PRELIMINARY INVESTIGATION AND EVALUATION REPORT CONTINENTAL BAKING COMPANY FACILITY 1010 46th Street Oakland, California

Prepared for

Continental Baking Company
1525 Bryant Street
San Francisco, CA 94103

July 14, 1994

Woodward-Clyde Consultants

500 12th Street, Suite 100
Oakland, California 94607-4014

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Woodward-Clyde

Engineering & Sciences applied to the earth & its environment

August 5, 1994

Ms. Susan L. Hugo
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Subject: Continental Baking Company, 1010 46th Street, Oakland, CA
Preliminary Investigation and Evaluation Report, July 14, 1994

Dear Ms. Hugo:

Attached for your review is a copy of the report of our recent investigation at Continental Baking Company (CBC)'s facility in Oakland, CA.

As requested in your letter to Mr. Fred Dannecker, CBC, dated March 15, 1994, CBC has initiated monthly groundwater level measurements, and quarterly groundwater analyses. I will be sending you copies of all reports.

If you have any questions, please feel free to phone me (510) 874-3138. I look forward to continuing to work with you on this and other sites.

Sincerely,

Jo Beth Folger

Jo Beth Folger

Attachment

c: Fred Dannecker, CBC-SF
File, CBC-SL
Jim Hummert, WCC-SL
Rich Hiett, RWQCB

Woodward-Clyde Consultants
500 12th Street, Suite 100 • Oakland, CA 94607-4014
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CERTIFICATION

PRELIMINARY INVESTIGATION AND EVALUATION REPORT
CONTINENTAL BAKING COMPANY
1010 46th Street, Oakland, CA

JULY 14, 1994
92CB040-10

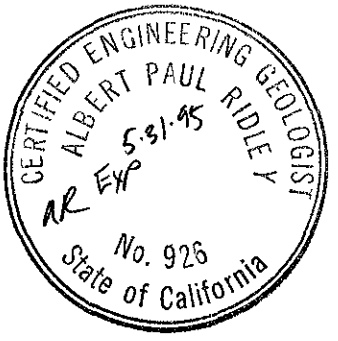
This report has been prepared by the staff of Woodward-Clyde Consultants and has been reviewed and approved by the professional whose signature appears below.

The findings, recommendations, specifications, or professional opinions are presented within the limits prescribed by the client and in accordance with generally accepted engineering practice in Northern California at the time this work plan was prepared. No other warranty is either expressed or implied.

WOODWARD-CLYDE CONSULTANTS

Jo Beth Folger
Project Manager

Albert P. Ridley, C.E.G.
Senior Associate Geologist



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1.0 INTRODUCTION

1.1 SCOPE OF WORK

This report has been prepared in accordance with the Tri-Regional Recommendations and Regional Water Quality Control Board guidelines. This report addresses the procedures involved with the Preliminary Investigation and Evaluation of the Continental Baking Company facility at 1010 46th Street in Oakland, California. This work was performed to investigate the extent and magnitude of the presence of petroleum hydrocarbons in the subsurface soil and groundwater at the site. Specific activities performed included the collection of soil samples during the drilling and construction of three groundwater monitoring wells at the site, initial monitoring well groundwater sample collection, sample analysis, and waste disposal. The investigation was centered on the vicinity of a former underground storage tankfarm.

1.2 SITE CONTACTS

The site is owned by Continental Baking Company (CBC) which has its headquarters in Saint Louis, Missouri. There is a local CBC office and site contact in San Francisco, California. Table 1 presents the name and address of the local CBC site contact and lists other important entities involved with the site investigation. Table 1 includes the regulatory agencies who will receive courtesy copies of reports and correspondence regarding this site investigation.

1.3 SITE LOCATION

The site is located in the San Francisco Bay area in the City of Oakland in Alameda County, California (Figure 1). The subject CBC facility is located at 1010 46th Street near the Oakland/Emeryville city limits. The site is situated along Adeline Street, at the northwest border of Oakland and occupies the area between 46th and 53rd streets. The local land use is mixed, with light industrial and commercial use along Adeline Street, a main thoroughfare. Residential buildings are located along the intersecting streets. There is an elementary school with a fenced playground located across 53rd Street.

1.4 SITE HISTORY

The site is divided into two separately fenced areas. The portion of the site being investigated, located at the intersection of 53rd Street and Adeline Street is a bakery thrift store and distribution center, with a maintenance garage. The maintenance garage is adjacent to the former thrift store. In late 1992, the thrift store was moved to a detached building shown in Figure 2. There were formerly three underground storage tanks (USTs) and two fuel dispensers located in a cluster behind the garage/former thrift shop building. These USTs consisted of one 200-gallon single-walled steel used oil, one 8,000-gallon single-walled steel diesel, and one 10,000-gallon single-walled fiber-reinforced plastic (fiberglass) gasoline tank.

The 10,000-gallon fiberglass gasoline UST was installed in 1985. The other tanks at the site were already present when the site was acquired by CBC in 1969. The ages of these tanks at the time of removal are unknown.

The other area which includes the main building with the site address, at the corner of 46th Street and Adeline Street, is leased by the San Francisco Herb and Natural Food Company (tea company). Prior to leasing the former bakery portion of the site to the tea company, CBC used the building as a bakery. The removed 10,000-gallon single-walled steel UST, which was used to store standby diesel fuel for the former bakery/current tea company building, was located beneath the parking lot located to the east. The age of the tank at the time of removal is unknown. This UST was already present when the site was acquired by CBC in 1969.

1.5 PREVIOUS WORK AND INVESTIGATIONS

On December 22, 1992, the four USTs were excavated and removed from the site.

One UST was a 10,000-gallon single-walled steel standby fuel storage tank formerly located beneath the parking lot behind the former bakery building. No holes were found in the UST during the above-ground inspection. No odors or evidence of soil staining were observed at this excavation. Two closure samples were collected from the sidewalls of this excavation and they were analyzed for petroleum hydrocarbon constituents. The samples did not contain

detectable concentrations of petroleum hydrocarbons. This closure is now complete and no further investigation is planned.

The remaining three USTs were formerly located in a cluster near the facility garage. As a result, the three USTs were removed from the same excavation. The inspection of the 10,000-gallon fiberglass gasoline UST, conducted immediately following removal from the excavation, revealed no apparent holes. The two closure samples collected from the excavation sidewalls at the ends of the gasoline UST did not contain detectable concentrations of petroleum hydrocarbons. No holes were observed during the inspection conducted immediately following removal of the 8,000-gallon steel diesel UST from the excavation. However, an odor of gasoline and/or diesel was noticed and the analytical results for one of the two soil samples collected from the excavation sidewalls contained low volatility (kerosene and oil range) total petroleum hydrocarbons at 58 and 120 mg/kg. Although benzene was not detected, the other aromatic hydrocarbon constituents of toluene, ethyl benzene, and xylenes were detected above their respective analytical reporting limits.

The single soil sample collected from beneath the used oil UST contained a low but detectable concentration (34 mg/kg) of oil and grease.

A sample of the soil beneath the former location of the two fuel dispensers was also collected and analyzed. The analytical laboratory detected 790 mg/kg of petroleum hydrocarbons in the range of diesel constituents in that soil sample.

Because some water had accumulated in the excavation during the removal, a grab water sample was collected. Analysis of this water sample found 2.9 mg/L of total petroleum hydrocarbons in the range of gasoline constituents but did not detect the heavier constituents normally associated with diesel. The water sample contained 0.54 mg/L benzene, 0.43 mg/L toluene, 0.02 mg/L ethyl benzene, and 0.22 mg/L xylenes. These concentrations may not necessarily be representative of groundwater conditions beneath the site because the water accumulated in the excavation was in contact with the sloughed soil from the sidewalls.

This area is the subject of the current investigation.

2.0
FIELD ACTIVITIES

This section describes field activities that were completed to evaluate and delineate petroleum hydrocarbons in the soil and groundwater that may be attributable to the former USTs at the CBC Oakland Facility.

2.1 DRILLING LOCATIONS

Three boreholes were drilled and sampled on May 11, 1994 at the CBC Oakland facility, and were completed as groundwater monitoring wells, identified as MW-1, MW-2, and MW-3 (Figure 2). The monitoring wells were located to assess the lateral and vertical extent of fuel constituents within the property and to evaluate the site-specific groundwater flow direction and gradient. Monitoring well MW-1 was installed within ten feet of the former USTs per RWQCB guidelines. Well MW-2 was installed at a location deemed to be upgradient from the former USTs. Monitoring well MW-3 was installed downgradient of the former UST location to intercept groundwater which may have been affected by former UST's contents.

2.2 DRILLING AND SUBSURFACE SOIL SAMPLING METHODOLOGY

The boreholes were drilled using a truck mounted Mobile B-57 drill rig equipped with 12-inch outside diameter, hollow-stem, continuous flight augers. The drilling subcontractor was Kvilhaug Well Drilling and Pump Company, Inc., of Concord, California. The wells were constructed in accordance with a permit issued by the Alameda County Flood Control and Water Conservation District Zone 7 (Appendix A).

Soil samples were collected using a split-spoon drive sampler capable of holding three 2.5-inch diameter, 6-inch long brass liners. Samples were collected by advancing the hollow-stem auger flights to the specified depth and then driving the sampler within the augers to obtain the sample. A 140-pound hammer with 30-inch drop was used to drive the sampler. Subsurface soil samples were collected for chemical analysis and lithologic logging during drilling at each borehole location. The head space vapors for each sampling interval were tested for the presence of volatile organic compounds (VOCs) with an HNU-Photoionization

Detector. The contents of one liner were emptied into a new ziplock bag and allowed to sit in the sun for about 15 minutes. The tip of the HNU was inserted into the bag and the results were recorded on the boring logs. Soil samples were described in accordance with the Unified Soil Classification System (USCS). A boring log was completed by the WCC hydrogeologist for each borehole. Boring logs are provided in Appendix B. All cuttings generated during drilling were placed on visquene and covered for eventual proper disposal.

Following collection, the soil sample liner designated for chemical analysis was sealed with teflon sheeting, plastic end caps, and duct tape and labeled. Each sample was sealed in a plastic ziplock bag and placed in a chilled cooler containing ice for transport to the analytical laboratory. The soil samples were shipped for analysis under chain-of-custody protocol to Anametrix Laboratories of San Jose, California. The soil samples submitted to the laboratory were analyzed for total extractable hydrocarbons as kerosene, motor oil and diesel (TPHd) by modified EPA Method 8015, total hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8010/8020 and for total recoverable petroleum hydrocarbons TRPH by EPA Method 5520EF.

2.3 MONITORING WELL INSTALLATION PROCEDURES

After reaching total depth, the boreholes were completed as groundwater monitoring wells. All well construction materials were emplaced through the center of the hollow-stem auger flights. Prior to construction, well casing materials were decontaminated by steam cleaning. The monitoring wells were constructed using 4-inch diameter, flush threaded, Schedule 40 polyvinylchloride (PVC) well casing. The screened portion of each well consisted of 0.02-inch factory slotted PVC of the same diameter and grade as the solid pipe. Monitoring wells MW-2 and MW-3 were screened approximately from 10 to 20 feet below ground surface; MW-1 was screened from 5 to 20 feet below ground surface. The screen intervals were selected to straddle the uppermost groundwater zone encountered and to allow for monitoring seasonal fluctuations of the water table. Water was first encountered at depths of 11 to 13.5 feet below ground surface. For well MW-2, the water level in the well rose to about 9 feet, or one foot above the top of the screen. Water levels for MW-1 and MW-3 were about 11 and 13 feet at below grade, respectively.

After installing the well casing and screen in the borehole, a sand filter pack consisting of Lonestar No. 2/12 sand was poured down the annulus of the augers. As the sand was added, the augers were pulled to allow the sand filter pack to fill the borehole annulus. The bottom of the augers was not pulled above the level of the sand during sand placement to help ensure a complete and continuous sand filter pack around the well screen. The sand filter pack extended from the bottom of the boring to one foot above the top of the well screen.

Following installation of the sand filter pack, approximately one to two feet of bentonite was placed on top of the sand filter pack as a seal. The seal consisted of 3/8-inch bentonite pellets hydrated in place with approximately five-gallons of water. The seal was allowed to hydrate for a minimum of 30-minutes before grouting was performed. Wells were capped with water-tight locking caps secured with keyed-alike locks.

A neat cement grout mixture was used to seal the borehole annulus from the top of the bentonite seal to just below ground surface. The neat cement grout consisted of a mixture of Type I and II Portland cement (94-lbs per bag), bentonite powder (up to 5 percent), and potable water (approximately 7 gallons per bag of cement).

After grouting, surface completions were performed at each monitoring well location. The surface completion consisted of a grouted in-place traffic rated utility box mounted nearly flush with the surrounding grade. Table 2 summarizes monitoring well construction details.

2.4 MONITORING WELL DEVELOPMENT PROCEDURES

Following construction, each monitoring well was developed to remove materials introduced during well construction, so that the well would yield representative groundwater samples. The wells were developed on May 18-19, 1994. The monitoring wells were developed according to the following procedures:

- All downhole equipment (e.g., surge block, hoses, etc,) was cleaned with a solution of laboratory grade soap (Alconox) and potable water before use.

- Prior to development, an Oil/Water Interface probe was used to measure the presence of a floating immiscible layer in each well. The water level and total depth of each well was measured and recorded.

- The screened interval of each well was swabbed for a maximum of 10-minutes to agitate the sand pack and loosen formational sand and silt.

- Each well was then purged dry until 10 casing volumes had been removed.

- Purging of each monitoring well was accomplished using a centrifugal pump.

- During well purging, general water quality parameters (pH, specific conductance, temperature, turbidity) were periodically measured and recorded, water color and odor were periodically observed and recorded.

Water removed from the wells during well development was contained in 55-gallon drums and stored on-site. Water Sample Logs used to document monitoring well development are provided in Appendix C.

2.5 GROUNDWATER SAMPLING PROCEDURES

Groundwater monitoring wells MW-1, MW-2, and MW-3 were sampled on May 26, 1994. Groundwater samples were collected from each monitoring well according to the following procedures:

- Purging and sampling equipment was cleaned in a solution of laboratory soap (Alconox) and potable water; rinsed with potable water; and finally rinsed with distilled water.

- Prior to sampling, an Oil/Water Interface probe was used to measure the presence of a floating immiscible layer in each well.

- At each well, the water level and total depth were measured.

- Wells MW-1, MW-2, and MW-3 were purged using a centrifugal pump.

- During purging, general water quality parameters (pH, specific conductance, temperature, turbidity) were periodically measured and recorded. Water color and odor were periodically observed and recorded.

- Purging continued until a minimum of 4-casing volumes of water were removed and water quality parameters stabilized.

- Groundwater samples were collected at each well with a new disposable bailer and were poured into appropriate sample containers provided by the analytical laboratory. Sample containers were sealed, labeled, wrapped in cushioned wrapping, and then placed in a chilled cooler containing ice for shipment to the analytical laboratory.

- After sampling was complete, general water quality parameters, water level, and total depth were again measured and recorded.

Immediately following sample collection, the sample bottles were placed in a chilled cooler for storage and transport to the analytical laboratory. All groundwater samples collected were recorded on chain-of-custody forms prior to shipment to the laboratory. Groundwater samples collected were submitted to a state certified laboratory for analysis. The samples collected for this project were submitted to Anametrix Laboratories of San Jose, California. The groundwater samples were analyzed for TPHd by modified EPA Method 8015, TPHg and BTEX by EPA Method 8010/8020 and Total Recoverable Petroleum Hydrocarbons by Standard Method 5520BF.

Water removed from the wells during purging was contained in 55-gallon drums for disposal. Water Sample Logs used to document monitoring well purging and sampling are provided in Appendix C.

2.6 DECONTAMINATION PROCEDURES

All down-hole drilling equipment such as augers were steam-cleaned prior to use between wells. The California split-spoon sampler, brass tube liners, oil-water interface probe and water level indicators were cleaned before each use by washing in a laboratory grade solution followed by two tap water rinses and one rinse with distilled water.

2.7 HEALTH AND SAFETY

Field activities at the CBC Oakland Facility were conducted in accordance with the provisions of the WCC site specific Health and Safety Plan. The plan was prepared to comply with state and federal occupational health and safety regulations to ensure health and safety of all workers, regulators, and public at the site. The Health and Safety Plan covering field work for this investigation is effective for the period 11 May 1994 through 30 May 1994.

2.8 ENGINEERING SURVEY

After installation, the three monitoring wells were surveyed by Hunter Surveying, Inc., of Orangevalle, California, a state licensed engineering surveyor. The soil boring was surveyed for location and elevation. Each well location was surveyed to an accuracy of 0.01 foot for the following points:

- The north rim of the top of well casing (with cap off) was surveyed for elevation and location.

- The rim of the protective traffic rated box was surveyed for elevation.

The survey data for the newly installed monitoring wells are provided in Table 3.

3.0
DATA EVALUATION

This section describes hydrogeologic conditions for the CBC Oakland facility and provides an assessment of the vertical and horizontal extent of contamination at the site.

3.1 SITE HYDROGEOLOGY

The depth to groundwater at the CBC Oakland facility during drilling was encountered at depths of about 11 to 13.5 feet below grade and stabilized at depths of around 9 to 13 feet below grade. Groundwater elevations stabilized in the wells at a range from 49.6 to 53.8 feet above mean sea level (MSL). Figure 3 shows the approximate groundwater elevation contours of water elevations measured on May 26, 1994. The groundwater flow direction is towards the southwest. The horizontal hydraulic gradient across the site was estimated to be about 0.04 feet per foot.

3.2 ANALYTICAL RESULTS

3.2.1 Subsurface Soils

Subsurface soil sampling was conducted on May 11 and 16, 1994. The soil samples were submitted to Anametrix Laboratories for the following analyses: TPH-extractable (kerosene, diesel, motor oil) by modified EPA Method 8015, TPHg and BTEX by EPA Method 8010/8020 and oil and grease (Method 5520/EF). Analytical results of soil samples collected are summarized in Table 3. A quality assurance/quality control (QA/QC) review was performed on the analytical data (Appendix D). The results of the review indicate that data are of acceptable quality.

Laboratory results indicate concentrations of TPHg in the soil samples collected from boring MW-1 ranging from 49 milligrams per kilogram (mg/kg) to 360 mg/kg. Concentrations of toluene, ethylbenzene, and total xylenes were also detected in the soil (Table 3). Benzene and toluene constituents were detected in the samples collected at the seven- and ten-foot sample depths; benzene was detected at less than 1 mg/kg, and toluene at less than 1.5 mg/kg.

Ethylbenzene and total xylenes were detected in all three samples from MW-1. The highest concentrations were found in the seven-foot sample at 4.5 mg/kg ethylbenzene and 21 mg/kg total xylenes.

None of the samples from MW-2 or MW-3 had detections of TPHg or BTEX constituents. Diesel was not detected in any of the soil samples from MW-1, MW-2 or MW-3.

However, TPH as kerosene, a component of the TPH analysis, was detected in the five- and seven-foot sample from MW-1 at 64 and 260 mg/kg, respectively. Furthermore, TPH as motor oil was detected in the five-foot samples from MW-1, MW-2 and MW-3 and ranges between 14 and 35 mg/kg. TPH as motor oil was also detected in the ten-foot sample in MW-3 at 160 mg/kg.

TRPH (oil and grease) was detected in soil samples MW-1(5), MW-1(7), MW-2(5), MW-2(10), MW-3(6.5) and MW-3(10) ranging from 53 to 270 mg/kg.

3.2.2 Groundwater

An oil-water interface probe was used to measure the thickness of any floating immiscible layer, if present, prior to purging. No measurable immiscible layer was present in any of the monitoring wells at the CBC-Oakland Facility.

Groundwater samples were analyzed for TPHd (modified EPA Method 8015), TPHg and BTEX (EPA Method 80101/8020), and oil and grease (Method 5520/BF). In addition to the groundwater samples collected from the three monitoring wells, one duplicate sample was collected from well MW-2 (labelled MW-4 on the chain-of-custody and the analytical data sheets). A QA/QC review was performed on the groundwater data. The groundwater analytical results are presented in Table 4.

TPHg and BTEX constituents were detected in the groundwater sample from MW-1. TPHg was detected at 12,000 µg/L and benzene, toluene, ethylbenzene and total xylenes were detected at 57, 340, 370 and 3100 µg/L, respectively. TPH diesel was also detected at 1300 µg/L. TRPH was not detected in the sample from MW-1.

The sample from MW-3 had detections of 1.7 µg/L toluene and 99 µg/L TPHd. TPHg, benzene, ethylbenzene and xylenes, and TRPH were not detected.

None of the constituents analyzed were detected in the groundwater sample from MW-2.

4.0
SUMMARY AND CONCLUSIONS

4.1 SUMMARY

Groundwater elevation at the CBC Oakland facility was calculated to be at about 50 to 54 feet above mean sea level. The calculated groundwater flow direction was estimated to be towards the southwest.

Total petroleum hydrocarbons quantified as gasoline and the gasoline constituents of benzene, toluene, ethylbenzene, and total xylenes were detected in soil samples collected in the immediate vicinity of the former excavation wells MW-1. Total oil and grease was reported in all three soil borings.

An oil/water interface probe was used to detect and measure the presence of an immiscible layer prior to well development and again prior to initiating groundwater sampling. No measurable immiscible layer was detected in any of the wells.

TPH quantified as gasoline diesel was detected in the groundwater sample collected from monitoring well MW-1. TPH as diesel was also detected in well MW-3 at a low concentration. None of the analytes were detected in MW-2 (or its duplicate sample MW-4).

4.2 CONCLUSIONS

This report satisfies the requirements for a Preliminary Investigation and Evaluation Report (PIER) and, as noted previously, concludes that the groundwater beneath the site has been impacted by petroleum hydrocarbons.

5.0
LIMITATIONS

The conclusions presented in this report are based on the available data and the professional opinion and experience of WCC. If additional data are collected, the conclusions presented herein may be revised. WCC's services were performed with the standard of care and skill commonly used as state of the practice in the profession. No other representation, expressed or implied, and no warranty or guarantee, is included or intended.

6.0
REFERENCES

State of California Regional Water Quality Control Board, Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites, August 10, 1990 and Appendix A - Reports, August 30, 1991.

Woodward-Clyde Consultants, Preliminary Site Assessment Work Plan, Continental Baking Company Facility, 1010 46th Street, Oakland, California - February 10, 1993.

Woodward-Clyde Consultants, Underground Storage Tank Removal and Closure at the Oakland Facility Report, Oakland, California, October 11, 1993.

TABLE 1

LIST OF CONTACTS
CONTINENTAL BAKING COMPANY FACILITY
6841 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

Facility Owner/Operator:

Continental Baking Company
1525 Bryant Street
San Francisco, California 94103

Fred Dannecker
(415) 552 0950

Environmental Consultants to Continental Baking Company:

Woodward-Clyde Consultants
500-12th Street, Suite 100
Oakland, California 94607

Jo Beth Folger
(510) 874 3138

Lead Implementing Agency:

Alameda County Health Agency
80 Swan Way, Room 200
Oakland, California 94621

Eva Chu
(510) 271 4530

Regional Water Quality Control Board:

Regional Water Quality Control Board
2101 Webster St., Suite 500
Oakland, California 94612

TABLE 2. MONITORING WELL CONSTRUCTION PARAMETERS
92CB010 - CBC OAKLAND
Oakland, California

26 May 1994

WELL ID	TOTAL DEPTH	SCREENED INTERVAL	COORDINATES Northing	COORDINATES Easting	TOC (1) ELEVATION	GROUNDWATER DEPTH (3)	GROUNDWATER ELEVATION
	(FT)	(FT, MSL) (2)	(FT, MSL) (2)		(FT, MSL) (2)	(FT, MSL) (2)	
MW-1	20	5 to 20	1012.02	4974.78	61.84	9.27	52.57
MW-2	20	10 to 20	994.64	5093.45	63.10	9.30	53.80
MW-3	20	10 to 20	932.55	4958.22	62.51	12.88	49.63

NOTES:
(1) TOC, Top of Casing
(2) MSL, Mean Sea Level
(3) Depth to groundwater is measured from the TOC.

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TABLE 3.
SOIL SAMPLES ANALYTICAL RESULTS SUMMARY
CBC - OAKLAND
92CB040
OAKLAND, CALIFORNIA

Sample ID	TPH as Gasoline/BTEX (EPA Modified 8015/8020)					TPH as Diesel (EPA Modified 8015)			TRPH (EPA 5520 EF)
(Depth, ft)	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH as Gasoline	TPH as Kerosene	TPH as Diesel	TPH as Motor Oil	Oil and Grease
MW-1 (5)	ND	ND	0.29	1.7	49	64	ND	28	120
MW-1 (7)	0 79	1.4	4.5	21	360	260	ND	ND	140
MW-1 (10)	0 53	0.75	0.44	0 75	52	ND	ND	ND	ND
MW-2 (5)	ND	ND	ND	ND	ND	ND	ND	14	87
MW-2 (10)	ND	ND	ND	ND	ND	ND	ND	ND	53
MW-2 (12)	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3 (6.5)	ND	ND	ND	ND	ND	ND	ND	35	110
MW-3 (10)	ND	ND	ND	ND	ND	ND	ND	160	270

Notes:
(1) All results are in mg/kg.
(2) Samples analyzed by Inchcape Testing Services, Anametrix Laboratories, May 18-23, 1994
(3) Refer to laboratory reports for analytical laboratory reporting limits
ND Not Detected

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TABLE 4.
GROUNDWATER SAMPLES ANALYTICAL RESULTS SUMMARY
CBC - OAKLAND
92CB040
OAKLAND, CALIFORNIA

Sample ID	TPH as Gasoline/BTEX (EPA Modified 8015/8020)					TPH as Diesel (EPA Modified 8015)	TRPH (EPA 5520 EF)
	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH as Gasoline	TPH as Diesel	Oil and Grease
MW-1	57	340	370	3100	12000	1300	ND
MW-2	ND	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	1.7	ND	99	ND
MW-4	ND	ND	ND	ND	ND	ND	ND

Notes:
(1) All results are in ug/L
(2) Samples analyzed by Inchcape Testing Services, Anametrix Laboratories, May 31-June 7, 1994
(3) Refer to laboratory reports for analytical laboratory reporting limits
ND Not Detected

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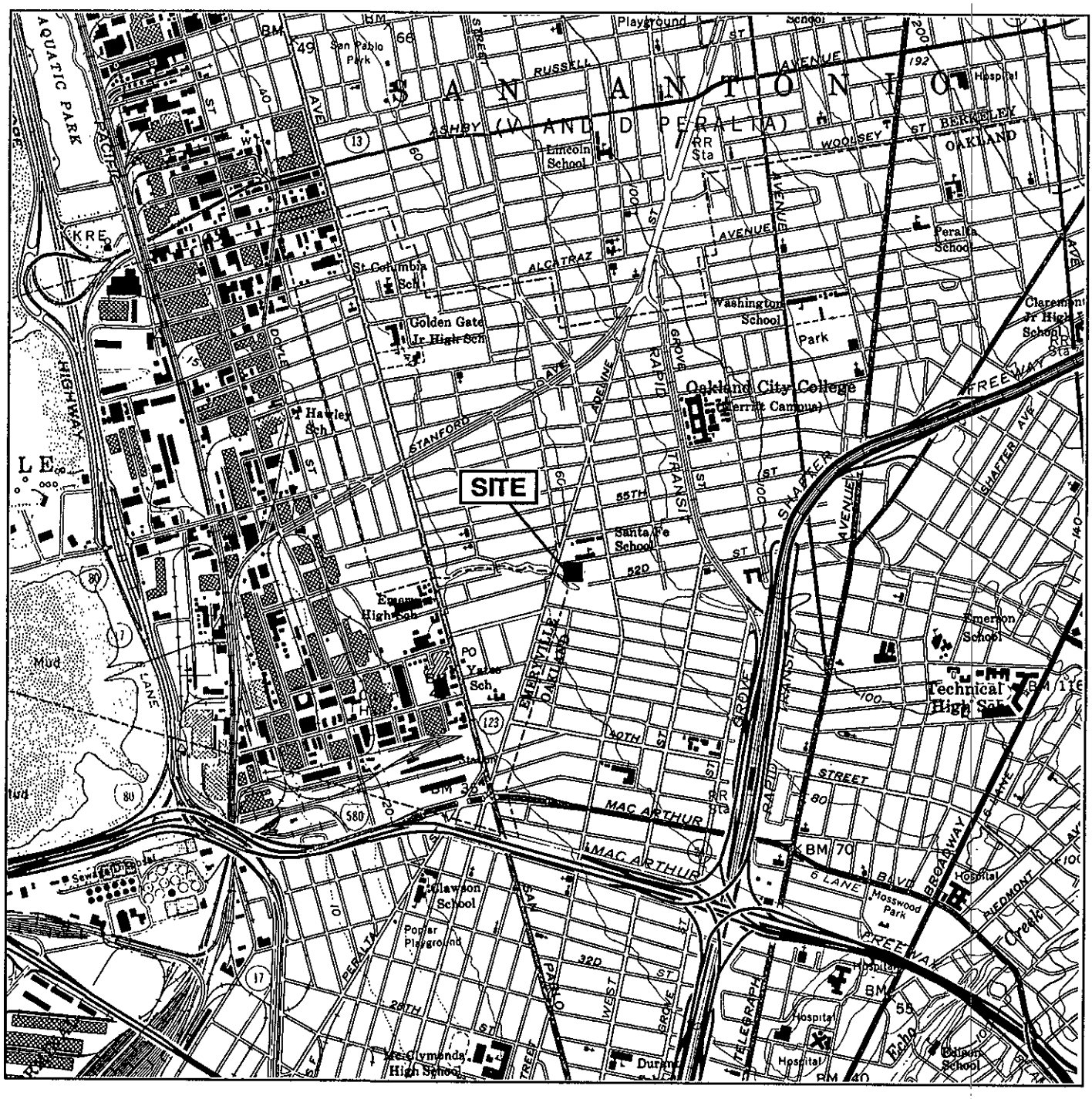
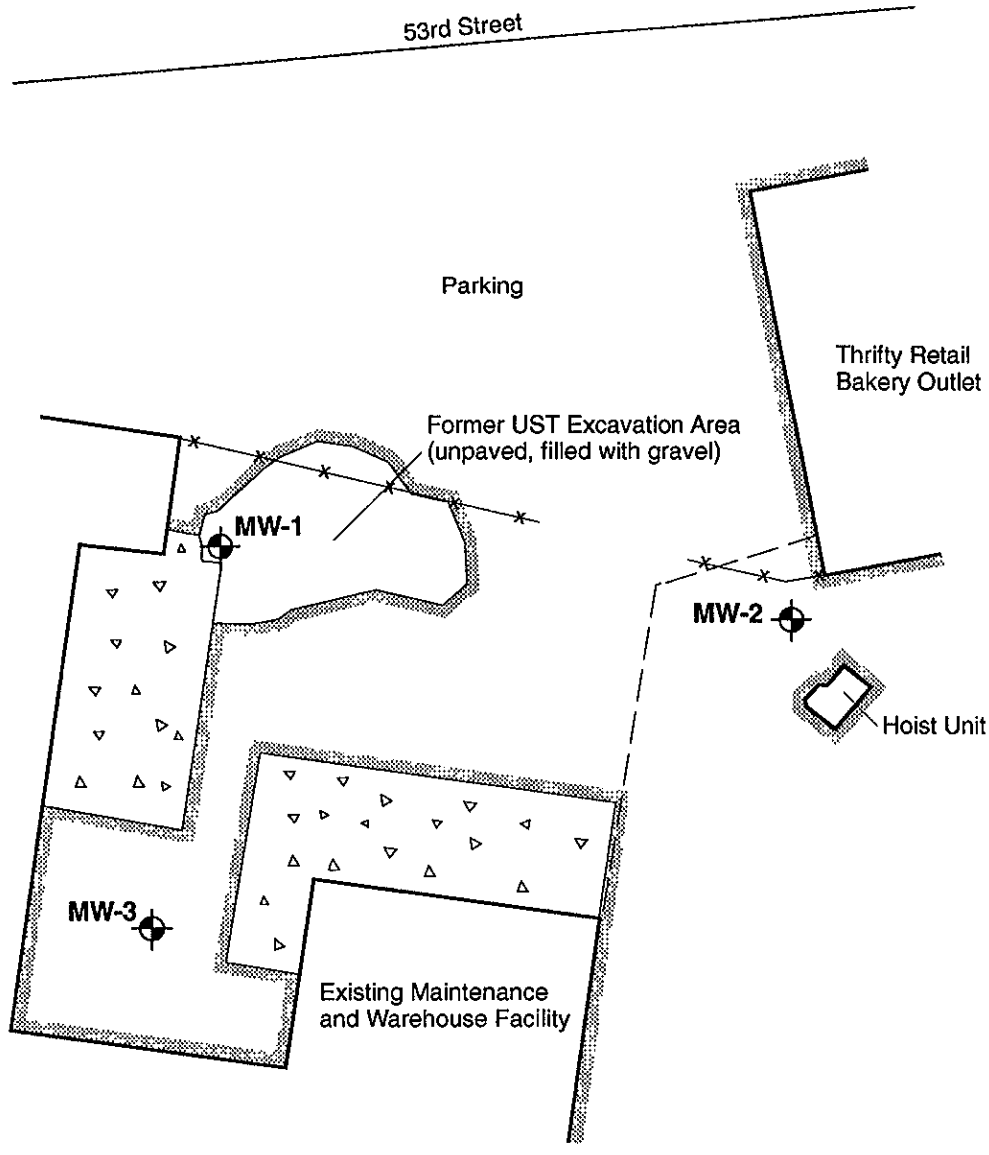


Project No. 92CB040	Continental Baking Company 1010 46th Street Oakland, California	SITE LOCATION	Figure 1
Woodward-Clyde Consultants			

92CB040-0000/061893



LEGEND

MW-1 Monitoring Well Location

Asphalt

Concrete

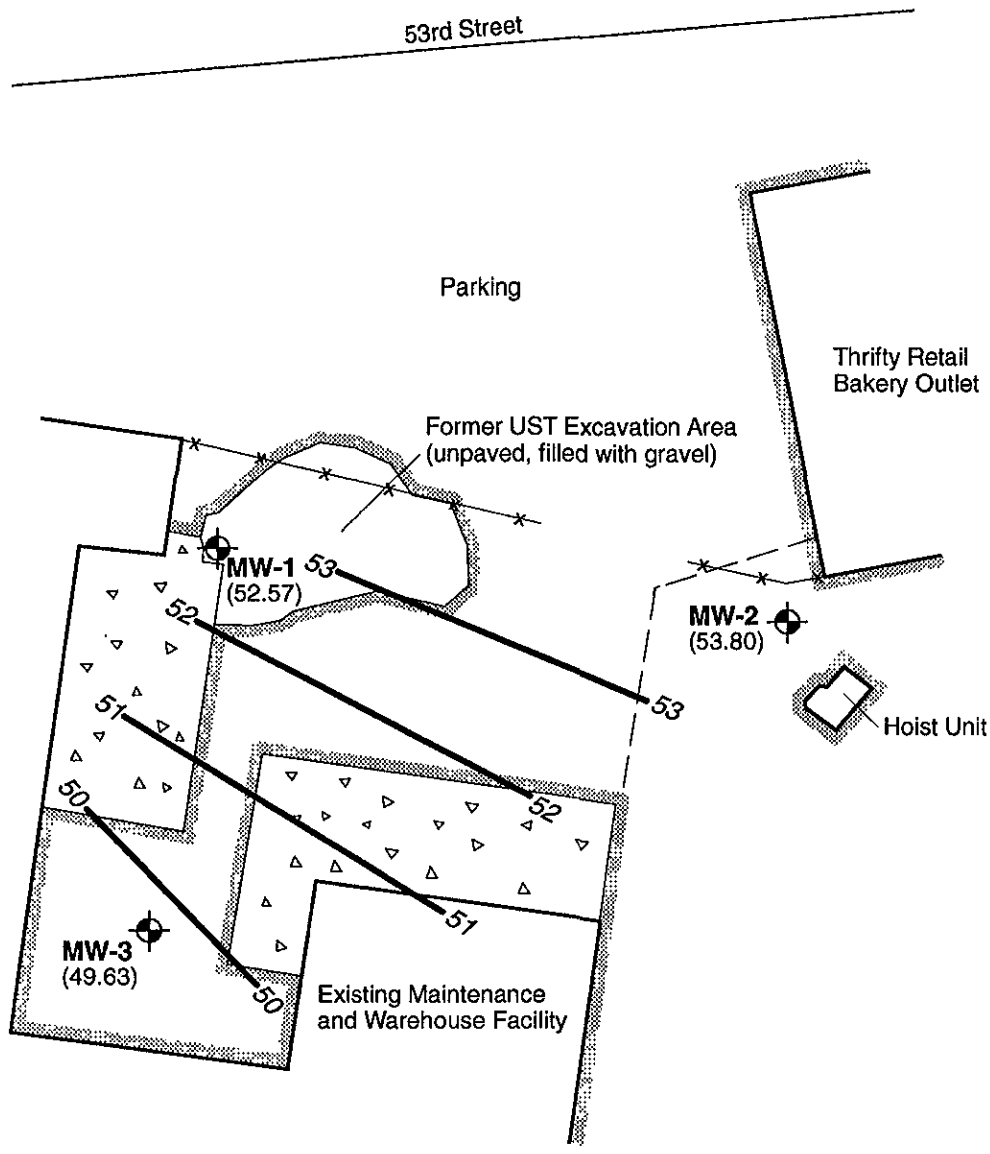
N

0 20 40

feet

Project No. 92CB040	Continental Baking Company 1010 46th Street Oakland, CA	MONITORING WELL LOCATIONS	Figure 2
Woodward-Clyde Consultants			

92CB040-0010/071294



LEGEND

52 —— 52 Approximate Groundwater Contour (feet above mean sea level)

MW-1 Approximate Well Location

Asphalt

Concrete

N

0 20 40

feet

Project No. 92CB040	Continental Baking Company 1010 46th Street Oakland, CA	GROUNDWATER ELEVATION CONTOURS MAY 1994	Figure 3
Woodward-Clyde Consultants			

92CB040-0010/071294

APPENDIX A
WELL INSTALLATION PERMIT

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94588 • (510) 484-2600

TELEFAX TRANSMITTAL

DATE: 10 May 94

DELIVER TO: Lois Gruenberg

NAME OF FIRM: Woodward-Clyde

FAX PHONE #: 874-3268

FROM: Wyman Hong

NUMBER OF PAGES: 2
(Including transmittal)

FOR VOICE CONTACT CALL: (510) 484-2600

FOR RETURN FAX: (510) 462-3914

REMARKS: Transmitting drilling permit 94282 for a monitoring well construction project at 1010-46th Street in Oakland for Continental Baking Co.

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 Continental Baking Co.
1010 46th Street
Oakland, Ca.

CLIENT
Name Continental Baking Co
Address 1525 Bryant St Voice
City San Francisco, Ca Zip 94103

APPLICANT
Name Woodward-Clyde Consultants
Bill Copeland Fax 874-3268
Address 500 12th St, Ste. 100 Voice 874-3192
City Oakland, Ca Zip 94607

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	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. 482390

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 15 ft.
Surface Seal Depth 5 ft. Number 3
grout 0 to 2'
bentonite 2' to 3'
groundwater surface @ 6'

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

ESTIMATED STARTING DATE 5/11/94
ESTIMATED COMPLETION DATE 5/11/94

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

APPLICANT'S SIGNATURE Wm B Copeland Date 5/2/94

FOR OFFICE USE

PERMIT NUMBER 94282
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 9 May 94
Wyman Hong

91992

APPENDIX B
BORING LOGS

Project: CBC - Oakland
Project Location: Oakland, California
Project Number: 92CB040

Log of Boring MW-1

Sheet 1 of 1

Date(s) Drilled: 5/16/94	Total Depth Drilled (feet): 21.5	Top of Casing Elevation (feet): 61.84 MSL	Groundwater Level (feet): ▽ First 11	▽ Completion	▽ 24 Hours 9.27		
Logged by: L. Autle'	Checked by:	Diameter of Hole (inches): 7 1/8	Diameter of Well (inches): 4	Number of Samples	Disturbed: 0	Undisturbed: 5	
Drilling Company: Kvilhaug Drilling		Drilling Method: Hollow Stem Auger		Drill Rig Type: B-53			
Sampler Type: Mod. CA - Split Spoon		Drill Bit Size/Type:		Type of Well Casing: 4-inch PVC Schedule 40			
Screen Perforation: 0.020" Slot (5' - 20')			Type of Sand Pack: #2/12 Sand (4' - 20')				
Type of Seals: Bentonite (3'- 4')			Grout (0'- 3')				
Comments: Located in former tank area next to bldg.							

Depth, feet	Elevation, feet	SAMPLES Type	SAMPLES Number	Blows/foot	USCS Classification	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log	OVA (ppm)	REMARKS
0					FILL		**SILT (FILL MATERIAL)** Dark brown, damp, soft			
	60									
							Gravels to 1" in diameter			
5				6 9 15						Rock in Shoe No Recovery
	55			5 9 10	ML		**CLAYEY SILT** Blue green mottled, slightly moist to moist, some coarse sand		110	50% Recovery
							more sand, slightly moist	▽		
10				3 11 15				▽	870	
	50									
15				4 4 5	SM-ML		**SANDY CLAYEY SILT** Light yellow brown, coarse to very coarse sand, 6" at top, grades to more silty		>1000	
	45									
20				3 4 5						
	40									

Woodward-Clyde Consultants

Project: CBC - Oakland Project Location: Oakland, California Project Number: 92CB040	**Log of Boring MW-2** Sheet 1 of 1

Date(s) Drilled 5/11/94	Total Depth Drilled (feet) 21.5	Top of Casing Elevation (feet) 63.10 MSL	Groundwater Level (feet) ▽ First 12	▼ Completion	▼ 24 Hours 9.30	
Logged by L. Autie'	Checked by	Diameter of Hole (inches) 7 1/8	Diameter of Well (inches) 4	Number of Samples	Disturbed 0	Undisturbed 6
Drilling Company Kvilhaug Drilling		Drilling Method Hollow Stem Auger		Drill Rig Type B-53		
Sampler Type Mod. CA - Split Spoon		Drill Bit Size/Type		Type of Well Casing 4-inch PVC Schedule 40		
Screen Perforation 0.020" Slot (10' - 20')			Type of Sand Pack #2/12 Sand (8' - 20')			
Type of Seals Bentonite (6' - 8')			Grout (0' - 6')			
Comments Located upgradient from the former tank form						

Depth, feet	Elevation, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows/foot	USCS Classification	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log	OVA (ppm)	REMARKS
0					ML		**SILTY CLAY / CLAYEY SILT** Brown			
	60									
5				4 7 10	ML		**CLAYEY SILT** Mottled tan and yellow, slightly moist, moderately dense, some coarse to fine sand		2	50% Recovery
	55							▽		Final Water Before Developement 5/12/94
10				3 6 12					2	
							grades to moist	▽		
				3 4 5					2	
	50									
15				2 3 5					1	
							very wet			
	45									
20				3 4 5						

Woodward-Clyde Consultants

Project: CBC - Oakland
Project Location: Oakland, California
Project Number: 92CB040

Log of Boring MW-3

Sheet 1 of 1

Date(s) Drilled 5/11/94	Total Depth Drilled (feet) 22.0	Top of Casing Elevation (feet) 62.51 MSL	Groundwater Level (feet)	First ▽ 13.5	Completion ▽	24 Hours ▽ 12.88	
Logged by L. Autle'	Checked by	Diameter of Hole (inches) 7 1/8	Diameter of Well (inches) 4	Number of Samples	Disturbed 0	Undisturbed 5	
Drilling Company Kvilhaug Drilling		Drilling Method Hollow Stem Auger		Drill Rig Type B-53			
Sampler Type Mod. CA - Split Spoon		Drill Bit Size/Type		Type of Well Casing 4-inch PVC Schedule 40			
Screen Perforation 0.020" Slot (10' - 20')			Type of Sand Pack #2/12 Sand (8' - 21')				
Type of Seals Bentonite (6' - 8')			Grout (0' - 6')				
Comments Located in the corner of the bldg.							

Depth, feet	Elevation, feet	SAMPLES Type	SAMPLES Number	Blows/foot	USCS Classification	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log	OVA (ppm)	REMARKS
0					CL		**SILTY CLAY** Brown with some yellow, some sand, moist			
	60									
5				3 4 4			**CLAY** (organic) Black blue, some pebbles, moist, soft			No Sample, 2" of Soil in Plug 1-1/2 Tubes Recovered with fill material only
	55			6 6 7	SM-ML		**SILTY SAND / SANDY SILT and CLAY** Yellow brown, fine sand, very moist		3	
					CL		**SILTY CLAY** Blue mottled, very soft, moist			
10				2 2 3			Grades to black, very moist		6	
	50							▽ ▽		
				1 1 1			Some pebbles up to 1/4" in diameter, some coarse sand, high organic particles		86	Hydrocarbon Odor Present
15				2 1 1	SM		**SILTY CLAYEY SAND** Black-green, gravels up to 1/2" in diameter, very wet, soft		48	
	45									
20				3 5 11	ML		**CLAYEY SILT** Yellow brown, medium dense, some sand, moist		38	

APPENDIX C
WATER SAMPLE LOGS (DEVELOPMENT AND GROUNDWATER SAMPLING)

5/18/94 and 5/19/94

MW-2

310 Surged well for 20 mins, purged Dry 10 gallons.

100 Purged dry @ 18 gallons total

118 Purged Dry @ 30 gallons.

545 Purged Dry @ 39 gallons.

527 Purged Dry @ 49 gallons

605 Dry @ 58 gallons

614 Dry @ 63 gallons

652 Dry @ 70 gallons

WATER SAMPLE LOG

WELL NO.: MW-2 Behind Discount Store.

CONDITION OF WELL good to Measurable FPLH

WELL TOTAL DEPTH 19.54 ft. DATE 5-18-94

WELL DIAMETER

☐ 2" WELL = 0.17 gal/ft H_2O 1 WCV = ___ gal. DEPTH TO WATER 8.98 ft. TIME 1312

☐ 3" WELL = 0.38 gal/ft H_2O

☑ 4" WELL = 0.66 gal/ft H_2O 10 WCV = 70 gal. FEET OF WATER 10.56 ft.

PURGE METHOD: ☐ GRUNDFOSS ☐ KECK ☐ TRICO ☐ HAND BAIL ☐ OTHER ___

DATE PURGED 5/18/94

PH STD 7.00 10.01 @ 25°C COND Red Lined

PH METER SERIAL NO. 219552

CONDUCTIVITY SER. NO. 13749

Mostly Cloudy & warm Honda Pump to purge

	TIME	DISCHARGE (GALLONS)	pH	TEMP. (°C)	SPECIFIC CONDUCTANCE	TURBIDITY	COLOR	ODOR DESCRIPTION	COMMENTS
	1347	10	7.88	20.2	500	>100	YELLOW BROWN	NONE	Purge Dry @ 10 gals. Silty/Fine Sand
	1402	18	7.64	19.4	500	>100	"	"	Dry @ 18 gals. "
	1418	30	7.53	19.8	490	>100	"	"	Dry @ 30 gals. "
	1547	39	7.38	17.9	450	>100	"	"	Dry @ 39 gals. "
5/19	1527	49	7.03	18.5	380	>100	TAN	NONE	Dry @ 49 gals / clearing
	1614	63	7.16	19.0	360	>100	TAN	"	Dry @ 58 and 63 gals.
	1652	70	7.19	18.9	360	>100	CLDY	"	Dry @ 70 gals.

TOTAL DISCHARGE 70 gal. CASING VOLUMES REMOVED ___

Development METHOD: ☐ DISPOSABLE BAILER ☐ TEFLON BAILER ☐ OTHER ___

DATE SAMPLED ___ TIME SAMPLED ___

SAMPLE # ___

TYPE OF ANALYSIS:

- ☐ #1 = TPH (GASOLINE) BTEX ..... 2 - 40 ml VOA's
- ☐ #2 = TPH (GASOLINE & DIESEL) BTEX ..... 2 - 40 ml VOA's & 1 - 1 L. AMBER
- ☐ #3 = TPH (GASOLINE & DIESEL) BTEX + 624 ..... 4 - 40 ml VOA's & 1 - 1 L. AMBER
- ☐ #4 = TPH (GASOLINE & DIESEL) BTEX + 624 + OIL & GREASE ..... 4 - 40 ml VOA's & 2 - 1 L. AMBER
- ☐ #5 = TPH (GASOLINE & DIESEL) BTEX + OIL & GREASE ..... 4 - 40 ml VOA's & 2 - 1 L. AMBER
- ☐ #6 = RINSATE ..... ___ 40 ml VOA's ___ 1 L. AMBER
- ☐ #7 = DUPLICATE ..... ___ 40 ml VOA's ___ 1 L. AMBER

SAMPLER'S NAME ___

OBSERVATIONS/COMMENTS ___

Woodward-Clyde Consultants

Sample No. MW-3

5/18/94 No measurable FPLH

Beginning water level = 12.69 TD = 19.75

1400 Started surging bottom 4" of well contains medium to fine sands/silt

1420 Stopped surging started purging

1439 Dry @ 5.5 gallons heavy sand in bucket

1538 Dry @ 19 gallons

1445 Dry @ 24.5 gallons

1530 Dry @ 30 gallons ← bottom cleaning off, only small amount of fine sands on bucket bottom

1607 Dry @ 35.5 gallons

1620 Dry @ 40.5 gallons

1625 Dry @ 44 gallons

WATER SAMPLE LOG

WELL NO.: MW-3

CONDITION OF WELL good No Measurable FPLH

WELL TOTAL DEPTH 19.75 ft. DATE 5/18/94

WELL DIAMETER

☐ 2" WELL = 0.17 gal/ft H_2O 1 WCV 4.7 gal. DEPTH TO WATER 12.69 ft. TIME 1435

☐ 3" WELL = 0.38 gal/ft H_2O

☒ 4" WELL = 0.66 gal/ft H_2O 10 WCV 47 gal. FEET OF WATER 7.06 ft. 4.7 gallons

PURGE METHOD: ☐ GRUNDFOSS ☐ KECK ☐ TRICO ☐ HAND BAIL ☐ OTHER _____

DATE PURGED 5/18/94

pH METER SERIAL NO. _____

CONDUCTIVITY SER. NO. _____

TIME	DISCHARGE (GALLONS)	pH	TEMP. (°C)	SPECIFIC CONDUCTANCE	TURBIDITY	COLOR	ODOR DESCRIPTION	COMMENTS
1439	5.5	7.36	18.5	1300	>100	Olive gray	NONE	Dry @ 5.5 gals. Silty/Fine sands
1452	10	7.22	18.0	1000	>100	"	"	Dry @ 10 gals. "
1539	19	7.06	17.7	830	>100	"	"	Dry @ 19 gals
5/19 1445	24.5	6.32	17.8	880	>100	Olive Gray	NONE	Dry @ 24.5 gals.
1607	35.5	6.73	17.6	800	>100	"	"	Dry @ 30 and 35.5
1630	47	6.95	17.9	790	>100	"	"	Dry @ 40.5, 44, & 47

TOTAL DISCHARGE _____ gal. CASING VOLUMES REMOVED _____

SAMPLING METHOD: ☐ DISPOSABLE BAILER ☐ TEFLON BAILER ☐ OTHER _____

DATE SAMPLED _____ TIME SAMPLED _____

SAMPLE # _____

TYPE OF ANALYSIS:

☐ #1 = TPH (GASOLINE) BTEX ..... 2 - 40 ml VOA's

☐ #2 = TPH (GASOLINE & DIESEL) BTEX ..... 2 - 40 ml VOA's & 1 - 1 L. AMBER

☐ #3 = TPH (GASOLINE & DIESEL) BTEX + 624 ..... 4 - 40 ml VOA's & 1 - 1 L. AMBER

☐ #4 = TPH (GASOLINE & DIESEL) BTEX + 624 + OIL & GREASE ..... 4 - 40 ml VOA's & 2 - 1 L. AMBER

☐ #5 = TPH (GASOLINE & DIESEL) BTEX + OIL & GREASE ..... 4 - 40 ml VOA's & 2 - 1 L. AMBER

☐ #6 = RINSATE ..... ___ 40 ml VOA's ___ 1 L. AMBER

☐ #7 = DUPLICATE ..... ___ 40 ml VOA's ___ 1 L. AMBER

SAMPLER'S NAME _____

OBSERVATIONS/COMMENTS _____

Woodward-Clyde Consultants

Sample No. MW-1

5/18/94

1500 Surged well 20 mins

1520 started purging

15

WATER SAMPLE LOG

WELL NO.: MW-1

CONDITION OF WELL good No measurable FPLH

WELL TOTAL DEPTH 19.09 ft. DATE 5/18/94

WELL DIAMETER

☐ 2" WELL = 0.17 gal/ft H_2O 1 WCV = 6.6 gal. DEPTH TO WATER 9.15 ft. TIME 1500

☐ 3" WELL = 0.38 gal/ft H_2O

☐ 4" WELL = 0.66 gal/ft H_2O 1 WCV 66 gal. FEET OF WATER 9.94 ft.

PURGE METHOD: ☐ GRUNDFOSS ☐ KECK ☐ TRICO ☐ HAND BAIL ☐ OTHER _____

DATE PURGED _____

pH METER SERIAL NO. _____

CONDUCTIVITY SER. NO. _____

TIME	DISCHARGE (GALLONS)	pH	TEMP. (°C)	SPECIFIC CONDUCTANCE	TURBIDITY	COLOR	ODOR DESCRIPTION	COMMENTS
1522	10	7.53	18.5	700	7100	Yellow BRN	NONE	Silty/Fine Sand
1527	20	7.41	18.4	500	7100	"	"	"
1534	30	7.37	18.4	470	7100	"	"	" 35 gals. total.
5/19 1455	39	6.91	18.3	420	>100	TAN	NONE	Slightly silty/clearin
1513	48	6.86	18.1	420	7100	TAN	"	"
1540	57	6.99	18.3	410	>100	"	"	Silt/almost no sand
1550	66	7.07	18.1	410	7100	"	Slight HC??	

TOTAL DISCHARGE 71 gal. CASING VOLUMES REMOVED _____

SAMPLING METHOD: ☐ DISPOSABLE BAILER ☐ TEFLON BAILER ☐ OTHER _____

DATE SAMPLED _____ TIME SAMPLED _____

SAMPLE # _____

TYPE OF ANALYSIS:

- ☐ #1 = TPH (GASOLINE) BTEX ..... 2 - 40 ml VOA's
- ☐ #2 = TPH (GASOLINE & DIESEL) BTEX ..... 2 - 40 ml VOA's & 1 - 1 L. AMBER
- ☐ #3 = TPH (GASOLINE & DIESEL) BTEX + 624 ..... 4 - 40 ml VOA's & 1 - 1 L. AMBER
- ☐ #4 = TPH (GASOLINE & DIESEL) BTEX + 624 + OIL & GREASE ..... 4 - 40 ml VOA's & 2 - 1 L. AMBER
- ☐ #5 = TPH (GASOLINE & DIESEL) BTEX + OIL & GREASE ..... 4 - 40 ml VOA's & 2 - 1 L. AMBER
- ☐ #6 = RINSATE ..... ___ 40 ml VOA's ___ 1 L. AMBER
- ☐ #7 = DUPLICATE ..... ___ 40 ml VOA's ___ 1 L. AMBER

SAMPLER'S NAME _____

OBSERVATIONS/COMMENTS _____

Woodward-Clyde Consultants

WATER SAMPLE LOG

Sample No. MW-1

Project No.: 92CB040 Date: 5-26-94

Project Name: CBC-Oakland

Sample Location: MW-1

Well Description: 4" PVC sch. 40

Weather Conditions: clear

Observations / Comments:

Quality Assurance

Sampling Method: Disposable bailer

Method to Measure Water Level: 200' Solinst

Pump Lines: (New) / Cleaned Bailer Lines: (New) / Cleaned

Method of cleaning Pump / Bailer: N/A

pH Meter No.: 218552 Calibrated 7.03/10.01

Specific Conductance Meter No.: 13749 Calibrated red-lined

Comments: TD 19.84+.36=20.2-9.27=10.93x.653=7.1x4=28.5

Sampling Measurements

Water Level (below MP) at Start: 9.27 End: 9.45

Measuring Point (MP): TOC

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments
9:35	5	7.40	18.3	463	slight	No	Lt.Tan	
9:36	10	7.32	18.0	449	High	"	Lt.Brn	
9:37	15	7.08	18.3	420	"	"	"	
9:39	20	7.00	18.0	451	Low	"	Lt.Tan	
9:40	25	6.97	17.3	440	"	"	"	
9:42	29	6.87	17.2	440	Med	"	Lt.Brn	
10:04	A.S.	7.10	17.8	419	Low	"	Lt.Tan	

Total Discharge: 29.5 gallons Casing Volumes Removed: 4.15

Method of disposal of discharged water: 55 gal drum

Number and size of sample containers filled: @ 10:00 3 VOAs (2 HCl, 1 HCl) (TPHg, BTEX), 2-1L. (TPHd), 2-1L. (5520 B/F) (H_2SO_4)

Collected by: JH / JL

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

Sample No.

WATER SAMPLE LOG

Sample No. MW-2

Project No.: 92CB040 Date: 5-26-94

Project Name: CBC - Oakland

Sample Location: MW-2

Well Description: 4" sch 40 PVC

Weather Conditions: clear

Observations / Comments: Duplicate sample taken

Quality Assurance

Sampling Method: Disposable bailer

Method to Measure Water Level: 200' Solinst

Pump Lines: (New) / Cleaned Bailer Lines: (New) / Cleaned

Method of cleaning Pump / Bailer: NA

pH Meter No.: 218552 Calibrated 7.03/10.01

Specific Conductance Meter No.: 13749 Calibrated red-lined

Comments: TD 19.19+.36=19.55-9.30=10.25x.653=6.69x4=26.8

Sampling Measurements

Water Level (below MP) at Start: 9.30 End: 11.32↑

Measuring Point (MP): TOC

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments
10:24	5	7.14	18.3	360	LOW	Clear	ND	
10:26	10	7.01	18.4	390	7100	TAN	"	
10:28	15	7.03	19.0	432	"	"	"	
10:35	20	7.17	19.1	417	"	"	"	
10:40	24	7.22	19.0	410	"	"	"	
10:45	27	7.19	19.4	420	"	"	"	
11:23	A.S	7.31	19.0	417	LOW	CLEAR	ND	

Total Discharge: 28 gallons Casing Volumes Removed:

Method of disposal of discharged water: 55 gallon drums

Number and size of sample containers filled: @11:10 3 VOCs (TPH$_g$/BTEX), 2-1L (TPH$_d$), 2-1L (5520 B/F) X/H$_2$SO$_4$) Duplicate labeled as MW-4 @ 09:30

Collected by: JH/JL

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

Sample No.

WATER SAMPLE LOG

Sample No. MW-3

Project No.: 92CB040 Date: 5-26-94

Project Name: CBC-Oakland

Sample Location: MW-3

Well Description: 4" sch 40 PVC

Weather Conditions: clear

Observations / Comments:

Quality Assurance

Sampling Method: Disposable bailer

Method to Measure Water Level: 200' Solinst

Pump Lines: (New) / Cleaned Bailer Lines: (New) / Cleaned

Method of cleaning Pump / Bailer: NA

pH Meter No.: 218552 Calibrated 7.03/10.01

Specific Conductance Meter No.: 13749 Calibrated red-lined

Comments: ID 19.08+.36=19.44 -12.88=6.56x.653=4.28x4=17.1 gal.

Sampling Measurements

Water Level (below MP) at Start: 12.88 End: 13.06

Measuring Point (MP): TOC

Time	Discharge (gallons)	pH	Temp. (°C)	Specific Conductance (µmhos / cm)	Turbidity	Color	Odor	Comments
10:12	5	6.72	17.2	800	7100	grey	ND	
10:17	9	6.80	17.5	800	"	"	"	
10:48	14	6.87	17.6	790	"	"	"	
10:55	17.5	6.85	17.7	790	"	"	"	
11:36	A.S.	6.91	18.2	790	"	"	"	

Total Discharge: 18.5 gal. Casing Volumes Removed:

Method of disposal of discharged water: 55 gal. drum

Number and size of sample containers filled: @ 11:30 3 VOCs (TPH$_g$/BTEX), 2-1L (TPH$_d$), 2-1L (8520B/F) (w/H_2SO_4)

Collected by: JH/JL

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

APPENDIX D
QUALITY ASSURANCE/QUALITY CONTROL REVIEW OF CHEMICAL DATA

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. 92CB040 CRC-Oakland

SAMPLERS: (Signature)

DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	ANALYSES: EPA Method TPH-g/BTEX	EPA Method 5520B/F	EPA Method TPH/Diesel	EPA Method	Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
5/26/94	0800	TRIP BLANK	W	3	~~4~~	~~3~~		3	Results to: Jo Beth Folger
	0830	MW-4 ●	W	3	2	2		7	
	10:00	MW-1*	W	3	2	2		7	Normal T.A.T.
	11:10	MW-2	W	3	2	2		7	
	11:30	MW-3	W	3	2	2		7	

* 1 VOC CONTAINER DID NOT HAVE HCl IN IT - label is crossed out.

5520B/F has H_2SO_4
TPH(g)/BTEX has HCl
TPH(d): NON pres.

All samples in bubble wrap + placed in iced cooler for storage + shipment.

TOTAL NUMBER OF CONTAINERS: 31

2 ICE CHESTS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	5/26/94 1200				

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Anametrix Courier				

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MS. JOBETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405132
Date Received : 05/13/94
Project ID : 92CB040
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9405132- 1	MW-3-6.5
9405132- 2	MW-3-10
9405132- 3	MW-2-5
9405132- 4	MW-2-10
9405132- 5	MW-2-12

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anametrix.

Todd Senniger for
Doug Robbins
Laboratory Director

5/26/94
Date

This report consists of 18 pages.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JOBETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405132
Date Received : 05/13/94
Project ID : 92CB040
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9405132- 1	MW-3-6.5	SOIL	05/11/94	TPHd
9405132- 2	MW-3-10	SOIL	05/11/94	TPHd
9405132- 3	MW-2-5	SOIL	05/11/94	TPHd
9405132- 4	MW-2-10	SOIL	05/11/94	TPHd
9405132- 5	MW-2-12	SOIL	05/11/94	TPHd
9405132- 1	MW-3-6.5	SOIL	05/11/94	TPHgBTEX
9405132- 2	MW-3-10	SOIL	05/11/94	TPHgBTEX
9405132- 3	MW-2-5	SOIL	05/11/94	TPHgBTEX
9405132- 4	MW-2-10	SOIL	05/11/94	TPHgBTEX
9405132- 5	MW-2-12	SOIL	05/11/94	TPHgBTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JOBETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405132
Date Received : 05/13/94
Project ID : 92CB040
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Ballmer 5/23/94
Department Supervisor Date

Reggie Davison 5/23/94
Chemist Date

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9405132 Client Project ID : 92CB040

Matrix : SOIL Units : mg/Kg

Compound Name	Method Reporting Limit*	Client ID MW-3-6.5 Lab ID 9405132-01	Client ID MW-3-10 Lab ID 9405132-02	Client ID MW-2-5 Lab ID 9405132-03	Client ID MW-2-10 Lab ID 9405132-04	Client ID MW-2-12 Lab ID 9405132-05
Benzene	0.0050	ND	ND	ND	ND	ND
Toluene	0.0050	ND	ND	ND	ND	ND
Ethylbenzene	0.0050	ND	ND	ND	ND	ND
Total Xylenes	0.0050	ND	ND	ND	ND	ND
TPH as Gasoline	0.50	ND	ND	ND	ND	ND
Surrogate Recovery		89%	54%	92%	89%	86%
Instrument ID		HP4	HP4	HP4	HP4	HP4
Date Sampled		05/11/94	05/11/94	05/11/94	05/11/94	05/11/94
Date Analyzed		05/18/94	05/18/94	05/18/94	05/18/94	05/18/94
RLMF		1	1	1	1	1
Filename Reference		FPY13201.D	FPY13202.D	FPY13203.D	FPY13204.D	FPY13205.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davison 5/23/94
Analyst Date

Cheryl Balmer 5/23/94
Supervisor Date

Issued on 5/20/94 @ 10:06 AM

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9405132
Matrix : SOIL

Client Project ID : 92CB040
Units : mg/Kg

Compound Name	Method Reporting Limit*	Client ID	Client ID	Client ID	Client ID	Client ID
		Lab ID	Lab ID	Lab ID	Lab ID	Lab ID
		METHOD BLANK				
Benzene	0.0050	ND				
Toluene	0.0050	ND				
Ethylbenzene	0.0050	ND				
Total Xylenes	0.0050	ND				
TPH as Gasoline	0.50	ND				
Surrogate Recovery		91%				
Instrument ID		HP4				
Date Sampled		N/A				
Date Analyzed		05/18/94				
RLMF		1				
Filename Reference		BY1801E1.D				

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davison 5/23/94
Analyst Date

Cheryl Balmes 5/23/94
Supervisor Date

Issued on 5/20/94 @ 10:11 AM

Matrix Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Project ID : 92CB040
Sample ID : MW-2-12
Matrix : SOIL
Date Sampled : 05/11/94

Laboratory ID : 9405132-05
Analyst : RD
Supervisor : dy
Instrument ID : HP4
Units : mg/Kg

COMPOUND NAME	SPIKE AMOUNT	SAMPLE RESULTS	MS RECOVERY	MSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Benzene	0.020	ND	90%	95%	45-139	-5%	30
Toluene	0.020	ND	80%	85%	51-138	-6%	30
Ethylbenzene	0.020	ND	95%	95%	48-146	0%	30
Total Xylenes	0.020	ND	95%	95%	50-139	0%	30
Surrogate Recovery		86%	92%	96%			
Date Analyzed		05/18/94	05/18/94	05/18/94			
Multiplier		1	1	1			
Filename Reference		FPY13205.D	FMY13205.D	FDY13205.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP4
Matrix : SOLID

Analyst : RV
Supervisor : CH
Units : mg/Kg

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	RECOVERY LIMITS
Benzene	0.020	95%	52-133
Toluene	0.020	100%	57-136
Ethylbenzene	0.020	100%	56-139
Total Xylenes	0.020	105%	56-141
Surrogate Recovery		99%	53-147
Date Analyzed		05/18/94	
Multiplier		1	
Filename Reference		MY1801E1.D	

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS KEROSENE
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9405132
Matrix : SOIL
Date Sampled : 05/11/94
Date Extracted: 05/16/94

Project Number : 92CB040
Date Released : 05/20/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9405132-01	MW-3-6.5	05/20/94	10	ND	79%
9405132-02	MW-3-10	05/20/94	20	ND	115%
9405132-03	MW-2-5	05/19/94	10	ND	117%
9405132-04	MW-2-10	05/18/94	10	ND	75%
9405132-05	MW-2-12	05/18/94	10	ND	68%
BY16H1F1	METHOD BLANK	05/18/94	10	ND	78%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as kerosene is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davidson 5/23/94
Analyst Date

Cheryl Balmer 5/23/94
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9405132
Matrix : SOIL
Date Sampled : 05/11/94
Date Extracted: 05/16/94

Project Number : 92CB040
Date Released : 05/20/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9405132-01	MW-3-6.5	05/20/94	10	ND	79%
9405132-02	MW-3-10	05/20/94	20	ND	115%
9405132-03	MW-2-5	05/19/94	10	ND	117%
9405132-04	MW-2-10	05/18/94	10	ND	75%
9405132-05	MW-2-12	05/18/94	10	ND	68%
BY16H1F1	METHOD BLANK	05/18/94	10	ND	78%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davison 5/23/94
Analyst Date

Cheryl Balmer 5/23/94
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9405132
Matrix : SOIL
Date Sampled : 05/11/94
Date Extracted: 05/16/94

Project Number : 92CB040
Date Released : 05/20/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9405132-01	MW-3-6.5	05/20/94	10	35	79%
9405132-02	MW-3-10	05/20/94	20	160	115%
9405132-03	MW-2-5	05/19/94	10	14	117%
9405132-04	MW-2-10	05/18/94	10	ND	75%
9405132-05	MW-2-12	05/18/94	10	ND	68%
BY16H1F1	METHOD BLANK	05/18/94	10	ND	78%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as motor oil is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davison 5/23/94
Analyst Date

Cheryl Balmer 5/23/94
Supervisor Date

TOTAL EXTRACTABLE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 92CB040 MW-2-10	Anametrix I.D.	: 9405132-04
Matrix	: SOIL	Analyst	: RD
Date Sampled	: 05/11/94	Supervisor	: cb
Date Extracted	: 05/16/94	Date Released	: 05/23/94
Date Analyzed	: 05/18/94	Instrument I.D.	: HP23

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	REC MS (mg/Kg)	% REC MS	REC MD (mg/Kg)	% REC MD	RPD	% REC LIMITS *
DIESEL	62.5	0	68.2	109%	65.1	104%	-5%	32-143
SURROGATE				110%		100%		55-129

* Quality control limits established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MY16H1F1
Matrix	: SOIL	Analyst	: RD
Date Sampled	: N/A	Supervisor	: CB
Date Extracted	: 05/16/94	Date Released	: 05/23/94
Date Analyzed	: 05/18/94	Instrument I.D.	: HP23

COMPOUND	SPIKE AMT (mg/Kg)	REC LCS (mg/Kg)	% REC LCS	% REC LIMITS *
DIESEL	62.5	69.2	111%	48-113
SURROGATE			80%	55-129

* Quality control limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JOBETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405132
Date Received : 05/13/94
Project ID : 92CB040
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9405132- 1	MW-3-6.5	SOIL	05/11/94	5520EF
9405132- 2	MW-3-10	SOIL	05/11/94	5520EF
9405132- 3	MW-2-5	SOIL	05/11/94	5520EF
9405132- 4	MW-2-10	SOIL	05/11/94	5520EF
9405132- 5	MW-2-12	SOIL	05/11/94	5520EF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JOBETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405132
Date Received : 05/13/94
Project ID : 92CB040
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor 5/19/94 Date

Chemist 5/18/94 Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORIES (408) 432-8192

Project # : 92CB040
Matrix : SOIL
Date sampled : 05/11/94
Date extracted: 05/16/94
Date analyzed : 05/17/94

Anametrix I.D. : 9405132
Analyst : BU
Supervisor : CW
Date released : 05/18/94

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9405132-01	MW-3-6.5	30	110
9405132-02	MW-3-10	30	270
9405132-03	MW-2-5	30	87
9405132-04	MW-2-10	30	53
9405132-05	MW-2-12	30	ND
BY16H1W9	METHOD BLANK	30	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

MATRIX SPIKE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: 92CB040, MW-2-10MS, MD	Anametrix I.D.	: 9405132-04
Matrix	: SOIL	Analyst	: BC
Date sampled	: 05/11/94	Supervisor	: CM
Date extracted	: 05/16/94	Date Released	: 05/18/94
Date analyzed	: 05/17/94		

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	MS AMT (mg/Kg)	%REC MS	MD AMT (mg/Kg)	%REC MD	%RPD	% REC LIMITS
Motor Oil	300	53	270	72	280	76	4	48-114

* Quality control limits established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MY16H1W9
Matrix	: SOIL	Analyst	: BL
Date sampled	: N/A	Supervisor	: CM
Date extracted	: 05/16/94	Date Released	: 05/18/94
Date analyzed	: 05/17/94		

COMPOUND	SPIKE AMT. (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
Motor Oil	300	300	100	71-119

* Quality control established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF.

#3414

9405132 (2)

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. 93CB040

SAMPLERS: (Signature) Lois Antié

	DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	ANALYSES: EPA Method 8015	EPA Method 8015	EPA Method 8020	EPA Method 5520 B+F	EPA Method							Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
1	5/11/94	0940	MW-3-6.5'	S	X	X	X									1	Samples were stored on ice immediately after sampling.
2	5/11/94	0955	MW-3-10'	S	X	X	X									1	
3	5/11/94	1347	MW-2-5'	S	X	X	X									1	
4	5/11/94	1400	MW-2-10	S	X	X	X									1	
5	5/11/94	1410	MW-2-12	S	X	X	X									1	

TPH-Extractable (diesel kerosene m.o)
TPH-Gasoline / BTEX
Total Oil & Grease

Questions / Results To:
[redacted]
Jo Beth Folger
@ 510 873-3138

TOTAL NUMBER OF CONTAINERS: 5

1 Ice Chest

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Lois Antié	5/12/94 1020			5/13/94 1704	

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Anametrix Courier				5/13/94 17:04

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MS. LOIS AUTIE
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405140
Date Received : 05/16/94
Project ID : 92CB040-0010
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9405140- 1	MW-1-5X
9405140- 2	MW-1-5
9405140- 3	MW-1-7
9405140- 4	MW-1-10

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anametrix.

Todd Stringer for
Doug Robbins
Laboratory Director

5/31/94
Date

This report consists of 17 pages.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS AUTIE
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405140
Date Received : 05/16/94
Project ID : 92CB040-0010
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9405140- 2	MW-1-5	SOIL	05/16/94	TPHd
9405140- 3	MW-1-7	SOIL	05/16/94	TPHd
9405140- 4	MW-1-10	SOIL	05/16/94	TPHd
9405140- 2	MW-1-5	SOIL	05/16/94	TPHgBTEX
9405140- 3	MW-1-7	SOIL	05/16/94	TPHgBTEX
9405140- 4	MW-1-10	SOIL	05/16/94	TPHgBTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS AUTIE
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405140
Date Received : 05/16/94
Project ID : 92CB040-0010
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balmer 5/23/94
Department Supervisor Date

Reggie Dawson 5/23/94
Chemist Date

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9405140 Client Project ID : 92CB040-0010

Matrix : SOIL Units : mg/Kg

Compound Name	Method Reporting Limit*	Client ID MW-1-5 Lab ID 9405140-02	Client ID MW-1-7 Lab ID 9405140-03	Client ID MW-1-10 Lab ID 9405140-04	Client ID Lab ID Method blank	Client ID Lab ID Method blank
Benzene	0.0050	ND	0.79	0.53	ND	ND
Toluene	0.0050	ND	1.4	0.75	ND	ND
Ethylbenzene	0.0050	0.29	4.5	0.44	ND	ND
Total Xylenes	0.0050	1.7	21	0.75	ND	ND
TPH as Gasoline	0.50	49	360	52	ND	ND
Surrogate Recovery		110%	123%	105%	102%	110%
Instrument ID		HP12	HP12	HP12	HP12	HP12
Date Sampled		05/16/94	05/16/94	05/16/94	N/A	N/A
Date Analyzed		05/19/94	05/19/94	05/18/94	05/18/94	05/19/94
RLMF		25	50	10	1	1
Filename Reference		FRY14002.D	FTY14003.D	FRY14004.D	BY1801E1.D	BY1901E1.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davison 5/23/94
Analyst Date

Cheryl Balmer 5/23/94
Supervisor Date

Issued on 5/23/94 @ 11:01 AM

Matrix Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Project ID : 92CB040-0010
Sample ID : MW-1-10
Matrix : SOIL
Date Sampled : 05/16/94

Laboratory ID : 9405140-04
Analyst : RD
Supervisor : CB
Instrument ID : HP12
Units : mg/Kg

COMPOUND NAME	SPIKE AMOUNT	SAMPLE RESULTS	MS RECOVERY	MSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Benzene	2.0	0.53	84%	79%	45-139	6%	30
Toluene	2.0	0.75	93%	93%	51-138	0%	30
Ethylbenzene	2.0	0.44	103%	103%	48-146	0%	30
Total Xylenes	2.0	0.75	108%	108%	50-139	0%	30
Surrogate Recovery		105%	101%	99%			
Date Analyzed		05/18/94	05/18/94	05/18/94			
Multiplier		100	100	100			
Filename Reference		FRY14004.D	FMY14004.D	FDY14004.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP12
Matrix : SOLID

Analyst : RD
Supervisor : ✓
Units : mg/Kg

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	RECOVERY LIMITS
Benzene	0.020	100%	52-133
Toluene	0.020	110%	57-136
Ethylbenzene	0.020	110%	56-139
Total Xylenes	0.020	100%	56-141
Surrogate Recovery		111%	53-147
Date Analyzed		05/18/94	
Multiplier		1	
Filename Reference		MY1801E1.D	

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as Gasoline
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP12
Matrix : SOLID

Analyst :
Supervisor :
Units : mg/Kg

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	LCSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Gasoline	0.50	92%	96%	56-141	-4%	30
Surrogate Recovery		97%	98%	53-147		
Date Analyzed		05/19/94	05/19/94			
Multiplier		1	1			
Filename Reference		MY1901E1.D	NY1901E1.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS KEROSENE
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9405140
Matrix : SOIL
Date Sampled : 05/16/94
Date Extracted: 05/17/94

Project Number : 92CB040-0010
Date Released : 05/23/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9405140-02	MW-1-5	05/20/94	10	64	115%
9405140-03	MW-1-7	05/19/94	50	260	88%
9405140-04	MW-1-10	05/18/94	10	ND	88%
BY17H1F1	METHOD BLANK	05/18/94	10	ND	85%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as kerosene is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Dawson 5/23/94
Analyst Date

Cheryl Balmer 5/23/94
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9405140
Matrix : SOIL
Date Sampled : 05/16/94
Date Extracted: 05/17/94

Project Number : 92CB040-0010
Date Released : 05/23/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9405140-02	MW-1-5	05/20/94	10	ND	115%
9405140-03	MW-1-7	05/19/94	50	ND	88%
9405140-04	MW-1-10	05/18/94	10	ND	88%
BY17H1F1	METHOD BLANK	05/18/94	10	ND	85%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Dawson 5/23/94
Analyst Date

Cheryl Balmer 5/23/94
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9405140
Matrix : SOIL
Date Sampled : 05/16/94
Date Extracted: 05/17/94

Project Number : 92CB040-0010
Date Released : 05/23/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)	Surrogate %Rec
9405140-02	MW-1-5	05/20/94	10	28	115%
9405140-03	MW-1-7	05/19/94	50	ND	88%
9405140-04	MW-1-10	05/18/94	10	ND	88%
BY17H1F1	METHOD BLANK	05/18/94	10	ND	85%

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
The surrogate recovery limits for o-terphenyl are 55-129%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as motor oil is determined by GCFID following sample extraction by EPA Method 3550.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davison 5/23/94
Analyst Date

Cheryl Beeman 5/23/94
Supervisor Date

TOTAL EXTRACTABLE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 92CB040-0010 MW-1-10	Anametrix I.D.	: 9405140-04
Matrix	: SOIL	Analyst	: RD
Date Sampled	: 05/16/94	Supervisor	:
Date Extracted	: 05/17/94	Date Released	: 05/23/94
Date Analyzed	: 05/18/94	Instrument I.D.	: HP23

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	REC MS (mg/Kg)	% REC MS	REC MD (mg/Kg)	% REC MD	RPD	% REC LIMITS *
DIESEL	62.5	0	59.6	95%	57.9	93%	-3%	32-143
SURROGATE				94%		96%		55-129

* Quality control limits established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MY17H1F1
Matrix	: SOIL	Analyst	: RD
Date Sampled	: N/A	Supervisor	: CB
Date Extracted	: 05/17/94	Date Released	: 05/23/94
Date Analyzed	: 05/18/94	Instrument I.D.	: HP23

COMPOUND	SPIKE AMT (mg/Kg)	REC LCS (mg/Kg)	% REC LCS	% REC LIMITS *
DIESEL	62.5	57.8	92%	48-113
SURROGATE			101%	55-129

* Quality control limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS AUTIE
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405140
Date Received : 05/16/94
Project ID : 92CB040-0010
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9405140- 2	MW-1-5	SOIL	05/16/94	5520EF
9405140- 3	MW-1-7	SOIL	05/16/94	5520EF
9405140- 4	MW-1-10	SOIL	05/16/94	5520EF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. LOIS AUTIE
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405140
Date Received : 05/16/94
Project ID : 92CB040-0010
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

-No QA/QC problems encountered with these samples.

Department Supervisor 5/31/94 Date

Chemist 5/27/94 Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORIES (408) 432-8192

Project #	: 92CB040-0010	Anametrix I.D.	: 9405140
Matrix	: SOIL	Analyst	: BW
Date sampled	: 05/16/94	Supervisor	: CM
Date extracted	: 05/17/94	Date released	: 05/27/94
Date analyzed	: 05/23/94		

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9405140-02	MW-1-5	30	120
9405140-03	MW-1-7	30	140
9405140-04	MW-1-10	30	ND
BY17H1W9	METHOD BLANK	30	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

MATRIX SPIKE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: 92CB040-0010, MW-1-10MS, MD	Anametrix I.D.	: 9405140-04
Matrix	: SOIL	Analyst	: SJ
Date sampled	: 05/16/94	Supervisor	: CM
Date extracted	: 05/17/94	Date Released	: 05/23/94
Date analyzed	: 05/23/94		

COMPOUND	SPIKE AMT (mg/Kg)	SAMPLE CONC (mg/Kg)	MS AMT (mg/Kg)	%REC MS	MD AMT (mg/Kg)	%REC MD	%RPD	% REC LIMITS
Motor Oil	300	ND	310	103	320	107	3	48-114

* Quality control limits established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF, 18th edition.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MY17H1W9
Matrix	: SOIL	Analyst	:
Date sampled	: N/A	Supervisor	:
Date extracted	: 05/17/94	Date Released	: 05/23/94
Date analyzed	: 05/23/94		

COMPOUND	SPIKE AMT. (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
Motor Oil	300	290	97	71-119

* Quality control established by Anametrix Laboratories.

TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520EF.

2427 9405140 (18) 17:30

Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. 92CB040-0010

SAMPLERS: (Signature) Lois Autié

	DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	EPA Method 8015	EPA Method 8020	EPA Method 5520	EPA Method	Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
1	5/16	945	MW-1-5X	S	HOLD per Lois Autié 5/17/94 cur				1	
2			MW-1-5	S	X	X	X		1	
3			MW-1-7	S	X	X	X		1	
4	↓	10:30	MW-1-10	S	X	X	X		1	

Analyses (written in columns): TPH d (diesel, kerosene, oil) / TPH g / BTEX / Oil & Grease

REMARKS: STANDARD TOT — Results to Lois Autié

To: Anametrix (408) 432-8192, 1961 Concourse Drive, Suite E, San Jose 95131

Dr 7 FF 9 AF 33713

TOTAL NUMBER OF CONTAINERS: 4

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Lois Autié	5/16 3:20	[signature]	[signature]	5/16 4:46	

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Cooler			Jennifer Miller	5/16/94 16:46

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MS. JO BETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405261
Date Received : 05/26/94
Project ID : 92CB040
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9405261- 1	T.BLANK
9405261- 2	MW-4
9405261- 3	MW-1
9405261- 4	MW-2
9405261- 5	MW-3

This report is organized in sections according to the specific Anametrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anametrix.

Todd Stringer for
Doug Robbins
Laboratory Director

Date 6/14/94

This report consists of 18 pages.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JO BETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405261
Date Received : 05/26/94
Project ID : 92CB040
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9405261- 2	MW-4	WATER	05/26/94	TPHd
9405261- 3	MW-1	WATER	05/26/94	TPHd
9405261- 4	MW-2	WATER	05/26/94	TPHd
9405261- 5	MW-3	WATER	05/26/94	TPHd
9405261- 1	T.BLANK	WATER	05/26/94	TPHgBTEX
9405261- 2	MW-4	WATER	05/26/94	TPHgBTEX
9405261- 3	MW-1	WATER	05/26/94	TPHgBTEX
9405261- 4	MW-2	WATER	05/26/94	TPHgBTEX
9405261- 5	MW-3	WATER	05/26/94	TPHgBTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JO BETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405261
Date Received : 05/26/94
Project ID : 92CB040
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as diesel for sample MW-1 is primarily due to the presence of a lighter petroleum product of hydrocarbon range C6-C12, possibly gasoline.

Cheryl Balmer 6/9/94
Department Supervisor Date

Reggie Dawson 6/13/94
Chemist Date

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9405261
Matrix : WATER

Client Project ID : 92CB040
Units : ug/L

Compound Name	Method Reporting Limit*	Client ID T.BLANK Lab ID 9405261-01	Client ID MW-4 Lab ID 9405261-02	Client ID MW-1 Lab ID 9405261-03	Client ID MW-2 Lab ID 9405261-04	Client ID MW-3 Lab ID 9405261-05
Benzene	0.50	ND	ND	57	ND	ND
Toluene	0.50	ND	ND	340	ND	ND
Ethylbenzene	0.50	ND	ND	370	ND	ND
Total Xylenes	0.50	ND	ND	3100	ND	1.7
TPH as Gasoline	50	ND	ND	12000	ND	ND
Surrogate Recovery		98%	101%	95%	100%	96%
Instrument ID		HP4	HP4	HP4	HP4	HP4
Date Sampled		05/26/94	05/26/94	05/26/94	05/26/94	05/26/94
Date Analyzed		05/31/94	05/31/94	06/02/94	06/01/94	06/01/94
RLMF		1	1	100	1	1
Filename Reference		FPY26101.D	FPY26102.D	FRY26103.D	FPY26104.D	FPY26105.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Peggie Dawson 6/13/94
Analyst Date

Cheryl Balmer 6/7/94
Supervisor Date

Issued on 6/9/94 @ 7:10 AM

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9405261 Client Project ID : 92CB040

Matrix : WATER Units : ug/L

Compound Name	Method Reporting Limit*	Client ID	Client ID	Client ID	Client ID	Client ID
		Lab ID	Lab ID	Lab ID	Lab ID	Lab ID
		METHOD BLANK	METHOD BLANK	METHOD BLANK	METHOD BLANK	
Benzene	0.50	ND	ND	ND	ND	
Toluene	0.50	ND	ND	ND	ND	
Ethylbenzene	0.50	ND	ND	ND	ND	
Total Xylenes	0.50	ND	ND	ND	ND	
TPH as Gasoline	50	ND	ND	ND	ND	
Surrogate Recovery		103%	99%	101%	101%	
Instrument ID		HP4	HP4	HP4	HP4	
Date Sampled		N/A	N/A	N/A	N/A	
Date Analyzed		05/31/94	06/01/94	06/01/94	06/02/94	
RLMF		1	1	1	1	
Filename Reference		BY3101E1.D	BU0101E1.D	BU0102E1.D	BU0201E1.D	

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Peggie Dawson 6/13/94
Analyst Date

Cheryl Balmer 6/6/94
Supervisor Date

Matrix Spike Report

Total Petroleum Hydrocarbons as BTEX

ITS - Anametrix Laboratories - (408)432-8192

Project ID : 92CB040
Sample ID : MW-4
Matrix : WATER
Date Sampled : 05/26/94

Laboratory ID : 9405261-02
Analyst : RV
Supervisor : [illegible]
Instrument ID : HP4
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	SAMPLE RESULTS	MS RECOVERY	MSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Benzene	20	ND	100%	100%	45-139	0%	30
Toluene	20	ND	100%	100%	51-138	0%	30
Ethylbenzene	20	ND	100%	100%	48-146	0%	30
Total Xylenes	20	ND	100%	100%	50-139	0%	30
Surrogate Recovery		101%	100%	103%			
Date Analyzed		05/31/94	05/31/94	05/31/94			
Multiplier		1	1	1			
Filename Reference		FPY26102.D	FMY26102.D	FDY26102.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Matrix Spike Report
Total Petroleum Hydrocarbons as Gasoline
ITS - Anametrix Laboratories - (408)432-8192

Project ID : 92CB040
Sample ID : MW-3
Matrix : WATER
Date Sampled : 05/26/94

Laboratory ID : 9405261-05
Analyst : RD
Supervisor : [illegible]
Instrument ID : HP4
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	SAMPLE RESULTS	MS RECOVERY	MSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Gasoline	500	ND	82%	90%	50-139	-9%	30
Surrogate Recovery		96%	80%	77%			
Date Analyzed		06/01/94	06/01/94	06/01/94			
Multiplier		1	1	1			
Filename Reference		FPY26105.D	FMY26105.D	FDY26105.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP4
Matrix : LIQUID

Analyst : RD
Supervisor : CP
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	RECOVERY LIMITS
Benzene	20	95%	52-133
Toluene	20	95%	57-136
Ethylbenzene	20	100%	56-139
Total Xylenes	20	100%	56-141
Surrogate Recovery		101%	61-139
Date Analyzed		05/31/94	
Multiplier		1	
Filename Reference		MY3103E1.D	

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as Gasoline
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP4
Matrix : LIQUID

Analyst : RD
Supervisor : ✓
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	RECOVERY LIMITS
Gasoline	500	90%	56-141
Surrogate Recovery		78%	61-139
Date Analyzed		06/01/94	
Multiplier		1	
Filename Reference		MU0101E1.D	

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as Gasoline
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP4
Matrix : LIQUID

Analyst : RD
Supervisor : CD
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	RECOVERY LIMITS
Gasoline	500	94%	56-141
Surrogate Recovery		74%	61-139
Date Analyzed		06/02/94	
Multiplier		1	
Filename Reference		MU0201E1.D	

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Matrix Spike Report
Total Petroleum Hydrocarbons as Gasoline
ITS - Anametrix Laboratories - (408)432-8192

Project ID : N/A
Sample ID : F-15W
Matrix : WATER
Date Sampled : 05/26/94

Laboratory ID : N/A
Analyst : RD
Supervisor : [illegible]
Instrument ID : HP4
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	SAMPLE RESULTS	MS RECOVERY	MSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Gasoline	500	ND	96%	96%	50-139	0%	30
Surrogate Recovery		102%	75%	73%			
Date Analyzed		06/02/94	06/02/94	06/02/94			
Multiplier		1	1	1			
Filename Reference		FPY27404.D	FMY27404.D	FDY27404.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Issued on 6/9/94 @ 7:33 AM

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9405261
Matrix : WATER
Date Sampled : 05/26/94
Date Extracted: 06/02/94

Project Number : 92CB040
Date Released : 06/08/94
Instrument I.D.: HP19

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9405261-02	MW-4	06/04/94	50	ND	95%
9405261-03	MW-1	06/07/94	100	1300	72%
9405261-04	MW-2	06/04/94	50	ND	93%
9405261-05	MW-3	06/04/94	50	99	92%
BU0211F9	METHOD BLANK	06/06/94	50	ND	112%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for o-terphenyl are 47-114%.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as C10-C28 is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 6/14/94 Date

Supervisor 6/13/94 Date

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3510 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: MU0211F9
Matrix	: WATER	Analyst	: IS
Date Sampled	: N/A	Supervisor	: CM
Date Extracted	: 06/02/94	Date Released	: 06/08/94
Date Analyzed	: 06/06-07/94	Instrument I.D.	: HP19

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	1180	94%	1140	91%	-3%	38-96
SURROGATE			89%		85%		47-114

* Quality control limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JO BETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405261
Date Received : 05/26/94
Project ID : 92CB040
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9405261- 2	MW-4	WATER	05/26/94	5520BF
9405261- 3	MW-1	WATER	05/26/94	5520BF
9405261- 4	MW-2	WATER	05/26/94	5520BF
9405261- 5	MW-3	WATER	05/26/94	5520BF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JO BETH FOLGER
WOODWARD-CLYDE CONSULTANTS
500 12TH STREET, SUITE 100
OAKLAND, CA 94607-4041

Workorder # : 9405261
Date Received : 05/26/94
Project ID : 92CB040
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor) 6/7/94 Date

Chemist 6/6/94 Date

ANALYSIS DATA SHEET - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
ANAMETRIX LABORATORY (408) 432-8192

Project I.D.	: 92CB040	Anametrix I.D.	: 9405261
Matrix	: WATER	Analyst	: BU
Date sampled	: 05/26/94	Supervisor	: CW
Date extracted	: 06/01/94	Date released	: 06/06/94
Date analyzed	: 06/04/94		

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9405261-02	MW-4	5.0	ND
9405261-03	MW-1	5.0	ND
9405261-04	MW-2	5.0	ND
9405261-05	MW-3	5.0	ND
BU0111W4	METHOD BLANK	5.0	ND

ND - Not detected above the reporting limit for the method.
TRPH - Total Recoverable Petroleum Hydrocarbons are determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

LAB CONTROL SAMPLE REPORT - TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
STANDARD METHOD 5520BF
ANAMETRIX LABORATORIES (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date sampled : N/A
Date extracted : 06/01/94
Date analyzed : 06/04/94

Anametrix I.D. : M/NU0111W4
Analyst : BJ
Supervisor : CH
Date Released : 06/06/94

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	%REC LCS	LCSD (mg/L)	%REC LCSD	%RPD	%REC LIMITS
Motor Oil	50	40	80	37	74	8	44-128

* Quality control limits established by Anametrix Laboratories.

2558

9405261

(18) (10/8)

Woodward-Clyde Consultants
500 12th Street, Suite 100, Oakland, CA 94607-4014
(510) 893-3600

Chain of Custody Record

PROJECT NO. CBC-Oakland 92CB040

SAMPLERS: (Signature) [signature] [signature]

	DATE	TIME	SAMPLE NUMBER	Sample Matrix (S)oil, (W)ater, (A)ir	ANALYSES: EPA Method TPHg/BTEX	EPA Method 5520B/F	EPA Method TPH(Diesel)	EPA Method	Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
(1)	5/24/94	0800	TRIP BLANK	W	3	~~2~~	~~2~~		3	Results to Jo Beth Folger
(2)		0830	MW-4	W	3	2	2		7	
(3)		10:00	MW-1*	W	3	2	2		7	
(4)		11:10	MW-2	W	3	2	2		7	Normal T.A.T.
(5)	↓	11:30	MW-3	W	3	2	2		7	

*1 VOC CONTAINER DID NOT HAVE HCl IN IT - label is crossed out.

5520B/F has H_2SO_4
TPH(g)/BTEX has HCl
TPH(d) = NON pres.

All samples in bubble wrap + placed in iced cooler for storage + shipment.

TOTAL NUMBER OF CONTAINERS: 31

2 ICE CHESTS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5/24/94 1200	[signature]	[signature]	5/24/94 1705	[signature]

15:45 HB

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Anametrix Courier			[signature]	5/24/94 14:05