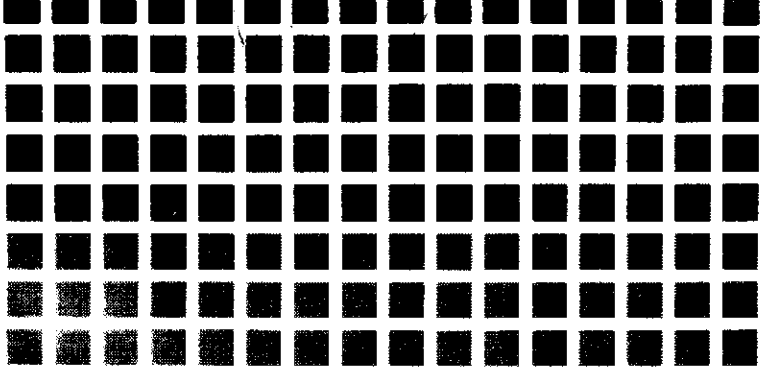
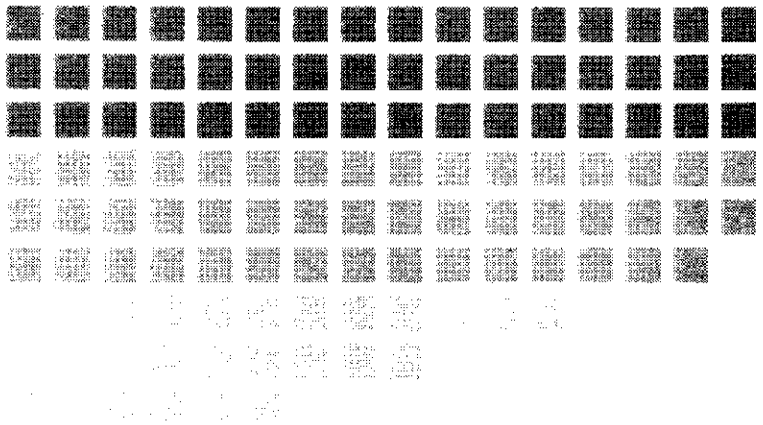




NOV 1989

■ Subsurface Consultants, Inc.

ENVIRONMENTAL ENGINEERING SERVICES
PLAZA CAR WASH
400 SAN PABLO AVENUE
ALBANY, CALIFORNIA
SCI 549.001

Prepared for:

Mr. Murray Stevens
Kamur Industries, Inc.
2351 Shoreline Drive
Alameda, California 94501

By:

William K. Wikander
Geotechnical Engineer 892 (expires 12/31/92)

R. William Rudolph
Geotechnical Engineer 741 (expires 12/31/92)

Subsurface Consultants, Inc.
171 12th Street, Suite 201
Oakland, California 94607
(415) 268-0461

November 7, 1989

I INTRODUCTION

This report summarizes results of recent environmental services we have performed at the Plaza Car Wash facility in Albany, California. Specifically, this report records the results of historical use research, a soil vapor study, efforts to mitigate the discharge of contaminants to El Cerrito Creek, and presents recommendations for future investigations and remediation. The site is located at 400 San Pablo Avenue as shown on the Site Plan, Plate 1. We presented the results of previous services at the site in letters dated August 22, September 1 and 15, and October 16, 1989.

During the course of our services, we have been in regular contact with Mr. M. Hossain Kazemi of the San Francisco Bay Regional Water Quality Control Board (RWQCB), Mr. Gil Wistar of the Alameda County Health Care services Agency (ACHCSA), and Mr. Mike Koepke of the Albany Fire Department. We understand that copies of all correspondence have been sent to the RWQCB, ACHCSA and the San Francisco Bay Area Air Quality Management District (BAAQMD). The purpose of the contacts and correspondence has been to (1) obtain interpretation of regulatory requirements, (2) provide information regarding the results of previous services and (3) obtain concurrence on investigative and interim cleanup methods to be used.

II SITE USAGE HISTORY

A. Environmental Cases

Past use of the site and neighboring parcels was researched by reviewing and/or contacting the following sources:

1. Sanborn Fire Insurance maps,
2. Historic telephone directories, and
3. Historic aerial photographs[1].

The earliest information available is from a Sanborn map dated 1929. The map shows the site to be vacant. Nearby sites identified on the map that may have used hazardous materials include an auto wrecking facility (407 San Pablo Avenue), a wholesale hardware and paint store (425 San Pablo), a gas and oil station (441 San Pablo) and a porcelain chinaware company with kilns (420 Kains Avenue).

Aerial photographs taken in 1949 show the site to be vacant. The photographs also show a gasoline station at 261 San Pablo, but the site of the former gasoline station at 441 San Pablo is vacant. The next available information, a Sanborn map dated 1950, shows the site to be vacant. Nearby sites that may have used hazardous materials include a gas station (261 San Pablo), a machine shop (425-433 San Pablo), a sheet metal works (501 San Pablo) and the porcelain chinaware company (420 Kains).

---

[1] Pacific Aerial Survey Maps AV-28-11-24/25 (9/19/49) and AV-3368-06-15/16 (8/3/88).

We understand that the Plaza Car Wash and adjacent Norge Cleaner facilities were constructed in the late 1950's. The California Orientation Center for the Blind (COCB) was constructed in about 1962. Up to about 3 feet of fill was placed on each site as part of construction. The fuel tanks at the Plaza Car Wash were reportedly installed in 1970.

B. Local Environmental Cases

Based upon our review of environmental case lists compiled by the RWQCB, and the Department of Health Services (DHS), there appears to be two documented environmental cases within about 2000 feet of the site. The location of each is shown on the attached Regional Map, Plate 2. A brief summary of available information regarding each case is presented below.

1. Mobil Station - 6700 Fairmount Avenue

On July 3, 1985, a sheen was observed in a creek near the Mobil Station. It is unclear if this is the same creek that borders the Norge Cleaners and COCB sites. Subsequent tank pressure tests at the Mobil Station indicated leaks in two 10,000 gallon gasoline storage tanks and/or distribution lines. Three monitoring wells were installed on July 20. Analytical tests of soil from the monitoring well boreholes indicated the presence of gasoline constituents; however, total petroleum hydrocarbon concentrations were not reported. Analytical tests performed on water samples from the wells indicated no detectable hydrocarbons, nor benzene, toluene or xylenes. The tanks were removed on September 2,

1985. Analysis of a composited, air dried soil sample from the excavation indicated a total hydrocarbon concentration of 15.69 parts per million (ppm). New tanks and distribution lines were installed in September 1985. Copies of correspondence regarding this site are presented in the Appendix.

2. Texaco Station - 6801 Fairmount Avenue

Leaks in two underground gasoline storage tanks and an underground waste oil storage tank were reported in September 1987. One gasoline tank and the waste oil tank were removed, and the piping for two other gasoline tanks were repaired.

C. Other Nearby Environmental Concerns

The RWQCB and DHS files only have records of documented cases where leaks have been reported. Other nearby sites that previously or currently utilize hazardous material storage tanks do exist. It is unknown if leaks have occurred at these sites. A brief summary of available information regarding each site is presented below.

1. Shell Station - 261 San Pablo Avenue

We understand that a service station existed at the site until about 1980. We are unaware if the fuel storage tanks and distribution lines were removed.

2. Norge Cleaners - 398 San Pablo Avenue

We understand that Norge Cleaners has a 300 gallon, above-ground storage tank containing perchloroethylene

(PCE). In addition, some unused and spent PCE is stored on-site in 55 gallon drums.

3. Troxell Auto Body Repair - 500 San Pablo Avenue

Information regarding this site was obtained from a report by Aqua Terra Technologies (ATT) dated August 14,1989. A copy of this report is presented in the Appendix. We understand that two underground, 550-gallon storage tanks are located beneath the sidewalk. The tanks have not been in active service for at least 10 years and are believed to have been installed about 40 years ago. The tanks were likely used for fuel and waste oil storage. The tanks were found to be full of water upon their discovery in July 1989. Analytical tests performed on the water indicated the presence of heavy metals and volatile and semi-volatile organic compounds. The water discharging from the COCB storm drain outlet into El Cerrito Creek was analyzed and indicated the presence of heavy metals, and volatile and semi-volatile organic compounds.

4. Granholt Sheetmetal Works - 501 San Pablo Avenue

During our site reconnaissance, we observed that an underground storage tank had recently been removed from beneath the sidewalk along Brighton Street at this address. Some excavated soil had been encapsulated with polyethylene sheeting. We are unaware of the type of material stored in the tank, nor whether contaminated soil and/or groundwater were encountered during tank removal.

5. Service Station - 441 San Pablo Avenue

Records indicate that a service station existed at this address prior to 1949. We are unaware if the fuel storage tanks and distribution lines leaked or were removed.

Hazardous materials may have been stored and/or utilized on other nearby sites. However, we did not observe records or indications confirming their presence or absence.

III SOIL VAPOR STUDY

A soil vapor study was performed by SCI to evaluate the extent of hydrocarbon contamination. The study area included the Plaza Car Wash, Norge Cleaners and COCB properties. The vapor sampling locations are shown on the Site Plan.

The soil vapor study equipment consisted of hollow steel rods with slotted sampling tips, a rotohammer, vacuum pump and organic vapor meter (OVM). The rod was driven into the ground so that the tip was situated just above the groundwater level. Soil vapor was withdrawn from the rods using a vacuum pump. After a few minutes, the vacuum pump was disconnected and an organic vapor meter (OVM) was used to draw a sample of the vapor and analyze it for organic compounds. The OVM readings are shown on the Site Plan.

IV SURFACE WATER CONTAMINATION MITIGATION

In our letter dated September 15, 1989, we stated that the storm drain on the COCB is likely acting as a subsurface drain, lowering groundwater in the area. We concluded that the contaminated groundwater was flowing toward the storm drain, entering the pipe through joints and exiting into El Cerrito Creek. Based upon the results of the soil vapor study and information from the Albany Fire Department concerning their observations of a video tape of the storm drain interior, it appeared that the majority of contaminants were entering the pipe within about 60 feet of the creek.

Assuming that the storm drain could not be blocked, two methods were considered to stop the flow of contaminated water into the pipe, as follows:

1. Storm Drain Pipe Seal. The pipe joints would be sealed so that water could not enter. This method could be effective as long as the seals were tight and extended along the entire pipe length. This method would not preclude the potential for contaminated groundwater flowing along the permeable trench backfill and into the creek.

2. Storm Drain Trench Sump. With this scheme, the water would be removed before it enters the pipe. Removing the water would require installation of a sump adjacent to the pipe, near the creek. Contaminated soil would be excavated

and properly disposed of. Water would be pumped from the sump, keeping groundwater levels below the bottom of the storm drain pipe. The removed water would require treatment before disposal. This method would also minimize the risk of contaminated groundwater entering the creek via the trench backfill.

Installation of a sump likely has a lower initial cost compared to sealing the pipe. However, the long-term cost of removing and treating contaminated groundwater has a potentially higher cost. Accordingly, we recommended that the storm drain joints be sealed. After sealing, contaminated soil and groundwater mitigation methods could be evaluated based upon the results of a thorough groundwater investigation.

On September 19, 1989, the interior of the storm drain pipe within 90 feet of the creek (north of the manhole shown on the Site Plan), was cleaned and inspected with a video camera in preparation for joint sealing/grouting. The camera survey indicated (1) excess concrete along the pipe bottom, (2) a 15 degree bend across several pipe sections about 60 feet from the creek, and (3) a crack in one of the concrete pipe sections. These conditions precluded joint sealing by grouting. Other alternative joint sealing measures, such as a pipe sleeve or liner, were then considered. However, they were considered inappropriate due to cost and engineering considerations.

The bends in the pipe were created by laying the pipe sections at angles to one another. The angle resulted in a crack at each

pipe joint at the outside of the bend. The video camera indicated roots and water entering through these cracks. The bend area was considered the most likely location where contaminated groundwater was entering the pipe.

On October 10 and 11, 1989, an excavation was made along the storm drain pipe in the area shown on the Sump Location Plan, Plate 3. Based upon OVM readings, about one half (5 cubic yards) of the soil removed was considered to be contaminated. The excavated soil was encapsulated in polyethylene sheeting and later aerated in accordance with BAAQMD guidelines, as reported in our letter dated October 16, 1989. The groundwater encountered in the trench contained a small amount of free product. It was removed and placed in steel drums for later disposal.

The excavation revealed a silty sand trench backfill of relatively high permeability. The clayey native soils have relatively low permeability. The 12-inch-diameter storm drain pipe was encountered at a depth of about 4.7 feet below surrounding grade. Of the three pipe joints exposed by the excavation, one was already sealed with mortar. Cracks were observed in one of the other joints and water was seeping out of the storm drain pipe, into the excavation. Mortar was placed over the unsealed joints. Trench backfill was encountered to a depth of about 6.7 feet, or about 1.0 foot below the pipe bottom. The excavation adjacent to the storm drain pipe was extended to a

depth of about 8 feet, which was considered as deep as possible considering the stability of the pipe.

A sump was installed to a depth of 8 feet within the excavation as shown on Plate 4. In summary, the sump consists of a 10-inch-diameter, PVC pipe with perforations in the lower about 5.5 feet. The end of the pipe is sealed with a cap. The excavation around the pipe is backfilled with 3/4-inch crushed rock to within about 4 inches of the groundsurface. The drain rock is covered with a concrete slab and asphalt concrete pavement.

On October 12, 1989, the groundwater level measured in the sump was 4.70 feet below the groundsurface. After 175 gallons of water were removed, the water level in the sump was at a depth of 7.65 feet. The sump recharged at a rate of about 17 gallons per hour. Similar results were obtained when the procedure was repeated several days later; however, the groundwater level appears to have stabilized at a depth of about 4.35 feet. We understand that after the rain storm on October 22 and 23, 1989, the water level had risen to a depth of about 3.00 feet, dropping to about 4.35 feet several days later. All of the pumped water was placed into 55-gallon steel drums for later disposal.

As requested by Mr. M. Hossain Kazemi of the RWQCB, about 25 gallons of water and product are being removed from the sump each week. During pumping, the pump is raised to remove floating product in the sump. Floating booms and absorbent materials are still being placed at the storm drain outlet. Floating product

No

has been periodically observed at the storm drain outlet since installation of the sump.

IV DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

A. General

Based upon information available to date, we conclude that groundwater contamination appears to extend off-premises in both the up and down gradient directions. Potential off-premises sources of contamination may exist. We recommend that additional investigation (including the installation of test borings /monitoring wells) be performed to determine the extent, type and concentration of contaminants present. Based upon this information, groundwater remediation alternatives should be identified and implemented.

It is judged that the sump can be used to minimize the risk of contaminated groundwater entering El Cerrito Creek. However, water levels in the sump should be maintained below the storm drain pipe. This will require continuous pumping and groundwater treatment.

We recommend that appropriate methods of contaminated soil remediation be identified and investigated. These methods will likely include removal or in-situ treatment.

We recommend that copies of this report be submitted to the ACHCSA and RWQCB. Our conclusions and recommendations are discussed in more detail in the following sections.

B. Historical On-Site and Off-Premises Uses

Based on our research, we judge that there is a risk of on-site groundwater contamination due to nearby off-premises sources. The presence or absence of off-premises sources of contamination should be confirmed by additional field studies.

C. Soil Vapor Study

The approximate extent of volatile organic chemical contamination can be determined by soil vapor studies. However, this method of study has limitations that preclude its use as a sole method of investigation. The major limitation is that the type and concentration of contaminant(s) are unknown. An OVM reading of none detected can mean that (1) the soil does not contain contaminants that can be indicated with an OVM, or (2) the soil is not permeable enough to yield the vapors of contaminants that are present and can be detected with an OVM. Sites with sandy soils, which are more permeable to vapors, generally yield more reliable results than sites with clayey soils, which are less permeable to vapors.

Information regarding the type and concentration of contaminants present, can only be reliably obtained by properly sampling and analytically testing the soil. Accordingly, soil vapor studies are often used as a relatively inexpensive way to select test boring/monitoring well locations.

The soil vapor study results indicated contamination over almost the entire Norge cleaners and Plaza Car Wash sites. Because part of the contaminated area is upgradient of the

unleaded gasoline tank distribution system, we conclude that it is possible that some of the contamination may originate from an off-premises source. We recommend that additional studies be performed to evaluate the extent of on-site and off-premises contamination. This should include an additional off-premises soil vapor study and test borings/monitoring wells both up and down gradient from the apparent on-site source.

Along the storm drain on the COCB site, contamination was detected within about 60 feet of the creek. We recommend that at least one test boring/monitoring well be installed in areas situated more than 60 feet from the creek to confirm the soil vapor study findings.

D. Sump

Observations of the sump excavation confirmed that the storm drain and trench backfill act as a conduit, channeling contaminated groundwater to El Cerrito Creek. To reduce the likelihood of contaminated groundwater and free product entering the creek via the storm drain, the sump water level should be maintained below the pipe bottom elevation. Based upon preliminary studies, we estimate that it will be necessary to pump the sump at an average rate of about 17 gallons per hour to maintain the required level. Pumping rates will likely vary seasonally.

The water removed from the sump will require treatment prior to disposal. The water should either be transported off-premises for treatment, or treated on-site and disposed of into

the sanitary sewer. Because of cost considerations, we judge that an on-site water treatment system ,such as one consisting of an oil/water separator, air stripper and activated carbon filter will be the most appropriate means to treat the water. If properly designed and maintained, this type of system can remove contaminants from water to non-detectable levels. Disposal of the treated water into a sanitary sewer will require a permit from the East Bay Municipal Utility District (EBMUD).

E. Contaminated Soil Removal

The lateral and vertical extent of soil contamination near the fuel release should be determined. Once defined, the contaminated soil should be remediated.

The existing fuel tanks and piping will likely be exposed during soil remediation. From a conservative standpoint, it may be prudent at that time to either remove or replace these facilities.

List of Attached Plates:

Plate 1	Site Plan
Plate 2	Regional Map
Plate 3	Sump Location Plan
Plate 4	Sump Detail

Appendix:

Correspondence regarding 6700 Fairmount Avenue

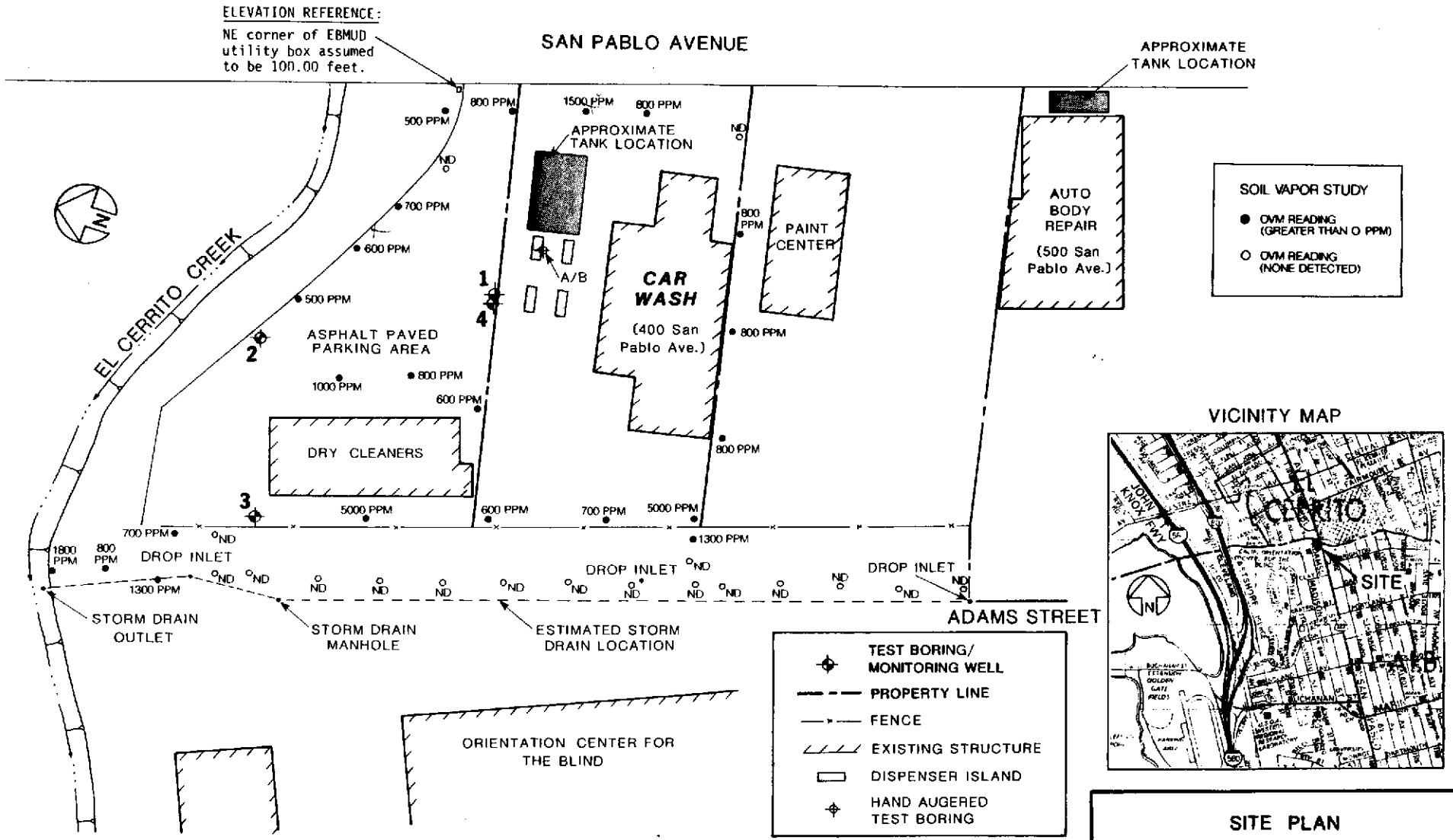
ATT Report regarding 500 San Pablo Avenue

Distribution:

6 copies: Mr. Murray Stevens
Kamur Industries, Inc.
2351 Shoreline Drive
Alameda, California 94501

1 copy: Mr. Craig Johns
Crosby, Heafey, Roach & May
1990 Harrison Street
Oakland, California 94612

WKW:RWR:JPB:clh



NOTE: This Site Plan was developed using approximate field measurements.

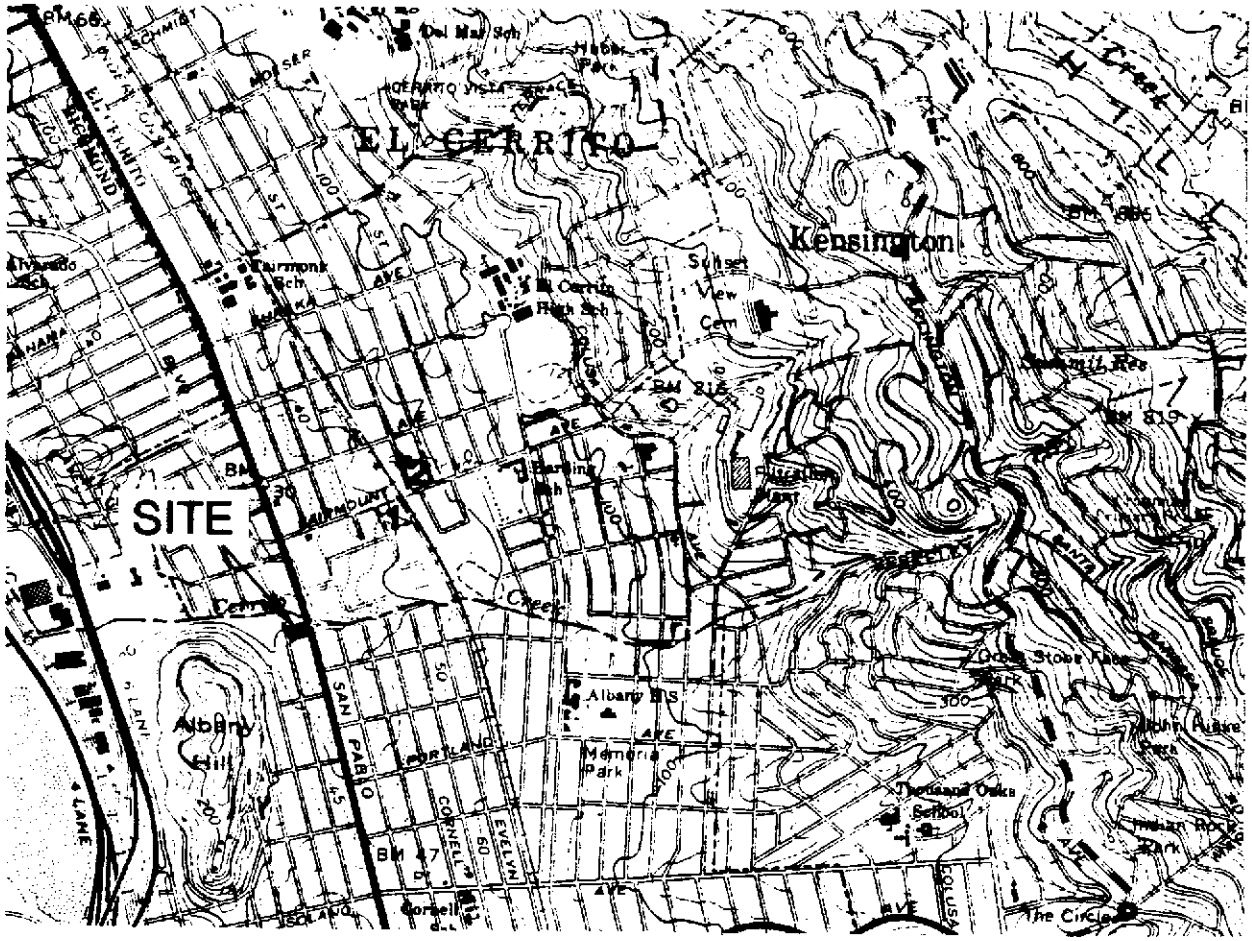
SITE PLAN

Subsurface Consultants

PLAZA CAR WASH - ALBANY, CA

JOB NUMBER	DATE	APPROVED
549.001	8/7/89	

PLATE 1



PROPERTIES REPORTING TOXIC MATERIAL OR FUEL RELEASES
WITHIN 2000 FEET OF THE SITE

SITE	LOCATION	TYPE OF PROBLEM
1	MOBILE STATION 6700 Fairmount Ave El Cerrito, CA	GASOLINE TANK LEAK
2	TEXACO STATION 6801 Fairmount Ave. El Cerrito, CA	GASOLINE TANK LEAK

N

APPROXIMATE SCALE (feet)

0 2000 4000

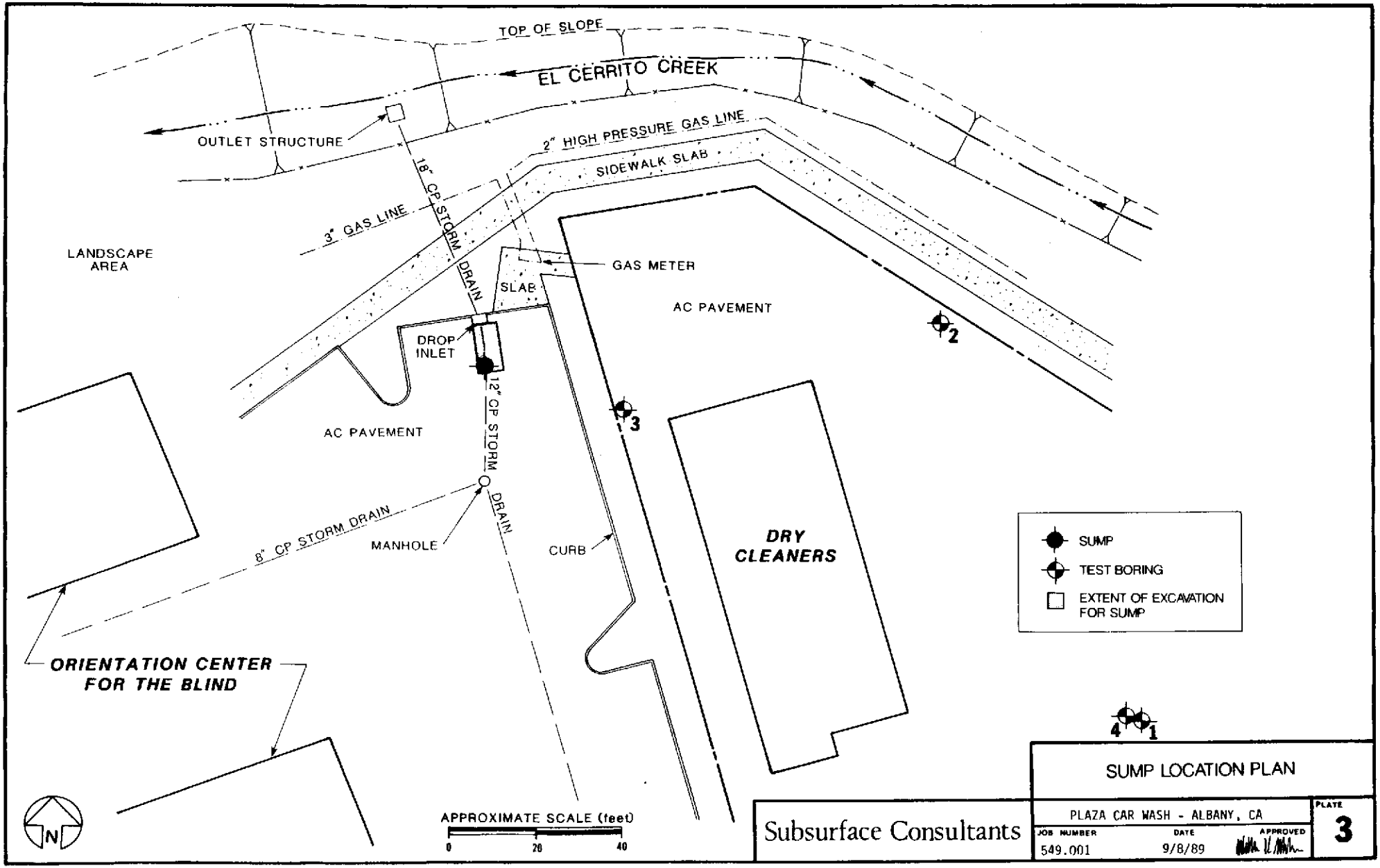
REGIONAL MAP

Subsurface Consultants

PLAZA CAR WASH – ALBANY, CA

JOB NUMBER	DATE	APPROVED
549.001	11/7/89	

PLATE 2

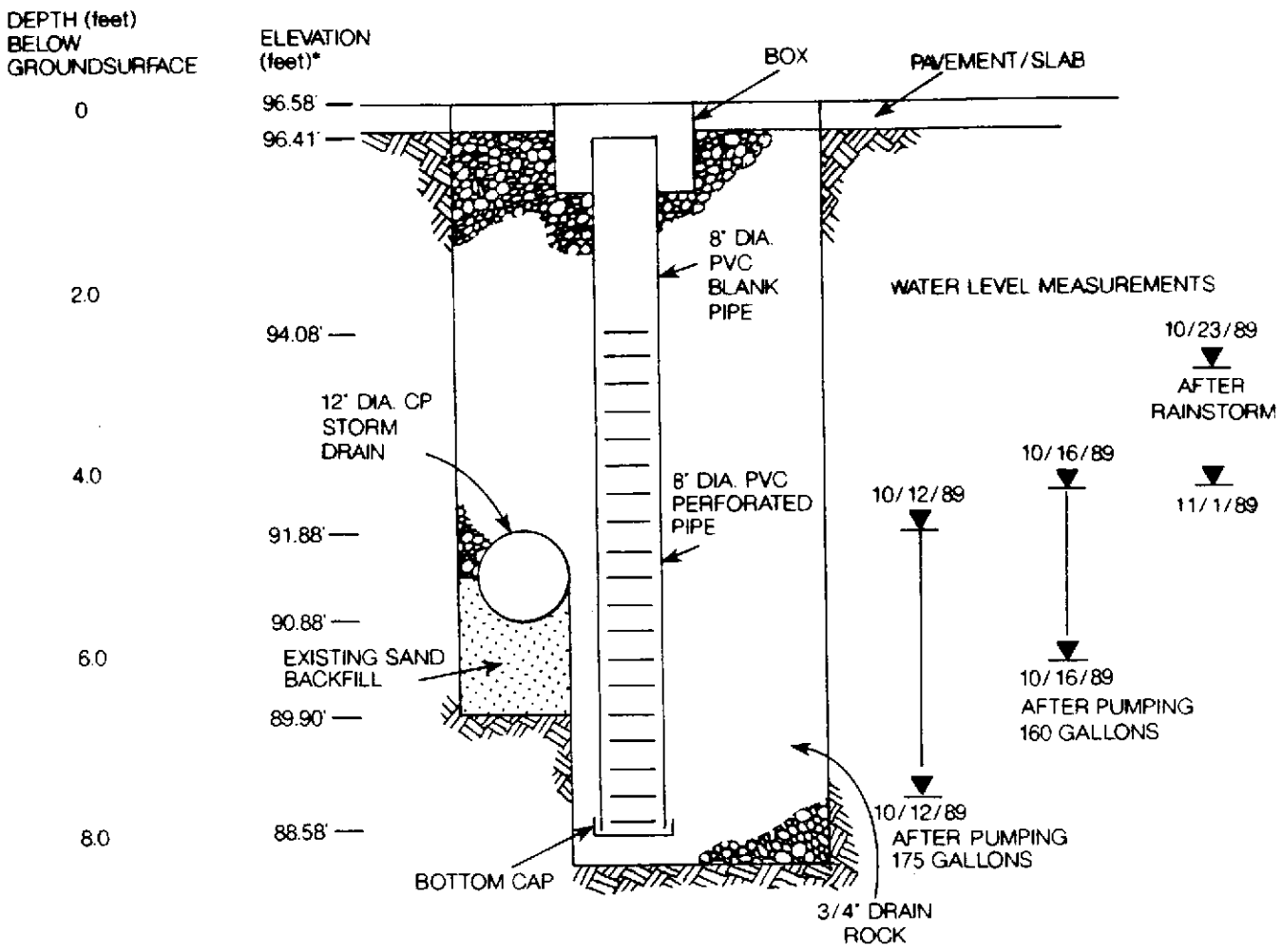


SUMP LOCATION PLAN

Subsurface Consultants

PLAZA CAR WASH - ALBANY, CA

JOB NUMBER	DATE	APPROVED	PLATE
549.001	9/8/89		3



*BASED UPON ASSUMED ELEVATION DATUM. SEE SITE PLAN

APPROXIMATE SCALE (feet)

0 2 4

SUMP DETAIL

Subsurface Consultants

PLAZA CAR WASH – ALBANY, CA

JOB NUMBER	DATE	APPROVED
549.001	11/3/89	

PLATE 4

SAN FRANCISCO BAY REGION

SUBJECT: Mobil Oil gas tank leak / El Cerrito

BY: clt DATE: 3 July 85

INFO FROM: Craig Galloway (213) 683-5520

Today I received a call from Craig Galloway of Mobil Oil in L.A. who appraised me of a confirmed gasoline line leak at one of their stations in El Cerrito (6700 Fairmont Ave). I have spoken previously w/ Bruce Benicke, Contra Costa Co Health, about this site. At that time there was gasoline discharging into a nearby creek and it was suspected to be coming from Mobil. Galloway said their pressure tests confirmed it is from their site & Mobil has taken responsibility (they also have discrepancies in their inventory records) for both on- and off-site mitigation:

Off-site: containment booms placed in the creek to contain the fuel. They will skim the creek after significant accumulation behind the boom

On-site: Mobil will begin construction of three monitoring well this afternoon. They are now pumping out their tanks and have made plans to replace all tanks + lines.

Other agencies involved or notified: Contra Costa Co. Health, USCG, DFG, Public Works, Fire Dept.

Galloway was also concerned about other gas stations in the neighborhood discharging gasoline. He said that gasoline in the creek appeared weathered and may have come from an upgradient source. I plan to inspect the area this afternoon.

	TO	IN
	RBJ	
	PMH	
	LPK	
	DMH	
	GJG	
	RBW**	
	ANO*	
	DME	
	LP	
	FEJ*	
	MJA	
	LF*	
	RMB	
	PHJ	
	RKM	
	DDD*	
	MRK	
	JYL	
	SCH	
	HJS**	
	HCK*	
	RAS	
	BBW	
	AGL*	
	MDD	
	ME	
	GRF	
	TCW**	
	RJC*	
	MHK	
	SIM*	
	TGR	
	JER	
	SRR	
	DAM*	
	TWH	
	UF	
	TMH	
	AJ	
	EJ	
	CP	
	WHJ**	
	MAP	
	HB	

Mobil Oil Corporation

612 SOUTH FLOWER STREET
P.O. BOX 2122
LOS ANGELES, CALIFORNIA 90051

DB

September 8, 1986

MOBIL OIL CORPORATION
S/S #10-131
6700 FAIRMONT AVENUE
EL CERRITO, CALIFORNIA
Alameda

Mr. Dale C. Bowyer
Regional Water Quality Control Board
1111 Jackson Street, Room 6040
Oakland, California 94607

Dear Mr. Bowyer:

Per my letter of December 13, 1985, enclosed for your information are the results from sampling completed on all wells at the above location. All water samples contain levels of hydrocarbons below detectable limits.

Based on 1) the recent water results, and 2) the previous removal of all contaminted soil encountered in the replacement of the steel tanks, Mobil believes this incident requires no further actions. We therefore request that this incident be considered closed.

Your cooperation in this incident has been appreciated. If you have any questions, please call my office at (213) 683-6335 or 5520.

Sincerely,

for R. J. Edwards
Region Environmental Manager

CEG:ars
enclosure
71220-(7)

cc: Mr. Bruce Benike
Contra Costa County
Health Services Department
1111 Ward Street
Martinez, California 94553

Groundwater Monitoring Report

Mobil Oil Corporation

612 SOUTH FLOWER STREET
P.O. BOX 2122
LOS ANGELES CALIFORNIA 90051

October 2, 1985

Mr. Peter W. Johnson
California Regional Water
Quality Control Board
San Francisco Bay Region
1111 Jackson St., Suite 6040
Oakland, CA 94607

RE: Mobil Oil Corporation
Service Station 10-131
6700 Fairmont Avenue
El Cerrito, CA

Dear Mr. Johnson:

Please find enclosed a copy of our consultant's report for the above location.

As you are aware product was encountered from a line failure on July 3, 1985. Since this event all tanks were replaced along with associated product lines. Three monitoring wells were installed with no free product encountered. Soil samples were taken with results attached. All contaminated soil has been isolated. All soil will be properly disposed within the near future.

Since the contaminated soil has been isolated and no free product has been encountered in the wells, Mobil Oil believes no further actions are necessary. To ensure our findings we will complete one more round of samplings. If at this time no product is evident Mobil Oil will request closure of this project.

It is requested that upon completion of your review of this project, your department advise my office if this proposal is satisfactory. If you have any questions, please do not hesitate to contact my office.

Sincerely,

R. J. Edwards
Region Environmental
Coordinator

CEG:ga
Enclosures
(48840)

cc: Mr. Bruce Benike
Contra Costa County
Health Services Department
1111 Ward Street
Martinez, CA 94553

Suite 212
100 West Rincon Avenue
Campbell, CA 95008

Geonomics Inc.
ENVIRONMENTAL SERVICES DIVISION

(408) 374-9116

September 13, 1985

Mr. Steve Pao
Mobil Oil
P.O. Box 127
Richmond, CA 94807

Dear Mr. Pao:

The attached report describes our resampling and laboratory testing results for contaminated soils taken at Mobil station # 10-131 in El Cerrito, CA. This report has also been sent to the Contra Costa County Department of Health Services. The invoice for our services is enclosed.

It has been our pleasure to provide this service for you. If you have any questions after reading the report, please feel free to call us.

Sincerely,

Roger D. Dockter

Roger D. Dockter
Geologist

Enclosure

Suite 212
100 West Rincon Avenue
Campbell, CA 95008

Geonomics Inc.
ENVIRONMENTAL SERVICES DIVISION

(408) 374-9116

Date: September 13, 1985

Soil Sampling Report - Underground Storage Tanks

Name of Business: Mobil Station # 10-131

Site address: 6700 Fairmont Avenue, El Cerrito, CA

Type of work performed: Soil sample taken for laboratory testing from soil excavated and air dried after tank removal.

Date sampled: September 2, 1985

Number of tanks at site: Two

Number of tanks removed: Two

Tank - capacity (approx.), contents, type: 10,000 gal. gasoline

Soil sample:

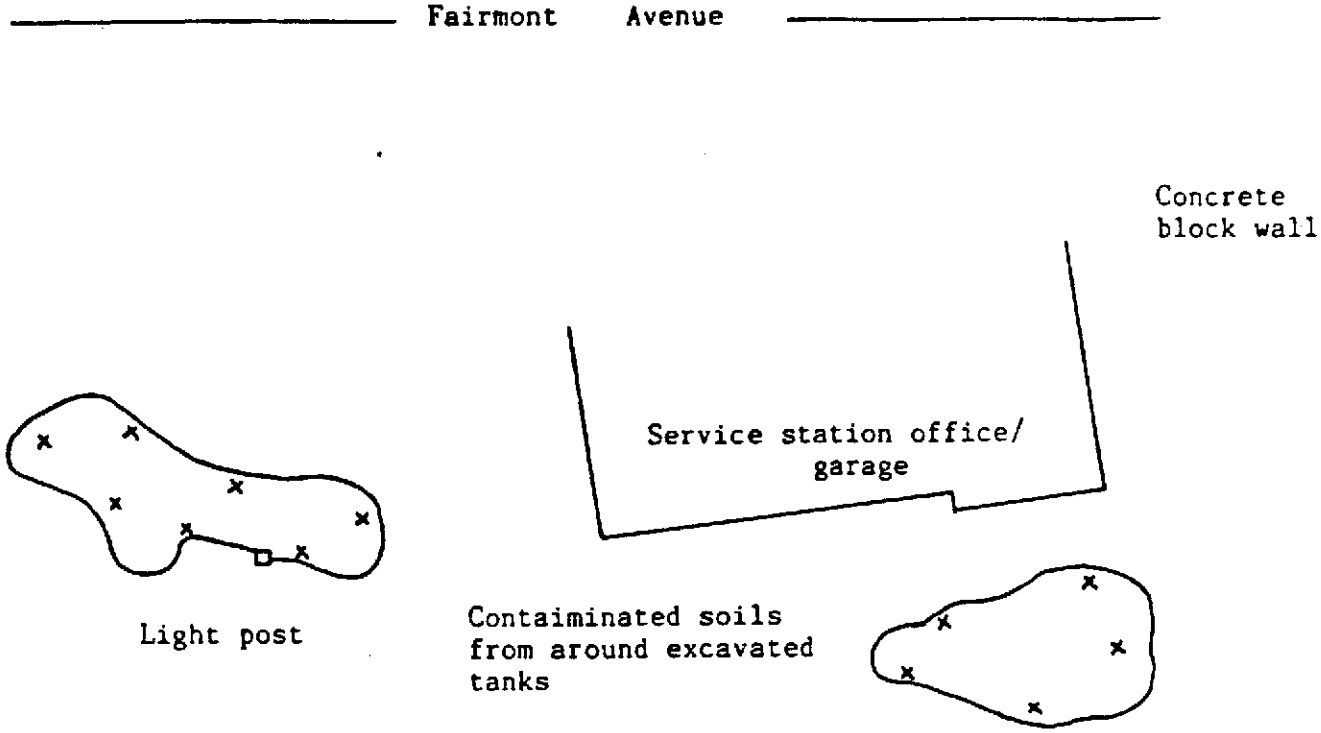
Sample #	Depth(ft)	Location description
M-4R	2-3" above base of asphalt surface	Composite sample (See Map)

Condition of soil sampled: Very faint odor from two locations, no odors at other locations.

Laboratory results: (lab report attached)

Sample Number	Test results	Tested for
M-4R	15.69 UG/GM	Total Hydrocarbons

Note: Total Hydrocarbons range from C11 to C20.



Site Map - Mobile Station # 10-131
6700 Fairmont Avenue
El Cerrito, CA

FIREMAN'S FUND
RISK MANAGEMENT
SERVICES, INC.

CONSULTING SERVICES
P. O. BOX 3890
SAN RAFAEL, CALIFORNIA 94911
800-227-0765
(IN CALIFORNIA 800-227-5889)

ENVIRONMENTAL LABORATORY
3700 LAKEVILLE HIGHWAY
PETALUMA, CALIFORNIA 94952
800-227-0765
(IN CALIFORNIA 800-227-5889)

LOSS CONTROL | INDUSTRIAL HYGIENE | LABORATORY | ENVIRONMENTAL ENGINEERING | OCCUPATIONAL HEALTH

Ronald Michelson
Geonomics, Inc.
100 West Rincon Avenue, Ste. 212
Campbell, CA 95008

L A B O R A T O R Y R E S U L T S

Supply/Order No.:
Client's Survey No.: M129
Contract No.: NO CONTRACT NUMBER

Laboratory Job No.: 851965
Date Received: 09/04/85
Date Reported: 09/10/85

ASSAY:SOLVENTS BY EXTRACTION
MATRIX:SOIL SAMPLES FROM MOBILE STATION 10-131, EL CERRITO, CA

LABNO	SMPLNO-ID	AIR(LT)	FRONT(MG)	BACK(MG)	TOTAL(MG)	MG/M3	PPM
12049	M-4R						
	TOTAL HYDROCARBONS				15.69 UG/GM		

NOTE: TOTAL HYDROCARBONS RANGE FROM C11 TO C20.

ANALYST:JOHN QUINN

"Imagineering a cleaner world"

RIEDEL
ENVIRONMENTAL SERVICES, INC.

☑ Portland Division
Foot of N. Portsmouth Ave
P.O. Box 5007
Portland, OR 97208
(503) 286-4656

☐ St. Louis Division
529 Spirit of St. Louis Blvd
Chesterfield, MO 63017
(314) 532 7660

☐ San Francisco Division
230 Cutting Blvd
Richmond, CA 94802
(415) 234-7400

☐ Seattle Division
901 Fairview Ave. No.
P.O. Box 1730
Seattle, WA 98111
(206) 622-2900

September 25, 1985

Mr. Stephen Pao
Mobil Oil Corporation
P. O. Box 127
Richmond, CA 94807

Dear Steve:

This letter report is a description of the geohydrologic work that was done at Mobil Service Station No. 10-131 located on Fairmont Avenue, El Cerrito, California. The work was done in relationship to a spill caused by a distribution line rupture that occurred on July 3, 1985.

On July 8th, three monitoring wells were installed on the property (see Figure 1 for locations). During the drilling of these wells, split-spoon samples were taken to ascertain subsurface soil conditions and detectable hydrocarbon contamination. Geologic logs of these wells are given on Appendix A of this letter.

On completion of monitoring well installation, the elevation of each well collar was determined to 0.01 foot accuracy (see Table I), and on July 9th water product thickness and water level measurements were made (also see Table I). No product was measured at that time and water table contours are shown in Figure 2.

Conclusions drawn from the above data is that the Mobil station is built on a 5 to 10 foot thick layer of backfill which is very compact. The high density of this near-surface layer would form a barrier being resistant to the vertical movement of liquids through the soil. Below the backfill is a natural formation of sandy clay which is where the water table exists. The boring logs show that hydrocarbon odors exist in all the holes drilled. Boring No. 1 had hydrocarbons only near the surface. The other two had hydrocarbon odor throughout the sampled sections. Boring No. 1 is upgradient of the pump islands (where the line rupture occurred) and the minor contamination detected would probably be from an accumulation of small spills during normal operations of the station. Borings No. 2 and 3 each had hydrocarbon odors at depth. However, no free product was observed. The detection of hydrocarbons by odor does not indicate the presence of product since very small concentrations can be smelled (on the order of 1 ppm). Measurement made in all the wells using an electronic interface probe detected no phase-separated free product (see Table I). Thus there appears to be a small amount of residual hydrocarbons in the soil above the water table but none on the water table or migrating along on top of the water.

With the installation of the new buried tanks at the station and replacement of the ruptured distribution line, any possible source of contaminants should be eliminated. However, at least one more set of water depth measurements and product thickness readings should be taken to assure no free product movement is occurring.

If you have any comments or suggestions regarding this data or recommendations, feel free to call me at (503) 286-4656.

Sincerely,

RIEDEL ENVIRONMENTAL SERVICES, INC.

Roger N. Smith
Hydrologist

RNS:kps

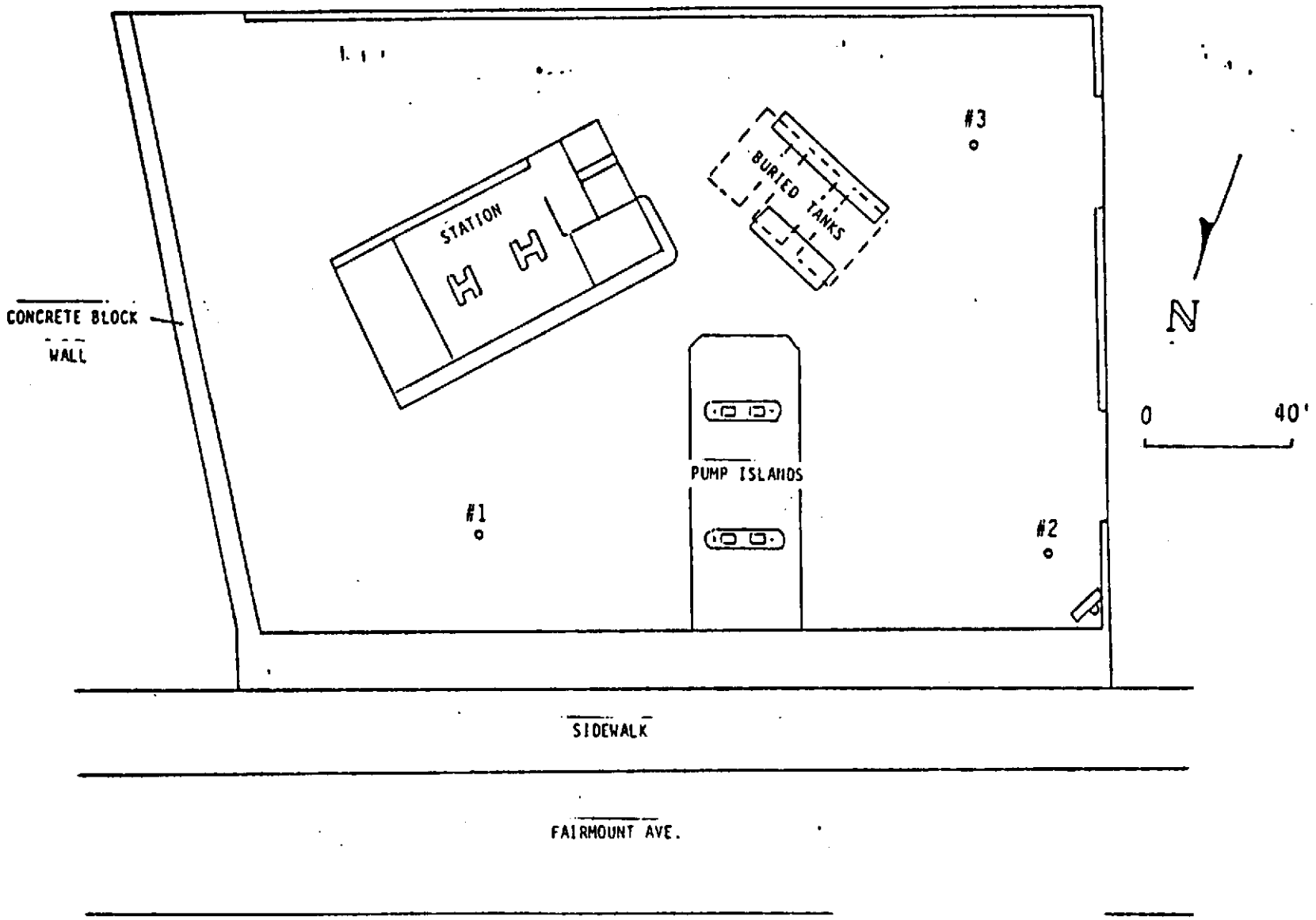


Figure 1. Location of monitoring wells on project site.

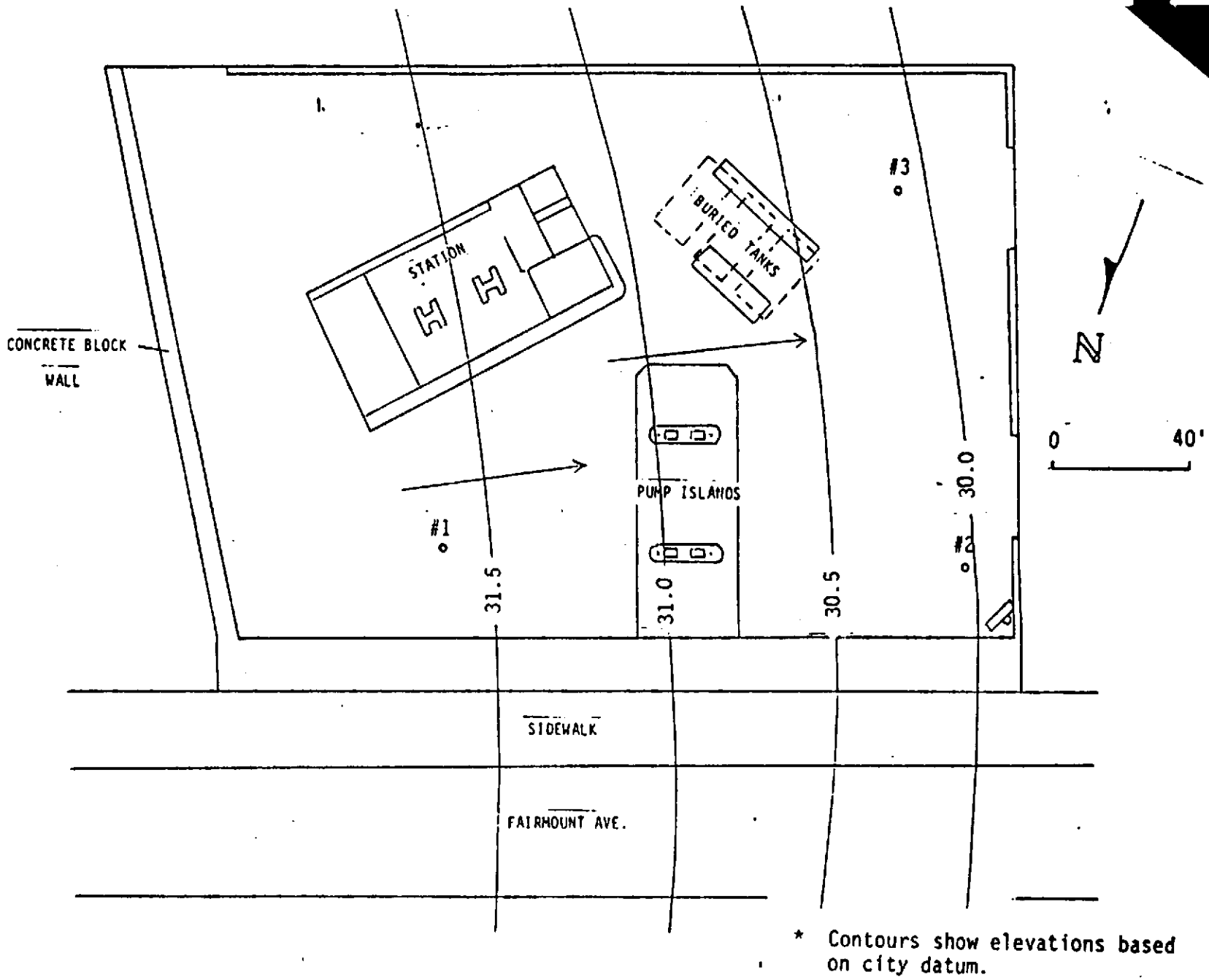


Figure 2. Groundwater contours and flow direction 7/9/85.

TABLE I

MONITORING WELL DATA

Well No.	Elevation (Top of Casing) (Ft.)	Water Elev. (Ft.)	Product Thickness (Ft.)
		7/9/85	7/9/85
1	42.11	31.66	0
2	37.98	30.05	0
3	38.49	30.15	0

Elevations are based on City of El Cerrito datum.

9/85
RNS/kps

DEPTH | GRAPHIC LOG | CLASSIFICATION OF MATERIAL | WELL CONSTRUCTION | GROUNDWATER | SAMPLES | (140 LB. WEIGHT, 30" DROP) ▲ BLOWS PER FOOT

SURFACE ELEVATION: (Top of Casing) 42.11

0 - 0^5 Asphalt

0^5 - 6^5 Drk brown to black sandy clay backfill, very tight and impermeable.
Odor: minor (if any) hydrocarbon smell

6^5 - 12^0 Medium to light brown sandy clay.
Odor: none

12^0 - 15^0 Light brown sandy clay.
Odor: none

Concrete
Bentonite
Sand

0 50 100

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

LEGEND

- I 2.0" O.D. SPLIT SPOON SAMPLE
- II 3.0" O.D. THIN WALLED SAMPLE
- G GRAB SAMPLE OF DRILL CUTTINGS
- NX CORE RUN
- * SAMPLE NOT RECOVERED
- ▼ WATER LEVEL

RIEDEL INTERNATIONAL, INC.
4555 N. CHANNEL AVE.
P.O. BOX 3220, PORTLAND, OREGON 97208-3220

BORING LOG 1

DATE 7/15/85 JOB NO. 8215 FIG.

GRAPHIC L

CLASSIFICATION OF MATERIAL

SURFACE ELEVATION: (Top of Casing) 37.98

WELL CONSTRUC

GROUNDWAT

SAMPLES

(140 LB WEIGHT, 30" DROP)
▲ BLOWS PER FOOT
0 50 100

0 - 0.5 Asphalt

0.5 - 7.0 Dark brown very compact sandy clay. Appears to be backfill and very impermeable.

7.0 - 12.0 Light brown very compact sandy clay. Appears relatively impermeable except through solution channels.
Odor: slight hydrocarbon smell.

12.0 - 15.0 Light brown very fine sandy clay.
Odor: slight hydrocarbon smell.

CONCRETE

BENTONITE

SAND

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

LEGEND

I 2.0" O.D. SPLIT SPOON SAMPLE
II 3.0" O.D. THIN WALLED SAMPLE
G GRAB SAMPLE OF DRILL CUTTINGS
NX CORE RUN
* SAMPLE NOT RECOVERED

▼ WATER LEVEL

RIEDEL INTERNATIONAL, INC.
4555 N. CHANNEL AVE.
P.O. BOX 3220, PORTLAND, OREGON 97208-3220

BORING LOG 2

DATE 7/20/85 JOB NO. 8215 FIG.

GRAPHIC LOG	CLASSIFICATION OF MATERIAL SURFACE ELEVATION: (Top of Casing): 38.49	WELL CONSTRUCTION	GROUNDWATER	SAMPLES	STD. PENETRATION RESISTANCE (140 LB. WEIGHT, 30" DROP) ▲ BLOWS PER FOOT 0 50 100
	0-05 Asphalt 05-10 Gray Sandy Clay Very compact, with orange stained solution channels, some crushed stone (5-10%) below 50': Odor .05-50 strong Hydrocarbon smell with high sulpher content, possibly caused by disolved asphalt 50 - 100 Much less noticeable small, almost non near bottom. 100 -150 Light brown silt and sand very loose Odor: Minor gas smell	CONCRETE BENTONITE SAND	▼		

LEGEND

- I 2.0" O.D. SPLIT SPOON SAMPLE
- II 3.0" O.D. THIN WALLED SAMPLE
- G GRAB SAMPLE OF DRILL CUTTINGS
- NX CORE RUN
- * SAMPLE NOT RECOVERED
- ▼ WATER LEVEL

RIEDEL INTERNATIONAL INC.
4555 N. CHANNEL AVE.
P.O. BOX 3220, PORTLAND, OREGON 97208-3220

BORING LOG 3

DATE 7/15/85 JOB NO. 8215 FIG.

Mobil Oil
Leaking fuel tank/line
Fairmont Ave, El Cerrito

9071

Thermo Electron

EAL Corporation

2030 Wright Avenue
Richmond, California 94804
(415) 235-2633
Telex 910 386 6173

ANALYSIS REPORT

Date: 7/25/85
Samples Received: 7/23/85
EAL W. O No.: 2720-43
Purchase Order No.: 177894

Riedel Environmental Services
230 Cutting Blvd.
Richmond, CA 94802

Attention: Jeff Lucas

SAMPLE IDENTIFICATION	EAL:	2720-43-1	2720-43-2	2720-43-3
	CUSTOMER:	1-Well 1	2-Well 2	3-Well 3
COMPOUND	UNIT			
Benzene	ppb	570	20	2
Toluene	ppb	220	1	1
Chlorobenzene	ppb	1	2	<1
Ethyl benzene	ppb	30	<1	<1
m-xylene	ppb	<1	<1	<1
1,2 dichlorobenzene	ppb	2	2	<1
1,3 dichlorobenzene	ppb	16	6	1
total org comp/as of toluene	ppb	3200	100	270

Reported 7/24/85

HYG/php

Harry Y. Gee
Program Manager

MTK

Mobil Oil Corporation

612 SOUTH FLOWER STREET
P.O. BOX 2122
LOS ANGELES, CALIFORNIA 90051

December 13, 1985

Mr. H. Kazemi
California Regional Water
Quality Control Board
1111 Jackson St., Room 6040
Oakland, California 94607

RE: MOBIL OIL CORPORATION
SERVICE STATION 10-131
6700 FAIRMONT AVENUE
EL CERRITO, CALIFORNIA

Dear Mr. Kazemi:

Enclosed for your review are the water results from our first round of sampling at the above location. The submission of these results are as requested in Mr. Peter Johnson's letter of October 25, 1985.

Since no free product has appeared in the monitoring wells, Mobil Oil proposes to complete one more round of sampling. In addition, our consultant will prepare a final report which will include a site assessment on wells and groundwater quality in the area.

Upon completion of your review, please advise my office if this proposal is satisfactory.

If you have any questions, please do not hesitate to contact my office at (213) 683-6335 or 5520.

Sincerely,

R. J. Edwards
Region Environmental
Coordinator

CEG:ram
Enclosure
(52300)

c.c.: Mr. Bruce Benike
Contra Costa County
Health Services Department
1111 Ward Street
Martinez, CA 94553

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
535 Main Street
Martinez, Ca. 94553
(415) 372-5444

KEI-P86-072
August 19, 1986

Mobil Oil Company
P. O. Box 127
Richmond, CA 94807

Attn: Mr. Steve Pao

Re: Mobil S/S 10 - 131
6700 Fairmont Avenue
El Cerrito, CA
Groundwater Pumping, Sampling and Analyses

Dear Mr. Pao:

This letter report summarizes our findings for the referenced site.

Kaprealian Engineering Inc. (KEI) performed the groundwater wells monitoring consisting of pumping the three existing wells, recording the water elevation prior to pumping, purging, sampling, and analyzing the samples for dissolved total hydrocarbons, Benzene, Toluene and Xylenes (BTX). The wells were purged five well volumes prior to taking the samples. The samples were taken at the water elevations ranging from 8 to 10.6 feet below the ground surface using a tephlon bailer, placed in clean glass bottles, stored in an ice chest and delivered to the Sequoia Analytical Laboratory in Redwood City, CA. Between samplings, the bailer was thoroughly cleaned to avoid any potential cross contamination. No floating product, odor or sheen was noted at the time of sampling.

The samples were taken on 8/12/86 and the results are as listed below:

LABORATORY RESULTS

Sample Station	Depth (ft)	Total Hydrocarbons (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)
MW-1	10.6	<0.05	<0.001	<0.001	<0.001
MW-2	8.0	<0.05	<0.001	<0.001	<0.001
MW-3	8.5	<0.05	<0.001	<0.001	<0.001

The laboratory results are attached.

CONCLUSIONS

The results indicate that there is no detectable hydrocarbons contamination in all three monitoring wells. Therefore, it is apparent that the impact on the shallow groundwater is extremely negligible.

According to the Contra Costa County Health Department and available groundwater information, there are no active wells within a quarter (1/4) mile of this area. The groundwater in this area is used for irrigation only.

RECOMMENDATIONS

KEI does not believe that continued monitoring of the wells will provide any new information regarding impact on the groundwater quality. Therefore, KEI recommends no further monitoring and sampling at this time unless it is specifically required by the California Regional Water Quality Control Board (CRWQCB). This information should be submitted to the CRWQCB and the Contra Costa County Health Department.

It has been a pleasure serving your company. Should you have any questions, please do not hesitate to contact me at 372-5444.

Sincerely,

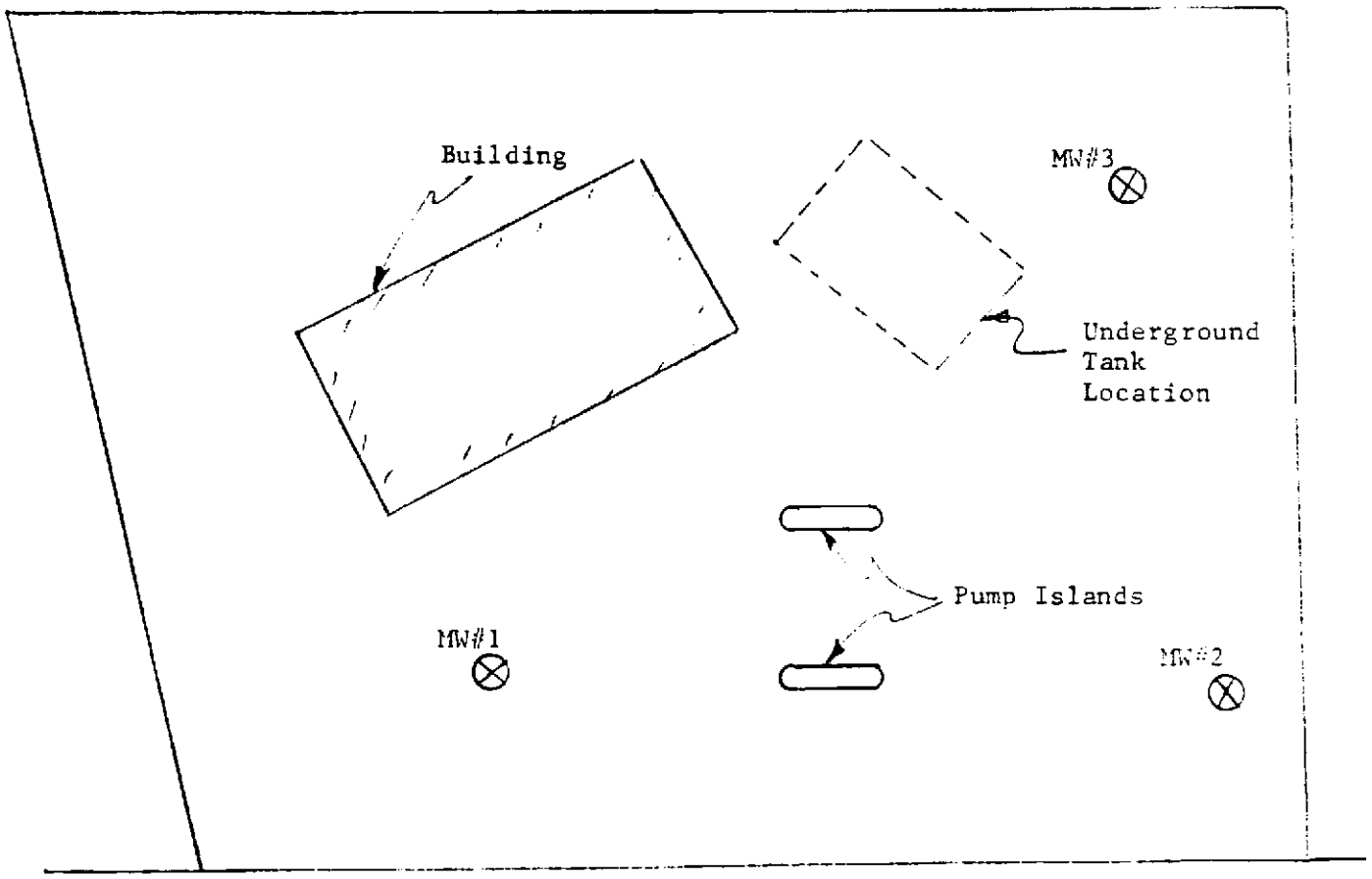
Kaprealian Engineering, Inc.

Mardo Kapreralian

MK:
Enclosure: Laboratory Analysis
Location Map

cc: C. Galloway

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
535 Main Street
Martinez, Ca. 94553
(415) 372-5444



LOCATION MAP - Mobil Service Station
6700 Fairmont Avenue
El Cerito, CA

⊗ Monitoring Well

ATT

August 14, 1989

Mr. Jon L. Benjamin
Attorney at Law
Heller, Ehrman, White & McAuliffe
333 Bush Street
San Francisco, CA 94104

Subject: Abandoned Underground Storage Tanks
500 San Pablo Avenue
Albany, CA

Dear Mr. Benjamin:

This letter presents chemical data and its interpretation for samples collected from the subject tanks and from Cerrito Creek, and provides a proposal for managing the tanks.

Aqua Terra Technologies
Consulting Engineers
Scientists

50 Buskirk Avenue
Suite 120
Walnut Creek, CA
5 9 6
5 0 3 4 - 4 8 8 4

BACKGROUND

Two tanks are located beneath approximately four feet of fill in the sidewalk fronting the building at 500 San Pablo Avenue. For identification purposes, the tanks have been designated as Tank 1 and Tank 2. Each tank has a nominal capacity of 550 gallons, with fill and vent piping located in the immediate vicinity. The tanks have not been in active service for at least 10 years, and are believed to have been installed approximately 40 years ago. Records regarding the historical uses of the tanks are not available; however, early uses likely included fuel and waste oil storage associated with automobile dealerships and maintenance.

The capacity of the tanks was confirmed when material completely filling each tank was removed during mid-July into 21, 55 gallon drums (total capacity 1,155 gallons or 577 gallons each). The material removed from each tank was identifiable as water containing dilute amounts of petroleum based substances. Inasmuch as the tank bottoms and the minimum depth to local groundwater are both approximately eight feet below grade, the source of the water in the tanks cannot be attributable to groundwater. Apparently, the tanks were filled with water as a closure measure by their last user.

Until their discovery in July, the existence of the tanks was unknown to the current property owner. The tanks were discovered during a reconnaissance of the area by local fire and health department personnel in association with a petroleum product occurrence in

Cerrito Creek. Subsequent investigations have identified underground fuel storage tanks located on an adjacent neighboring property as the source of the release to the creek.

SAMPLE COLLECTION/RESULTS

Samples of the material contained in each of the underground tanks and a sample of the petroleum product occurring in the creek were collected by Aqua Terra personnel on July 12 as described in the sample collection records provided in Attachment A. The samples with chain of custody documentation were submitted in an iced cooler to a California Department of Health Services certified analytical laboratory for chemical analysis. Each sample was analyzed for 13 heavy metals according to EPA Method 6000 and 7000 series protocol and for volatile and semi-volatile organic chemicals according to EPA Methods 8240 and 8270. The chemical data are summarized in Table 1 of Attachment B along with the analytical laboratory data sheets and chain of custody document.

As summarized in Table 1, chemical analyses of the material contained in Tank 1 indicate that the tank was used to store a solvent. Semi-volatile hydrocarbon constituents characteristic of a petroleum lubricant or fuel were not detected in the sample. However, compounds which included 1,2-dichloroethane (DCA) and 2-butanone (MEK), and are commonly associated with solvents, were present in the sample, as were benzene (B), toluene (T), ethylbenzene (E), and xylene (X). All of the volatile compounds detected in the Tank 1 sample were present at generally equivalent concentrations, with no compound occurring at a level substantually higher than any other compound, again suggesting a solvent. The mixture of compounds detected in the sample are not suggestive of a fuel.

The analytical data resulting from the sample collected from Tank 2 shows concentrations of volatile and semi-volatile organics characteristic of aged gasoline. This observation is supported by the existence of ethylbenzene and xylene, coupled with the exclusion of benzene and toluene. In addition, naphthalene and 2-methylnaphthlene are both constituents of gasoline.

The detected concentration of lead in the Tank 2 sample indicates that the gasoline stored in the tank was leaded. The absence of other polynuclear aromatic hydrocarbons (PAH) in addition to the naphthalenes suggests that waste oil was not stored in the tank.

The sample of material collected from Cerrito Creek is significantly dissimilar to either of the samples collected from the tanks. The absence of detectable lead, the elevated concentrations of BTEX, and the presence of the naphthalenes in the creek sample, as illustrated in Table 1, provides a strong correlation with unleaded gasoline.

The results of the chemical analyses presented in Table 1 indicate that each of the three samples (Tank 1, Tank 2, Cerrito Creek) are representative of distinctly different materials. A correlation is not apparent between the data representing the contents of the tanks and the material sampled from the creek.

TANK CONTENTS DISPOSAL

The chemical data characterizing the contents of Tanks 1 and 2 indicate that the material must either be managed by a waste contractor or pretreated for disposal to the storm or sanitary sewers. Contingent upon acceptance by a waste contractor, the materials may be removed for approximately $28.00 per drum, or a total of about $600. Considering the potential difficulties associated with pretreating the material and obtaining permission for discharge to the sewer, the waste contractor represents the least costly and most expeditious option.

PROPOSED CLOSURE ACTION

With the discovery of the tanks, action is required to comply with the intent of applicable underground storage tank regulations (California Code of Regulations, Title 23, Subchapter 16). The regulations require that the tanks either be monitored according to an approved monitoring plan, or that they be closed to prevent their future use. Inasmuch as the tanks have not been in active service for a number of years, the appropriate alternative for complying with the regulatory intent is to close them. The closure requirement calls for either

removing the tanks by excavating them or closing them in-place by filling them with a solid set grout material. In-place closure is accompanied by cleaning the tanks of any residual material and capping all appurtenant piping. The regulations also contain a provision for temporary closure where a future use of the tanks is anticipated.

The conditions existing at the property on which the tanks are located are somewhat unique and do not fit easily into any of the closure options allowed by the regulations. It is my understanding that plans are currently underway to begin redevelopment of the property within the next 18 to 24 months. Redevelopment will include demolition of several of the structures currently occupying the property, including the building associated with the tanks. Consequently, considerable site work, including excavation and grading activities, will be implemented. Removing the tanks during these activities would eliminate several problems associated with removing the tanks under current conditions.

Removing the tanks now would require closing traffic lanes on San Pablo Avenue during excavation activities, blocking all sidewalk traffic for several days in the area of the tanks, limiting the boundaries of the excavation between San Pablo Avenue and the front of the building, placing the structural integrity of the building at risk from soils caving, and disrupting activities of businesses operating in the immediate vicinity. Alternatively, closing the tanks in-place by filling them with grout will create future problems during redevelopment activities since each tank will represent the equivalent of a 550 gallon boulder.

The solution to the problems generated by either excavating the tanks or closing them in-place is to implement temporary closure measures until the tanks can be removed during redevelopment. This option satisfies the intent of the regulations and provides substantial benefit to the public as well as to the property owners. Considering that the tanks have not been used in several years and considering the apparent sound integrity of the tanks as manifested by their being full of water until recent weeks when emptied, an environmental

risk is not expected from leaving the tanks in-place until redevelopment activities are initiated.

Specific activities to implement temporary closure of the tanks should include cleaning the tanks of all residual materials and fitting the fill pipe to each tank with a tight fitting, locking cap. The tanks should be monitored quarterly to confirm that liquid is not accumulating in them. When the tanks are removed during redevelopment, soil sampling should be conducted to verify the integrity of the tanks and/or to document the removal of any contaminated soils associated with the tanks.

The contents of this letter should be shared with the involved regulatory agencies prior to implementing the proposed closure action.

Please contact me if you have any questions regarding the matters discussed herein.

Sincerely,

Aqua Terra Technologies, Inc.

R. Wane Schneiter, Ph.D.
Civil Engineer No. 38735 (Expires 3/31/93)
Project Manager

RWS:lg
Attachments

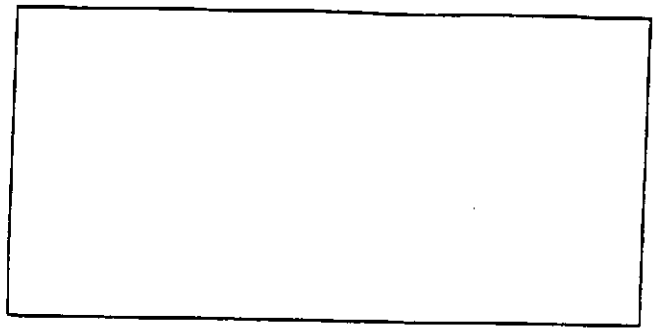
ATTACHMENT A

Sample Collection Records

ATT

ENVIRONMENTAL SAMPLE COLLECTION RECORD

Site Plan:



Date: 7-12-89 Time: 10:30 Job No: 9064

Sample ID: TK-1 Location: 500 San Pablo Ave Albany, CA

Sampling Procedure: Collected sample by lowering a teflon bailer into tank 1. Product was poured into 40ml. VOA, 1 liter amber, and 1 liter plastic for EPA 624, 625 and PPM.

Water Level: pH:

Depth to bottom of well: Salinity:

Well Purge Volume: Turbidity:

Purge Water Fate: Organic Vapor:

Sampling Equipment: Teflon bailer, rubber gloves,

Equipment Cleaning Procedures: N/A

Sampling Handling/Storage: sample was stored on ice immediately after sampling.

Sample Collected By: MICHAEL DESCHENES

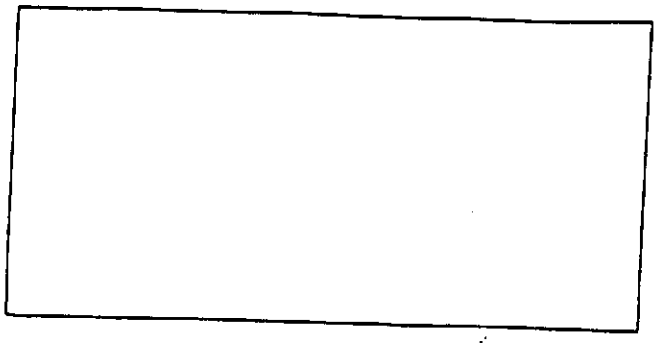
Signature: Michael Deschenes Title: Staff Scientist

Aqua Terra Technologies
Consulting Engineers & Scientists

ATT

ENVIRONMENTAL SAMPLE COLLECTION RECORD

Site Plan:



Date: 7-12-89 Time: 11:15 Job No: 9064

Sample ID: TK-2 Location: 500 San Pablo Ave. Albany, CA

Sampling Procedure: Collected sample by lowering a teflon bailer into tank 2. Product was poured into 40 ml, 1 liter amber, and 1 liter plastic for EPA 624, 625, and PPM

Water Level: pH:

Depth to bottom of well: Salinity:

Well Purge Volume: Turbidity:

Purge Water Fate: Organic Vapor:

Sampling Equipment: Teflon bailer, rubber gloves.

Equipment Cleaning Procedures: N/A

Sampling Handling/Storage: Sample was stored on ice immediately after sampling.

Sample Collected By: MICHAEL DESCHENES

Signature: Michael Deschenes Title: Staff Scientist

Aqua Terra Technologies
Consulting Engineers & Scientists

ATT

ENVIRONMENTAL SAMPLE COLLECTION RECORD

Site Plan:

Date: 7-12-89 Time: 12:00 Job No: 9064

Sample ID: CR-1 Location: 500 San Pablo ave. Albany, CA

Sampling Procedure: Collected sample from creek using a sterile plastic brass tube cap. Floating product was poured into 40 ml. VOA, 1 liter amber, and 1 liter plastic for EPA 624, 6 and PP

Water Level: pH:

Depth to bottom of well: Salinity:

Well Purge Volume: Turbidity:

Purge Water Fate: Organic Vapor:

Sampling Equipment: sterile plastic brass tube cap, rubber gloves

Equipment Cleaning Procedures: N/A

Sampling Handling/Storage: sample was stored on ice immediately after sampling

Sample Collected By: MICHAEL DESCHENES

Signature: Michael Deschenes Title: Staff Scientist

ATTACHMENT B

Chemical Data

Table 1. Albany Tanks

Chemical	Concentration Tank 1 (mg/L)	Tank 2 (mg/Kg)	Creek (mg/Kg)
lead	<5	82	<5
mercury	<0.02	<0.5	0.1
silver	14	14	9.5
thallium	13	15	12
zinc	79	22	<5
1,2-dichloroethane	1.6	<0.25	<0.25
2-butanone	2.9	<5	<5
benzene	6.4	<0.25	8,000
toluene	11	<0.25	39,000
ethylbenzene	7.8	1,800	24,000
xylene	38	2,000	89,000
2,4-dimethylphenol	0.91	<100	<100
benzoic acid	2.6	<500	<500
bis(2-chloroethoxy)methane	0.64	<100	<100
naphthalene	<10	650	2,400
2-methylnaphthalene	<10	760	1,700
di-n-butylphthalate	0.3	<100	<100

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

07/25/89 JP

WORK ORD#: C907244
CLIENT: MICHAEL DECHENES
AQUA TERRA TECHNOLOGIES
2950 BUSKIRK AVENUE, SUITE 120
WALNUT CREEK, CA 94596
PROJECT#: SFB-0134-9
LOCATION: 500 SAN PABLO AVE.
ALBANY, CA
SAMPLED: 07/12/89 BY: M. DESCHENES
RECEIVED: 07/13/89 BY: M. HUTH
ANALYZED: 07/20/89 BY: L. CALLAN
MATRIX: OIL
UNITS: mg/L

PRIORITY POLLUTANT METALS
TEST RESULTS

	MDL	LAB # I.D.#	01 TK-1	02 TK-2	03 CR-1		
Antimony	25		<25	<25	<25		
Arsenic	12		<12	<12	<12		
Beryllium	0.5		<0.5	<0.5	<0.5		
Cadmium	1		<1	<1	<1		
Chromium	3		<3	<3	<3		
Copper	3		<3	<3	<3		
Lead	5		<5	82	<5		
Mercury	0.02		<0.02	<0.5	0.1		
Nickel	0.3		<0.3	<0.3	<3		
Selenium	25		<25	<25	<25		
Silver	5		14	14	9.5		
Thallium	10		13	15	12		
Zinc	5		79	22	<5		

MDL = Method Detection Limit; compound below this level would not be detected.
METHOD: As by EPA 3020/7060; Cd by EPA 3020/7131; Se by EPA 3020/7740; Hg by EPA 7470; Ag by EPA 3005/7760; Tl by EPA 3020/7840; Pb by EPA 3020/7421; Others by EPA 3020/6010.

Emma P. Popek

EMMA P. POPEK, Director

GTEL
ENVIRONMENTAL
LABORATORIES, INC

Northwest Region
4080 Pike Lane
Concord CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

07/27/89 jp Page 1 of 1

WORK ORD#:C907242
CLIENT: BRAD BENNETT
AQUA TERRA TECHNOLOGIES
2950 BUSKIRK AVE. SUITE 120
WALNUT CREEK, CA 94596
PROJECT#: SFB-0134-7
LOCATION: 500 SAN PABLO AVE./ALBANY, CA

SAMPLED: 07/12/89 BY: M. DESCHENES
RECEIVED: 07/13/89
ANALYZED: 07/26/89 BY: P. KOWALSKI

MATRIX: Water and Oil
UNITS: ug/L (ppb) water/ ug/kg Soil

PARAMETER	MDL	SAMPLE # I.D.	01* TK-1	02** TK-2	03** CR-1		
Chloromethane	500		<500	<500	<500		
Bromomethane	500		<500	<500	<500		
Vinyl chloride	500		<500	<500	<500		
Chloroethane	500		<500	<500	<500		
Methylene chloride	250		<500	<500	<500		
Acetone	5000		<5000	<5000	<5000		
Carbon disulfide	250		<250	<250	<250		
1,1-Dichloroethene	250		<250	<250	<250		
1,1-Dichloroethane	250		<250	<250	<250		
trans-1,2-Dichloroethene	250		<250	<250	<250		
Chloroform	250		<250	<250	<250		
1,2-Dichloroethane	250		1600	<250	<250		
2-Butanone	5000		2900	<5000	<5000		
1,1,1-Trichloroethane	500		<500	<500	<500		
Carbon tetrachloride	500		<500	<500	<500		
Vinyl acetate	2500		<2500	<2500	<2500		
Bromodichloromethane	250		<250	<250	<250		
1,2-Dichloropropane	250		<250	<250	<250		
cis-1,3-Dichloropropene	250		<250	<250	<250		
Trichloroethene	250		<250	<250	<250		
Dibromochloromethane	250		<250	<250	<250		
1,1,2-Trichloroethane	250		<250	<250	<250		
Benzene	250		6400	<250	8000000		
trans-1,3-Dichloropropene	250		<250	<250	<250		
2-Chloroethylvinylether	500		<500	<500	<500		
Bromoform	250		<250	<250	<250		
4-Methyl-2-pentanone	2500		<2500	<2500	<2500		
2-Hexanone	2500		<2500	<2500	<2500		

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.

METHOD: MS 8240

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

WORK ORD#:C907242

CLIENT: BRAD BENNETT
PROJECT#: SFB-0134-7
LOCATION: 500 SAN PABLO AVE./ALBANY, CA

MATRIX: Water and Soil
UNITS: ug/L (ppb) water/ ug/kg soil

PARAMETER	MDL	SAMPLE # I.D.	01* TK-1	02** TK-2	03** CR-1
Tetrachloroethene	250		<250	<250	<250
1,1,2,2-Tetrachloroethane	250		<250	<250	<250
Toluene	250		11000	<250	39000000
Chlorobenzene	250		<250	<250	<250
Ethylbenzene	250		7800	1800000	24000000
Styrene	250		<250	<250	<250
1,2-Dichlorobenzene	250		<250	<250	<250
1,3-Dichlorobenzene	250		<250	<250	<250
1,4-Dichlorobenzene	250		<250	<250	<250
Xylene (total)	250		38000	2000000	89000000
Trichlorofluoromethane	250		<250	<250	<250

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.

METHOD: MS 8240
* Water Sample
** Soil Sample

Emma P. Popek

EMMA P. POPEK, Laboratory Director

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07/27/89 MH Page 1 of 1

WORK ORD#:C907243
CLIENT: BRAD BENNETT
AQUA TERRA TECHNOLOGIES
2950 BUSKIRK AVE. SUITE 120
WALNUT CREEK, CA 94596
PROJECT#: SFB-0134-8
LOCATION: 500 SAN PABLO AVE./ALBANY, CA

SAMPLED: 07/12/89 BY: M. DESCHENES
RECEIVED: 07/13/89
ANALYZED: 07/18/89 BY: M. MAZZALI

MATRIX: WATER * - OIL **
UNITS: ug/L * - ug/Kg **

PARAMETER	MDL	SAMPLE # I.D.	01 * TK-1	02 ** TK-2	03 ** CR-1	
Phenol	10		<10	<100000	<100000	
bis(2-Chloroethyl)ether	10		<10	<100000	<100000	
2-Chlorophenol	10		<10	<100000	<100000	
1,3-Dichlorobenzene	10		<10	<100000	<100000	
1,4-Dichlorobenzene	10		<10	<100000	<100000	
Benzyl alcohol	10		<10	<100000	<100000	
1,2-Dichlorobenzene	10		<10	<100000	<100000	
2-Methylphenol	10		<10	<100000	<100000	
bis-(2-Chloroisopropyl)ether	10		<10	<100000	<100000	
4-Methylphenol	10		<10	<100000	<100000	
N-Nitroso-di-n-propylamine	10		<10	<100000	<100000	
Hexachloroethane	10		<10	<100000	<100000	
Nitrobenzene	10		<10	<100000	<100000	
Isophorone	10		<10	<100000	<100000	
2-Nitrophenol	10		<10	<100000	<100000	
2,4-Dimethylphenol	10		910	<100000	<100000	
Benzoic acid	50		2600	<500000	<500000	
bis(2-Chloroethoxy)methane	10		640	<100000	<100000	
2,4-Dichlorophenol	10		<10	<100000	<100000	
1,2,4-Trichlorobenzene	10		<10	<100000	<100000	
Naphthalene	10		<10	650000	2400000	
4-Chloroaniline	10		<10	<100000	<100000	
Hexachlorobutadiene	10		<10	<100000	<100000	
4-Chloro-3-methylphenol	10		<10	<100000	<100000	
2-Methylnaphthalene	10		<10	760000	1700000	
Hexachlorocyclopentadiene	10		<10	<100000	<100000	
2,4,6-Trichlorophenol	10		<10	<100000	<100000	
2,4,5-Trichlorophenol	10		<10	<100000	<100000	

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.
METHOD: EPA 8270
NOTE: Data pertaining to WATER will be indicated by *.
Date pertaining to OIL will be indicated by **.

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WORK ORD#:C907243

CLIENT: BRAD BENNETT
PROJECT#: SFB-0134-8
LOCATION: 500 SAN PABLO AVE./ALBANY, CA

MATRIX: WATER * - OIL **
UNITS: ug/L * - ug/Kg **

PARAMETER	MDL	SAMPLE # I.D.	01 * TK-1	02 ** TK-2	03 ** CR-1		
2-Chloronaphthalene	10		<10	<100000	<100000		
2-Nitroaniline	50		<50	<500000	<500000		
Dimethylphthalate	10		<10	<100000	<100000		
Acenaphthylene	10		<10	<100000	<100000		
3-Nitroaniline	50		<50	<500000	<500000		
Acenaphthene	10		<10	<100000	<100000		
2,4-Dinitrophenol	50		<50	<500000	<500000		
4-Nitrophenol	50		<50	<500000	<500000		
Dibenzofuran	10		<10	<100000	<100000		
2,4-Dinitrotoluene	10		<10	<100000	<100000		
2,6-Dinitrotoluene	10		<10	<100000	<100000		
Diethylphthalate	10		<10	<100000	<100000		
4-Chlorophenyl-phenylether	10		<10	<100000	<100000		
Fluorene	10		<10	<100000	<100000		
4-Nitroaniline	50		<50	<500000	<500000		
4,6-Dinitro-2-methylphenol	50		<50	<500000	<500000		
N-Nitrosodiphenylamine	10		<10	<100000	<100000		
4-Bromophenyl-phenylether	10		<10	<100000	<100000		
Hexachlorobenzene	10		<10	<100000	<100000		
Pentachlorophenol	50		<50	<500000	<500000		
Phenanthrene	10		<10	<100000	<100000		
Anthracene	10		<10	<100000	<100000		
Di-n-butylphthalate	10		300	<100000	<100000		
Fluoranthene	10		<10	<100000	<100000		
Pyrene	10		<10	<100000	<100000		
Butylbenylphthalate	10		<10	<100000	<100000		
3,3-Dichlorobenzidine	10		<10	<100000	<100000		
Benzo(a)anthracene	10		<10	<100000	<100000		

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.
METHOD: EPA 8270
NOTE: Data pertaining to WATER will be indicated by *.
Data pertaining to OIL will be indicated by **.

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WORK ORD#:C907243

CLIENT: BRAD BENNETT
PROJECT#: SFB-0134-8
LOCATION: 500 SAN PABLO AVE./ALBANY, CA

MATRIX: WATER 8 - OIL 88
UNITS: ug/L * - ug/Kg **

PARAMETER	MDL	SAMPLE # I.D.	01 * TK-1	02 ** TK-2	03 ** CR-1	
bis(2-Ethylhexyl)phthalate	10		<10	<100000	<100000	
Chrysene	10		<10	<100000	<100000	
Di-n-octylphthalate	10		<10	<100000	<100000	
Benzo(b)fluoranthene	10		<10	<100000	<100000	
Benzo(k)fluoranthene	10		<10	<100000	<100000	
Benzidine	50		<50	<500000	<500000	
Benzo(a)pyrene	10		<10	<100000	<100000	
Indeno(1,2,3-cd)pyrene	10		<10	<100000	<100000	
Dibenz(a,h)anthracene	10		<10	<100000	<100000	
Benzo(g,h,i)perylene	10		<10	<100000	<100000	

MDL = Method Detection Limit; compound below this level would not be detected.
Results rounded to two significant figures.
METHOD: EPA 8270
NOTE: Data pertaining to WATER will be indicated by *.
Data pertaining to OIL will be indicated by **.

Emma P. Popek

EMMA P. POPEK, Laboratory Director

c Deschenes
st
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)934-4884
)934-0418

ATT

ierra Technologies
ulting Engineers & Scientists

CHAIN OF SAMPLE CUSTODY RECORD

Collector: MICHAEL DESCHENES — Date Sampled: 7/12/89 Time: _____
Location of Sampling: 500 SAN PABLO AVE, ALBANY, CA 94706
CLIENT: KEN FREEDMAN
Project Number: 9064 Survey Number: _____
Sample Type: WASTE OIL/WATER, SOLVENTS?
Container Type and Condition: 40 ML VOA, 1 LITER AMBER, 1 LITER PLASTIC
Contract Laboratory Record/Name: GTEL, CONCORD.

Sample ID	Field Information
TK-1 (6)	ANALYZE WASTE OIL ONLY
TK-2 (6)	ANALYZE WASTE OIL ONLY
CR-1 (6)	

Analysis Requested: EPA 624, EPA 625, EPA PPM.

Results Needed By: 2 WEEKS JULY 26, 1989

Contact and results to be sent to: MICHAEL DESCHENES

Travel Blank: ☐ Yes ☒ No Travel Blank to be Analyzed Separately: ☐ Yes ☒ No

Duplicate Samples: ☒ Yes ☐ No Duplicates to be Analyzed Separately: ☐ Yes ☒ No

Cleaning Blank: ☐ Yes ☒ No Cleaning Blank to be Analyzed Separately: ☐ Yes ☒ No

Background Soil Sample: ☐ Yes ☒ No Background Soil Sample to be Analyzed Separately: ☐ Yes ☒ No

Chain of Custody:

1. Michael Deschenes — Field Personnel — 7-13-89 — Date
2. _____ — Courier — _____ — Date
3. Michelle Heath — Lab — July 13, 1989 1310 — Date