

# SMITH-EMERY GEOSERVICES

July 10, 1996

SEG File No. 90404  
SEG Report No. 96-344

Alameda County Department of Environmental Health (ACDEH)  
1131 Harbor Bay Parkway, Suite #250  
Alameda, California 94502-6577

Attn: Mr. Barney Chan

## **REPORT - QUARTER 2, 1996 GROUNDWATER MONITORING 3925 ALAMEDA AVENUE, OAKLAND, CALIFORNIA**

Gentlemen:

### **INTRODUCTION**

In accordance with your request, Smith-Emery GeoServices is pleased to present this report of quarterly groundwater monitoring for the above referenced site. The location of the site is shown on Vicinity Map, Plate 1. The locations of the monitoring wells and the calculated groundwater gradient are presented on the Plot Plan, Plate 2.

The details of the monitoring well installation previously were presented in Smith-Emery GeoServices Report No. 95-187, dated August 22, 1995.

### **SCOPE OF SERVICES**

Smith-Emery GeoServices' scope of services for the quarterly groundwater monitoring at 3925 Alameda Avenue, Oakland, California included:

- Groundwater level measurements;

- Monitoring well purging;
- Groundwater sampling and analytical testing;
- Calculation of groundwater gradient and flow direction;
- Interpretation of analytical and groundwater data and presentation of this report of our findings.

**WELL MEASUREMENT**

Groundwater level measurements were taken in groundwater monitoring wells MW1, MW2, and MW3 on June 26, 1996. Static water levels and well depths were measured to the nearest one-hundredth of a foot using an electronic groundwater level indicator. The top of the well casings were surveyed by a licensed surveyor and used as reference points from mean sea level during this sampling event. Well measurement and survey data obtained for the three wells are presented in Table 1 on the following page.

The gradient is approximately 1.3 vertical feet over 100 horizontal feet at a direction of South <sup>West</sup>46° ~~East~~. A current gradient map showing the surveyed monitoring well locations and flow direction is included as the Plot Plan, Plate 2.

**TABLE 1**  
**Well Measurement Data**

<u>Well I.D.</u>	<u>Date of Measurement</u>	<u>Casing Elevation</u>	<u>Depth to water from top of casing</u>	<u>Water Elevation, Mean Sea Level</u>
MW-1	06-26-96	8.73'	9.96'	-1.23'
MW-2	06-26-96	8.42'	9.57'	-1.15'
MW-3	06-26-96	9.26'	9.85'	-1.59'

**Gradient: 1.3% @ S46° ~~E~~ W**

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Note: The benchmark elevation was set referenced to City of Oakland survey monument BM-19NW24 at elevation 9.664 feet above mean sea level. Per the USGS topographical map for the Oakland East Quadrangle, the ground surface elevation at the site is approximately 10 feet above mean sea level.

### WATER PURGING

The monitoring wells were purged and sampled according to established guidelines and the approved workplan (previously submitted). Prior to sampling, the depth to water was measured with respect to a reference point at the top of the casing using an electronic water level meter, accurate to the nearest one-hundredth of a foot. A transparent bailer was then used to sample the surface of the water table in the wells for the purpose of observing any free product. In wells MW1, MW2, and MW3, no visible free product was noticed. In MW1, MW2, and MW3 a slight petroleum odor was noticed in the purge water.

Each well was purged with a development bailer after checking for free product. A minimum of 3 well volumes had been removed from each well. Measured levels of conductivity, temperature, and pH were monitored prior to taking samples. Detailed records of well purging and sampling data appear in Appendix I - Well Purge Data Sheets.

Groundwater samples were obtained in clean disposable Teflon bailers equipped with a flow control valve. Water samples for EPA Method 8015M were placed in EPA-approved 40 ml vials capped with Teflon backed caps, and 1L glass bottles with Teflon backed caps. No air bubble or headspace was present in the samples taken. All samples were then labeled and placed in zip lock bags, preserved at approximately four degrees Celsius on blue ice, and transported with appropriate chain-of-custody documentation to a state-certified laboratory.

**ANALYTICAL PROGRAM**

Analytical tests on the samples taken for this project were performed by state-certified laboratories of North State Environmental in South San Francisco, California. The detailed results of all analytical work are contained in Appendix II - Report of Analytical Results.

**Groundwater Samples**

The groundwater samples obtained from the wells MW1, MW2, and MW3 were analyzed by Standard Method EPA 8015M for Gasoline, Diesel, Kerosene, Motor Oil, and BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes). A summary of the analytical results are presented in the following table.

**Table 2 - ANALYTICAL FINDINGS**

**MONITORING WELL SAMPLINGS, sampled 6/26/96, analyzed 6/28/96**

**TEST: BTEX, TPH AS GASOLINE, DIESEL, MOTOR OIL, AND KEROSENE**

<b>Sample</b>	<b>Gasoline (mg/L)</b>	<b>Diesel Fuel (mg/L)</b>	<b>Kerosene (mg/L)</b>	<b>Motor Oil (mg/L)</b>	<b>Benzene (mg/L)</b>	<b>Toluene (mg/L)</b>	<b>Ethyl benzene (mg/L)</b>	<b>Xylenes (mg/L)</b>
<b>MW1</b>	7	ND	3	ND	2.3	0.062	0.230	0.160
<b>MW2</b>	5	ND	1	ND	1.0	0.170	0.150	0.290
<b>MW3</b>	0.4	ND	0.6	ND	0.004	0.004	0.025	0.012

Note: ND - Not Detected

### HISTORY

Two underground storage tanks, a 10K diesel and a 1K gasoline, were removed from this site in March 1988 by Blaine Tech. Evidence of a hydrocarbon release was found under the tank at that time. Additional soil excavation and soil samplings by Engeo, Inc. in March 1994 have confirmed gasoline, diesel, kerosene, and BTEX contamination of the subsurface soil immediately surrounding the former tank pit. The purpose of this work is to continue to monitor the extent of and concentrations of hydrocarbons in the subsurface downgradient of the former tank location and the adjacent Ekotek site. This quarterly monitoring program has been initiated at the request of the Alameda County Department of Environmental Health.

### CONCLUSIONS

Review of this quarter's data from the monitoring wells indicated that the groundwater beneath the project site is flowing in a direction of S46°E with a slope of approximately 1.3 percent. The groundwater has a steeper slope of 1.3% as compared to 0.3% measured during the previous quarter measurement on March 22, 1996. In addition, the direction of groundwater flow has shifted 42 degrees toward the west from the last quarter. The groundwater elevation in Monitoring Well 3 has risen slightly, while the groundwater elevation in Monitoring Wells 1 and 2 has dropped slightly since the last measurement. The groundwater gradients surrounding the project site may vary due to either natural or man-made influences, such as subsurface recharge zones, tidal influences, subsurface geology, or groundwater extraction wells.

This quarter's analytical results for the three wells show decreases in all petroleum hydrocarbon concentrations from the previous quarter's result in Monitoring Wells 1 and 2, and slight increases

petroleum hydrocarbon constituents that were detected in the measurements taken the previous quarter in Monitoring Well 3.

### LIMITS OF LIABILITY

The findings, conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our investigation, and we further assume the explorations to be representative of the subsurface conditions throughout the site.

The factual data and interpretations pertain to the specific project described in this report and are solely for the use of **Smooke and Sons Investment Company**, and are not applicable to any other project or site. Any reliance on this document by any other person or entity shall be at that party's sole risk.


Our investigation was performed using the standard of care level of skill ordinarily exercise under similar circumstances by reputable Environmental Assessors and Geologists currently practicing in these or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

The following plates and appendices complete this report.

Plate 1	Vicinity Map
Plate 2	Plot Plan with Groundwater Gradient
Appendix I	Well Purge Data Sheets
Appendix II	Analytical Results Chain of Custody

Respectfully submitted,

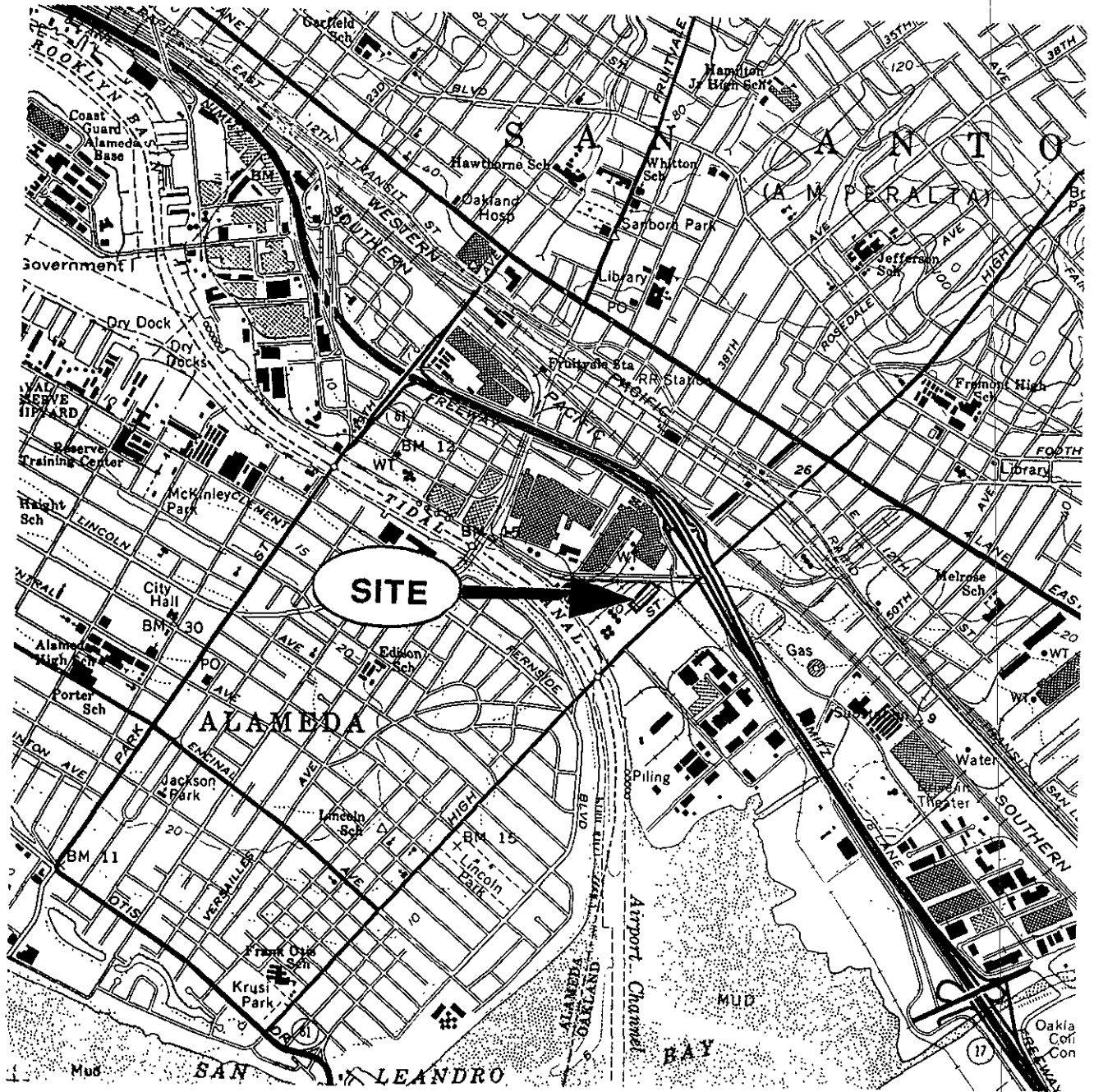
SMITH-EMERY GEOSERVICES



Miles Grant  
R.G. 5367  
Project Geologist



SCALE: 1" = 2000'



REFERENCE:  
U.S.D.I. - GEOLOGICAL SURVEY  
OAKLAND EAST QUADRANGLE  
ALAMEDA COUNTY, CALIFORNIA

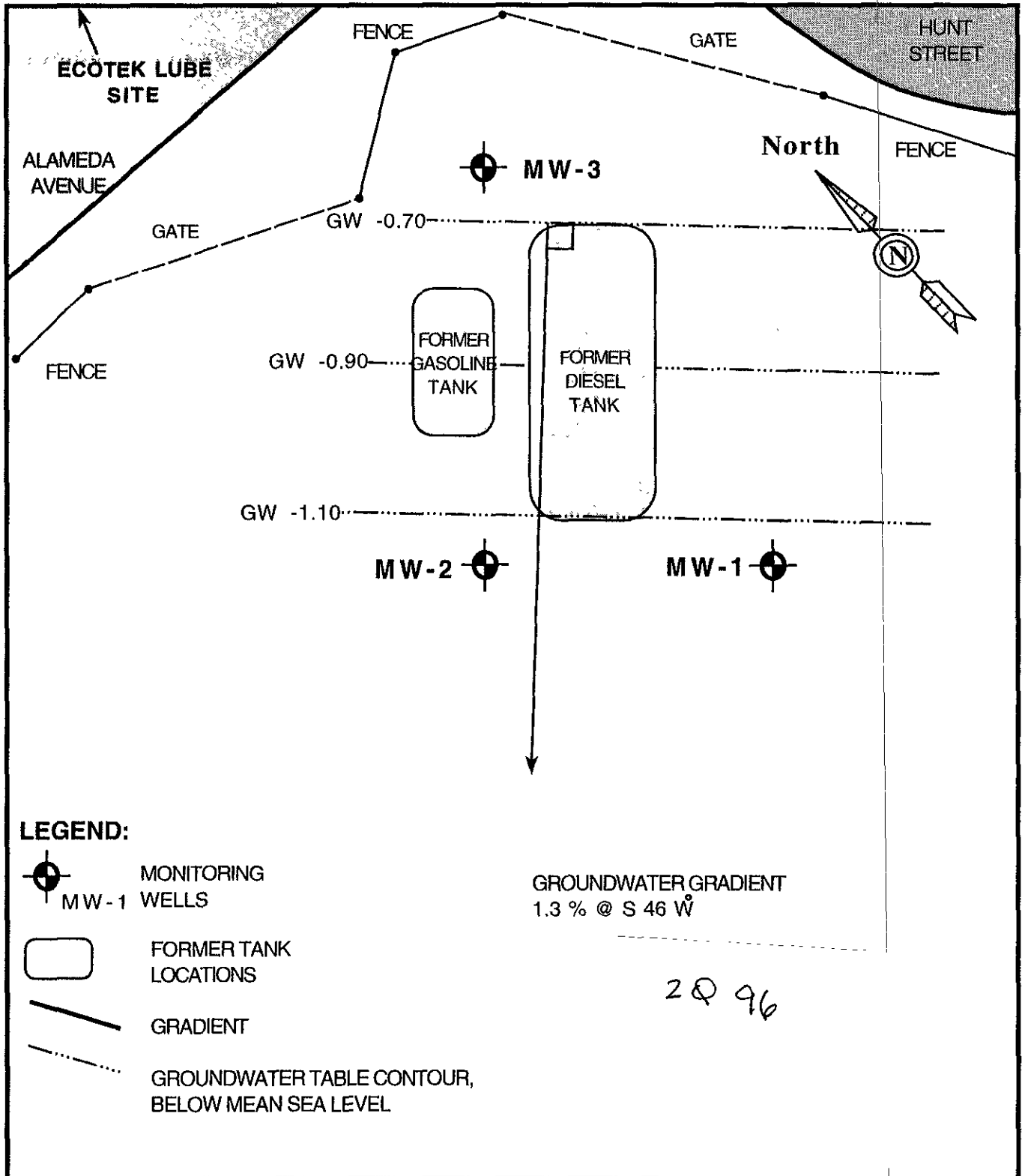
# VICINITY MAP

FILE REVIEW  
SMOOKE & SONS  
3925 ALAMEDA AVENUE  
OAKLAND, CALIFORNIA


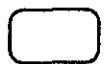

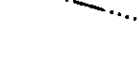
## SMITH-EMERY GEOSERVICES

JOB NO: 90404

PLATE 1




**LEGEND:**

-  MONITORING WELLS
-  FORMER TANK LOCATIONS
-  GRADIENT
-  GROUNDWATER TABLE CONTOUR, BELOW MEAN SEA LEVEL

GROUNDWATER GRADIENT  
1.3% @ S 46 W

2 Q 96

**1-STORY WAREHOUSE  
3925 ALAMEDA AVENUE**

0 15  
  
1 INCH = 15 FEET

*SMOOKE & SONS INVESTMENT CO.  
3925 ALAMEDA AVENUE  
OAKLAND, CALIFORNIA*

**QUARTERLY MONITORING**  
SMITH-EMERY GEOSERVICES  
SEG Job No. 90404 **PLATE 2**



**APPENDIX I**

**WELL PURGE DATA SHEETS**







**APPENDIX II**

**ANALYTICAL RESULTS**



# North State Environmental

Chemical Waste Disposal • Trucking • Consulting

## C E R T I F I C A T E   O F   A N A L Y S I S

JOB NO: 96-450  
CLIENT: SMITH-EMERY  
PROJECT NAME: SMOOKE-OAKLAND

DATE SAMPLED: 06-27-96  
DATE EXTRACTED: 06-28-96  
DATE ANALYZED: 06-28-96

BTXEM AND GASOLINE RANGE ORGANICS BY  
EPA METHOD 8020/5030 AND 8015 M  
KEROSENE RANGE HYDROCARBONS BY EPA METHOD 8015 M

Sample No.	Client ID	Analyte	Result
96-450-01	MW1-Q2-96	Benzene	2300 ug/L
		Toluene	62 ug/L
		Ethylbenzene	230 ug/L
		Xylenes	160 ug/L
		Gasoline	7 mg/L
		Kerosene	3 mg/L
96-450-02	MW2-Q2-96	Benzene	1000 ug/L
		Toluene	170 ug/L
		Ethylbenzene	150 ug/L
		Xylenes	290 ug/L
		Gasoline	5 mg/L
		Kerosene	1 mg/L
96-450-03	MW3-Q2-96	Benzene	4 ug/L
		Toluene	4 ug/L
		Ethylbenzene	25 ug/L
		Xylenes	12 ug/L
		Gasoline	0.4 mg/L
		Kerosene	0.6 mg/L

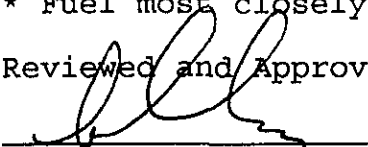
### Quality Control Quality Assurance Summary: Water

Analyte	Method	Reporting limit	Blank	MS/MSD Recovery	RPD
MTBE	8020	0.5 ug/L	ND	AVG 93%	2
Benzene	8020	0.5 ug/L	ND		
Toluene	8020	0.5 ug/L	ND		
Ethylbenzene	8020	0.5 ug/L	ND		
Xylenes	8020	1 ug/L	ND		
Gasoline	8015/5030	50 ug/L	ND	AVG 99%	3
Diesel	8015 M	50 ug/L	ND	AVG 103%	2

ELAP CERTIFICATION NUMBER 1753

\* Fuel most closely matches kerosene or jet fuel pattern.

Reviewed and Approved by



John Murphy  
Laboratory Director



# North State Environmental Analytical Laboratory

## Chain of Custody/Request for Analysis

(415) 588-9652

Client: SMITH-EMERY GEOSERVICES		Phone: 330-3006X126	Report to: RICK WIDEBROCK	Turnaround Time STD	
Mailing Address: P.O. BOX 880550 SAN FRANCISCO, CA 94188			Billing to:	8 Hr	24 Hr
Site Address: SMOCKE - OAKLAND			PO# / Billing Reference: SMOCKE - OAKLAND - 90404	40 Hr	5 Days
Sampler: CHRISTINA		Date:	Other		

Sample ID:	Sample Description	Container # / type	Sampling Time/Date	ANALYSIS REQUESTED							Remarks
				TPH-D	TPH-G EST Y	BTEX	O+G	FUEL SCAN	MTL	LEAD	
MN1-02-96	WATER	240A, 1L	12:30pm 6-26-96	/	/			/	/		
MN2-02-96	WATER	240A, 1L	1:15pm 6-26-96	/	/			/	/		
MN3-02-96	WATER	240A, 1L	1:20pm 6-26-96	/	/			/	/		

RUN FUEL SCAN  
WITH BTEX-MBTX

WATER SAMPLE  
RETURNED BY  
D. HURLEY

Relinquished by: <i>R. Widbrock</i>	Date: 6/27/96 Time: 12:00	Received by: <i>[Signature]</i> USA	Yes	No
Relinquished by:	Date: Time:	Received by:	Were samples Preserved ?	L
Relinquished by:	Date: Time:	Received in lab by: <i>[Signature]</i> USA	In good condition ?	-