



RO 867-CL

March 22, 1993

# 86

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

Re: Shell Service Station  
WIC #204-5508-2709  
3750 East 14th Street  
Oakland, California  
WA Job #81-425-203

81-425-203

Dear Mr. Chan:

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 first quarter 1993 and proposed work for the second quarter 1993.

First Quarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured depths to ground water and collected ground water samples from the four site wells. BTS' report describing these activities including the laboratory analytic report for ground water samples is included as Attachment A.
- Weiss Associates (WA) compiled the ground water elevation data (Table 1) and the analytic results (Table 2) and prepared a ground water elevation contour map (Figure 2).
- WA recommended modifying well sampling frequencies in our February 2, 1993 fourth quarter status report.

Barney Chan  
March 22, 1993

2

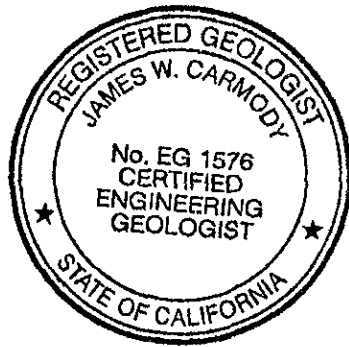
Anticipated Second Quarter 1993 Activities:

WA will submit a report presenting the results of the second quarter 1993 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results, ground water elevation measurements and a ground water elevation contour map.

Conclusions and Recommendations


Ground water has risen about 8 ft compared to the fourth quarter of 1992. This ground water rise is probably due to the heavy rains this winter. WA will monitor analytic results to assess whether the ground water rise will cause a change in hydrocarbon concentrations.

Please call if you have any questions.



Sincerely,  
Weiss Associates

J. Michael Asport  
Technical Assistant

*for*   
Joseph P. Theisen, C.E.G.  
Senior Hydrogeologist

JMA/JPT:jma

J:\SHELL\425\QMRPTS\425QMFE3.WP

Attachments: Figures  
Table  
A - BTS' Ground Water Monitoring Report  
B - Sampling Frequency Criteria

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, CA 94520  
Lester Feldman, Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, CA 94612

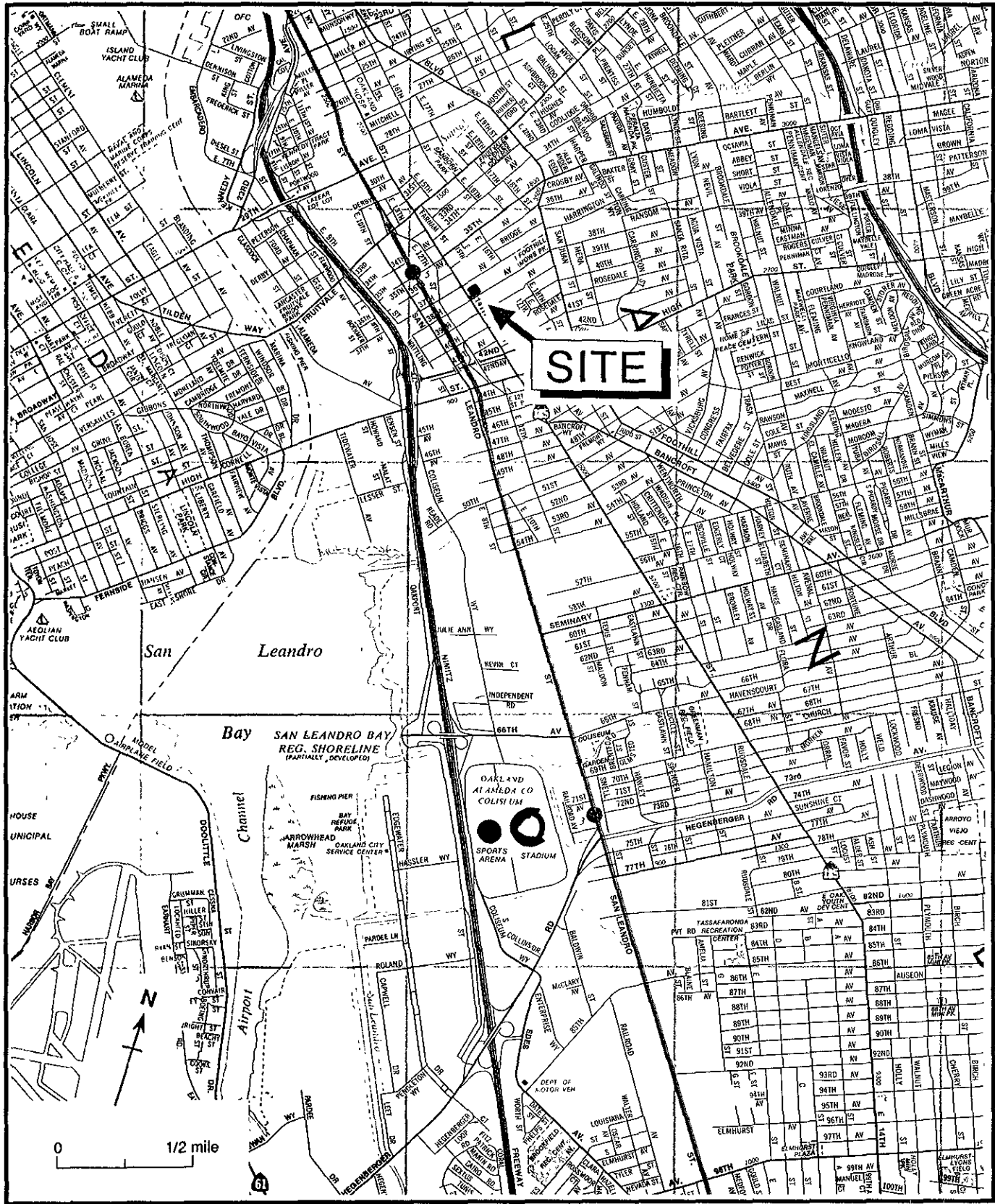
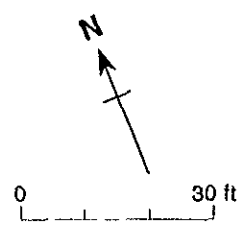
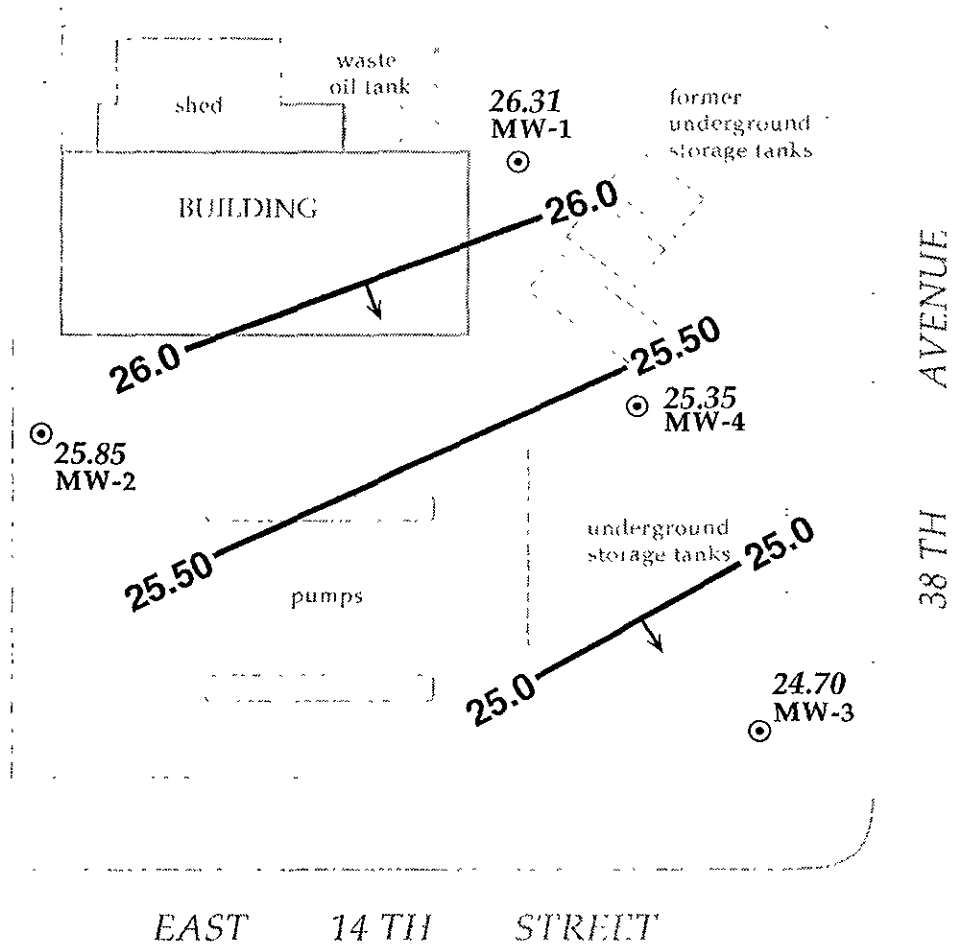


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-2709, 3750 East 14th Street, Oakland, California



EXPLANATION	
⊙ MW-1	Existing monitoring well
24.70	Ground water elevation, feet above mean sea level
- 25.50	Ground water elevation contour, approximately located
→	Inferred ground water flow direction

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - January 5, 1993 - Shell Service Station WIC #204-5508-2709, 3750 East 14th Street, Oakland, California

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-2709, 3750 East 14th Street, Oakland, California**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	04/11/90	34.67	12.01	22.66
	07/23/90		13.40	21.27
	10/23/90		15.71	18.96
	01/18/91		13.11	21.56
	04/23/91		8.42	26.25
	07/23/91		12.87	21.80
	10/23/91		14.52	20.15
	01/24/92		12.33	22.34
	04/28/92		9.18	25.49
	07/02/92		12.10	22.57
	10/06/92		14.62	20.05
	01/05/93		8.36	26.31
	MW-2		04/11/90	34.75
07/23/90		13.84	20.91	
10/23/90		16.21	18.54	
01/18/91		13.64	21.11	
04/23/91		9.05	25.70	
07/23/91		13.41	21.34	
10/23/91		15.03	19.72	
01/24/92		12.86	21.89	
04/28/92		9.56	25.19	
07/02/92		13.70	21.05	
10/06/92		15.21	19.54	
01/05/93		8.90	25.85	
MW-3		04/11/90	33.12	
	07/23/90	12.53		20.59
	10/23/90	14.92		18.20
	01/18/91	12.64		20.48
	04/23/91	8.13		24.99
	07/23/91	12.06		21.06
	10/23/91	13.79		19.33
	01/24/92	11.58		21.54
	04/28/92	8.55		24.57
	07/02/92	11.30		21.82
	10/06/92	13.96		19.16
	01/05/93	8.42		24.7
	MW-4	07/02/92		33.99
10/06/92		14.43	19.56	
01/05/93		8.64	25.35	

Table 2. Analytic Results for Ground Water - Shell Service Station, WIC #204-5508-2709, 3750 East 14th Street, Oakland, California

Sample	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	B	E	T	X	TCE	TCA	POG
			-----parts per million (mg/L)-----								
MW-1 (Quarterly)	04/11/90	12.01	<0.050	<0.050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	<10
	07/23/90	13.40	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0010	<5
	10/23/90	15.71	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<5
	01/18/91	13.11	0.072	---	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	---
	04/23/91	8.42	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/23/91	12.87	<0.50	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	10/23/91	14.52	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/24/92	12.33	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/28/92	9.18	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/02/92	12.10	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	10/06/92	14.62	<0.05	---	<0.0005	0.0016	0.0025	0.0044	---	---	---
	01/05/93	8.36	---	---	<0.0005	<0.0005	<0.0005	0.0005	---	---	---
MW-2 (2nd and 4th Quarter)	04/11/90	12.46	<0.050	<0.050	<0.0005	<0.0005	<0.0005	<0.0005	0.00074	<0.0004	<10
	07/23/90	13.84	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	<0.0005	<5
	10/23/90	16.21	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	---
	01/18/91	13.64	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	---
	04/23/91	9.05	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	---
	07/23/91	13.41	<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	---
	10/23/91	15.03	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/24/92	12.86	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	04/28/92	9.56	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	07/02/92	13.70	---	---	---	---	---	---	---	---	---
	10/06/92	15.21	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/05/93	8.90	---	---	---	---	---	---	---	---	---
MW-3 (Quarterly)	04/11/90	11.20	0.29	0.33	<0.0005	0.0006	<0.0005	0.0009	<0.0004	<0.0004	<10
	07/23/90	12.53	0.60	---	0.0031	0.013	0.0016	0.015	<0.0005	0.0006	<5
	10/23/90	14.92	0.12	0.13 <sup>a</sup>	0.0006	<0.0005	<0.0005	0.0011	<0.0005	<0.0005	<5
	01/18/91	12.64	0.46	0.76	0.0064	0.0032	0.0017	0.0014	<0.0005	<0.0005	---
	04/23/91	8.13	0.53	0.73 <sup>a</sup>	0.0071	0.017	0.011	0.018	---	---	---
	07/23/91	12.06	0.90	0.77 <sup>a</sup>	0.0020	<0.0005	0.0028	0.0046	---	---	---
	10/23/91	13.79	0.80	0.57 <sup>a</sup>	0.0056	<0.0005	0.0007	0.0046	---	---	---
	01/24/92	11.58	1.3	0.83	0.0023	0.0038	0.0023	0.0052	---	---	---
	04/28/92	8.55	0.52 <sup>b</sup>	0.30 <sup>a</sup>	0.0006	0.0012	0.0009	0.0034	---	---	---
	07/02/92	11.30	1.5	0.21 <sup>a</sup>	0.0390	0.0020	0.0073	0.018	---	---	---
	10/06/92	13.96	0.95	0.12 <sup>a</sup>	<0.0005	0.016	0.029	0.037	---	---	---
	01/05/93	8.42	2.2	---	<0.0005	<0.0005	<0.0005	0.0058	---	---	---
MW-4 (Quarterly)	07/02/92	11.90	0.58	---	0.0210	0.0290	<0.0005	0.0063	---	---	---
	10/06/92	14.43	0.098	---	0.0029	0.0042	0.0007	0.0091	---	---	---
	10/06/92 <sup>b</sup>	---	0.17	---	0.0022	0.0038	0.0006	0.012	---	---	---
	01/05/93	8.64	0.74	---	0.0280	0.0530	<0.0005	0.004	---	---	---
	01/05/93 <sup>b</sup>	---	0.840	---	0.0290	0.0520	<0.0005	0.005	---	---	---

Weiss Associates



-- Table 2 continues on next page --

Table 2. Analytic Results for Ground Water - Shell Service Station, WIC #204-5508-2709, 3750 East 14th Street, Oakland, California (continued)

Sample	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	B	E	T	X	TCE	TCA	POG
			-----parts per million (mg/L)-----								
Bailer	07/02/92	---	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
Blank	10/06/92	---	<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
Trip	04/11/90		<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
Blank	07/23/90		<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	10/23/90		<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	01/18/91		<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	04/23/91		<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	07/23/91		<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	10/23/91		---	---	---	---	---	---	---	---	---
	01/24/92		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	04/28/92		---	---	---	---	---	---	---	---	---
	07/02/92		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	10/06/92		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
	01/05/93		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---	---
DHS MCLs			NE	NE	0.001	0.680	0.10 <sup>c</sup>	1.750	0.005	0.200	NE

**Abbreviations:**

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015  
 TPH-D = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015  
 B = Benzene by EPA Method 602 or 8020  
 E = Ethylbenzene by EPA Method 602 or 8020  
 T = Toluene by EPA Method 602 or 8020  
 X = Xylenes by EPA Method 602 or 8020  
 TCE = Trichloroethene by EPA Method 8010/601  
 TCA = 1,1,1-Trichloroethane by EPA Method 8010/601  
 POG = Petroleum oil by American Public Health Association Standard Methods 503  
 DTSC MCLs = California Department of Toxic Substance Control maximum contaminant levels for drinking water  
 NE = Not established  
 --- = Not analyzed

**Notes:**

a = Results due primarily to low boiling hydrocarbons possibly gasoline or kerosene  
 b = Duplicate sample  
 c = DTSC recommended action level for drinking water, MCL not established

**ATTACHMENT A**  
**BTS GROUND WATER MONITORING REPORT**



January 14, 1993

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

Attn: Daniel T. Kirk

SITE:  
Shell WIC # 204-5508-2709  
3750 East 14th Street  
Oakland, California

QUARTER:  
1st quarter of 1993

## QUARTERLY GROUNDWATER SAMPLING REPORT 930105-N-1

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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 the 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.

## TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	4	01-05-93	TOP OF PIPE	--	NONE	--	--	8.36	26.29
MW-2	4	01-05-93	TOP OF PIPE	--	NONE	--	--	8.90	28.04
MW-3	4	01-05-93	TOP OF PIPE	ODOR	NONE	--	--	8.42	27.78
MW-4 *	4	01-05-93	TOP OF PIPE	--	NONE	--	--	8.64	24.46

\* Sample DUP was a duplicate sample taken from well MW-4.

## STANDARD PROCEDURES

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### 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 may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of water may be obtained 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.

### 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 site 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. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

## **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**

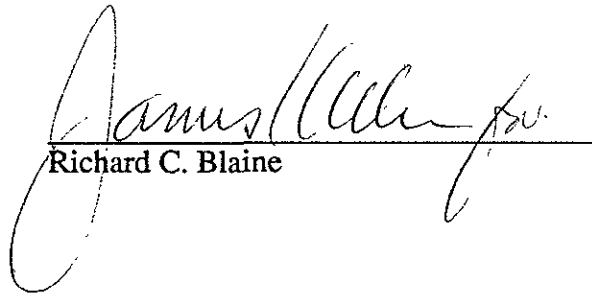
Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become 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: chain of custody  
certified analytical report

cc: Weiss Associates  
5500 Shellmound Street  
Emeryville, CA 94608-2411  
ATTN: Kristina Koltavary

9301024 (18) 10/17 1130

 <b>SHELL OIL COMPANY</b> RETAIL ENVIRONMENTAL ENGINEERING - WEST		<b>CHAIN OF CUSTODY RECORD</b> Serial No: _____				Date: 1-5-93 Page 1 of 1													
Site Address: 3750 E. 14TH ST. OAKLAND, CA		<b>Analysis Required</b>				LAB: ANAMETRIX													
WIC#: 204.5508.2709		TPH (EPA 8015 Mod. Gas) TPH (EPA 8015 Mod. Diesel) BTEX (EPA 8020/602) Volatile Organics (EPA 8240) Test for Disposal Combination TPH 8015 & BTEX 8020 Asbestos Container Size Preparation Used Composite Y/N	CHECK ONE (1) BOX ONLY Quantity Monitoring <input checked="" type="checkbox"/> 6441 Site Investigation <input type="checkbox"/> 6441 Soil Classy/Disposal <input type="checkbox"/> 6442 Water Classy/Disposal <input type="checkbox"/> 6443 Soil/Air Rem. of Sys. O & M <input type="checkbox"/> 6462 Water Rem. of Sys. O & M <input type="checkbox"/> 6463 Other <input type="checkbox"/>		TURN AROUND TIME 24 hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 15 days <input checked="" type="checkbox"/> (Normal) Other <input type="checkbox"/>														
Shell Engineer: DAN KIRK (Phone No.: 675, Fax #: 6171)			NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.																
Consultant Name & Address: BLAINE TECH SERVICES, 985 TIMOTHY DR. SAN JOSE CA 95122																			
Consultant Contact: C. GLEN BENNETT (Phone No.: 408, Fax #: 925-5535)																			
Comments: BTS # 930105 - N - 1																			
Sampled by: Nate Overmeyer Printed Name: NATE OVERMEYER		MATERIAL DESCRIPTION		SAMPLE CONDITION/COMMENTS															
Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/COMMENTS	
① MW-1	1-5-93			X		3						X		N	40 ML	HCL	N	GROUNDWATER	
② MW-3				X		4		X				X		40 ML	HCL				
③ <del>MW-3</del> DUP.				X		3						X		40 ML	HCL				
④ MW-4	per Simon Haggie 1-6-93			X		3						X							
⑤ TB	BTS 1-5-93 such			X		2						X						TRIP BLANK	
Relinquished By (signature): Nate Overmeyer Printed Name: NATE OVERMEYER Date: 1-6-93 Time: _____		Relinquished By (signature): Simon Haggie Printed Name: SIMON HAGGIE Date: 1-6-93 Time: 10:30		Relinquished By (signature): Michelle D. Aguilar Printed Name: MICHELLE D. AGUILAR Date: _____ Time: _____		Relinquished By (signature): Simon Haggie Printed Name: SIMON HAGGIE Date: 1-6-93 Time: 10:50		Relinquished By (signature): _____ Printed Name: _____ Date: _____ Time: _____											

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS



MR. GLEN BENNETT  
BLAINE TECH  
985 TIMOTHY STREET  
SAN JOSE, CA 95133

Workorder # : 9301024  
Date Received : 01/06/93  
Project ID : 204-5508-2709  
Purchase Order: MOH-B813

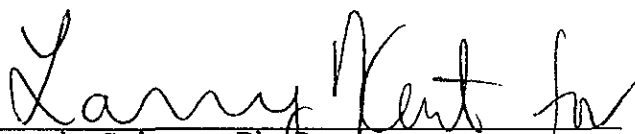
The following samples were received at Anamatrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9301024- 1	MW-1
9301024- 2	MW-3
9301024- 3	DUP
9301024- 4	MW-4
9301024- 5	TB

This report consists of 7 pages not including the cover letter, and is organized in sections according to the specific Anamatrix 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 Anamatrix 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.

Anamatrix 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 Anamatrix.

  
\_\_\_\_\_  
Sarah Schoen, Ph.D.  
Laboratory Director

1-21-93  
Date

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

MR. GLEN BENNETT  
BLAINE TECH  
985 TIMOTHY STREET  
SAN JOSE, CA 95133

Workorder # : 9301024  
Date Received : 01/06/93  
Project ID : 204-5508-2709  
Purchase Order: MOH-B813  
Department : GC  
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9301024- 2	MW-3	WATER	01/05/93	TPHd
9301024- 1	MW-1	WATER	01/05/93	TPHg/BTEX
9301024- 2	MW-3	WATER	01/05/93	TPHg/BTEX
9301024- 3	DUP	WATER	01/05/93	TPHg/BTEX
9301024- 4	MW-4	WATER	01/05/93	TPHg/BTEX
9301024- 5	TB	WATER	01/05/93	TPHg/BTEX



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

MR. GLEN BENNETT  
BLAINE TECH  
985 TIMOTHY STREET  
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Workorder # : 9301024  
Date Received : 01/06/93  
Project ID : 204-5508-2709  
Purchase Order: MOH-B813  
Department : GC  
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Bulman 1/15/93  
Department Supervisor Date

Peggie Dawson 1/19/93  
Chemist Date

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

Anamatrix W.O.: 9301024  
Matrix : WATER  
Date Sampled : 01/05/93

Project Number : 204-5508-2709  
Date Released : 01/11/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-1	Sample I.D.# MW-3	Sample I.D.# DUP	Sample I.D.# MW-4	Sample I.D.# TB
Benzene	0.5	ND	ND	29	28	ND
Toluene	0.5	ND	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	52	53	ND
Total Xylenes	0.5	0.5	5.8	5.5	4.0	ND
TPH as Gasoline	50	180	2200	840	740	ND
% Surrogate Recovery		107%	90%	92%	92%	90%
Instrument I.D.		HP21	HP21	HP21	HP21	HP21
Date Analyzed		01/07/93	01/07/93	01/07/93	01/08/93	01/07/93
RLMF		1	5	5	5	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.

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

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

Steve Jones 1/21/93  
Analyst Date

Cheryl Balman 1/21/93  
Supervisor Date

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

Anamatrix W.O.: 9301024  
Matrix : WATER  
Date Sampled : N/A

Project Number : 204-5508-2709  
Date Released : 01/11/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# BJ0701E3 BLANK	Sample I.D.# BJ0801E3 BLANK
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND
% Surrogate Recovery		110%	97%
Instrument I.D.		HP21	HP21
Date Analyzed		01/07/93	01/08/93
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.

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

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

Reggie Dawson 1/19/93  
Analyst Date

Charles Balmer 1/15/93  
Supervisor Date

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

Anamatrix W.O.: 9301024  
 Matrix : WATER  
 Date Sampled : 01/05/93  
 Date Extracted: 01/07/93

Project Number : 204-5508-2709  
 Date Released : 01/14/93  
 Instrument I.D.: HP23

Anamatrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9301024-02	MW-3	01/07/93	50	170
DWBL010793	METHOD BLANK	01/07/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.

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 3510.

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

Steve Poma                      11/21/93  
 Analyst                                      Date

Cheryl Beelman                      1/21/93  
 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 : 01/07/93

Anamatrix I.D. : LCSW0107  
 Analyst : RD  
 Supervisor : *[Signature]*  
 Date Released : 01/19/93  
 Instrument I.D.: HP21

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	375	329	88%	56-116
SURROGATE			85%	53-147

\* Quality control established by Anamatrix, Inc.

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

Sample I.D. : LAB CONTROL SAMPLE  
 Matrix : WATER  
 Date Sampled : N/A  
 Date Extracted: 01/07/93  
 Date Analyzed : 01/07/93

Anamatrix I.D. : LCSW0107  
 Analyst : *RV*  
 Supervisor : *AS*  
 Date Released : 01/19/93  
 Instrument I.D.: HP23

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	820	66%	870	70%	6%	63-130

\*Quality control established by Anamatrix, Inc.



# SHELL WELL MONITORING DATA SHEET

Project #: <b>920105-N1</b>	Wic # <b>204-5508-2189</b>
Sampler: <b>(N)</b>	Date Sampled: <b>1-5-93</b>
Well I.D.: <b>MW.1</b>	Well Diameter: (circle one) 2 3 <b>(4)</b> 6
Total Well Depth: Before <b>26.29</b> After	Depth to Water: Before <b>8.36</b> After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<b>(PVC)</b> Grade Other --

Volume Conversion Factor (VCF):  
 $(2.31 \times (d^2/4) \times \pi) / 2.31$   
 where  
 2.31 = in./foot  
 d = diameter (in.)  
 π = 3.1416  
 2.31 = in./foot

Well dia.	VCF
2"	0.16
3"	0.37
4"	0.68
5"	1.07
6"	1.54
8"	2.64
10"	4.17

<u>11.65</u>	x	<u>3</u>	=	<u>34.96</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer  Middleburg  Electric Submersible  Suction Pump  Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg  Electric Submersible  Suction Pump  Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
12:01	65.8	7.6	700	1.68	11.5	
12:28	63.6	7.2	600	2.64	23.0	
12:48	64.2	7.0	600	1.65	35.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: **35**

Sampling Time: **12:50**

Sample I.D.: **MW.1**      Laboratory: **ANA.**

Analyzed for: **TPH - S, BTXE**

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:



# SHELL WELL MONITORING DATA SHEET

Project #: 93805-N1		Wic # 204-5508-2709	
Sampler: (N)		Date Sampled: 1.5.93	
Well I.D.: MW.3		Well Diameter: (circle one) 2 3 (4) 6	
Total Well Depth: Before 27.78 After		Depth to Water: 5.5 Before 8.426 After	
Depth to Free Product:		Thickness of Free Product (feet):	
Measurements referenced to: (PVC) Grade Other --			

Volume Conversion Factor (VCF):  
 $VCF = (r^2/n) \times 2.31$   
 where:  
 r = Well Radius  
 n = Diameter (In.)  
 2.31 = Conversion Factor

Well dia.	VCF
2"	0.11
3"	0.27
4"	0.47
5"	0.77
6"	1.10
8"	1.83
10"	2.87

<u>12.58</u>	$\times$	<u>3</u>	$=$	<u>37.75</u>	
Case Volume		Specified Volumes		gallons	

Purging: Bailer  Middleburg  Electric Submersible  Suction Pump  Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg  Electric Submersible  Suction Pump  Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
14:07	68.2	7.1	600	7.60	12.5	
14:19	68.4	7.0	700	4.28	25.0	
14:33	68.2	7.0	700	1.93	38.0	SLIGHT FUEL ODOR

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 38

Sampling Time: 14:40

Sample I.D.: MW.3      Laboratory: ANA.

Analyzed for: TPH-G, BTXE, TPH-D

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: 930405 - N1	Wic # 204.5508.2709
Sampler: (N)	Date Sampled: 1.5.93
Well I.D.: MW.4	Well Diameter: (circle one) 2 3 (4) 6
Total Well Depth: Before 24.46 After	Depth to Water: Before 8.64 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	(PVC) Grade Other --

Volume Conversion Factor (VCF):  
 $VCF = (d^2/n) \times \pi / 2.31$   
 where:  
 d = Inlet  
 & diameter (in.)  
 n = 2.31 ft  
 $\pi = 3.1416$   
 $VCF = \pi d^2 / 18.8$

Well dia.	VCF
2"	0.24
3"	0.27
4"	0.36
6"	0.81
8"	1.36
10"	2.08
12"	2.97

<u>10.28</u>	x	<u>3</u>	=	<u>30.84</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer  Middleburg  Electric Submersible  Suction Pump  Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg  Electric Submersible  Suction Pump  Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
13:11	67.2	7.0	600	>200	10.0	
13:21	67.0	7.0	600	68.2	20.5	
13:35	67.0	7.0	600	43.2	31.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 31

Sampling Time: 13:45

Sample I.D.: MW.4      Laboratory: ANA.

Analyzed for: TPH - G, BTXE

Duplicate I.D.: ~~XXXXXXXX~~ DUP.      Cleaning Blank I.D.:

Analyzed for: SAME

Shipping Notations:

Additional Notations: