

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY
DAVID J. KEARS, Agency Director



March 2, 1999

STID 1188

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700

REMEDIAL ACTION COMPLETION CERTIFICATION

Mr. Hooshang Hadjian
7240 Dublin Boulevard
Dublin, CA 94583

RE: Skyline Chevron, 11880 Skyline Blvd., Oakland

Dear Mr. Hadjian:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Section 2721(e) of Title 23 of the California Code of Regulations.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung
Director, Environmental Health Services

c: Chuck Headlee, RWQCB
Dave Deaner, SWRCB (w/attachment)
✓ Leroy Griffin, Oakland Fire Department
✓ SOS/files

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY
DAVID J. KEARS, Agency Director



March 3, 1999

STID 1188

Mr. Hooshang Hadjian
7240 Dublin Boulevard
Dublin, CA 94568

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700

RE: Skyline Chevron, 11880 Skyline Blvd., Oakland

Dear Mr. Hadjian:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]) of the California Health and Safety Code. The State Water Resources Control Board (SWRCB) has required since March 1, 1997 that this agency use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at this site.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- o Up to 270 parts per billion (ppb) Total Petroleum Hydrocarbons as Gasoline and 0.8 ppb benzene, among other fuel constituents, are present in groundwater beneath the site.

If you have any questions, please contact the undersigned at (510) 567-6783.

Sincerely,

✓ Scott O. Seery, CHMM
Hazardous Materials Specialist

Enclosures:

1. Case Closure Letter
2. Case Closure Summary

- SIGNED
COPY -

01-1397

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: June 5, 1996

Agency name: Alameda County-HazMat Address: 1131 Harbor Bay Pkwy
City/State/Zip: Alameda, CA 94502 Phone: (510) 567-6700
Responsible staff person: D. Klettke Title: Hazardous Materials Spec.

II. CASE INFORMATION

Site facility name: Skyline Chevron
Site facility address: 11880 Skyline Blvd., Oakland, CA 94619
RB LUSTIS Case No: N/A Local Case No./LOP Case No.: 1188
URF filing date: 6/19/91 SWEEPS No: N/A

Responsible Parties: Addresses: Phone Numbers:
Hooshang Hadjian, 2108 San Ramon Valley Blvd., San Ramon, CA 94583
(510) 838-5594

ENVIRONMENTAL
PROTECTION

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	6000	Leaded gasoline	removed	2/28/91
2	8000	UL gasoline	removed	2/28/91
3	6000	Super UL gasoline	removed	2/28/91
4	4000	Diesel	removed	2/28/91
5	500	Waste oil	removed	2/28/91

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: UST failure, 8000-gallon UL gasoline tank had large hole in NW end of tank.
Site characterization complete? YES
Date approved by oversight agency: unknown, file indicates that a follow-up letter was sent 6/4/92 requesting that a work plan be implemented.
Monitoring Wells installed? YES Number: five (5)
Proper screened interval? YES
Highest GW depth below ground surface: 4.79' on 1/11/93 (STMW-2)
Lowest depth: 12.62' on 8/12/94 (STMW-4)
Flow direction: consistently east-northeasterly following site topography.
Most sensitive current use: commercial
Are drinking water wells affected? NO Aquifer name: N/A
Is surface water affected? NO Nearest affected SW name: N/A
Off-site beneficial use impacts (addresses/locations): N/A
Report(s) on file? YES Where is report(s) filed? Alameda County
1131 Harbor Bay Pkwy
Alameda, CA 94502

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount</u> <u>(include units)</u>	<u>Action (Treatment</u> <u>or Disposal w/destination)</u>	<u>Date</u>
Tanks	1 x 8000-gallon; 2 x 6000-gallon; 1 x 4000-gallon; 1 x 500-gallon;	disposal/Erickson, Inc. 255 Parr Blvd., Richmond, CA	2/28/91
Piping			
Free Product			
Soil	250 cubic yards	aerated; reused on site	
Groundwater	8000-gallons	disposed to storm drain as per RWQCB	
Barrels			

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

<u>Contaminant</u>	<u>Soil (ppm)</u>		<u>Water (ppb)</u>	
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>
TPH (Gas)	2700	<1	120,000	270
TPH (Diesel)	1300	<1	790	NA
Benzene	8.6	<0.005	11,000	0.8
Toluene	150	<0.005	17,000	<0.5
Ethyl benzene	83	<0.005	1800	7.3
Xylenes	560	0.008	15,000	7.4
Oil & Grease	190	<10	<1000	<500
Heavy metals	¹		²	
Other		³		

NA=Not Analyzed

Comments (Depth of Remediation, etc.):

The project site was abandoned as a service station by the owner in February 1991. The site had five (5) underground storage tanks (USTs - 1-6000-gallon leaded gasoline, 1-8000-gallon unleaded gasoline, 1-6000-gallon super unleaded gasoline, 1-4000-gallon diesel and 1-500-gallon waste oil), which were removed in February 1991.

Laboratory analyses of soil samples collected at the time of UST removals detected maximum concentrations of total petroleum hydrocarbons as diesel (TPHd - 1300 ppm in sample # 14), total petroleum hydrocarbons as gasoline (TPHg - 2700 ppm in sample # 4), Oil & Grease (O&G - 190 ppm in sample # 20), benzene (8.6 ppm in

¹The metals cadmium, chromium, lead, nickel and zinc were detected at concentrations of ND, 280 ppm, ND, 1400 ppm and 28 ppm, respectively, from soil sample # 20, collected from the waste oil excavation.

²Zinc was the only metal detected at a concentration of 0.69 ppm, from sample # 19, which was collected from the groundwater encountered in the waste oil excavation.

³Maximum concentrations of TPHg and BTEX were detected in soil sample S-13-5, at concentrations of 6.0 ppm, 0.031 ppm, 0.076 ppm, 0.095 ppm, and 0.45 ppm, respectively, at a depth of five (5) feet below grade from the former service island area excavation.

sample # 4), toluene (150 ppm in sample # 4), ethyl benzene (83 ppm in sample # 4) and total xylenes (560 ppm in sample # 4).

Laboratory analyses of water samples collected at the time of UST removals detected maximum concentrations of TPHg (120 ppm in sample # 8), TPHd (0.79 ppm in sample # 19), benzene (11 ppm in sample # 8), toluene (17 ppm in sample # 8), ethyl benzene (1.8 ppm in sample # 7) and total xylenes (15 ppm in sample # 8).

The metals cadmium, chromium, lead, nickel and zinc were detected at concentrations of ND, 280 ppm, ND, 1400 ppm and 28 ppm, respectively, from soil sample # 20, collected from the waste oil excavation. Zinc was the only metal detected in water sample # 19, at a concentration of 0.69 ppm, collected from the waste oil excavation.

Over-excavation of the former UST areas was conducted in January 1992. The soil in the former tank areas was excavated until photo ionization detector (PID) readings showed concentrations of volatile organic compounds to be less than 10 ppm. During over-excavation of the gasoline and diesel tank areas, groundwater seepage from the sidewall of the excavation was encountered at approximately five (5) to seven (7) feet below grade (bg). The depths of the gasoline and diesel tank excavation ranged from seven feet to a maximum of 10 feet bg. A total of seven (7) sidewall samples (S-1-4 to S-7-4) were collected from the former gasoline and diesel tank areas, and a total of four (4) sidewall samples (S-8-7 to S-10-7) were collected from the former waste oil tank area. The dimensions of the excavations for both former tank areas and their sampling locations are shown in Figure 2.

The soil samples were analyzed for TPHd, TPHg and BTEX. Total Oil and Grease (TOG) was analyzed for waste oil tank area soil samples only. Laboratory results of the soil samples collected during the over-excavation activities are summarized in Table 1.

Laboratory verification soil samples from the sidewalls indicated that most of the soil containing elevated levels of TPHg were removed except in two areas located in the vicinity of the former service island area. The concentrations of TPH in these two areas were reported as being less than 10 mg/kg using field screening methods.

The amount of excavated contaminated soils were estimated to be approximately 200 cubic yards from the gasoline and diesel tank areas and approximately 50 cubic yards from the waste oil tank area. Prior to backfilling of the fuel tank areas, approximately 8,000-gallons of groundwater was pumped into two holding tanks. A water sample collected from the two holding tanks was analyzed to contain non-detectable concentrations of petroleum hydrocarbons, and was later discharged to the storm water drain under verbal approval from the Regional Water Quality Control Board. (RWQCB). The excavation was backfilled with mostly imported fill material and compacted. The upper one foot of the excavation areas were backfilled with the aerated stockpiled soil, which was analyzed to contain non-detectable levels of TPHg and BTEX, and low levels of TPHd (3.6 mg/kg).

The excavation of the service island and former abandoned product line was conducted during March of 1992. The depths of excavation ranged from four (4) to seven (7) feet bg. Low to moderate levels of gasoline odor were detected in the service island excavation areas. Excavation activities continued until no odor was detected, and PID readings were less than approximately 10 ppm. Soil samples were collected at depths ranging from 4 to 7 feet bg (See Figure 2). Analytical results for the soil samples collected during the service island and product line excavations are summarized in Table 3.

IV. 'CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? **YES**
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? **YES**
Does corrective action protect public health for current land use? **YES**
Site management requirements: **None**
Should corrective action be reviewed if land use changes? **YES**
Monitoring wells Decommissioned: **None, pending closure**
Number Decommissioned: **None** Number Retained: **five (5)**
List enforcement actions taken: **None**
List enforcement actions rescinded: **N/A**

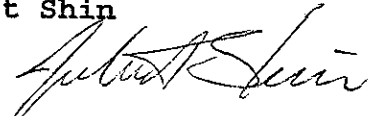
V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Dale Klettke Title: Hazardous Materials Specialist

Signature:  Date: 6/5/96

Reviewed by

Name: Juliet Shin Title: Sr. Hazardous Materials Specialist

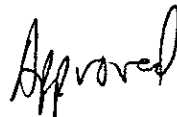
Signature:  Date: 6/6/96

Name: Thomas Peacock Title: LOP Manager

Signature:  Date: 6-5-96

VI. RWQCB NOTIFICATION

Date Submitted to RB:

RB Response: 

RWQCB Staff Name: Kevin Graves

Title: **AWRCE**

Signature: 

Date: 7/1/96

VII. ADDITIONAL COMMENTS, DATA, ETC.

On April 24, 1992, four exploratory borings (MW-1 through MW-4) were advanced to depths of 21, 20, 23 and 20 feet, respectively, and subsequently converted to groundwater monitoring wells STMW-1 through STMW-4). Soil samples from the borings were collected at depths of approximately four (4) and nine (9) feet bg. Soil samples were analyzed for TPHg, TPHd and BTEX. Chemical analyses of soil samples from the borings detected no TPHd, TPHg and BTEX for all soil samples except sample STMW-2-4. Soil sample STMW-2-4 detected TPHg (1.3 mg/kg), TPHd (3.4 mg/kg), toluene (0.0079 mg/kg), ethyl benzene (0.0058 mg/kg) and total xylenes (0.019 mg/kg). Results are summarized in Table 4.

On May 8, 1992, water samples from the four (4) on-site wells were collected. The groundwater level during sampling ranged from 6.99 feet to 8.5 feet bg. The shallow groundwater flow was in an easterly direction.

During initial sampling, a mild petroleum odor was noted in well STMW-4 only. All groundwater samples were analyzed for TPHg, TPHd and BTEX. In addition, groundwater samples collected from the vicinity of the waste oil tank area were analyzed for VOCs (EPA Method 8010) and TOG. Groundwater chemical results of the four on-site monitoring wells are summarized in Table 4.

On December 23, 1992, Soil Tech Engineering (STE) installed one additional monitoring well (STMW-5) down-gradient of the former waste oil tank and the service island areas (See Figure 4). Groundwater was encountered at approximately 13 feet bg, and the total depth of the groundwater monitoring well is 21 feet. Shallow groundwater flow was again calculated to be in an easterly direction.

Two soil samples (STMW-5-4 and STMW-5-8) were collected at depths of four (4) and eight (8) feet bg, respectively. Soil samples were analyzed for TPHd, TPHg, TOG, VOC's and BTEX. No TPHd, TPHg, TOG, VOC's or BTEX was detected in either of the two soil samples.

The subject site has conducted nine (9) groundwater sampling events. Low levels of petroleum hydrocarbons have consistently been detected in well STMW-2, however, contaminant levels detected since 8/19/92 have been at or below the maximum contaminant levels (MCLs) for primary drinking water standards (See Table 5).

Case closure is warranted for this site as a "Low-Risk Groundwater Case" for the following reasons.

- a) The source has been sufficiently removed or has been remediated.

Laboratory analysis of verification soil samples collected from the sidewalls of the former gasoline and waste oil UST excavations indicate that soil containing elevated levels of TPHg were removed. However, xylene was detected at a concentration of 8 ppb in confirmatory soil sample S-8-7, collected at a depth of 7 feet bg from the waste oil excavation. Laboratory analysis of verification soil samples collected from the service island detected maximum levels of TPHg and BTEX at concentrations of 6.0, 0.031, 0.076, 0.095 and 0.45 ppm, respectively.

- b) The site has been adequately characterized.

Laboratory analysis of soil and groundwater samples collected during site investigations document that the previous release is small in extent and appears to be limited to soils remaining in place surrounding monitoring well STMW-2 and the service island verification samples S-13-5 and S-15-5.

- c) The dissolved hydrocarbon plume appears to be stable and is not migrating.

TPHg and BTEX have consistently been detected in groundwater samples collected from monitoring well STMW-2, located near the former service islands. Since initial groundwater sampling events began in 1992, maximum concentrations of TPHg and BTEX detected in wells STMW-1 through STMW-5 are 0.81, 0.02, 0.0031, 0.026 and 0.046 ppm, respectively.

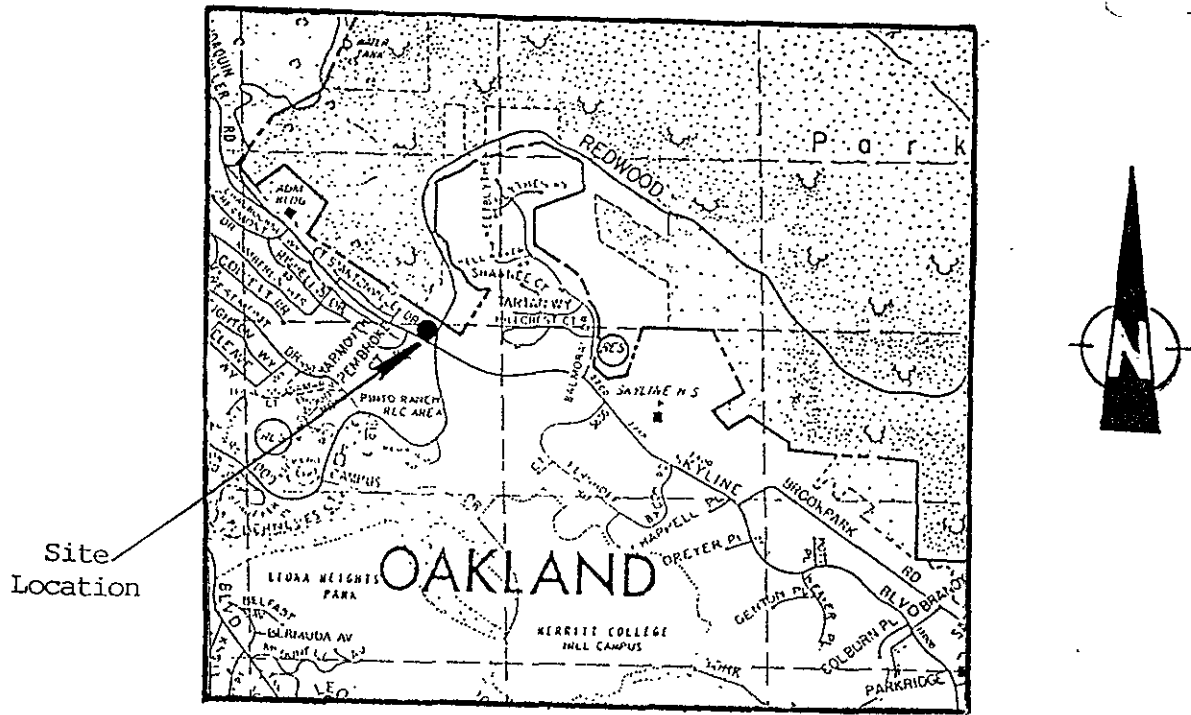
- d) No water walls, deeper drinking water wells, surface water or other sensitive receptors are likely to be impacted.

The petroleum hydrocarbon groundwater contamination appears to be localized in the vicinity of the waste oil UST and service island excavations. The concentrations historically detected in these areas

should not impact the quality of groundwater down gradient of the site.

- e) The site presents no significant risk to human health or the environment.

Benzene concentrations in confirmation soil samples, collected from the final UST and service island excavations, are not in exceedance of the ASTM RBCA CA-modified Tier 1 RSBL value (0.049 ppm) for a 1E-05 (1 in 100,000) excess cancer risk for soil-vapor intrusion from soil to buildings. Since January 1993, benzene concentrations detected in groundwater samples collected from the five on-site monitoring wells have been at or below primary drinking water MCLs.



Thomas Brothers Map 1982 Edition
Alameda - Contra Costa Counties

Page 13 A6

Figure 1

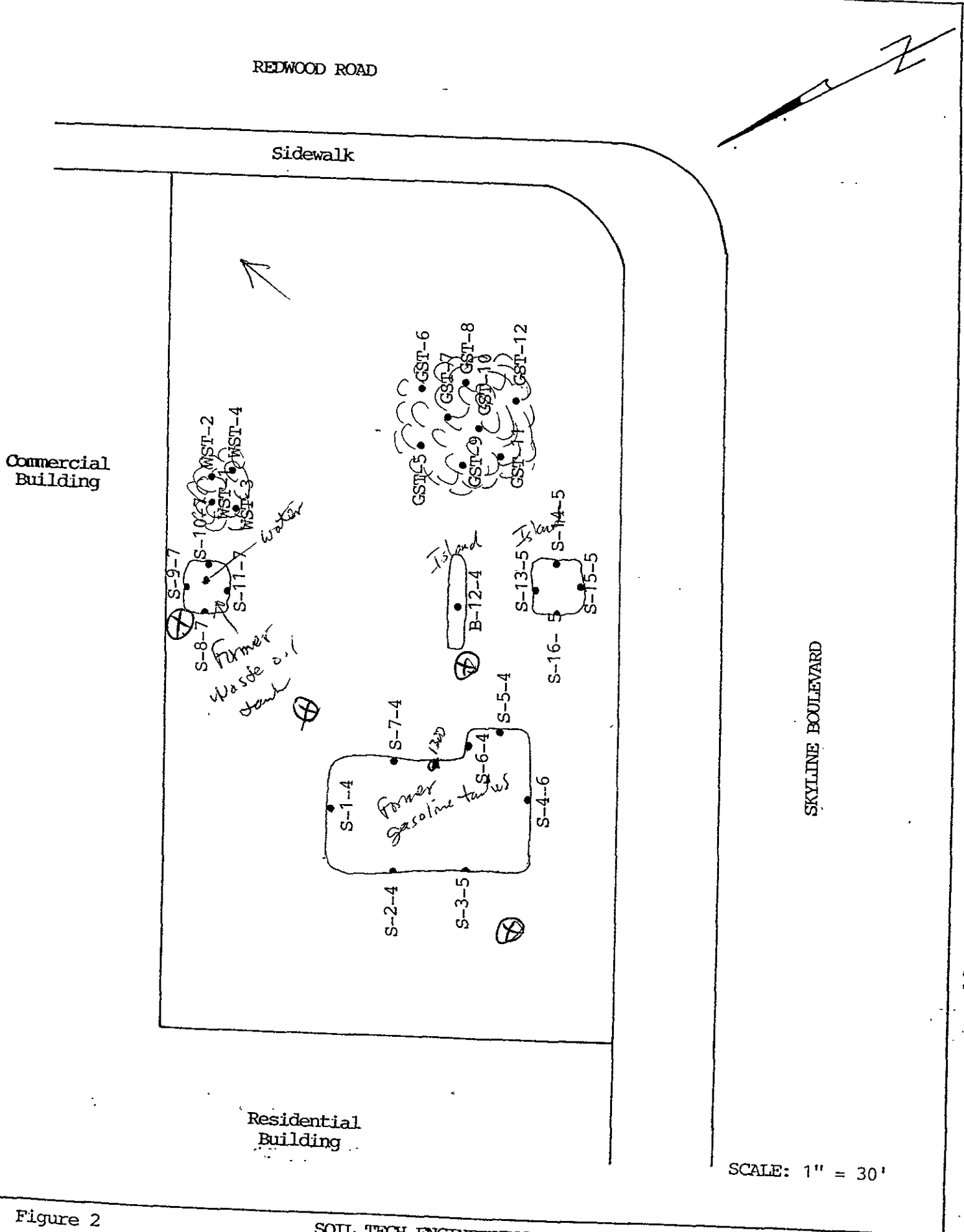


Figure 2

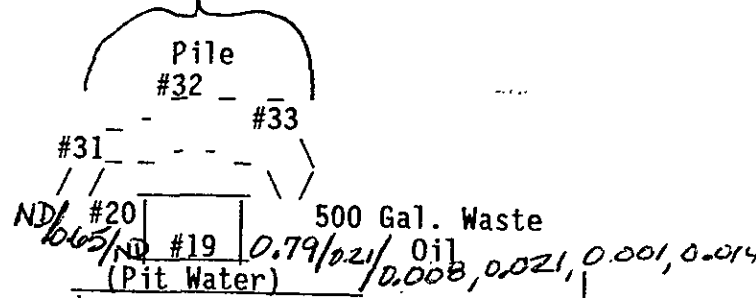


Chevron Station
11880 Skyline Blvd.
Oakland, CA

DIESEL CONC. IN RED (PPM)
GASOLINE CONC. IN BLACK (PPM)
BTEX CONC. IN BLUE (PPM)

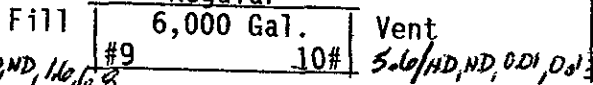
DIESEL/GASOLINE/BTEX

21/0.68/ND

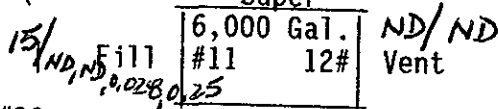


120/11, 17, 1.5, 15

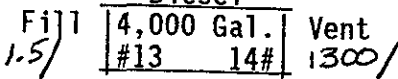
(#8 Pit Water)
Regular



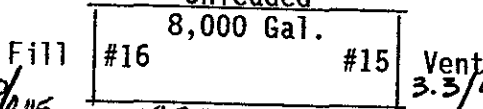
Super



Diesel

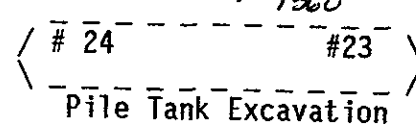
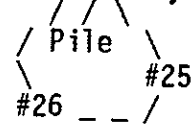
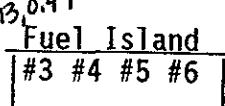
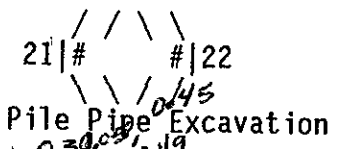
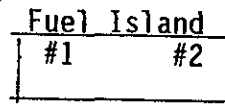


Unleaded



(Pit Water)

6.5/0.12, 0.17, 1.8, 0.030



N
Redwood
Road

Skyline Blvd.

TABLE 1
SOIL ANALYTICAL RESULTS
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

A. SOIL RESULTS FROM FORMER GASOLINE AND WASTE OIL TANK AREAS.

Date	Sample #	Depth feet	TPHd	TPHg	B	T	E	X	TOG
1/22/92	S-1-4	4	NA	ND	ND	ND	ND	ND	NA
	S-2-4	4	NA	ND	ND	ND	ND	ND	NA
	S-3-5	5	NA	ND	ND	ND	ND	ND	NA
	S-4-6	6	NA	ND	ND	ND	ND	ND	NA
1/23/92	S-5-4	4	ND	ND	ND	ND	ND	ND	NA
	S-6-4	4	ND	ND	ND	ND	ND	ND	NA
	S-7-4	4	ND	ND	ND	ND	ND	ND	NA
1/24/92	S-8-7	7	ND	ND	ND	ND	ND	0.008	ND
	S-9-7	7	ND	ND	ND	ND	ND	ND	ND
	S-10-7	7	ND	ND	ND	ND	ND	ND	ND
	S-11-7	7	ND	ND	ND	ND	ND	ND	ND

TPHd - Total Petroleum Hydrocarbons as diesel
 TPHg - Total Petroleum Hydrocarbons as gasoline
 BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
 TOG - Total Oil and Grease
 NA - Not Analyzed
 ND - Not Detected (Below Laboratory Detection Limit)

TABLE 2
STOCKPILED SOIL ANALYTICAL RESULTS
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample #	TPHd	TPHg	B	T	E	X	TOG
1/24/92	WST-1,2,3,4	ND	ND	ND	ND	ND	ND	36
	GST-5,6,7,8	3.9	ND	ND	ND	ND	ND	NA
	GST-9,10,11,12	ND	ND	ND	ND	ND	ND	NA

TPHd - Total Petroleum Hydrocarbons as diesel
 TPHg - Total Petroleum Hydrocarbons as gasoline
 BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
 NA - Not Analyzed
 ND - Not Detected (Below Laboratory Detection Limit)

TABLE 3
SOIL ANALYTICAL RESULTS
FROM SERVICE ISLAND AREAS
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample #	Depth feet	TPHg	B	T	E	X
3/9/92	B-12-4	4	ND	ND	ND	ND	ND
	S-13-5	5	6.0	0.031	0.076	0.095	0.45
	S-14-5	5	ND	ND	ND	ND	ND
	S-15-5	5	1.5	ND	0.012	0.008	0.16
	S-16-5	5	ND	ND	ND	ND	ND

TPHg - Total Petroleum Hydrocarbons as gasoline
 BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
 ND - Not Detected (Below Laboratory Detection Limit)

TABLE 4
SOIL AND WATER ANALYTICAL RESULTS

I. SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample #	Depth feet	TPHd	TPHg	B	T	E	X	TOG
4/24/92	STMW-1-4	4	ND	ND	ND	ND	ND	ND	NA
	STMW-1-9	9	ND	ND	ND	ND	ND	ND	NA
	STMW-2-4	4	3.4	1.3	ND	0.0079	0.0058	0.019	NA
	STMW-2-9	9	ND	ND	ND	ND	ND	ND	NA
	STMW-3-4	4	ND	ND	ND	ND	ND	ND	NA
	STMW-3-9	9	ND	ND	ND	ND	ND	ND	NA
	STMW-4-4	4	ND	ND	ND	ND	ND	ND	ND

TPHd - Total Petroleum Hydrocarbons as diesel
 TPHg - Total Petroleum Hydrocarbons as gasoline
 BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
 ND - Not Detected (Below Laboratory Detection Limit)
 NA - Not Analyzed

TABLE 4 CONT'D
SOIL AND WATER ANALYTICAL RESULTS

II. WATER ANALYTICAL RESULTS IN MILLIGRAMS PER LITER(mg/L)

Date	Well No.	TPHd	TPHg	B	T	E	X	TOG
5/08/92	STMW-1	ND	ND	ND	ND	ND	ND	ND
	STMW-2	ND	ND	ND	ND	ND	ND	ND
	STMW-3	ND	ND	ND	ND	ND	ND	ND
	STMW-4	ND	0.57	0.02	0.0067	0.002	0.046	ND

III. VOLATILE ORGANIC ANALYSES PER EPA METHOD 8010

Date	Well Number	VOC's Compound Detected
5/08/92	STMW-3	None Detected
	STMW-4	None Detected

TPHd - Total Petroleum Hydrocarbons as diesel
 TPHg - Total Petroleum hydrocarbons as gasoline
 BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
 ND - Not Detected (Below Laboratory Detection Limit)
 NA - Not Analyzed

TABLE 5
GROUNDWATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/l)

A. TPHd, TPHg, BTEX AND TOG RESULTS

Date	Well No.	TPHd	TPHg	B	T	E	X	TOG
2/14/95	STMW-1	NA	ND	ND	ND	ND	ND	NA
	STMW-2	NA	0.63	0.0006	0.0007	0.0063	0.0099	NA
	STMW-3	NA	ND	ND	ND	ND	ND	NA
	STMW-4	NA	ND	ND	ND	ND	ND	ND
	STMW-5	NA	ND	ND	ND	ND	ND	ND
8/16/95	STMW-1	NA	ND	ND	ND	ND	ND	NA
	STMW-2	NA	0.27	0.0008	ND	0.0073	0.0074	NA
	STMW-3	NA	ND	ND	ND	ND	ND	NA
	STMW-4	NA	ND	ND	ND	ND	ND	ND
	STMW-5	NA	ND	ND	ND	ND	ND	ND
	SDWS	NL	NL	0.001	0.100*	0.68	1.75	NL

TABLE 5 CONT'D
 GROUNDWATER ANALYTICAL RESULTS
 IN
 MILLIGRAMS PER LITER (mg/l)

A. TPHd, TPHg, BTEX AND TOG RESULTS

Date	Well No.	TPHd	TPHg	B	T	E	X	TOG
1/10/94	STMW-1	NA	ND	ND	ND	ND	ND	NA
	STMW-2	NA	ND	ND	ND	ND	ND	NA
	STMW-3	NA	NA	NA	NA	NA	NA	NA
	STMW-4	NA	ND	ND	ND	ND	ND	ND
	STMW-5	NA	ND	ND	ND	ND	ND	ND
8/12/94	STMW-1	NA	ND	ND	ND	0.0009	0.004	NA
	STMW-2	NA	ND	ND	ND	0.0007	ND	NA
	STMW-3	NA	ND	ND	ND	ND	0.002	NA
	STMW-4	NA	ND	ND	ND	ND	ND	ND
	STMW-5	NA	ND	ND	ND	ND	0.002	ND
	SDWS	NL	NL	0.001	0.100*	0.68	1.75	NL

TABLE 5 CONT'D
GROUNDWATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/l)

A. TPHd, TPHg, BTEX AND TOG RESULTS

Date	Well No.	TPHd	TPHg	B	T	E	X	TOG
4/09/93	STMW-1	ND	0.37	ND	ND	0.0028	0.0053	NA
	STMW-2	ND	0.81	0.0009	0.0011	0.0036	0.015	NA
	STMW-3	ND	ND	ND	ND	ND	ND	NA
	STMW-4	ND	ND	ND	ND	ND	ND	0.0009
	STMW-5	ND	ND	ND	ND	ND	ND	0.0073
7/16/93	STMW-1	NA	ND	ND	ND	ND	ND	NA
	STMW-2	NA	0.56	0.0012	0.002	0.015	0.0032	NA
	STMW-3	NA	NA	NA	NA	NA	NA	NA
	STMW-4	NA	ND	ND	ND	ND	ND	ND
	STMW-5	NA	ND	ND	ND	ND	ND	ND
	SDWS	NL	NL	0.001	0.100*	0.68	1.75	NL

TABLE 5
GROUNDWATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/l)

A. TPHd, TPHg, BTEX AND TOG RESULTS

Date	Well No.	TPHd	TPHg	B	T	E	X	TOG
5/08/92	STMW-1	ND	ND	ND	ND	ND	ND	ND
	STMW-2	ND	ND	ND	ND	ND	ND	ND
	STMW-3	ND	ND	ND	ND	ND	ND	ND
	STMW-4	ND	0.57	0.02	0.0067	0.002	0.046	ND
8/19/92	STMW-1	ND	ND	ND	ND	ND	ND	NA
	STMW-2	ND	0.71	0.0057	0.0031	0.026	0.023	NA
	STMW-3	ND	ND	ND	ND	ND	ND	ND
	STMW-4	ND	ND	ND	ND	ND	ND	ND
1/11/93	STMW-1	ND	ND	ND	ND	ND	ND	NA
	STMW-2	ND	0.77	0.0008	0.0012	0.0044	0.0092	NA
	STMW-3	ND	ND	ND	ND	ND	ND	ND
	STMW-4	ND	ND	ND	ND	ND	ND	1.4
	STMW-5	ND	ND	ND	ND	ND	ND	ND

TABLE 5 CONT'D
 GROUNDWATER ANALYTICAL RESULTS
 IN
 MILLIGRAMS PER LITER (mg/l)

B. PURGEABLE HALOCARBONS (EPA METHOD 601) AND CHROMIUM RESULTS

Date	Well Number	Purgeable Halocarbons Detected
5/08/92	STMW-3	None Detected
	STMW-4	None Detected
8/19/92	STMW-3	None Detected
	STMW-4	None Detected
1/11/93	STMW-3	None Detected
	STMW-4	None Detected
	STMW-5	None Detected
4/09/93	STMW-4	None Detected
	STMW-5	None Detected
2/14/95	STMW-4	None Detected
	STMW-5	None Detected

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-1
Date Drilled: 4/24/92		Approx. Elevation

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					2-inch asphalt, 1-foot dark yellowish-brown baserock, very stiff.
2					Dark grey silty gravelly clay, damp, stiff.
3					Munsell Color: HUE 5Y 4/1
4	STMW-1-4			CL	Dark grey silty clay, damp, stiff.
5					Munsell Color: HUE 5Y 4/1
6					
7					
8					
9	STMW-1-9			CL	Dark grey silty clay, damp, very stiff.
10					Munsell Color: HUE 5Y 4/1
11					
12					
13					Very dark grey silty clay, moist, stiff.
14					Munsell Color: HUE 5Y 3/1
15					
16					

Remarks

File No. 10-91-482-SA

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-1
Date Drilled: 4/24/92		Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17					▽ First groundwater encountered at 17 feet.
18					
19					
20					
21					Boring terminated at 21 feet.
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

Logged By. Noori Ameli	Exploratory Boring Log	Boring No. STMW-2
Date Drilled. 4/24/92	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Dark brown silty gravelly clay, moist, stiff. Munsell Color: HUE 10YR 3/3
2					
3					
4	STMW-2-4			CL	Dark grey silty gravelly clay, moist, very stiff. Munsell Color: HUE 5Y 4/1
5					
6					Some big size (3" to 5" diameter) rocks in the soil.
7					
8					
9	STMW-2-9			CL	Dark grey silty clay, damp, very stiff. Munsell Color: HUE 5Y 4/1
10					
11					
12					
13					Very dark grey silty clay, moist, stiff. Munsell Color: HUE 5Y 3/1
14					
15					
16					▽ First groundwater encountered at 16 feet.

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. SIMW-2
Date Drilled: 4/24/92		Approx. Elevation
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17					Very dark grey silty clay, moist, stiff. Munsell Color: HUE 5Y 3/1
18					
19					Boring terminated at 20 feet.
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-3
Date Drilled: 4/24/92	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Very dark grey silty clay, damp. Munsell Color: HUE 10YR 3/1 Dark grey silty gravelly clay, damp, stiff. Munsell Color: HUE 5Y 4/1
2					
3					
4	STMW-3-4			CL	Dark grey silty clay with a few gravel, damp, stiff. Munsell Color: HUE 5Y 4/1
5					
6					
7					
8					
9	STMW-3-9			CL	Dark grey silty clay, damp, stiff. Munsell Color: HUE 5Y 4/1
10					
11					
12					
13					
14					
15					
16					Very dark grey silty clay, moist, stiff. Munsell Color: HUE 5Y 3/1 ∇ First groundwater encountered at 16 feet.

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-3
Date Drilled: 4/24/92	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17					Very dark grey silty clay, moist, stiff. Munsell Color: HUE 5Y 3/1
18					
19					Boring terminated at 23 feet.
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-4
Date Drilled. 4/24/92	Approx. Elevation	Boring Diameter 8-inch
Drilling Method Mobile drill rig B-40L		Sampling Method

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
1					Dark olive-grey silty gravelly clay. Munsell Color: HUE 5Y 3/2
2					
3					
4	STMW-4-4			CL	Dark olive-grey/dark brown silty gravelly clay, moist, stiff. Munsell Color: HUE 5Y 3/2/10YR 3/3
5					
6					
7					
8					
9					No sample recovery at this depth.
10					∇ First groundwater encountered at 10 feet. Dark brown silty clayey gravel, wet. Munsell Color: HUE 10YR 3/3
11					
12					
13					Color changes to very dark olive-grey silty gravelly clay, stiff, wet. Munsell Color: HUE 5Y 3/1
14					
15					
16					Color changes to dark grey silty clay with a few gravel, stiff, wet. Munsell Color: HUE 5Y 4/1

Remarks

Logged By: Noori Ameli	Exploratory Boring Log	Boring No. STMW-4
Date Drilled: 4/24/92	Approx. Elevation	Boring Diameter 8-inch

Drilling Method Mobile drill rig B-40L	Sampling Method
---	-----------------

Depth, Ft.	Sample No.	Field Test for Total Ionization	Penetration Resistance Blows/Ft.	Unified Soil Classification	DESCRIPTION
17					Color changes to dark grey silty clay with a few gravel, stiff, wet. Munsell Color: HUE 5Y 4/1
18					
19					Boring terminated at 20 feet.
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

REDWOOD ROAD

Sidewalk

Approximate Groundwater Direction as of 8/16/95

Commercial Building

C. EL. 98.88
W. EL. 87.37

Former Islands Excavation Areas

Monitoring Well Location (SIMW-5)

Monitoring Well Location (SIMW-4)

Former Tanks Excavation Areas

C. EL. 99.87
W. EL. 87.59

C. EL. 100.99
W. EL. 92.08

Monitoring Well Location (SIMW-3)

88.00

90.00

92.00

C. EL. 101.06
W. EL. 91.52

Monitoring Well Location (SIMW-2)

94.00

C. EL. 104.84
W. EL. 95.10

Monitoring Well Location (SIMW-1)

SKYLINE BOULEVARD

C. EL. Casing Elevation
W. EL. Water Elevation

Residential Building

Monitoring Well Location

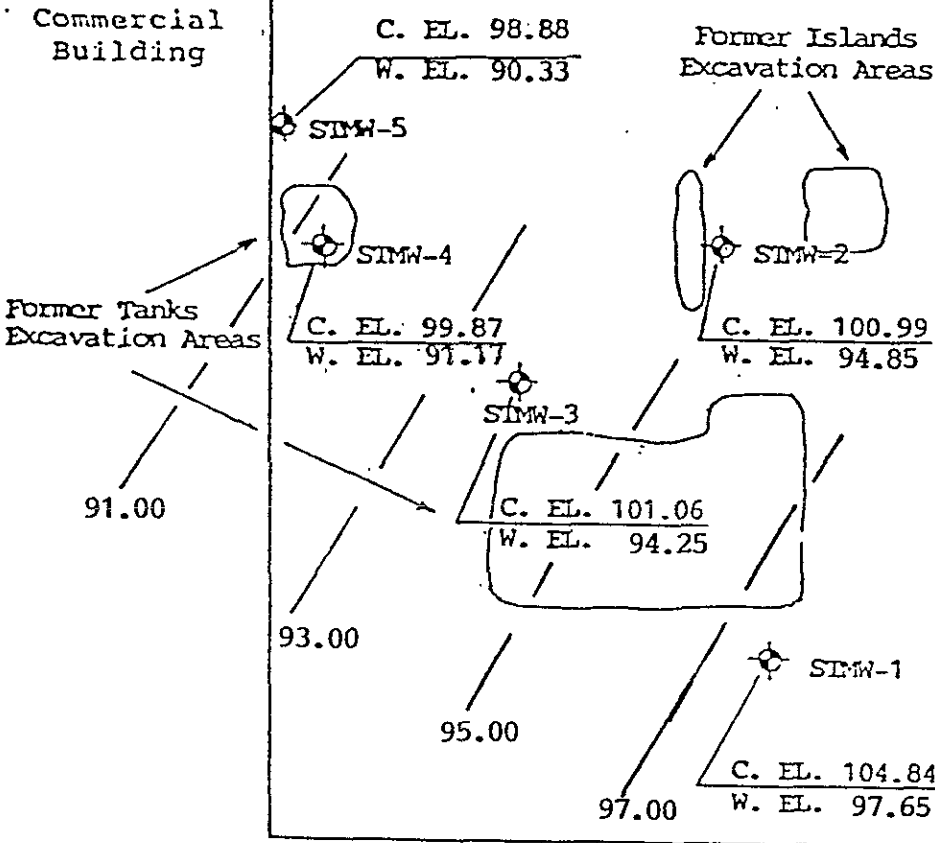
SCALE: 1" = 30'

Figure 2

REDWOOD ROAD

Sidewalk

Approximate Groundwater Direction as of 2/14/95



SKYLINE BOULEVARD

C. EL. Casing Elevation
W. EL. Water Elevation

Residential Building

Monitoring Well Location

SCALE: 1" = 30'

Figure 2

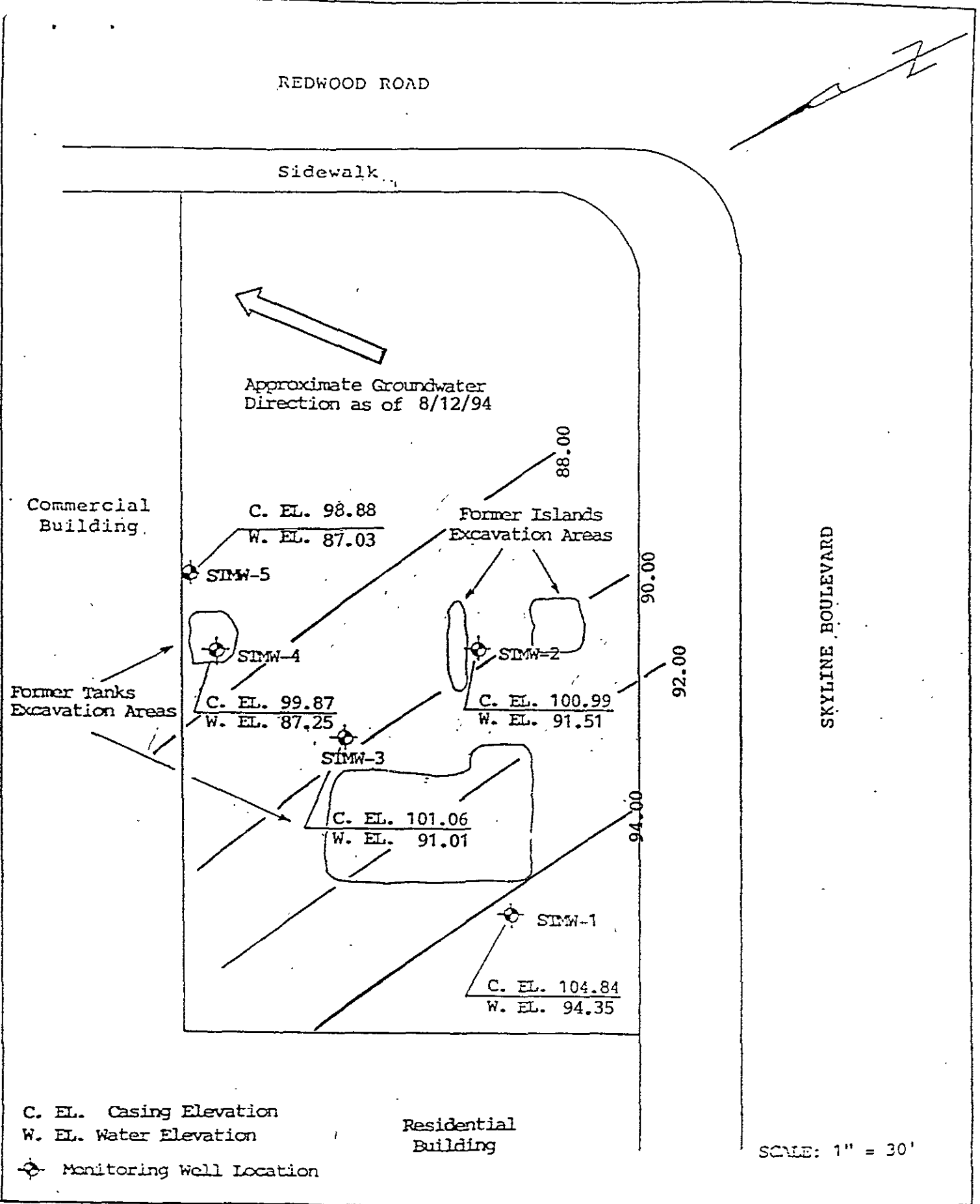
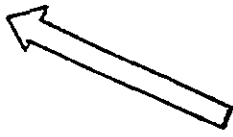


Figure 2

REDWOOD ROAD

Sidewalk..



Approximate Groundwater Direction as of 1/10/94

Commercial Building

C. EL. 98.88
W. EL. 88.23

Former Islands Excavation Areas

SIMW-5

SIMW-4

SIMW-2

Former Tanks Excavation Areas

C. EL. 99.87
W. EL. 88.55

C. EL. 100.99
W. EL. 93.04

SIMW-3

C. EL. 101.06
W. EL. 92.39

89.00

91.00

93.00

95.00

SIMW-1

C. EL. 104.84
W. EL. 96.03

SKYLINE BOULEVARD

Residential Building

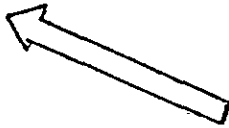
- C. EL. Casing Elevation
- W. EL. Water Elevation
- ⊕ Monitoring Well Location

SCALE: 1" = 30'

Figure 2

REDWOOD ROAD

Sidewalk



Approximate Groundwater Direction as of 7/16/93

Commercial Building

C. EL. 98.88
W. EL. 87.64

Former Islands Excavation Areas

Monitoring Well Location (SIMW-5)

Monitoring Well Location (SIMW-4)

Monitoring Well Location (SIMW-2)

Former Tanks Excavation Areas

C. EL. 99.87
W. EL. 87.89

C. EL. 100.99
W. EL. 92.66

Monitoring Well Location (SIMW-3)

C. EL. 101.06
W. EL. 91.94

89.00

91.00

93.00

Monitoring Well Location (SIMW-1)

95.00
C. EL. 104.84
W. EL. 95.31

SKYLINE BOULEVARD

C. EL. Casing Elevation

W. EL. Water Elevation

Monitoring Well Location

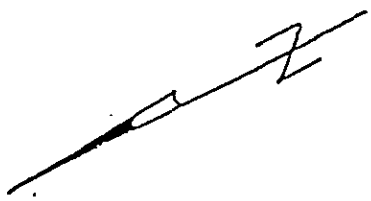
Residential Building

SCALE: 1" = 30'

Figure 2

REDWOOD ROAD

Sidewalk



Approximate Groundwater Direction as of 4/09/93

91.00

Commercial Building

C. EL. 98.88

W. EL. 90.01

Former Islands, Excavation Areas

93.00

SIMW-5

95.00

SIMW-2

SIMW-4

Former Tanks Excavation Areas

C. EL. 99.87

W. EL. 90.81

C. EL. 100.99

W. EL. 94.92

SIMW-3

97.00

C. EL. 101.06

W. EL. 93.96

SIMW-1

C. EL. 104.84

W. EL. 97.49

SKYLINE BOULEVARD

C. EL. Casing Elevation

W. EL. Water Elevation

Monitoring Well Location

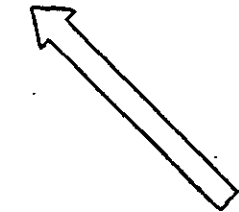
Residential Building

SCALE: 1" = 30'

Figure 2

REDWOOD ROAD

Sidewalk



Approximate Groundwater Direction as of 1/11/93

Commercial Building

C. EL. 98.88
W. EL. 91.20

Former Islands Excavation Areas

SIMW-5



SIMW-4



SIMW-2

Former Tanks Excavation Areas

C. EL. 99.87
W. EL. 91.89

C. EL. 100.99
W. EL. 96.20

SIMW-3

C. EL. 101.06
W. EL. 95.48

93 94 95

96

97

98

SIMW-1

C. EL. 104.84
W. EL. 98.61

SKYLINE BOULEVARD

C. EL. Casing Elevation
W. EL. Water Elevation

Residential Building

Monitoring Well Location

SCALE: 1" = 30'

Figure 2

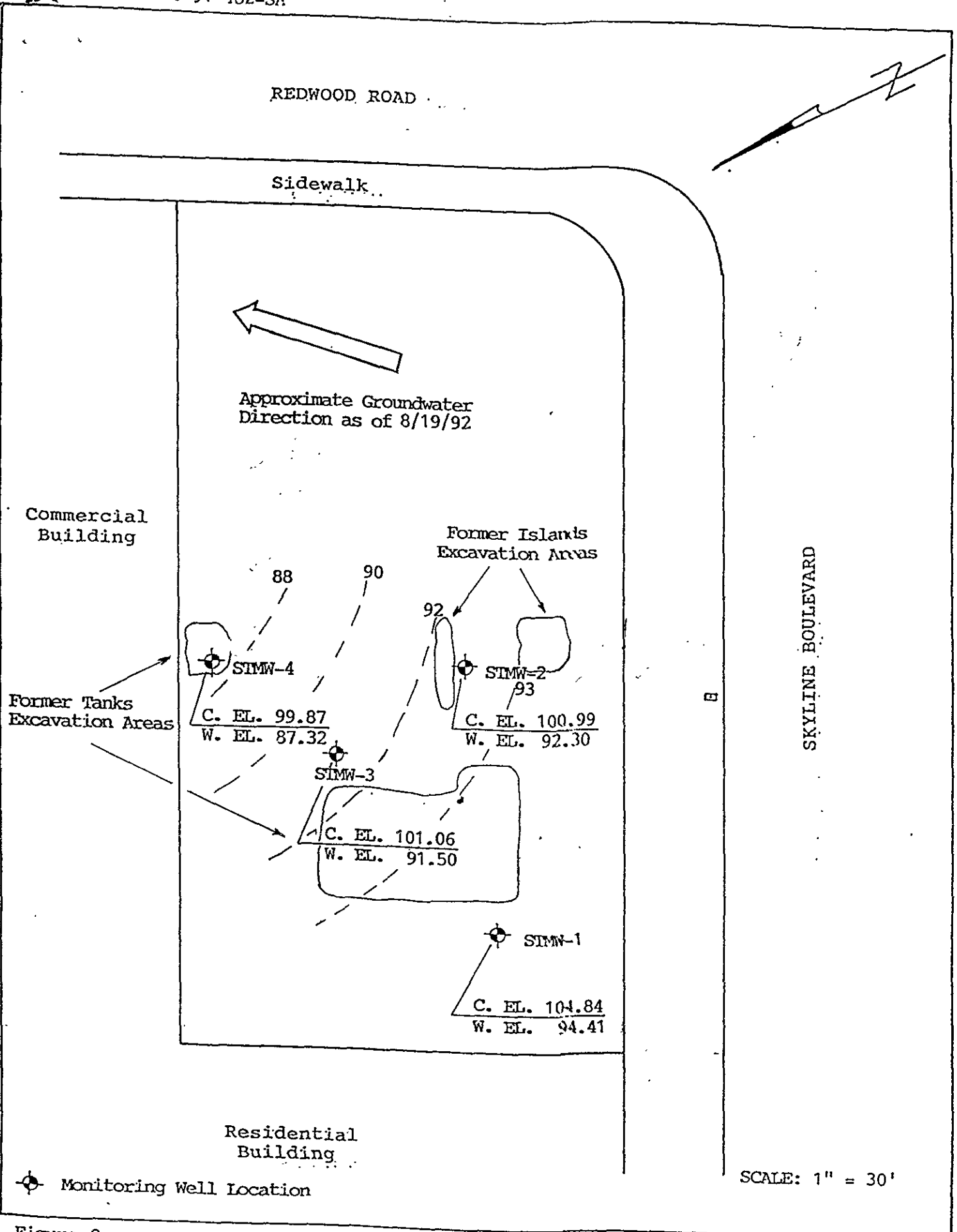


Figure 2

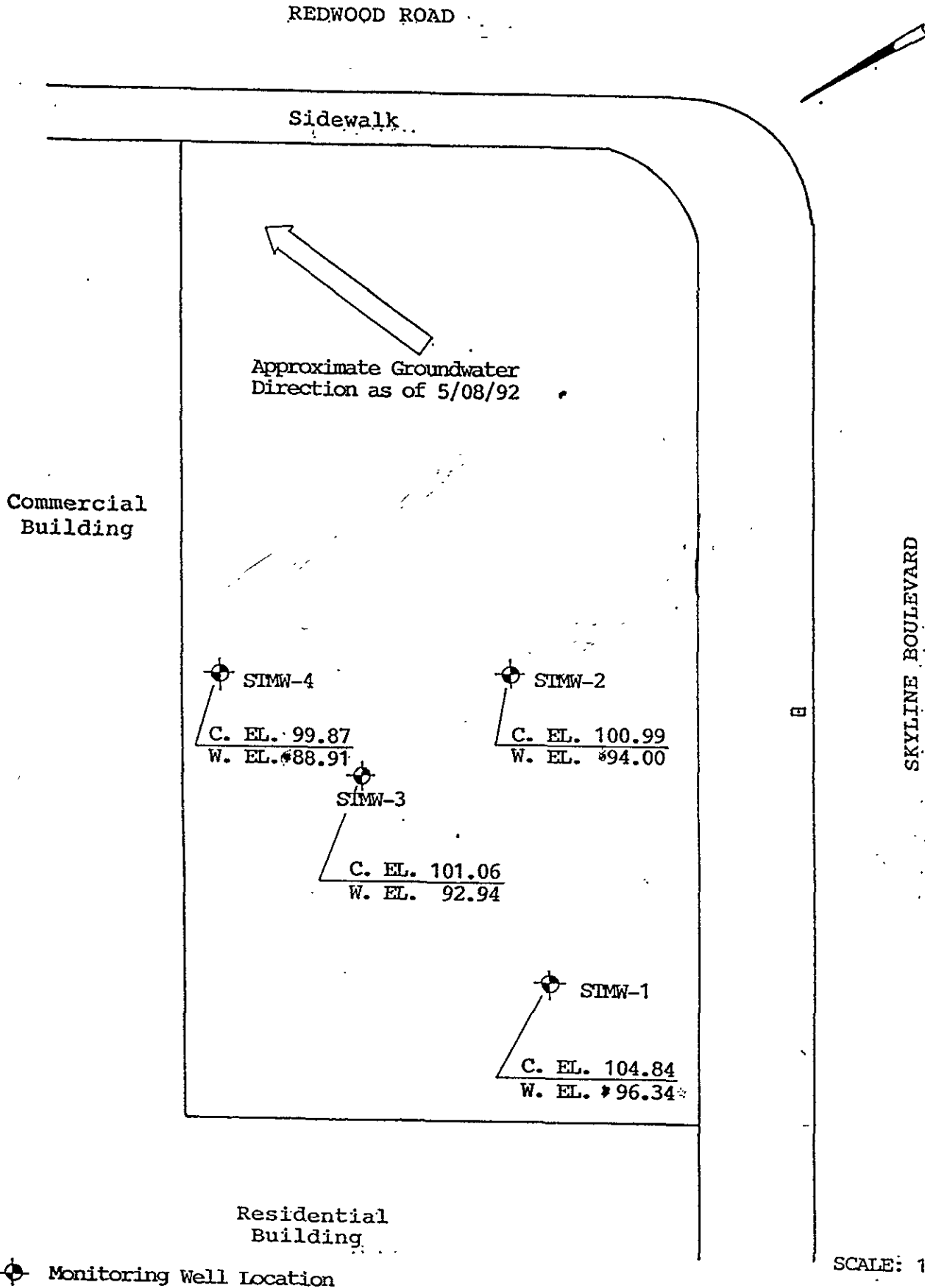


Figure 3