EAST BAY
MUNICIPAL UTILITY DISTRICT

WASTEWATER DEPARTMENT

SD174- 0042

April 2, 1991

91 APR -9 AM 9:00

Mr. Don Miller
California Linen Rental
Miller Trust
989 41st Street
Oakland, CA 94608

Dear Mr. Miller:

RE: SD 174, Adeline Street Interceptor
Contaminated Spoils Removal and Disposal
41st Street and Adeline Street

The purpose of this letter is to notif[redacted] that East Bay Municipal Utility District (EBMUD) and the Cities of Oakland and Berkeley (Joint Partners) discovered contaminated materials near your site on January 30, 19[redacted] search with the Alameda County Department of Health Services (County) has revealed that California Linen Rental has [redacted] Tank Unauthorized Release (Leak) Contamination Site Report on record for this area. Please be advised that should the findings of the Alameda County Department of Health Services indicate that your leakage contaminated the area of [redacted] Joint Partners [redacted] the law to [redacted] the sampling, [redacted] documentation and disposal of the [redacted] spoils.

Please note that our review of California Linen's Work Plan for Site Investigation Report indicates that the aquifer in the area of leakage has not been sufficiently characterized. The groundwater gradient analysis suffers from lack of measurements and data. Moreover, our review of another report in the area and our site excavation has indicated that the groundwater gradient direction varies significantly with the findings in your report. The groundwater flow has been observed to flow in a [redacted] direction towards Adeline Street and the project site.

EBMUD and the Joint Partners has conducted trench and trench spoil sampling and analysis of the contaminated spoils and area. Copies of these reports are enclosed for your use.

P.O. BOX 24055 . OAKLAND . CA 94623 . (415) 465-3700

Should you have any questions on this matter, please contact me at (415) 601-7633.

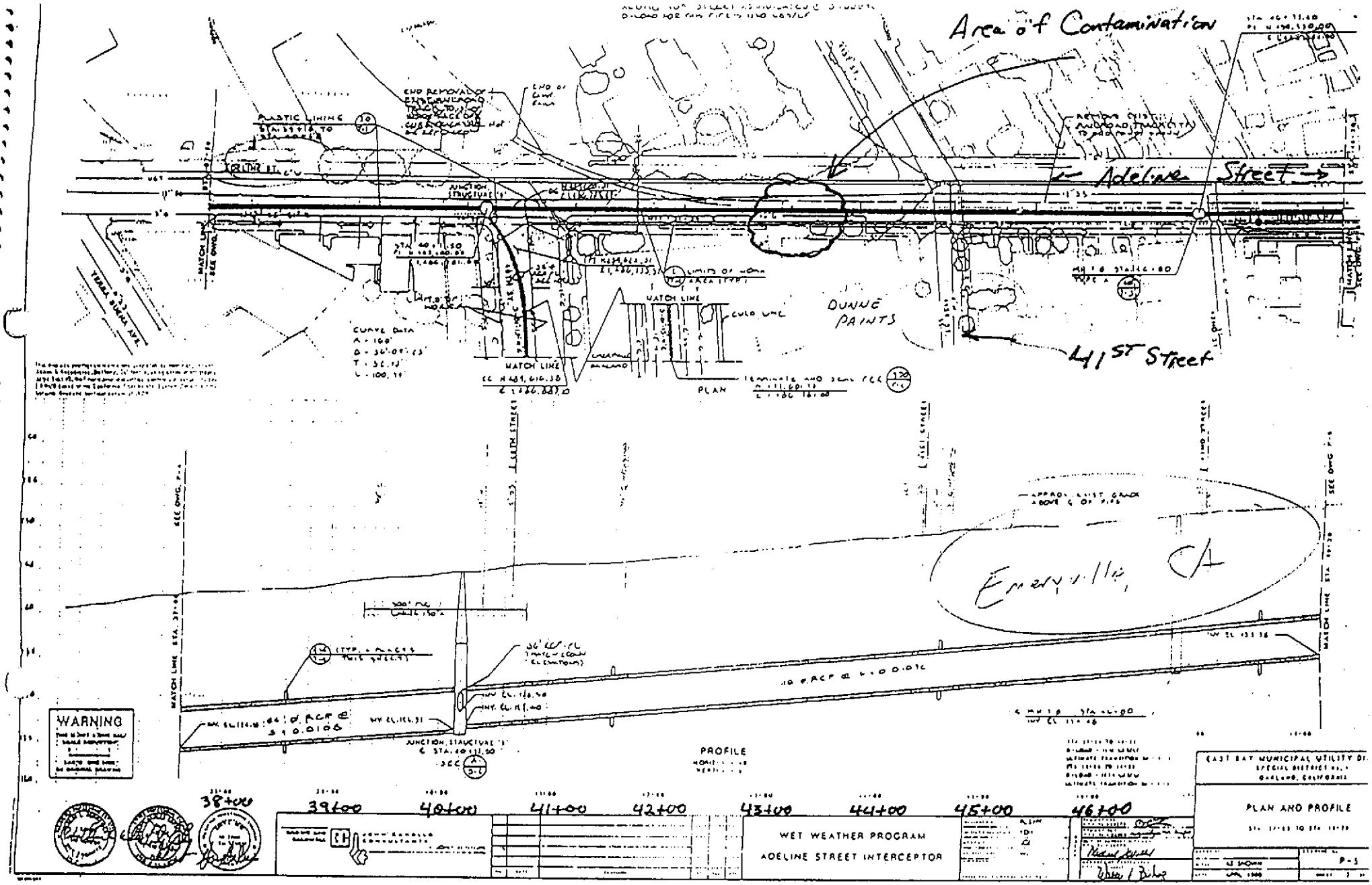
Sincerely,

ERNESTO A. AVILA, P.E.
Construction Manager

Enclosures
cc:
Gil Wistar, County of Alameda Department of Environmental Health
Susan Hugo, County of Alameda Department of Environmental Health
Dennis Byrne, County of Alameda Department of Environmental Health
Lester Feldman, California RWQCB - North Bay Toxics
Tom Gandesbery, California RWQCB - North Bay Toxics

PC30V.D02
PC30V.J10

cc: Henry Yee, City of Berkeley
Gus Amerzhini, City of Oakland
Juan Arreguin, City of Emeryville


Area of Contamination
Adeline Street
41ST Street
DUNNE PAINTS
MATCH LINE
PLAN
PROFILE
WARNING
Emeryville, CA
38+00
39+00
40+00
41+00
42+00
43+00
44+00
45+00
46+00
WET WEATHER PROGRAM
ADELINE STREET INTERCEPTOR
EAST BAY MUNICIPAL UTILITY DI
PLAN AND PROFILE

Woodward-Clyde Consultants

SHEET 1 OF 2

FIELD RECORD

PROJECT NO. 91C0050A-5000 PROJECT NAME ADELINE INTERCEPTOR

PROJECT LOCATION 47ST & ADELINE, EMERYVILLE, CA

DATE 1/31/91

TIME ON JOB 1300 hrs TO 1445 hrs

FIELD REPRESENTATIVE L. HUNTSMAN

COMMENTS

ARRIVED ON-SITE. MET JOHN PAXTON WITH SAMPLING SUPPLIES. JOHN COLLECTED SAMPLES.

NO MEASURABLE RESPONSE TO CGI IN BOTTOM OF TRENCH

SAMPLE #1

VOA BOTTLE - FIELD BLANK OF DI H_2O COLLECTED IN BOTTOM OF TRENCH - N. END - APPROX STA. 43+34 - 13:25 HRS

SAMPLE #2

VOA BOTTLE - TRIP BLANK PUT IN COOLER

SAMPLE #3

VOA BOTTLE - WATER SEEPING INTO TRENCH NEAR DIGGING FACE - STA 43+34 - 16½' DEEP (BELOW PAVEMENT SURFACE) - 13:37 HRS

SAMPLE #4

VOA BOTTLE - DUPLICATE OF #3 - 13:40 HRS

SAMPLE #5A

SOIL SAMPLE IN JAR - STA 43+40 - CENTER OF TRENCH - DIGGING FACE - 8' DEEP - BENEATH EXISTING CONCRETE PIPE - GRAY CLAYEY MATERIAL UNDER DARKER SURFACE SOIL (FILL?) - 13:43 HRS

SAMPLE #5B

SOIL SAMPLE IN JAR - STA 43+40 - CENTER OF TRENCH - DIGGING FACE - 13½' DEEP - BENEATH EXISTING CONCRETE PIPE - ORANGISH MATERIAL - NOTICIBLE ODOR WHEN SAMPLED - 13:54 HRS

SAMPLE #5C

SOIL SAMPLE IN JAR - STA 43+34 - LEFT WALL OF TRENCH (LOOKING NORTH OR UP STATION) - APPROX 6" BENEATH INFLOW OF WATER. DEPTH = 16 FEET - 13:59 HRS

SAMPLE #6

VOA BOTTLE - SAMPLED FROM POOL APPROX 1' NORTH OF END OF CONCRETE PIPE. WATER LEVEL AT INVERT ELEV. OF PIPE - STA 42+76.5 - 14:10 HRS

SAMPLE #7

VOA BOTTLE - DUPLICATE OF #6 - 14:11 HRS

Woodward-Clyde Consultants

SHEET 2 OF 2

FIELD RECORD

PROJECT NO. 91C0050A-5000 PROJECT NAME ADELINE INTERCEPTOR

PROJECT LOCATION 41ST & ADELINE, EMERYVILLE, CA

DATE 1/31/91

TIME OF JOB

AM TO AM

PM PM

FIELD REPRESENTATIVE S. HUNTSMAN

COMMENTS

SAMPLE #8

SOIL SAMPLE IN JAR - SUSPECTED SOURCE OF CONTAMINATION STA 42+81, 5'-9" DEPTH, SAMPLED BEHIND LEFT WALL OF TRENCH APPROX 1', 200ppm READING ON CGM, NOTICIBLE ODOR - 14:19 HRS

SAMPLE #9

WATER BOTTLE SAMPLE - SAME PLACE AS #6 - 14:30 HRS

SAMPLE #10

WATER BOTTLE SAMPLE - DUPLICATE OF #9 - 14:31 HRS

SAMPLE #11

WATER BOTTLE SAMPLE - SAME PLACE AS #3 - 14:36 HRS

LEFT SITE ≈ 14:45 HRS AND DROVE TO LAB

ANALYSES ORDERED:

SAMPLE NO.	EPA-8240	EPA-8270	EPA-624
5B	X		
8	X	X	
3			X
6			X

TURNED CUSTODY OF SAMPLES OVER AT 15:30 HRS TO LAB

01-31-91 05:07PM CC OAKLAND P04/**

Woodward-Clyde Consultants

500 12th Street, Suite 100, Oakland, CA 94607-4014
(415) 893-3600

Chain of Custody Record

PROJECT NO. 91C0050A-5000

SAMPLERS: (Signature) [signature]

DATE	TIME	SAMPLE NUMBER	Sample Matrix (Soil, Water, Air)	EPA Method 8240	EPA Method 8270	EPA Method 624	EPA Method 625	Number of Containers	REMARKS (Sample preservation, handling procedures, etc.)
1-31-91	—		S	X	X				
1-31-91	13:25	1	W					1	
	13:30	2	W					1	~~24 hr TAT~~
	13:37	3*	W			X		1	Results for
	13:40	4	W					1	8240 + 624 fax
	13:43	5A	S					1	to George Ford
	13:51	5B	S	X				1	12:00 Noon Friday
	13:59	5C	S					1	2-1-91
	14:10	6	W			X		1	Results for 8270 -
	14:11	7	W					1	ASAP Monday
	14:19	8	S	X	X			1	2-4-91
	14:30	9	W					1	Faxed to George Ford
	14:31	10	W					1	FAX # 874-32..
	14:36	11	W					1	Questions call George 874-32.. Scott 874-31..
									RETAIN UNUSED PORTION OF SAMPLES FOR FUTURE ANALYSIS

TOTAL NUMBER OF CONTAINERS: 13

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	01/31 14:40	[signature]	[signature]	1/31/91 15:30	[signature]

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

Woodward-Clyde Consultants

Chain of Custody # 910039

February 15, 1991

Scott Huntsman
Woodward-Clyde Consultants
500 12th Street; Suite #100
Oakland, CA 94607-4014

RECEIVED
FEB 19 1991
SCOTT HUNTSMAN

Dear Mr. Huntsman:

Enclosed is the report for (Project ID 91C0050A) samples which were received at Woodward-Clyde Analytical Laboratory February 5, 1991.

The report consists of the following sections:

I Analysis Results

Additional analysis requested on February 13, 1991. Analysis performed by Med-Tox.

If you have any questions, please feel free to call.

Sincerely,

Edward R. Morales
Lab Manager

Trench Spoil Sample at Oyster Bay Regional Shoreline Park

Woodward-Clyde Consultants

CAC - 17 METALS, TOTAL THRESHOLD LIMIT CONCENTRATION (TTLC)

PROJECT NAME: ADELINE STREET
PROJECT NUMBER: 91C0050A
PROJECT MANAGER: SCOTT HUNTSMAN

COC#: 910039
CONC UNITS: mg/kg
MATRIX: SOIL

WCC LAB ID:		METHOD	910039-07COMP		
SAMPLE ID:			P6-COMP		
DATE SAMPLED:	DETECTION	BLANK	02-05-91	STLC	TTLC
DATE ANALYZED:	LIMIT		02-14-91	LIMIT (mg/l)	LIMIT (mg/kg)
SILVER	0.2	ND	0.2	5	500
ARSENIC	1	ND	4	5	500
BARIUM	5	ND	140	100	10000
BERYLLIUM	0.1	ND	0.5	0.75	75
CADMIUM	0.2	ND	0.3	1	100
COBALT	0.5	ND	14	80	8000
CHROMIUM VI	NA	NA	NA	5	500
CHROMIUM	6	ND	74	560	2500
COPPER	1	ND	64	25	2500
MERCURY	0.2	ND	ND	0.2	20
MOLYBDENUM	0.6	ND	ND	350	3500
NICKEL	3	ND	68	20	2000
LEAD	2	ND	14	5	1000
ANTIMONY	2	ND	ND	15	500
SELENIUM	2	ND	ND	1	100
THALLIUM	3	ND	50	7	700
VANADIUM	3	ND	44	24	2400
ZINC	2	ND	55	250	5000

REVIEWED BY:

Woodward-Clyde Consultants

To: Ernie Avila, EBMUD FAX 601-7636

From: George Ford, WCC 11 pages total

0905/2-5-91

Here are the 8270 results, along with additional 8240 results. The only 8270 compound identified was 0.75 ppm 2-Methyl-napthalene. In addition, they identified approx. 2000 ppm C_8 to C_{15} hydrocarbons. These results are consistent with previous results, and suggest that the contaminant is Stoddard solvent, paint thinner, or something related.

Please call me at 874-3203 if have questions

LOG NO: E91-01-707

Received: 31 JAN 91
Reported: 04 FEB 91

Mr. George Ford
Woodward-Clyde Consultants
500 12th Street, Suite 100
Oakland, California 94607-4014

Project: 91C0050A-5000

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
01-707-1	Sample #3	31 JAN 91
01-707-2	Sample #5B	31 JAN 91
01-707-4	Sample #6	31 JAN 91

PARAMETER	01-707-1	01-707-2	01-707-4
Purgeable Priority Pollutants			
Date Analyzed	02.01.91	---	02.01.91
Date Extracted	02.01.91	---	02.01.91
Dilution Factor, Times	1	---	1
1,1,1-Trichloroethane, ug/L	<1	---	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	---	<1
1,1,2-Trichloroethane, ug/L	<1	---	<1
1,1-Dichloroethane, ug/L	<1	---	<1
1,1-Dichloroethene, ug/L	<1	---	<1
1,2-Dichloroethane, ug/L	<1	---	<1
1,2-Dichlorobenzene, ug/L	<1	---	<1
1,2-Dichloropropane, ug/L	<1	---	<1
1,3-Dichlorobenzene, ug/L	<1	---	<1
1,4-Dichlorobenzene, ug/L	<1	---	<1
2-Chloroethylvinylether, ug/L	<1	---	<1
2-Hexanone, ug/L	<1	---	<1
4-Methyl-2-Pentanone, ug/L	<1	---	<1
Acetone, ug/L	<10	---	<10
Acrolein, ug/L	<10	---	<10
Acrylonitrile, ug/L	<10	---	<10
Bromodichloromethane, ug/L	<1	---	<1
Bromoethane, ug/L	<1	---	<1
Benzene, ug/L	<1	---	<1
Bromoform, ug/L	<1	---	<1
Chlorobenzene, ug/L	<1	---	<1

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01-707-1	Sample #3	31 JAN 91
01-707-2	Sample #5B	31 JAN 91
01-707-4	Sample #6	31 JAN 91

PARAMETER	01-707-1	01-707-2	01-707-4
Carbon Tetrachloride, ug/L	<1	---	<1
Chloroethane, ug/L	<1	---	<1
Chloroform, ug/L	<1	---	<1
Chloromethane, ug/L	<1	---	<1
Carbon Disulfide, ug/L	<1	---	<1
Dibromochloromethane, ug/L	<1	---	<1
Ethylbenzene, ug/L	<1	---	<1
Freon 113, ug/L	<1	---	<1
Methyl ethyl ketone, ug/L	<20	---	<20
Methylene chloride, ug/L	<5	---	<5
Styrene, ug/L	<1	---	<1
Trichloroethene, ug/L	<1	---	1
Trichlorofluoromethane, ug/L	<1	---	<1
Toluene, ug/L	<1	---	<1
Tetrachloroethene, ug/L	<1	---	<1
Vinyl acetate, ug/L	<1	---	<1
Vinyl chloride, ug/L	<1	---	<1
Total Xylene Isomers, ug/L	<1	---	<1
cis-1,2-Dichloroethene, ug/L	<1	---	<1
cis-1,3-Dichloropropene, ug/L	<1	---	<1
trans-1,2-Dichloroethene, ug/L	<1	---	<1
trans-1,3-Dichloropropene, ug/L	<1	---	
Semi-Quantified Results **			800
C9-C11 Hydrocarbon Matrix, ug/L	---	---	

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01-707-2	Sample #5B	31 JAN 91
01-707-4	Sample #6	31 JAN 91

PARAMETER	01-707-1	01-707-2	01-707-4

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

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Project: 91C0050A-5000

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
01-707-1	Sample #3	31 JAN 91
01-707-2	Sample #5B	31 JAN 91
01-707-4	Sample #6	31 JAN 91

PARAMETER	01-707-1	01-707-2	01-707-4
Volatile Organics (EPA 8240)			
Date Analyzed	---	01.31.91	---
Time Analyzed	---	17:59	---
Analyst ID, No.	---	5058	---
Detection Limit, ug/kg	---	5	---
Dilution Factor, Times	---	1	---
Instrument ID, No.	---	S17-03	---
1,1,1-Trichloroethane, ug/kg	---	<5	---
1,1,2,2-Tetrachloroethane, ug/kg	---	<5	---
1,1,2-Trichloroethane, ug/kg	---	<5	---
1,1-Dichloroethane, ug/kg	---	<5	---
1,1-Dichloroethene, ug/kg	---	<5	---
1,2-Dichloroethane, ug/kg	---	<5	---
1,2-Dichlorobenzene, ug/kg	---	<5	---
1,2-Dichloropropane, ug/kg	---	<5	---
1,3-Dichlorobenzene, ug/kg	---	<5	---
1,4-Dichlorobenzene, ug/kg	---	<5	---
2-Chloroethylvinylether, ug/kg	---	<5	---
2-Hexanone, ug/kg	---	<50	---
4-Methyl-2-Pentanone, ug/kg	---	<50	---
Acetone, ug/kg	---	<50	---
Acrolein, ug/kg	---	<50	---
Acrylonitrile, ug/kg	---	<50	---
Bromodichloromethane, ug/kg	---	<5	---
Bromomethane, ug/kg	---	<5	---

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01-707-1	Sample #3	31 JAN 91
01-707-2	Sample #5B	31 JAN 91
01-707-4	Sample #6	31 JAN 91

PARAMETER	01-707-1	01-707-2	01-707-4
Benzene, ug/kg	---	<5	---
Bromoform, ug/kg	---	<5	---
Chlorobenzene, ug/kg	---	<5	---
Carbon Tetrachloride, ug/kg	---	<5	---
Chloroethane, ug/kg	---	<5	---
Chloroform, ug/kg	---	<5	---
Chloromethane, ug/kg	---	<5	---
Carbon Disulfide, ug/kg	---	<5	---
Dibromochloromethane, ug/kg	---	<5	---
Ethylbenzene, ug/kg	---	<5	---
Freon 113, ug/kg	---	<5	---
Methyl ethyl ketone, ug/kg	---	<50	---
Methylene chloride, ug/kg	---	<20	---
Styrene, ug/kg	---	<5	---
Trichloroethene, ug/kg	---	<5	---
Trichlorofluoromethane, ug/kg	---	<5	---
Toluene, ug/kg	---	<5	---
Tetrachloroethene, ug/kg	---	<5	---
Vinyl acetate, ug/kg	---	<5	---
Vinyl chloride, ug/kg	---	<5	---
Total Xylene Isomers, ug/kg	---	<5	---
cis-1,2-Dichloroethene, ug/kg	---	<5	---
cis-1,3-Dichloropropene, ug/kg	---	<5	---
trans-1,2-Dichloroethene, ug/kg	---	<5	---
trans-1,3-Dichloropropene, ug/kg	---	<5	---

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Project: 91C0050A-5000

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
01-707-3	Sample #8	31 JAN 91

PARAMETER	01-707-3
B/N,A Ext.Pri.Poll. (EPA-8270)	
Date Analyzed	02.01.91
Date Extracted	02.01.91
Dilution Factor, Times	1
1,2,4-Trichlorobenzene, mg/kg	<0.03
1,2-Dichlorobenzene, mg/kg	<0.03
1,2-Diphenylhydrazine, mg/kg	<0.03
1,3-Dichlorobenzene, mg/kg	<0.03
1,4-Dichlorobenzene, mg/kg	<0.03
2,4,5-Trichlorophenol, mg/kg	<0.03
2,4,6-Trichlorophenol, mg/kg	<0.03
2,4-Dichlorophenol, mg/kg	<0.03
2,4-Dimethylphenol, mg/kg	<0.03
2,4-Dinitrophenol, mg/kg	<0.3
2,4-Dinitrotoluene, mg/kg	<0.03
2,6-Dinitrotoluene, mg/kg	<0.03
2-Chloronaphthalene, mg/kg	<0.03
2-Chlorophenol, mg/kg	<0.03
2-Methyl-4,6-dinitrophenol, mg/kg	<0.03
2-Methylnaphthalene, mg/kg	[redacted]
2-Methylphenol (o-Cresol), mg/kg	<0.03
2-Nitroaniline, mg/kg	<0.2
2-Nitrophenol, mg/kg	<0.03
3,3'-Dichlorobenzidine, mg/kg	<0.03
3-Nitroaniline, mg/kg	<0.2
4-Bromophenylphenylether, mg/kg	<0.03
4-Chloro-3-methylphenol, mg/kg	<0.03

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Project: 91C0050A-5000

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
01-707-3	Sample #8	31 JAN 91

PARAMETER	01-707-3
4-Chloroaniline, mg/kg	<0.2
4-Chlorophenylphenylether, mg/kg	<0.03
4-Methylphenol (p-Cresol), mg/kg	<0.03
4-Nitroaniline, mg/kg	<0.2
4-Nitrophenol, mg/kg	<0.6
Acenaphthene, mg/kg	<0.03
Acenaphthylene, mg/kg	<0.03
Aniline, mg/kg	<0.03
Anthracene, mg/kg	<0.03
Benzidine, mg/kg	<1
Benzo(a)anthracene, mg/kg	<0.03
Benzo(a)pyrene, mg/kg	<0.03
Benzo(b)fluoranthene, mg/kg	<0.03
Benzo(g,h,i)perylene, mg/kg	<0.03
Benzo(k)fluoranthene, mg/kg	<0.03
Benzyl alcohol, mg/kg	<0.2
Benzoic acid, mg/kg	<0.2
Butylbenzylphthalate, mg/kg	<0.03
Chrysene, mg/kg	<0.03
Di-n-octylphthalate, mg/kg	<0.03
Dibenzo(a,h)anthracene, mg/kg	<0.03
Dibenzofuran, mg/kg	<0.03
Dibutylphthalate, mg/kg	<0.03
Diethylphthalate, mg/kg	<0.03
Dimethylphthalate, mg/kg	<0.03
Fluoranthene, mg/kg	<0.03
Fluorene, mg/kg	<0.03

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LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
01-707-3	Sample #8	31 JAN 91

PARAMETER	01-707-3
Hexachlorobenzene, mg/kg	<0.03
Hexachlorobutadiene, mg/kg	<0.03
Hexachlorocyclopentadiene, mg/kg	<0.03
Hexachloroethane, mg/kg	<0.03
Indeno(1,2,3-c,d)pyrene, mg/kg	<0.03
Isophorone, mg/kg	<0.03
N-Nitrosodimethylamine, mg/kg	<0.03
N-Nitrosodiphenylamine, mg/kg	<0.03
N-Nitrosodi-n-propylamine, mg/kg	<0.03
Nitrobenzene, mg/kg	<0.03
Naphthalene, mg/kg	<0.03
Phenanthrene, mg/kg	<0.03
Phenol, mg/kg	<0.03
Pentachlorophenol, mg/kg	<0.03
Pyrene, mg/kg	<0.03
Bis(2-chloroethoxy)methane, mg/kg	<0.03
Bis(2-chloroethyl)ether, mg/kg	<0.03
Bis(2-chloroisopropyl)ether, mg/kg	<0.03
Bis(2-ethylhexyl)phthalate, mg/kg	<3
Other B/N,A Ext.Pri.Poll. (BPA-8270)	---
Semi-Quantified Results **	
C8-C15 Hydrocarbon Matrix, mg/kg	2000

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

LOG NO: E91-01-707

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Mr. George Ford
Woodward-Clyde Consultants
500 12th Street, Suite 100
Oakland, California 94607-4014

Project: 91C0050A-5000

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
01-707-3	Sample #8	31 JAN 91

PARAMETER	01-707-3
Purgeable Priority Pollutants	
Date Analyzed	01.31.91
Date Extracted	01.31.91
Dilution Factor, Times	4
1,1,1-Trichloroethane, mg/kg	<0.8
1,1,2,2-Tetrachloroethane, mg/kg	<0.8
1,1,2-Trichloroethane, mg/kg	<0.8
1,1-Dichloroethane, mg/kg	<0.8
1,1-Dichloroethene, mg/kg	<0.8
1,2-Dichloroethane, mg/kg	<0.8
1,2-Dichlorobenzene, mg/kg	<0.8
1,2-Dichloropropane, mg/kg	<0.8
1,3-Dichlorobenzene, mg/kg	<0.8
1,4-Dichlorobenzene, mg/kg	<0.8
2-Chloroethylvinylether, mg/kg	<0.8
2-Hexanone, mg/kg	<8
4-Methyl-2-Pentanone, mg/kg	<8
Acetone, mg/kg	<8
Acrolein, mg/kg	<20
Acrylonitrile, mg/kg	<20
Bromodichloromethane, mg/kg	<0.8
Bromomethane, mg/kg	<0.8
Benzene, mg/kg	<0.8
Bromoform, mg/kg	<0.8
Chlorobenzene, mg/kg	<0.8
Carbon Tetrachloride, mg/kg	<0.8
Chloroethane, mg/kg	<0.8

LOG NO: B91-01-707

Received: 31 JAN 91
Reported: 04 FEB 91

Mr. George Ford
Woodward-Clyde Consultants
500 12th Street, Suite 100
Oakland, California 94607-4014

Project: 91C0050A-5000

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
01-707-3	Sample #8	31 JAN 91

PARAMETER	01-707-3
Chloroform, mg/kg	<0.8
Chloromethane, mg/kg	<0.8
Carbon Disulfide, mg/kg	<0.8
Dibromochloromethane, mg/kg	<0.8
Ethylbenzene, mg/kg	<0.8
Freon 113, mg/kg	<0.8
Methyl ethyl ketone, mg/kg	<8
Methylene chloride, mg/kg	<4
Styrene, mg/kg	<0.8
Trichloroethene, mg/kg	<0.8
Trichlorofluoromethane, mg/kg	<0.8
Toluene, mg/kg	<0.8
Tetrachloroethene, mg/kg	<0.8
Vinyl acetate, mg/kg	<0.8
Vinyl chloride, mg/kg	<0.8
Total Xylene Isomers, mg/kg	<0.8
cis-1,2-Dichloroethene, mg/kg	<0.8
cis-1,3-Dichloropropene, mg/kg	<0.8
trans-1,2-Dichloroethene, mg/kg	<0.8
trans-1,3-Dichloropropene, mg/kg	<0.8
Other Purgeable Priority Pollutants	---
Semi-Quantified Results **	
C5-C11 Hydrocarbon Matrix, mg/kg	[redacted]

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

CALIFORNIA REGIONAL WQ...

FEB 14 1989

2/9/89 AM

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

QUALITY CONTROL BOARD

EMERGENCY ☐ YES ☑ NO

HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? ☐ YES ☐ NO

FOR LOCAL AGENCY USE ONLY
I HEREBY CERTIFY THAT I AM A DESIGNATED GOVERNMENT EMPLOYEE AND THAT I HAVE REPORTED THIS INFORMATION TO LOCAL OFFICIALS PURSUANT TO SECTION 25180.7 OF THE HEALTH AND SAFTY CODE.
SIGNED: Gilbert M. Wistar DATE: 2/9/89

REPORT DATE: 02/08/89 CASE #:

REPORTED BY

NAME OF INDIVIDUAL FILING REPORT: Gil Wistar
PHONE: (415) 271-4320
SIGNATURE: Gilbert M. Wistar

REPRESENTING ☑ LOCAL AGENCY ☐ OWNER/OPERATOR ☐ REGIONAL BOARD ☐ OTHER
COMPANY OR AGENCY NAME: Alameda Co. Dept. of Envir. Health

ADDRESS: 80 Swan Way STREET Suite 200 Oakland CITY CA STATE 94621 ZIP

RESPONSIBLE PARTY

NAME: Miller Trust ☐ UNKNOWN
CONTACT PERSON: Don Miller
PHONE: (415) 653-6300

ADDRESS: 989 41ST St. STREET Oakland CITY CA STATE 94608 ZIP

SITE LOCATION

FACILITY NAME (IF APPLICABLE): California Linen Rental
OPERATOR:
PHONE: (415) 653-6300

ADDRESS: 989 41ST St. STREET Oakland CITY 94608 ZIP COUNTY

CROSS STREET: Linden
TYPE OF AREA ☐ COMMERCIAL ☒ INDUSTRIAL ☐ RURAL ☒ RESIDENTIAL ☐ OTHER
TYPE OF BUSINESS ☐ RETAIL FUEL STATION ☐ FARM ☒ OTHER linen service

IMPLEMENTING AGENCIES

LOCAL AGENCY / AGENCY NAME: Ala. Co. Dept. of Envir. Health
CONTACT PERSON: Gil Wistar
PHONE: (415) 271-4320

REGIONAL BOARD: San Francisco Bay RWQCB
CONTACT PERSON: Lisa McCann
PHONE: (415) 464-1255

SUBSTANCES INVOLVED

(1) NAME: #5 fuel oil — QUANTITY LOST (GALLONS): ☑ UNKNOWN
(2) NAME: — QUANTITY LOST (GALLONS): ☐ UNKNOWN

DISCOVERY/ABATEMENT

DATE DISCOVERED: 02/08/89
HOW DISCOVERED ☐ INVENTORY CONTROL ☐ SUBSURFACE MONITORING ☐ NUISANCE CONDITIONS ☐ TANK TEST ☑ TANK REMOVAL ☐ OTHER

DATE DISCHARGE BEGAN: ☑ UNKNOWN

METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY)
☑ REMOVE CONTENTS ☐ REPLACE TANK ☑ CLOSE TANK ☐ REPAIR TANK ☐ REPAIR PIPING ☐ CHANGE PROCEDURE ☐ OTHER

HAS DISCHARGE BEEN STOPPED? ☑ YES ☐ NO IF YES, DATE: 02/08/89

SOURCE/CAUSE

SOURCE OF DISCHARGE
☑ TANK LEAK ☐ UNKNOWN
☑ PIPING LEAK
☐ OTHER

TANKS ONLY/CAPACITY
2,500 GAL
AGE > 20 YRS
☐ UNKNOWN

MATERIAL
☐ FIBERGLASS
☑ STEEL
☐ OTHER

CAUSE(S)
☐ OVERFILL ☐ RUPTURE/FAILURE
☑ CORROSION ☐ UNKNOWN
☐ SPILL ☐ OTHER

CASE TYPE

CHECK ONE ONLY
☐ UNDETERMINED ☐ SOIL ONLY ☑ GROUNDWATER ☐ DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)

CURRENT STATUS

CHECK ONE ONLY
☐ SITE INVESTIGATION IN PROGRESS (DEFINING EXTENT OF PROBLEM) ☐ CLEANUP IN PROGRESS ☐ SIGNED OFF (CLEANUP COMPLETED OR UNNECESSARY)
☑ NO ACTION TAKEN ☐ POST CLEANUP MONITORING IN PROGRESS ☐ NO FUNDS AVAILABLE TO PROCEED ☐ EVALUATING CLEANUP ALTERNATIVES

REMEDIAL ACTION

CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)
☐ CAP SITE (CD) ☑ EXCAVATE & DISPOSE (ED) ☐ REMOVE FREE PRODUCT (FP) ☐ ENHANCED BIO DEGRADATION (IT)
☐ CONTAINMENT BARRIER (CB) ☐ EXCAVATE & TREAT (ET) ☑ PUMP & TREAT GROUNDWATER (GT) ☐ REPLACE SUPPLY (RS)
☐ TREATMENT AT HOOKUP (HU) ☐ NO ACTION REQUIRED (NA) ☐ OTHER (OT)

COMMENTS

Tank had several 1" - 2" holes in bottom and side. Significant soil staining and some product in groundwater noted during tank removal. Awaiting analytical results from samples

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

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

July 7, 1989

Mr. John H. Sammons
The Traverse Group, Inc.
1620 Grant Ave., Suite 2
Novato, CA 94945

Re: Revised work plan for California Linen Rental site, 989 - 41st St., Oakland

Dear Mr. Sammons:

The Alameda County Department of Environmental Health, Hazardous Materials Division, has reviewed your resubmitted work plan for the site shown above. With its additions, the plan is adequate as a preliminary assessment for both soil and groundwater contamination that may have resulted from the leaking underground tanks. We are eager for the work described in the plan to begin at this site; please submit to this office a report detailing findings and any recommendations for further investigation or remediation no later than **August 18, 1989.**

If you have any questions about this letter or about remediation requirements at the site, please contact Gil Wistar, Hazardous Materials Specialist, at 271-4320.

Sincerely,

Rafat A. Shahid, Chief
Hazardous Materials Division

c: Joel Pitney, California Linen Rental
Scott Hugenberger, San Francisco Bay RWQCB

CALIFORNIA LINEN RENTAL Co.
989 Forty First Street
Oakland, CA 94608

WORKPLAN FOR SITE INVESTIGATION

SITE LOCATION

This site is located at the corner of 41st and Linden Streets in the city of Oakland. This land use in the area is mixed industrial and residential. The mailing address for this site is 989 41st Street, Oakland, CA 94608.

INTRODUCTION

This workplan covers all services, equipment and materials to be provided by The Traverse Group, Inc. (hereafter TGI) for the drilling of boreholes, the collection of appropriate soil samples, the installation of a minimum of three to a maximum of five monitoring wells on the property and the development of remedial action plans to address any soil and groundwater contamination that might be detected during this phase.

The site is presently owned by California Linen Co, a commercial laundry company. On February 8, 1989, three steel underground storage tanks were removed from the site: A 10,000 gallon capacity tank which contained regular gasoline, A 3,000 gallon tank which contained #5 fuel oil and a 550 gallon tank which contained unleaded gasoline.

Analytical results from soil samples collected by others after tank removal indicate hydrocarbon contamination above 100 ppm. In addition, a water sample taken from standing water in the fuel oil tank pit contained 14,000 ppm of Oil and Grease and 520 ppm Total Petroleum Hydrocarbons as Diesel.

The entire project is to be completed within the guidelines and regulations set forth by the City of Oakland, the Alameda County Division of Environmental Health and the Alameda County Flood Control and Water Conservation District (ACFCD).

SCOPE OF FUNCTIONS

The Traverse Group, Inc. (TGI) shall provide geologic and engineering services for subsurface investigation of this site, including determination of background contamination levels and investigation of hazardous waste contamination.

INTRODUCTION

This report describes the work performed by Miller Environmental Consulting for California Linen Rental Co. A preliminary investigation of the subsurface was performed to determine whether fuel contamination had impacted the ground water. The investigation also gives an initial assessment of the extent and levels of fuel contamination in the soil. This report includes a description of the work performed, field observations, results of analyses, and recommendations for further action based on the findings of this project.

BACKGROUND

The site is located at the corner of 41st and Linden Streets in north Oakland, California, near the Emeryville city limits. California Linen operates a linen supply rental and commercial laundry on the premises. Land use in the area is both industrial and residential.

On February 8, 1989 the Robert J. Miller Co. removed three underground storage tanks from the site: a 10,000 gallon capacity tank which contained regular gasoline, a 2,500 gallon tank which contained #5 fuel oil and a 550 gallon tank which contained unleaded gasoline. Figure 1 shows the locations of the former tanks.

Analytical results from soil samples collected after tank removal indicated hydrocarbon contamination above action levels. In addition, a water sample taken from standing water in the fuel oil tank pit contained 14,000 ppm of oil and grease and 520 ppm total petroleum hydrocarbons as diesel. The discovery of the contamination led to this investigation.

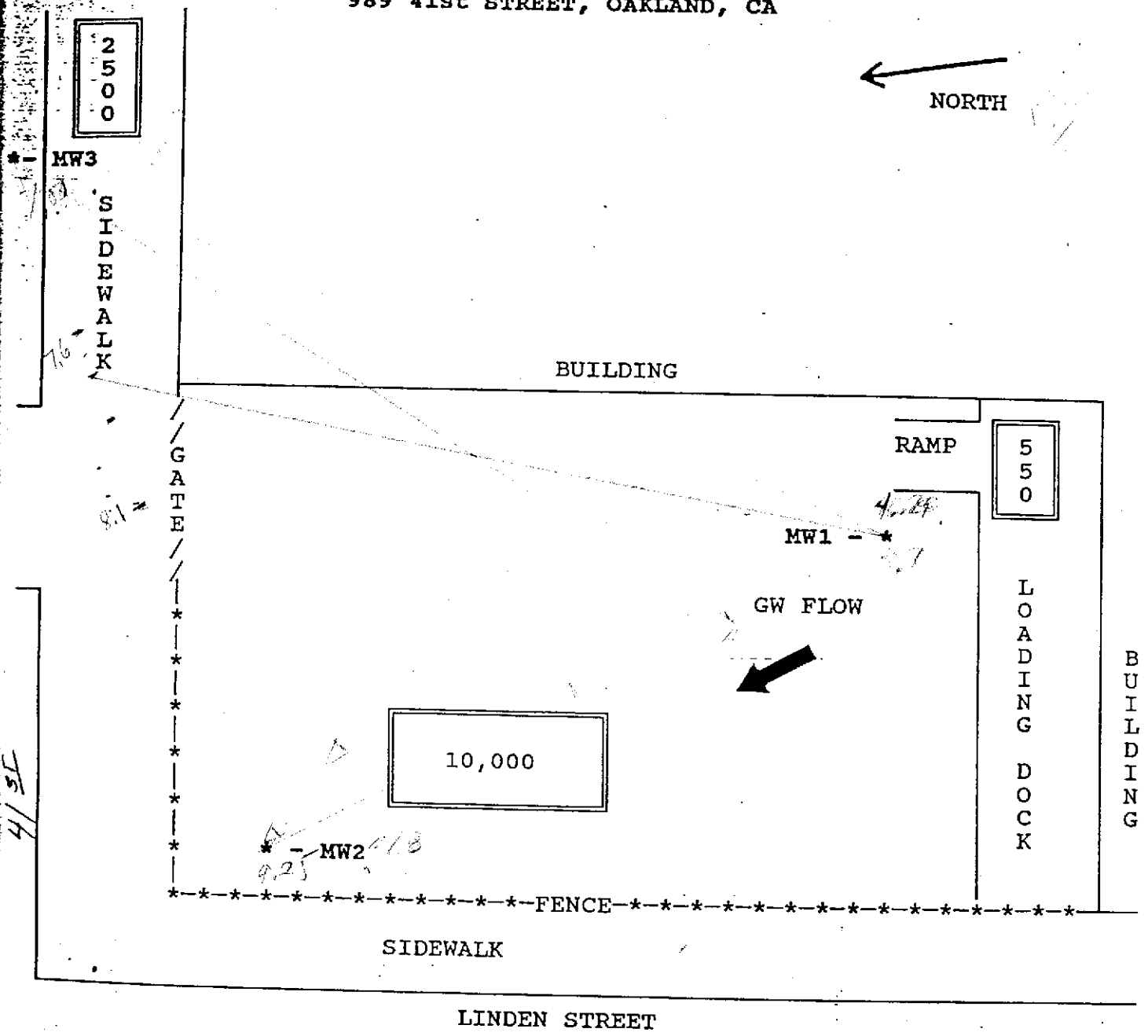
SCOPE OF WORK

A preliminary subsurface site investigation was conducted. The objectives of this study were to: 1) determine the ground water depth and direction of flow, 2) to investigate the extent of soil contamination in the immediate area, and 3) to determine whether ground water contamination had occurred.

Three monitoring wells were installed to satisfy the above objectives. Soil samples were collected from the borings and the monitoring wells were purged and sampled for ground water analysis.

The wells were surveyed by a licensed surveyor on October 12, 1989. Water levels were measured in all three monitoring wells and the ground water gradient and flow direction was estimated.

FIGURE 1
SITE PLAN - CALIFORNIA LINEN
989 41st STREET, OAKLAND, CA



approximate scale:

10'

= former underground tank location

* = monitoring well location

DRILLING AND WELL CONSTRUCTION

Three borings were drilled to describe the geology, locate the water table, and install the monitoring wells. Each of the borings were drilled into the water table with hollow stem augers, logged and sampled. Soil cuttings generated during drilling were placed in 55-gallon drums, labeled and left on site.

Figure 1 shows the location of the wells in relation to the site. MW1 was sited as close as possible to the former location of the upgradient tank pit. An upgradient well is not possible due to the existence of the building. MW2 and MW3 are located in the approximate downgradient directions from the former tanks.

Four-inch diameter, threaded PVC casing was used in well construction. The casing was capped at both ends and a Christy box was installed at the surface. Locks were attached to preclude tampering. Construction details for the wells are described below. Individual construction logs and boring logs are in Appendix A.

The monitoring wells were bored to depths ranging from 21.5-23 feet below ground level. Each well was constructed with fifteen feet of .02-inch slotted casing and with blank casing to the surface. The annular space between the borehole and the well casing was packed with #3 Monterey sand from the bottom of the borehole to one foot above the screened interval. A bentonite plug was set above the sand pack and the remaining annular space was sealed to the surface with a cement/bentonite slurry.

SAMPLING

Soil samples were collected at four foot intervals beginning at four feet below grade and terminating at the water table. (The four-foot sampling interval was requested by Alameda County Health Department due to the shallow water table.) The samples were taken with a modified California split-tube sampler fitted with three clean, brass liners. The lowermost brass liner with the soil sample was covered with teflon wrap, capped and placed on ice for delivery to the laboratory for analysis.

The wells were developed by pumping and bailing six well volumes (approximately sixty gallons) and then allowed to stabilize overnight. Samples of the ground water were taken from all three wells on October 2, 1989. Wells were again purged of four well volumes (approximately forty gallons) and then ground water was bailed into clean glass VOA bottles with teflon caps. All sampling equipment was cleaned with

reagent grade methanol and thoroughly rinsed between each sample collection. The sample bottles were immediately placed on ice and transported to the laboratory for analysis.

All soil and ground water samples were delivered under chain-of custody procedures.

HYDROGEOLOGY

Geologic Setting

San Francisco Bay lies in a low area in the Coast Range province, a region of northwest trending faults, hills and valleys. The site itself is situated on the flatlands, approximately 1 mile west of the eastern edge of the present Bay at Emeryville. The Bay is a drowned valley which is thought to have originally formed by erosion by the ancestral Sacramento River (Jenkins, 1951) and subsequently widened by subsidence and a rise in sea level. Quaternary (Pleistocene to recent) sediments deposited in what is now the Bay, include both shallow marine and continental deposits.

The youngest, surficial deposit is known as "Bay Mud" and occurs in areas adjacent to the Bay. Bay Mud is generally composed of unconsolidated, olive gray, blue gray, or black silty clay. It is typically plastic and varies from soft to stiff. Organic remains such as shells and peat are not uncommon. Permeability is generally low except where lenses of sand occur. Bay Mud is mainly derived from the sediment load carried by the Sacramento and San Joaquin Rivers and has been deposited in the Bay for almost 10,000 years (Helley et al.,1979). Bay Mud continues to be deposited today.

In the Oakland area, several other sedimentary units are noted by Radbruch & Case (1967). Franciscan bedrock has been documented underlying the sediments at Clay and 12th Streets approximately 2 miles south of the site (Woodward-Clyde, 1987). The Franciscan Formation is a complex assemblage of deformed and altered sediments and volcanic rocks which commonly form bedrock in the San Francisco Bay region.

Site hydrogeology

The geologic materials found during drilling consist dominantly of fine-grained sediments which generally fall into the category of Bay Mud. A black clay is present below the asphalt to a depth of approximately four to six feet. Underlying this dark clay is an olive gray, silty clay which extends to the bottom of the borings but becomes light brown in color at approximately 10 feet in MW1 and MW2.

In MW3 (located in 41st Street) a fine-grained sand lens is present between 3.5 and 4 feet. A brown silty clay underlies the sand. Except for the sand lens, the logs show a

homogenous clayey lithology in all three borings.

Ground water levels were estimated to be between 7 and 10 feet below ground surface during drilling. Water levels were measured with an electric sounder after the wells had stabilized on October 11, 1989. The three wells were surveyed on October 12, 1989 by a California licensed surveyor. The Plat of Survey is included in Appendix C. The water levels and conversions to elevations are given in Table 1 below.

TABLE 1
WATER LEVEL DEPTHS AND ELEVATIONS IN FEET. OCT 11, 1989

Well	TOC Elev.	Depth	Elevation
MW1	53.89	7.70	46.19
MW2	54.06	9.25	44.81
MW3	52.79	7.00	45.79

TOC=Top of casing

Based on the present data ground water is flowing in a north-northwest direction towards the intersection of 41st and Linden Streets. This data is shown on Figure 1.

RESULTS OF ANALYSES

Soil and water samples were delivered to Acculab Environmental Services in Petaluma, California. This laboratory is certified by the state of California for drinking water and hazardous waste testing and analysis. Samples were analyzed following procedures developed and verified by the Environmental Protection Agency (EPA). Soil and ground water samples were analyzed as follows:

EPA 5020/8015/602 - Total petroleum hydrocarbons as gasoline
EPA 3550/3510/8015 - Total petroleum hydrocarbons as diesel
EPA 3510/SM503A/418.1- Total petroleum hydrocarbons as waste oil
EPA 5030/8020 -Benzene, toluene, ethylbenzene, and xylene (BTEX)

Soils
Six soil samples were analyzed from the three monitoring

wells. Contamination was detected only in two soil samples. The highest levels were 140 ppm gasoline at the 4-foot depth in MW1 and 190 ppm waste oil at the same depth in MW2.

Significant results are shown in Table 2 below. Samples not listed in the table did not have detectable concentrations for any of the analytes tested (i.e MW3 tested "clean" as did the remaining samples for MW1 and MW2). Complete laboratory reports are attached in Appendix B.

TABLE 2
SIGNIFICANT ANALYTICAL RESULTS FOR SOIL SAMPLES

Well/ Depth	Gasoline	Diesel	Waste Oil	Benzene	Toluene	Xylene	Ethlybnzn
MW1/ 4'	140	36	41	5.3	2.2	16.0	2.9
MW2/ 4'	ND	ND	190	ND	ND	ND	ND

a) All results are expressed in milligrams per kilograms (mg/kg). Mg/kg is equivalent to parts per million (ppm).
b) ND = not detected

Ground Water

Contamination in the ground water was not detected in MW2 nor MW3. MW1 had low levels of contamination except for gasoline and benzene. Benzene has a very low action level (1ppb); no action level has been established for gasoline. The results are shown in the Table 3 below and the complete laboratory reports are in Appendix B.

TABLE 3
RESULTS FOR GROUND WATER SAMPLES

Well	Gasoline	Diesel	Benzn	Toluene	Xyln	Ethlybnzn	Waste oil
MW1	70	0.61	2.8	2.4	4.8	2.3	ND
MW2	ND	ND	ND	ND	ND	ND	ND
MW3	ND	ND	ND	ND	ND	ND	ND

Results are in milligrams per liter (mg/L) which is equivalent to ppm.

DISCUSSION

Miller Environmental Company generally attempts to review nearby subsurface investigations on file at the Oakland office of the Regional Water Quality Control Board (RWQCB). Due to earthquake related problems at the RWQCB the records could not be accessed at this time. We were also unable to contact members of the RWQCB to discuss the results of this investigation.

One of the problems to be discussed is the lack of maximum contaminant levels (MCLs) established for gasoline. MCLs, however, commonly apply to drinking water aquifers and the water table in this area can essentially be considered non-potable. The water table lies within Bay Mud, a low permeability unit which cannot properly, by definition of yield, be regarded an aquifer.

CONCLUSIONS

The underground tanks at the California Linen site have been removed and the surface has been covered with either asphalt or concrete. The results of this investigation indicate that the two underground tanks formerly located within the fence line were a source of contamination at the property. Records show that both of these tanks (labeled on Figure 1 as 10,000 and 550 gallon capacity) contained gasoline.

Soil contamination was found at the four foot depth in MW1 and MW2. Levels were relatively low (140 ppm for gasoline in MW1 and 190 ppm for waste oil in MW2). Waste oil is fairly immobile so that it is less of a problem than gasoline. Gasoline appears localized at the 4-foot depth in MW1. Soil contamination was not detected in MW3 at either the 4-foot or 8-foot depth.

Ground water contamination is focused in the vicinity of MW1. Analytical test results on ground water from MW1 indicate 70 ppm gasoline and 2.8 ppm benzene.

Ground water contamination was not detected in either MW2 or MW3, located downgradient of former tank locations. These wells are located in close proximity to the former tank locations and will function effectively in detecting release of contaminants to the groundwater should that occur at those locations.

RECOMMENDATIONS

Due to the apparent localized and relatively low levels of soil contamination at this site remedial action is not suggested at this time. Additional sampling of the ground water in the three monitoring wells however is recommended to monitor contaminant levels. If ground water continues to test "clean" in MW2 and MW3 after the next round of analyses they should be sampled biannually. MW1 should be tested quarterly for a period of at least one year.

A copy of this report should be submitted to the RWQCB and Alameda County Department of Health Services for their review.

WARRANTY

Miller Environmental Company warrants all services to be of high professional quality. No other warranty, either expressed or implied, as to quality or result to be achieved as a consequence of this work, is made. This report provides an assessment of the potential problems noted and represents a professional opinion. All reports and recommendations are based upon conditions and information made available to Miller to date. Liability is not assumed in cases where the client or other parties involved have failed to disclose known environmental information. No responsibility is assumed for the control or correction of conditions or practices existing at the premises of the client. Data available from future subsurface exploration may modify the conclusions and recommendations of this report.