



Chevron U.S.A. Inc.

2 Annabel Lane, Suite 200, San Ramon, CA 94583 • Phone (415) 838-5000

9/4/86

Marketing Operations
D. Moller
Division Manager, Operations
S. L. Patterson
Area Manager, Operations
C. G. Trimbach
Manager, Engineering

5 August 1987

cc copy
original
to RWQCB

T.M. Gerow
Public Health Engineer
County Department of Environmental Health
470 27th Street, Room 324
Oakland, California 94612

- RE: Chevron Service Station 9-1153
Fernside and Gibbons, Alameda, CA

Dear Mr. Gerow:

Chevron U.S.A. Inc. is in the process of conducting an investigation of the above-referenced site.

Attached is a copy of our most recent consultant's report and a summary of chemical analysis done at the site to date. Additionally, Chevron has contracted with EA Engineering, Science, and Technology, Inc. (EA) for further investigations at this site. Investigations will include:

1. Conducting a Soil Vapor Contaminant Assessment to determine extent of contamination
2. A review of existing data provided by Chevron and readily available literature.
3. Conducting an inventory of existing wells within a one-half mile radius including when available, location, depth, construction, yield, and usage (both pumping rates and use).
4. Development of a conceptual hydrogeological model and inputs for a numerical simulation.
5. A model using a worst plausible case approach assessing potential impacts, if any, on existing water supplies.
6. Development of a brief risk assessment report outlined below.
 - A. Summary of Investigations to Date
 - Summary of data in a table
 - Maps
 - . Regional
 - . Site, includes all sampling points

- Well inventory
 - Geological x-sections
 - . Generalized from literature
 - . Local if applicable
 - Determination of local gradient and ground-water flow velocity
- B. Analysis of Contaminant Fate
- Fate of ground water
 - Ground water model flow to nearest well show concentration vs. time
 - Evaluate biodegradation potential
- C. Determination of Risk
- Recommendations for further actions

Should you have questions or require additional information please do not hesitate to contact Robert Stolz at 415-838-5302.

Very truly yours,

D. Moller

By _____
R.S. Stolz
Engineer



EMCON
ASSOCIATES

Consultants in Wastes
Management and
Environmental Control

RECEIVED

MEMORANDUM

September 18, 1986
Project 800-75.01

GETTLER-RYAN INC.
1992 National Avenue
Hayward, California 94545

Attention: Mr. Jeffrey M. Ryan

Re: Former Chevron Service
Station, Fernside Blvd.
and Gibbons Drive,
Alameda, California
Station # 1153

Gentlemen:

This memorandum documents the installation of three monitoring wells (C-1 through C-3) on August 18, 1986 by EMCON Associates at the former Chevron service station located at Fernside Boulevard and Gibbons Drive in Alameda, California. The locations of the monitoring wells are shown on the attached Figure 1.

The borings for Wells C-1, C-2, and C-3 were drilled using continuous-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. Upon completion, all borings were converted to 3-inch monitoring wells. Well details accompany the attached Exploratory Boring Logs.

The borings encountered interbedded sand, silt, sand, and clayey sand to the total depth explored of 22-1/2 feet. Ground water was encountered at a depth of approximately 4 feet. Floating product odor was noted in soils from Borings C-1 and C-2 from depths ranging between 1-1/2 and 5-1/2 feet. Faint product odor was noted in sand fill from Boring C-3 at a depth of 1 foot, and in soils from Boring C-1 at 9 feet.

The monitoring wells were field-checked for water level and presence of floating product by EMCON on September 4, 1986. No floating product was found in any of the wells. Therefore, ground water samples were collected from each of the wells. Prior to sampling, four casing volumes of water

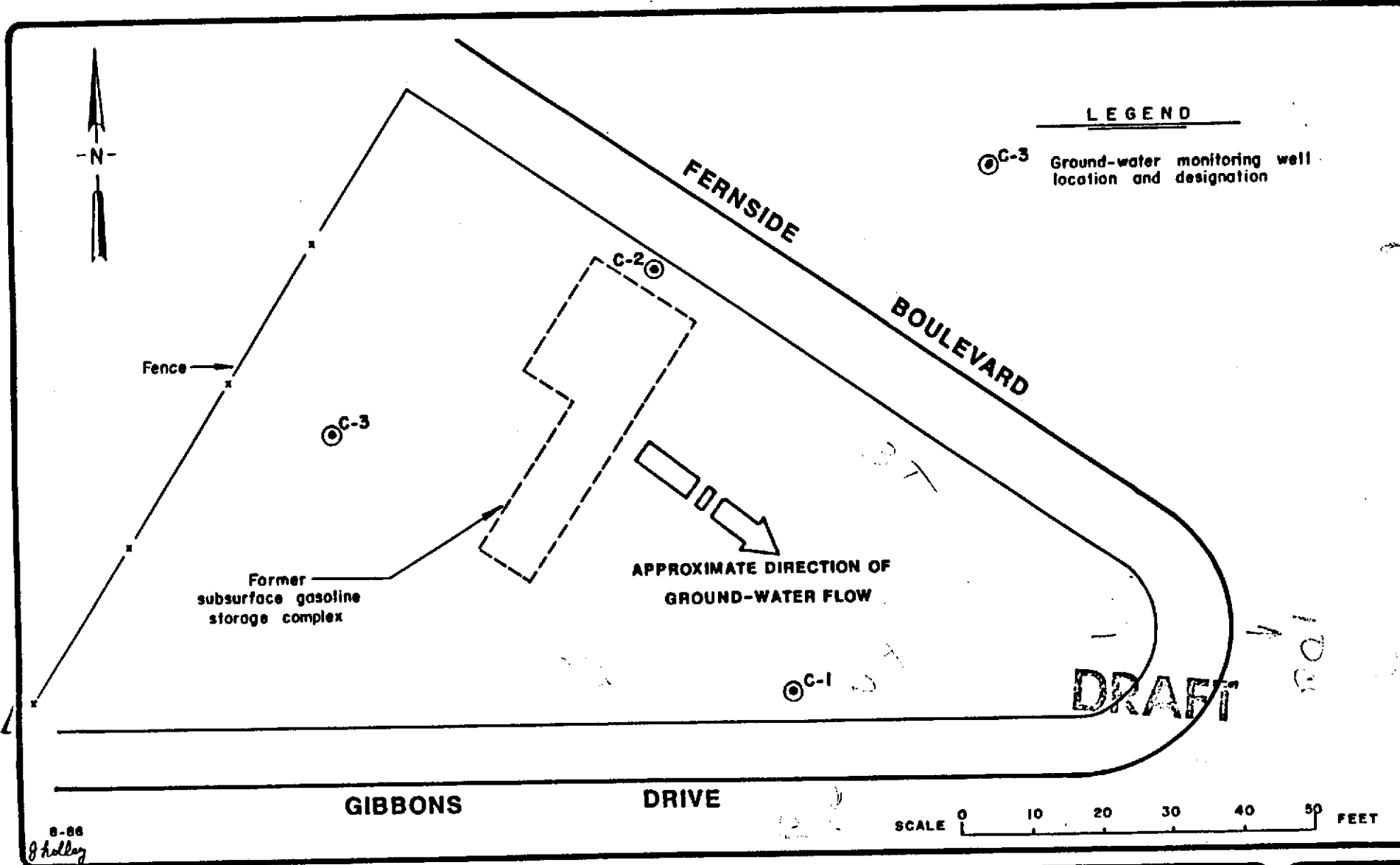
Headquarters:
1921 Ringwood Avenue, San Jose, California 95131, (408) 275-1444

Branch office: 445 W. Garfield Avenue, Glendale, California 91204

were purged from the wells using a suction pump. The ground-water samples were then collected using a teflon bailer. The samples were placed on ice and delivered directly to a certified analytical laboratory. The samples were analyzed for the presence of gasoline and BTX (benzene, toluene, xylene) compounds. Gasoline was detected in ground-water samples from C-1, C-2 and C-3 at 15,000 parts per billion (ppb), 1,000 ppb and 50 ppb, respectively. Certified analytical reports and methods of analysis are attached.

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


Susan M. Willhite



8-86
J. Halley

EMCON
Associates

GETTLER-RYAN INC.
SUBSURFACE HYDROGEOLOGIC INVESTIGATION
FORMER CHEVRON SERVICE STATION, FERNSIDE BLVD. & GIBBONS DR.
ALAMEDA, CALIFORNIA

MONITORING WELL LOCATION MAP

FIGURE
1
PROJECT NO.
800-75.0

Chevron Service Station 9-1153, Fernside Blvd. and Gibbons Dr., Alameda, CA (mg/L and mg/kg)

<u>Sample^b</u>	<u>Depth/Date</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl- benzene</u>	<u>Total Petroleum Hydrocarbons⁽⁸⁾</u>	<u>EDB</u>
MW C1 ⁽¹⁾							
Soil		-	-	-	-	-	-
Groundwater	09/04/86	.76	.82	1.5 ⁽²⁾	-	15. ⁽³⁾	-
MW C2 ⁽⁴⁾							
Soil		-	-	-	-	-	-
Groundwater	09/04/86	.049	.018	.084 ⁽²⁾	-	1.1 ⁽³⁾	-
MW C3 ⁽⁵⁾							
Soil		-	-	-	-	-	-
Groundwater	09/04/86	.0032	.0054	.0058 ⁽²⁾	-	.050 ⁽³⁾	-
<u>Soil Samples</u>							
#1	11'	-	-	-	-	<1	-
#2 ^a	12'	-	-	-	-	<1	-
#3 ^a	10'	-	-	-	-	<1	-
#4 ^a	10.5'	-	-	-	-	<1	-
#6 ^a (6)	8'	-	-	-	-	<11 ⁽⁷⁾	-
#7 ^a	18" ⁽⁹⁾	-	-	-	-	1400	-
#8 ^a	20" ⁽¹⁰⁾	-	-	-	-	530	-
#9 ^a	12" ⁽¹¹⁾	-	-	-	-	150	-
#10 ^a	10'	-	-	-	-	<1	-
#11 ^a	12'	-	-	-	-	<1	-
#12 ^a	10'	-	-	-	-	<11	-
#13 ^a	12-18" ⁽¹²⁾	-	-	-	-	33	-
#1 ^c		-	-	-	-	<1 ⁽¹⁴⁾	-
#2 ^c		-	-	-	-	<1 ⁽¹⁴⁾	-
<u>Water Sample^a</u>							
#5 ⁽¹³⁾	06/04/86	-	-	-	-	130 ⁽⁸⁾	-

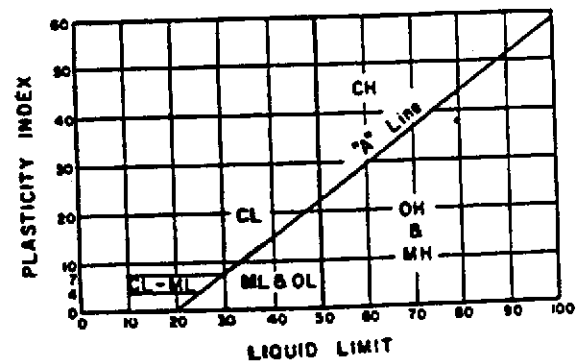
Footnotes:

1. Designated on report as "C01".
 2. Combined figure for xylenes and ethylbenzene.
 3. Combined as "Volatile Hydrocarbons due to Gasoline".
 4. Designated on report as "C02".
 5. Designated on report as "C03".
 6. Sample #5 was a water sample.
 7. Waste oil by extraction.
 8. Reported as gasoline unless otherwise noted.
 9. Soil from stockpile 18" below surface.
 10. Soil from stockpile 20" below surface.
 11. Soil from stockpile 12" below surface.
 12. Soil from stockpile 12-18" below surface.
 13. Subsurface water sample.
 14. Designated as total hydrocarbon-response-gasoline.
-
- a. See Data Source List.
 - b. See Data Source List.
 - c. See Data Source List.

MAJOR DIVISIONS		SYMBOLS	TYPICAL SOIL DESCRIPTIONS
COARSE GRAINED SOILS (More than 1/2 of soil > no. 200 sieve size)	<u>GRAVELS</u> (More than 1/2 of coarse fraction > no. 4 sieve size)	GW	Well graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	<u>SANDS</u> (More than 1/2 of coarse fraction < no. 4 sieve size)	SW	Well graded sands or gravelly sands, little or no fines
		SP	Poorly graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS (More than 1/2 of soil < no. 200 sieve size)	<u>SILTS & CLAYS</u> <u>LL < 50</u>	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
	<u>SILTS & CLAYS</u> <u>LL > 50</u>	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS	Pt	Peat and other highly organic soils	

CLASSIFICATION CHART
(Unified Soil Classification System)

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U. S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVEL coarse fine	3" to No. 4	76.2 to 4.76
	3" to 3/4"	76.2 to 19.1
	3/4" to No. 4	19.1 to 4.76
SAND coarse medium fine	No. 4 to No. 200	4.76 to 0.074
	No. 4 to No. 10	4.76 to 2.00
	No. 10 to No. 40	2.00 to 0.420
	No. 40 to No. 200	0.420 to 0.074
SILT & CLAY	Below No. 200	Below 0.074



PLASTICITY CHART

GRAIN SIZE CHART

METHOD OF SOIL CLASSIFICATION



NOTES:

Logs of Exploratory Borings

2.5 YR, 6/2

Denotes color as field checked to Munsell Soil Color Charts (1975 Edition)



Denotes undisturbed sample taken in 2-inch split-spoon sampler.



Denotes disturbed sample (bag sample).



Denotes first observation of groundwater.



Denotes static ground-water level.

NR

No recovery

Penetration

Sample drive hammer weight = 140 pounds, drop = 30 inches. Blows required to drive sampler 1 foot are indicated on logs.

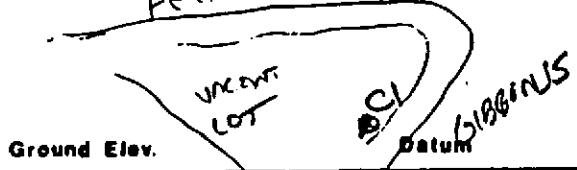


LOG OF EXPLORATORY BORING

PROJECT NO. 100-11 DATE 8-10-86
 CLIENT GR ON N
 LOCATION ALAMEDA
 LOGGED BY ECL DRILLER RAYLAND

DURING NO. 01
 Sheet 1
 of 1

Field location of boring: FELIUS 10E



Drilling method H-S AUGER
 Hole dia. 8"

Casing installation data 3" PVC SLOTTED CASING INSTALLED FROM 2' TO 2 FEET; SUD TO SURFACE; SAND PACK TO 16"; BENTONITE TO 14"; CONCRETE TO SURFACE.

Ground Elev. _____

Water level	4.8'	4.1'		
Time	13.05	16.06		
Date	8-18-86	8-18-86		

Pocket Terravane TSF	Pocket Penetrometer TSF	Blows/ft. or Pressure PSI	Type of Sample	Sample Number	Depth	Sample	Soil Group Symbol (U.S.C.S.)
					2		SW
					4		SP
25		11/4/4	DR-L	(1)	6		SC
					8		
3.0		11/8/16	DR-L	(2)	10		
					12		
					14		SP
		7/12/16	DR-L	(3)	16		
					18		
		12/17/30	DR-L	(4)	20		
					22		SC
3.0		10/12/17	DR-L	(5)			

DESCRIPTION

SAND-FILL; BROWN (10YR, 5/8); 10-20% FINES; 70-80% FINE SAND; 10-20% MED SAND TO FINE GRAVEL; LOOSE; DRY; NPD.
@ 1 1/2 FEET; STRONG GAS ODR.
SAND; DARK GRAY (2.5Y, N4); 5-10% FINES; FINE SAND; LOOSE; WET; STRONG GAS ODR.
CLAYEY SAND; DARK GRAY (2.5Y, N4); 30-40% FINES; FINE SAND; VERY STIFF; WET; STRONG GAS ODR.
@ 9-10 1/2 FT. DARK GRAYISH BROWN (2.5Y, 4/2); FAINT GAS ODR.
SAND; OLIVE BROWN; (2.5Y, 4/4); 5-10% FINES; 60-40% FINE SAND; 5-10% MEDIUM SAND; MEDIUM DENSE; WET; NO GAS ODR.
@ 17-20 FT. 5) COARSE SAND TO FINE GRAVEL; VERY DENSE; NPD.
CLAYEY SAND; GRAYISH BROWN (2.5Y, 5/2); 25-35% FINES TO 80% FINE SAND; VERY STIFF; WET; NPD.

BOTTOM OF BORING AT 22 1/2 FEET.

PRELIMINARY

WELL DETAIL

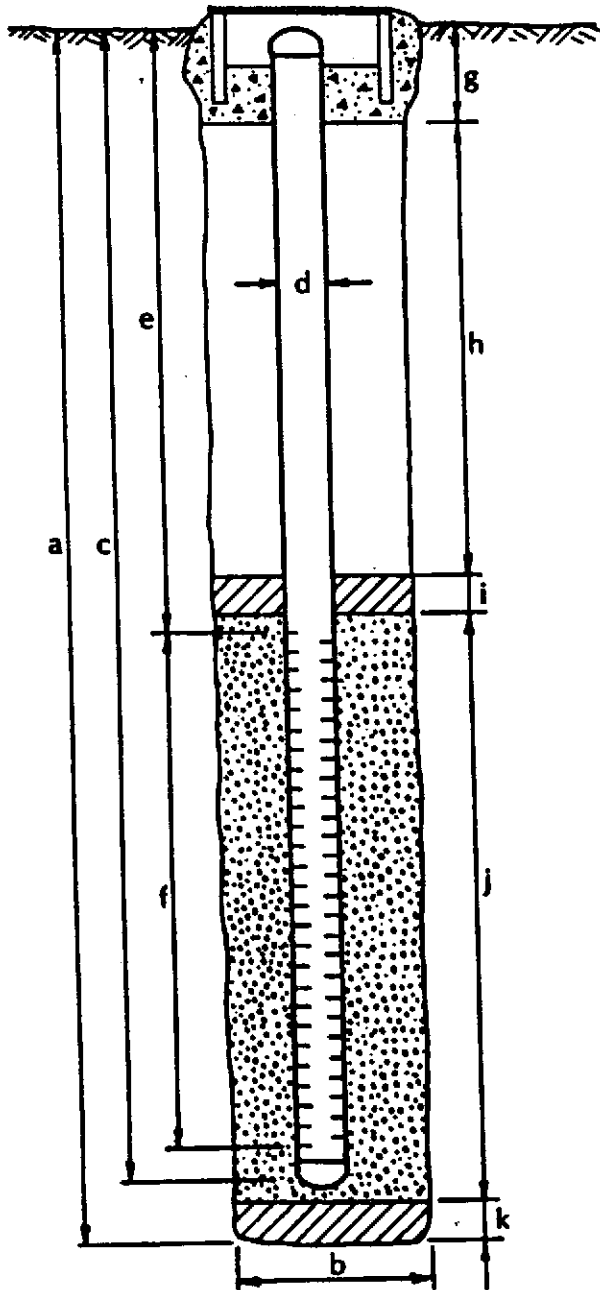


PROJECT NUMBER 800-75-01
 PROJECT NAME G-R (H=VP.101)
 COUNTY ALAMEDA
 WELL PERMIT NO. _____

BORING / WELL NO. C-1
 TOP OF CASING ELEV. _____
 GROUND SURFACE ELEV. 7' ± MSL
 DATUM USGS

DRAFT

G-5 vault box (Std.)



EXPLORATORY BORING

a. Total depth 22 1/2 ft.
 b. Diameter 8" in.
 Drilling method HOLLOW-STEM AUGER

WELL CONSTRUCTION

c. Casing length 22 ft.
 Material STEEL 40 P/C
 d. Diameter 3 in.
 e. Depth to top perforations 2 ft.
 f. Perforated length 20 ft.
 Perforated interval from 22 to 2 ft.
 Perforation type MACHINED SLOT
 Perforation size .020 INCH
 g. Surface seal 1.2 ft.
 Seal material CEMENT GROUT
 h. Backfill 0 ft.
 Backfill material _____
 i. Seal 0.3 ft.
 Seal material BENTONITE
 j. Gravel pack (22 to 1.5 FEET) 20.5 ft.
 Pack material CORSE AQUICLUS SAND
 k. Bottom seal 1.5 ft.
 Seal material BENTONITE

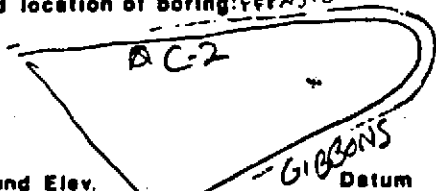


LOG C EXPLORATORY BORING

CLIENT GR CH 20N
 LOCATION ALAMOUNT
 LOGGED BY EBL DRILLER BYLAND

G-2
 Sheet 1
 of 1

Field location of boring: FFPNS.0E



Ground Elev.

Drilling method HS AUGER

Hole dia 8"

Casing Installation data 3" PIC SUTTED CASING INSTALLED FROM 22 TO 2 FEET; SOID CASING FROM 2 FEET TO SURFACE. SAND POOL TO 16"; BENTONITE TO 14"; CONCRETE TO SURFACE.

Pocket Torr vane TSF	Pocket Penetrometer TSF	Blows/ft. or Pressure PSI	Type of Sample	Sample Number	Depth	Sample	Soil Group Symbol (U.S.C.S.)	DESCRIPTION
					2	SW		SAND-FILL; OLIVE GRAY; (54, 4/2); 10-20% FINES; 55-65% FINE SAND; 10-20% MEDIUM TO COARSE SAND; 10-20% FINE TO COARSE GRAVELS; LOOSE; MOIST; NO PRODUCT ODOR.
		11/11	DR-L 33%	(1)	4	SM		SILTY SAND; VERY DARK GRAY (25Y, N2); 15-25% FINE TO COARSE FINE SAND; LOOSE; WET; STRONG GAS ODOR.
		110	DR-L 100%	(2)	10	SC		CLAYEY SAND; OLIVE GRAY (5Y, 4/2); 30-40% FINES; FINE SAND; STIFF; WET; NO PRODUCT ODOR.
		7/19/19	DR-L 100%	(3)	14	SP		SAND; OLIVE BROWN (2.5Y, 4/4); 5-10% FINES; 80-90% FINE SAND; 5-10% MEDIUM SAND; DENSE; WET; NO PRODUCT ODOR.
		15/15/15	DR-L 100%	(4)	22			© 20% - 22 FEET; 10-15% FINES; MEDIUM DENSE TO DENSE; NO PRODUCT ODOR.
					21			BOTTOM OF BORING AT 22 FEET
					26			
					28			
					30			

PRELIMINARY

WELL DETAIL

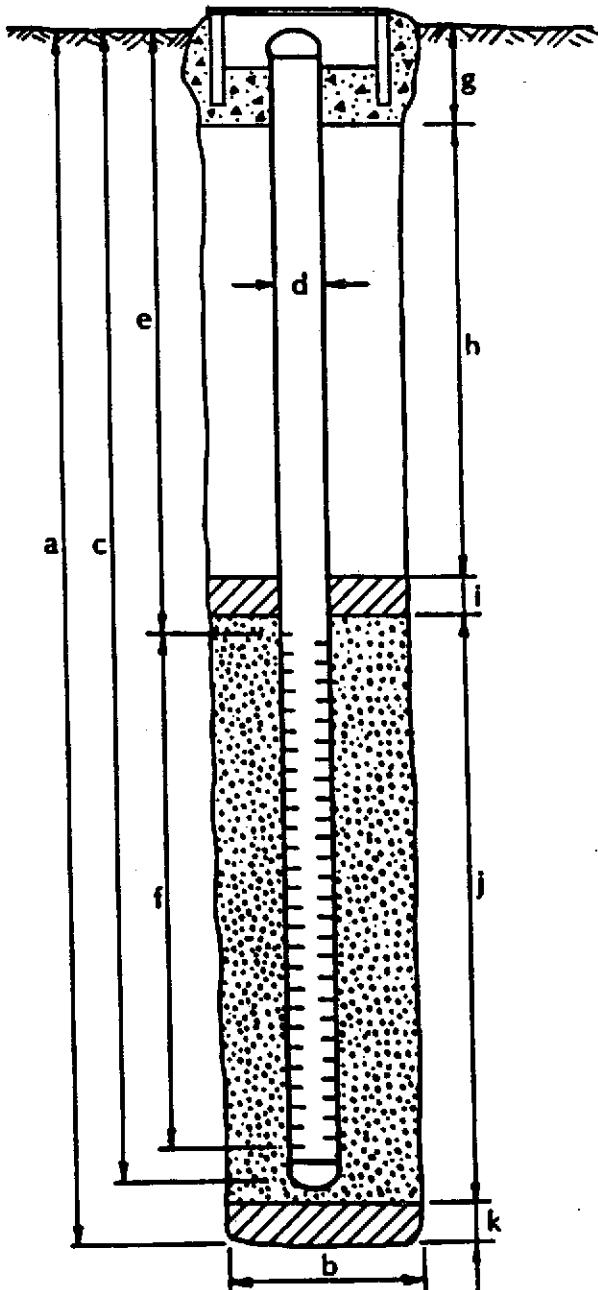


PROJECT NUMBER 800-75.01
 PROJECT NAME GL CHEVRON
 COUNTY ALAMEDA
 WELL PERMIT NO. _____

BORING / WELL NO. C-2
 TOP OF CASING ELEV. _____
 GROUND SURFACE ELEV. 7' ± MSL
 DATUM USGS

G-5 vault box (Std.)

DRAFT



EXPLORATORY BORING

a. Total depth 22 ft.
 b. Diameter 8 in.
 Drilling method Horizontal Steam Auger

WELL CONSTRUCTION

c. Casing length 22 ft.
 Material SCHEDULE 40 PVC
 d. Diameter 3 in.
 e. Depth to top perforations 2 ft.
 f. Perforated length 20 ft.
 Perforated interval from 22 to 2 ft.
 Perforation type MACHINER SLOT
 Perforation size .020 INCH
 g. Surface seal 1.2 ft.
 Seal material CEMENT GROUT
 h. Backfill 0 ft.
 Backfill material _____
 i. Seal 0.3 ft.
 Seal material BEITONITE
 j. Gravel pack (22 TO 1.5 FEET) 20.5 ft.
 Pack material COARSE SAND
 k. Bottom seal 0 ft.
 Seal material _____

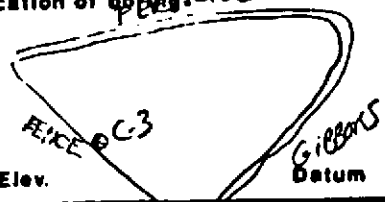


LOG O EXPLORATORY BORING

CLIENT GR CHE UN
 LOCATION ALBERT
 LOGGED BY EBL DRILLER BOYLAND

C-3
 Sheet 1
 of 1

Field location of penetration



Drilling method H-S AUGER
 Hole dia. 8"

Casing installation data 3" PVC SLOTTED CASING INSTALLED FROM 22 TO 2 FEET; SOLID PVC FROM 2 FEET TO SURFACE; SAND PACK FROM 22' TO 18"; BENTONITE FROM 18" TO 14"; CONCRETE FROM 14" TO SURFACE.

Ground Elev. _____

Pocket Torque	Pocket Penetrometer TSF	Blows/ft. or Pressure PSI	Type of Sample	Sample Number	Depth	Sample	Soil Group Symbol (U.S.C.S.)
					2		SW
					4		SP
	2.5/7		CL	(1)	6		SC
					8		SC
	2.0	5/8/11	CL	(2)	10		SC
					12		SC
					14		SP
	3.0	9/25/35	CL	(3)	16		SC
					18		SP
					20		SC
	1.5	2/14/12	CL	(4)	22		SC
					24		
					26		
					28		
					30		

Water level	Time	Date	DESCRIPTION
4.0'	16:16	8-18-86	
			SAND-FILL; BLUE GRAY (5Y, 4/2); 10-20% FINES - 60-70% FINE SAND; 10-20% MEDIUM TO COARSE SAND; 10-20% FINE TO COARSE GRAVEL; CONCRETE FRAGMENTS; LOOSE; NO ROOT ODOR.
			SAND; VERY DARK GRAY BROWN (10YR, 3/2); 5-10% FINES; FINE SAND 5, 10-20% MEDIUM TO COARSE SAND; LOOSE; NO ROOT ODOR.
			CLAY SAND; GRAYISH BROWN (10YR, 5/2); 40-50% FINES; FINE SAND; STIFF; WET; NO ROOT ODOR; ROOT FRAGMENTS AND Holes.
			SAND; BROWN (10YR, 4/3); 5-10% FINES; FINE SAND; 5-10% MEDIUM SAND; DENSE; WET; NO ROOT ODOR.
			CLAY SAND; BROWN (10YR, 5/3); 25-35% FINES; FINE SAND; VERY STIFF; WET; NO ROOT ODOR.
			SAND; BROWN (10YR, 4/3); > 10% FINES; 10-15% FINE SAND; MEDIUM DENSE; WET; NO CLAY SAND; DARK GRAY (2.5Y, N4); 35-45% FINES; FINE SAND; STIFF; WET; NO ROOT ODOR.
			BOTTOM OF BORING AT 22 FEET

PRELIMINARY

WELL DETAIL

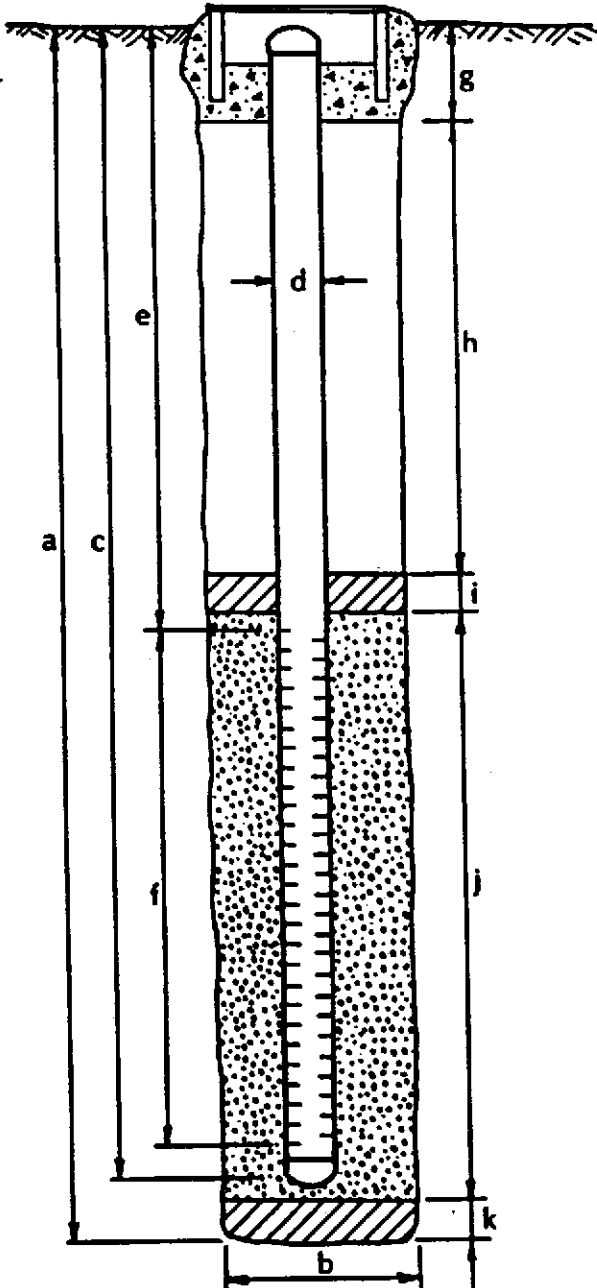


PROJECT NUMBER FOO-75.01
 PROJECT NAME GR CHEVRON
 COUNTY ALAMEDA
 WELL PERMIT NO. _____

BORING / WELL NO. C-3
 TOP OF CASING ELEV. _____
 GROUND SURFACE ELEV. 7'±MSL
 DATUM USGS

G-5 vault box (Std.)

DRAWN



EXPLORATORY BORING

- a. Total depth 22 ft.
 b. Diameter 8 in.
 Drilling method HOLLOW-STEM AUGER

WELL CONSTRUCTION

- c. Casing length 22 ft.
 Material SCHEDULE 40 PVC
 d. Diameter 3 in.
 e. Depth to top perforations 2 ft.
 f. Perforated length 20 ft.
 Perforated interval from 22 to 2 ft.
 Perforation type MACHINED SLOT
 Perforation size .020 INCH
 g. Surface seal 1.2 ft.
 Seal material CEMENT GROUT
 h. Backfill 0 ft.
 Backfill material _____
 i. Seal 0.3 ft.
 Seal material PERIOLITE
 j. Gravel pack (22 TO 1.5 FEET) 20.5 ft.
 Pack material COARSE AQUARIUM SAND
 k. Bottom seal 0 ft.
 Seal material _____

Data Source List

- a. Flay, R. Report from Thermo Analytical, Inc. to Chevron U.S.A. No. date.
- b. Murphy, P. 1986. Report from Emcon Associates to Gettler-Ryan, Inc., 15 September 1986.
- c. Flay, R. 1986. Letter from Thermo Analytical Inc. to Vicki Hobbs, Chevron U.S.A., 8 July 1986.

EMCON ASSOCIATES • CHEMICAL LABORATORIES

Analysis • Consultation • Research • Environmental Studies
State Approved Water Laboratory



CERTIFIED ANALYTICAL REPORT

Project Number: 800-75.01

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

Location: Chevron, Alameda

Sample Type: WATER
Units: $\mu\text{g/l}$

Sample Designation:	C01	C02	C03
Field Date:	09/04/86	09/04/86	09/04/86
Laboratory Number:	E86-0809	E86-0809	E86-0809
Benzene	760	49	3.2
Toluene	820	18	5.4
Xylenes and Ethylbenzene	1500	84	5.8
Volatile Hydrocarbons due to Gasoline	15000	1100	50

Page 1

Reported by: *Philip Murphy*

Date: *9-15-86*

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.

LABORATORY METHODS

The method of analysis is taken from EPA methods 5030, 8015, 8020 and 602. Five milliliters of water sample or 50 microliters of methanol extract of a solid soil sample mixed in 5 milliliters of reagent are purged using an inert gas to transfer the analyze compounds from the liquid phase to the vapor phase. The vapor is passed through a sorbent tube in which the compounds of interest are trapped. When the purging of the liquid sample is complete, the sorbent trap is heated and back-flushed with the inert gas, and the compounds are transferred in this gas to a gas chromatograph. The compounds enter a chromatographic column that is temperature programmed to separate the compounds. The compounds are eluted off the column in the gas phase and enter a photo-ionization detector followed in series by a flame-ionization detector. The latter combination allows for discrimination between aliphatic and aromatic compounds. Quantitation is performed by integration under all peaks obtained. Benzene, toluene, xylene, and ethylbenzene are quantitated by comparison to fresh or evaporated gasoline standards.

TMAJERG

1400 West 53rd Street

Suite 460

Emeryville, CA 94608-2946

(415) 652-2300

Chevron USA
2 Annabel Lane, Suite #200
San Ramon, CA 94583

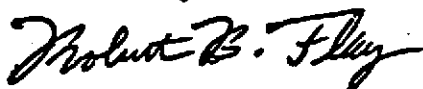
Release #23

Procedure: The samples are analyzed for gasoline by following the method described in Attachment 2, Analytical Procedures for Fuel Leak Investigations. The samples are concentrated on a Tekmar LSC-2 automatic sample concentrator prior to injection into a gas chromatograph fitted with a flame ionization detector. Quantitation is performed, as total hydrocarbon response, against known concentrations of gasoline. The limit of detection for this method of analysis is one part per million (mg/kg), unless stated otherwise.

The samples are analyzed for waste oil by following a modified EPA Method 3510 extraction procedure. The samples are extracted three times with hexane. The solvent is removed from the combined extracts and carbon disulfide is added. The solution is injected into a gas chromatograph fitted with a flame ionization detector. Quantitation is performed, as total hydrocarbon response, against a solution made from a known concentration of light machine oil. The limit of detection for this method of analysis is eleven parts per million (mg/kg).

The results are summarized in Table I.

Submitted by:



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RBF:sm1

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TABLE I

<u>ERG #</u>	<u>CLIENT ID</u>	<u>GASOLINE CONCENTRATION (mg/kg or mg/L)</u>
7920-1	86155 F1 #1	ND(1)
7920-2	86155 F1 #2	ND(1)
7920-3	86155 F1 #3	ND(1)
7920-4	86155 F1 #4	ND(1)
7920-5	86155 F1 #5	130 ppm** _{A.C.}
7920-6	86155 F1 #6	ND(11)*
7920-7	86155 F1 #7	1400
7920-8	86155 F1 #8	530
7920-9	86155 F1 #9	150
7920-10	86155 F1 #10	ND(1)
7920-11	86155 F1 #11	ND(1)
7920-12	86155 F1 #12	ND(11)*
7920-13	86155 F1 #13	33

*waste oil, by extraction

**water sample (mg/L)

ND = None detected. The limits of detection are in ().

told John Ough
9-19 that no floating
product in groundwater

3 wells
down gradient of old tank
(in above) benzene 2600 bpb
T 820
X 1500
ML 15000 bpb

C2 Residue
adj to tank
ben 49
T 18
X 94
THC 1100 ppb

C3 up gradient of tank
2 3.2 50
5.4
5.0