ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

2432-Std

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

REMEDIAL ACTION COMPLETION CERTIFICATION

January 7, 1997

Mr. Clifford Bermodes
c/o Sanact, Inc. Dba Roto Rooter
14981 Washington Avenue
San Leandro, CA 94578

RE: ROTO-ROOTER, 14985 WASHINGTON AVENUE, SAN LEANDRO

Dear Mr. Shaw:

This letter confirms the completion of site investigation and remedial action for the one 1000-gallon gasoline underground storage tank 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 tank 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, Department of Environmental Health

01-1261 (1)

CALIFORNIA REGIONAL WATER

JUL 12 1996 KG

QUALITY CONTROL BOARD

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION **Date: May 29, 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: **Roto Rooter**
Site facility address: **14985 Washington Avenue, San Leandro, CA 94578**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **2432**
URF filing date: **7/16/90** SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
Clifford Bermodes, c/o Sanact, Inc. Dba Roto Rooter	**14981 Washington Avenue, San Leandro, CA 94578**	**(510)483-2324**

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	1000 gallon	gasoline	removed	6/15/90

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **unknown, possible holes in UST (from file notes)**
Site characterization complete? **YES**
Date approved by oversight agency: **5/25/94**
Monitoring Wells installed? **YES** Number: **four (4)**
Proper screened interval? **YES**
Highest GW depth below ground surface: **4.42' (MW-3 on 1/12/95)**
Lowest depth: **9.85' (MW-4 on 7/7/95)**
Flow direction: **varies, predominantly SW**
Most sensitive current use: **commercial**
Are drinking water wells affected? **NO** Aquifer name: **San Leandro Cone**
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

ENVIRONMENTAL PROTECTION
96 AUG 22 PM 2:22

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank	1000 gallons	disposal/Erickson, Inc. 255 Parr Blvd., Richmond, CA 94801	6/15/90
Piping	unknown		
Free Product			
Soil	80 cubic yard	aeration/reused on site	
Groundwater			
Barrels			
Tank rinsate	150 gallons	disposal/H & H Ship Service 220 China Basin Street, San Francisco,CA	6/15/90

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm) Before[1]	Soil (ppm) After[2]	Water (ppb) Before[3]	Water (ppb) After
TPH (Gas)	1000	<1	35,000	<50
TPH (Diesel)	NA	NA	NA	NA
Benzene	2.20	<0.005	1,230	<0.5
Toluene	2.16	<0.005	1,980	<0.5
Ethyl benzene	9.19	<0.005	1,620	<0.5
Xylenes	0.11	<0.005	9,480	2.6
Oil & Grease	NA	NA	NA	NA
Heavy metals	NA	NA	NA	NA
Other-MTBE	NA	NA	NA	<5

NA=Not analyzed

Comments (Depth of Remediation, etc.):

On June 15, 1990, one (1) 1000-gallon underground storage tank (UST) formerly containing unleaded gasoline was removed from the site by Verl's Construction. Ground water was present at the base of the excavation at a depth of approximately 7 feet below ground surface (bgs). Soil sample S1 was collected from the soil/groundwater interface about one foot back into the east sidewall of the excavation at an approximate depth of 7 feet bgs. Soil sample S2 was collected at an approximate depth of 9 feet bgs beneath the former location of the west end of the tank. In addition, sample PW was collected from water which had accumulated in the excavation.

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[1]Before TPHg, benzene, toluene, and ethyl benzene soil concentrations were detected in sample S1, collected at the soil/water interface at a depth of seven feet below grade (bg) from the east sidewall. The xylene soil concentration was detected in soil sample S2, collected at a depth of nine feet bg from beneath the west end of the UST. Both were initial samples collected at the time of UST closure.

[2]After soil concentrations were obtained from soil samples SW-1, SW-2, SW-3 and SW-4, collected at a depth of approximately 6-6.5 feet bgs from the sidewalls of the final tank pit over-excavation.

[3]Before water concentrations were detected in sample PW collected from groundwater which had accumulated in the former tank pit during the 1990 tank removal.

Soil and water samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethyl benzene and total xylenes (BTEX) (See Table 1).

On October 1, 1990, TMC Environmental performed addition soil excavation of the former tank pit to an approximate depth of 8 feet bgs. The removal of contaminated soil was guided through use of a portable hydrocarbon detector. Although contamination limits appeared defined to the north, south and west, apparent soil staining was still visible in the northeastern corner of the excavation sidewall at the conclusion of excavation activities (See Plate 2). No soil samples were collected after conclusion of the over-excavation activities.

On October 9, 1990, 8 soil borings (B-1 through B-8) were advanced in order to determine the nature and extent of soil staining at the northeastern corner of the excavation and to collect groundwater interface soil samples. Groundwater interface soil samples were collected at depths of approximately 7-7.5 feet bgs from all borings except boring B-4. Boring B-4 contained raw sewage at a depth of three feet bgs where the boring was eventually abandoned. The staining and apparent contamination observed at the northeastern corner of the excavation was determined to be primarily related to the release of sewage from two holding tank-leach line systems present at the edge of the excavation (See Plate 3). Up to 200 ppm TPHg and 1.7 ppm benzene were detected in soil sampled from boring B-8 (See Table 2).

On October 17, 1990, approximately one foot of additional soil was excavated from the sidewalls of the excavation until field instrumentation indicated no detectable hydrocarbon vapors. Four soil samples (SW-1 through SW-4) were collected from the excavation sidewalls at depths of approximately 6 feet bgs (See Plate 4). All soil samples were analyzed for the presence of TPHg and BTEX, and were below laboratory detection limits. The excavation was then back filled with clean imported fill and base rock.

On December 2, 1990, six (6) soil borings (B-9 through B-14) were advanced and a groundwater interface soil sample collected from each (See Plate 5). Borings were emplaced along the south flank of the final UST excavation and to the east. All soil samples were below laboratory detection limits for TPHg and BTEX (See Table 5).

See Section VII, Additional Comments, etc...

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**
Number Decommissioned: **N/A** Number Retained: **4, pending closure**
List enforcement actions taken: **None**
List enforcement actions rescinded: **N/A**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Dale Klettke** Title: **Hazardous Materials Specialist**

Signature: Dale Klettke Date: 7/10/96

Reviewed by

Name: **Scott Seery** Title: **Sr. Hazardous Materials Specialist**

Signature: 7/10/96 Date:

Name: **Thomas Peacock** Title: **Supervising HazMat Specialist**

Signature: Thomas Peacock Date: 7-11-96

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response: Approved

RWQCB Staff Name: **Kevin Graves** Title: **AWRCE**

Signature: Date: 8/19/96

VII. ADDITIONAL COMMENTS, DATA, ETC.

On December 3, 1990 (MW-1) and May 29, 1991 (MW-2 and MW-3), TMC Environmental install three (3) groundwater monitoring wells near the former underground storage tank (see Plate 6). Groundwater monitoring well MW-1 was installed at the same location as boring B-8.

On June 7, 1994, Tank Protect Engineering (TPE) advanced one (1) exploratory soil boring which was subsequently converted to groundwater monitoring well TMW-4. No detectable concentrations of TPHg or BTEX were found in either the soil or groundwater samples collected during the installation and sampling of groundwater monitoring well TMW-4.

Groundwater monitoring wells MW-1, MW-2 and MW-3 were sampled 13 times, and well TMW-4 was sampled 5 times, between 1990 and 1996. Low-to-elevated levels of petroleum hydrocarbons have consistently been detected in well MW-1; however, contaminant levels detected since 10/6/94 have been at or below the maximum contaminant levels (MCLs) for primary drinking water standards (See Table 8).

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.

Non-detectable concentrations of petroleum hydrocarbons were found in verification soil samples from the north, south, east and west sidewalls, at depths of 6.0 to 6.5 feet below grade, collected after over-excavation of the tank pit. Although, apparent soil staining was still present in the northeastern corner of the excavation sidewall, this staining was determined to be primarily related to the release of sewage from two holding tank-leach line systems present at the edge of the excavation.

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 MW-1 and borings B-2 and B-3.

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

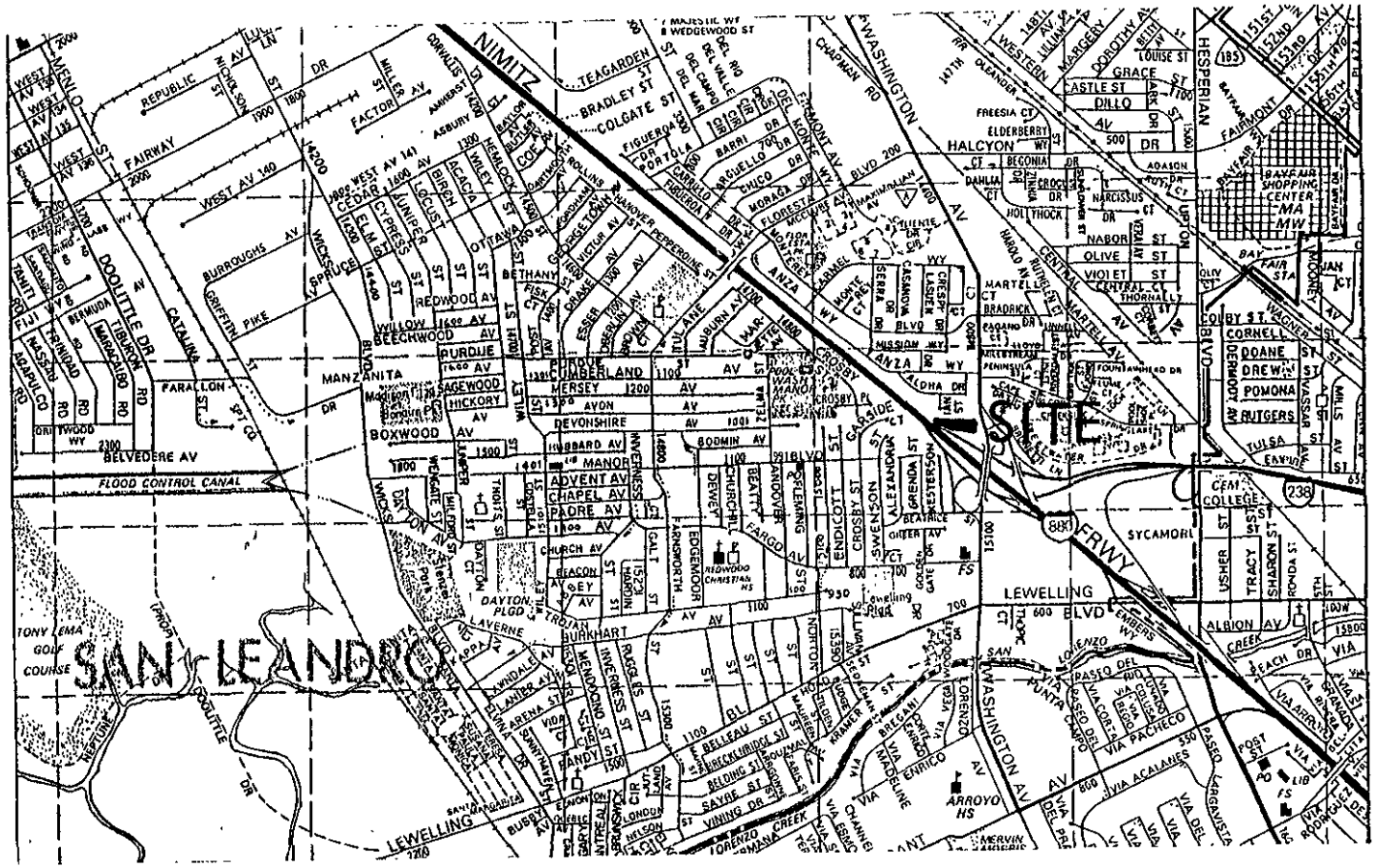
TPHG and BTEX have historically been detected only in monitoring well MW-1, and the water sampling data appear to indicate that the latent fuel compounds are strongly adsorbed to the sediments surrounding well MW-1.

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

The petroleum hydrocarbon contamination appears to be localized in the vicinity of well MW-1, and 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 soil sampled at depths of approximately 7 feet bgs, from borings B-2, B-3 and B-8 (MW-1), located directly adjacent to the lawn mower repair shop, are 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. However, the contamination appears to be localized and is not migrating off-site at concentrations which would pose a risk to human health or the environment. Apparent sources of the petroleum hydrocarbon contamination have been removed, and natural bioattenuation will likely further reduce latent soil and groundwater concentrations detected in borings B-2 and B-3 and in well MW-1.



Base Map from Thomas Bros. Maps, The Thomas Guide, Alameda County, 1990

LEGEND

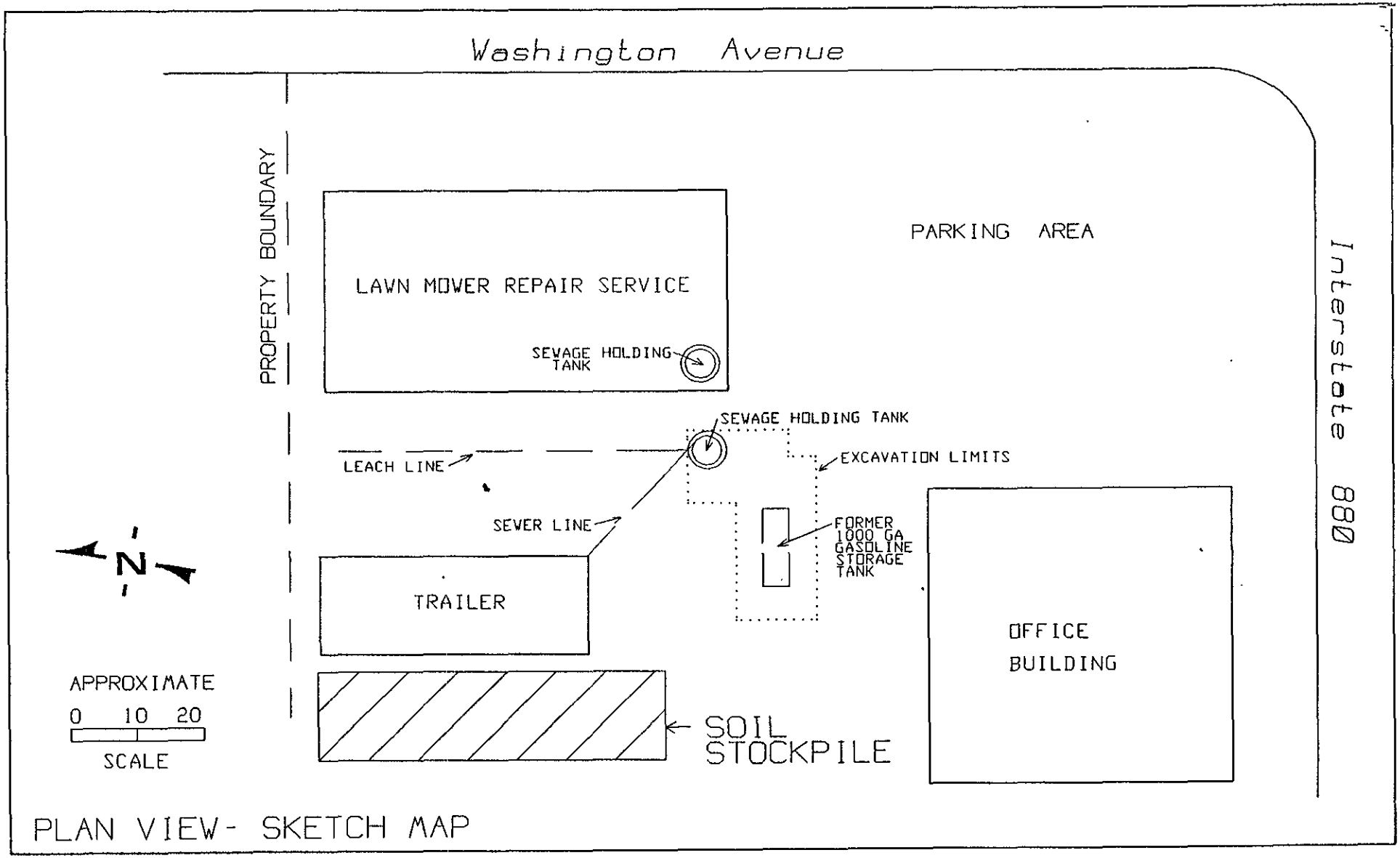
N

Scale: 1 inch = 2200 feet

SITE VICINITY MAP

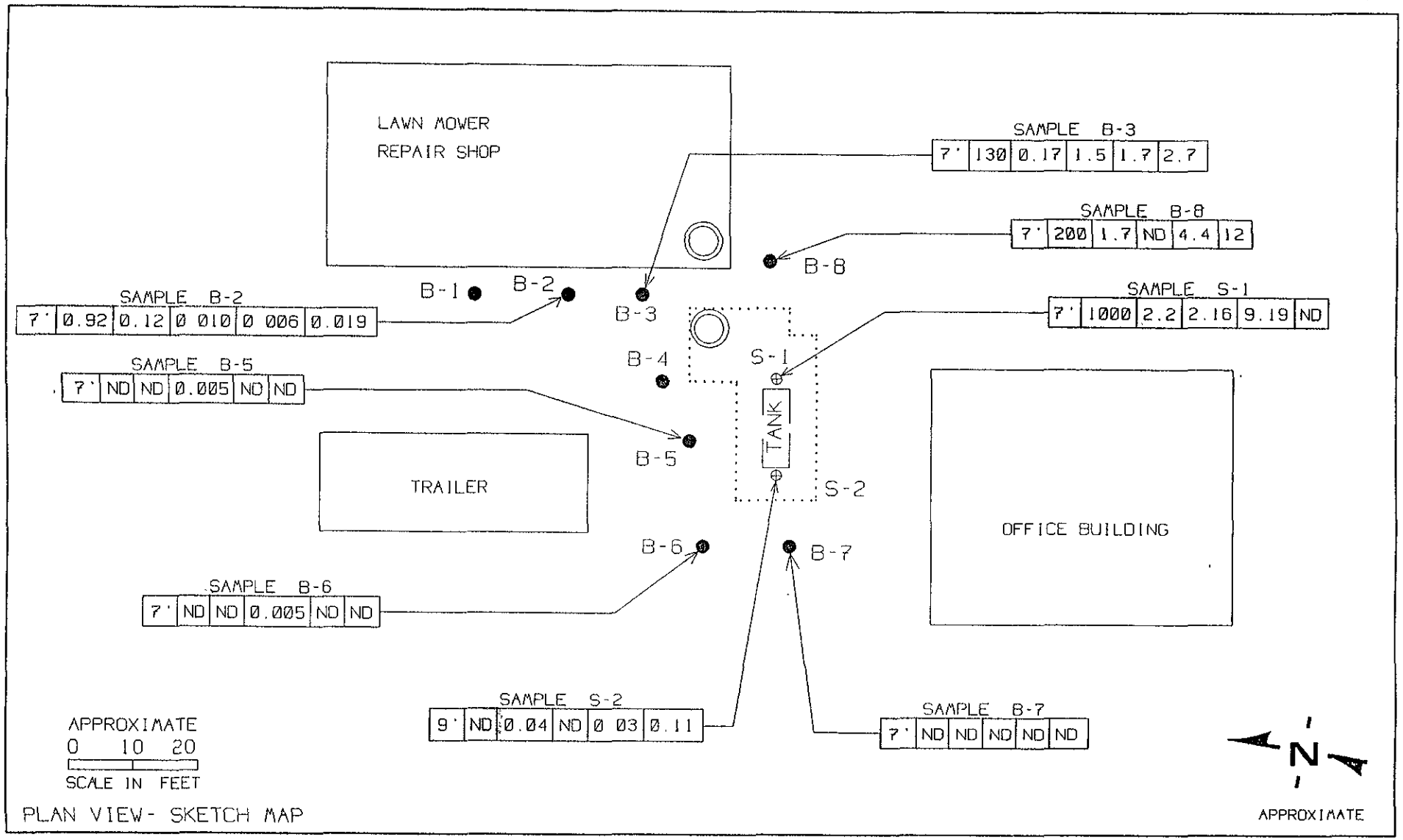
Roto-Rooter

14985 Washington Avenue, San Leandro, California



SITE MAP

ROTO ROOTER, 14985 WASHINGTON AVENUE
SAN LEANDRO, CALIFORNIA



PLAN VIEW- SKETCH MAP

LEGEND

TAC INC SOIL SAMPLE LOCATION

SCS ENGINEERS SAMPLE LOCATION

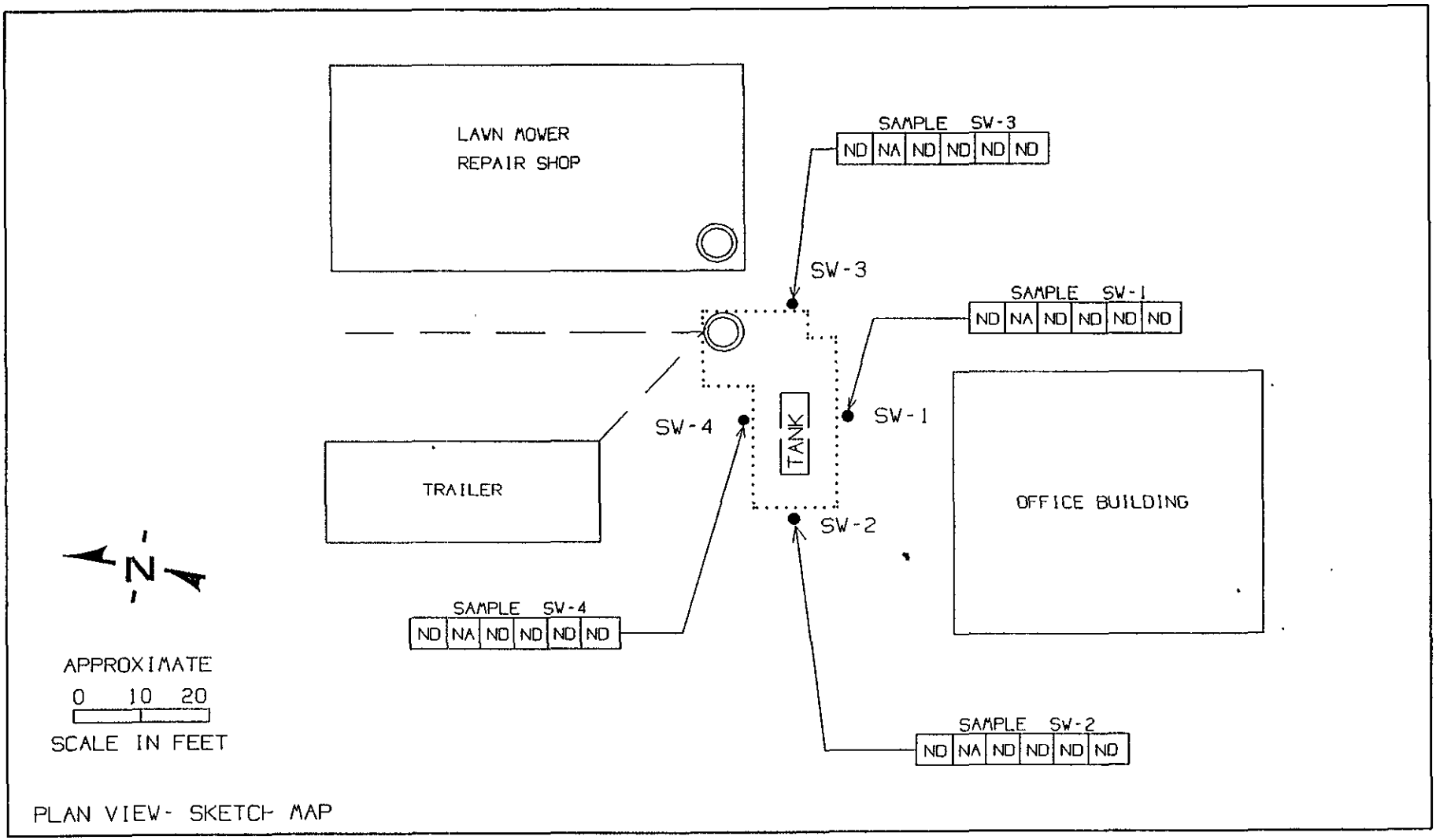
CHEMICAL CONCENTRATIONS IN MG/KG

DEPTH- FT	TPH AS GAS	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES

ND - NOT DETECTED IN SAMPLE ABOVE LIMITS
NA - NOT ANALYZED
ALL SAMPLES ARE INTERFACE SAMPLES

SOIL SAMPLING MAP

Roto Rooter
14985 Washington Avenue
San Leandro, California



LEGEND

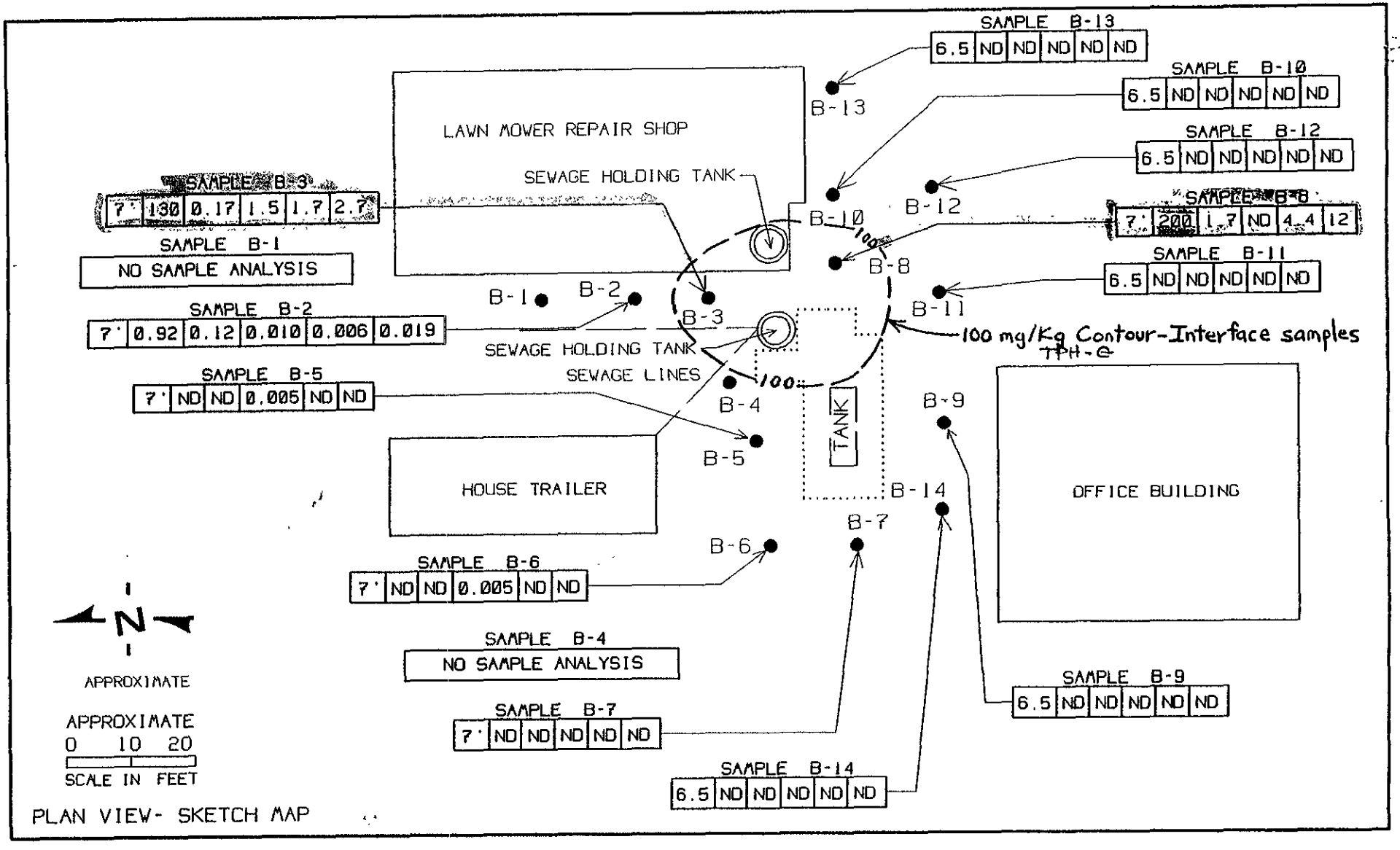
TMC SOIL SAMPLE

DEPTH- FT	TPH AS GAS	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES

ND - NOT DETECTED IN SAMPLE ABOVE LIMITS
NA - NOT ANALYZED
ALL SAMPLES ARE INTERFACE SAMPLES

EXCAVATION SAMPLING MAP

Roto Rooter
14985 Washington Avenue
San Leandro, California



PLAN VIEW- SKETCH MAP

LEGEND

TAC INC. SOIL SAMPLE LOCATION

CHEMICAL CONCENTRATIONS IN MG/KG

DEPTH- FT.	TPH AS GAS	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES

ND - NOT DETECTED IN SAMPLE ABOVE LIMITS
ALL SAMPLES ARE INTERFACE SAMPLES

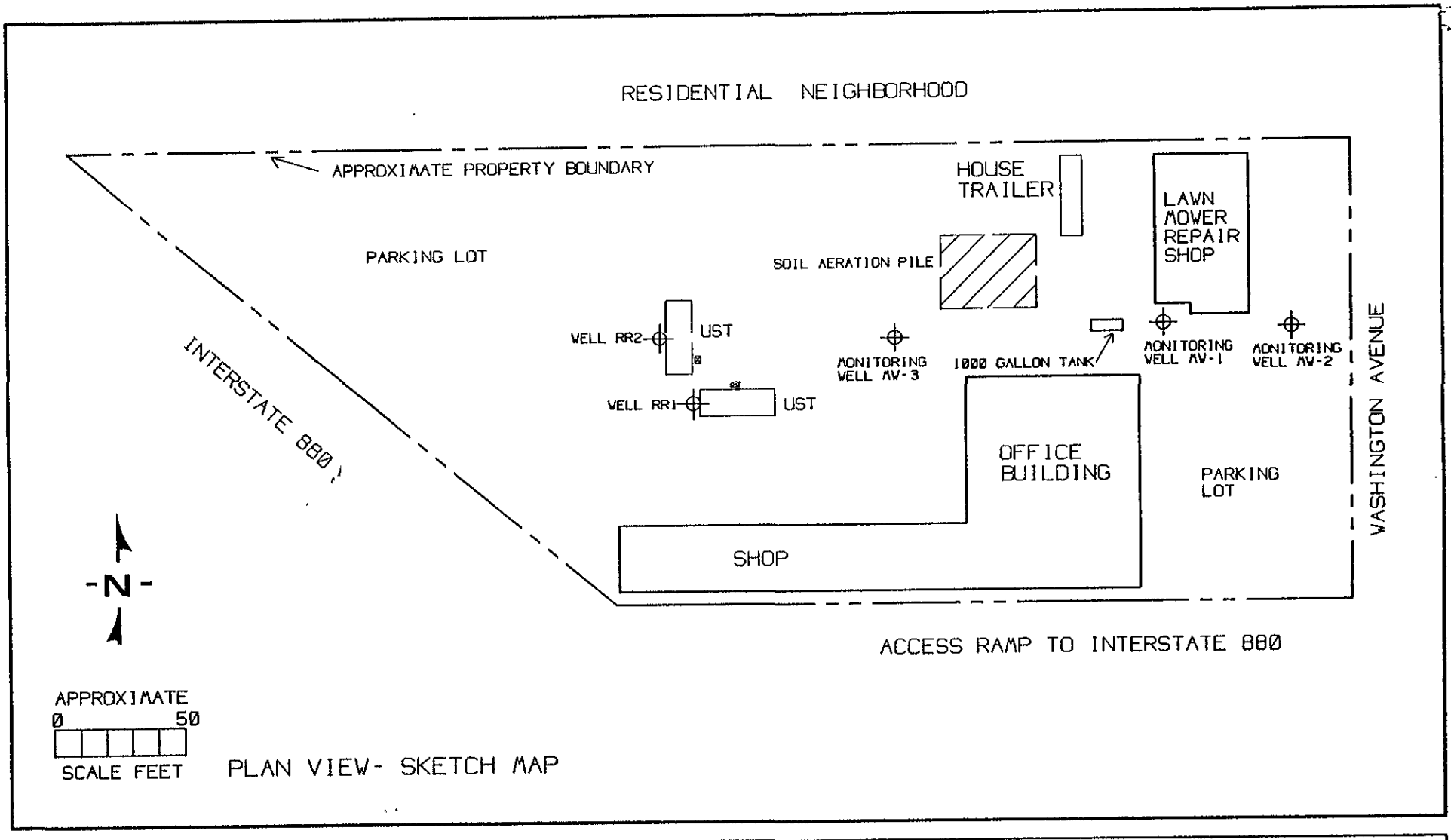
SOIL SAMPLING MAP

Roto Rooter

14985 Washington Avenue San Leandro, California

TMC ENVIRONMENTAL INC., SAN PABLO, CALIFORNIA

PLATE 5



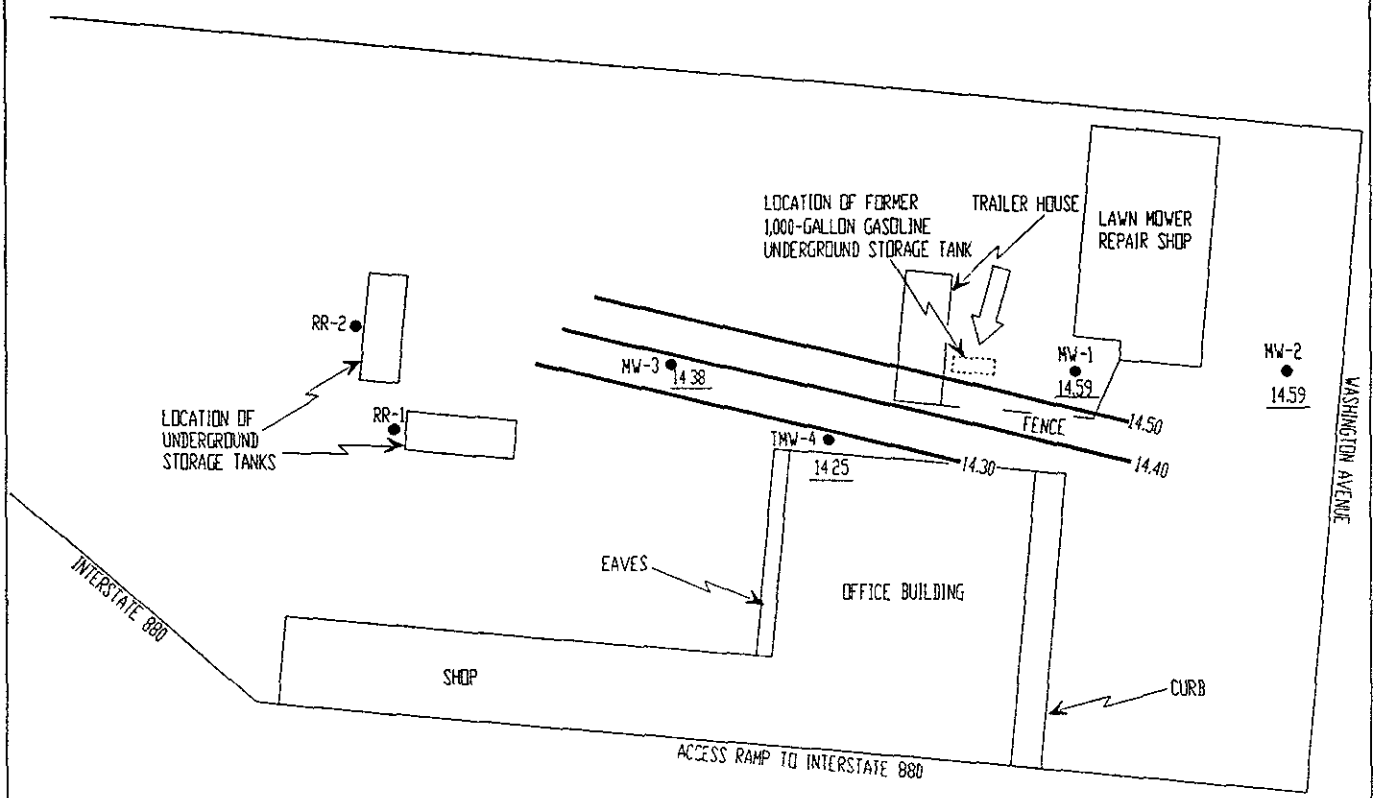
ROTO-ROOTER

14985 WASHINGTON AVENUE SAN LEANDRO, CALIFORNIA

SITE MAP

TMC ENVIRONMENTAL INC. SAN PABLO, CALIFORNIA

PLATE 6



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY OTHERS
RR-1 ●	NAME AND LOCATION OF TANK MONITORING WELL
TMW-4 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
14.38	POTENTIOMETRIC ELEVATION
14.50	POTENTIOMETRIC CONTOUR
	GROUNDWATER FLOW DIRECTION

-N-

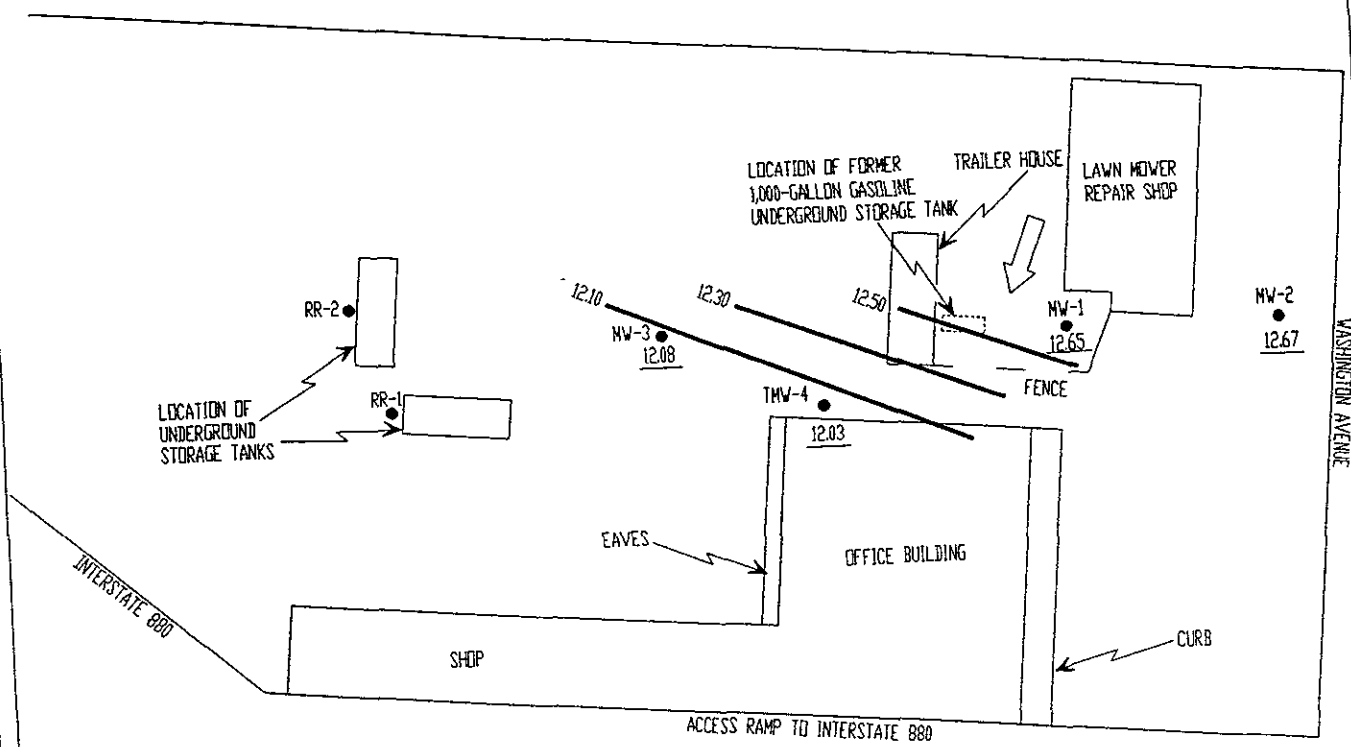
0 50
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (1/24/96)

ROTO-ROOTER PLUMBING SERVICE
14985 WASHINGTON AVENUE
SAN LEANDRO, CA 94578

DATE	2/21/96
FIGURE	1
FILE #	310-2N
DRAWN BY	VK
CHECKED BY	LNH



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY OTHERS
RR-1 ●	NAME AND LOCATION OF TANK MONITORING WELL
TMW-4 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
12.03	POTENTIOMETRIC ELEVATION
12.20	POTENTIOMETRIC CONTOUR
	GROUNDWATER FLOW DIRECTION

-N-

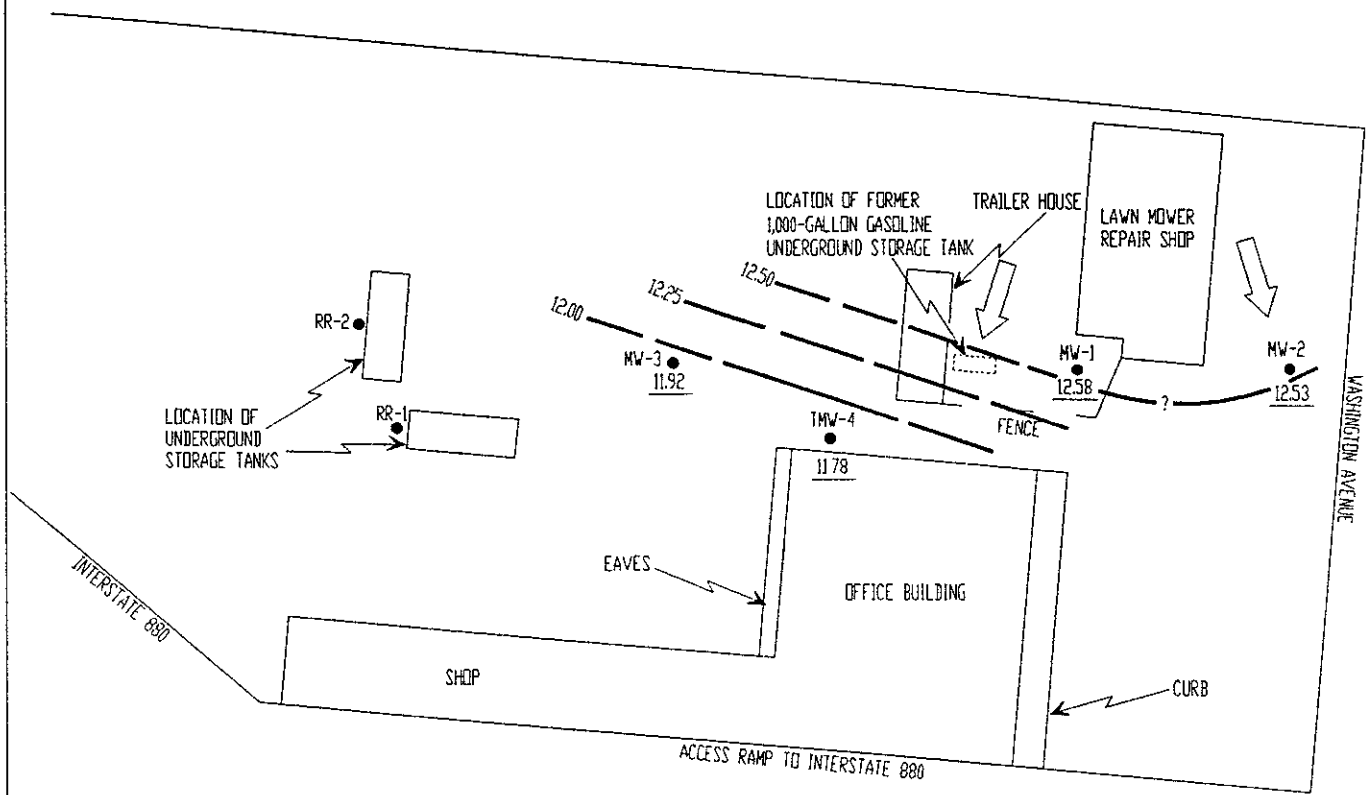
0 50
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (10/2/95)

ROTO-ROOTER PLUMBING SERVICE
14985 WASHINGTON AVENUE
SAN LEANDRO, CA 94578

DATE	12/13/95
FIGURE	1
FILE #	310-1N
DRAWN BY	VK
CHECKED BY	MV



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY OTHERS
RR-1 ●	NAME AND LOCATION OF TANK MONITORING WELL
TMW-4 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
11.92	POTENTIOMETRIC ELEVATION
12.00	POTENTIOMETRIC CONTOUR
	GROUNDWATER FLOW DIRECTION

-N-

0 50

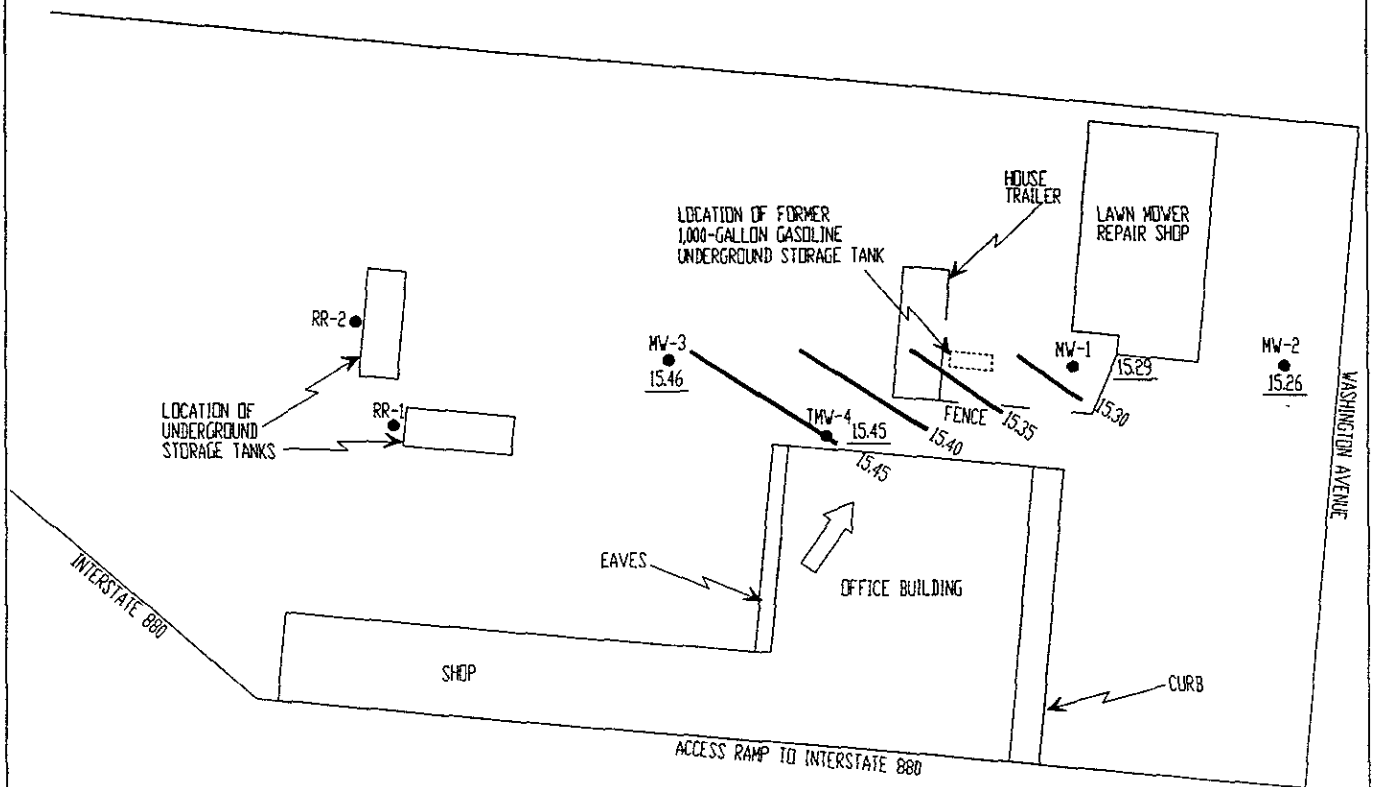
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (7/7/95)

ROTO-ROOTER PLUMBING SERVICE
14985 WASHINGTON AVENUE
SAN LEANDRO, CA 94578

DATE	7/31/95
FIGURE	1
FILE #	310N
DRAWN BY	MT
CHECKED BY	JVM



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY OTHERS
RR-1 ●	NAME AND LOCATION OF TANK MONITORING WELL
TMW-4 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
15.29	POTENTIOMETRIC ELEVATION
15.40	POTENTIOMETRIC CONTOUR
	GROUNDWATER FLOW DIRECTION

-N-

0 50

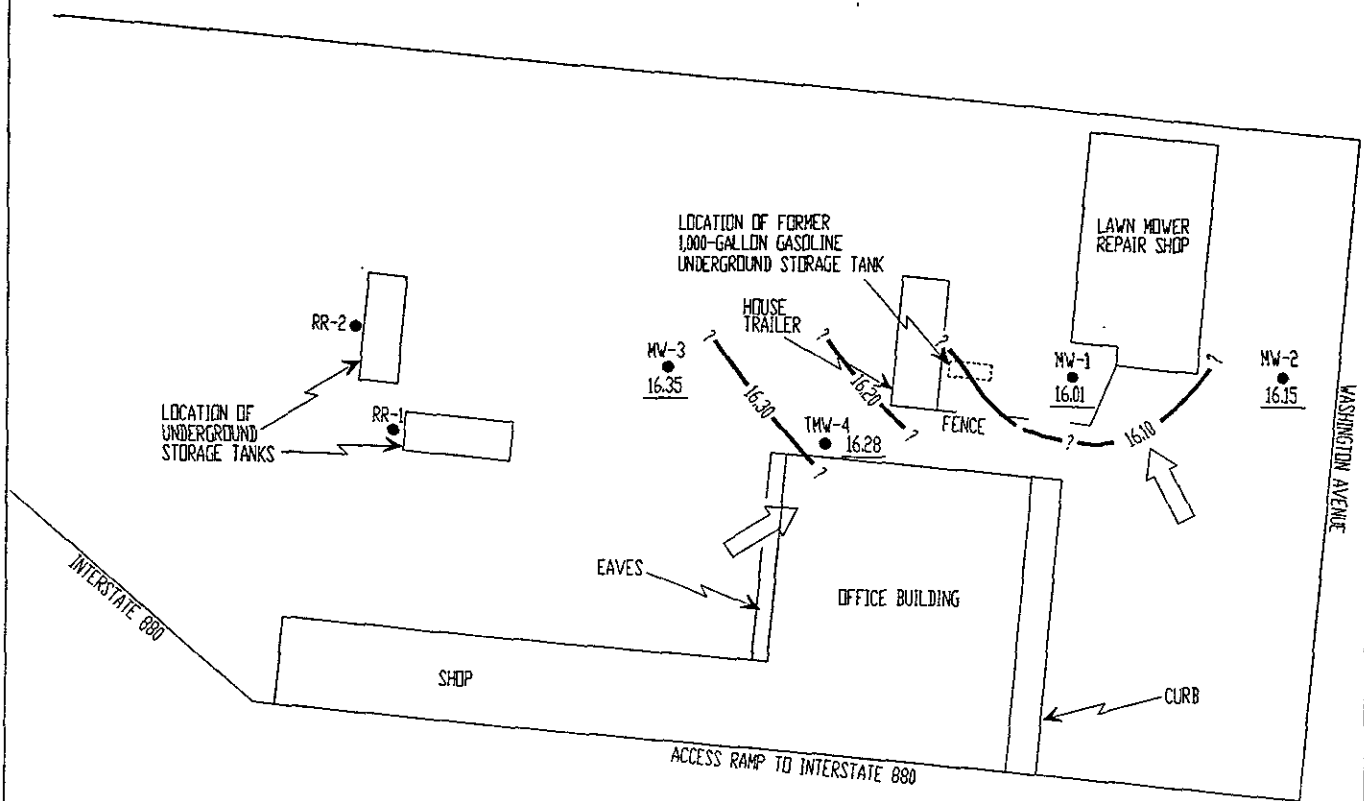
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (1/12/95)

ROTO-ROOTER PLUMBING SERVICE
14985 WASHINGTON AVENUE
SAN LEANDRO, CA 94578

DATE	5/3/95
FIGURE	1
FILE #	310-7D
DRAWN BY	VK
CHECKED BY	JVM



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY OTHERS
RR-1 ●	NAME AND LOCATION OF TANK MONITORING WELL
TMW-4 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
16.35	POTENTIOMETRIC ELEVATION
16.30	POTENTIOMETRIC CONTOUR
	GROUNDWATER FLOW DIRECTION

-N-

0 50

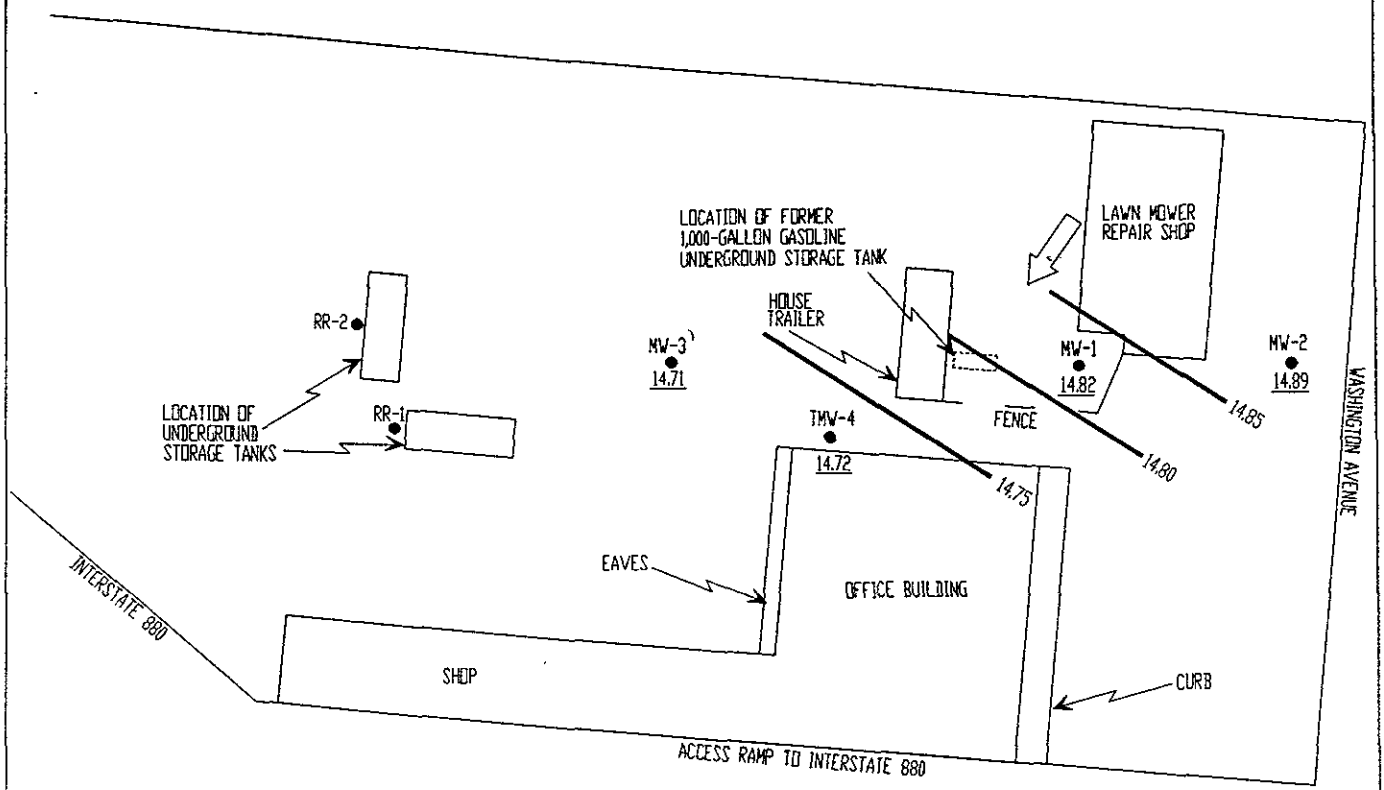
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (1/12/95)

ROTO-ROOTER PLUMBING SERVICE
14985 WASHINGTON AVENUE
SAN LEANDRO, CA 94578

DATE	1/26/95
FIGURE	1
FILE #	310-6D
DRAWN BY	MT
CHECKED BY	JVN



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY OTHERS
RR-1 ●	NAME AND LOCATION OF TANK MONITORING WELL
TMW-4 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
14.82	POTENTIOMETRIC ELEVATION
14.80	POTENTIOMETRIC CONTOUR
	GROUNDWATER FLOW DIRECTION

N

0 50

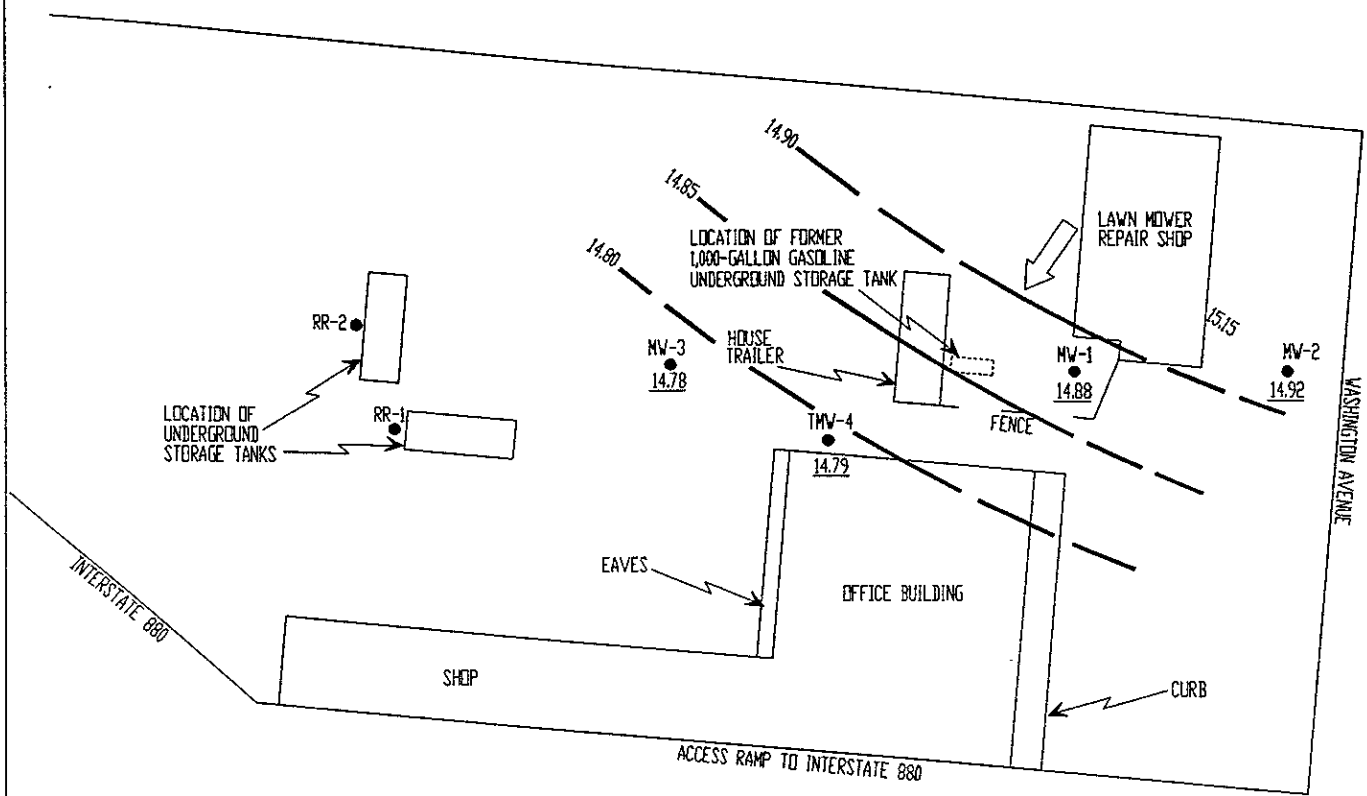
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (10/6/94)

ROTO-ROOTER PLUMBING SERVICE
14985 WASHINGTON AVENUE
SAN LEANDRO, CA 94578

DATE	11/3/94
FIGURE	1
FILE #	310-4D
DRAWN BY	AK
CHECKED BY	JVM



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY OTHERS
RR-1 ●	NAME AND LOCATION OF TANK MONITORING WELL
TMW-4 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
14.92	POTENTIOMETRIC ELEVATION
14.90	POTENTIOMETRIC CONTOUR
	GROUNDWATER FLOW DIRECTION

-N-

0 50

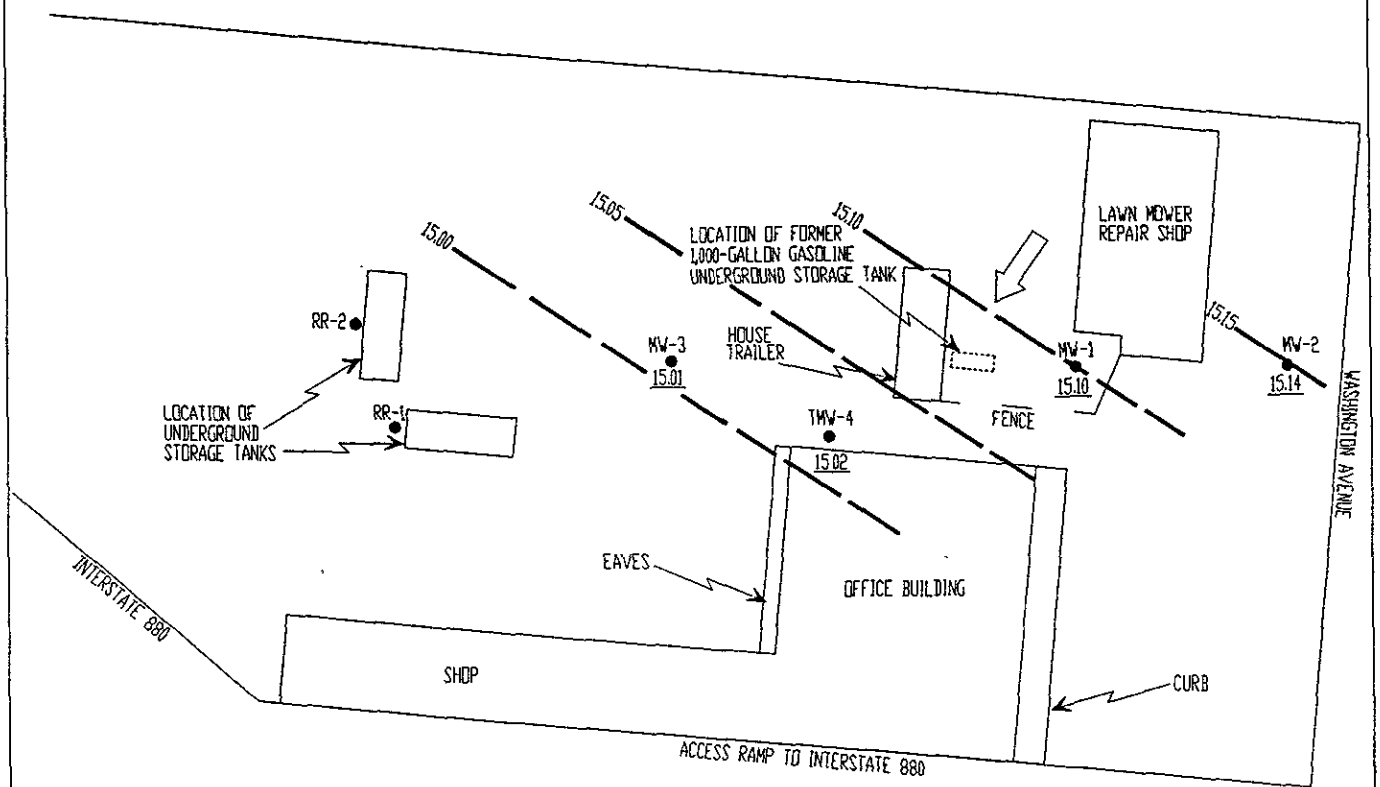
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (7/8/94)

ROTO-ROOTER PLUMBING SERVICE
14985 WASHINGTON AVENUE
SAN LEANDRO, CA 94578

DATE	7/26/94
FIGURE	1
FILE #	310-3
DRAWN BY	AK
CHECKED BY	RA



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELLS INSTALLED BY OTHERS
RR-1 ●	NAME AND LOCATION OF TANK MONITORING WELL
TMW-4 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
15.01	POTENTIOMETRIC ELEVATION
15.00	POTENTIOMETRIC CONTOUR
	GROUNDWATER FLOW DIRECTION

-N-

0 50

SCALE IN FEET

TANK PROTECT ENGINEERING

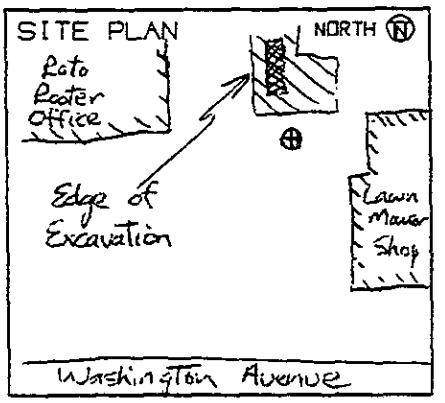
GROUNDWATER GRADIENT MAP (6/13/94)

ROTO-ROOTER PLUMBING SERVICE
14985 WASHINGTON AVENUE
SAN LEANDRO, CA 94578

DATE	7/7/94
FIGURE	3
FILE #	310-2
DRAWN BY	MT
CHECKED BY	RA

FIELD RECORD OF BORING

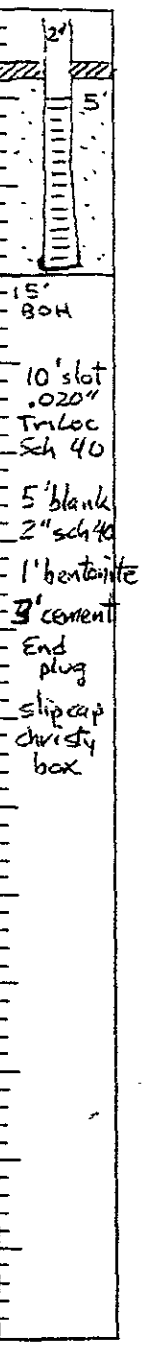
SHEET 1 OF 1



PROJECT Roto Rooter		BORING NO MW-RR1
LOCATION 14985 Washington Ave		DATE 12-3-90
CONTRACTOR Exectech		LICENSE 596545
DRILLING METHOD B34, 8" Hollow stem augur		
SAMPLING METHOD Standard pin 140# @ 30" drive		
LOGGER Mark Youngkin	DRILLER Cam	
AGENCY Zone 7, Alameda Flood Control		PERMIT
BORING DIAMETER 8"	CASING DIAMETER 2"	TOTAL DEPTH 15'

SAMPLE NUMBER	SAMPLE DEPTH	REC %	BLOWS / 12"	TLV PPM	WATER LOG	LEGEND USCS	DESCRIPTION
					dry	Fill	Asphalt - 3" & base rock Brown top soil fill, rocky, dry
							Sandy, very fine, dry, brown, no stain
	5-6½'	100	10		moist	SP	Sand @ 6½', grey, very fine grained, strong odor of gasoline staining - grey
	10-11½	100	5		wet		Clayey sand - sandy clay, brown, no odor or obvious staining, free water in sampler
	15-16½	100	7		wet	CL	Clay, grey-brown, stiff, no obvious odor, blebs of black organic matter
							BOH @ 15' below grade
							9' of free water in hole
							Water level @ ≈ 6' below grade

VELL DATA

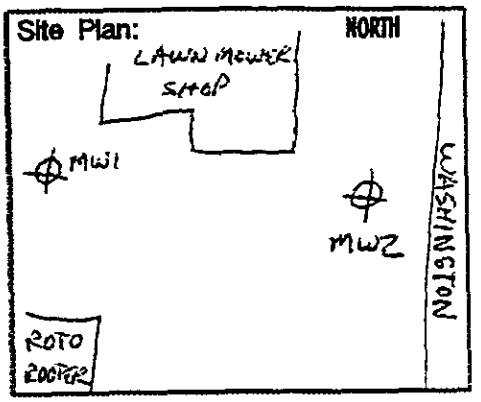


TMC ENVIRONMENTAL, INC.

FIELD RECORD OF BORING

Sheet 1 of 1

Site Plan:

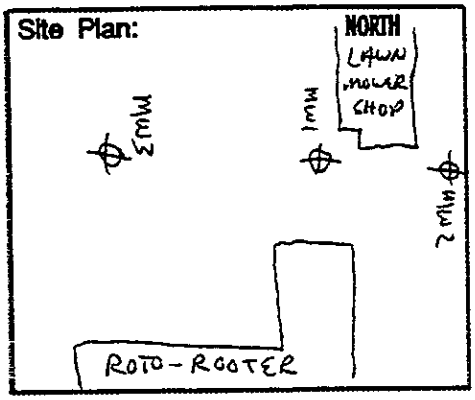


Project: ROTO-ROOTER	Boring No. MW2
Location: 14985 WASHINGTON AVENUE	Date: 5-29-91
Contractor: EXCELTECH RIG 86910	License: 596545
Drilling Method: B34 hollowstem auger – 8" flights	
Sampling Method: California Split Spoon, 140 @ 30"	
Logger: MARK YOUNGKIN	Driller: CAM & RICH
Agency: ALAMEDA COUNTY HEALTH DEPT.	Permit: Zone 7
Boring Dia. 8"	Casing Dia. 2" Total Depth: 20'

SAMPLE NUMBER	SAMPLE DEPTH	REC %	BLOWS / 12"	TLV PPM	WATER LOG	DEPTH	LEGEND USCS	DESCRIPTION	STAIN ODOR
						0		ASPHALT	
								BASE ROCK	
					DRY	2	CL-SM	SILTY CLAY, DARK BROWN, LOOSE, TOP SOIL, SANDY,	NONE
						4	CL-SC		
MW2-6	6-6½'	100	14	150	MOIST				
						6		SANDY CLAY, BROWN, SOFT, PEBBLES	NONE
						8		SWITCH TO STANDARD PIN	
							CL-SP, SC		
	11-11½	100	6	NA	WET	10		SILTY-SANDY CLAY, BROWN, FIRM, LENS OF FINE SAND	NONE
						12			
						14	CL-SC		
								SILTY CLAY, BROWN, FIRM, LENS OF FINE SAND	NONE
	16-16½	100	8	NA	WET	16			
						18			
							CL-SC	SILTY CLAY, BROWN, STIFF, LENS OF FINE SAND, GRAY MUD	NONE
	21-21½	100	12	NA	WET	20			

FIELD RECORD OF BORING

Sheet 1 of 1



Project: ROTO - ROOTER	Boring No. MW3
Location: 14985 WASHINGTON AVE	Date: 5-29-91
Contractor: EXCELTECH RIG #6910	License: 596545
Drilling Method: B34 Hollow Stem Auger - 8" Flights	
Sampling Method: California Split Spoon & Standard pin	140# @ 30"
Logger: MARK YOUNGKIN	Driller: CAM & Rich
Agency: ALAMEDA COUNTY HEALTH	Permit: Zone 7
Boring Dia. 8"	Casing Dia. 2" Total Depth: 20'

SAMPLE NUMBER	SAMPLE DEPTH	REC %	BLOWS / 12"	TLV PPM	WATER LOG	DEPTH	LEGEND USCS	DESCRIPTION	STAIN ODOR
						0		ASPHALT	
								BASE ROCK	
					DRY	2	CL-SM	SILTY CLAY, DARK BROWN, LOOSE, TOP SOIL	NONE
						4		SANDY CLAY, BROWN, SOFT, PEBBLES	NONE
MW3-6	6-6½	100	14	2150	MOIST	6	CL-SC		
					WET		SP	SAND, BROWN, LOOSE, FINE-MEDIUM GRAIN	NONE
						8		SWITCH TO STAUDARD PIN	
	11-11½	100	4	NA	WET	10	SC-CL	SILTY-SANDY CLAY, BROWN, FIRM	NONE
						12	SC-SP	SILTY SANDY CLAY - SAND, BROWN, LENS OF FINE SAND	NONE
						14			
	16-16½		12	NA	WET	16	CL-SC	SILTY CLAY, BROWN, FIRM, TO STIFF, LENS OF SAND	NONE
						18		SAND, BROWN, LOOSE, FINE	NONE
							SC		
	21-21½		15	NA	WET	20	CL	SILTY CLAY, BROWN TO GRAY, BAY MUD ?	NONE
						22			

LOG OF EXPLORATORY BORING

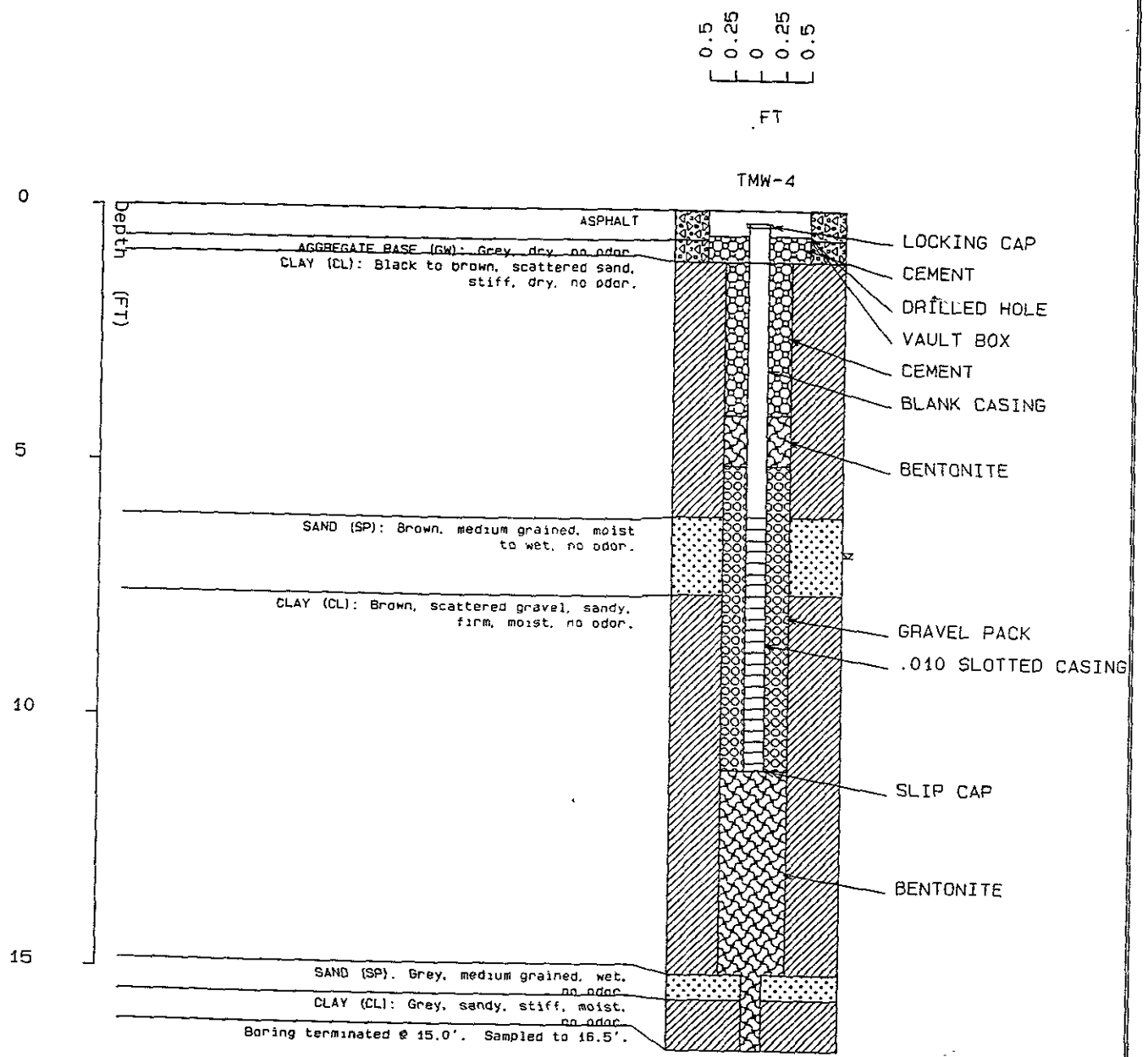
PROJECT NUMBER 310 BORING NO. TMW-4

PROJECT NAME 14985 WASHINGTON AVENUE, SAN LEANDRO, CA

BY LNH DATE 6/7/94 SURFACE ELEV. 22 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRATION (BLOWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
				1			ASPHALT
							AGGREGATE BASE (GW): Grey, dry, no odor.
				2			CLAY (CL): Black to brown, scattered sand, stiff, dry, no odor.
				3			
				4			
				5			
1.2/1.5	34	14		6			SAND (SP): Brown, medium grained, moist to wet, no odor.
				7			
				8			CLAY (CL): Brown, scattered gravel, sandy, firm, moist, no odor.
				9			
				10			
1.5/1.5	24	7		11			
				12			
				13			SAND (SP): Grey, medium grained, wet, no odor.
				14			CLAY (CL): Grey, sandy, stiff, moist, no odor.
				15			Boring terminated @ 15.0'. Sampled to 16.5'
1.0/1.5	-	16		16			

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch O.D. augers. Samples collected in a 2.0-inch I.D. California sampler.



LEGEND ▽ Static Water Level

GW SP CL

WELL ID : TMW-4

14985 WASHINGTON AVENUE, SAN LEANDRO, CA

TANK PROTECT ENGINEERING

Figure :

Initial UST closure sample

TABLE 1

Sample I.D.	Analysis	Compound	Results in parts per million
S1 (soil)	8015	gasoline	1,000
	8020	benzene	2.200
		toluene	2.160
		ethylbenzene	9.190
		xylenes	ND
S2 (soil)	8015	gasoline	ND
	8020	benzene	.040
		toluene	ND
		ethylbenzene	.030
		xylenes	.110
PW (water)	8015	gasoline	35
	602	benzene	1.230
		toluene	1.980
		ethylbenzene	1.620
		xylenes	9.480

ND = not detected

TABLE 2
Summary of Laboratory Analyzes of Soil Samples for Gasoline
Soil Investigation Soil Boring Sampling

Sample ID Label	*Depth feet*	*TPH as Gasoline mg/Kg*	*Benzene ug/Kg*	*Toluene ug/Kg*	*Ethyl benzene ug/Kg*	*Total Xylenes ug/Kg*
Reporting Limit		1.0	5.0	5.0	5.0	5.0
B-2	7-7½	0.92	0.12	0.010	0.006	0.019
B-3	7-7½	130	0.17	1.5	1.7	2.7
B-5	7-7½	ND	ND	0.005	ND	ND
B-6	7-7½	ND	ND	0.005	ND	ND
B-7	7-7½	ND	ND	ND	ND	ND
B-8	7-7½	200	1.7	ND	4.4	12

ND- NOT DETECTED AT OR ABOVE REPORTING LIMIT

TABLE 3
Summary of Laboratory Analyzes of Soil Samples for Gasoline
Excavation Sidewall Soil Sampling

Sample ID Label	*Depth feet*	*TVH as Gasoline mg/Kg*	*Benzene ug/Kg*	*Toluene ug/Kg*	*Ethyl benzene ug/Kg*	*Total Xylenes ug/Kg*
Reporting Limit		1.0	5.0	5.0	5.0	5.0
SW-1	6-6½	ND	ND	ND	ND	ND
SW-2	6-6½	ND	ND	ND	ND	ND
SW-3	6-6½	ND	ND	ND	ND	ND
SW-4	6-6½	ND	ND	ND	ND	ND

ND- NOT DETECTED AT OR ABOVE REPORTING LIMIT

TABLE 4
Summary of Laboratory Analyzes of Soil Samples for Gasoline
Aeration Soil Pile Sampling

Sample ID Label	Depth feet	TVH as Gasoline mg/Kg	Benzene ug/Kg	Toluene ug/Kg	Ethyl benzene ug/Kg	Total Xylenes ug/Kg
Reporting Limit		1.0	5.0	5.0	5.0	5.0
SOIL PILE 1	ND	ND	ND	ND	ND	ND
SOIL PILE 2	ND	ND	ND	ND	ND	ND
SOIL PILE 3	ND	ND	ND	ND	ND	ND
SOIL PILE 4	ND	ND	ND	ND	ND	ND

ND- NOT DETECTED AT OR ABOVE REPORTING LIMIT

TABLE 5
Summary of Laboratory Analyzes of Soil Samples for Gasoline
Exploratory Boring Soil Sampling

Sample ID Label	Depth feet	TVH as Gasoline mg/Kg	Benzene ug/Kg	Toluene ug/Kg	Ethyl benzene ug/Kg	Total Xylenes ug/Kg
Reporting Limit		1.0	5.0	5.0	5.0	5.0
B-9	7	ND	ND	ND	ND	ND
B-10	7	ND	ND	ND	ND	ND
B-11	7	ND	ND	ND	ND	ND
B-12	7	ND	ND	ND	ND	ND
B-13	7	ND	ND	ND	ND	ND
B-14	7	ND	ND	ND	ND	ND

ND- NOT DETECTED AT OR ABOVE REPORTING LIMIT

TABLE 6
Summary of Laboratory Analyzes of Soil Samples for Gasoline
Monitoring Well Soil Sampling

Sample ID Label	Depth feet	TVH as Gasoline mg/Kg	Benzene ug/Kg	Toluene ug/Kg	Ethyl benzene ug/Kg	Total Xylenes ug/Kg
Reporting Limit		1.0	5.0	5.0	5.0	5.0
MW2-6	6	ND	ND	ND	ND	ND
MW3-6	6	ND	ND	ND	ND	ND

ND- NOT DETECTED AT OR ABOVE REPORTING LIMIT

TABLE 7 SUMMARY OF FLOW DIRECTION AND GRADIENT

Measurement Date	*Direction of Flow*	*Horizontal Gradient*	*Average Water Level*
December 27, 1990	North 120° West	0.002 ft/ft	14.63 feet
July 2, 1991	North 121° West	0.0017 ft/ft	14.79 feet
October 16, 1991	North 134° West	0.002 ft/ft	14.42 feet
January 24, 1991	North 118° West	0.0015 ft/ft	14.92 feet
May 27, 1992	North 141° West	0.0012 ft/ft	14.96 feet
July 23, 1993	North ±128° West	0.0008 ft/ft	15.03 feet
December 21, 1993	North ±147 West	0.0021 ft/ft	15.24 feet

GROUNDWATER GRADIENTS, FLOW DIRECTIONS, AND ELEVATION DATA

Date	Average Groundwater Elevation (Feet MSL[1])	Change in Average Groundwater Elevation	Groundwater Gradient	Groundwater Flow Direction
06/13/94	15.07	---	.0016	SW
07/08/94	14.84	-0.23	.0019	SW
10/06/94	14.78	-0.06	.0020	SW
01/12/95	16.20	+1.42	.0040	NW-NE
04/11/95	15.37	-0.83	.0032	NW-NE
07/07/95	12.20	-.3.17	.021	SE-SW
10/02/95	12.36	+.16	.025	SW
01/24/96	14.45	+2.09	.01	SW

[1] MEAN SEA LEVEL

TABLE 8 SUMMARY OF LABORATORY ANALYSES OF WATER SAMPLES

Sample ID Label	*Sample Date*	*TVH as Gasoline ug/L*	*Benzene ug/L*	*Toluene ug/L*	*Ethyl benzene ug/L*	*Total Xylenes ug/L*
Reporting Limit		50	0.5	0.5	0.5	0.5
MW-1	12-27-90	6800	780	220	72	920
MW-1	7-2-91	370	27	6.5	22	17
MW-2	7-2-91	ND	ND	ND	ND	ND
MW-3	7-2-91	ND	ND	ND	ND	ND
MW-1	10-16-91	140	3.9	ND	1.6	2.0
MW-2	10-16-91	ND	ND	ND	ND	ND
MW-3	10-16-91	ND	ND	ND	ND	ND
MW-1	1-24-92	3,300	300	13	120	410
MW-2	1-24-92	ND	ND	ND	ND	ND
MW-3	1-24-92	ND	ND	ND	ND	ND
MW-1	5-27-92	580	36	ND	52	17
MW-2	5-27-92	ND	ND	ND	ND	ND
MW-3	5-27-92	ND	ND	ND	ND	ND
RR-1	6-22-93	ND	ND	ND	ND	ND
RR-2	6-22-93	ND	ND	ND	ND	ND
MW-1	7-23-93	1,100	42	16	96	120
MW-2	7-23-93	ND	ND	ND	ND	ND
MW-3	7-23-93	ND	ND	ND	ND	ND
MW-1	12-21-93	ND	ND	ND	ND	ND
MW-2	12-21-93	ND	ND	ND	ND	ND
MW-3	12-21-93	ND	ND	ND	ND	ND

ND = NOT DETECTED AT OR ABOVE REPORTING LIMIT

Well MW-1 demonstrated non-detectable concentrations of target analytes in comparison to previous sampling episodes. The other wells (MW-2 and MW-3) continue to exhibit non-detectable levels of Gas and BTEX.

TABLE 3 (CONT.)
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS
(ppb[1])

Sample ID Name	Date	TPHG	Methyl t-Butyl Ether	Benzene	Toluene	Ethyl-benzene	Xylenes
MW-1	07/08/94	1,500,000	NA	<280	<290	<320	5,300
	10/06/94	15,000	NA	<2.5	<2.5	13	100
	01/12/95	560	NA	<0.50	<0.50	0.50	11
	04/11/95	2,300	NA	<2.5	3.1	87	11
	07/07/95	400	NA	1.1	<0.50	<0.50	<1.5
	10/10/95	80	<5.0	1.5	<0.50	<0.50	7.2
	01/24/96	<50	<5.0	<0.50	<0.50	<0.50	2.6
MW-2	07/08/94	<50	NA	<0.50	<0.50	<0.50	<1.5
	10/06/94	NA[2]	NA	NA	NA	NA	NA
	01/12/95	NA	NA	NA	NA	NA	NA
	04/11/95	NA	NA	NA	NA	NA	NA
	07/07/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	10/10/95	NA	NA	NA	NA	NA	NA
	01/24/96	NA	NA	NA	NA	NA	NA
MW-3	07/08/94	<50	NA	<0.50	<0.50	<0.50	<1.5
	10/06/94	<50	NA	<0.50	<0.50	<0.50	<1.5
	01/12/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	04/11/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	07/07/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	10/10/95	NA	NA	NA	NA	NA	NA
	01/24/96	NA	NA	NA	NA	NA	NA
TMW-4	07/08/94	<50	NA	<0.50	<0.50	<0.50	<1.5
	10/06/94	<50	NA	<0.50	<0.50	<0.50	<1.5
	01/12/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	04/11/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	07/07/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	10/10/95	NA	NA	NA	NA	NA	NA
	01/24/96	NA	NA	NA	NA	NA	NA

TABLE 8 (CONT.)
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS
(ppb[1])

Sample ID Name	Date	TPHG	Methyl t-Butyl Ether	Benzene	Toluene	Ethyl-benzene	Xylenes
TMW-5[3]	07/08/94	<50	NA	<0.50	<0.50	<0.50	<1.5
	10/06/94	<50	NA	<0.50	<0.50	<0.50	<1.5
	01/12/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	04/11/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	07/07/95	<50	NA	<0.50	<0.50	<0.50	<1.5
	10/10/95	<50	<5.0	<0.50	<0.50	<0.50	<1.5
	01/24/96	<50	<5.0	<0.50	<0.50	<0.50	<1.5

[1] PARTS PER BILLION
[2] NOT ANALYZED
[3] TRIP BLANK