11/15/88

SHELL OIL COMPANY
15275 WASHINGTON
SAN LEANDRO

9/28/88

BRIEF HISTORY

- Installed four groundwater monitoring wells (S-1 through S-4) on June 18, 1985 to assess soil and groundwater conditions on site. Gasoline concentrations in the groundwater samples taken from these wells ranged from 0.52 ppm to 32.0 ppm. Well S-3 contained approximately 0.5 feet of separate phase product. Soil samples taken from the borings [illegible] concentrations ranging from none detected to 3,900 ppm. Report prepared by Emcon Associates dated August 12, 1985.

- Four borings (S-A through S-D) were drilled on August 15, 1986 prior to tank removal/replacement. Borings S-B through S-D were placed within the underground gasoline storage tank complex. Gasoline concentrations from soil samples taken from these borings ranged from none detected to 1,700 ppm. Boring S-B was converted to a temporary tank complex monitoring well. Approximately 0.13 feet of separate phase product was measured in S-B. Boring S-A was placed adjacent to the waste oil tank; however, laboratory analysis reports that no waste oil was detected. Report prepared by Emcon Associates dated September 12, 1986.

- Installed one additional groundwater monitoring well (S-5) adjacent to the waste oil tank. Gasoline and benzene concentrations in the groundwater were detected at 7.8 ppm and 0.38 ppm respectively. Report prepared by Emcon Associates dat[illegible]

- One mile radius well survey conducted February 13, 1987 by Emcon Associates.

- Underground gasoline storage tanks were removed in June of 1987. Temporary tank complex monitoring well S-B was removed during construction. All site wells were inaccessible from June to August of 1987.

- Wells S-2 and S-4 were destroyed during the tank replacement project.

- A work plan dated July 28, 1987 was prepared by Pacific Environmental Group, Inc. recommending the installation of additional wells to define the extent of contamination.

WORK COMPLETED THIS PERIOD

- Applied for an encroachment permit from the City of San Leandro to conduct a soil gas survey.

- Groundwater samples were collected from all existing site wells on September 6, 1988. Sampling report prepared by Blaine Technical Services, Inc. attached to this report.

SHELL OIL COMPANY
15275 WASHINGTON
SAN LEANDRO

9/28/88

GROUNDWATER MONITORING **FREQUENCY: WEEKLY**

- INITIAL: Four wells (S-1 through S-4), static groundwater at 7 feet, 0.5 feet of separate phase product in well S-3.

- HISTORICAL: Four wells (S-1 through S-4) and one (1) tank complex well (S-B). Separate phase product in S-3 and S-B reduced to a film. From August 1985 to September 1987 separate phase product in S-B ranged from 0.05 feet to 1.05 feet.

- CURRENT: Monitoring wells (S-2 and S-4), have been covered or destroyed. Tank hole well S-B was removed during tank excavation. Three wells (S-1, S-3, and S-5) are accessible. Groundwater is 7 feet to 8 feet below the surface. A hydrocarbon film is present in well S-3.

- PRODUCT RECOVERED: Approximately 60 gallons

GROUNDWATER SAMPLING **FREQUENCY: NONE**

- INITIAL: Monitoring wells S-1, S-2, and S-4 were sampled on July 9, 1985 and gasoline concentrations ranged from 0.52 ppm to 32.0 ppm with well S-4 containing the greater concentrations.

- HISTORICAL: On January 8, 1987 monitoring well S-5 was analyzed and gasoline concentrations were 7.8 ppm. See attached table summarizing the results.

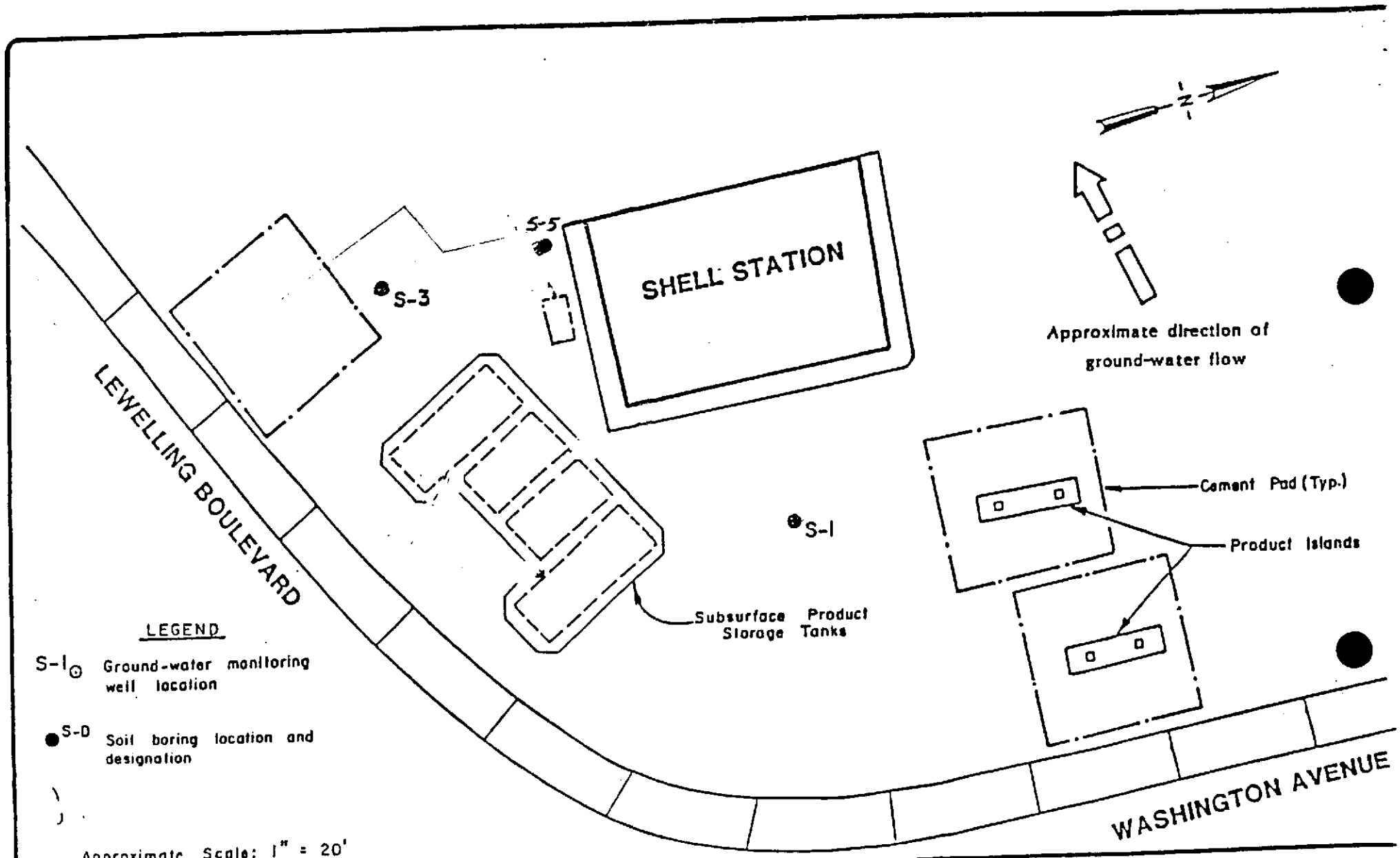
- CURRENT: Gasoline concentrations reange from none detected (S-1) to 96.0 ppm (S-3).

PROPOSED ACTION:

- Soil-gas survey scheduled for October 5, 1988.

- Based upon the results of the soil-gas survey, install additional groundwater monitoring wells to define extent of contamination.

- Propose remedial action plan upon completion of definition.



SUBSURFACE HYDROGEOLOGIC INVESTIGATION
SHELL STATION, LEWELLING BLVD & WASHINGTON AVE.
SAN LEANDRO, CALIFORNIA

SITE

FIGURE 1

PROJECT NO. 738-08.0

ANALYTICAL LOG

DATE	SAMPLE POINT	TVHC (PPM)	BENZENE (PPM)	TOLUENE (PPM)	XYLENES (PPM)
DETECTION LIMITS	--------	0.05	0.0005	0.001	0.004
09-Jul-85	S1	0.52	N/A	N/A	N/A
09-Jul-85	S2	2.20	N/A	N/A	N/A
09-Jul-85	S4	22.00	N/A	N/A	N/A
08-Jan-87	S5	7.80	0.3800	0.510	1.000

DATE	SAMPLE POINT	TVHC (PPM)	BENZENE (PPM)	TOLUENE (PPM)	E.B. (PPM)	XYLENES (PPM)
DETECTION LIMITS	--------	0.05	0.0005	0.001	0.001	0.003
06-Sep-88	S1	<0.05	<0.0005	<0.001	<0.001	<0.003
06-Sep-88	S3	96.00	3.4000	9.500	2.700	17.000
06-Sep-88	S5	7.00	2.6000	0.060	0.400	0.700

DATE	WELL	DTH	DTW	HT	BAILED	FLOWMETER	PT-LIQ.	PT-H20	EMP	C.ELEV
	B									
	1									19.00
	2									18.50
	3									16.50
	4									18.00
07-Jun-88	1		7.38	0.00					GS	
21-Jun-88	1		7.38	0.00					EK	
05-Jul-88	1		7.55	0.00					GS	
19-Jul-88	1		7.64	0.00					DF	
02-Aug-88	1		7.78	0.00					GS	
16-Aug-88	1		7.93	0.00					DF	
30-Aug-88	1		8.03	0.00					DF	
07-Jun-88	3	7.45	(1.00)	.00						
21-Jun-88	3	7.34	(1.00)	.00						
05-Jul-88	3	7.57	(1.00)	.00						
19-Jul-88	3		7.68	0.00						
02-Aug-88	3	7.65	(1.00)	.00						
16-Aug-88	3		7.78	0.00						
30-Aug-88	3		7.88	0.00						
07-Jun-88	5		7.66	0.00						
21-Jun-88	5		7.62	0.00						
05-Jul-88	5		7.84	0.00						
19-Jul-88	5		8.01	0.00						
02-Aug-88	5		8.12	0.00						
16-Aug-88	5		8.33	0.00						
30-Aug-88	5		8.41	0.00						

BLAINE
TECH SERVICES INC.

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

September 12, 1988

Gettler Ryan
1992 National Ave.
Hayward, CA 94545

Attention: John Werfal

GETTLER/RYAN PROJECT: 89831

SITE:
SHELL STATION
15275 WASHINGTON
SAN LEANDRO, CALIFORNIA

GROUNDWATER WELL SAMPLING:
SEPTEMBER 6, 1988

GROUNDWATER WELL SAMPLING REPORT 88250-T-2

This report deals with the groundwater well sampling performed by our firm in response to your request. Data collected in the course of our work at the site is presented in the TABLE OF WELL MONITORING DATA. This data was collected during our inspection, well evacuation, and sample collection. Measurements include the total depth of the well and depth to water. These measurements are taken from grade at the well head, which is defined by placing a straight edge across the open enclosure or utility box in which the monitoring well is situated. Water surfaces are further inspected for the presence of a petroleum sheen or free product zone. A series of electrical conductivity, pH, and temperature readings are obtained during well evacuation and at the time of sample collection. Recharge performance can be evaluated by comparing the anticipated five case volume evacuation gallonage with the volume which could actually be purged.

TABLE OF WELL MONITORING DATA

Well I.D.	S-1
Date Sampled	9/6/88
Well Diameter (in.)	3
Total Well Depth (ft.)	19.25
Depth To Water (ft.)	5.37
Free Product (in.)	NONE
Reason If Not Sampled	--
"Ideal" 5 Case Vol. (gal.)	26.0
Did Well Dewater?	NO
Gallons Evacuated	28.0
Purging Device	SUCTION
Sampling Device	BAILER
Time	12:52 13:03
Temperature (Fahrenheit)	71.5 68.0
pH	8.2 7.9
Conductivity (micromhos/cm)	2100 1500
BTS Chain of Custody	88250-T-2
BTS Sample I.D.	S-1 LIQUID
DHS HMTL Laboratory	IT CORPORATION
Laboratory Sample I.D.	SB-09-028-01
Analysis	THC (GAS) & BTXE

TABLE OF WELL MONITORING DATA

Well I.D.	S-3
Date Sampled	9/6/88
Well Diameter (in.)	3
Total Well Depth (ft.)	15.0
Depth To Water (ft.)	7.98
Free Product (in.)	SHEEN
Reason If Not Sampled	--
"Ideal" 5 Case Vol. (gal.)	13.0
Did Well Dewater?	YES @ 9.25 gals.
Gallons Evacuated	11.5
Purging Device	BAILER
Sampling Device	BAILER
Time	13:44 14:05
Temperature (Fahrenheit)	69.9 67.1
pH	7.1 7.8
Conductivity (micromhos/cm)	1500 1400
BTS Chain of Custody	88250-T-2
BTS Sample I.D.	S-3 LIQUID
DHS HMTL Laboratory	IT CORPORATION
Laboratory Sample I.D.	88-09-028-02
Analysis	THC (GAS) & BTXE

TABLE OF WELL MONITORING DATA

Well I.D.	S-5
Date Sampled	9/6/88
Well Diameter (in.)	4
Total Well Depth (ft.)	18.5
Depth To Water (ft.)	8.43
Free Product (in.)	NONE
Reason If Not Sampled	--
"Ideal" 5 Case Vol. (gal.)	33.0
Did Well Dewater?	NO
Gallons Evacuated	36.0
Purging Device	SUCTION
Sampling Device	BAILER
Time	13:12 13:19
Temperature (Fahrenheit)	74.3 66.5
pH	7.1 7.2
Conductivity (micromhos/cm)	1700 1900
BTS Chain of Custody	88250-T-2
BTS Sample I.D.	S-5 LIQUID
DHS RMTL Laboratory	IT CORPORATION
Laboratory Sample I.D.	88-09-028-03
Analysis To Detect	THC (GAS) & BTXE

SAMPLING

Samples were obtained by standardized sampling procedures that follow an evacuation and sample collection protocol which conforms with State and Regional Water Quality Control Board standards and specifically adheres to EPA requirements for apparatus, sample containers and sample handling as specified in publication SW 846.

Included in the scope of work are routine measurements and investigative procedures which are intended to determine if the wells are suitable for evacuation and sampling. These include measurement of the total depth of the well; the depth to water (groundwater or free product zone), and the thickness of any free product zone (FPZ) encountered. The presence of a significant free product zone may interfere with efforts to collect a water sample that accurately reflects the condition of groundwater lying below the FPZ. This interference is caused by adhesion of petroleum to any device being lowered through the FPZ and the likelihood that minute globules of petroleum may break free of the sampling device and be included in the sample. Accordingly, evaluation of analytical results from wells containing any amount of free petroleum should take into account the possibility that positive results have been skewed higher by such an inclusion. The decision to sample or not sample such wells is left to the discretion of our field personnel at the site and the client's consultant who establishes sampling guidelines based on the need for current information on groundwater conditions at the site.

SAMPLING EQUIPMENT AND MECHANICS

If equipment is not specifically selected by the client, the apparatus for well evacuation and sample collection is selected by our field personnel based on an evaluation of the field conditions.

Four types of devices are commonly available for employment:

Bailers
High Volume Suction Pumps
Electric Submersible Pumps
USGS/Middleburg positive displacement sampling pumps

Bailers and High Volume Suction Pumps were selected for the samples collected at your site.

BAILERS

A bailer, in its simplest form, is a hollow tube which has been fitted with a check valve at the lower end. The device can be lowered into a well by means of a cord. When the bailer enters the water, the check valve opens and liquid flows into the interior of the bailer. The bottom check valve prevents water from escaping when the bailer is drawn up out of the well.

Two types of bailers are used in groundwater wells at sites where fuel hydrocarbons are of concern. The first type of bailer is made of a clear material such as acrylic plastic and is used to obtain a sample of the surface and the near surface liquids in order to detect the presence of visible or measurable fuel hydrocarbon floating on the surface. The second type of bailer is made of Teflon or stainless steel and is used as an evacuation and/or sampling device.

Bailers are inexpensive and relatively easy to clean. Because they are manually operated, variations in operator technique may have a greater influence than would be found with more automated sampling equipment. Also where fuel is involved, the bailer may include near surface contaminants that are not representative of water deeper in the well.

SUCTION PUMPS

High volume suction pumps are frequently selected because of their low cost and simplicity of operation. The pump is located at the well head and draws water up through pipes lowered into the well and attached to the pump. The lowest section of pipe is fitted with a checkvalve to preclude water which has entered the pipe from re-entering the monitoring well. Well evacuation is efficient down to the effective twenty five foot limit of suction evacuation, but the discharge stream is unsuitable for sampling owing to the loss of volatiles caused by the suction applied by the pump. Therefore, the suction pump is only used to perform the evacuation protocol, and is then withdrawn. Sample collection is accomplished with a clean Teflon or stainless steel bailer.

SAMPLING METHODOLOGY

Our standard evacuation protocol calls for the removal of five case volumes of water. This is safely above accepted minimum evacuation levels and usually more than sufficient to insure the sampling of fresh formation water in all but truly oversized borings. However, this level of evacuation may not be obtainable from wells installed in certain formations. Rather than initiate a lengthy study of the well's recovery characteristics, incur the cost of a return visit, or otherwise second guess the professional responsible for the evaluation of the well's performance, our field personnel deal with non-recovering wells in the following manner: The volume of water removed prior to dewatering is noted for comparison to the five case volume standard. The well is allowed to recover during an interval of time which is reported in the table on page two. A sample is then drawn from the water that has recovered in the well case. When large diameter well cases are being evacuated, the pH, EC and temperature parameters are carefully noted for the first indication of stabilization signifying that fresh formation water is entering and being removed from the well. This is typically after 3 case volumes of water have been evacuated.

The pumps and their associated lines and hoses are thoroughly cleaned between use in different monitoring wells. This has proven to be a far more

effective safeguard against cross contamination than reliance on estimations of probable contamination.

SAMPLE HANDLING PROCEDURES

Sample material is collected in specially prepared containers appropriate to the type of analyses intended. These containers are supplied to us by the certified laboratory performing the analyses. Sample material to be analyzed for gasoline and its dissolved constituents is contained in 40 ml volatile organic analysis (VOA) vials prepared with hydrochloric acid preservative. Sample material to be analyzed for lead is contained in 250 ml VOA bottles with a nitric acid preservative. Sample material to be analyzed for diesel and other high boiling compounds is contained in 1 liter bottles without preservatives. Volatile organic analysis containers are filled and then sealed without headspace. All samples are promptly placed in an ice chest containing pre-frozen blocks of an ice substitute for transport to the laboratory under our standard chain of custody.

CHAIN OF CUSTODY

The chain of custody form requires time, date, and signature entries by the person releasing the samples and corresponding time, date, and signature entries by the person accepting custody of the samples. These notations are required at each transmittal.

HAZARDOUS MATERIALS TESTING LABORATORY

The samples obtained at this site were transported to the IT Corporation Santa Clara Valley Laboratory, which is located at 2055 Junction Avenue, San Jose, California. This laboratory has been assigned a California Department of Health Services certification as a Hazardous Materials Testing Laboratory. Their certification number is 137.

CERTIFIED ANALYTICAL REPORT

On completion of the requested analytical procedures, the laboratory issued their results in the form of a certified analytical report which is included as an attachment at the close of this report.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/rfs

attachments: chain of custody
certified analytical report

BLAINE
TECH SERVICES INC.

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

CHAIN OF CUSTODY # 88250 T2

SITE SPECIFICATION Gettler Ryan #89831
Shell
15275 Washington
San Leandro, CA

( ) Bill BLAINE TECH SERVICES, Inc.
(X) Bill G/R

SPECIAL INSTRUCTIONS

58-09-028

SAMPLE I.D.	QUANTITY	TYPE	OK	ANALYSIS TO DETECT	STATUS	RESULTS	LAB NUMBER
S-1	3	L		THC (GAS) BTAX	Rou	9/20	58-09-028-01
S-3	↓	↓		↓	↓	↓	-02
S-5	↓	↓		↓	↓	↓	-03
9/3 TRIP	1	↓		↓	↓	↓	-04

Field sampling was performed by Thomas W. Battle

Sampling was completed at 14:15 AM/(PM) 9-6 -1988

RELEASE OF SAMPLES FROM (name,time,date) --->>>>> INTO THE CUSTODY OF (name,time,date)

from Thomas Battle 15:20 AM/(PM) 9/6 -88 -> to Steven Pham 15:20 AM/(PM) 9/6 -88

from _____ @ __:__ AM/PM _____ -88 -> to _____ @ __:__ AM/PM _____ -88

from _____ @ __:__ AM/PM _____ -88 -> to _____ @ __:__ AM/PM _____ -88

The laboratory designated to perform these analyses is: IT/SCV DHS LMTL #137
NOTE: Procedures and detection limits must confrom to RWQCB Region II specifications.
Please include chain of custody number and site specification on reports and invoices.

INTERNATIONAL TECHNOLOGY CORPORATION

September 20, 1988

Gettler-Ryan
1992 National Avenue
Hayward, CA 94545

ATTN: Jerry Mitchell

Following are the results of analyses on the samples described below.

Project:	G-R #89831/BTS #8825ØT2, Shell, 15275 Washington, San Leandro, CA
Lab Numbers:	S8-Ø9-Ø28-Ø1 thru S8-Ø9-Ø28-Ø3
Number of Samples:	3
Sample Type:	Water
Date Received:	9/6/88
Analyses Requested:	Low Boiling Hydrocarbons

The method of analysis for low boiling hydrocarbons is taken from EPA Methods 8Ø15, 8Ø2Ø and 5Ø3Ø. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethyl benzene and xylenes.

James C. Harper

JCH/gg

1 Page Following - Table of Results

cc: Rich Blaine, Blaine Tech Services

IT Santa Clara Valley to Gettler-Ryan
ATTN: Christa Lopez

September 20, 1988
Page 1 of 1

Project: G-R #89831/BTS #88250T2, Shell,
15275 Washington, San Leandro, CA

ND = None Detected

Summary of Results
Milligrams per Liter

Lab Number	Sample Identification	Low Boiling Hydrocarbons (calculated as gasoline)	Benzene	Toluene	Ethyl Benzene	Xylenes
S8-09-028-01	S-1	ND	ND	ND	ND	ND
Detection Limit		0.05	0.0005	0.001	0.001	0.003
S8-09-028-02	S-3	96.	3.4	9.5	2.7	17.
Detection Limit		20.	0.2	0.5	0.5	2.
S8-09-028-03	S-5	7.	2.6	0.06	0.40	0.70
Detection Limit		1.	0.05	0.02	0.02	0.08