

# BLAINE TECH SERVICES INC.

1370 TULLY RD., SUITE 505  
SAN JOSE, CA 95122  
(408) 995-5535

March 15, 1990

R.L. Stevens  
22240 Meekland Avenue  
Hayward, CA 94541

Attn: Bob Stevens

SITE:  
Hoyt & Buettner  
22177 Meekland Avenue  
Hayward, California

PROJECT:  
Tank Removal

SAMPLED ON:  
February 28, 1990

## TANK REMOVAL SAMPLING REPORT 900228-K-1

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Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results or become involved with the marketing or installation of remedial systems. The interpretation of results should be performed by representatives of interested regulatory agencies and/or those professionals who are engaged as paid consultants in the business of providing opinions and proposals for further investigation or clean-up activities.

This report describes the initial environmental sampling and documentation performed by our firm on this project. In addition to the text of the Sampling Report, supporting documents are provided as attachments. These include the chain of custody and the certified analytical laboratory report. All of these documents should be kept together and preserved as a file of interrelated records which, together, comprise the documentation of the work performed at the site.

## Scope of Requested Services

In accordance with your request, field personnel would be dispatched to the site to collect samples following the removal of one gasoline tank, one diesel tank and one waste oil tank. We would arrange for the proper analyses of the samples, and maintain adequate documentation resulting in the issuance of a formal Sampling Report. The collection of environmental samples was to be performed in accordance with the requirements of the State Water Resources Control Board and the specific directions of the Local Implementing Agency (LIA) inspector present at the site at the time of removal.

## Execution of the Tank Removal Sampling

The subject site is located within the overall jurisdiction of the Regional Water Quality Control Board -- San Francisco Bay Region. Initial inspection and evaluation of the site is customarily conducted by the local implementing agency (LIA), which was the Alameda County Health Agency and the Eden Consolidated Fire Protection District. The Alameda County Health Agency was represented by Ms. Pamela Evans, who was present to observe the tank removal and sampling. The Eden Consolidated Fire Protection District was represented by Mr. James Ferdinand, who was present to observe and direct the removal of the tanks from the subsurface but then left the site prior to sampling.

Personnel were dispatched from our office and arrived at Hoyt & Buettner property on Wednesday, February 28, 1990. Other interested parties included Mr. Harry Buettner, the property owner.

In accordance with the local regulations and the field judgment of the LIA representative, a detailed inspection was conducted in which the tanks were visually inspected and likely failure points were probed with small pointed metal examination tools. No holes were observed in any of the tanks.

TANK I.D.	SIZE IN GALLONS	TANK CONTENT	MATERIAL OF CONSTRUCTION	INSPECTION FOUND
A	1,000	DIESEL	STEEL	NO HOLES
B	1,000	GASOLINE	STEEL	NO HOLES
WO	550	WASTE OIL	STEEL	NO HOLES

Standard RWQCB Interface samples were taken of the native soil at points corresponding to both ends of the diesel and gasoline tank. A standard interface sample was also taken of the native soil at a point corresponding to the middle of the waste oil tank. Interface sampling was performed in accordance with the direction of the LIA representative, Ms. Evans. After Ms. Evans left the site, Mr. Buettner requested that we collect deeper exploratory samples from the bottom of the waste oil tank pit. The exploratory samples were taken at points corresponding to both ends of the waste oil tank. Obvious contamination was noted at the fill pipe end. In the paragraphs that follow, those samples are described in the order in which they were collected.

Sample #1 was a standard interface sample taken at the fill pipe end of Tank B at a depth of twelve and a half feet (12.5') below grade.

Sample #2 was a standard interface sample taken at the end opposite the fill pipe of Tank B at a depth of twelve feet (12.0') below grade.

Sample #3 was a standard interface sample taken at the fill pipe end of Tank A at a depth of thirteen feet (13.0') below grade.

Sample #4 was a standard interface sample taken at the end opposite the fill pipe of Tank A at a depth of twelve and a half feet (12.5') below grade.

Sample #5 was a standard interface sample taken at the middle of Tank WO at a depth of nine and half feet (9.5') below grade.

Sample #6 was a deeper exploratory sample taken at the end opposite the fill pipe of Tank WO at a depth of sixteen feet (16.0') below grade.

Sample #7 was a deeper exploratory sample taken at the fill pipe end of Tank WO at a depth of eighteen feet (18.0') below grade.

The location of individual sampling points is shown on the diagram on page four. Additional information on the exact method of sample collection will be found in the **Sampling Methodology** section of this report.

After completion of the field work, the sample containers were delivered to Sequoia Analytical Laboratory in Redwood City, California. Sequoia Analytical Laboratory is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #145.

It was requested that the analytical procedures used for these analyses be those specified by the Regional Water Quality Control Board -- San Francisco Bay Region. The methods are defined in attachments to the San Francisco RWQCB (Region 2) publication, Guidelines For Addressing Fuel Leaks and in documents issued to clarify the Board's interpretation of the California LUFT Manual.

## **SAMPLING METHODOLOGIES USED ON THIS PROJECT**

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**Standard RWQCB Interface Samples:** Samples taken immediately following a tank removal are required to conform to criteria established by the Regional Water Quality Control Boards. Interpretation of these criteria is usually entrusted to the discretion of the local implementing agency inspector, but are widely known and conformance with these criteria is expected even when no regulatory agency personnel are present to direct the procedures. Accordingly, "Standard Interface samples" are those which have been taken in accordance with the standard protocol for obtaining interface samples. These samples fall

ENLARGEMENT OF GASOLINE  
AND DIESEL TANK PIT

MAP REF: THOMAS BROS.  
ALAMEDA COUNTY  
P.58 C-1

0 5' 10'  
SCALE FOR  
ENLARGEMENTS

0 75'  
SCALE:

LEGEND: F = FILL END

ENLARGEMENT OF  
WASTE OIL TANK PIT

CONCRETE  
PAD

FENCE AT PROPERTY LINE

MEEKLAND AVENUE  
SIDEWALK

PROPERTY LINE

BLDG.

BLDG.

- #1 SOIL SAMPLE FROM 12.5'  
ANALYSIS FOR TOTAL PETROLEUM  
HYDROCARBONS (TPH) AS GASOLINE,  
BENZENE, TOLUENE, XYLENES, AND  
ETHYLBENZENE (BTXE) AT SEQUOIA  
ANALYTICAL LABORATORY  
SEQUOIA LAB NO. 0023875
- #2 SOIL SAMPLE FROM 12'  
ANALYSIS FOR TPH AS GASOLINE,  
BTXE  
SEQUOIA LAB NO. 0023876
- #3 SOIL SAMPLE FROM 13'  
ANALYSIS FOR TPH AS DIESEL, BTXE  
SEQUOIA LAB NO. 0023877
- #4 SOIL SAMPLE FROM 12.5'  
ANALYSIS FOR TPH AS DIESEL, BTXE  
SEQUOIA LAB NO. 0023878
- #5 SOIL SAMPLE FROM 9.5'  
ANALYSIS FOR TPH AS GASOLINE,  
TPH AS DIESEL, BTXE, TOTAL OIL  
AND GREASE (TOG), CADMIUM, CHROMIUM,  
LEAD, ZINC, AND 8010  
SEQUOIA LAB NO. 0023879
- #6 SOIL SAMPLE FROM 16'  
ANALYSIS FOR TPH AS GASOLINE,  
TPH AS DIESEL, BTXE, TOG, CADMIUM,  
CHROMIUM, LEAD, ZINC, AND 8010  
SEQUOIA LAB NO. 0023880
- #7 SOIL SAMPLE FROM 18'  
ANALYSIS FOR TPH AS GASOLINE,  
TPH AS DIESEL, BTXE, TOG, CADMIUM,  
CHROMIUM, LEAD, ZINC, AND 8010  
SEQUOIA LAB NO. 0023881

SAMPLING PERFORMED BY JOHN KOMAN  
DIAGRAM PREPARED BY BRENT ADAMS

into the category of samples which are known to be of primary concern to the interested regulatory agencies for determining if additional action will be required at a site and the methodology has been closely defined in state and RWQCB publications, supplements, and presentations. These specify both the acceptable depth and lateral situation of sample collection points. In accordance with these specifications, sample collection is executed as close as possible to the center line (longitudinal axis) of the tank and on a vertical axis with the fill pipe. A corresponding location is also found at the opposite end of the tank whenever standard interface samples are being collected.

Briefly, the method consists of digging up native soil from directly below the fill pipe and the corresponding opposite end of the tank and obtaining a sample from the backfill/native soil interface or a short distance below the interface. A short distance has been defined by Region 2 Board engineers as not greater than twenty-four inches below the backfill/native soil interface and is generally taken to be one foot below the backfill/native soil interface. This soil is brought up in the backhoe bucket. A shovel or trowel is used to cut away surface soil and backfill material which may have been included in the bucket, and the sample is taken by pushing or driving a brass sample liner into the newly exposed soil from the designated depth and location. Additional clarifications by Region 2 Board engineers have indicated that when there is an obvious difference in the relative contamination of soil brought up from the interface depth, then it is the relatively more contaminated soil that should be selected for inclusion in the sample.

**Elective Exploratory Samples:** This type of sampling employs the same sample collection and handling procedures as are used in standard RWQCB interface sampling, but soil is typically obtained at a greater depth or from a position that is laterally offset from the interface location.

### **Sample Containers**

Our firm uses new sample containers of the type specified by either EPA or the RWQCB for the collection of samples at sites where underground storage tanks are involved. Soil samples for volatile, semivolatile and nonvolatile analyses are all collected in properly prepared new brass liners which are 2 inches in diameter by 4 inches in length. Closure is accomplished with press fit plastic end caps which are fitted to the open ends of brass tube liners after a sheet of aluminum foil is wrapped over the exposed sample material. A noncontributing/nonsubtractive tape is wrapped completely around the joint areas where the plastic caps meet the outer wall of the brass tube. No preservative other than cold storage is used on samples captured in sample containers of this type.

### **Sample Handling Procedures**

Solid sample material is captured by advancing the liner into the soil. This may be done by pushing the liner into soft soils or by containing the liner in a drive shoe which can be advanced and then retracted by means of a slide hammer. The open ends of the sample liner are covered with aluminum foil and plastic end caps. Excess aluminum foil is removed and the edge of the plastic end caps is tightly sealed against the outer surface of the brass liner with an unbroken wrap made with a tape which has been tested to confirm that it does not contribute compounds that would be detected in the type of analyses in-

tended for the sample contained inside of the brass liner. The brass liner is then labeled with the appropriate identification numbers which specify the sampling activity designation number, sample collection area, depth etc. that apply to that particular sample. The sample liner is then placed in an ice chest which contains pre-frozen blocks of an inert ice substitute such as Blue Ice or Super Ice.

### **Sample Designations**

All sample containers are identified with both a sampling event number and a discrete sample identification number. Please note that the sampling event number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days as jobs and projects often do. This is followed by the sample I.D. number which is usually a simple number such as #1, #2, #3.

### **Chain of Custody**

Samples are continuously maintained in either a chilled ice chest, refrigerator, or freezer from the time of collection until acceptance by the State certified Hazardous Materials Testing Laboratory selected to perform the analytical procedures. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

### **Laboratory Identification Numbers**

Following receipt of the samples and completion of the Chain of Custody form, the laboratory then assigns their own identification numbers to the samples. Different laboratories use different numbering systems and, according to their own internal conventions, may or may not assign sequential numbers to samples which are placed on temporary "hold", pending the results of other analyses. Laboratory identification numbers (if assigned and available) are included on the DIAGRAM page, and will be found on the certified analytical report by the analytical laboratory.

### **Certified Analytical Report**

The certified analytical report generated by the laboratory is the official document in which they issue their findings. The certified analytical report is included as an attachment at the close of this report.

### **General Advisory on Positive Results**

Blaine Tech Services, Inc. provides sampling and documentation. The proper technical execution of this work demands a high level of dedication to the principle that data gathering should be performed by impartial individuals who are also disinterested in the outcome of the analytical procedures. To function as a disinterested and independent third party

Blaine Tech Services, Inc. makes it a policy to not become involved in either the interpretation of results or the sale of any consulting services or remediation packages. There are an ample number of firms who can provide consulting services and make proposal on whatever level of work they feel should be undertaken.

Even though we do not engage in the interpretation of analytical results, the making of recommendations, or the issuance of proposals on how best to remediate environmental conditions, we have been asked by the engineering staff of the Regional Water Quality Control Board to include in our reports an advisory section outlining the general type of additional actions which may be required when contamination is found. This advisory is not intended to characterize conditions at this particular site or replace the services of a consulting firm specializing in the investigation, characterization and remediation of such conditions as may exist. Rather, it is intended to advise you that such additional actions may be required even though some time may elapse before you are contacted by one of the interested regulatory agencies.

In Region 2 (which is regulated by the San Francisco Regional Water Quality Control Board), the thresholds are readily defined in the Board's publication, Guidelines For Addressing Fuel Leaks. According to this document, soil which has less than 100 parts per million total petroleum fuel hydrocarbon (TPH) contamination does not generally require immediate additional action. Board engineers emphasize that this does not mean that some action might not be required in the future. Still, the site is assigned a low priority unless it is situated in an area of high hydrogeologic concern.

The detection of more than 100 ppm TPH in the native soil beneath a tank is generally considered grounds for requiring an additional investigation in the form of soil borings and installation of at least one groundwater monitoring well followed by periodic monitoring. The detection of 1000 ppm TPH is usually viewed by the Board as an unacceptable level of fuel saturation which will mandate excavation of the effected ground down to the furthest practicable reach of conventional excavating machinery followed by soil borings and installation of groundwater monitoring wells.

Other regions use different standards for determining when a groundwater investigation will be required. For example benzene is often used in lieu of TPH. Even very low levels of benzene are often seen as grounds for requiring a subsurface investigation. This criteria may be relaxed or stiffened depending on the location of the site in relation to different groundwater systems, the depth to water, type of soil, and the concentrations of benzene involved.

The above standards apply only to fuels. When samples taken in connection with a waste oil tank or a solvent tank are found to contain even small amounts of any of the EPA priority pollutants (such as TCE, PCE, DCE etc. which are detected by EPA methods 8010, 8020, and 8240) more stringent standards are often applied. In these cases, soil borings and monitoring well installation may be required if there is any detectable amount of any of the EPA priority pollutant compounds.

When contaminants are found to have reached the water underlying a site, the Board customarily requires that additional work be undertaken in order to define the extent of the contamination.

## Reportage

Submission to the Regional Water Quality Control Board and the local implementing agency should include copies of the sampling report, the chain of custody, and the certified analytical report issued by the Hazardous Materials Testing Laboratory. The property owner should attach a cover letter and submit all documents together in a package.


The following addresses have been listed here for your convenience:

Water Quality Control Board  
San Francisco Bay Region  
1800 Harrison Street  
Room 700  
Oakland, CA 94612  
ATTN: Lester Feldman

Alameda County Health Agency  
Hazardous Materials Management  
80 Swan Way, Rm 200  
Oakland, CA 94621  
ATTN: Pamela J. Evans

Eden Consolidated Fire Protection District  
427 Paseo Grande  
San Lorenzo, CA 94580  
ATTN: James Ferdinand

Please call if we can be of any further assistance.



Richard C. Blaine

RCB/dmp

attachments: chain of custody  
analytical report



**BLAINE  
TECH SERVICES INC**

1370 TULLY ROAD SUITE 505  
SAN JOSE, CA 95122  
(408) 995 5535

CHAIN OF CUSTODY # 900228 K1  
SITE SPECIFICATION 22177 Meekland  
Hayward, Calif

Bill BLAINE TECH SERVICES, Inc. SPECIAL INSTRUCTIONS  
 Bill \_\_\_\_\_

SAMPLE I.D.	QUANTITY	TYPE	OK	ANALYSIS TO DETECT	STATUS	RESULTS	LAB NUMBER
#1	1	S		TPH (GAS) BTEX	Routine	Routine	
#2	1	S		TPH (GAS) BTEX	Routine	Routine	
<i>Diesel Tank</i> #3	1	S		DIESEL BTEX TPH	Routine	Routine	
<i>Waste</i> #4	1	S		DIESEL BTEX TPH 503 DIE (0.6) CA CR Pb Zn /8010	Routine	Routine	
<i>Waste</i> #5	1	S		"	Routine	Routine	
<i>Waste</i> #6	1	S		"	Routine	Routine	
#7	1	S		"	Routine	Routine	

Field sampling was performed by JOHN KUMAR Sampling was completed at 12:15 AM (PM) 02-28-90

RELEASE OF SAMPLES FROM (name,time,date) --->>>> INTO THE CUSTODY OF (name,time,date)  
from John Kumar @ : AM/PM 90 -> to David L... @ 13:35 AM (PM) 2-28-90  
from @ : AM/PM 90 -> to @ : AM/PM 90  
from @ : AM/PM 90 -> to @ : AM/PM 90

The laboratory designated to perform these analyses is: SEQUOIA DNS HMTL # 145  
NOTE: Procedures and detection limits must conform to RMCCB Region II specifications.  
Please include chain of custody number and site specification on reports and invoices.



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript: Soil, #5  
Lab Number: 002-3879

Sampled: Feb 28, 1990  
Received: Feb 28, 1990

Reported: Mar 16, 1990

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	0.50	N.D.
<b>Chromium.....</b>	<b>0.25</b>	<b>26</b>
<b>Lead.....</b>	<b>0.25</b>	<b>17</b>
<b>Zinc.....</b>	<b>0.50</b>	<b>56</b>

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Elizabeth W. Hackl  
Project Manager



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript: Soil, #6  
Lab Number: 002-3880

Sampled: Feb 28, 1990  
Received: Feb 28, 1990

Reported: Mar 16, 1990

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	0.50	N.D.
Chromium.....	0.25	33
Lead.....	0.25	6.4
Zinc.....	0.50	44

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*for*   
Elizabeth W. Hackl  
Project Manager



# SEQUOIA ANALYTICAL

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Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript: Soil, #7  
Lab Number: 002-3881

Sampled: Feb 28, 1990  
Received: Feb 28, 1990

Reported: Mar 16, 1990

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium.....	0.50	N.D.
<b>Chromium.....</b>	<b>0.25</b>	<b>32</b>
<b>Lead.....</b>	<b>0.25</b>	<b>18</b>
<b>Zinc.....</b>	<b>0.50</b>	<b>43</b>

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Elizabeth W. Hackl  
Project Manager



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Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript.: Soil, #1  
Analysis Method: EPA 5030/8015/8020  
Lab Number: 002-3875


Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 9, 1990  
Reported: Mar 16, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons.....	1.0	N.D.
Benzene.....	0.050	N.D.
Toluene.....	0.10	N.D.
Ethyl Benzene.....	0.10	N.D.
Xylenes.....	0.10	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*for*   
Elizabeth W. Hackl  
Project Manager



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Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript.: Soil, #2  
Analysis Method: EPA 5030/8015/8020  
Lab Number: 002-3876

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 9, 1990  
Reported: Mar 16, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons.....	1.0	N.D.
Benzene.....	0.050	N.D.
Toluene.....	0.10	N.D.
Ethyl Benzene.....	0.10	N.D.
Xylenes.....	0.10	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*EWH*  
Elizabeth W. Hackl  
Project Manager



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(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript.: Soil, #5  
Analysis Method: EPA 5030/8015/8020  
Lab Number: 002-3879

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 9, 1990  
Reported: Mar 16, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons	1.0	640
Benzene	0.050	0.28
Toluene	0.10	3.7
Ethyl Benzene	0.10	2.8
Xylenes	0.10	21

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Elizabeth W. Hackl  
Project Manager



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Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript.: Soil, #6  
Analysis Method: EPA 5030/8015/8020  
Lab Number: 002-3880


Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 9, 1990  
Reported: Mar 16, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons.....	1.0	N.D.
Benzene.....	0.050	N.D.
Toluene.....	0.10	N.D.
Ethyl Benzene.....	0.10	N.D.
Xylenes.....	0.10	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*For*   
Elizabeth W. Hackl  
Project Manager





# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services	Client Project ID: #900228-KI, Meekland	Sampled: Feb 28, 1990
1370 Tully Rd., Suite 505	Sample Descript.: Soil, #7	Received: Feb 28, 1990
San Jose, CA 95122	Analysis Method: EPA 5030/8015/8020	Analyzed: Mar 9, 1990
Attention: Richard Blaine	Lab Number: 002-3881	Reported: Mar 16, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons	1.0	42
Benzene	0.050	N.D.
Toluene	0.10	0.29
Ethyl Benzene	0.10	N.D.
Xylenes	0.10	5.9

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*EW*  
  
 Elizabeth W. Hackl  
 Project Manager



# SEQUOIA ANALYTICAL

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Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Matrix Descript: Soil  
Analysis Method: EPA 3550/8015  
First Sample #: 002-3877

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Extracted: Mar 12, 1990  
Analyzed: Mar 14, 1990  
Reported: Mar 16, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
002-3877	#3	N.D.
002-3878	#4	N.D.
002-3879	#5	5,800
002-3880	#6	1.4
002-3881	#7	7,700

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*For* Elizabeth W. Hackt  
Project Manager

23879.BLA <9>



# SEQUOIA ANALYTICAL

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Blaine Tech Services  
1370 Tully Rd., Suite 505  
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Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Matrix Descript: Soil  
Analysis Method: EPA 5030/8020  
First Sample #: 002-3877

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 6, 1990  
Reported: Mar 16, 1990

## BTEX DISTINCTION (EPA 8020)

Sample Number	Sample Description	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
002-3877	#3	N.D.	N.D.	N.D.	N.D.
002-3878	#4	N.D.	N.D.	N.D.	N.D.

Detection Limits:

0.050

0.10

0.10

0.10

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*For*  
Elizabeth W. Hackl  
Project Manager

23879.BLA <10>



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Matrix Descript: Soil  
Analysis Method: SM 503 D&E (Gravimetric)  
First Sample #: 002-3879

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Extracted: Mar 12, 1990  
Analyzed: Mar 14, 1990  
Reported: Mar 16, 1990

## TOTAL RECOVERABLE PETROLEUM OIL


Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
002-3879	#5	8,300
002-3880	#6	N.D.
002-3881	#7	16,000

Detection Limits:

30

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Elizabeth W. Hackl  
Project Manager

23879.BLA <11>



# SEQUOIA ANALYTICAL

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Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript: Soil, #5  
Analysis Method: EPA 5030/8010  
Lab Number: 002-3879

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 13, 1990  
Reported: Mar 16, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	100	N.D.
Bromoform.....	100	N.D.
Bromomethane.....	100	N.D.
Carbon tetrachloride.....	100	N.D.
Chlorobenzene.....	100	N.D.
Chloroethane.....	500	N.D.
2-Chloroethylvinyl ether.....	100	N.D.
Chloroform.....	100	N.D.
Chloromethane.....	100	N.D.
Dibromochloromethane.....	100	N.D.
1,2-Dichlorobenzene.....	200	N.D.
1,3-Dichlorobenzene.....	200	N.D.
1,4-Dichlorobenzene.....	200	N.D.
1,1-Dichloroethane.....	100	N.D.
1,2-Dichloroethane.....	100	N.D.
1,1-Dichloroethene.....	100	N.D.
Total 1,2-Dichloroethene.....	100	N.D.
1,2-Dichloropropane.....	100	N.D.
cis-1,3-Dichloropropene.....	100	N.D.
trans-1,3-Dichloropropene.....	100	N.D.
Methylene chloride.....	200	N.D.
1,1,2,2-Tetrachloroethane.....	100	N.D.
Tetrachloroethene.....	100	N.D.
1,1,1-Trichloroethane.....	100	N.D.
1,1,2-Trichloroethane.....	100	N.D.
Trichloroethene.....	100	N.D.
Trichlorofluoromethane.....	100	N.D.
Vinyl chloride.....	200	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

*For*   
Elizabeth W. Hackl  
Project Manager



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript: Soil, #6  
Analysis Method: EPA 5030/8010  
Lab Number: 002-3880

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 13, 1990  
Reported: Mar 16, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*EW Hackl*  
Elizabeth W. Hackl  
Project Manager



# SEQUOIA ANALYTICAL

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Blaine Tech Services  
1370 Tully Rd., Suite 505  
San Jose, CA 95122  
Attention: Richard Blaine

Client Project ID: #900228-KI, Meekland  
Sample Descript: Soil, #7  
Analysis Method: EPA 5030/8010  
Lab Number: 000-2381

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 13, 1990  
Reported: Mar 16, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	100	N.D.
Bromoform.....	100	N.D.
Bromomethane.....	100	N.D.
Carbon tetrachloride.....	100	N.D.
Chlorobenzene.....	100	N.D.
Chloroethane.....	500	N.D.
2-Chloroethylvinyl ether.....	100	N.D.
Chloroform.....	100	N.D.
Chloromethane.....	100	N.D.
Dibromochloromethane.....	100	N.D.
1,2-Dichlorobenzene.....	200	N.D.
1,3-Dichlorobenzene.....	200	N.D.
1,4-Dichlorobenzene.....	200	N.D.
1,1-Dichloroethane.....	100	N.D.
1,2-Dichloroethane.....	100	N.D.
1,1-Dichloroethene.....	100	N.D.
Total 1,2-Dichloroethene.....	100	N.D.
1,2-Dichloropropane.....	100	N.D.
cis-1,3-Dichloropropene.....	100	N.D.
trans-1,3-Dichloropropene.....	100	N.D.
Methylene chloride.....	200	N.D.
1,1,2,2-Tetrachloroethane.....	100	N.D.
Tetrachloroethene.....	100	N.D.
1,1,1-Trichloroethane.....	100	N.D.
1,1,2-Trichloroethane.....	100	N.D.
Trichloroethene.....	100	N.D.
Trichlorofluoromethane.....	100	N.D.
Vinyl chloride.....	200	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

  
Elizabeth W. Hackl  
Project Manager

