aqua science engineers, inc.

March 7, 1997

REPORT
of
SOIL AND GROUNDWATER ASSESSMENT
ASE JOB NO. 2908
at
Emeryville Properties
1400 Park Avenue
Emeryville, California

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
2411 Old Crow Canyon Road, #4
San Ramon, CA 94583
(510) 820-9391

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineers, Inc. (ASE)'s soil and groundwater assessment for Emeryville Properties located at 1400 Park Avenue in Emeryville, California *(Figures 1 and 2)*. The site assessment activities were initiated by Emeryville Properties as required by the Alameda County Health Care Services Agency (ACHCSA) in their letter dated December 9, 1996 (Appendix A).

2.0 SITE HISTORY

2.1 Prior Consultants' Work

In 1992, a below grade concrete vault was removed outside the north side of the building. This vault was used for secondary containment for six former vats used for chrome-plating activities. A Final Closure Report issued by Excel Trans in 1992 indicated that the soil surrounding the vault contained elevated concentrations of chromium and approximately 40 tons of soil were removed from the site. In October 1992, Excel Trans drilled four soil borings in an attempt to delineate the chromium contamination in soil downgradient of the former vault. Total chromium concentrations in these borings ranged from 2.2 parts per million (ppm) to 88 ppm, far below the action level in the US EPA Region IX Preliminary Remediation Goals for industrial soil.

In December 1994, Alton Geoscience conducted assessment activities at the site related to the former vault which included the drilling of six (6) soil borings and the installation of monitoring wells MW-1, MW-2 and MW-3. Soil and groundwater samples from these borings and wells were analyzed for total and Hexavalent chromium, total lead, and halogenated volatile organic compounds (HVOCs).

The results of the Alton investigation indicated that there were low concentrations of total chromium (ranging from 19 ppm to 91 ppm) and Hexavalent chromium ranging from non detectable (N.D.) to 27 ppm in the soil. Total chromium ranging from N.D. to 0.069 ppm, and Hexavalent chromium concentrations ranging from N.D. to 0.025 ppm were detected in water samples collected from monitoring wells MW-1, MW-2 and MW-3 at the site. Low concentrations of total lead were detected in all of the soil samples, but at concentrations below regulatory thresholds. No total lead was detected in the water samples collected from monitoring wells MW-1, MW-2 and MW-3 at the site. Halogenated volatile organic compounds (HVOCs) concentrations were identified in two soil samples collected on site. However, a source for HVOC compounds was not identified near the

former tank vault. HVOCs were detected in groundwater samples from all three monitoring wells. Since MW-3 was positioned upgradient of the former vault, and HVOCs were identified in the water sample from MW-3, an offsite source was considered. Alton performed a review of HVOC data for both the Del Monte plant and the ECI facility, each of which are located near and either upgradient or crossgradient of the subject site. Data shows the HVOC contamination in groundwater from these two site appear to be affecting at least a portion of the Emeryville Properties property. In an effort to provide information regarding the known offsite source of groundwater contamination, ASE has included drawings from the Alton report detailing locations of wells and corresponding groundwater concentrations (Figures Offsite 1 and Offsite 2). For further information regarding the afore-mentioned remedial and assessment activities, see the Alton Geoscience report dated May 17, 1995. A "No Further Action" letter was issued by the ACHCSA on December 13, 1995 related to the former vault closure activities mentioned above.

2.2 Aqua Science Engineers, Inc. (ASE) Work

On July 21, 1995, ASE excavated 112.36 tons of petroleum-hydrocarbon contaminated soil from below a truck dock that was fitted with a honing machine used by a previous building tenant. Analytical results of sidewall excavation soil samples (6-feet below ground surface (bgs) indicated the presence of hydrocarbons from C8 to C44 as high as 870 ppm and oil and grease concentrations as high as 1,600 ppm. Bottom of excavation soil samples collected from 10-feet bgs were non-detectable for hydrocarbons from C8 to C44 and only 20 ppm oil and grease. A grab groundwater sample collected from within the pit contained 7,000 parts per billion (ppb) total petroleum hydrocarbons and 11,000 ppb total oil and grease. Soil and water samples were also analyzed for HVOCs by EPA Method 8010. None of the soil samples contained VOC concentrations above reporting limits. However, the grab groundwater sample contained tetrachloroethene (PCE) at 19 ppb, trichloroethene (TCE) at 100 ppb, vinyl chloride at 11 ppb, 1,2- dichlorobenzene at 1 ppb, cis 1,2-dichloroethene at 49 ppb, and trans 1,2-dichloroethene at 3. All these HVOCs are known to exist in the area's groundwater from contamination caused by others.

Further overexcavation of contaminated soil was not possible due to the position of the excavation in proximity to the building walls and the adjacent Horton Street and sidewalk.

The excavation was backfilled with clean, imported soil, and the contaminated soil was transported to and disposed of at Forward, Inc., a non-hazardous landfill in Manteca, California, on July 13, 1995. For further

information regarding these activities, please see the ASE report dated August 3, 1995.

On October 23, 1995, ASE removed three (3) underground fuel storage tanks (USTs) from the site (Figure 2). The existing monitoring wells at the site are to be utilized for sampling related to the potential release from these former USTs. See ASE report dated January 12, 1996 for details regarding the UST removal activities.

This 1996 assessment examines the portion of the site used by the previous occupant of the building for honing processes, as well as the assessment of a partially buried vessel/tank on the site.

3.0 SCOPE OF WORK

Based on the site history and requirements of the ACHCSA, ASE's scope of work was as follows:

1) Prepare a workplan and health and safety plan for ACHCSA approval.

2) Obtain an encroachment permit from the City of Emeryville to install a groundwater monitoring well in the city's right of way and a subsurface drilling permit from the Alameda County Flood Control and Water Conservation District (Zone 7).

3) Drill one soil boring in Horton Avenue west/downgradient of the former honing pit area. Collect soil samples for hydrogeologic description and analysis.

4) Construct a groundwater monitoring well in the boring.

5) Develop the monitoring well using surge block agitation and bailer evacuation.

6) Collect groundwater samples from all four site monitoring wells for analysis.

7) Analyze one (1) soil and one (1) groundwater sample from the newly installed soil boring/monitoring well (MW-4) at a CAL-EPA certified analytical laboratory for total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 5030/8015, total petroleum hydrocarbons as diesel (TPH-D) and motor oil (TPH-MO) by modified EPA Method 3510/8015, HVOCs by EPA Method 8240 and Pb and Cr

by EPA Method 6010. In addition, if TPH-D or TPH-MO are detected in any of the samples, those samples will also be analyzed for polynuclear aromatic compounds (PNAs) by EPA Method 8310.

8) Analyze groundwater samples collected from monitoring well MW-1 for TPH-G by modified EPA Method 5030/8015, TPH-D by modified EPA Method 3510/8015, benzene, toluene, ethylbenzene and total xylenes (BTEX) and MTBE by EPA Method 8020 and PNAs by EPA Method 8310.

9) Analyze groundwater samples collected from monitoring wells MW-2 and MW-3 for HVOCs by EPA Method 8240 and chromium and lead by EPA Method 3005A/6010A.

10) Survey the top of casing elevation of the newly installed well relative to the existing on-site wells and determine the groundwater flow direction and gradient beneath the site.

11) Prepare a report outlining the methods and findings of this assessment.

Details of this 1996 assessment are presented below.

4.0 DRILLING SOIL BORINGS AND COLLECTING SAMPLES

Prior to drilling, ASE obtained a City of Emeryville encroachment permit to drill in the city's right of way and an Alameda County Flood Control and Water Conservation District (Zone 7) drilling permit (Appendix B). ASE also notified Underground Service Alert (USA) to have underground public utilities in the vicinity of the site marked.

On December 6, 1996, Soils Exploration Services of Benicia, California drilled soil boring MW-4 at the site using a CME-55 drill rig equipped with 8-inch diameter hollow-stem augers. Groundwater monitoring well MW-4 was subsequently constructed in the boring.

Undisturbed soil samples were collected at 5-foot intervals as drilling progressed for lithologic and hydrogeologic description and for possible chemical analyses. The samples were collected by driving a split-barrel drive sampler lined with 2-inch diameter stainless steel tubes ahead of the auger tip with successive blows from a 140-lb. hammer dropped 30-inches. One tube from each sampling interval was immediately trimmed, sealed with Teflon tape, plastic end caps and duct tape, labeled, sealed in a

plastic bag and stored on ice for transport to Chromalab, Inc. of Pleasanton, California (ELAP #1094) under chain of custody. Soil from the remaining tubes was described by the site geologist using the Unified Soil Classification System and was screened for volatile compounds with an Organic Vapor Meter (OVM). The soil was screened by emptying soil from one of the sample tubes into a plastic bag. The bag was then sealed and placed in the sun for approximately 10 minutes. After the hydrocarbons were allowed to volatilize, the OVM measured the vapor in the bag through a small hole punched in the bag. OVM readings are used as a screening tool only since the procedures are not as rigorous as those used in the laboratory. Drilling equipment was steam-cleaned prior to use, and sampling equipment was washed with a TSP solution between sampling intervals to prevent cross-contamination. Rinsate was contained on-site in sealed and labeled Department of Transportation approved 55-gallon (DOT 17H) drums.

Sediments encountered during drilling generally consisted of clayey silt from beneath the asphaltic concrete surface to 4-feet bgs, silty clay from 4-feet bgs to 7-feet bgs, sandy silt from 7-feet bgs to 13-feet bgs, and clayey silt from 13-feet bgs to the total depth explored of 21.5-feet bgs. Groundwater was encountered at approximately 4-feet bgs. The boring log and well construction details are included as Appendix C. Drill cuttings were contained in DOT 17H drums for future disposal by the client.

5.0 ANALYTICAL RESULTS FOR SOIL

The soil sample collected from 2.0-feet bgs was analyzed by Chromalab for TPH-G by modified EPA Method 5030/8015, TPH-D and TPH-MO by modified EPA Method 3510/8015, HVOCs by EPA Method 8240, PNAs by EPA 8270A and chromium and lead by EPA Method 3050A/6010A. The 2.0-foot sample was selected because it best represented the capillary fringe soil sample and also had a slight hydrocarbon odor. No organic vapor meter (OVM) readings were detected in any of the soil samples collected from MW-4. Please note that due to a laboratory error, the PNAs were analyzed after the samples holding time expired. However, since PNAs are semi-volatile compounds and not volatile, the results should be considered generally representative of subsurface conditions. The analytical results are tabulated in Table One, and a copy of the certified analytical report and chain of custody form are included in Appendix D.
2 ppm TPH-D were detected in the soil sample collected from 2.0-feet bgs in boring MW-4. No TPH-G, TPH-MO, HVOCs or PNAs were detected in the soil sample, and chromium and lead were detected at concentrations below regulatory concern.

TABLE ONE

Summary of Analysis of **SOIL** Samples from MW-4
All results are in **parts per million**

COMPOUND	MW-4 2.0'	PRGs (Industrial)
Total petroleum hydrocarbons as Gasoline (TPH-G)	< 1	NE
Total petroleum hydrocarbons as Diesel (TPH-D)	2	NE
Total petroleum hydrocarbons as Motor Oil (TPH-MO)	< 50	NE
Chromium, total	36	450
Lead	6.2	1,000
Benzene	< 0.005	3.2
Toluene	< 0.005	2,800
Ethylbenzene	< 0.005	690
Total xylenes	< 0.005	990
cis-1,2-Dichloroethene	< 0.005	200
Tetrachloroethene	< 0.005	25
Trichloroethene	< 0.005	17
Vinyl chloride	< 0.005	0.011
All Semi-VOCs by EPA Method 8270	< 0.035 - < 0.20	Varies
All HVOCs by EPA Method 8240	< 0.005 - < 0.05	Varies

Notes:
Concentrations in excess of PRGs are **bold**.

Non-detectable concentrations are indicated by the less than sign (<) followed by the detection limit.

PRG = United States Environmental Protection Agency (US EPA) Region IX preliminary remediation goal (PRG) for industrial soil.

NE = Not established.

6.0 MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Groundwater monitoring well MW-4 was constructed in boring MW-4 with 2-inch diameter, 0.020-inch slotted, flush-threaded, schedule 40 PVC well screen and blank casing. The well was screened between 3.5-feet bgs and 20.0-feet bgs (the total depth of the boring) to monitor the first water bearing zone encountered. Lonestar #3 Monterey sand was placed in the annular space between the borehole and the casing from the bottom of the boring to approximately 0.5-feet above the well screen. A 0.5-foot thick hydrated bentonite layer separates the sand from the overlying cement surface seal. The wellhead is secured with a locking wellplug beneath an at-grade traffic-rated vault. This well construction is consistent with the well construction of pre-existing monitoring wells at the site. Although the water table may rise above the top of the screened interval in this well, the shallow nature of groundwater beneath the site would not allow the well to be screened above this elevation while providing an adequate sanitary surface seal.

On December 11, 1996, ASE environmental specialist Scott Ferriman developed monitoring well MW-4 using two episodes of surge-block agitation and bailer evacuation. Over ten well casing volumes of water were removed from the well during development, and evacuation continued until the water was relatively clear.

On December 13, 1996, ASE environmental specialist Scott Ferriman collected groundwater samples from all four site monitoring wells. Prior to sampling, the surface of groundwater in each monitoring well was checked for the presence of free-floating hydrocarbons or sheen. No free-floating hydrocarbons or sheen were present on the groundwater surface from any of the monitoring wells. The wells were then purged of four well casing volumes of groundwater. The pH, temperature and conductivity of the purge water were monitored during evacuation, and samples were not collected until these parameters stabilized. Samples were collected from each well using dedicated polyethylene bailers. The groundwater samples were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials and 1-liter amber glass bottles. All of the samples were preserved with hydrochloric acid, labeled, placed in protective foam sleeves, and stored on ice for transport to Chromalab, Inc. under chain of custody. Well development and sampling purge water were contained in DOT 17H drums and stored on-site for handling by the client at a later date. See Appendix E for a copy of the Field Logs.

7.0 GROUNDWATER ELEVATIONS

ASE surveyed the top of casing elevation of each well relative to a site datum on December 23, 1996. An assumed site datum elevation of 10-feet above mean sea level (msl) was interpolated from the USGS Oakland West, California 7.5 Minute Quadrangle (1980). The top of casing elevation of monitoring well MW-2 was set at 10.00-feet and the top of casing elevations of the monitoring wells MW-1, MW-3 and MW-4 were surveyed relative to monitoring well MW-2.

On December 13, 1996, ASE environmental specialist Scott Ferriman measured the depth to groundwater in each monitoring well. The depth to groundwater measurements are presented in Table Two, and groundwater elevation contours are plotted on Figure 3. Groundwater appears to flow to the west beneath the site at a gradient of 0.009-feet/foot. Work by others in the area has indicated that the groundwater flow direction varies, perhaps due to tidal cycles.

TABLE TWO
Summary of Groundwater Well Survey Data

Well ID.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation (msl)
MW-1	12-13-96	12.67	7.85	4.82
MW-2	12-13-96	10.00	5.39	4.61
MW-3	12-13-96	13.61	7.69	5.92
MW-4	12-13-96	8.17	3.42	4.75

8.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples from monitoring well MW-1 were analyzed by Chromalab for TPH-G by modified EPA Method 5030/8015, TPH-D by modified EPA Method 3510/8015, BTEX and MTBE by EPA Method 8020. Groundwater samples from monitoring wells MW-2, MW-3 and MW-4 were analyzed for HVOCs by EPA Method 8240, total chromium and lead by EPA Method 3005A/6919A. The groundwater samples from monitoring well MW-4 were also analyzed for TPH-G by modified EPA Method 5030/8015, TPH-D and TPH-MO by modified EPA Method 3510/8015 and PNAs by EPA Method 8310. The analytical results are

tabulated in Table Three, and copies of the certified analytical report and chain of custody form are included in Appendix F.

As indicated in figures Offsite 1 and Offsite 2, monitoring well MW-4 is the closest downgradient well relative to the ECI facility source. Groundwater collected from MW-4 contained 300 ppb total chromium, 31 ppb cis 1,2-dichloroethene, 18 ppb PCE, 110 ppb TCE, and 8.2 ppb vinyl chloride. The concentrations detected in groundwater collected from MW-4 reflect the likelihood of offsite plume migration onto the subject site. All these compounds are known to exist in the area's groundwater from contamination caused by others and the lower concentrations detected in these further downgradient wells reflect the likelihood of offsite plume migration onto the subject site.

No detectable concentrations of petroleum hydrocarbons were identified from groundwater collected from MW-1. Groundwater collected from MW-2 contained 57 ppb chromium and 3.4 ppb TCE. Groundwater collected from MW-3 contained 14 ppb cis 1,2-dichloroethene, 4.7 ppb PCE, and 13 ppb TCE. Again, all these compounds are known to exist in the area's groundwater from contamination caused by others.

TABLE THREE
Summary of Analysis of **GROUNDWATER** Samples
All results are in **parts per billion**

COMPOUND	MW-1	MW-2	MW-3	MW-4	DTSC MCLs
Total petroleum hydrocarbons as Gasoline (TPH-G)	< 50	NA	NA	< 50	NE
Total petroleum hydrocarbons as Diesel (TPH-D)	< 50	NA	NA	140*	NE
Total petroleum hydrocarbons as Motor Oil (TPH-MO)	< 50	NA	NA	< 50	NE
Chromium, total	NA	**57**	< 5	**300**	50
Lead	NA	< 5	< 5	< 5	50
Benzene	< 0.5	< 2	< 2	< 2	1
Toluene	< 0.5	< 2	< 2	< 2	100
Ethylbenzene	< 0.5	< 2	< 2	< 2	680
Total xylenes	< 0.5	< 2	< 2	< 2	1,750
MTBE	< 5	NA	NA	NA	NE
cis-1,2-Dichloroethene	NA	< 2	**14**	**31**	6
Tetrachloroethene	NA	< 2	4.7	**18**	5
Trichloroethene	NA	3.4	**13**	**110**	5
Vinyl chloride	NA	< 5	< 5	**8.2**	0.5
All Semi-VOCs by EPA Method 8270	NA	NA	NA	< 2.0 - < 5.0	Varies
All HVOCs by EPA Method 8240	NA	< 2 - < 20	< 2 - < 20	< 2 - < 20	Varies

Notes:
* = Chromatogram pattern does not resemble diesel standard.

Concentrations in excess of MCLs are **bold**.

Non-detectable concentrations are indicated by the less than sign (<) followed by the detection limit..

DTSC MCL = California Department of Toxic Substances Control maximum contaminant level for drinking water.

NA = Not analyzed
NE = Not established

9.0 ASSESSMENT OF PARTIALLY BURIED VESSEL/TANK

On May 22, 1996, ASE environmental specialist Scott Ferriman drilled borehole BH-A to a depth of 5-feet bgs adjacent to the partially buried vessel/tank located adjacent to the property in the sidewalk on Holden Street (Figure 2). The historical use of this vessel, to this date, is unknown. This borehole was drilled to determine contamination, if any, due to the unknown contents within the vessel. A soil sample was collected at 5-feet bgs due to the presence of shallow groundwater at 5-feet bgs.

The vessel was full of what appeared to be water, most likely rain water, because the vessel has a partially open top. ASE collected a water sample labeled TANK-WATER from within the vessel.

The soil and grab water sample were contained in laboratory provided sample containers, labeled, placed in protective foam sleeves, and stored on ice for immediate transport to Core Laboratories of Anaheim, California by Federal Express, under chain of custody. The soil sample was analyzed for total extractable petroleum hydrocarbons (TEPH) by modified EPA Method 8015, HVOCs by EPA Method 8240, semi-VOCs by EPA Method 8270, and CAM 17 metals and STLC lead. The water sample was analyzed for TEPH, by modified EPA Method 8015, HVOCs by EPA Method 8240, and semi-VOCs by EPA Method 8270.

The soil sample contained 170 ppm TEPH, no HVOCs, no semi-VOCs and the only metal with an elevated concentration was total lead at 280 ppm. The STLC lead concentration for this sample was 29 ppm. No TEPH, HVOCs or semi-VOCs were detected in the water sample. See Appendix G for copies of the analytical report.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Only very low concentrations of diesel, total chromium and lead were detected in the soil sample collected from monitoring well MW-4. These concentrations are well below any recommended clean-up levels. Equally, the concentrations of compounds detected in groundwater collected from monitoring wells MW-1, MW-2, MW-3 and MW-4 appear to be insignificant in relation to those detected in off-site sources; all compounds detected in the site's monitoring wells are found in other upgradient site's wells at much higher concentrations. As previous consultants have concluded, ASE believes the HVOC and chromium concentrations should be considered adequately characterized on site.

As a rule, concentrations of pollutants in groundwater are compared to California Department of Toxic Substances Control (DTSC) maximum contaminant levels (MCLs) for drinking water. Therefore, ASE has compared the site's groundwater concentrations to the DTSC MCLs as depicted in Table Two. Elevated concentrations of chromium, cis-1,2-DCE, PCE, TCE and vinyl chloride were detected in groundwater samples collected from monitoring wells at the site; however, all these VOCs and chromium are known to exist in the area's groundwater from contamination caused by others. These concentrations exceed DTSC MCLs for drinking water; however, due to its poor quality, the groundwater beneath the subject site is not currently used for drinking water. Therefore, although some of these compounds exceed DTSC MCLs for drinking water, sites such as these can qualify for case closure under certain circumstances without remedial activities or further assessment activities. There is no source of HVOCs identified at the subject site. The only source of chromium at the subject site has been removed.

ASE recommends the following:

- Continue to sample the groundwater from monitoring well MW-1 for one additional quarter as required by the ACHCSA. If similar analytical results are detected next quarter, ASE will recommend no further sampling of MW-1 and its subsequent destruction.

- Discontinue the sampling of monitoring wells MW-2 and MW-3 as previously required by the ACHCSA because their installation was required for a subsurface investigation that has obtained case closure. However, since the HVOC compounds detected in MW-2 and MW-3 are likely due to an off-site source, Emeryville Properties should collect a sample from one or both of these wells on an annual basis to track the migration of HVOCs onto the subject site from offsite sources. This annual sampling should be conducted within the first quarter of each year when groundwater elevations are the highest.

- Continue to sample groundwater within MW-4 annually in order to assess upgradient sources of HVOCs and chromium. ASE believes the concentrations of petroleum hydrocarbons detected in MW-4 do not appear to be a significant threat to local bodies of water or human health, and thus recommends no further analyses for TPH-G, TPH-D, TPH-MO and PNAs.

- Since the elevated concentration of lead in soil adjacent to the partially buried vessel has not appeared to have migrated downgradient to monitoring well MW-3, ASE recommends no further assessment activities related to this tank/vessel. ASE recommends closure in-place of the partially buried tank/vessel located adjacent to the property on Holden Street. The appropriate documentation to perform closure in place will be submitted on behalf of the property owner in the very near future.

11.0 REPORT LIMITATIONS

The results of this assessment represent conditions at the time of the soil and groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent California state DHS certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

Should you have any questions or comments, please feel free to call us at (510) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Robert E. Kitay, R.G.
Senior Geologist

David Allen, R.E.A.
Senior Project Manager

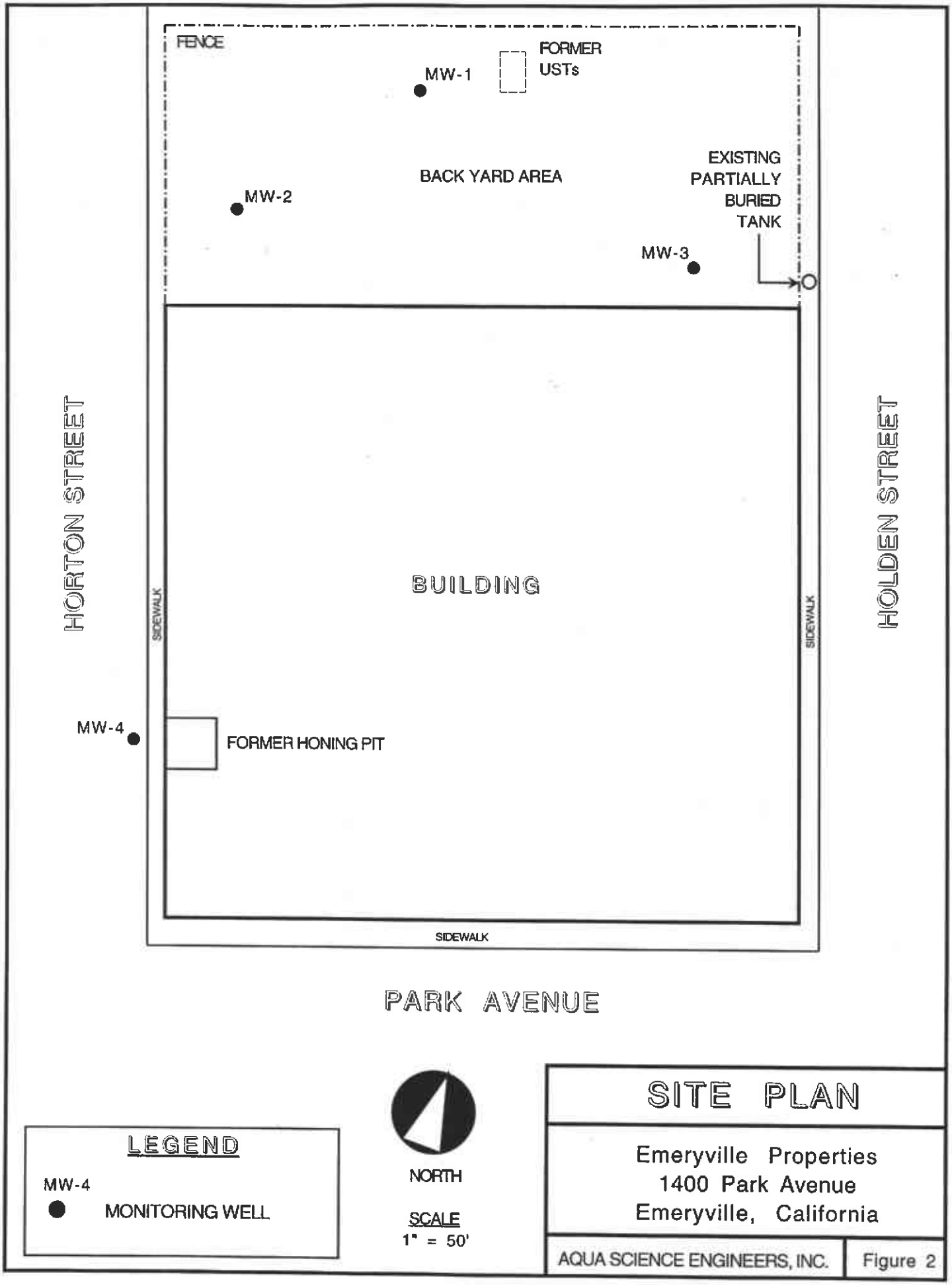
cc: Mr. William Lewerenz, Emeryville Properties
Ms. Gwen Tellegen
Ms. Susan Hugo, Alameda County Health Care Services Agency
Mr. Kevin Graves, RWQCB, San Francisco Bay Region

NORTH

LOCATION MAP

Emeryville Properties Facility
1400 Park Avenue
Emeryville, California

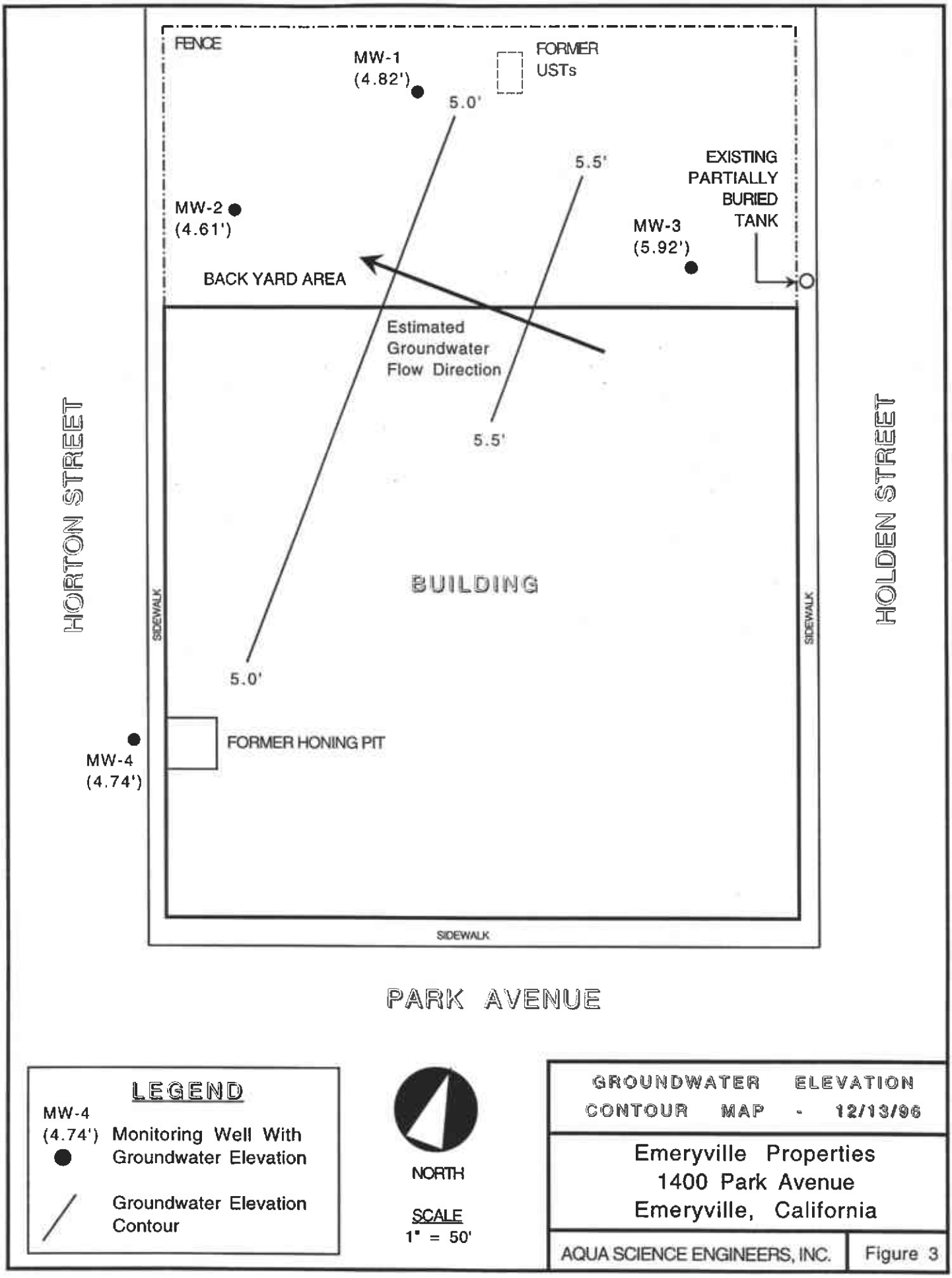
Aqua Science Engineers | Figure 1



SITE PLAN

Emeryville Properties
1400 Park Avenue
Emeryville, California

AQUA SCIENCE ENGINEERS, INC. | Figure 2



LEGEND

MW-4 (4.74') ● Monitoring Well With Groundwater Elevation

/ Groundwater Elevation Contour

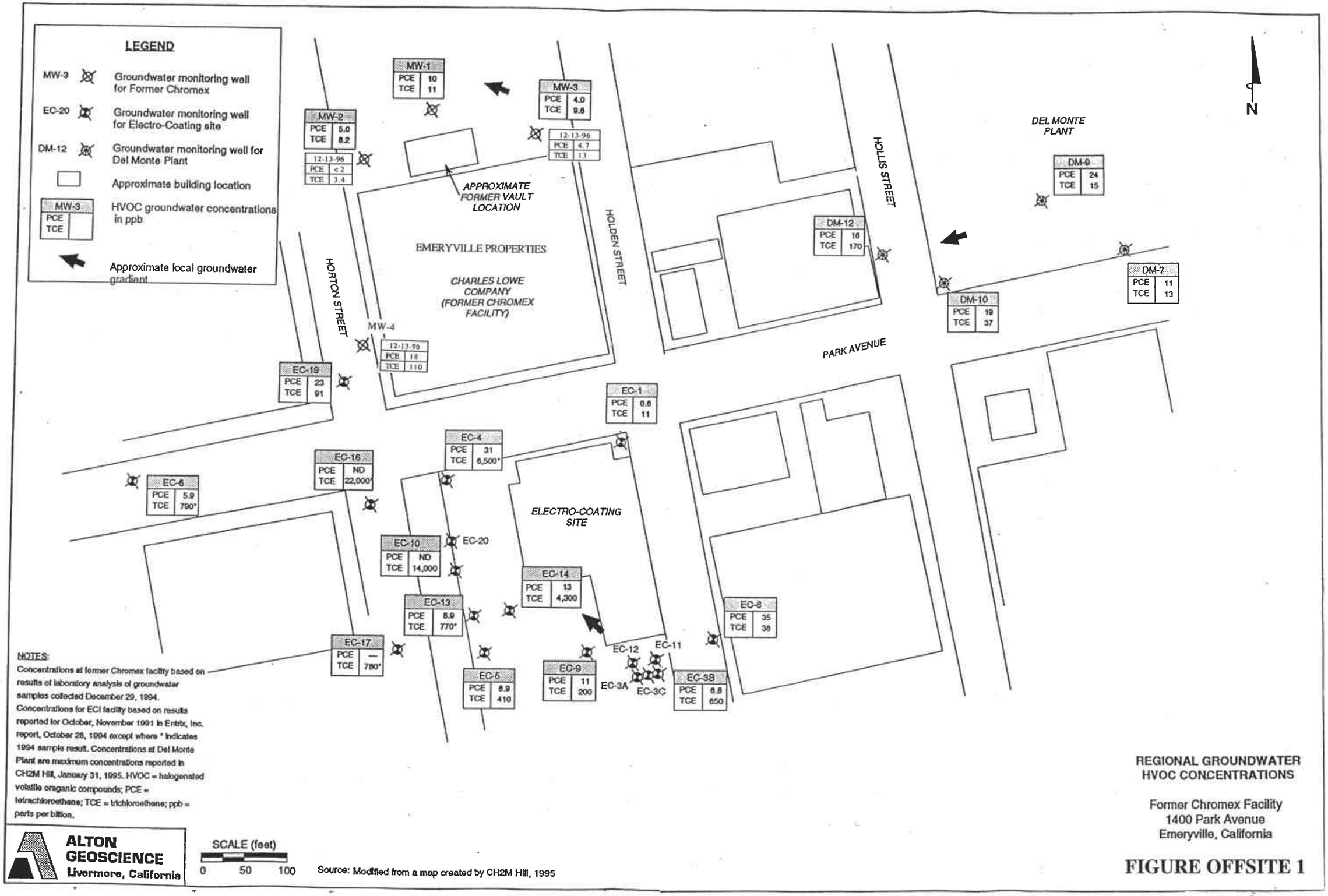
NORTH

SCALE
1" = 50'

GROUNDWATER ELEVATION CONTOUR MAP - 12/13/96

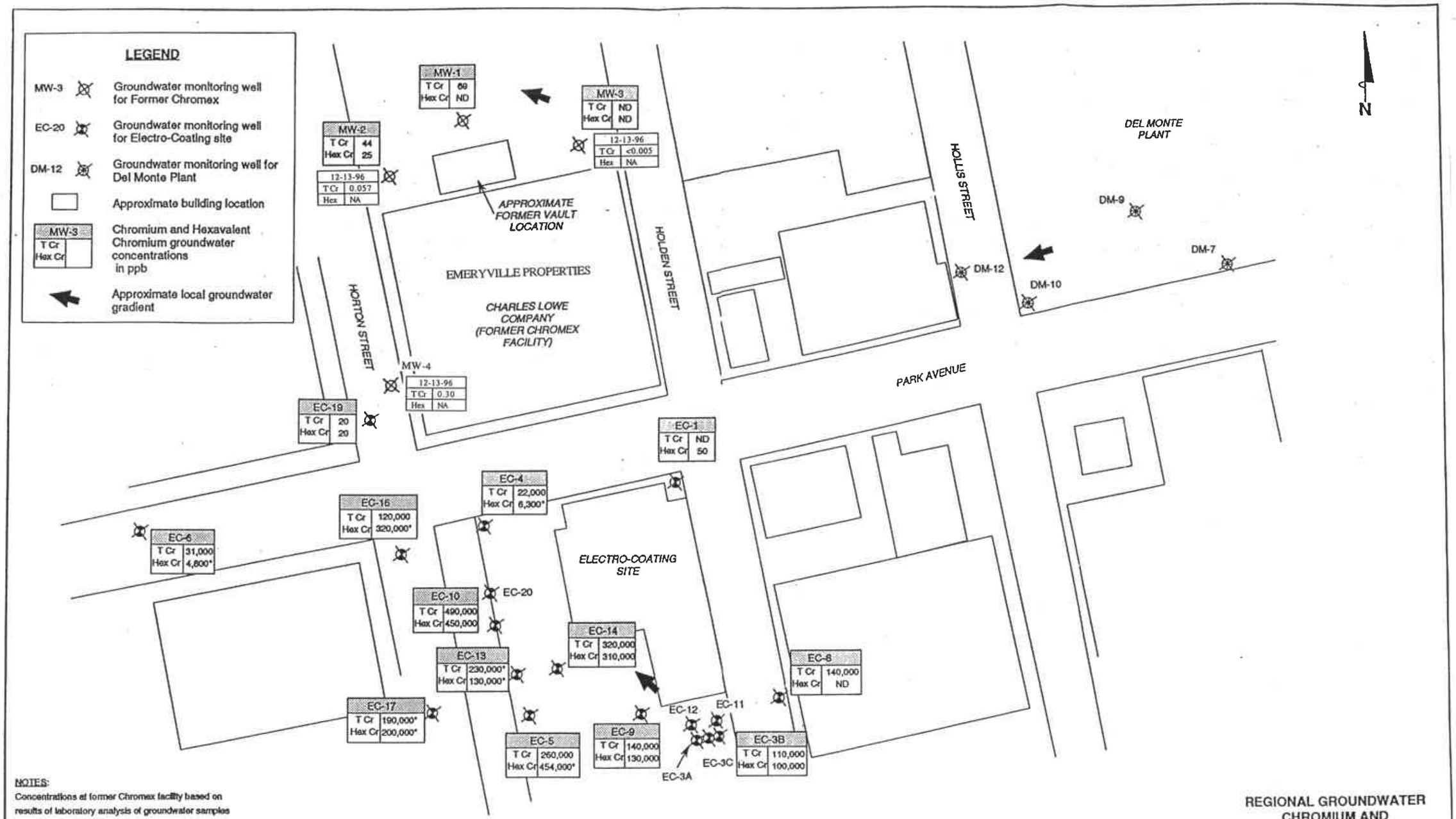
Emeryville Properties
1400 Park Avenue
Emeryville, California

AQUA SCIENCE ENGINEERS, INC. | Figure 3



Source: Modified from a map created by Alton Geoscience

aqua science engineers inc.



NOTES:
Concentrations at former Chromax facility based on results of laboratory analysis of groundwater samples collected December 29, 1994. Concentrations for ECI facility based on results reported for October, November 1991 in Entrix, Inc. report, October 28, 1994 except where 1994 results are denoted by *. T Cr = total chromium; Hex Cr = hexavalent chromium; ppb = parts per billion.

ALTON GEOSCIENCE
Livermore, California

SCALE (feet)
0 50 100

Source: Modified from a map created by CH2M Hill, 1995

REGIONAL GROUNDWATER CHROMIUM AND HEXAVALENT CHROMIUM CONCENTRATIONS

Former Chromex Facility
1400 Park Avenue
Emeryville, California

FIGURE OFFSITE 2

Source: Modified from a map created by Alton Geoscience

aqua science engineers inc.

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

December 9, 1996
STID # 319

Mr. William Lewerenz
Emeryville Properties
699 Second Street
San Francisco, CA 94107

Mr. Thomas La Flamme
c/o Thomas Short Co.
1685 34th Street
Oakland, CA 94608

RE: Former Chromex / Charles Lowe / Thomas Short Company
1400 Park Street, Emeryville, California 94608

Dear Mr. Lewerenz & Mr. La Flamme:

This letter is a follow up to the on site meeting I had with Ms. Gwen Tellegan and Mr. Dave Allen of Aqua Science Engineers (ASE) on December 6, 1996 regarding the subsurface investigation related to the three underground storage tanks (USTs) and the vertical honing tank removed from the above referenced site. A work plan for soil and groundwater investigation dated December 2, 1996 and submitted by ASE for the subject site was reviewed and verbally approved by this agency.

During the site visit, ASE was implementing the approved work plan by installing a shallow groundwater monitoring well downgradient of the former honing tank. This well should be included in the groundwater monitoring program for the site. As part of the chromium vault investigation, three monitoring wells (MW-1, MW-2 & MW-3) were previously installed at the site. The chromium vault investigation was given a "no further action" status in the closure letter issued by this office on December 13, 1995. However, continued groundwater monitoring is required concerning the release associated with the three USTs removed from the site. Groundwater monitoring well MW-1 which is downgradient of the former USTs was sampled on November 6, 1995. Results showed the presence of low levels of toluene (4 ppb) , xylene (7.8 ppb) , PCE (7.9 ppb), DCE (2.6 ppb), and TCE (5.8ppb). TPH diesel and TPH motor oil were not detected in the water sample. Monitoring well MW-1 must be sampled for the following target compounds ; TPH gasoline, TPH diesel, TPH motor oil, BTEX , MTBE and PAH's (if TPH diesel is present). At a minimum, two more quarters of sampling must be conducted in well MW-1.

With regards to the UST found on the sidewalk along Holden Street, more information is warranted as far as the historical use of the tank, installation and piping diagrams, etc. Any openings /pipings associated with the UST must be capped to prevent water infiltration , usage and /or tampering by others since the UST appears to be accessible to the public. The UST must be properly closed by removal or closure in place. Please submit a UST closure application and provide our office with a copy of the results of the sample collected from the tank and the soil sample collected near the tank area no later than January 9, 1997.

If you have any questions concerning this letter or the subject site, please contact me at (510) 567-6780.

Sincerely,

Susan L. Hugo

Susan L. Hugo
Senior Hazardous Materials Specialist

c: Mee Ling Tung, Director, Environmental Health
Gordon Coleman, Acting Chief, Environmental Protection Division
Sum Arigala, San Francisco Bay, RWQCB
Gwen Tellegan, 2300 E. Imperial Highway, El Segundo, CA 90245
Dave Allen, ASE, 2411 Old Crow Canyon Road, # 4, San Ramon, CA 94583
SH / files

APPENDIX B

Permits

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT
1400 Park Avenue
Emeryville, CA

CLIENT
Name Emeryville Properties
Address 699 - 2nd Street Voice 310-640-9100
City San Francisco, CA Zip 94107

APPLICANT
Name Aqua Science Engineers, Inc.
Attn: Robert Kitay Fax 510-837-4853
Address 2411 Old Crow Canyon Rd #4 Voice 510-820-9391
City San Ramon, CA Zip 94583

TYPE OF PROJECT
Well Construction
Cathodic Protection ___
Water Supply ___
Monitoring X
Geotechnical Investigation
General ___
Contamination ___
Well Destruction ___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. C-57 582696

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 25 ft.
Surface Seal Depth 2 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 11-6-96
ESTIMATED COMPLETION DATE 11-6-96

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Robert E. Kitay Date 11-3-96

FOR OFFICE USE

PERMIT NUMBER 96862
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 5 Dec 96
Wyman Hong

91992

PERMIT NO. 96-12-81 (FORM REVISED JUNE 1996)

ENCROACHMENT PERMIT
CITY OF EMERYVILLE - PUBLIC WORKS DEPARTMENT
2200 POWELL ST., 12TH FLR.
EMERYVILLE, CA 94608
(510) 596 4330

DATE 11-27-96

PROPERTY OWNER EMERYVILLE PROPERTIES PHONE NO. 310·640·9100

CONTACT PERSON GWEN TELLEGEN

ADDRESS 699 2nd STREET SAN FRANCISCO CA 94107

CONTRACTOR AQUA SCIENCE ENG. LICENSE NO. 487000 CLASS "A" HAZ C57

CONTACT PERSON ROBERT KITAY PHONE NO. 510. 820· 9391

ADDRESS 1400 PARK AVENUE EMERYVILLE @ HORTON
LOCATION OF WORK (INCLUDE ADDRESS AND STREET NAME AND CROSS STREETS)

PLANNED DATE OF COMMENCEMENT 12-6-96 PLANNED DATE OF COMPLETION 12-6-96

DESCRIPTION OF WORK (INCLUDE AVERAGE DEPTH OF EXCAVATION, MAXIMUM DEPTH, AVERAGE WIDTH, LENGTH, AND ESTIMATED COST OF WORK)

INSTALLATION OF a 2" DIAMETER by 20' deep
GROUNDWATER MONITORING WELL.
ESTIMATED COST ≈ $ 1,500 ⁰⁰

CURRENT BUSINESS LICENSE ON FILE ✓ YES? _____ NO?

CONTRACTOR SIGNATURE [signature]

DO NOT WRITE BELOW THIS LINE

[signature] (SIGNATURE)

Sr. Civil Engineer (TITLE)

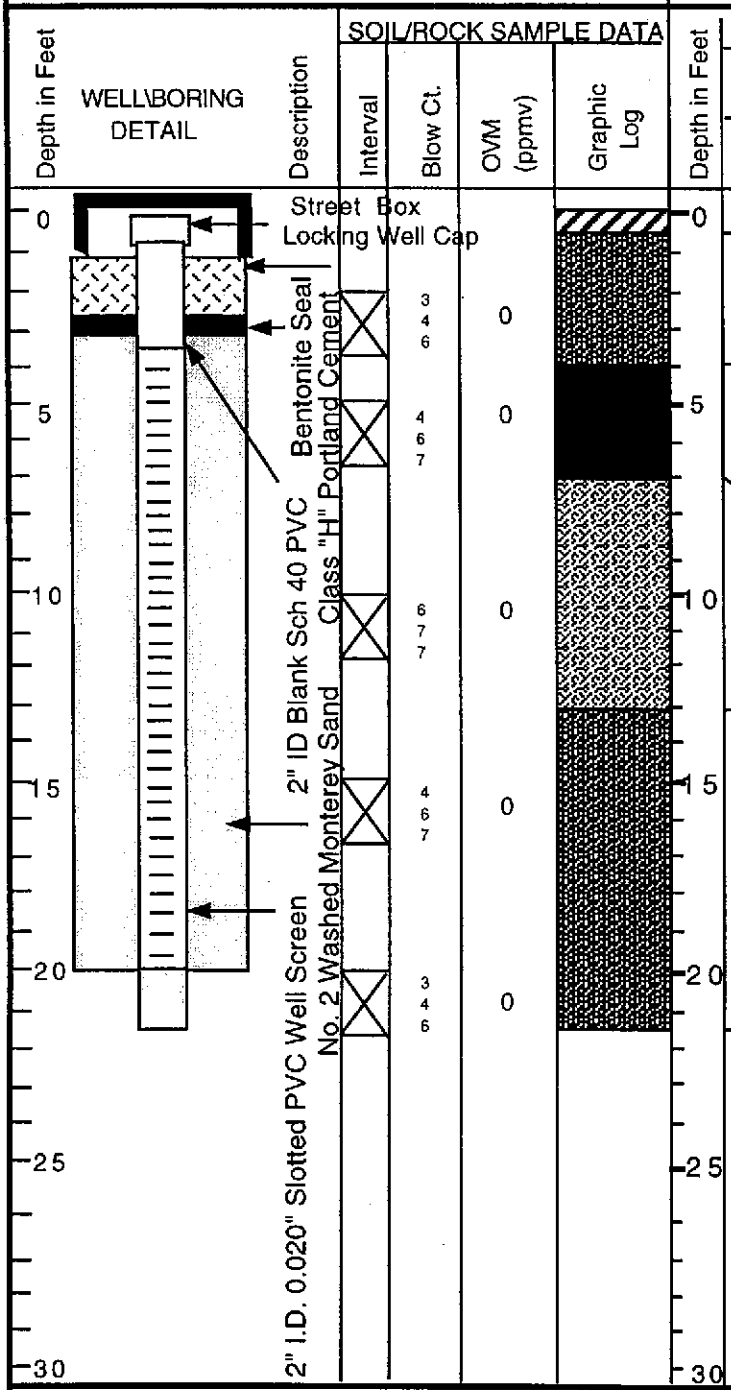
APPENDIX C

Boring Log and Well Construction Details

SOIL BORING LOG AND WELL COMPLETION DETAILS		Monitoring Well MW-4
Project Name: Emeryville Properties	Project Location: 1400 Park Avenue, Emeryville, CA	Page 1 of 1
Driller: Soils Exploration Services	Type of Rig: CME 55	Size of Drill: 8" O.D. Hollow-Stem Augers
Logged By: Robert E. Kitay	Date Drilled: December 6, 1996	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: 4'	Total Depth of Well Completed: 20.0'
Static Depth of Water in Well: 4'	Well Screen Type and Diameter: 2" Diameter PVC
Total Depth of Boring: 21.5'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2.0" I.D. California Sampler



Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Asphaltic concrete
	Clayey SILT (MH); dark brown; stiff; moist; 70% silt; 30% clay; high plasticity; very low estimated K; slight hydrocarbon odor
	▼ *Groundwater First Encountered*
5	Silty CLAY (CH); dark yellow brown; stiff; wet; 70-75% clay; 20-25% silt; 5% subrounded pebbles (predominantly chert) to 0.2" diameter; high plasticity; very low estimated K; slight hydrocarbon odor
10	Sandy SILT (ML); yellow brown; stiff; wet; 55% silt; 25-30% fine to medium sand; 5-10% subrounded pebbles to 2" diameter; 10% clay; low plasticity; low estimated K; slight hydrocarbon odor
15	Clayey SILT (MH); yellow brown; stiff; wet; 80% silt; 20% clay; high plasticity; low estimated K; no odor
20	
	End of boring at 21.5'
25	
30	

APPENDIX D

Analytical Report and Chain of Custody Form
For Soil Samples from MW-4

CHROMALAB, INC.

Environmental Services (SDB)

December 13, 1996 *Submission #:* 9612106

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 6, 1996

re: 1 sample for TPH- Gasoline analysis.
Method: *EPA 8015M*

Matrix: SOIL
Sampled: December 6, 1996 *Run#:* 4485 *Analyzed:* December 12, 1996

Spl#	CLIENT SPL ID	GASOLINE (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
110130	MW-4 2.0'	N.D.	1.0	N.D.	107	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-837-4853 MV 12/13

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 12, 1996 *Submission #:* 9612106

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 6, 1996

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 3050A/6010A Nov 1990*

Client Sample ID: **MW-4 2.0'**
Spl#: 110130 *Matrix:* SOIL *Extracted:* December 11, 1996
Sampled: December 6, 1996 *Run#:* 4439 *Analyzed:* December 11, 1996

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
CHROMIUM	36	1.0	N.D.	95.4	1
LEAD	6.2	1.0	N.D.	95.8	1

Charles Woolley
Chemist

John S. Labash
Inorganic Supervisor

510-837-4853 MV 12/13

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 13, 1996 *Submission #:* 9612106

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 6, 1996

re: 1 sample for TEPH analysis.
Method: *EPA 8015M*

Matrix: SOIL *Extracted:* December 11, 1996
Sampled: December 6, 1996 *Run#:* 4457 *Analyzed:* December 12, 1996

Spl# CLIENT SPL ID	Diesel (mg/Kg)	Motor Oil (mg/Kg)
110130 MW-4 2.0'	2.0	N.D.
Reporting Limits	1.0	50
Blank Result	N.D.	N.D.
Blank Spike Result (%)	67.0	--

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 16, 1996 *Submission #:* 9612106

AQUA SCIENCE ENGINEERS INC
Atten: Robert Kitay
Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 6, 1996
re: One sample for Volatile Organics by GC/MS analysis.
Method: *SW846 METHOD 8240A Nov 1990*

Client Sample ID: **MW-4 2.0'**
Spl#: 110130 *Matrix:* SOIL
Sampled: December 6, 1996 *Run#:* 4510 *Analyzed:* December 14, 1996

ANALYTE	RESULT (ug/Kg)	REPORTING LIMIT (ug/Kg)	BLANK RESULT (ug/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
ACETONE	N.D.	20	N.D.	--	1
BENZENE	N.D.	5.0	N.D.	101	1
BROMODICHLOROMETHANE	N.D.	5.0	N.D.	--	1
BROMOFORM	N.D.	5.0	N.D.	--	1
BROMOMETHANE	N.D.	5.0	N.D.	--	1
METHYL ETHYL KETONE	N.D.	20	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	5.0	N.D.	--	1
CHLOROBENZENE	N.D.	5.0	N.D.	107	1
CHLOROETHANE	N.D.	5.0	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	10	N.D.	--	1
CHLOROFORM	N.D.	5.0	N.D.	--	1
CHLOROMETHANE	N.D.	10	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	5.0	N.D.	101	1
1,2-DICHLOROETHENE (CIS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	5.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	5.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	5.0	N.D.	--	1
ETHYLBENZENE	N.D.	5.0	N.D.	--	1
2-HEXANONE	N.D.	20	N.D.	--	1
METHYLENE CHLORIDE	N.D.	10	N.D.	--	1
4-METHYL-2-PENTANONE (MIBK)	N.D.	20	N.D.	--	1
STYRENE	N.D.	5.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	5.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	5.0	N.D.	--	1
TOLUENE	N.D.	5.0	N.D.	101	1
1,1,1-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROETHENE	N.D.	5.0	N.D.	107	1
TRICHLOROFLUOROMETHANE	N.D.	5.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	5.0	N.D.	--	1
VINYL ACETATE	N.D.	50	N.D.	--	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TOTAL XYLENES	N.D.	5.0	N.D.	--	1

Chip Poalinelli
Operations Manager

Eric Tam
Laboratory Director

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 16, 1996 *Submission #:* 9612106

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 6, 1996

re: **Blank spike and duplicate** report for Volatile Organics by GC/MS analysi

Method: SW846 METHOD 8240A Nov 1990

Matrix: SOIL
Lab Run#: 4510 *Analyzed:* December 13, 1996

Analyte	Spike Amount BSP (ug/Kg)	Spike Amount Dup (ug/Kg)	Found BSP (ug/Kg)	Found Dup (ug/Kg)	Spike Recov BSP (%)	Spike Recov Dup (%)	Control Limits	% RPD	% RPD Lim
BENZENE	89.8	88.6	90.6	82.0	101	92.6	69-129	8.68	20
CHLOROBENZENE	89.8	88.6	96.1	100	107	113	61-121	5.45	20
1,1-DICHLOROETHENE	89.8	88.6	90.8	89.2	101	101	65-125	0	20
TOLUENE	89.8	88.6	90.4	95.2	101	107	70-130	5.77	20
TRICHLOROETHENE	89.8	88.6	96.2	85.4	107	96.4	74-134	10.4	20

BS Smpl #: 110899
BSD Smpl #: 110900

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

DC_BSD1226 CHP 17:54:39

CHROMALAB, INC.

Environmental Services (SDB)

December 16, 1996 *Submission #:* 9612106

AQUA SCIENCE ENGINEERS INC

Attn: Robert Kitay

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 6, 1996

re: **Matrix spike** report for Volatile Organics by GC/MS analysis.

Method: SW846 METHOD 8240A Nov 1990

Matrix: SOIL
Lab Run#: 4510 *Instrument:* 5972-3 *Analyzed:* December 14, 1996

Analyte	Spiked Sample Amount (ug/Kg)	Spike Amt MS (ug/Kg)	Spike Amt MSD (ug/Kg)	Amt Found MS (ug/Kg)	Amt Found MSD (ug/Kg)	Spike Recov MS (%)	Spike Recov MSD (%)	Control Limits	% RPD	% RPD Lir
BENZENE	ND	566	540	584	572	103	106	69-129	2.87	2(
CHLOROBENZENE	ND	566	540	575	523	102	96.8	61-121	5.23	2(
1,1-DICHLOROETHENE	ND	566	540	547	482	96.6	89.2	65-125	7.96	2(
TOLUENE	ND	566	540	570	557	101	103	70-130	1.96	2(
TRICHLOROETHENE	ND	566	540	570	539	101	99.8	74-134	1.20	2(

Sample Spiked: 110676
Submission #: 9612167
Client Sample ID: 1040PR03

MS Smpl #: 110901
MSD Smpl #: 110902

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 16, 1996 *Submission #:* 9612106

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 6, 1996

re: **Surrogate** report for 1 sample for Volatile Organics by GC/MS
Method: SW846 METHOD 8240A Nov 1990
Lab Run#: 4510
Matrix: SOIL

Sample#	Client Sample ID	Surrogate	% Recovered	Recovery Limits
110130-1	MW-4 2.0'	4-BROMOFLUOROBENZENE	87.7	74-12
110130-1	MW-4 2.0'	D4-1,2-DICHLOROETHANE	114	70-12
110130-1	MW-4 2.0'	D8-TOLUENE	107	81-11

Sample#	QC Sample Type	Surrogate	% Recovered	Recovery Limits
110898-1	Reagent blank (MDB)	4-BROMOFLUOROBENZENE	96.1	74-12
110898-1	Reagent blank (MDB)	D4-1,2-DICHLOROETHANE	99.1	70-12
110898-1	Reagent blank (MDB)	D8-TOLUENE	95.2	81-11
110899-1	Spiked blank (BSP)	4-BROMOFLUOROBENZENE	91.1	74-12
110899-1	Spiked blank (BSP)	D4-1,2-DICHLOROETHANE	91.0	70-12
110899-1	Spiked blank (BSP)	D8-TOLUENE	97.2	81-11
110900-1	Spiked blank duplicate (BSD)	4-BROMOFLUOROBENZENE	98.4	74-12
110900-1	Spiked blank duplicate (BSD)	D4-1,2-DICHLOROETHANE	90.2	70-12
110900-1	Spiked blank duplicate (BSD)	D8-TOLUENE	105	81-11
110901-1	Matrix spike (MS)	4-BROMOFLUOROBENZENE	93.0	74-12
110901-1	Matrix spike (MS)	D4-1,2-DICHLOROETHANE	98.3	70-12
110901-1	Matrix spike (MS)	D8-TOLUENE	94.5	81-11
110902-1	Matrix spike duplicate (MSD)	4-BROMOFLUOROBENZENE	89.9	74-12
110902-1	Matrix spike duplicate (MSD)	D4-1,2-DICHLOROETHANE	92.6	70-12
110902-1	Matrix spike duplicate (MSD)	D8-TOLUENE	98.0	81-11

V051
QCSURR1229 CHIP 16-Dec-96 17:5

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

106/110:30 - 110132

31104

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4,
San Ramon, CA 94583
(510) 820-9391 - FAX (510) 837-4853

Chain of Custody

DATE 12-6-96 PAGE 1 OF 1

SAMPLERS (SIGNATURE) (PHONE NO.) Robert E. Kitay (510) 820-9391

PROJECT NAME Emeryville Properties NO. 2908

ADDRESS 1400 Park Street, Emeryville, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS: If TPH-D & TPH-MO is detected, also analyze sample for PNAs by EPA 8310.

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GASOLINE (EPA 5030/8015)	TPH-GASOLINE/BTEX (EPA 5030/8015-8020)	TPH-DIESEL + Motor oil (EPA 3510/8015)	PURGABLE AROMATICS (EPA 602/8020)	PURGABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240)	BASE/NUETRALS, ACIDS (EPA 625/8270)	OIL & GREASE (EPA 5520 E&F or B&F)	LUFT METALS (5) (EPA 6010+7000)	TITLE 22 (CAM 17) (EPA 6010+7000)	TCLP (EPA 1311/1310)	STLC- CAM WET (EPA 1311/1310)	REACTIVITY CORROSIVITY IGNITABILITY	Hold	Pb + Cr			
MW-4 2.0'	12/6	9:30	Soil	1	X		X			X									X			
MW-4 5.0'	↓	9:40		1														X				
MW-4 10.0'	↓	9:55	↓	1														X				

SUBM #: 9612106 REP: MV
CLIENT: ASE
DUE: 12/13/96
REF #:31104

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Robert E. Kitay 15:25 (signature) (time)	M. Verra 15:25 (signature) (time)	M. Verra 8:30 (signature) (time)	[signature] (signature)	
Robert E. Kitay 12-6-96 (printed name) (date)	Mike Verra 12/06/96 (printed name) (date)	Mike Verra 12/09/96 (printed name) (date)	Santone 12/9/96 (printed name) (date)	
Company- ASE	Company- Chromalab	Company- Chromalab	Company- Chromalab	

CHROMALAB, INC.

Environmental Services (SDB)

January 7, 1997 *Submission #:* 9701016

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROP. *Project#:* 2908
Received: December 6, 1996

re: One sample for Polynuclear Aromatic Hydrocarbons (PAHs) analysis.
Method: *SW846 Method 8270A Nov 1990*

Client Sample ID: **MW4-2.0'**
Spl#: 112877 *Matrix:* SOIL *Extracted:* January 3, 1997
Sampled: December 6, 1996 *Run#:* 4768 *Analyzed:* January 3, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
NAPHTHALENE	N.D.	0.10	N.D.	--	1
ACENAPHTHYLENE	N.D.	0.10	N.D.	--	1
ACENAPHTHENE	N.D.	0.10	N.D.	86.1	1
FLUORENE	N.D.	0.10	N.D.	--	1
PHENANTHRENE	N.D.	0.10	N.D.	--	1
ANTHRACENE	N.D.	0.10	N.D.	--	1
FLUORANTHENE	N.D.	0.10	N.D.	--	1
PYRENE	N.D.	0.10	N.D.	78.8	1
BENZO(A)ANTHRACENE	N.D.	0.10	N.D.	--	1
CHRYSENE	N.D.	0.10	N.D.	--	1
BENZO(B)FLUORANTHENE	N.D.	0.10	N.D.	--	1
BENZO(K)FLUORANTHENE	N.D.	0.20	N.D.	--	1
BENZO(A)PYRENE	N.D.	0.035	N.D.	--	1
INDENO(1,2,3-CD)PYRENE	N.D.	0.20	N.D.	--	1
DIBENZO(A,H)ANTHRACENE	N.D.	0.20	N.D.	--	1
BENZO(GHI)PERYLENE	N.D.	0.20	N.D.	--	1

Michael Lee
Chemist

Chip Poalinelli
Operations Manager

CHROMALAB, INC.

Environmental Services (SDB)

January 7, 1997 *Submission #:* 9701016

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROP. *Project#:* 2908
Received: December 6, 1996

re: **Surrogate** report for 1 sample for Polynuclear Aromatic
Method: SW846 Method 8270A Nov 1990
Lab Run#: 4768
Matrix: SOIL

Sample#	Client Sample ID	Surrogate	% Recovered	Recovery Limits
112877-1	MW4-2.0'	NITROBENZENE-D5	83.9	23-120
112877-1	MW4-2.0'	2-FLUOROBIPHENYL	84.4	30-115
112877-1	MW4-2.0'	TERPHENYL-D14	83.9	18-137

Sample#	QC Sample Type	Surrogate	% Recovered	Recovery Limits
113074-1	*Reagent blank (MDB)*	NITROBENZENE-D5	49.2	23-120
113074-1	*Reagent blank (MDB)*	2-FLUOROBIPHENYL	52.5	30-115
113074-1	*Reagent blank (MDB)*	TERPHENYL-D14	54.2	18-137
113076-1	*Spiked blank (BSP)*	NITROBENZENE-D5	84.8	23-120
113076-1	*Spiked blank (BSP)*	2-FLUOROBIPHENYL	92.6	30-115
113076-1	*Spiked blank (BSP)*	TERPHENYL-D14	83.2	18-137
113077-1	*Spiked blank duplicate (BSD)*	NITROBENZENE-D5	75.4	23-120
113077-1	*Spiked blank duplicate (BSD)*	2-FLUOROBIPHENYL	81.7	30-115
113077-1	*Spiked blank duplicate (BSD)*	TERPHENYL-D14	87.2	18-137
113062-1	*Matrix spike (MS)*	NITROBENZENE-D5	79.7	23-120
113062-1	*Matrix spike (MS)*	2-FLUOROBIPHENYL	84.4	30-115
113062-1	*Matrix spike (MS)*	TERPHENYL-D14	75.9	18-137
113063-1	*Matrix spike duplicate (MSD)*	NITROBENZENE-D5	84.2	23-120
113063-1	*Matrix spike duplicate (MSD)*	2-FLUOROBIPHENYL	97.2	30-115
113063-1	*Matrix spike duplicate (MSD)*	TERPHENYL-D14	93.4	18-137

S105
QCSURR1229 MIKELEE 07-Jan-97 12

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

016/112877

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

ADD ON/CHANGE ORDER

New Submission No: 9701016

Order No: 31457

Original Submission Info

Client Name: ASE

Project Mgr: Robert Kitay

Project Name: EMERYVILLE PROP.

Project No: 2908

PO#: -

Date Received: 12/6/96

Submission No: 9612106

Name of Caller: David Allen

Call Date: 1/2/97 Time: _____

Add on Due Date: 1/8/97 Date Sampled 12/6/96

Comments: _____

SUBM #: 9701016 REP: MV
CLIENT: ASE
DUE: 01/08/97
REF #:31457/9612106

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	PAHs 8270	LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
MW4-2.0'	12/6/96	-	S	-												X									1

RUSH

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Emeryville Properties, 1400 Park Ave. Emeryville, CA
Job #: 2908 Date of sampling: 12-13-96
Well Name: MW-1 Sampled by: SE
Total depth of well (feet): 22.91 Well diameter (inches): 2"
Depth to water before sampling (feet): 7.85
Thickness of floating product if any: none
Depth of well casing in water (feet): 15.06
Number of gallons per well casing volume (gallons): 2.6
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 10
Equipment used to purge the well: Dedicated Poly Bailer
Time Evacuation Began: 10:05 Time Evacuation Finished: 10:25
Approximate volume of groundwater purged: 10
Did the well go dry?: no After how many gallons: —
Time samples were collected: 10:30
Depth to water at time of sampling: 7.92
Percent recovery at time of sampling: 99%
Samples collected with: Dedicated Poly Bailer
Sample color: Clear Odor: None
Description of sediment in sample: None

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	65.4	8.56	494
2	67.6	8.49	513
3	68.1	8.27	516
4	68.1	2.25	515

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-1	3	40 ml VOAs	HCl	Yes	TPHg / 8020/MTBE
"	1	1 L Amber	HCl	Yes	TPHD/MO
↓	1	L Amber	—	Yes	8310
	4				

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Emeryville Properties, 1400 Park Ave, Emeryville, CA
Job #: 2908 Date of sampling: 12-13-96
Well Name: MW-2 Sampled by: SF
Total depth of well (feet): 22.87 Well diameter (inches): 2"
Depth to water before sampling (feet): 5.39
Thickness of floating product if any: none
Depth of well casing in water (feet): 17.48
Number of gallons per well casing volume (gallons): 3.0
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 12
Equipment used to purge the well: Dedicated Poly Bailer
Time Evacuation Began: 10:45 Time Evacuation Finished: 11:15
Approximate volume of groundwater purged: 12
Did the well go dry?: no After how many gallons: -
Time samples were collected: 11:20
Depth to water at time of sampling: 5.42
Percent recovery at time of sampling: 99%
Samples collected with: Dedicated Poly Bailer
Sample color: clear Odor: none
Description of sediment in sample: Brown silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	64.9	8.12	448
2	65.2	8.01	462
3	65.8	7.86	489
4	65.9	7.82	497

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-2	3	40 ml VOAs	HCl	Yes	8240
↓	1	1-500 ml HDPE	—	Yes	Pb, Cr

2411 Old Crow Canyon Road, Suite 4, San Ramon, CA 94583 • 510-820-9391 • Fax 510-837-4853

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Emeryville Properties, 1400 Park Ave, Emeryville, CA
Job #: 2908 Date of sampling: 12-13-96
Well Name: MW-3 Sampled by: SF
Total depth of well (feet): 22.92 Well diameter (inches): 2"
Depth to water before sampling (feet): 7.69
Thickness of floating product if any: none
Depth of well casing in water (feet): 15.23
Number of gallons per well casing volume (gallons): 2.6
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 10
Equipment used to purge the well: ~~PP~~ Dedicated Poly Bailer
Time Evacuation Began: 9:30 Time Evacuation Finished: 9:50
Approximate volume of groundwater purged: 10
Did the well go dry?: No After how many gallons: —
Time samples were collected: 9:55
Depth to water at time of sampling: 7.78
Percent recovery at time of sampling: 99%
Samples collected with: Dedicated Poly Bailer
Sample color: Clear Odor: none
Description of sediment in sample: none

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	65.3	8.30	665
2	66.5	7.97	676
3	65.7	7.82	712
4	65.6	7.77	719

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-3	3	40 ml VOAs	HCl	Yes	8240
↓	1	1 500 ml APDE	—	Yes	Pb, Cr

2411 Old Crow Canyon Road, Suite 4, San Ramon, CA 94583 • 510-820-9391 • Fax 510-837-4853

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Emeryville Properties, 1400 Park Ave. Emeryville, CA
Job #: 2908 Date of sampling: 12-13-96
Well Name: MW-4 Sampled by: SF
Total depth of well (feet): 19.55 Well diameter (inches): 2"
Depth to water before sampling (feet): 3.42
Thickness of floating product if any: none
Depth of well casing in water (feet): 16.13
Number of gallons per well casing volume (gallons): 2.7
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 11
Equipment used to purge the well: Dedicated Poly Bailer
Time Evacuation Began: 8:40 Time Evacuation Finished: 9:10
Approximate volume of groundwater purged: 11
Did the well go dry?: no After how many gallons:
Time samples were collected: ~~8:45~~ 9:15
Depth to water at time of sampling: 3.45
Percent recovery at time of sampling: 100%
Samples collected with: Dedicated Poly Bailer
Sample color: clear Odor: none
Description of sediment in sample: Brown silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	65.4	8.58	974
2	66.3	8.60	1023
3	66.2	8.47	989
4	66.1	8.49	995

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-4	6	40 ml VOAs	HCl	Yes	8240 / TPH-G
	1	1 l Amber	HCl		TPHD/MO
	1	1 l Amber	—		8310
	1	500 ml HPDE	—		Pb, Cr

APPENDIX F

Analytical Report and Chain of Custody Form
For Groundwater Samples

CHROMALAB, INC.

Environmental Services (SDB)

December 20, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC

Atten: Scott Ferriman

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996

re: 2 samples for TEPH analysis.
Method: *EPA 8015M*

Matrix: WATER *Extracted:* December 18, 1996
Sampled: December 13, 1996 *Run#:* 4563 *Analyzed:* December 19, 1996

Spl#	CLIENT SPL ID	Diesel (ug/L)	Motor Oil (ug/L)
110817	MW-1	N.D.	N.D.
110820	MW-4	140	N.D.

Note: Hydrocarbon reported as Diesel, does not match the pattern of our Diesel standard.

Reporting Limits	50	500
Blank Result	N.D.	N.D.
Blank Spike Result (%)	68.0	--

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

December 20, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC
Atten: Scott Ferriman
Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996
re: One sample for Volatile Organics by GC/MS analysis.
Method: *SW846 METHOD 8240A Nov 1990*

Client Sample ID: **MW-3**
Spl#: 110819 *Matrix:* WATER
Sampled: December 13, 1996 *Run#:* 4595 *Analyzed:* December 17, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
ACETONE	N.D.	20	N.D.	--	1
BENZENE	N.D.	2.0	N.D.	96.0	1
BROMODICHLOROMETHANE	N.D.	2.0	N.D.	--	1
BROMOFORM	N.D.	2.0	N.D.	--	1
BROMOMETHANE	N.D.	5.0	N.D.	--	1
METHYL ETHYL KETONE	N.D.	20	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	2.0	N.D.	--	1
CHLOROBENZENE	N.D.	2.0	N.D.	96.0	1
CHLOROETHANE	N.D.	2.0	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	10	N.D.	--	1
CHLOROFORM	N.D.	2.0	N.D.	--	1
CHLOROMETHANE	N.D.	2.0	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	2.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	2.0	N.D.	94.0	1
1,2-DICHLOROETHENE (CIS)	14	2.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	2.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	2.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	2.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	2.0	N.D.	--	1
ETHYLBENZENE	N.D.	2.0	N.D.	--	1
2-HEXANONE	N.D.	20	N.D.	--	1
METHYLENE CHLORIDE	N.D.	3.0	N.D.	--	1
4-METHYL-2-PENTANONE (MIBK)	N.D.	20	N.D.	--	1
STYRENE	N.D.	2.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	2.0	N.D.	--	1
TETRACHLOROETHENE	4.7	2.0	N.D.	--	1
TOLUENE	N.D.	2.0	N.D.	97.0	1
1,1,1-TRICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	2.0	N.D.	--	1
TRICHLOROETHENE	13	2.0	N.D.	94.0	1
TRICHLOROFLUOROMETHANE	N.D.	2.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	2.0	N.D.	--	1
VINYL ACETATE	N.D.	20	N.D.	--	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TOTAL XYLENES	N.D.	2.0	N.D.	--	1

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 20, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC
Atten: Scott Ferriman
Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996
re: One sample for Volatile Organics by GC/MS analysis, continued.
Method: *SW846 METHOD 8240A Nov 1990*

Client Sample ID: **MW-3**
Spl#: 110819 *Matrix:* WATER
Sampled: December 13, 1996 *Run#:* 4595 *Analyzed:* December 17, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR

Oleg Nemtsov
Chemist

Chip Poalinelli
Operations Manager

510-837-4853 MV 12/20

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 20, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC
Atten: Scott Ferriman
Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996
re: One sample for Volatile Organics by GC/MS analysis.
Method: *SW846 METHOD 8240A Nov 1990*

Client Sample ID: **MW-4**
Spl#: 110820 *Matrix:* WATER
Sampled: December 13, 1996 *Run#:* 4595 *Analyzed:* December 17, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
ACETONE	N.D.	20	N.D.	--	1
BENZENE	N.D.	2.0	N.D.	96.0	1
BROMODICHLOROMETHANE	N.D.	2.0	N.D.	--	1
BROMOFORM	N.D.	2.0	N.D.	--	1
BROMOMETHANE	N.D.	5.0	N.D.	--	1
METHYL ETHYL KETONE	N.D.	20	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	2.0	N.D.	--	1
CHLOROBENZENE	N.D.	2.0	N.D.	96.0	1
CHLOROETHANE	N.D.	2.0	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	10	N.D.	--	1
CHLOROFORM	N.D.	2.0	N.D.	--	1
CHLOROMETHANE	N.D.	2.0	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	2.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	2.0	N.D.	94.0	1
1,2-DICHLOROETHENE (CIS)	31	2.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	2.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	2.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	2.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	2.0	N.D.	--	1
ETHYLBENZENE	N.D.	2.0	N.D.	--	1
2-HEXANONE	N.D.	20	N.D.	--	1
METHYLENE CHLORIDE	N.D.	3.0	N.D.	--	1
4-METHYL-2-PENTANONE (MIBK)	N.D.	20	N.D.	--	1
STYRENE	N.D.	2.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	2.0	N.D.	--	1
TETRACHLOROETHENE	18	2.0	N.D.	--	1
TOLUENE	N.D.	2.0	N.D.	97.0	1
1,1,1-TRICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	2.0	N.D.	--	1
TRICHLOROETHENE	110	2.0	N.D.	94.0	1
TRICHLOROFLUOROMETHANE	N.D.	2.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	2.0	N.D.	--	1
VINYL ACETATE	N.D.	20	N.D.	--	1
VINYL CHLORIDE	8.2	5.0	N.D.	--	1
TOTAL XYLENES	N.D.	2.0	N.D.	--	1

CHROMALAB, INC.

Environmental Services (SDB)

December 20, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC
Atten: Scott Ferriman
Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996
re: One sample for Volatile Organics by GC/MS analysis, continued.
Method: *SW846 METHOD 8240A Nov 1990*

Client Sample ID: **MW-4**
Spl#: 110820 *Matrix:* WATER
Sampled: December 13, 1996 *Run#:* 4595 *Analyzed:* December 17, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR

Oleg Nemtsov
Chemist

Chip Poalinelli
Operations Manager

510-837-4853 MV 12/20

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 20, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC
Atten: Scott Ferriman
Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996
re: One sample for Volatile Organics by GC/MS analysis.
Method: *SW846 METHOD 8240A Nov 1990*

Client Sample ID: **MW-2**
Spl#: 110818 *Matrix:* WATER
Sampled: December 13, 1996 *Run#:* 4595 *Analyzed:* December 17, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
ACETONE	N.D.	20	N.D.	--	1
BENZENE	N.D.	2.0	N.D.	96.0	1
BROMODICHLOROMETHANE	N.D.	2.0	N.D.	--	1
BROMOFORM	N.D.	2.0	N.D.	--	1
BROMOMETHANE	N.D.	5.0	N.D.	--	1
METHYL ETHYL KETONE	N.D.	20	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	2.0	N.D.	--	1
CHLOROBENZENE	N.D.	2.0	N.D.	96.0	1
CHLOROETHANE	N.D.	2.0	N.D.	--	1
2-CHLOROETHYLVINYLETHER	N.D.	10	N.D.	--	1
CHLOROFORM	N.D.	2.0	N.D.	--	1
CHLOROMETHANE	N.D.	2.0	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	2.0	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	2.0	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	2.0	N.D.	94.0	1
1,2-DICHLOROETHENE (CIS)	N.D.	2.0	N.D.	--	1
1,2-DICHLOROETHENE (TRANS)	N.D.	2.0	N.D.	--	1
1,2-DICHLOROPROPANE	N.D.	2.0	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	2.0	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	2.0	N.D.	--	1
ETHYLBENZENE	N.D.	2.0	N.D.	--	1
2-HEXANONE	N.D.	20	N.D.	--	1
METHYLENE CHLORIDE	N.D.	3.0	N.D.	--	1
4-METHYL-2-PENTANONE (MIBK)	N.D.	20	N.D.	--	1
STYRENE	N.D.	2.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	2.0	N.D.	--	1
TETRACHLOROETHENE	N.D.	2.0	N.D.	--	1
TOLUENE	N.D.	2.0	N.D.	97.0	1
1,1,1-TRICHLOROETHANE	N.D.	2.0	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	2.0	N.D.	--	1
TRICHLOROETHENE	3.4	2.0	N.D.	94.0	1
TRICHLOROFLUOROMETHANE	N.D.	2.0	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	2.0	N.D.	--	1
VINYL ACETATE	N.D.	20	N.D.	--	1
VINYL CHLORIDE	N.D.	5.0	N.D.	--	1
TOTAL XYLENES	N.D.	2.0	N.D.	--	1

CHROMALAB, INC.

Environmental Services (SDB)

December 20, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC
Atten: Scott Ferriman
Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996
re: One sample for Volatile Organics by GC/MS analysis, continued.
Method: *SW846 METHOD 8240A Nov 1990*

Client Sample ID: **MW-2**
Spl#: 110818 *Matrix:* WATER
Sampled: December 13, 1996 *Run#:* 4595 *Analyzed:* December 17, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR

Oleg Nemtsov
Chemist

Chip Poalinelli
Operations Manager

510-837-4853 MV 12/20

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

December 19, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC

Atten: Scott Ferriman

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996

re: One sample for Gasoline, BTEX & MTBE analysis.
Method: *EPA 8015M SW846 8020A Nov 1990*

Client Sample ID: **MW-1**
Spl#: 110817 *Matrix:* WATER
Sampled: December 13, 1996 *Run#:* 4540 *Analyzed:* December 18, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	106	1
BENZENE	N.D.	0.50	N.D.	104	1
TOLUENE	N.D.	0.50	N.D.	104	1
ETHYL BENZENE	N.D.	0.50	N.D.	104	1
XYLENES	N.D.	0.50	N.D.	106	1
MTBE	N.D.	5.0	N.D.	91.5	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

December 19, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC

Atten: Scott Ferriman

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996

re: 1 sample for TPH- Gasoline analysis.
Method: *EPA 8015M*

Matrix: WATER
Sampled: December 13, 1996 *Run#:* 4522 *Analyzed:* December 16, 1996

Spl#	CLIENT SPL ID	GASOLINE (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
110820	MW-4	N.D.	50	N.D.	108	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-837-4853 MV 12/20

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

V010 D:QC0405 KAYVAN 15.

CHROMALAB, INC.

Environmental Services (SDB)

December 19, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC

Atten: Scott Ferriman

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-2**
Spl#: 110818 *Matrix:* WATER *Extracted:* December 18, 1996
Sampled: December 13, 1996 *Run#:* 4537 *Analyzed:* December 19, 1996

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
CHROMIUM	0.057	0.0050	N.D.	104	1
LEAD	N.D.	0.0050	N.D.	106	1

Charles Woolley
Chemist

John S. Labash
Inorganic Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

December 19, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC

Atten: Scott Ferriman

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-3**
Spl#: 110819 *Matrix:* WATER *Extracted:* December 18, 1996
Sampled: December 13, 1996 *Run#:* 4537 *Analyzed:* December 19, 1996

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
CHROMIUM	N.D.	0.0050	N.D.	104	1
LEAD	N.D.	0.0050	N.D.	106	1

Charles Woolley
Chemist

John S. Labash
Inorganic Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

December 19, 1996 *Submission #:* 9612185

AQUA SCIENCE ENGINEERS INC

Atten: Scott Ferriman

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-4**
Spl#: 110820 *Matrix:* WATER *Extracted:* December 18, 1996
Sampled: December 13, 1996 *Run#:* 4537 *Analyzed:* December 19, 1996

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
CHROMIUM	0.30	0.0050	N.D.	104	1
LEAD	N.D.	0.0050	N.D.	106	1

Charles Woolley
Chemist

John S. Labash
Inorganic Supervisor

185/110817 - 110820

3rd TMP 12/13/96

31193

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4,
San Ramon, CA 94583
(510) 820-9391 - FAX (510) 837-4853

Chain of Custody

DATE 12-13-96 PAGE 1 OF 1

SAMPLERS (SIGNATURE) (PHONE NO.)
Scott T. [signature] 510-820-9291

PROJECT NAME Emeryville Properties NO. 2908
ADDRESS 1400 Park Ave, Emeryville, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:
5-Day

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH: GASOLINE (EPA 5030/8015)	TPH: GASOLINE/BTEX/MTBE (EPA 5030/8015-8020)	TPH: DIESEL/Motor Oil (EPA 3510/8015)	PURGABLE AROMATICS (EPA 602/8020)	PURGABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240)	BASE/NUETRALS, ACIDS (EPA 625/8270)	OIL & GREASE (EPA 5520 E&F or B&F)	LUFT METALS (5) (EPA 6010+7000)	TITLE 22 (CAM 17) (EPA 6010+7000)	TCLP (EPA 1311/1310)	STLC- CAM WET (EPA 1311/1310)	REACTIVITY CORROSIVITY IGNITABILITY	Cr, Pb - Dissolved	Filter w/ 45 micron	Initiate EPA 8310 if TPHD/MO is Detected		
MW-1	12-13-96	10:30	water			X	X													O		
MW-2	"	11:20	"	4						X								X	X			
MW-3	"	9:55	"	4						X								X	X			
MW-4	"	9:15	"	7	X		X			X								X	X	O		

SUBM #: 9612185 REP: MV
CLIENT: ASE
DUE: 12/20/96
REF #: 31193

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Scott T. [signature] 15:15	[signature]	[signature] 1805	Mimi Pak 1805	* Initiate EPA 8310 if TPHD/MO is Detected in MW-1 and MW-4
(signature) (time)	(signature) (time)	(signature) (time)	(signature) (time)	
Scott T. Ferriman 12-13-96	B. Morrow 12-13-96	B. Morrow 12-13-96	Mimi Pak 12/13/96	
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	
Company- ASE, Inc.	Company- Chromalab	Company- Chromalab	Company- Chromalab	

CHROMALAB, INC.

Environmental Services (SDB)

January 6, 1997 *Submission #:* 9701009

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996

re: One sample for Polynuclear Aromatic Hydrocarbons (PAHs) analysis.
Method: *SW846 Method 8270A Nov 1990*

Client Sample ID: **MW-4**
Spl#: 112827 *Matrix:* WATER *Extracted:* January 3, 1997
Sampled: December 13, 1996 *Run#:* 4752 *Analyzed:* January 3, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
NAPHTHALENE	N.D.	2.0	N.D.	--	1
ACENAPHTHYLENE	N.D.	2.0	N.D.	--	1
ACENAPHTHENE	N.D.	2.0	N.D.	86.0	1
FLUORENE	N.D.	5.0	N.D.	--	1
PHENANTHRENE	N.D.	2.0	N.D.	--	1
ANTHRACENE	N.D.	2.0	N.D.	--	1
FLUORANTHENE	N.D.	2.0	N.D.	--	1
PYRENE	N.D.	2.0	N.D.	81.3	1
BENZO(A)ANTHRACENE	N.D.	2.0	N.D.	--	1
CHRYSENE	N.D.	2.0	N.D.	--	1
BENZO(B)FLUORANTHENE	N.D.	2.0	N.D.	--	1
BENZO(K)FLUORANTHENE	N.D.	2.0	N.D.	--	1
BENZO(A)PYRENE	N.D.	2.0	N.D.	--	1
INDENO(1,2,3-CD)PYRENE	N.D.	2.0	N.D.	--	1
DIBENZO(A,H)ANTHRACENE	N.D.	2.0	N.D.	--	1
BENZO(GHI)PERYLENE	N.D.	2.0	N.D.	--	1

Michael Lee
Chemist

Chip Poalinelli
Operations Manager

510-837-4853 MV 01/06

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

January 6, 1997 *Submission #:* 9701009

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: EMERYVILLE PROPERTIES *Project#:* 2908
Received: December 13, 1996

re: **Surrogate** report for 1 sample for Polynuclear Aromatic
Method: SW846 Method 8270A Nov 1990
Lab Run#: 4752
Matrix: WATER

Sample#	Client Sample ID	Surrogate	% Recovered	Recovery Limits
112827-1	MW-4	NITROBENZENE-D5	59.0	35-114
112827-1	MW-4	2-FLUOROBIPHENYL	55.4	43-116
112827-1	MW-4	TERPHENYL-D14	67.4	33-141

Sample#	QC Sample Type	Surrogate	% Recovered	Recovery Limits
112962-1	*Reagent blank (MDB)*	NITROBENZENE-D5	43.7	35-114
112962-1	*Reagent blank (MDB)*	2-FLUOROBIPHENYL	45.2	43-116
112962-1	*Reagent blank (MDB)*	TERPHENYL-D14	53.0	33-141
112964-1	*Spiked blank (BSP)*	NITROBENZENE-D5	76.8	35-114
112964-1	*Spiked blank (BSP)*	2-FLUOROBIPHENYL	82.4	43-116
112964-1	*Spiked blank (BSP)*	TERPHENYL-D14	81.2	33-141
112965-1	*Spiked blank duplicate (BSD)*	NITROBENZENE-D5	67.6	35-114
112965-1	*Spiked blank duplicate (BSD)*	2-FLUOROBIPHENYL	85.7	43-116
112965-1	*Spiked blank duplicate (BSD)*	TERPHENYL-D14	77.1	33-141

S105
QCSURR1229 MIKELEE 06-Jan-97 11

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

01-12827

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

ADD ON/CHANGE ORDER

New Submission No: 9701009

Order No: 31449

SUBM #: 9701009 REP: MV
CLIENT: ASE
DUE: 01/06/97
REF #:31449/9612185

Original Submission Info

Client Name: ASE

Project Mgr: Robert Kitay

Project Name: Emeryville Properties

Project No: 2903

PO#:

Date Received: 12/13

Submission No: 9612185

Name of Caller: Dave Alben

Call Date: 1/2/96 Time:

Add on Due Date: 1/6/97 Date Sampled 12/13/96

Comments: Run even though out of hold time.

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	X PNAs 8270	LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
MW-4	12/13		W	-												X									

CORE LABORATORIES

CORE LABORATORIES
A N A L Y T I C A L R E P O R T

Job Number: 961377
Prepared For:

Brea Canon Oil Co.
Gwen Tellegen
2300 E.Imperial Hwy 7th Floor
El Segundo, CA 90245

Date: 06/03/96

Elizabeth Arrington for
Signature

6/3/96
Date:

Name: Timothy A. Scott

Core Laboratories
1250 Gene Autry Way
Anaheim, CA 92805

Title: Laboratory Manager

CA.E.L.A.P. 1174
L.A.C.S.D. 10146

CORE LAB

CORE LABORATORIES

L A B O R A T O R Y   T E S T S   R E S U L T S
06/03/96

JOB NUMBER: 961377   CUSTOMER: Brea Canon Oil Co.   ATTN: Gwen Tellegen

CLIENT I.D.........: Emeryville
DATE SAMPLED.......: 05/22/96
TIME SAMPLED.......: 08:00
WORK DESCRIPTION...: Tank Water

LABORATORY I.D...: 961377-0001
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS..........: H20 GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
TEPH - Carbon Chain Liquid		*1		EPA 8015 (modified)	05/30/96	TH
C8-C9	ND	1.0	mg/L	EPA 8015 (modified)		
C10-C11	ND	1.0	mg/L	EPA 8015 (modified)		
C12-C13	ND	1.0	mg/L	EPA 8015 (modified)		
C14-C15	ND	1.0	mg/L	EPA 8015 (modified)		
C16-C17	ND	1.0	mg/L	EPA 8015 (modified)		
C18-C19	ND	1.0	mg/L	EPA 8015 (modified)		
C20-C23	ND	1.0	mg/L	EPA 8015 (modified)		
C24-C27	ND	1.0	mg/L	EPA 8015 (modified)		
C28-C31	ND	1.0	mg/L	EPA 8015 (modified)		
C32-C35	ND	1.0	mg/L	EPA 8015 (modified)		
C36-C39	ND	1.0	mg/L	EPA 8015 (modified)		
C40-C43	ND	1.0	mg/L	EPA 8015 (modified)		
C44+	ND	1.0	mg/L	EPA 8015 (modified)		
Total	ND	1.0	mg/L	EPA 8015 (modified)		
Liquid-Liquid Extraction for BNAs	COMPLETED	-----	N/A	EPA 3520	05/30/96	C.M
Volatile Organics by GC/MS		*1		EPA 624	05/31/96	CIS
Acetone	ND	10	ug/L	EPA 624		
Benzene	ND	5	ug/L	EPA 624		
Bromodichloromethane	ND	5	ug/L	EPA 624		
Bromoform	ND	5	ug/L	EPA 624		
Bromomethane	ND	10	ug/L	EPA 624		
2-Butanone	ND	10	ug/L	EPA 624		
Carbon disulfide	ND	5	ug/L	EPA 624		
Carbon tetrachloride	ND	5	ug/L	EPA 624		
Chlorobenzene	ND	5	ug/L	EPA 624		
Chloroethane	ND	10	ug/L	EPA 624		
2-Chloroethylvinyl ether	ND	10	ug/L	EPA 624		
Chloroform	ND	5	ug/L	EPA 624		
Chloromethane	ND	10	ug/L	EPA 624		
Dibromochloromethane	ND	5	ug/L	EPA 624		
1,2-Dichlorobenzene	ND	5	ug/L	EPA 624		
1,3-Dichlorobenzene	ND	5	ug/L	EPA 624		
1,4-Dichlorobenzene	ND	5	ug/L	EPA 624		
1,1-Dichloroethane	ND	5	ug/L	EPA 624		
1,2-Dichloroethane	ND	5	ug/L	EPA 624		
1,1-Dichloroethene	ND	5	ug/L	EPA 624		
Total 1,2-Dichloroethenes	ND	5	ug/L	EPA 624		
1,2-Dichloropropane	ND	5	ug/L	EPA 624		
cis-1,3-Dichloropropene	ND	5	ug/L	EPA 624		
trans-1,3-Dichloropropene	ND	5	ug/L	EPA 624		

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:00
WORK DESCRIPTION...: Tank Water

LABORATORY I.D...: 961377-0001
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Ethylbenzene	ND	5	ug/L	EPA 624		
2-Hexanone	ND	10	ug/L	EPA 624		
Methylene Chloride	ND	5	ug/L	EPA 624		
4-Methyl-2-pentanone	ND	10	ug/L	EPA 624		
Styrene	ND	5	ug/L	EPA 624		
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 624		
Tetrachloroethene	ND	5	ug/L	EPA 624		
Toluene	ND	5	ug/L	EPA 624		
1,1,1-Trichloroethane	ND	5	ug/L	EPA 624		
1,1,2-Trichloroethane	ND	5	ug/L	EPA 624		
Trichloroethene	ND	5	ug/L	EPA 624		
Vinyl acetate	ND	10	ug/L	EPA 624		
Vinyl chloride	ND	10	ug/L	EPA 624		
Total Xylenes	ND	5	ug/L	EPA 624		
d4-1,2-Dichloroethane (SURROGATE)	100	0	% Recovery	76-114% QC LIMITS		
d8-Toluene (SURROGATE)	95	0	% Recovery	88-110% QC LIMITS		
4-Bromofluorobenzene (SURROGATE)	87	0	% Recovery	86-115% QC LIMITS		
Semivolatile Organics by GC/MS		*1		EPA 625	05/30/96	CIS
Acenaphthene	ND	10	ug/L	EPA 625		
Acenaphthylene	ND	10	ug/L	EPA 625		
Anthracene	ND	10	ug/L	EPA 625		
Benzidine	ND	20	ug/L	EPA 625		
Benzo(a)anthracene	ND	10	ug/L	EPA 625		
Benzo(b)fluoranthene	ND	10	ug/L	EPA 625		
Benzo(k)fluoranthene	ND	10	ug/L	EPA 625		
Benzoic acid	ND	20	ug/L	EPA 625		
Benzo(ghi)perylene	ND	10	ug/L	EPA 625		
Benzo(a)pyrene	ND	10	ug/L	EPA 625		
Benzyl alcohol	ND	10	ug/L	EPA 625		
Bis(2-chloroethoxy)methane	ND	10	ug/L	EPA 625		
Bis(2-chloroethyl)ether	ND	10	ug/L	EPA 625		
Bis(2-chloroisopropyl)ether	ND	10	ug/L	EPA 625		
Bis(2-ethylhexyl) phthalate	ND	10	ug/L	EPA 625		
4-Bromophenyl phenyl ether	ND	10	ug/L	EPA 625		
Butyl benzyl phthalate	ND	10	ug/L	EPA 625		
4-Chloroaniline	ND	20	ug/L	EPA 625		
4-Chloro-3-methylphenol	ND	10	ug/L	EPA 625		
2-Chloronaphthalene	ND	10	ug/L	EPA 625		
2-Chlorophenol	ND	10	ug/L	EPA 625		
4-Chlorophenyl phenyl ether	ND	10	ug/L	EPA 625		
Chrysene	ND	10	ug/L	EPA 625		
Di-n-butyl phthalate	ND	10	ug/L	EPA 625		
1,2-Dichlorobenzene	ND	10	ug/L	EPA 625		

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:00
WORK DESCRIPTION...: Tank Water

LABORATORY I.D...: 961377-0001
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H20 GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
1,3-Dichlorobenzene	ND	10	ug/L	EPA 625		
1,4-Dichlorobenzene	ND	10	ug/L	EPA 625		
3,3'-Dichlorobenzidine	ND	20	ug/L	EPA 625		
2,4-Dichlorophenol	ND	20	ug/L	EPA 625		
Dibenzo(a,h)anthracene	ND	10	ug/L	EPA 625		
Dibenzofuran	ND	10	ug/L	EPA 625		
Diethyl phthalate	ND	10	ug/L	EPA 625		
2,4-Dimethylphenol	ND	10	ug/L	EPA 625		
Dimethyl phthalate	ND	10	ug/L	EPA 625		
4,6-Dinitro-2-methylphenol	ND	20	ug/L	EPA 625		
2,4-Dinitrophenol	ND	10	ug/L	EPA 625		
2,4-Dinitrotoluene	ND	10	ug/L	EPA 625		
2,6-Dinitrotoluene	ND	10	ug/L	EPA 625		
Di-n-octyl phthalate	ND	10	ug/L	EPA 625		
Fluorene	ND	10	ug/L	EPA 625		
Fluoranthene	ND	10	ug/L	EPA 625		
Hexachlorobenzene	ND	10	ug/L	EPA 625		
Hexachlorobutadiene	ND	10	ug/L	EPA 625		
Hexachlorocyclopentadiene	ND	10	ug/L	EPA 625		
Hexachloroethane	ND	10	ug/L	EPA 625		
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	EPA 625		
Isophorone	ND	10	ug/L	EPA 625		
2-Methylnaphthalene	ND	10	ug/L	EPA 625		
2-Methylphenol	ND	10	ug/L	EPA 625		
4-Methylphenol	ND	10	ug/L	EPA 625		
2-Nitroaniline	ND	10	ug/L	EPA 625		
3-Nitroaniline	ND	50	ug/L	EPA 625		
4-Nitroaniline	ND	50	ug/L	EPA 625		
2-Nitrophenol	ND	10	ug/L	EPA 625		
4-Nitrophenol	ND	10	ug/L	EPA 625		
N-Nitrosodimethylamine	ND	50	ug/L	EPA 625		
N-Nitrosodi-n-propylamine	ND	10	ug/L	EPA 625		
N-Nitrosodiphenylamine	ND	10	ug/L	EPA 625		
Naphthalene	ND	10	ug/L	EPA 625		
Nitrobenzene	ND	10	ug/L	EPA 625		
Pentachlorophenol	ND	20	ug/L	EPA 625		
Phenanthrene	ND	10	ug/L	EPA 625		
Phenol	ND	10	ug/L	EPA 625		
Pyrene	ND	10	ug/L	EPA 625		
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 625		
2,4,5-Trichlorophenol	ND	10	ug/L	EPA 625		
2,4,6-Trichlorophenol	ND	10	ug/L	EPA 625		
2-Fluorophenol (SURROGATE)	4(a)	0	% Recovery	21-110% QC LIMITS		
d6-Phenol (SURROGATE)	36	0	% Recovery	10-110 QC LIMITS		
d5-Nitrobenzene (SURROGATE)	57	0	% Recovery	34-114% QC LIMITS		

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:00
WORK DESCRIPTION...: Tank Water

LABORATORY I.D...: 961377-0001
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H20 GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
2-Fluorobiphenyl (SURROGATE)	54	0	% Recovery	43-116% QC LIMITS		
2,4,6-Tribromophenol (SURROGATE)	41	0	% Recovery	10-122% QC LIMITS		
d14-Terphenyl (SURROGATE)	76	0	% Recovery	33-141% QC LIMITS		
Total Hydrocarbons Extraction	COMPLETED	-----	N/A	Cal. DHS Method	05/31/96	TH

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.........: Emeryville
DATE SAMPLED.......: 05/22/96
TIME SAMPLED.......: 08:45
WORK DESCRIPTION...: BH-A-5

LABORATORY I.D...: 961377-0002
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS..........: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
TEPH - Carbon Chain Solids		*1		EPA 8015 (modified)	05/30/96	TH
C8-C9	ND	1.0	mg/kg	EPA 8015 (modified)		
C10-C11	ND	1.0	mg/kg	EPA 8015 (modified)		
C12-C13	ND	1.0	mg/kg	EPA 8015 (modified)		
C14-C15	ND	1.0	mg/kg	EPA 8015 (modified)		
C16-C17	3.7	1.0	mg/kg	EPA 8015 (modified)		
C18-C19	9.1	1.0	mg/kg	EPA 8015 (modified)		
C20-C23	17	1.0	mg/kg	EPA 8015 (modified)		
C24-C27	49	1.0	mg/kg	EPA 8015 (modified)		
C28-C31	45	1.0	mg/kg	EPA 8015 (modified)		
C32-C35	28	1.0	mg/kg	EPA 8015 (modified)		
C36-C39	13	1.0	mg/kg	EPA 8015 (modified)		
C40-C43	8.5	1.0	mg/kg	EPA 8015 (modified)		
C44+	ND	1.0	mg/kg	EPA 8015 (modified)		
Total	170	1.0	mg/kg	EPA 8015 (modified)		
Metals Digestion - Solids	COMPLETED	-----	N/A	EPA 3050	05/30/96	RH
Sonication Extraction for BNAs	COMPLETED	-----	N/A	EPA 3550	05/30/96	C.M
Volatile Organics by GC/MS		*1		EPA 8240	06/01/96	CIS
Acetone	ND	10	ug/kg	EPA 8240		
Benzene	ND	5	ug/kg	EPA 8240		
Bromodichloromethane	ND	5	ug/kg	EPA 8240		
Bromoform	ND	5	ug/kg	EPA 8240		
Bromomethane	ND	10	ug/kg	EPA 8240		
2-Butanone	ND	10	ug/kg	EPA 8240		
Carbon disulfide	ND	5	ug/kg	EPA 8240		
Carbon tetrachloride	ND	5	ug/kg	EPA 8240		
Chlorobenzene	ND	5	ug/kg	EPA 8240		
Chlorodibromomethane	ND	5	ug/kg	EPA 8240		
Chloroethane	ND	10	ug/kg	EPA 8240		
2-Chloroethylvinyl ether	ND	10	ug/kg	EPA 8240		
Chloroform	ND	5	ug/kg	EPA 8240		
Chloromethane	ND	10	ug/kg	EPA 8240		
1,2-Dichlorobenzene	ND	5	ug/kg	EPA 8240		
1,3-Dichlorobenzene	ND	5	ug/kg	EPA 8240		
1,4-Dichlorobenzene	ND	5	ug/kg	EPA 8240		
1,1-Dichloroethane	ND	5	ug/kg	EPA 8240		
1,2-Dichloroethane	ND	5	ug/kg	EPA 8240		
1,1-Dichloroethene	ND	5	ug/kg	EPA 8240		
cis-1,2-Dichloroethene	ND	5	ug/kg	EPA 8240		
trans-1,2-Dichloroethene	ND	5	ug/kg	EPA 8240		

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.....: Emeryville
DATE SAMPLED.....: 05/22/96
TIME SAMPLED.....: 08:45
WORK DESCRIPTION...: BH-A-5

LABORATORY I.D...: 961377-0002
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS.....: H20 GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
1,2-Dichloropropane	ND	5	ug/kg	EPA 8240		
cis-1,3-Dichloropropene	ND	5	ug/kg	EPA 8240		
trans-1,3-Dichloropropene	ND	5	ug/kg	EPA 8240		
Ethylbenzene	ND	5	ug/kg	EPA 8240		
2-Hexanone	ND	10	ug/kg	EPA 8240		
Methylene Chloride	ND	5	ug/kg	EPA 8240		
4-Methyl-2-pentanone	ND	10	ug/kg	EPA 8240		
Styrene	ND	5	ug/kg	EPA 8240		
1,1,2,2-Tetrachloroethane	ND	5	ug/kg	EPA 8240		
Tetrachloroethene	ND	5	ug/kg	EPA 8240		
1,1,1-Trichloroethane	ND	5	ug/kg	EPA 8240		
1,1,2-Trichloroethane	ND	5	ug/kg	EPA 8240		
Trichloroethene	ND	5	ug/kg	EPA 8240		
Toluene	ND	5	ug/kg	EPA 8240		
Trichlorofluoromethane	ND	5	ug/kg	EPA 8240		
Vinyl acetate	ND	10	ug/kg	EPA 8240		
Vinyl chloride	ND	10	ug/kg	EPA 8240		
Total Xylenes	ND	5	ug/kg	EPA 8240		
d4-Dichloroethane (SURROGATE)	104	0	% Recovery	70-121% QC LIMITS		
d8-Toluene (SURROGATE)	101	0	% Recovery	84-138% QC LIMITS		
4-Bromofluorobenzene (SURROGATE)	126(a)	0	% Recovery	74-121% QC LIMITS		
Semivolatile Organics by GC/MS		*10		EPA 8270	05/30/96	CIS
Acenaphthene	ND	3300	ug/kg	EPA 8270		
Acenaphthylene	ND	3300	ug/kg	EPA 8270		
Anthracene	ND	3300	ug/kg	EPA 8270		
Benzidine	ND	6700	ug/kg	EPA 8270		
Benzo(a)anthracene	ND	3300	ug/kg	EPA 8270		
Benzo(b)fluoranthene	ND	3300	ug/kg	EPA 8270		
Benzo(k)fluoranthene	ND	3300	ug/kg	EPA 8270		
Benzoic acid	ND	6700	ug/kg	EPA 8270		
Benzo(ghi)perylene	ND	3300	ug/kg	EPA 8270		
Benzo(a)pyrene	ND	3300	ug/kg	EPA 8270		
Benzyl alcohol	ND	3300	ug/kg	EPA 8270		
Bis(2-chloroethoxy)methane	ND	3300	ug/kg	EPA 8270		
Bis(2-chloroethyl)ether	ND	3300	ug/kg	EPA 8270		
Bis(2-chloroisopropyl)ether	ND	3300	ug/kg	EPA 8270		
Bis(2-ethylhexyl) phthalate	ND	3300	ug/kg	EPA 8270		
4-Bromophenyl phenyl ether	ND	3300	ug/kg	EPA 8270		
Butyl benzyl phthalate	ND	3300	ug/kg	EPA 8270		
4-Chloroaniline	ND	6700	ug/kg	EPA 8270		
4-Chloro-3-methylphenol	ND	3300	ug/kg	EPA 8270		
2-Chloronaphthalene	ND	3300	ug/kg	EPA 8270		
2-Chlorophenol	ND	3300	ug/kg	EPA 8270		

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.........: Emeryville
DATE SAMPLED.......: 05/22/96
TIME SAMPLED.......: 08:45
WORK DESCRIPTION...: BH-A-5

LABORATORY I.D...: 961377-0002
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS..........: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
4-Chlorophenyl phenyl ether	ND	3300	ug/kg	EPA 8270		
Chrysene	ND	3300	ug/kg	EPA 8270		
Di-n-butyl phthalate	ND	3300	ug/kg	EPA 8270		
1,2-Dichlorobenzene	ND	3300	ug/kg	EPA 8270		
1,3-Dichlorobenzene	ND	3300	ug/kg	EPA 8270		
1,4-Dichlorobenzene	ND	3300	ug/kg	EPA 8270		
3,3'-Dichlorobenzidine	ND	3300	ug/kg	EPA 8270		
2,4-Dichlorophenol	ND	6700	ug/kg	EPA 8270		
Dibenzo(a,h)anthracene	ND	3300	ug/kg	EPA 8270		
Dibenzofuran	ND	3300	ug/kg	EPA 8270		
Diethyl phthalate	ND	3300	ug/kg	EPA 8270		
2,4-Dimethylphenol	ND	3300	ug/kg	EPA 8270		
Dimethyl phthalate	ND	3300	ug/kg	EPA 8270		
4,6-Dinitro-2-methylphenol	ND	6700	ug/kg	EPA 8270		
2,4-Dinitrophenol	ND	3300	ug/kg	EPA 8270		
2,4-Dinitrotoluene	ND	3300	ug/kg	EPA 8270		
2,6-Dinitrotoluene	ND	3300	ug/kg	EPA 8270		
Di-n-octyl phthalate	ND	3300	ug/kg	EPA 8270		
Fluorene	ND	3300	ug/kg	EPA 8270		
Fluoranthene	ND	3300	ug/kg	EPA 8270		
Hexachlorobenzene	ND	3300	ug/kg	EPA 8270		
Hexachlorobutadiene	ND	3300	ug/kg	EPA 8270		
Hexachlorocyclopentadiene	ND	3300	ug/kg	EPA 8270		
Hexachloroethane	ND	3300	ug/kg	EPA 8270		
Indeno(1,2,3-cd)pyrene	ND	3300	ug/kg	EPA 8270		
Isophorone	ND	3300	ug/kg	EPA 8270		
2-Methylnaphthalene	ND	3300	ug/kg	EPA 8270		
2-Methylphenol	ND	3300	ug/kg	EPA 8270		
4-Methylphenol	ND	3300	ug/kg	EPA 8270		
2-Nitroaniline	ND	3300	ug/kg	EPA 8270		
3-Nitroaniline	ND	17000	ug/kg	EPA 8270		
4-Nitroaniline	ND	17000	ug/kg	EPA 8270		
2-Nitrophenol	ND	6700	ug/kg	EPA 8270		
4-Nitrophenol	ND	6700	ug/kg	EPA 8270		
N-Nitrosodimethylamine	ND	17000	ug/kg	EPA 8270		
N-Nitrosodi-n-propylamine	ND	3300	ug/kg	EPA 8270		
N-Nitrosodiphenylamine	ND	3300	ug/kg	EPA 8270		
Naphthalene	ND	3300	ug/kg	EPA 8270		
Nitrobenzene	ND	3300	ug/kg	EPA 8270		
Pentachlorophenol	ND	6700	ug/kg	EPA 8270		
Phenanthrene	ND	3300	ug/kg	EPA 8270		
Phenol	ND	3300	ug/kg	EPA 8270		
Pyrene	ND	3300	ug/kg	EPA 8270		
1,2,4-Trichlorobenzene	ND	3300	ug/kg	EPA 8270		
2,4,5-Trichlorophenol	ND	3300	ug/kg	EPA 8270		

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

LABORATORY TESTS RESULTS
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

CLIENT I.D.........: Emeryville
DATE SAMPLED.......: 05/22/96
TIME SAMPLED.......: 08:45
WORK DESCRIPTION...: BH-A-5

LABORATORY I.D...: 961377-0002
DATE RECEIVED....: 05/24/96
TIME RECEIVED....: 09:45
REMARKS..........: H2O GLASS

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
2,4,6-Trichlorophenol	ND	3300	ug/kg	EPA 8270		
2-Fluorophenol (SURROGATE)	103	0	% recovery	25-121% QC LIMITS		
d6-Phenol (SURROGATE)	104	0	% recovery	24-125% QC LIMITS		
d5-Nitrobenzene (SURROGATE)	120	0	% recovery	23-120% QC LIMITS		
2-Fluorobiphenyl (SURROGATE)	121(a)	0	% recovery	30-115% QC LIMITS		
2,4,6-Tribromophenol (SURROGATE)	119	0	% recovery	19-122% QC LIMITS		
d14-Terphenyl (SURROGATE)	123	0	% recovery	18-147% QC LIMITS		
CAM Metals		*100		EPA 6010	05/30/96	EAW
Antimony (Sb)	32	5.0	mg/kg	EPA 6010		
Arsenic (As)	21	5.0	mg/kg	EPA 6010		
Barium (Ba)	93	5.0	mg/kg	EPA 6010		
Beryllium (Be)	ND	5.0	mg/kg	EPA 6010		
Cadmium (Cd)	ND	5.0	mg/kg	EPA 6010		
Chromium (Cr)	42	5.0	mg/kg	EPA 6010		
Cobalt (Co)	ND	5.0	mg/kg	EPA 6010		
Copper (Cu)	43	5.0	mg/kg	EPA 6010		
Lead (Pb)	280	5.0	mg/kg	EPA 6010		
Molybdenum (Mo)	9.5	5.0	mg/kg	EPA 6010		
Nickel (Ni)	20	5.0	mg/kg	EPA 6010		
Silver (Ag)	11	5.0	mg/kg	EPA 6010		
Thallium (Tl)	ND	5.0	mg/kg	EPA 6010		
Vanadium (V)	20	5.0	mg/kg	EPA 6010		
Zinc (Zn)	150	5.0	mg/kg	EPA 6010		
Mercury (Hg)	1.70	0.0002	mg/kg	7471	05/30/96	RH
Selenium (Se)	0.27	0.20	mg/kg	7740	05/30/96	EAW
Total Hydrocarbons Extraction	COMPLETED	-----	N/A	Cal. DHS Method	05/31/96	TH

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORELAB

CORE LABORATORIES

QUALITY ASSURANCE REPORT

06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Mercury (Hg) REPORTING LIMIT/DF: 0.0002UNITS:mg/kg			DATE/TIME ANALYZED:05/30/96 08:00 METHOD REFERENCE :7471						QC BATCH NUMBER:952520 TECHNICIAN:RH	
BLANK	ICB	IB053096	<0.0002							
BLANK	CCB	CB053096	<0.0002							
BLANK	MB	MB053096	<0.0002							
STANDARD	ICVS	M94441	0.23			0.2	115			
STANDARD	CCVS	M94441	0.17			0.2	85			
STANDARD	LCS	M50052	0.24			0.2	120			
SPIKE	BLANK	053096-1	0.50					0.4	0.1	100
PARAMETER:Selenium (Se) REPORTING LIMIT/DF: 0.002 UNITS:mg/kg			DATE/TIME ANALYZED:05/30/96 14:48 METHOD REFERENCE :7740						QC BATCH NUMBER:952521 TECHNICIAN:EAW	
BLANK	ICB	IB053096	<0.002							
BLANK	MB	MB053096	<0.002							
BLANK	CCB	CB053096	<0.002							
STANDARD	ICVS	M50142/43	0.026			0.025	104			
STANDARD	LCS	M40713/14	0.026			0.025	104			
STANDARD	CCVS	M50142/43	0.025			0.025	100			
SPIKE	MATRIX	961394-1	0.024					0.003	0.025	84
DUPLICATE	MS/MSD	961394-1	0.024	0.023	4					

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LAB

CORE LABORATORIES

QUALITY ASSURANCE REPORT

06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

288S DATE ANALYZED: 05/30/96 TIME ANALYZED: 00:00 METHOD: EPA 8015 (modified) QC NUMBER:952542

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
C8-C9	METHOD	MB053096	1	<1.0	1.0	mg/kg
C10-C11	METHOD	MB053096	1	<1.0	1:0	mg/kg
C12-C13	METHOD	MB053096	1	<1.0	1.0	mg/kg
C14-C15	METHOD	MB053096	1	<1.0	1.0	mg/kg
C16-C17	METHOD	MB053096	1	<1.0	1.0	mg/kg
C18-C19	METHOD	MB053096	1	<1.0	1.0	mg/kg
C20-C23	METHOD	MB053096	1	<1.0	1.0	mg/kg
C24-C27	METHOD	MB053096	1	<1.0	1.0	mg/kg
C28-C31	METHOD	MB053096	1	<1.0	1.0	mg/kg
C32-C35	METHOD	MB053096	1	<1.0	1.0	mg/kg
C36-C39	METHOD	MB053096	1	<1.0	1.0	mg/kg
C40-C43	METHOD	MB053096	1	<1.0	1.0	mg/kg
C44+	METHOD	MB053096	1	<1.0	1.0	mg/kg
Total	METHOD	MB053096	1	<1.0	1.0	mg/kg

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

QUALITY ASSURANCE REPORT
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen TeLlegen

288S DATE ANALYZED: 05/30/96 TIME ANALYZED: 00:00 METHOD: EPA 8015 (modified) QC NUMBER:952542

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY	DETECTION LIMITS	UNITS OF MEASURE
Total	MATRIX	961364-17	1	570	0	1000	57	1.0	mg/kg
	MATRIX DUP	961364-17	1	584	0	1000	58	1.0	mg/kg
	MATRIX	961347-36	1	585	0	1000	59	1.0	mg/kg
	MATRIX DUP	961347-36	1	598	0	1000	60	1.0	mg/kg

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

QUALITY ASSURANCE REPORT
06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

288L DATE ANALYZED: 05/30/96 TIME ANALYZED: 00:00 METHOD: EPA 8015 (modified) QC NUMBER:952543

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
C8-C9	METHOD	MB053096	1	<1.0	1.0	mg/L
C10-C11	METHOD	MB053096	1	<1.0	1.0	mg/L
C12-C13	METHOD	MB053096	1	<1.0	1.0	mg/L
C14-C15	METHOD	MB053096	1	<1.0	1.0	mg/L
C16-C17	METHOD	MB053096	1	<1.0	1.0	mg/L
C18-C19	METHOD	MB053096	1	<1.0	1.0	mg/L
C20-C23	METHOD	MB053096	1	<1.0	1.0	mg/L
C24-C27	METHOD	MB053096	1	<1.0	1.0	mg/L
C28-C31	METHOD	MB053096	1	<1.0	1.0	mg/L
C32-C35	METHOD	MB0530969	1	<1.0	1.0	mg/L
C36-C39	METHOD	MB053096	1	<1.0	1.0	mg/L
C40-C43	METHOD	MB053096	1	<1.0	1.0	mg/L
C44+	METHOD	MB053096	1	<1.0	1.0	mg/L
Total	METHOD	MB053096	1	<1.0	1.0	mg/L

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LAB

CORE LABORATORIES

QUALITY ASSURANCE REPORT

06/03/96

JOB NUMBER: 961377 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

288L DATE ANALYZED: 05/30/96 TIME ANALYZED: 00:00 METHOD: EPA 8015 (modified) QC NUMBER:952543

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	DILUTION FACTOR	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY	DETECTION LIMITS	UNITS OF MEASURE
Total	MATRIX	961376-27	1	802	0	1000	80	1.0	mg/L
	MATRIX DUP	961376-27	1	816	0	1000	82	1.0	mg/L

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 8270 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Acenaphthene	METHOD	053096	1	ND	330	ug/kg
Acenaphthylene	METHOD	053096	1	ND	330	ug/kg
Anthracene	METHOD	053096	1	ND	330	ug/kg
Benzidine	METHOD	053096	1	ND	660	ug/kg
Benzo(a)anthracene	METHOD	053096	1	ND	330	ug/kg
Benzo(b)fluoranthene	METHOD	053096	1	ND	330	ug/kg
Benzo(k)fluoranthene	METHOD	053096	1	ND	330	ug/kg
Benzoic acid	METHOD	053096	1	ND	660	ug/kg
Benzo(ghi)perylene	METHOD	053096	1	ND	330	ug/kg
Benzo(a)pyrene	METHOD	053096	1	ND	330	ug/kg
Benzyl alcohol	METHOD	053096	1	ND	330	ug/kg
Bis(2-chloroisopropyl)ether	METHOD	053096	1	ND	330	ug/kg
Bis(2-ethylhexyl)phthalate	METHOD	053096	1	ND	330	ug/kg
4-Bromophenyl phenyl ether	METHOD	053096	1	ND	330	ug/kg
Butyl benzyl phthalate	METHOD	053096	1	ND	330	ug/kg
4-Chloroaniline	METHOD	053096	1	ND	660	ug/kg
4-Chloro-3-methylphenol	METHOD	053096	1	ND	330	ug/kg
2-Chloronaphthalene	METHOD	053096	1	ND	330	ug/kg
2-Chlorophenol	METHOD	053096	1	ND	330	ug/kg
4-Chlorophenyl phenyl ether	METHOD	053096	1	ND	330	ug/kg
Chrysene	METHOD	053096	1	ND	330	ug/kg
Di-n-butyl phthalate	METHOD	053096	1	ND	330	ug/kg
1,2-Dichlorobenzene	METHOD	053096	1	ND	330	ug/kg
1,3-Dichlorobenzene	METHOD	053096	1	ND	330	ug/kg
1,4-Dichlorobenzene	METHOD	053096	1	ND	330	ug/kg
3,3'-Dichlorobenzidine	METHOD	053096	1	ND	660	ug/kg
2,4-Dichlorophenol	METHOD	053096	1	ND	660	ug/kg
Dibenzo(a,h)anthracene	METHOD	053096	1	ND	330	ug/kg
Dibenzofuran	METHOD	053096	1	ND	330	ug/kg
Diethyl phthalate	METHOD	053096	1	ND	330	ug/kg
2,4-Dimethylphenol	METHOD	053096	1	ND	330	ug/kg
Dimethyl phthalate	METHOD	053096	1	ND	330	ug/kg
4,6-Dinitro-2-methylphenol	METHOD	053096	1	ND	660	ug/kg
2,4-Dinitrophenol	METHOD	053096	1	ND	330	ug/kg
2,4-Dinitrotoluene	METHOD	053096	1	ND	330	ug/kg
2,6-Dinitrotoluene	METHOD	053096	1	ND	330	ug/kg
Di-n-octyl phthalate	METHOD	053096	1	ND	330	ug/kg
Fluorene	METHOD	053096	1	ND	330	ug/kg
Fluoranthene	METHOD	053096	1	ND	330	ug/kg
Hexachlorobenzene	METHOD	053096	1	ND	330	ug/kg
Hexachlorobutadiene	METHOD	053096	1	ND	330	ug/kg
Hexachloroethane	METHOD	053096	1	ND	330	ug/kg
Indeno(1,2,3-cd)pyrene	METHOD	053096	1	ND	330	ug/kg
Isophorone	METHOD	053096	1	ND	330	ug/kg
2-Methylnaphthalene	METHOD	053096	1	ND	330	ug/kg
2-Methylphenol	METHOD	053096	1	ND	330	ug/kg
4-Methylphenol	METHOD	053096	1	ND	330	ug/kg
2-Nitroaniline	METHOD	053096	1	ND	330	ug/kg

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 8270 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
3-Nitroaniline	METHOD	053096	1	ND	1600	ug/kg
4-Nitroaniline	METHOD	053096	1	ND	330	ug/kg
2-Nitrophenol	METHOD	053096	1	ND	330	ug/kg
4-Nitrophenol	METHOD	053096	1	ND	1600	ug/kg
N-Nitrosodimethylamine	METHOD	053096	1	ND	330	ug/kg
N-Nitrosodi-n-propylamine	METHOD	053096	1	ND	330	ug/kg
N-Nitrosodiphenylamine	METHOD	053096	1	ND	330	ug/kg
Naphthalene	METHOD	053096	1	ND	330	ug/kg
Nitrobenzene	METHOD	053096	1	ND	660	ug/kg
Pentachlorophenol	METHOD	053096	1	ND	330	ug/kg
Phenanthrene	METHOD	053096	1	ND	330	ug/kg
Phenol	METHOD	053096	1	ND	330	ug/kg
Pyrene	METHOD	053096	1	ND	330	ug/kg
1,2,4-Trichlorobenzene	METHOD	053096	1	ND	330	ug/kg
2,4,5-Trichlorophenol	METHOD	053096	1	ND	330	ug/kg
2,4,6-Trichlorophenol	METHOD	053096	1	ND	330	ug/kg
2-Fluorophenol (SURROGATE)	METHOD	053096	1	86	25-121	%Recovery
d6-Phenol (SURROGATE)	METHOD	053096	1	89	24-125	%Recovery
d5-Nitrobenzene (SURROGATE)	METHOD	053096	1	85	23-120	%Recovery
2-Fluorobiphenyl (SURROGATE)	METHOD	053096	1	81	30-115	%Recovery
2,4,6-Tribromophenol (SURROGATE)	METHOD	053096	1	95	19-122	%Recovery
d14-Terphenyl (SURROGATE)	METHOD	053096	1	86	18-147	%Recovery

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 8270 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	UNITS	PERCENT RECOVERY	RPD	QC LIMITS %REC	QC LIMITS RPD
Phenol	BLANK	053096	3326	0	3300	ug/kg	101	1.4	60-117	36
	BLANK DUP	053096	3279	0	3300	ug/kg	99			
2-Chlorophenol	BLANK	053096	2589	0	3300	ug/kg	78	8.2	70-120	50
	BLANK DUP	053096	2809	0	3300	ug/kg	85			
1,4-Dichlorobenzene	BLANK	053096	1617	0	1700	ug/kg	95	1.4	71-123	27
	BLANK DUP	053096	1595	0	1700	ug/kg	94			
N-Nitroso-di-n-propylamine	BLANK	053096	1704	0	1700	ug/kg	100	1.8	66-129	38
	BLANK DUP	053096	1674	0	1700	ug/kg	98			
1,2,4-Trichlorobenzene	BLANK	053096	1600	0	1700	ug/kg	94	1.1	84-125	23
	BLANK DUP	053096	1617	0	1700	ug/kg	95			
4-Chloro-3-methylphenol	BLANK	053096	2769	0	3300	ug/kg	84	4.6	59-126	33
	BLANK DUP	053096	2899	0	3300	ug/kg	88			
Acenaphthene	BLANK	053096	1637	0	1700	ug/kg	96	8.3	66-134	19
	BLANK DUP	053096	1778	0	1700	ug/kg	105			
4-Nitrophenol	BLANK	053096	2213	0	3300	ug/kg	67	0.1	37-118	50
	BLANK DUP	053096	2210	0	3300	ug/kg	67			
2,4-Dinitrotoluene	BLANK	053096	1598	0	1700	ug/kg	94	3.5	53-116	47
	BLANK DUP	053096	1543	0	1700	ug/kg	91			
Pentachlorophenol	BLANK	053096	2895	0	3300	ug/kg	88	7.9	47-143	47
	BLANK DUP	053096	2676	0	3300	ug/kg	81			
Pyrene	BLANK	053096	1821	0	1700	ug/kg	107	11.1	71-157	36
	BLANK DUP	053096	2034	0	1700	ug/kg	120			
2-Fluorophenol (SURROGATE)	BLANK	053096	185	0	200	ug/kg	93	N/A	25-121	N/A
	BLANK DUP	053096	177	0	200	ug/kg	89			
d6-Phenol (SURROGATE)	BLANK	053096	181	0	200	ug/kg	91	N/A	24-125	N/A
	BLANK DUP	053096	179	0	200	ug/kg	90			
d5-Nitrobenzene (SURROGATE)	BLANK	053096	85	0	100	ug/kg	85	N/A	23-120	N/A
	BLANK DUP	053096	91	0	100	ug/kg	91			
2-Fluorobiphenyl (SURROGATE)	BLANK	053096	84	0	100	ug/kg	84	N/A	30-115	N/A
	BLANK DUP	053096	83	0	100	ug/kg	83			
2,4,6-Tribromophenol(SURROGATE	BLANK	053096	190	0	200	ug/kg	95	N/A	19-122	N/A
	BLANK DUP	053096	196	0	200	ug/kg	98			
d14-Terphenyl (SURROGATE)	BLANK	053096	98	0	100	ug/kg	98	N/A	18-147	N/A
	BLANK DUP	053096	108	0	100	ug/kg	108			

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LAB

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 625 | JOB NUMBER: 961377 | DATE ANALYZED: 05/30/96

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Acenaphthene	METHOD	052696	1	ND	10	ug/L
Acenaphthylene	METHOD	052696	1	ND	10	ug/L
Anthracene	METHOD	052696	1	ND	10	ug/L
Benzidine	METHOD	052696	1	ND	20	ug/L
Benzo(a)anthracene	METHOD	052696	1	ND	10	ug/L
Benzo(b)fluoranthene	METHOD	052696	1	ND	10	ug/L
Benzo(k)fluoranthene	METHOD	052696	1	ND	10	ug/L
Benzoic acid	METHOD	052696	1	ND	20	ug/L
Benzo(ghi)perylene	METHOD	052696	1	ND	10	ug/L
Benzo(a)pyrene	METHOD	052696	1	ND	10	ug/L
Benzyl alcohol	METHOD	052696	1	ND	10	ug/L
Bis(2-chloroisopropyl)ether	METHOD	052696	1	ND	10	ug/L
Bis(2-ethylhexyl)phthalate	METHOD	052696	1	ND	10	ug/L
4-Bromophenyl phenyl ether	METHOD	052696	1	ND	10	ug/L
Butyl benzyl phthalate	METHOD	052696	1	ND	10	ug/L
4-Chloroaniline	METHOD	052696	1	ND	20	ug/L
4-Chloro-3-methylphenol	METHOD	052696	1	ND	10	ug/L
2-Chloronaphthalene	METHOD	052696	1	ND	10	ug/L
2-Chlorophenol	METHOD	052696	1	ND	10	ug/L
4-Chlorophenyl phenyl ether	METHOD	052696	1	ND	10	ug/L
Chrysene	METHOD	052696	1	ND	10	ug/L
Di-n-butyl phthalate	METHOD	052696	1	ND	10	ug/L
1,2-Dichlorobenzene	METHOD	052696	1	ND	10	ug/L
1,3-Dichlorobenzene	METHOD	052696	1	ND	10	ug/L
1,4-Dichlorobenzene	METHOD	052696	1	ND	10	ug/L
3,3'-Dichlorobenzidine	METHOD	052696	1	ND	20	ug/L
2,4-Dichlorophenol	METHOD	052696	1	ND	20	ug/L
Dibenzo(a,h)anthracene	METHOD	052696	1	ND	10	ug/L
Dibenzofuran	METHOD	052696	1	ND	10	ug/L
Diethyl phthalate	METHOD	052696	1	ND	10	ug/L
2,4-Dimethylphenol	METHOD	052696	1	ND	10	ug/L
Dimethyl phthalate	METHOD	052696	1	ND	10	ug/L
4,6-Dinitro-2-methylphenol	METHOD	052696	1	ND	20	ug/L
2,4-Dinitrophenol	METHOD	052696	1	ND	10	ug/L
2,4-Dinitrotoluene	METHOD	052696	1	ND	10	ug/L
2,6-Dinitrotoluene	METHOD	052696	1	ND	10	ug/L
Di-n-octyl phthalate	METHOD	052696	1	ND	10	ug/L
Fluorene	METHOD	052696	1	ND	10	ug/L
Fluoranthene	METHOD	052696	1	ND	10	ug/L
Hexachlorobenzene	METHOD	052696	1	ND	10	ug/L
Hexachlorobutadiene	METHOD	052696	1	ND	10	ug/L
Hexachloroethane	METHOD	052696	1	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	METHOD	052696	1	ND	10	ug/L
Isophorone	METHOD	052696	1	ND	10	ug/L
2-Methylnaphthalene	METHOD	052696	1	ND	10	ug/L
2-Methylphenol	METHOD	052696	1	ND	10	ug/L
4-Methylphenol	METHOD	052696	1	ND	10	ug/L
2-Nitroaniline	METHOD	052696	1	ND	10	ug/L

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 625 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

BLANKS

TEST DESCRIPTION	ANALY SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
3-Nitroaniline	METHOD	052696	1	ND	50	ug/L
4-Nitroaniline	METHOD	052696	1	ND	10	ug/L
2-Nitrophenol	METHOD	052696	1	ND	10	ug/L
4-Nitrophenol	METHOD	052696	1	ND	50	ug/L
N-Nitrosodimethylamine	METHOD	052696	1	ND	10	ug/L
N-Nitrosodi-n-propylamine	METHOD	052696	1	ND	10	ug/L
N-Nitrosodiphenylamine	METHOD	052696	1	ND	10	ug/L
Naphthalene	METHOD	052696	1	ND	10	ug/L
Nitrobenzene	METHOD	052696	1	ND	20	ug/L
Pentachlorophenol	METHOD	052696	1	ND	10	ug/L
Phenanthrene	METHOD	052696	1	ND	10	ug/L
Phenol	METHOD	052696	1	ND	10	ug/L
Pyrene	METHOD	052696	1	ND	10	ug/L
1,2,4-Trichlorobenzene	METHOD	052696	1	ND	10	ug/L
2,4,5-Trichlorophenol	METHOD	052696	1	ND	10	ug/L
2,4,6-Trichlorophenol	METHOD	052696	1	ND	10	ug/L
2-Fluorophenol (SURROGATE)	METHOD	052696	1	66	21-110	%Recovery
d6-Phenol (SURROGATE)	METHOD	052696	1	93	10-110	%Recovery
d5-Nitrobenzene (SURROGATE)	METHOD	052696	1	103	35-114	%Recovery
2-Fluorobiphenyl (SURROGATE)	METHOD	052696	1	92	43-116	%Recovery
2,4,6-Tribromophenol (SURROGATE)	METHOD	052696	1	110	10-123	%Recovery
d14-Terphenyl (SURROGATE)	METHOD	052696	1	102	33-141	%Recovery

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LAB

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 625 JOB NUMBER:961377 DATE ANALYZED: 05/30/96

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	UNITS	PERCENT RECOVERY	RPD	QC LIMITS %REC	QC LIMITS RPD
Phenol	BLANK	bs051696	62	0	100	ug/L	62	31.8	5-110	42
	BLANK DUP	bs051696	45	0	100	ug/L	45			
2-Chlorophenol	BLANK	bs051696	67	0	100	ug/L	67	37.2	27-123	40
	BLANK DUP	bs051696	46	0	100	ug/L	46			
1,4-Dichlorobenzene	BLANK	bs051696	43	0	50	ug/L	86	0.0	36-97	28
	BLANK DUP	bs051696	43	0	50	ug/L	86			
N-Nitroso-di-n-propylamine	BLANK	bs051696	53	0	50	ug/L	106	20.8	41-116	38
	BLANK DUP	bs051696	43	0	50	ug/L	86			
1,2,4-Trichlorobenzene	BLANK	bs051696	45	0	50	ug/L	90	2.2	39-98	28
	BLANK DUP	bs051696	46	0	50	ug/L	92			
4-Chloro-3-methylphenol	BLANK	bs051696	73	0	100	ug/L	73	1.4	23-97	42
	BLANK DUP	bs051696	72	0	100	ug/L	72			
Acenaphthene	BLANK	bs051696	47	0	50	ug/L	94	4.2	46-118	31
	BLANK DUP	bs051696	49	0	50	ug/L	98			
4-Nitrophenol	BLANK	bs051696	60	0	100	ug/L	60	3.4	10-80	50
	BLANK DUP	bs051696	58	0	100	ug/L	58			
2,4-Dinitrotoluene	BLANK	bs051696	46	0	50	ug/L	92	6.7	24-96	38
	BLANK DUP	bs051696	43	0	50	ug/L	86			
Pentachlorophenol	BLANK	bs051696	57	0	100	ug/L	57	5.4	9-105	50
	BLANK DUP	bs051696	54	0	100	ug/L	54			
Pyrene	BLANK	bs051696	56	0	50	ug/L	112	5.2	26-127	31
	BLANK DUP	bs051696	59	0	50	ug/L	118			
2-Fluorophenol (SURROGATE)	BLANK	bs051696	75	0	200	ug/L	38	N/A	21-110	N/A
	BLANK DUP	bs051696	58	0	200	ug/L	29			
d6-Phenol (SURROGATE)	BLANK	bs051696	125	0	200	ug/L	63	N/A	10-110	N/A
	BLANK DUP	bs051696	128	0	200	ug/L	64			
d5-Nitrobenzene (SURROGATE)	BLANK	bs051696	89	0	100	ug/L	89	N/A	35-114	N/A
	BLANK DUP	bs051696	106	0	100	ug/L	106			
2-Fluorobiphenyl (SURROGATE)	BLANK	bs051696	75	0	100	ug/L	75	N/A	43-116	N/A
	BLANK DUP	bs051696	92	0	100	ug/L	92			
2,4,6-Tribromophenol(SURROGATE	BLANK	bs051696	160	0	200	ug/L	80	N/A	10-123	N/A
	BLANK DUP	bs051696	190	0	200	ug/L	95			
d14-Terphenyl (SURROGATE)	BLANK	bs051696	92	0	100	ug/L	92	N/A	33-141	N/A
	BLANK DUP	bs051696	127	0	100	ug/L	127			

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LAB

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 8240 JOB NUMBER: 961377 DATE ANALYZED: 05/31/96

BLANKS

TEST DESCRIPTION	ANALYS.SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Acetone	METHOD	053196	1	ND	10	ug/L
Benzene	METHOD	053196	1	ND	5	ug/L
Bromodichloromethane	METHOD	053196	1	ND	5	ug/L
Bromoform	METHOD	053196	1	ND	5	ug/L
Bromomethane	METHOD	053196	1	ND	10	ug/L
2-Butanone	METHOD	053196	1	ND	10	ug/L
Carbon disulfide	METHOD	053196	1	ND	5	ug/L
Carbon tetrachloride	METHOD	053196	1	ND	5	ug/L
Chlorobenzene	METHOD	053196	1	ND	5	ug/L
Chlorodibromomethane	METHOD	053196	1	ND	5	ug/L
Chloroethane	METHOD	053196	1	ND	10	ug/L
2-Chloroethylvinyl ether	METHOD	053196	1	ND	10	ug/L
Chloroform	METHOD	053196	1	ND	5	ug/L
Chloromethane	METHOD	053196	1	ND	10	ug/L
1,1-Dichloroethane	METHOD	053196	1	ND	5	ug/L
1,2-Dichloroethene	METHOD	053196	1	ND	5	ug/L
1,1-Dichloroethene	METHOD	053196	1	ND	5	ug/L
1,2-Dichloroethene (total)	METHOD	053196	1	ND	5	ug/L
1,2-Dichloropropane	METHOD	053196	1	ND	5	ug/L
cis-1,3-Dichloropropene	METHOD	053196	1	ND	5	ug/L
trans-1,3-Dichloropropene	METHOD	053196	1	ND	5	ug/L
Ethylbenzene	METHOD	053196	1	ND	5	ug/L
2-Hexanone	METHOD	053196	1	ND	10	ug/L
Methylene chloride	METHOD	053196	1	ND	5	ug/L
4-Methyl-2-pentanone	METHOD	053196	1	ND	10	ug/L
Styrene	METHOD	053196	1	ND	5	ug/L
1,1,2,2-Tetrachloroethane	METHOD	053196	1	ND	5	ug/L
Tetrachloroethene	METHOD	053196	1	ND	5	ug/L
Toluene	METHOD	053196	1	ND	5	ug/L
1,1,1-Trichloroethane	METHOD	053196	1	ND	5	ug/L
1,1,2-Trichloroethane	METHOD	053196	1	ND	5	ug/L
Trichloroethene	METHOD	053196	1	ND	5	ug/L
Vinyl acetate	METHOD	053196	1	ND	5	ug/L
Vinyl chloride	METHOD	053196	1	ND	10	ug/L
Total xylenes	METHOD	053196	1	ND	5	ug/L
d4-1,2-Dichloroethane (SURROGATE)	METHOD	053196	1	102	70-121	% recovery
d8-Toluene (SURROGATE)	METHOD	053196	1	96	84-138	% recovery
4-Bromofluorobenzene (SURROGATE)	METHOD	053196	1	87	74-121	% recovery

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LAB

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 8240 JOB NUMBER: 961377 DATE ANALYZED: 05/31/96

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	UNITS	PERCENT RECOVERY	RPD	QC LIMITS %REC	QC LIMITS RPD
Benzene	MATRIX	961363-1	49.6	0	50.0	ug/L	99	2.8	76-127	11
	MATRIX DUP	961363-1	51.0	0	50.0	ug/L	102			
Chlorobenzene	MATRIX	961363-1	45.8	0	50.0	ug/L	92	5.1	75-130	13
	MATRIX DUP	961363-1	48.2	0	50.0	ug/L	96			
1,1-Dichloroethene	MATRIX	961363-1	47.8	0	50.0	ug/L	96	7.3	61-145	14
	MATRIX DUP	961363-1	51.4	0	50.0	ug/L	103			
Trichloroethene	MATRIX	961363-1	50.1	0	50.0	ug/L	100	0.2	71-120	14
	MATRIX DUP	961363-1	50.2	0	50.0	ug/L	100			
Toluene	MATRIX	961363-1	44.5	0	50.0	ug/L	89	6.1	76-125	13
	MATRIX DUP	961363-1	47.3	0	50.0	ug/L	95			
d4-Dichloroethane (SURROGATE)	MATRIX	961363-1	50.7	0	50.0	ug/L	101	N/A	76-114	N/A
	MATRIX DUP	961363-1	52.5	0	50.0	ug/L	105			
d8-Toluene (SURROGATE)	MATRIX	961363-1	47.6	0	50.0	ug/L	95	N/A	88-110	N/A
	MATRIX DUP	961363-1	48.3	0	50.0	ug/L	97			
4-Bromofluorobenzene (SURROGAT	MATRIX	961363-1	53.5	0	50.0	ug/L	107	N/A	86-115	N/A
	MATRIX DUP	961363-1	50.9	0	50.0	ug/L	102			

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 8240 JOB NUMBER: 961377 DATE ANALYZED: 05/31/96

BLANKS

TEST DESCRIPTION	ANALYS. SUB-TYPE	ANALYSIS I.D.	DILUTION FACTOR	ANALYZED VALUE	DETECTION LIMIT	UNITS OF MEASURE
Acetone	METHOD	053196	1	ND	10	ug/kg
Benzene	METHOD	053196	1	ND	5	ug/kg
Bromodichloromethane	METHOD	053196	1	ND	5	ug/kg
Bromoform	METHOD	053196	1	ND	5	ug/kg
Bromomethane	METHOD	053196	1	ND	10	ug/kg
2-Butanone	METHOD	053196	1	ND	10	ug/kg
Carbon disulfide	METHOD	053196	1	ND	5	ug/kg
Carbon tetrachloride	METHOD	053196	1	ND	5	ug/kg
Chlorobenzene	METHOD	053196	1	ND	5	ug/kg
Chlorodibromomethane	METHOD	053196	1	ND	5	ug/kg
Chloroethane	METHOD	053196	1	ND	10	ug/kg
2-Chloroethylvinyl ether	METHOD	053196	1	ND	10	ug/kg
Chloroform	METHOD	053196	1	ND	5	ug/kg
Chloromethane	METHOD	053196	1	ND	10	ug/kg
1,1-Dichloroethane	METHOD	053196	1	ND	5	ug/kg
1,2-Dichloroethene	METHOD	053196	1	ND	5	ug/kg
1,1-Dichloroethene	METHOD	053196	1	ND	5	ug/kg
1,2-Dichloroethene (total)	METHOD	053196	1	ND	5	ug/kg
1,2-Dichloropropane	METHOD	053196	1	ND	5	ug/kg
cis-1,3-Dichloropropene	METHOD	053196	1	ND	5	ug/kg
trans-1,3-Dichloropropene	METHOD	053196	1	ND	5	ug/kg
Ethylbenzene	METHOD	053196	1	ND	5	ug/kg
2-Hexanone	METHOD	053196	1	ND	10	ug/kg
Methylene chloride	METHOD	053196	1	ND	5	ug/kg
4-Methyl-2-pentanone	METHOD	053196	1	ND	10	ug/kg
Styrene	METHOD	053196	1	ND	5	ug/kg
1,1,2,2-Tetrachloroethane	METHOD	053196	1	ND	5	ug/kg
Tetrachloroethene	METHOD	053196	1	ND	5	ug/kg
Toluene	METHOD	053196	1	ND	5	ug/kg
1,1,1-Trichloroethane	METHOD	053196	1	ND	5	ug/kg
1,1,2-Trichloroethane	METHOD	053196	1	ND	5	ug/kg
Trichloroethene	METHOD	053196	1	ND	5	ug/kg
Vinyl acetate	METHOD	053196	1	ND	5	ug/kg
Vinyl chloride	METHOD	053196	1	ND	10	ug/kg
Total xylenes	METHOD	053196	1	ND	5	ug/kg
d4-1,2-Dichloroethane (SURROGATE)	METHOD	053196	1	102	70-121	% recovery
d8-Toluene (SURROGATE)	METHOD	053196	1	96	84-138	% recovery
4-Bromofluorobenzene (SURROGATE)	METHOD	053196	1	87	74-121	% recovery

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORELAB

CORE LABORATORIES

QUALITY ASSURANCE REPORT

EPA Method 8240 JOB NUMBER: 961377 DATE ANALYZED: 05/31/96

MATRIX SPIKES

TEST DESCRIPTION	ANALYSIS SUB-TYPE	ANALYSIS I. D.	ANALYZED VALUE	ORIGINAL VALUE	SPIKE ADDED	UNITS	PERCENT RECOVERY	RPD	QC LIMITS %REC	QC LIMITS RPD
Benzene	MATRIX	961363-1	49.6	0	50.0	ug/kg	99	2.8	66-142	21
	MATRIX DUP	961363-1	51.0	0	50.0	ug/kg	102			
Chlorobenzene	MATRIX	961363-1	45.8	0	50.0	ug/kg	92	5.1	60-133	21
	MATRIX DUP	961363-1	48.2	0	50.0	ug/kg	96			
1,1-Dichloroethene	MATRIX	961363-1	47.8	0	50.0	ug/kg	96	7.3	59-172	22
	MATRIX DUP	961363-1	51.4	0	50.0	ug/kg	103			
Trichloroethene	MATRIX	961363-1	50.1	0	50.0	ug/kg	100	0.2	62-137	24
	MATRIX DUP	961363-1	50.2	0	50.0	ug/kg	100			
Toluene	MATRIX	961363-1	44.5	0	50.0	ug/kg	89	6.1	59-139	21
	MATRIX DUP	961363-1	47.3	0	50.0	ug/kg	95			
d4-Dichloroethane (SURROGATE)	MATRIX	961363-1	50.7	0	50.0	ug/kg	101	N/A	70-121	N/A
	MATRIX DUP	961363-1	52.5	0	50.0	ug/kg	105			
d8-Toluene (SURROGATE)	MATRIX	961363-1	47.6	0	50.0	ug/kg	95	N/A	84-138	N/A
	MATRIX DUP	961363-1	48.3	0	50.0	ug/kg	97			
4-Bromofluorobenzene (SURROGAT	MATRIX	961363-1	53.5	0	50.0	ug/kg	107	N/A	74-121	N/A
	MATRIX DUP	961363-1	50.9	0	50.0	ug/kg	102			

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

ICP BLANK DATA

Date Analyzed: 5-30-96

Analyte		Cal. Blank (ug/l)	Cont. Blank (ug/l)	Det. Limits (ug/l)
Antimony	(Sb)	ND	ND	50
Arsenic	(As)	ND	ND	50
Barium	(Ba)	ND	ND	50
Beryllium	(Be)	ND	ND	50
Cadmium	(Cd)	ND	ND	50
Chromium	(Cr)	ND	ND	50
Cobalt	(Co)	ND	ND	50
Copper	(Cu)	ND	ND	50
Lead	(Pb)	ND	ND	50
Molybdenum	(Mo)	ND	ND	50
Nickel	(Ni)	ND	ND	50
Silver	(Ag)	ND	ND	50
Thallium	(Tl)	ND	ND	50
Vanadium	(V)	ND	ND	50
Zinc	(Zn)	ND	ND	50

CORE LAB

CORE LABORATORIES

ICP REFERENCE STANDARD

Date Analyzed: 5-30-96

Sample Number: M50142/43

Analyte		True Conc. (ug/l)	Actual Conc. (ug/l)	% Rec
Antimony	(Sb)	5000	5012	100
Arsenic	(As)	5000	5051	101
Barium	(Ba)	5000	5106	102
Beryllium	(Be)	5000	5106	102
Cadmium	(Cd)	5000	5154	103
Chromium	(Cr)	5000	5153	103
Cobalt	(Co)	5000	5160	103
Copper	(Cu)	5000	5136	103
Lead	(Pb)	5000	5144	103
Molybdenum	(Mo)	5000	5026	100
Nickel	(Ni)	5000	5161	103
Silver	(Ag)	5000	5158	96
Thallium	(Tl)	5000	5113	102
Vanadium	(V)	5000	5138	103
Zinc	(Zn)	5000	5162	103

CORE LABORATORIES

ICP MATRIX SPIKE ANALYSIS

Date Analyzed: 5-30-96

Sample : 961308-11

Analyte		Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS %Rec	MSD Conc. (ug/L)	MSD %Rec	RPD
Antimony	(Sb)	5000	288	5140	97	5228	99	2
Arsenic	(As)	5000	40	4988	99	5040	100	1
Barium	(Ba)	5000	8980	14710	115	14580	112	1
Beryllium	(Be)	5000	ND	4930	99	4998	100	1
Cadmium	(Cd)	5000	74	4915	97	4982	98	1
Chromium	(Cr)	5000	1244	6178	99	6228	100	1
Cobalt	(Co)	5000	84	4924	97	4986	98	1
Copper	(Cu)	5000	1552	6673	102	6708	103	1
Lead	(Pb)	5000	316	5164	97	5192	98	1
Molybdenum	(Mo)	5000	296	5167	97	5252	99	2
Nickel	(Ni)	5000	3786	8899	102	8865	102	0
Silver	(Ag)	5000	121	4849	95	4709	92	3
Thallium	(Tl)	5000	26	4882	97	4934	98	1
Vanadium	(V)	5000	100	5016	98	5126	101	2
Zinc	(Zn)	5000	5935	11160	105	11070	103	1

CORE LABORATORIES

QUALITY ASSURANCE FOOTER

METHOD REFERENCES

(1) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, November 1990, and July 1992 update
(2) Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989
(3) EPA 600/4-79-020, Methods of Chemical Analysis for Waters and Wastes, March 1983
(4) Federal Register, Friday, October 26, 1984 (40 CFR Part 136)
(5) American Society for Testing and Materials, Volumes 5.01, 5.02, 5.03, 1992
(6) EPA 600/4-89-001, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organisms
(7) EPA 600/4-90-027, Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Fresh Water and Marine Organisms, Fourth Edition

COMMENTS

All methods of chemical analysis have a statistical uncertainty associated with the results. Unless otherwise indicated, the data in this report are within the limits of uncertainty as specified in the referenced method. Quality control acceptance criteria are based either on actual laboratory performance or on limits specified in the referenced method. The date and time of analysis indicated on the QA report may not reflect the actual time of analysis for QC samples. All data reported on an "as received" basis unless otherwise indicated. Data reported in the QA report may be lower than sample data due to dilution of samples into the calibration range of the analysis. Sample concentrations for solid samples are calculated on an as received (wet) basis. Unless otherwise indicated, volatiles by gas chromatograpy are reported from a single column. Volatiles analyses on low level soils are conducted at room temperature.

FLAGS, FOOTNOTES, AND ABBREVIATIONS (as needed)

NA = Not analyzed
N/A = Not applicable
ug/L = Micrograms per liter
mg/L = Milligrams per liter
ND = Not detected at a value greater than the reporting limit
NC = Not calculable due to values lower than the detection limit
N.I. = Not Ignitable
S.I. = Sustains Ignition
I(NS) = Ignites, but does not Sustain Ignition
RPD = Relative Percent Difference
(a) = Surrogate recoveries were outside acceptable ranges due to matrix effects.
(b) = Surrogate recoveries were not calculated due to dilution of the sample below the detectable range for the surrogate.
(c) = Matrix spike recoveries were outside acceptable ranges due to matrix effects.
(d) = Relative Percent Difference (RPD) for duplicate analysis outside acceptance limits due to actual differences in the sample matrix.
(e) = The limit listed for flammability indicates the upper limit for the test. Samples are not tested at temperatures above 140 Fahrenheit since only samples which will sustain ignition at temperatures below 140 are considered flammable.
(f) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a diesel standard, however, the hydrocarbon pattern did not match a diesel pattern.
(g) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a gasoline standard, however, the hydrocarbon pattern did not match a gasoline pattern.
(h) = High dilution due to matrix effects
(i) = Samples with results below 500 mg/L are considered hazardous

QC SAMPLE IDENTIFICATIONS

MB = Method Blank
RB = Reagent Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CS = Calibration Standard
ICB = Initial Calibration Verification
CCV = Continuing Calibration Verification
SB = Storage Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate
MD = Matrix Duplicate
BS = Blank Spike
SS = Surrogate Spike
LCS = Laboratory Control Standard
RS = Reference Standard

SUBCONTRACTED LABORATORY LOCATIONS

Core Laboratories:	Aurora, Colorado(ELAP #1933)	*AU
	Casper, Wyoming	*CA
	Corpus Christi, Texas	*CC
	Houston, Texas	*HP
	Lake Charles, Louisiana	*LC
	Long Beach, California	*LB
Aquatic Testing Laboratories:		
	Ventura, California	*AT

Rev. 23 /usr/nick/wpwork/qafooter23 8/12/94

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

961377

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4,
San Ramon, CA 94583
(510) 820-9391 - FAX (510) 837-4853

Chain of Custody

DATE 5-22-96 PAGE 1 OF 1

SAMPLERS (SIGNATURE) (PHONE NO.)
Scott F. Ferriman 510-820-9391

PROJECT NAME Emeryville Properties NO. 3002
ADDRESS 1400 Park Avenue, Emeryville, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GASOLINE (EPA 5030/8015)	TPH-GASOLINE/BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	PURGABLE AROMATICS (EPA 602/8020)	PURGABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240)	BASE/NUETRALS, ACIDS (EPA 625/8270)	OIL & GREASE (EPA 5520 E&F or B&F)	LUFT METALS (5) (EPA 6010+7000)	TITLE 22 (CAM 17) (EPA 6010+7000)	TCLP (EPA 1311/1310)	STLC- CAM WET (EPA 1311/1310)	REACTIVITY CORROSIVITY IGNITABILITY	8015M Full Chain
Tank Water	5-22-96	8:00	water	6 VOAs HCl 3 Amber vials	1					X	X							X
BH-A-5'	5-22-96	8:45	soil	1 - BT	2					X	X			X				X

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Scott F. Ferriman 10:00	Federal Express 10:00		Greg Sizemore	
(signature) (time)	(signature) (time)	(signature) (time)	(signature) 9:45 (time)	
Scott Ferriman 5-22-96	5-22-96		Greg Sizemore	
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	
Company- ASE, Inc.	Company-	Company-	Core Lab 5-24-96	

CORE LABORATORIES

CORE LABORATORIES
A N A L Y T I C A L R E P O R T

Job Number: 961444
Prepared For:

Brea Canon Oil Co.
Gwen Tellegen
2300 E.Imperial Hwy 7th Floor
El Segundo, CA 90245

Date: 06/07/96

Elizabeth Cerimagna
Signature

6/10/96
Date:

Name: Tim A. Scott

Core Laboratories
1250 Gene Autry Way
Anaheim, CA 92805

Title: Laboratory Manager

CA. E. L. A. P. 1174
L. A. C. S. D. 10146

CORE LABORATORIES

LABORATORY TESTS RESULTS
06/07/96

JOB NUMBER: 961444 CUSTOMER: Brea Canon Oil Co. / ATTN: Gwen Tellegen

CLIENT I.D.....: Gwen Tellegen
DATE SAMPLED.....: 06/04/96
TIME SAMPLED.....: 00:00
WORK DESCRIPTION...: 961444-1

LABORATORY I.D...: 961444-0001
DATE RECEIVED....: 06/04/96
TIME RECEIVED....: 12:00
REMARKS.....: soil, brass

TEST DESCRIPTION	FINAL RESULT	LIMITS/*DILUTION	UNITS OF MEASURE	TEST METHOD	DATE	TECHN
Metals Digestion-Aqueous	COMPLETED		N/A	EPA 3010A	06/06/96	RH
STLC Extraction Metals		*10		EPA 6010	06/06/96	EAW
Lead (Pb)	29	0.50	mg/L	EPA 6010		
STLC Metals Extraction	COMPLETED	-----	N/A	Cal. DHS Method	06/07/96	RH
Chromium (Cr+6), Total	<0.01	0.01	mg/kg	EPA 7196	06/07/96	JEM

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LABORATORIES

QUALITY ASSURANCE REPORT
06/07/96

JOB NUMBER: 961444 CUSTOMER: Brea Canon Oil Co. ATTN: Gwen Tellegen

ANALYSIS				DUPLICATES		REFERENCE STANDARDS		MATRIX SPIKES		
ANALYSIS TYPE	ANALYSIS SUB-TYPE	ANALYSIS I.D.	ANALYZED VALUE (A)	DUPLICATE VALUE (B)	RPD or (|A-B|)	TRUE VALUE	PERCENT RECOVERY	ORIGINAL VALUE	SPIKE ADDED	PERCENT RECOVERY
PARAMETER:Chromium (Cr+6), Total			DATE/TIME ANALYZED:06/07/96 15:53							QC BATCH NUMBER:952731
REPORTING LIMIT/DF: 0.01 UNITS:mg/kg			METHOD REFERENCE :EPA 7196							TECHNICIAN:JEM
BLANK	METHOD	060796A	<0.01							
STANDARD	LCS	SI60044	0.11			0.10	110			
SPIKE	MATRIX (c)	961444-1	0.14					0.00	0.20	70
DUPLICATE	MATRIX	961444-1	<0.01	<0.01	NC					

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094

CORE LAB

CORE LABORATORIES

ICP BLANK DATA

Date Analyzed: 6-06-96

Analyte		Cal. Blank (ug/l)	Cont. Blank (ug/l)	Det. Limits (ug/l)
Antimony	(Sb)	ND	ND	50
Arsenic	(As)	ND	ND	50
Barium	(Ba)	ND	ND	50
Beryllium	(Be)	ND	ND	50
Cadmium	(Cd)	ND	ND	50
Chromium	(Cr)	ND	ND	50
Cobalt	(Co)	ND	ND	50
Copper	(Cu)	ND	ND	50
Lead	(Pb)	ND	ND	50
Molybdenum	(Mo)	ND	ND	50
Nickel	(Ni)	ND	ND	50
Silver	(Ag)	ND	ND	50
Thallium	(Tl)	ND	ND	50
Vanadium	(V)	ND	ND	50
Zinc	(Zn)	ND	ND	50

CORE LABORATORIES

ICP REFERENCE STANDARD

Date Analyzed: 6-06-96

Sample Number: M50142/43

Analyte		True Conc. (ug/l)	Actual Conc. (ug/l)	% Rec
Antimony	(Sb)	5000	5061	101
Arsenic	(As)	5000	5139	103
Barium	(Ba)	5000	5110	102
Beryllium	(Be)	5000	5130	103
Cadmium	(Cd)	5000	5149	103
Chromium	(Cr)	5000	5154	103
Cobalt	(Co)	5000	5158	103
Copper	(Cu)	5000	5120	102
Lead	(Pb)	5000	5130	103
Molybdenum	(Mo)	5000	5046	100
Nickel	(Ni)	5000	5158	103
Silver	(Ag)	5000	5167	96
Thallium	(Tl)	5000	5151	103
Vanadium	(V)	5000	5109	102
Zinc	(Zn)	5000	5168	103

CORE LAB

CORE LABORATORIES

ICP MATRIX SPIKE ANALYSIS

Date Analyzed: 6-06-96

Sample : 961450-1

Analyte		Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS %Rec	MSD Conc. (ug/L)	MSD %Rec	RPD	
Antimony	(Sb)	500	ND	448	90	432	86	4	
Arsenic	(As)	500	ND	457	91	432	86	5	
Barium	(Ba)	500	144	584	88	566	84	3	
Beryllium	(Be)	500	ND	458	92	445	89	3	
Cadmium	(Cd)	500	ND	465	93	456	91	2	
Chromium	(Cr)	500	ND	477	95	458	92	4	
Cobalt	(Co)	500	ND	464	93	454	91	2	
Copper	(Cu)	500	508	843	67	790	56	6	
Lead	(Pb)	500	338	825	97	772	87	6	
Molybdenum	(Mo)	500	229	563	67	538	62	4	*
Nickel	(Ni)	500	ND	482	96	484	97	0	
Silver	(Ag)	500	ND	107	21	121	24	13	**
Thallium	(Tl)	500	ND	432	86	462	92	7	
Vanadium	(V)	500	ND	442	88	428	86	3	
Zinc	(Zn)	500	2226	2773	109	2638	82	5	

* MATRIX INTERFERENCE

** LOW DUE TO POSSIBLE PRECIPITATION OF AG

CORE LABORATORIES

QUALITY ASSURANCE FOOTER

METHOD REFERENCES

(1) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, November 1990, and July 1992 update
(2) Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989
(3) EPA 600/4-79-020, Methods of Chemical Analysis for Waters and Wastes, March 1983
(4) Federal Register, Friday, October 26, 1984 (40 CFR Part 136)
(5) American Society for Testing and Materials, Volumes 5.01, 5.02, 5.03, 1992
(6) EPA 600/4-89-001, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Fresh Water Organisms
(7) EPA 600/4-90-027, Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Fresh Water and Marine Organisms, Fourth Edition

COMMENTS

All methods of chemical analysis have a statistical uncertainty associated with the results. Unless otherwise indicated, the data in this report are within the limits of uncertainty as specified in the referenced method. Quality control acceptance criteria are based either on actual laboratory performance or on limits specified in the referenced method. The date and time of analysis indicated on the QA report may not reflect the actual time of analysis for QC samples. All data reported on an "as received" basis unless otherwise indicated. Data reported in the QA report may be lower than sample data due to dilution of samples into the calibration range of the analysis. Sample concentrations for solid samples are calculated on an as received (wet) basis. Unless otherwise indicated, volatiles by gas chromatograpy are reported from a single column. Volatiles analyses on low level soils are conducted at room temperature.

FLAGS, FOOTNOTES, AND ABBREVIATIONS (as needed)

NA = Not analyzed
N/A = Not applicable
ug/L = Micrograms per liter
mg/L = Milligrams per liter
N.I. = Not Ignitable
S.I. = Sustains Ignition
I(NS) = Ignites, but does not Sustain Ignition
RPD = Relative Percent Difference
ND = Not detected at a value greater than the reporting limit
NC = Not calculable due to values lower than the detection limit
(a) = Surrogate recoveries were outside acceptable ranges due to matrix effects.
(b) = Surrogate recoveries were not calculated due to dilution of the sample below the detectable range for the surrogate.
(c) = Matrix spike recoveries were outside acceptable ranges due to matrix effects.
(d) = Relative Percent Difference (RPD) for duplicate analysis outside acceptance limits due to actual differences in the sample matrix.
(e) = The limit listed for flammability indicates the upper limit for the test. Samples are not tested at temperatures above 140 Fahrenheit since only samples which will sustain ignition at temperatures below 140 are considered flammable.
(f) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a diesel standard, however, the hydrocarbon pattern did not match a diesel pattern.
(g) = Results for this hydrocarbon range did not match a typical hydrocarbon pattern. Results were quantified using a gasoline standard, however, the hydrocarbon pattern did not match a gasoline pattern.
(h) = High dilution due to matrix effects
(i) = Samples with results below 500 mg/L are considered hazardous

QC SAMPLE IDENTIFICATIONS

MB = Method Blank
RB = Reagent Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CS = Calibration Standard
ICB = Initial Calibration Verification
CCV = Continuing Calibration Verification
SB = Storage Blank
MS = Matrix Spike
MSD = Matrix Spike Duplicate
MD = Matrix Duplicate
BS = Blank Spike
SS = Surrogate Spike
LCS = Laboratory Control Standard
RS = Reference Standard

SUBCONTRACTED LABORATORY LOCATIONS

Core Laboratories:	Aurora, Colorado(ELAP #1933)	*AU
	Casper, Wyoming	*CA
	Corpus Christi, Texas	*CC
	Houston, Texas	*HP
	Lake Charles, Louisiana	*LC
	Long Beach, California	*LB
Aquatic Testing Laboratories:	Ventura, California	*AT

Rev. 23 /usr/nick/wpwork/qafooter23 8/12/94

1250 Gene Autry Way
Anaheim, CA 92805
(714) 937-1094