gettler - ryan inc.
general contractors

September 16, 1986

Mr. Ray Newsome
Shell Oil Company
Post Office Box 7004
Lafayette, California 94549

Reference: Shell Service Station
15275 Washington Ave. & Lewelling
San Leandro, California

Gentlemen:

Enclosed is the September 12, 1986 EMCON Associates letter containing the results of a soil and ground water investigation conducted at the referenced location. Also included is monitoring data for the reference site. Please note that well S-B shows approximately 1.2 inches of floating product.

Please do not hesitate to call if you should have any questions or comments.

Bill D. Knutson

Bill D. Knutson

BDK/ns

Enclosure

1992 national avenue • hayward, california 94545-1787 • 783-7500

EMCON
ASSOCIATES
Consultants in Wastes
Management and
Environmental Control

RECEIVED
SEP 15 1986
GETTLER-RYAN INC.
GENERAL CONTRACTORS

September 12, 1986
Project 738-08.02

Gettler Ryan Inc.
1992 National Avenue
Hayward, California 94545

Attn: Mr. Jeffrey M. Ryan

Re: Shell Service Station
Lewelling Boulevard and
Washington Avenue,
San Leandro, California

Gentlemen:

This letter presents the results of a soil and ground water investigation conducted by EMCON Associates at the Shell service station located at Lewelling Boulevard and Washington Street, San Leandro, California. Four ground-water monitoring wells (S-1 through S-4) were previously installed at the site by EMCON. The results of that investigation were transmitted to Gettler-Ryan in a report dated August 12, 1985. The investigation revealed gasoline concentrations of 520 parts per billion (ppb) in Well S-1, 2,200 ppb in Well S-2, and 32,000 ppb in Well S-4. Well S-3 contained approximately 6 inches of free floating gasoline. The locations of these wells are shown on Figure 1. The purpose of the current investigation was to examine soil and ground water conditions within or adjacent to the subsurface gasoline storage tank complex and waste oil tank located at the site. It is EMCON's understanding that the results of this investigation will be used to document hydrocarbon concentrations for soil disposal purposes if the tanks are to be replaced.

FIELD INVESTIGATION PROCEDURES

Four exploratory borings (S-A through S-D) were drilled at the locations shown on Figure 1. Boring S-A was placed adjacent to the subsurface waste oil tank, and Borings S-B, S-C, and S-D were placed within the subsurface gasoline storage tank complex. The borings were drilled using continous-flight hollow-stem auger drilling equipment and were logged by an EMCON geologist. Soil samples for logging were obtained from auger-return materials and by advancing a California modified split-spoon sampler into undisturbed soil beyond the tip of the auger. Soil samples for chemical analysis were collected at approximately 5-foot depth intervals and were placed in glass containers, packed on ice, and delivered directly to a certified analytical laboratory. Laboratory results accompany this report.

Upon completion, Borings S-A, S-C, and S-D were backfilled with bentonite and soil cuttings to a depth of 1 foot and concrete to the ground surface. Boring abandonment details accompany the attached Exploratory Boring Logs. Boring S-B was converted to a 3-inch temporary monitoring well as detailed on Plate C.

SITE CONDITIONS

Boring S-A encountered sandy silt to a depth of 7 feet, underlain by clay to the total depth explored of 8 feet. Borings S-B, S-C, and S-D encountered sand and clay fill to a depth of 12 feet, underlain by clay to the total depth explored of 15-1/2 to 17 feet. Ground water was encountered at approximately 7 feet.

Strong product odor was noted in soils from Boring S-A to the total depth explored of 8 feet, and in soils from Borings S-B, S-C, and S-D within the fill area to a depth of approximately 12 feet. Faint product odor was noted in Borings S-B and S-C just below the fill material.

LABORATORY INVESTIGATIONS AND RESULTS

All soils collected from Borings S-B, S-C, and S-D were analyzed for the presence of gasoline and BTX (benzene, toluene, xylene) compounds. Results of the analyses, reported in parts per million, are presented in Table 1. The detection limit is unusually high in the sample from S-C at 7-1/2 to 9 feet, and from S-D at 3-1/2 to 5 feet (detection limits of 200 ppm and 100 ppm respectively) due to the presence of matrix interferences from a non-gasoline compound in the samples. Soils from Boring S-A were analyzed for waste oil. No waste oil was detected in the sample. However, unidentified volatile compounds (probably gasoline) were present. Certified analytical results accompany this letter.

If you have any questions regarding the contents of this letter, please do not hesitate to call.

Very Truly Yours,

EMCON Associates

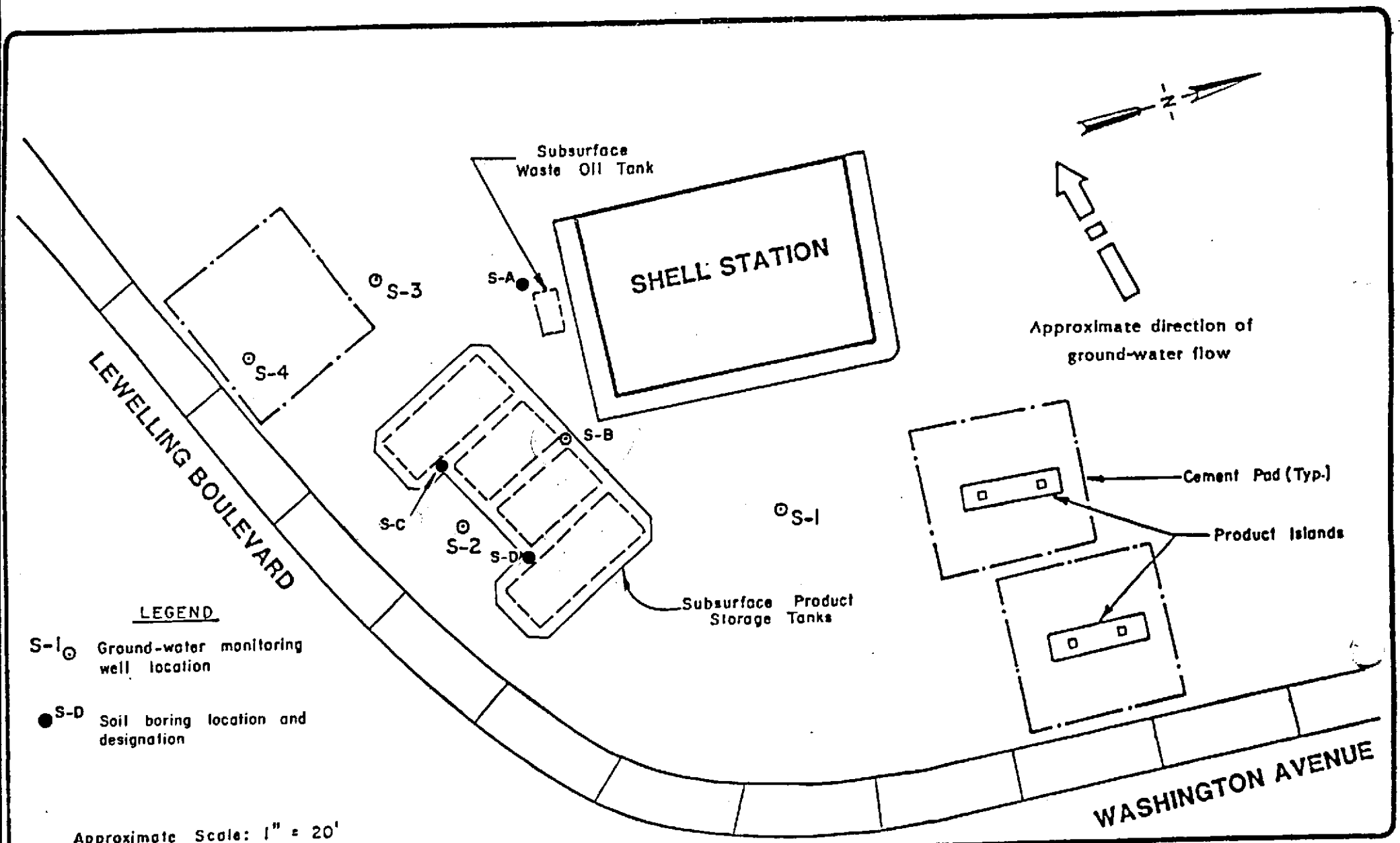
Christine R. Wilson
Staff Geologist

Susan M. Willhite
Senior Project Geologist
CEG 1272

CRW/SMW/EBL

TABLE 1

Sample Identification	Depth Interval (in feet)	Gasoline Concentration (parts per million)
S-B	3-1/2 to 5	1,700
	11 to 12-1/2	1,500
	14 to 15-1/2	<5
S-C	3-1/2 to 5	310
	7-1/2 to 9	<200
	11-1/2 to 13	<5
	14 to 15-1/2	300
	15-1/2 to 17	<5
S-D	3-1/2 to 5	<100
	7 to 8-1/2	<5
	11 to 12-1/2	<5
	14 to 15-1/2	<5



EMCON Associates
San Jose, California

GETTLER-RYAN, INC.
SUBSURFACE HYDROGEOLOGIC INVESTIGATION
SHELL STATION, LEWELLING BLVD & WASHINGTON AVE.
SAN LEANDRO, CALIFORNIA

SITE PLAN

FIGURE
1

PROJECT NO.
738-08.02

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.02 BORING NO. S-A

PROJECT NAME Gettler-Ryan,Shell,Lewelling Bl. & Washington Av. PAGE 1 OF 1

BY EBL DATE 8/15/86 San Leandro SURFACE ELEV. 22'±

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
							ASPHALT, SAND, AND GRAVEL-FILL.
						ML	SANDY SILT; very dark gray (10YR, 3/1); 30-40% fine sand; soft; wet; strong product odor.
	2.0	10	▽	5	1	CH	CLAY; black (10YR,2/1); 10-20% fine sand; stiff; wet; strong product odor.
				10			BOTTOM OF BORING AT 8 FEET.
				15			
				20			
				25			
				30			
				35			
				40			

REMARKS

Drilled by 8-inch continous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Boring backfilled with cuttings to 1 foot; concrete to surface.

PLATE A

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.02 BORING NO. S-B

PROJECT NAME Gettler-Ryan,Shell,Lewelling Bl. & Washington Av. PAGE 1 OF 1

BY EBL DATE 8/15/86 San Leandro SURFACE ELEV. 22'± MSL

TORVANE (TSF)	POCKET PENETRO-METER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
							CONCRETE, SAND, and GRAVEL-FILL.
						SW	SAND-FILL; dark gray (10YR, 4/1); 5-10% fines; fine sand; 20-30% medium to coarse sand; loose; moist; strong product odor.
				5	1		@ 7': wet; strong product odor.
		2			2		
				10			
	1.5	16			3	CH	CLAY; very dark brown (10YR, 2/2); 10-20% fine sand; stiff; wet; faint product odor.
	2.5	22		15	4		@ 14': very stiff; no product odor.
							BOTTOM OF BORING AT 15-1/2 FEET.
				20			
				25			
				30			
				35			
				40			

in tank pit

REMARKS

Drilled by 8-inch continous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Boring converted to 3-inch monitoring well as detailed in plate C.

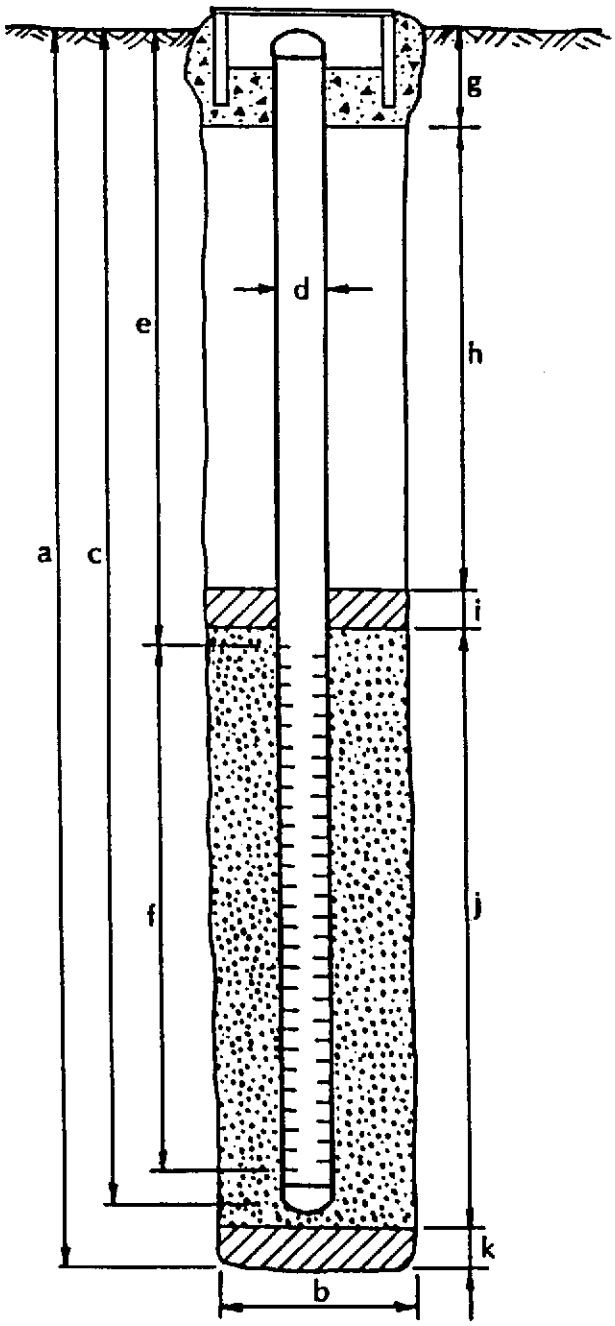
WELL DETAILS

EMCON ASSOCIATES

PROJECT NUMBER 738-08.02
PROJECT NAME G-R Shell, San Leandro
COUNTY Alameda
WELL PERMIT NO. _____

BORING / WELL NO. S-B
TOP OF CASING ELEV. _____
GROUND SURFACE ELEV. 22' MSL
DATUM USGS

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 15.5 ft.
b. Diameter 8 in.
Drilling method Hollow-Stem Auger

WELL CONSTRUCTION

c. Casing length 15.5 ft.
Material Schedule 40 PVC
d. Diameter 3 in.
e. Depth to top perforations 1 ft.
f. Perforated length 14.5 ft.
Perforated interval from 14.5 to 1 ft.
Perforation type Machined Slot
Perforation size .020 inch
g. Surface seal 0.3 ft.
Seal material Bentonite
h. Backfill 0 ft.
Backfill material _____
i. Seal 0.7 ft.
Seal material Concrete
j. Gravel pack (13.9 to 1 Ft.) 12.9 ft.
Pack material Coarse Aquarium Sand
k. Bottom seal 0 ft.
Seal material _____
Note: Borehole caved to 13.9 feet.

PLATE C

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.02 BORING NO. S-C

PROJECT NAME Gettler-Ryan,Shell,Lewelling Bl. & Washington Av. PAGE 1 OF 1

BY EBL DATE 8/15/86 San Leandro SURFACE ELEV. 22'± MSL

TORVANE (TSF)	POCKET PENETRO-METER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-GRAPHIC COLUMN	DESCRIPTION
							CONCRETE, SAND, and GRAVEL- FILL.
					1	SW	SAND-FILL; dark gray (10YR, 4/1); < 10% fines; fine to coarse sand; loose; damp; strong product odor.
				5		CL	CLAY-FILL; very dark gray (2.5Y, N3); 10-20% fine sand; soft; moist; strong product odor.
		4	▽		2	SW	SAND-FILL; dark gray (10YR, 4/1); < 10% fines; fine to coarse sand; loose; wet; strong product odor.
	1.5	13		10	3	CH	CLAY; very dark grayish brown (2.5Y, 3/2); 15-25% fine sand; stiff; wet; faint product odor.
	3.0	21		15	4		@ 14': very stiff; faint product odor.
	2.5				5		@ 15-1/2': stiff; moist; no product odor.
				20			BOTTOM OF BORING AT 17 FEET.
				25			
				30			
				35			
				40			

REMARKS

Drilled by 8-inch continous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Boring backfilled with Bentonite to 12 feet, cuttings to 1 foot, and concrete to surface.

LOG OF EXPLORATORY BORING

PROJECT NUMBER 738-08.02 BORING NO. S-D

PROJECT NAME Gettler-Ryan,Shell,Lewelling Bl. & Washington Av. PAGE 1 OF 1

BY EBL DATE 8/15/86 San Leandro SURFACE ELEV. 22'± MSL

TORVANE (TSF)	POCKET PENETROMETER (TSF)	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
							CONCRETE, SAND, and GRAVEL-FILL.
					1	SP	SAND; very dark gray (10YR, 3/1); < 10% fines; fine sand; loose; moist; strong product odor.
				5			
		2	▽		2		@ 7': moderate product odor.
				10	3		@ 11': wet; strong product odor; product sheen on sampler.
		12				CL	CLAY; very dark grayish brown; (2.5Y, 3/2); 10-20% fine sand; very stiff; moist; no product odor.
	3.0	26		15	4		
							BOTTOM OF BORING AT 15-1/2 FEET.
				20			
				25			
				30			
				35			
				40			

REMARKS

Drilled by continous-flight, hollow-stem auger; samples collected with 2-inch California modified split-spoon sampler. Boring backfilled with Bentonite to 12 feet, cuttings to 1 foot, and concrete to surface.

PLATE E

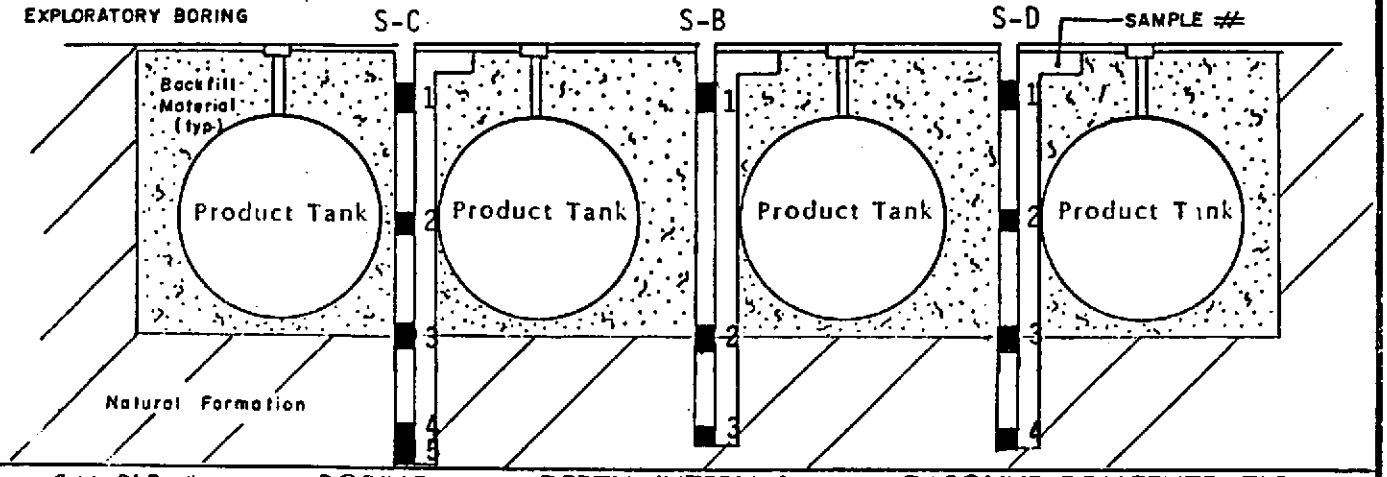
EMCON ASSOCIATES

GETTLER-RYAN, INC.

GENERALIZED PROFILE OF SUBSURFACE TANK COMPLEX AND GASOLINE CONCENTRATIONS WITHIN BACKFILL MATERIAL

PROJECT NUMBER 738-08.02
PROJECT NAME G-R Shell, San Leandro
NUMBER OF TANKS IN COMPLEX 4

MAPVIEW DIMENSIONS 27' x 42'
APPROXIMATE DEPTH 12 feet



SAMPLE #	BORING	DEPTH INTERVAL	GASOLINE CONCENTRATION (parts per million)
1	S-B	3-1/2 to 5	1,700
2	S-B	11 to 12-1/2	1,500
3	S-B	14 to 15-1/2	nd*
1	S-C	3-1/2 to 5	310
2	S-C	7-1/2 to 9	nd[1]
3	S-C	11-1/2 to 13	nd*
4	S-C	14 to 15-1/2	300
5	S-C	15-1/2 to 17	nd*
1	S-D	3-1/2 to 5	nd[2]
2	S-D	7 to 8-1/2	nd*
3	S-D	11 to 12-1/2	nd*
4	S-D	14 to 15-1/2	nd*

nd = no detection.

* Detection limit = 5 parts per million.

1 Detection limit = 200 ppm due to matrix interferences.

2 Detection limit = 100 ppm due to matrix interferences.

EMCON ASSOCIATES • CHEMICAL LABORATORIES
Analysis • Consultation • Research • Environmental Studies
State Approved Water Laboratory

CERTIFIED ANALYTICAL REPORT

Report to:
Gettler Ryan
1992 National Ave
Hayward, CA 94545

Project Number: 738-08.02

Location: SAN LEANDRO

Sample Type: SOIL
Units: mg/kg

Sample Designation:	SB-3.5-5	SB-11-12.5	SB-14-15.5	SC-3.5-5
Field Date:	08/15/86	08/15/86	08/15/86	08/15/86
Laboratory Number:	E86-0751	E86-0751	E86-0751	E86-0751
Benzene	1.0	5.6	<0.05	<0.5
Toluene	11	37	<0.1	<1
Xylenes and Ethylbenzene	97	130	<0.8	24
Volatile Hydrocarbons due to Gasoline	1700	1500	<5	310

Sample Designation:	SC-7.5-9	SC-11.5-13	SC-14-15.5	SC-15.5-17
Field Date:	08/15/86	08/15/86	08/15/86	08/15/86
Laboratory Number:	E86-0751	E86-0751	E86-0751	E86-0751
Benzene	<0.2 *	<0.05	1.6	<0.05
Toluene	<0.4 *	<0.1	5.1	<0.1
Xylenes and Ethylbenzene	<1.6 *	<0.4	28	<0.4
Volatile Hydrocarbons due to Gasoline	<200 *	<5	300	<5

Sample Designation:	SD-3.5-5	SD-7-8.5	SD-11-12.5	SD-14-15.5
Field Date:	08/15/86	08/15/86	08/15/86	08/15/86
Laboratory Number:	E86-0751	E86-0751	E86-0751	E86-0751
Benzene	<0.1 *	<0.05	0.11	<0.05
Toluene	<0.2 *	<0.1	<0.1	<0.1
Xylenes and Ethylbenzene	<0.8 *	<0.4	<0.4	<0.4
Volatile Hydrocarbons due to Gasoline	<100 *	<5	<5	<5

* Detection limit elevated due to sample matrix interference.

Reported by: Philip Murphy Date: 9-10-86

1921 RINGWOOD AVENUE, SAN JOSE, CALIFORNIA 95131 TELEPHONE (408) 275-1444

These results were obtained by following standard laboratory procedures; the liability of the corporation shall not exceed the amount paid for this report.

DATE: 09/09/86

Project Number: 738-08.02

Gettler Ryan
1992 National Ave
Hayward, CA 94545

Location: SAN LEANDRO

METHODS OF ANALYSIS

Sample Type: SOIL

PARAMETER	METHOD
Benzene Toluene Xylenes and Ethylbenzene Volatile Hydrocarbons due to Gasoline	The method of analysis is taken from EPA methods 5030, 8015, 8020 and 602. The samples are tested by gas chromatography using the purge and trap technique. Detection is by means of both photoionization and flame ionization detectors.