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

July 13, 1998

STID 4147

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

REMEDIAL ACTION COMPLETION CERTIFICATION

Jerry and Mary Petsas
16518 Toledo Street
San Leandro, CA 94578

RE: 16035 E. 14th Street, San Leandro

Dear Mr. and Mrs. Petsas:

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: Dick Pantages, Chief, Env. Protection Division
Chuck Headlee, RWQCB
Dave Deaner, SWRCB (w/attachment)
James Ferdinand, Alameda County Fire Department
SOS/files

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

Ro# 786

July 13, 1998

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

STID 4147

Jerry and Mary Petsas
16518 Toledo Street
San Leandro, CA 94578

RE: 16035 E. 14th Street, San Leandro

Dear Mr. and Mrs. Petsas:

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:

- Up to 750 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G) and 2.1 ppm Benzene, among other fuel constituents, remain in soil beneath the site. Up to 0.33 ppm TPH-G and 0.013 ppm Benzene, among other fuel constituents, remain in groundwater.

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

cc: Dick Pantages, Chief

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION **Date: 10/29/97**

Agency name: **Alameda County-EPD** Address: **1131 Harbor Bay Pkwy #250**
City/State/Zip: **Alameda, CA 94502** Phone: **(510) 567-6700**
Responsible staff person: **Scott Seery** Title: **Haz. Materials Spec.**

II. CASE INFORMATION

Site facility name: **Petsas Property**
Site facility address: **16035 E. 14th Street, San Leandro 94578**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **4147**
URF filing date: 02/06/92 SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
Jerry and Mary Petsas	16518 Toledo St. San Leandro, CA 94578	(510) 276-2828
Beatrice S. Gallegos	4650 N. Palm Ave. Fresno, CA 93704	
Gregory J. Gallegos	344 Rollingwood Dr. Vallejo, CA 94591	

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	1000	gasoline	removed	02/04/92
2	1000	"	"	"
3	750	waste oil	"	"
4	250	" "	"	07/29/96

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: tank corrosion / over filling

Site characterization complete? YES

Date approved by oversight agency:

Monitoring Wells installed? YES Number: 3

Proper screened interval? YES

Highest GW depth below ground surface: 5.63' Lowest depth: 7.52'

Flow direction: NW - NE

Most sensitive current use: commercial

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Are drinking water wells affected? NO Aquifer name: San Leandro cone

Is surface water affected? NO Nearest affected SW name: NA

Off-site beneficial use impacts (addresses/locations): NA

Report(s) on file? **YES** Where is report 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	(2x1000; 1x750 gals)	Disposal - Erickson, Inc. Richmond, CA	02/04/92
	250 gal	Disposal - Erickson, Inc. Richmond, CA	07/29/96
Piping	UNK length	Disposal - Erickson, Inc. Richmond, CA	02/04/92
Product/H_2O	1420 gals	Recycle - Alviso Oil Co. Alviso, CA	03/03/92-03/04/92
	35 gals	Recycle - Evergreen Env. Svc. Newark, CA	08/22/96
Soil	132 yds^3	Disposal - Redwood L.F. Novato, CA	03/25/92-03/26/92
	65 yds^3	Disposal - BFI L.F. Livermore, CA	05/20/92
	19.48 tons	Disposal - Bay Area Soil	08/30/96

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	**Soil (ppm)**		**Water[3] (ppb)**	
	Before[1]	After[2]	Before	After
TPH (Gas)	1300	750	720	330
TPH (Diesel)	950	980	460	140
TEPH	250	17	NA	NA
Benzene	3.2	2.1	54	13
Toluene	39	31	<0.5	<0.5
Xylene	78	67	13	<1.5
Ethylbenzene	14	18	19	6.2
Oil & Grease	54	<50	<1000	NA
Heavy metals	(SEE: Note 1)		NA	"
Other **HVOC**	ND	ND	"	"
SVOC	"	"	"	"

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Notes:

1) All "Before" soil results (except TEPH) from sample S3-BP collected from waste oil UST pit at 8.5' BG during 2/92. TEPH reflects sample 1-285-WO @ 6.5' collected from below second waste oil UST removed in 7/96. HVOCs were "ND" in both 1992 and 1996 waste oil UST closure samples. SVOCs were only sought during 1996 closure. All metals concentrations fall within expected geogenic concentrations or were at concentrations below detection limits.

2) All "After" soil results (except TEPH and HVOC) from sample VSNW-1 collected from sidewall of 1992 waste oil UST pit after over-excavation of entire UST area. TEPH and HVOC results from sample 2-285-WO @ 9.5' from the sidewall of 1996 waste oil UST pit after vertical over-excavation.

3) All "Before" and "After" water results reflect samples collected between 5/93 and 12/95 from well MW-1.

Comments (Depth of Remediation, etc.):

During February 1992, two (2) 1000 gallon gasoline and one 750 gallon waste oil USTs were removed from this ~ 1940's era service station. The fuel tanks reportedly had not been used since the late 1970's; the waste oil UST appeared to have been in use since that time.

Numerous throughgoing holes were observed in product piping and all USTs. Contamination was clearly evident in both the fuel and waste oil tank excavations. Soil samples were collected from below each end of both fuel USTs @ a depth of 8.5' BG. One soil sample was collected from below the waste oil UST at a similar depth. "Apparent" GW was noted seeping into the waste oil UST excavation during sampling activities.

Up to 1300 ppm TPH-G and 3.2 ppm benzene were noted in sample S3-BP collected at the base of the waste oil tank excavation. Up to 880 ppm TPH-G and detectable TEX were noted in samples collected from the fuel UST pit.

The UST pits were subsequently overexcavated to an overall depth of approximately 10' BG and resampled. The excavation extended to the north up to the edge of the old station building and dispenser drive pad. Excavated sediments were predominantly light grey-to-black clays, except for ~2' thick sand layer encountered at 7' BG in the SE end of the final excavation. GW entered the excavation at an approximate depth of 8' BG, with apparent HC "sheen" reportedly observed.

Up to 750 ppm TPH-G, 980 ppm TPH-D and 2.1 ppm benzene, as well as TEX, were identified in confirmation sample VSNW-1, collected at a depth of 7.5' BG from the sidewall directly below the foundation of the station building. Only occasional and minor concentrations of TEX and TPH-G were identified in samples collected from the area of the final excavation representative of former fuel UST locations.

Approximately 200 yds^3 of excavated material were transported to Redwood and BFI landfills (Novato and Livermore, CA, respectively) for disposal.

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

A single 250 gallon waste oil UST was later discovered buried below the concrete at the entrance to the auto service bay and removed during July 1996. The tank appeared in sound condition upon removal.

Some HC impact was noted in native materials encountered in the excavation. An initial soil sample was collected at the 6.5 depth, consistent with the apparent fill\native soil interface. The excavation was deepened to ~ 10' BG at which point GW was reached. A single sidewall sample was also collected at this depth.

Up to 250 ppm TEPH was identified in the initial 6.5' sample. TPH-D, -G, and EX were also detected at low concentrations. Only trace concentrations of TPH-G, TEPH and xylenes were noted in the 10' sample.

It is reported that 19.48 tons of soil excavated from this UST pit were disposed in August 1996 at "Bay Area Soil" (location unknown).

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: NA

Should corrective action be reviewed if land use changes? YES

Monitoring wells Decommisioned: NO (pending case closure)

Number Decommisioned: 0 Number Retained: 3 (pending case closure)

List enforcement actions taken: NOV (01/04/94)

List enforcement actions rescinded: NONE

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Scott Seery
Signature: [signature]
Title: Haz Mat Specialist
Date: 11/5/97

Reviewed by
Name: Tom Peacock
Signature: [signature] for
Title: Supervising Haz Mat Specialist
Date: 11/5/97

V. LOCAL AGENCY REPRESENTATIVE DATA (Continued)

Name: ~~Brian Oliva~~ Pamela J. Evans Title: Sr. Haz Mat Specialist
Signature: Pamela J Evans Date: 11/5/97

VI. RWQCB NOTIFICATION

Date Submitted to RB: 11/5/97 RB Response:
RWQCB Staff Name: Kevin Graves Title: San. Eng. Assoc. Date:

VII. ADDITIONAL COMMENTS, DATA, ETC.

Three (3) monitoring wells were subsequently constructed at the site during April 1993 in locations surrounding the final UST excavation, and completed to depths ranging from 15 to 18' BG. Well screens were placed between 7 and 17' (MW-2 and -3), and 7 and 15' BG (MW-1). Ground water appeared to be present under confined conditions and occur within a silty SAND layer encountered at ~7.5' BG. Initial flow directions (4/93 and 5/93) were calculated towards the north and NW, respectively.

Soil samples collected during boring advancement revealed target compounds at either unremarkable concentrations, or below laboratory detection limits. Initial water samples collected from completed wells identified up to 720 ug/l TPH-G and 54 ug/l benzene, as well as detectable TEX.

Well sampling continued through December 1995. Final water sample results from well MW-1 revealed 3300 ug/l TPH-G, 140 ug/l TPH-D, and 13 ug/l benzene, as well as detectable ethylbenzene.

....

Site data were evaluated within the framework of the American Society for Testing and Materials (ASTM) E 1739-95 *"Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites,"* or RBCA. Potential complete exposure pathways were identified. A "Tier 1" evaluation was performed, comparing site chemical data with the "example" ASTM RBCA Tier 1 *California-modified* Risk-Based Screening Level (RBSL) look-up table, and determining the reasonable comparability to default input parameters used in development of the RBSLs. Comparisons were based on <u>maximum</u> historic contaminant concentrations for sample locations which appeared to represent reasonable "worse-case" examples. ***Benzene*** was used as the "risk-driving" compound during this screening evaluation, applying the 1E-04 excess cancer risk target level for commercial receptor populations.

Leaking Underground Fuel Storage Tank Program

VII. ADDITIONAL COMMENTS, DATA, ETC. (Continued)

Potential complete exposure pathways for this site were evaluated, as follows:

(1) vapor intrusion from ground water to buildings;

(2) volatilization from ground water to outdoor air;

(3) vapor intrusion from soil to buildings; and,

(4) volatilization from soil to outdoor air

An asphalt-paved parking lot now covers the entire area where the USTs were formerly located. The conclusion, therefore, is that potential exposure pathways for *outdoor* receptor populations from either soil or ground water media are not reasonably expected to be complete, and will not, consequently, be further evaluated in this context.

Based on a maximum soil **benzene** concentration of 2.1 ppm (sample VSNW-1), the ASTM RBCA Tier 1 RBSL target level was exceeded for the *"soil-vapor intrusion from soil to buildings"* exposure pathway for commercial receptor populations. It is reasonably expected, however, that geogenic factors will produce greater *actual* vapor transport attenuation potential versus theoretical (i.e., ASTM Tier 1) potential. Based on published boring logs, for example, sediments encountered in the area of consideration (station building) were predominantly "damp" CLAY from approximately 2.5 to 15' BG, the total depth explored.

ASTM RBSLs are based on the physical characteristics of a model "sandy soil." Inherent characteristics of site soils, however, are expected to result in increased vapor attenuation, thereby reducing potential exposure risks by impeding vapor flow to enclosed air space. This evidence strongly suggests that vapor exfiltration from formation soils to potential receptor populations is not reasonably expected to occur.

LEGEND

REFERENCE: USGS 7.5 MINUTE
SERIES QUADRANGLE MAPS
SAN LEANDRO AND HAYWARD, CA
PHOTOREVISED 1980

0 2,000
SCALE IN FEET

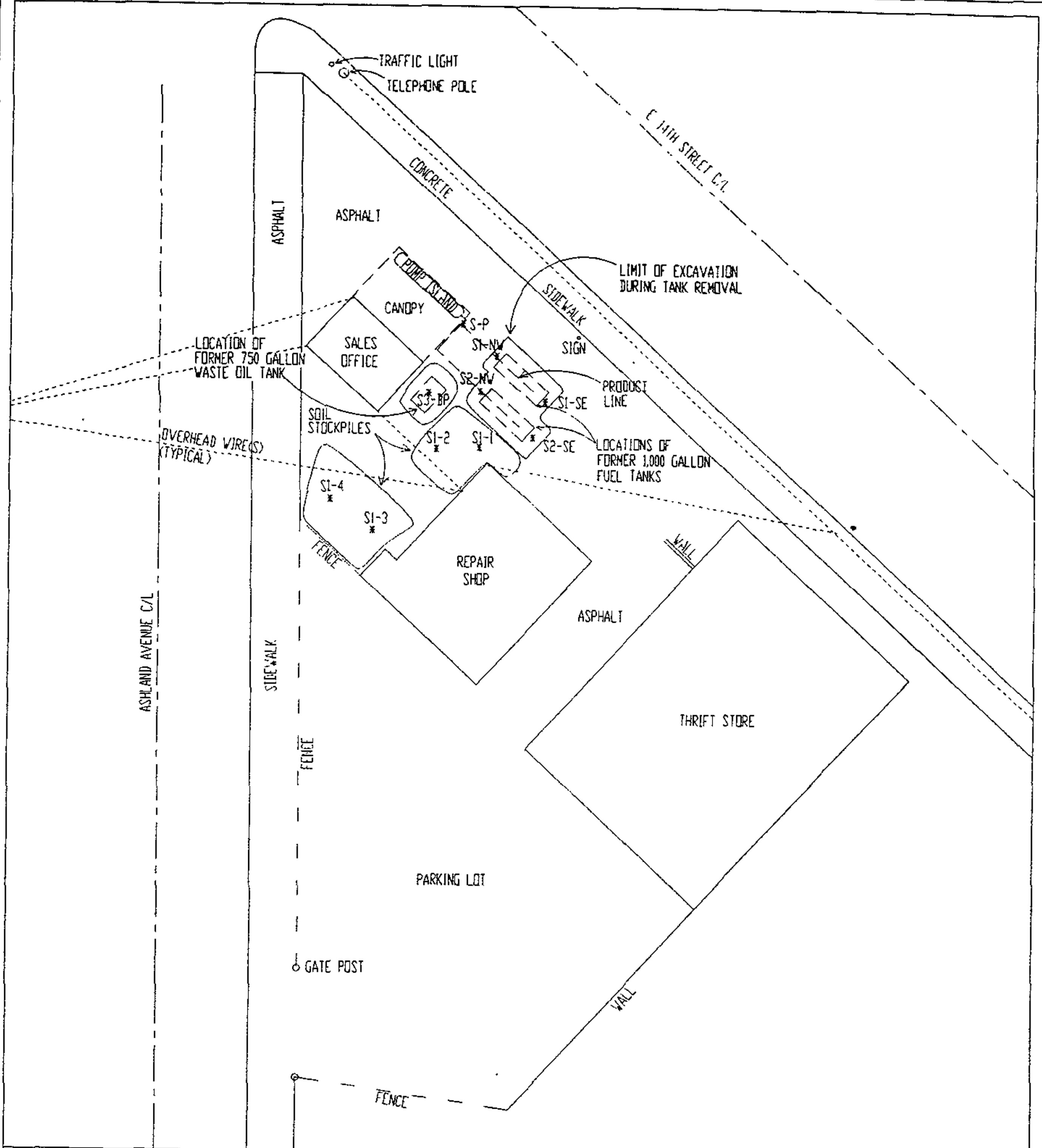
N

TANK PROTECT ENGINEERING

SITE VICINITY MAP

16035 EAST 14TH STREET
SAN LEANDRO, CA 94578

DATE	8/4/93
FIGURE	1
FILE #	218A-6
DRAWN BY	MAC
CHECKED BY	JVN



LEGEND

S1-NW * NAME AND LOCATION OF SOIL SAMPLE

-N-

NOTE: HEIGHT OF OVERHEAD WIRES IS APPROXIMATELY 15 FEET.

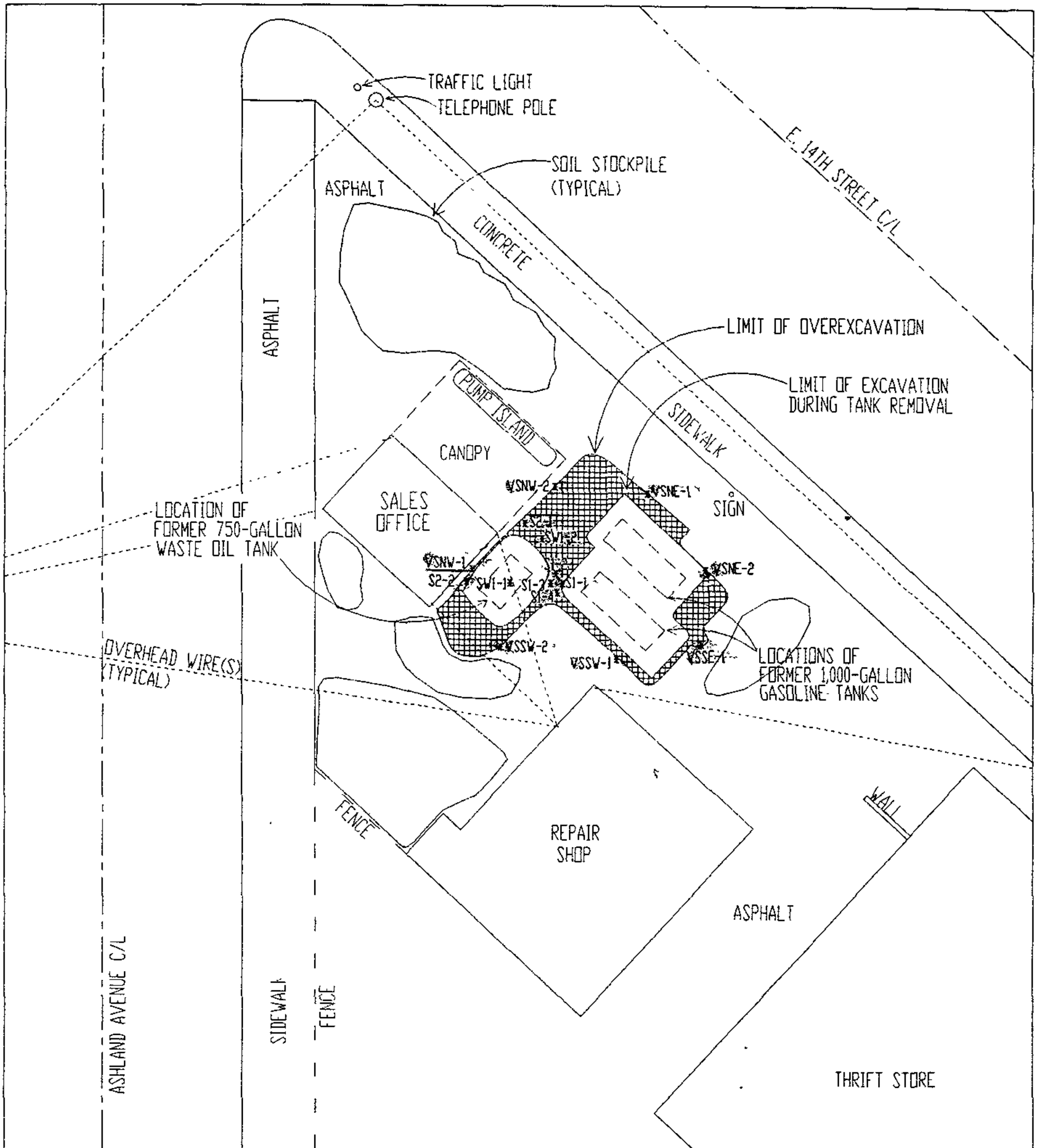
0 30
SCALE IN FEET

TANK PROTECT ENGINEERING

SITE DETAIL
TANK REMOVALS (2/4/92 & 2/5/92)

16035 EAST 14TH STREET
SAN LEANDRO, CA 94578

DATE	12/18/91
FIGURE	2
FILE #	218-2
DRAWN BY	MAC
CHECKED BY	JVM



LEGEND

AREA OF OVEREXCAVATION

VSNE-1 * NAME AND LOCATION OF SOIL SAMPLE

-N-

NOTE: HEIGHT OF OVERHEAD WIRES IS APPROXIMATELY 15 FEET.

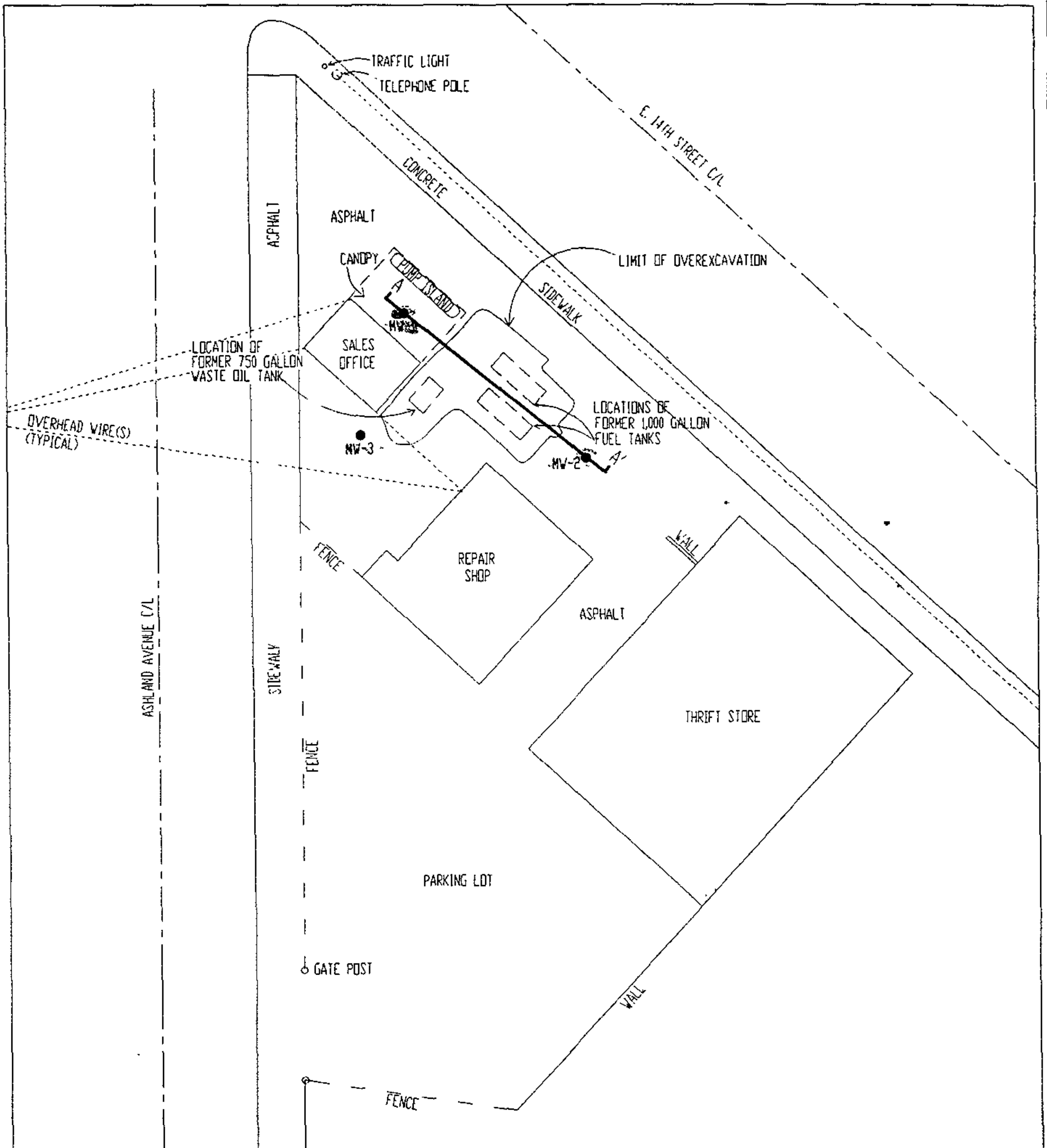
0 20
SCALE IN FEET

TANK PROTECT ENGINEERING

SITE DETAIL
OVEREXCAVATION (3/2/92 & 3/3/92)

16035 EAST 14TH STREET
SAN LEANDRO, CA 94578

DATE	2/5/93
FIGURE	3
FILE #	218-3
DRAWN BY	MAC
CHECKED BY	JVM



LEGEND

MW-1 ● NAME AND LOCATION OF GROUNDWATER MONITORING WELL

LOCATION OF GEOLOGIC CROSS SECTION.

NOTE: HEIGHT OF OVERHEAD WIRES IS APPROXIMATELY 15 FEET.

N

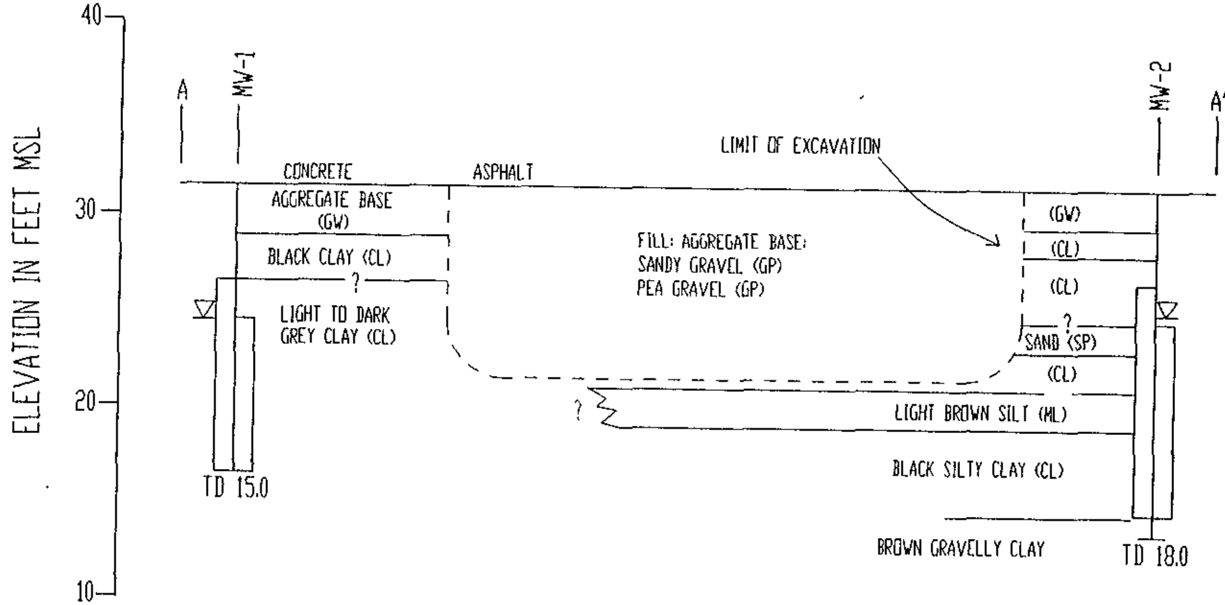
0 30 SCALE IN FEET

TANK PROTECT ENGINEERING

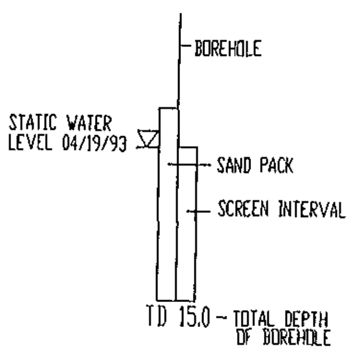
SITE DETAIL
LOCATION OF CROSS SECTION A-A'

16035 EAST 14TH STREET
SAN LEANDRO, CA 94578

DATE	4/16/93
FIGURE	6
FILE #	218-5
DRAWN BY	LNH
CHECKED BY	JVM



LEGEND



0 10
SCALE IN FEET

NO VERTICAL EXAGGERATION

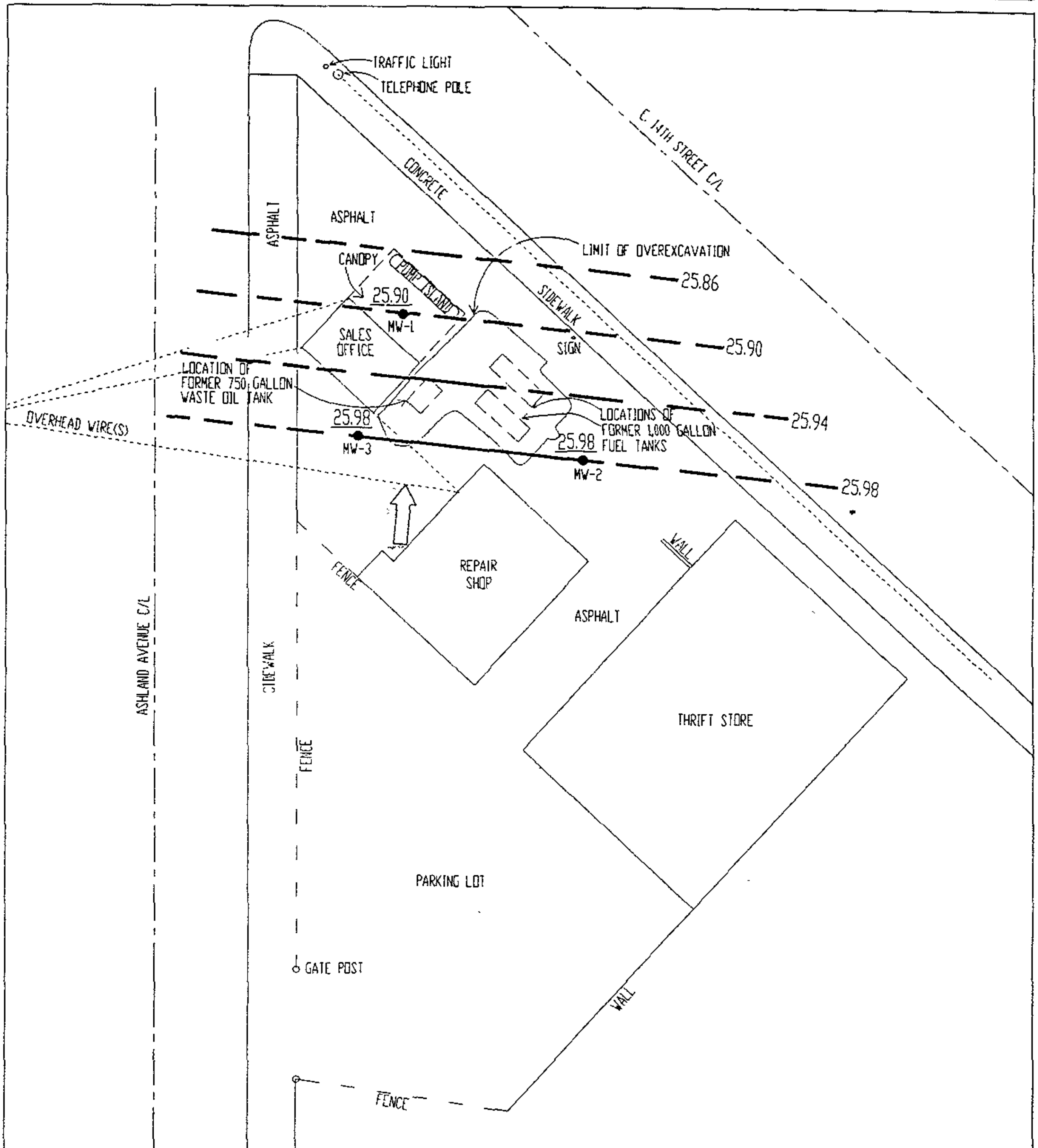
NOTE: SEE FIGURE 6 FOR LOCATION OF CROSS SECTION

TANK PROTECT ENGINEERING

GEOLOGIC CROSS SECTION A-A'

16035 EAST 14TH STREET
SAN LEANDRO, CA 94578

DATE	4/19/93
FIGURE	5
FILE #	218
DRAWN BY	LNH
CHECKED BY	JVM



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
25.90	POTENTIOMETRIC ELEVATION
25.86	POTENTIOMETRIC CONTOUR
⇦	GROUNDWATER FLOW DIRECTION

-N-

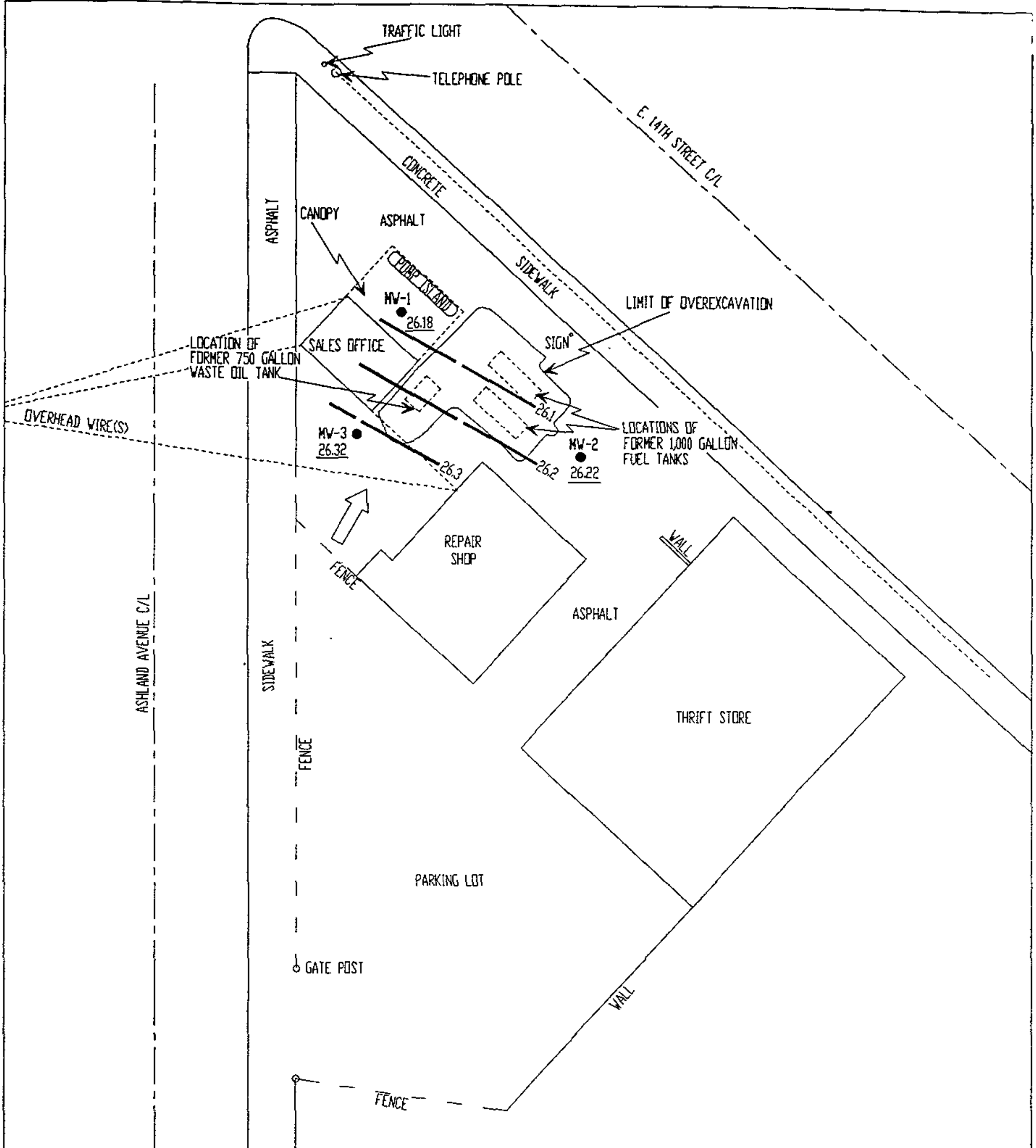
0 30
SCALE IN FEET

TANK PROTECT ENGINEERING

SITE DETAIL
GROUNDWATER GRADIENT MAP (4/19/93)

16035 EAST 14TH STREET
SAN LEANDRO, CA 94578

DATE	4/19/93
FIGURE	7
FILE #	218-7
DRAWN BY	LNH
CHECKED BY	JVM



LEGEND

MW-1 ●	NAME AND LOCATION OF GROUNDWATER MONITORING WELL
26.32	POTENTIOMETRIC ELEVATION
26.1	POTENTIOMETRIC CONTOUR
⇦	GROUNDWATER FLOW DIRECTION

N

0 30
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (12/18/95)

16035 EAST 14TH STREET
SAN LEANDRO, CA 94578

DATE	2/14/96
FIGURE	1
FILE #	218-3N
DRAWN BY	VK
CHECKED BY	LNH

INITIAL UST REMOVAL 1992

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
SAMPLES COLLECTED DURING TANK REMOVAL ACTIVITIES
(ppm[1])

	Sample ID Name	Date	Depth (feet)	TPHD	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil & Grease
fuel USTs	S1-SE	02/05/92	8.5	NA[2]	220	<.048	.19	1.9	1.1	NA
	S2-SE	02/05/92	8.5	NA	330	<.048	.39	1.8	3.6	NA
	S1-NW	02/05/92	8.5	NA	660	<.048	.59	9.1	33	NA
	S2-NW	02/05/92	8.5	NA	880	<.24	<.66	17	55	NA
waste oil UST	S3-BP[3]	02/05/92	8.5	950	1,300	3.2	39	14	78	54
	S-P	02/05/92	1.5	NA	.72	<.005	<.0066	<.005	<.03	NA
	S1-1, 2, 3, 4	02/05/92	---	NA	160	<.048	<.13	.87	3.3	NA

1 PARTS PER MILLION

2 NOT ANALYZED

3 ALSO ANALYZED FOR VOLATILE ORGANICS BY EPA METHOD 8010 AND SELECTED METALS; NO VOLATILE ORGANICS WERE DETECTED. CHROMIUM, LEAD, NICKEL AND ZINC WERE DETECTED AT CONCENTRATIONS OF 35 ppm, 10 ppm, 46 ppm AND 57 ppm, RESPECTIVELY

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
SAMPLES COLLECTED DURING EXCAVATION ACTIVITIES
(ppm[1])

waste oil UST excavation

fuel UST excavation

Sample ID Name	Date	Depth (feet)	TPHD	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil & Grease
VSNW-1[2,3]	03/02/92	7.5	980	750	2.1	31	18	67	<50
SW1-(1-2) S2-(1-2)[3]	03/02/92	5.0-7.0	1,700	260	.610	3.9	8.3	30	230
VSNW-2	03/03/92	7.0	NA[4]	4.1	.0086	<.0050	.054	.028	NA
VSSW-1	03/03/92	7.0	NA	<.50	<.0050	<.0050	<.0050	<.015	NA
VSSW-2[3]	03/03/92	7.0	<1.0	<.50	<.0050	<.0050	.020	.024	<50
VSNE-1	03/03/92	7.0	NA	1.4	<.0050	<.0050	<.0050	.029	NA
VSNE-2	03/03/92	7.0	NA	<.50	<.0050	<.0050	<.0050	<.015	NA
VSSE-1	03/03/92	7.0	NA	1.8	<.0050	<.0050	<.0050	.024	NA
S1-(1-4[5])	03/03/92	5.0-7.5	NA	89	<.022	.140	1.2	1.8	NA

1 PARTS PER MILLION

2 ALSO ANALYZED BY EPA METHOD 8270; ALL RESULTS WERE NONDETECTABLE AT THE REPORTING LIMIT.

3 ALSO ANALYZED FOR SELECTED METALS; SEE TABLE 3.

4 NOT ANALYZED

5 ALSO ANALYZED FOR ORGANIC LEAD BY THE DHS METHOD; NO ORGANIC LEAD WAS DETECTED AT A REPORTING LIMIT OF 2.5 ppm.

TABLE 3
SUMMARY OF SOIL SAMPLE
ANALYTICAL RESULTS FOR METALS
(ppm[1])

Sample ID Name	Date	Cadmium	Chromium	Lead	Nickel	Zinc
VSNW-1	03/02/92	<.250	45	11	62	63
SW1-(1-2) S2-(1-2)	03/02/92	<.250	26	48	30	120
VSSW-2	03/03/92	<.250	33	5	42	39

1 PARTS PER MILLION

TABLE 6
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
SAMPLES COLLECTED FROM SOIL BORINGS
(ppm[1])

Sample ID Name	Date	Depth (feet)	TPHD	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil & Grease
MW-1	04/16/93	5.0	<1.0	<.500	<.0050	<.0050	<.0050	<.015	<50
MW-2	04/16/93	5.0	NA[2]	<.500	<.0050	<.0050	<.0050	<.015	NA
MW-3	04/16/93	5.0	<1.0	1.5	<.0050	<.0050	.0099	.017	<50

1 PARTS PER MILLION

2 NOT ANALYZED

TABLE 1
GROUNDWATER ELEVATION

Well Name	Date	Elevation TOC[1] (Feet MSL[2])	Depth-to-Water From TOC (Feet)	Groundwater Elevation (Feet MSL)
MW-1	04/19/93	32.72	6.82	25.90
	05/05/93		7.04	25.68
	08/10/93		7.40	25.32
	11/18/93		7.47	25.25
	03/04/94		6.93	25.79
	09/16/94		7.52	25.20
	12/09/94		6.95	25.77
	03/10/95		6.07	26.65
	06/15/95		6.94	25.78
	09/20/95		7.18	25.54
	12/18/95		6.54	26.18
MW-2	04/19/93	32.40	6.42	25.98
	05/05/93		6.62	25.78
	08/10/93		6.99	25.41
	11/18/93		7.06	25.34
	03/04/94		6.53	25.87
	09/16/94		7.10	25.30
	12/09/94		6.59	25.81
	03/10/95		5.63	26.77
	06/15/95		6.61	25.79
	09/20/95		6.76	25.64
	12/18/95		6.18	26.22
MW-3	04/19/93	32.56	6.58	25.98
	05/05/93		6.82	25.74
	08/10/93		7.23	25.33
	11/18/93		7.31	25.25
	03/04/94		6.75	25.81
	09/16/94		7.34	25.22

TABLE 1
GROUNDWATER ELEVATION

Well Name	Date	Elevation TOC[1] (Feet MSL[2])	Depth-to-Water From TOC (Feet)	Groundwater Elevation (Feet MSL)
MW-3	12/09/94	32.56	6.82	25.74
	03/10/95		5.66	26.90
	06/15/95		6.78	25.78
	09/20/95		6.97	25.59
	12/18/95		6.24	26.32

[1] TOP OF CASING
[2] MEAN SEA LEVEL

TABLE 2
GROUNDWATER ELEVATIONS, GRADIENTS, AND FLOW DIRECTIONS

Date	Average Groundwater Elevation (Feet MSL[1])	Change in Average Groundwater Elevation (Feet)	Groundwater Gradient	Groundwater Flow Direction
04/19/93	25.95		0.0031	N
05/05/93	25.73	-0.22	0.0025	NW
08/10/93	25.35	-0.38	0.0018	NW
11/18/93	25.28	-0.07	0.0021	NW
03/04/94	25.82	+0.54	0.0017	NW
09/16/94	25.24	-0.58	0.0021	NW
12/09/94	25.77	+.53	0.0017	WSW
03/10/95	26.77	+1.00	0.0093	NNE
06/15/95	25.78	+0.01	0.0002	WNW
09/20/95	25.59	-1.18	0.0023	NNW
12/18/95	26.24	+0.65	0.0097	NNE

[1] MEAN SEA LEVEL

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

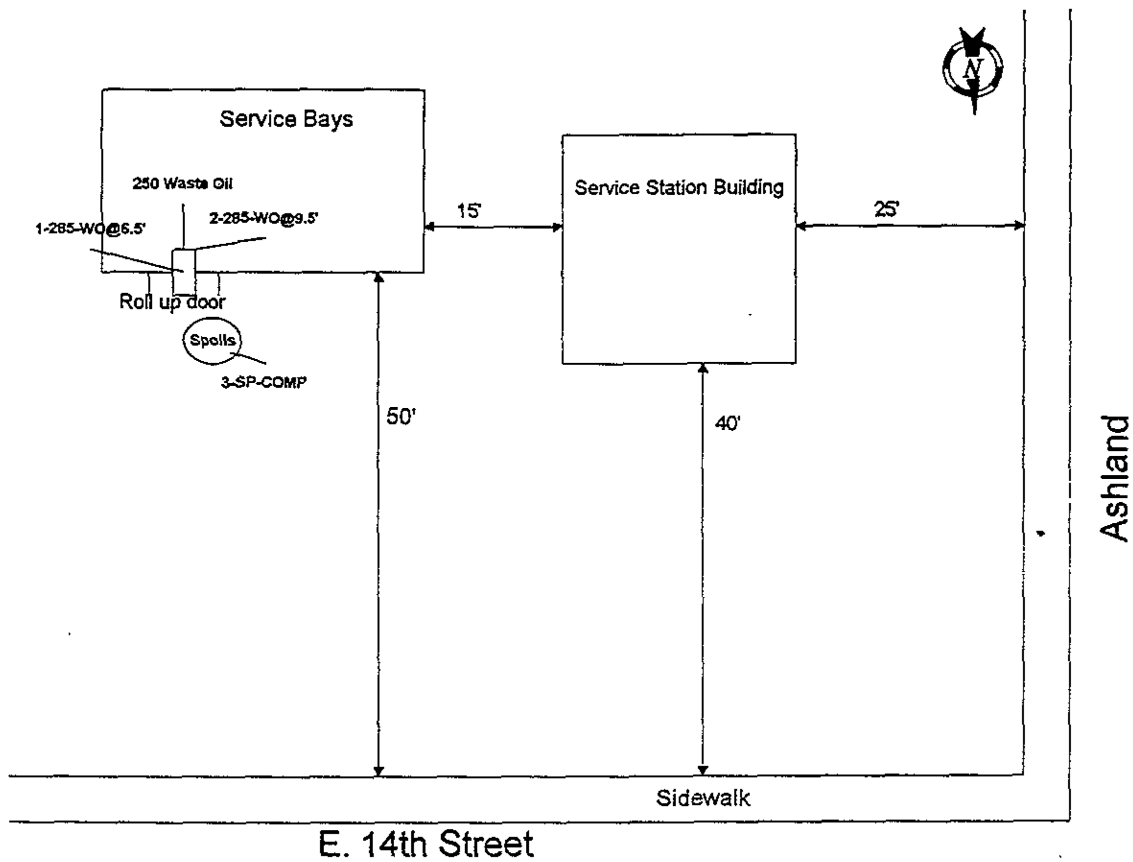
Sample ID Name	Date	TPHD	TPHG	Methyl t-butyl ether	Benzene	Toluene	Ethyl-benzene	Xylenes	Oil & Grease
MW-1	05/05/93	460	720	NA[3]	54	<1.5	19	13	<1,000[2]
	08/10/93	640	540	NA	37	<0.50	79	8.9	<1,000
	11/18/93	250	370	NA	38	<0.50	0.57	4.1	<5,000
	03/04/94	620	240	NA	6.0	<0.50	22	<1.5	<5,000
	09/16/94	62	210	NA	<0.50	<0.50	10	<1.5	<5,000
	12/09/94	<50	490	NA	<0.50	<0.50	22	<1.5	NA
	03/10/95	90	280	NA	21	<0.50	11	<1.5	NA
	06/15/95	420	480	NA	20	<0.50	14	<1.5	NA
	09/20/95	120	680	<5.0	18	<0.50	15	<1.5	NA
	12/18/95	140	330	<5.0	13	<0.50	6.2	<1.5	NA
MW-2	05/05/93	NA	<50	NA	47	<0.50	<0.87	<1.5	NA
	08/10/93	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	11/18/93	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	03/04/94	NA	<61	NA	<0.50	<0.50	<0.50	<1.5	NA
	09/16/94	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	12/09/94	NA	53	NA	<0.50	<0.50	<0.50	<1.5	NA
	03/10/95	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	06/15/95	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	09/20/95	NA	<50	<5.0	<0.50	<0.50	<0.50	<1.5	NA
	12/18/95	NA	NA	NA	NA	NA	NA	NA	NA
MW-3	05/05/93	130	73	NA	22	<0.50	<0.87	<1.5	<1,000[2]
	08/10/93	160	53	NA	<0.50	<0.50	0.73	<1.5	<1,000
	11/18/93	<50	75	NA	<0.50	<0.50	1.5	<1.5	<5,000
	03/04/94	130	110	NA	<0.50	<0.50	2.1	<1.5	<5,000
	09/16/94	<50	<50	NA	<0.50	<0.50	<0.50	<1.5	<5,000
	12/09/94	<50	50	NA	<0.50	<0.50	<0.50	<1.5	NA
	03/10/95	<50	<50	NA	<0.50	<0.50	0.53	<1.5	NA
	06/15/95	<50	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	09/20/95	<50	<50	<5.0	<0.50	<0.50	<0.50	<1.5	NA

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

Sample ID Name	Date	TPHD	TPHG	Methyl t-butyl ether	Benzene	Toluene	Ethyl-benzene	Xylenes	Oil & Grease
MW-3	12/18/95	<50	<50	<5.0	2.1	<0.50	<0.50	1.7	NA
MW-4[4]	05/05/93	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	08/10/93	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	11/18/93	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	03/04/94	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	09/16/94	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	12/09/94	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	03/10/95	NA	<50	NA	<0.50	<0.50	0.77	<1.5	NA
	06/15/95	NA	<50	NA	<0.50	<0.50	<0.50	<1.5	NA
	09/20/95	NA	<50	<5.0	<0.50	<0.50	<0.50	<1.5	NA
	12/18/95	NA	<50	<5.0	<0.50	<0.50	<0.50	<1.5	NA

1 PARTS PER BILLION
2 WELL SAMPLED ON 5/7/93
3 NOT ANALYZED
4 TRIP BLANK

1996 Waste Oil UST Removal



Not to Scale

HK2, INC./ SEMCO 1751 Leslie Street San Mateo, California 94402	Jerry & Mary Petsas 16035 E. 14th Street San Leandro, Calif.

Site Layout and Sampling Locations

North State Environmental
Chemical Waste Disposal · Trucking · Consulting

CERTIFICATE OF ANALYSIS

JOB NO: 96-531
CLIENT: SEMCO
PROJECT NAME: E. 14th STREET
96-0222 PETSAS

DATE SAMPLED: 07-29-96
DATE EXTRACTED: 07-31-96
DATE ANALYZED: 07-31-96

BTXE AND GASOLINE RANGE ORGANICS BY
EPA METHOD 8020/5030 AND 8015 M
DIESEL RANGE HYDROCARBONS BY EPA METHOD 8015 M
TEPH (OIL AND GREASE) BY EPA METHOD 5520 F

Sample No.	Client ID	Analyte	Result
96-531-01	1-285-WO	Benzene	ND
	@ 6.5'	Toluene	ND
	SOIL	Ethylbenzene	54 ug/Kg
		Xylenes	430 ug/Kg
		Gasoline	30 mg/Kg
		Diesel	42 mg/Kg
		TEPH (5520 F)	250 mg/Kg
96-531-02	2-285-WO	Benzene	ND
	@ 9.5'	Toluene	ND
	SOIL	Ethylbenzene	ND
		Xylenes	9 ug/Kg
		Gasoline	.62 mg/Kg
		Diesel	ND
		TEPH (5520 F)	17 mg/Kg
96-531-03	3-SP-COMP	Benzene	ND
	SOIL	Toluene	13 ug/Kg
		Ethylbenzene	46 ug/Kg
		Xylenes	40 ug/Kg
		Gasoline	16 mg/Kg
		Diesel	44 mg/Kg
		TEPH (5520 F)	310 mg/Kg

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North State Environmental
Chemical Waste Disposal · Trucking · Consulting

CERTIFICATE OF ANALYSIS

Lab No: 96-531
Client: Semco/HK2
Project: 16035 E. 14th St., San LEandro

Date Sampled: 07-29-96
Date Extracted: 08-03-96
Date analyzed: 08-04-96

TTLC Metals by Atomic Absoption Spectrsocopy
Sample prepared by Method 3050

SAMPLE NO	CLIENT ID	ANALYTE	METHOD	RESULT
96-531-01	1-285-WO 6.5'	Nickel	7520	42 mg/Kg
	Soil	Zinc	7950	49 mg/Kg
		Chromium	7190	39 mg/Kg
		Cadmium	7130	ND
		Lead	7420	ND
96-531-02	2-285-WO 9.5'	Nickel	7520	42 mg/Kg
	Soil	Zinc	7950	46 mg/Kg
		Chromium	7190	41 mg/Kg
		Cadmium	7130	ND
		Lead	7420	ND
96-531-03	SP-Comp	Nickel	7520	41 mg/Kg
		Zinc	7950	92 mg/Kg
		Chromium	7190	39 mg/Kg
		Cadmium	7130	ND
		Lead	7420	44

Quality Contorol Quality Assurance Summary:

Analyte	Method	Reporting Limit	Blank	MS/MSD Recovery	RPD
Nickel	7520	5.0 mg.Kg	ND	87/95	3
Zinc	7950	1.0 mg/Kg	ND	95/94	4
Chromium	7190	5.0 mg/Kg	ND	87/92	1
Cadmium	7130	2.0 mg/Kg	ND	92/94	2
Lead	7420	2.0 mg/Kg	ND	100/102	2

ELAP Certificate NO: 1753

Reviewed and Approved:

John A. Murphy, Laboratory Director

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CERTIFICATE OF ANALYSIS

JOB NO: 96-531
CLIENT: Semco/HK2
PROJECT ID: 16035 E. 14th st., San Leandro

DATE SAMPLED: 07-29-96
DATE EXTRACTED:07-30-96
DATE ANALYZED:07-30-96

8010 Volatile halogenated organics by GC/MS Method 8260

Laboratory Number	96-531-01	96-531-02	96-531-03
Client ID	1-285-wo @ 6.5	2-285-WO @ 9.5	SP-COMP
Matrix	SOIL	SOIL	SOIL
Analyte	Results	Results	Results
Chlormethane	ND<25	ND<25	
Vinyl Chloride	ND<25	ND<25	ND<25
Bromomethane	ND<25	ND<25	ND<25
Chloroethane	ND<25	ND<25	ND<25
Trichlorofluoroethane	ND<5	ND<5	ND<25
1,1-Dichloroethene	ND<5	ND<5	ND<5
Methylene Chloride	ND<5	ND<5	ND<5
trans-1,2-Dichloroethene	ND<5	ND<5	ND<5
1,1-Dichloroethane	ND<5	ND<5	ND<5
cis-1,2-Dichleoroethene	ND<5	ND<5	ND<5
Chloroform	ND<5	ND<5	ND<5
1,1,1-Trichloroethane	ND<5	ND<5	ND<5
Carbon Tetrachloride	ND<5	ND<5	ND<5
1,2-Dichloroethane	ND<5	ND<5	ND<5
Trichloroethene	ND<5	ND<5	ND<5
Bromodichloroethane	ND<5	ND<5	ND<5
trans-1,3-Dichloropropene	ND<5	ND<5	ND<5
cis-1,3-Dichloropropene	ND<5	ND<5	ND<5
1,1,2-Trichloroethane	ND<5	ND<5	ND<5
Tetrachloroethene	ND<5	ND<5	ND<5
Dibromobenzene	ND<5	ND<5	ND<5
Chlorobenzene	ND<5	ND<5	ND<5
1,1,2,2-Tetrachloroethane	ND<5	ND<5	ND<5
1,3-Dichlorobenzene	ND<5	ND<5	ND<5
1,4-Dichlorobenzene	ND<5	ND<5	ND<5
1,2-Dichloroethane	ND<5	ND<5	ND<5

Surrogate Recoveries

1,2-Dichloroethane d4	92%	93%	93%
Toluene d8	94%	96%	94%
4-Bromofluorobenzene	92%	94%	94%

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Superior Analytical Laboratory

NORTH STATE ENVIRONMENTAL
Attn: JOHN MURPHY

Project
Reported on August 6, 1996

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

LAB ID	Sample ID		Matrix	Dil.Factor	Moisture
21669-01	96531-01	1-285-WD @ 6.5'	Soil	1.0	-
21669-02	96531-02	" " 9.5'	Soil	1.0	-
21669-03	96531-03	SP comp	Soil	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21669-01 Conc. ug/Kg	RL	21669-02 Conc. ug/Kg	RL	21669-03 Conc. ug/Kg	RL
bis(2-chloroethyl)ether	ND	300	ND	300	ND	300
aniline	ND	300	ND	300	ND	300
phenol	ND	300	ND	300	ND	300
2-chlorophenol	ND	300	ND	300	ND	300
1,3-dichlorobenzene	ND	300	ND	300	ND	300
1,4-dichlorobenzene	ND	300	ND	300	ND	300
1,2-dichlorobenzene	ND	300	ND	300	ND	300
benzyl alcohol	ND	300	ND	300	ND	300
bis-(2-chloroisopropyl)ether	ND	300	ND	300	ND	300
2-methylphenol	ND	300	ND	300	ND	300
hexachloroethane	ND	300	ND	300	ND	300
n-nitroso-di-n-propylamine	ND	300	ND	300	ND	300
4-methylphenol	ND	300	ND	300	ND	300
nitrobenzene	ND	300	ND	300	ND	300
isophorone	ND	300	ND	300	ND	300
2-nitrophenol	ND	300	ND	300	ND	300
2,4-dimethylphenol	ND	300	ND	300	ND	300
bis(2-chloroethoxy)methane	ND	300	ND	300	ND	300
2,4-dichlorophenol	ND	300	ND	300	ND	300
1,2,4-trichlorobenzene	ND	300	ND	300	ND	300
naphthalene	ND	300	ND	300	ND	300
benzoic acid	ND	1500	ND	1500	ND	1500
4-chloroaniline	ND	300	ND	300	ND	300
hexachlorobutadiene	ND	300	ND	300	ND	300
4-chloro-3-methylphenol	ND	300	ND	300	ND	300
2-methyl-naphthalene	ND	300	ND	300	ND	300
hexaclorocyclopentadiene	ND	1500	ND	1500	ND	1500
2,4,6-trichlorophenol	ND	300	ND	300	ND	300
2,4,5-trichlorophenol	ND	300	ND	300	ND	300
2-chloronaphthalene	ND	300	ND	300	ND	300
2-nitroaniline	ND	300	ND	300	ND	300

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Project
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EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21669-01	96531-01	Soil	1.0	-
21669-02	96531-02	Soil	1.0	-
21669-03	96531-03	Soil	1.0	-

R E S U L T S   O F   A N A L Y S I S

Compound	21669-01 Conc. ug/Kg	RL	21669-02 Conc. ug/Kg	RL	21669-03 Conc. ug/Kg	RL
acenaphthylene	ND	300	ND	300	ND	300
dimethylphthlate	ND	300	ND	300	ND	300
2,6-dinitrotoluene	ND	300	ND	300	ND	300
Acenaphthene	ND	300	ND	300	ND	300
3-nitroaniline	ND	300	ND	300	ND	300
2,4-dinitrophenol	ND	1500	ND	1500	ND	1500
dibenzofuran	ND	300	ND	300	ND	300
2,4-dinitrotoluene	ND	300	ND	300	ND	300
4-nitrophenol	ND	300	ND	300	ND	300
fluorene	ND	300	ND	300	ND	300
4-chlorophenyl-phenylether	ND	300	ND	300	ND	300
diethylphthlate	ND	300	ND	300	ND	300
4-nitroaniline	ND	1500	ND	1500	ND	1500
4,6-dinitro-2-methylphenol	ND	300	ND	300	ND	300
n-nitrosodiphenylamine	ND	300	ND	300	ND	300
4-bromo-phenyl-phenylether	ND	300	ND	300	ND	300
hexachlorobenzene	ND	300	ND	300	ND	300
pentachlorophenol	ND	1500	ND	1500	ND	1500
phenanthrene	ND	300	ND	300	ND	300
anthracene	ND	300	ND	300	ND	300
di-n-butylphthlate	ND	300	ND	300	ND	300
fluoranthene	ND	300	ND	300	ND	300
benzidine	ND	1500	ND	1500	ND	1500
pyrene	ND	300	ND	300	ND	300
butylbenzylphthlate	ND	300	ND	300	ND	300
3.3'-dichlorobenzidine	ND	300	ND	300	ND	300
Benzo(a)Anthracene	ND	300	ND	300	ND	300
chrysene	ND	300	ND	300	ND	300
bis(2-ethylhexyl)phthalate	ND	300	ND	300	ND	300
di-n-octylphthalate	ND	300	ND	300	ND	300
Benzo(b)Fluoranthene	ND	300	ND	300	ND	300

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Reported on August 6, 1996

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21669-01	96531-01	Soil	1.0	-
21669-02	96531-02	Soil	1.0	-
21669-03	96531-03	Soil	1.0	-

R E S U L T S   O F   A N A L Y S I S

Compound	21669-01 Conc. ug/Kg	RL	21669-02 Conc. ug/Kg	RL	21669-03 Conc. ug/Kg	RL
Benzo(k)Fluoranthene	ND	300	ND	300	ND	300
Benzo(a)Pyrene	ND	300	ND	300	ND	300
Indeno(1,2,3)Pyrene	ND	300	ND	300	ND	300
dibenzo[a,h]anthracene	ND	300	ND	300	ND	300
9H-Carbazole	ND	300	ND	300	ND	300
Benzo(g,h,i)Perylene	ND	300	ND	300	ND	300
>> Surrogate Recoveries (%) <<						
2-fluorophenol	64		37		54	
phenol-d5	71		52		64	
nitrobenzene-d5	67		50		62	
2-fluorobiphenyl	71		64		62	
2,4,6-tribromophenol	90		83		70	
terphenyl-d14	71		67		73	