PRELIMINARY ENVIRONMENTAL ASSESSMENT
12th STREET AND
MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA
SCI 272.021

Prepared for:

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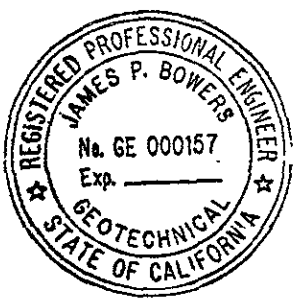

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June 19, 1991

I INTRODUCTION

This report presents the results of a preliminary environmental assessment conducted by Subsurface Consultants, Inc. (SCI) for the east half of the block bounded by 11th, 12th and Castro Streets, and Martin Luther King, Jr. Way in Oakland, California. The location of the site is indicated on the Site Plan, Plate 1.

As outlined in our Proposal dated January 28, 1991, our assessment was conducted to evaluate the likelihood of on-site and off-premises sources of hazardous materials affecting the soil and groundwater at the site. In general, our services consisted of:

1. Reviewing available geologic maps and reports for the area;
2. Reviewing pertinent city, county and state files, as necessary;
3. Reviewing historical aerial photographs and maps;
4. Reviewing documented off premises problems which appear to have the potential to impact the site;
5. Conducting a site reconnaissance to visually check for indications of on-site contamination and the presence of hazardous and/or toxic materials, and
6. Drilling 5 test borings to obtain soil and groundwater samples;
7. Obtaining 2 surface samples to check for indications of surface soil contamination;
8. Analysis of soil and groundwater samples for presence of metals, hydrocarbons, volatile organics, semi volatile organics and cyanide, as deemed appropriate;
9. Developing conclusions and preparing this report.

II SITE USAGE HISTORY

A. General

We were able to research the past use of the site and neighboring parcels by reviewing and/or contacting the following sources:

1. Sanborn Fire Insurance maps,
2. City of Oakland Department of Public Works,
3. City of Oakland historic telephone directories,
4. Personal Interviews, and
5. Historic aerial photographs.

B. Site History

Based upon our research, we have determined that the block was occupied by residential developments from at least the late 1800's through 1931. The property was occupied by several homes and boarding facilities.

In 1940, a gasoline service station was constructed at 1125 Grove Street (now named Martin Luther King, Jr. Way). The service station had at least 5 underground fuel tanks (500 gallon capacity), two dispenser islands and an automobile lift hoist. The service station was demolished in 1971; the tanks were removed at that time. The location of the previous tanks and other facilities is shown on Plate 1.

In 1947, a single story warehouse was constructed at the north west corner of 11th and Grove Streets. It occupied approximately one half the property. At this time, we are unaware of the

building use between 1947 and 1959. However, a building permit application was filed in 1953 by the "owner", Sun Electric Company, to construct partition walls to separate shop, warehouse and office areas. In this regard, we suspect that it may have been utilized by an electrical contractor or manufacturing business. Alpha Photo Products occupied the building from 1959 until 1974. Alpha Photo Products at the time was a wholesale and retail distributor of photochemicals and supplies. Based upon conversations with an employee, no bulk tank storage of photochemicals has occurred at the site. A lavatory was infrequently used as a darkroom and photochemicals were likely occasionally discharged to the sewer. No known fuel storage tanks were present within the warehouse. Following Alpha Photo Products, the City of Oakland Office of Community Development converted the use to offices and occupied the building starting in 1976. The building was demolished in 1985. From 1971 through 1983, the adjacent properties at 663-12th Street and the former service station site were used for employee and customer automobile parking for the warehouse.

A lot at 1119 Grove Street remained a residential dwelling from the time of its construction until 1983.

A 1985 aerial photograph shows the property vacant, except for a residential structure which was relocated and stored on-site as part of the City of Oakland Preservation Park development.

C. Surrounding Neighborhood

Properties surrounding the site have been developed with a variety of residential, commercial and public improvements through

the years. From an environmental standpoint, previous developments which included fuel oil tanks may be significant. We do not have data to indicate if and where fuel oil tanks may have been present in the neighborhood.

An automobile service station existed at the northeast corner of Grove Street and 12th Street. This service station was present from at least 1950 until 1979.

III LOCAL ENVIRONMENTAL CONCERNS

Our research indicates that areas surrounding the site have been occupied by residential, commercial and public developments. Businesses in this area such as shops, auto repair facilities, and manufacturing facilities have operated in the neighborhood and likely used materials which are currently considered hazardous and whose use is regulated by the State of California.

Based on our review of environmental cases compiled by San Francisco Regional Water Quality Control Board, the California Department of Health Services, and the Federal Environmental Protection Agency, there appears to be no documented environmental cases on the site. However, we have identified a number of environmental cases within 2000 feet of the property. The location of these sites are indicated on the Environmental Case Plan, Plate 2. References used to identify the above sites are listed in the Appendix.

IV FIELD INVESTIGATION

A. Environmental Sampling

A sampling program was developed to preliminarily assess soil and groundwater quality at the site. The program consisted of collecting surface soil samples at 2 locations, and drilling and sampling 5 test borings. The surface soils, borings, and probes were situated at the locations indicated on the Site Plan. The borings were drilled using a drill rig, equipped with 8-inch-diameter hollow stem augers.

The borings extended to depths of about 15 to 33 feet. Our field engineer observed drilling operations, prepared logs of the test borings, and obtained undisturbed samples of the soils encountered. The logs of the test borings and probes are presented on Plates 3 through 7. Soils are classified in accordance with the Unified Soil Classification System described on Plate 8.

Environmental soil samples were retained in 2.0-inch-diameter brass sample liners. Teflon sheeting was placed on the ends of the soil liners; the liners were subsequently capped and sealed with tape.

Water samples were obtained from within the hollow stem of the augers in the test borings, using a Teflon sampling device. The water samples were placed in glass and plastic containers, as appropriate, which were precleaned by the supplier according to EPA protocol. Soil and water samples were refrigerated on-site and remained so until delivery to the analytical laboratory. The test

borings were backfilled with concrete upon completion of drilling. Soil cuttings generated during drilling were left on-site near each test boring.

Drilling and sampling equipment was thoroughly steam cleaned prior to each use, to reduce the likelihood of cross-contamination between samples or borings.

V SITE CONDITIONS

A. Site Geology

The site is situated within the Northern California Coast Ranges Geomorphic Province. Locally, the site is mapped[1] as being underlain by the Merritt Sand formation. This quaternary age deposit consists primarily of fine-grained silty and clayey sand deposited by wind and water as beach and near shore deposits. The Merritt Sand overlies the Alameda Formation, also deposited in Quaternary time. The Alameda Formation consists of continental and marine sediments deposited in the valley of the San Francisco Bay.

B. Site Conditions

The site encompasses a rectangular lot with plan dimensions of about 150 by 200 feet. The property is covered with construction debris, equipment, and a job trailer. Also present is a boarded up two-story wooden Victorian house (Herrick House) that has been moved to the property and is stored on steel beams and blocking.

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[1] Radbruch, "Areal and Engineering Geology of the Oakland West Quadrangle, California," 1957, U. S. Geologic Survey Map I-239

A second Victorian house (Merriam House) was previously moved to the property but was burned down while stored on-site. No permanent structures currently occupy the site. However, concrete basement slabs, foundations and basement walls previously planned for the Herrick and Merriam Houses occupy the northern portion of the lot.

Fill consisting of silty sand was visible at the ground surface over the southern portion of the site. The fill appears to be derived from the basement excavations performed to construct the foundations which exist on the north side of the property. Surface vegetation consists of grass and weeds.

B. Soil and Groundwater Conditions

The test borings indicate that the site is blanketed by a layer of fill about 5 feet thick. The fill consists of loose sands and silty sands. The fill is not present in Borings 3 and 4, which were drilled inside the existing basements. The fill is underlain by dense sands, and silty and clayey sands of the Merritt sand formation. These soils extended to the depths explored, 32 feet.

Groundwater levels were measured at depths of about 24 to 29 feet below the ground surface immediately following drilling. These levels may not represent fully stabilized groundwater levels. Review of available data indicates that groundwater flow in the area is toward the northwest.

IV ANALYTICAL TESTING

Soil and groundwater testing was performed by Curtis & Tompkins, Ltd., A State of California Department of Health Services (DHS) certified laboratory for the test performed. The analytical tests performed included:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA methods 5030/8015 modified;
2. Total extractable hydrocarbons (TEH), sample preparation and analysis using EPA methods 3550/8015 modified;
3. Oil and grease (O&G) using SMMW method 5520 E & F;
4. Purgeable halocarbons, sample preparation and analysis using EPA methods 5030/8010;
5. Volatile aromatic hydrocarbons sample preparation and analysis using EPA methods 5030/8020;
6. Title 26 heavy metals;
7. Semi volatile organic compounds by EPA method 8270;
8. Total cyanide compounds using EPA method 335.2.

Selected samples of soil and water were composited by the laboratory to create composite samples for analysis. The results of the analytical tests on composited and discrete soil samples are summarized in Tables 1, 2 and 3. Analytical test results on a composite groundwater sample are summarized in Table 4. Analytical test reports are presented in the Appendix. The results from the composited samples do not represent actual chemical concentrations of specific locations, but instead are a qualitative indication of the presence of various contaminants within one or more of the discrete samples which make up the composite.

Table 1. Petroleum Hydrocarbon Concentrations in Soil

Sample	Total Volatile Hydrocarbons, as Gasoline (ppm)[1]	Total Extractable Hydrocarbons (ppm)	Oil & Grease (ppm)
1 @ 1.5'	--[2]	--	ND[3]
2 @ 7'	ND	ND	ND
3 @ 3'	2300	--	--
3 @ 6.5'	51	--	--
3 @ 15.5'	4000	--	--
3 @ 20.5'	980	ND	ND
4 @ 24'	ND	--	--
S1 @ 1'	ND	7.6[4]	ND

[1] ppm = parts per million = mg/kg
[2] -- = Test not requested
[3] ND = None detected, chemicals not present at concentrations above detection limits
[4] Includes diesel at 3.3 ppm and motor oil at 4.3 ppm

Table 2. Contaminants Concentrations in Soil

Sample	Total Lead (ppm)[1]	Cyanide	1,2 Dichloroethane (ppb)[2]	Other EPA 8010 Chemicals	EPA 8270 Chemicals
1 @ 1.5'	31.9	--[3]	--	--	--
3 @ 20.5'	--	--	330	ND[4]	--
5 @ 1'	63.0	ND	--	--	--
S2 @ 6"-12"	118	ND	--	--	--
Composite A[5]	--	ND	--	--	--
Composite B[6]	--	--	--	--	ND

[1] ppm = parts per million = mg/kg
[2] ppb = parts per billion = ug/kg
[3] -- = Test not requested
[4] ND = None detected, chemicals not present at concentrations above detection limits
[5] Composite A includes samples 2 @ 3', S1 @ 1' and S2 @ 6"-12"
[6] Composite B includes samples 2 @ 3', 5 @ 1' and S2 @ 6"-12"

Table 3. Heavy Metal Concentrations[1] in Soil

Total Metal	Composite A [2]	TTLC[3]
Antimony (Sb)	ND[4]	500
Arsenic (As)	ND	500
Barium (Ba)	64.5	10,000[5]
Beryllium (Be)	ND	75
Cadmium (Cd)	1.2	100
Chromium (Cr)[6]	25.7	2,500
Cobalt (Co)	4.7	8,000
Copper (Cu)	14.6	2,500
Lead (Pb)	66.1	1,000
Mercury (Hg)	0.2	20
Molybdenum (Mo)	ND	3,500
Nickel	14.6	2,000
Selenium (Se)	ND	100
Silver (Ag)	ND	500
Thallium (Tl)	ND	700
Vanadium (V)	20.8	2,400
Zinc (Zn)	53.9	5,000

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1 Concentrations in parts per million (ppm) = mg/kg
2 Composite A includes samples 2 @ 3', S1 @ 3', and S2 @ 6"-12"
3 Total threshold limit concentration (CAC 66699)
4 ND = None detected, chemicals not present at concentrations above detection limits
5 Excluding barite and barium sulfate
6 Total chromium compounds

Table 4. Concentration of Volatile Organic Compounds in Water

Sample	EPA 8010[1] Chemicals	EPA 8020[1] Chemicals
Water Composite Borings 1 and 2	ND[2]	ND

1 For a complete list of EPA 8010 and 8020 chemicals, see attached analytical test reports.

2 ND = None detected, chemicals not present at concentrations above detection limits

VII DISCUSSION AND CONCLUSIONS

Based upon the results of our preliminary investigation, we conclude that conditions of environmental concern exist on-site. These concerns are primarily associated with (1) hydrocarbon (gasoline) contamination in areas occupied by the previous gasoline service station, (2) low concentrations of lead in surface soils, and (3) motor oil and diesel fuel contamination in shallow fills blanketing portions of the site. Each of these concerns is discussed in more detail below.

A. Gasoline Contamination

The studies completed to date indicate that hydrocarbon contamination exists near previous fuel tanks that existed on the site. The location of the tanks are shown on the attached Plate 1. It is our opinion that the previous fuel tanks are the most likely source of contamination. Test Boring 3 was drilled near the tanks and encountered gasoline concentrations in soil ranging from 51 to

4000 milligrams per kilogram (mg/kg). The hydrocarbon contamination extended to depths of approximately 24 feet below the level at which drilling occurred, which corresponds approximately to the depth of groundwater in the area.

The local regulatory agencies require that soils containing elevated hydrocarbon concentrations be remediated. The gasoline concentrations encountered are sufficiently high that we judge that remediation is appropriate and will likely be required by the regulatory agencies.

The gasoline contamination appears to have extended to groundwater. Consequently, we conclude that groundwater quality has been at least locally impacted.

A volatile organic chemical, 1,2-Dichloroethane (1,2-DCA) was detected in soil near groundwater in Test Boring 3. This organic chemical is a common solvent as well as a minor constituent of many gasolines. The source of the 1,2-DCA is somewhat uncertain at this time. However, based on our previous experience, we judge that is likely associated with either (1) leakage from a waste oil tank on the service station property, or (2) associated with the previous gasoline release.

B. Lead Contamination

Lead and several other heavy metals were detected in surface soils on the property. The concentrations of the metals are considered low and likely do not represent a significant environmental concern. Remediation of the materials for use onsite because of health or groundwater contamination concerns is unnecessary. However, the presence of low concentrations of lead may have possible impacts with respect to disposal of the materials in local landfills. The landfills have maximum allowable limits on lead concentrations. All of the heavy metal concentrations are well below the total threshold limit concentration (TTLC), defined by the EPA to classify materials as being hazardous. Because the proposed development for the property involves the construction of a below ground basement, it will be necessary to excavate much of the surface soil on the property and dispose of it off-site. If this is the case, it may be necessary to characterize the surface soils with regard to lead concentrations prior to disposal at a landfill. Soil characterization requirements vary from landfill to landfill, and for this reason will have to be addressed once an appropriate landfill is identified. Characterization will likely involve sampling the soils and evaluating total and soluble lead concentrations within the materials.

C. Diesel and Motor Oil Contamination

Diesel and motor oil were detected in shallow surface soils at sampling location S1. The concentrations of these hydrocarbons were very low, less than 10 mg/kg. We judge that the source of

this contamination is associated with the former gasoline service station. The basement excavation previously made on the service station site probably encountered contaminated soils which were removed and spread on the groundsurface in other portions of the property. The diesel and oil concentrations detected at sample location S1 are low and by themselves are not indicative of a significant health or environmental concern. However, we judge that higher hydrocarbon concentrations may exist in the shallow soils in other portions of the property where service station site soils have been spread. As with the case of lead, even low levels of diesel and oil may have an impact on off-site soil disposal options during construction. Prior to disposal, it may be necessary to analytically characterize the soils in accordance with landfill requirements.

D. Impacts From Off-Site Sources

As previously discussed, numerous businesses upgradient of the project area likely use/used materials considered to be hazardous. If present, contamination sources on these properties could impact groundwater. Contaminated groundwater could migrate onto the project site. However, based on our study, we conclude that at this time there are no indications that groundwater has been significantly impacted time by such off-site sources.

E. Recommendations

It is apparent that fuel releases have occurred on the service station site. The hydrocarbon concentrations are sufficiently high that remediation will likely be required by the regulatory

agencies. Prior to remediation, we recommend that additional field and analytical studies be conducted to characterize the lateral and vertical extent of soil contamination. The regulatory agencies will also likely require the evaluation of impacts to groundwater quality as a result of the fuel releases. The additional studies will likely include test borings, groundwater monitoring wells and the appropriate chemical analyses.

The depth and lateral extent of the surface soils containing lead should be defined to permit accurate estimates of the quantity of materials requiring special disposal consideration. This additional study will likely involve shallow (less than 5 feet deep) test borings or pits and the appropriate analytical testing.

As discussed previously, soils containing high concentrations of diesel, motor oil, and possibly other hydrocarbons may have been removed from the service station area and spread on other portions of the site. For this reason, we believe that it would be prudent to conduct limited additional studies to confirm the extent and characteristics of the surface soils containing hydrocarbons. This would also allow more refined estimates of the quantity of material requiring special disposal consideration.

F. Regulatory Involvement

The Alameda County Health Care services Agency (ACHCSA) and the Regional Water Quality Control Board (RWQCB) regulate groundwater contamination resulting from gasoline leaks/spills. In this regard, we recommend that the appropriate fuel release report be filed with the Alameda County Health Care Services Agency.

VII LIMITATIONS

This assessment was intended to provide a preliminary means of evaluating the risk of the property containing significant soil and/or groundwater contamination. The conclusions drawn from this assessment are an expression of our professional opinion, and do not constitute a warranty or guaranty, either expressed or implied. It should be understood that additional investigative work on the property may modify the conclusions presented herein, as additional information becomes available.

List of Attached Plates:

Plate 1	Site Plan
Plate 2	Environmental Cases Plan
Plates 3 through 7	Logs of Borings 1 through 5
Plate 8	Unified Soil Classification System

Appendix:

Air Photo List

Regulatory Agency Document List

Analytical Laboratory Test Reports

Chain-of-Custody Documents

Distribution:

6 copies: Ms. Henri Turney
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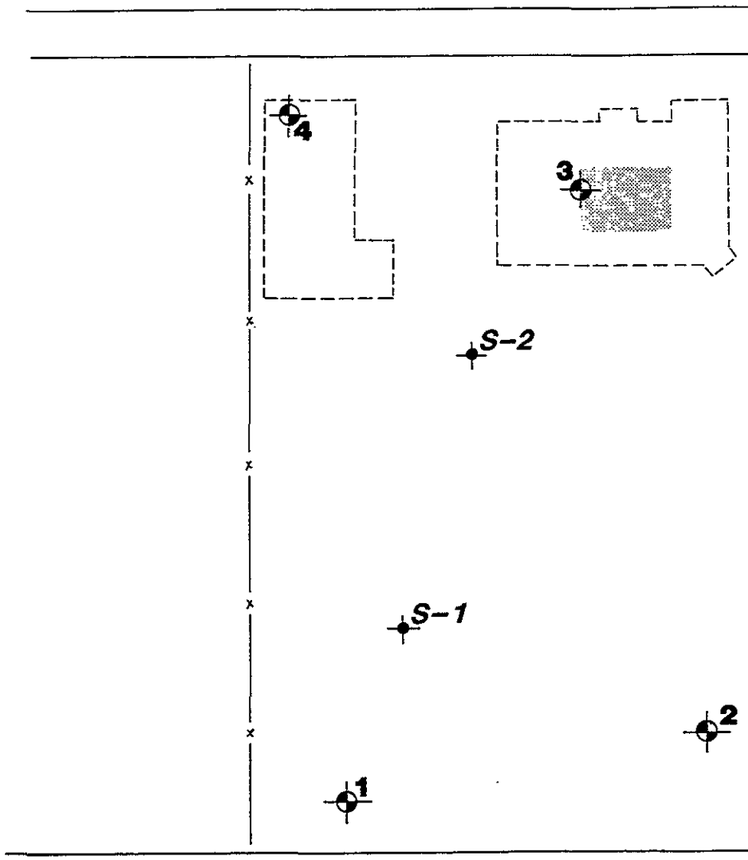
Oakland, California 94612

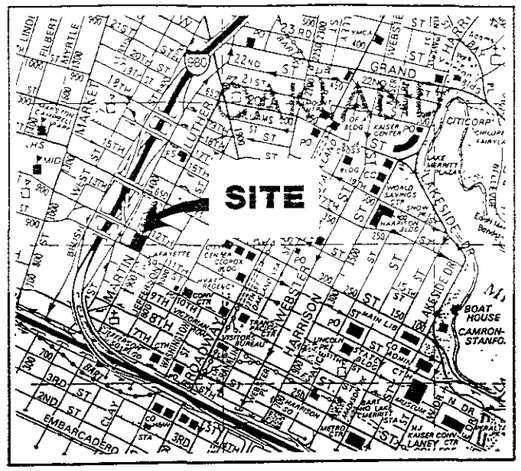
JVB:RWR:JPB:ddh

12TH STREET

MARTIN LUTHER KING JR. WAY

11TH STREET





VICINITY MAP

- TEST BORING
- SURFACE SOIL SAMPLE
- —x— FENCE
- – – – EXISTING BASEMENTS
- APPROXIMATE LOCATION OF FORMER TANKS

TRUE NORTH

REFERENCE NORTH

APPROXIMATE SCALE (feet)

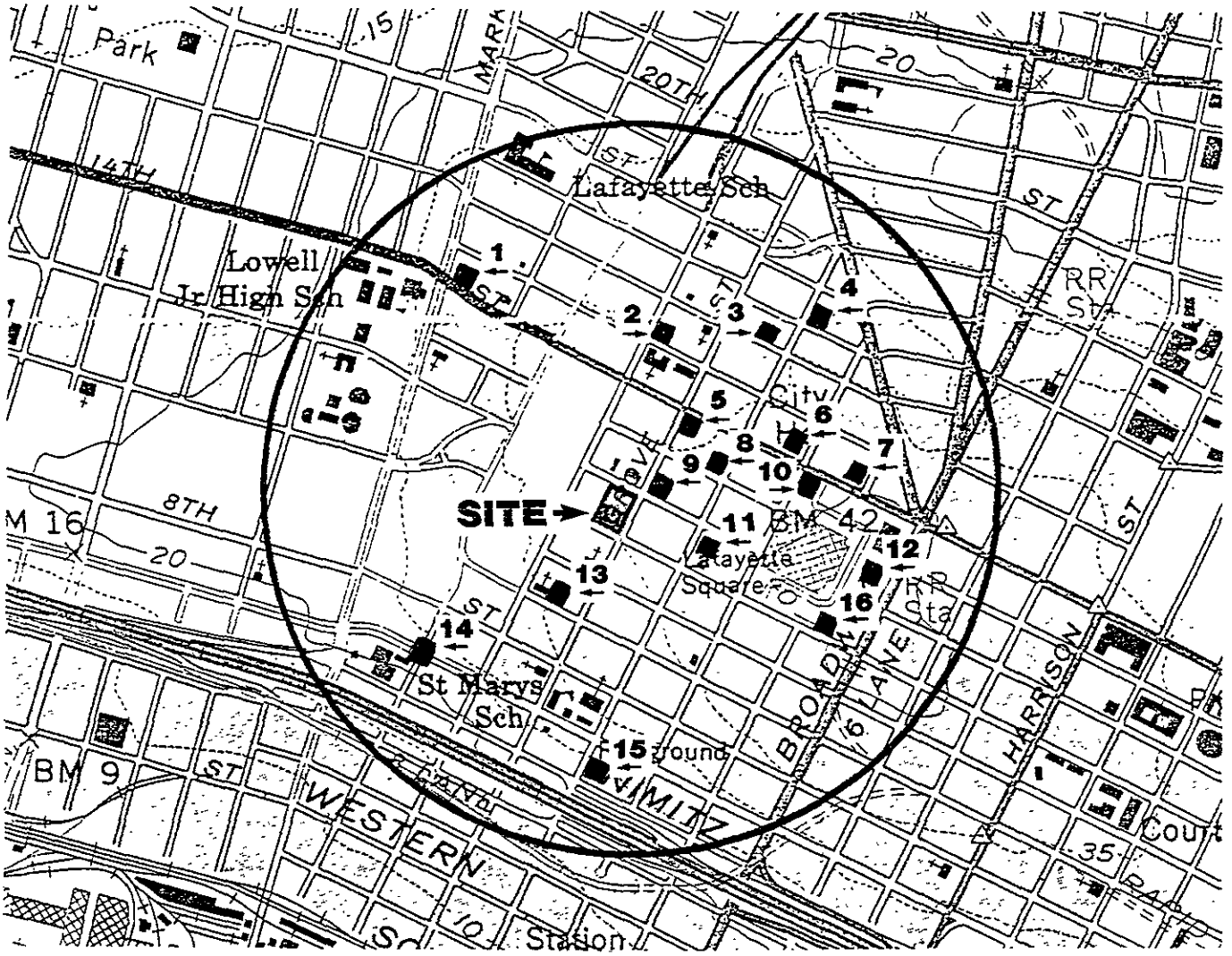
0 40 80

SITE PLAN

Subsurface Consultants

12TH ST. & MARTIN LUTHER KING JR. WAY

JOB NUMBER	DATE	APPROVED	PLATE
272.021	4/5/91		1



1	OAKLAND GRAPHICS	864 14th Street
2	OAKLAND COMMUNITY DEVELOPMENT	690 15th Street
3	CHAMPION COMPANY	610 16th Street
4	BLUE PRINT SERVICE COMPANY	1700 Jefferson Street
5	BRAMALEA PACIFIC	Martin Luther King Jr. Way & 14th Street
6	CITY OF OAKLAND	1417 Clay Street
7	OAKLAND CITY HALL	1 City Hall Plaza
8	BRAMALEA PACIFIC	13th & Jefferson Streets
9	OAKLAND REDEVELOPMENT AGENCY	1330 Martin Luther King Jr. Way
10	5 CITY CENTER	1300 Clay Street
11	BLUE PRINT SERVICE COMPANY	1160 Jefferson Street
12	BALTE RESOURCES INT.	1221 Broadway
13	GTE TELEPHONE COMPANY	670 9th Street
14	GREYHOUND	7th & Brush Streets
15	PARKING STRUCTURE	7th & Jefferson Streets
16		11th Street & Broadway

ENVIRONMENTAL CASES PLAN

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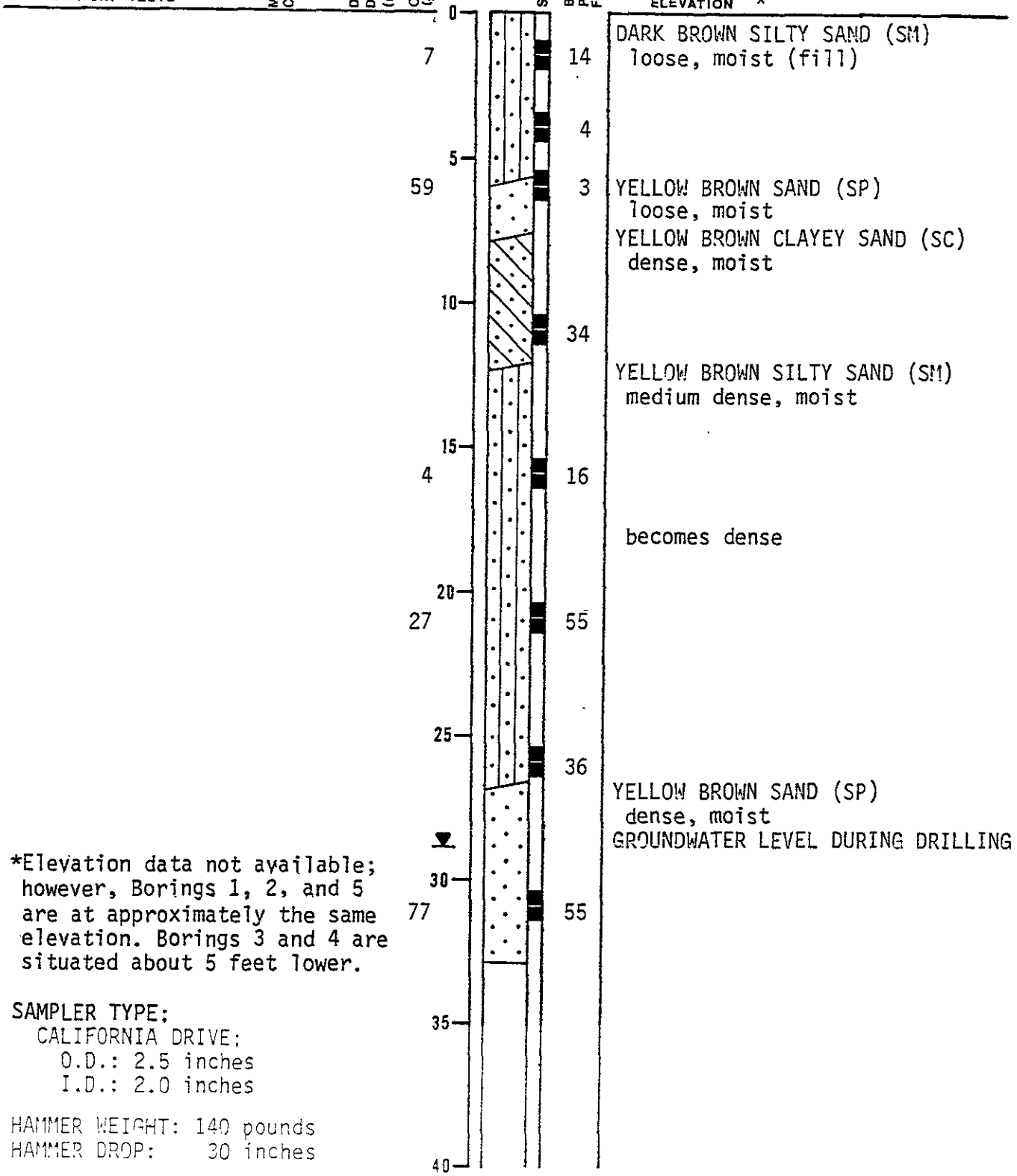
PLATE 2

LOG OF TEST BORING 1

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 4/1/91
ELEVATION *



*Elevation data not available; however, Borings 1, 2, and 5 are at approximately the same elevation. Borings 3 and 4 are situated about 5 feet lower.

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

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

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PLATE 3

LOG OF TEST BORING 2

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 4/1/91
ELEVATION *

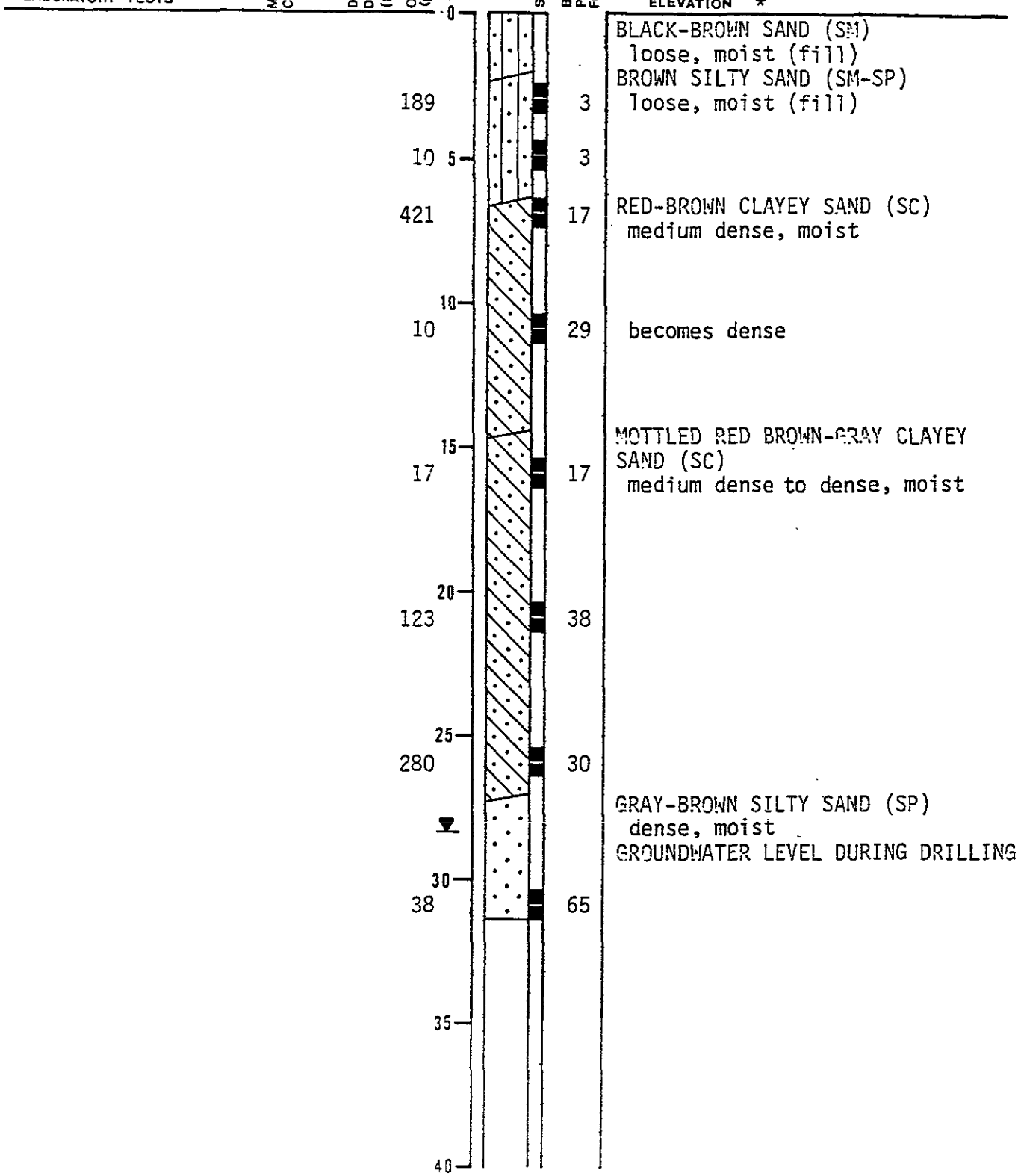

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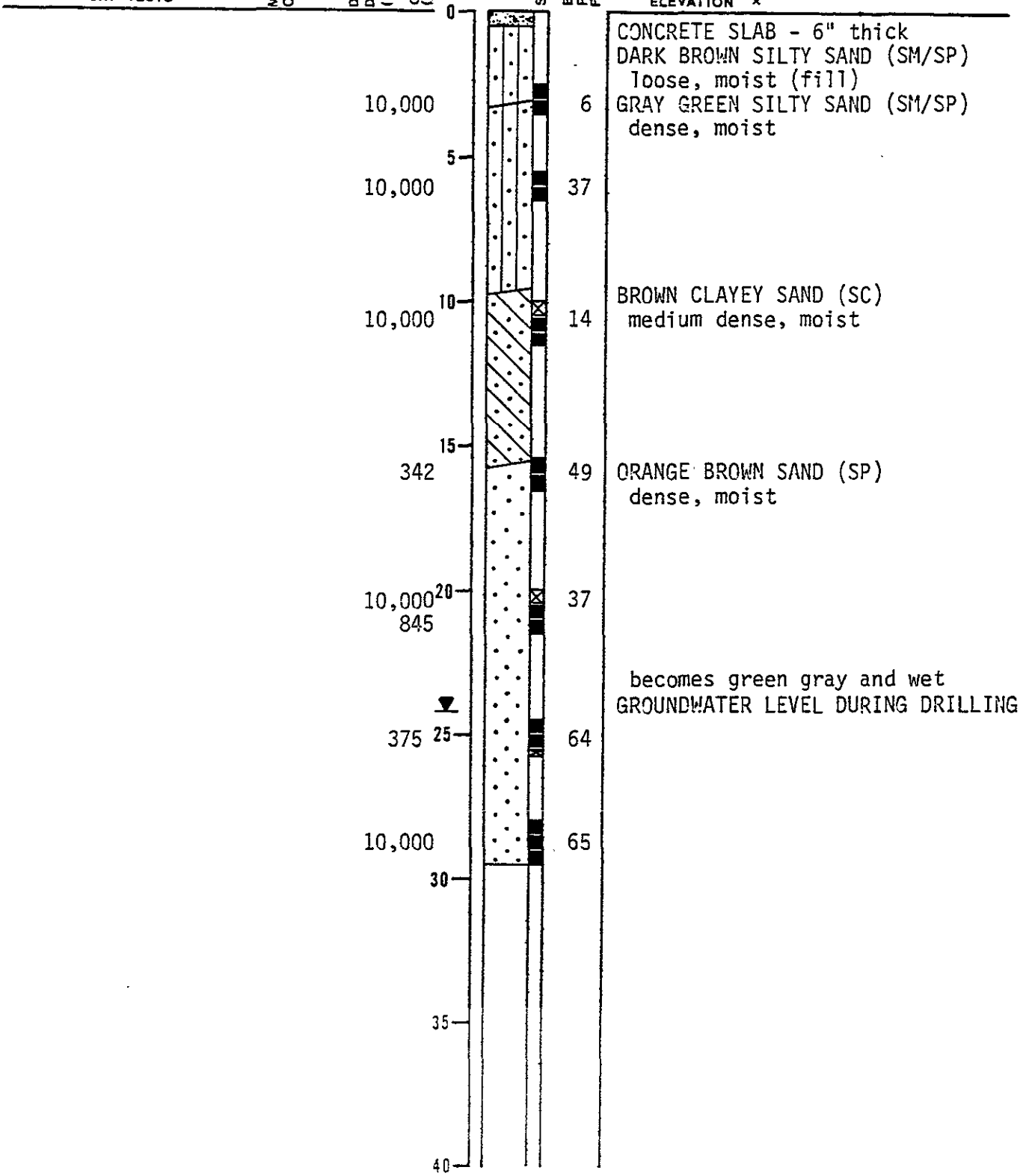
PLATE 4

LOG OF TEST BORING 3

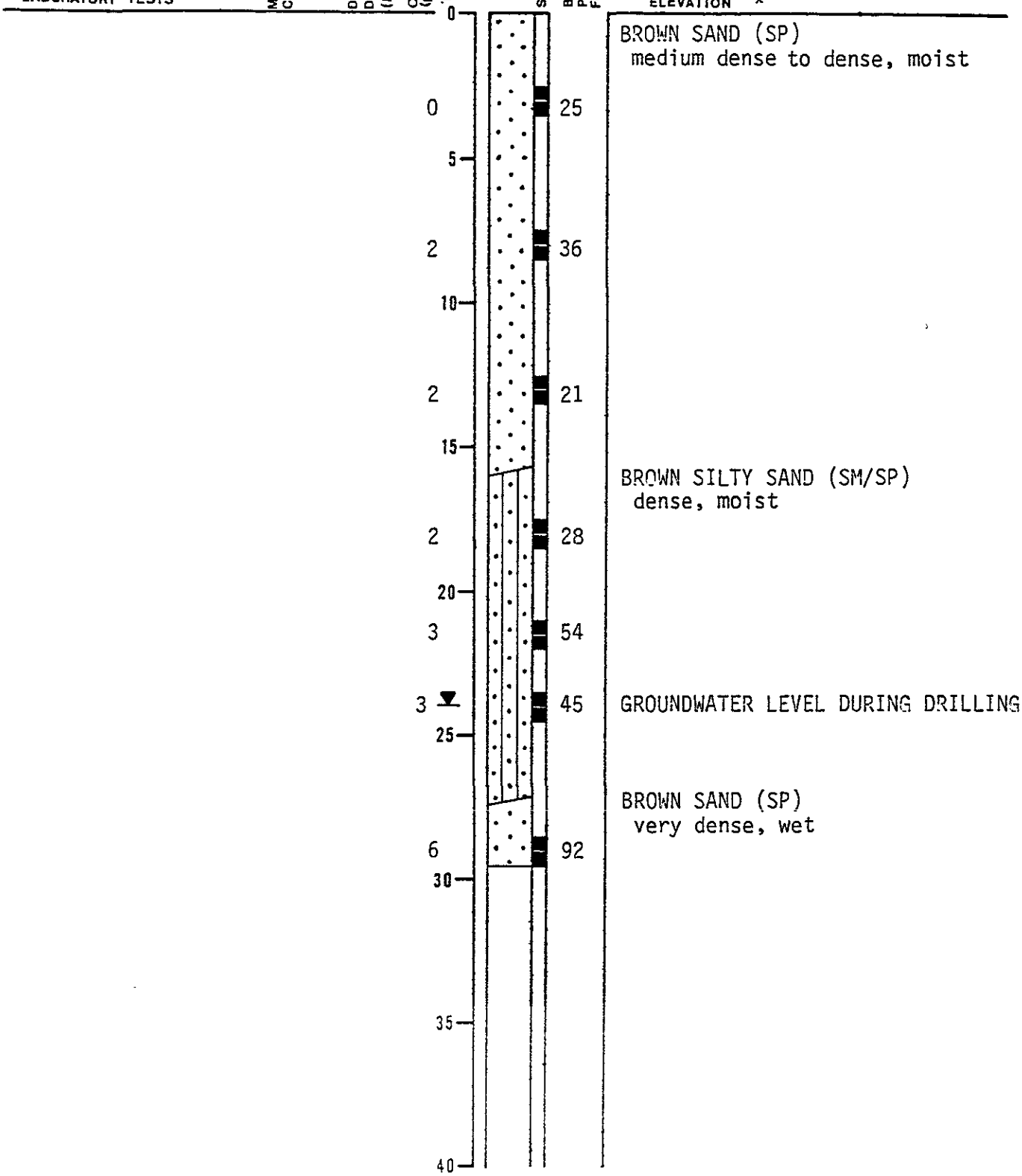
EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 4/2/91
ELEVATION *



Subsurface Consultants	12TH STR. & MARTIN LUTHER KING JR. WAY			PLATE
	JOB NUMBER	DATE	APPROVED	5
	272.021	4/5/91	JVB	

LOG OF TEST BORING 4

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 4/2/91
ELEVATION *



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	JOB NUMBER 272.021	DATE 4/5/91	APPROVED JVB	

LOG OF TEST BORING 5

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 4/2/91
ELEVATION

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			BROWN SAND (SP) loose, moist (fill)
			6			2	
				5			BROWN SILTY SAND (SM/SP) medium dense to dense, moist
			3			23	
				10			MOTTLED GRAY & BROWN CLAYEY SAND (SC) medium dense to dense, moist
			5			22	
				15			GRAY SAND (SP) medium dense to dense, moist
			3			22	
							NO GROUNDWATER ENCOUNTERED DURING DRILLING
				20			
				25			
				30			
				35			
				40			

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PLATE 7

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

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12TH STR. & MARTIN LUTHER KING JR. WAY

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PLATE 8

AIR PHOTOS REVIEWED[1]

AV-3845-8-28/29	June 12, 1990
AV-2640-05-17/18	May 15, 1985
AV-2300-05-15/16	June 21, 1983
AV-2040-05-15/16	June 22, 1981
AV 1750-05-17	September 14, 1979
AV-1377-05-23/24	July 16, 1977
AV-1193-05-14	May 29, 1975
AV-1100-05-16	April 24, 1973
AV-995-03-12	May 19, 1971
AV-902-05-16	May 2, 1969
V-844-12-29	April 10, 1968
AV-710-08-27	April 20, 1966
AV-550-07	1963
AV-337-05-27	July 7, 1959
SF Area 2-21	March 1, 1958
AV 253-08-24/25	May 3, 1957
AV-119-09-33/34	August 14, 1953
AV 28-13-42	April 14, 1950
AV-11-06-3/4	March 24, 1947
ALA-C-19J	February 8, 1946
ALA-C-19B-1/2	April 11, 1941
ALA-C-19F-1	April 3, 1934

[1] Pacific Aerial Surveys Oakland, California

Regulatory Agency Lists Reviewed

List	Sites Identified Within 2000 Feet Radius
EPA National Priorities List (CERCLIS) Federal Register/Vol 55, No 50, 2/11/91	None
California 1989 Bond Expenditure Plan List. Compiled 1/10/90	None
Hazardous Waste and Substances - Sites List (Cortese's List) 9/88	Greyhound 7th and Brush Streets GTE Telephone Company 670 9th Street Bramalea Pacific 12th and Clay Streets City of Oakland Redevelopment Agency 1417 Clay Street Blue Print Service Company 1160 Jefferson Street
Regional Water Quality Control Board Fuel Leak List 11/5/90	Unknown 11th Street Bramalea Pacific 12th and Clay Streets Bramalea Pacific 13th and Jefferson Streets Oakland Community Development 690 15th Street Oakland City Hall 1 City Hall Plaza 5 City Center 1300 Clay Street City of Oakland 1417 Clay Street

Regulatory Agency Lists Reviewed (continued)

List	Sites Identified Within 2000 Feet Radius
	Blue Print Service Company 1700 Jefferson Street
	Oakland Redevelopment Agency 1330 Martin Luther King Jr. Way
	Parking Structure 7th and Jefferson Streets
	Greyhound 7th and Brush Streets
Regional Water Quality Control Board Toxics List 11/2/90	Greyhound 7th and Brush Streets
California Department of Health Services Abandoned Site List 10/16/89	Oakland Graphics* 864 14th Street
	Champion Company* 610 16th Street
	Batte Resources Int.* 1221 Broadway

*No further action recommended by DHS

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

DATE RECEIVED: 04/04/91
DATE REPORTED: 04/11/91

LAB NUMBER: 103440

CLIENT: SUBSURFACE CONSULTANTS

REPORT ON: 10 SOIL SAMPLES
2 SOIL COMPOSITE SAMPLES
1 WATER COMPOSITE SAMPLE

PROJECT ID: 272.021
LOCATION: 12TH STREET & MLK JR. WAY

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103440-12
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 272.021
LOCATION: 12TH STREET & MLK JR. WAY
SAMPLE ID: S1@1, S2@6"-12",2@3'

DATE RECEIVED: 04/04/91
DATE ANALYZED: 04/05,08/91
DATE REPORTED: 04/16/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5.0	EPA 6010
Arsenic	ND	2.5	EPA 6010
Barium	64.5	0.50	EPA 6010
Beryllium	ND	0.50	EPA 6010
Cadmium	1.2	0.50	EPA 6010
Chromium (total)	25.7	0.50	EPA 6010
Cobalt	4.7	0.50	EPA 6010
Copper	14.6	1.0	EPA 6010
Lead	66.1	2.5	EPA 6010
Mercury	0.2	0.1	EPA 7471
Molybdenum	ND	0.50	EPA 6010
Nickel	14.6	0.50	EPA 6010
Selenium	ND	2.5	EPA 6010
Silver	ND	1.0	EPA 6010
Thallium	ND	5.0	EPA 6010
Vanadium	20.8	1.0	EPA 6010
Zinc	53.9	0.50	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	<1	89	Mercury	3	111
Arsenic	9	89	Molybdenum	7	88
Barium	2	92	Nickel	<1	91
Beryllium	2	99	Selenium	6	85
Cadmium	5	91	Silver	3	80
Chromium	<1	91	Thallium	5	82
Cobalt	3	90	Vanadium	3	92
Copper	<1	92	Zinc	3	97
Lead	<1	92			

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 103440
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 272.021
LOCATION: 12th ST. & MLK Jr. WAY

DATE RECEIVED: 04/04/91
DATE ANALYZED: 04/10/91
DATE REPORTED: 04/11/91

ANALYSIS: CYANIDE
ANALYSIS METHOD: EPA 335.2 (MODIFIED)

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
103440-10	5 @ 1	ND	mg/Kg	0.3
103440-12	S1 @ 1, S2 @ 6"-12", 2 @ 3'	ND	mg/Kg	0.3

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	4
Recovery, %	95

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 103440
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 272.021
LOCATION: 12th ST. & MLK Jr. WAY

DATE RECEIVED: 04/04/91
DATE ANALYZED: 04/06/91
DATE REPORTED: 04/11/91

ANALYSIS: LEAD
ANALYSIS METHOD: EPA 7420

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
103440-2	S2 @ 6"-12"	118	mg/Kg	3.0
103440-3	1 @ 1.5	31.9	mg/Kg	3.0
103440-10	5 @ 1	63.0	mg/Kg	3.0

QA/QC SUMMARY

RPD, %	1
Recovery, %	101

Curtis & Tompkins, Ltd.

Client: Subsurface Consultants

Laboratory Login Number: 103440

Project Name: 12th Street & MLK Jr. Way
Project Number: 272.021

Report Date: 11 April 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **METHOD: SMWW 17:5520EF**

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
103440-001	S1@1	Soil	04-APR-91	04-APR-91	09-APR-91	ND	mg/Kg	50	AY	1191
103440-003	1@1.5	Soil	01-APR-91	04-APR-91	09-APR-91	ND	mg/Kg	50	AY	1191
103440-004	2@7	Soil	01-APR-91	04-APR-91	09-APR-91	ND	mg/Kg	50	AY	1191
103440-005	3@20.5	Soil	02-APR-91	04-APR-91	09-APR-91	ND	mg/Kg	50	AY	1191

ND = Not Detected at or above Reporting Limit (RL).

Curtis & Tompkins, Ltd.

Q C B a t c h R e p o r t

Client: Subsurface Consultants
Project Name: 12th Street & MLK Jr. Way
Project Number: 272.021

Laboratory Login Number: 103440
Report Date: 16 April 91

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **QC Batch Number: 1191**

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	50	mg/Kg	SMWW 17:5520EF	09-APR-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	82%	SMWW 17:5520EF	09-APR-91
BSD	84%	SMWW 17:5520EF	09-APR-91

		Control Limits
Average Spike Recovery	83%	80% - 120%
Relative Percent Difference	2.7%	< 20%

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 103440
CLIENT: SUBSURFACE CONSULTANTS
PROJECT #: 272.021
LOCATION: 12th ST. & MLK Jr. WAY

DATE RECEIVED: 04/04/91
DATE ANALYZED: 04/06/91
DATE REPORTED: 04/11/91

Total Volatile Hydrocarbons as Gasoline in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	TVH AS GASOLINE (mg/Kg)	REPORTING LIMIT (mg/Kg)
103440-1	S1 @ 1	ND	1.0
103440-4	2 @ 7	ND	1.0
103440-5	3 @ 20.5	980	16
103440-6	3 @ 6.5	51	16
103440-7	3 @ 15.5	4,000	80
103440-8	3 @ 3	2,300	80
103440-9	4 @ 24	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	115

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 103440
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 272.021
LOCATION: 12th. ST. & MLK Jr. WAY

DATE RECEIVED: 04/04/91
DATE EXTRACTED: 04/05/91
DATE ANALYZED: 04/10/91
DATE REPORTED: 04/11/91

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

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	MOTOR OIL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
103440-1	S1 @ 1	ND	3.3	4.3	1.0
103440-4	2 @ 7	ND	ND	ND	1.0
103440-5	3 @ 20.5	ND	ND	ND	1.0

ND = Not Detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	98

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 103440-5
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 272.021
SAMPLE ID: 3 @ 20.5

DATE RECEIVED: 04/04/91
DATE ANALYZED: 04/08/91
DATE REPORTED: 04/11/91

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

Compound	RESULT ug/Kg	REPORTING LIMIT ug/Kg
chloromethane	ND	200
bromomethane	ND	200
vinyl chloride	ND	200
chloroethane	ND	200
methylene chloride	ND	100
trichlorofluoromethane	ND	100
1,1-dichloroethene	ND	100
1,1-dichloroethane	ND	100
1,2-dichloroethene (total)	ND	100
chloroform	ND	100
freon 113	ND	100
1,2-dichloroethane	330	100
1,1,1-trichloroethane	ND	100
carbon tetrachloride	ND	100
bromodichloromethane	ND	100
1,2-dichloropropane	ND	100
cis-1,3-dichloropropene	ND	100
trichloroethylene	ND	100
1,1,2-trichloroethane	ND	100
trans-1,3-dichloropropene	ND	100
dibromochloromethane	ND	100
2-chloroethylvinyl ether	ND	200
bromoform	ND	100
tetrachloroethylene	ND	100
1,1,2,2-tetrachloroethane	ND	100
chlorobenzene	ND	100
1,3-dichlorobenzene	ND	100
1,2-dichlorobenzene	ND	100
1,4-dichlorobenzene	ND	100

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Duplicate: Relative % Difference	13
Spike: Average % Recovery	98

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 103440-16
CLIENT: SUBSURFACE CONSULTANTS
PROJECT #: 272.021
LOCATION: 12th ST. & MLK Jr. WAY
SAMPLE ID: COMPOSITE 1 & 2

DATE RECEIVED: 04/04/91
DATE ANALYZED: 04/09/91
DATE REPORTED: 04/11/91

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-chloroethylvinyl 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, %	5
RECOVERY, %	102

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103440-16
CLIENT: SUBSURFACE CONSULTANTS
PROJECT #: 272.021
LOCATION: 12th ST. & MLK Jr. WAY
SAMPLE ID: COMPOSITE 1 & 2

DATE RECEIVED: 04/04/91
DATE ANALYZED: 04/09/91
DATE REPORTED: 04/11/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	ND	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	105

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 103440-13
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID : 272.021
SAMPLE ID: S2 @ 6-12",2 @ 3',5 @ 1

DATE RECEIVED: 04/04/91
DATE EXTRACTED: 04/05/91
DATE ANALYZED: 04/09/91
DATE REPORTED: 04/11/91

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	1650
2,4-Dimethylphenol	ND	330
Benzoic Acid	ND	1650
2,4-Dichlorophenol	ND	1650
4-Chloro-3-methylphenol	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	1650
2,4-Dinitrophenol	ND	1650
4-Nitrophenol	ND	1650
4,6-Dinitro-2-methylphenol	ND	1650
Pentachlorophenol	ND	1650
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1650

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 103440-13 EPA 8270
SAMPLE ID: S2 @ 6-12",2 @ 3',5 @ 1

BASE/NEUTRAL COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	ND	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	91 %	Nitrobenzene-d5	75 %
Phenol-d6	112 %	2-Fluorobiphenyl	88 %
2,4,6-Tribromophenol	108 %	Terphenyl-d14	72 %

Subsurface Consultants

CHAIN OF CUSTODY RECORD & ANALYTICAL TEST REQUEST

Project Name: 12th Street & MLK Jr Way

SCI Job Number: 272.021

Project Contact at SCI: John Bosche

Sampled By: Charles Pearson

Analytical Laboratory: Curtis & Tompkins

Analytical Turnaround: Normal (1 week)

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
Composite (1&2	W	V	4/1/91		8010, 8020	
S1 @ 1	S	T	4/4/91		O&G, TVH, TEH	
S2 @ 6"-12"	S	T	4/1/91		Pb	
1 @ 1½	S	T	4/1/91		O&G, Pb	
2 @ 7	S	T	4/1/91		O&G, TVH, TEH	
3 @ 20.5	S	T	4/2/91		8010, TVH, O&G, TEH	
3 @ 6.5	S	T	4/2/91		TVH	
3 @ 15½	S	T	4/2/91		TVH	
3 @ 3	S	T	4/2/91		TVH	

* * * * * *

Released by: [signature] Date: 04/04/91

Released by Courier: _____ Date: / /

Received by Laboratory: [signature] Date: 4/4/91

Relinquished by Laboratory: _____ Date: _____

Received 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: 12th Street & MLK Jr Way

SCI Job Number: 272.021

Project Contact at SCI: John Bosche

Sampled By: Charles Pearson

Analytical Laboratory: Curtis & Tompkins

Analytical Turnaround: Normal (1 week)

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
4@24	S	T	4/2/91		TVH	
5@1	S	T	4/4/91		CN, Pb	

* * * * * *

Released by: [signature] Received by: _____ Date: 04/04/91

Released by: _____ Received by: _____ Date: _____

Received by Laboratory: [signature] Date: 4/4/91

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 Consul' nts

CHAIN OF CUSTODY RECORD & Al .YTICAL TEST REQUEST

Project Name: 12th Street & MLK Jr Way

SCI Job Number: 272.021

Project Contact at SCI: John Bosche

Sampled By: Charles Pearson

Analytical Laboratory: Curtis & Tompkins

Analytical Turnaround: Normal (1 week)

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
S1 @ 1	S	T	4/4/91			
S2 @ 6"-12"	S	T	4/1/91	Composite →	Title 26 Metals & CN	
2 @ 3'	S	T	4/1/91			
S2 @ 6"-12"	S	T	4/1/91			
2 @ 3'	S	T	4/1/91	Composite →	8270	
5 @ 1	S	T	4/4/91			

* * * * * *

Released by: [signature] Date: 04/04/91

Released by Courier: _____ Date: _____

Received by Laboratory: [signature] Date: 4/4/91

Relinquished by Laboratory: _____ Date: _____

Received 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:
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