GHH ENGINEERING, INC.
RCE #27011 Lic. #537901

RISK ASSESSMENT
AND
CLOSURE REQUEST REPORT

USA STATION #57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

SEPTEMBER, 1998

PREPARED FOR:

USA GASOLINE CORPORATION
30101 AGOURA COURT, SUITE 200
AGOURA HILLS, CALIFORNIA 91301-4311

PREPARED BY:

GHH ENGINEERING INC.
8084 OLD AUBURN ROAD, SUITE E
CITRUS HEIGHTS, CALIFORNIA 95610

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

APPENDICES

1.0 INTRODUCTION

USA Gasoline Corporation (USA) has retained GHH Engineering, Inc. (GHH) to assist USA in matters pertaining to environmental issues at their former station #57 located at 10700 MacArthur Boulevard, Oakland, California, as shown on Figure 1. Mr. Srikanth Dasappa of USA authorized GHH to prepare this "Risk Assessment and Closure Report" (RACR) for the site. This report is prepared for submittal to the Alameda County Health Care Services Agency (County), the lead agency overseeing environmental issues at the site.

2.0 BACKGROUND AND SITE HISTORY

2.1 Site Description

The site was formerly a retail service station, which dispensed gasoline and diesel from four underground storage tanks (USTs) located in the southern portion of the site, as shown on Figure 2. The buildings have been demolished and the property restored to grade. The property is presently enclosed in a fenced compound within the Foothill Square Shopping Center parking lot.

The site is located at the southeast corner of the Foothill Square Shopping Center, which is bounded by 106th Avenue to the north, Foothill Boulevard to the east, 108th Avenue to the south, and MacArthur Boulevard to the west within the City of Oakland. The property immediately surrounding the site is part of the asphalt parking area for the shopping center. Residential properties are present across 108th Avenue to the south of the site. Highway 580, a multi-lane freeway is east of the site beyond Foothill Boulevard.

On July 19, 1994, three 12,000-gallon gasoline tanks and one 8,000-gallon diesel tank were excavated and removed from the site. Assessment and remediation activities have occurred at the site from July, 1994 to the present. Approximately 775 cubic yards of soil were excavated from the site during tank removal and over-excavation efforts in 1994. This soil was removed from the vicinities of the former UST tanks and the fuel distribution lines.

Sixteen soil borings were drilled and sampled at the site, and eight were completed as groundwater monitoring wells.

The following reports describe the assessment and remediation efforts at the former USA site.

- Preliminary Site Assessment Investigation, dated March 13, 1987, Pacific Environmental Group
- UST's Removal Soil Sampling and Over-Excavation, dated October 6, 1994, Western Geo-Engineers
- Supplementary Site Assessment Report, dated April 24, 1995, Alton Geoscience
- Supplementary Site Assessment Report, dated February 26, 1996, Alton Geoscience

2.2 Regional Geology

The site is located in the East Bay Plain in the eastern part of the San Francisco Bay area.

Much of the East Bay Plain is underlain by the Temescal formation and the Alameda formation, which are of Pleistocene age (DWR, 1975). The Temescal formation consists of interfingering layers of clayey gravel, sandy silt clay, and various clay silt sand mixtures. The formation varies in thickness to a maximum of approximately 60-feet. Underlying the Temescal formation is the Alameda formation, which consists of unconsolidated continental and marine gravels, sands, silts, and clays, with some shells and organic material in places. The Alameda formation has a maximum known thickness of 1,050-feet (Radbruch, 1957). These formations thin to the east, where they pinch out against the Berkeley Hills.

2.3 Site Geology

The site is located in Oakland, California, at an elevation of approximately 80-feet above mean sea level (National Geodetic Vertical Datum, 1929). The site is near the eastern edge of the East Bay Plain and the Berkeley Hills rise abruptly east of the site. The ground surface at the site slopes to the southwest. The underlying geologic formations thin to the east in the East Bay Plain and are very thin in the vicinity of the site. Bedrock which makes up the Berkeley Hills is present at shallow depths beneath the site and outcrops can be seen to the east of the site. This bedrock was encountered during the prior site assessment and remediation activities.

2.4 Regional Hydrogeology

The site is located in the East Bay Plain Groundwater Area, a subarea of the Santa Clara Valley Basin. Groundwater occurs in unconsolidated Quaternary alluvium, including the Alameda formation (DWR, 1975). Most water used in the area is imported from other areas of the state by the East Bay Municipal Utilities District. Scattered wells supply individual dwellings, and a few commercial and industrial developments (DWR, 1975). No water wells have been identified within 250-feet of the site. Groundwater flows in a generally westerly direction toward San Francisco Bay.

2.5 Local Hydrogeology

Groundwater is reportedly present in the bedrock beneath the site. The earlier assessment work documents that bedrock consisting of sandstone and siltstone was found as shallow as 13-feet beneath ground surface beneath the site. Groundwater was first encountered at 40-feet below ground surface (bgs) while drilling MW-3, with the groundwater level stabilizing at about 13-feet bgs.

Soil was removed to a depth of approximately 20-feet bgs. During the over-excavation activities no groundwater was encountered. It is expected that the bedrock surface controls the presence and movement of the shallow groundwater in the alluvial deposits beneath the site. The earlier reports indicate that groundwater was found in both the alluvial deposits and bedrock.

Groundwater monitoring wells have been perforated in only the bedrock and in both alluvium and bedrock. There appears to be different water levels or piezometric surfaces in the two lithologies. Groundwater flow was reported in 1995 to be in a north-northeasterly direction at a gradient of 0.015-feet per foot. In 1996 there was a perceived piezometric low in the vicinity of S-1, S-2 and MW-7. Neither of these site conditions are consistent with the local geology and topography.

3.0 SITE INVESTIGATION

Investigative studies have been completed to better characterize the site by identifying potential sources and receptors in the vicinity of the USA site. A regulatory search was conducted of the area, identifying handlers or unauthorized releases of chemicals of concern within a 1-mile radius of the site. A reconnaissance level survey of the area around the site was made to identify potential preferential pathways for petroleum hydrocarbon migration. In addition, a domestic/ municipal well search was completed for a ½-mile radius to ascertain whether potential groundwater receptors are present in the vicinity of the former USA station.

3.1 Results of Regulatory Search

A state and federal regulatory database search was conducted by Vista Information Solutions (Vista) for identified unauthorized releases of various regulated chemicals of concern. This 1-mile radius search was completed to ascertain whether other releases could contribute or commingle with materials beneath the USA site. Three leaking underground storage tank sites were identified within ¼-mile of the site to the northwest and west. The Vista report is included in Appendix A.

3.2 Potential Pathway Survey

A conduit survey was conducted for the site to identify potential shallow migration routes for petroleum hydrocarbon compounds, the conduit locations are shown on Figure 3. The minimal extent to impacted soil is contained within the site boundaries . These areas are unlikely to impact because of the containment on-site of minor impacted soil and the historic depth of groundwater at this site is below typical invert depths of utilities (6 to 9-feet bgs).

3.3 Well Survey

A domestic/municipal well file search was conducted at the California Department of Water Resources. Well locations identified during the file search were verified during the field reconnaissance survey of the area.

That survey was conducted within a ½-mile radius of the site. Domestic wells were identified approximately 2,000-feet to the northeast of the site in an area topographically higher than the former USA site. These well locations are shown on Figure 3 and in Table 1.

4.0 SITE CLEANUP AND CLOSURE

4.1 Risk Based Corrective Action Guidelines

The American Society of Testing and Materials (ASTM) recently published an emergency standard guide covering risk based corrective action (RBCA) for petroleum impacted sites. The purpose for this standard guide is to provide a technical approach to evaluate subsurface hydrocarbon impact with a decision making process to protect human health and environmental resources. The guide integrates suggested US EPA risk and exposure practices with site assessment practices and remedial measures.

The RBCA process uses a "tiered" approach whereby data collection and analyses are evaluated at discrete points. As a tier is completed the data is reviewed and evaluated to determine if more site specific analysis is required. The applicable tiers are as follows:

Tier 1- A preliminary site assessment or investigation, which involves site classification and non-site specific risk based screening level (RBSL) action goals. These may also include using standards such as maximum contaminant levels (MCLs) for potable groundwater use.

Tier 2 - Site specific corrective action goals that provides the user with an option for determining site specific target levels (SSTL) and appropriate compliance requirements.

Tier 3 - Site specific corrective action goals are used for determining appropriate points of compliance if the Tier 2 corrective action goals are not appropriate.

A requirement for use of RBCA methodology is lateral extent of impacted groundwater. GHH is addressing the Regional Board criteria for a low risk soil and groundwater case as indicated for this site by addressing the Interim guidance issues set by the County.

4.2 Review of Site Conditions

The following discussion presents the guidelines for a low risk groundwater case as presented by the Bay Area RWQCB in their January 6, 1996 Interim Guidance document, and a description of how the Oakland site compares with those guidelines.

1. The leak has been stopped and ongoing sources, including free product have been removed or remediated.

As described in the site history, the UST's were removed in July, 1994. During the tank removal and over-excavation, approximately 775 cubic yards of soil were excavated to remove impacted soil. The analytical results are summarized in Tables 2 and 3. The soil disposal manifests are included in Appendix B. Since that time the site has been demolished and all underground plumbing and aboveground structures have been removed.

In November, 1995 and January, 1997, trace amounts of free product were observed in S-2. No measureable free product has been present in any of the other wells at the site.

2. The site has been adequately characterized.

A total of 16 soil borings were drilled and sampled at the site, and eight were completed as groundwater monitoring wells. There appears to be a TPH groundwater plume that is limited to the central portion of the site. The groundwater analytical data in Table 4 shows that the TPH in the groundwater appears to be restricted to the station site and the perimeter well analyses suggest that the plume is not migrating. The groundwater elevations in Table 5 suggests a groundwater low in the vicinity of the former UST excavation. Low permeability soils beneath the site are not conducive to significant groundwater migration.

Residual soil impacted with TPH compounds extends to approximately 40-feet bgs, as shown in Table 3. The TPH impacted soil appears limited to the vicinity of the former UST area. Shallow TPH impacted soils are also present in the vicinity of the former pump islands. The residual impacted soil is shown on Figure 4. This map effectively shows that most of the impacted soil has been removed from the UST field area. Petroleum hydrocarbon compounds remaining in the product line and dispenser areas were found from non-detect to low concentrations. This minimal quantity and magnitude of impacted soil will effectively attenuate over time. This is especially true now that the source has been removed.

3. The dissolved hydrocarbon plume is not migrating.

The response to question #2 above addresses this question. In addition, the dissolved TPH plume does not appear to be present at concentrations that would likely be migrating to any appreciable degree. The direction of flow and gradient have been monitored at the site which indicates a groundwater trough in the vicinity of the former UST excavation. This trough would contain dissolved hydrocarbons on site. The aquifer in the vicinity of the site appears to be confined by silts and clays.

4. No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.

The nearest domestic well is approximately 1,800-feet up slope from the subject site, as shown on Figure 5. The City provides municipal water via East Bay Municipal Utilities District to the residences in the area where the old domestic wells are present. Secondly, there appears to be little migration of groundwater off-site, so the potential for impacted groundwater migrating to that well and being extracted is negligible.

To evaluate the above assumption and to support the theory, a Domenico groundwater flow model was run to evaluate the potential for impacted groundwater migrating from the USA site to the domestic well.

A worst case scenario was used with benzene from a downgradient well MW-3. It was calculated that once the impacted groundwater reached a steady-state condition the benzene concentrations 1,800-feet from the source would be below MCL. A print out of the model results are included in Appendix C.

5. The site presents no significant risk to human health.

The TPH appears to be contained in fine grained silt and clay soils. During the evaluation of the site the potential risk pathways for human exposure were identified as contact with the impacted groundwater or the presence of impacted vapors being released into the atmosphere. With groundwater levels varying between 13 and 20-feet bgs for the period of record, it is improbable vapor migration from the plume will occur to any appreciable degree. Given that groundwater was not encountered during the overexcavation further minimizes the potential for contact. Then the potential for the impacted groundwater entering a domestic source was reviewed, as discussed in question #4 above.

The potential for TPH vapors entering the ambient air at the site will be mitigated by placing an asphalt surface over the site. Therefore, the plume does not appear to represent a significant risk to human health.

6. The site presents no significant risk to the environment.

The TPH that has been released at the USA site appears to be stable and has not moved appreciably since the release was identified in 1987. There are no surface water areas or potentially threatened habitats within one half mile of the site. Therefore leaving the TPH in place does not appear to constitute a threat to the environment.

4.3 Identification of Exposure Pathways

Two areas of potential risk to human health or the environment have been identified as groundwater ingestion and outdoor air inhalation.

The very conservative Domenico Fate and Transport model (Appendix C) has effectively shown that impacted groundwater to the nearest domestic/municipal well receptor is negligible to non-existent and demonstrates that there is no risk to human health. This is further supported because the wells are up slope, completed in bedrock, and the homes where these wells are located are provided with municipal water.

The source of petroleum hydrocarbon compounds have been effectively taken away with the removal of UST's and overexcavation in 1994. The residual impacted soil may volatilize to the outdoor air which would unlikely cause any significant exposure. The area is expected to be paved, which should remove any potential for future exposure to a receptor in any confined location.

5.0 CONCLUSIONS

- The petroleum hydrocarbon source area has been essentially removed.
- The impacted groundwater appears to be stable and decreasing in magnitude, as shown in Table 4 and in the Graphs section of this report. Disagree
- The impacted groundwater does not appear to be migrating and remains contained beneath the site.
- A low risk has been identified for the two potential exposure pathways at the site, groundwater ingestion and outdoor air inhalation.

6.0 RECOMMENDATIONS

USA has effectively removed the petroleum source at this site by removing the UST's in 1994 and by over-excavating approximately 775 cubic yards of gasoline impacted soil in July, 1994.

This site should qualify for closure and/or No Further Action because the containment of the zone of impact has been demonstrated by the many episodes of assessment drilling (Review of Site Conditions section of this text and the Site Investigations Reports included in Appendix D), and the lack of sensitive receptors indicated from the well survey and preferential pathways survey.

Upon approval of this request, the groundwater wells at this site will be abandoned, in accordance with appropriate permitting and regulatory notification. It is recommended that an ORC®/grout slurry be used for abandonment of borings S-1, S-2 and MW-3 adjacent to the former UST field.

ORC® is a formulation of magnesium peroxide that slowly releasing molecular oxygen when hydrated. The addition of oxygen is expected to revitalize the existing micro-organisms population from an anaerobic condition to an aerobic condition enhancing bio-degradation.

7.0 PREPARATION OF REPORT

Firm Preparing Report

GHH Engineering, Inc.
8084 Old Auburn Road, Suite E
Citrus Heights, California 95610

Report Prepared by:

This report was prepared by GHH Engineering, Inc. Mr. Richard J. Zipp, Principal Hydrogeologist, is the qualified person responsible for overseeing this project. This report was written by Ms. Kathleen A. Waldo, Staff Engineer, and reviewed for technical content by Mr. Vern A. Bennett, Project Manager, and Mr. Zipp.

The analyses submitted in this report are based upon the best available information obtained from the field investigation, persons knowledgeable about the site, and local government agencies. This report was prepared to assist the USA in the evaluation of the site.

This report has been reviewed by the client and they are responsible for the findings herein. If you have any questions or need additional information, please call the undersigned at (916) 723-7645.

Thank You,

Vern A. Bennett
Project Manager

Richard J. Zipp, R.G. #H.G.
Principal Hydrogeologist

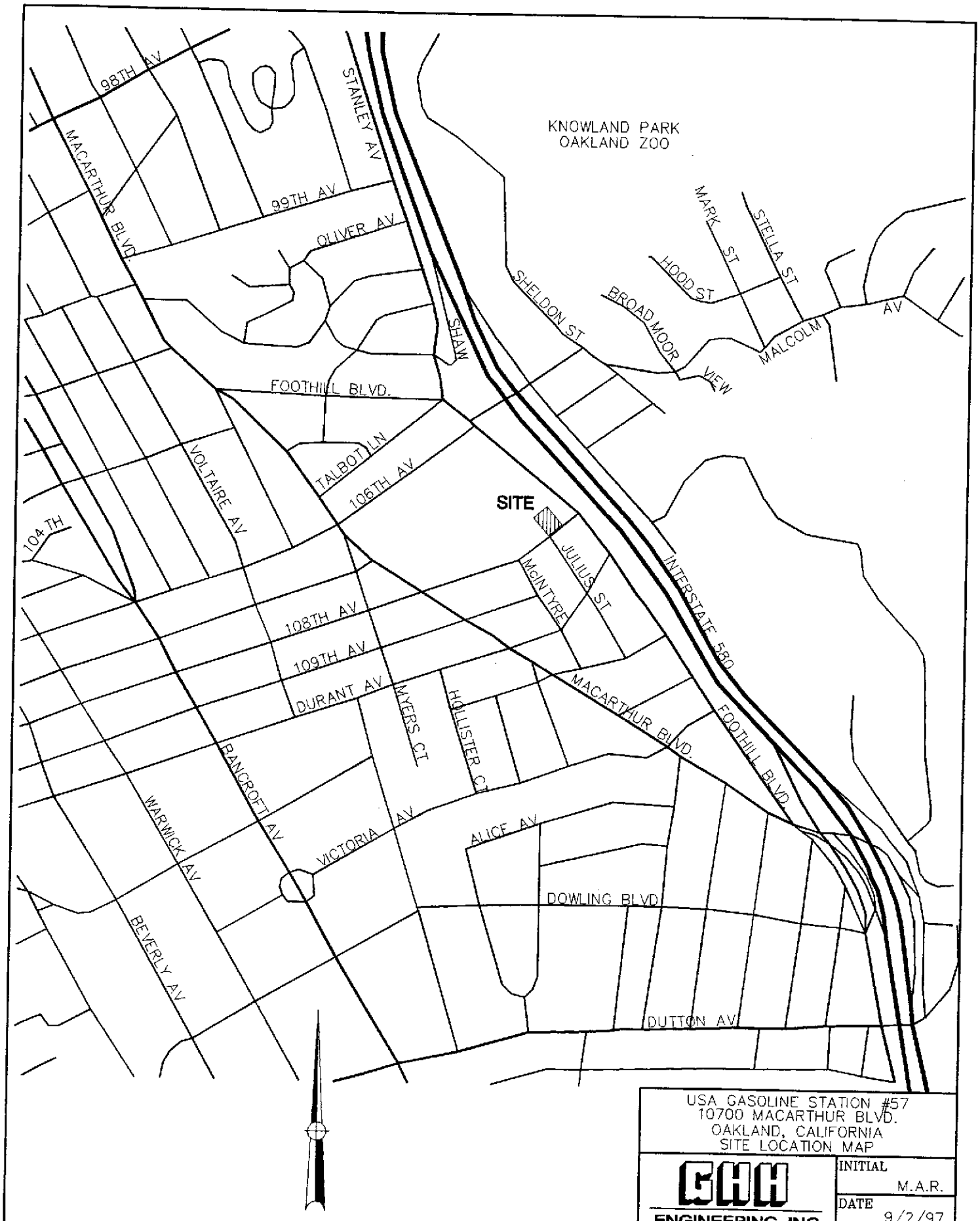
REGISTERED GEOLOGIST
RICHARD J. ZIPP
No. 3611
STATE OF CALIFORNIA

F:\5090\VB\naj\RACR.rpt

no change with GHH
10/5/98

_____

Srikanth Dasappa Date
USA Gasoline Corporation

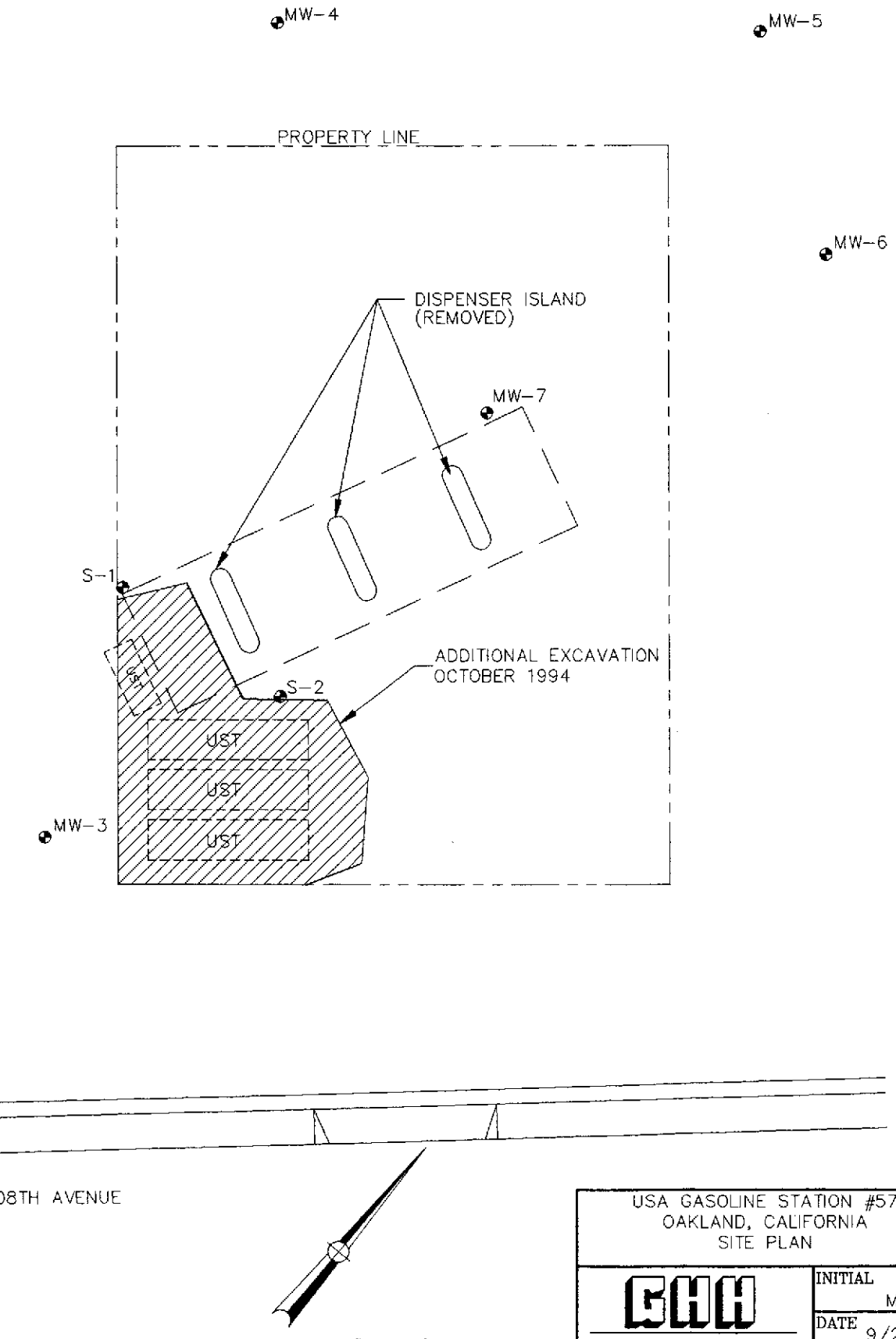


APPROX. SCALE: 1" = 800'

USA GASOLINE STATION #57
10700 MACARTHUR BLVD.
OAKLAND, CALIFORNIA
SITE LOCATION MAP

GHA
ENGINEERING, INC.
8084 Old Auburn Rd.
Citrus Heights, CA 95610
(916) 723-7645

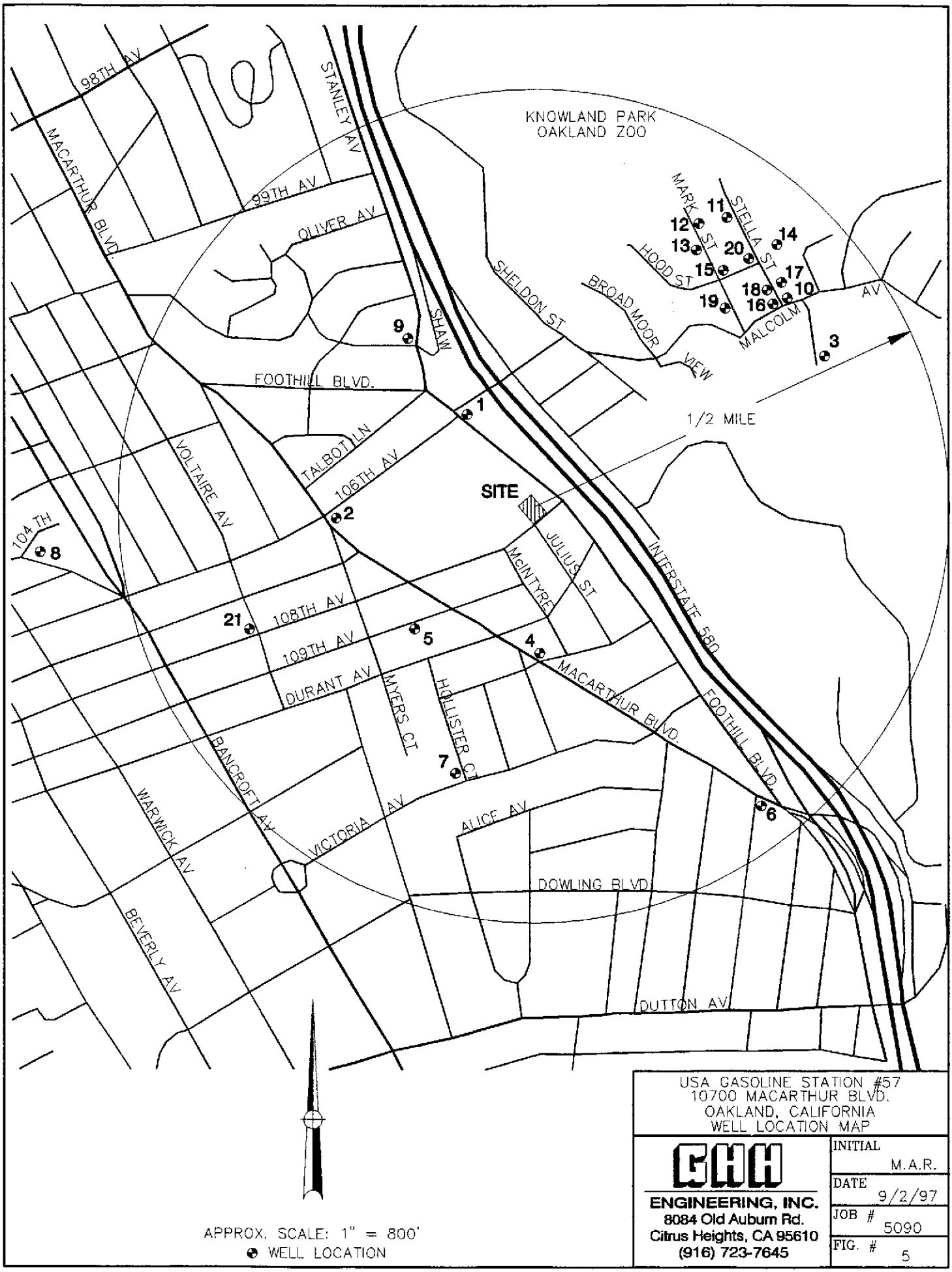
INITIAL	M.A.R.
DATE	9/2/97
JOB #	5090
FIG. #	1



USA GASOLINE STATION #57
OAKLAND, CALIFORNIA
SITE PLAN

GHA
ENGINEERING, INC.
8084 Old Auburn Rd.
Citrus Heights, CA 95610
(916) 723-7645

INITIAL	M.A.R.
DATE	9/2/97
JOB #	5090
FIG. #	2



USA GASOLINE STATION #57
10700 MACARTHUR BLVD.
OAKLAND, CALIFORNIA
WELL LOCATION MAP

APPROX. SCALE: 1" = 800'
● WELL LOCATION

GHH
ENGINEERING, INC.
8084 Old Auburn Rd.
Citrus Heights, CA 95610
(916) 723-7645

INITIAL	M.A.R.
DATE	9/2/97
JOB #	5090
FIG. #	5

TABLE 1

WELLS WITHIN 1/2-MILE RADIUS
USA STATION #57
OAKLAND, CALIFORNIA

Map ID	Well Use	Owner	Well Address	DWR	Year	Perforated Intervals (feet)
1	MW	Southland	10501 Foothills	2 S 3 W 24 E (3-5)	1987	
2	MW	Arco	10600 MacArthur	2 S 3 W 24 E 11	1992	
3	MW	Sam Kai Kee	106th	2 S 3 W 24 G 1	1951	28-85'
4	MW	Shell		2 S 3 W 24 M		
5	IW	Ms. Kitchen	2544 109th	2 S 3 W 24 M 1		38-55'
6	MW	Unocal	96 MacArthur			Unknown
7	IW	Mr. Brahmse	377 Hollister	2 S 3 W 24 N 1	1971	35-75'
8	CPW	PG&E	Sunnyside 75' SW of 104th	2 S 3 W 23 K 1	1974	120'
9	CPW	PG&E	Shaw & Stanley	2 S 3 W 24 E 2	1976	120'
10	DW	Mr. Freitas	Stella & Malcolm	2 S 3 W 24 B 5	1955	55-123'
11	DW	G. Hower	10700 Stella	2 S 3 W 24 B 2	1951	55'
12	DW	Johnson	10731 Mark	2 S 3 W 24 B 1	1951	102'
13	DW	Sam Kai Kee	Mark	2 S 3 W 24 B 3		100'
14	DW	H. Mathews	10544 Stella	2 S 3 W 24 C 3		42-92'
15	DW	A. Bassigian	Mark & Hood	2 S 3 W 24 B	1958	56-107'
16	DW	C. Bach	Malcolm & Stella	2 S W W 24		100'
17	DW	J. Prentiss	10521 Stella	S 2 3 W 24 C	1951	Unknown
18	DW	R. Trimble	10520 Stella	2 S 3 W 24 C	1951	190'
19	DW	C. Armtront	10550 Stella	2 S 3 W 24 C	1951	Unknown
20	DW	H. Brenneman	10600 Stella	2 S 3 W 24 B 4	1951	98'
21	CPW	PG&E	Voltaire & 108th	2 S S W 23 J 1		105'

MW Monitoring well
DW Domestic well
CW Cathodic protection well
IW Irrigation well

G:\data\5090\Search.wb1

TABLE 2

SOIL ANALYTICAL DATA - TANK REMOVAL
FORMER USA STATION #57
10700 MacARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Sample Location	Sample ID	Date	Depth (feet)	TPH G (ppm)	TPH D (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylene (ppm)	TTLC Lead (ppm)
Product Trench	PI-E-3.5	07/19/94	3.5	ND(0.2)	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	7
	PI-2	07/19/94	3.5	4,500	ND(50)	ND(1.0)	6	60	440	4
	PI-3	07/19/94	3.5	ND(0.2)	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	5
	PI-4	07/19/94	4	ND(0.2)	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	6
	PI-5	07/19/94	3.5	ND(1.0)	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	7
	PI2-0	09/19/94	9	15	-	0.02	0.04	0.07	0.19	-
Tank Field	TP1	07/19/94	12.5	-	60	ND(0.005)	0.015	0.007	0.008	-
	TP2	07/19/94	12.5	-	230	ND(1.0)	0.79	2.2	0.7	-
	TP3	07/19/94	13	94	-	0.18	0.25	1	5.9	3
	TP4	07/19/94	13	1400	-	1.9	3.5	12	150	4
	TP5	07/19/94	13	300	-	ND(0.5)	0.74	4.8	20	3
	TP6	07/19/94	13	0.7	-	ND(0.005)	ND(0.005)	0.006	ND(0.005)	3
	TP7	07/19/94	13	ND(0.2)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	3
Tank Cavity	TC-1	08/19/94	16	ND(0.2)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC-2	08/19/94	16	93	-	ND(1.0)	0.28	0.63	3.1	-
	TC-3	08/19/94	17.5	2.4	1	0.008	0.02	0.02	0.11	-
	TC-4	08/19/94	15.5	0.7	2	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC-5	08/19/94	17	190	-	0.17	0.38	0.99	7.9	-
	TC-6	08/19/94	18	ND(0.2)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	SM-1	08/19/94	19.5	0.4	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC2-1	09/27/94	417	ND(0.2)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC2-2	09/27/94	13	13	-	0.06	0.019	0.026	ND(0.005)	-
	TC2-3	09/27/94	16	ND(0.2)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC2-4	09/27/94	13	ND(0.2)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC2-5	09/27/94	12	100	200	0.13	0.12	0.1	0.26	-
	TC2-7	09/27/94	13	6.3	37	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC2-8	09/27/94	13	ND(1.0)	16	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC2-9	09/27/94	19	0.4	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC2-11	09/27/94	13	2200	-	9.6	21	40	260	-
	TC2-12	09/27/94	12	130	-	0.33	0.29	0.66	7.9	-
	TC2-13	09/27/94	20	620	-	1.1	4.9	6.4	66	-
	TC2-14	09/27/94	11	92	-	0.096	0.1	0.17	1.7	-
	TC2-15	09/27/94	17	ND(0.2)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	TC2-16	09/27/94	14	ND(1.0)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
(Alton)	TC3-3	10/94	12-13	300	330	-	-	-	-	-
(Alton)	TC3-4	10/94	12-13	510	ND	-	-	-	-	-
(Alton)	TCE-5	10/94	12-13	2400	ND	-	-	-	-	-
(Alton)	TC3-6	10/94	12-13	940	ND	-	-	-	-	-
Dispenser Island	DI-1	09/27/94	3.5	720	-	0.19	2	9	53	-
	DI-2	09/27/94	3.5	280	-	0.12	0.8	4.6	33	-
	DI-3	09/27/94	3	ND(0.2)	-	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	-
	DI-4	09/27/94	3	590	-	0.7	2.5	13	81	-
	DI-5	09/27/94	3.5	570	-	0.1	1.5	2.7	17	-
	DI-6	09/27/94	3.5	1800	-	0.72	5.2	31	180	-

SOIL SAMPLES BY WESTERN GEO-ENGINEERS UNLESS OTHERWISE NOTED

TPH G	Total petroleum hydrocarbons in the gasoline range
TPH D	Total petroleum hydrocarbons in the diesel range
ppm	Parts per million
ND	Not detected at the method detection limit
-	Not measured/not analyzed

TABLE 3

SOIL ANALYTICAL DATA
FORMER USA STATION #57
10700 MacARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Well ID	Date	Depth (feet)	TPH G (ppm)	TPH D (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylene (ppm)
S-1	02/12/87	20.5	42	-	-	-	-	-
		20.5	16	-	-	-	-	-
S-2	02/12/87	24.5	600	-	-	-	-	-
B-1	02/28/95	5.5	ND	-	ND	ND	ND	ND
		9.5	44	-	0.12	ND	0.14	0.4
		13.0	540	55	2.6	10	7.5	48
		20.0	ND	-	0.012	0.016	ND	0.029
		25.0	3.9	-	0.048	0.14	0.062	0.37
		31.0	ND	-	ND	0.011	0.0057	0.045
		35.0	ND	-	0.014	0.018	0.012	0.079
		40.5	ND	ND	ND	ND	ND	ND
B-2	03/01/95	5.0	ND	-	ND	ND	ND	ND
		10.5	ND	-	ND	ND	ND	ND
		16.0	16	-	0.057	0.028	0.029	1.2
		21.0	110	-	0.96	0.41	0.33	1.5
		26.0	240	22	0.76	1.4	0.85	1.9
B-3	03/01/95	11.0	ND	-	ND	ND	ND	ND
		15.5	10	-	0.044	0.11	0.079	0.63
		20.5	15	1.3	0.041	0.37	0.15	1.1
B-4	03/02/95	3.0	ND	-	ND	ND	ND	ND
		6.0	ND	-	ND	ND	ND	ND
		12.0	ND	ND	ND	ND	ND	ND
B-5	03/02/95	5.5	ND	-	ND	ND	ND	ND
		12.0	ND	ND	ND	ND	ND	ND
B-6	03/02/95	4.0	33	5.3	0.093	0.065	0.33	2.0
		5.5	2.6	-	0.062	ND	0.030	0.047
		12.0	ND	-	ND	ND	ND	0.022

TABLE 3 (Continued)

SOIL ANALYTICAL DATA
FORMER USA STATION #57
10700 MacARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Well ID	Date	Depth (feet)	TPH G (ppm)	TPH D (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylene (ppm)
B-7	03/02/95	3.5	ND	ND	ND	ND	ND	ND
		5.0	ND	-	ND	ND	ND	ND
		12.0	ND	-	ND	ND	ND	ND
B-8	03/02/95	3.0	17	-	0.012	0.021	0.12	0.16
		5.5	ND	ND	0.019	ND	0.050	ND
		12.0	2.0	-	0.042	ND	ND	0.016
MW-3	02/28/95	5.5	ND	-	ND	ND	ND	ND
		11.5	1.9	-	0.026	0.011	0.0061	0.019
		13.5	240	12	0.41	0.64	2.0	5.4
		15.5	110	-	0.37	3.8	1.5	10
		21.5	3.0	-	0.26	0.24	0.059	0.50
		24.5	ND	-	0.030	0.0069	0.0056	0.016
		29.5	ND	-	ND	0.0054	ND	0.0092
		39.5	ND	-	ND	ND	ND	ND
MW-4	11/21/95	10.0	ND	5.0	ND	ND	ND	ND
MW-5	11/21/95	10.0	ND	5.2	ND	ND	ND	ND
		15.0	ND	4.2	ND	ND	ND	ND
MW-6	11/21/95	10.0	ND	4.4	ND	ND	ND	ND
MW-7	11/21/95	10.0	ND	4.7	ND	ND	ND	ND
		15.0	ND	4.3	ND	ND	ND	ND
		20.0	25	8.7	0.071	0.11	0.043	0.1
MW-8	11/21/95	10.0	ND	5.5	ND	ND	ND	ND
		15.0	ND	5.1	ND	ND	ND	ND
		20.0	ND	4.5	ND	ND	ND	ND

TPH G — Total petroleum hydrocarbons in the gasoline range
TPH D — Total petroleum hydrocarbons in the diesel range
ppm — Parts per million
ND — Not detected at the method detection limit
\- — Not measured/not analyzed
Boring locations are presented in Alton Geo Sciences' "Supplementary Site Assessment Report " which are included in Appendix C.

MW-6
(11/20/95)
TPH-D 4.4 @10'

MW-5
(11/21/95)
TPH-D 5.2 @10'
4.2 @15'

DI-6
(9/27/94)
TPHG 1800 @3.5'
BENZENE 0.72 @3.5'

(11/20/95)
TPH-D 4.7 @10'
4.3 @15'
8.7 @20'
TPH-G 25 @20'
BENZENE 0.071 @20'
MW-7

CANOPY (REMOVED)

DI-5
(9/27/94)
TPHG 570 @3.5'
BENZENE 0.1 @3.5'

B-6
(3/2/95)
TPHG 33 @4'
2.6 @5.5'
TPHD 5.3 @4'
BENZENE 0.093 @4'
BENZENE 0.062 @5.5'

DI-1
(9/27/94)
TPHG 720 @3.5'
BENZENE 0.19 @3.5'

D
(2/12/87)
TPH 2 @9-10.5'

PROPERTY LINE

B
(2/12/87)
TPH 4 @18.5-20'

S-2
(2/12/87)
TPH-G 600 @24.5'

MW-4
(11/20/95)
TPH-D 5 @10'
4.2 @15'

D1-2
(9/27/94)
TPHG 280 @3.5'
BENZENE 0.12 @3.5'

B-8
(3/2/95)
TPHG 17 @3'
2 @12'
BENZENE 0.012 @3'
BENZENE 0.019 @5.5'
BENZENE 0.042 @12'

A
(2/12/87)
TPH 16 @13.5-15'

(16') (17') (17') (15.5') (19') (20')
UST UST UST UST

B-2
(3/2/95)
TPHG 16 @16'
110 @21'
240 @26'
TPHD 22 @26'
BENZENE 0.057 @16'
BENZENE 0.96 @21'
BENZENE 0.76 @26'

TC3-5
(10/94)
2400 @12'

TC3-4
(10/94)
510 @12'

B-3
(3/2/95)
TPHG 10 @15.5'
15 @20.5'
TPHD 1.3 @20.5'
BENZENE 0.044 @15.5'
BENZENE 0.041 @20.5'

DI-4
(9/27/94)
TPHG 590 @3'
BENZENE 0.7 @3'

S-1
(2/12/87)
TPH-G 42 @20.5'
16 @20.5'

TC3-6
(10/94)
TPHG 940 @12'

B-1
(2/28/95)
TPHG 44 @9.5'
540 @13'
3.9 @25'
TPHD 55 @13'
BENZENE 0.12 @9.5'
2.6 @13'
0.012 @20'
0.048 @25'
0.014 @35'

MW-3
(2/28/95)
TPH-G 1.9 @11.5'
240 @13.5'
110 @15.5'
3.0 @21.5'
TPH-D 12 @13.5'
BENZENE 0.026 @11.5'
0.41 @13.5'
0.37 @15.5'
0.26 @21.5'
0.03 @24.5'

TC3-3
(10.94)
TPHG 300 @12'
TPHD 330 @12'

MW-8
(11/21/95)
TPH-D 5.5 @10'
5.1 @15'
4.5 @20'

SIDEWALK

108TH AVENUE

ADDITIONAL EXCAVATION OCTOBER 1994

TANK EXCAVATION
TO 13' DEPTH
(JULY 19, 1994)

ADDITIONAL EXCAVATION
DEPTH IN ( ) EVENLY GRADED
(AUGUST, SEPTEMBER 1994)

SCALE: 1" = 20'

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- SOIL SAMPLE LOCATION

NOTE: DISPENSER ISLANDS WERE REMOVED ON AUGUST 19, 1994
ALL SOIL SAMPLE DATA IS REPORTED IN PARTS PER MILLION

USA GASOLINE STATION #57
OAKLAND, CALIFORNIA
RESIDUAL IMPACTED SOILS MAP

GHH
ENGINEERING, INC.
8084 Old Auburn Rd.
Citrus Heights, CA 95610
(916) 723-7645

INITIAL	M.A.R.
DATE	9/2/97
JOB #	5090
FIG. #	4

TABLE 4 (Continued)

GROUNDWATER ANALYTICAL DATA
FORMER USA STATION #57
10700 MacARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Well ID	Date Sampled	TPH G (ug/l)	TPH D (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Total Xylene (ug/l)	MTBE 8020 (ug/l)
MW-5	11/22/95	ND(50)	280	ND(0.5)	1.8	ND(0.5)	3	2.2
	12/06/95	-	-	-	-	-	-	-
	01/04/96	-	-	-	-	-	-	-
	01/31/97	80	ND(50)	ND(0.5)	0.6	ND(0.5)	2	6
	10/10/97	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(2)	ND(5)
	01/20/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	04/28/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	07/31/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
MW-6	11/22/95	ND(50)	140	ND(0.5)	1.2	ND(0.5)	1.5	5.3
	12/06/95	-	-	-	-	-	-	-
	01/04/96	-	-	-	-	-	-	-
	01/31/97	70	ND(50)	ND(0.5)	2	ND(0.5)	ND(1)	5
	10/10/97	80	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(2)	ND(5)
	01/20/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	04/28/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	07/31/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
MW-7	11/22/95	ND(50)	180	ND(0.5)	0.57	ND(0.5)	0.62	0.73
	12/06/95	-	-	-	-	-	-	-
	01/04/96	-	-	-	-	-	-	-
	01/31/97	70	ND(50)	0.7	1	ND(0.5)	ND(1)	8
	10/10/97	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(2)	15
	01/20/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	04/28/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	9.3
	07/31/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
MW-8	11/22/95	ND(50)	360	ND(0.5)	1.3	ND(0.5)	2.1	2.1
	12/06/95	-	-	-	-	-	-	-
	01/04/96	-	-	-	-	-	-	-
	01/31/97	80	ND(50)	0.6	1	ND(0.5)	1	8
	10/10/97	50	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(2)	ND(5)
	01/20/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	04/28/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	07/31/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)

TPH G	Total petroleum hydrocarbons in the gasoline range
TPH D	Total petroleum hydrocarbons in the diesel range
ug/l	Micrograms per liter
MTBE	Methyl-tert-butyl-ether
ND	Not detected at the method detection limit
-	Not measured/not analyzed
*	Laboratory indicates the chromatogram does not match the diesel hydrocarbon range pattern

Note: MTBE was confirmed on 01/31/97 with EPA Method 8260 in MW-3 at a concentration of 180 ug/l

G:\Data\5090\gwdata.wb1

TABLE 4

GROUNDWATER ANALYTICAL DATA
FORMER USA STATION #57
10700 MacARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Well ID	Date Sampled	TPH G (ug/l)	TPH D (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Total Xylene (ug/l)	MTBE 8020 (ug/l)
S-1	12/17/87	-	-	630	4.4	3.5	37	-
	01/27/94	6,900	ND(50)	880	ND(15)	ND(15)	ND(15)	-
	03/03/95	910	5900	260	7.6	16	14	-
	07/24/95	-	-	-	-	-	-	-
	11/22/95	460	6100	13	0.69	0.99	1.1	460
	12/06/95	-	-	-	-	-	-	-
	01/04/96	-	-	-	-	-	-	-
	01/31/97	1,100	200	11	6	3	6	200
	10/10/97	530	2,000	ND(0.5)	2.1	ND(0.5)	ND(2)	230
	01/20/98	1,800	200	ND(0.5)	ND(0.5)	1.5	10	87
	04/28/98	130	7,300	1.9	3.2	ND(0.5)	ND(0.5)	310
	07/31/98	310	2,000	0.54	4.6	3.8	0.82	280
S-2	12/17/87	-	-	3,400	3,800	1,300	11,000	-
	01/27/94	15,000	ND(50)	660	230	470	1,600	-
	03/03/95	24,000	6000	1900	440	600	2,500	-
	07/24/95	-	-	-	-	-	-	-
	11/22/95	-	-	-	-	-	-	-
	12/06/95	-	-	-	-	-	-	-
	01/04/96	-	-	-	-	-	-	-
	01/31/97	-	-	-	-	-	-	-
	10/10/97	13,000	ND(50)	260	38	190	280	600
	01/20/98	1,900	2,300	4.6	6.3	ND(0.5)	4.6	190
	04/28/98	22,000	ND(100)	980	160	320	680	570
	07/31/98	160,000	ND(50)	950	290	550	1,700	550
MW-3	03/03/95	2,500	1600	540	92	36	200	-
	07/24/95	-	-	-	-	-	-	-
	11/22/95	14,000	5400	5700	230	430	650	820
	12/06/95	-	-	-	-	-	-	-
	01/04/96	-	-	-	-	-	-	-
	01/31/97	1,100	ND(50)	130	8	5	5	-
	10/10/97	3,400	1,100	830	4	100	ND(10)	160
	01/20/98	3,900	550	7.9	4.1	ND(0.5)	3.7	ND(5.0)
	04/28/98	800	1,000	82	5.2	5.7	5.4	240
	07/31/98	2,200	610	510	7.6	16	5.27	310
MW-4	11/22/95	ND(50)	200	ND(0.5)	1.5	ND(0.5)	1.7	6.4
	12/06/95	-	-	-	-	-	-	-
	01/04/96	-	-	-	-	-	-	-
	01/31/97	ND(50)	ND(50)	ND(0.5)	2	ND(0.5)	2	11
	10/10/97	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(2)	ND(5.0)
	01/20/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	04/28/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)
	07/31/98	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5.0)

(8260)
180

TABLE 5

GROUNDWATER ELEVATION DATA
FORMER USA STATION #57
10700 MacARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Well ID	Date of Measurement	Elevation Top of Casing (feet)	Depth to Groundwater	Elevation of Groundwater (feet MSL)	Product Thickness (feet)
S-1	03/03/95	74.74	13.10	61.64	0.00
	07/24/95		12.35	62.39	0.00
	11/22/95	78.68	19.30	59.38	0.00
	12/06/95		19.59	59.09	0.00
	01/04/96		19.52	59.16	0.00
	01/31/97		15.07	63.61	0.00
	10/10/97		18.90	59.78	0.00
	01/20/98		16.79	61.89	0.00
	04/28/98		8.37	70.31	0.00
	07/31/98		11.61	67.07	0.00
S-2	03/03/95	76.86	15.39	61.47	0.00
	07/24/95		14.47	62.39	0.00
	11/22/95	80.93	21.52	59.41	trace
	12/06/95		21.78	59.15	0.00
	01/04/96		21.75	59.18	0.00
	01/31/97		17.25	63.68	trace
	10/10/97		21.21	59.72	trace
	01/20/98		19.07	61.86	0.00
	04/28/98		10.47	70.46	0.00
	07/31/98		13.71	67.22	0.00
MW-3	03/03/95	76.30	13.99	62.31	0.00
	07/24/95		13.33	62.97	0.00
	11/22/95	80.32	20.94	59.38	0.00
	12/06/95		17.48	62.84	0.00
	01/04/96		20.01	60.31	0.00
	01/31/97		16.63	63.69	0.00
	10/10/97		20.62	59.70	0.00
	01/20/98		15.40	64.92	0.00
	04/28/98		10.51	69.81	0.00
	07/31/98		13.46	66.86	0.00
MW-4	11/22/95	76.42	14.99	61.43	0.00
	12/06/95		11.21	65.21	0.00
	01/04/96		14.62	61.80	0.00
	01/31/97		8.18	68.24	0.00
	10/10/97		14.14	62.28	0.00
	01/20/98		7.05	69.37	0.00
	04/28/98		5.88	70.54	0.00
	07/31/98		8.40	68.02	0.00

TABLE 5 (Continued)

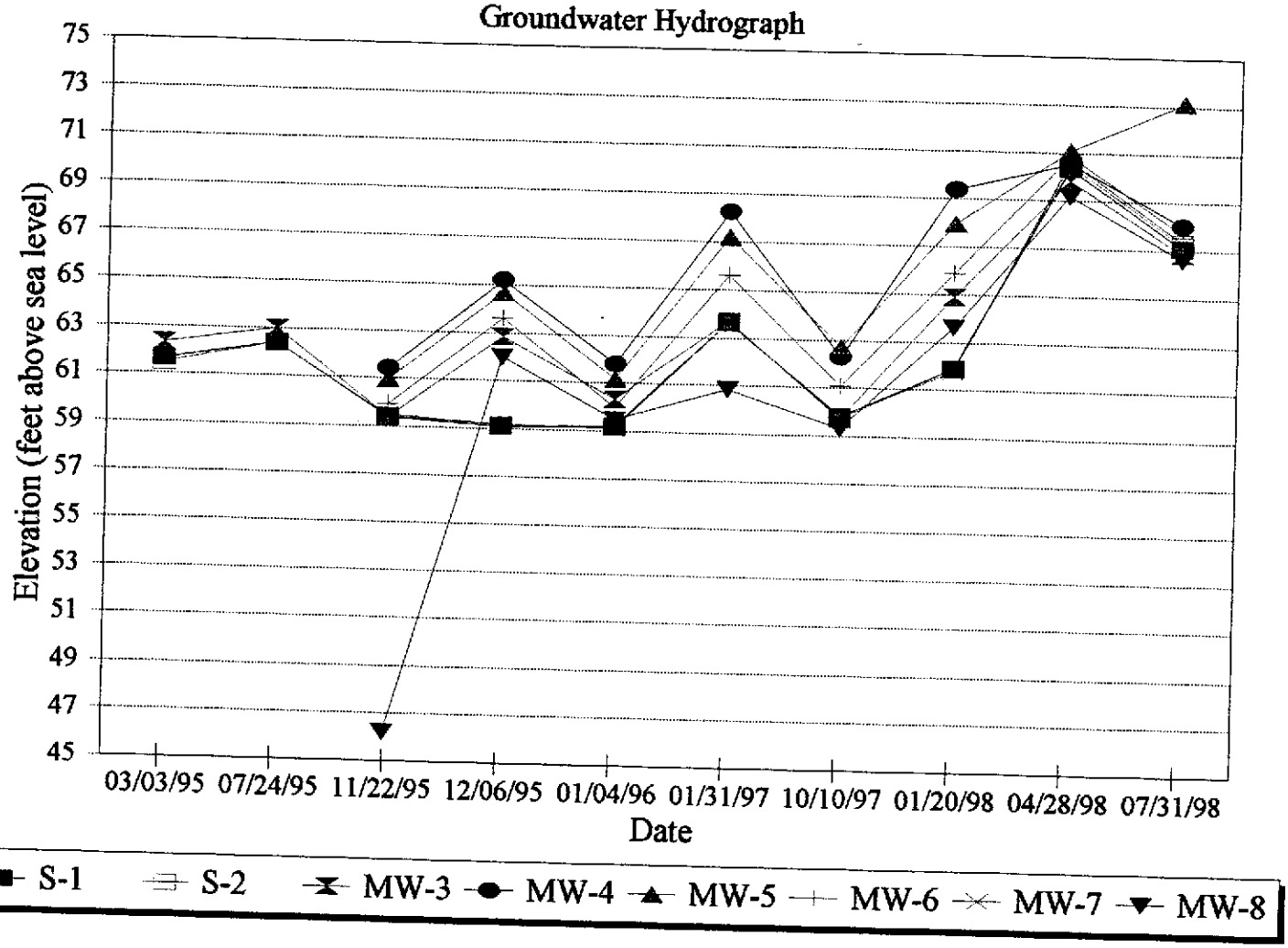
GROUNDWATER ELEVATION DATA
FORMER USA STATION #57
10700 MacARTHUR BOULEVARD
OAKLAND, CALIFORNIA

Well ID	Date of Measurement	Elevation Top of Casing (feet)	Depth to Groundwater	Elevation of Groundwater (feet MSL)	Product Thickness (feet)
MW-5	11/22/95	80.52	19.56	60.96	0.00
	12/06/95		15.84	64.68	0.00
	01/04/96		19.36	61.16	0.00
	01/31/97		13.31	67.21	0.00
	10/10/97		17.80	62.72	0.00
	01/20/98		12.58	67.94	0.00
	04/28/98		9.45	71.07	0.00
	07/31/98		7.38	73.14	0.00
MW-6	11/22/95	81.64	21.73	59.91	0.00
	12/06/95		18.03	63.61	0.00
	01/04/96		21.67	59.97	0.00
	01/31/97		16.01	65.63	0.00
	10/10/97		20.55	61.09	0.00
	01/20/98		15.74	65.90	0.00
	04/28/98		10.78	70.86	0.00
	07/31/98		13.97	67.67	0.00
MW-7	11/22/95	78.86	19.38	59.48	0.00
	12/06/95		19.72	59.14	0.00
	01/04/96		19.76	59.10	0.00
	01/31/97		15.25	63.61	0.00
	10/10/97		19.03	59.83	0.00
	01/20/98		17.11	61.75	0.00
	04/28/98		8.22	70.64	0.00
	07/31/98		11.53	67.33	0.00
MW-8	11/22/95	79.55	33.33	46.22	0.00
	12/06/95		17.57	61.98	0.00
	01/04/96		20.08	59.47	0.00
	01/31/97		18.72	60.83	0.00
	10/10/97		20.26	59.29	0.00
	01/20/98		15.91	63.64	0.00
	04/28/98		10.39	69.16	0.00
	07/31/98		12.93	66.62	0.00

MSL Mean sea level

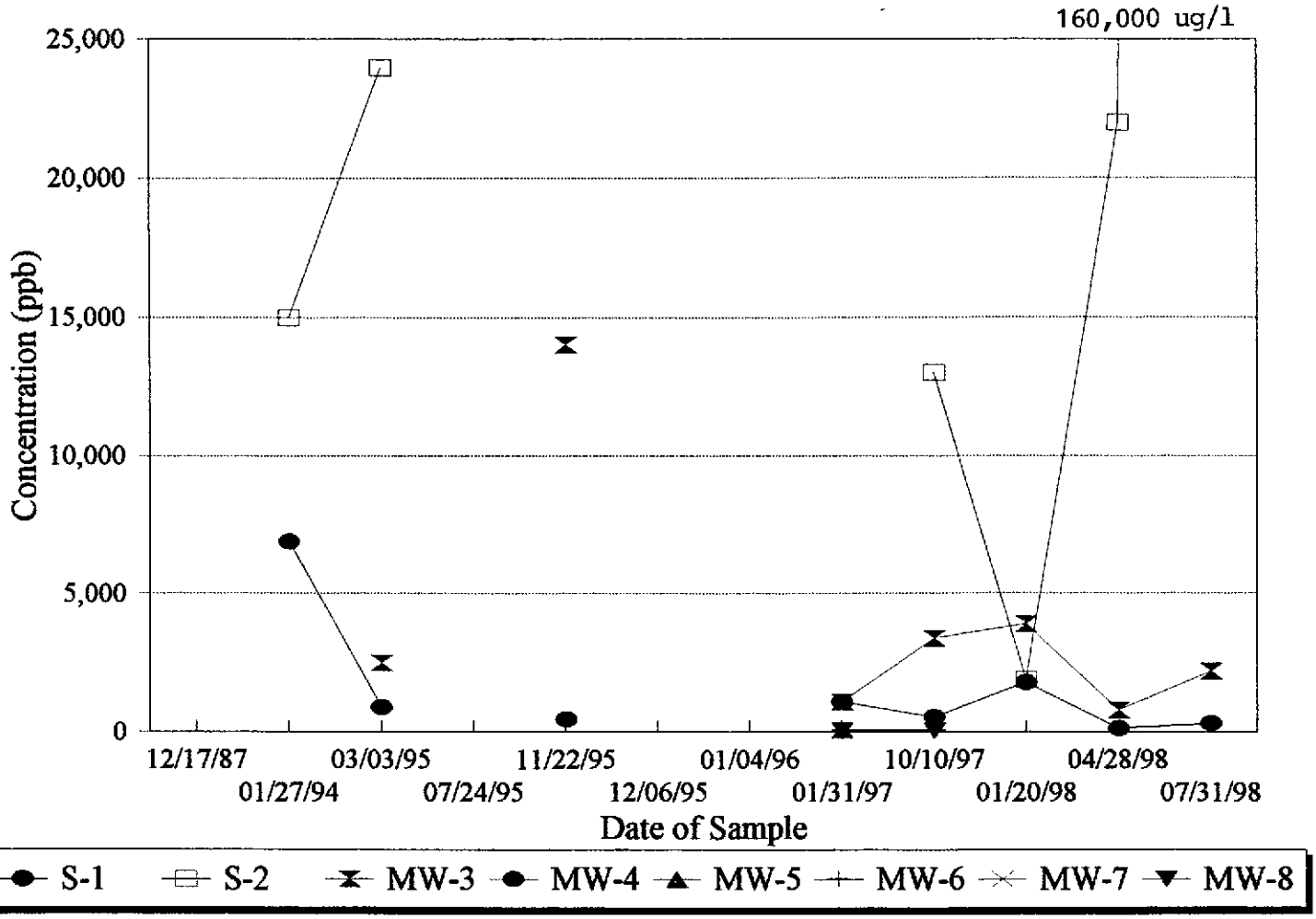
USA # 57 - OAKLAND

Groundwater Hydrograph



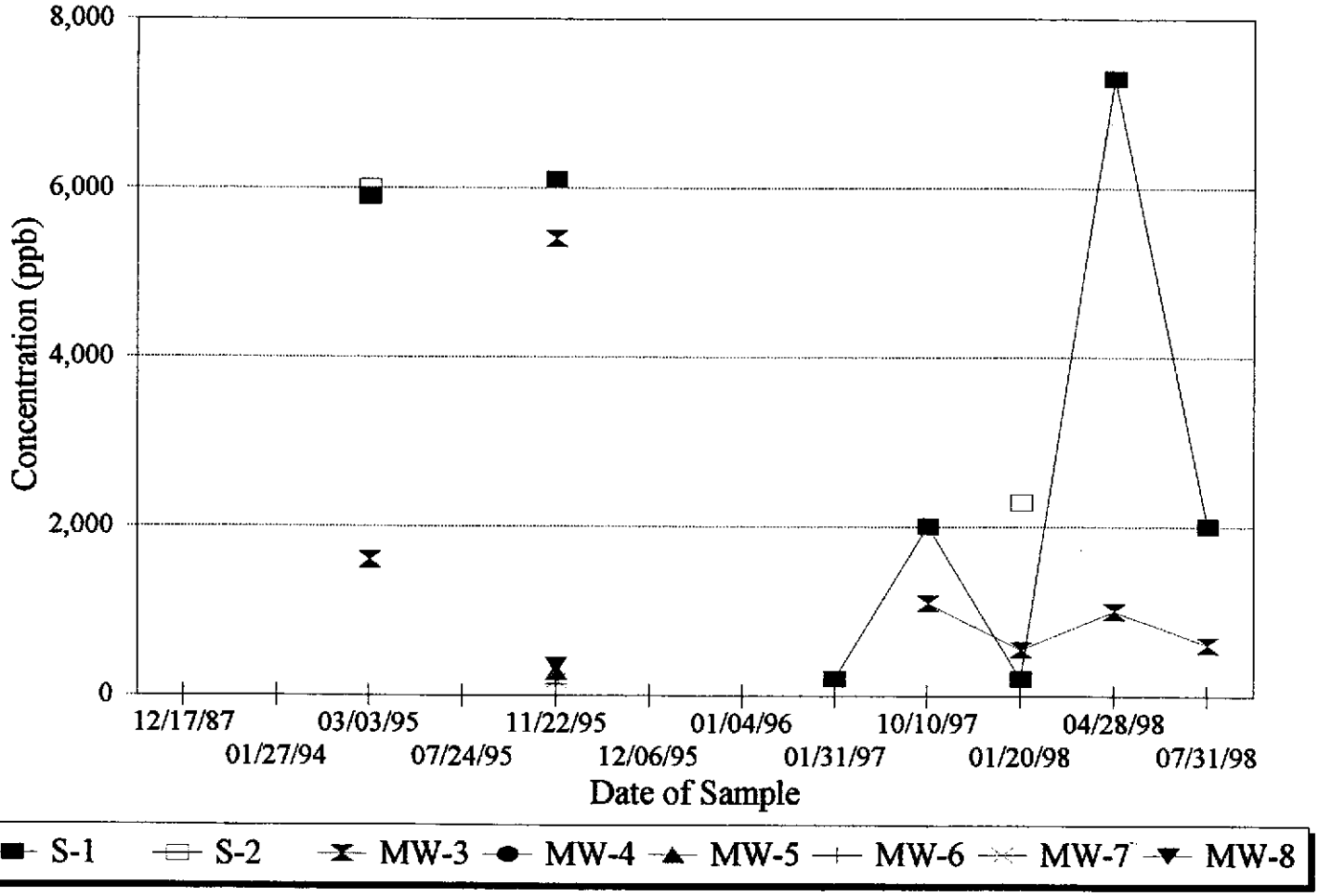
USA # 57 - OAKLAND

TPH G Concentration vs. Time



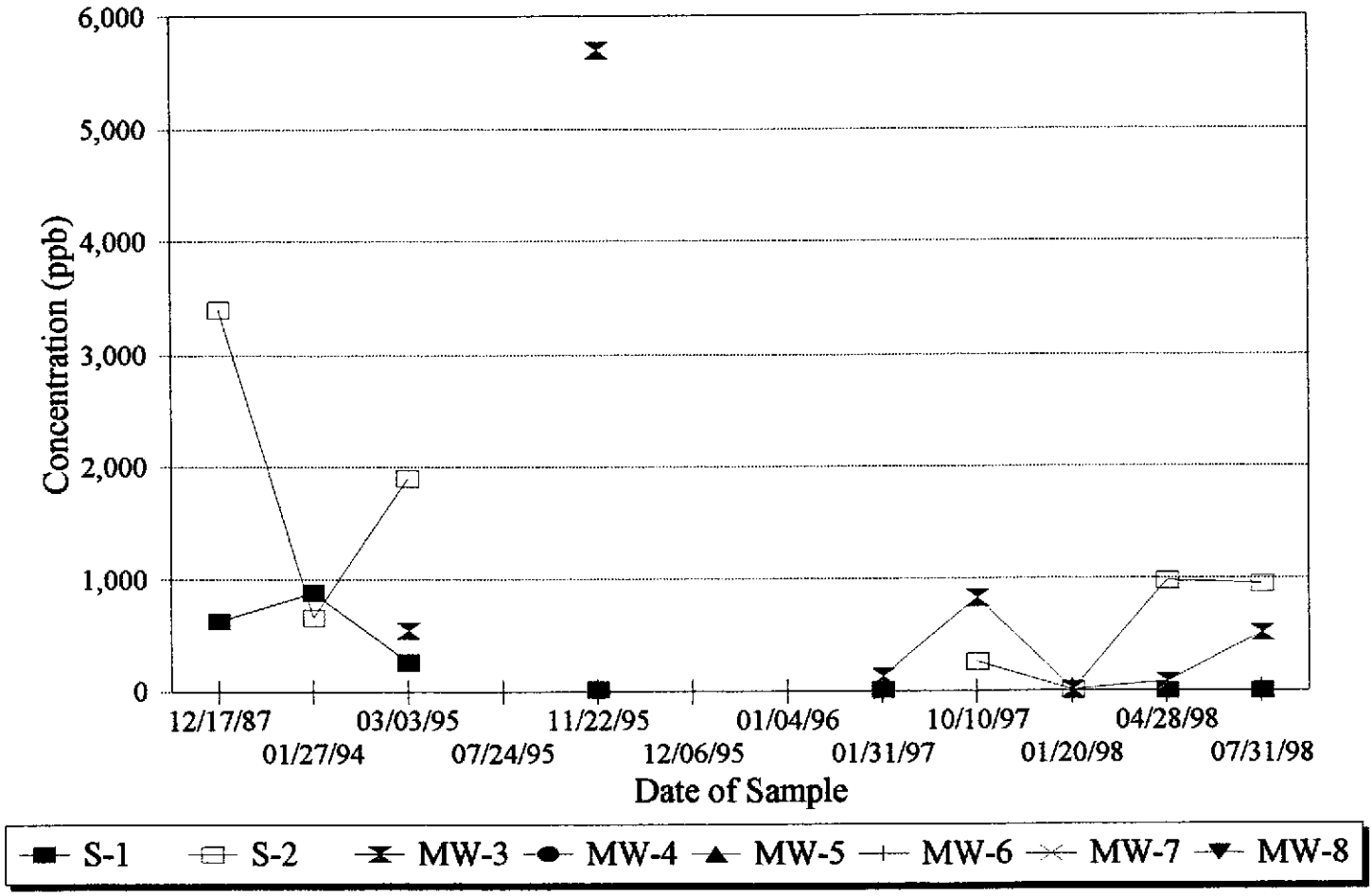
USA #57 - OAKLAND

TPH D Concentration vs. Time



USA STATION #57 - OAKLAND

Benzene Concentrations vs. Time



APPENDIX A

VISTA SITE ASSESSMENT REPORT

SITE ASSESSMENT PLUS REPORT

PROPERTY INFORMATION	CLIENT INFORMATION
Project Name/Ref #: 8665/5090 USA GASOLINE STATION #57 10700 MACARTHUR BLVD OAKLAND, CA 94605 Cross Street: FOOTHILL BLVD 108TH AVE Latitude/Longitude: (37.742586, 122.146834)	VERN BENNETT THE PARK CORP-CITRUS HEIGHTS 8084 OLD AUBURN RD STE E CITRUS HEIGHTS, CA 95610

Site Distribution Summary Agency / Database - Type of Records			within 1/8 mile	1/8 to 1/4 mile	1/4 to 1/2 mile	1/2 to 1 mile
A) Databases searched to 1 mile:						
US EPA	NPL	National Priority List	0	0	0	0
US EPA	CORRACTS	RCRA Corrective Actions	0	0	0	0
US EPA	TSD	RCRA permitted treatment, storage, disposal facilities	0	0	0	0
STATE	SPL	State equivalent priority list	0	0	0	0
B) Databases searched to 1/2 mile:						
US EPA	CERCLIS	Sites under review by US EPA	0	0	0	-
STATE	SCL	State equivalent CERCLIS list	0	0	0	-
STATE REG CO	LUST	Leaking Underground Storage Tanks	1	2	2	-
STATE/ REG/CO	SWLF	Permitted as solid waste landfills, incinerators, or transfer stations	0	0	0	-
STATE	DEED RSTR	Sites with deed restrictions	0	0	0	-
REGIONAL	NORTH BAY	Sites on North Bay Toxic List	0	0	0	-
REGIONAL	SOUTH BAY	Sites on South Bay Toxic List	0	0	0	-
STATE	CORTESE	State index of properties with hazardous waste	0	0	1	-
STATE	TOXIC PITS	Toxic Pits cleanup facilities	0	0	0	-
C) Databases searched to 1/4 mile:						
US EPA	RCRA Viol	RCRA violations/enforcement actions	0	0	-	-
US EPA	TRIS	Toxic Release Inventory database	0	0	-	-
STATE	UST/AST	Registered underground or aboveground storage tanks	0	2	-	-

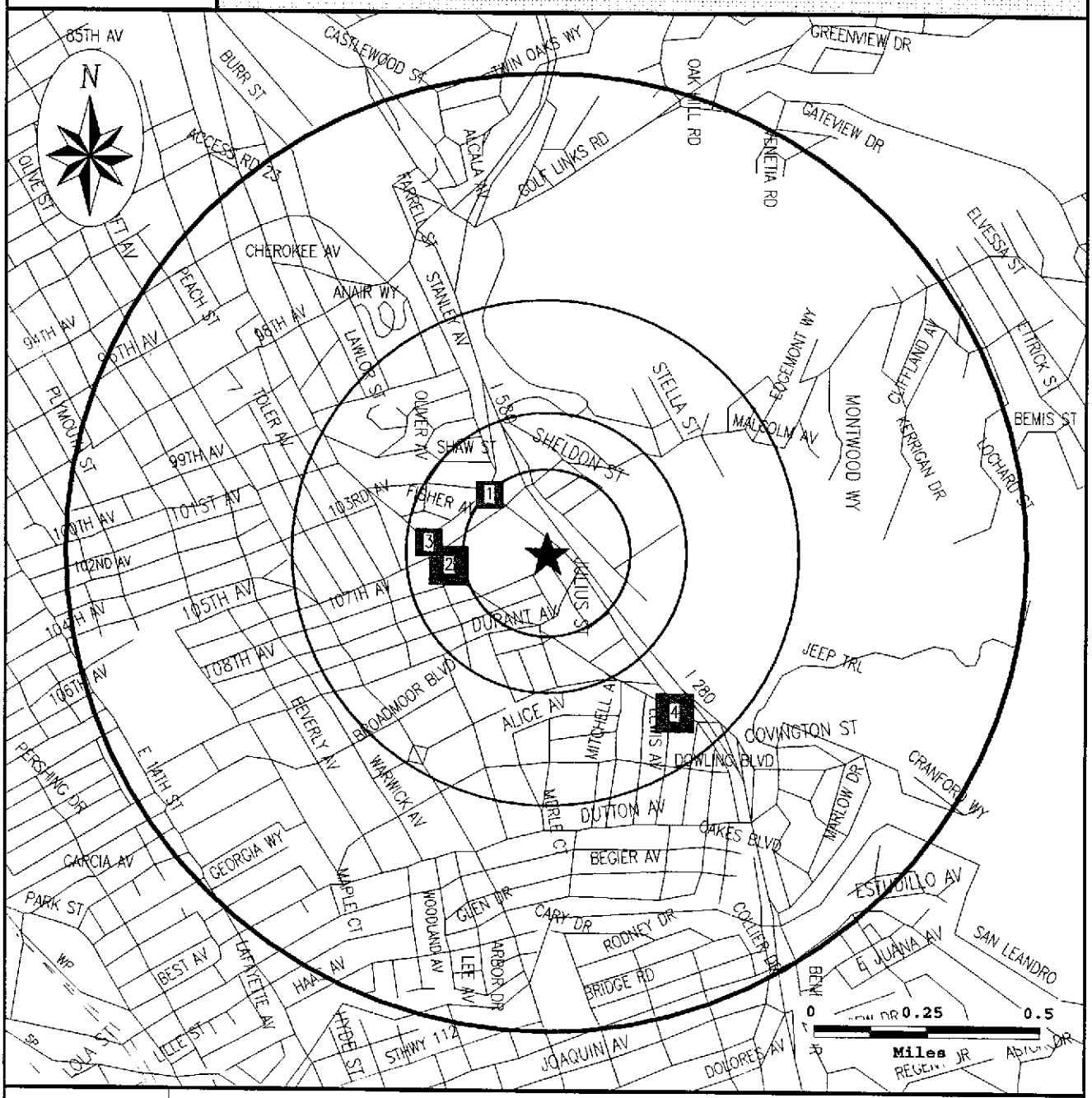
Site Distribution Summary Agency / Database - Type of Records			within 1/8 mile	1/8 to 1/4 mile	1/4 to 1/2 mile	1/2 to 1 mile
D) Databases searched to 1/8 mile:						
US EPA	ERNS	Emergency Response Notification System of spills	0	-	-	-
US EPA	GNRTR	RCRA registered small or large generators of hazardous waste	0	-	-	-

This geographic database search meets the American Society for Testing Materials (ASTM) standards for a government records review. A (-) indicates the search distance exceeds ASTM search parameters.

NOTES

SITE ASSESSMENT PLUS REPORT

Map of Sites within One Mile



Subject Site	Category:	A	B	C	D
★	Databases Searched to:	1 mi.	1/2 mi.	1/4 mi.	1/8 mi.
	Single Sites	◆	■	△	○
	Multiple Sites	◆	■	△	○
		NPL, SPL, TSD, CORRACTS	CERCLIS, SCL, LUST, SWLF	TRIS, UST	ERNS, GENERATORS

Roads
Highways
Railroads
Rivers or Water Bodies
Utilities

If additional databases are listed in the cover page of the report they are also displayed on this map. The map symbol used corresponds to the database category letter A,B,C,D.

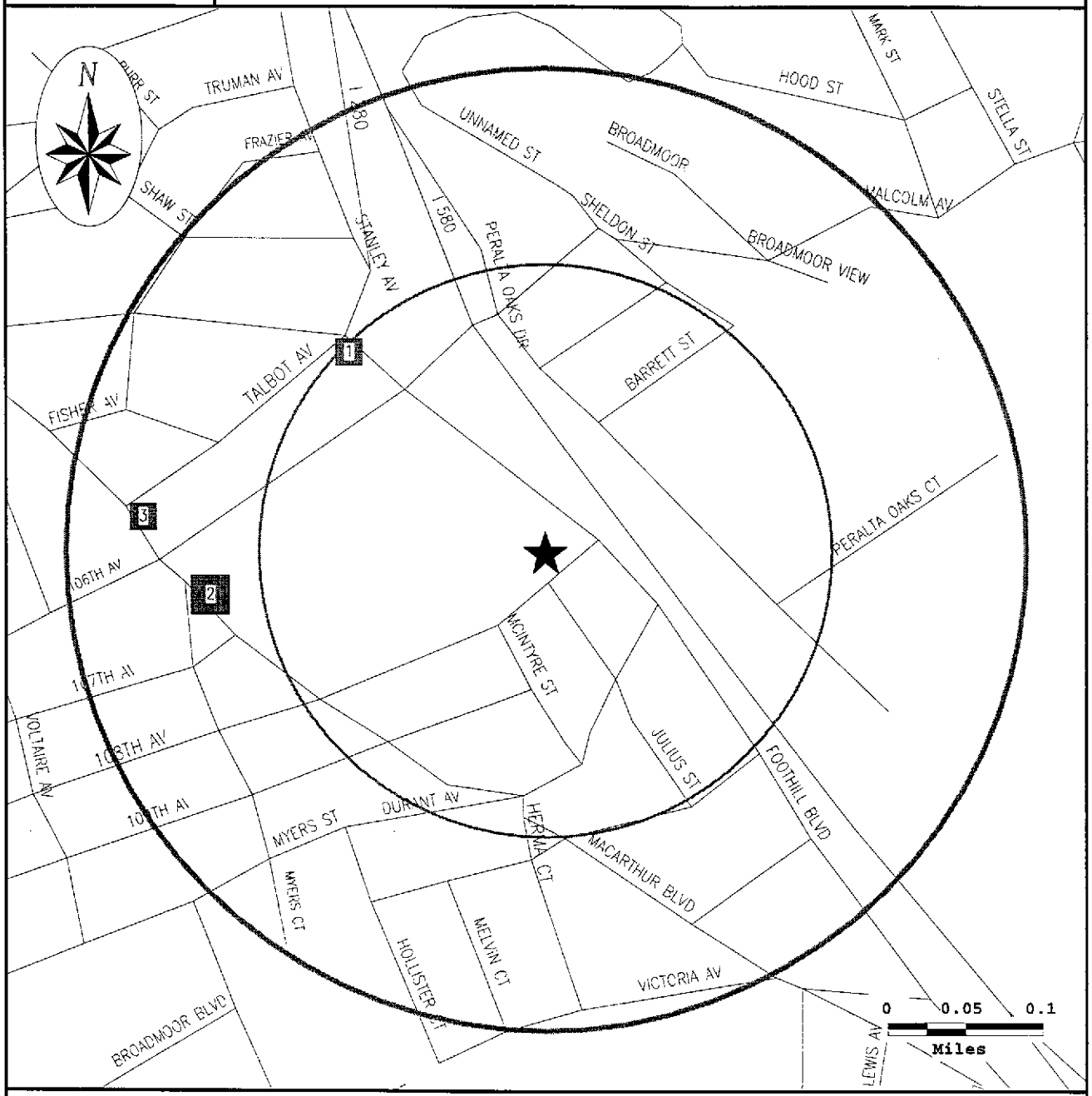
For More Information Call VISTA Information Solutions, Inc. at **1 - 800 - 767 - 0403**

Report ID: **131025-001**

Date of Report: **April 16, 1997**

SITE ASSESSMENT PLUS REPORT

Map of Sites within Quarter Mile



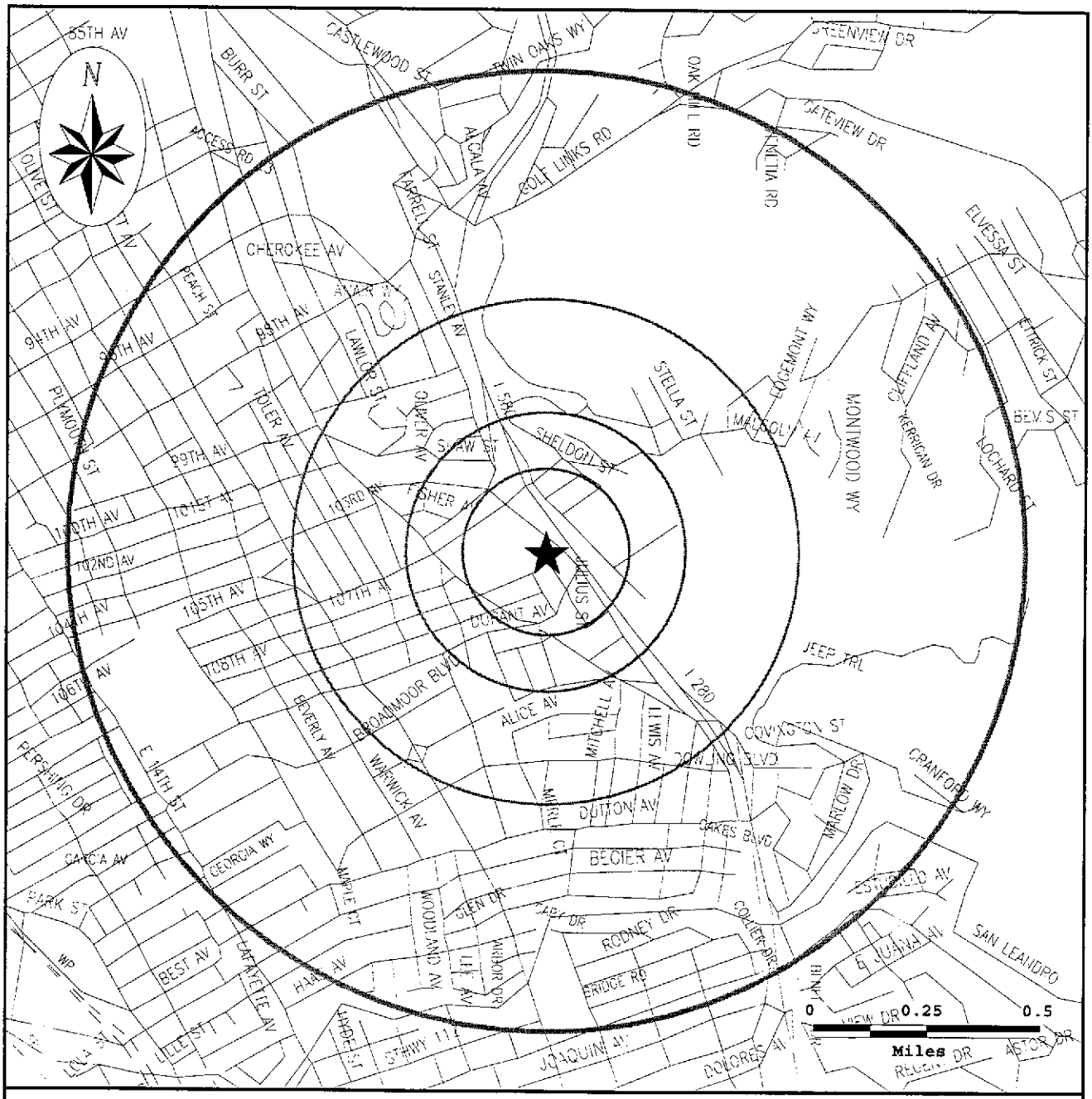
Subject Site	Category: / Databases Searched to:	A 1 mi.	B 1/2 mi.	C 1/4 mi.	D 1/8 mi.
★	Single Sites	◆	■	△	○
	Multiple Sites	◆	■	△	○
		NPL, SPL, TSD, CORRACTS	CERCLIS, SCL, LUST, SWLF	TRIS, UST	ERNS, GENERATORS

Roads
Highways
Railroads
Rivers or Water Bodies
Utilities

If additional databases are listed in the cover page of the report they are also displayed on this map. The map symbol used corresponds to the database category letter A,B,C,D.

SITE ASSESSMENT PLUS REPORT

Street Map



Subject Site ★

Roads, Highways, Rivers, Water Bodies

Railroads, Utilities

SITE ASSESSMENT PLUS REPORT

SITE INVENTORY

MAP ID	PROPERTY AND THE ADJACENT AREA (within 1/8 mile)	VISTA ID / DISTANCE / DIRECTION	A				B										C			D	
			NPL	CORRACTS	TSD	SPL	CERCLIS	SCL	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR
1	7-ELEVEN STORE 2212-19403/CD 10501 FOOTHILL BLVD OAKLAND, CA 94605	1286 0.12 MI NW							X											

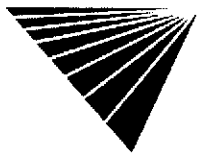
MAP ID	SITES IN THE SURROUNDING AREA (within 1/8 - 1/4 mile)	VISTA ID / DISTANCE / DIRECTION	A				B										C			D	
			NPL	CORRACTS	TSD	SPL	CERCLIS	SCL	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR
2	OLYMPIC GAS STATION 10700 MACARTHUR OAKLAND, CA 94605	4500830 0.16 MI W																X		
2	YOUNGS CLEANERS 10700 MACARTHUR BLVD OAKLAND, CA 94605	3777487 0.16 MI W							X											
3	ARCO 10600 MACARTHUR BLVD OAKLAND, CA 94605	930200 0.20 MI W							X									X		

MAP ID	SITES IN THE SURROUNDING AREA (within 1/4 - 1/2 mile)	VISTA ID / DISTANCE / DIRECTION	A				B										C			D	
			NPL	CORRACTS	TSD	SPL	CERCLIS	SCL	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR
4	SABEK, INC. 635 MACARTHUR BLVD. SAN LEANDRO, CA 94577	3198770 0.36 MI SE							X					X				•		
4	BENNETT'S AUTO REPAIR 735 MACARTHUR BLVD SAN LEANDRO, CA 94577	5355784 0.42 MI SE							X											

MAP ID	SITES IN THE SURROUNDING AREA (within 1/2 - 1 mile)	VISTA ID / DISTANCE / DIRECTION	A				B										C			D	
			NPL	CORRACTS	TSD	SPL	CERCLIS	SCL	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR
No Records Found																					

X = search criteria; • = tag-along (beyond search criteria).

UNMAPPED SITES	VISTA ID	A				B									C			D	
		NPL	CORRACTS	TSD	SPL	CERCLIS	SCL	LUST	SWLF	DEED RSTR	NORTH BAY	SOUTH BAY	CORTESE	TOXIC PITS	RCRA VIOL	TRIS	UST/AST	ERNS	GNRTR
CALIFORNIA AIR CHARTER P O BOX OAKLAND, CA 94603	4037490																X		



X = search criteria; • = tag-along (beyond search criteria).
For more information call VISTA Information Solutions, Inc. at 1 - 800 - 767 - 0403.
Report ID: **131025-001** Date of Report: **April 16, 1997**
Version 2.4.1

SITE ASSESSMENT PLUS REPORT

DETAILS

PROPERTY AND THE ADJACENT AREA (within 1/8 mile)

VISTA Address*:	7-ELEVEN STORE 2212-19403/CD 10501 FOOTHILL BLVD OAKLAND, CA 94605	VISTA ID#:	1286	Map ID
		Distance/Direction:	0.12 MI / NW	1
		Plotted as:	Point	

STATE LUST - State Leaking Underground Storage Tank / SRC# 3343		Agency ID:	4444
Agency Address:	*SAME AS ABOVE*		
Tank Status:	*NOT AVAILABLE*		
Media Affected:	*GROUNDWATER*		
Substance:	*GASOLINE (UNSPECIFIED)*		
Leak Cause:	*UNAVAILABLE*		
Remedial Action:	*NO ACTION TAKEN*		
Remedial Status 1:	*PRELIMINARY ASSESSMENT*		
Remedial Status 2:	*NOT AVAILABLE*		
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*		

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 3486		Agency ID:	01-0002
Agency Address:	*7 ELEVEN* *10501 FOOTHILL BLVD* *OAKLAND, CA 94605*		
Tank Status:	*NOT AVAILABLE*		
Discovery Date:	*DECEMBER 16, 1986*		
Media Affected:	*GROUNDWATER*		
Substance:	*GASOLINE (UNSPECIFIED)*		
Leak Cause:	*STRUCTURAL FAILURE*		
Leak Source:	*UNDERGROUND TANK*		
Remedial Action:	*NO ACTION TAKEN*		
Remedial Status 1:	*PRELIMINARY ASSESSMENT*		
Remedial Status 2:	*NOT AVAILABLE*		
Fields Not Reported:	*Quantity (Units)*		

SITES IN THE SURROUNDING AREA (within 1/8 - 1/4 mile)

VISTA Address*:	OLYMPIC GAS STATION 10700 MACARTHUR OAKLAND, CA 94605	VISTA ID#:	4500830	Map ID
		Distance/Direction:	0.16 MI / W	2
		Plotted as:	Point	

STATE UST - State Underground Storage Tank / SRC# 1612		EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*		
Underground Tanks:	*4*		
Aboveground Tanks:	*NOT REPORTED*		
Tanks Removed:	*NOT REPORTED*		

SITES IN THE SURROUNDING AREA (within 1/8 - 1/4 mile) CONT.

Tank ID:	*1U*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*FIBERGLASS*
Tank Size (Units):	*12000 (GALLONS)*	**Tank Material:**	*UNKNOWN*
Tank ID:	*2U*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*AGENCY REPORTS THE UNDEFINED TERM "OTHER"*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*FIBERGLASS*
Tank Size (Units):	*12000 (GALLONS)*	**Tank Material:**	*UNKNOWN*
Tank ID:	*3U*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*FIBERGLASS*
Tank Size (Units):	*12000 (GALLONS)*	**Tank Material:**	*UNKNOWN*
Tank ID:	*4U*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*DIESEL*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*FIBERGLASS*
Tank Size (Units):	*8000 (GALLONS)*	**Tank Material:**	*UNKNOWN*

VISTA Address*:	**YOUNGS CLEANERS** **10700 MACARTHUR BLVD** **OAKLAND, CA 94605**	VISTA ID#: Distance/Direction: Plotted as:	3777487 0.16 MI / W Point

Map ID **2**

STATE LUST - State Leaking Underground Storage Tank / SRC# 3343 — Agency ID: 875

Agency Address:	*YOUNGS CLEANERS* *10700 MACARTHUR BLVD* *OAKLAND, CA*
Tank Status:	*NOT AVAILABLE*
Media Affected:	*GROUNDWATER*
Substance:	*OTHER AUTO FUELS,OILS,FLUIDS*
Leak Cause:	*UNAVAILABLE*
Remedial Action:	*NO ACTION TAKEN*
Remedial Status 1:	*LEAK BEING CONFIRMED*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 3486 — Agency ID: 01-1955

Agency Address:	*YOUNG CLEANERS* *10700 MACARTHUR BLVD* *OAKLAND, CA 94605*
Tank Status:	*NOT AVAILABLE*
Discovery Date:	*OCTOBER 18, 1988*
Media Affected:	*GROUNDWATER*
Substance:	*OTHER AUTO FUELS,OILS,FLUIDS*
Leak Cause:	*STRUCTURAL FAILURE*
Leak Source:	*UNDERGROUND TANK*
Remedial Action:	*NO ACTION TAKEN*
Remedial Status 1:	*LEAK BEING CONFIRMED*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Quantity (Units)*

SITES IN THE SURROUNDING AREA (within 1/8 - 1/4 mile) CONT.

VISTA Address*:	ARCO 10600 MACARTHUR BLVD OAKLAND, CA 94605	VISTA ID#:	930200	Map ID
		Distance/Direction:	0.20 MI / W	3
		Plotted as:	Point	

STATE LUST - State Leaking Underground Storage Tank / SRC# 3343	Agency ID:	3756

Agency Address:	*SAME AS ABOVE*
Tank Status:	*NOT AVAILABLE*
Media Affected:	*GROUNDWATER*
Substance:	*GASOLINE (UNSPECIFIED)*
Leak Cause:	*UNAVAILABLE*
Remedial Action:	*NO ACTION TAKEN*
Remedial Status 1:	*CONTAMINATION ASSESSMENT*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 3486	Agency ID:	01-0089

Agency Address:	*SAME AS ABOVE*
Tank Status:	*NOT AVAILABLE*
Discovery Date:	*OCTOBER 7, 1988*
Media Affected:	*GROUNDWATER*
Substance:	*GASOLINE (UNSPECIFIED)*
Leak Cause:	*STRUCTURAL FAILURE*
Leak Source:	*UNDERGROUND TANK*
Remedial Action:	*NO ACTION TAKEN*
Remedial Status 1:	*CONTAMINATION ASSESSMENT*
Remedial Status 2:	*NOT AVAILABLE*
Fields Not Reported:	*Quantity (Units)*

STATE UST - State Underground Storage Tank / SRC# 1612	EPA/Agency ID:	N/A

Agency Address:	*ARCO FAC #276* *10600 MACARTHUR* *OAKLAND, CA 94605*
Underground Tanks:	*5*
Aboveground Tanks:	*NOT REPORTED*
Tanks Removed:	*NOT REPORTED*

Tank ID:	*1U*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*FIBERGLASS*
Tank Size (Units):	*10000 (GALLONS)*	**Tank Material:**	*BARE STEEL*
Tank ID:	*2U*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*FIBERGLASS*
Tank Size (Units):	*10000 (GALLONS)*	**Tank Material:**	*BARE STEEL*
Tank ID:	*3U*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*FIBERGLASS*
Tank Size (Units):	*10000 (GALLONS)*	**Tank Material:**	*BARE STEEL*
Tank ID:	*4U*	**Tank Status:**	*ACTIVE/IN SERVICE*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*FIBERGLASS*
Tank Size (Units):	*10000 (GALLONS)*	**Tank Material:**	*BARE STEEL*

SITES IN THE SURROUNDING AREA (within 1/8 - 1/4 mile) CONT.

Tank ID:	*5U*	**Tank Status:**	*CLOSED REMOVED*
Tank Contents:	*OIL(NOT SPECIFIED)*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*UNKNOWN*
Tank Size (Units):	*550 (GALLONS)*	**Tank Material:**	*BARE STEEL*

SITES IN THE SURROUNDING AREA (within 1/4 - 1/2 mile)

Map ID **4**

VISTA Address*:	**SABEK, INC.** **635 MACARTHUR BLVD.** **SAN LEANDRO, CA 94577**	VISTA ID#: Distance/Direction: Plotted as:	3198770 0.36 MI / SE Point

STATE LUST - State Leaking Underground Storage Tank / SRC# 3343		EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*		
Tank Status:	*NOT AVAILABLE*		
Media Affected:	*SOIL/SAND/LAND*		
Substance:	*GASOLINE (UNSPECIFIED)*		
Leak Cause:	*UNAVAILABLE*		
Remedial Action:	*NO ACTION TAKEN*		
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*		
Remedial Status 2:	*NOT AVAILABLE*		
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*		

Regional LUST - Regional Leaking Underground Storage Tank / SRC# 3486		Agency ID:	01-0793
Agency Address:	*SABEK INC* *635 MACARTHUR BLVD* *SAN LEANDRO, CA 94577*		
Tank Status:	*NOT AVAILABLE*		
Discovery Date:	*OCTOBER 6, 1992*		
Media Affected:	*SOIL/SAND/LAND*		
Substance:	*GASOLINE (UNSPECIFIED)*		
Leak Cause:	*STRUCTURAL FAILURE*		
Leak Source:	*UNDERGROUND TANK*		
Remedial Action:	*NO ACTION TAKEN*		
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*		
Remedial Status 2:	*NOT AVAILABLE*		
Fields Not Reported:	*Quantity (Units)*		

CORTESE / SRC# 2298		EPA/Agency ID:	N/A
Agency Address:	*SABEK INC* *635 MACARTHUR BLVD* *SAN LEANDRO, CA*		
List Name:	*LEAKING TANK*		
Site ID:	*INV-ID01-001394*		

SITES IN THE SURROUNDING AREA (within 1/4 - 1/2 mile) CONT.

VISTA Address*:	BENNETT'S AUTO REPAIR 735 MACARTHUR BLVD SAN LEANDRO, CA 94577	VISTA ID#: Distance/Direction: Plotted as:	5355784 0.42 MI / SE Point

Map ID **4**

STATE LUST - State Leaking Underground Storage Tank / SRC# 3343		EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*		
Tank Status:	*NOT AVAILABLE*		
Media Affected:	*SOIL/SAND/LAND*		
Substance:	*WASTE OIL*		
Leak Cause:	*UNAVAILABLE*		
Remedial Action:	*EXCAVATE DISPOSE*		
Remedial Status 1:	*LEAK BEING CONFIRMED*		
Remedial Status 2:	*NOT AVAILABLE*		
Fields Not Reported:	*Discovery Date, Quantity (Units), Leak Source*		

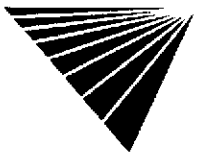
Regional LUST - Regional Leaking Underground Storage Tank / SRC# 3486		Agency ID:	01-1975
Agency Address:	*SAME AS ABOVE*		
Tank Status:	*NOT AVAILABLE*		
Discovery Date:	*MARCH 15, 1991*		
Media Affected:	*SOIL/SAND/LAND*		
Substance:	*WASTE OIL*		
Leak Cause:	*CORROSION*		
Leak Source:	*UNDERGROUND TANK*		
Remedial Action:	*EXCAVATE DISPOSE*		
Remedial Status 1:	*CASE CLOSED/CLEANUP COMPLETE*		
Remedial Status 2:	*NOT AVAILABLE*		
Fields Not Reported:	*Quantity (Units)*		

SITES IN THE SURROUNDING AREA (within 1/2 - 1 mile)

No Records Found

UNMAPPED SITES

Records Found, No Details Displayed



SITE ASSESSMENT PLUS REPORT

DESCRIPTION OF DATABASES SEARCHED

A) DATABASES SEARCHED TO 1 MILE

NPL
SRC#: 3444

VISTA conducts a database search to identify all sites within 1 mile of your property.
The agency release date for NPL was December, 1996.

The National Priorities List (NPL) is the EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. A site must meet or surpass a predetermined hazard ranking system score, be chosen as a state's top priority site, or meet three specific criteria set jointly by the US Dept of Health and Human Services and the US EPA in order to become an NPL site.

SPL
SRC#: 3172

VISTA conducts a database search to identify all sites within 1 mile of your property.
The agency release date for Calsites Database: Annual Workplan Sites was July, 1996.

This database is provided by the Cal. Environmental Protection Agency, Dept. of Toxic Substances Control.

CORRACTS
SRC#: 3441

VISTA conducts a database search to identify all sites within 1 mile of your property.
The agency release date for RCRA Corrective Action Sites List was December, 1996.

The EPA maintains this database of RCRA facilities which are undergoing "corrective action". A "corrective action order" is issued pursuant to RCRA Section 3008 (h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predates RCRA.

RCRA-TSD
SRC#: 3441

VISTA conducts a database search to identify all sites within 1 mile of your property.
The agency release date for RCRIS was December, 1996.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA TSDs are facilities which treat, store and/or dispose of hazardous waste.

B) DATABASES SEARCHED TO 1/2 MILE

CERCLIS
SRC#: 3442

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for CERCLIS was January, 1997.

The CERCLIS List contains sites which are either proposed to or on the National Priorities List(NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL. The information on each site includes a history of all pre-remedial, remedial, removal and community relations activiies or events at the site, financial funding information for the events, and unrestricted enforcement activities.

NFRAP
SRC#: 3443

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for CERCLIS-NFRAP was January, 1997.

NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

Cal Cerclis
SRC#: 2462

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Ca Cerclis w/Regional Utility Description was June, 1995.

This database is provided by the U.S. Environmental Protection Agency, Region 9. These are regional utility descriptions for California CERCLIS sites.

SCL
SRC#: 3171

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Calsites Database: All Sites except Annual Workplan Sites (incl. ASPIS) was July, 1996.

This database is provided by the Department of Toxic Substances Control.

SWLF
SRC#: 2882

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Ca Solid Waste Information System (SWIS) was March, 1996.

This database is provided by the Integrated Waste Management Board.

WMUDS
SRC#: 3373

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Waste Management Unit Database System (WMUDS) was November, 1996.

This database is provided by the State Water Resources Control Board. This is used for program tracking and inventory of waste management units. This system contains information from the following eight main databases: Facility, Waste Management Unit, SWAT Program Information, SWAT Report Summary Information, Chapter 15 (formerly Subchapter 15), TPCA Program Information, RCRA Program Information, Closure Information; also some information from the WDS (Waste Discharge System).

LUST
SRC#: 3169

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Region #2-North and South Bay SLIC Report was March, 1996.

This database is provided by the Regional Water Quality Control Board, Region #2.

LUST
SRC#: 3266

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Region #5-Central Valley SLIC\DOD\DOE List was August, 1996.

This database is provided by the Regional Water Quality Control Board, Region #5.

LUST
SRC#: 3343

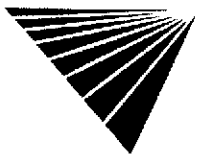
VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Lust Information System (LUSTIS) was October, 1996.

This database is provided by the California Environmental Protection Agency.

LUST RG5
SRC#: 3485

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Region #5-Central Valley Undergound Tank Tracking System was February, 1997.

This database is provided by the Regional Water Quality Control Board, Region #5.



LUST RG2
SRC#: 3486

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Region #2-San Francisco Bay Fuel Leaks List was February, 1997.

This database is provided by the Regional Water Quality Control Board, Region #2.

CORTESE
SRC#: 2298

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Cortese List-Hazardous Waste Substance Site List was February, 1995.

This database is provided by the Office of Environmental Protection, Office of Hazardous Materials.

Deed Restrictions
SRC#: 1703

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Deed Restriction Properties Report was April, 1994.

This database is provided by the Department of Health Services-Land Use and Air Assessment. These are voluntary deed restriction agreements with owners of property who propose building residences, schools, hospitals, or day care centers on property that is "on or within 2,000 feet of a significant disposal of hazardous waste".

Toxic Pits
SRC#: 2229

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for Summary of Toxic Pits Cleanup Facilities was February, 1995.

This database is provided by the Water Quality Control Board, Division of Loans Grants.

North Bay
SRC#: 1718

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for North Bay County Toxic List-Region #2 Surface Spills was April, 1994.

This database is provided by the Regional Water Quality Control Board, Region #2.

South Bay
SRC#: 1719

VISTA conducts a database search to identify all sites within 1/2 mile of your property.
The agency release date for South Bay Site Management System was April, 1994.

This database is provided by the San Francisco Bay Region.

C) DATABASES SEARCHED TO 1/4 MILE

RCRA-Viols/En
SRC#: 3441

VISTA conducts a database search to identify all sites within 1/4 mile of your property.
The agency release date for RCRIS was December, 1996.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Violators are facilities which have been cited for RCRA Violations at least once since 1980. RCRA Enforcements are enforcement actions taken against RCRA violators.

UST's
SRC#: 1612

VISTA conducts a database search to identify all sites within 1/4 mile of your property.
The agency release date for Underground Storage Tank Registrations Database was January, 1994.

This database is provided by the State Water Resources Control Board, Office of Underground Storage Tanks; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

AST's
SRC#: 3370

VISTA conducts a database search to identify all sites within 1/4 mile of your property.
The agency release date for Aboveground Storage Tank Database was November, 1996.

This database is provided by the State Water Resources Control Board.

TRIS
SRC#: 2587

VISTA conducts a database search to identify all sites within 1/4 mile of your property.
The agency release date for TRIS was May, 1995.

Section 313 of the Emergency Planning and Community Right-to-Know Act (also known as SARA Title III) of 1986 requires the EPA to establish an inventory of Toxic Chemicals emissions from certain facilities(Toxic Release Inventory System). Facilities subject to this reporting are required to complete a Toxic Chemical Release Form(Form R) for specified chemicals.

D) DATABASES SEARCHED TO 1/8 MILE

ERNS
SRC#: 3006

VISTA conducts a database search to identify all sites within 1/8 mile of your property.
The agency release date for ERNS was March, 1996.

The Emergency Response Notification System (ERNS) is a national database used to collect information on reported releases of oil and hazardous substances. The database contains information from spill reports made to federal authorities including the EPA, the US Coast Guard, the National Response Center and the Department of transportation. A search of the database records for the period October 1986 through March 1996 revealed information regarding reported spills of oil or hazardous substances in the stated area.

RCRA-LgGen
SRC#: 3441

VISTA conducts a database search to identify all sites within 1/8 mile of your property.
The agency release date for RCRIS was December, 1996.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Large Generators are facilities which generate at least 1000 kg./month of non-acutely hazardous waste (or 1 kg./month of acutely hazardous waste).

RCRA-SmGen
SRC#: 3441

VISTA conducts a database search to identify all sites within 1/8 mile of your property.
The agency release date for RCRIS was December, 1996.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Small and Very Small generators are facilities which generate less than 1000 kg./month of non-acutely hazardous waste.

End of Report

APPENDIX B

SOIL DISPOSAL MANIFESTS

No copies of the manifests are available. According to Mr. Srikanth Dasappa with USA Gasoline Corporation, the soil disposal manifests were submitted to Mr. Barney Chin with Alameda County on September 24, 1998.

APPENDIX C

DOMINICO MODEL RESULTS

DOMINICO MODEL FOR CALCULATING CONCENTRATIONS OF IMPACTED GROUNDWATER AT STEADY STATE

Directions: input all data requested in unshaded areas

Benzene Concentration (ug/l)	Distance to Nearest Receptor (feet)	Decay Rate (/days)	Groundwater Velocity (feet/year)	Width of impacted soil (feet)	Depth of impacted soil (feet)	Dispersion in the Y Direction erf ( )	Dispersion in the Z Direction erf ( )	Error Function of dispersion in the Y Direction	Error Function of dispersion in the Y Direction
5,700	1,800	0.0009	10	20	40	0.015	0.056	0.0172	0.0626

alpha X (feet)	180
alpha Y (feet)	60.00
alpha Z (feet)	18
Groundwater Velocity (feet/day)	0.0274

*At steady state the concentration of benzene at the nearest receptor will be approximately 1.50E-08 ug/l

*If the decay is assumed to be first order reaction then the approx. time to reach steady state will be 81 years

ASSUMPTIONS
- one-dimensional flow and 3-dimensional dispersion
- first-order decay rate based on dissolved and adsorbed phases decaying at the same rate
- medium is isotropic and homogeneous
- source concentration is constant
- aerial source perpendicular to the direction of flow

APPENDIX D

SITE INVESTIGATION REPORTS

Preliminary Site Assessment Investigation, dated March 13, 1987
Pacific Environmental Group
UST's Removal Soil Sampling and Over-Excavation, dated October 6, 1994
Western Geo-Engineers
Supplementary Site Assessment Report, dated April 24, 1995
Alton Geoscience
Supplementary Site Assessment Report, dated February 26, 1996
Alton Geoscience

PRELIMINARY SITE ASSESSMENT INVESTIGATION

USA SERVICE STATION #57

OAKLAND, CALIFORNIA

Submitted to

GETTLER-RYAN INC.

March 13, 1987

Project 100-22.01

PACIFIC ENVIRONMENTAL GROUP, INC.

1601 Civic Center Drive, Suite 202, Santa Clara, CA 95050

(408) 984-6536

TABLE OF CONTENTS

PRELIMINARY SITE ASSESSMENT INVESTIGATION
USA SERVICE STATION #57
OAKLAND, CALIFORNIA

INTRODUCTION

This report documents an investigation to assess the impact of site activities on soil and ground water at USA service station #57, located at 10700 MacArthur Boulevard (Foothill Boulevard at 108th Avenue) in Oakland, California. Pacific Environmental Group, Inc. (PACIFIC) performed the investigation for Gettler-Ryan Inc. on behalf of Shell Oil Company, which is considering acquisition of the site. The purpose of the investigation was to collect data which would be useful in determining possible underground contamination at the site.

The scope of work included exploratory drilling, observation well installation, and soil and ground water sampling and analysis. Detailed descriptions of the field procedures, analytical techniques, and descriptions of the regional hydrogeology and regulatory perspective are included in the Appendices to this report. The last appendix presents a remedial-action cost estimate prepared by Gettler-Ryan Inc.

SITE CONDITIONS

General

The project site is located on the northwestern corner of Foothill Boulevard and 108th Avenue in the southeastern corner of the City of Oakland (See Figure 1). The site is located at the rear of a shopping center at 10700 MacArthur Boulevard. The local land-use is high-density residential and commercial.

The City provides water and sanitary sewer to the site and surrounding developments.

Site Operations

A gasoline service station currently operates on the site. The site layout is shown on Figure 2. Three 12,000-gallon steel underground storage tanks exist at the site; these tanks store regular leaded gasoline, unleaded regular gasoline and premium unleaded gasoline. An 8,000-gallon steel tank stores diesel fuel. No waste oil tank exists at the site. The site has three service islands, and no leak detection system. The site operator reported that no product leaks or spills have occurred at the site.

FIELD INVESTIGATION

Based on site conditions as disclosed through research and reconnaissance, a total of six exploratory borings were drilled at the site, and two of these were converted to observation wells. The boring and well locations were selected in accordance with Shell Oil Company guidelines. Borings were placed at the western (downgradient) ends of the service islands, on the west side of the main tank complex, and on the west side of the diesel tank. The two borings adjacent to the tanks were converted to observation wells. The boring and well locations are shown on the Site Plan, Figure 2. Detailed descriptions of the field procedures and boring logs are included in Appendix A.

Results

The six exploratory borings drilled at the site encountered similar conditions. The site is underlain by alluvial silty clays and clayey sands to a depth of approximately 22 feet. Below this depth, deeply weathered claystone and sandstone was encountered, extending to at least the maximum exploration depth of 40 feet. The claystone and sandstone may represent older, consolidated alluvium or bedrock of the Diablo Range. Borings A, B, C, and D were terminated at a depth of 20 feet and did not encounter ground water. Ground water was encountered at a depth of approximately 38 feet in fractured sandstone in Boring S-1 and at 31 feet in Boring S-2, and it slowly stabilized to an average depth of 15 feet, the day after well completion. Ground water at the site is confined due to the low-permeability clayey materials overlying the fractured sandstone. With only two on-site wells, the local gradient and flow direction cannot be calculated.

ANALYTICAL RESULTS

Selected soil samples were analyzed for total hydrocarbons according to EPA Method 413.2. Water samples from each observation well were analyzed for volatile organic compounds, including benzene, toluene, xylenes, and ethyl benzene (BTX), according to EPA Method 602. Various other samples were analyzed for quality assurance/quality control (QA/QC) purposes, as described below. The analytical techniques are described in Appendix C, which also contains the Certified Analytical Reports. Table 1 (page 3) summarizes the analytical results.

Soils

The soil samples from the exploratory borings showed variable concentrations of total hydrocarbons. The highest concentration was found in the sample from Boring S-2 (24-25.5 feet), with a total hydrocarbons concentration of 600 parts per million (ppm). This boring was located on the northwest side of the tank complex.

TABLE 1

SUMMARY OF ANALYTICAL RESULTS

Soil Samples

Boring No.	Depth (ft)	Total Hydrocarbons (ppm)
A	13.5-15	16
B	18.5-20	4
C	18.5-20	ND
D	9-10.5	2
S-1	19-20.5	42
S-1	19-20.5	16
S-2	24-24.5	600
Fill Box		410

Ground-Water Samples

Well No.	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
S-1	630	4.4	37
S-2	3,400	3,800	11,000

QA/QC Water Samples

Duplicate S-1	630	3.2	36
Field Blank	ND	ND	ND
Cleaning Blank	ND	2.3	5.2
Rinsate S-1	ND	ND	ND

Note: "ND" denotes concentration below detection limit. (See Appendix B.)

Borings A (13.5-15 feet) and S-1 (19-20.5 feet), located northwest of the southernmost island and the diesel tank, contained low concentrations of total hydrocarbons, 16 and 42 ppm. Borings B (18.5 -20 feet), C (18.5-20 feet) and D (9-10.5 feet) had the lowest concentrations, from not detectable to 4 ppm. Borings B and C were located at the northwest ends of pumping islands, and Boring D was located adjacent to the product line at the southeast end of the middle pump island.

Ground Water

The ground-water sample from Well S-1, which is located adjacent to the gasoline tank complex, had high concentrations of BTX, ranging from 3,400 parts per billion (ppb) benzene to 11,000 ppb xylenes. This well had a sheen of floating product at the time of sampling. Well S-2 showed high benzene levels (630 ppb), but much lower concentrations of toluene (4.4 ppb) and xylenes (37 ppb).

Quality Assurance/Quality Control Samples

A number of additional samples were collected and analyzed in fulfillment of QA/QC procedures required by Shell Oil Company. The results are discussed below.

Duplicate soil samples from Boring S-1 (19-20.5 feet) were analyzed; total hydrocarbons measured 42 ppm and 16 ppm. These numbers are comparable, allowing for soil inhomogeneity. Duplicate water samples were taken from Well S-1, and the results were almost identical.

The field blank showed non-detectable concentrations of BTX. The pump cleaning blank showed low concentrations of toluene and xylenes (2.3 and 5.2 ppb), and non-detectable benzene. This sample was collected after sampling Well S-2, which had very high concentrations of BTX. The pump was not re-used at the site.

The organic-free water used as the final rinse on the split-spoon sampler (rinsate S-1) showed non-detectable concentrations of BTX.

CONCLUSIONS

Based on the results of this investigation, the following conclusions have been reached:

Ground water occurs at the site under confined conditions, with stabilized water levels at a depth of approximately 15 feet below grade. The ground water flow direction is assumed to be toward the southwest, following topography.

The site has been impacted by petroleum product loss, which has reached the underlying ground water. A sheen of floating product and dissolved components of gasoline (BTX) were found in Well S-1, located adjacent to the tank complex. Well S-2, located farther downgradient of the tank complex had a fairly

high benzene concentration, and much lower concentrations of toluene and xylenes. These relative concentrations may indicate a recent product loss, as the dissolved benzene normally migrates downgradient faster that the other constituents.

The extent of the dissolved product plume is not determined at present, insofar as the only two on-site wells exist. Additional observation wells would be required to determine the extent of the plume and its direction of movement.

Since municipal water is available to the residences in the site vicinity, it is unlikely that the nearby wells are used for drinking water. Thus, based on local water use, a relatively low potential exists for the impacted ground water to migrate off-site and affect water resources. However, the potential does exist for the plum to move off-site toward the nearby irrigation wells. This potential should be further evaluated by conducting an inventory of local wells, detailing well construction and particularly well activity. Additional information may be available from the Alameda County Flood Control and Water Conservation District and the California Department of Water Resources.

Results of the detailed well inventory may indicate the need for additional observation wells between the site and any usable water supply wells. These wells would also help to establish the extent of migration of the plume. If ground-water resources are threatened, ground-water remediation may be warranted.

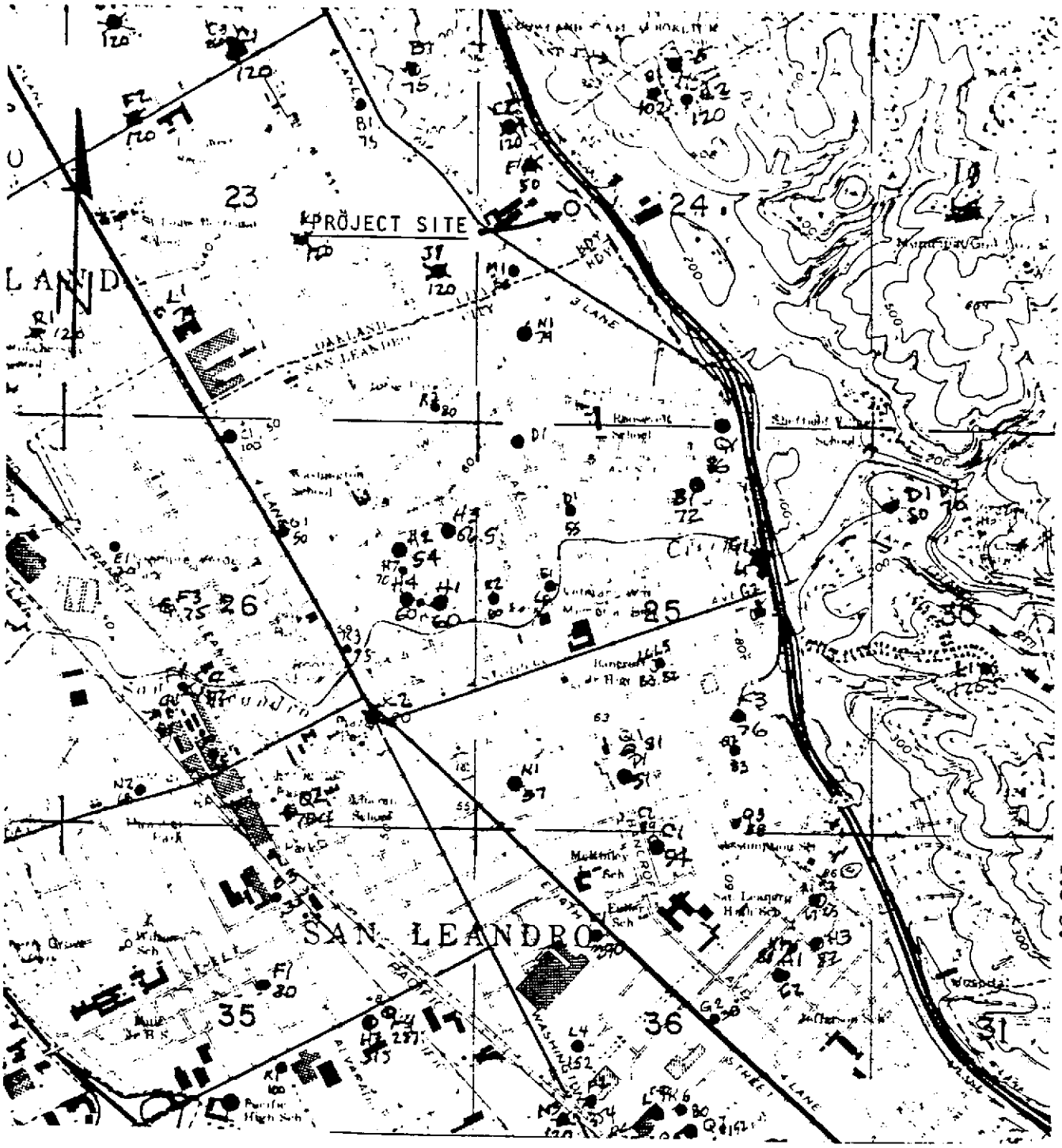
If you have questions regarding the contents of this report, please call.

Respectfully Submitted,

PACIFIC ENVIRONMENTAL GROUP, INC.

Debra Moser
Senior Geologist
CEG 1293

Susan Willhite
Project Manager



NI 57 ● Well location, designation, and depth (ft)

SCALE: 1" = 2000'

PACIFIC ENVIRONMENTAL GROUP, INC.

PRELIMINARY SITE ASSESSMENT INVESTIGATION
USA SERVICE STATION #57
OAKLAND, CALIFORNIA

LOCATION MAP

FIGURE 1

PROJECT NO. 100-22.01

APPENDIX A

FIELD PROCEDURE AND BORING LOGS

APPENDIX A

FIELD PROCEDURES

SITE INVESTIGATION PROCEDURES

The site investigation program consisted of exploratory drilling, soil sampling, observation well installation, field chemical analysis of soil samples, and water sampling. The procedures are described below.

Exploratory Drilling and Cleaning Procedures

All borings were drilled using eight-inch diameter hollow-stem auger drilling equipment and were logged by a PACIFIC geologist using the Unified Soil Classification System and the Subsurface Investigation Activity Guide (Exhibit E) provided by Shell Oil Company. Boring logs are included in this Appendix.

Between soil sampling events, the sampler was triple-rinsed, first in clear water, then in detergent, and finally in clean water. Between borings, the sampler received a fourth rinse with organic-free water. If evidence of contamination was noted during drilling of any boring, the augers and sampler were steam cleaned before drilling another boring.

Soil Sampling

Soil samples for logging and laboratory analysis were collected whenever possible at approximately 5-foot depth intervals by advancing a California-modified split-spoon sampler with clean brass liners into undisturbed soil beyond the tip of the auger. The split-spoon sampler was driven a maximum of 18 inches, using a 140-pound hammer with a 30-inch drop. The number of hammer blows required for each 6-inch advance was noted and recorded on the boring log.

After the sampler was withdrawn from the borehole, the amount of sample recovery was noted on the logs, and the brass liners holding the soil samples were removed. Up to two of these liners from each sample interval were wrapped in aluminum foil and chilled for possible laboratory analysis. Samples selected for laboratory analysis were sealed in glass jars, labeled, logged onto chain-of-custody forms, and stored on ice for transport. Another portion of the sample was retained for the field chemical analysis, described below.

Well Construction/Exploratory Boring Abandonment

Borings S-1 and S-2 were advanced a maximum of 10 feet into the water-bearing zone, taking care not to fully penetrate a 5-foot-thick aquitard.

After the drilling, observation wells were constructed using 3-inch diameter, Schedule 40 PVC casing and 0.020-inch factory-slotted screen. The screen was placed through the entire saturated section, extending approximately 20 feet above the first-encountered water level. Graded sand pack was placed in the annular space across the screened interval, and it extended approximately 3 feet above the screen. A bentonite and concrete seal extends from the sand pack to the ground surface. Locking caps and protective vault boxes were installed by Gettler-Ryan on all wells.

The exploratory borings which were not completed as observation wells (Borings A, B and C) were abandoned by backfilling with concrete to a depth of 5 feet, then native soils to a depth of six inches and then capping with concrete.

Field Chemical Analysis

A portion of each soil sample was used to perform a head-space test in the field for volatile organic compounds. The test procedure involved measuring approximately 30 grams from an undisturbed soil sample, placing this sub-sample in a clear glass jar, and covering the jar with aluminum foil secured under a ring-type threaded lid. The jar was placed in a warm water bath (75 to 90 degrees F) for approximately twenty minutes. Then the foil was pierced and the head-space within the jar was tested for total organic vapor, measured in parts per million, with an H-NU photo-ionization detector. The results of these tests appear on the boring logs.

Water Sampling Procedure

Ground-water sampling was performed by Blaine Technical Services of San Jose, California. Their sampling procedures are summarized below.

Before sampling, fluid levels were measured in each well using a clean tape measure. Next, all observation wells were checked for the presence of floating petroleum product, using a clean, clear acrylic bailer. No floating product was detected, so all of the wells were purged and sampled by the following technique:

Each well was purged of a minimum of four casing volumes using a Geotech bladder pump constructed of stainless steel and Teflon. If the well discharge was extremely turbid, additional purging was performed to aid in well development. After the purging, water samples were collected from the pump discharge and placed into appropriate EPA-approved containers. All purge water was drummed in clean Department of Transportation-approved containers. The ground-water samples were labeled, logged onto chain-of-custody documents, and placed on ice for transport.

All sampling equipment was cleaned before sampling each well, by steam-cleaning, rinsing and flushing for a minimum of fifteen minutes. This process equates to a minimum of 40 pump volumes.

WELL LOG
KEY TO ABBREVIATIONS

Drilling Method
- HSA - Hollow stem auger
- CFA - Continuous flight auger
- Air - Reverse air circulation

Gravel Pack
- CA - Coarse aquarium sand

Sampling Method
- Cal. Mod. - California modified split-spoon sampler (2" inner diameter) driven 18" by a 140-pound hammer having a 30" drop. Where penetration resistance is designated "P", sampler was instead pushed by drill rig.
- Disturbed - Sample taken from auger-return materials as they surfaced.
- n/a - Not applicable

Moisture Content
- Dr - Dry
- Dp - Damp
- Mst - Moist
- Wt - Wet
- Sat - Saturated

Sorting
- PS - Poorly sorted
- MS - Moderately sorted
- WS - Well sorted

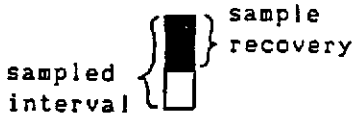
Plasticity
- L - Low
- M - Moderate
- H - High

H-NU (ppm)
- ND - No detection

Density

Sands and gravels	Silts and clays
VL - Very loose	VS - Very soft
L - Loose	Sft - Soft
MD - Medium dense	MSt - Medium Stiff
D - Dense	Stf - Stiff
VD - Very dense	VSt - Very stiff
	Hd - Hard

Symbols
- ▽ - First encountered ground water
- ▼ - Static ground water level



GRAIN-SIZE SCALE

GRADE LIMITS inches	GRADE LIMITS U.S. Standard sieve size	GRADE NAME
12.0		Boulders
3.0	3.0 in.	Cobbles
0.19	No. 4	Gravel
	coarse	
0.08	No. 10	
	medium	Sand
	No. 40	
	fine	
	No. 200	
		Silt
		Clay Size

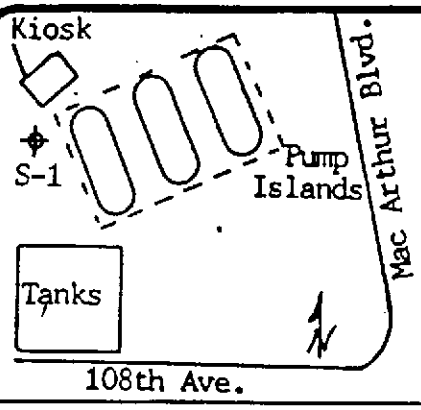
PACIFIC ENVIRONMENTAL GROUP, INC.

UNIFIED SOIL CLASSIFICATION SYSTEM

PRIMARY DIVISIONS			GROUP SYMBOL	TYPICAL NAMES
COARSE GRAINED SOILS more than half is larger than #200 sieve	GRAVELS half of coarse fraction larger than #4 sieve	CLEAN GRAVELS (less than 5% fines)	GW	Well graded gravels, gravel-sand mixtures; little or no fines
			GP	Poorly graded gravels or gravel-sand mixtures; little or no fines
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS half of coarse fraction smaller than # 4 sieve	CLEAN SANDS (less than 5% fines)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS more than half is smaller than #200 sieve	SILTS AND CLAYS liquid limit less than 50%		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
	SILTS AND CLAYS liquid limit less than 50%		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 silts
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils

PACIFIC ENVIRONMENTAL GROUP, INC.

JOB NO. 100-22.01



SHELL OIL COMPANY -- WELL LOG

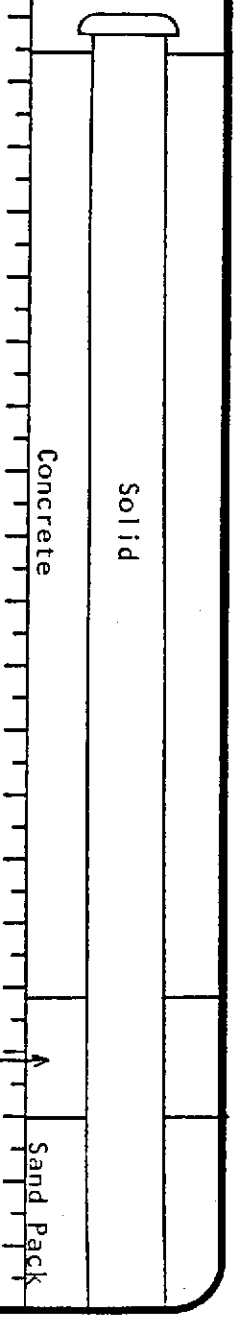
WELL NUMBER ▶ S-1	LOCATION ▶ Oakland		
DATE ▶ 2/12/87	WEATHER ▶ Cool, rain		
LOGGED BY ▶ DM	DRILLED BY ▶ Bayland: Ed, Curt		
DRILLING METHOD ▶ HSA	SAMPLING METHOD ▶ Cal. Mod.		
GRAVEL PACK ▶ CA	SEAL ▶ Bentonite & concrete		

CASING ▶ TYPE Schedule 40 PVC DIAMETER 3" LENGTH 20' HOLE DIA 8"

SCREEN ▶ TYPE Schedule 40 PVC SLOT .020" DIAMETER 3" LENGTH 20' TOTAL DEPTH 40'

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	H-NU (ppm)	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY / REMARKS
						0			Concrete
						1			(CL) olive-brown silty clay
						2			
						3			
Dp			M		ND	4		P	(minor sand; no odor)
						5			(gravelly at 5')
						6			
						7			
						8			
Dp	MS	VD				9		8	(SC) dark yellowish-brown clayey sand; trace find gravel; no odor
					ND	10		25	
						1		45	
						2			
						3			
						4		15	
Dp	MS	VD			38	5		30	(very silty, slight odor)
						6		50	
						7			
						8			
						9		6	
Dp	MS	VD			102			15	(very fine grained; moderate to strong odor)

WELL COMPLETION



PACIFIC ENVIRONMENTAL GROUP, INC.

JOB NO. 100-22.01

LOCATION MAP

See page 1 for details.

SHELL OIL COMPANY -- WELL LOG

WELL NUMBER ▶ S-1	LOCATION ▶ Oakland
DATE ▶	WEATHER ▶
LOGGED BY ▶	DRILLED BY ▶
DRILLING METHOD ▶	SAMPLING METHOD ▶
ELEVATION ▶	GRAVEL PACK ▶ / SEAL ▶

CASING ▶ TYPE | DIAMETER | LENGTH | HOLE DIA

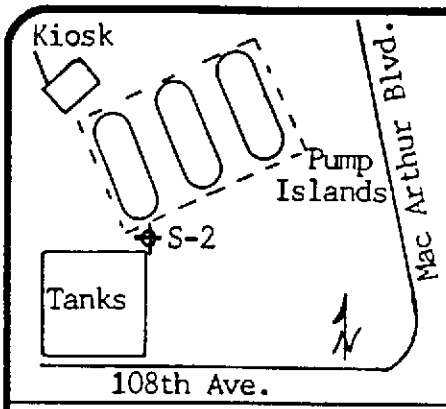
SCREEN ▶ TYPE | SLOT | DIAMETER | LENGTH | TOTAL DEPTH

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	H-NU (ppm)	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY / REMARKS
						20		15	(SC) continued
								25	
						1			
						2			(harder drilling)
						3			
Dr-Dp	PS	VD			ND	4		50	yellowish-brown silty sandstone; deeply weathered; fractured; trace clay; no odor
						5			
						6			
						7			
						8			
Dp		Hd			1	9		30	yellowish-brown claystone; no odor
								50	
						30			
						1			
						2			
						3			
						4		30	(very closely fractured; deeply weathered; no odor to very slight odor)
Dp		Hd			ND	5		50	
						6			
						7			
						8			dark grayish-brown silty sandstone; fractured
						9		50	
Wt	PS	VD							Total Depth = 40'

WELL COMPLETION: Sand Pack; Screens

PACIFIC ENVIRONMENTAL GROUP, INC.

JOB NO. 100-22.01



SHELL OIL COMPANY -- WELL LOG

PAGE 1 OF 2

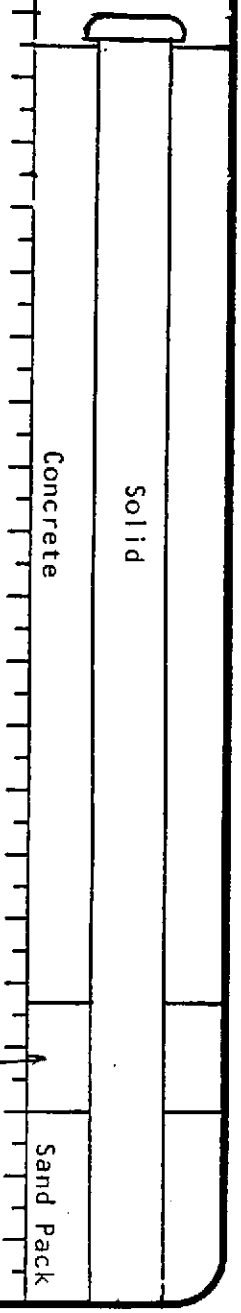
WELL NUMBER	S-2	LOCATION	Oakland
DATE	2/12/87	WEATHER	cool, rainy
LOGGED BY	DM	DRILLED BY	Bayland: Ed, Curt
DRILLING METHOD	HSA	SAMPLING METHOD	Cal. Mod.
GRAVEL PACK	CA	SEAL	bentonite & concrete

CASING ▶ TYPE Schedule 40 PVC DIAMETER 3" LENGTH 20' HOLE DIA 8"

SCREEN ▶ TYPE Schedule 40 PVC SLOT .020" DIAMETER 3" LENGTH 20' TOTAL DEPTH 40'

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	H-NU (ppm)	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY / REMARKS
						0			concrete
						1			(CL) gray silty clay; no odor
						2			
						3			
Dp	WS				ND	4		P	(SM) dark yellowish-brown silty sand; very fine-grained; no odor
						5			
						6			
						7			
						8			
Dp		Hd	L		4.4	9		11	(CL) dark yellowish-brown sandy clay; very silty; moderate odor
						10		22	
						1		30	
						2			
						3			
Dp		VSt	L		127	4		P	(CL-ML) dark grayish-brown silty clay to clayey silt; no odor
						5			
						6			
						7			
						8			
Dp	PS					9			(SC) dark yellowish-brown clayey sand; some gravel; silty; very fine-grained; no odor

WELL COMPLETION



PACIFIC ENVIRONMENTAL GROUP, INC.

JOB NO. 100-22.01

LOCATION MAP

See page 1 for details.

SHELL OIL COMPANY -- WELL LOG

WELL NUMBER ▶ S-2		LOCATION ▶ Oakland	
DATE ▶		WEATHER ▶	
LOGGED BY ▶		DRILLED BY ▶	
DRILLING METHOD ▶		SAMPLING METHOD ▶	
GRAVEL PACK ▶		SEAL ▶	

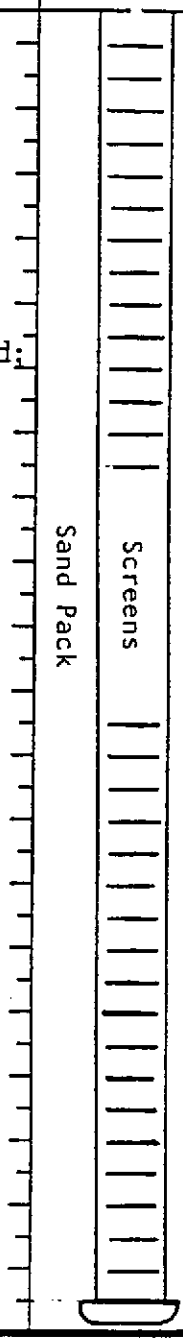
ELEVATION ▶

CASING ▶ TYPE | DIAMETER | LENGTH | HOLE DIA

SCREEN ▶ TYPE | SLOT | DIAMETER | LENGTH | TOTAL DEPTH

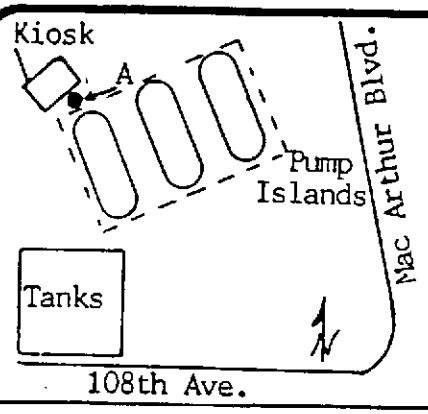
MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	H-NU (ppm)	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY / REMARKS
						20			(SC) continued
						1			
						2			
						3			
Dp	P				152	4		P	dark yellowish brown to dark grayish-brown sandstone; fractured; weathered; no odor
						5			
						6			
						7			
						8			
						9			
Dp	P	VD				30		P	(very closely fractured; very strong odor)
						1	▽		
						2			
						3			
Wt		VD				4		P	(fractured; moderate odor)
						5			
						6			
						7			
						8			
Wt		VD				9		P	(fractured; weathered; no odor) total depth = 40'

WELL COMPLETION



PACIFIC ENVIRONMENTAL GROUP, INC.

JOB NO. 100-22.01



SHELL OIL COMPANY -- WELL LOG

PAGE 1 OF 1

WELL NUMBER ▶ Boring A		LOCATION ▶ Oakland	
DATE ▶ 2/12/87		WEATHER ▶ cool, rainy	
LOGGED BY ▶ DM		DRILLED BY ▶ Bayland: Ed, Curt	
DRILLING METHOD ▶ HSA		SAMPLING METHOD ▶ Cal. Mod.	
GRAVEL PACK ▶ n/a		SEAL ▶ concrete	

CASING ▶ TYPE n/a DIAMETER n/a LENGTH HOLE DIA 8"

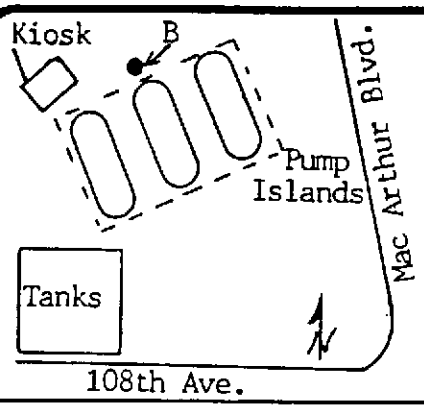
SCREEN ▶ TYPE n/a SLOT n/a DIAMETER n/a LENGTH TOTAL DEPTH 20'

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	H-NU (ppm)	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY / REMARKS	WELL COMPLETION
						0			concrete	
						1			asphalt	
									(CL) olive silty clay; brown mottling	
						2				
						3				
Dp	PS				ND	4		P	(SC) olive-gray clayey sand; little gravel; no odor	
						5				
						6				
						7				
						8				
Dp		Hd	L		ND	9		8	(CL) dark yellowish-brown sandy clay; some silt; trace fine gravel; no odor	
						10		18		
								20		
						1				
						2				
						3				
						4		12		
Dp		Hd	L		8.3			20	(increasing sand and fine gravel; slight odor)	
						5		30		
						6				
						7				
						8				
						9			(SC) dark yellowish-brown clayey sand; some gravel; no odor	
Dp					4.6				total depth = 20'; no water encountered	

concrete

PACIFIC ENVIRONMENTAL GROUP, INC.

JOB NO. 100-22.01



SHELL OIL COMPANY -- WELL LOG

PAGE 1 OF 1

WELL NUMBER ▶ Boring B		LOCATION ▶ Oakland	
DATE ▶ 2/12/87		WEATHER ▶ cool, cloudy	
LOGGED BY ▶ DM		DRILLED BY ▶ Bayland: Ed, Curt	
DRILLING METHOD ▶ CFA		SAMPLING METHOD ▶ Cal. Mod.	
GRAVEL PACK ▶ n/a		SEAL ▶ concrete	

CASING ▶ TYPE n/a DIAMETER n/a LENGTH — HOLE DIA 6"

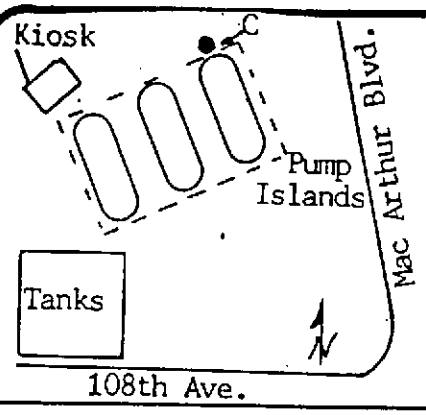
SCREEN ▶ TYPE n/a SLOT n/a DIAMETER n/a LENGTH — TOTAL DEPTH 20'

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	H-NU (ppm)	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY / REMARKS
						0			concrete; odor in base rock
Dp-Mst						1			(CL) yellowish-brown silty clay; trace fine sand; no odor
						2			
						3			
Dp	MS				ND	4		P	(SM) dark yellowish-brown silty sand; fine to medium grained; no odor (gravelly at 5')
						5			
						6			
						7			
						8			(CL) dark yellowish-brown sandy clay; some silt; no odor
Dp		Hd	L		ND	9		8	
						10		20	
								20	
						1			
						2			
						3			
						4		10	
Dp		Hd	L		ND			20	(very silty; no odor)
						5		25	
						6			
						7			
						8			(SC) dark yellowish-brown clayey sand; some grave; silty; no odor
						9		10	
Dp	PS	VD			<1			25	
								30	total depth = 20'; no water encountered

WELL COMPLETION: concrete

PACIFIC ENVIRONMENTAL GROUP, INC.

JOB NO. 100-22.01



SHELL OIL COMPANY -- WELL LOG

PAGE 1 OF 1

WELL NUMBER ▶ Boring C		LOCATION ▶ Oakland	
DATE ▶ 2/12/87		WEATHER ▶ cool, rainy	
LOGGED BY ▶ DM		DRILLED BY ▶ Bayland: Ed, Curt	
DRILLING METHOD ▶ CFA		SAMPLING METHOD ▶ Cal. Mod.	
GRAVEL PACK ▶ n/a		SEAL ▶ concrete	

CASING ▶ TYPE n/a DIAMETER n/a LENGTH HOLE DIA 6"

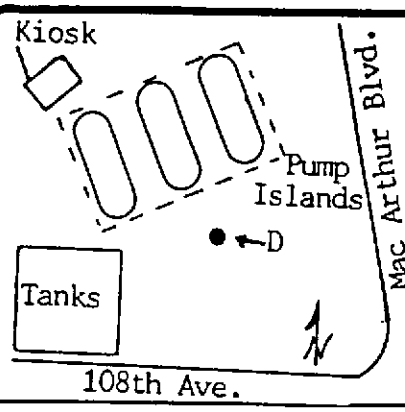
SCREEN ▶ TYPE n/a SLOT n/a DIAMETER n/a LENGTH TOTAL DEPTH 20'

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	H-NU (ppm)	DEPTH	SAMPLE	RECOVERY	PENETRATION RESISTANCE	LITHOLOGY / REMARKS	WELL COMPLETION
						0				concrete	
Dp						1				(SM-ML) dark yellowish-brown silty sand to sandy silt	
						2					
						3					
Dp	MS				ND	4			P	(fine to medium grained; no odor)	
						5					
						6					
						7					
						8				(CL) dark yellowish-brown sandy clay; some silt; trace gravel; no odor	
Dp		Hd			ND	9			10		
						10			18		
									23		
						1					
						2					
						3					
Dp		Hd			<1	4			10	(very silty; no odor)	
						5			18		
									25		
						6					
						7					
						8					
						9			10		
Dp		Hd			14.2				18	(dark grayish-brown; slight odor)	
									20	total depth = 20'; no water encountered	

concrete

PACIFIC ENVIRONMENTAL GROUP, INC.

JOB NO. 100-22.01



SHELL OIL COMPANY -- WELL LOG

PAGE 1 OF 1

WELL NUMBER	Boring D	LOCATION	Oakland
DATE	2/12/87	WEATHER	cold, rainy
LOGGED BY	DM	DRILLED BY	Bayland: Ed, Curt
DRILLING METHOD	CFA	SAMPLING METHOD	Cal. Mod.
GRAVEL PACK	n/a	SEAL	concrete

CASING ▶ TYPE n/a DIAMETER LENGTH HOLE DIA 6"

SCREEN ▶ TYPE SLOT DIAMETER LENGTH TOTAL DEPTH 20'

MOISTURE CONTENT	SORTING	DENSITY	PLASTICITY	SAMPLE NO.	HNU (ppm)	DEPTH	SAMPLE RECOVERY	PENETRATION RESISTANCE	LITHOLOGY / REMARKS
						0			concrete
Dp-Mst						1			(CL) yellowish-brown silty clay; trace sand
						2			
						3			?
						4		P	(SW) dark grayish-brown sand
						5			
						6			
						7			
						8			
Wt	PS				18.2	9		P	
Dp		Stf	L						(no odor)
						10			(GC-SC) dark grayish-brown clayey gravel to sand; very silty; no odor
						1			
						2			
						3			
						4		P	(CL) yellowish-brown silty clay; very silty; some very fine sand
Dp		Stf	L		ND	5			
						6			
						7			
						8			
		VSt				9		P	
									total depth = 20'; no water encountered

WELL COMPLETION: concrete

APPENDIX B

LABORATORY ANALYSIS AND CERTIFIED ANALYTICAL REPORTS

APPENDIX B

LABORATORY ANALYSIS

Analytical parameters and techniques and sample selection criteria were specified by Shell Oil Company. All analyses were performed by IT Corporation of Santa Clara, California, a California State-certified laboratory approved by Shell Oil Company. Certified analytical reports and descriptions of the analytical techniques are included in this Appendix.

Based on the results of the field chemical analysis, one soil sample from each exploratory boring was analyzed for total hydrocarbons by EPA Method 413.2. The soil sample with the highest H-NU reading was selected for these analyses. One duplicate soil sample (a second brass ring) was also analyzed at the site. In addition, a soil sample from one of the on-site tank fill boxes was collected and submitted for analysis for total hydrocarbons.

Water samples collected from each on-site well were analyzed for volatile organic compounds by EPA Method 602. Additional water samples were analyzed, including a sample of organic-free water which was used to rinse the split-spoon sampler, a duplicate sample collected from one of the on-site wells, a field blank and a pump blank.

INTERNATIONAL TECHNOLOGY CORPORATION

Pacific Environmental Group, Inc.
1601 Civic Center Dr., Suite 107
Santa Clara, CA 95050

February 28, 1987

Attn: Susan Willhite

Following are the results of our analyses on samples of soil and water received February 17, 1987. The project identification is:

Project: 100-22.01, Oakland

The analysis for aromatic hydrocarbons in waters is taken from E.P.A. Method 602, a purge and trap technique. Final detection is by gas chromatography using a photoionization detector (GC/PID) in series with a flame ionization detector. The primary separation column is 5% AT-1200 + 1.75% Bentone 34/ Chromosorb W. Confirmation of positive results is by GC/PID using a Carbopack B/3% SP-1500 column.

The analysis for total hydrocarbons in soils is taken from E.P.A. Methods 3550 and 413.2. The soil is extracted with repeated portions of 1,1,2-tri-chlorotrifluoroethane using a horn-type sonicator. The resulting extract is dried with sodium sulfate and examined by infrared spectroscopy.

All soils are extracted using "wet" soil; a soil moisture determination is performed on an additional portion of soil. The results given in the following tables are corrected for moisture and are presented on a "dry soil basis".

FR/jd

2 pages following - Tables of Results

Fred Rouse

Fred Rouse

ITAS/Santa Clara to Pacific Environmental Group, Inc.
ATTN: Susan Willhite

February 28, 1987

TABLE OF RESULTS

ND = None Detected

Parts per Million
(dry soil basis)

Laboratory Number	Sample Identification		Date Received	Total Hydrocarbons
	Project 100-22.01, Oakland			
S7-02-076-01	A	13.5-15'	2/17/87	16.
S7-02-076-02	B	18.5-20'	2/17/87	4.
S7-02-076-03	C	18.5-20'	2/17/87	ND.
S7-02-076-04	D	9-10.5'	2/17/87	2.
S7-02-076-05	S-1	19-20.5'	2/17/87	42.
S7-02-076-06	S-1	19-20.5'	2/17/87	16.
S7-02-076-07	S-2	24-25.5'	2/17/87	600.
S7-02-076-09	Fill Box		2/17/87	410.
			Detection Limit	2.

ITAS/Santa Clara to Pacific Environmental Group, Inc.
ATTN: Susan Willhite

February 28, 1987

TABLE OF RESULTS

ND = None Detected

Laboratory Number	Sample Identification	Date Received	Method 602 Surrogate Recovery (%)	Micrograms per Liter			
				Benzene	Toluene	Ethyl Benzene	Xylene Isomers
	Project 100-22.01, Oakland						
S7-02-069-01	S-1	2/17/87	92.	630.	4.4	3.5	37.
S7-02-069-02	S-2	2/17/87	112.	3400.	3800.	1300.	11000.
S7-02-069-04	22-FB	2/17/87	101.	ND	ND	ND	ND
S7-02-069-05	22-CB	2/17/87	76.	ND	2.3	0.9	5.2
S7-02-069-06	22-DP	2/17/87	85.	630.	3.2	3.2	36.
S7-02-076-08	S-1 Split Spoon Rinsate	2/17/87	97.	ND	ND	ND	ND
		Detection Limit		0.5	0.5	0.5	1.5

APPENDIX C

REGIONAL HYDROGEOLOGIC SETTING

APPENDIX C

REGIONAL HYDROGEOLOGIC SETTING

Geology

The project site is located in the extreme southeastern portion of the City of Oakland, at the base of the western foothills of the Diablo Range. The alluvial area of this region extending from the foothills to the San Francisco Bay is referred to as the Bay Plain, and consists of coalescing alluvial cones deposited in a structural depression. The project site is within the San Leandro alluvial cone subarea of the Bay Plain. The alluvial sediments of this area consist of gently-sloping sand, gravel and clay beds which generally become thinner and finer-grained towards the west. The maximum thickness is at least 500 feet. The eastward extent of the Bay Plain is defined by the Hayward Fault, which trends northwesterly, less than one-quarter mile northeast of the project site.

Ground water

Ground water occurs within the sand and gravel beds of the alluvium, and is often confined beneath clay beds. The regional gradient follows topography toward the southwest.

A survey was conducted to identify water supply wells within one-half mile of the site. The well locations are shown on Figure 1. In addition, a summary of well details including total depth, depth to water, use and yield are summarized in this Appendix. This information was obtained from the Alameda County Flood Control and Water Conservation District (ACFCD). The well located closest to the site is approximately 800 feet to the northwest, and is a 50-foot cathodic protection well designated E1 on Figure 1. Wells N1 and M1 are the wells closest to the site in a downgradient direction. Well N1, 1800 feet southwest of the site, is 79 feet deep, and has a static water level 40 feet below grade. Well M1, 1700 feet southwest of the site, is 58 feet deep, with a water level 38 feet below grade. These wells are both used for irrigation. All of these wells were drilled in 1977; their present level of activity is unknown.

Municipal water is supplied by East Bay Municipal Utilities District (EBMUD), which imports water from outside the area.

The following sheets contain a summary of regional well data which is maintained as a data-base by the Alameda County Flood Control and Water Conservation District (ACFCD). This information is listed by township, range, section number and subsection number according to the California State Well Numbering System. Also noted on Figure 1, next to the well, is the depth of the well in feet. Well logs for many of these wells are on file with the ACFCD.

ALAMEDA COUNTY -- BAY PLAIN GROUNDWATER STUDY -- WELL INVENTORY REPORT

WELL NUMBER	DATE (MO/YR)	SURFACE ELEV. (FT)	TOTAL WELL DEPTH (FT)	DEPTH TO WATER (FT)	DTW (MSL)	WELL USE	LOG	WQ	WL	YIELD (GPM)	DIA. (IN)
2S/3W 24B 4	?	341	98	36	0	DOM	D	0	6	0	6
2S/3W 24C 1	?	0	0	0	0	?	&?	0	0	0	0
2S/3W 24C 2	?	0	190	0	0	DOM	?	0	0	0	0
2S/3W 24C 3	?	330	97	23	0	DOM	D	0	0	0	8
2S/3W 24C 6	7/57	0	107	50	0	DOM	D	0	0	0	0
2S/3W 24C 7	12/52	0	100	0	0	DOM	D	0	0	0	8
2S/3W 24E 1	7/77	0	50	0	0	CAT	D	0	0	0	0
2S/3W 24E 2	2/76	0	120	0	0	CAT	D	0		0	0
2S/3W 24G 1	4/51	0	100	28	0	DOM	D	0	0	0	8
2S/3W 24M 1	9/77	0	58	33	0	IRR	D	0	0	0	8
2S/3W 24N 1	3/77	0	79	40	0	IRR	D	0	0	0	5
2S/3W 24Q 1	7/77	0	86	48	0	IRR	D	0	0	0	6
2S/3W 25B 1	5/77	0	72	55	0	IRR	D	0	0	25	8
2S/3W 25D 1	8/77	0	55	0	0	IRR	D	0	0	5	0
2S/3W 25D 2	4/53	0	95	40	0	IRR	D	0	0	0	8
2S/3W 25E 2	9/77	0	60	14	0	IRR	D	0	0	0	4
2S/3W 25F 1	8/52	0	75	0	0	DOM	?	0	0	0	12
2S/3W 25G 1	?	0	61	0	0	CAT	D	0	0	0	0
2S/3W 25G 2	6/81	0	65	0	0	CAT	D	0	0	0	0
2S/3W 25H 1	4/46	0	78	36	0	DOM	D	0	0	0	0
2S/3W 25K 1	9/33	0	93	59	0	DOM	D	0	0	0	8
2S/3W 25K 2	/49	0	102	0	0	IRR	D	0	0	0	8
2S/3W 25K 3	1/47	0	76	32	0	DOM	D	0	0	150	12
2S/3W 25L 1	9/37	0	88	0	0	DOM	D	0	0	0	8
2S/3W 25L 5	9/77	0	82	47	0	IRR	D	0	0	0	6
2S/3W 25L 6	9/77	0	83	46	0	IRR	D	0	0	0	6
2S/3W 25M 1	8/41	0	93	0	0	IRR	D	0	0	0	0
2S/3W 25N 1	6/77	0	57	37	0	IRR	D	0	0	15	6
2S/3W 25N 2	7/77	0	49	36	0	IRR	D	0	0	13	0
2S/3W 25P 1	4/77	0	51	40	0	IRR	D	0	0	0	4
2S/3W 25P 2	?	0	0	0	0	DOM	?	1	0	0	0
2S/3W 25Q 1	/49	0	81	0	0	IRR	D	0	0	10	7
2S/3W 25Q 2	9/77	0	83	46	0	IRR	D	0	0	0	6
2S/3W 25Q 3	10/77	0	88	46	0	IRR	D	0	0	0	6
2S/3W 26C 1	?	0	99	0	0	IND	D	0	0	0	18
2S/3W 26C 2	5/77	0	32	31	0	IRR	D	0	0	0	0
2S/3W 26C 3	8/82	0	100	25	0	IRR	D	0	0	0	8
2S/3W 26E 1	07/86	0	30	17	0	TES	D	0	0	0	2
2S/3W 26F 1	9/29	0	94	0	0	IRR	D	0	0	75	8
2S/3W 26F 2	/49	0	101	0	0	IRR	?	0	0	13	7
2S/3W 26F 3	10/57	0	75	38	0	DOM	D	0	0	33	6
2S/3W 26F 4	8/49	0	132	0	0	IRR	D	0	0	0	16
2S/3W 26F 5	6/77	0	35	15	0	IRR	?	0	0	0	6

ALAMEDA COUNTY -- BAY PLAIN GROUNDWATER STUDY -- WELL INVENTORY REPORT

WELL NUMBER	DATE (MO/YR)	SURFACE ELEV. (FT)	TOTAL WELL DEPTH (FT)	DEPTH TO WATER (FT)	DTW (MSL)	WELL USE	LOG	WQ	WL	YIELD (GPM)	DIA. (IN)
2S/3W 19N 2	5/75	0	0	0	0	GEO*	G	0	0	0	0
2S/3W 19Q 1	9/55	0	518	85	0	IRR+	D	+	0	1,600	14
2S/3W 19Q 2	6/86	0	14	4	0	MON	G	0	0	0	2
2S/3W 20L	10/86	0	91	4	0	BOR	G	0	0	0	0
2S/3W 21J 1	?	0	1,000	25	0	DES	?	9	2	0	0
2S/3W 21J 2	6/76	0	448	59	0	IND+	?	Y	0	930	12
2S/3W 21R 1	?	0	600	0	0	IND	?	3	3	0	0
2S/3W 22D 1	?	0	175	0	0	IRR	?	0	1	0	12
2S/3W 22D 2	10/86	0	20	11	0	DES	D	0	0	0	2
2S/3W 22D 3	10/86	0	20	9	0	DES	D	0	0	0	2
2S/3W 22D 4	10/86	0	20	9	0	DES	D	0	0	0	2
2S/3W 22E 1	2/76	0	0	0	0	GEO*	G	0	0	0	0
2S/3W 22F 1	6/75	0	0	0	0	GEO*	G	0	0	0	0
2S/3W 22G 1	5/73	0	120	0	0	CAT	D	0	0	0	0
2S/3W 22G 2	6/81	0	65	0	0	CAT	D	0	0	0	0
2S/3W 22J 1	/46	0	950	0	0	IND	?	0	0	1,100	14
2S/3W 22L 1	9/54	0	950	0	0	IND	D	0	0	1,250	14
2S/3W 22L 2	7/32	21	953	62	-41	IND	D	0	0	940	14
2S/3W 22L 3	11/67	0	957	0	0	IND	D	0	0	1,000	14
2S/3W 22M 1	?	0	0	5	0	IRR	?	0	1	0	6
2S/3W 22P 1	/54	0	22	0	0	IRR	?	0	1	0	4
2S/3W 22P 2	4/48	22	602	52	-30	IND	D	Y	0	1,150	14
2S/3W 22P 3	?	22	0	0	0	IND+	?	0	+	0	10
2S/3W 22Q 1	7/56	0	598	115	0	IND	D	0	0	1,200	14
2S/3W 22Q 2	?	0	944	0	0	IND	D	0	0	940	0
2S/3W 22R 1	3/73	0	120	0	0	CAT	D	0	0	0	0
2S/3W 23B 1	6/77	0	75	42	0	DOM	D	0	0	0	6
2S/3W 23C 1	/52	37	120	0	0	DES	D	0	0	0	0
2S/3W 23C 2	/20	37	105	0	0	DES	?	0	0	0	0
2S/3W 23C 3	8/77	0	260	41	0	IRR	D	Y	0	75	8
2S/3W 23D 1	4/76	0	120	0	0	CAT	D	0	0	0	0
2S/3W 23F 1	/49	0	39	12	0	IRR	?	0	1	0	7
2S/3W 23F 2	6/74	0	120	0	0	CAT	D	0	0	0	0
2S/3W 23J 1	4/76	0	105	0	0	CAT	D	0	0	0	0
2S/3W 23K 1	10/74	0	120	0	0	CAT	D	0	0	0	0
2S/3W 23L 1	6/77	0	74	20	0	IND	D	0	0	10	8
2S/3W 23M 1	?	0	0	0	0	?	?	0	0	0	0
2S/3W 23Q 2	?	0	0	0	0	?	?	0	0	0	0
2S/3W 23R 1	?	0	60	29	0	DES	?	0	0	0	6
2S/3W 23R 2	10/77	0	80	37	0	IRR	D	0	0	0	6
2S/3W 24B 1	?	310	102·	35	0	DOM	D	0	0	0	6
2S/3W 24B 2	3/55	0	123·	65	0	DOM	D	0	0	0	8
2S/3W 24B 3	?	340	55·	45	0	DOM	D	0	0	0	6

APPENDIX D

REGULATORY PERSPECTIVE

The regulatory climate affecting storage and handling of gasoline at service stations is complex and changing. It is complex because of the overlapping roles of the regulatory agencies. It changes as recently-enacted legislation becomes binding. Discussed below are three categories of regulations that could potentially apply at gasoline service station sites:

1) Notification of Fuel Leak

Assembly Bill 2185 (Water's Bill - 1985) requires that when leaks are detected or suspected, they must be reported to the California Office of Emergency Services (OES) and the local hazardous materials response agency. OES provides notification to the various State and Federal agencies having jurisdiction.

The newly-enacted Safe Drinking Water and Toxic Enforcement Act (Proposition 65) requires reporting of spills of certain chemicals, some of which exist in gasoline.

2) Underground Gasoline Tanks

The Sher Bill (AB 853 - 1985) requires that underground tanks storing hazardous materials be monitored for leaks. Monitoring may involve an inspection program in conjunction with various internal devices or external devices such as wells.

3) Remedial Action

The San Francisco Regional Water Quality Control Board (RWQCB) has jurisdiction over cases affecting ground water in the Oakland area. The RWQCB developed Guidelines for Addressing Fuel Leaks (finalized September 1985). These guidelines require that floating product greater thatn 0.25" thick be removed in nearly all cases. Clean up of dissolved product is evaluated case by case. In addition, soils with greater than 1,000 ppm total hydrocarbons must be removed.

The California State Department of Health Services has established "action levels" for benzene (0.7 ppb), toluene (100 ppb) and xylenes (620 ppb). The action levels were intended for drinking water, but the California Regional Water Quality Control Board (RWQCB) also uses them as guidelines to determine whether remedial action measures are warranted for other water resources. Non-drinking water situations are evaluated case by case for potential impact to usable water supplies. Attenuation factors ranging from 10 to 100 have been applied to the action levels in some RWQCB regions, recognizing that the concentration at a given location will attenuate to a significantly lower concentration when the plume reaches a usable drinking water source. Both wells at the site exceed these levels with respect to benzene, and Well S-1 also exceeds the action levels for toluene and xylenes.

APPENDIX E

REMEDIAL ACTION COST ESTIMATE
BY GETTLER-RYAN INC.

USA GASOLINE CORPORATION

10700 MACARTHUR BOULEVARD, OAKLAND, CALIFORNIA

Proj. Sec. 24; T2S; R3W MDB&M

UST'S REMOVAL SOIL SAMPLING and LIMITED OVEREXCAVATION

OCTOBER 6, 1994

BY
-WEGE-
WESTERN GEO-ENGINEERS
1386 EAST BEAMER STREET
WOODLAND,CA 95776
(916) 668-5300

WESTERN GEO-ENGINEERS
CALIF CONTRACTOR # 513857 A CORPORATION
REGISTERED GEOLOGISTS

1386 EAST BEAMER STREET
WOODLAND, CA 95776-6003
FAX (916) 662-0273
(916) 668-5300

Mr. Srikanth Dasappa
USA Gasoline Corporation
30101 Agoura Court, Ste. 200
Agoura Hills, California 91301
(818) 865-9200
Fax (818) 865-0092

October 6, 1994

RE: UST's Removal Sampling on 7/19/94 and Limited Overexcavation Sampling on 8/19/94 and 9/27/94 at USA Station #57, 10700 MacArthur Blvd., Oakland, Alameda County, CA for USA Gasoline Corporation.

LOCATION

The site, USA Gasoline Corporation Station #57 is located at 10700 MacArthur Boulevard, Oakland, Alameda County, California and lies in projected Sec. 24; T2S; R3W; MDB&M at an elevation of approximately 65 feet above mean sea level. This site is no longer an active retail service station.

SOIL SAMPLING AND UST REMOVAL

On July 19, 1994 Pacific Excavator's (Joe Madison) removed four Underground Storage Tanks, three 12,000 gallon gasoline UST's and one 8000 gallon diesel UST. Western Geo-Engineers collected twelve soil samples, seven in native soil beneath the tanks and five in native soil beneath the product line trench (see Field Notes, page 12). The samples were collected by Vern Bennett of Western Geo-Engineers under the direction of Ms. Eva Chu (Hazardous Materials Specialist), Alameda County Health Agency.

The soil samples were delivered with accompanying chain-of-custody documentation to American Environmental Network (AEN), a California State certified laboratory (DHS #1172). The soil samples were analyzed by AEN for concentrations of Total Petroleum Hydrocarbons as gasoline and diesel (TPH-G&D) using EPA methods 5030 and 3550; for Benzene, Toluene, Ethylbenzene and xylenes using EPA Method 8020 and for Total Threshold Limit Concentration (TTLC) Lead. TPH G&D, BTEX and Total Pb were run on the five product line soil samples (PI-E 3.5 and PI-2 thru PI-5) from beneath the product line trench; the five soil samples

collected beneath the UST's that stored gasoline (TP3 thru TP7) were analyzed for TPH-G and BTEX and Total Pb. The soil samples collected beneath the diesel UST (TP1 and TP2) were analyzed for TPH-D, BTEX and Total Pb; in addition, these two samples were analyzed for PNA's by EPA method 8270.

Petroleum Hydrocarbons were detected in concentrations above action levels in seven of the twelve samples collected. Of the five product line samples, PI-2 had elevated levels of TPH-G and BTEX above detection limits; of the seven soil samples from beneath the UST's, TP5 was the only sample that was below detection limit. In addition, Naphthalene was the only compound detected from M8270 analysis (probably from Tar wrapping of the Diesel UST).

Western Geo-Engineers questioned the lab on their 'elevated' detection limits for Volatile Organic Compounds (VOC's) from 8020 analysis on some of these soil samples; 'hydrocarbon interference' was noted by the laboratory for these raised detection limits. Soil samples TP2 and TP5 were analyzed on August 13, 1994 for Volatile Organics utilizing EPA method 8240, to identify 'target' compounds that may attribute to the increased detection limits of the 8020 analysis. All compounds from the 8240 analysis are 'non detect' other than VOC's, this analysis was for identification purposes only (holding time on samples had expired). Benzene and Toluene were not identified in M8240 suggesting that Benzene and Toluene in the 8020 results were probably 'Hydrocarbon Interference', the BTEX concentrations from the 8020 analysis should be used because of the 'holding time' constraints for either analysis.

Ms. Eva Chu requested of USA Gasoline Corp. that 2 soil samples each from the dispenser islands are still needed to complete the initial investigation from the UST and Product line sampling; this soil sampling occurred on August 19, 1994 and is addressed below in this text.

For a listing of the analytical results from the soil samples please see the enclosed worksheet (page 12), Table 1 and AEN laboratory report in Appendix B.

LIMITED OVEREXCAVATION, SOIL SAMPLING ON AUGUST 19, 1994

On August 18 and 19, 1994 Pacific Excavators (Joe Madison) overexcavated the UST tank cavity, to abate and/or remove entirely all of the contaminated soil from this site. This overexcavation was to implement the USA Gasoline Corporation Workplan prepared by Western Geo-Enginneers dated August 11, 1994.

The overexcavation was accomplished by utilizing an excavator tractor with an excavation reach of 19-20 feet. Soil screening with the use of a hand held photo-ionizing detector (PID), visual (soil staining) and olfactory senses was used as the determining tool to guide the excavating.

The overexcavation partially completed the extent that the workplan outlined (ie. excavate the perimeter of the tank cavity 2 feet and the base to one foot of the local ground water). The tank cavity was excavated to roughly 16 feet (in the gasoline UST portion of excavation) and 14½ feet in the diesel UST portion of the tank cavity, see Field Notes in Appendix C. A localized 'perched water' in sand lenses at approximately 12 feet was removed, dry soil was present beneath these intervals.

A soil sample (SM-1) was collected from 19.5 feet on August 18, 1994, this sample was taken at the vertical extent of the excavator for two reasons, 1) determine whether hydrocarbon tainted soil exists at that depth, and 2) see if ground water can be encountered at the site (monitor wells S1 and S2 indicate a depth to ground water at approximately 17 feet).

The dispenser islands were removed for soil sampling (Alameda County Health request, 7/19/94) on August 19, 1994. The Dispenser Islands and the Tank Cavity were sampled by Western Geo-Engineers (Vern Bennett) under the direction of Ms. Eva Chu of Alameda County Health Agency on August 19, 1994. Fourteen soil samples were collected, six from native soil beneath the dispenser islands (2 samples each island) and seven samples of the tank cavity; one sample was taken after overexcavating the 'hot area,PI-2' Request by Alameda County Health (Appendix D) from the initial product line sampling. The overexcavation sample PI2-O was collected at 9 feet after excavating an area of soil contamination; this area indicated a 'fill sand' interval from 3½ to 6 feet which was removed before sampling. The seven soil samples that were collected from the base of the tank cavity were taken at depths that indicated the lowest/least soil contamination (by field indicators, ie. PID, staining, etc.). These locations and depths and soil types are presented in the worksheets and map (Appendix C) and in Table 1.

The relatively undisturbed soil samples were collected from the bucket of the excavator in 2"X3" clean brass sleeves. Each sample was preserved by wrapping the sleeve ends with aluminum foil and then capping them with plastic caps which are secured to

the sleeve with duct tape. Each sleeve was labeled with the time, date, location number, depth, analyses to be run, site name and initials of the geologist. Each sample was then placed in a zip lock bag and deposited in an ice chest with enough ice to preserve the samples at 4° for chain-of-custody delivery to a California State Certified Laboratory.

The soil samples from the Tank cavity and Dispenser islands were delivered under chain-of custody to AEN laboratory and analyzed for concentrations of Total Petroleum Hydrocarbons as Gasoline and Volatile Aromatic Hydrocarbons, utilizing EPA methods 5030 and 8020, repectively.

The stockpiled soil from the UST removal and overexcavation efforts (525 cubic yards) were sampled on August 19, 1994. Eleven soil samples (Table 1, Worksheets in Appendix C and Lab results in Appendix E) were collected, one composite per 50 cubic yards of soil, this soil was analyzed by AEN laboratory for TPH,G and BTEX by EPA methods 5030 and 8020, repectively. In addition, TPH,D analysis was requested from USA Gasoline Corporation of the 4 soil pile samples SP3-1, SP3-2, SP3-3 and SP3-4 on September 1, 1994 (these results are also in Table 1 and Appendix E).

The excavation is secured by fencing, the excavated soil is placed on the asphalt paving of the station property and covered with visquine plastic.

LIMITED OVEREXCAVATION, SOIL SAMPLING ON SEPTEMBER 27, 1994

On September 21 and 22, 1994 Pacific Excavators (Joe Madison) overexcavated the UST tank cavity to abate and/or remove entirely contaminated soil from this site. This overexcavation was a continuation of the earlier excavation efforts and was to implement the USA Gasoline Corporation Workplan prepared by Western Geo-Enginneers dated August 11, 1994.

On September 27, 1994 Western Geo-Engineers collected fourteen soil samples, four in native soil at the base of the tank cavity and ten in native soil from sidewalls of the tank cavity (see Field Notes, page 14). The samples were collected by Vern Bennett of Western Geo-Engineers under the direction of Ms. Eva Chu (Hazardous Materials Specialist), Alameda County Health Agency.

Soil samples were collected, prepared and stored per QA/QC procedures presented in the earlier section of this text.

The soil samples from the Tank cavity (see Worksheet on page 14) were delivered under chain-of custody to AEN laboratory and analyzed for concentrations of Total Petroleum Hydrocarbons as Gasoline and Volatile Aromatic Hydrocarbons, utilizing EPA methods 5030 and 8020, repectively. In addition selected samples (TC2-5, TC2-7 and TC2-8) had TPH, Diesel run; these samples were collected in the vicinity of the former Diesel UST.

The stockpiled soil from this overexcavation effort (250 cubic yards) were sampled on September 27, 1994. Five soil samples (Table 1 and Lab results in Appendix E) were collected, one composite per 50 cubic yards of soil. This soil was analyzed by AEN laboratory for TPH,G and BTEX by EPA methods 5030 and 8020, repectively. In addition, TPH,D analysis was run on the composite sample from SP4.

The analytical results, methods and depths for soil samples from the UST's removal and overexcavation efforts are tabulated in Table 1, Appendix F; their locations are depicted in Figures 3, 4 and 5.

The excavation is secured by fencing, the excavated soil is placed on the asphalt paving of the station property and covered with visquine plastic.

The services performed by Western Geo-Engineers, a corporation, under California Registered Geologist #3037 and/or Contractors License #513857, was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the State of California and the Oakland area. Our work and/or supervision of remediation and/or abatement operations, active or preliminary, at this site is in no way meant to imply that we are owners or operators of this site. Please note that known soil and/or ground water contamination must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

Sincerely,

Vern A. Bennett
Project Geologist

REGISTERED GEOLOGIST
JACK E. NAPPER
No. 3037
STATE OF CALIFORNIA

Jack E. Napper
Registered Geologist #3037

WEGE: TABLE 1

USA PETROLEUM CORPORATION
10700 MACARTHUR BLVD.,
OAKLAND, CALIFORNIA

SOIL SAMPLE LABORATORY RESULTS

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	DEPTH SAMPLED IN FEET	SAMPLING COMPANY	LAB	TPH,G ppm	TPH,D ppm	BENZENE ppm	TOLUENE ppm	ETHYL BENZENE ppm	XYLENE ppm	TTLC LEAD ppm	STLC LEAD PPM	PNA's by M8270 ppm	VOL.ORGAN by 8240 ** ppm
P_L TRNCH	PI-E 3.5	07/19/94	3.5	WEGE	AEN	<0.2	<1.0	<.005	<.005	<.005	<.005	7			
P_L TRNCH	PI-2	07/19/94	3.5	WEGE	AEN	4500	<50	<1.0	6	60	440	4			
P_L TRNCH	PI-3	07/19/94	3.5	WEGE	AEN	<0.2	<1.0	<.005	<.005	<.005	<.005	5			
P_L TRNCH	PI-4	07/19/94	4	WEGE	AEN	<0.2	<1.0	<.005	<.005	<.005	<.005	6			
P_L TRNCH	PI-5	07/19/94	3.5	WEGE	AEN	<1.0	<1.0	<.005	<.005	<.005	<.005	7			
TNK FIELD	TP1	07/19/94	12.5	WEGE	AEN		60	<.005	0.015	0.007	0.008			<0.2	
TNK FIELD	TP2	07/19/94	12.5	WEGE	AEN		230	<1.0	0.79	2.2	0.7			* 0.77	ND
TNK FIELD	TP3	07/19/94	13	WEGE	AEN	94		0.18	0.25	1	5.9	3			
TNK FIELD	TP4	07/19/94	13	WEGE	AEN	1400		1.9	3.5	12	150	4			
TNK FIELD	TP5	07/19/94	13	WEGE	AEN	300		<.5	0.74	4.8	20	3			ND
TNK FIELD	TP6	07/19/94	13	WEGE	AEN	0.7		<.005	<.005	0.006	<.005	3			
TNK FIELD	TP7	07/19/94	13	WEGE	AEN	<0.2		<.005	<.005	<.005	<.005	3			
TNK CAVTY	TC-1	08/19/94	16	WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				
TNK CAVTY	TC-2	08/19/94	16	WEGE	AEN	93		<0.01	0.28	0.63	3.1				
TNK CAVTY	TC-3	08/19/94	17.5	WEGE	AEN	2.4	1	0.008	0.02	0.02	0.11				
TNK CAVTY	TC-4	08/19/94	15.5	WEGE	AEN	0.7	2	<.005	<.005	<.005	<.005				
TNK CAVTY	TC-5	08/19/94	17	WEGE	AEN	190		0.17	0.38	0.99	7.9				
TNK CAVTY	TC-6	08/19/94	18	WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				
TNK CAVTY	SM-1	08/18/94	19.5	WEGE	AEN	0.4		<.005	<.005	<.005	<.005				
TNK CAVTY	TC2-1	09/27/94	17	WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				
TNK CAVTY	TC2-2	09/27/94	13	WEGE	AEN	13		0.06	0.019	0.026	<.005				
TNK CAVTY	TC2-3	09/27/94	16	WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				
TNK CAVTY	TC2-4	09/27/94	13	WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				
TNK CAVTY	TC2-5	09/27/94	12	WEGE	AEN	100	200	0.13	0.12	0.1	0.25				
TNK CAVTY	TC2-7	09/27/94	13	WEGE	AEN	6.3	17	<.005	<.005	<.005	<.005				
TNK CAVTY	TC2-8	09/27/94	13	WEGE	AEN	<1.0	16	<.005	<.005	<.005	<.005				
TNK CAVTY	TC2-9	09/27/94	19	WEGE	AEN	0.4		<.005	<.005	<.005	<.005				
TNK CAVTY	TC2-11	09/27/94	13	WEGE	AEN	2200		9.6	21	40	260				
TNK CAVTY	TC2-12	09/27/94	12	WEGE	AEN	130		0.33	0.29	0.66	7.9				
TNK CAVTY	TC2-13	09/27/94	20	WEGE	AEN	620		1.1	4.9	6.4	66				
TNK CAVTY	TC2-14	09/27/94	11	WEGE	AEN	92		0.096	0.1	0.17	1.7				
TNK CAVTY	TC2-15	09/27/94	17	WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				
TNK CAVTY	TC2-16	09/27/94	14	WEGE	AEN	<1.0		<.005	<.005	<.005	<.005				
DISP ISL	DI-1	08/19/94	3.5	WEGE	AEN	720		0.19	2	9	53				
DISP ISL	DI-2	08/19/94	3.5	WEGE	AEN	280		0.12	0.8	4.6	33				
DISP ISL	DI-3	08/19/94	3	WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				

WEGE: TABLE 1

USA PETROLEUM CORPORATION
10700 MACARTHUR BLVD.,
OAKLAND, CALIFORNIA

SOIL SAMPLE LABORATORY RESULTS

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	DEPTH SAMPLED IN FEET	SAMPLING COMPANY	LAB	TPH,G ppm	TPH,D ppm	BENZENE ppm	TOLUENE ppm	ETHYL BENZENE ppm	XYLENE ppm	TTLC LEAD ppm	STLC LEAD PPM	PNA's by M8270 ppm	VOL.ORGAN by 8240 ** ppm
DISP ISL	DI-4	08/19/94	3	WEGE	AEN	590		0.7	2.5	13	81				
DISP ISL	DI-5	08/19/94	3.5	WEGE	AEN	570		0.1	1.5	2.7	17				
DISP ISL	DI-6	08/19/94	3.5	WEGE	AEN	1800		0.72	5.2	31	180				
PROD TRNC	PT2-O	08/19/94	9	WEGE	AEN	15		0.02	0.04	0.07	0.19				
SOIL PILESP1-1	A-D08/19/94	6'UP2'IN		WEGE	AEN	31		<.005	0.053	<.005	1.2				
SOIL PILESP1-2	A-D08/19/94	6'UP2'IN		WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				
SOIL PILESP1-3	A-B08/19/94	6'UP2'IN		WEGE	AEN	<0.2		<.005	<.005	<.005	<.005				
SOIL PILESP2-1	A-D08/19/94	5'UP1.5IN		WEGE	AEN	22		<.01	0.029	<.01	0.075				
SOIL PILESP2-2	A-D08/19/94	5'UP1.5IN		WEGE	AEN	66		0.02	0.11	0.065	0.25				
SOIL PILESP2-3	A-D08/19/94	5'UP1.5IN		WEGE	AEN	51		<.01	0.07	<.01	0.32				
SOIL PILESP2-4	A-D08/19/94	5'UP1.5IN		WEGE	AEN	210		0.04	0.76	0.48	3.1				
SOIL PILESP3-1	A-D08/19/94	6'UP2'IN		WEGE	AEN	360	460	<.05	1.7	3.3	28				
SOIL PILESP3-2	A-D08/19/94	6'UP2'IN		WEGE	AEN	<40	750	<.01	<.01	<.01	<.04				
SOIL PILESP3-3	A-D08/19/94	6'UP2'IN		WEGE	AEN	<20	180	<.01	0.02	0.01	0.05				
SOIL PILESP3-4	A-D08/19/94	6'UP2'IN		WEGE	AEN	73	400	<.02	0.03	0.08	1.3				
SOIL PILESP4-1	A-D09/27/94	6'UP2'IN		WEGE	AEN	<0.2		<.005	<.005	<.005	<.005		0.2		
SOIL PILESP4-2	A-D09/27/94	6'UP2'IN		WEGE	AEN	<0.2		<.005	<.005	<.005	<.005		<0.1		
SOIL PILESP4-3	A-D09/27/94	6'UP2'IN		WEGE	AEN	<0.2		<.005	<.005	<.005	<.005		<0.1		
SOIL PILESP4-4	A-D09/27/94	6'UP2'IN		WEGE	AEN	<0.2		<.005	<.005	<.005	<.005		<0.1		
SOIL PILE SP5	A-D 09/27/94	6'UP2'IN		WEGE	AEN	0.4	92	<.005	<.005	<.005	<.005		<0.1		
SPIL COMP1-2	& 1-208/19/94	6'UP2'IN		WEGE	AEN								0.3		
SPIL COMP1-3	& 2-208/19/94	6'UP2'IN		WEGE	AEN								0.1		
SPIL COMP2-3	& 2-408/19/94	6'UP2'IN		WEGE	AEN								0.1		
SPIL COMP3-1	& 3-208/19/94	6'UP2'IN		WEGE	AEN								0.1		
SPIL COMP3-3	& 3-408/19/94	6'UP2'IN		WEGE	AEN								0.3		

ppm= PARTS PER MILLION (mg/kg)
TPH= TOTAL FUEL HYDROCARBONS (GASOLINE)
TTLC= TOTAL THRESHOLD LIMIT CONCENTRATION
EPA METHOD 5030 USED FOR TPH,GASOLINE
EPA METHOD 3550 FOR TPH,DIESEL
EPA METHOD 8020 USED FOR (BTEX); BENZENE, TOLUENE, ETHYL BENZENE, XYLENE
EPA METHOD 7420 USED FOR TTLC (LEAD)

WEGE= WESTERN GEO-ENGINNERS
AEN= AMERICAN ENVIRONMENTAL NETWORK (DHS #1172)
* PNA'S by M8270, note Naphthaline is only PNA above detection limit.
BLANK &/or " ", sample not taken or analyzed.

WEGE: TABLE 1

USA PETROLEUM CORPORATION

10700 MACARTHUR BLVD.,

OAKLAND, CALIFORNIA

SOIL SAMPLE LABORATORY RESULTS

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	DEPTH SAMPLED IN FEET	SAMPLING COMPANY	LAB	TPH,G ppm	TPH,D ppm	BENZENE ppm	TOLUENE ppm	ETHYL BENZENE ppm	XYLENE ppm	TTLC LEAD ppm	STLC LEAD PPM	PNA's by M8270 ppm	VOL.ORGAN by 8240 ** ppm

EPA METHOD 8270 FOR PNA'S

SAMPLE LOCATION & ID-SPIL COMP= SOIL PILE PILE OF PREVIOUS SAMPLES

TO 100 CUBIC YARDS - Pb LEAD ANALYSIS

** SOIL SAMPLES TP2 & TP5 ANALYZED ON 8/13/94, ANALYSIS WAS RAN TO IDENTIFY 'TARGET' COMPOUNDS OF VOLATILE ORGANICS FROM EPA M8240; QUESTIONS WERE RAISED FROM WEGE TO THE LAB BECAUSE OF HIGH DETECTION LIMITS FROM 8020 ANALYSIS ALL COMPOUNDS OF M8240 ARE 'NON-DETECT' FOR COMPOUNDS OTHER THAN VOC'S, M8020 WILL BE USED FOR LEVELS ON COMPOUNDS M8240 WAS WAS IDENTIFICATION PURPOSES ONLY-HOLDING TIME ON SAMPLES HAD EXPIRED, BENZENE & TOLUENE WERE NOT IDENTIFIED IN M8240, SUGESTING THAT B & T IN THE 8020 RESULTS WAS PROBABLY 'HYDROCARBON INTERFERENCE'.

WESTERN GEO-ENGINEERS

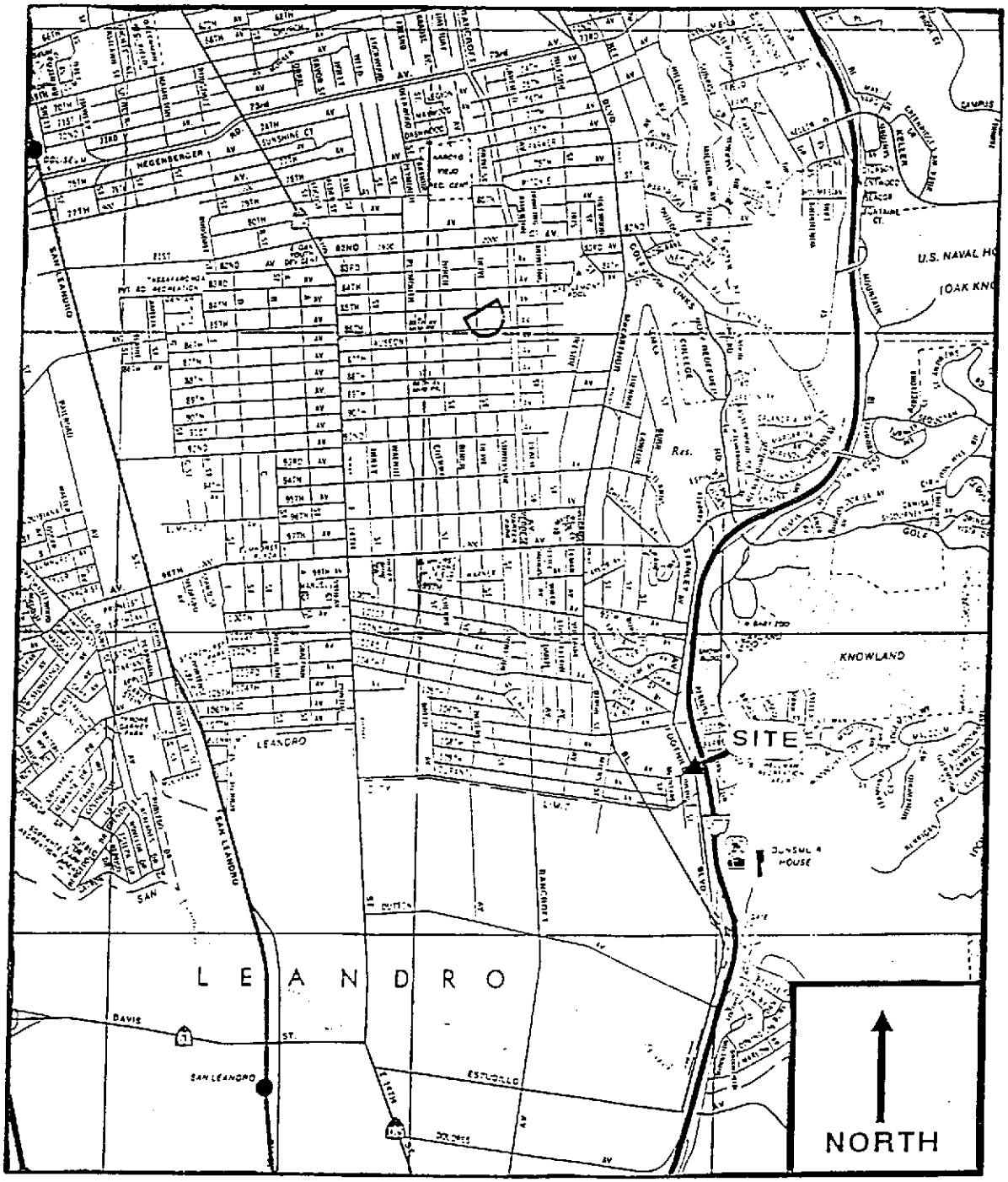


FIGURE 1, AAA, SITE LOCATION MAP

WESTERN GEO-ENGINEERS

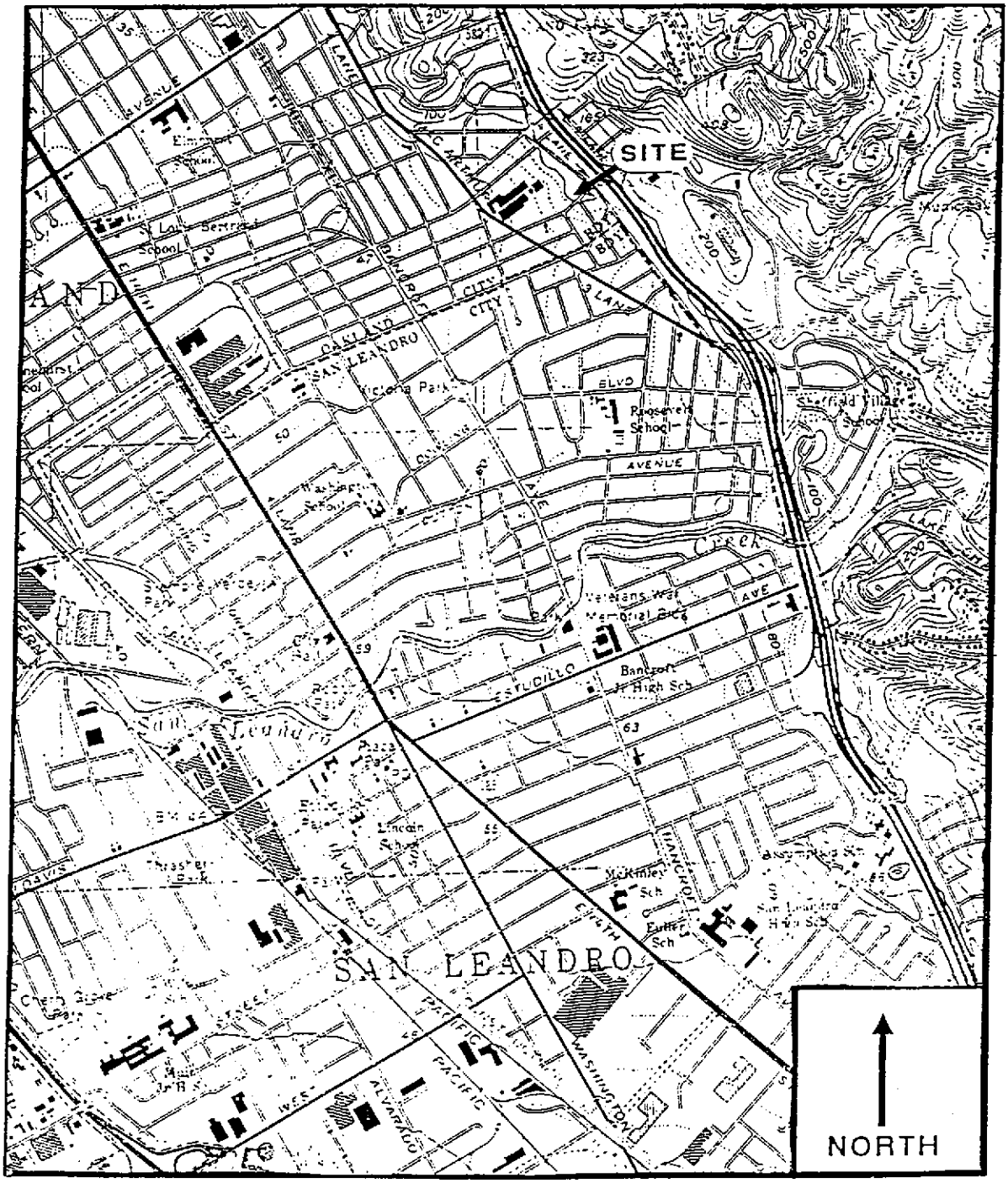


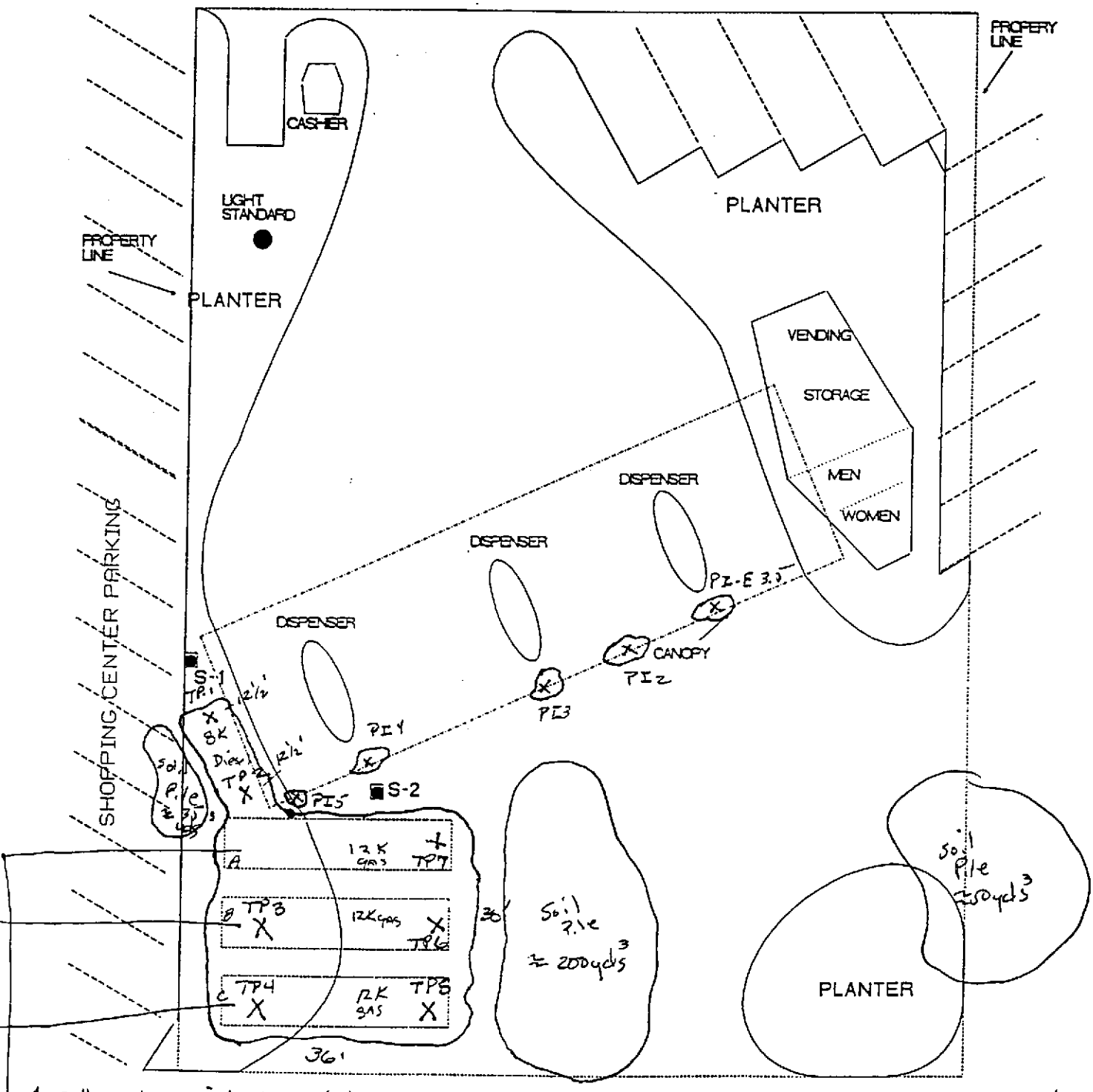
FIGURE 2. USGS TOPO SHEET SITE LOCATION MAP

USTA AND PRODUCT LINE
SOIL SAMPLING

20' 0' 20'
SCALE IN FEET

FIGURE 3
7/19/94

USA GASOLINE CORPORATION
STATION #57
10700 MACARTHUR BLVD.,
OAKLAND, CA
SITE BASE MAP—



A pulled, clean interior - no holes
B pulled, ⅛" hole (fill side bottom) - leaking water
C pulled, no holes interior

used H+H LEL/O_2 meter to pull tanks
perched water on site ≈ 10½' GW S1 - 16'
S2 - 17'

Analysis directive by Alameda Co. Ms. Eva Chu
TP_1, TP_2 TPH D - BTEX 8250 PNA's
TP_3 - TP_7 TPH G/BTEX Pb
PI 1 - PI 5

proj.

WEGE WESTERN GEO-ENGINEERS
1386 EAST BEAMER
WOODLAND, CALIFORNIA 95695
(916) 668-5300, FAX (916) 662-0273

SEC. 24; T 2 S; R 3 W; MDB&M
JOB DESCRIPTION Tank Pull + Product Line Soil Sampling
LOCATION USA Gasoline Corp Sta #57
ADDRESS 10700 MacArthur BLVD.
CITY Oakland STATE CA
COUNTY Alameda
CLIENT USA Gasoline Corp.
ADDRESS 30101 Agoura Court Ste 200
CITY Agoura Hills STATE CA ZIP 91301
PHONE (818) 865-9200 FAX (818) 865-0092
CLIENT REP. Srikanth Dasappa

WORK PERFORMED BY Vern Bennett
DATE 7/19/94
LEAVE OFFICE 9:30 AM (½ hr off time)
ARRIVE SITE 11:00 AM
MILEAGE 90 mi
LEAVE SITE 6:30
ARRIVE OFFICE mob to another site
MILEAGE mob to another site
#SOIL SAMP. 12
#WATER SAMP. N/A
LABORATORY AEN
WEGE TO PAY LAB (YES) (NO)

SITE MAP

See Figure 3

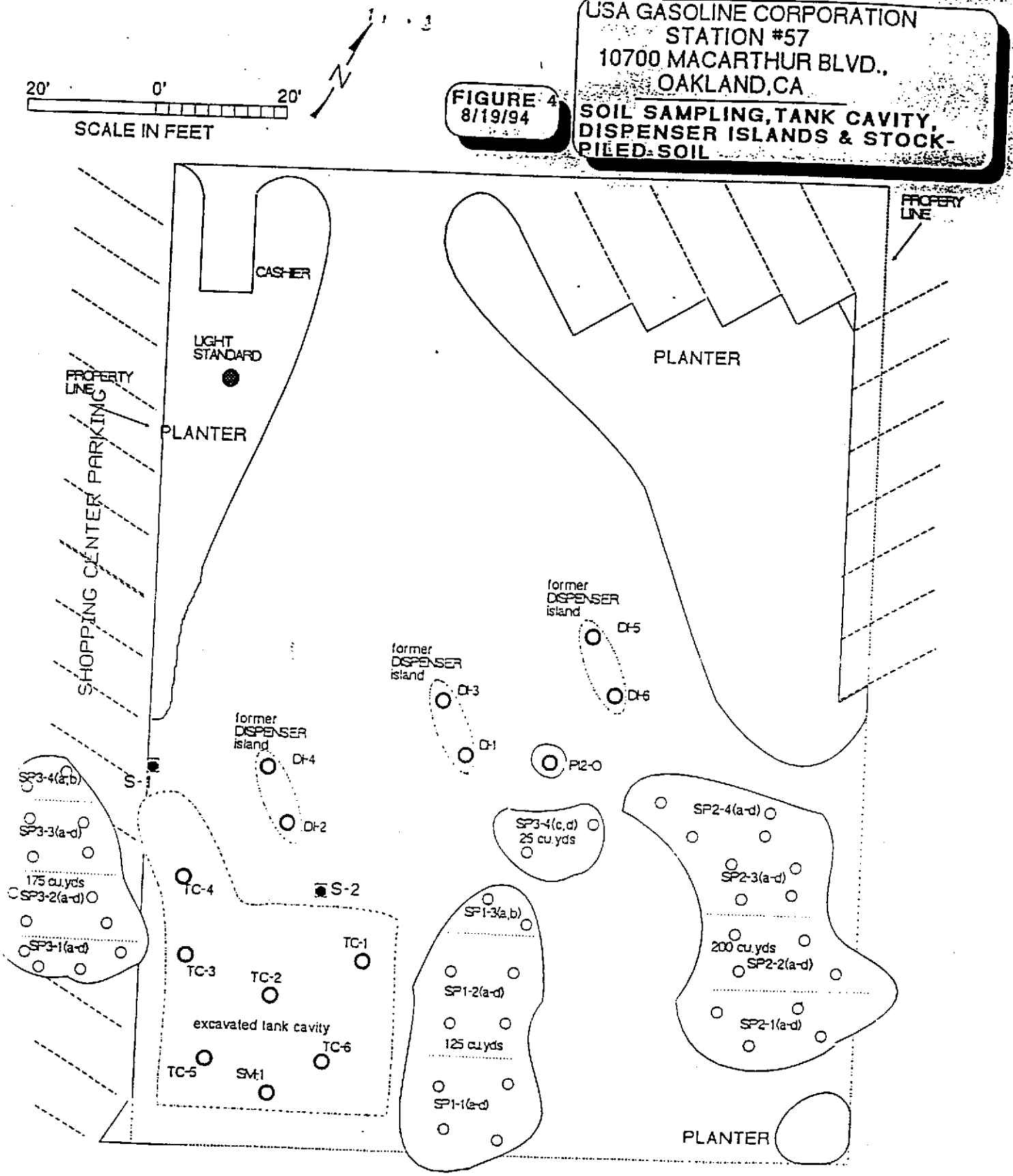
APPROX. SCALE

GOV. AGENCY	REP. NAME	ADDRESS	PHONE	FAX
Alameda Co.	Ms. Eva Chu	1131 Harbor Bay Pkwy	~~(510) 337-9335~~	~~(510) 337-28~~
Environ. Health		Alameda, CA 94502	(510) 567-6700	(510) 337-9335

SITE ACTIVITY LOG	NOTES:
9:30 - 1100	Mob to site
11:00 - 12:00	Recon site w/ Srikanth D, map excavation
12:00 - 12:30	Lunch w/ USA
12:30 - 1:30	H+H vacuum tanks Don Madison - contractor - Dry Ice Tanks
1:30 - 2:45	1:00 Alameda Co - Eva Chu arrives - Sample pump Islands
	Prop owners - ENV. consultant - take duplicates of soil samples
2:45 - 5:30	Pull Tanks / LEL O₂ meter - Fire Dept clearance
	pull 1 8K Diesel UST, 3 12K Gasoline UST
	Take soil samples of Tank Field by Direction
	of Alameda Co. Rep - Ms Eva Chu
	Pulled middle Gas. UST ⅛" hole bottom of fill pipe
	All other USTs - appear tight, intact
	Some water in excavation, purged for recharge by H+H
	GW in MW's S₁ + S₂ @ 16-18' BGS - water in pit, perched
5:30 - 6:00	— Sample PIs

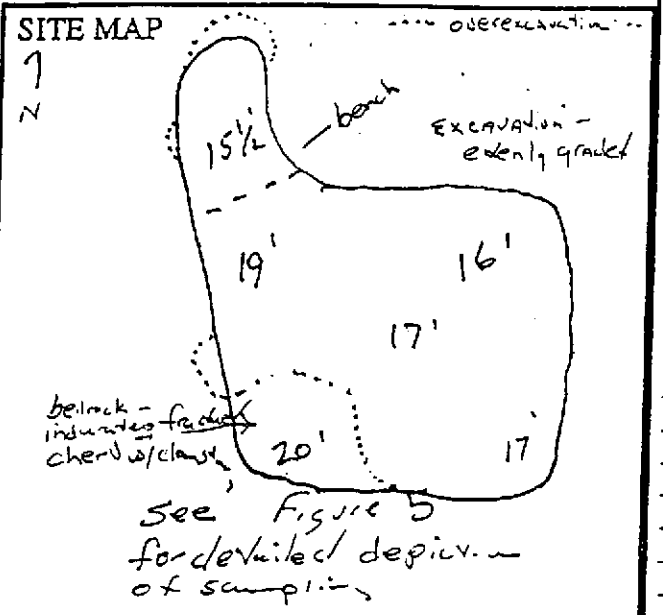
SAMPLE DATA / LABORATORY RESULTS: see Table 1 + soil results

	ID	LOCATION	DEPTH	TYPE	TIME	TIP	LABORATORY RESULTS
Product Line Trench	PI-E 3.5	E Island	3.5'	SILT	1:30	0PPM	see Table 1 + soil Results
	PI 2	mid of mid E I	3.5	SILT; SD	1:45	300ppm	
	PI 3	middle Isl	3.5	SILT	2:15	0PPM	
	PI 4	West Isl	4.0	Clayey silt	2:35	0PPM	
	PI 5	west of W Isl	3.5	"	5:45	0PPM	
Tank Field	TP1	Diesl Tank N	12.5	Sdy silt	3:15	0PPM	
	TP2	Desel Tank S	12.5	Clayey sd	3:25	0PPM	
	TP3	mid Gas Tank W	13	Clay Sd	4:45	16ppm	
	TP4	S - Gas Tank W	13	Clayey fn	4:50	360 ppm	
	TP5	S-Gas Tank E	13	Silty sd	5:00	126ppm	
	TP6	M-Gas Tank E	13	SILT	5:10	0	
	TP7	N-Gas Tank E	13	SILTY sd	5:15	0	


USA GASOLINE CORPORATION
STATION #57
10700 MACARTHUR BLVD.,
OAKLAND,CA
FIGURE 4
8/19/94
SOIL SAMPLING, TANK CAVITY, DISPENSER ISLANDS & STOCK-PILED-SOIL
20' 0' 20'
SCALE IN FEET
PROPERTY LINE
CASHIER
LIGHT STANDARD
PLANTER
PROPERTY LINE
SHOPPING CENTER PARKING
PLANTER
former DISPENSER island
DI-5
DI-6
former DISPENSER island
DI-3
DI-1
former DISPENSER island
DI-4
DI-2
PI2-O
S-1
SP3-4(a,b)
SP3-3(a-d)
175 cu.yds
SP3-2(a-d)
SP3-1(a-d)
TC-4
S-2
TC-1
TC-3
TC-2
excavated tank cavity
TC-6
TC-5
SM-1
SP3-4(c,d)
25 cu.yds
SP1-3(a,b)
SP1-2(a-d)
125 cu.yds
SP1-1(a-d)
SP2-4(a-d)
SP2-3(a-d)
200 cu.yds
SP2-2(a-d)
SP2-1(a-d)
PLANTER

WEGE WESTERN GEO-ENGINEERS
1386 EAST BEAMER
WOODLAND, CALIFORNIA 95695
(916) 668-5300, FAX (916) 662-0273

SITE MAP



See figure 5 for detailed depiction of sampling

APPROX. SCALE
NO Scale

SEC. 24; T 2S ; R 3W ; MDB&M	
JOB DESCRIPTION	Overexcavation Soil Sampling
LOCATION	USA Gasoline Corp, Stn #57
ADDRESS	10200 MacArthur Blvd.
CITY	Oakland STATE CA
COUNTY	Alameda
CLIENT	USA Gasoline Corp
ADDRESS	30101 Agoura Court Ste 2C
CITY	STATE CA ZIP 91301
PHONE	(818) 865-9200 FAX (818) 865-0092
CLIENT REP.	Seikath Dasappa
WORK PERFORMED BY	Vern Bennett
DATE	9/27/94
LEAVE OFFICE	9:00 AM
ARRIVE SITE	11:00 AM
MILEAGE	90 mi.
LEAVE SITE	5:45 PM
ARRIVE OFFICE	8:15 PM
MILEAGE	90 mi.
#SOIL SAMP.	19 ~~18~~ 21
#WATER SAMP.	N/A
LABORATORY	AEN
WEGE TO PAY LAB (YES) (NO)	

GOV. AGENCY	REP. NAME	ADDRESS	PHONE	FAX
Alameda Co Environ Health	Ms. Eva Chu	1131 Harbor Bay Parkway Alameda, CA 94502	(510) 567-6760	(510) 337-9335

SITE ACTIVITY LOG	NOTES:
11:00 - 11:30	Receive w/ Joe Madison - prepare to sample
11:30 - 11:45	Alameda County (Ms. Eva Chu) arrives, go over site and plans for sampling
11:45 - 2:30	sample under direction of Eva Chu Tank cavity and sidewalls of overexcavation. Tank cavity was evenly overexcavation - all sidewalls - except NE wall of main cavity was taken back 1'-2', the base was excavated & evenly graded as shown above 4 soil samples of base & 10 samples of sidewalls were taken - minor overexcavation of sidewalls were done 9/28 Co leaves
2:30 - 2:45	Secure site w/ Joe Madison - Joe leaves
2:45 - 5:45	Sample soil pile ≈ 250 cubic yards
	775 cubic yards of soil generated from Tank Pull & 2 overexcavation episodes

SAMPLE DATA

ID	LOCATION	DEPTH	TYPE	TIME	TIP
TC2-1	TankCav base	17'	silty clay	11:45	0 ppm
TC2-2	TankCav SW	13'	[illegible]	12:00	35 ppm
TC2-3	TankCav SW	16'	Gravelly silt	12:30	0 ppm
TC2-4	TankCav SW	13'	silt	12:45	0 ppm
TC2-5	TankCav SW	12'	silty clay	1:00	7 ppm
TC2-7	TankCav SW	13'	silty clay	1:25	70 ppm
TC2-8	TankCav SW	13'	silty clay	1:30	0 ppm
TC2-9	TankCav base	19'	[illegible]	1:40	20 ppm
TC2-11	TankCav SW	13'	[illegible]	2:00	150 ppm
TC2-12	TankCav SW	12'	silty clay	2:10	20 ppm
TC2-13	TankCav base	20'	silty clay	2:15	40 ppm
TC2-14	TankCav SW	11'	clay	2:30	10000 ppm

LABORATORY RESULTS
Soil results see Table 1

WESTERN GEO-ENGINEERS
1386 EAST BEAMER
WOODLAND, CALIFORNIA 95695
(916) 668-5300, FAX (916) 662-0273

SITE MAP

APPROX. SCALE

SEC. ;T ;R ; B&M	
JOB DESCRIPTION	
LOCATION	
ADDRESS	
CITY.	STATE
COUNTY	
CLIENT	
ADDRESS	
CITY	STATE ZIP
PHONE	FAX
CLIENT REP.	
WORK PERFORMED BY	
DATE	
LEAVE OFFICE	
ARRIVE SITE	
MILEAGE	
LEAVE SITE	
ARRIVE OFFICE	
MILEAGE	
#SOIL SAMP.	
#WATER SAMP.	
LABORATORY	
WEGE TO PAY LAB (YES) (NO)	

GOV. AGENCY	REP. NAME	ADDRESS	PHONE	FAX

SITE ACTIVITY LOG

NOTES: 9/27/94

Continued Page

SAMPLE DATA

	ID	LOCATION	DEPTH	TYPE	TIME	TIP
TC2-	15	Tank Cav base	17'	Silt	2:35	0ppm
TC2-	16	Tank Cav SW	14'	Clay	2:40	0ppm

LABORATORY RESULTS

See Table 1 for results

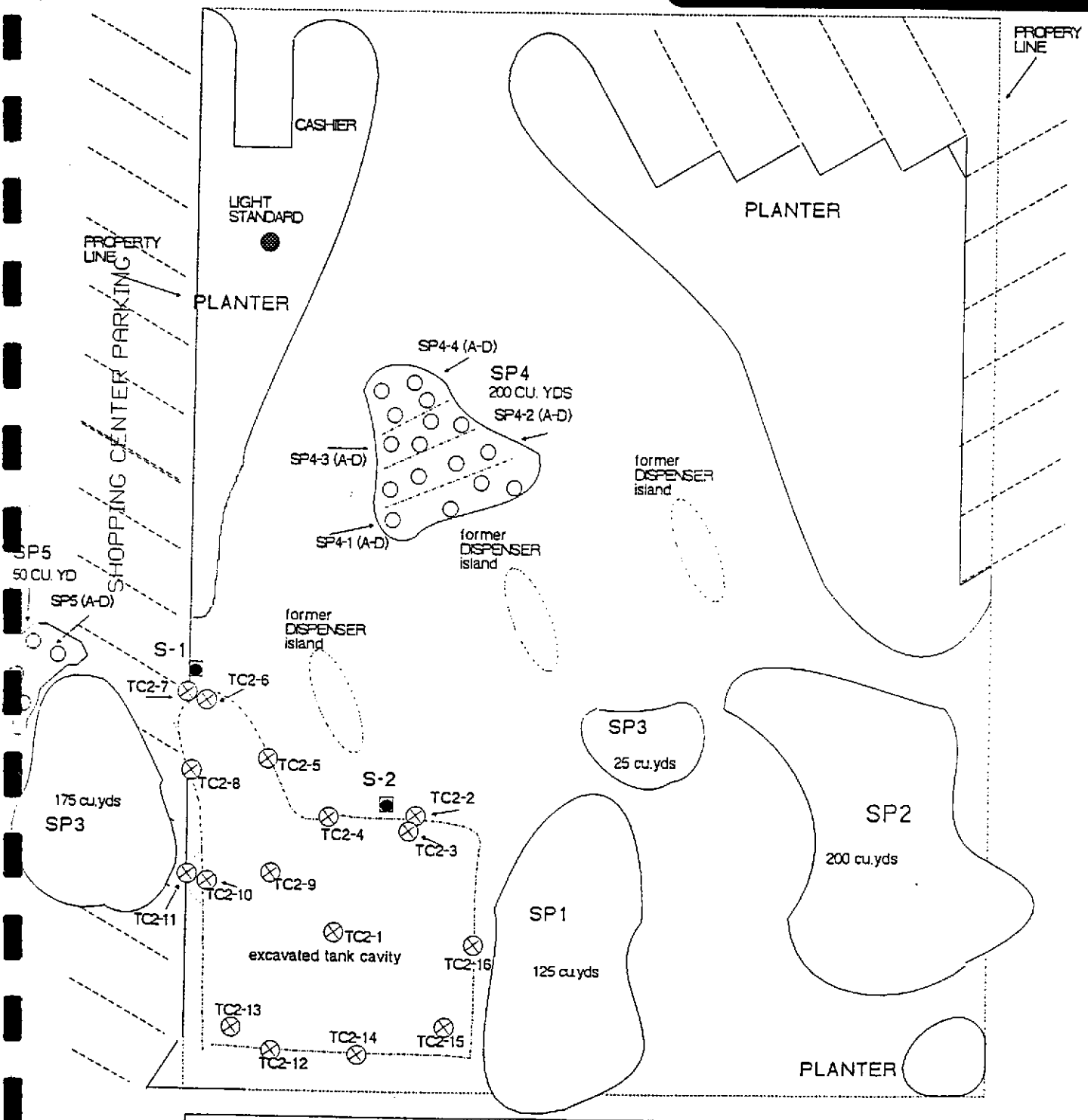
15

USA GASOLINE CORPORATION
STATION #57
10700 MACARTHUR BLVD.,
OAKLAND,CA

FIGURE 5
9/27/94

SOIL SAMPLING, TANK CAVITY, STOCK-PILED SOIL (2nd EPISODE OF TNK CAV. SMPL)

20' 0' 20'
SCALE IN FEET



SAMPLES TAKEN FROM BASE OF TANK CAVITY	TC2-1	TC2-2	TC2-8
	TC2-9	TC2-3	TC2-11
	TC2-13	TC2-4	TC2-12
	TC2-15	TC2-5	TC2-14
		TC2-7	TC2-16

SAMPLES TAKEN FROM SIDEWALLS OF TANK CAVITY — SIDEWALL UNDERCUT - SAMPLES TAKEN

TC2-6 AND TC2-10 TAKEN BUT NOT ANALYZED