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

StID 4865

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

August 25, 1997

Mr. Nissian Sadian
5733 Medallion Court
Castro Valley, CA 94552

Re: Fuel Leak Site Case Closure for 525 98th Ave, Oakland, CA 94603

Dear Mr. Sadian:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Protection Division is required to 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 the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

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

- residual soil contamination may still exist in the immediate vicinity of the former fuel tanks; and
- up to 1.3ppb benzene in groundwater.

If you have any questions, please contact me at (510) 567-6762.

eva chu
Hazardous Materials Specialist

enlosure:
1. Case Closure Letter
2. Case Closure Summary

c: Frank Kliewer, City of Oakland-Planning, 1330 Broadway, 2nd Floor, Oakland, CA 94612
files (sadian5)

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

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

REMEDIAL ACTION COMPLETION CERTIFICATION

StID 4865 - 525 98th Ave, Oakland, CA
(1-6K and 1-4K gallon gasoline and 1-550 gallon waste oil tanks removed in December 7, 1993)

August 25, 1997

Mr. Nissian Sadian
5733 Medallion Court
Castro Valley, CA 94552

Dear Mr. Sadian:

This letter confirms the completion of 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 Title 23, Section 2721(e) of the California Code of Regulations.

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

Sincerely,

Mee Ling Tung, Director

cc: Chief, Division of Environmental Protection
Kevin Graves, RWQCB
Dave Deaner, SWRCB (with attachment-case closure summary)
Leroy Griffin, OFD
files-ec (sadian4)

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION Date: February 21, 1997

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

II. CASE INFORMATION

Site facility name: **Abandon Gas Station**
Site facility address: **525 98th Ave, Oakland, CA 94603**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **4865**
URF filing date: **1/5/94** SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
Nissan Sadian	301 Franklin St, Oakland, CA 94607	

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	6,000	Gasoline	Removed	12/7/93
2	4,000	Gasoline	Removed	"
3	550	Waste Oil	"	"

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Unknown**
Site characterization complete? **YES**
Date approved by oversight agency: **2/7/97**
Monitoring Wells installed? **Yes** Number: **3**
Proper screened interval? **Yes, ~5' to 18' bgs in well STMW-1**
Highest GW depth below ground surface: **8.21'** Lowest depth: **10.71'**
Flow direction: **NNE**
Most sensitive current use: **Commercial**
Are drinking water wells affected? **No** Aquifer name: **Unknown**
Is surface water affected? **No** Nearest affected SW name: **NA**
Off-site beneficial use impacts (addresses/locations): **None**

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:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank	3 USTs	Disposed by Erickson, Richmond	12/7/93
Piping			
Soil	??? quantity	Aerated and reused to fill pit	
Groundwater			
Barrels			

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before[1]	After[2]	Before[3]	After[4]
TPH (Gas)	12,000	ND	45,000	5,800
TPH (Diesel)	ND	NA	690	ND
Benzene	11	ND	23	1.3
Toluene	270	ND	29	0.7
Ethylbenzene	77	ND	150	4.6
Xylenes	610	ND	250	14
MTBE	NA		NA	ND
Oil & Grease	ND		3,900	0.7
Heavy metals	Cd,Cr,Pb,Ni,Zn	See Note 5		
Other VOCs	ND			
SVOCs	ND			

NOTE: 1 soil collected from tank pits at time of UST removal, 12/93
2 soil collected after overexcavation, 1/96
3 maximum historical concentrations detected in monitoring wells
4 latest concentrations detected in monitoring wells, 12/96
5 metal concentrations in soil appear to be w/in acceptable geogenic levels

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan?
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan?
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: **No, pending site closure**
Number Decommissioned: **0** Number Retained: **3**
List enforcement actions taken: **NOV issued 4/6/94; 6/9/94; 9/29/94; 11/29/94**
List enforcement actions rescinded: **in compliance by 3/28/95**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Eva Chu** Title: **Haz Mat Specialist**

Signature: Eva Chu Date: 3/6/97

Reviewed by

Name: **Amy Leech** Title: **Haz Mat Specialist**

Signature: A Leech Date: 2/21/97

Name: **Thomas Peacock** Title: **Supervisor**

Signature: Thomas Peacock Date: 3-6-97

VI. RWQCB NOTIFICATION

Date Submitted to RB: 3/7/97 RB Response: Approved

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

Signature: Kevin Graves Date: 3/27/97

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site is currently an abandoned gasoline station. Three USTs were removed in December 1993. Two fuel UST (1-6,000 gallon, 1-4,000 gallon gasoline tanks) were located in a common pit, and a 550 gallon waste oil tank in another pit. A total of four soil samples were collected from beneath the USTs in the fuel pit, and one soil sample was collected beneath the waste oil tank. Two soil samples were also collected below the product piping. All soil samples were analyzed for TPHg, TPHd, BTEX, and total lead. In addition the waste oil soil sample was analyzed for TOG, VOCs, SVOCs and the metals Cd, Cr, Pb, Ni, and Zn. (See Figs 1 and 2)

Analytical results of the soil samples from the product piping and the waste oil pit did not contain petroleum hydrocarbons, VOCs and SVOCs above the detection limits. Soil samples from the fuel pit contained elevated TPHg and BTEX concentrations. Up to 12,000 ppm TPHg and 11, 270, 77, and 610 ppm BTEX, respectively were identified in sample B-4, collected at ~12' bgs. (See Table 1)

In March 1995 three exploratory borings (SB-4 through SB-6) were advanced and three groundwater monitoring wells (STMW-1 through STMW-3) were installed at the site. Groundwater was encountered at ~12' bgs and stabilized at ~9' bgs. Soil samples were collected from each boring at ~6' and 11' bgs and analyzed for TPHg and BTEX. Low levels of these analytes were identified in soil collected from STMW-1, SB-4, and SB-5 at 11' bgs. (See Fig 3, Table 2, and Boring Logs)

In January 1996 the pit was excavated, removing sloughed material, concrete and debris, and contaminated soil. Depth to water had risen to ~7' bgs, therefore, confirmatory soil samples were collected from the sidewalls at ~7' bgs. The stockpiled soil was also sampled. All soil samples were analyzed for TPHg and BTEX. None of the soil samples contained detectable amounts of hydrocarbons. The stockpiled soil was subsequently used as fill material to backfill the excavations. (See Fig 4, Table 3)

Groundwater has been sampled for five consecutive quarters, 4/95 through 4/96. Regional groundwater flow direction is toward the southwest, but flow direction for the subject site has generally been to the north, northeast. Well STMW-1 continues to identify elevated TPHg in groundwater. However, levels of TPHd, BTEX, and TOG have been low to non-detectable. Well STMW-2 has also shown low hits of TPHg and TPHd. However, the levels do not appear to pose a risk to human health, based on EPA's RBCA Tier 1 Look Up Table. (See fig 5, Table 4)

In summary, case closure is recommended because:

- the leak and ongoing sources have been removed;
- the site has been adequately characterized;
- the dissolved plume is not migrating;
- no water wells, surface water, or other sensitive receptors are likely to be impacted; and,
- it appears that the site presents no significant risk to human health or the environment.

sadian12

File No. 10-93-570-ST

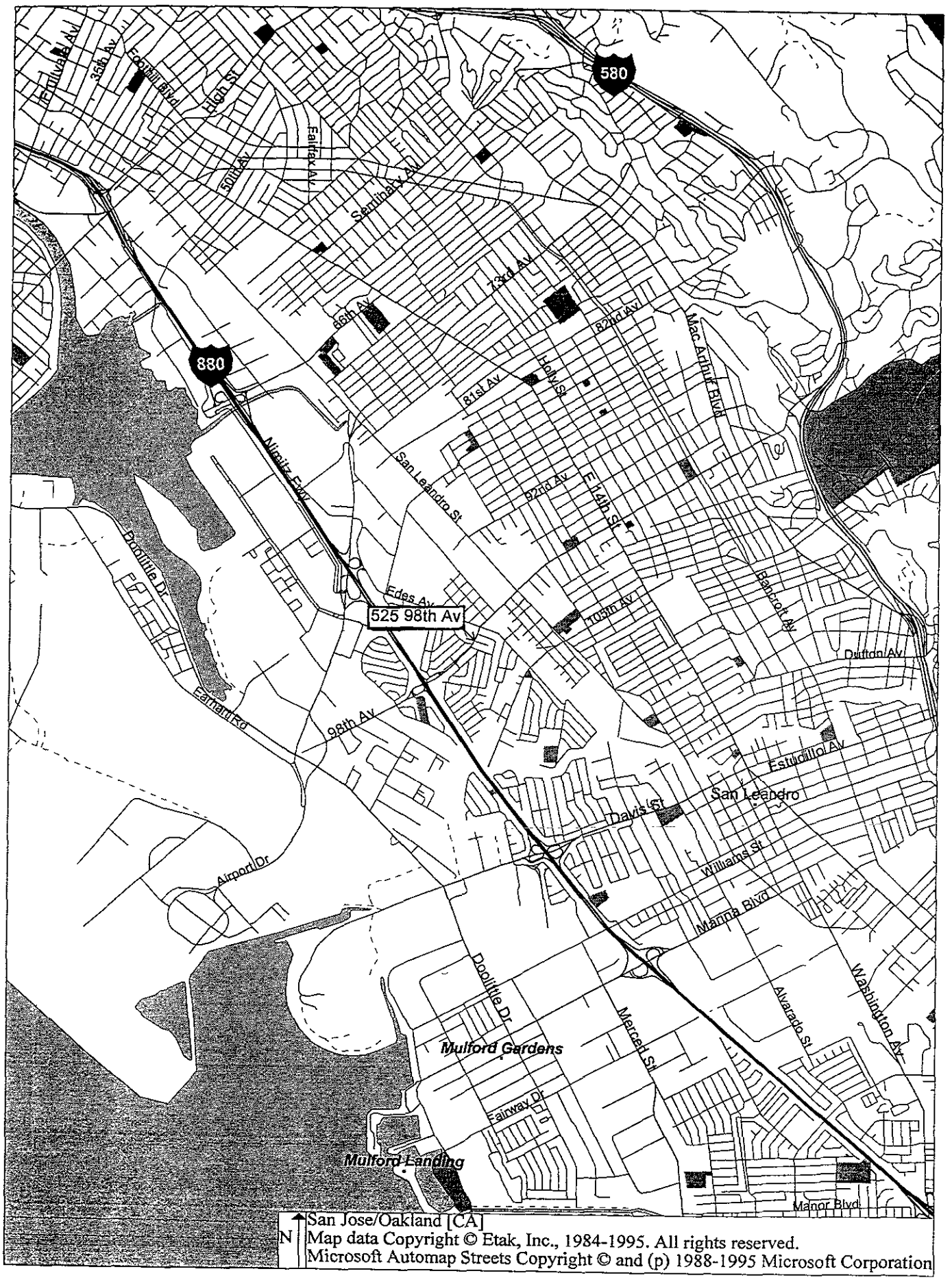


Figure 1 SOIL TECH ENGINEERING, INC. M1

File No. 10-93-570-ST

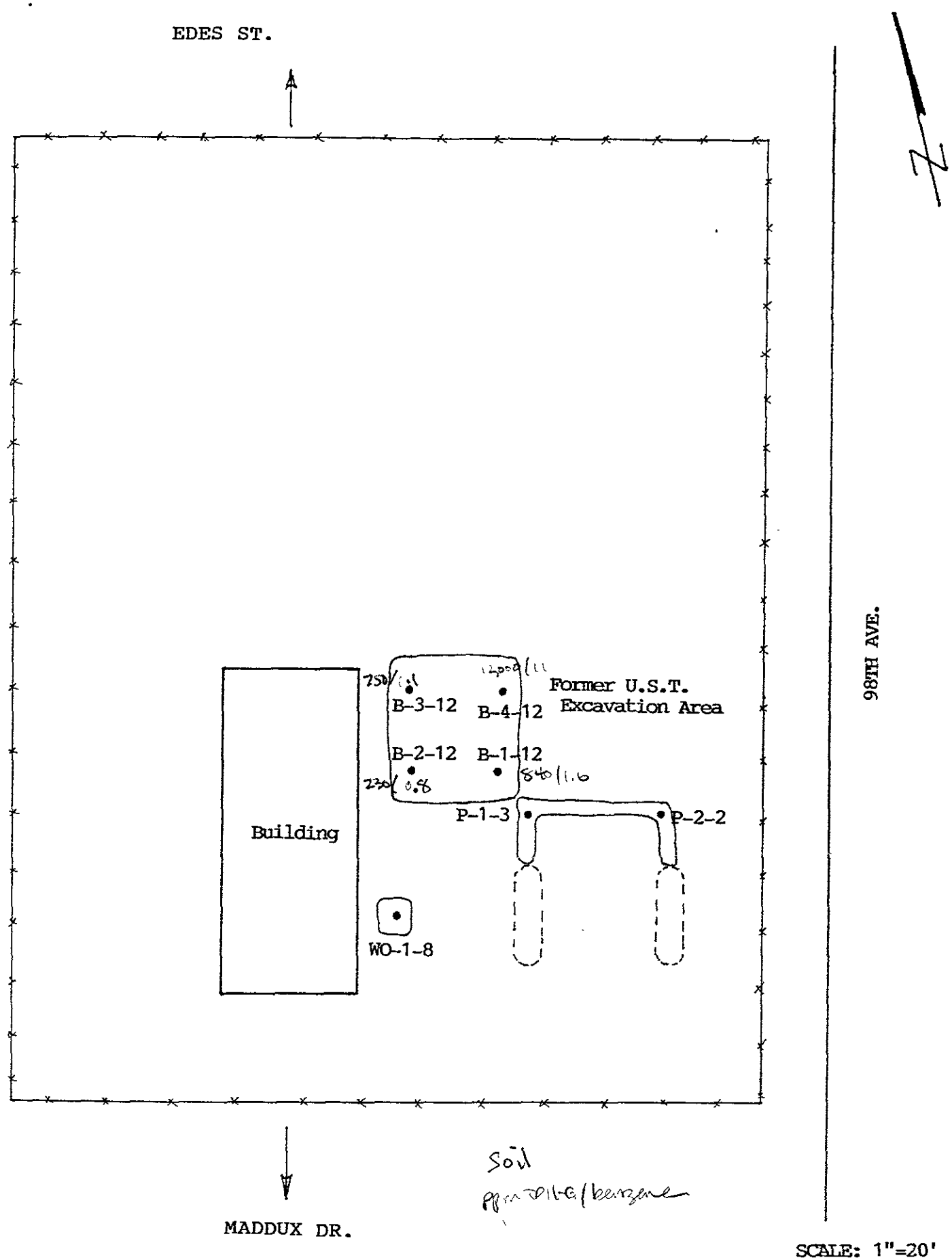


Figure 2

SOIL TECH ENGINEERING, INC.

M2

File No. 10-93-570-ST

TABLE 1
SUMMARY OF SOIL ANALYSIS RESULTS
IN
PARTS PER MILLION (ppm)

1. TPHD, TPHG AND BTEX RESULTS

Date	Sample Number	Depth feet	TPHd	TPHg	B	T	E	X
12/07/93	WO-1-8	8	ND	ND	ND	ND	ND	ND
	P-1-3	3	ND	ND	ND	ND	ND	ND
	P-2-2	2	ND	ND	ND	ND	ND	ND
	B-1-12	12	ND	840	1.6	4.0	7.9	42
	B-2-12	12	ND	230	0.8	0.25	1.0	4.8
	B-3-12	12	ND	750	1.1	0.62	2.9	31
	B-4-12	12	ND	12,000	11	270	77	610

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)

TABLE 1 CONT'D
SUMMARY OF SOIL ANALYSIS RESULTS
IN
PARTS PER MILLION (ppm)

2. TOG, TOTAL LEAD, VOC's AND SEMI-VOC's RESULTS

Date	Sample No.	Depth feet	TOG	Total Lead	VOC's	Semi-VOC's
12/07/93	WO-1-8	8	ND	NA	ND	ND
	P-1-3	3	NA	ND	NA	NA
	P-2-2	2	NA	ND	NA	NA
	B-1-12	12	NA	3.1	NA	NA
	B-2-12	12	NA	3.3	NA	NA
	B-3-12	12	NA	1.6	NA	NA
	B-4-12	12	NA	ND	NA	NA

Semi-VOC's - Semi-Volatile Organic Compounds (EPA Method 8270)
VOC's - Volatile Organic Compounds (EPA Method 8010)
TOG - Total Oil & Grease

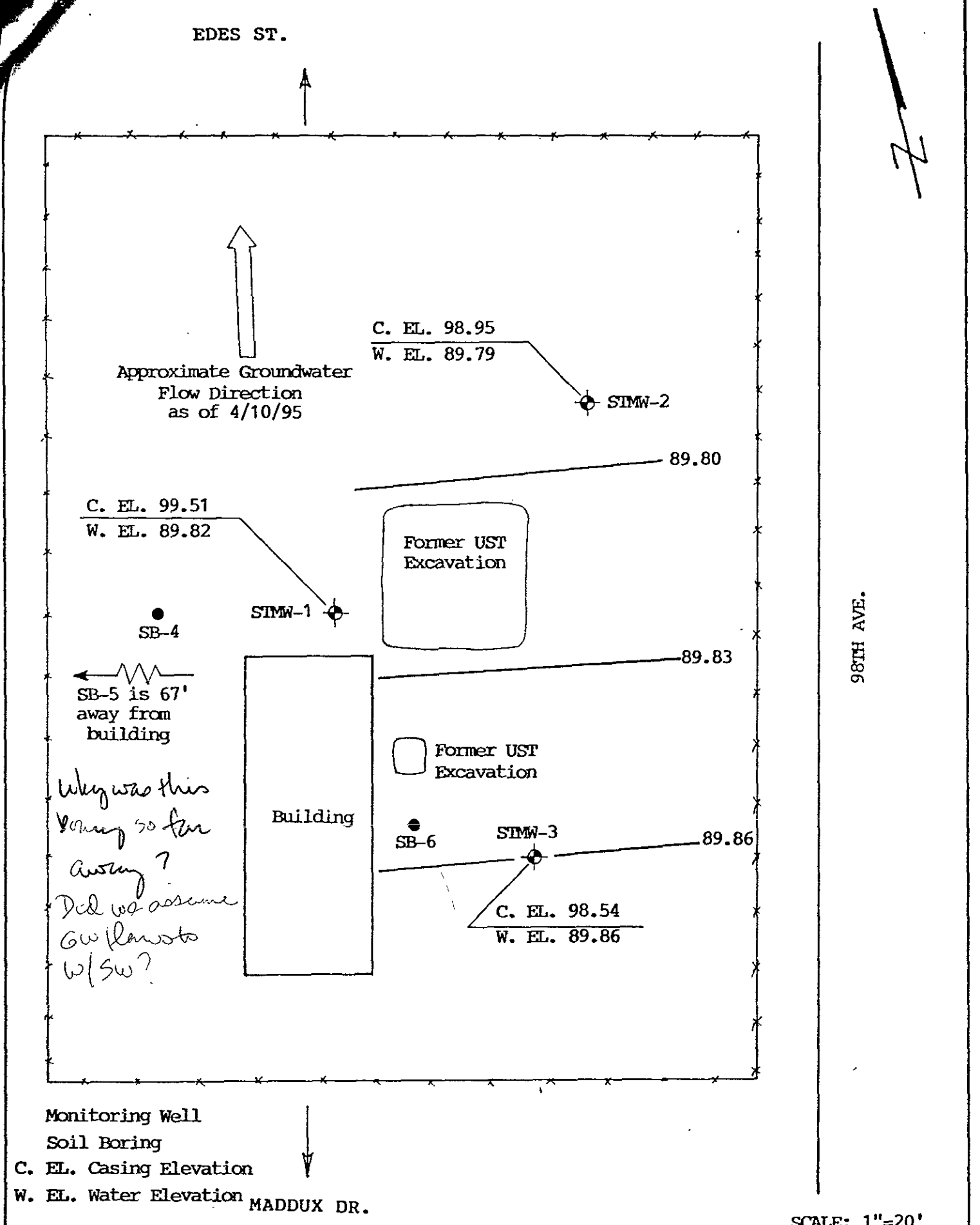
TABLE 1 CONT'D
SUMMARY OF SOIL ANALYSIS RESULTS
IN
PARTS PER MILLION (ppm)

3. CAM 5 METALS RESULTS

Date	Sample No.	Depth Feet	Cd	Cr	Pb	Ni	Zn
12/07/93	WO-1-8	8	ND	57	4.9	74	65
	P-1-3	3	NA	NA	NA	NA	NA
	P-2-2	2	NA	NA	NA	NA	NA
	B-1-12	12	NA	NA	NA	NA	NA
	B-2-12	12	NA	NA	NA	NA	NA
	B-3-12	12	NA	NA	NA	NA	NA
	B-4-12	12	NA	NA	NA	NA	NA

Cd - Cadmium
Cr - Chromium
Pb - Lead
Ni - Nickel
Zn - Zinc
NA - Not Analyzed
ND - Not Detected (Below Laboratory Detection Limit)

File No. 10-93-570-ST



Why was this boring so far away? Did we assume GW flow to W/SW?

Monitoring Well
Soil Boring
C. EL. Casing Elevation
W. EL. Water Elevation

SCALE: 1"=20'

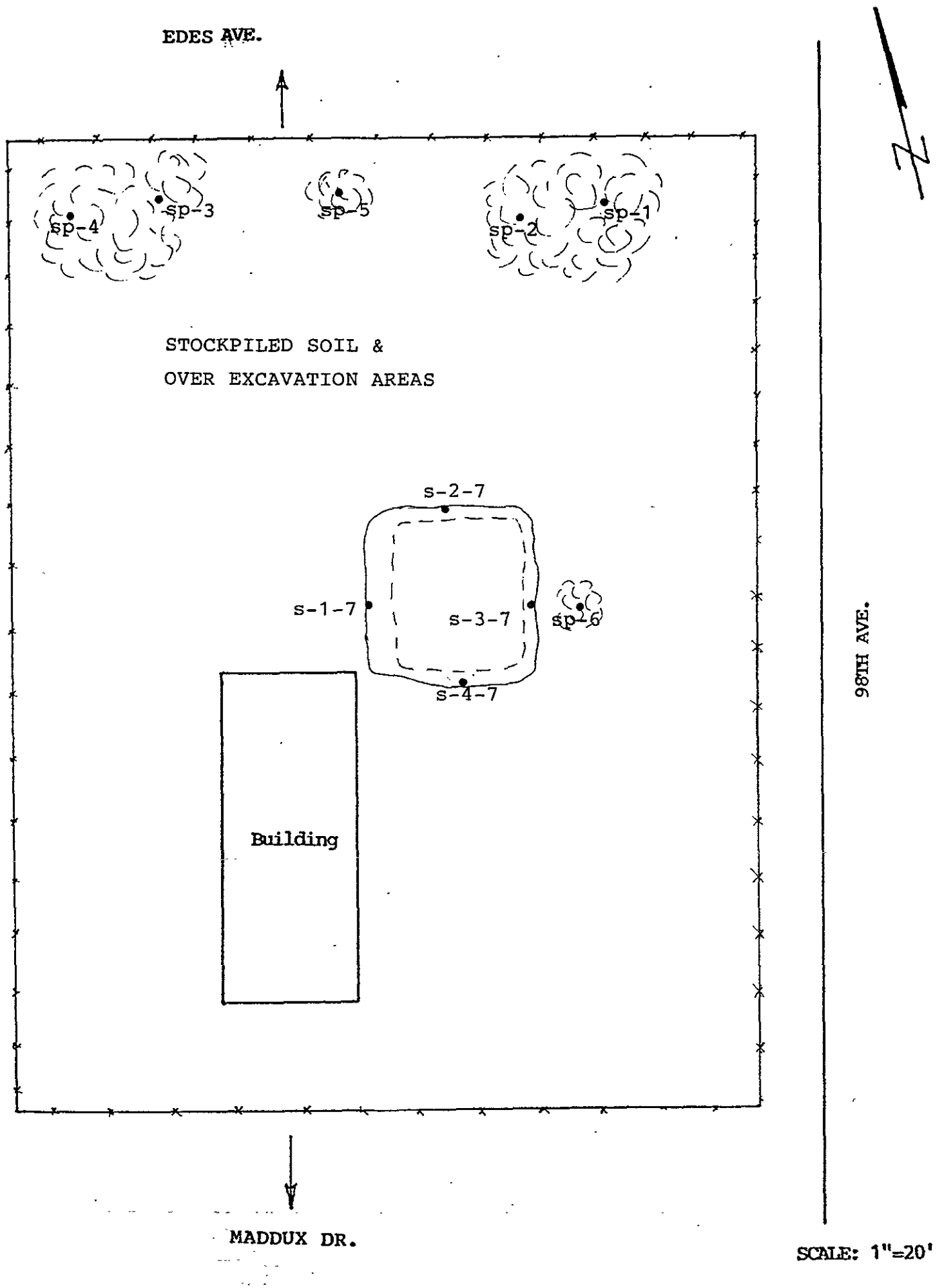
~~Figure 2~~ Fig 3

File No. 10-93-570-ST

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

Date	Sample No.	Depth feet	TPHg	B	T	E	X
3/06/95	STMW-1-6	6	ND	ND	ND	ND	ND
	STMW-1-11	11	46	0.034	0.036	0.09	0.21
	STMW-2-6	6	ND	ND	ND	ND	ND
	STMW-2-11	11	ND	ND	ND	ND	ND
	STMW-3-6	6	ND	ND	ND	ND	ND
	STMW-3-11	11	ND	ND	ND	ND	ND
3/07/95	SB-4-6	6	ND	ND	ND	ND	ND
	SB-4-11	11	34	0.044	0.039	0.036	0.097
	SB-5-6	6	1.3	ND	ND	0.0064	0.017
	SB-5-11	11	25	0.03	0.027	0.011	0.044
	SB-6-6	6	ND	ND	ND	ND	ND
	SB-6-11	11	ND	ND	ND	ND	ND

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

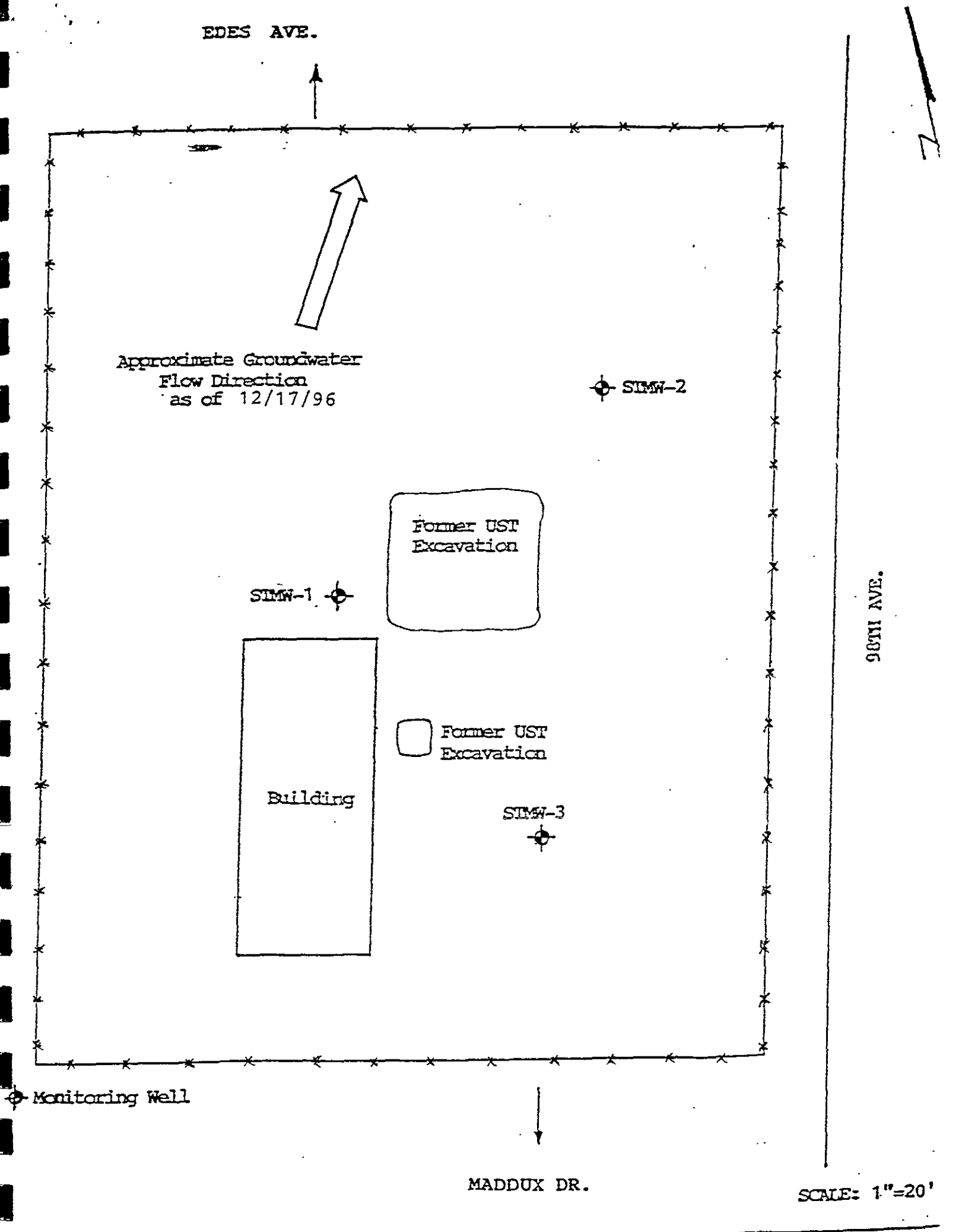

EDES AVE.
sp-4
sp-3
sp-5
sp-2
sp-1
STOCKPILED SOIL &
OVER EXCAVATION AREAS
s-2-7
s-1-7
s-3-7
sp-6
s-4-7
Building
98TH AVE.
MADDUX DR.
SCALE: 1"=20'

File No. 10-93-570-ST

TABLE # 3
SUMMARY OF SOIL SAMPLES RESULTS
IN
MILLIGRAMS PER KILOGRAM (mg/Kg)

Date	Sample No.	TPHg	B	T	E	X
1/22/96	SP-1	ND	ND	ND	ND	ND
	SP-2	ND	ND	ND	ND	ND
	SP-3	ND	ND	ND	ND	ND
	SP-4	ND	ND	ND	ND	ND
	SP-5	ND	ND	ND	ND	ND
1/29/96	SP-6	ND	ND	ND	ND	ND
	S-1-7	ND	ND	ND	ND	ND
	S-2-7	ND	ND	ND	ND	ND
	S-3-7	ND	ND	ND	ND	ND
	S-4-7	ND	ND	ND	ND	ND

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


EDES AVE.
Approximate Groundwater
Flow Direction
as of 12/17/96
SIMW-2
Former UST
Excavation
SIMW-1
Former UST
Excavation
Building
SIMW-3
Monitoring Well
MADDUX DR.
98TH AVE.
SCALE: 1"=20'

File No. 10-93-570-ST

TABLE4
GROUNDWATER MONITORING DATA (feet) AND ANALYTICAL RESULTS (mg/L)

Date	Well No./ Elevation	Depth of Well	Depth to Perf.	Depth to Water	GW Elev.	Well Observation	TPHd	TPHg	B	T	E	X	MTBE	TOG
04/10/95	STMW-1 (99.51)	20	4.5	9.69	89.82	V. l. rainbow sh. sp. Light pet. odor	0.067	13.0	0.0059	0.0069	0.15	0.25	NA	NA
07/25/95				10.39	89.12	No sheen No. odor	ND	45.0	0.011	0.029	0.02	0.16	NA	NA
10/24/95				10.71	88.80	No sheen L. sewage odor	ND	7.8	0.0036	0.0015	0.02	0.031	NA	0.9
01/22/96				8.21	91.30	Rainbow sh. sp. L. pet. odor	0.49	23.0	0.023	0.022	0.1	0.23	NA	1.7
04/25/96				9.85	89.66	No sheen V. l. pet. odor	0.69	6.0	0.0016	0.0009	0.022	0.023	NA	3.9
12/17/96				9.42	90.09	Rainbow sh. sp. L. sewage odor	ND	5.8	0.0013	0.0007	0.0046	0.014	ND	0.0007

TPHd - Total Petroleum Hydrocarbons as Diesel
TPHg - Total Petroleum Hydrocarbons as Gasoline
B - Benzene
T - Toluene
E - Ethyl Benzene
X - Total Xylenes
ND - Not Detected
NA - Not Analyzed
GW Elev. - Groundwater Elevation
MTBE - Methyl Tertiary Butyl Ether
TOG - Total Oil & Grease
Pet. - Petroleum
Perf. - Perforation
V. - Very
L. - Light
sh. sp. - sheen spots
pet. - petroleum

cont TABLE 4
GROUNDWATER MONITORING DATA (feet) AND ANALYTICAL RESULTS (mg/L)

Date	Well No./ Elevation	Depth of Well	Depth to Perf.	Depth to Water	GW Elev.	Well Observation	TPHd	TPHg	B	T	E	X	MTBE	TOG
04/10/95	STMW-2 (98.95)	20	5	9.16	89.79	No sheen No odor	0.054	ND	ND	ND	ND	ND	NA	NA
07/25/95				9.87	89.08	No sheen No. odor	ND	ND	ND	ND	ND	ND	NA	NA
10/24/95				10.19	88.76	No sheen No odor	ND	ND	ND	ND	ND	ND	NA	ND
01/22/96				7.74	91.21	No sheen No odor	0.25	0.082	0.0007	ND	ND	0.0023	NA	0.6
04/25/96				9.33	89.62	No sheen No odor	0.4	0.13	ND	ND	0.0006	0.001	NA	0.6
12/17/96				8.91	90.04	No sheen No odor	ND	0.24	0.0006	ND	ND	0.0006	ND	ND

TPHd - Total Petroleum Hydrocarbons as Diesel
TPHg - Total Petroleum Hydrocarbons as Gasoline
B - Benzene **T** - Toluene
E - Ethyl Benzene **X** - Total Xylenes
ND - Not Detected
NA - Not Analyzed
GW Elev. - Groundwater Elevation
MTBE - Methyl Tertiary Butyl Ether
TOG - Total Oil & Grease
Perf. - Perforation

T1 cont'

File No. 10-93-570-ST

cont. TABLE 4

GROUNDWATER MONITORING DATA (feet) AND ANALYTICAL RESULTS (mg/L)

Date	Well No./ Elevation	Depth of Well	Depth to Perf.	Depth to Water	GW Elev.	Well Observation	TPHd	TPHg	B	T	E	X	MTBE	TOG
04/10/95	STMW-3 (98.54)	20	5	8.68	89.86	No sheen No odor	ND	ND	ND	ND	ND	ND	NA	15
07/25/95				9.40	89.14	No sheen No odor	ND	ND	ND	ND	ND	ND	NA	ND
10/24/95				9.73	88.81	No sheen No odor	ND	ND	ND	ND	ND	ND	NA	ND
01/22/96				7.19	91.35	No sheen No odor	ND	ND	ND	ND	ND	ND	NA	ND
04/25/96				8.85	89.69	No sheen No odor	0.15	ND	ND	ND	ND	ND	NA	0.5
12/17/96				8.42	90.12	No sheen No odor	ND	ND	ND	ND	ND	ND	ND	ND

TPHd - Total Petroleum Hydrocarbons as Diesel
TPHg - Total Petroleum Hydrocarbons as Gasoline
B - Benzene **T** - Toluene
E - Ethyl Benzene **X** - Total Xylenes
ND - Not Detected
NA - Not Analyzed
GW Elev. - Groundwater Elevation
MTBE - Methyl Tertiary Butyl Ether
TOG - Total Oil & Grease
Perf. - Perforation

T1 cont'

10-93-570-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No STMW-1
Date Drilled: 3/06/95	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/6"	Unified Soil Classification	DESCRIPTION
1				CH	2-inch asphalt on 4-inch baserock. Very dark grey fat clay with sand, damp, stiff, 15% subangular medium to coarse grained sand. Munsell Soil Color: 5YR 3/1
2					
3					
4					
5				GC	Dark brown clayey gravel with sand, damp, medium dense, 25% lean clay fines, 30% fine to coarse grained sand, 45% gravel clasts to 2-inch diameter.
6	STMW-1-6		325 psi		Munsell Soil Color: 10YR 3/3
7					
8					
9					▼ Static groundwater encountered at 9½ feet.
10				CH	Grey with yellowish-brown mottles fat clay, damp, very stiff, moderate gasoline odor, rainbow sheen on water.
11	STMW-1-11		325 psi		Munsell Soil Color: 10YR 5/1 with 5/6
12					▽ First groundwater encountered at 12 feet.
13					
14					
15					
16					

Remarks

NO. 10-93-570-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No STMW-1
Date Drilled 3/06/95	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				CH	Grey with yellowish-brown mottles fat clay, damp, very stiff, moderate gasoline odor, rainbow sheen on water. Munsell Soil Color: 10YR 5/1 with 5/6
18					Caved to 18'4".
19					
20					Boring terminated at 20 feet.
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

10-93-570-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. STMW-2
Date Drilled: 3/06/95	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/6"	Unified Soil Classification	DESCRIPTION
1				CH	2-inch asphalt on 4-inch baserock. Very dark grey fat clay with sand, damp, stiff, 15% medium grained sand. Munsell Soil Color: 5YR 3/1
2					
3					
4					
5				GC	Brown clayey gravel with sand, damp to moist, medium dense, 25% clayey fines, 30% fine to coarse grained sand, 45% subangular gravel clasts to 1½-inch diameter. Munsell Soil Color: 10YR 4/3
6	STMW-2-6		350 psi		
7					
8					
9					▼ Static groundwater encountered at 9½ feet.
10				CH	Greenish-grey fat clay, damp, stiff. Munsell Soil Color: 5GY 5/1
11	STMW-2-11		350 psi		
12					▽ First groundwater encountered at 12 feet.
13					
14					
15					
16					

Remarks

10-93-570-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. STMW-2
Date Drilled 3/06/95	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				CH	Greenish-grey fat clay, damp, stiff. Munsell Soil Color: 5GY 5/1
18				CH	Light olive-brown sandy fat clay with gravel, moist, stiff, 20% medium grained sand, 10% gravel clasts to 2-inch diameter.
19					Munsell Soil Color: 5YR 3/3
20					Caved to 20 feet.
21					
22					Boring terminated at 22 feet.
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

10-93-570-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. STMW-3
Date Drilled: 3/06/95	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/6"	Unified Soil Classification	DESCRIPTION
1				CH	2-inch asphalt on 4-inch baserock. Very dark greyish-brown sandy fat clay, damp, stiff, 25% medium grained sand. Munsell Soil Color: 10YR 3/2
2					
3					Becomes dark greyish-brown sandy fat clay, damp, stiff, 25% medium grained sand. Munsell Soil Color: 10YR 4/3
4					
5					Becomes gravelly.
6	STMW-3-6		375 psi		
7					
8				CH	Greenish-grey fat clay, moist, stiff. Munsell Soil Color: 5GY 6/1
9					
10					
11	STMW-3-11		350 psi		
12					▽ First groundwater encountered at 12 feet.
13					
14					
15				CH	Brown sandy fat clay with gravel, moist, stiff, 20% medium grained sand, 20% gravel clasts to 1-inch diameter. Munsell Soil Color: 10YR 5/3
16					

Remarks

No 10-93-570-ST

Logged By Robert Baker	Exploratory Boring Log	Boring No STMW-3
Date Drilled 3/06/95	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				CH	Brown sandy fat clay with gravel, moist, stiff, 20% medium grained sand, 20% gravel clasts to 1-inch diameter. Munsell Soil Color: 10YR 5/3
18					
19					
20					
21					Caved to 21 feet.
22					
23					
24					Boring terminated at 24 feet.
25					
26					
27					
28					
29					
30					
31					
32					

Remarks

10-93-570-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. SB-4
Date Drilled: 3/07/95	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/6"	Unified Soil Classification	DESCRIPTION
1				CH	2-inch asphalt on 4-inch baserock. Black fat clay with sand, damp, stiff, 15% fine to medium grained sand. Munsell Soil Color: 10YR 2/1
2					
3				GC	Dark brown clayey gravel with sand, damp, medium dense, 40% clayey fines, 25% fine to coarse grained sand, 35% subangular gravel clasts to 1-inch diameter. Munsell Soil Color: 10YR 3/3
4					
5					
6	SB-4-6		350 psi	SP-SC	Dark brown poorly graded sand with clay, damp to moist, medium dense, 90% fine to medium grained sand, 10% clayey fines. Munsell Soil Color: 10YR 3/3
7					
8				CH	Dark yellowish-brown with grey mottles fat clay, damp, stiff, moderate to strong gasoline odor at 10 feet sample. Munsell Soil Color: 10YR 4/4 with 5/1
9					
10					▼ Static groundwater encountered at 9½ feet.
11	SB-4-11		350 psi		Boring terminated at 11½ feet.
12					
13					
14					
15					
16					

Remarks

Job No. 10-93-570-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. SB-5
Date Drilled: 3/07/95	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/6"	Unified Soil Classification	DESCRIPTION
1				CH	2-inch asphalt on 4-inch baserock. Black fat clay with sand, damp, stiff, 15% fine to medium grained sand. Munsell Soil Color: 10YR 2/1
2					
3				GC	Very dark greyish-brown clayey gravel with sand, damp, medium dense, 30% clayey fines, 40% gravel clasts to 1-inch diameter, 30% fine to coarse grained sand. Munsell Soil Color: 10YR 3/2
4					
5					
6	SB-5-6		350 psi	CH	Very dark greyish-brown fat clay, damp, very stiff. Munsell Soil Color: 10YR 3/2
7					
8				CH	Greenish-grey fat clay, moist, stiff. Munsell Soil Color: 5GY 5/1
9					▼ Static groundwater encountered at $9\frac{1}{2}$ feet.
10					
11	SB-5-11		350 psi		Slight gasoline odor in sample. Boring terminated at $11\frac{1}{2}$ feet.
12					
13					
14					
15					
16					

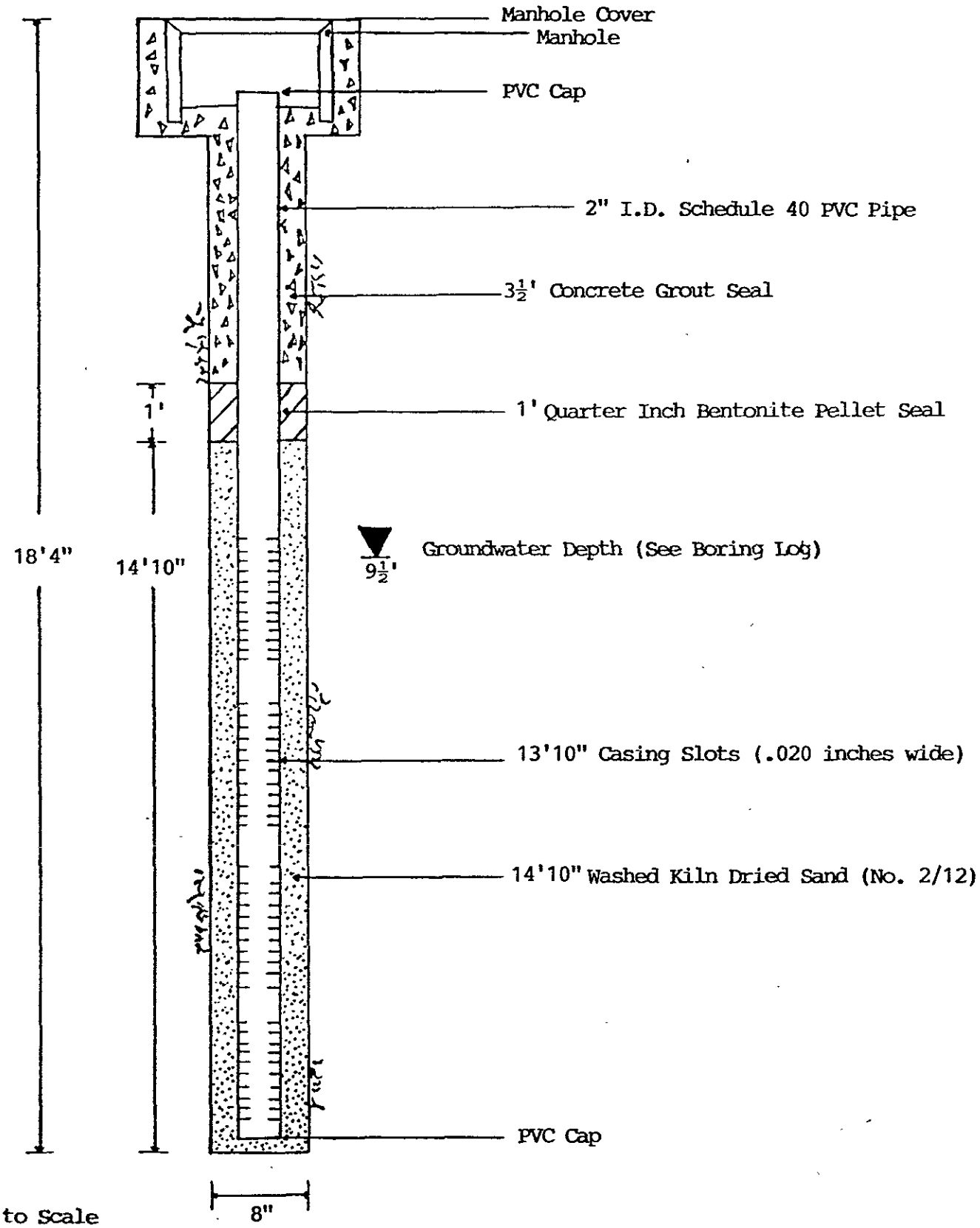
Remarks

10-93-570-ST

Logged By: Robert Baker	Exploratory Boring Log	Boring No. SB-6
Date Drilled: 3/07/95	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/6"	Unified Soil Classification:	DESCRIPTION
1				CH	2-inch asphalt on 4-inch baserock. Black fat clay, damp, stiff, with 10% subangular coarse grained sand. Munsell Soil Color: 10YR 2/1
2					
3				CH	Dark greyish-brown sandy fat clay, moist, stiff, 40% fine to coarse grained angular sand. Munsell Soil Color: 10YR 4/2
4					
5					
6	SB-6-6		350 psi		
7					
8				CH	Greenish-grey fat clay, moist, stiff. Munsell Soil Color: 5GY 5/1
9					▼ Static groundwater encountered at 9.8 feet.
10					
11	SB-6-11		350 psi		Boring terminated at 11½ feet.
12					
13					
14					
15					
16					

Remarks



STMW-1

Piezometer Schematic

SOIL TECH ENGINEERING, INC.

PS1