



93 NOV -1 AM 11:56

October 28, 1993

Jeff Sharpio
Alameda County Department
of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621-1426

1/26/94 - left msg w/ Dick to continue
w/ semi annual sampling of MW-3 only.
this Feb/Mar and Aug/Sep - then we can
evaluate for closure. However all well
elevations should be measured for flow direction

Re: ACDEH STID #1976
Shell Service Station
WIC #204-4380-0303
318 South Livermore Avenue
Livermore, California
WA Job #81-613-203

Dear Mr. Sharpio:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1). This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. Included below are descriptions and results of activities performed in the third quarter 1993 and proposed work for the fourth quarter 1993.

Third Quarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured depths to ground water and collected ground water samples from all four site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.
- Weiss Associates (WA) compiled the ground water elevation and analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).

Anticipated Fourth Quarter 1993 Activities:

As approved in the ACDEH's July 19, 1993¹ letter to Dan Kirk of Shell Oil Company, the monitoring frequency at this site will be reduced to twice annually, in the spring and fall quarters. The next sampling event will occur in the first quarter of 1994.

Conclusions and Recommendations:

As indicated in the ACDEH's June 19, 1992 letter to Dan Kirk of Shell Oil Company¹, this site would be granted case closure if no hydrocarbons or lead were detected during four consecutive quarters of ground water sampling. We began sampling this site on September 2, 1992 and have attempted to sample all site wells quarterly for the last five quarters. Due to low water levels, not all of the wells could be sampled each quarter. However, each of the wells has been sampled at least three times, including during recent quarters when the water levels were up to 16 ft higher than in previous quarters. Since 1990 when the wells were first installed, benzene has been detected over Department of Toxic Substances Control (DTSC) maximum contaminant levels for drinking water (MCLs) only twice, at a maximum of 6.8 parts per billion (ppb) in well MW-3.

Since no benzene or other hydrocarbons have ever been detected over DTSC MCLs in downgradient wells MW-1, MW-2 and MW-4 despite the recent rise in ground water, and since the benzene concentrations detected in source area well MW-3 are near or below DTSC MCLs and do not appear to pose any threat to human health or the environment, we request that the Alameda County Department of Environmental Health grant case closure for this site.

¹ ACDEH, July 26, 1993, Letter from hazardous materials specialist Eva Chu to Shell environmental engineer Dan Kirk regarding the Shell service station at 318 South Livermore Avenue, Livermore, California, 1 pg.

Jeff Sharpio
October 28, 1993

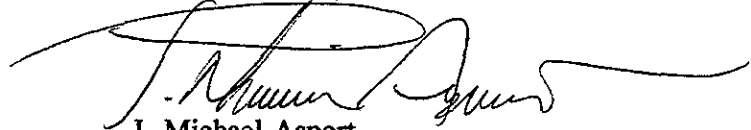
3

Weiss Associates 

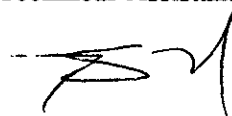
Please call if you have any questions.



Sincerely,
Weiss Associates

A handwritten signature in black ink, appearing to read "J. Michael Asport".

J. Michael Asport
Technical Assistant

A handwritten signature in black ink, appearing to read "N. Scott MacLeod".

N. Scott MacLeod, R.G.
Project Geologist

JMA/NSM:jma

J:\SHELL\600\QMRPTS\613QMOC3.WP

Attachments: A - Ground Water Monitoring Report and Analytic Data

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, CA 94520
Tom Callaghan, Regional Water Quality Control Board, San Francisco Bay Region, 2101
Webster Street, Oakland, CA 94612

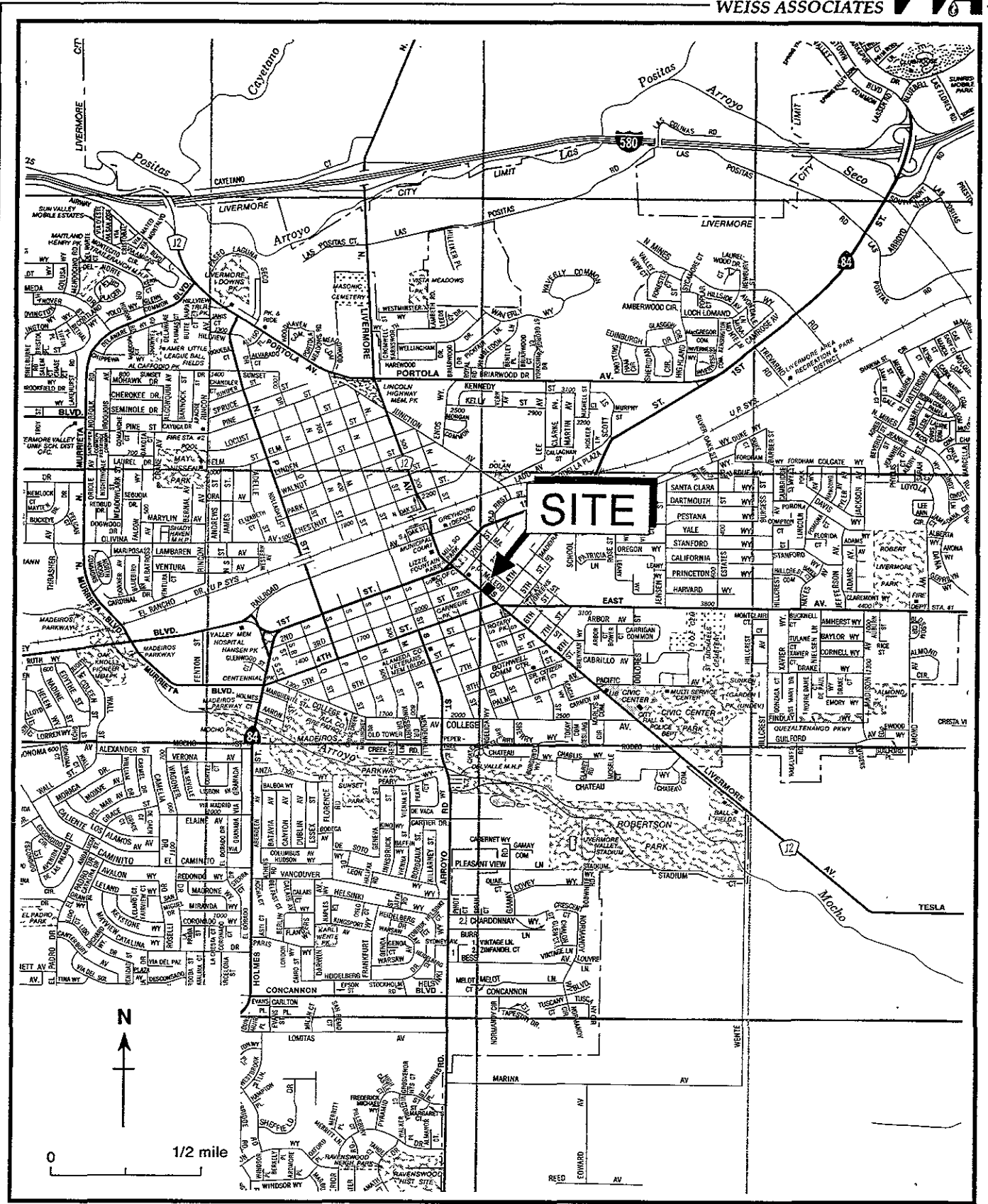
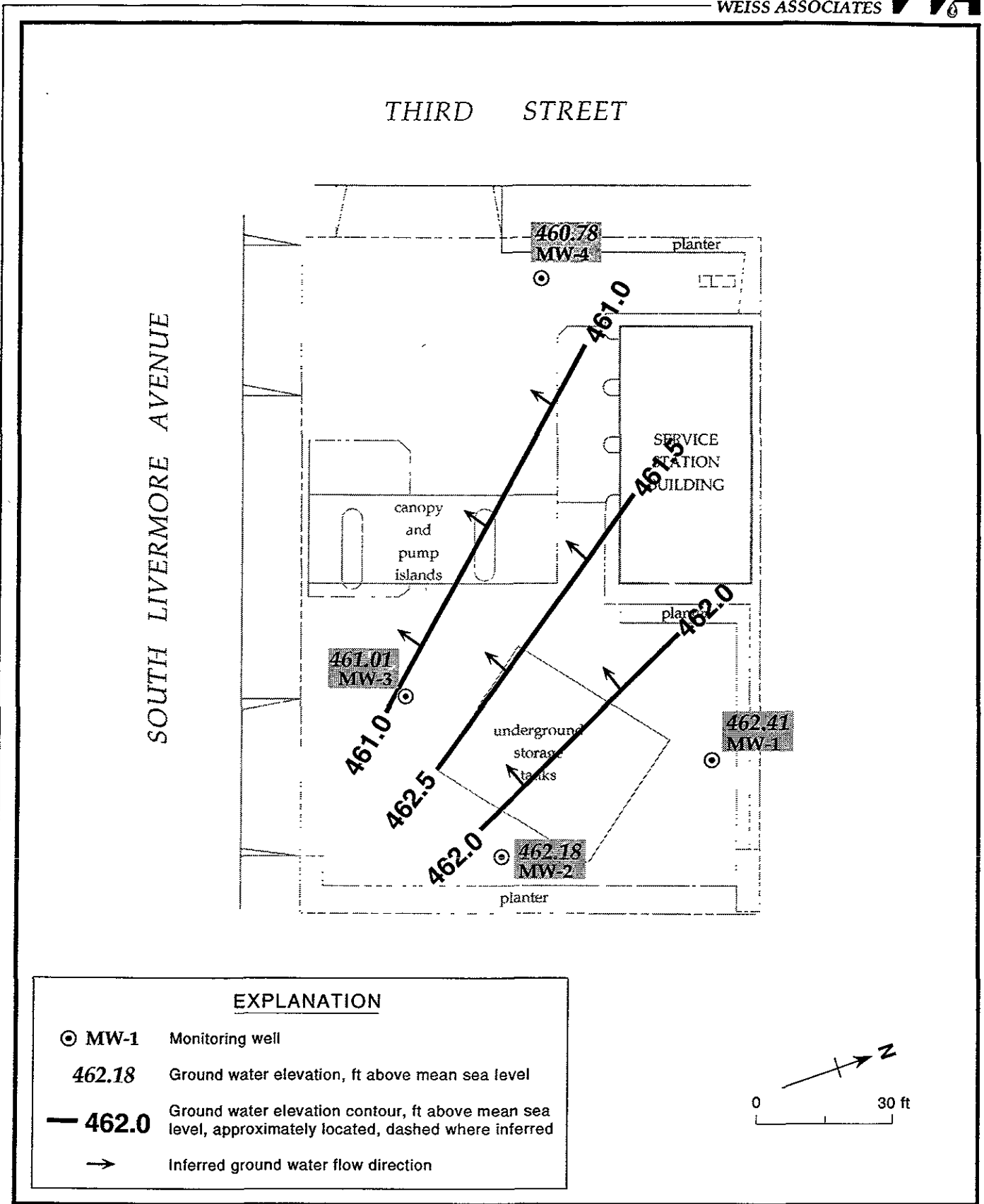


Figure 1. Site Location Map - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California



EXPLANATION	
⊙ MW-1	Monitoring well
462.18	Ground water elevation, ft above mean sea level
— 462.0	Ground water elevation contour, ft above mean sea level, approximately located, dashed where inferred
→	Inferred ground water flow direction

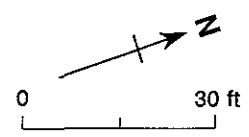


Figure 2. Monitoring Well Locations and Ground Water Elevations - September 21, 1993 - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	06/21/90	496.08	42.69	453.39
	09/28/90		44.75	451.33
	11/06/90		45.61	450.47
	12/07/90		45.82	450.26
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.47	448.61
	05/27/93		31.09	464.99
	09/21/93		33.67	462.41
MW-2	06/21/90	495.49	42.15	453.34
	09/28/90		44.18	451.31
	11/06/90		44.98	450.51
	12/07/90		45.32	450.17
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.14	448.35
	05/27/93		31.48	464.01
	09/21/93		33.31	462.18
MW-3	06/21/90	494.80	42.07	452.73
	09/28/90		44.15	450.65
	11/06/90		44.93	449.87
	12/07/90		45.56	449.24
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.02	447.78
	05/27/93		29.58	465.22
	09/21/93		33.79	461.01
MW-4	06/21/90	494.33	42.21	452.12
	09/28/90		44.27	450.06
	11/06/90		45.12	449.21
	12/07/90		45.97	448.36
	09/02/92		50.61	443.72
	11/13/92		Dry	Dry
	01/25/93		47.40	446.93
	05/27/93		32.54	461.79
	09/21/93		33.55	460.78

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Well ID	Date	Depth to Water	TPH-G	B	E	T	X	Lead
			-----parts per billion (ug/L)-----					
MW-1	06/21/90	42.69	<30	<0.3	<0.3	<0.3	<0.3	---
	10/02/90	44.75	<30	<0.3	<0.3	<0.3	<0.3	---
	09/02/92	---	---	---	---	---	---	---
	11/13/92	---	---	---	---	---	---	---
	01/25/93	47.47	<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93	31.09	<50	<0.5	<0.5	<0.5	<0.5	---
	05/27/93 ^{dup}	31.09	<50	<0.5	<0.5	<0.5	<0.5	---
	09/21/93	33.67	<50	<0.5	<0.5	<0.5	<0.5	---
MW-2	06/21/90	42.15	<30	<0.3	<0.3	<0.3	<0.3	---
	10/02/90	44.18	<30	<0.3	<0.3	<0.3	<0.3	---
	09/02/92	Dry	---	---	---	---	---	---
	11/13/92	Dry	---	---	---	---	---	---
	01/25/93	47.14	<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93	31.48	<50	<0.5	<0.5	<0.5	<0.5	---
	09/21/93	33.31	<50	<0.5	<0.5	<0.5	<0.5	---
	MW-3	06/21/90	42.07	<30	<0.3	<0.3	<0.3	<0.3
10/02/90		44.15	<30	<0.3	<0.3	<0.3	<0.3	---
09/02/92		Dry	---	---	---	---	---	---
11/13/92		Dry	---	---	---	---	---	---
01/25/93		47.02	<50	<0.5	<0.5	<0.5	<0.5	<3
05/27/93		29.58	50	6.8	5	1.9	5.7	---
09/21/93		33.79	80	2.3	0.9	1.0	0.9	---
09/21/93 ^{dup}		33.79	90	2.3	0.9	0.9	4.0	---
MW-4	06/21/90	42.21	<30	<0.3	<0.3	<0.3	<0.3	---
	10/02/90	44.27	<30	<0.3	<0.3	<0.3	<0.3	---
	09/02/92	50.61	63	<0.5	<0.5	<0.5	<0.5	3.3
	09/02/92 ^{dup}	50.61	67	<0.5	<0.5	<0.5	<0.5	---
	11/13/92	Dry	---	---	---	---	---	---
	01/25/93	47.40	<50	<0.5	<0.5	<0.5	<0.5	<3
	01/25/93 ^{dup}	47.40	<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93	32.54	<50	<0.5	<0.5	<0.5	<0.5	---
	09/21/93	33.55	<50	<0.5	<0.5	<0.5	<0.5	---
Trip Blank	09/02/92		<50	<0.5	<0.5	<0.5	<0.5	---
	01/25/93		<50	<0.5	<0.5	<0.5	<0.5	<3
	05/27/93		<50	<0.5	<0.5	<0.5	<0.5	---
	09/21/93		<50	<0.5	<0.5	<0.5	<0.5	---
DTSC MCLs			NE	1	680	100 ^a	1,750	50

Weiss Associates



-- Table 2 continues on next page --

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California (continued)

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015

B = Benzene by EPA Method 8020

E = Ethylbenzene by EPA Method 8020

T = Toluene by EPA Method 8020

X = Xylenes by EPA Method 8020

Lead = Lead by EPA Method 7421

NE = Not established

--- = Not analyzed

<n = Not detected at detection limits of n ppb

DTSC MCLs = California Department of Toxic Substances Control maximum
contaminant levels for drinking water

dup = Duplicate sample

Notes:

a = DTSC recommended action level; MCL not established

ATTACHMENT A
GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

October 15, 1993

Shell Oil Company
P.O. Box 5278
Concord, CA 94520-9998

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-4380-0303
318 S. Livermore Avenue
Livermore, California

QUARTER:
3rd quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930921-J-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a **TABLE OF WELL GAUGING DATA**. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water may be removed in cases where the well dewateres and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California.

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such sites is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. 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 the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

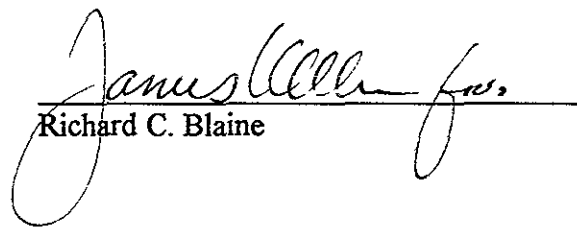
Objective Information Collection

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. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.


Richard C. Blaine

RCB/lpn

attachments: table of well gauging data
chain of custody
certified analytical report

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Michael Asport

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	9/21/93	TOC	--	NONE	--	--	33.67	54.83
MW-2	9/21/93	TOC	--	NONE	--	--	33.31	54.43
MW-3 *	9/21/93	TOC	--	NONE	--	--	33.79	52.44
MW-4	9/21/93	TOC	--	NONE	--	--	33.55	51.69

* Sample DUP was a duplicate sample taken from well MW-3.

9309270 (18) (10/97) 10:40

SHELL OIL COMPANY RETAIL ENVIRONMENTAL ENGINEERING - WEST		CHAIN OF CUSTODY RECORD Serial No: 930921-J1		Date: 9/21/93 Page 1 of 1															
Site Address: 318 S. Livermore Ave., Livermore		Analysis Required				LAB: Anamatrix													
WIC#: 204-4380-0303						CHECK ONE (1) BOX ONLY <input checked="" type="checkbox"/> QUARTERLY MONITORING <input type="checkbox"/> SITE INVESTIGATION <input type="checkbox"/> SOIL CLOSURE/DISPOSAL <input type="checkbox"/> WATER CLOSURE/DISPOSAL <input type="checkbox"/> SOIL/AIR REM. or Sys. O & M <input type="checkbox"/> WATER REM. or Sys. O & M <input checked="" type="checkbox"/> OTHER													
Shell Engineer: Dan Kirk Phone No.: (510) 575-6168 Fax #: 675-6160						<input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours <input checked="" type="checkbox"/> 15 days (Normal) <input type="checkbox"/> Other													
Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133						<input type="checkbox"/> HOT: Notify Lab as soon as possible of 24/48 hr. TAT.													
Consultant Contact: Jim Keller Phone No.: (408) 995-5535 Fax #: 293-8773																			
Commons:																			
Sampled by: <i>[Signature]</i>																			
Printed Name: JERRY SOTORFF																			
Sample ID	Date	Sludge	Soil	Water	Air	No. of Cont.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8015 Mod. Diesel)	Volatiles Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	Dissolved Pb (7401)	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	CONDITION COMMENTS
1 MW-4	9/21			X		4					X	X							OK
2 MW-3	9/21			X		4					X	X							Replacement - 9m
3 MW-1	9/21			X		4					X	X							
4 MW-2	9/21			X		4					X	X							
5 DUP	9/21			X		4					X	X							
6 TB	9/21			X		2					X								
Relinquished By (Signature): <i>[Signature]</i>		Printed Name: JERRY SOTORFF		Date: 9/21/93 Time: 4:30 PM		Received (Signature): <i>[Signature]</i>		Printed Name: KRISTINA V. RAYBURN		Date: 9/21/93 Time: 10:00 AM		Received (Signature): <i>[Signature]</i>		Printed Name: CALVIN ROBINSON		Date: 9/21/93 Time: 10:20 AM			
Relinquished By (Signature): <i>[Signature]</i>		Printed Name: KRISTINA V. RAYBURN		Date: 9/21/93 Time: 10:00 AM		Received (Signature): <i>[Signature]</i>		Printed Name: CALVIN ROBINSON		Date: 9/21/93 Time: 10:20 AM		Received (Signature): <i>[Signature]</i>		Printed Name: <i>[Signature]</i>		Date: <i>[Signature]</i>			
Relinquished By (Signature): <i>[Signature]</i>		Printed Name: <i>[Signature]</i>		Date: <i>[Signature]</i> Time: <i>[Signature]</i>		Received (Signature): <i>[Signature]</i>		Printed Name: <i>[Signature]</i>		Date: <i>[Signature]</i> Time: <i>[Signature]</i>		Received (Signature): <i>[Signature]</i>		Printed Name: <i>[Signature]</i>		Date: <i>[Signature]</i> Time: <i>[Signature]</i>			

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Inchcape Testing Services

Anametrix Laboratories

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

MR. JIM KELLER
BLAINE TECH SERVICES INC.
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9309270
Date Received : 09/22/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9309270- 1	MW-4
9309270- 2	MW-3
9309270- 3	MW-1
9309270- 4	MW-2
9309270- 5	DUP
9309270- 6	TB

This report consists of 10 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

10-8-93

Date

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

MR. JIM KELLER
BLAINE TECH SERVICES INC.
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9309270
Date Received : 09/22/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9309270- 1	MW-4	WATER	09/21/93	TPHgBTEX
9309270- 2	MW-3	WATER	09/21/93	TPHgBTEX
9309270- 3	MW-1	WATER	09/21/93	TPHgBTEX
9309270- 4	MW-2	WATER	09/21/93	TPHgBTEX
9309270- 5	DUP	WATER	09/21/93	TPHgBTEX
9309270- 6	TB	WATER	09/21/93	TPHgBTEX

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

MR. JIM KELLER
BLAINE TECH SERVICES INC.
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9309270
Date Received : 09/22/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balmer
Department Supervisor

9/28/93
Date

Peggie Dawson 9/28/93
Chemist Date

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

Anamatrix W.O.: 9309270
Matrix : WATER
Date Sampled : 09/21/93

Project Number : 204-4380-0303
Date Released : 09/28/93

Reporting Limit	Sample I.D.# MW-4	Sample I.D.# MW-3	Sample I.D.# MW-1	Sample I.D.# MW-2	Sample I.D.# DUP	
(ug/L)	-01	-02	-03	-04	-05	
Benzene	0.5	ND	2.3	ND	ND	2.3
Toluene	0.5	ND	1.0	ND	ND	0.9
Ethylbenzene	0.5	ND	0.9	ND	ND	0.9
Total Xylenes	0.5	ND	0.9	ND	ND	4.0
TPH as Gasoline	50	ND	80	ND	ND	90
% Surrogate Recovery	115%	114%	115%	114%	121%	
Instrument I.D.	HP4	HP4	HP4	HP4	HP4	
Date Analyzed	09/24/93	09/24/93	09/24/93	09/24/93	09/24/93	
RLMF	1	1	1	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 (Dilution).

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%.

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

Reggie Dawson 9/28/93
Analyst Date

Cheryl Palmer 9/28/93
Supervisor Date

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

Anamatrix W.O.: 9309270
Matrix : WATER
Date Sampled : 09/21/93

Project Number : 204-4380-0303
Date Released : 09/28/93

Reporting Limit	Sample I.D.# TB	Sample I.D.# BS2401E2
COMPOUNDS (ug/L)	-06	BLANK
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Total Xylenes	0.5	ND
TPH as Gasoline	50	ND
% Surrogate Recovery	112%	101%
Instrument I.D.	HP4	HP4
Date Analyzed	09/24/93	09/24/93
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 (Dilution).

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%.

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

Peggie Dawson 9/28/93
Analyst Date

Cheryl Palmer 9/28/93
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 : WATER
 Date Sampled : N/A
 Date Analyzed : 09/24/93

Anamatrix I.D. : MS2402E1
 Analyst : RD
 Supervisor : *[Signature]*
 Date Released : 09/28/93
 Instrument I.D.: HP4

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	500	380	76%	67-127
p-BFB			102%	61-139

* Quality control established by Anamatrix, Inc.

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:

- ▶ "Test Methods for Evaluating Solid Waste," SW-846, EPA, 3rd Edition, November 1986.
- ▶ "Methods for Chemical Analysis of Water and Wastes," EPA, 3rd Edition, 1983.
- ▶ CCR Title 22, Section 66261, Appendix II, California Waste Extraction Test.
- ▶ CCR Title 22, Section 66261, Appendix XI, Organic Lead.
- ▶ "Standard Methods for the Examination of Water and Wastewater," APHA, AWWA, WEF, 18th Edition, 1992.
- ▶ USEPA Contract Laboratory Program Statement of Work for Inorganic Analyses, ILM02.1, 1991.

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. Anamatrix 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. Anamatrix 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. Anamatrix control limit for PDSR is 85-115%.

Qualifiers (Q)

Anamatrix 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 Anamatrix control limits due to interferences from relatively high concentration level of the analyte in the unspiked sample.
- L - Reporting limit was increased to compensate for background absorbances or matrix interferences.

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. Unless noted, all samples were prepared according to procedures in the EPA Contract Laboratory Program Statement of Work, ILM02.1, 1991.

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

MR. JIM KELLER
BLAINE TECH SERVICES INC.
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9309270
Date Received : 09/22/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : METALS
Sub-Department: METALS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9309270- 1	MW-4	WATER	09/21/93	7421
9309270- 2	MW-3	WATER	09/21/93	7421
9309270- 3	MW-1	WATER	09/21/93	7421
9309270- 4	MW-2	WATER	09/21/93	7421
9309270- 5	DUP	WATER	09/21/93	7421

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

MR. JIM KELLER
BLAINE TECH SERVICES INC.
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9309270
Date Received : 09/22/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : METALS
Sub-Department: METALS

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Keannuqum 10/6/93
Department Supervisor Date

Mona Kanel 10/06/93
Chemist Date

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

Analyte-Method: Lead-7421
Project I.D. : 204-4380-0303
Matrix : WATER
Reporting Unit: ug/L

Analyst : *ML*
Supervisor : *MW*
Date Sampled : 09/21/93
Date Released : 10/06/93
Instrument I.D. : AA3

ANAMETRIX SAMPLE I.D.	CLIENT I.D.	DATE PREPARED	DATE ANALYZED	REP. LIMIT	DIL. FACTOR	RESULT	Q
9309270-01	MW-4	09/30/93	10/04/93	3.0	1	ND	
9309270-02	MW-3	09/30/93	10/04/93	3.0	1	ND	
9309270-03	MW-1	09/30/93	10/04/93	3.0	1	ND	
9309270-04	MW-2	09/30/93	10/05/93	3.0	1	3.7	
9309270-05	DUP	09/30/93	10/05/93	3.0	1	ND	
MB0930W	METHOD BLANK	09/30/93	10/04/93	3.0	1	ND	

COMMENT:

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

Anamatrix W.O.# : 9309270
 Spike I.D. : LCS0930W
 Project I.D. : 204-4380-0303
 Matrix : WATER
 Reporting Unit : ug/L

Analyst : *MK*
 Supervisor : *llh*
 Date Released : 10/06/93
 Instrument I.D : AA3

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	SPIKE AMT.	METHOD SPIKE	% REC.	Q
Lead-7421	09/30/93	10/04/93	20.0	20.0	100	

COMMENT: