closed site

GeoStrategies Inc.

August 31, 1993

Alameda County
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Attention: Mr. Brian Oliva

Reference: **UNOCAL Service Station No. 3737**
1400 Powell Street
Emeryville, California

Mr. Oliva:

In accordance with the LUFT guidelines for soil analysis, the reporting limit for Oil and Grease according to method 5520EF is 50 mg/kg. Please replace the following page in your copy of the Oil/Water Separator Abandonment report dated August 11, 1993:

- Page 3 of the Anametrix analytical report for Oil and Grease located in Appendix A.

If you have questions or comments, please call.

GeoStrategies Inc. by,

Cliff M. Garratt
Project Manager

Enclosure

cc: Mr. Syed N. Rizvi, UNOCAL Corporation
Mr. George Warren, Emeryville Fire Department
Mr. Robert Boust, UNOCAL Corporation

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GeoStrategies Inc.

August 11, 1993

Alameda County
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Attention: Mr. Brian Oliva

Reference: **UNOCAL Service Station No. 3737**
1400 Powell Street
Emeryville, California

Mr. Oliva:

As requested by Mr. Syed N. Rizvi of UNOCAL Corporation, we are forwarding a copy of the Oil/Water Separator Abandonment report dated August 11, 1993. This report presents the results of soil sampling and field activities conducted at the above referenced location.

If you have questions or comments, please call.

GeoStrategies Inc. by,

Cliff M. Gerratt
Project Manager

Enclosure

cc: Mr. Syed N. Rizvi, UNOCAL Corporation
Mr. George Warren, Emeryville Fire Department
Mr. Robert Boust, UNOCAL Corporation

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GeoStrategies Inc.

OIL/WATER SEPARATOR ABANDONMENT

UNOCAL Service Station No. 3737
1400 Powell Street
Emeryville, California

412602-1

August 11, 1993

GeoStrategies Inc.

August 11, 1993

UNOCAL Corporation
911 Wilshire Boulevard, Suite 1137
Los Angeles, California 90017

Attention: Mr. Syed N. Rizvi

Reference: **OIL/WATER SEPARATOR ABANDONMENT**
UNOCAL Service Station No. 3737
1400 Powell Street
Emeryville, California

Mr. Rizvi:

This report prepared by GeoStrategies Inc. (GSI) summarizes the field activities performed at the above referenced site during the oil/water separator abandonment on July 16, 1993 (Plate 1).

FIELD PROCEDURES

The site is currently occupied by an operating UNOCAL Service Station. The contents of the 2 by 3 by 3-foot deep oil/water separator were transferred into 55-gallon drums. The separator box was then steam cleaned, the rinseate transferred into 55-gallon drums, and the emptied separator wiped down with absorbent pads. The concrete bottom to the separator box was then broken out using a jackhammer. A hand auger was used to bore to a total of approximately 2 feet below the bottom of the box, where groundwater was encountered. A hand-driven soil sampling device was used to collect a soil sample from approximately 1 foot below the bottom of the box.

412602-1

SOIL SAMPLING

Soil sample UOW-1 was collected from beneath the oil/water separator box at a depth of approximately 1 foot below the bottom of the box, or approximately 4 feet below grade (Plate 2). The sample was collected by driving the sampling device fitted with a clean stainless steel sample tube, into the soil with a hand operated drive hammer. Upon removal of the sample tube from the sampling device, both ends were covered with teflon tape and sealed with plastic end caps. The sample was then labeled, placed in a cooler with blue ice, entered on a Chain-of-Custody form, and transported to Anametrix Inc., a California State-certified laboratory located in San Jose, California.

The sample was analyzed for Total Petroleum Hydrocarbons calculated as Gasoline and as Diesel according to EPA Method 8015 (Modified), for Benzene, Toluene, Ethylbenzene, and Xylenes according to EPA Method 8020, for Oil and Grease according to Standard Methods 5520 E&F, Halogenated Volatile Organics according to EPA Method 8240, and ICAP Metals (Cr, Cd, Pb, Zn, Ni) by atomic absorption. These data are summarized in Table 1, and are included in Appendix A.

If you have questions or comments, please call.

GeoStrategies Inc. by,

Ellen C. Fostersmith
Geologist

Stephen J. Carter
Project Manager
R.G. 5577

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

ECF/SJC:rt

Plate 1. Vicinity Map
Plate 2. Site Plan

Appendix A. Laboratory Analytical Report and Chain-of-Custody Form

QC:

TABLE

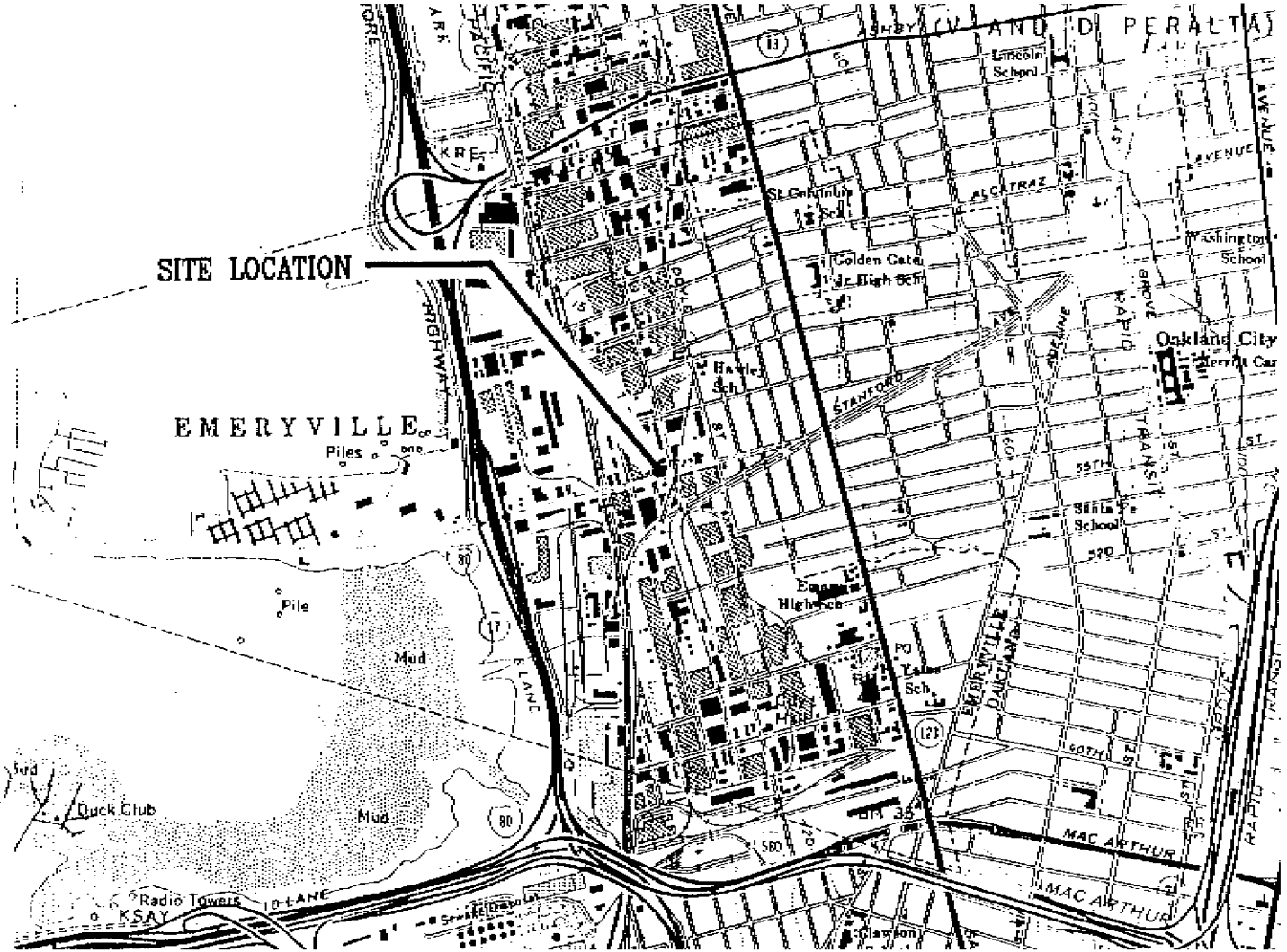
TABLE 1

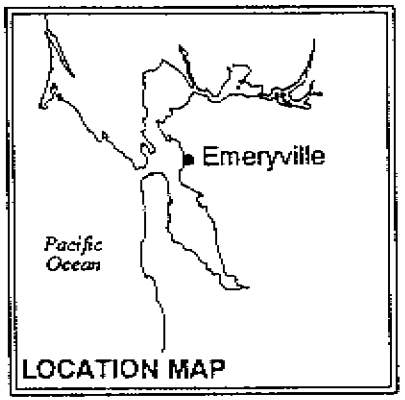
SOIL ANALYTICAL DATA

SAMPLE NO.	DEPTH (FT)	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	O&G (PPM)	TOTAL LEAD (PPM)
UOW-1	1	16-Jul-93	20-Jul-93	<0.5	<0.005	<0.005	<0.005	<0.005	<10	67	8.0

PPM = Parts Per Million.
TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
TPH-D = Total Petroleum Hydrocarbons calculated as Diesel.
O&G = Oil and Grease.
UOW = Oil/Water Separator Sample.

ILLUSTRATIONS





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0 2000

Scale in Feet

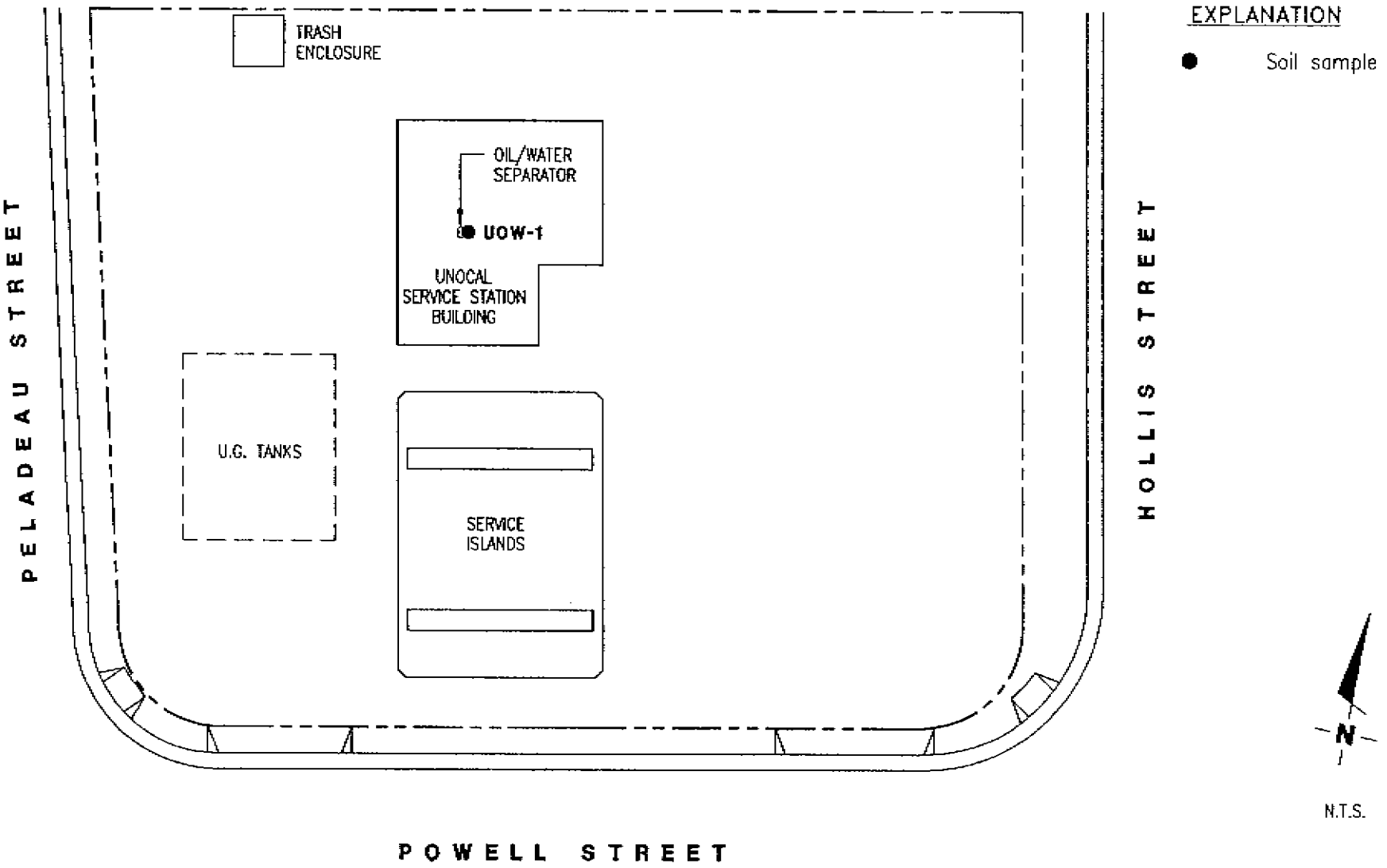
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
UNOCAL Service Station #3737
1400 Powell Street
Emeryville, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
4126		8/93	



GeoStrategies Inc.

SITE PLAN
UNOCAL Service Station #3737
1400 Powell Street
Emeryville, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
412602		8/93	

APPENDIX A
LABORATORY ANALYTICAL REPORT
AND
CHAIN-OF-CUSTODY FORM

Inchcape Testing Services
Anametrix Laboratories

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9307155- 1	UOW-1

This report consists of 23 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

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

Sarah Schoen, Ph.D.
Laboratory Director

7-23-93
Date

ANAMETRIX REPORT DESCRIPTION
GCMS

Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

Tentatively Identified Compounds (TICs)

TIC forms contain tabulated results for non-target compounds detected in GC/MS analyses. TICs must be requested at the time samples are submitted at Anametrix. TIC forms immediately follow the OADS form for each sample. If TICs are requested but not found, then TIC forms will not be included with the report.

Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

Qualifiers

Anametrix uses several data qualifiers (Q) in it's report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the amount reported exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.
- A - Indicates that the tentatively identified compound is a suspected aldol condensation product. This is common in EPA Method 8270 soil analyses.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307155- 1	UOW-1	SOIL	07/16/93	8240

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- No QA/QC problems encountered.

Department Supervisor 7-20-93 Date

Chemist 7-20-93 Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : 412602
Sample ID : UOW-1
Matrix : SOIL
Date Sampled : 7/16/93
Date Analyzed : 7/20/93
Instrument ID : MSD2

Anametrix ID : 9307155-01
Analyst : [illegible]
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	77.	
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID :
Sample ID : VBLK2Z
Matrix : SOIL
Date Sampled : 0/ 0/ 0
Date Analyzed : 7/20/93
Instrument ID : MSD2

Anametrix ID : BL2002A1
Analyst : PF
Supervisor : M

Dilution Factor : 1.0
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 8240
ANAMETRIX, INC. (408)432-8192

Project ID : 412602
Matrix : SOLID

Anametrix ID : 9307155
Analyst : PF
Supervisor : [illegible]

	SAMPLE ID	SU1	SU2	SU3
1	VBLK2Z	104	100	104
2	UOW-1	103	99	101
3	LCS2A	103	100	104
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

	QC LIMITS
SU1 = 1,2-Dichloroethane-d4	(85-121)
SU2 = Toluene-d8	(83-117)
SU3 = 1,4-Bromofluorobenzene	(82-116)

* Values outside of Anametrix QC limits

LABORATORY CONTROL SPIKE RECOVERY FORM --- EPA METHOD 8240

ANAMETRIX, INC. (408)432-8192

Project/Case :
Matrix : SOIL
Date Sampled : 0/ 0/00
Date Analyzed : 07/20/93
Instrument ID : MSD2

Anametrix ID : ML2002A1
Analyst : DF
Supervisor : MJ
SDG/Batch :

LCS2A

COMPOUND	SPIKE ADDED (ug/Kg	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	%REC LIMITS
1,1-Dichloroethene	50	0	50	100	78-150
Benzene	50	0	50	100	85-120
Trichloroethene	50	0	45	90	64-135
Toluene	50	0	48	96	88-119
Chlorobenzene	50	0	47	94	86-116

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307155- 1	UOW-1	SOIL	07/16/93	TPHd
9307155- 1	UOW-1	SOIL	07/16/93	TPHgBTEX

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Bodmer 7/21/93
Department Supervisor Date

Lucia Shor 7/22/93
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9307155
Matrix : SOIL
Date Sampled : 07/16/93

Project Number : 412602
Date Released : 07/21/93

COMPOUNDS	Reporting Limit (mg/Kg)	Sample I.D.# UOW-1 -01	Sample I.D.# BL1901E2 BLANK
Benzene	0.005	ND	ND
Toluene	0.005	ND	ND
Ethylbenzene	0.005	ND	ND
Total Xylenes	0.005	ND	ND
TPH as Gasoline	0.5	ND	ND
% Surrogate Recovery		98%	101%
Instrument I.D.		HP8	HP8
Date Analyzed		07/19/93	07/19/93
RLMF		1	1

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

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.

RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

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

Analyst 7/22/93 Date

Supervisor 7/21/93 Date

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

Anametrix W.O.: 9307155
Matrix : SOIL
Date Sampled : 07/16/93
Date Extracted: 07/22/93

Project Number : 412602
Date Released : 07/23/93
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9307155-01	UOW-1	07/22/93	10	ND
BL22H1F1	METHOD BLANK	07/22/93	10	ND

Note: Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.
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.

Peggie Davison 7/23/93
Analyst Date

Cheryl Balmer 7/23/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : SOIL
Date Sampled : N/A
Date Analyzed : 07/19/93

Anametrix I.D. : ML1901E1
Analyst : IS
Supervisor : GS
Date Released : 07/21/93
Instrument ID : HP8

COMPOUND	SPIKE AMT (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
BENZENE	0.020	0.020	100%	52-133
TOLUENE	0.020	0.021	105%	57-136
ETHYLBENZENE	0.020	0.020	100%	56-139
TOTAL-XYLENES	0.020	0.019	95%	56-141
P-BFB			105%	53-147

* Quality control limit 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
Matrix : SOIL
Date Sampled : N/A
Date Extracted: 07/22/93
Date Analyzed : 07/22/93

Anametrix I.D. : ML22H1F1
Analyst : [illegible]
Supervisor : [illegible]
Date Released : 07/21/93
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (mg/Kg)	REC LCS (mg/Kg)	% REC LCS	% REC LIMITS
Diesel	125	84	67%	48-113

*Limits established by Anametrix, Inc.

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307155- 1	UOW-1	SOIL	07/16/93	5520EF

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Department Supervisor 7/19/93 Date

Chemist 7/19/93 Date

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

Project # : 412602
Matrix : SOIL
Date sampled : 07/16/93
Date extracted: 07/16/93
Date analyzed : 07/19/93

Anametrix I.D. : 9307155
Analyst : [illegible]
Supervisor : [illegible]
Date released : 08/27/93

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9307155-01	UOW-1	50	67
BL16H1W9	METHOD BLANK	50	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.

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

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML16H1W9
Matrix	: SOIL	Analyst	:
Date sampled	: N/A	Supervisor	:
Date extracted	: 07/16/93	Date Released	: 07/19/93
Date analyzed	: 07/19/93		

COMPOUND	SPIKE AMT. (mg/Kg)	LCS (mg/Kg)	%REC LCS	%REC LIMITS
Motor Oil	300	270	90%	68-113%

* Quality control established by Anametrix Laboratories.

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

ANAMETRIX REPORT DESCRIPTION
INORGANICS

Analytical Data Report (ADR)

The ADR contains tabulated results for inorganic analytes. All field samples, QC samples and blanks were prepared and analyzed according to procedures in the following references:

- EPA Method 6010/7000/9000 series - "Test Methods for Evaluating Solid Waste," SW-846, EPA, 3rd Edition, November 1986.
- EPA Method 100, 200, 300 series - "Methods for Chemical Analysis of Water and Wastes," EPA, 3rd Edition, 1983.
- Toxicity Characteristic Leaching Procedure (EPA Method 1311) - 40 CFR, Part 268, Appendix 1, June 1990.
- Waste Extraction Test - Results are reported in mg/L of extract according to procedures of CCR Title 22, Section 66261, Appendix II.
- Organic Lead - CCR Title 22, Section 66261, Appendix XI.
- Standard Method 3340B - "Standard Methods for the Examination of Water and Wastewater," APHA, AWWA, WEF, 18th Edition, 1992.

Matrix Spike Report (MSR)

The MSR summarizes percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. MSRs may not be provided with all analytical reports. Anametrix control limit for MSR is 75-125% with 25% for RPD limits.

Laboratory Control Sample Report (LCSR)

The LCSR summarizes percent recovery information for laboratory control spikes on reagent water or soil. This information is a statement of performance for the method, i.e., the samples are properly prepared and analyzed according to the applicable methods. Anametrix control limit for LCSR is 80-120%.

Method Blank Report (MBR)

The MBR summarizes quality control information for reagents used in preparing samples. The absolute value of each analyte measured in the method blank should be below the method reporting limit for that analyte.

Post Digestion Spike Report (PDSR)

The PDSR summarizes percent recovery information for post digestion spikes. A post digestion spike is performed for a particular analyte if the matrix spike recovery is outside of established control limits. Any percent recovery for a post digestion spike outside of established limits for an analyte indicates probable matrix effects and interferences for that analyte. Anametrix control limit for PDSR is 85-115%.

Qualifiers (Q)

Anametrix uses several data qualifiers in inorganic reports. These qualifiers give additional information on the analytes reported. The following is a list of qualifiers and their meanings:

- I - Sample was analyzed at the stated dilution due to spectral interferences.
- U - Analyte concentration was below the method reporting limit. For matrix and post digestion spike reports, a value of "0.0" is entered for calculation of the percent recovery.
- B - Sample concentration was below the reporting limit but above the instrument detection limit. Result is entered for calculation of the percent recovery only.
- H - Spike percent recovery was outside of Anametrix control limits due to interferences from relatively high concentration level of the analyte in the unspiked sample.

Comment Codes

In addition to qualifiers, the following codes are used in the comment section of all reports to give additional information about sample preparation methods:

- A - Sample was prepared for silver based on the silver digestion method developed by the Southern California Laboratory, Department of Health Services, "Acid Digestion for Sediments, Sludges, Soils and Solid Wastes. A Proposed Alternative to EPA SW846, Method 3050." Environmental Science and Technology, 1989, 23, 898-900.
- T - Spikes were prepared after extraction by the Toxicity Characteristic Leaching Procedure (TCLP).
- C - Spikes were prepared after extraction by the California Waste Extraction Test (CWET) method.
- D - Reported results are dissolved, not total, metals.

Reporting Conventions

Analytical values reported are gross values, i.e., not corrected for method blank contamination.
Solid matrices are reported on a wet weight basis, unless specifically requested otherwise.

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : METALS
Sub-Department: METALS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307155- 1	UOW-1	SOIL	07/16/93	6010

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

MR. TOM PAULSON
GETTLER RYAN/GEOSTRATEGIES
2150 W. WINTON AVENUE
HAYWARD, CA 94545

Workorder # : 9307155
Date Received : 07/16/93
Project ID : 412602
Purchase Order: 412602
Department : METALS
Sub-Department: METALS

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Department Supervisor 7/23/93 Date

Chemist Mona Kamel 7/23/93 Date

INORGANIC ANALYSIS DATA SHEET
ANAMETRIX, INC. (408) 432-8192

Anametrix I.D.: 9307155-01
Client I.D. : UOW-1
Project I.D. : 412602
Reporting Unit: mg/Kg
Matrix : SOIL

Date Sampled : 07/16/93
Analyst : MK
Supervisor : MW
Date Released : 07/20/93
Instrument I.D. : ICP1

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	REPORT LIMIT	DIL. FACTOR	RESULT	Q
Cadmium-6010	07/19/93	07/20/93	0.25	1	ND	
Chromium-6010	07/16/93	07/19/93	0.50	1	23.7	
Nickel-6010	07/16/93	07/19/93	2.0	1	29.0	
Lead-6010	07/19/93	07/20/93	2.0	1	8.0	
Zinc-6010	07/16/93	07/19/93	1.0	1	33.2	

COMMENT:

METHOD BLANK REPORT
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.# : 9307155
Method Blank I.D.: MB0716S, MB0719S
Project I.D. : 412502
Matrix : SOIL
Reporting Unit : mg/Kg

Analyst : MK
Supervisor : MW
Date Released : 07/20/93
Instrument I.D. : ICP1

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	REPORTING LIMIT	RESULT	Q
Cadmium-6010	07/19/93	07/20/93	0.25	ND	
Chromium-6010	07/16/93	07/19/93	0.50	ND	
Nickel-6010	07/16/93	07/19/93	2.0	ND	
Lead-6010	07/19/93	07/20/93	2.0	ND	
Zinc-6010	07/16/93	07/19/93	1.0	ND	

COMMENT:

LABORATORY CONTROL SAMPLE REPORT
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.# : 9307155
Spike I.D. : LCS0719S, LCS0716S
Project I.D. : 412502
Matrix : SOIL
Reporting Unit : mg/Kg

Analyst :
Supervisor :
Date Released : 07/20/93
Instrument I.D : ICP1

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	SPIKE AMT.	METHOD SPIKE	% REC.	Q
Cadmium-6010	07/19/93	07/20/93	2.5	2.2	88.0	
Chromium-6010	07/16/93	07/19/93	10.0	8.6	86.0	
Nickel-6010	07/16/93	07/19/93	25.0	21.5	86.0	
Lead-6010	07/19/93	07/20/93	25.0	21.3	85.2	
Zinc-6010	07/16/93	07/19/93	25.0	20.4	81.6	

COMMENT:

Gettler - Ryan Inc. 9307155 (15) 13:50 MB

ENVIRONMENTAL DIVISION

2072 **Chain of Custody**

COMPANY Unocal #3737 JOB NO. 412602

JOB LOCATION 1400 Powell / Hollis

CITY Emeryville PHONE NO.

AUTHORIZED Hunt DATE 7/16/93 P.O. NO.

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
HOW-1	1	Soil	7/16/93 9:26	TPH-G, BTEX, TPH-D O&G; 8240; ICAP metals	(1)

RELINQUISHED BY: [signature] 1:30 RECEIVED BY:

[signature] 7/16/93

RELINQUISHED BY: RECEIVED BY:

RELINQUISHED BY: RECEIVED BY LAB: [signature] 7/16/93 13:30

DESIGNATED LABORATORY: Anametrix DHS #:

REMARKS: 24 hr TAT for TPHg/BTEX, O&G, & TPHd

2 day Rush for 8240 & 6010

DATE COMPLETED FOREMAN