CITY OF EMERYVILLE
REDEVELOPMENT AGENCY
2200 POWELL STREET, SUITE 1200
EMERYVILLE, CALIFORNIA 94608
(415) 596-4350

April 10, 1991

Ms. Susan Hugo
Alameda County Division of
Hazardous Materials
80 Swan Way, Room 200
Oakland, CA 94621

RE: 1056 - 48th Street

Dear Ms. Hugo:

Enclosed are ~~four~~ three environmental soils reports prepared for the Emeryville Redevelopment Agency for a piece of property it owns at 1056 - 48th Street.

The subject parcel was purchased by the Agency in April of 1990 for the Vacant Housing Program. For your information, the Agency plans to construct a Victorian-styled duplex on the lot which will be sold as two individual units to low to moderate income households.

Please feel free to contact me with any questions. We will be anxious to hear the results of your review as we would like to begin construction this spring.

Sincerely,

Maryann Leshin
Projects Coordinator

Encl.

malhd hugo.ltr
ho 17.100

PRELIMINARY ENVIRONMENTAL ASSESSMENT
PHASE 2
1056 - 48TH STREET
EMERYVILLE, CALIFORNIA
SCI 537.006

Prepared for:

Ms. Maryann Leshin
City of Emeryville
2200 Powell Street, 12th Floor
Emeryville, California 94608

By:

William K. Wikander
Geotechnical Engineer 892 (expires 12/31/92)

R. William Rudolph
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Subsurface Consultants, Inc.
171 - 12th Street, Suite 201
Oakland, California 94607
(415) 268-0461

April 5, 1991

I INTRODUCTION

This report records the results of our Phase 2 preliminary environmental assessment at 1056 - 48th Street in Emeryville, California. The project location is shown on the Site Plan, Plate 1. We previously performed a geotechnical investigation and environmental consultation regarding the site; the results were presented in correspondence dated January 29, February 8, and March 11, 1991.

During our geotechnical investigation, we obtained four near-surface soil samples for analytical testing. The samples were composited and analytically tested for petroleum hydrocarbons, benzene, toluene, xylene, and ethylbenzene (BTXE), volatile halocarbons, heavy metals, cyanide, and semi-volatile organics. Each of the samples from the composite were then individually analyzed for the detected contaminants. The results indicated [redacted] diesel, polynuclear aromatic hydrocarbons (PNA's), [redacted] were considered high enough to warrant further investigation. [redacted] concentrations of cyanide, cadmium, BTXE and volatile halocarbons were low; accordingly, the risks associated with these materials were also considered to be low.

The purpose of this assessment, as outlined in our agreement dated March 14, 1991, was to explore subsurface conditions by drilling test borings, obtain soil samples, perform analytical tests, and develop conclusions and/or recommendations regarding:

1. Subsurface conditions,

2. The presence of contaminants analytically tested for in the samples,

3. The extent of on-site soil contamination,

4. The significance of contaminant levels with respect to state and local regulatory criteria, and

5. The scope of future investigation, if necessary.

II FIELD EXPLORATION

Four test borings were drilled at the locations shown on the Site Plan. The boring locations were chosen to provide additional information regarding subsurface conditions and contaminants encountered during the previous investigation. The borings were drilled using trailer-mounted, 4.5-inch-diameter, solid-flight auger equipment. The drilling and sampling equipment was steam-cleaned prior to each use. The boreholes were drilled to depths of about [redacted] Soil cuttings generated during drilling were encapsulated in polyethylene sheeting and left on-site for later disposal by others. At the completion of drilling, the boreholes were backfilled with cement grout.

Our geologist/engineer observed drilling operations and prepared logs of the soils encountered. The logs of test borings from the previous and current investigations are presented on Plates 2 through 8. Soils are classified in accordance with the Unified Soil Classification System described on Plate 9. Undisturbed soil samples were obtained at frequent intervals. The

samples were retained in brass sample liners. Teflon sheets were placed over the liner ends prior to capping, taping and labeling. The samples were refrigerated until delivery to analytical laboratory. The samples were accompanied by Chain-of-Custody Records, copies of which are presented in the Appendix.

A groundwater sample was obtained from Boring 6, using a pre-cleaned Teflon sampler. The water sample was placed in pre-cleaned containers and refrigerated until delivery to the analytical laboratory. The sample was accompanied by a Chain-of-Custody Record, a copy of which is presented on the Appendix.

III ANALYTICAL TESTING

Analytical testing was performed by Curtis and Tompkins, Ltd., a California Department of Health Services (DHS) certified analytical laboratory for the tests performed.

The analytical tests were directed toward contaminants detected during our previous investigations. Accordingly, the samples were analyzed for:

1. Total extractable hydrocarbons (EPA 3550/8015),
2. Total and soluble lead (EPA 7420, and CCR Title 26 Section 22-66700),
3. Cyanide (EPA 355.2 modified),
4. Volatile halocarbons (EPA 5030/8010), and
5. Polynuclear aromatic hydrocarbons (EPA 3350/8270).

The results of the analytical tests are presented in Table 1. Copies of the laboratory analytical test reports are presented in the Appendix.

Table 1. Analytical Test Results

Organic Compounds in Soil

Sample	Total Extractable Hydrocarbons[1] (mg/kg)	Volatile Halocarbons (ug/kg)	Cyanide (mg/kg)	Polynuclear Aromatic Hydrocarbons (ug/kg)
B1 @ 1'	11	ND[2]	[redacted]	ND
B2 @ 1'	10	ND	ND	ND
B3 @ 1'	24	ND	[redacted]	[redacted][3]
B4 @ 1'	97	ND	ND	[redacted][4]
B5 @ 2'	ND	ND	[redacted]	ND
B5 @ 7'	ND	--	--	ND
B6 @ 3'	ND	--	ND	ND
B6 @ 6'	ND	ND	ND	ND
B6 @ 10'	ND	--	ND	ND
B7 @ 4'	ND	--	ND	ND
B7 @ 8'	ND	ND	ND	ND
B8 @ 5'	ND	--	ND	--
[redacted]	[redacted]	--	[redacted]	--
B8 @ 16'	ND	--	ND	--

Cadmium and Lead In Soil

Sample	Cadmium[7] Total (mg/kg) 100	Cadmium[7] Soluble (mg/L) 1.0	Lead[8] Total (mg/kg) 1000	Lead[8] Soluble (mg/L) 5.0
B1 @ 1'	2.3	0.01	23	0.24
B2 @ 1'	1.7	0.04	18	0.28
B3 @ 1'	3.1	0.08	280	[redacted]
B4 @ 1'	2.0	0.04	91	3.2
B5 @ 2'	--	--	6.5	0.10
B5 @ 7'	--	--	4.4	ND
B6 @ 3'	--	--	3.0	ND
B6 @ 6'	--	--	ND	ND
B6 @ 10'	--	--	3.5	ND
B7 @ 4'	--	--	5.4	ND
B7 @ 8'	--	--	ND	0.17

Organic Compounds and Dissolved Lead In Water

Sample	Total Extractable Hydrocarbons (ug/L)	Purgeable Halocarbons (ug/L)	Dissolved Lead (mg/L)
6 (water)	ND	ND	ND

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1 Diesel Range unless noted otherwise
2 ND = None detected, see laboratory test reports in Appendix for detection limits
3 Nine compounds detected, with concentrations ranging from 56 to 200 ug/kg; see attached laboratory test reports for detected compounds
4 Thirteen compounds detected, with concentrations ranging from 220 to 6400 ug/kg; see attached laboratory test report for detected compounds
5 -- = Test not requested
6 Motor oil range
7 Total Threshold Limit Concentration = 100 mg/kg, Soluble Threshold Limit Concentration = 1.0 mg/L
8 TTLC = 1000 mg/kg, STLC = 5.0 mg/L

IV SITE CONDITIONS

A. Geology

The site is located on a broad alluvial plain bordered by the Berkeley Hills on the east and San Francisco Bay on the west. According to a geologic map by Radbruch (1957)[1], the site is underlain by the Temescal Formation, an alluvial fan deposit comprised of interfingered lenses of clayey gravel, sandy silty clay and sand-clay-silt mixtures. The historic alignment of Temescal Creek is directly north of the site.

B. Surface Conditions

The relatively level, rectangular site measures about 40 by 120 feet. It is bordered on the south by 48th Street, on the north by the Alameda County Flood Control and Water Conservation District easement, and on east and west by residences.

Based upon our review of aerial photographs of the area taken in 1959 and 1977[2], the site was formerly occupied by a single family house at the approximate location shown on the Site Plan. In addition, Temescal Creek ran along the north property boundary. According to long-term neighborhood residents, the former house burned during the early 1970's. By 1977, the house had been removed, and the Temescal Creek channel had been filled in.

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[1] "Areal and Engineering Geology of the Oakland West Quadrangle, California," U.S.G.S. Map I-239.

[2] Pacific Aerial Surveys AV-337-07-23/24 (1959) and AV-1377-06-18/19 (1977)

The site is currently vacant and used for vehicle parking. Vegetation consists mostly of sparse grasses, trees and bushes.

C. **Subsurface Conditions**

Based upon the results of our field explorations, subsurface conditions at the site primarily consist of fill overlying native clayey soils. The north part of the site is blanketed by fill which was apparently placed within the previous creek alignment. It extends to a depth of 11 feet in Test Boring 1. The fill thickness decreases with distance away from the north property line. The estimated limit of creek channel fill is shown on the Site Plan. The fill at the center of the site is likely associated with the former house. It extends to a depth of about 4 feet in Test Borings 4 and 5. The fill consists of silty clays and clayey sands. It also contains brick fragments, gravel and fire related debris.

Beneath the fill, and at the groundsurface elsewhere, are native soils consisting of interbedded layers of sandy and silty clays and clayey sands.

Groundwater was encountered at a depth of about 20 feet during drilling in Boring 3. Groundwater was not encountered in the other borings during drilling.

During drilling, there were no visual or olfactory indications of contamination. No organic vapors were detected, using an organic vapor meter (OVM) to screen selected soil samples.

V CONCLUSIONS AND RECOMMENDATIONS

A. General

The analytical test results to date indicate that detectable concentrations of [redacted] hydrocarbons, cadmium and lead exist in soil at the site. [redacted] The concentrations of each of the contaminants in each boring are shown on the attached Site Plan, Plate 1. Our conclusions and recommendations regarding each contami[illegible] presented in the following paragraphs.

B. D[illegible]

[redacted] through [redacted] Diesel was n[illegible] ow a depth of about one foot. The source of diesel [illegible] uncertain. However, because the site was former[illegible] a residence, it is not likely that an undergr[illegible]sel storage tank formerly existed on the property. We judge that the diesel is most likely related to the use of the [redacted]. Given that diesel concentrations are less than 100 ppm and appear to involve only the upper foot of soil, we conclude that remediation will likely not be appropriate.

C. Motor Oil

[redacted] was encountered in native soil at a concentration of [redacted] beneath 9 feet of fill in Boring 8. This boring is located within the former Temescal Creek channel. The analytical results indicate that the fill above the old creek bottom and soils

a few feet below the previous creek do not contain motor oil at concentrations above detection limits. The source of this oil is currently unknown. However, because the site is residential, we judge that it is unlikely that large quantities of motor oil were stored and/or disposed of on site. The soil contamination may be related to an undocumented former spill within the creek before the fill was placed. We judge that because the soil containing motor oil contamination is covered with fill, and motor oil is relatively immobile in the soil, the oil contamination does not pose a significant environmental risk. However, because the motor oil concentration is greater than 100 mg/kg, the regulatory agencies may require further study and/or groundwater monitoring.

D. Cyanide

Cyanide was encountered in Borings 1, 3 and 8 at concentrations of 0.3 and 0.4 mg/kg. These concentrations are low and are at or near the analytical detection limit (0.3 mg/kg). The source of cyanide is unknown. However, we speculate that the cyanide is related to the use of pest control materials at the site. We judge that the cyanide contamination does not require further study or remediation.

E. Polynuclear Aromatic Hydrocarbons

Polynuclear aromatic hydrocarbons (PNA's) were detected in soils from Borings 3 and 4, which were located near the former structure. The cumulative concentration of PNA's ranged from 1,960 to 21,000 ug/kg. PNA's were not encountered below a depth of 1 foot. The PNA's are likely associated with fire debris from the

previous structure on the site. No specific regulatory criteria exists for the cleanup of PNA's in soil. However, given that the concentrations are relatively high, and the fire debris also contains soluble lead above hazardous waste concentrations, we recommend remediation of the soils which contain the high PNA concentrations.

F. Cadmium and Lead

Cadmium and lead were detected in the many of the soil samples selected for analysis. The cadmium and lead concentrations were generally relatively low and consistent with typical background concentrations in an urban environment. However, the lead concentrations in Borings 3 and 4, which were located near the former structure, were considered relatively high. The elevated lead concentrations do not appear to extend below a depth of about [illegible]t. The soluble lead concentration in soil from Test Boring 3 (9.4 mg/l) is above the Soluble Threshold Limit Concentration for lead of 5.0 mg/l. Accordingly, this material is considered to be a hazardous waste requiring remediation. The source of lead is likely paint and building materials from the former structure.

We recommend that PNA and lead contaminated soil within the approximate limits shown on the Site Plan, and to a depth of about [illegible] be remediated. We judge that the most practical remediation method will be excavation and disposal at a suitable landfill. The excavation should be backfilled with clean imported soils.

G. Submittals to Regulatory Agencies

We recommend that this report be provided to the following regulatory agencies:

Ms. Susan Hugo
Alameda County Health Care services Agency
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

Mr. Lester Feldman
California Regional Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street
Oakland, California 94612

H. Limitations

This study was intended to provide a preliminary means of checking the site for indications of soil contamination, based upon the previous known use of the site. If areas of contamination exist on other portions of the property, away from the areas investigated, it is probable that they would not have been detected by the analyses. In addition, if chemicals that were not tested for were used at the site, they would not have been detected during this study.

List of Attached Plates:

Plate 1	Site Plan
Plates 2 thru 8	Logs of Test Borings 1 thru 8
Plate 9	Unified Soil Classification System

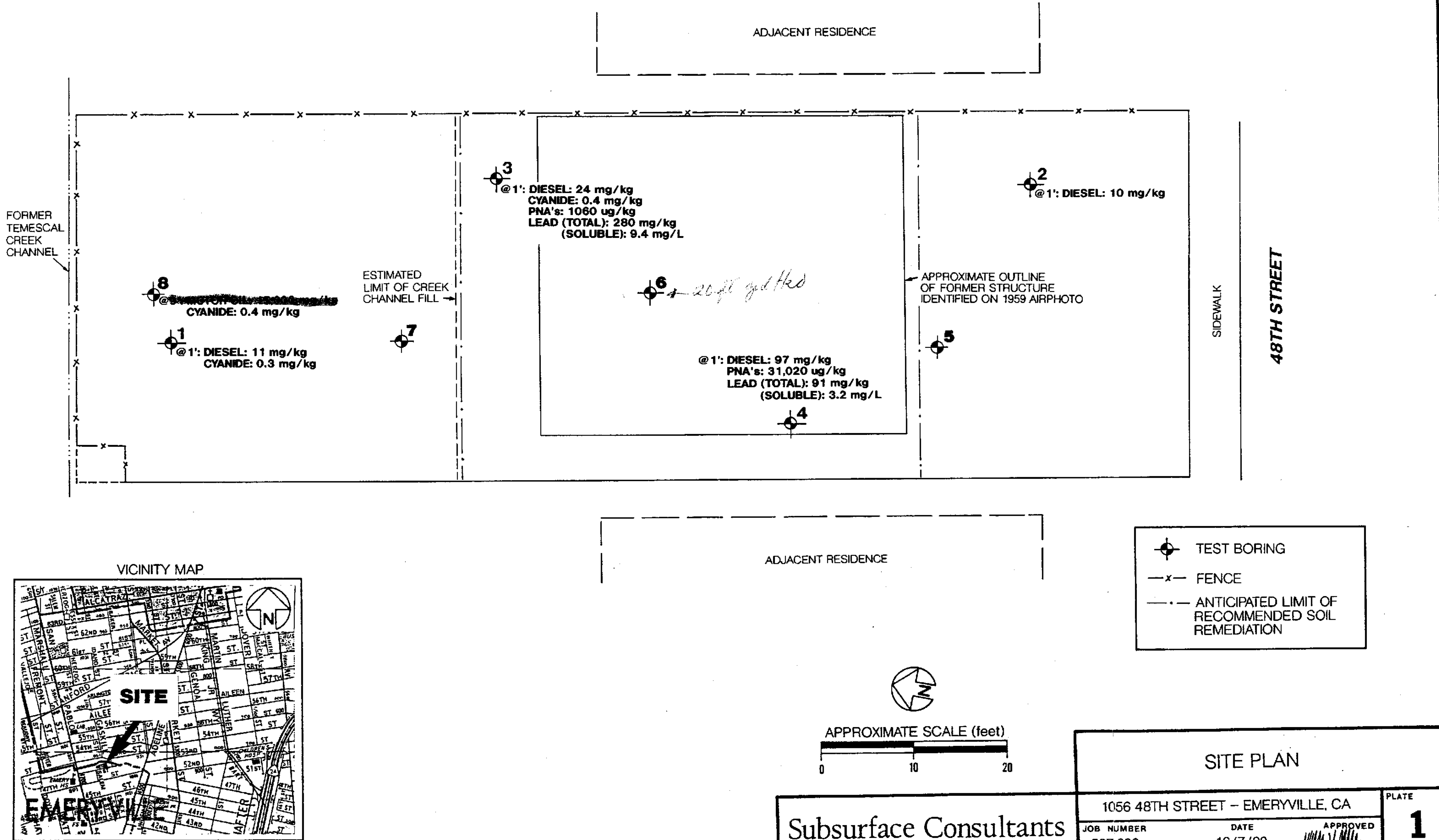
Appendix:

Analytical Test Results
Chain-of-Custody Records

Distribution:

6 copies: Ms. Maryann Leshin
City of Emeryville
2200 Powell Street, 12th Floor
Emeryville, California 94608

WKW:RWR:JPB:sld


ADJACENT RESIDENCE
FORMER TEMESCAL CREEK CHANNEL
ESTIMATED LIMIT OF CREEK CHANNEL FILL
3
@1': DIESEL: 24 mg/kg
CYANIDE: 0.4 mg/kg
PNA's: 1060 ug/kg
LEAD (TOTAL): 280 mg/kg
(SOLUBLE): 9.4 mg/L
2
@1': DIESEL: 10 mg/kg
8
@[redacted]
CYANIDE: 0.4 mg/kg
6
20 ft gd tkd
APPROXIMATE OUTLINE OF FORMER STRUCTURE IDENTIFIED ON 1959 AIRPHOTO
SIDEWALK
48TH STREET
1
@1': DIESEL: 11 mg/kg
CYANIDE: 0.3 mg/kg
7
5
@1': DIESEL: 97 mg/kg
PNA's: 31,020 ug/kg
LEAD (TOTAL): 91 mg/kg
(SOLUBLE): 3.2 mg/L
4
ADJACENT RESIDENCE
TEST BORING
FENCE
ANTICIPATED LIMIT OF RECOMMENDED SOIL REMEDIATION
VICINITY MAP
SITE
EMERYVILLE
N
APPROXIMATE SCALE (feet)
0
10
20

SITE PLAN

1056 48TH STREET – EMERYVILLE, CA

Subsurface Consultants

JOB NUMBER	DATE	APPROVED	PLATE
537.006	12/7/90	[signature]	1

LOG OF TEST BORING 1

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 12/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
			0			DARK BROWN GRAVELLY CLAY (CL) medium stiff, moist, with brick fragments and rootlets
	14.0	--			11	
					12*	DARK BROWN SILTY CLAY (CL) medium stiff, moist, with gravel and brick fragments (fill) stiff below 3 feet
	11.8	108	5		52	
	10.8	105	10		29	MOTTLED LIGHT BROWN AND ORANGE SANDY CLAY (CL) medium stiff, moist, fine grained sand with gravel (fill) DARK BROWN SILTY CLAY (CL) medium stiff, moist, with gravel
	23.1	97	15		21	
	11.6	111	20		52	MOTTLED BROWN AND ORANGE CLAYEY SAND (SC) dense, moist, fine grained sand with gravel NO GROUNDWATER ENCOUNTERED DURING DRILLING
			25			
			30			
			35			
			40			

PI = Plasticity Index
LL = Liquid Limit
UC = Unconfined compressive Shear Strength

SAMPLER TYPE:
MODIFIED CALIFORNIA DRIVE
I.D.: 2.5 inches
O.D.: 3.0 inches
*CALIFORNIA DRIVE
I.D.: 2.0 inches
O.D.: 2.5 inches

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

Subsurface Consultants

1056 48TH STREET - EMERYVILLE, CA

JOB NUMBER 537.006 | DATE 12/7/90 | APPROVED

PLATE 2

LOG OF TEST BORING 2

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 12/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
	9.3	96	0		14	BROWN SANDY CLAY (CL) medium stiff, moist, fine grained sand, porous
	12.3	--			8*	
PI = 29%	24.0	84			18	BLACK SILTY CLAY (CH) medium stiff, moist
LL = 56%			5			
UC = 2340psf						
	14.7	109			20	MOTTLED BROWN AND ORANGE CLAYEY SAND (SC) medium dense, moist, fine to coarse grained sand
			10			DARK BROWN SILTY CLAY (CL) stiff, moist
	29.6	93			27*	NO GROUNDWATER ENCOUNTERED DURING DRILLING
			15			

LOG OF TEST BORING 3

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 12/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
	10.3		0			
PI = 12%	12.7	85			13	BROWN SANDY CLAY (CL) medium stiff, moist, fine grained sand
LL = 32%					9*	
UC = 2130psf						
	22.0	85	5		17	BLACK SILTY CLAY (CH) medium stiff, moist
						occasional gravel below 10 feet
	21.4	98	10		25	
						NO GROUNDWATER ENCOUNTERED DURING DRILLING
	24.0	99	15		28	

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1056 48TH STREET - EMERYVILLE, CA

JOB NUMBER	DATE	APPROVED
537.006	12/7/90	

PLATE 3

LOG OF TEST BORING 4

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 12/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
	8.9	109	0		18	DARK BROWN CLAYEY SAND (SC) medium dense, moist, with gravel (fill)
PI = 9% LL = 25%	17.5	104			11*	
			5		16	BROWN SILTY CLAY (CL) medium stiff, moist
						with occasional gravel below 7 feet
UC = 3070psf	17.4	106	10		19	
	25.4	93	15		27	NO GROUNDWATER ENCOUNTERED DURING DRILLING

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1056 48TH STREET - EMERYVILLE, CA

JOB NUMBER 537.006 | DATE 12/7/90 | APPROVED

PLATE 4

LOG OF TEST BORING 5

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 3/14/91
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			BROWN CLAYEY SAND (SC) medium dense, moist (fill)
			0			12	MOTTLED BROWN AND GRAY SILTY SAND (SM) medium dense, moist, fine grained (fill)
			4			16	DARK BROWN SILTY CLAY (CL) medium stiff, moist
			4	5		30	BROWN SANDY CLAY (CL) medium stiff, moist, fine to medium grained sand
			5	10		13	DARK GRAY SILTY CLAY (CL) medium stiff, moist
				15			Borehole backfilled with neat cement grout
							NO GROUNDWATER ENCOUNTERED DURING DRILLING

SAMPLER TYPE:
CALIFORNIA DRIVE
O.D.: 2.5 inches
I.D.: 2.0 inches

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

Subsurface Consultants

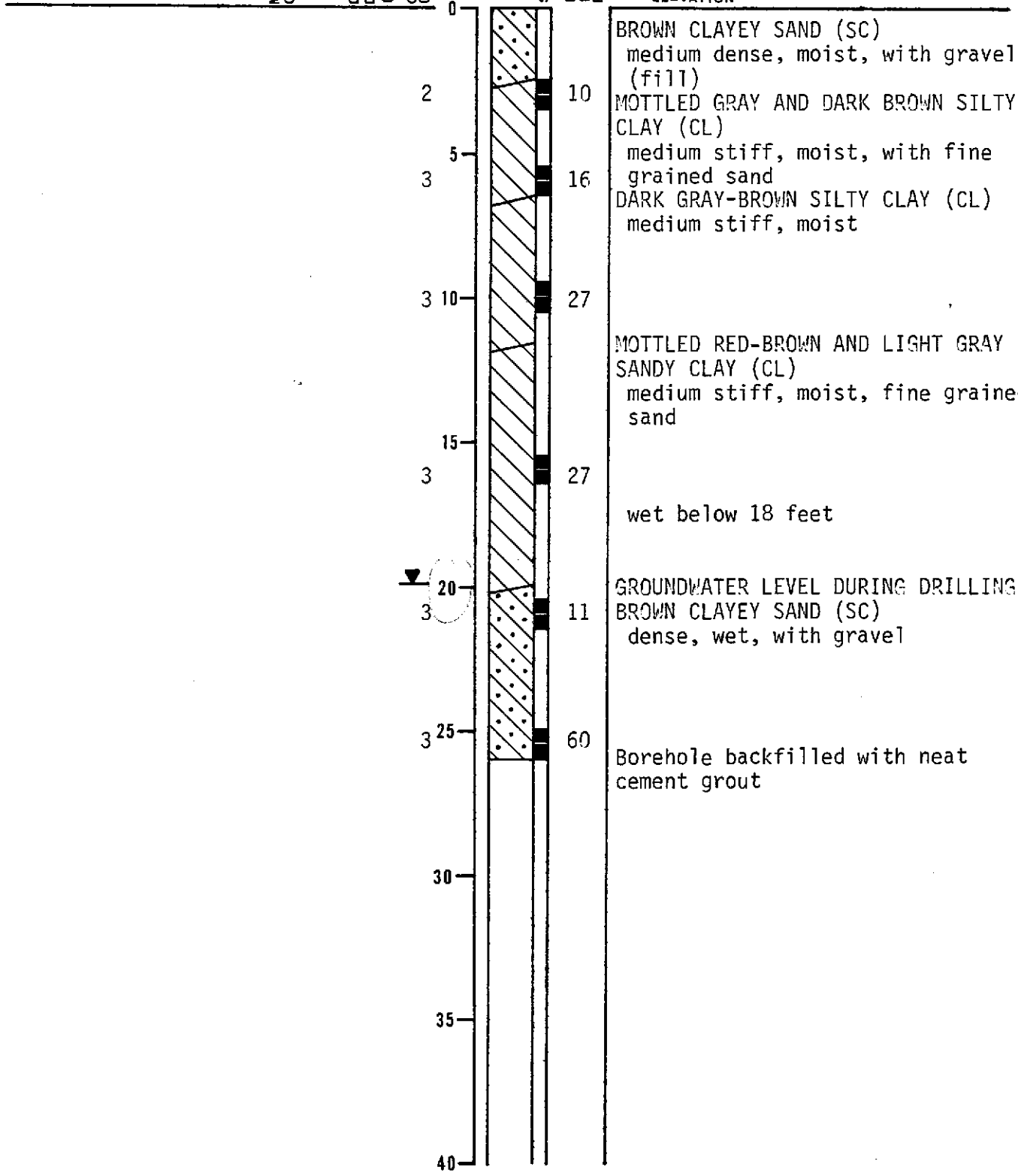
1056 48TH STREET - EMERYVILLE, CA

JOB NUMBER	DATE	APPROVED
537.006	3/15/91	

PLATE 5

LOG OF TEST BORING 6

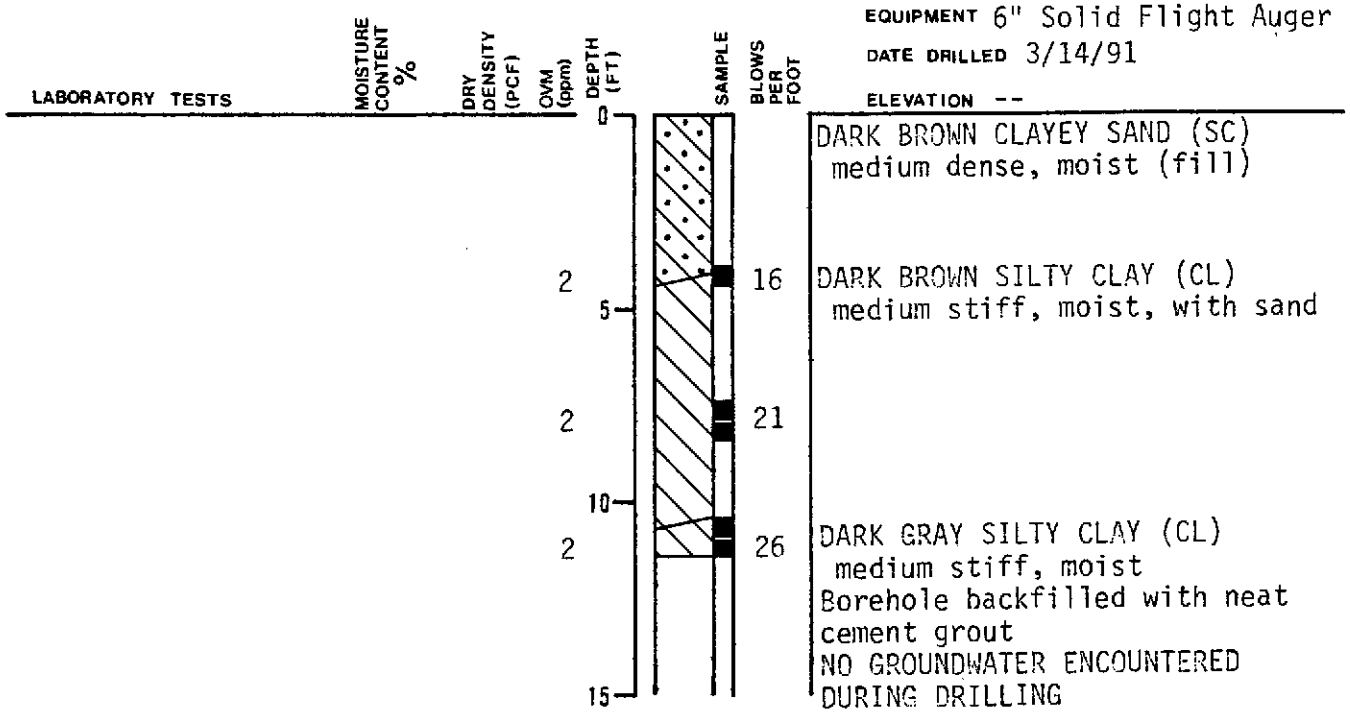
EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 3/14/91
ELEVATION --



Subsurface Consultants	1056 48TH STREET - EMERYVILLE, CA			PLATE
	JOB NUMBER	DATE	APPROVED	6
	537.006	3/15/91		

LOG OF TEST BORING 7

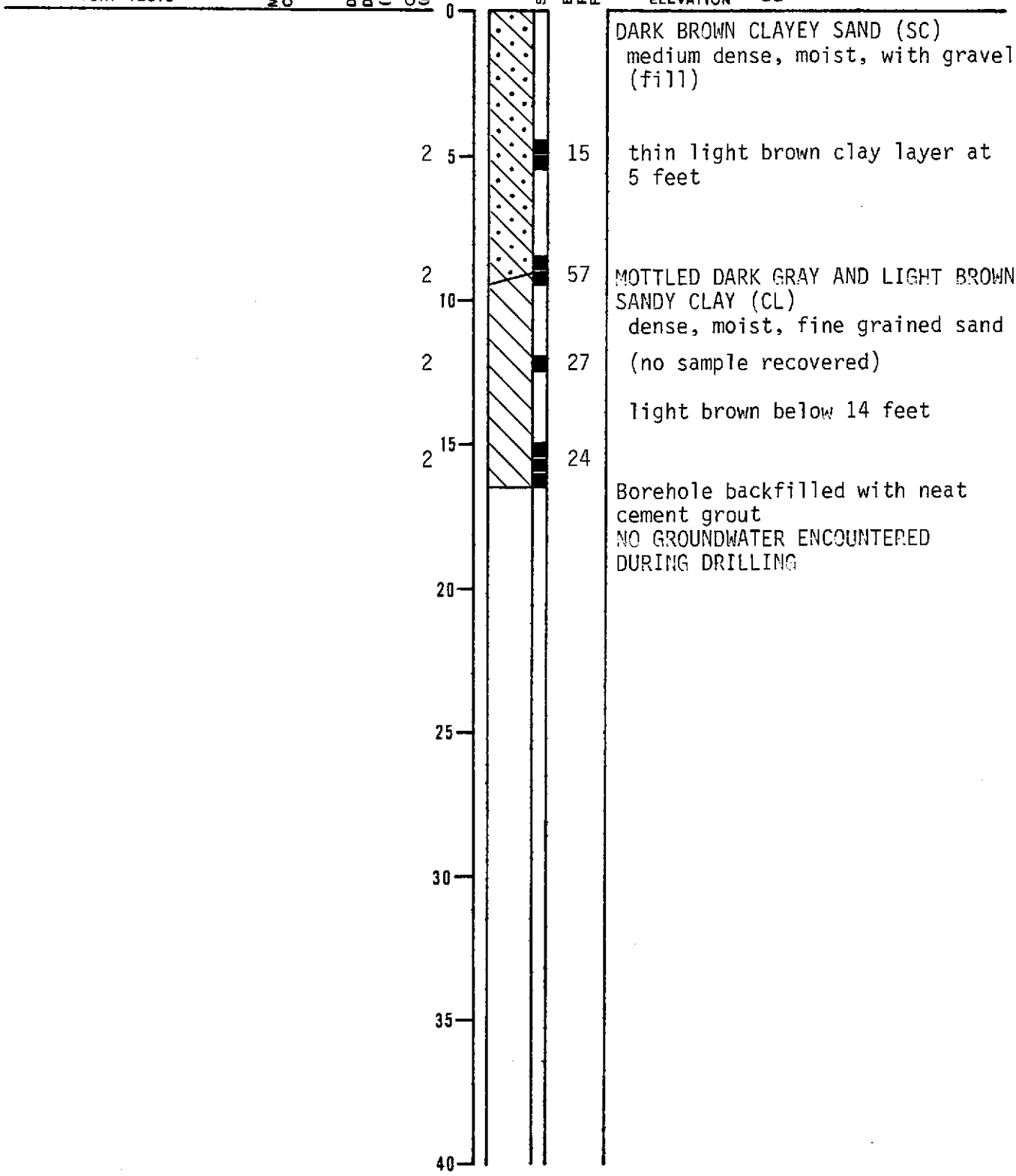
EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 3/14/91
ELEVATION --



Subsurface Consultants	1056 48TH STREET - EMERYVILLE, CA			PLATE 7
	JOB NUMBER 537.006	DATE 3/15/91	APPROVED	

LOG OF TEST BORING 8

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 3/14/91
ELEVATION --



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1056 48TH STREET - EMERYVILLE, CA

JOB NUMBER	DATE	APPROVED
537.006	3/15/91	

PLATE 8

GENERAL SOIL CATEGORIES			SYMBOLS	TYPICAL SOIL TYPES
COARSE GRAINED SOILS More than half is larger than No. 200 sieve	**GRAVEL** More than half coarse fraction is larger than No. 4 sieve size	Clean Gravel with little or no fines	GW	Well Graded Gravel, Gravel-Sand Mixtures
			GP	Poorly Graded Gravel, Gravel-Sand Mixtures
		Gravel with more than 12% fines	GM	Silty Gravel, Poorly Graded Gravel-Sand-Silt Mixtures
			GC	Clayey Gravel, Poorly Graded Gravel-Sand-Clay Mixtures
	SAND More than half coarse fraction is smaller than No. 4 sieve size	Clean sand with little or no fines	SW	Well Graded Sand, Gravelly Sand
			SP	Poorly Graded Sand, Gravelly Sand
		Sand with more than 12% fines	SM	Silty Sand, Poorly Graded Sand-Silt Mixtures
			SC	Clayey Sand, Poorly Graded Sand-Clay Mixtures
FINE GRAINED SOILS More than half is smaller than No. 200 sieve	**SILT AND CLAY** Liquid Limit Less than 50%		ML	Inorganic Silt and Very Fine Sand, Rock Flour, Silty or Clayey Fine Sand, or Clayey Silt with Slight Plasticity
			CL	Inorganic Clay of Low to Medium Plasticity, Gravelly Clay, Sandy Clay, Silty Clay, Lean Clay
			OL	Organic Clay and Organic Silty Clay of Low Plasticity
	SILT AND CLAY Liquid Limit Greater than 50%		MH	Inorganic Silt, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silt
			CH	Inorganic Clay of High Plasticity, Fat Clay
			OH	Organic Clay of Medium to High Plasticity, Organic Silt
HIGHLY ORGANIC SOILS			PT	Peat and Other Highly Organic Soils

UNIFIED SOIL CLASSIFICATION SYSTEM

Subsurface Consultants

1056 48TH STREET - EMERYVILLE, CA

JOB NUMBER	DATE	APPROVED
537.006	3/29/91	

PLATE 9

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 03/15/91
DATE REPORTED: 03/28/91

LAB NUMBER: 103254

CLIENT: SUBSURFACE CONSULTANTS

REPORT ON: TEN SOIL SAMPLES AND ONE WATER SAMPLE

PROJECT ID: 537.006
LOCATION: 1056 48TH STREET

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
LOCATION: 1056 48TH STREET

DATE RECEIVED: 03/15/91
DATE EXTRACTED: 03/19/91
DATE ANALYZED: 03/22/91
DATE REPORTED: 03/28/91

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	GASOLINE RANGE (mg/Kg)	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	MOTOR OIL RANGE (mg/Kg)
103254-1	5 @ 2'	ND(10)	ND(10)	ND(10)	ND(10)
103254-2	5 @ 7'	ND(10)	ND(10)	ND(10)	ND(10)
103254-3	6 @ 3'	ND(10)	ND(10)	ND(10)	ND(10)
103254-4	6 @ 6'	ND(10)	ND(10)	ND(10)	ND(10)
103254-5	6 @ 10'	ND(10)	ND(10)	ND(10)	ND(10)
103254-6	7 @ 4'	ND(10)	ND(10)	ND(10)	ND(10)
103254-7	7 @ 8'	ND(10)	ND(10)	ND(10)	ND(10)
103254-8	8 @ 5'	ND(10)	ND(10)	ND(10)	ND(10)
103254-9	8 @ 9'	ND(100)	ND(100)	ND(100)	15,000
103254-10	8 @ 16'	ND(10)	ND(10)	ND(10)	ND(10)

ND = Not Detected at or above reporting limit. Reporting limit indicated in parenthesis.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	119

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-1
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 5 @ 2'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/25/91
DATE REPORTED: 03/28/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
1,1,2-trichloroethane	ND	5.0
trans-1,3-dichloropropene	ND	5.0
dibromochloromethane	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
tetrachloroethylene	ND	5.0
1,1,2,2-tetrachloroethane	ND	5.0
chlorobenzene	ND	5.0
1,3-dichlorobenzene	ND	5.0
1,2-dichlorobenzene	ND	5.0
1,4-dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Duplicate: Relative % Difference	9
Spike: Average % Recovery	95

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-4
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 6 @ 6'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/26/91
DATE REPORTED: 03/28/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
1,1,2-trichloroethane	ND	5.0
trans-1,3-dichloropropene	ND	5.0
dibromochloromethane	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
tetrachloroethylene	ND	5.0
1,1,2,2-tetrachloroethane	ND	5.0
chlorobenzene	ND	5.0
1,3-dichlorobenzene	ND	5.0
1,2-dichlorobenzene	ND	5.0
1,4-dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Duplicate: Relative % Difference	9
Spike: Average % Recovery	98

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-7
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 7 @ 8'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/26/91
DATE REPORTED: 03/28/91

EPA 8010: Volatile Halocarbons in Soil & Wastes
Extraction Method: EPA 5030 - Purge & Trap

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
chloromethane	ND	10
bromomethane	ND	10
vinyl chloride	ND	10
chloroethane	ND	10
methylene chloride	ND	5.0
trichlorofluoromethane	ND	5.0
1,1-dichloroethene	ND	5.0
1,1-dichloroethane	ND	5.0
1,2-dichloroethene (total)	ND	5.0
chloroform	ND	5.0
freon 113	ND	5.0
1,2-dichloroethane	ND	5.0
1,1,1-trichloroethane	ND	5.0
carbon tetrachloride	ND	5.0
bromodichloromethane	ND	5.0
1,2-dichloropropane	ND	5.0
cis-1,3-dichloropropene	ND	5.0
trichloroethylene	ND	5.0
1,1,2-trichloroethane	ND	5.0
trans-1,3-dichloropropene	ND	5.0
dibromochloromethane	ND	5.0
2-chloroethylvinyl ether	ND	10
bromoform	ND	5.0
tetrachloroethylene	ND	5.0
1,1,2,2-tetrachloroethane	ND	5.0
chlorobenzene	ND	5.0
1,3-dichlorobenzene	ND	5.0
1,2-dichlorobenzene	ND	5.0
1,4-dichlorobenzene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Duplicate: Relative % Difference	9
Spike: Average % Recovery	98

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-11
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 6(WATER)

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/26/91
DATE REPORTED: 03/28/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethyl vinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	9
RECOVERY, %	98

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
LOCATION: 1056 48TH STREET

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

ANALYSIS: LEAD
ANALYSIS METHOD: EPA 7420

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
103254-1	5 @ 2'	6.5	mg/Kg	3.0
103254-2	5 @ 7'	4.4	mg/Kg	3.0
103254-3	6 @ 3'	3.0	mg/Kg	3.0
103254-4	6 @ 6'	ND	mg/Kg	3.0
103254-5	6 @ 10'	3.5	mg/Kg	3.0
103254-6	7 @ 4'	5.4	mg/Kg	3.0
103254-7	7 @ 8'	ND	mg/Kg	3.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	94

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
LOCATION: 1056 48TH STREET

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

ANALYSIS: DISSOLVED LEAD
ANALYSIS METHOD: EPA 7420

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
103254-11	6(WATER)	ND	mg/L	0.06

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	94

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
LOCATION: 1056 48TH STREET

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/28/91
DATE REPORTED: 03/28/91

ANALYSIS: SOLUBLE LEAD
EXTRACTION BY WASTE EXTRACTION TEST: CCR TITLE 26 SECTION 22-66700
ANALYSIS METHOD: EPA 7420

LAB ID	CLIENT ID	RESULT	UNITS	REPORTING LIMIT
103254-1	5 @ 2'	0.10	mg/L	0.06
103254-2	5 @ 7'	ND	mg/L	0.06
103254-3	6 @ 3'	ND	mg/L	0.06
103254-4	6 @ 6'	ND	mg/L	0.06
103254-5	6 @ 10'	ND	mg/L	0.06
103254-6	7 @ 4'	ND	mg/L	0.06
103254-7	7 @ 8'	0.17	mg/L	0.06

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	3
RECOVERY, %	95

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
LOCATION: 1056 48TH STREET

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/20/91
DATE REPORTED: 03/28/91

ANALYSIS: CYANIDE
ANALYSIS METHOD: EPA 335.2 (Modified)

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
103254-3	6 @ 3'	ND	mg/Kg	0.3
103254-4	6 @ 6'	ND	mg/Kg	0.3
103254-5	6 @ 10'	ND	mg/Kg	0.3
103254-6	7 @ 4	ND	mg/Kg	0.3
103254-7	7 @ 8'	ND	mg/Kg	0.3
103254-8	8 @ 5'	ND	mg/Kg	0.3
103254-9	8 @ 9'	0.4	mg/Kg	0.3
103254-10	8 @ 16'	ND	mg/Kg	0.3

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	81

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
LOCATION: 1056 48TH STREET

DATE RECEIVED: 03/15/91
DATE EXTRACTED: 03/20/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
103254-11	6(WATER)	ND	ND	50

ND = Not detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	8
RECOVERY, %	102

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-1
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 5 @ 2'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

Polynuclear Aromatic Hydrocarbons in Soils & Wastes by EPA 8270
Extraction Method: EPA 3550

COMPOUND	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Naphthalene	ND	50
Acenaphthylene	ND	50
Acenaphthene	ND	50
Fluorene	ND	50
Phenanthrene	ND	50
Anthracene	ND	50
Fluoranthene	ND	50
Pyrene	ND	50
Benzo(a)anthracene	ND	50
Chrysene	ND	50
Benzo(b)fluoranthene	ND	50
Benzo(k)fluoranthene	ND	50
Benzo(a)pyrene	ND	50
Indeno(1,2,3-cd)pyrene	ND	50
Dibenzo(a,h)anthracene	ND	50
Benzo(g,h,i)perylene	ND	50

ND = Not detected at or above reporting limit.

QA/QC SURROGATE RECOVERY

Nitrobenzene-d5	61 %
2-Fluorobiphenyl	84 %
terphenyl-d14	62 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-2
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 5 @ 7'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

Polynuclear Aromatic Hydrocarbons in Soils & Wastes by EPA 8270
Extraction Method: EPA 3550

COMPOUND	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Naphthalene	ND	50
Acenaphthylene	ND	50
Acenaphthene	ND	50
Fluorene	ND	50
Phenanthrene	ND	50
Anthracene	ND	50
Fluoranthene	ND	50
Pyrene	ND	50
Benzo(a)anthracene	ND	50
Chrysene	ND	50
Benzo(b)fluoranthene	ND	50
Benzo(k)fluoranthene	ND	50
Benzo(a)pyrene	ND	50
Indeno(1,2,3-cd)pyrene	ND	50
Dibenzo(a,h)anthracene	ND	50
Benzo(g,h,i)perylene	ND	50

ND = Not detected at or above reporting limit.

QA/QC SURROGATE RECOVERY

Nitrobenzene-d5	71 %
2-Fluorobiphenyl	84 %
terphenyl-d14	57 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-3
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 6 @ 3'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

Polynuclear Aromatic Hydrocarbons in Soils & Wastes by EPA 8270
Extraction Method: EPA 3550

COMPOUND	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Naphthalene	ND	50
Acenaphthylene	ND	50
Acenaphthene	ND	50
Fluorene	ND	50
Phenanthrene	ND	50
Anthracene	ND	50
Fluoranthene	ND	50
Pyrene	ND	50
Benzo(a)anthracene	ND	50
Chrysene	ND	50
Benzo(b)fluoranthene	ND	50
Benzo(k)fluoranthene	ND	50
Benzo(a)pyrene	ND	50
Indeno(1,2,3-cd)pyrene	ND	50
Dibenzo(a,h)anthracene	ND	50
Benzo(g,h,i)perylene	ND	50

ND = Not detected at or above reporting limit.

QA/QC SURROGATE RECOVERY

Nitrobenzene-d5	73 %
2-Fluorobiphenyl	88 %
terphenyl-d14	60 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-4
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 6 @ 6'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

Polynuclear Aromatic Hydrocarbons in Soils & Wastes by EPA 8270
Extraction Method: EPA 3550

COMPOUND	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Naphthalene	ND	50
Acenaphthylene	ND	50
Acenaphthene	ND	50
Fluorene	ND	50
Phenanthrene	ND	50
Anthracene	ND	50
Fluoranthene	ND	50
Pyrene	ND	50
Benzo(a)anthracene	ND	50
Chrysene	ND	50
Benzo(b)fluoranthene	ND	50
Benzo(k)fluoranthene	ND	50
Benzo(a)pyrene	ND	50
Indeno(1,2,3-cd)pyrene	ND	50
Dibenzo(a,h)anthracene	ND	50
Benzo(g,h,i)perylene	ND	50

ND = Not detected at or above reporting limit.

QA/QC SURROGATE RECOVERY

Nitrobenzene-d5	75 %
2-Fluorobiphenyl	90 %
terphenyl-d14	61 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-5
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 6 @ 10'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

Polynuclear Aromatic Hydrocarbons in Soils & Wastes by EPA 8270
Extraction Method: EPA 3550

COMPOUND	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Naphthalene	ND	50
Acenaphthylene	ND	50
Acenaphthene	ND	50
Fluorene	ND	50
Phenanthrene	ND	50
Anthracene	ND	50
Fluoranthene	ND	50
Pyrene	ND	50
Benzo(a)anthracene	ND	50
Chrysene	ND	50
Benzo(b)fluoranthene	ND	50
Benzo(k)fluoranthene	ND	50
Benzo(a)pyrene	ND	50
Indeno(1,2,3-cd)pyrene	ND	50
Dibenzo(a,h)anthracene	ND	50
Benzo(g,h,i)perylene	ND	50

ND = Not detected at or above reporting limit.

QA/QC SURROGATE RECOVERY

Nitrobenzene-d5	72 %
2-Fluorobiphenyl	87 %
terphenyl-d14	61 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-6
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 7 @ 4'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

Polynuclear Aromatic Hydrocarbons in Soils & Wastes by EPA 8270
Extraction Method: EPA 3550

COMPOUND	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Naphthalene	ND	50
Acenaphthylene	ND	50
Acenaphthene	ND	50
Fluorene	ND	50
Phenanthrene	ND	50
Anthracene	ND	50
Fluoranthene	ND	50
Pyrene	ND	50
Benzo(a)anthracene	ND	50
Chrysene	ND	50
Benzo(b)fluoranthene	ND	50
Benzo(k)fluoranthene	ND	50
Benzo(a)pyrene	ND	50
Indeno(1,2,3-cd)pyrene	ND	50
Dibenzo(a,h)anthracene	ND	50
Benzo(g,h,i)perylene	ND	50

ND = Not detected at or above reporting limit.

QA/QC SURROGATE RECOVERY

Nitrobenzene-d5	70 %
2-Fluorobiphenyl	84 %
terphenyl-d14	61 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103254-7
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.006
SAMPLE ID: 7 @ 8'

DATE RECEIVED: 03/15/91
DATE ANALYZED: 03/21/91
DATE REPORTED: 03/28/91

Polynuclear Aromatic Hydrocarbons in Soils & Wastes by EPA 8270
Extraction Method: EPA 3550

COMPOUND	RESULT ug/Kg	REPORTING LIMIT ug/Kg
Naphthalene	ND	50
Acenaphthylene	ND	50
Acenaphthene	ND	50
Fluorene	ND	50
Phenanthrene	ND	50
Anthracene	ND	50
Fluoranthene	ND	50
Pyrene	ND	50
Benzo(a)anthracene	ND	50
Chrysene	ND	50
Benzo(b)fluoranthene	ND	50
Benzo(k)fluoranthene	ND	50
Benzo(a)pyrene	ND	50
Indeno(1,2,3-cd)pyrene	ND	50
Dibenzo(a,h)anthracene	ND	50
Benzo(g,h,i)perylene	ND	50

ND = Not detected at or above reporting limit.

QA/QC SURROGATE RECOVERY

Nitrobenzene-d5	81 %
2-Fluorobiphenyl	100 %
terphenyl-d14	68 %

Subsurface Consultants

CHAIN OF CUSTODY RECORD
& ANALYTICAL TEST REQUEST

Project Name: 1056 48TH STREET

SCI Job Number: 537.006

Project Contact at SCI: BILL WIKANDER

Sampled By: JOHN WOLFE

Analytical Laboratory: CURTIS & TOMPKINS

Analytical Turnaround: STANDARD

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
502'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	8015 MOD.
					PNA's	8100
					VOLATILE HALOCARBONS	8010
					TOTAL AND SOLUBLE LEAD	CAM WET
507'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	8015 MOD.
					PNA's	8100
					TOTAL AND SOLUBLE LEAD	CAM WET
603'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	8015 MOD.
					PNA's	8100
					TOTAL AND SOLUBLE LEAD	CAM WET
					CYANIDE	335.2 MOD.

* * * * * *

Released by: [signature] Received by: [signature] 03/15/91 Date: 03/15/91

Released by: _____ Received by: [signature] Date: _____

Received by Laboratory: _____ Date: _____

Released by Laboratory: _____ Date: _____

Released by: _____ Date: _____

[1] Sample Type: W = Water, S = Soil, O = Other (specify)
[2] Container Type: V = VOA, P = Plastic, G = Glass, T = Brass Tube, O = Other (specify)

NOTES TO LABORATORY:
- Notify SCI if there are any anomalous peaks on GC or other scans
- Questions/clarifications - Contact SCI at (415) 268-0461

Subsurface Consultants

CHAIN OF CUSTODY RECORD
& ANALYTICAL TEST REQUEST

Project Name: 1056 48th STREET

SCI Job Number: 537.006

Project Contact at SCI: BILL WICANDER

Sampled By: JOHN WOLFE

Analytical Laboratory: CURTIS & TOMPKINS

Analytical Turnaround: STANDARD

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
606'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	8015 MOD.
					PNA's	8100
					VOLATILE HYDROCARBONS	8010
					TOTAL AND SOLUBLE LEAD	CAM WET
					CYANIDE	335.2 MOD.
6010'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	8015 MOD.
					PNA's	8100
					TOTAL AND SOLUBLE LEAD	CAM WET
					CYANIDE	335.2 MOD.

* * * * * *

Released by: [signature] Received by: Mike Mayo Date: 03/1?/91

Released by: _____ Received by: _____ Date: _____

Received by Laboratory: _____ Date: _____

Released by Laboratory: _____ Date: _____

Released by: _____ Date: _____

[1] Sample Type: W = Water, S = Soil, O = Other (specify)
[2] Container Type: V = VOA, P = Plastic, G = Glass, T = Brass Tube, O = Other (specify)

NOTES TO LABORATORY:
- Notify SCI if there are any anomalous peaks on GC or other scans
- Questions/clarifications - Contact SCI at (415) 268-0461

Subsurface Consultants

CHAIN OF CUSTODY RECORD
& ANALYTICAL TEST REQUEST

Project Name: 1056 48TH STREET

SCI Job Number: 537.006

Project Contact at SCI: BILL WILKANDER

Sampled By: JOHN WOLFE

Analytical Laboratory: CURTIS & TOMPKINS

Analytical Turnaround: STANDARD

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
704'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	8015MOD.
					PNA's	8100
					TOTAL MHO SOLUBLE LEAD	CAM WET
					CYANIDE	335.2 MOD.
708'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	8015MOD.
					PNA's	8100
					VOLATILE HALOCARBONS	8010
					TOTAL MHO SOLUBLE LEAD	CAM WET
					CYANIDE	335.2 MOD.

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Released by: [signature] Received by: [signature] Date: 03/15/91

Released by: _____ Received by: _____ Date: _____

Received by Laboratory: _____ Date: _____

Released by Laboratory: _____ Date: _____

Released by: _____ Date: _____

[1] Sample Type: W = Water, S = Soil, O = Other (specify)
[2] Container Type: V = VOA, P = Plastic, G = Glass, T = Brass Tube, O = Other (specify)

NOTES TO LABORATORY:
- Notify SCI if there are any anomalous peaks on GC or other scans
- Questions/clarifications - Contact SCI at (415) 268-0461

Subsurface Consultants

CHAIN OF CUSTODY RECORD
& ANALYTICAL TEST REQUEST

Project Name: 1056 48TH STREET

SCI Job Number: 537.006

Project Contact at SCI: BILL WILKINDER

Sampled By: JOHN WOLPE

Analytical Laboratory: CURTIS & TOMPKINS

Analytical Turnaround: STANDARD

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
B05'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	BO15 MOD.
					CYANIDE	335.2 MOD.
B09'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	BO15 MOD.
					CYANIDE	335.2 MOD.
B16'	SOIL	BRASS TUBE	3/14/91		TEH w/GAS	BO15 MOD.
					CYANIDE	335.2 MOD.
		1L GLASS JAR			TEH, DISSOLVED	BO15 MOD.
6 (WATER)	WATER	1L GLASS JAR	3/14/91		LEAD*	
		VOA			VOLATILE HYDROCARBONS	BO10
		* NEEDS TO BE PRE-FILTERED				

Released by: [signature] Received by: [signature] Date: 03/15/91

Released by: _____ Received by: _____ Date: _____

Received by Laboratory: _____ Date: _____

Released by Laboratory: _____ Date: _____

Released by: _____ Date: _____

[1] Sample Type: W = Water, S = Soil, O = Other (specify)
[2] Container Type: V = VOA, P = Plastic, G = Glass, T = Brass Tube, O = Other (specify)

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