FILE OR PER NO. ENVELOPE No. of

LOP 3623 C

☐ OWNER City of Oakland 1330 MLK Way at 14th St.

Address

Oak 612 Phone

☐ Contractor Donnell Chow

Address 238-3493 J

Phone

☐ OTHER (Specify) 768-0461 SC

Address Mark Kawakami

Fernando Velez Phone

☒ CONTACT FOR INVESTIGATION

XR

PLAN REVIEW		By	Date
$	Rec'd.		
No.	Plans Rec'd.		
Plans Approved			
Layout Made			
Rejected			
Applicant Notified			
Plans Returned			
Permit Issued			

CONSTRUCTION PROGRESS ACCEPTANCE

FOR

Pre-Plaster/drywall

Pre-Final

Final

Case Closed

POOL / EXCAVATION / OTHER	By	Date
Pre-Concrete Gunite		
Pre-Plaster		
Final		
Septic Tank		
Absorption Field		
Absorption Bed		
House Sewer		
Septic Tank		
Absorption Field		
Absorption Bed		

U.G. TANKS	By	Date
Pre-C		
Final		

REMARKS

Date	By	

5-5-95 JE

LOCATION

Vicinity Map

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

RAFAT A. SHAHID, DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
(510) 567-6700

May 5, 1995
STID 3623

REMEDIAL ACTION COMPLETION CERTIFICATION

Attn: Donnell Choy
City of Oakland Attorney's Office
Oakland REdevelopment Agency
505-14th St., 12th Floor
Oakland CA 94612

Attn: Andrew Clark-Clough
City of Oakland
Office of Public Works
Environmental Division
1333 Broadway, Suite 330
Oakland CA 94612

RE: City of Oakland, vacant lot/square block, 1330 Martin Luther King Way (at 14th St.), aka 13th and Jefferson Streets, Oakland CA 94612

Dear Mr. Choy and Mr. Clark-Clough,

This letter confirms the completion of site investigation and remedial action for the former 1,750-gallon water/oil underground storage tank (UST), the 625-gallon water/oil UST, the 275-gallon gasoline UST, and the 550-gallon gasoline UST at the above referenced site.

Based on the available information and with the provision that the information provided to this agency was accurate and representative of site conditions, **no further action related to the underground tank release is required.**

This notice is issued pursuant to a regulation contained in Title 23, Division 3, Chapter 16, Section 2721(e) of the California Code of Regulations.

If you have any questions regarding this letter, please contact Jennifer Eberle at (510) 567-6700, ext. 6761.

Very truly yours,

Rafat A. Shahid, Director

cc: Bill Raynolds, Acting Chief, Hazardous Materials Division/file
Kevin Graves, RWQCB
Mike Harper, SWRCB (with attachment)
Jennifer Eberle

LOP/Completion
je 3623clos.let

Oakland
All-America City
1993

ENVIRONMENTAL PROTECTION
96 MAY 31 PM 1:31

CITY OF OAKLAND

ENVIRONMENTAL AFFAIRS • 1333 BROADWAY, SUITE 330 • OAKLAND, CALIFORNIA 94612

Office of Public Works

(510) 238-6688
FAX (510) 238-7286
TDD (510) 838-7644

May 29, 1996

Jennifer Eberle
Alameda County
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

RE: 910 Broadway - Chinatown Redevelopment Area SLIC STID 5803
14th Street and MLK

Dear Ms. Eberle:

Please find enclosed a copy of Subsurface Consultant's September 30, 1995 report titled, *Well Abandonment and Treatment System Closure, 14th Street and Martin Luther King Jr. Way.* I apologize for any delays in getting this report to you.

As requested in your letter dated January 8, 1996, I have submitted a second written request to the Redevelopment Agency for a check to be processed in the amount of $900.00 and submitted to your office to cover oversight fees for the Chinatown Redevelopment Area project and Swans Market.

If you have any questions or require additional information, please call me at 238-6361.

Sincerely,

Andrew Clark-Clough
Environmental Program Supervisor

attachment

R. William Rudolph, Jr., PE
Thomas E. Cundey, PE
Jeriann N. Alexander, PE

September 30, 1995
SCI 430.010

1330 MLK
3623

Mr. David Ralph
Project Manager
Redevelopment Division
Office of Economic Development and Employment
1333 Broadway, 9th Floor
Oakland, California 94612

Final Report
Well Abandonment and Treatment System Closure
14th Street and Martin Luther King Jr. Way
Oakland, California

Dear Mr. Ralph:

This letter summarizes environmental services performed by Subsurface Consultants, Inc. (SCI) during well abandonment and treatment system closure at the referenced site. The City received a *Remedial Action Completion Certification* for the site from the Alameda County Health Care Services Agency, dated May 5, 1995. SCI was subsequently authorized to proceed with well abandonment and treatment system closure activities, as described in SCI's Work Plan dated June 12, 1995. SCI subcontracted with Bay Area Tank and Marine, Inc. (BATM), an environmental contractor, to perform the services described herein, under SCI's direction and intermittent observation. Memoranda were submitted to you periodically during the course of the work, summarizing the progress of the project. The services performed are summarized in the following sections.

Permits and Traffic Control Plan

Prior to proceeding with well abandonment, BATM submitted a traffic control plan and obtained the required City of Oakland excavation, sidewalk obstruction, and parking meter obstruction permits. In addition, SCI obtained a Zone 7 well abandonment permit for the wells (copy attached).

Subsurface Consultants, Inc.
171 12th Street • Suite 201 • Oakland, California 94607 • Telephone 510-268-0461 • FAX 510-268-0137

Well Abandonment

SCI contacted Mr. Wyman Hong with the Zone 7 Alameda County Flood Control and Water Conservation District (Zone 7) regarding well abandonment procedures. Zone 7 is the agency responsible for groundwater protection and oversight of well permits. Mr. Hong indicated that abandonment by pressure grouting is an acceptable procedure. We also confirmed that this method was acceptable with Ms. Jennifer Eberle of the Alameda County Health Care Services Agency.

BATM abandoned the wells by pressure grouting. Well abandonment included the following:

1. Removing the valve or utility box,

2. Disconnecting any piping and valves,

3. Connecting a pressure grout packer to the well casing,

4. Preparing a neat cement grout with a ratio of about 6 gallons of water per sack of Type II portland cement,

5. Applying pressure to the grout column,

6. Backfilling the well head void as follows:
   - Pavement areas - use concrete to within 3 inches of the finish grade.
   - Concrete sidewalks - backfill with concrete to slab subgrade elevation.
   - Landscape or undeveloped areas - backfill with compacted soil.

7. Patching the well head areas as follows:
   - Pavement areas - hot patch with 3 inches of asphalt concrete.
   - Concrete sidewalks - cut concrete at a score joint and replace the concrete in a full rectangular section. Finish concrete in accordance with City requirements.

SCI's field engineer visited the site periodically during well abandonment to observe the work.

Large Diameter Sump Abandonment

A 24-inch corrugated metal pipe (CMP) previously installed at the site was abandoned by initially pressure grouting the lower portion of the casing and sand pack to a level above the groundwater level. Following grouting, the upper portion of the CMP above

groundwater was backfilled with lean concrete. The manhole was removed and the concrete sidewalk was sawcut and replaced.

SVES and Groundwater Extraction System Piping Abandonment

BATM abandoned the pipes beneath the City streets and sidewalks by backfilling them with grout. The pipelines and manifold on the treatment plant site were completely removed to the sidewalk line along Martin Luther King, Jr. Way.

SVES System Decommissioning

The thermal oxidizer for the SVES, the blowers and control units, and all miscellaneous piping were removed from the site and disposed by BATM. The concrete pads were demolished and removed from the site.

Groundwater Treatment System

The groundwater treatment system was transported to a City-owned storage location on Edgewater Drive. Prior to transport, the water within the carbon canisters was removed and disposed by Seaport Petroleum Corporation. Non-hazardous Special Waste Manifest forms for the water are attached. The carbon within the canisters was not removed prior to transport. As discussed with you, it will be necessary to change out the carbon in the A unit prior to incorporation of the canisters into another treatment system. The carbon in the B unit was never exposed to hydrocarbon contamination, and can be reused. A proposal from Westates Carbon Products to change the carbon is attached. Westates has already sampled and tested the carbon in unit A to confirm that it is non-hazardous.

Final Cleanup and Disposal

Upon completion of the project, all miscellaneous items and trash were removed from the site and disposed by BATM. As requested, the fencing was left in place.

Please call if you have any questions.

Yours very truly,

Subsurface Consultants, Inc.

Thomas E. Cundey

Thomas E. Cundey
Geotechnical Engineer 2058 (expires 6/30/96)

TEC:tc

Attachments: Zone 7 Water Agency Drilling Permit Application
Non-Hazardous Special Waste Manifests
Westates Carbon Products Proposal

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1330 Martin Luther King, Jr. Way (at 14th)

CLIENT
Name City of Oakland Redevelopment Agency
Address 1333 Broadway Voice 238-3692
City 9th Floor, Oakland, CA Zip 94612

APPLICANT
Name Subsurface Consultants, Inc.
Fax (510) 268-0461
Address 171-12th St.,#201 Voice (510) 268-0137
City Oakland, CA Zip 94607

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	___	Well Destruction	X

PROPOSED WATER SUPPLY WELL USE N/A

Domestic	___	Industrial	___	Other	___
Municipal	___	Irrigation	___		

DRILLING METHOD: N/A

Mud Rotary	___	Air Rotary	___	Auger	___
Cable	___	Other	___		

Gen. Contractor
~~DRILLER'S~~ LICENSE NO. 572244

WELL PROJECTS

Drill Hole Diameter	___	in.	Maximum		
Casing Diameter	___	in.	Depth	___	ft.
Surface Seal Depth	___	ft.	Number	___	

GEOTECHNICAL PROJECTS

Number of Borings	___		Maximum		
Hole Diameter	___	in.	Depth	___	ft.

ESTIMATED STARTING DATE 7/12/95±
ESTIMATED COMPLETION DATE 7/19/95±

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Thomas E. Curdey Date 7/5/95
THOMAS E. CURDEY

FOR OFFICE USE

PERMIT NUMBER 95426
LOCATION NUMBER 1S/4W 35D80 to 35D116

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

(E) WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 12 Jul 95
Wyman Hong

91992

12 July 1995

ZONE 7
WATER RESOURCES ENGINEERING
GROUNDWATER PROTECTION ORDINANCE

CITY OF OAKLAND
1330 MARTIN LUTHER KING, JR. WAY
OAKLAND
WELLS 1S/4W 35D80 TO 35D116
PERMIT 95426

Destruction Requirements:

1. Clean out all bridged or poorly compacted materials to the bottom of the well.

2. Pressure grout the casing to 2 feet below finished grade or orignal ground, whichever is the lower elevation.

3. Remove casing, seal and gravel pack to 2 feet below finished grade or original ground, whichever is the lower elevation.

4. After the seal has set, backfill the remaining hole with compacted material.

These destruction requirements as proposed by Thomas Cundey of Subsurface Consultants meet or exceed Zone 7 minimum requirements.

First Environmental Group
3501 Collins Avenue
Richmond, CA 94806
(510) 232-0202
Fax (510) 232-5844

Nº 1056

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name: CITY OF OAKLAND
Address: 7101 EDGEWATER
OAKLAND
Phone No.: 510 - 615 5998

Generating Location: OAKLAND LOT
Address: 14TH & MARTIN LUTHER KING JR.
OAKLAND, CA.
Phone No.: 510 - 615 5998

Description of Waste	Quantity	Units	Containers No.	Containers Type
TREATMENT PROCESS WATER (CLEAN)	9.00.59.	1		T

Type: D - Drum, C - Carton, B - Bag, T - Truck, P - Pounds, Y - Yards, O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Anthony Calloway — Generator Authorized Agent Name
Anthony Calloway — Signature
10 02 95 — Shipment Date

TRANSPORTER

Truck No.: 132
Phone No.: 510-232-0202
Transporter Name: FIRST ENVIRONMENTAL GROUP
Driver Name (Print): TIM GINNELL
Address: 3501 COLLINS AVE
Richmond CA.
Vehicle License No./State: 3N19532 CA.
Vehicle Certification: 6101/R

I hereby certify that the above named materials was picked up at the generator site listed above.

Tim Ginnell — Driver Signature
10 02 95 — Shipment Date

I hereby certify that the above named materials was delivered without incident to the destination listed below.

Tim Ginnell — Driver Signature
10 02 95 — Delivery Date

DESTINATION

(BY HERA MARINE TANK FILLED OUT THIS SECTION BY MISTAKE

Site Name: 14TH & Martin Luther King Blv. #104
Phone No.: 510 - 372 4270
Address: 4951 Sunset Dr. Martinez CA 94553

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Anthony Calloway — Name of Authorized Agent
Anthony Calloway — Signature
10 02 95 — Receipt Date

First Environmental Group
3501 Collins Avenue
Richmond, CA 94806
(510) 232-0202
Fax (510) 232-5844

№ 1057

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name CITY OF OAKLAND
Address 7101 EDGEWATER
OAKLAND
Phone No. 510 - 615 5198

Generating Location CITY LOT
Address 111TH + MARTIN LUTHER KING JR.
OAKLAND CA.
Phone No. 510 - 372 4270

Containers — Type: D - Drum, C - Carton, B - Bag, T - Truck, P - Pounds, Y - Yards, O - Other

Description of Waste	Quantity	Units	No.	Type
TREATMENT PROCESS WATER (CLEAN)	02500	G	01	T
	00			

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

SEE ATTACHED — Generator Authorized Agent Name
Signature
10/02/97 — Shipment Date

TRANSPORTER

Truck No. 132
Transporter Name First Environmental Group
Address 3501 Collins Ave
Richmond, CA

Phone No. 510-232-0202
Driver Name (Print) Tim Slemmell
Vehicle License No./State 2N19522 CA.
Vehicle Certification 6/01/98

I hereby certify that the above named materials was picked up at the generator site listed above.
Driver Signature — 10/02/97 — Shipment Date

I hereby certify that the above named materials was delivered without incident to the destination listed below.
Driver Signature — 10/02/97 — Delivery Date

DESTINATION

510-187

Site Name Crosby & Overton Co. Phone No. ___ - ___
Address 610 Transit Blvd. Redwood City, CA.

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent
Signature
Receipt Date

Wheelabrator Clean Air Systems Inc.

6611 San Leandro Street
Oakland, CA 94621
Tel. 510-639-7274
Fax. 510-639-7762

July 12, 1995

Mr. Thomas E. Cundey
Subsurface Consultants, Inc.
171 12th Street, Suite 201
Oakland, CA 94607

Dear Tom:

It was a pleasure meeting you. Wheelabrator - Westates Carbon Products (Westates) is pleased to present our proposal for your activated carbon needs at your Oakland project. Westates has over 25 years experience in carbon adsorption technologies and can provide the following benefits to Subsurface Consultants:

- **Turn-key Service.** We provide on-site services, vessel exchange service, spent carbon transportation, and off-site reactivation (our own state-of-the art facility), technical support, full line of quality certified activated carbons.

- **Responsible management of your liabilities.** Westates is a member of the Wheelabrator/Waste Management group of companies. We can provide the stability, resources and experience to address your long term requirements for carbon services.

Westates can offer the following services:

SERVICE

Calgon Model 4 - 2,000 lb aqua unit

REGULAR SERVICE:	***$3,460/unit**
ONE WAY SERVICE (no replacement carbon):	***$2,730/unit**
FREIGHT TO REGENERATOR:	**Included**
SPENT CARBON PROFILE FEE:	****$200/one time**
TCLP EXTRACTION 8010/8020	***$205**

REGULAR SERVICE

Westates' OSHA trained crew arrive on-site; vacuum spent carbon into DOT containers; inspect vessel and inform customer of any needed repairs; refill vessel with fresh granular activated carbon; transport spent carbon by certified hazardous waste hauler. The spent carbon is regenerated and certificate of reactivation is issued. Samples of spent carbon are tested at Westates' laboratory in Los Angeles for total volatile loading and moisture content. Subsurface Consultants will be informed of the results.

ONE WAY SERVICE

Westates' OSHA trained crew arrive on-site; vacuum spent carbon into DOT containers; transport spent carbon by certified hazardous waste hauler. The spent carbon is regenerated and a certificate of reactivation is issued.

Experienced Service Crews

Westates' service personnel are full time, trained employees. All service technicians have undergone the following:

- 40 hour OSHA (8 hour refresher as needed)
- Forklift operator certification
- Confined space entry
- Physical exams and drug screens
- HM-181 training
- First Aid/CPR

plus additional training.

Safety and customer service is our goal.

Reactivation Services

Built and placed into commercial operation in 1992, Westates provides its state-of-the-art EPA RCRA permitted reactivation plant in Parker, Arizona for reactivating spent carbon classified as non-hazardous or hazardous. This plant is located on a greenfield site without any previous industry or other use of the area that would pose a threat of liability for generators shipping their spent carbons to Parker. Westates customers receive priority service the Parker Plant.

Our facility has been successfully audited by many companies like DuPont, Chevron, FMC, Hewlett Packard and many more. We would be pleased to arrange an audit for Subsurface Consultants. Let us know how we can assist you.

Westates can provide spent carbon reactivation services in an economical and environmentally safe manner. All reactivation services will be concluded with the issuance of a Certificate of Reactivation which certifies the reactivation, in accordance with Federal regulations, by a thermal process that removed and destroyed volatile and semi-volatile contaminants adsorbed on the spent carbon.

Technical Support

Westates Carbon's Technical Services Group maintains and operates a state certified laboratory for analysis of contaminants on spent carbon, provides spent carbon testing for profile approval process, conducts research and development, maintains Quality Control and Quality Assurance programs for activated carbons used by Westates.

The technical Services Group is headed by Dr. James Graham, Director who has over 25 years of experience and is a member of the ASTM Committee for Carbon. Dr. Graham and his staff are available to address our client's technical questions and consult on issued related to carbon as well as other applications.

**Please note that Subsurface Consultants is responsible for any costs associated with profiling and manifesting the spent carbon. The Spent Carbon Profile fee quoted above is for non-hazardous or non-RCRA spent carbon only; profiling of RCRA spent carbon requires separate sample analysis be performed in compliance with our facility's Waste Analysis Plan at an alternate cost of $450. Please contact Westates' Service Department in Oakland (800-659-1718) for assistance in completing the profiling and manifest forms.

*Please note that all the above prices are FOB Oakland, do not include any applicable taxes, and are subject to Westates' standard terms and conditions of sale of goods and/or services.

By using Westates Carbon, Subsurface Consultants will benefit from higher quality products, efficient service, lower overall costs and proper management of your long term liabilities.

Should you have any questions regarding any of the above, please do not hesitate to call me. Westates looks forward to working with Subsurface Consultants in meeting your project goals.

Sincerely,

Keith R. Jones
Field Sales Engineer

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION **Date:** 3/2/95

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

II. CASE INFORMATION

Site facility name: **City of Oakland (vacant lot)**
Site facility address: **1330 Martin Luther King Way (at 14th St.), Oakland CA 94612 (this is a square block)**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **3623**
URF filing date: 7/8/88 SWEEPS No: **N/A**

Responsible Parties: **Addresses:** **Phone Numbers:**
Attn: Donnell Choy, City Attorney, Oakland Redevelopment Agency, 505-14th St., 12th Floor, Oakland CA 94612 (510-238-3493)

Attn: Andrew Clark-Clough, City of Oakland, Office of Public Works, Environmental Division, 1333 Broadway, Suite 330, Oakland CA 94612 (510-238-6361)

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	1,750*	water and oil	removed	9/89
2	625*	water and oil	removed	9/89
3	275*	gasoline	removed	9/89
4	550**	gasoline	removed	6/17/88

*located at 13th and Jefferson Sts
**located at 14th St and MLK Way

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: unknown

Site characterization complete? YES

Date approved by oversight agency: n/a

Monitoring Wells installed? YES Number: at least 24

Proper screened interval? YES

Highest GW depth below ground surface: Lowest depth:
*Gw exists between depths of approximately 25 to 27'bgs.

Flow direction: NW

Leaking Underground Fuel Storage Tank Program

Most sensitive current use: vacant lot

Are drinking water wells affected? NO Aquifer name:

Is surface water affected? NO Nearest affected SW name:

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

Report(s) on file? **YES** Where is report(s) filed?
Alameda County, 1131 Harbor Bay Pky, Alameda Ca 94502

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment of Disposal w/destination)	Date
Tanks:			
14th and MLK:	550 gal	disposed to H&H	
13th and Jeff:	1,750 gal	disposed to H&H	approx 9/89
	625 gal	disposed to H&H	approx 9/89
	275 gal	disposed to H&H	approx 9/89
Free Product			
Soil:			
13th and Jefferson Sts:	**2,384 tons**	disposed to Class 1 HW landfill (USPCI Grassy Mtn Facility in Knolls UT) 8/89 (see 11/1/89 SCI report--HW manifests)	
	8,600 yd3	disposed to Class 3 after aeration (Redwood landfill in Novato) (see 12/6/90 SCI report--no disposal doc.)***	1990
14th and MLK Way:	**2,550 yd3**	disposed (see 12/6/90 SCI report for 1330 MLK--no disposal doc.)***	

Groundwater was treated from 4/90 to 11/93, and was discharged to EBMUD

***disposal documentation was generally not included in reports if the material went to a Class 3 facility.**

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)
Maximum Documented Contaminant Concentrations - - Before and After Cleanup

14TH STREET AND MLK WAY

Contaminant	Soil (ppm)		Water (ppm)	
	Before	After	Before	After
TPH (Gas)	7,660	1,000	FP#	2.43
TPH (Diesel)	NA	NA	NA	NA
Benzene	0.790	0.167*	3.1	0.058
Toluene	1.2	0.388*	2.7	0.010
Xylene	38	91.2*	5.5	0.163
Ethylbenzene	7.3	0.529*	ND	0.058
Oil & Grease	NA	NA	NA	NA
Heavy metals	NA	NA	NA	NA

Comments (Depth of Remediation, etc.): "Before" water samples are from the first 3 MWs installed in 6/88 near 14th and MLK. "After" water samples are from MW42 on 11/8/94. "Before" soil samples are from the one sample taken at the fill end of UST at 14th and MLK. "After" soil samples are from the soil overexcavation (see **Plate 3 and Table 4**).

#FP = free product

*Since BTEX was NA in the verification samples from overexcavation, the "after" soil samples are from the 3 borings (60-62) put in MLK Way to verify the effectiveness of the SVES and gw extraction system; TPHg was ND in these locations (see **Table 5 and Plate 4**).

Leaking Underground Fuel Storage Tank Program

13TH AND JEFFERSON STREETS

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	2,310*	ND**	1700#@	ND#@
TPH (Diesel)	22,000@	ND@#	110#@	ND#@
Benzene	55*	0.018**	ND#@	ND#@
Toluene	44*	0.026**	1.5#@	ND#@
Xylene	167*	0.063**	20#@	ND#@
Ethylbenzene	trace^	0.071**	28#@	ND#@
Oil & Grease	1,500^	150^^	ND	ND
Kerosene	48,000^	ND^^	###	
Lead	1300#	260##	NA	
Zinc	3200@	0.46@#	NA	
PNAs	@@	ND##	NA	
PCBs/pesticides	ND^			
HVOCs			@@@	

Comments (Depth of Remediation, etc.):
* SB-24 (see Table 7a and Plate 5a)
** See Plate 7a
@ initial tank removal (see Table 1a and Plate 1a)

@# verification samples post-UST-overexcavation (see Table 8a & Plate 1a)
@@ various PNAs (see Table 2a and Plate 2a)
# see Table 3a and Plate 3a
see Table 4a and Plate 4a; it is likely that lower concentrations of Pb actually remained in place, because CW-9 was overexcavated, but not resampled in the same exact location
^ soil below sump at 14'bgs (see Table 5a and Plate 6a)
^^ soil below sump at 21'bgs (see Table 6a and Plate 6a)
#@ see Table 9a
the TEH analysis for gw (see Table 9a) included kerosene range
@@@ see Table 10a

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Undetermined

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Undetermined

Does corrective action protect public health for current land use? YES
Site management requirements: NA

Should corrective action be reviewed if land use changes? YES, if it changes to residential

Monitoring wells Decommisioned: NOt yet
Number Decommisioned: MW49 (12/18/92; see 1/11/93 SCI letter)
Number Retained: at least 23

List enforcement actions taken: NOV dated 8/16/89 from the County (for submittal of workplan)

List enforcement actions rescinded: unknown

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Jennifer Eberle — Title: Hazardous Materials Specialist
Signature: Jeberle — Date: 4-10-95

Reviewed by
Name: eva chu — Title: Hazardous Materials Specialist
Signature: — Date: 4/10/95

Name: Amy Leech — Title: Hazardous Materials Specialist
Signature: — Date: 4/11/95

VI. RWQCB NOTIFICATION

Date Submitted to RWQCB: 4-11-95 — RB Response:
RWQCB Staff Name: Kevin Graves — Title: AWRCE
Signature: — Date:

VII. ADDITIONAL COMMENTS, DATA, ETC. Major Hint: look for the reports w/the red tabs. That's where I got the info for this summary. There are 2 full boxes of reports for this site. You don't want to look at every report.

14TH STREET AND MLK WAY

On 6/17/88, one 550-gallon gasoline UST was removed. This UST was previously used by Oakland's Fire Dept, and was last used in approximately 1978. It is possible the UST (or prior UST) was used since approximately 1930, because the Fire House was built at that time. One soil sample was collected from adjacent to the UST's lower side (fill end). It contained 1,000 ppm TPH-g, 0.790 ppm benzene, 1.2 ppm toluene, 7.3 ppm ethylbenzene, and 38 ppm total xylenes. In addition, 14 soil borings were installed, ranging from 25 to 37'bgs. Three of these borings were converted to MWs. The upper 9-20' consisted of clayey sands. Below this depth are sands w/less silt and clay. Soil and groundwater samples were collected; see attached tables 2 and 3. MW16 contained "a thin layer of floating gasoline;" approximately 1/8" in thickness. MW16 was located approximately 10' NW of the UST. GW was determined to flow NW. See attached **Plate 1.** (See the 7/29/88 Progress Report 1, by SCI)

The extent of contamination was defined by these borings. Contaminated soils were removed by excavation beginning in 12/88. The excavation limits are shown on the attached **Plate 2**, and went to depths of 31'bgs. After excavation, 11 soil samples were collected from the pit bottom and walls; see **Plate 3 and Table 4.** Due to physical constraints such as utilities, soils containing TPHg as high as 1,000 mg/kg were left in place along MLK Way. Approximately 4,000 cubic yards of soil were removed, stockpiled on site, aerated to acceptable levels, and then used to backfill the excavation.

A soil vapor extraction system (SVES) and a gw treatment system were installed to remediate offsite soil and gw contamination beneath MLK Way. The SVES system operated for approximately 3 years (from 2/91 to 11/93). The gw treatment system started on 4/30/90 and was shut down on 11/93, with County approval. The combined system removed all measurable free product, and significantly reduced the dissolved gasoline plume in gw, as well as the soil plume. The SVES consisted of 25 vapor extraction wells that were connected to a vacuum blower; a thermal oxidizer treated the vapors. Vapor extraction well locations are shown on **Plate 4.** The gw treatment system consisted of pumping gw from 2 extraction wells, EW-1 and 28, shown on **Plate 5.** Extraction rates have varied up to about 6 gpm. The pumped gw was treated w/carbon and then discharged into EBMUD. EBMUD monitored the progress of the system, via quarterly reporting.
GW has consistently flowed in a NW direction at a gradient of about 0.7 percent. Pump tests indicate a transmissivity of about 280 ft2/day and a hydraulic conductivity of about 5 x 10-3 cm/sec.

On 9/8/93, 3 test borings were drilled (60 through 62) within the SVES area to obtain soil samples within the area of contamination. The results are summarized in **Table 5 and Plate 4.** BTEX remained in a thin layer, approximately 1 foot thick, above the gw surface, at maximum concentrations of 0.167 ppm benzene, 0.388 ppm toluene, 91.2 ppm xylenes, and 0.529 ppm ethylbenzene.

The extent of the free and dissolved product gw plumes were defined by the MWs as seen in **Plate 5.** The approximate extent of these gw plumes prior to remediation are also shown in **Plate 5.** The water level data and free product thicknesses are listed in **Table 6.** Up to 40" or 3.7' of free product was measured in several vapor and monitoring wells prior to remediation.

The gw analytical results are summarized in **Table 7.** After ND results were achieved for organic lead and VOCs, and since very low levels of EDB were detected, gw was subsequently only analyzed for TPHg and BTEX.

MW42 has been the only well w/hydrocarbons since 5/93. The gw plume appears to be contained just south of 14th St. at MLK Way, and appears to be degrading, as noted from the decreasing concentrations. No drinking water wells have been identified in the downgradient area from the gw plume. It is therefore unlikely that gw contamination is impacting drinking water.

The most recent concentrations (in MW42) can be compared to ASTM numbers. ASTM uses a concentration of 11 ppm (or 11,000 ppb) benzene for the residential scenario (most conservative scenario) via gw-volatilization to outdoor air. The concentrations detected have been well below this value since the initiation of gw sampling in 7/88. The one exception is 18,000 ppb benzene in MW11 on 11/8/89; this has since decreased to ND, and has been ND for the past 6 quarters. See **Table 7.**

Soil concentrations from borings 60-62, emplaced into MLK Way within the area already remediated by SVE (see **Plate 4 and Table 5)** represent soil concentrations remaining in place. The highest hit of benzene was 0.167 ppm. The ASTM value for residential via soil-volatilization to outdoor air is 0.272 ppm benzene. The highest groundwater concentrations remaining in place are below MLK Way at 14th St: 2,430 ppb TPHg, 58 ppb benzene, 10 ppb toluene, 163 ppb xylene, and 58 ppb ethylbenzene. The ASTM value for residential via groundwater-volatilization to outdoor air is 11,000 ppb benzene. There are no values for TPHg, toluene, xylene, or ethylbenzene. **When using ASTM's Emergency Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, the residual concentrations appear to be of no significant impact to human health.**

This site, known as 1330 MLK Way, is actually a square block in size, including the space between 14th and 13th Streets, and between MLK Way and Jefferson Streets. Another environmental investigation occurred simultaneously for the portion of the site near the corner of Jefferson and 13th Streets. This area contained hydrocarbons, lead and PNAs. See **Plate 5** for an overview of the entire area in 1951. There was extensive remediation by excavation in this portion of the site. Per the County's letter dated 6/2/94 (see attachment), no further action (cleanup or monitoring) was required for this area.

13TH AND JEFFERSON STREETS

Discussions with past City employees confirmed the presence of gasoline storage and dispensing facilities. Three USTs were subsequently uncovered during excavation activities. These 3 USTs were found to have created only localized contamination and therefore do not represent the source of gasoline contamination at 13th and Jefferson. These 3 USTs are included in this closure summary in previous sections, and will be discussed below.

A full history of the environmental work performed in this section of the site is included in the "Request for Site Closure, Hydrocarbon and Lead Contamination Sites, 13th and Jefferson Sts," by Subsurface Consultants Inc. (SCI), dated 4/15/94.

Leaking Underground Fuel Storage Tank Program

Three USTs were removed in 9/89. See the County's inspection report included as **Attachment 1B.** Sampling revealed 22,000 ppm TPHd (Tank 2), up to 73 ppm O&G (by SM503E) (Tank 1), and low concentrations of PNAs beneath Tanks 1 and 2. Tank 3 was ND for TPHg and BTEX. See **Table 1a.** The contaminated soils were satisfactorily removed by excavation; see **Table 8a and Plate 1a.** The soil contamination impacted soils extending approximately 12'bgs, but did not extend to gw, which existed approx at 26'bgs. (See the 9/25/90 "Closure Report, 3 USTs near 13th and Jefferson Sts," by SCI)

Following soil remediation, 8 MWs (MW47, 48, 49, 51, 52, 53, 54, and 59) were installed to monitor gw quality **(See Plate 8a).** TPHg and TEX were initially identified in MW54, but have not been detected during the last 5 quarters. Low levels of HVOCs (1,2-DCA and 1,2-DCE) were detected in gw, but were not detected for at least the last 4 quarters of sampling. Low levels of chloroform (ND-8.0ppb) have been detected in upgradient wells MW51-53, but are not believed to be attributable to this site since there is no apparent source of chloroform in the vicinity. See **Tables 9a and 10a.**

Table 2.
Hydrocarbon Concentrations in Soil
Prior to Remediation

Boring	Depth (feet)	TVH[1] (mg/kg)[2]	Benzene (ug/kg)[3]	Toluene (ug/kg)	Xylene (ug/kg)	Ethyl-Benzene (ug/kg)
1	16	ND[4]	ND	ND	ND	ND
1	21	ND	ND	ND	ND	ND
1	25	ND	ND	ND	ND	ND
1A	16	ND	--[5]	--	--	--
1A	21	3700	--	--	--	--
2	16	ND	ND	ND	ND	ND
2	21	1810	26.3	42.5	154	24.8
2	25.5	7530	29.5	447	752	87.9
3	16	ND	ND	ND	ND	ND
3	21	2370	15.9	39.2	199	31.0
3	25.5	ND	ND	ND	ND	ND
4	16	54	ND	ND	3.0	0.5
4	21	6770	21.9	158	598	101
4	26	ND	ND	0.2	ND	ND
6	17.5	ND	ND	ND	ND	ND
6	23	ND	ND	ND	ND	ND
6	27	ND	ND	ND	ND	ND
7	19	ND	--	--	--	--
	24	ND	--	--	--	--
	28.5	2020	--	--	--	--
8	16	ND	ND	ND	ND	ND
8	21	ND	ND	ND	ND	ND
8	26	ND	ND	ND	ND	ND
11	25	ND	--	--	--	--
14	19	ND	--	--	--	--
	22	ND	--	--	--	--
	25	6710	--	--	--	--
15	25	ND	ND	ND	ND	ND
16	25	7660	39.3	257	719	117
28	23	ND	--		--	--
	26	ND	--		--	--
	29	ND	--		--	--

Phase 1
Phase 2

14th
+
MLK

Table 2.
Hydrocarbon Concentrations in Soil
Prior to Remediation (Cont.)

Boring	Depth (feet)	TVH[1] (mg/kg)[2]	Benzene (ug/kg)[3]	Toluene (ug/kg)	Xylene (ug/kg)	Ethyl-Benzene (ug/kg)
29	27	ND	ND	ND	ND	ND
29	30	139	ND	ND	ND	ND
29	33	ND	ND	ND	ND	ND
30	25	5350	36.4	120	383	71.4
30	27	ND	0.3	0.3	0.1	ND
31	25	ND	ND	ND	ND	ND
31	27	ND	ND	ND	ND	ND
39	24.5	ND	--	--	--	--
	27	ND	--	--	--	--
40	24	ND	--	--	--	--
40	27	ND	--	--	--	--
41	24	ND	--	--	--	--
	26	5000	--	--	--	--
	27	22	--	--	--	--
	28	ND	--	--	--	--
42	21	ND	--	--	--	--
42	24	ND	--	--	--	--
42	26	TRACE	--	--	--	--
43	23	ND	--	--	--	--
	24.5	1000	--	--	--	--
	26	ND	--	--	--	--
53	26.5	ND	--	--	--	--
54	24	ND	--	--	--	--
	26.5	ND	--	--	--	--
55	24	ND	--	--	--	--
	27	ND	--	--	--	--

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1 Total volatile hydrocarbons, as gasoline
2 Milligrams per kilogram
3 Micrograms per kilogram
4 Test not requested
5 Not detected at concentrations above the reporting limits

TABLE 3. CONTAMINANT CONCENTRATIONS IN WATER

Sample	TPH[1] (mg/L)[2]	Benzene (ug/L)[3]	Toluene (ug/L)	Total Xylenes (ug/L)	Ethyl Benzene (ug/L)
Well #8	(trace) <10	ND[4]	ND	ND	ND
Well #11	10	1800	ND	1200	ND
Well #16	90	3100	2700	5500	ND

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1 TPH = Total Petroleum Hydrocarbons, as gasoline

2 mg/L = milligrams per liter or parts per million (ppm)

3 ug/L = micrograms per liter or parts per billion (ppb)

4 ND = not detected at concentrations above detection limit; see test reports for detection limits

Table 4
Contaminant Concentrations in Soil Following Excavation

Sample	Depth (feet)	TVH[1] (mg/kg)[2]
NC	26	ND[3]
ND	26	600
SC	26	Trace
WF	31	ND
EF	30	ND
EF1	29	ND
EFC	28	ND
WF2	31	ND
WW	26	1000
EW	26	ND
EW1	26	ND

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1 TVH = Total volatile hydrocarbons, as gasoline
2 milligrams per kilogram
3 Not detected at concentrations above reporting limits

Table 5.
Hydrocarbon Concentrations in Soil Following Remediation

Boring	Depth (feet)	TVH[1] (mg/kg)[2]	Benzene (ug/kg)[3]	Toluene (ug/kg)	Xylene (ug/kg)	Ethyl-Benzene (ug/kg)
60	25.5	<0.01	--[4]	--	--	--
	27	<100	155	193	908	121
	28	<0.01	--	--	--	--
61	23.5	<.01	--	--	--	--
	25	<0.1	--	--	--	--
	26.5	<100	167	388	36,400	340
62	25	<0.05	--	--	--	--
	27	<100	107	170	91,200	529
	28	<0.01	--	--	--	--

[1] Total Volatile Hydrocarbons as Gasoline
[2] Milligrams per kilogram
[3] Micrograms per kilogram
[4] Test not requested

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Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
EW-1	99.24	5/4/94	25.67	73.57	--
		8/11/94	23.9	75.34	--
		11/8/95	26.01	73.23	--
		3/7/95	24.26	74.98	--
11	99.66	1/19/89	26.82	72.84	--
		4/3/89	26.35	73.31	--
		7/5/89	26.95	72.71	--
		11/9/89	27.28	72.38	--
		1/24/90	27.40	72.26	--
		4/30/90	27.56	72.10	--
		7/3/90	28.89	70.77	--
		10/23/90	28.93	70.73	--
		1/21/91	27.75	71.91	--
		4/24/91	28.14	71.52	--
		7/24/91	28.78	70.88	--
		10/24/91	29.09	70.57	--
		1/23/92	29.85	69.81	--
		5/1/92	27.44	72.22	--
		8/7/92	27.86	71.80	--
		11/16/92	27.84	71.82	--
		2/16/93	25.94	73.72	--
		5/12/93	27.13	72.53	--
		8/17/93	27.20	72.46	--
		11/16/93	26.85	72.81	--
		2/2/94	26.64	73.02	--
		5/4/94	24.52	75.14	--
		8/11/94	26.76	72.90	--
		11/8/94	26.88	72.78	--
		3/7/95	25.25	74.41	--
28	98.99	1/19/89	26.16	72.83	--
		4/3/89	25.70	73.29	--
		7/5/89	26.26	72.73	--
		11/8/89	26.59	72.40	--
		1/24/90	26.81	72.18	--
	97.79	5/10/90	31.83	65.96	1.22
		7/3/90	31.95	65.84	0.04
		10/23/90	31.25	66.54	1.38
		1/21/91	28.00	69.79	--
		10/24/91	27.26	70.53	--
		1/23/92	32.99	64.80	--
		8/7/92	26.95	70.84	--
		11/16/92	25.95	71.84	--

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Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
28	97.79	2/16/93	24.06	73.73	--
		5/12/93	25.48	72.31	--
		8/17/93	25.55	72.24	--
		11/16/93	24.92	72.87	--
		5/4/94	24.80	72.99	--
		8/11/94	24.86	72.93	--
		11/8/94	24.96	72.83	--
		3/7/95	23.35	74.44	--
29	97.95	1/19/89	26.14	71.81	--
		4/3/89	25.88	72.07	--
		7/5/89	26.19	71.76	--
		11/9/89	26.51	71.44	--
		1/24/90	26.66	71.29	--
		4/30/90	26.73	71.22	--
		7/3/90	27.22	70.73	--
		10/23/90	27.40	70.55	--
		01/21/91	26.89	71.06	--
		3/28/91	27.04	70.91	--
		10/24/91	27.47	70.48	--
		1/23/92	27.89	70.06	--
		11/16/92	26.78	71.17	--
		2/16/93	25.60	72.35	--
		5/12/93	26.04	71.91	--
		8/17/93	26.25	71.70	--
		11/16/93	26.22	71.73	--
		2/2/94	26.08	71.87	--
		5/4/94	26.88	71.07	--
		8/11/94	26.01	71.94	--
		11/8/94	26.17	71.78	--
		3/7/95	24.88	73.07	--
31	98.90	1/19/89	26.15	72.75	--
		4/3/89	25.90	73.00	--
		7/5/89	26.28	72.62	--
		11/9/89	26.64	72.26	--
		1/24/90	26.84	72.06	--
		4/30/90	26.87	72.03	--
		7/3/90	27.50	71.40	--
		9/23/90	27.52	71.38	--
		1/21/91	27.09	71.81	--
		4/24/91	27.12	71.78	--
		7/24/91	27.60	71.30	--
		10/24/91	28.81	70.09	--
		1/23/92	28.31	70.59	--

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Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
31	98.90	5/1/92	26.70	72.20	--
		8/7/92	27.00	71.90	--
		11/16/92	27.04	71.86	--
		2/16/93	25.63	73.27	--
		5/12/93	26.20	72.70	--
		8/17/93	26.41	72.49	--
		11/16/93	26.25	72.65	--
		2/2/94	26.07	72.83	--
		5/4/94	25.90	73.00	--
		8/11/94	26.08	72.82	--
		11/8/94	26.25	72.65	--
		3/7/95	24.74	74.16	--
39	99.00	4/3/89	25.87	73.13	--
		7/5/89	26.38	72.62	--
		11/9/89	26.70	72.30	--
		1/24/90	26.86	72.14	--
		4/30/90	26.97	72.03	--
		7/3/90	28.17	70.83	--
		10/23/90	28.17	70.83	--
		1/21/91	27.15	71.85	--
		3/28/91	27.76	71.24	--
		4/24/91	27.33	71.67	--
		7/24/91	27.91	71.09	--
		10/24/91	28.26	70.74	--
		1/23/92	29.00	70.00	--
		5/1/92	26.82	72.18	--
		8/7/92	27.18	71.82	--
		11/16/92	27.19	71.81	--
		2/16/93	25.53	73.47	--
		5/12/93	26.52	72.48	--
		8/17/93	26.65	72.35	--
		11/16/93	26.30	72.70	--
		2/2/94	26.10	72.90	--
		5/4/94	25.96	73.04	--
		8/11/94	26.16	72.84	--
		11/8/94	26.31	72.69	--
		3/7/95	24.75	74.25	--
42	99.12	4/3/89	25.77	73.35	--
		7/5/89	26.30	72.82	--
		11/9/89	26.66	72.46	--
		1/24/90	26.82	72.30	--
		4/18/90	26.94	72.18	--
		7/3/90	28.58	70.54	--

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Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
42	99.12	10/23/90	28.58	70.54	0.08
		7/24/91	28.10	71.02	--
		10/24/91	28.24	70.88	--
		1/23/92	29.33	69.79	--
		5/1/92	26.88	72.24	--
		8/7/92	27.10	72.02	--
		11/16/92	26.68	72.44	--
		2/16/93	25.41	73.71	--
		5/12/93	26.74	72.38	--
		8/17/93	26.80	72.32	--
		11/16/93	26.25	72.87	--
		2/2/94	26.03	73.09	--
		5/4/94	25.90	73.22	--
		8/11/94	26.14	72.98	--
		11/8/94	26.26	72.86	--
		3/7/95	24.65	74.47	--
43	98.87	4/3/89	25.32	73.55	0.08
		7/5/89	26.80	72.07	1.34
		11/9/89	28.44	70.43	2.89
		4/30/90	27.05	71.82	0.79
		7/3/90	28.36	70.51	0.7
		10/23/90	28.19	70.68	0.83
		10/24/91	26.30	72.57	--
		1/24/92	28.25	70.62	0.02
		5/1/92	25.44	73.43	--
		8/7/92	25.11	73.76	--
		11/16/92	26.42	72.45	--
		2/16/93	24.35	74.52	--
		5/12/93	25.90	72.97	--
		8/17/93	25.50	73.37	--
		11/16/93	25.21	73.66	--
		2/2/94	24.98	73.89	--
		5/4/94	24.68	74.19	--
		8/11/94	25.10	73.77	--
		11/8/94	25.20	73.67	--
		3/7/95	23.55	75.32	--
45	100.90	12/5/89	28.71	72.19	--
		4/30/90	28.85	72.05	--
		7/3/90	29.45	71.45	--
		10/23/90	29.50	71.40	--
		1/21/91	29.03	71.87	--
		4/24/91	28.87	72.03	--
		7/25/91	29.63	71.27	--

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Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
45	100.90	10/24/91	29.62	71.28	--
		1/23/92	30.45	70.45	--
		5/1/92	28.42	72.48	--
		8/7/92	28.70	72.20	--
		11/16/92	28.84	72.06	--
		2/16/93	27.14	73.76	--
		5/12/93	28.00	72.90	--
		8/17/93	28.35	72.55	--
		11/16/93	28.15	72.75	--
		2/2/94	27.95	72.95	--
		8/11/94	28.10	72.80	--
		11/8/94	28.19	72.71	--
		3/7/95	26.47	74.43	--
46	98.11	12/19/89	27.40	70.71	--
		4/30/90	27.46	70.65	--
		7/3/90	27.75	70.36	--
		10/23/90	27.86	70.25	--
		1/21/91	27.60	70.51	--
		4/24/91	27.40	70.71	--
		7/24/91	28.73	69.38	--
		10/24/91	27.88	70.23	--
		1/23/92	28.31	69.80	--
		8/7/92	27.28	70.83	--
		11/16/92	27.42	70.69	--
		2/16/93	26.44	71.67	--
		5/12/93	26.78	71.33	--
		8/17/93	27.01	71.10	--
		11/16/93	27.10	71.01	--
		2/2/94	26.86	71.25	--
		8/11/94	26.28	71.83	--
		11/8/94	27.00	71.11	--
		3/7/95	25.96	72.15	--
58	98.89	1/30/91	28.25	70.64	--
		3/28/91	27.81	71.08	--
		4/24/91	27.55	71.34	--
		7/24/91	33.42	65.47	--
		10/24/91	28.29	70.60	--
		1/23/92	28.75	70.14	--
		5/1/92	27.10	71.79	--
		8/7/92	27.40	71.49	--
		11/16/92	27.44	71.45	--
		2/16/93	26.10	72.79	--
		5/12/93	26.68	72.21	--

Table 6. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
58	98.89	8/17/93	26.88	72.01	--
		11/16/93	26.77	72.12	--
		2/2/94	26.58	72.31	--
		5/4/94	26.42	72.47	--
		8/11/94	26.60	72.29	--
		11/8/94	26.75	72.14	--
		3/7/95	25.35	73.54	--
59	100.37	2/12/91	27.45	72.92	--
		3/13/91	27.60	72.77	--
		4/3/91	27.36	73.01	--
		6/13/91	28.01	72.36	--
		9/10/91	28.00	72.37	--
		12/12/91	28.53	71.84	--
		4/17/92	26.91	73.46	--
		7/28/92	27.27	73.10	--
		11/3/92	27.56	72.81	--
		2/2/93	24.74	75.63	--
		5/6/93	25.76	74.61	--
		11/8/94	26.51	73.86	--
		3/7/95	24.63	75.74	--

Elevation reference: PG&E manhole approximately 30 feet south of 14th Street on Martin Luther King Jr. Way, assumed to be 100.00 feet,
TOC = Top of casing
-- = No free product present

Table 7

CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
EW-1	5/4/94	103	ND	ND	15.1	ND	--	--	--
	8/11/94	370	ND	ND	3.4	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--
	3/7/95	307	ND	ND	3.5	0.9	--	--	--
11	7/5/88	10,000	1,800	ND	1,200	ND	--	--	--
	4/3/89	53,000	7,100	4,000	2,400	380	--	--	--
	7/6/89	22,000	5,300	3,200	2,300	390	ND	26	--
	11/8/89	120,000	18,000	8,000	21,000	4,500	ND	37	--
	7/18/90	26,000	950	19	98	ND	--	--	--
	10/23/90	4,200	1,600	8.5	170	28	--	0.2	--
	1/21/91	1,900	600	6.2	84	60	--	0.15	--
	4/24/91	4,800	1,100	3.5	46	120	--	--	--
	7/24/91	950	330	0.9	1.8	12	--	--	--
	10/24/91	970	350	1.6	1.6	14	--	ND	--
	1/23/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	340	77	0.6	0.6	ND	--	--	--
	8/6/92	220	54	ND	ND	ND	--	--	--
	11/16/92	159	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/12/93	ND	ND	ND	ND	ND	--	--	--
	8/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	ND	ND	ND	ND	ND	--	--	--
28	9/2/88	890	431	75.4	84	ND	ND	9.2	--
	7/6/89	13,000	4,900	1,500	1,300	100	ND	27	--
	5/4/94	103	ND	ND	15.1	ND	--	--	--
29	9/2/88	ND	ND	8.1	ND	ND	ND	ND	--
	4/3/89	450	ND	2	6.7	2	--	--	--
	7/6/89	ND	ND	15	ND	ND	ND	ND	--
	11/8/89	780	ND	14	32	7.9	ND	ND	--
	10/23/90	1,800	1.2	6.5	4.8	2.7	--	--	--
	1/21/91	1,100	ND	3.7	4.9	1.3	--	ND	--
	3/28/91	500	ND	1.6	0.8	ND	--	--	--
31	9/2/88	ND	ND	ND	ND	ND	ND	ND	--
	4/3/89	ND	ND	ND	ND	ND	--	--	--
	7/6/89	ND	ND	ND	ND	ND	ND	ND	--
	11/8/89	ND	ND	ND	ND	ND	ND	ND	--
	7/18/90	ND	ND	ND	ND	ND	--	--	--
	1/21/91	ND	ND	0.6	2.1	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/23/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/7/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	43	ND	ND	ND	ND	--	--	--
	12/17/92	35.3	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/12/93	ND	ND	ND	ND	ND	--	--	--

Table 1

CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
31	8/17/93	ND	ND	ND	ND	ND	–	–	–
	2/2/94	ND	ND	ND	ND	ND	–	–	–
39	4/3/89	2,000	250	11	210	ND	–	–	–
	7/6/89	7,900	2,700	1,300	860	97	ND	3	–
	11/8/89	9,300	4,500	760	310	150	ND	4	36
	7/18/90	ND	4.1	ND	ND	ND	–	–	–
	10/23/90	160	12	6.4	5	ND	–	ND	ND
	1/21/90	200	23	0.9	2	1.2	–	ND	–
	3/28/91	ND	ND	ND	ND	ND	–	–	–
	4/24/91	ND	ND	ND	ND	ND	–	–	–
	7/24/91	ND	1.4	ND	ND	ND	–	–	–
	10/24/91	ND	ND	ND	ND	ND	–	ND	–
	1/23/92	ND	ND	ND	ND	ND	–	–	–
	5/1/92	ND	ND	ND	ND	ND	–	–	–
	8/7/92	ND	ND	ND	ND	ND	–	–	–
	11/16/92	ND	ND	ND	ND	ND	–	–	–
	2/16/93	ND	ND	ND	ND	ND	–	–	–
	5/12/93	ND	ND	ND	ND	ND	–	–	–
	8/18/93	ND	ND	ND	ND	ND	–	–	–
	11/16/93	ND	ND	ND	ND	ND	–	–	–
	2/2/94	20	ND	ND	2.9	2.2	–	–	–
	5/4/94	ND	3	0.9	2.3	1.2	–	–	–
	8/11/94	ND	ND	0.7	1.4	0.5	–	–	–
	11/8/94	ND	ND	ND	ND	ND	–	–	–
	3/7/95	215	57.8	2.7	11.2	21.5	–	–	–
42	7/6/89	13,000	4,500	100	1,000	ND	ND	8	–
	10/23/90	8,800	420	580	910	91	–	0.7	–
	7/24/91	21,000	2,200	300	650	180	–	–	–
	10/24/91	18,000	2,300	1,100	1,000	260	–	16	–
	1/23/92	10,000	1,100	280	430	300	–	–	–
	5/1/92	16,000	1,200	330	580	220	–	–	–
	8/7/92	12,000	890	510	1,000	340	–	–	–
	11/16/92	587	1.2	4.3	43	ND	–	–	–
	2/16/93	6730	386	51	411	183	–	–	–
	5/12/93	13400	748	238	777	ND	–	–	–
	8/17/93	4120	268	ND	323	377	–	–	–
	11/16/93	8350	143	41	199	133	–	–	–
	2/2/94	1080	7.4	11.2	144	67.1	–	–	–
	5/4/94	4580	ND	ND	845	347	–	–	–
	8/11/94	6910	37	ND	417	221	–	–	–
	11/8/94	2580	9	ND	102	63	–	–	–
	3/7/95	2430	22	10	163	58	–	–	–
43	10/24/91	6,300	ND	ND	130	9.1	–	–	–
	5/1/92	930	ND	ND	3.8	ND	–	–	–
	8/7/92	450	ND	2.4	3.5	1.5	–	–	–
	11/16/92	614	ND	2	34.4	1.6	–	–	–
	2/16/93	123	12.5	4.3	60.9	18.6	–	–	–

Table 7

CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
43	5/12/93	96.4	ND	ND	ND	ND	--	--	--
	8/17/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	ND	ND	ND	ND	ND	--	--	--
45	12/5/89	ND	ND	ND	ND	ND	ND	ND	--
	10/23/90	ND	0.9	1.4	1.8	ND	--	--	--
	1/21/91	ND	ND	ND	ND	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/24/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/6/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
46	11/30/89	ND	2.1	1.9	2	ND	ND	ND	--
	7/18/90	ND	ND	ND	ND	ND	--	--	--
	10/23/90	ND	ND	0.6	ND	0.5	--	--	--
	1/21/91	ND	ND	ND	ND	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
58	1/30/91	ND	ND	ND	ND	ND	--	--	--
	3/28/91	ND	ND	ND	ND	ND	--	--	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/24/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/6/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/4/94	ND	ND	ND	ND	ND	--	--	--
	8/11/94	ND	ND	ND	ND	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--
	3/7/95	ND	ND	ND	ND	ND	--	--	--
59	2/16/93	ND	ND	ND	ND	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--

TVH = Total Volatile Hydrocarbons
EDB = Ethylene Dibromide
1,2-DCA = 1, 2-Dichloroethane
ug/l = micrograms per liter
ND = None detected, chemicals not present at concentrations above the detection limits
-- = Test not requested

EXISTING BUILDING

11 25 (ND)

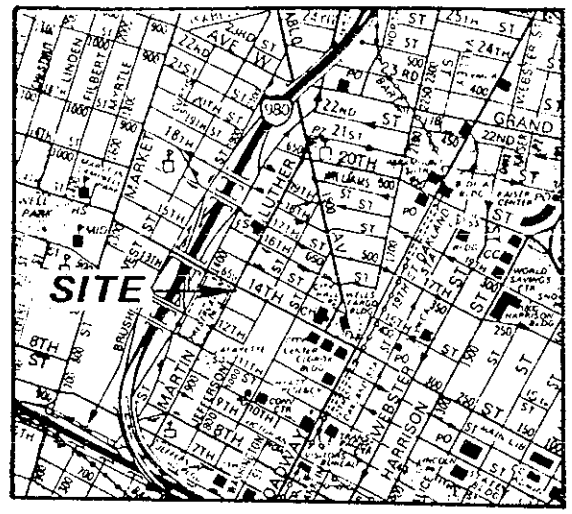
9

24

25

10

DIRECTION OF GROUNDWATER FLOW



VICINITY MAP

15 25 (ND)

14 19 (ND)
22 (ND)
25 (6710)

7 19 (ND)
24 (987)
28.5 (2020)

4 16 (54)
21 (6770)
26 (ND)

ZONE OF SOIL CONTAMINATION

MARTIN LUTHER KING Jr. WAY

16 25 (7660)

1 16 (ND)
21 (ND)
25 (ND)

1A 8 C1,000

Contamination noted during tank excavation

2 16 (ND)
21 (1810)
25 (7530)

6 17.5 (ND)
23 (ND)
27 (ND)

16 (ND)
21 (3700)

3 16 (ND)
21 (2370)
25 (ND)

8 16 (ND)
21 (ND)
26 (ND)

SAMPLE DEPTH (FT)

Borings 5 & 12 drilled in nearby areas; not part of this assessment

Boring 13 abandoned due to obstruction at 4'.

ND = NOT DETECTED
() = TVH CONCENTRATION IN MG/KG OR ppm

- TEST BORING
- MONITORING WELL
- TEST BORING PREVIOUS STUDY
- PIEZOMETER
- TANK

APPROXIMATE SCALE (FEET)

20 40

N

14th STREET

13th ST

Jefferson

Subsurface Consultants

SITE PLAN

1330 MARTIN LUTHER KING Jr. WAY, OAK.

JOB NUMBER	DATE	APPROVED
430.002	7-25-88	

PLATE 1

30

MARTIN LUTHER KING, JR, WAY

14th STREET

SIDEWALK

SIDEWALK

10

31 25 (ND) 27 (ND)

54 24 (ND) 26.5 (ND)

39 24.5 (ND) 27 (ND)

55 24 (ND) 27 (ND)

53 26.5 (ND)

24 (ND) 26 (5000) 27 (22)

40 24 (ND) 27 (ND)

41 28 (ND)

23 (ND) 24.5 (1000) 26 (ND)

43

21 (ND) 24 (ND) 26 (TR)

42

25 (5350) 27 (ND)

30

23 (ND) 26 (ND) 29 (ND)

28

6 17.5 (ND) 23 (ND) 27 (ND)

VAPOR TREATMENT SYSTEM

2 16 (ND) 21 (1810) 25 (7530)

EXTENT OF PREVIOUS ON-SITE SOIL CLEANUP

14 19 (ND) 22 (ND) 25 (6710)

25 (ND) 11

16 (54) 21 (6770) 26 (ND)

19 (ND) 24 (ND) 28.5 (2020)

7

4

25 (7660)

16

32

TANK

3 16 (ND) 21 (2370) 25 (ND)

8 16 (ND) 21 (ND) 26 (ND)

15 25 (ND)

16 (ND) 1A 21 (3700)

16 (ND) 1 21 (ND) 25 (ND)

9

EXISTING BUILDING

Unitarian Church

TRUE NORTH

REFERENCE NORTH

N

N

APPROXIMATE SCALE (feet)

0 20 40

APPROXIMATE EXTENT OF SOIL CONTAMINATION

4 ← BORING NUMBER

21 (1810)

CONCENTRATION (mg/kg)

SAMPLE DEPTH (feet)

(ND) NONE DETECTED

(TR) TRACE DETECTED

VAPOR WELL

GASOLINE CONCENTRATIONS IN S

Subsurface Consultants

1330 MARTIN LUTHER KING, JR. WAY - OAK.

JOB NUMBER	DATE	APPROVED
430.011	11/1/90	

PLATE 2

MARTIN LUTHER KING JR. WAY

A

WW@26'

SC@26'

WF@31'

PREVIOUS TANK

SUMP

WF2@31'

ND@26'

B

BOTTOM OF EXCAVATION

NC@26'

EFC@28'

EF1@29'

EF@30'

EW@26'

EW1@26'

B'

SIDEWALK

14TH STREET

A'

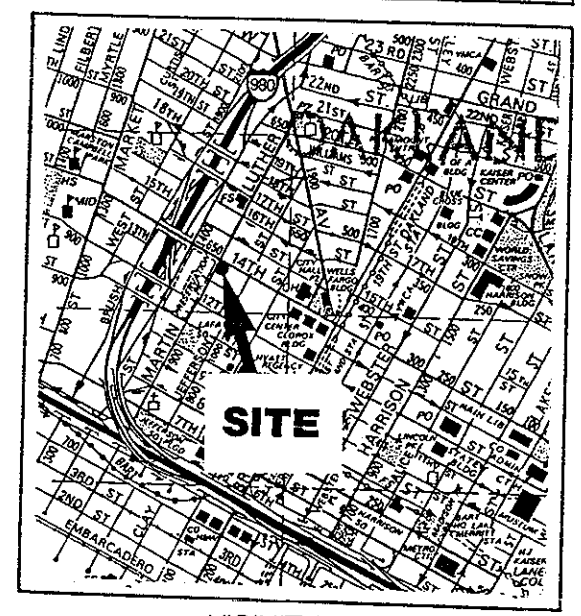
PROPERTY LINE

SOIL SAMPLE LOCATION AND DESIGNATION

STORM DRAIN INLET

A A'

CROSS SECTION LOCATION



VICINITY MAP

TRUE

REFERENCE

APPROXIMATE SCALE (feet)

0 10 20

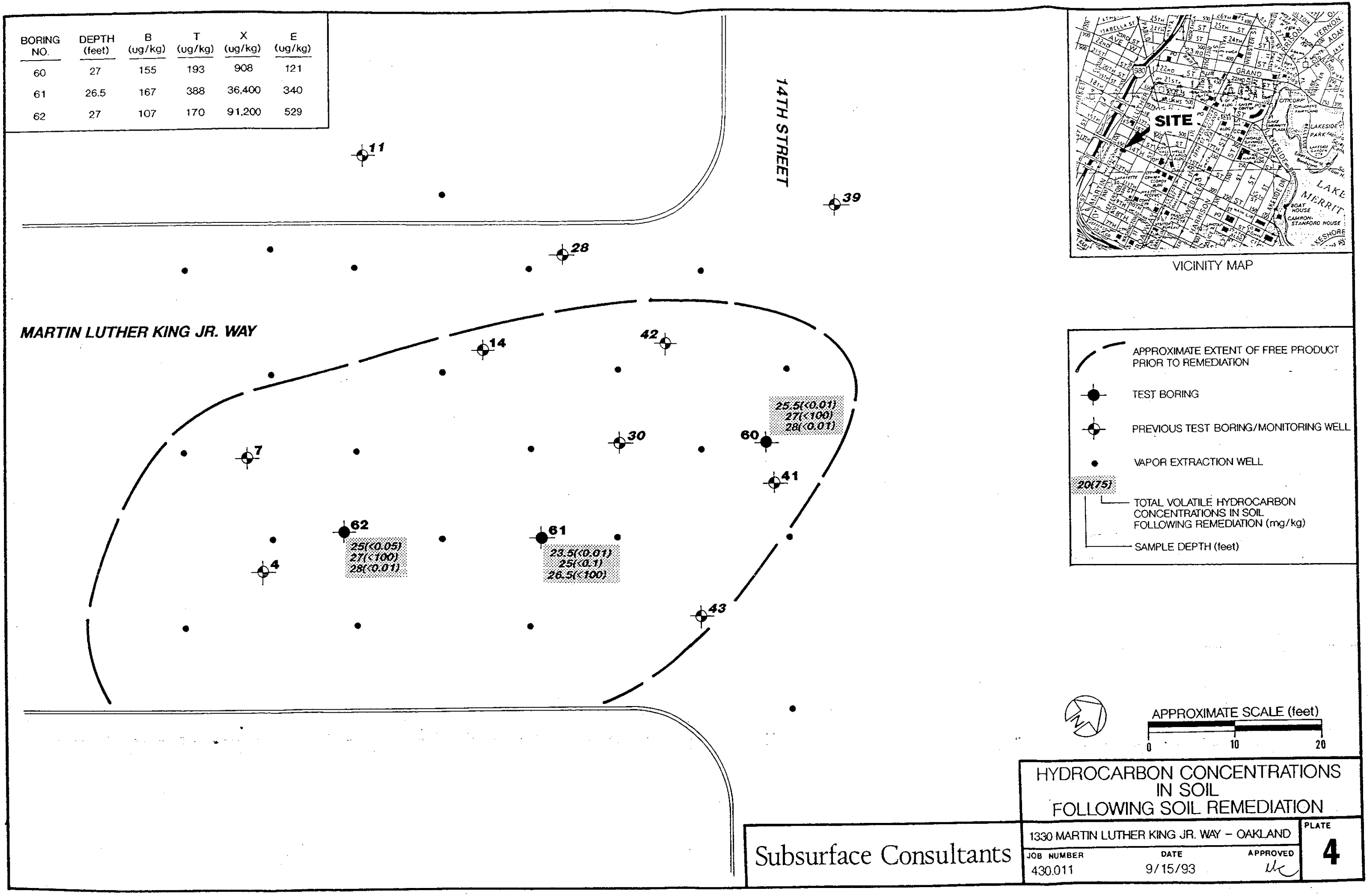
EXTENT OF ON-SITE SOIL REMEDIATION

Subsurface Consultants

1330 MARTIN LUTHER KING, Jr. WAY - OAK.

JOB NUMBER	DATE	APPROVED	PLATE
430.002	9/12/89		3

BORING NO.	DEPTH (feet)	B (ug/kg)	T (ug/kg)	X (ug/kg)	E (ug/kg)
60	27	155	193	908	121
61	26.5	167	388	36,400	340
62	27	107	170	91,200	529



VICINITY MAP

APPROXIMATE EXTENT OF FREE PRODUCT PRIOR TO REMEDIATION

TEST BORING

PREVIOUS TEST BORING/MONITORING WELL

VAPOR EXTRACTION WELL

20(75) — TOTAL VOLATILE HYDROCARBON CONCENTRATIONS IN SOIL FOLLOWING REMEDIATION (mg/kg)

SAMPLE DEPTH (feet)

APPROXIMATE SCALE (feet)

0 10 20

HYDROCARBON CONCENTRATIONS IN SOIL FOLLOWING SOIL REMEDIATION

Subsurface Consultants

1330 MARTIN LUTHER KING JR. WAY – OAKLAND

JOB NUMBER	DATE	APPROVED
430.011	9/15/93	

PLATE 4

MONITORING WELL

BTXE BENZENE, TOLUENE, XYLENE, ETHYLBENZENE

TVH TOTAL VOLATILE HYDROCARBONS, AS GASOLINE

ND NOT DETECTED

CONCENTRATIONS IN ug/l

B	120	10

10 — MOST RECENT CONCENTRATION

120 — CONCENTRATION 10/23/90

APPROXIMATE EXTENT OF FREE PRODUCT PLUME PRIOR TO REMEDIATION

APPROXIMATE EXTENT OF DISSOLVED PRODUCT PLUME PRIOR TO REMEDIATION

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

14TH STREET

MARTIN LUTHER KING JR. WAY

EXISTING BUILDING

PARKING

EXISTING BUILDING

GW TREATMENT PLANT

PREVIOUS TANK

REFERENCE NORTH

TRUE NORTH

APPROXIMATE SCALE (feet)

0 20 40

29

31

8/18/93		
TVH	ND	ND
B	ND	ND
T	ND	ND
X	ND	ND
E	ND	ND

58

2/16/93	
TVH	ND
B	ND
T	ND
X	ND
E	ND

39

8/18/93		
TVH	160	ND
B	12	ND
T	6.4	ND
X	5	ND
E	ND	ND

42

8/18/93		
TVH	18,000	4,120
B	2,300	268
T	1,100	ND
X	1,000	323
E	260	377

43

8/18/93		
TVH	6,300	ND
B	ND	ND
T	ND	ND
X	130	ND
E	9.1	ND

30

28

46

10/24/91		
TVH	ND	ND
B	ND	ND
T	0.6	ND
X	ND	ND
E	0.5	ND

11

8/18/93		
TVH	4,200	ND
B	1,600	ND
T	8.5	ND
X	170	ND
E	28	ND

EW1

4/24/91		
TVH	48,000	170
B	7,600	ND
T	8,200	ND
X	5,600	ND
E	150	ND

32

59

45

2/16/93		
TVH	ND	ND
B	0.9	ND
T	1.4	ND
X	1.8	ND
E	ND	ND

HYDROCARBON CONCENTRATIONS IN GROUNDWATER Aug 93

Subsurface Consultants

1330 MARTIN LUTHER KING JR. WAY – OAK.

JOB NUMBER	DATE	APPROVED	PLATE
430.010	10/25/93	MC	5

14th STREET

MARTIN LUTHER KING, JR. WAY

JEFFERSON STREET

SIDEWALK

RESTAURANT

FIRE HOUSE NO. 1

FURNITURE STORE

STORE

RADIO REPAIR SHOP

FIRE DEPARTMENT GARAGE & REPAIR SHOP

POLICE DEPARTMENT GARAGE

GASOLINE SERVICE STATION

13th STREET

GASOLINE STATION

N

APPROXIMATE SCALE (feet)

0 50 100

SOURCE: SANBORN FIRE INSURANCE MAP
1911 - 1951

SITE USE MAP - 1951

5

Subsurface Consultants

14TH & MLK, JR. WAY, OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.004	9/13/88	

PLATE 6

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

June 2, 1994
STID 3623

Donnell Choy
Deputy City Attorney
Oakland City Attorney Office
505-14th St., 12th Floor
Oakland CA 94612

RE: 13th and Jefferson Streets, Oakland CA 94612

Dear Mr. Choy,

We are in receipt of the "Request for Site Closure, Hydrocarbon and Lead Contamination Sites, 13th and Jefferson Streets, Oakland California," prepared by Subsurface Consultants, Inc. (SCI), dated 4/15/94. As we discussed by phone today, we cannot grant case closure for this site because it is the same parcel of land as the ongoing groundwater monitoring at 14th St. and Martin Luther King Way. If these two areas were subdivided, then we could begin the case closure process.

Upon review of the above named report, this office concurs that **no further cleanup or monitoring work is warranted for the site at 13th St. and Jefferson St., as shown on the attached map.** This map is Plate 1 of SCI's 4/15/94 "Request for Site Closure, Hydrocarbon and Lead Contamination Sites, 13th and Jefferson Streets, Oakland California." Please understand that this statement is different from a Remedial Actions Completion Certification, aka a "closure letter," which is signed by our Assistant Agency Director (currently Rafat Shahid).

If you have any questions, please contact me at 510-271-4530.

Sincerely,

Jennifer Eberle
Hazardous Materials Specialist

cc: David Ralph, City of Oakland, OEDE, 1333 Broadway, #900, Oakland CA 94612
Andrew Clark-Clough, City of Oakland, Environmental Affairs, 1333 Broadway, #330, Oakland CA 94612
Jim Bowers, Subsurface Consultants, Inc., 171-12th St., Suite 201, Oakland CA 94607
Kevin Graves, RWQCB
Ed Howell/file

attachment
je

Table 1a CONTAMINANT CONCENTRATIONS IN SOIL FOLLOWING TANK REMOVAL (mg/kg or parts per million)

Contaminant	T-1N[8]	T-1S	T-2	T-3
TEH[1]	ND[7]	ND	22,000	
O&G[2]	67	73	ND	
Cadmium	1.5		4.0	
Lead	ND		28	
Zinc	100		3,200	
EPA 8240[3] chemicals	ND		ND	
TVH[5]				ND
BTXE[6]				ND
Polynuclear Aromatic Hydrocarbons (EPA 8270)[4]				
Napthalene			6.6	
Fluorene			4.3	
Penanthrene			7.6	
2-Methylnapthalene			25	
Other EPA 8270 Chemicals	ND		ND	

13th & Jefferson

1 TEH = Total Extractable Hydrocarbons as diesel
2 O&G = Oil and Grease Method SMWW 503E
3 8240 = Volatile Organics, EPA Test Method 8240
4 8270 = Semi-Volatile Organics, EPA Test Method 8270
5 TVH = Total Volatile Hydrocarbons as gasoline
6 BTXE = Benzene, Toluene, Xylene, Ethylbenzene, EPA Test Method 8020
7 ND = None detected at concentrations above detection limit: see test reports for detection limits
8 All samples were taken below bottom of tanks.

Table 2.0 PAH CONCENTRATIONS IN SOIL PRIOR TO REMEDIATION (continued)
(LEAD AND PAH CONTAMINATED SOIL)

Test pit	Depth (feet)	Chemical/Chemical Analysis	Concentration (mg/kg)[1]
1	1.5	EPA Method 8100 Chemicals	ND[2]
10	2.0	EPA Method 8100 Chemicals	ND
10	3.5	EPA Method 8100 Chemicals	ND
11	1.0	EPA Method 8100 Chemicals	ND
		Naphthalene	ND
		Acenaphthylene	7
		Acenaphthene	ND
		Fluorene	ND
		Phenanthrene	30
		Anthracene	5
		Fluoranthene	71
		Pyrene	93
		Benzo(a)anthracene	37
		Chrysene	38
		Benzo(b)fluoranthene	61
		Benzo(k)fluoranthene	20
		Benzo(a)pyrene	69
		Indeno(1,2,3-cd)pyrene	86
		Dibenzo(a,h)anthracene	12
		Benzo(g,h,i)perylene	110
14	2.0	EPA Method 8100 Chemicals	ND
16	1.5	EPA Method 8100 Chemicals	ND

[1] Milligrams per kilogram or parts per million (ppm)
[2] Not detected at concentrations above the reporting limits

Table 2a PAH CONCENTRATIONS IN SOIL PRIOR TO REMEDIATION (LEAD AND PAH CONTAMINATED SOIL)

Boring	Depth (feet)	Chemical/Chemical Analysis	Concentration (mg/kg)[1]
32	4.0	EPA Method 8100 Chemicals	ND[2]
32	10.0	EPA Method 8100 Chemicals	ND
33	2.0	EPA Method 8100 Chemicals	
		Naphthalene	110
		Acenaphthylene	190
		Acenaphthene	ND
		Fluorene	34
		Phenanthrene	1,200
		Anthracene	100
		Fluoranthene	1,100
		Pyrene	1,100
		Benzo(a)anthracene	210
		Chrysene	280
		Benzo(b)fluoranthene	330
		Benzo(k)fluoranthene	140
		Benzo(a)pyrene	420
		Indeno(1,2,3-cd)pyrene	370
		Dibenzo(a,h)anthracene	39
		Benzo(g,h,i)perylene	440
33	5.0	EPA Method 8100 Chemicals	ND
33	13.0	EPA Method 8100 Chemicals	ND

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[1] mg/kg = milligrams per kilogram or parts per million (ppm)
[2] ND = Not detected at concentrations above the reporting limits

Table 3Q LEAD CONCENTRATIONS IN SOIL PRIOR TO REMEDIATION
(LEAD AND PAH CONTAMINATED SOIL)

Test Boring	Sample Depth (ft)	Total Lead[1] (mg/kg)[2]	Extractable Lead[3] (mg/L)[4]
32	4.0	46	1.4
32	10.0	23	--[6]
33	2.0	250	15
33	5.0	ND	--
33	13.0	ND	--
Test Pit			
1	1.5	20	--
10	2.0	1300	28
10	3.5	ND[5]	--
11	1.0	300	8.4
14	2.0	ND	--
16	1.5	400	63

---

1 EPA 7420 Method of analysis
2 milligrams per kilogram or parts per million (ppm)
3 California WET Extraction 6670, digestion EPA 3050
4 milligrams per liter or parts per million (ppm)
5 Not detected, chemicals not present at concentrations above detection limits
6 Test not requested

Post Remediation

Table 4a. SUMMARY OF TOTAL PNA AND LEAD CONCENTRATIONS IN SOIL

Sample Designation	Total PNA Concentrations (ppm)[1]	Total Lead Concentrations (ppm)
CB-1	ND[2]	ND
CB-2	ND	ND
CB-3	ND	2.9
CB-4	ND	4.4
CB-5	ND	5.0
CB-6	ND	9.1
CW-1	ND	61
CW-2	ND	2.9
CW-3	ND	4.5
CW-4	ND	6.8
CW-6	ND	7.2
CW-8	ND	16
CW-10	ND	5.3
CW-12[4]	ND	4.6
CW-13	ND	5.6
CW-14	ND	4.4
CW-15	ND	4.5
CW-16	ND	23
CW-5	4050[3]	13
CW-7	2800[3]	6.0
CW-9	1720[3]	260
CW-11	8320[3]	130

highlighted > 50ppm

1 ppm = mg/kg = parts per million
2 ND = none detected
3 The excavation was expanded to remove these materials
4 Results in bold type are those taken along the sides and bottom of the final excavation

Table 5a CONTAMINANT CONCENTRATIONS IN SOIL[3] BELOW SUMP
(CONCRETE FLOOR DRAIN SUMP)

Contaminant	Concentration (mg/kg[1])	STLC
Metals		
Barium	42	100
Cadmium	1.1	1.0
Chromium (total)	45	5
Cobalt	6.8	80
Copper	10	25
Lead	7.0	5
Nickel	25	20
Vanadium	21	24
Zinc	18	250
Other Title 22 Metals	ND[2]	
Ethylbenzene	Trace	
Total Xylenes	11	
Other Volatile Organics (EPA 8240)	ND	
Pesticides and PCBs (EPA 8080)	ND	
Oil and Grease (SMWW 503E)	1,500	
Total Extractable Hydrocarbons (TEH)		
Gasoline	380	
Kerosene	48,000	
Diesel	270	

---

1 mg/kg = milligrams per kilogram
2 ND = None detected at concentrations above detection limits. See test reports for detection limits.
3 Sample Designation: Sump @ 14 feet

Table 6d HYDROCARBON CONCENTRATIONS IN SOIL FOLLOWING REMEDIATION
(CONCRETE FLOOR DRAIN SUMP)

Sample Designation	TEH[1] (mg/kg)	O&G[2] (mg/kg)
Sump @ 14	48,650	1,500
Sump @ 21	ND[4]	150
Sump @ 26		
Bottom	ND	89
North	ND	ND
South	ND	ND
West	ND	58
East	ND	51
Sump @ 28 (Bottom)	ND	ND
N @ 12	ND	
N @ 18	ND	
N @ 24	ND	
S @ 6	ND	
S @ 12	ND	
S @ 18	ND	
S @ 24	34[6]	
S2 @ 24	ND	
E @ 6	ND	
E @ 12	ND	
E @ 18	ND	
E @ 24	ND	ND
W @ 6	ND	
W @ 12	ND	
W @ 18	ND	
W @ 24	ND	ND

---

1 TEH = Total Extractable Hydrocarbons, EPA 8015/3550
2 O&G = Oil and Grease Method SMWW 503E
3 BTXE = Benzene, Toluene, Xylene and Ethylbenzene, EPA 8020
4 ND = None detected at concentrations above detection limits. See test reports for detection limits.
5 mg/kg = milligrams per kilogram
6 Additional soil was removed and wall was resampled as S2 @ 24

Table 7[illegible] PETROLEUM HYDROCARBON CONCENTRATIONS IN SOIL PRIOR TO REMEDIATION (GASOLINE CONTAMINATION)

Sample[2]	Total TVH (mg/kg[3])	Ethyl-Benzene (mg/kg)	Toluene (mg/kg)	Xylenes (mg/kg)	Benzene (mg/kg)
12 @ 23	ND				
19 @ 27	21				
24 @ 18	ND[4]	ND	ND	ND	ND
24 @ 23	88.3	ND	ND	3.51	1.56
24 @ 27.5	2,310	ND	43.5	167.0	54.7
25 @ 23	19.9	ND	0.16	0.86	0.21
26 @ 23	ND	ND	ND	0.17	ND
27 @ 18	ND	ND	ND	0.11	ND
27 @ 23.5	516	ND	3.59	34.4	11.6
27 @ 28	ND	ND	ND	0.23	0.13
34 @ 21	ND[5]				
34 @ 25	ND				
34 @ 28	ND				
35 @ 16	ND				
35 @ 21	ND				
35 @ 26	ND	ND	ND	ND	ND
36@ 20.5	ND				
36 @ 25.5	1,800				
36 @ 30	79				
37 @ 20.5	ND				
37 @ 25	Trace				
37 2 27.5	ND				
38 @ 20.5	ND				
38 @ 25.5	190	ND	ND	7.4	3.1
38 @ 28.5	ND				
44 @ 21	Trace	.036	.055	.34	1.2
44 @ 26	590				
44 @ 31	800				
45 @ 26	ND				
46 @ 20.5	83				
46 @ 24	470				
46 @ 27	ND				

Table 7@ PETROLEUM HYDROCARBON CONCENTRATIONS IN SOIL PRIOR TO REMEDIATION (Continued) (GASOLINE CONTAMINATION)

Sample[2]	TVH (mg/kg[3])	Benzene (mg/kg)	Toluene (mg/kg)	Total Xylenes (mg/kg)	Ethyl-Benzene (mg/kg)
47 @ 21	ND				
47 @ 25	404				
47 @ 28	12				
47 @ 31	ND				
48 @ 16	ND				
48 @ 21	ND				
48 @ 26	63				
49 @ 21	25				
49 @ 25.5	38				
49 @ 27.5	600				
51 @ 26	ND	ND	ND	ND	ND
52 @ 26	ND	ND	.007	ND	ND
53 @ 26	ND	ND	.015	ND	ND
55 @ 24.5	30	ND	.023	.150	.033
57 @ 25.5	14	ND	.014	.075	.015
59 @ 24	29				
59 @ 26	ND				
60 @ 25.5	ND				
61 @ 24.5	ND				
61 @ 26	Trace	.013	.051	.110	.026
62 @ 26	ND				
63 @ 26	ND				
65 @ 24	Trace				
65 @ 26	17				
66 @ 24.5	21				
66 @ 26	58	ND	.580	1.200	.570
67 @ 22.5	ND				
67 @ 25.5	ND				

Table ~~2a~~ 8a CONTAMINANT CONCENTRATIONS FOLLOWING SOIL EXCAVATION
(mg/kg or parts per million)

Contaminant	T-1N @ 12'	T-1S @ 12'	T2 @ 11'	T2 @ 14'
TEH[1]	ND[3]	ND	ND	ND
O&G[2]	ND	ND		
Zinc			0.46	
Pyrene			0.13	ND
Benzo(b)fluoranthene			0.11	ND
Indeno(1,2,3 cd)pyrene			0.16	ND
Other PNA's[4]			ND	ND

---

1 TEH = Total Extractable Hydrocarbons, EPA 8015/3550
2 O&G = Oil and Grease SMWW 503E
3 ND = None detected at concentrations above detection limits. See analytical reports for detection limits.
4 PNA's = Polynuclear Aromatic Hydrocarbons, EPA 8100

V CONTAMINATED SOIL TREATMENT AND DISPOSAL

The contaminated soils excavated from beneath tanks T1 and T2 were aerated and stockpiled on-site. Approximately 50 yards of diesel and oil and grease contaminated soil were removed from beneath the tanks. These materials were disposed of at the west Contra Costa County Sanitary Landfill in Richmond, California. Prior to disposal, two samples of the aerated soil were obtained (Samples TISPA and TISPB) and analyzed for oil and grease (SMWW

9a

Table ~~15.~~ PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUNDWATER

Well	Date	O&G[1] (ug/L)	TVH[2] (ug/L)	TEH[3] (ug/L)	B[4] (ug/L)	T[5] (ug/L)	X[6] (ug/L)	E[7] (ug/L)
MW-47	04/06/90	--	ND[8]	--	ND	ND	ND	ND
	10/04/90	--	--	--	ND	ND	ND	ND
	12/03/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
	12/12/91	--	ND	--	ND	ND	ND	ND
	04/17/92	--	--	--	ND	ND	ND	ND
MW-48	04/06/90	--	ND	--	ND	ND	ND	ND
	07/18/90	ND	ND	ND	ND	ND	ND	ND
	10/04/90	--	--	110	ND	ND	ND	ND
	12/03/90	ND	ND	ND	ND	ND	ND	ND
	03/13/91	ND	ND	ND	ND	ND	ND	ND
	09/11/91	ND	ND	ND	ND	ND	ND	ND
	12/12/91	ND	ND	ND	ND	ND	ND	ND
	04/17/92	ND	--	--	ND	ND	ND	ND
MW-49	04/06/90	--	ND	--	ND	ND	ND	ND
	12/03/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
	12/12/91	--	ND	--	ND	ND	ND	ND
	04/17/92	--	--	--	ND	ND	ND	ND
	12/18/92	Well Abandoned						
MW-51	04/06/90	--	ND	--	ND	ND	ND	ND
	10/04/90	--	--	--	ND	ND	ND	ND
	12/04/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
MW-52	04/06/90	--	ND	--	ND	ND	ND	ND
	10/04/90	--	--	--	ND	ND	ND	ND
	12/04/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
MW-53	09/21/90	--	ND	--	ND	ND	ND	ND
	10/04/90	--	ND	--	ND	ND	ND	ND
	12/04/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/11/91	--	ND	--	ND	ND	ND	ND
	08/12/91	Well Abandoned						

Table 15. PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUNDWATER (continued)

Well	Date	O&G[1] (ug/L)	TVH[2] (ug/L)	TEH[3] (ug/L)	B[4] (ug/L)	T[5] (ug/L)	X[6] (ug/L)	E[7] (ug/L)
MW-54	09/21/90	--	1700	--	ND	1.5	20	1.9
	10/04/90	--	1300	--	ND	0.7	12	28
	12/04/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
	12/12/91	--	ND	--	ND	ND	ND	ND
	04/17/92	--	--	--	ND	ND	ND	ND
MW-59	03/13/91	--	ND	--	ND	ND	ND	ND

[1] Oil and Grease
[2] Total Volatile Hydrocarbons
[3] Total Extractable Hydrocarbons
[4] Benzene
[5] Toluene
[6] Xylene
[7] Ethylbenzene
[8] ND = Non-detectable, see analytical test reports for detection limits
[9] -- Not tested

Table ~~16.~~ 10a

8010s or 60/s

HALOGENATED VOLATILE ORGANIC CHEMICAL CONCENTRATIONS IN GROUNDWATER

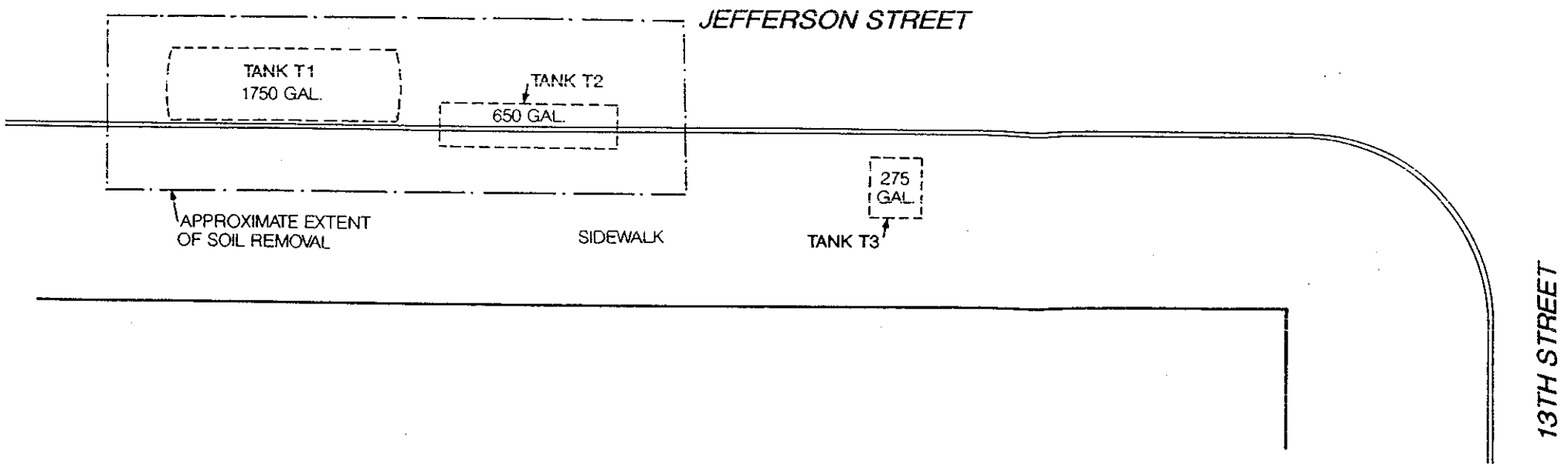
Well	Date	1,2 DCA[1] (ug/L)[3]	1,2 DCE[2] (ug/L)	Chloroform (ug/L)	Other EPA 8010 (ug/L)
MW-29	01/04/91	ND[4]	ND	ND	ND
MW-31	01/04/91	ND	ND	10	ND
MW-45	01/04/91	ND	ND	ND	ND
MW-46	01/04/91	ND	ND	ND	ND
MW-47	12/03/90	ND	11	ND	ND
	01/04/91	16	ND	ND	ND
	03/13/91	6.7	ND	ND	ND
	06/13/91	ND	ND	ND	ND
	09/11/91	ND	ND	ND	ND
	12/12/91	ND	ND	ND	ND
	04/17/92	ND	ND	ND	ND
	07/28/92	ND	ND	ND	ND
	11/03/92	ND	ND	ND	ND
MW-48	10/04/90	60	ND	ND	ND
	12/03/90	31	ND	ND	ND
	01/04/91	15	ND	ND	ND
	03/13/91	30	ND	ND	ND
	06/19/91	6.1	ND	ND	ND
	09/11/91	5.3	ND	ND	ND
	12/12/91	16	ND	ND	ND
	04/17/92	1	ND	ND	ND
	07/28/92	ND	ND	ND	ND
	11/03/92	ND	ND	ND	ND
	02/03/93	ND	ND	ND	ND
	05/06/93	ND	ND	ND	ND
MW-49	12/03/90	ND	ND	ND	ND
	03/03/91	ND	ND	ND	ND
	06/13/91	5.0	ND	ND	ND
	09/11/91	ND	ND	ND	ND
	12/12/91	ND	ND	ND	ND
	04/17/92	ND	ND	ND	ND
	11/03/92	ND	ND	ND	ND
	12/18/92	Well Abandoned			
MW-51	12/04/90	ND	ND	ND	ND
	06/13/91	ND	ND	1.0	ND
MW-52	12/04/90	ND	ND	1.3	ND
	06/13/91	ND	ND	2.0	ND
MW-53	10/04/90	ND	ND	1.2	ND
	12/04/90	ND	ND	1.9	ND
	03/13/91	ND	ND	2.0	ND
	06/13/91	ND	ND	8.0	ND
	08/12/91	Well abandoned			

Table 16. HALOGENATED VOLATILE ORGANIC CHEMICALS
CONCENTRATIONS IN GROUNDWATER (continued)

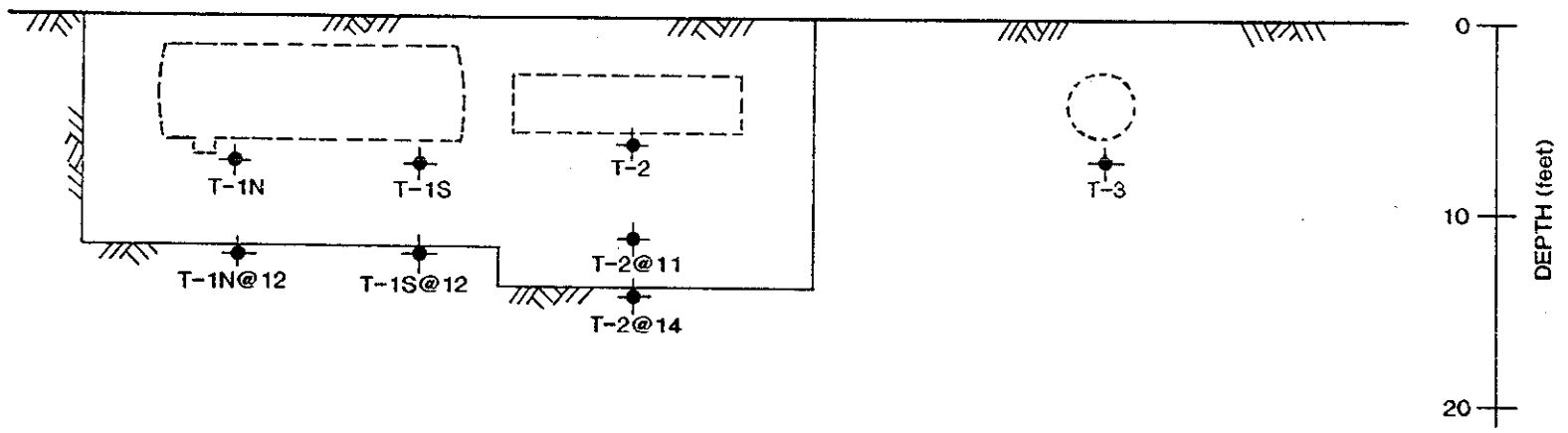
Well	Date	1,2 DCA[1] (ug/L)[3]	1,2 DCE[2] (ug/L)	Chloroform (ug/L)	Other EPA 8010 (ug/L)
MW-54	10/04/90	ND	ND	1.6	ND
	12/04/90	ND	ND	1.5	ND
	01/04/91	ND	ND	ND	ND
	03/13/91	ND	ND	ND	ND
	06/13/91	ND	ND	1.0	ND
	11/03/92	ND	ND	ND	ND
	02/02/93	ND	ND	1.1	ND
	05/06/93	ND	ND	0.7	ND
MW-59	03/13/91	ND	ND	ND	ND
	04/03/91	ND	ND	ND	ND
	09/11/91	ND	ND	ND	ND
	12/12/91	ND	ND	ND	ND
	04/17/92	ND	ND	ND	ND
	07/28/92	ND	ND	ND	ND
	11/03/92	ND	ND	ND	ND

[1] 1,2 Dichloroethane
[2] 1,2 Dichloroethene
[3] Micrograms/liter = parts per billion
[4] None detected, see test reports for detection limits

PLAN



CROSS SECTION



SAMPLE LOCATION

TANK

T-1N@12 SAMPLE DESIGNATION AND DEPTH (feet)

N

APPROXIMATE SCALE (feet)

0 10 20

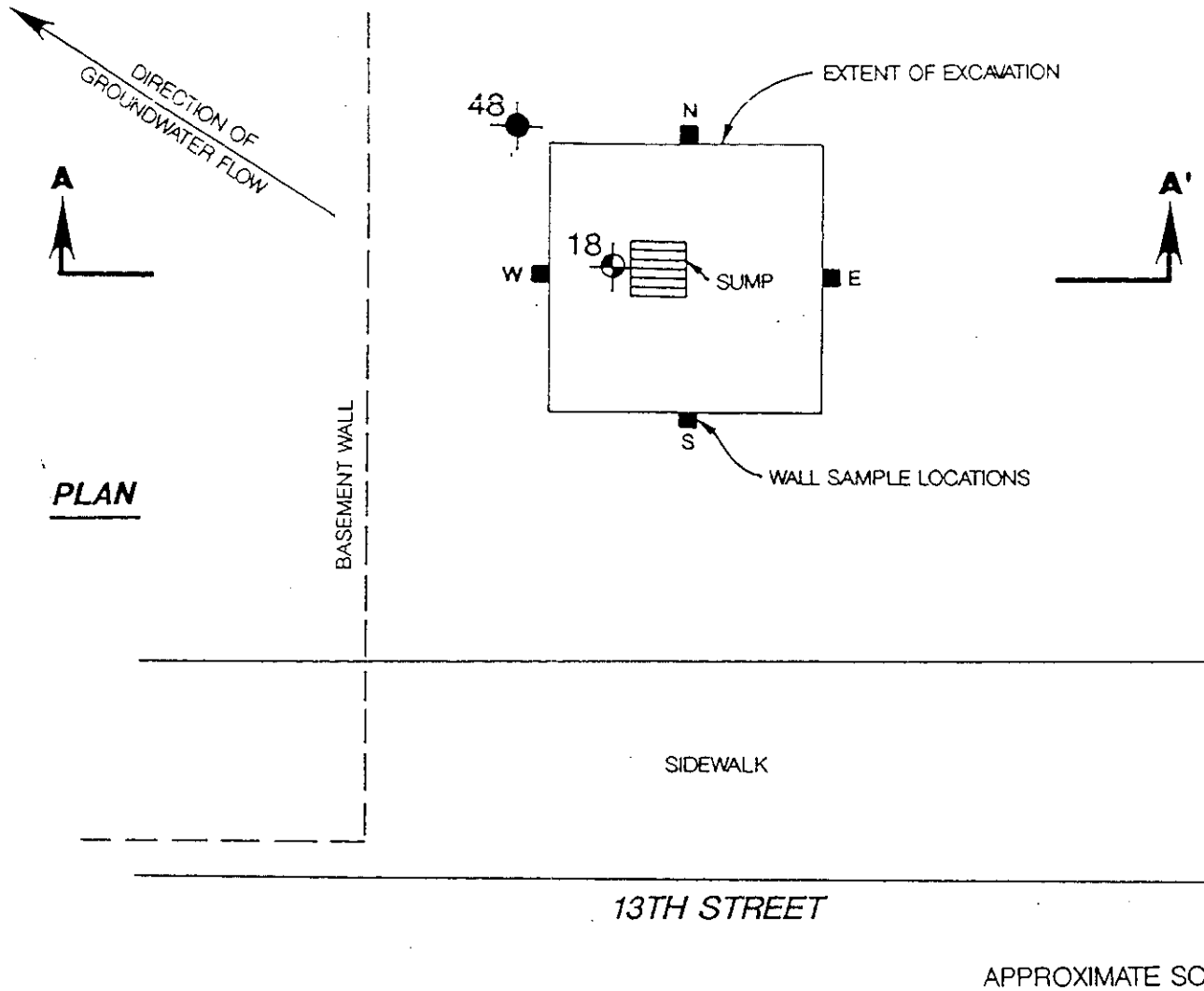
SITE PLAN

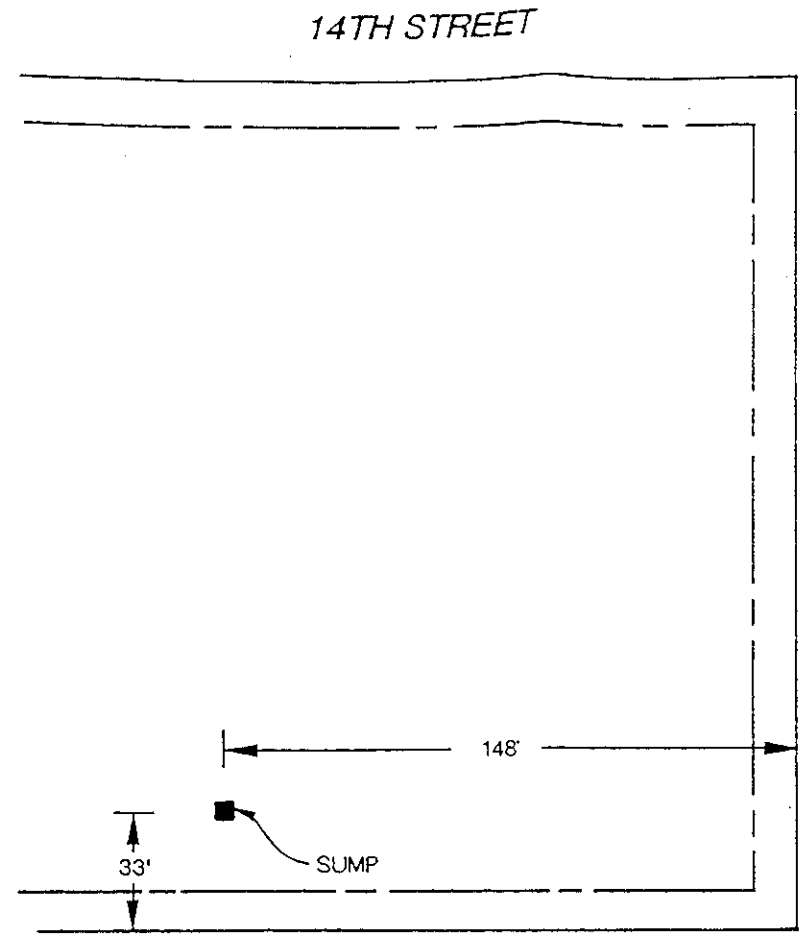
Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.007	7/18/90	

PLATE 1a





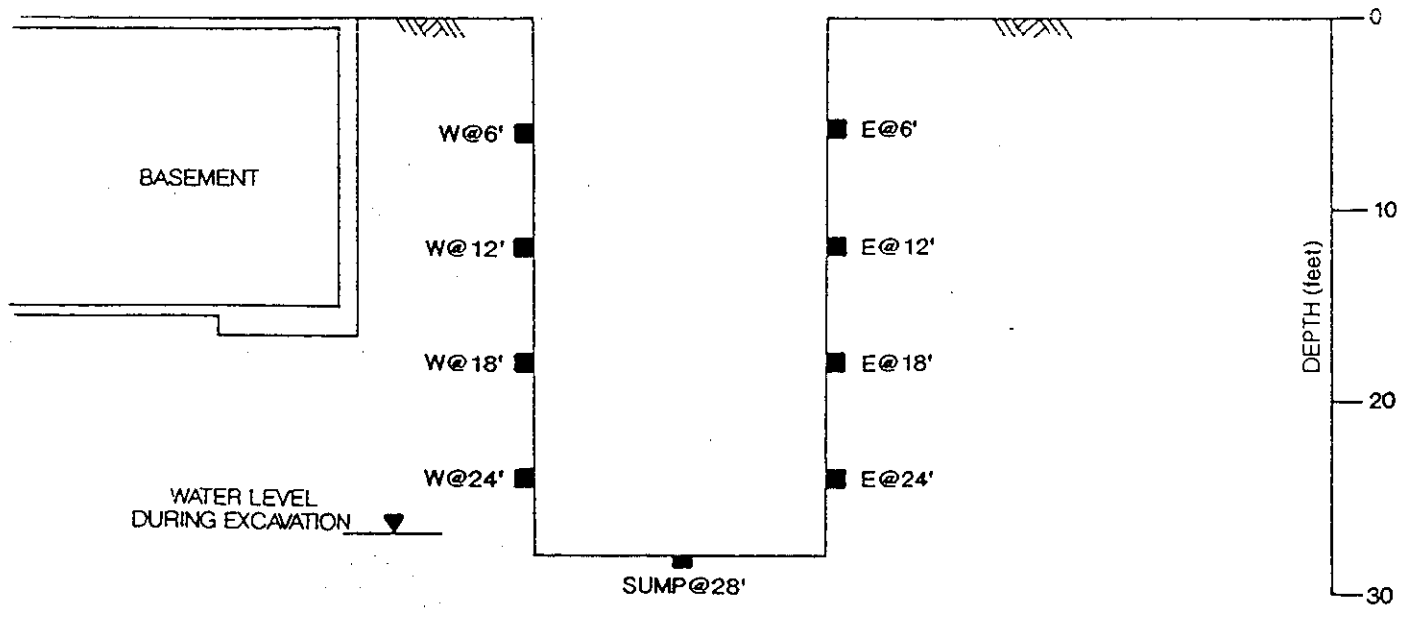
APPROXIMATE SCALE (feet)

0 10 20

APPROXIMATE SCALE (feet)

0 50 100

CROSS SECTION A – A'



REFERENCE NORTH

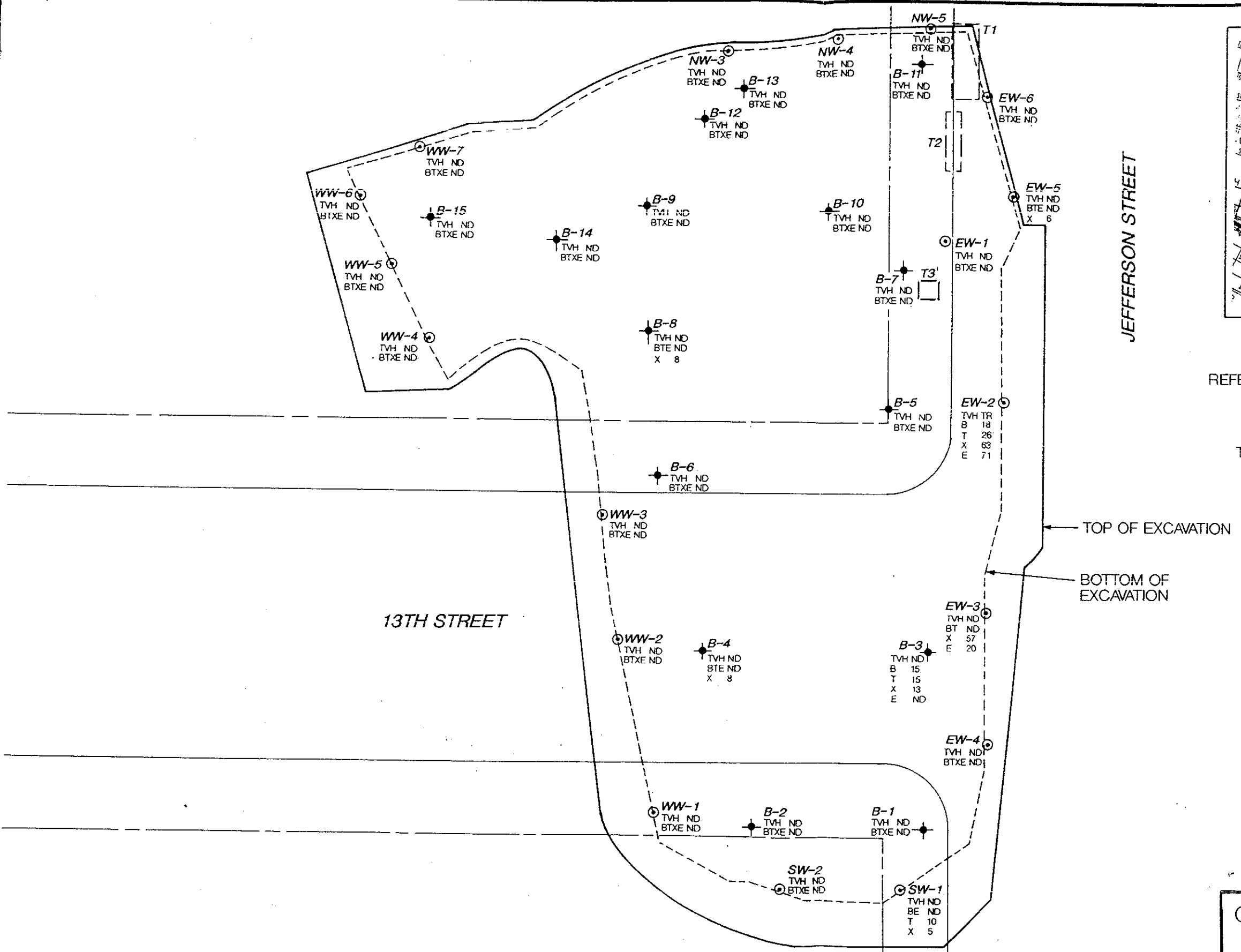
TRUE NORTH

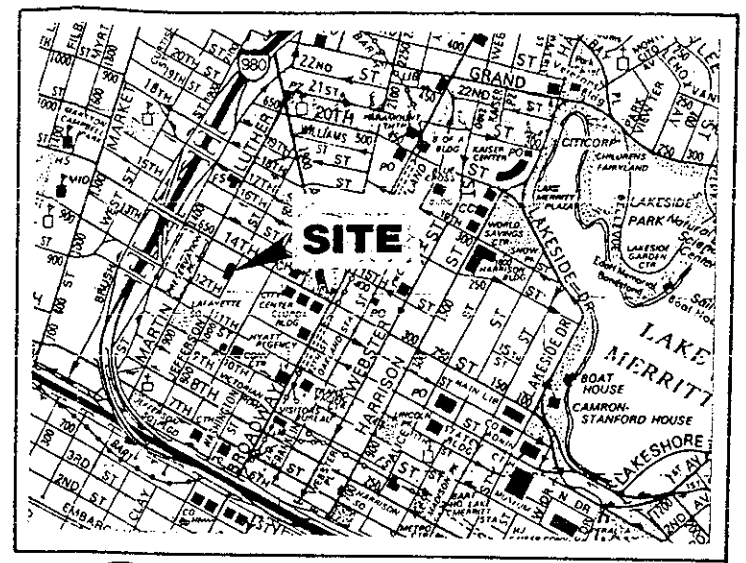
SUMP SITE PLAN & EXTENT OF SOIL REMEDIATION

Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.006	8/9/90	





VICINITY MAP

REFERENCE NORTH

TRUE NORTH

APPROXIMATE SCALE (feet)

0 20 40

- MONITORING WELL
- BOTTOM SAMPLE
- SIDEWALL SAMPLE
- FUEL TANK LOCATION
- EXISTING WATER WELL
- BRICK LINED WATER WELL

TVH – TOTAL VOLATILE HYDROCARBONS AS GASOLINE (ppm)
B – BENZENE (ppb)
T – TOLUENE (ppb)
X – TOTAL XYLENES (ppb)
E – ETHYL BENZENE (ppb)
ND – NONE DETECTED (ppb)

GASOLINE CONCENTRATIONS IN SOIL FOLLOWING REMEDIATION

Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.003	5/10/90	

PLATE 7a

14TH STREET

PG&E

MARTIN LUTHER KING JR. WAY

JEFFERSON STREET

75.0'

75.5'

76.0'

59

47

48

49

51

52

53

54

T1

T2

T3

1

2

EXTENT OF BASEMENT

13TH STREET

PROBABLE TANK LOCATION BASED ON OBSERVATIONS DURING SOIL REMEDIATION

UNDERGROUND STORAGE TANKS DISCOVERED DURING REMEDIATION

TEST BORING/MONITORING WELL

PROPERTY LINE

APPROXIMATE EXTENT OF GASOLINE CONTAMINATED SOIL REMEDIATION

PREVIOUS SUMP AND APPROXIMATE EXTENT OF SOIL REMEDIATION

PREVIOUS WATER WELL

PREVIOUS BRICK–LINED WELL

APPROXIMATE EXTENT OF PAH AND LEAD CONTAMINATED SOIL REMEDIATION

GROUNDWATER CONTOURS (feet) MAY 6, 1993

APPROXIMATE EXTENT OF DCA PLUME (1991)

TRUE NORTH

REFERENCE NORTH

APPROXIMATE SCALE (feet)

0 50 100

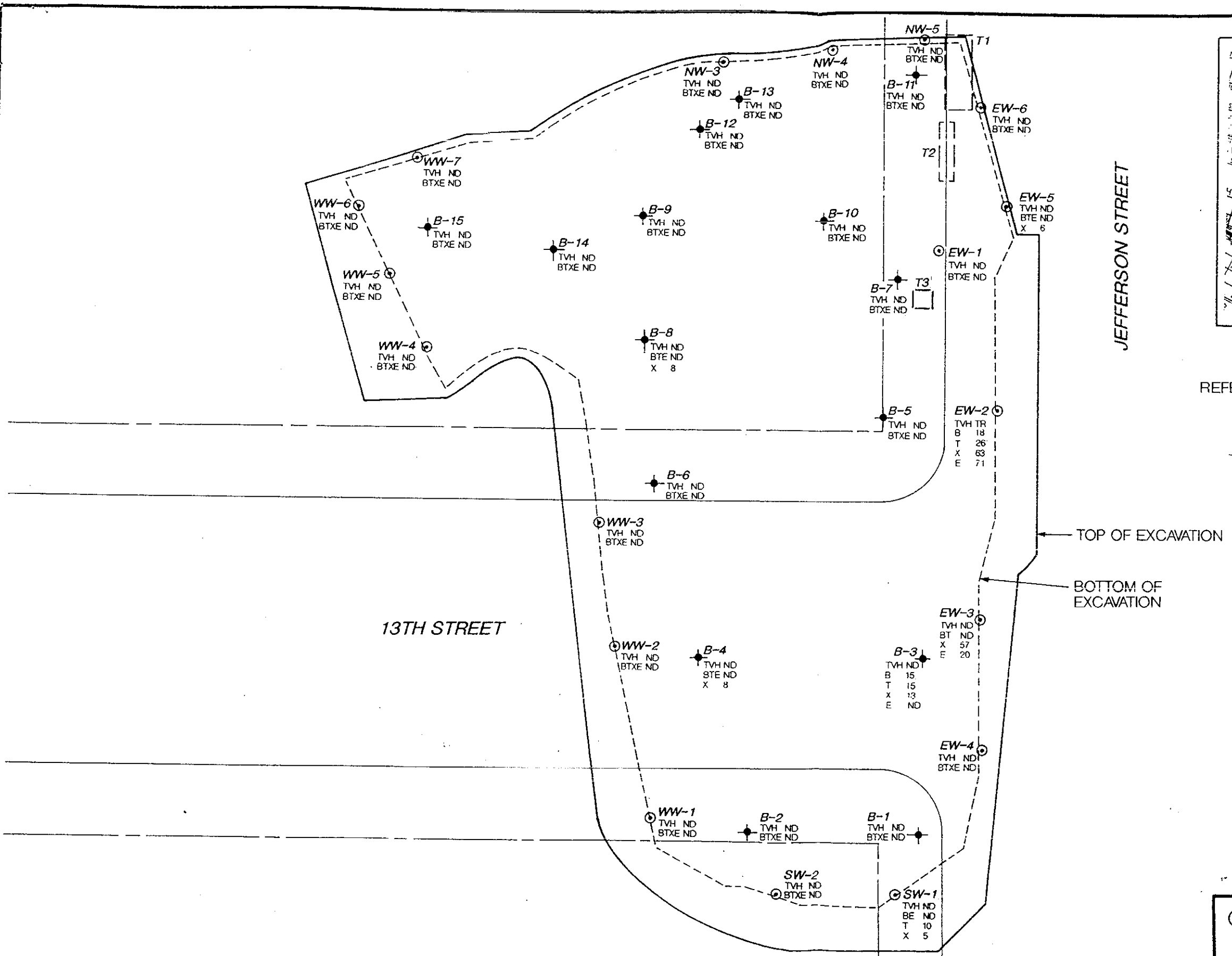
SITE PLAN

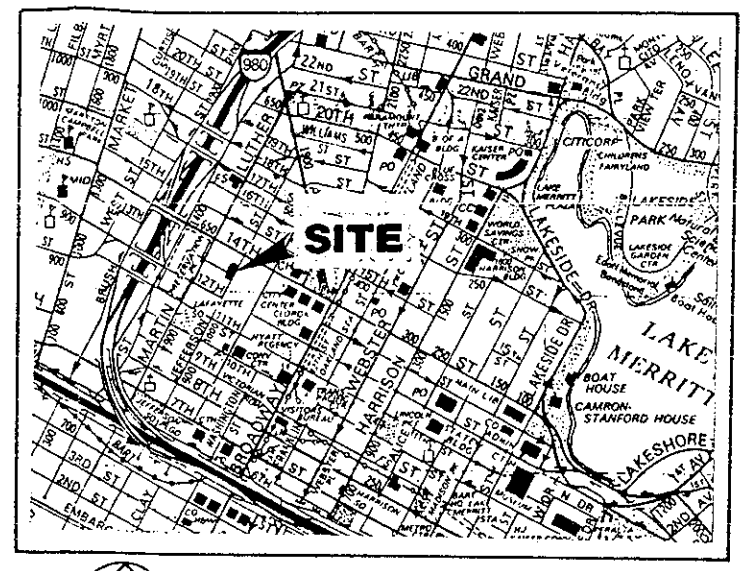
Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.013	3/27/91	

PLATE 1





VICINITY MAP

REFERENCE NORTH

TRUE NORTH

APPROXIMATE SCALE (feet)

0 20 40

- MONITORING WELL
- BOTTOM SAMPLE
- SIDEWALL SAMPLE
- FUEL TANK LOCATION
- EXISTING WATER WELL
- BRICK LINED WATER WELL

TVH – TOTAL VOLATILE HYDROCARBONS AS GASOLINE (ppm)

B – BENZENE (ppb)

T – TOLUENE (ppb)

X – TOTAL XYLENES (ppb)

E – ETHYL BENZENE (ppb)

ND – NONE DETECTED (ppb)

GASOLINE CONCENTRATIONS IN SOIL FOLLOWING REMEDIATION

Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.003	5/10/90	

PLATE 7a

14TH STREET

PG&E

MARTIN LUTHER KING JR. WAY

JEFFERSON STREET

75.0'

75.5'

76.0'

59

47

48

49

51

52

53

54

1

2

T1

T2

T3

EXTENT OF BASEMENT

13TH STREET

PROBABLE TANK LOCATION BASED ON OBSERVATIONS DURING SOIL REMEDIATION

UNDERGROUND STORAGE TANKS DISCOVERED DURING REMEDIATION

TEST BORING/MONITORING WELL

PROPERTY LINE

APPROXIMATE EXTENT OF GASOLINE CONTAMINATED SOIL REMEDIATION

PREVIOUS SUMP AND APPROXIMATE EXTENT OF SOIL REMEDIATION

PREVIOUS WATER WELL

PREVIOUS BRICK-LINED WELL

APPROXIMATE EXTENT OF PAH AND LEAD CONTAMINATED SOIL REMEDIATION

GROUNDWATER CONTOURS (feet) MAY 6, 1993

APPROXIMATE EXTENT OF DCA PLUME (1991)

TRUE NORTH

REFERENCE NORTH

APPROXIMATE SCALE (feet)

0 50 100

SITE PLAN

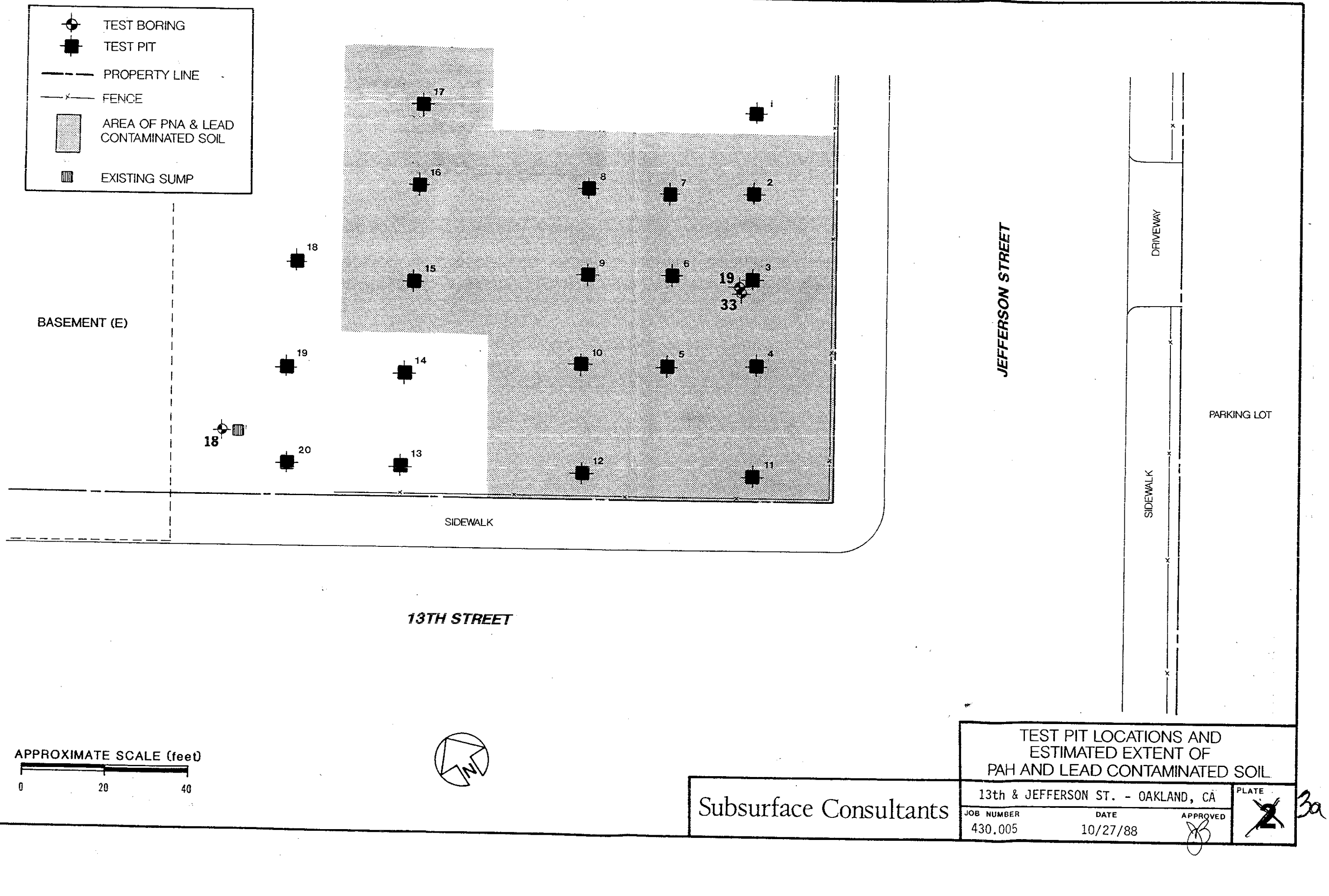
8a

Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.013	3/27/91	

PLATE 1



TEST PIT LOCATIONS AND ESTIMATED EXTENT OF PAH AND LEAD CONTAMINATED SOIL

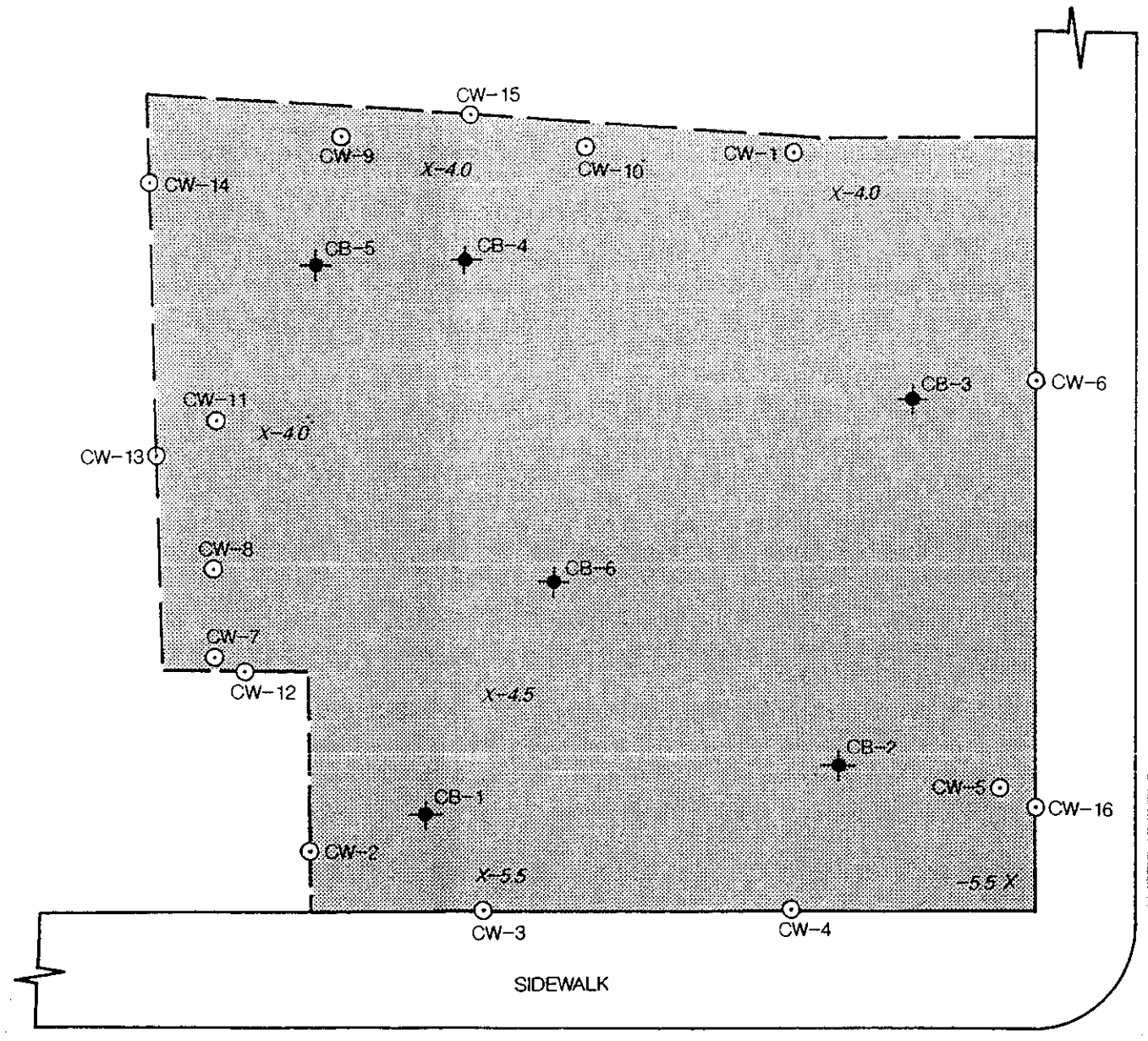
Subsurface Consultants

13th & JEFFERSON ST. - OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.005	10/27/88	

PLATE 3a

2,384 ton soil removed to Class I fm here in 8-89



CONFIRMATION BOTTOM SAMPLE

CONFIRMATION WALL SAMPLE

EXTENT OF EXCAVATION

X EXCAVATION DEPTH BELOW SIDEWALK (feet)

N

APPROXIMATE SCALE (feet)

0 20 40

LIMITS OF REMEDIATION PAH AND LEAD CONTAMINATED SOIL

Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.005	10/23/89	

PLATE

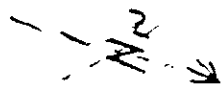
K. Chesick's notes: Alameda County 10/31/89
Attachment 1B

8/31/89

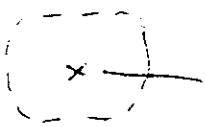
14th + Jefferson, Oakland

Tanks pulled. Former waste oil tank pulled first. Heavily corroded, some pipe/fixture holes which had been soldered shut have corroded open.
Unknown tank had minor to moderate corrosion as did the gasoline tank.

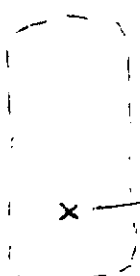
(13th St)



Gasoline



rust brown



Unknown, riveted

Moist brown clayey sand, has odor of paint thinner (Stoddard solvent?) smells like solvent

Green-grey clayey sand, taken immediately below tank bottom.

"Soil"/backfill beneath tank bottom is green/brown/black + shows imprints of tank corrosion

Former waste oil tank; riveted (poss. former fuel oil tank)

"Sump" end of tank (tank bottom has 12" diam. 6-8" deep "protrusion")

Green-grey clayey sand, taken immediately below tank bottom (no soil or fill removed) taken at 9:02. Appears to have some oil + grease

4/10/95 Revised closure summary. Phoned SCI: spoke w/Tom Kundy (Bill Rudolf is out on vacation this wk, and Fernando Velez is out ill w/chicken pox.) Told him we still need report, but it's not the highest priority.

4/11/95 Reviewed 4/6/95 QR by SCI. GW sampled on 3/7/95 flowed NW at 1% gradient (consistent). Concs are approximately the same. GWEs increased. Copied the new data (GWEs and concs) and added to closure summary.

Revised closure summary. Phoned SCI: spoke w/Tom Kundy (Bill Rudolf is out on vacation this wk, and Fernando Velez is out ill w/chicken pox.) Told him to stop QM, and that we do not need the report after all. Closure is imminent!

Copied the entire closure summary for myself, and sent clos summary to Kevin Graves for review.

4/28/95 Received clos sum w/KG's concurrence signature. Wrote closure letter to RP.

5/2/95 left mess F. Velez: we need to close the wells. I forgot to have them do this before I wrote the closure letter!

5-8 sp w/ FV. He'll sp w/ D. Ralph

6-2 phoned David Ralph (238-3692)

6-6 mess fm DR: he asked SCI to close wells.

waste chemicals generated during plating activities. The soil and goundwater in the area contain significant concentrations of trichloroethene (TCE), tetrachloroethene (PCE), and Freon®113. Measured goundwater concentrations range from 37 parts per billion (ppb) to nearly five parts per million (ppm), and measured soil gas concentrations range from 220 ppb to 11 ppm.

The demonstration began in July 1994 and will extend to February 1995. The primary objectives of this demonstration are: 1) to determine the mass removal of target VOCs from EW-233; and 2) to determine the percent transfer of those target VOCs from the groundwater to the vapor as the water is vacuumed up through EW-233's extraction tube to ground level. Baseline groundwater samples were collected just prior to system startup. During operation, several process variables are being monitored, and water and vapor samples are being collected for analysis. Water level and soil vacuum are also being measured in wells and specially constructed piezometer nests surrounding EW-233 to determine the zone of influence of the 2-Phase™ extraction system. Other information is also being collected to evaluate the performance and cost of the system, which so far has fallen below 5% of the cost per pound to remove contaminants using Pump and Treat technology.

Benefits

Pilot-scale test results indicate 2-Phase™ extraction is effective in the low permeability silts at McClellan AFB (see Figure 3):

- Estimates indicate that 2-Phase™ extraction will reduce remediation costs by an order of magnitude, from $1,370 to $70-$160 per pound.

McClellan AFB Pilot Test Results (EW 233)

	Before Test	Two-phase Extraction	Change
Groundwater Flow Rate (gpm)	3.5	8.2-9.1	+150%
Vapor Flow Rate	—	65-70 scfm	+65-70 scfm
Pounds of Contaminant Removed per Year	123	Groundwater: 20-24* Vapor: 1,200* *estimated values	Twelvefold Increase
$ per Pound Removed	$1,370	$160	90% Reduction

Figure 3: 2-Phase™ Test Results

Conclusion

Installation of the 2-Phase™ extraction system at other McClellan sites will be relatively easy. Areas with soil conditions of low air permeability and water tables at depths of approximately 100 feet are good candidates. Most of McClellan's targeted sites match these soil characteristics, so the potential for widespread use of 2-Phase™ onbase is great. If success continues, McClellan should meet its goals of increasing the contaminant removal rate, containing groundwater on the base, and removing sources of groundwater contamination.

References

Site Summary STID 3623
1330 MLK Way (at 14th St.)
Oakland 94612

con't

1/26/95 left mess Donnell Choy (238-3493). Will a ltr w/the following language help them to develop the site? NFA required for the onsite parcel, but monitoring must continue in the offsite wells located in the street, where the plume appears to be contained, degrading, and not migrating.

2/8/95 left mess D. Choy; received mess fm him.

2/9/95 left mess D. Choy

2/24/95 lm D. Choy

2/27/95 mess fm Fernando Velez of SCI (268-0461).

2/28/95 mess to and fm F. Velez. Mark Kawakami is no longer w/SCI. How often are they sampling? He's the new PM. He thinks it may be annual, but needs to check his files. I believe it's still quarterly.

left mess D. Choy

3/1/95 mess fm D. Choy twice

3/2/95 mess fm and to D. Choy. Spoke w/F. Velez: there's a 4/19/93 letter fm SCI to me Request to Monitor GW Mon Program, where they asked to discontinue 2 wells, one of which we DID disc, but the other we didn't (well 58). So he wants to know which wells to sample. I told him to hold off, bec. I'm reviewing this case for closure.

Wrote ltr to RPs. Faxed it to SCI.

Began review of file for case closure

3/3/95 Wrote draft case closure summary. Faxed 3/2/95 ltr to D. Choy.

3/21/95 Revised closure summary. Phoned SCI re reference to report on installation of GWE/SVE system. Both Jim Bowers and Mark Kawakami are no longer w/SCI. Jim is now w/HSR in San Jose; they're involved in HW (disposal?). left message

TRANSMIT REPORT

1995.02-23 17:01
510 337 9335
ALAMEDA CO EHS HAZ-OPS

COM No.	REMOTE STATION	START TIME	DURATION	PAGES	RESULT	USER ID	REMARKS
567	5104848178	02-23 17:00	00'44	01/01	OK		

7499402045

ALAMEDA COUNTY FIRE CHIEF'S ASSOCIATION
HAZARDOUS MATERIALS SUB-COMMITTEE
1131 HARBOR BAY PARKWAY, ALAMEDA
ROOM 201
MARCH 1, 9:30 - 11:30 AM
MEETING AGENDA

MEETING CALLED TO ORDER

ATTENDANCE/SELF INTRODUCTION

OLD MINUTES

TREASURY REPORT

OLD BUSINESS

I. HAZMACON
   a. DEADLINE TO SUBMIT NAMES FOR 3 TICKETS FOR THE PRICE OF 2

NEW BUSINESS

I. FREEDOM OF INFORMATION ACT AND EXISTING POLICY FOR RESPONDING TO REQUESTS FOR INFORMATION
   a. LAWSUIT FILED BY ENVIRONMENTAL LAW FOUNDATION

II. PRESENTATION BY DTSC
   a. UPDATE ON STATUS OF REMOVED UST AS WASTE OR HAZARDOUS WASTE

3623

12-8-94 Mark K. phoned. Rec Ap w/ K. Graves. KG wants them to wait a yr - go to annual mon., then proceed w/ NAA. Bec ~~they~~ 1 State ~~[illegible]~~ h as adopted NAA regs. Can streamline NAA sites in future. If they wanna go ahead + close the parcel, since contam is offsite in st, then wt can they do to ~~get~~ close site? The contam cd be ID'd w/ st + not w/ prop.

Phoned KG: In order to do NAA, they have to do a lot of paperwork: contingency plans, etc. Easier to reduce frequency to annual. Let plume study (athon) happen. Since City owns the st + also the parcel, + if parcel is clean, then close it. Open the street as a sep. site. Ask Tom.

1-26-95 Reviewed 12-21-94 QR by SCI.
Gw sampled 11-8-94 flowed W-NW at 1%.
Decreased concs. in MW 39 + 42.
Spoke w/ Tom: We can write ltr saying NFA onsite req'd, + keep QS offsite, plume seems contained, etc.

10 ppm Calibration Mix Volumes
for 4'X1/8" SE-30
(if in 1L container)

Temp. (^{o}C)	$MeCl_2$ (uL)	$n\text{-}C_6H_{14}$ (uL)	C_6H_6 (uL)
14.0	28.39	79.51	139.20
14.5	27.82	77.16	135.76
15.0	27.41	75.63	132.41
15.5	26.73	73.40	129.14
16.0	26.07	71.95	125.95
16.5	25.56	70.87	122.84
17.0	25.18	69.12	119.81
17.5	24.68	67.42	116.85
18.0	24.19	65.75	113.97
18.5	24.07	65.42	111.15
19.0	23.01	62.55	108.41
19.5	22.55	61.31	105.73
20.0	21.89	60.09	103.12
20.5	21.67	58.90	100.57
21.0	21.35	57.16	98.09
21.5	20.82	56.03	95.67
22.0	20.41	55.20	93.31
22.5	20.20	53.83	91.00
23.0	19.61	52.50	88.75
23.5	19.32	51.26	86.57
24.0	18.86	50.70	84.43
24.5	18.47	49.94	82.34
25.0	18.01	48.71	80.31
25.5	17.74	47.51	78.33
26.0	17.48	46.34	76.39
26.5	17.13	45.42	74.51
27.0	16.96	44.16	72.67
27.5	16.62	43.64	70.87
28.0	16.21	42.77	69.12
28.5	15.81	41.93	67.42
29.0	15.50	40.69	65.75
29.5	15.42	39.88	64.13

3623

12-7-94 Sp w/Mark Kawakami.

Conditions haven't changed much.

Wants to stop monitoring. Is that NAA?

Dec 20th? I suggested a mtg w/K. Graves.

8:30 or 9:00

Dec 21st or 22nd

future use of site? MK: on-site contam was remediated. Just off-site " exists.

O's defined. 5-6 yrs monitoring.

Q: Boring logs

Source removal + sampling

Reviewed 9-14-94 QR by SCI.

GW sampled 8-11-94 had ↑d conc's in MW-42 (6910 TVH + 37 benz). GWE ↓d in MW-42 only by .24 ft. Strange.

Did they do QS in Nov 94? MK: yes: report here w/in 1 wk (conc's are lower) but can't

Sp w/K.G: Can reduce frequency, NAA. Where's the light at the close case via end of the tunnel? Wants MK to phone him.

Told MK to call K. Graves.

COUNTY OF ALAMEDA

REQUISITION

REQUISITION NO.

DEPARTMENT Environmental Health

DELIVER TO: Hazardous Materials Division
80 Swan Room 200
Oakland CA 94621

PLEASE FILL IN DEPT. NUMB.

DATE 5/9/91

DATE NEEDED

	QUANTITY	UNIT	STORES STOCK NO	DESCRIPTION OF ITEMS CATALOG REFERENCES, ETC. - BUDGET ITEM NO	TO BE COMPLETED BY PURCHASING DEPT. ONLY PRICE	
1	2	cyl.	101-350	Calibrant Gas for HNU PI 101	130	00
2						
3				HNU Systems Inc.		
4				160 Charlemont St,		
5				Newton, MA 02161		
6				(617) 964-6690		
7						
8						
9						
10						
11						
12						
13						
14						

Vendor

Add

FOB Dest.

Terms

Delvy. days

Quote By

Init. & Date

PLEASE COMPLETE BELOW PER INSTRUCTIONS IN AUDITORS BACIS USER'S GUIDE.

	FUND	FUNCT	DEPT	ACCT	PROJ
LINE NO.					
LINE NO.					
LINE NO.					

I hereby certify that the supplies, materials or services above specified are necessary for use in this department, and that there is an unencumbered balance in the appropriation applicable thereto to the credit of this department sufficient to meet this expenditure.

REQUISITIONED FOR

APPROVED BY

FOR ADDITIONAL INFO PHONE

TITLE

QIC CODE

File

FORWARD ORIGINAL TO PURCHASING - RETAIN COPIES FOR YOUR FILES

FORM 100-5 (REV. 2/77)

3623

6-14-94

Spoke w/ Mark L. of SCI. Can they abandon these 5 wells? 51, 52, 54, 47, 48

49-53 already destroyed

(doc. prior)

O'll check.

He wants a ltr asking discontinuation of treatmt at 14th & MLK.

6-22-94 Wr ltr to RP okcing discontinuing of treatmt at 14th + MLK.

6-23 Sp w/Tom. OK to abandon wells. Keep in mind that if a future problem arises, then future work may be needed.

7-12 Lori Casias phoned. She sp w/D. Choy. The RP is Redevel. Agency, + he is the contact. Rbase ngd say:

Oak Red. Agency
Attn D. Choy
(Oak City Att Off) → eliminate
505-14th
Oak

ppm oil & grease and non detect for TPH diesel, BTEX, TPH motor oil. Sidewall sample at 8 feet bgs showed 33 ppm oil & grease and non detect for TPH diesel, BTEX , TPH motor oil.

The residual soil contamination left in place are within the clean up goals for the site, however the impact to groundwater must be evaluated. The groundwater investigation related to the former heating fuel tank should be incorporated in the long term monitoring program.

Until clean up is complete, you will need to submit reports to this office **every three months** (or at a more frequent interval, if specified at any time by this office). In addition, the following items must be incorporated in your future reports or workplans :

- a cover letter from the responsible party or tank owner stating the accuracy of the report and whether he/she concurs with the conclusions and recommendations in the report or workplan
- site map delineating contamination contours for soil and groundwater based on recent data should be included and the status of the investigation and cleanup must be identified
- proposed continuing or next phase of investigation / cleanup activities must be included to inform this department of the responsible party or tank owner's intention
- any changes in the groundwater flow direction and gradient based on the measured data since the last sampling event must be explained
- historical records of groundwater level in each well must be tabulated to indicate the fluctuation in water levels
- tabulate analytical results from all previous sampling events; provide laboratory reports (including quality control/quality assurance) and chain of custody documentation

All reports and proposals must be submitted under seal of a California Registered Geologist or Registered Civil Engineer with a statement of qualifications for each lead professional involved with the project.

3623

6-2-94 Sp w/D. Choy. Are there plans to sell site? Unsure.
Wants assurance that no further work wd be req'd in that area.

write to: Donnell Choy
Dep. City Att. office
Oak " "
505 - 14th St., 12th Fl
Oak 612

Ur ltr to D. Choy

6-9-94 Reviewed 4-22-94 QR by SCI.
for 1330 MLK Way at 14th St.
gw sampled 2-2-94

Ur ltr to RP.

Reviewed 5-31-94 QR by SCI.
they only sampled wells 39, 42, 58 + EW-1.
on 5-4-94. EW-1 had low conc's.
DF well 58 is still ND.
42 + 39 fluctuated ↓ + ↑.

6-9 Mark Kawakami phoned re my 6-2 ltr to D. Choy.

3623

5-4-94 Mark K of SCI phoned.
Did I give verbal ok to discontinue treatmt? (Don't you talk w/ Jim Bowers)?

5-9 Reviewed parcel maps (sent fm SCI).

5-13 lm David Ralph. Is their intent to sell a portion of this site?

5-19 met w/TP.
if lot 27 was contam fm tank, then ~~they~~ it shd be a sep. site (Std)

If they want to build/sell the SE half of site, they 1st must subdivide... bec. we can't close "the site" bec it's just one big parcel.
We'll close the SE portion of - lot w/i 60 d' if you provide doc. that it's a sep. parcel. Write them?

5-20 Donnell Choy l.m.

5-27 lm " "

ACORD. CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY) 04/11/94

PRODUCER
Insurance Center of Merced
2908 North G Street
P. O. Box 2268
Merced, CA 95344

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Semco, Inc.
1217 South 7th Street
Modesto, CA 95351

COMPANIES AFFORDING COVERAGE

COMPANY LETTER A Golden Eagle Ins. Co

COMPANY LETTER B

COMPANY LETTER C

COMPANY LETTER D

COMPANY LETTER E

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				GENERAL AGGREGATE	$
	COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG.	$
	CLAIMS MADE OCCUR.				PERSONAL & ADV. INJURY	$
	OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	$
					FIRE DAMAGE (Any one fire)	$
					MED. EXPENSE (Any one person)	$
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	$
	ANY AUTO				BODILY INJURY (Per person)	$
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	$
	SCHEDULED AUTOS				PROPERTY DAMAGE	$
	HIRED AUTOS					
	NON-OWNED AUTOS					
	GARAGE LIABILITY					
	EXCESS LIABILITY				EACH OCCURRENCE	$
	UMBRELLA FORM				AGGREGATE	$
	OTHER THAN UMBRELLA FORM					
A	WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY	PWC254163	04/05/94	04/05/95	X STATUTORY LIMITS	
					EACH ACCIDENT	$1,000,000
					DISEASE-POLICY LIMIT	$1,000,000
					DISEASE-EACH EMPLOYEE	$1,000,000
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS
All California Operations

CERTIFICATE HOLDER

County of Alameda
80 Swan Way, Room 200
Oakland, CA 94621

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
Wayne Mykins

3623

4-20-94 Revs 4-15-94 "Request for Site Closure, HC + Pb Contam. Sites, 13th + Jeff." by SCI.

Release codes: ED, ET

maybe need to ~~separate~~ divide this STID since they want closure.

QA: [illegible] Plate 2? (see Table 2) [illegible] yes

QB: ~~if~~ CB5, 7, 9 + 11 [illegible] PAH; [illegible] was also [illegible] were [illegible] (Table 4 + Plate 3)

QC: [illegible]

D p. 13 + Table 12: PAH's were left in place.

4-20 sp w/ J. Bowers:

1) assessor's map.

2) QA: ok

QB 3) [illegible] the CB 7 hit [illegible] contam. [illegible]

ok

15	9
16	5

QC 4) they overexed + resampled (to ND) T-2 at 14'

ok

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

RAFAT A. SHAHID, Assistant Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Division
80 Swan Way, Rm. 200
Oakland, CA 94621
(510) 271-4320

April 18, 1994

Jon Amdur
Assistant Port Environmental Scientist
Port of Oakland
530 Water Street
Oakland, CA 94607

Re: Alameda County Environmental Health Department, Hazardous Materials Division's change in assigned lead for Port of Oakland site mitigation cases

Dear Jon:

This note formally acknowledges a change in the lead case worker for all Port site mitigation projects. Barney Chan will now be the primary lead contact assigned to handle both underground and non underground tank sites. Jennifer Eberle will be the back up contact person from this office. To maximize continuity I am willing to attend the next meeting between the Port and ACDEH.

Please feel free to contact myself or Barney if you have any questions.

Sincerely,

Paul M. Smith
Senior Hazardous Materials Specialist

c:
Neil Werner, Port of Oakland
Dan Schoenholz, Port of Oakland
Patricia Murphy, Port of Oakland
Edgar Howell, ACDEH
Barney Chan, ACDEH
Jennifer Eberle, ACDEH

3623

4-20-94 Rec'd 4-15 "Request to Discontinue Soil + GW Remediation" by SCI.

Gas Contam 1330 MLK Way

~~Boring logs~~ (Plates 5-7) show signif. OVM hits on soil at cap. fringe. The logs + the analytical data show that HC's (volatiles) remain in a thin layer 1' thick at cap. fringe.

It appears the gasoline has weathered.

Looks like MW 28 had ~~a~~ FP bet. 5-90 + 10-90.

p. 9 where are tabular gw results for EW1?

~~(See Plate 8 - sampled it~~ show bout MW-39?

do
EW1
42
59
39

4-20 sp w/ Jim Bowers
I want to add 39 as DG a zero line.
Jim thinks they sampled the 3 wells already (based on my verbal OK). He'll get OK to me.
May be we can delete 59 in future if both EW1 + 59 are ND.

City wants to sell site

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

RAFAT A. SHAHID, Assistant Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Division
80 Swan Way, Rm. 200
Oakland, CA 94621
(510) 271-4320

April 18, 1994

Jon Amdur
Assistant Port Environmental Scientist
Port of Oakland
530 Water Street
Oakland, CA 94607

Re: Alameda County Environmental Health Department, Hazardous Materials Division's change in assigned lead for Port of Oakland site mitigation cases

Dear Jon:

This note formally acknowledges a change in the lead case worker for all Port site mitigation projects. Barney Chan will now be the primary lead contact assigned to handle both underground and non underground tank sites. Jennifer Eberle will be the back up contact person from this office. To maximize continuity I am willing to attend the next meeting between the Port and ACDEH.

Please feel free to contact myself or Barney if you have any questions.

Sincerely,

Paul M. Smith
Senior Hazardous Materials Specialist

c:
Neil Werner, Port of Oakland
Dan Schoenholz, Port of Oakland
Patricia Murphy, Port of Oakland
Edgar Howell, ACDEH
Barney Chan, ACDEH
Jennifer Eberle, ACDEH

3623

11-17-93 Mtg onsite w/ ① Joseph Cotton
② Donnell Choy ③ David Ralph 238-6688
④ James Bowers ⑤ Mark Kawakami + ⑥ J. Eberle 238-7371 direct

(A) MW 39, 59 + 42 will be monitored post-treatment.

(B) the sump area - they want to close. Will submit closure request

CITY OF OAKLAND

DAVID W. RALPH
PROJECT MANAGER
PROJECTS MANAGEMENT
OFFICE OF ECONOMIC
DEVELOPMENT AND EMPLOYMENT

PHONE (510) 238-3692
FAX (510) 238-3691

1333 BROADWAY, 9TH FLOOR, OAKLAND, CA 94612

2-17-94
Reviewed 12-14-93 QR by SCI.
Consistent W-NW gradient
GW sampled 11-16-93 in 4 MWs.

3673

cont

City wants to stop treating Auburn + continue mon. Wants to meet!

Donnell Choy - city lawyer - doesn't want me to spend a lot of time revising file.

11-3-93 Recv 9-14 "QR, Gas. Contam." by SCI

11-4 Rec'd 11-2 Smtl fm SCI.

11-17 Recv 10-8-93 "QMR 14" by SCI. (to EBMUD).

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR
DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

October 25, 1993
STID 3749

Bo Gin
288-11th St.
Oakland CA 94607

RE: Former Service Station
706 Harrison St.
Oakland CA 94607

NOTICE OF VIOLATION

Dear Mr. Gin,

As you know, I was onsite on 7/22/93 for the installation of monitoring wells and vapor extraction wells. This work was part of a workplan dated 6/7/93, prepared by Dennis Bates Associates (DBA). This workplan was conditionally accepted by letter dated 6/14/93. The final report was to be received by 9/14/93, as indicated by our 6/14/93 letter, as well as the 6/7/93 workplan. During a telephone conversation between myself and Dennis Bates on 10/1/93, the report was promised to me the week of 10/4/93. No report has been received. Every step of this investigation has been frought with delay. Hence, this **Notice of Violation.** This case is being referred to the Alameda County District Attorney office for guidance.

not a complete sentence

In the meantime, you are required to submit the final report for work proposed in the 6/7/93 workplan by Dennis Bates Associates (DBA) **within 5 days or by October 30, 1993.**

Please be advised that "no person shall close an underground tank system unless that person . . . demonstrates to the appropriate agency . . . that the site has been investigated to determine if there are any present, or were past releases, and if so, that appropriate corrective or remedial actions have been taken," as per Section 25298 (c) (4) of the California Health & Safety Code, (CH&SC) Division 20, Chapter 6.7. Further, "any operator of an underground tank system shall be liable for a civil penalty of not less than five hundred dollars ($500) or more than five thousand dollars ($5,000) for each underground storage tank for each day of violation for. . .failure to properly close an underground tank system," as per Section 25299 (a) (5) of CH&SC, Division 20, Chapter 6.7.

Please be advised that this is a formal request for technical reports pursuant to California Water Code Section 13267(b). Any extensions of the stated deadlines, or modifications of the required tasks, must be confirmed in writing by either this agency or the RWQCB.

3623

6-16-93 Reviewed 6-14-93 "QR, Gas. Contam" by SCI. Gw flows W-NW
[ ] ↑ in MW 42 to 13,400 ppb TPH-g
+ 748 ppb benz (approx. doubling in [ ])
MW 43 ↓ in [ ]. They ceased QM in
MW 45 + 58, as previously ok'd in my
5-4-93 ltr.

7-19-93 Rev'd 7-12-93 "QMR # 13, Wastewater Discharge Permit Acct" by SCI.

11-2-93 Mtg w/J. Bowers.
They ~~took~~ did some SBs to below gw as
conf. samples after >3-5 yrs. VES.
All ND for TPHg. They reduced zone of contam. fm
3-4' thick to ~1', in cap. zone.
Looks like VES removed volatile components
of gas, but ~~[illegible]~~ some components remain
i.e. BTEX — wait! — BTEX is volatile!
107 to 167 ug/kg or ppb = .107 to .167 ppm.
It's no longer gasoline. Doesn't match
chromatogram for "SI". VES is now
inefficient; it's pulling out smaller amts.

UST AUTOMATIC GAUGING SYSTEMS

Test Method Name/Model	Evaluation Results	Manufacturer	Evaluator/Date
ATG Automatic Tank Gauging System	P_{FA}=0% @ 0.1 gph P_D=100% @ 0.2 gph Tanks to 18,000 50-95% full tank	Harley Pump Company 5800 Foxridge Drive Mission, KS 66202 (913) 813-5700	Ken Wilcox Associates 04/19/91
Auto Stik	Precision Test: P_{FA}=4.66% @ 0.05 gph P_D=95.35% @ 0.1 gph Monthly Test: P_{FA}=0.044% @ 0.1 gph P_D=99.96% @ 0.2 ghp Tanks to 15,000 gal 50-95% full tank	EBW, Inc. 2814 McCracken Avenue Muskegon, MI 49441 (800) 475-5151	Ken Wilcox Associates 04/30/91
E'SPI III	P_{FA}=1.1% @ 0.075 gph P_D=97.9% @ 0.2 gph Tanks to 15,000 gal 50-95% full tank	Egemin Naamloze Vennootschap Bredabaan 1201 - 2900 Schoten, Belgium (011) 32-3-03 / 645 27 90	HRI 03/05/91
E'SPI IV	P_{FA}=0.3% @ 0.1 gph P_D=97.2% @ 0.2 gph Tanks to 15,000 gal 50-95% full tank	Egemin Naamloze Vennootschap Bredabaan 1201 - 2900 Schoten, Belgium (011) 32-3-03 / 645 27 90	HRI 03/05/91
EASI Level-Tru	P_{FA}=4.6% @ 0.1 gph P_D=95.4% @ 0.2 gph Tanks to 15,000 gal 50-95% full tank	Environment and Safety, Inc. 721 Charcot Avenue San Jose, CA 95131 (408) 954-9081	HRI 05/01/91

3623

3-17-93 Rec'd QR for Floor Drain Sump by SCI dated 3-8-93.

Wr letter to RP acknowledge rcpt of these 2 SCI reports. Asked for lab data for Floor Drain Sump QM

3-31 Reviewed resubmittal of QR for Floor Drain Sump, dated 3-25. This one has lab report, but it's not signed!

4-20-93 Reviewed 4-6-93 "QM Report 12, Wastewater Discharge Permit Acct"

5-4-93 Reviewed 4-19-93 "Request to Modify GW Mon. Program" by SCI. they want to terminate mon. of mw 45 + 58, due to 9 Qs of ND. Wrote ltr to RP accepting request.

6-14-93 ~~Rec'd~~ Reviewed June 8-93 QR Floor Drain Sump, by SCI. gw flows NW. Only mw 48 + 54 were analyzed, + only for VOCs. Only #54 had 0.7 ppb chloroform.

3693

1-25-93 Rec'd "Request to Modify GW Mon. Program, Floor Drain Sump" 13th + Jeff. Sts. by SCI dated 1-21-93.

1-25 Rec'd "Well Destruction Report, MW 49" 13th + Jeff. by SCI dated 1-11-93.

1-25-93 Rec'd "Quarterly Mon. Report 11" 1330 MLK Way. It's a letter report to EBMUD fm SCI dated 1-13-93.

1-26-93 Spoke w/ J. Bowers re floor drain sump mws. Chloroform at #54 may be due to leaking water main. But he'll talk City that I want to keep mon. #54 for VCCs.

1) HCs request to cease mon.
2) VCCs " " " "

3-17-93 Rec'd QR for Gas. Contam. by SCI dated 3-11-93. GW sampled on 2-16-93 ~~(1 yr since previous sample) why 1 yr lapse?~~ GW COCs mostly ↓d except MW 42, which ↑d. (6730ppb TPH-g, 386ppb benz).

surements are needed, a small air compressor is useful. In shallow wells, and air pump is typically used.

A water-level measurement is made when air is pumped into the small tube the pressure is monitored. Air pressure will continue to increase until it expels all water from the line. Air pressure, which is determined when the pressure ge stabilizes, is used to calculate the height of the water in the tube. If the pressure gage is calibrated in pounds per square inch (psi), a conversion is made to t by multiplying the psi reading by 2.31. The actual level in the well is determined by subtracting the calculated distance from the air line's length. According to Driscoll (1986), the dependability of measurements made by the air-line vice varies with the accuracy of the pressure gage and the care used in determining the initial pressure reading. Depth to water can usually be determined within 0.25 foot of the true water level. Garber and Koopman (1968) have so shown that the precision of the measurement is mainly dependent upon the ccuracy of the pressure gage. They state that even with gages having gradations s small as 0.1 psi, the maximum possible resolution would be 0.23 foot. Unless ne air-line method is used in wells of substantial depth, corrections for thermal xpansion, hysteresis, fluid density, and barometric pressure are not necessary.

Electrical Methods

Currently, the most favored technique for manual water level measurement is the use of an electrical probe. The most prevalent instrument of this type is that which operates on the principle that a circuit is completed when two electrodes come in contact with the water surface in the well. Other instruments rely on such physical characteristics as resistance, capacitance, or self-potential to produce a signal. Many of these instruments employ a two-wire conductor which is marked every foot, every 5 feet, or at 10-foot intervals. Some newer instruments use vinyl-, epoxy-, or Teflon-clad steel tapes as an insulated electrode and the well casing or grounding wire as the other.

Water-level probes which use self-potential typically have one electrode made of magnesium and the other of brass or steel. When the probe comes into contact with water, a potential between the two dissimilar metals is measured at the surface on a millivolt meter.

If a battery is added to the circuit, the two electrodes may be of the same material, usually brass, lead, or ferrous alloy. When the electrodes come into contact with the water surface, the borehole fluid conducts the current, and a meter, light, or buzzer is activated at the ground surface.

The principles of capacitance and inductance have been used by the U.S. Geological Survey to detect water surfaces (Garber and Koopman, 1968). These were basically specialty instruments and have not been commercially developed. They would, however, have the same apparent accuracy and precision as other electrical probes because the sensing elements are suspended in the well via multiwire conductors.

Errors in water-level measurements using electrical probes result from changes in the cable length and diameter as a function of use, depth, and temperature. After repeated use, the markings on the drop line often have a tendency to become loose and slide (if banded) or become illegible from wear (if embossed). Shallow measurements made with well-maintained electrical probes are typically reproducible to within ± 0.02 foot. Because of kinks in the cable and less than vertical suspension in a well, Barcelona and others (1985) have stated that the accuracy of electrical probes is about 0.1 foot.

A common disadvantage inherent in most electrical probe instruments is that if substantial amounts of oil or other constituents are floating upon the water surface, contact cannot be reliably made. This is a major concern in ground-water investigations involving hydrocarbon releases. Special sensing probes utilizing an optical liquid sensor in conjunction with electrical conductivity are commercially available to measure the hydrocarbon/water interface. Because this type of sensing probe is also suspended from multiconductor wire, the same errors as previously discussed for electrical probes apply.

Pressure Transducer Methods

With the advent of reliable silicon-based strain gage pressure sensors, a unique type of instrument is being commercially marketed for measuring changes in water levels—submersible differential pressure transducers. These transducers contain a 4–20 mA current transmitter and a strain gage sensor. The current transmitter prevents measurement sensitivity from being affected by cable length. Because all sensitive electronics are in the transducer and submerged in a constant temperature environment (the well water), errors due to temperature fluctuations are negligible (In Situ, Inc., 1983). Most transducers used for measuring ground-water levels have a small capillary tube leading from one side of a differential pressure sensor that is vented to the atmosphere. This allows for automatic compensation of barometric pressure. A signal conditioning unit and a power source are required ancillary equipment to make a water-level measurement.

For a discrete water-level measurement, the transducer is lowered a known distance into the well and allowed to equilibrate to the fluid temperature. The distance of submergence of the transducer is read on the signal conditioning unit and is subtracted from the known cable length referenced at the top of the well.

This technique is easily adaptable to continuous monitoring. It also offers several advantages in ease of accurate measurement in both pumping wells and wells with cascading water. Sources of error in this type of instrument include the electronics (linearity, accuracy, temperature coefficient, etc.), temperature changes and inappropriate application (i.e., range and material of construction) of a transducer in a given medium (Sheingold, 1980). Because of the sensitive electronics, care must be taken to avoid any rough handling in the field or in storage.

The accuracy of water-level transducers is dependent upon the type and range (sensitivity) of the device used. Most transducers are rated in terms of a percent

3623

10-14-92 Rec'd "Quarterly Mon. Report 10" re wastewater discharge to EBMUD ND CJ's are being discharged to sewer.

12-9-92 Rec'd "Quarterly GW Mon." Nov. 1992 Floor Drain Sump. There are now 4 Qs ND for VOCs in MW47, 49 + 59 So only MW 48 + 54 remain w/VOCs w/in the last 4 Qs.

12-8-92 Spoke w/ J. Carver. She's gonna submit a letter recmdg RFA here.

1-14-93 Rec'd "Q GW Mon. Gas-Contam." report by SCI dated 1-8-93. CJs of VOCs are generally ↓ing except MWs #43, #31 (↑ing).

1-22-93 Reviewed "Request to Modify GW Mon. Program" by SCI dated 1-21-93, re floor drain sump.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Woodward-Clyde Consultants	Client Project ID:	#8910011A-0200, Shell	Sampled:	Mar 13, 1990
500 12th St., Suite 100	Matrix Descript:	Water	Received:	Mar 14, 1990
Oakland, CA 94607-4041	Analysis Method:	EPA 3510/8015	Extracted:	Mar 20, 1990
Attention: Keith Guyer	First Sample #:	003-2156 C	Analyzed:	Mar 22, 1990
			Reported:	Mar 23, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons µg/L (ppb)
0032156 C	S-2	N.D.
0032157 C	S-5	N.D.
0032158 C	S-4	540

Detection Limits:	**50**

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

9-11-92 Rcv'd + reviewed "Quarterly GW Mon. Floor Drain Sump" Report by SCI. Only 3 MWs sampled this time (7-28-92); all ND for VOCs. HCs are no longer analyzed due to 4 Qs ND.

9-11 Rcv'd + reviewed "Quarterly GW Mon. Gasoline Contam." Report by SCI. dated 9-8-9
[]s of HCs are declining.
"~24 vapor wells in MLK bet. 2 gw extr. wells." Tel con w/S. Carson of SCI.
" ~4-26-91 summary reports show 1kg of VEWs."

14th + MLK

9-16 mtg at site w/Jim Bowers
another tank offsite? Sanborn fire insur. maps - told Katherine ~ 1 yr. ago.

{ there is a report on tank clos. of the 3 USTs on Jeff. near 13th on N end of soil exc. area ~2 yrs. ago

soil was hauled off site.

sump - soil contam. w/ kerosene, O+G. It was a city repair facility.

lead/PNA soil contam. cleaned up 1st. Soil off-hauled.

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR
DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

Certified Mailer #
September 10, 1992

STID 3703

Warren Senegal
6643 Harmon Dr.
Sacramento CA 95831

RE: Reliable Handi Cab
1520-7th St.
Oakland CA 94607

Dear Mr. Senegal,

As we discussed by phone today, you have assumed responsibility for your recently deceased brother, Byron Senegal, as pertains to the above referenced site. Since you may be unfamiliar with the details of this case, and since you may not have access to Byron's files, you are welcome to go through our file for the site.

I have received the "Underground Tank Removal Closure Report," prepared by Mark East of E & G Construction, undated, but received in this office on 8/21/92. Upon review of this report, I required additional clarification from Mark East, which we did over the telephone and by mail. To date, the events relating to the removal of four tanks are essentially understood.

Significant concentrations of petroleum hydrocarbons were initially detected during the removal of a waste oil tank (4,900 ppm Oil & Grease) and three fuel tanks (33,000 ppb TPH-gasoline and 630 ppb benzene in pit water; and 520 ppm TPH-gasoline in the stockpile). Due to these levels of contamination, a groundwater investigation is required as per Regional Water Quality Control Board (RWQCB) guidelines. This generally consists of three groundwater monitoring wells placed in a triangular fashion to determine the groundwater flow direction and extent of contamination. Groundwater monitoring wells must be monitored and analyzed on a quarterly basis until four consecutive quarters of non-detectable concentrations are found.

Therefore, we request that you submit a workplan for a subsurface investigation, and a schedule for implementation **within 45 days** from the date of this letter, or **by October 25, 1992.**

All reports and proposals must be submitted **under seal** of a California-Registered Geologist, -Certified Engineering Geologist, or -Registered Civil Engineer. All proposals, reports, and analytical results pertaining to this investigation and remediation must be sent both to our office and to:

3623

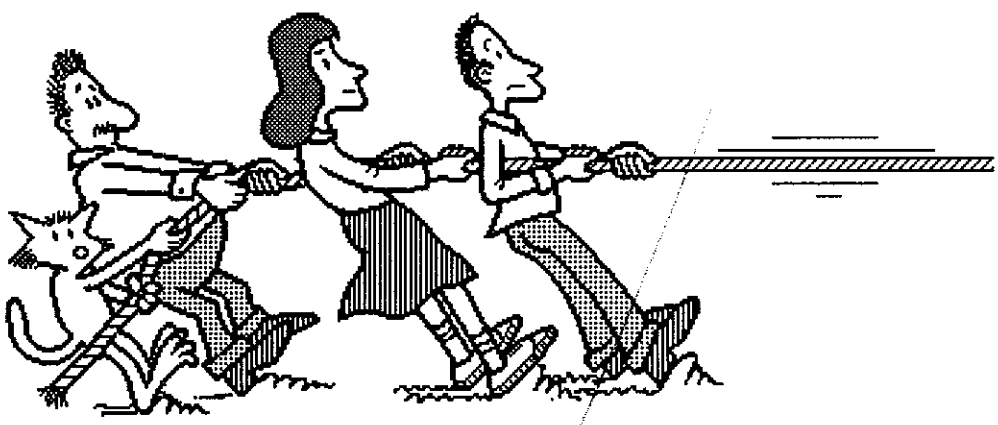
Tel con w/ J. Bowers

9-1-92 Phoned Subsurf. to see when next Qly report will be sent to us. any day now

they're monitoring wells for VOCs:
#48, 47, 49, 59, 54
last results: DG clean + UG clean
Oakland Redevel. Agency
Lois Parr
John Esposito - Bramlea Pacific - developer
- agent for O'R.A.

still has a plm 14th + MLK. - soil w/ TPH-g
* SVE system. soil + gw contaminated.
40" FP one yr ago. No FP anymore.
Using SVE system for both FP + soil
thermal oxidizer burns vapor, + discharges vapor to air. (at 1400°F)
can destroy Cl HC
only need 900°F to burn HC.
2 gw extr. wells - pumped into Baker tanks + treated w/carbon. Water is clean coming out of 1st Baker tank. this treats dissolved HC ~~FP~~ in water
former 500-gal gas UST at 14th + MLK.
~ 2000 gal FP th. & recvd over past yr.

TEAM WORK AWARD



Dennis Byrne

For Cooperation
Assistance and Initiative
April 10 - June 30, 1992

Thomas Peacock

June 16, 1992

3603

8-19-92 Sean Carson - tel con

never found USTs. at prop removed

in past found sandy backfill N side 13th St
(w/o record or permit) found pipes S side 13th St.

3 other USTs found & removed. Not related to gas plume. (clustered together. Then were in N portion of soil ex. area.
Exc. was ~ 30' bgs.

? sm oil
? gas } minor leaks
? die } - dug below impact

July 92 gw sampling - did not include HCs.
MW 59 put in to detect VOCs, not HCs
all VOCs ND! in gw

WW treatment plant for HCs 14th & MLK. - Qly qu mon. report - 3d be. Qly - but isn't by Progress Report #1, 2, 3
coming to us soon MW 29, 31, 45, 46
cluster of mws } 11, 39, 42, 43
at 10th & MLK }
thermal oxidizer - vapor extr.
6" FP at one time - all gone now.
500 gal UST at firehouse SE corner 14th & MLK. Tank leaked ~ 1500-2000 gal.
soil excavated & replaced.
vapor wells - 1/3 yr.
2 gw extr. wells

3623

~~#1 Request for info to LOP~~

8-18-92, 6-24-92 Report

1 aspect w/ request to discontinue analysis for HCs. except in NW 48-59.

7-8-91 Report:

p. 7 USTs still in place ✗? NO - never found

p. 14 "tank release areas" indicate that USTs are the sources of contam.

p. 13 "gas-contam. soils" are the srs of contam.

incensistency

Q: what was the sump used for?

con w/ Paul says vapor probes → soil + gw treatment

ask Bowers - USTs rem? LOP

K.C. may have pulled tanks

≤ 20,000-gal Baker tanks - gw treatment

treatment to treat VOCs when, then ∆ mind.

bec. gw levels decreased.

8-19 Lm Jim Bowers

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

Certified Mailer #

July 14, 1992

STID 42

Gardiner Mfg. Co.
PO Box 1499
Oakland CA 94604
Attn: Gene Teasley

Re: Gardiner Mfg. Co.
1920 Union St.
Oakland CA 94607

Dear Mr. Teasley,

This letter is being sent to document a telephone conversation on 7/14/92 between yourself and Jennifer Eberle of our staff. You indicated that James Sweeney, the company President, is unable to handle matters regarding to the tank removal. You also indicated that you would act in his place.

You indicated that you were not familiar with our letter dated 4/28/92, which requests a proposal for a subsurface investigation. Therefore, I am enclosing a copy of that letter. Please submit a proposal for a subsurface investigation, as per the 4/28/92 letter, **within 45 days** from the date of this letter, or **by August 29, 1992.**

If you have any questions, please contact Jennifer Eberle at 510-271-4320.

Sincerely,

Susan Hugo
Senior Hazardous Materials Specialist

cc: Rich Hiett, RWQCB
File

je

R. William Rudolph, Jr., PE
Thomas E. Cundey, PE
Jeriann N. Alexander, PE

April 6, 1995
SCI 430.010

Ms. Jennifer Eberle
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

Quarterly Groundwater Monitoring
Gasoline Contamination
March 1995
1330 Martin Luther King, Jr. Way
at 14th Street
Oakland, California

Dear Ms. Eberle:

This letter presents the results of the March 7, 1995 quarterly groundwater monitoring. Remediation of contaminated soil and groundwater resulting from an underground gasoline tank release has been performed at the site. Remediation consisted of (1) vapor extraction, and (2) groundwater extraction and treatment. The vapor extraction system removed all measurable free product in the area. The groundwater extraction system has significantly lowered dissolved product concentrations and reduced the extent of the dissolved product plume. Soil and groundwater remediation were terminated on November 18, 1993, per your verbal approval. Groundwater monitoring has been performed since 1988. The location of the site and wells are presented on Plate 1.

Sampling and Analysis

During this event, Wells MW39, MW42, MW58 and EW-1 were sampled. The groundwater monitoring event consist of (1) measuring groundwater levels, (2) purging water from each well until pH, conductivity and temperature had stabilized, and (3) sampling the wells with pre-cleaned disposable samplers. The samples were retained in glass containers and preserved with hydrochloric acid. The containers were placed in an ice filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-custody documents accompanied the samples to the laboratory.

Analytical testing was performed by Eureka Laboratories, Inc., a State of California Department of Health Services certified laboratory for hazardous waste and water testing. The analytical tests included:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector), and

2. Benzene, toluene, xylenes and ethylbenzene (BTXE), sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a flame ionization detector).

A summary of the current and previous analytical test results and groundwater elevation data are presented in the attached Tables 1 and 2. Groundwater elevation contours and the analytical test results for this event are plotted on Plate 1. Analytical test reports and chain-of-custody documents for the current event are also attached.

Conclusions

As shown on Plate 1, the groundwater level data for the March 7, 1995 event indicate that the regional groundwater flow direction is toward the northwest at a gradient of approximately 1 percent. This groundwater flow direction and the gradient remain consistent with previous measurements.

Total volatile hydrocarbon (TVH) were detected in wells EW-1, 39 and 42 during this event at concentrations of 307, 215 and 2430 ug/l, respectively. Similar concentrations have been detected in wells EW-1 and 42 since active remediation ceased. Until this event well 39 either did not contain TVH above detection limits or at very low concentrations. We suspect that the detection of TVH and BTXE during this event is due to the relatively high groundwater levels which currently exist following the heavy winter rain storms. Groundwater levels are at the highest level since monitoring began in January 1989. The elevated groundwater has likely mobilized residual contamination situated within the capillary zone above the typical groundwater level.

Future Monitoring

In accordance with the monitoring program, the next sampling event will be performed during the month of June. During this event, Wells MW39, MW42, MW58 and EW-1 will be sampled and analyzed for TVH and BTXE.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Fernando Velez by mail

Fernando Velez
Engineer

R. William Rudolph

R. William Rudolph
Geotechnical Engineer 741 (expires 12/31/96)

FV:JNA:RWR:sld

Attachments: Table 1 - Contaminant Concentrations in Groundwater
Table 2 - Groundwater Elevation Data
Plate 1 - Site Plan
Analytical Test Reports
Chain-of-Custody Documents
Sampling Forms

cc: Mr. David W. Ralph
Office of Economic Development and Employment
1333 Broadway, Suite 900
Oakland, California 94612

Mr. Donnell Choy
Office of City Attorney
City of Oakland
905 14th Street, 12th Floor
Oakland, California 94612

Mr. Andrew Clark-Clough
City of Oakland
Environmental Affairs
1331 Broadway, Suite 800
Oakland, California 94612

Table 1
CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
EW-1	5/4/94	103	ND	ND	15.1	ND	--	--	--
	8/11/94	370	ND	ND	3.4	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--
	3/7/95	307	ND	ND	3.5	0.9	--	--	--
11	7/5/88	10,000	1,800	ND	1,200	ND	--	--	--
	4/3/89	53,000	7,100	4,000	2,400	380	--	--	--
	7/6/89	22,000	5,300	3,200	2,300	390	ND	26	--
	11/8/89	120,000	18,000	8,000	21,000	4,500	ND	37	--
	7/18/90	26,000	950	19	98	ND	--	--	--
	10/23/90	4,200	1,600	8.5	170	28	--	0.2	--
	1/21/91	1,900	600	6.2	84	60	--	0.15	--
	4/24/91	4,800	1,100	3.5	46	120	--	--	--
	7/24/91	950	330	0.9	1.8	12	--	--	--
	10/24/91	970	350	1.6	1.6	14	--	ND	--
	1/23/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	340	77	0.6	0.6	ND	--	--	--
	8/6/92	220	54	ND	ND	ND	--	--	--
	11/16/92	159	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/12/93	ND	ND	ND	ND	ND	--	--	--
	8/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	ND	ND	ND	ND	ND	--	--	--
28	9/2/88	890	431	75.4	84	ND	ND	9.2	--
	7/6/89	13,000	4,900	1,500	1,300	100	ND	27	--
	5/4/94	103	ND	ND	15.1	ND	--	--	--
29	9/2/88	ND	ND	8.1	ND	ND	ND	ND	--
	4/3/89	450	ND	2	6.7	2	--	--	--
	7/6/89	ND	ND	15	ND	ND	ND	ND	--
	11/8/89	780	ND	14	32	7.9	ND	ND	--
	10/23/90	1,800	1.2	6.5	4.8	2.7	--	--	--
	1/21/91	1,100	ND	3.7	4.9	1.3	--	ND	--
	3/28/91	500	ND	1.6	0.8	ND	--	--	--
31	9/2/88	ND	ND	ND	ND	ND	ND	ND	--
	4/3/89	ND	ND	ND	ND	ND	--	--	--
	7/6/89	ND	ND	ND	ND	ND	ND	ND	--
	11/8/89	ND	ND	ND	ND	ND	ND	ND	--
	7/18/90	ND	ND	ND	ND	ND	--	--	--
	1/21/91	ND	ND	0.6	2.1	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/23/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/7/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	43	ND	ND	ND	ND	--	--	--
	12/17/92	35.3	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/12/93	ND	ND	ND	ND	ND	--	--	--

Table 1
CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
31	8/17/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	ND	ND	ND	ND	ND	--	--	--
39	4/3/89	2,000	250	11	210	ND	--	--	--
	7/6/89	7,900	2,700	1,300	860	97	ND	3	--
	11/8/89	9,300	4,500	760	310	150	ND	4	36
	7/18/90	ND	4.1	ND	ND	ND	--	--	--
	10/23/90	160	12	6.4	5	ND	--	ND	ND
	1/21/90	200	23	0.9	2	1.2	--	ND	--
	3/28/91	ND	ND	ND	ND	ND	--	--	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	1.4	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	ND	--
	1/23/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/7/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/12/93	ND	ND	ND	ND	ND	--	--	--
	8/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	20	ND	ND	2.9	2.2	--	--	--
	5/4/94	ND	3	0.9	2.3	1.2	--	--	--
	8/11/94	ND	ND	0.7	1.4	0.5	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--
	3/7/95	215	57.8	2.7	11.2	21.5	--	--	--
42	7/6/89	13,000	4,500	100	1,000	ND	ND	8	--
	10/23/90	8,800	420	580	910	91	--	0.7	--
	7/24/91	21,000	2,200	300	650	180	--	--	--
	10/24/91	18,000	2,300	1,100	1,000	260	--	16	--
	1/23/92	10,000	1,100	280	430	300	--	--	--
	5/1/92	16,000	1,200	330	580	220	--	--	--
	8/7/92	12,000	890	510	1,000	340	--	--	--
	11/16/92	587	1.2	4.3	43	ND	--	--	--
	2/16/93	6730	386	51	411	183	--	--	--
	5/12/93	13400	748	238	777	ND	--	--	--
	8/17/93	4120	268	ND	323	377	--	--	--
	11/16/93	8350	143	41	199	133	--	--	--
	2/2/94	1080	7.4	11.2	144	67.1	--	--	--
	5/4/94	4580	ND	ND	845	347	--	--	--
	8/11/94	6910	37	ND	417	221	--	--	--
	11/8/94	2580	9	ND	102	63	--	--	--
	3/7/95	2430	22	10	163	58	--	--	--
43	10/24/91	6,300	ND	ND	130	9.1	--	--	--
	5/1/92	930	ND	ND	3.8	ND	--	--	--
	8/7/92	450	ND	2.4	3.5	1.5	--	--	--
	11/16/92	614	ND	2	34.4	1.6	--	--	--
	2/16/93	123	12.5	4.3	60.9	18.6	--	--	--

Table 1
CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
43	5/12/93	96.4	ND	ND	ND	ND	--	--	--
	8/17/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	ND	ND	ND	ND	ND	--	--	--
45	12/5/89	ND	ND	ND	ND	ND	ND	ND	--
	10/23/90	ND	0.9	1.4	1.8	ND	--	--	--
	1/21/91	ND	ND	ND	ND	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/24/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/6/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
46	11/30/89	ND	2.1	1.9	2	ND	ND	ND	--
	7/18/90	ND	ND	ND	ND	ND	--	--	--
	10/23/90	ND	ND	0.6	ND	0.5	--	--	--
	1/21/91	ND	ND	ND	ND	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
58	1/30/91	ND	ND	ND	ND	ND	--	--	--
	3/28/91	ND	ND	ND	ND	ND	--	--	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/24/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/6/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/4/94	ND	ND	ND	ND	ND	--	--	--
	8/11/94	ND	ND	ND	ND	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--
	3/7/95	ND	ND	ND	ND	ND	--	--	--
59	2/16/93	ND	ND	ND	ND	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--

TVH = Total Volatile Hydrocarbons
EDB = Ethylene Dibromide
1,2-DCA = 1, 2-Dichloroethane
ug/l = micrograms per liter
ND = None detected, chemicals not present at concentrations above the detection limits
-- = Test not requested

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
EW-1	99.24	5/4/94	25.67	73.57	--
		8/11/94	23.9	75.34	--
		11/8/95	26.01	73.23	--
		3/7/95	24.26	74.98	--
11	99.66	1/19/89	26.82	72.84	--
		4/3/89	26.35	73.31	--
		7/5/89	26.95	72.71	--
		11/9/89	27.28	72.38	--
		1/24/90	27.40	72.26	--
		4/30/90	27.56	72.10	--
		7/3/90	28.89	70.77	--
		10/23/90	28.93	70.73	--
		1/21/91	27.75	71.91	--
		4/24/91	28.14	71.52	--
		7/24/91	28.78	70.88	--
		10/24/91	29.09	70.57	--
		1/23/92	29.85	69.81	--
		5/1/92	27.44	72.22	--
		8/7/92	27.86	71.80	--
		11/16/92	27.84	71.82	--
		2/16/93	25.94	73.72	--
		5/12/93	27.13	72.53	--
		8/17/93	27.20	72.46	--
		11/16/93	26.85	72.81	--
		2/2/94	26.64	73.02	--
		5/4/94	24.52	75.14	--
		8/11/94	26.76	72.90	--
		11/8/94	26.88	72.78	--
		3/7/95	25.25	74.41	--
28	98.99	1/19/89	26.16	72.83	--
		4/3/89	25.70	73.29	--
		7/5/89	26.26	72.73	--
		11/8/89	26.59	72.40	--
		1/24/90	26.81	72.18	--
	97.79	5/10/90	31.83	65.96	1.22
		7/3/90	31.95	65.84	0.04
		10/23/90	31.25	66.54	1.38
		1/21/91	28.00	69.79	--
		10/24/91	27.26	70.53	--
		1/23/92	32.99	64.80	--
		8/7/92	26.95	70.84	--
		11/16/92	25.95	71.84	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
28	97.79	2/16/93	24.06	73.73	--
		5/12/93	25.48	72.31	--
		8/17/93	25.55	72.24	--
		11/16/93	24.92	72.87	--
		5/4/94	24.80	72.99	--
		8/11/94	24.86	72.93	--
		11/8/94	24.96	72.83	--
		3/7/95	23.35	74.44	--
29	97.95	1/19/89	26.14	71.81	--
		4/3/89	25.88	72.07	--
		7/5/89	26.19	71.76	--
		11/9/89	26.51	71.44	--
		1/24/90	26.66	71.29	--
		4/30/90	26.73	71.22	--
		7/3/90	27.22	70.73	--
		10/23/90	27.40	70.55	--
		01/21/91	26.89	71.06	--
		3/28/91	27.04	70.91	--
		10/24/91	27.47	70.48	--
		1/23/92	27.89	70.06	--
		11/16/92	26.78	71.17	--
		2/16/93	25.60	72.35	--
		5/12/93	26.04	71.91	--
		8/17/93	26.25	71.70	--
		11/16/93	26.22	71.73	--
		2/2/94	26.08	71.87	--
		5/4/94	26.88	71.07	--
		8/11/94	26.01	71.94	--
		11/8/94	26.17	71.78	--
		3/7/95	24.88	73.07	--
31	98.90	1/19/89	26.15	72.75	--
		4/3/89	25.90	73.00	--
		7/5/89	26.28	72.62	--
		11/9/89	26.64	72.26	--
		1/24/90	26.84	72.06	--
		4/30/90	26.87	72.03	--
		7/3/90	27.50	71.40	--
		9/23/90	27.52	71.38	--
		1/21/91	27.09	71.81	--
		4/24/91	27.12	71.78	--
		7/24/91	27.60	71.30	--
		10/24/91	28.81	70.09	--
		1/23/92	28.31	70.59	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
31	98.90	5/1/92	26.70	72.20	--
		8/7/92	27.00	71.90	--
		11/16/92	27.04	71.86	--
		2/16/93	25.63	73.27	--
		5/12/93	26.20	72.70	--
		8/17/93	26.41	72.49	--
		11/16/93	26.25	72.65	--
		2/2/94	26.07	72.83	--
		5/4/94	25.90	73.00	--
		8/11/94	26.08	72.82	--
		11/8/94	26.25	72.65	--
		3/7/95	24.74	74.16	--
39	99.00	4/3/89	25.87	73.13	--
		7/5/89	26.38	72.62	--
		11/9/89	26.70	72.30	--
		1/24/90	26.86	72.14	--
		4/30/90	26.97	72.03	--
		7/3/90	28.17	70.83	--
		10/23/90	28.17	70.83	--
		1/21/91	27.15	71.85	--
		3/28/91	27.76	71.24	--
		4/24/91	27.33	71.67	--
		7/24/91	27.91	71.09	--
		10/24/91	28.26	70.74	--
		1/23/92	29.00	70.00	--
		5/1/92	26.82	72.18	--
		8/7/92	27.18	71.82	--
		11/16/92	27.19	71.81	--
		2/16/93	25.53	73.47	--
		5/12/93	26.52	72.48	--
		8/17/93	26.65	72.35	--
		11/16/93	26.30	72.70	--
		2/2/94	26.10	72.90	--
		5/4/94	25.96	73.04	--
		8/11/94	26.16	72.84	--
		11/8/94	26.31	72.69	--
		3/7/95	24.75	74.25	--
42	99.12	4/3/89	25.77	73.35	--
		7/5/89	26.30	72.82	--
		11/9/89	26.66	72.46	--
		1/24/90	26.82	72.30	--
		4/18/90	26.94	72.18	--
		7/3/90	28.58	70.54	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
42	99.12	10/23/90	28.58	70.54	0.08
		7/24/91	28.10	71.02	--
		10/24/91	28.24	70.88	--
		1/23/92	29.33	69.79	--
		5/1/92	26.88	72.24	--
		8/7/92	27.10	72.02	--
		11/16/92	26.68	72.44	--
		2/16/93	25.41	73.71	--
		5/12/93	26.74	72.38	--
		8/17/93	26.80	72.32	--
		11/16/93	26.25	72.87	--
		2/2/94	26.03	73.09	--
		5/4/94	25.90	73.22	--
		8/11/94	26.14	72.98	--
		11/8/94	26.26	72.86	--
		3/7/95	24.65	74.47	--
43	98.87	4/3/89	25.32	73.55	0.08
		7/5/89	26.80	72.07	1.34
		11/9/89	28.44	70.43	2.89
		4/30/90	27.05	71.82	0.79
		7/3/90	28.36	70.51	0.7
		10/23/90	28.19	70.68	0.83
		10/24/91	26.30	72.57	--
		1/24/92	28.25	70.62	0.02
		5/1/92	25.44	73.43	--
		8/7/92	25.11	73.76	--
		11/16/92	26.42	72.45	--
		2/16/93	24.35	74.52	--
		5/12/93	25.90	72.97	--
		8/17/93	25.50	73.37	--
		11/16/93	25.21	73.66	--
		2/2/94	24.98	73.89	--
		5/4/94	24.68	74.19	--
		8/11/94	25.10	73.77	--
		11/8/94	25.20	73.67	--
		3/7/95	23.55	75.32	--
45	100.90	12/5/89	28.71	72.19	--
		4/30/90	28.85	72.05	--
		7/3/90	29.45	71.45	--
		10/23/90	29.50	71.40	--
		1/21/91	29.03	71.87	--
		4/24/91	28.87	72.03	--
		7/25/91	29.63	71.27	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
45	100.90	10/24/91	29.62	71.28	--
		1/23/92	30.45	70.45	--
		5/1/92	28.42	72.48	--
		8/7/92	28.70	72.20	--
		11/16/92	28.84	72.06	--
		2/16/93	27.14	73.76	--
		5/12/93	28.00	72.90	--
		8/17/93	28.35	72.55	--
		11/16/93	28.15	72.75	--
		2/2/94	27.95	72.95	--
		8/11/94	28.10	72.80	--
		11/8/94	28.19	72.71	--
		3/7/95	26.47	74.43	--
46	98.11	12/19/89	27.40	70.71	--
		4/30/90	27.46	70.65	--
		7/3/90	27.75	70.36	--
		10/23/90	27.86	70.25	--
		1/21/91	27.60	70.51	--
		4/24/91	27.40	70.71	--
		7/24/91	28.73	69.38	--
		10/24/91	27.88	70.23	--
		1/23/92	28.31	69.80	--
		8/7/92	27.28	70.83	--
		11/16/92	27.42	70.69	--
		2/16/93	26.44	71.67	--
		5/12/93	26.78	71.33	--
		8/17/93	27.01	71.10	--
		11/16/93	27.10	71.01	--
		2/2/94	26.86	71.25	--
		8/11/94	26.28	71.83	--
		11/8/94	27.00	71.11	--
		3/7/95	25.96	72.15	--
58	98.89	1/30/91	28.25	70.64	--
		3/28/91	27.81	71.08	--
		4/24/91	27.55	71.34	--
		7/24/91	33.42	65.47	--
		10/24/91	28.29	70.60	--
		1/23/92	28.75	70.14	--
		5/1/92	27.10	71.79	--
		8/7/92	27.40	71.49	--
		11/16/92	27.44	71.45	--
		2/16/93	26.10	72.79	--
		5/12/93	26.68	72.21	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
58	98.89	8/17/93	26.88	72.01	--
		11/16/93	26.77	72.12	--
		2/2/94	26.58	72.31	--
		5/4/94	26.42	72.47	--
		8/11/94	26.60	72.29	--
		11/8/94	26.75	72.14	--
		3/7/95	25.35	73.54	--
59	100.37	2/12/91	27.45	72.92	--
		3/13/91	27.60	72.77	--
		4/3/91	27.36	73.01	--
		6/13/91	28.01	72.36	--
		9/10/91	28.00	72.37	--
		12/12/91	28.53	71.84	--
		4/17/92	26.91	73.46	--
		7/28/92	27.27	73.10	--
		11/3/92	27.56	72.81	--
		2/2/93	24.74	75.63	--
		5/6/93	25.76	74.61	--
		11/8/94	26.51	73.86	--
		3/7/95	24.63	75.74	--

Elevation reference: PG&E manhole approximately 30 feet south of 14th Street on Martin Luther King Jr. Way, assumed to be 100.00 feet,

TOC = Top of casing

-- = No free product present

EXTRACTION WELL

MONITORING WELL

TVH — TOTAL VOLATILE HYDROCARBONS, AS GASOLINE

BTXE — BENZENE, TOLUENE, XYLENES, ETHYLBENZENE

ND — NONE DETECTED

CONCENTRATIONS IN ug/l

GROUNDWATER ELEVATION CONTOUR 3/7/95

73.00'

73.50'

74.00'

74.50'

75.00'

75.50'

31 74.16'

29 73.07'

58 73.54' TVH ND BTXE ND

TVH 215
B 57.8
T 2.7
X 11.2
E 21.5

39 74.25'

14TH STREET

46

TVH 2430
B 22
T 10
X 163
E 58

42 74.47'

43 75.32'

28 74.44'

EXISTING BUILDING

PARKING

EXISTING BUILDING

11 74.41'

MARTIN LUTHER KING JR. WAY

EW-1 74.93'
TVH 307
B ND
T ND
X 3.5
E 0.9

GW TREATMENT PLANT

PREVIOUS TANK

59 75.74'

45 74.43'

REFERENCE NORTH

TRUE NORTH

APPROXIMATE SCALE (feet)

0 20 40

SITE PLAN

Subsurface Consultants

1330 MARTIN LUTHER KING JR. WAY – OAK.

JOB NUMBER	DATE	APPROVED
430.010	3/28/95	

PLATE 1

EUREKA LABORATORIES, INC.

Corporate Office:
6790 FLORIN PERKINS ROAD
SACRAMENTO, CA 95828
TEL: (916) 381-7953
FAX: (916) 381-4013

Branch Office:
17403 N.E. 28th STREET
REDMOND, WA 98052
TEL: (206) 885-0284
FAX: (206) 885-0284

Air Pollution
Chemical Analysis,
Research & Testing
Environmental Studies
Robotics
Toxicology

March 22, 1995

Mr. Fernando Velez
SUBSURFACE CONSULTANTS
171 12th Street, Suite 201
Oakland, CA 94607

Reference - ELI Order #: 95-03-010
Project: MLK
Job #: 430.010

Dear Mr. Velez:

Eureka Laboratories, Inc. is pleased to submit a laboratory report for the subject project. This report presents analytical results for four (4) aqueous samples for the following analyses:

ANALYSIS	METHOD	SAMPLE ID.
Total Petroleum Hydrocarbons (Gasoline)	CA LUFT	MW-39, MW-42, MW-58, EW-1
Purgeable Aromatics	EPA 602	same as above

Sincerely,
EUREKA LABORATORIES, INC.

By: Felix Yeung
Felix Yeung
Manager, QA/QC Office

FY/pvc

Attachment

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-05A
SAMPLE ID: METHOD BLANK

DATE SAMPLED: NA
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/13/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: NA

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-01A
SAMPLE ID: MW-39

DATE SAMPLED: 03/07/95
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/13/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 5ml

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	215	20
CARBON NO. RANGE		
Gasoline Range	C6-C13	
PEAK CARBON NO.		
Gasoline Range	C9	

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-02A
SAMPLE ID: MW-42

DATE SAMPLED: 03/07/95
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/13/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 0.5ml

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	2430	200 *
CARBON NO. RANGE		
Gasoline Range	C6-C13	
PEAK CARBON NO.		
Gasoline Range	C9	

* Higher detection limit is due to high analyte concentration.
NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-03A
SAMPLE ID: MW-58

DATE SAMPLED: 03/07/95
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/13/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 5ml

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-04A
SAMPLE ID: EW-1

DATE SAMPLED: 03/07/95
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/13/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 5ml

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	307	20
CARBON NO. RANGE		
Gasoline Range	C6-C13	
PEAK CARBON NO.		
Gasoline Range	C9	

Hydrocarbons in the gasoline range are detected in the sample. However, their patterns are different from our standard. Therefore, area equivalent is used to quantitate this sample.
NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK	DATE RECEIVED: 03/10/95
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 03/13/95
ELI SAMPLE ID: 9503010-07A	MATRIX: AQUEOUS
SAMPLE ID: MW-58 MATRIX SPIKE RECOVERY	SAMPLE VOL./WT.: 5ml

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	119%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK	DATE RECEIVED: 03/10/95
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 03/13/95
ELI SAMPLE ID: 9503010-08A	MATRIX: AQUEOUS
SAMPLE ID: MW-58 MATRIX SPIKE RECOVERY DUP.	SAMPLE VOL./WT.: 5ml

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	103%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK	DATE RECEIVED: 03/10/95
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 03/13/95
ELI SAMPLE ID: 9503010-09A	MATRIX: AQUEOUS
SAMPLE ID: REAGENT SPIKE RECOVERY	SAMPLE VOL./WT.: NA

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	102%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK	DATE RECEIVED: 03/10/95
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 03/13/95
ELI SAMPLE ID: 9503010-10A	MATRIX: AQUEOUS
SAMPLE ID: REAGENT SPIKE RECOVERY DUP.	SAMPLE VOL./WT.: NA

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	93%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-05A
SAMPLE ID: METHOD BLANK

DATE SAMPLED: NA
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: NA

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-01A
SAMPLE ID: MW-39

DATE SAMPLED: 03/07/95
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 5ml

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	57.8	2.5 *
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	21.5	2.5 *
V7	Toluene	2.7	0.5
V8	Xylenes (Dimethyl benzenes)	11.2	0.5

Note: All positively identified compounds were second column or second detector confirmed.
* A lower sample volume or higher dilution factor was used for the quantification of this compound due to high analyte concentration.
NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-02A
SAMPLE ID: MW-42

DATE SAMPLED: 03/07/95
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 0.5ml

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L * ug/L (ppb)
V1	Benzene	22	5
V2	Chlorobenzene	<5	5
V3	1,2-Dichlorobenzene	<5	5
V4	1,3-Dichlorobenzene	<5	5
V5	1,4-Dichlorobenzene	<5	5
V6	Ethyl benzene	58	5
V7	Toluene	10	5
V8	Xylenes (Dimethyl benzenes)	163	5

Note: All positively identified compounds were second column or second detector confirmed.
* Higher detection limit is due to high analyte concentration.
NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-03A
SAMPLE ID: MW-58

DATE SAMPLED: 03/07/95
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 5ml

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-04A
SAMPLE ID: EW-1

DATE SAMPLED: 03/07/95
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 5ml

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	0.9	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	3.5	0.5

Note: All positively identified compounds were second column or second detector confirmed.
NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-07A
SAMPLE ID: MW-58 MATRIX SPIKE RECOVERY

DATE SAMPLED: NA
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 5ml

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	110%
V2	Chlorobenzene	106%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	113%
V7	Toluene	110%
V8	Xylenes (Dimethyl benzenes)	111%

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-08A
SAMPLE ID: MW-58 MATRIX SPIKE RECOVERY DUP.

DATE SAMPLED: NA
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: 5ml

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	100%
V2	Chlorobenzene	102%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	108%
V7	Toluene	107%
V8	Xylenes (Dimethyl benzenes)	104%

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-09A
SAMPLE ID: REAGENT SPIKE RECOVERY

DATE SAMPLED: NA
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: NA

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	97%
V2	Chlorobenzene	100%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	101%
V7	Toluene	100%
V8	Xylenes (Dimethyl benzenes)	101%

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 95-03-010
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9503010-10A
SAMPLE ID: REAGENT SPIKE RECOVERY DUP.

DATE SAMPLED: NA
DATE RECEIVED: 03/10/95
DATE EXTRACTED: NA
DATE ANALYZED: 03/14/95
MATRIX: AQUEOUS
SAMPLE VOL./WT.: NA

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	117%
V2	Chlorobenzene	104%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	106%
V7	Toluene	110%
V8	Xylenes (Dimethyl benzenes)	105%

NA = Not Applicable

Huey-Chen Chow
Chemist

March 22, 1995
Date

UPS# 0630908102 1

4°C

CHAIN OF CUSTODY FORM

PAGE 1 OF 1

PROJECT NAME: MLK 95-03-010. GCU3.19

JOB NUMBER: 430.010

LAB: ~~CURT~~ EUREKA LABORATORIES

PROJECT CONTACT: Fernando Vélez

TURNAROUND: NORMAL

SAMPLED BY: Dennis Alexander

REQUESTED BY: Fernando Vélez

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX						CONTAINERS						METHOD PRESERVED					SAMPLING DATE								NOTES	ANALYSIS REQUESTED		
		WATER	SOIL	WASTE	AIR			VOA	LITER	PINT	TUBE			HCL	H_2SO_4	HNO_3	ICE	NONE	MONTH		DAY		YEAR		TIME				TVH 8020	BTXE 602
1A	MW-39	X						3						X			X		0	3	0	7	9	5	1	1	2	0		X	X
2A	MW-42	X						3						X			X		0	3	0	7	9	5	1	2	1	5		X	X
3A	MW-58	X						3						X			X		0	3	0	7	9	5	1	0	4	5		X	X
4A	EW-1	X						3						X			X		0	3	0	7	9	5	1	4	0	0		X	X

OFFICIAL NOTICE FROM EU: After 30 days from 3/22/95 samples will be disposed of @ a licensed waste disposal site unless client requests their return or by special arrangement for a long holding period. Charges for sample returns are $200 per sample to cover costs of handling and shipping.

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
		Simon Yeung	3/10/95 10:20 am
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.

171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607

(510) 268-0461 • FAX: 510-268-0137

GROUNDWATER DEPTHS

Project Name: MLK

Job No.: 430.010

Measured by: DWA

Well	Date	Time	Groundwater Depth (feet)	Comments
EW-1	3/7/95	8:17 a.m.	24.26'	
MW-11	↓	7:52 a.m.	25.25'	
MW-28		9:10 a.m.	23.35'	
MW-29		8:34 a.m.	24.88'	
MW-31		8:27 a.m.	24.74'	
MW-39		8:59 a.m.	24.75'	
MW-42		9:20 a.m.	24.65'	
MW-43		8:21 a.m.	23.55'	
MW-45		7:40 a.m	26.47	
MW-46		8:52 a.m.	25.96'	
MW-58		8:40 a.m.	25.35'	
MW-59	↓	8:05 a.m.	24.63'	

WELL SAMPLING FORM

Project Name: MLK
Well Number: MW-39
Job No.: 430.010
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 3/7/95
TOC Elevation:
Weather: Sunny

Depth to Casing Bottom (below TOC) 31.50 feet
Depth to Groundwater (below TOC) 24.75 feet
Feet of Water in Well 6.75 feet
Depth to Groundwater When 80% Recovered 26.10 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.1 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
1	6.72	21.0	290		semi-clear/no odor
2	6.76	21.0	390		
3	6.79	21.0	450		decreasing particulates
4	6.73	21.0	475		

Total Gallons Purged 4 gallons
Depth to Groundwater Before Sampling (below TOC) 24.80 feet
Sampling Method teflon bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: MLK
Well Number: MW-42
Job No.: 430.010
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 3/7/95
TOC Elevation:
Weather: sunny

Depth to Casing Bottom (below TOC) 32.00 feet
Depth to Groundwater (below TOC) 24.65 feet
Feet of Water in Well 7.35 feet
Depth to Groundwater When 80% Recovered 26.12 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.2 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
1	7.01	21.0	450		murky / green-gray color moderate odor spotty sheen
2	6.96	21.0	525		
3	6.96	20.5	550		
4	6.95	20.5	550		

Total Gallons Purged 4 gallons
Depth to Groundwater Before Sampling (below TOC) 24.90' feet
Sampling Method disposable bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: MLK
Well Number: MW-58
Job No.: 430.010
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 3/7/95
TOC Elevation:
Weather: Sunny

Depth to Casing Bottom (below TOC) 32.50 feet
Depth to Groundwater (below TOC) 25.35 feet
Feet of Water in Well 7.15 feet
Depth to Groundwater When 80% Recovered 26.78 feet
Casing Volume (feet of water x Casing DIA ² x 0.0408) 1.2 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
1	6.92	21.0	525		murky / no odor
2	6.89	21.0	525		
3	6.88	21.0	525		
4	6.88	21.0	525		

Total Gallons Purged 4 gallons
Depth to Groundwater Before Sampling (below TOC) 25.60' feet
Sampling Method teflon bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

WELL SAMPLING FORM

Project Name: MLK
Well Number: EW-1
Job No.: 430.010
Well Casing Diameter: 4 inch
Sampled By: DWA
Date: 3/7/95
TOC Elevation:
Weather: sunny

Depth to Casing Bottom (below TOC) 43.00 feet
Depth to Groundwater (below TOC) 24.26 feet
Feet of Water in Well 18.74 feet
Depth to Groundwater When 80% Recovered 28.00 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 12.23 gallons
Depth Measurement Method Tape & Paste (Electronic Sounder) Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

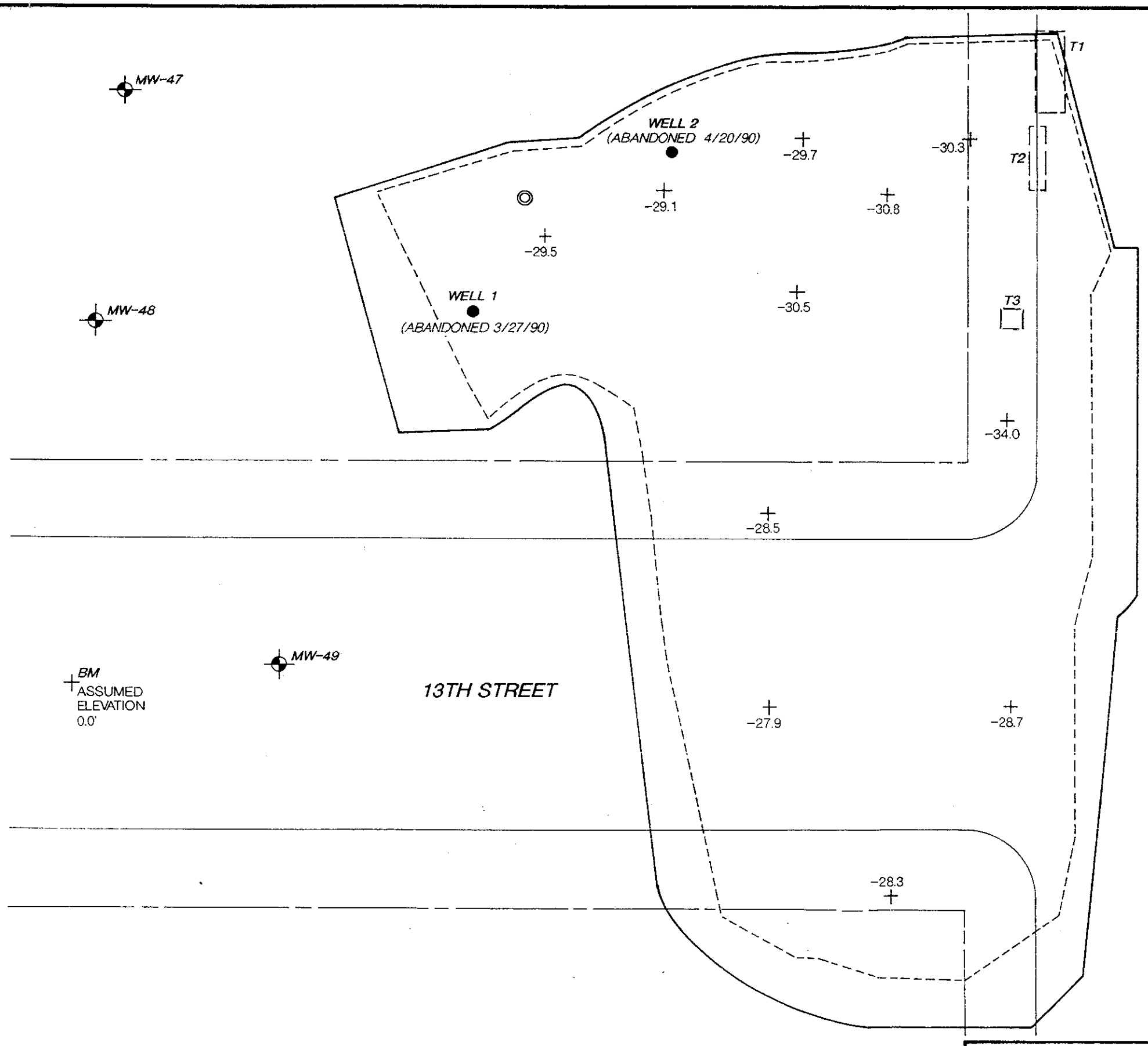
Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
15	6.95	22.0	850		semi-clear/no odor
20	6.97	22.0	850		↓
25	6.99	21.5	850		↓
30	7.01	21.5	850		clear
35	7.01	21.0	850		

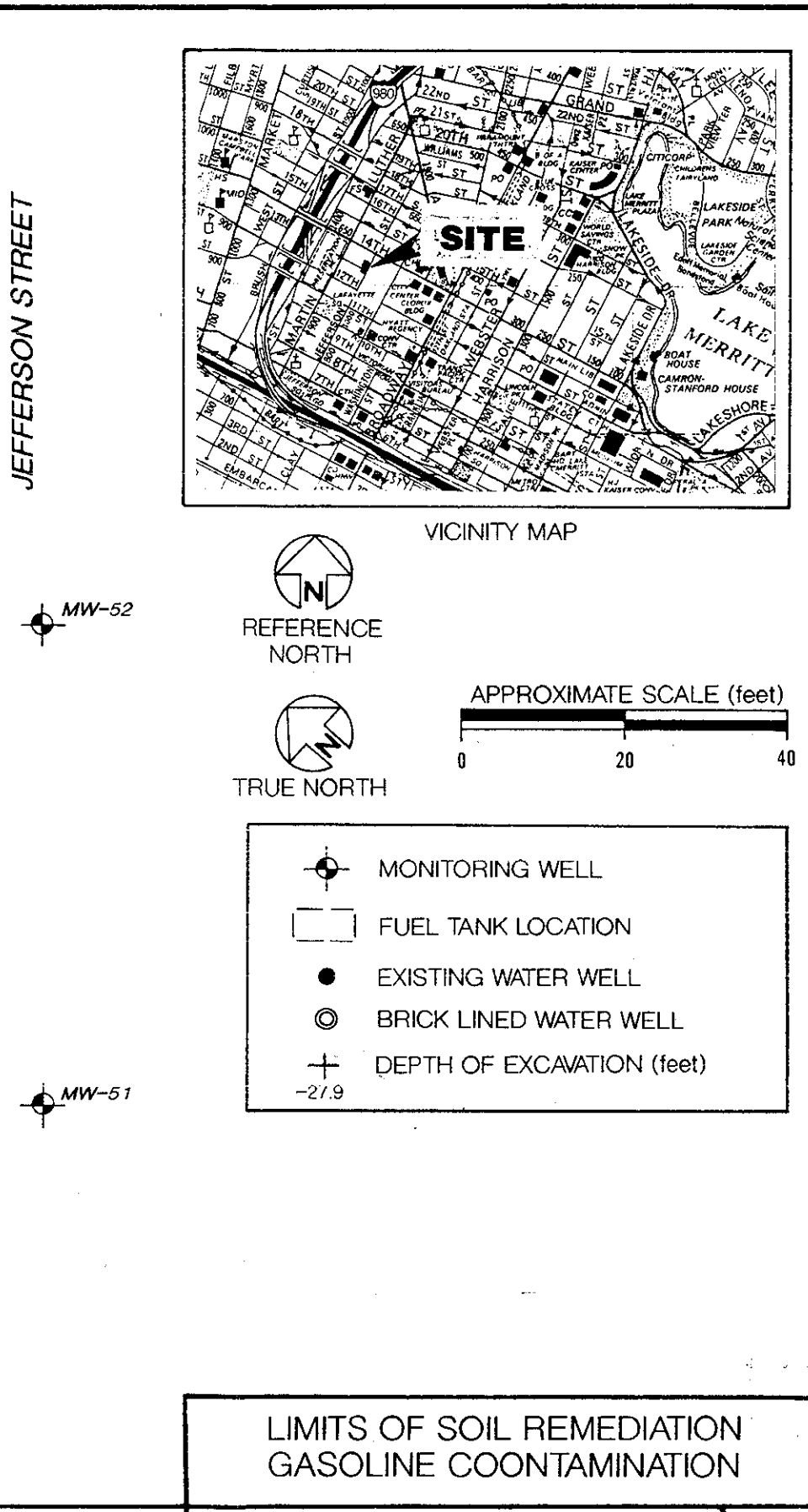
Total Gallons Purged 37 gallons
Depth to Groundwater Before Sampling (below TOC) 24.50 feet
Sampling Method teflon bailer
Containers Used 3 (40 ml) ____ (liter) ____ (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE





LIMITS OF SOIL REMEDIATION GASOLINE COONTAMINATION

Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.003	5/10/90	

PLATE 6

ASSESSOR'S MAP 2

29

Scale: 1" = 50'

OAKLAND (KELLERSBERGER'S)(Bk.7 Pg.3)

10-17-84 ST
9-6-85 P.B.
10-9-85 P.B.

B O O K 3

14 TH STREET

19

MARTIN LUTHER KING, JR. WAY

80

80.5

1330

1320

1308

617

613

(75) (25) 300 (25) (75)

8 7 6 5 4 3 2 1

9 10 11 12 13 14

28 27 26 187 25 24 23

15 16 17 18 19 20 21 22

1.38 Ac

1335

1325

1307

(25) (100) (200)

80.5

JEFFERSON STREET

668 640 622

80

Redevelop - Agency of the City of Oak
St. Care (Fenelon, Esq.
60 c Mar. St
SF 94111

APPROXIMATE EXTENT OF SOIL REMEDIATION

13 TH STREET

6 6 8 - 12th St.

12th St.

27

City Center Garage west Aspect
11th Broadway
Oakland CA

ESSOR'S MAP 2

Code Area Nos. 17-022

Scale: 1" = 50'

OAKLAND (KELLERSBERGER'S) (Bk. 7 Pg. 3)

29

13TH STREET

APPROXIMATE EXTENT OF SOIL REMEDIATION

80

19

80.5

WAY

(75) (25) 300 (25) (75)

8 7 6 5 4 3 2 1 — 9 10 11 12 13 14 — 15 16 17 18 19 20 21 22

(25) (100) 200 (100) (25)

28 27 26 25 24 23

178

6-1

1.38 Ac.

1221 1215 1211 1209 1207

644 632 630 628 622 608 602 600

80.5

STREET

33

80

12TH STREET

21

MARTIN LUTHER KING, JR.

(75) (25) 300 (25) (75)

8 7 6 5 4 3 2 1 — 9 10 11 12 13 14 — 15 16 17 18 19 20 21 22

(25) (100) 200 (100) (25)

28 27 26 25 24 23

1.38 Ac.

7

155

JEFFERSON

3

80.25

11TH STREET

James P. Bowers, PE
R. William Rudolph, Jr., PE

ALCO
HAZMAT
94 MAY -6 PM 1:15

LETTER OF TRANSMITTAL

TO: Ms. Jennifer Eberle
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room #200
Oakland, California 94621

DATE: May 3, 1994
PROJECT 13th & Jefferson Streets
SCI JOB NUMBER: 430.013

WE ARE SENDING YOU:

- 1 copies
- ☐ of our final report
- ☐ a draft of our report
- ☐ a Service Agreement
- ☐ a proposed scope of services
- ☐ specifications
- ☐ grading/foundation plans
- ☐ soil samples/groundwater samples
- ☐ an executed contract
- ☐ _____

- ☐ if you have any questions, please call
- ☐ for your review and comment
- ☐ please return an executed copy
- ☐ for geotechnical services
- ☐ with our comments
- ☐ with Chain of Custody documents
- ☒ for your use
- ☐ _____
- ☐ _____

REMARKS:

As requested, enclosed are the Assessors Parcel Maps for the referenced site. If we can be of further assistance, please call.

COPIES TO:

BY: Mark Kawakami

■ Subsurface Consultants, Inc.

171 12th Street • Suite 201 • Oakland, California 94607 • Telephone 510-268-0461 • FAX 510-268-0137

1/30/95 Zia Khan phoned, and asked for a copy of Tri-Regional Guidelines, as well as Article 11. Faxed them to Zia.

2/8/95 mess fm Zia; Ran MapInfo map; located nearby sites and wells.

2/15/95 mess fm and to Zia Khan.

2/16/95 Received workplan by ERM

2/27/95 Reviewed 2/15/95 Workplan by ERM. **They propose 4 soil borings on each side of the pit, and to convert all four to MWs.** Questions: 1) site map Fig 1-1 is incorrect (minor) 2) **4 may be too many borings/wells.** 3) specify time bet inst and devel 4) weekly verbal updates to who? County or RP? 5) how will they select soil samples to be analyzed? how many per boring? 6) **will they move out away from pit if the boring appears hot?** 7) what happened to Zia's plan for overex? 8) they say federal MCL for benzene is .05 ppb, but it's really 5 ppb.

3/2/95 spoke w/Zia: discussed wp. Let's overex S wall and resample first, then put in 3 MWs (not 4): on E, W, and S sides of pit. His address is ERM EnviroClean West, 4085 Nelson Ave., Suite E&F, Concord CA 94520 (609-1313 is his fax.) Revised the MW location map from wp, and faxed it to Zia.

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR
DEPARTMENT OF ENVIRONMENTAL HEALTH

ALAMEDA COUNTY-ENV. HEALTH DEPT.
ENVIRONMENTAL PROTECTION DIV.
1131 HARBOR BAY PKWY., #250
ALAMEDA CA 94502-6577
(510)567-6700

March 2, 1995
STID 3623

Attn: Donnell Choy
Deputy City Attorney
Oakland City Attorney Office
505-14th St., 12th Floor
Oakland CA 94612

Attn: Andrew Clark-Clough
City of Oakland, Office of Public Works,
Environmental Division
1333 Broadway, Suite 330
Oakland CA 94612

RE: 1330 Martin Luther King Jr. Way at 14th St., Oakland CA 94612

Dear Mr. Choy and Mr. Clark-Clough,

Upon recent review of this case, it has been determined that no further action is required for the onsite parcel, but monitoring and sampling must continue in certain offsite wells located in the street, at the intersection of Martin Luther King Jr. Way and 14th St., where the plume appears to be contained, degrading, and not migrating. These offsite wells include MW39, MW42, MW58, and extraction well EW1. The sampling matrix includes TPH-gasoline and BTEX. The sampling frequency should be maintained as quarterly, until further notice. The case is presently being reviewed for closure.

If you have any questions, please contact me at 510-567-6700, ext. 6761.

Sincerely,

Jennifer Eberle
Hazardous Materials Specialist

cc: David Ralph, City of Oakland, OEDE, 1333 Broadway, #900, Oakland CA 94612
Fernando Velez, Subsurface Consultants, Inc., 171-12th St., Suite 201, Oakland CA 94607
Kevin Graves, RWQCB
Ed Howell/file

je 3623-C

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To F. Velez	From J. Eberle
Co. D. Choy	Co.
Dept.	Phone #
Fax #	Fax #

R. William Rudolph, Jr., PE
Thomas E. Cundey, PE
Jeriann N. Alexander, PE

December 21, 1994
SCI 430.010

Ms. Jennifer Eberle
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

Quarterly Groundwater Monitoring
Gasoline Contamination
November 1994
1330 Martin Luther King, Jr. Way
at 14th Street
Oakland, California

Dear Ms. Eberle:

This letter presents quarterly groundwater monitoring results for the referenced site. Contaminated soil and groundwater remediation resulting from an underground gasoline tank release has been performed at the site. Remediation consisted of (1) vapor extraction, and (2) groundwater extraction and treatment. The vapor extraction system removed all measurable free product in the area. The groundwater extraction system has significantly lowered dissolved product concentrations and reduced the extent of the dissolved product plume. Soil and groundwater remediation were terminated on November 18, 1993, per your verbal approval. Groundwater monitoring has been performed since 1988. The location of the site and wells are presented on Plate 1.

Sampling and Analysis

During this event, Wells 39, 42, MW-58, MW-59 and EW-1 were sampled. The groundwater monitoring event consist of (1) measuring groundwater levels, (2) purging water from each well until pH, conductivity and temperature had stabilized, and (3) sampling the wells with pre-cleaned disposable samplers. The samples were retained in glass containers and preserved with hydrochloric acid. The containers were placed in an ice filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-custody documents accompanied the samples to the laboratory.

Analytical testing was performed by Eureka Laboratories, Inc., a State of California Department of Health Services certified laboratory for hazardous waste and water testing. The analytical tests included:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector), and

2. Benzene, toluene, xylenes and ethylbenzene (BTXE), sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a flame ionization detector).

A summary of the current and previous analytical test results and groundwater elevation data are presented in the attached Tables 1 and 2. Analytical test reports and chain-of-custody documents for the current event are also attached.

Conclusions

The groundwater level data indicate that the regional groundwater flow direction is toward the west-northwest at a gradient of approximately 1 percent. This groundwater flow direction and gradient remain consistent with previous measurements.

In general, the analytical results indicate that dissolved hydrocarbon concentrations in groundwater remain generally consistent with the previous monitoring event. Elevated TVH and BTXE concentrations are present in the vicinity of well 42, however the concentrations are about 1/3 of the concentrations detected in August 1994.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Mark Kawakami
Civil Engineer C52437 (expires 12/31/98)

MK:JNA:sld

Attachments: Table 1 - Contaminant Concentrations in Groundwater
Table 2 - Groundwater Elevation Data
Plate 1 - Site Plan
Analytical Test Reports
Chain-of-Custody Documents

cc: Mr. David W. Ralph
Office of Economic Development and Employment
1333 Broadway, Suite 900
Oakland, California 94612

Mr. Donnell Choy
Office of City Attorney
City of Oakland
905 14th Street, 12th Floor
Oakland, California 94612

Mr. Andrew Clark-Clough
City of Oakland
Environmental Affairs
1331 Broadway, Suite 800
Oakland, California 94612

Attach file 430010i.tbl

Table 1. CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
EW-1	5/4/94	103	ND	ND	15.1	ND	--	--	--
	8/11/94	370	ND	ND	3.4	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--
11	7/5/88	10,000	1,800	ND	1,200	ND	--	--	--
	4/3/89	53,000	7,100	4,000	2,400	380	--	--	--
	7/6/89	22,000	5,300	3,200	2,300	390	ND	26	--
	11/8/89	120,000	18,000	8,000	21,000	4,500	ND	37	--
	7/18/90	26,000	950	19	98	ND	--	--	--
	10/23/90	4,200	1,600	8.5	170	28	--	0.2	--
	1/21/91	1,900	600	6.2	84	60	--	0.15	--
	4/24/91	4,800	1,100	3.5	46	120	--	--	--
	7/24/91	950	330	0.9	1.8	12	--	--	--
	10/24/91	970	350	1.6	1.6	14	--	ND	--
	1/23/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	340	77	0.6	0.6	ND	--	--	--
	8/6/92	220	54	ND	ND	ND	--	--	--
	11/16/92	159	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/12/93	ND	ND	ND	ND	ND	--	--	--
	8/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	ND	ND	ND	ND	ND	--	--	--
28	9/2/88	890	431	75.4	84	ND	ND	9.2	--
	7/6/89	13,000	4,900	1,500	1,300	100	ND	27	--
	5/4/94	103	ND	ND	15.1	ND	--	--	--
29	9/2/88	ND	ND	8.1	ND	ND	ND	ND	--
	4/3/89	450	ND	2	6.7	2	--	--	--
	7/6/89	ND	ND	15	ND	ND	ND	ND	--
	11/8/89	780	ND	14	32	7.9	ND	ND	--
	10/23/90	1,800	1.2	6.5	4.8	2.7	--	--	--
	1/21/91	1,100	ND	3.7	4.9	1.3	--	ND	--
	3/28/91	500	ND	1.6	0.8	ND	--	--	--
31	9/2/88	ND	ND	ND	ND	ND	ND	ND	--
	4/3/89	ND	ND	ND	ND	ND	--	--	--
	7/6/89	ND	ND	ND	ND	ND	ND	ND	--
	11/8/89	ND	ND	ND	ND	ND	ND	ND	--
	7/18/90	ND	ND	ND	ND	ND	--	--	--
	1/21/91	ND	ND	0.6	2.1	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/23/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/7/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	43	ND	ND	ND	ND	--	--	--
	12/17/92	35.3	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/12/93	ND	ND	ND	ND	ND	--	--	--

Table 1. CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
31	8/17/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	ND	ND	ND	ND	ND	--	--	--
32	10/23/90	48,000	7,600	8,200	5,600	150	--	3.8	--
	1/21/91	96,000	9,600	15,000	16,000	2,000	--	ND	--
	4/24/91	170	ND	ND	ND	ND	--	--	--
39	4/3/89	2,000	250	11	210	ND	--	--	--
	7/6/89	7,900	2,700	1,300	860	97	ND	3	--
	11/8/89	9,300	4,500	760	310	150	ND	4	36
	7/18/90	ND	4.1	ND	ND	ND	--	--	--
	10/23/90	160	12	6.4	5	ND	--	ND	ND
	1/21/90	200	23	0.9	2	1.2	--	ND	--
	3/28/91	ND	ND	ND	ND	ND	--	--	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	1.4	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	ND	--
	1/23/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/7/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/12/93	ND	ND	ND	ND	ND	--	--	--
	8/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	20	ND	ND	2.9	2.2	--	--	--
	5/4/94	ND	3	0.9	2.3	1.2	--	--	--
	8/11/94	ND	ND	0.7	1.4	0.5	--	--	--
	11/8/94	**ND**	**ND**	**ND**	**ND**	**ND**	--	--	--
42	7/6/89	13,000	4,500	100	1,000	ND	ND	8	--
	10/23/90	8,800	420	580	910	91	--	0.7	--
	7/24/91	21,000	2,200	300	650	180	--	--	--
	10/24/91	18,000	2,300	1,100	1,000	260	--	16	--
	1/23/92	10,000	1,100	280	430	300	--	--	--
	5/1/92	16,000	1,200	330	580	220	--	--	--
	8/7/92	12,000	890	510	1,000	340	--	--	--
	11/16/92	587	1.2	4.3	43	ND	--	--	--
	2/16/93	6730	386	51	411	183	--	--	--
	5/12/93	13400	748	238	777	ND	--	--	--
	8/17/93	4120	268	ND	323	377	--	--	--
	11/16/93	8350	143	41	199	133	--	--	--
	2/2/94	1080	7.4	11.2	144	67.1	--	--	--
	5/4/94	4580	ND	ND	845	347	--	--	--
	8/11/94	6910	37	ND	417	221	--	--	--
	11/8/94	**2580**	**9**	**ND**	**102**	**63**	--	--	--

Table 1. CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xiyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
43	10/24/91	6,300	ND	ND	130	9.1	--	--	--
	5/1/92	930	ND	ND	3.8	ND	--	--	--
	8/7/92	450	ND	2.4	3.5	1.5	--	--	--
	11/16/92	614	ND	2	34.4	1.6	--	--	--
	2/16/93	123	12.5	4.3	60.9	18.6	--	--	--
	5/12/93	96.4	ND	ND	ND	ND	--	--	--
	8/17/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	2/2/94	ND	ND	ND	ND	ND	--	--	--
45	12/5/89	ND	ND	ND	ND	ND	ND	ND	--
	10/23/90	ND	0.9	1.4	1.8	ND	--	--	--
	1/21/91	ND	ND	ND	ND	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/24/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/6/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
46	11/30/89	ND	2.1	1.9	2	ND	ND	ND	--
	7/18/90	ND	ND	ND	ND	ND	--	--	--
	10/23/90	ND	ND	0.6	ND	0.5	--	--	--
	1/21/91	ND	ND	ND	ND	ND	--	ND	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
58	1/30/91	ND	ND	ND	ND	ND	--	--	--
	3/28/91	ND	ND	ND	ND	ND	--	--	--
	4/24/91	ND	ND	ND	ND	ND	--	--	--
	7/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	1/24/92	ND	ND	ND	ND	ND	--	--	--
	5/1/92	ND	ND	ND	ND	ND	--	--	--
	8/6/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	2/16/93	ND	ND	ND	ND	ND	--	--	--
	5/4/94	ND	ND	ND	ND	ND	--	--	--
	8/11/94	ND	ND	ND	ND	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--

Table 1. CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Xlyenes (ug/L)	Ethyl Benzene (ug/L)	Total Organic Lead (ug/L)	EDB (ug/L)	1,2-DCA (ug/L)
59	2/16/93	ND	ND	ND	ND	ND	--	--	--
	11/8/94	ND	ND	ND	ND	ND	--	--	--

Total Volatile Hydrocarbons
Ethylene Dibromide
1, 2-Dichloroethane
micrograms per liter
None detected, chemicals not present at concentrations above the detection limits
Test not requested

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
11	99.66	1/19/89	26.82	72.84	--
		4/3/89	26.35	73.31	--
		7/5/89	26.95	72.71	--
		11/9/89	27.28	72.38	--
		1/24/90	27.40	72.26	--
		4/30/90	27.56	72.10	--
		7/3/90	28.89	70.77	--
		10/23/90	28.93	70.73	--
		1/21/91	27.75	71.91	--
		4/24/91	28.14	71.52	--
		7/24/91	28.78	70.88	--
		10/24/91	29.09	70.57	--
		1/23/92	29.85	69.81	--
		5/1/92	27.44	72.22	--
		8/7/92	27.86	71.80	--
		11/16/92	27.84	71.82	--
		2/16/93	25.94	73.72	--
		5/12/93	27.13	72.53	--
		8/17/93	27.20	72.46	--
		11/16/93	26.85	72.81	--
		2/2/94	26.64	73.02	--
		5/4/94	24.52	75.14	--
		8/11/94	26.76	72.90	--
		11/8/94	26.88	72.78	--
28	98.99	1/19/89	26.16	72.83	--
		4/3/89	25.70	73.29	--
		7/5/89	26.26	72.73	--
		11/8/89	26.59	72.40	--
		1/24/90	26.81	72.18	--
	97.79	5/10/90	31.83	65.96	1.22
		7/3/90	31.95	65.84	0.04
		10/23/90	31.25	66.54	1.38
		1/21/91	28.00	69.79	0
		10/24/91	27.26	70.53	0
		1/23/92	32.99	64.80	0
		8/7/92	26.95	70.84	--
		11/16/92	25.95	71.84	--
		2/16/93	24.06	73.73	--
		5/12/93	25.48	72.31	--
		8/17/93	25.55	72.24	--
		11/16/93	24.92	72.87	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
28	97.79	5/4/94	24.80	72.99	--
		8/11/94	24.86	72.93	--
		11/8/94	24.96	72.83	--
29	97.95	1/19/89	26.14	71.81	--
		4/3/89	25.88	72.07	--
		7/5/89	26.19	71.76	--
		11/9/89	26.51	71.44	--
		1/24/90	26.66	71.29	--
		4/30/90	26.73	71.22	--
		7/3/90	27.22	70.73	--
		10/23/90	27.40	70.55	--
		01/21/91	26.89	71.06	--
		3/28/91	27.04	70.91	--
		10/24/91	27.47	70.48	--
		1/23/92	27.89	70.06	--
		11/16/92	26.78	71.17	--
		2/16/93	25.60	72.35	--
		5/12/93	26.04	71.91	--
		8/17/93	26.25	71.70	--
		11/16/93	26.22	71.73	--
		2/2/94	26.08	71.87	--
		5/4/94	26.88	71.07	--
		8/11/94	26.01	71.94	--
		11/8/94	26.17	71.78	--
30	99.30	1/19/89	27.50	71.80	1.56
		4/3/89	28.44	70.86	2.56
		7/5/89	28.90	70.40	3.38
		11/9/89	29.52	69.78	3.67
		4/30/90	27.23	72.07	0.29
		7/3/90	29.07	70.23	0.57
		10/23/90	29.07	70.23	1.27
		1/21/91	29.09	70.21	2.27
		4/24/91	27.80	71.50	0.19
		5/31/91	28.08	71.22	0.49
		10/24/91	28.94	70.36	0
		11/16/92	27.29	72.01	--
		2/16/93	25.42	73.88	--
		5/12/93	27.10	72.20	--
		8/17/93	27.01	72.29	--
		11/16/93	26.30	73.00	--
		2/2/94	26.08	73.22	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
30	99.30	5/4/94	25.95	73.35	--
		8/11/94	26.20	73.10	--
31	98.90	1/19/89	26.15	72.75	--
		4/3/89	25.90	73.00	--
		7/5/89	26.28	72.62	--
		11/9/89	26.64	72.26	--
		1/24/90	26.84	72.06	--
		4/30/90	26.87	72.03	--
		7/3/90	27.50	71.40	--
		9/23/90	27.52	71.38	--
		1/21/91	27.09	71.81	--
		4/24/91	27.12	71.78	--
		7/24/91	27.60	71.30	--
		10/24/91	28.81	70.09	--
		1/23/92	28.31	70.59	--
		5/1/92	26.70	72.20	--
		8/7/92	27.00	71.90	--
		11/16/92	27.04	71.86	--
		2/16/93	25.63	73.27	--
		5/12/93	26.20	72.70	--
		8/17/93	26.41	72.49	--
		11/16/93	26.25	72.65	--
		2/2/94	26.07	72.83	--
		5/4/94	25.90	73.00	--
		8/11/94	26.08	72.82	--
		11/8/94	26.25	72.65	--
32	98.53	1/24/90	25.64	72.89	--
		4/30/90	25.82	72.71	--
		6/1/90	26.30	72.23	--
		10/23/90	26.70	71.83	--
		1/21/91	26.06	72.47	--
		4/24/91	26.40	72.13	--
		10/24/91	27.05	71.48	--
39	99.00	4/3/89	25.87	73.13	--
		7/5/89	26.38	72.62	--
		11/9/89	26.70	72.30	--
		1/24/90	26.86	72.14	--
		4/30/90	26.97	72.03	--
		7/3/90	28.17	70.83	--
		10/23/90	28.17	70.83	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
39	99.00	1/21/91	27.15	71.85	--
		3/28/91	27.76	71.24	--
		4/24/91	27.33	71.67	--
		7/24/91	27.91	71.09	--
		10/24/91	28.26	70.74	--
		1/23/92	29.00	70.00	--
		5/1/92	26.82	72.18	--
		8/7/92	27.18	71.82	--
		11/16/92	27.19	71.81	--
		2/16/93	25.53	73.47	--
		5/12/93	26.52	72.48	--
		8/17/93	26.65	72.35	--
		11/16/93	26.30	72.70	--
		2/2/94	26.10	72.90	--
		5/4/94	25.96	73.04	--
		8/11/94	26.16	72.84	--
		11/8/94	26.31	72.69	--
42	99.12	4/3/89	25.77	73.35	--
		7/5/89	26.30	72.82	--
		11/9/89	26.66	72.46	--
		1/24/90	26.82	72.30	--
		4/18/90	26.94	72.18	--
		7/3/90	28.58	70.54	--
		10/23/90	28.58	70.54	0.08
		7/24/91	28.10	71.02	0
		10/24/91	28.24	70.88	--
		1/23/92	29.33	69.79	--
		5/1/92	26.88	72.24	--
		8/7/92	27.10	72.02	--
		11/16/92	26.68	72.44	--
		2/16/93	25.41	73.71	--
		5/12/93	26.74	72.38	--
		8/17/93	26.80	72.32	--
		11/16/93	26.25	72.87	--
		2/2/94	26.03	73.09	--
		5/4/94	25.90	73.22	--
		8/11/94	26.14	72.98	--
		11/8/94	26.26	72.86	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
43	98.87	4/3/89	25.32	73.55	0.08
		7/5/89	26.80	72.07	1.34
		11/9/89	28.44	70.43	2.89
		4/30/90	27.05	71.82	0.79
		7/3/90	28.36	70.51	0.7
		10/23/90	28.19	70.68	0.83
		10/24/91	26.30	72.57	0
		1/24/92	28.25	70.62	0.02
		5/1/92	25.44	73.43	0
		8/7/92	25.11	73.76	--
		11/16/92	26.42	72.45	--
		2/16/93	24.35	74.52	--
		5/12/93	25.90	72.97	--
		8/17/93	25.50	73.37	--
		11/16/93	25.21	73.66	--
		2/2/94	24.98	73.89	--
		5/4/94	24.68	74.19	--
		8/11/94	25.10	73.77	--
		11/8/94	25.20	73.67	--
45	100.90	12/5/89	28.71	72.19	--
		4/30/90	28.85	72.05	--
		7/3/90	29.45	71.45	--
		10/23/90	29.50	71.40	--
		1/21/91	29.03	71.87	--
		4/24/91	28.87	72.03	--
		7/25/91	29.63	71.27	--
		10/24/91	29.62	71.28	--
		1/23/92	30.45	70.45	--
		5/1/92	28.42	72.48	--
		8/7/92	28.70	72.20	--
		11/16/92	28.84	72.06	--
		2/16/93	27.14	73.76	--
		5/12/93	28.00	72.90	--
		8/17/93	28.35	72.55	--
		11/16/93	28.15	72.75	--
		2/2/94	27.95	72.95	--
		8/11/94	28.10	72.80	--
		11/8/94	28.19	72.71	--

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
46	98.11	12/19/89	27.40	70.71	--
		4/30/90	27.46	70.65	--
		7/3/90	27.75	70.36	--
		10/23/90	27.86	70.25	--
		1/21/91	27.60	70.51	--
		4/24/91	27.40	70.71	--
		7/24/91	28.73	69.38	--
		10/24/91	27.88	70.23	--
		1/23/92	28.31	69.80	--
		8/7/92	27.28	70.83	--
		11/16/92	27.42	70.69	--
		2/16/93	26.44	71.67	--
		5/12/93	26.78	71.33	--
		8/17/93	27.01	71.10	--
		11/16/93	27.10	71.01	--
		2/2/94	26.86	71.25	--
		8/11/94	26.28	71.83	--
		11/8/94	27.00	71.11	--
58	98.89	1/30/91	28.25	70.64	--
		3/28/91	27.81	71.08	--
		4/24/91	27.55	71.34	--
		7/24/91	33.42	65.47	--
		10/24/91	28.29	70.60	--
		1/23/92	28.75	70.14	--
		5/1/92	27.10	71.79	--
		8/7/92	27.40	71.49	--
		11/16/92	27.44	71.45	--
		2/16/93	26.10	72.79	--
		5/12/93	26.68	72.21	--
		8/17/93	26.88	72.01	--
		11/16/93	26.77	72.12	--
		2/2/94	26.58	72.31	--
		5/4/94	26.42	72.47	--
		8/11/94	26.60	72.29	--
		11/8/94	26.75	72.14	--

Elevation reference: PG&E manhole approximately 30 feet south of 14th Street on Martin Luther King Jr. Way, assumed to be 100.00 feet,
TOC = Top of casing
-- = No free product present

EXTRACTION WELL

MONITORING WELL

TVH — TOTAL VOLATILE HYDROCARBONS, AS GASOLINE

BTXE — BENZENE, TOLUENE, XYLENES, ETHYLBENZENE

ND — NONE DETECTED

CONCENTRATIONS IN ug/l

31

29

58 TVH ND BTXE ND

14TH STREET

DIRECTION OF GROUNDWATER FLOW

39 TVH ND BTXE ND

46

42 TVH 2580 B 9 T ND X 102 E 63

43

30

28

EXISTING BUILDING

PARKING

EXISTING BUILDING

11 TVH ND BTXE ND

MARTIN LUTHER KING JR. WAY

EW-1 TVH ND BTXE ND

GW TREATMENT PLANT

32

PREVIOUS TANK

59 TVH ND BTXE ND

REFERENCE NORTH

TRUE NORTH

APPROXIMATE SCALE (feet)

0 20 40

45 TVH ND BTXE ND

SITE PLAN

Subsurface Consultants

1330 MARTIN LUTHER KING JR. WAY – OAK.

JOB NUMBER	DATE	APPROVED	PLATE
430.010	12/7/94	MK	1

EUREKA LABORATORIES, INC.

Corporate Office:
6790 FLORIN PERKINS ROAD
SACRAMENTO, CA 95828
TEL: (916) 381-7953
FAX: (916) 381-4013

Branch Office:
17403 N.E. 28th STREET
REDMOND, WA 98052
TEL: (206) 885-0284
FAX: (206) 885-0284

Air Pollution
Chemical Analysis
Research & Testing
Environmental Studies
Robotics
Toxicology

November 28, 1994

Mr. Mark Kawakami
SUBSURFACE CONSULTANTS
171 12th Street, Suite 201
Oakland, CA 94607

Reference - ELI Order #: 94-11-028
Project: MLK
Project #: 430.010

Dear Mr. Kawakami:

Eureka Laboratories, Inc. is pleased to submit a laboratory report for the subject project. This report presents analytical results for five (5) aqueous samples for the following analyses:

ANALYSIS	METHOD	SAMPLE ID.
Gasoline	CA LUFT	EW-1, MW-39, MW-42, MW-58, MW-59
Purgeable Aromatics	EPA 8020	Same as above

Sincerely,
EUREKA LABORATORIES, INC.

By: Felix Yeung
Felix Yeung
Manager, QA/QC Office

FY/pvc

Attachment

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED:	NA
DATE RECEIVED:	11/10/94
DATE EXTRACTED:	NA
DATE ANALYZED:	11/10/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	NA
DILUTION FACTOR:	1

ELI SAMPLE ID: 9411028-06A
SAMPLE ID: METHOD BLANK

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED:	11/08/94
DATE RECEIVED:	11/10/94
DATE EXTRACTED:	NA
DATE ANALYZED:	11/10/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5ml
DILUTION FACTOR:	1

ELI SAMPLE ID: 9411028-01A
SAMPLE ID: EW-1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

Hydrocarbons in the gasoline range are detected in the sample. However, their patterns are different from our standard.
NA = Not Applicable

Huey-Chen Chow — November 28, 1994
Chemist — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: 11/08/94
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/10/94
INSTRUMENT ID: SVG7
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-02A
SAMPLE ID: MW-39

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED:	11/08/94
DATE RECEIVED:	11/10/94
DATE EXTRACTED:	NA
DATE ANALYZED:	11/10/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5ml
DILUTION FACTOR:	1

ELI SAMPLE ID: 9411028-03A
SAMPLE ID: MW-42

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	2580	1000 *
CARBON NO. RANGE		
Gasoline Range	C6-C13	
PEAK CARBON NO.		
Gasoline Range	C9	

* Higher detection limit is due to high analyte concentration.
NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

ELI SAMPLE ID: 9411028-04A
SAMPLE ID: MW-58

DATE SAMPLED:	11/08/94
DATE RECEIVED:	11/10/94
DATE EXTRACTED:	NA
DATE ANALYZED:	11/10/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5ml
DILUTION FACTOR:	1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow — November 28, 1994
Chemist — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED:	11/08/94
DATE RECEIVED:	11/10/94
DATE EXTRACTED:	NA
DATE ANALYZED:	11/10/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5ml
DILUTION FACTOR:	1

ELI SAMPLE ID: 9411028-05A
SAMPLE ID: MW-59

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
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(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK	DATE RECEIVED: 11/10/94
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 11/10/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9411028-08A	SAMPLE VOL./WT.: 5ml
SAMPLE ID: EW-1 MATRIX SPIKE RECOVERY	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	77%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED:	NA
DATE RECEIVED:	11/10/94
DATE EXTRACTED:	NA
DATE ANALYZED:	11/10/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5ml
DILUTION FACTOR:	1

ELI SAMPLE ID: 9411028-09A
SAMPLE ID: EW-1 MATRIX SPIKE RECOVERY DUP.

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	93%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow
Chemist

November 28, 1994
Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK	DATE RECEIVED: 11/10/94
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 11/10/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9411028-10A	SAMPLE VOL./WT.: NA
SAMPLE ID: REAGENT SPIKE RECOVERY	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	99%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK	DATE RECEIVED: 11/10/94
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 11/10/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9411028-11A	SAMPLE VOL./WT.: NA
SAMPLE ID: REAGENT SPIKE RECOVERY DUP.	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	97%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: NA
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-06A
SAMPLE ID: METHOD BLANK

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: 11/08/94
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-01A
SAMPLE ID: EW-1

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: 11/08/94
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-02A
SAMPLE ID: MW-39

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: 11/08/94
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 10

ELI SAMPLE ID: 9411028-03A
SAMPLE ID: MW-42

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L * ug/L (ppb)
V1	Benzene	9	5
V2	Chlorobenzene	<5	5
V3	1,2-Dichlorobenzene	<5	5
V4	1,3-Dichlorobenzene	<5	5
V5	1,4-Dichlorobenzene	<5	5
V6	Ethyl benzene	63	5
V7	Toluene	<5	5
V8	Xylenes (Dimethyl benzenes)	102	5

Note: All positively identified compounds were second column or second detector confirmed.
* Higher detection limit is due to high analyte concentration.
NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: 11/08/94
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-04A
SAMPLE ID: MW-58

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: 11/08/94
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-05A
SAMPLE ID: MW-59

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow
Chemist

November 28, 1994
Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

EIL SAMPLE ID: 9411028-08A
SAMPLE ID: MW-58 MATRIX SPIKE RECOVERY

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	83%
V2	Chlorobenzene	83%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	79%
V7	Toluene	76%
V8	Xylenes (Dimethyl benzenes)	80%

NA = Not Applicable

Huey-Chen Chow — November 28, 1994
Chemist — Date

PURGEABLE AROMATICS
EPA METHOD 8020

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(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-09A
SAMPLE ID: MW-58 MATRIX SPIKE RECOVERY DUP.

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	104%
V2	Chlorobenzene	99%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	101%
V7	Toluene	96%
V8	Xylenes (Dimethyl benzenes)	98%

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: NA
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-10A
SAMPLE ID: REAGENT SPIKE RECOVERY

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	96%
V2	Chlorobenzene	94%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	94%
V7	Toluene	90%
V8	Xylenes (Dimethyl benzenes)	94%

NA = Not Applicable

Huey-Chen Chow — November 28, 1994
Chemist — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-11-028
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 11/10/94
DATE EXTRACTED: NA
DATE ANALYZED: 11/14/94
INSTRUMENT ID: VG3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: NA
DILUTION FACTOR: 1

ELI SAMPLE ID: 9411028-11A
SAMPLE ID: REAGENT SPIKE RECOVERY DUP.

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	81%
V2	Chlorobenzene	79%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	74%
V7	Toluene	75%
V8	Xylenes (Dimethyl benzenes)	76%

NA = Not Applicable

Huey-Chen Chow — Chemist
November 28, 1994 — Date

CHAIN OF CUSTODY FORM

94-11-028 GCV8/19

Shipped by FedX 125280536? 6°C

PAGE OF

PROJECT NAME: MLK

JOB NUMBER: 430.010 LAB: Eureka Laboratories

PROJECT CONTACT: Mark Kawakami TURNAROUND: Normal

SAMPLED BY: Dennis Alexander REQUESTED BY: Mark Kawakami

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR			CONTAINERS: VOA	LITER	PINT	TUBE			METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: TVH	BTXE
1A	EW-1	X						3						X			X		11	08	94	1500		X	X
2A	MW-39	X						3						X			X					1315		X	X
3A	MW-42	X						3						X			X					1345		X	X
4A	MW-58	X						3						X			X					1245		X	X
5A.	MW-59	X						3						X			X		11	08	94	1145		X	X

OFFICIAL NOTICE FROM ELI: After 30 days from NOV. 28 19 samples will be disposed of at a licensed waste disposal site unless client requests their return or by special arrangement for a long holding period. Charges for sample returns are $2.00 per sample to cover costs of handling and shipping.

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
[signature]	11/9/94 12:50pm	Simon Yeung	11/10/94 9:50am.

COMMENTS & NOTES:

Subsurface Consultants, Inc.

171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607

(510) 268-0461 • FAX: 510-268-0137

R. William Rudolph, Jr., PE
Thomas E. Cundey, PE
Jerlann N. Alexander, PE

September 14, 1994
SCI 430.010

Ms. Jennifer Eberle
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Quarterly Groundwater Monitoring
Gasoline Contamination
August 1994
1330 Martin Luther King, Jr. Way
at 14th Street
Oakland, California

Dear Ms. Eberle:

This letter presents quarterly groundwater monitoring results for the referenced site. Groundwater monitoring has been performed as a result of an underground gasoline tank release. The location of the site is presented on Plate 1.

Background

Contaminated soil and groundwater remediation has been performed. Site remediation consisted of (1) vapor extraction, and (2) groundwater extraction and treatment. The vapor extraction system removed all measurable free product in the area. The groundwater extraction system has significantly lowered dissolved product concentrations and reduced the extent of the dissolved product plume. Soil and groundwater remediation activities were terminated on November 18, 1993, per your verbal approval.

Sampling Event

During this event, Wells 39, 42, MW-58 and EW-1 were sampled. The groundwater monitoring event consist of (1) measuring groundwater levels, (2) purging water from each well until pH, conductivity and temperature had stabilized, and (3) sampling the wells with pre-cleaned disposable samplers. The samples were retained in glass containers and preserved with hydrochloric acid. The containers were placed in an ice filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-custody documents accompanied the samples to the laboratory.

Subsurface Consultants, Inc.

171 12th Street • Suite 201 • Oakland, California 94607 • Telephone 510-268-0461 • FAX 510-268-0137

Analytical testing was performed by Eureka Laboratories, Inc., a State of California Department of Health Services certified laboratory for hazardous waste and water testing. The analytical tests included:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector), and

2. Benzene, toluene, xylenes and ethylbenzene (BTXE), sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a flame ionization detector).

A summary of the current and previous analytical test results and groundwater elevation data are presented in the attached Tables 1 and 2. Analytical test reports and chain-of-custody documents are also attached.

Conclusions

The groundwater level data indicate that the regional groundwater flow direction is toward the west-northwest at a gradient of approximately 1 percent. This groundwater flow direction and gradient remain consistent with previous measurements.

In general, the analytical results indicate that dissolved hydrocarbon concentrations in groundwater remain generally consistent with previous monitoring events. Elevated TVH and BTEX are present in the vicinity of Well 42.

In accordance with the monitoring plan the next sampling event will be conducted during the month of November 1994. During that event we propose sampling Wells 39, 42, MW-58 and EW-1 for TVH and BTEX.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Mark Kawakami
Civil Engineer C052437 (expires 12/31/94)

MK:sld

Attachments: Table 1 - Contaminant Concentrations in Groundwater
Table 2 - Groundwater Elevation Data
Plate 1 - Site Plan
Analytical Test Reports
Chain-of-Custody Documents

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Table 1. CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH[1] (ug/L)[5]	B[2] (ug/L)	T[2] (ug/L)	X[2] (ug/L)	E[2] (ug/L)	Total Organic Lead (ug/L)	EDB[3] (ug/L)	1,2 DCA[4] (ug/L)
	05/04/94	103	ND	ND	15.1	ND	--	--	--
EW-1	**08/11/94**	**370**	**ND**	**ND**	**3.4**	**ND**	**--**	--	--
11	07/05/88	10,000	1,800	ND[6]	1,200	ND	--[7]	--	--
	04/03/89	53,000	7,100	4,000	2,400	380	--	--	--
	07/06/89	22,000	5,300	3,200	2,300	390	ND	26	--
	11/08/89	120,000	18,000	8,000	21,000	4,500	ND	37	--
	07/18/90	26,000	950	19	98	ND	--	--	--
	10/23/90	4,200	1,600	8.5	170	28	--	0.2	--
	01/21/91	1,900	600	6.2	84	60	--	0.15	--
	04/24/91	4,800	1,100	3.5	46	120	--	--	--
	07/24/91	950	330	0.9	1.8	12	--	--	--
	10/24/91	970	350	1.6	1.6	14	--	ND	--
	01/23/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	340	77	0.6	0.6	ND	--	--	--
	08/06/92	220	54	ND	ND	ND	--	--	--
	11/16/92	159	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
	05/12/93	ND	ND	ND	ND	ND	--	--	--
	08/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	02/02/94	ND	ND	ND	ND	ND	--	--	--
28	09/02/88	890	431	75.4	84	ND	ND	9.2	--
	07/06/89	13,000	4,900	1,500	1,300	100	ND	27	--
	05/04/94	103	ND	ND	15.1	ND	--	--	--
29	09/02/88	ND	ND	8.1	ND	ND	ND	ND	--
	04/03/89	450	ND	2.0	6.7	2.0	--	--	--
	07/06/89	ND	ND	15	ND	ND	ND	ND	--
	11/08/89	780	ND	14	32	7.9	ND	ND	--
	10/23/90	1,800	1.2	6.5	4.8	2.7	--	--	--
	01/21/91	1,100	ND	3.7	4.9	1.3	--	ND	--
	03/28/91	500	ND	1.6	0.8	ND	--	--	--
31	09/02/88	ND	ND	ND	ND	ND	ND	ND	--
	04/03/89	ND	ND	ND	ND	ND	--	--	--
	07/06/89	ND	ND	ND	ND	ND	ND	ND	--
	11/08/89	ND	ND	ND	ND	ND	ND	ND	--
	07/18/90	ND	ND	ND	ND	ND	--	--	--
	01/21/91	ND	ND	0.6	2.1	ND	--	ND	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	01/23/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	ND	ND	ND	ND	ND	--	--	--
	08/07/92	ND	ND	ND	ND	ND	--	--	--

Table 1. CONTAMINANT CONCENTRATIONS IN GROUNDWATER (continued)

Test Boring	Sample Date	TVH[1] (ug/L)[5]	B[2] (ug/L)	T[2] (ug/L)	X[2] (ug/L)	E[2] (ug/L)	Total Organic Lead (ug/L)	EDB[3] (ug/L)	1,2 DCA[4] (ug/L)
	11/16/92	43	ND	ND	ND	ND	--	--	--
	12/17/92[8]	35.3	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
	05/12/93	ND	ND	ND	ND	ND	--	--	--
	08/17/93	ND	ND	ND	ND	ND	--	--	--
	02/02/94	ND	ND	ND	ND	ND	--	--	--
32	10/23/90	48,000	7,600	8,200	5,600	150	--	3.8	--
	01/21/91	96,000	9,600	15,000	16,000	2,000	--	ND	--
	04/24/91	170	ND	ND	ND	ND	--	--	--
39	04/03/89	2,000	250	11	210	ND	--	--	--
	07/06/89	7,900	2,700	1,300	860	97	ND	3.0	--
	11/08/89	9,300	4,500	760	310	150	ND	4.0	36
	07/18/90	ND	4.1	ND	ND	ND	--	--	--
	10/23/90	160	12	6.4	5.0	ND	--	ND	ND
	01/21/90	200	23	0.9	2.0	1.2	--	ND	--
	03/28/91	ND	ND	ND	ND	ND	--	--	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	1.4	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	ND	--
	01/23/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	ND	ND	ND	ND	ND	--	--	--
	08/07/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
	05/12/93	ND	ND	ND	ND	ND	--	--	--
	08/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	02/02/94	20	ND	ND	2.9	2.2	--	--	--
	05/04/94	ND	3.0	0.9	2.3	1.2	--	--	--
	08/11/94	**ND**	**ND**	**0.7**	**1.4**	**0.5**	--	--	--
42	07/06/89	13,000	4,500	100	1,000	ND	ND	8.0	--
	10/23/90	8,800	420	580	910	91	--	0.7	--
	07/24/91	21,000	2,200	300	650	180	--	--	--
	10/24/91	18,000	2,300	1,100	1,000	260	--	16	--
	01/23/92	10,000	1,100	280	430	300	--	--	--
	05/01/92	16,000	1,200	330	580	220	--	--	--
	08/07/92	12,000	890	510	1,000	340	--	--	--
	11/16/92	587	1.2	4.3	43	ND	--	--	--
	02/16/93	6730	386	51	411	183	--	--	--
	05/12/93	13400	748	238	777	ND	--	--	--
	08/17/93	4120	268	ND	323	377	--	--	--
	11/16/93	8350	143	41	199	133	--	--	--
	02/02/94	1080	7.4	11.2	144	67.1	--	--	--
	05/04/94	4580	ND	ND	845	347	--	--	--
	08/11/94	**6910**	**37**	**ND**	**417**	**221**	--	--	--
43	10/24/91	6,300	ND	ND	130	9.1	--	--	--
	05/01/92	930	ND	ND	3.8	ND	--	--	--
	08/07/92	450	ND	2.4	3.5	1.5	--	--	--
	11/16/92	614	ND	2.0	34.4	1.6	--	--	--
	02/16/93	123	12.5	4.3	60.9	18.6	--	--	--
	05/12/93	96.4	ND	ND	ND	ND	--	--	--
	08/17/93	ND	ND	ND	ND	ND	--	--	--

Table 1 CONTAMINANT CONCENTRATIONS IN GROUNDWATER (continued)

Test Boring	Sample Date	TVH[1] (ug/L)[5]	B[2] (ug/L)	T[2] (ug/L)	X[2] (ug/L)	E[2] (ug/L)	Total Organic Lead (ug/L)	EDB[3] (ug/L)	1,2 DCA[4] (ug/L)
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	02/02/94	ND	ND	ND	ND	ND	--	--	--
45	12/05/89	ND	ND	ND	ND	ND	ND	ND	--
	10/23/90	ND	0.9	1.4	1.8	ND	--	--	--
	01/21/91	ND	ND	ND	ND	ND	--	ND	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	01/24/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	ND	ND	ND	ND	ND	--	--	--
	08/06/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
46	11/30/89	ND	2.1	1.9	2.0	ND	ND	ND	--
	07/18/90	ND	ND	ND	ND	ND	--	--	--
	10/23/90	ND	ND	0.6	ND	0.5	--	--	--
	01/21/91	ND	ND	ND	ND	ND	--	ND	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
58	01/30/91	ND	ND	ND	ND	ND	--	--	--
	03/28/91	ND	ND	ND	ND	ND	--	--	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	01/24/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	ND	ND	ND	ND	ND	--	--	--
	08/06/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
	05/04/94	ND	ND	ND	ND	ND	--	--	--
	08/11/94	**ND**	**ND**	**ND**	**ND**	**ND**	**--**	**--**	**--**
59	02/16/93	ND	ND	ND	ND	ND	--	--	--

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[1] TVH = Total Volatile Hydrocarbons
[2] BTXE = Benzene, Toluene, Xylene, and Ethylbenzene
[3] EPA 8011, ethylene dibromide
[4] EPA 8010, 1, 2-dichloroethane
[5] ug/L = micrograms per liter
[6] ND = None detected, chemicals not present at concentrations above the detection limits
[7] -- = Test not requested
[8] Well resampled

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
EW-1	99.24	05/04/94	25.67	73.57	--
		08/11/94	23.90	75.34	--
11	99.66	01/19/89	26.82	72.84	--
		04/03/89	26.35	73.31	--
		07/05/89	26.95	72.71	--
		11/09/89	27.28	72.83	--
		01/24/90	27.40	72.26	--
		04/30/90	27.56	72.10	--
		07/03/90	28.89	70.77	--
		10/23/90	28.93	70.73	--
		01/21/91	27.75	71.97	--
		04/24/91	28.14	71.52	--
		07/24/91	28.78	70.88	--
		10/24/91	29.09	70.57	--
		01/23/92	29.85	69.81	--
		05/01/92	27.44	72.22	--
		08/07/92	27.86	71.80	--
		11/16/92	27.84	71.82	--
		02/16/93	25.94	73.72	--
		05/12/93	27.13	72.53	--
		08/17/93	27.20	72.46	--
		11/16/93	26.85	72.81	--
		02/02/94	26.64	73.02	--
		05/04/94	24.52	75.14	--
		08/11/94	26.76	72.90	
28	98.99	01/19/89	26.16	72.83	--
		04/03/89	25.70	73.29	--
		07/05/89	26.26	72.73	--
		11/08/89	26.59	72.40	--
		01/24/90	26.81	72.18	--
	97.79	05/10/90	31.83	65.96	1.22
		07/03/90	31.95	65.84	0.04
		10/23/90	31.25	66.54	1.38
		01/21/91	28.00	69.79	0.00
		10/24/91	27.26	70.53	0.00
		01/23/92	32.99	64.89	0.00
		08/07/92	26.95	70.84	--[2]
		11/16/92	25.95	71.84	--
		02/16/93	24.06	73.73	--
		05/12/93	25.48	72.31	--
		08/17/93	25.55	72.24	--
		11/16/93	24.92	72.87	--
		05/04/94	24.80	72.99	--
		08/11/94	24.86	72.93	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
29	97.95	01/19/89	26.14	71.81	--
		04/03/89	25.88	72.07	--
		07/05/89	26.19	71.76	--
		11/09/89	26.51	71.44	--
		01/24/90	26.66	71.29	--
		04/30/90	26.73	71.22	--
		07/03/90	27.22	70.73	--
		10/23/90	27.40	70.55	--
		01/21/91	26.89	71.06	--
		03/28/91	27.04	70.91	--
		10/24/91	27.47	70.48	--
		01/23/92	27.89	70.06	--
		11/16/92	26.78	71.17	--
		02/16/93	25.60	72.35	--
		05/12/93	26.04	71.91	--
		08/17/93	26.25	71.70	--
		11/16/93	26.22	71.73	--
		02/02/94	26.08	71.92	--
		05/04/94	26.88	73.35	--
		08/11/94	26.01	71.94	--
30	99.30	01/19/89	27.50	71.80	1.56
		04/03/89	28.44	70.86	2.56
		07/05/89	28.90	70.40	3.38
		11/09/89	29.52	69.78	3.67
		04/30/90	27.23	72.07	0.29
		07/03/90	29.07	70.23	0.57
		10/23/90	29.07	70.23	1.27
		01/21/91	29.09	70.23	2.27
		04/24/91	27.80	71.50	0.19
		05/31/91	28.08	71.23	0.49
		10/24/91	28.94	70.36	0.00
		11/16/92	27.29	72.01	--
		02/16/93	25.42	73.88	--
		05/12/93	27.10	72.20	--
		08/17/93	27.01	72.29	--
		11/16/93	26.30	73.00	--
		02/02/94	26.08	73.22	--
		05/04/94	25.95	73.35	--
		08/11/94	26.20	73.10	--
31	98.90	01/19/89	26.15	72.75	--
		04/03/89	25.90	73.00	--
		07/05/89	26.28	72.76	--
		11/09/89	26.64	72.26	--
		01/24/90	26.84	72.06	--
		04/30/90	26.87	72.03	--
		07/03/90	27.50	71.40	--
		09/23/90	27.52	71.36	--
		01/21/91	27.09	71.81	--
		04/24/91	27.12	71.78	--
		07/24/91	27.60	71.30	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
31		10/24/91	28.81	70.09	--
		01/23/92	28.31	70.59	--
		05/01/92	26.70	72.20	--
		08/07/92	27.00	71.90	--
		11/16/92	27.04	71.86	--
		02/16/93	25.63	73.27	--
		05/12/93	26.20	72.70	--
		08/17/93	26.41	72.49	--
		11/16/93	26.25	72.65	--
		02/02/94	26.07	72.83	--
		05/04/94	25.90	73.00	--
		08/11/94	26.08	72.83	--
32	98.53	01/24/90	25.64	72.89	--
		04/30/90	25.82	72.71	--
		06/01/90	26.30	72.23	--
		10/23/90	26.70	71.83	--
		01/21/91	26.06	72.47	--
		04/24/91	26.40	72.13	--
		10/24/91	27.05	71.48	--
39	99.00	04/03/89	25.87	73.13	--
		07/05/89	26.38	72.62	--
		11/09/89	26.70	72.30	--
		01/24/90	26.86	72.14	--
		04/30/90	26.97	72.03	--
		07/03/90	28.17	70.83	--
		10/23/90	28.17	70.83	--
		01/21/91	27.15	71.85	--
		03/28/91	27.76	71.24	--
		04/24/91	27.33	71.67	--
		07/24/91	27.91	71.09	--
		10/24/91	28.26	70.74	--
		01/23/92	29.00	70.00	--
		05/01/92	26.82	72.18	--
		08/07/92	27.18	71.82	--
		11/16/92	27.19	71.81	--
		02/16/93	25.53	73.47	--
		05/12/93	26.52	72.48	--
		08/17/93	26.65	72.35	--
		11/16/93	26.30	72.70	--
		02/02/94	26.10	72.90	--
		05/04/94	25.96	73.04	--
		08/11/94	26.16	72.86	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
42	99.12	04/03/89	25.77	73.35	--
		07/05/89	26.30	72.89	--
		11/09/89	26.66	72.46	--
		01/24/90	26.82	72.30	--
		04/18/90	26.94	72.18	--
		07/03/90	28.58	70.54	--
		10/23/90	28.58	70.54	0.08
		07/24/91	28.10	71.02	0.00
		10/24/91	28.24	70.88	--
		01/23/92	29.33	69.79	--
		05/01/92	26.88	72.44	--
		08/07/92	27.10	72.02	--
		11/16/92	26.68	72.44	--
		02/16/93	25.41	73.71	--
		05/12/93	26.74	72.38	--
		08/17/93	26.80	72.32	--
		11/16/93	26.25	72.87	--
		02/02/94	26.03	73.09	--
		05/04/94	25.90	73.22	--
		08/11/94	26.14	72.98	--
43	98.87	04/03/89	25.32	73.55	0.08
		07/05/89	26.80	72.07	1.34
		11/09/89	28.44	70.43	2.89
		04/30/90	27.05	71.82	0.79
		07/03/90	28.36	70.51	0.70
		10/23/90	28.19	70.68	0.83
		10/24/91	26.30	72.57	0.00
		01/24/92	28.25	70.62	0.02
		05/01/92	25.44	73.43	0.00
		08/07/92	25.11	73.76	--
		11/16/92	26.42	72.45	--
		02/16/93	24.35	74.52	--
		05/12/93	25.90	72.97	--
		08/17/93	25.50	73.37	--
		11/16/93	25.21	73.66	--
		02/02/94	24.98	73.89	--
		05/04/94	24.68	74.19	--
		08/11/94	25.10	73.77	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
		02/16/93	24.35	74.52	--
45	100.90	12/05/89	28.71	72.19	--
		04/30/90	28.85	72.05	--
		07/03/90	29.45	71.45	--
		10/23/90	29.50	71.40	--
		01/21/91	29.03	71.87	--
		04/24/91	28.87	72.03	--
		07/25/91	29.63	71.27	--
		10/24/91	29.62	71.28	--
		01/23/92	30.45	70.45	--
		05/01/92	28.42	72.48	--
		08/07/92	28.70	72.20	--
		11/16/92	28.84	72.06	--
		02/16/93	27.14	73.76	--
		05/12/93	28.00	72.90	--
		08/17/93	28.35	72.55	--
		11/16/93	28.15	72.75	--
		02/02/94	27.95	72.95	--
		08/11/94	28.10	72.80	--
46	98.11	12/19/89	27.40	70.71	--
		04/30/90	27.46	70.63	--
		07/03/90	27.75	70.36	--
		10/23/90	27.86	70.25	--
		01/21/91	27.60	70.51	--
		04/24/91	27.40	70.71	--
		07/24/91	28.73	69.38	--
		10/24/91	27.88	70.23	--
		01/23/92	28.31	69.80	--
		08/07/92	27.28	70.83	--
		11/16/92	27.42	70.69	--
		02/16/93	26.44	71.67	--
		05/12/93	26.78	71.33	--
		08/17/93	27.01	71.10	--
		11/16/93	27.10	71.01	--
		02/02/94	26.86	71.25	--
		08/11/94	26.88	71.23	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
58	98.89	01/30/91	28.25	70.64	--
		03/28/91	27.81	71.08	--
		04/24/91	27.55	71.34	--
		07/24/91	33.42	65.47	--
		10/24/91	28.29	70.60	--
		01/23/92	28.75	70.14	--
		05/01/92	27.10	71.79	--
		08/07/92	27.40	71.49	--
		11/16/92	27.44	71.45	--
		02/16/93	26.10	72.79	--
		05/12/93	26.68	72.21	--
		08/17/93	26.88	72.01	--
		11/16/93	26.77	72.12	--
		02/02/94	26.58	72.31	--
		05/04/94	26.42	72.47	--
		08/11/94	26.60	72.29	--

[1] Elevation reference: PG&E manhole approximately 30 feet south of 14th Street on Martin Luther King Jr. Way, assumed to be 100.00 feet, TOC = Top of casing

[2] -- = No free product present

MONITORING WELL

TVH — TOTAL VOLATILE HYDROCARBONS, AS GASOLINE

BTXE — BENZENE, TOLUENE, XYLENES, ETHYLBENZENE

ND — NONE DETECTED

CONCENTRATIONS IN ug/l

31

29

58
TVH ND
BTXE ND

14TH STREET

TVH ND
B ND
T 0.7
X 1.4
39 E 0.5

TVH 6910
B 37
T ND
X 417
42 E 221

43

46

28

EXISTING BUILDING

PARKING

EXISTING BUILDING

11

MARTIN LUTHER KING JR. WAY

EW-1
TVH 370
B ND
T ND
X 3.4
E ND

32
PREVIOUS TANK

GW TREATMENT PLANT

59

45

REFERENCE NORTH

N

TRUE NORTH

N

APPROXIMATE SCALE (feet)

0 20 40

SITE PLAN

Subsurface Consultants

1330 MARTIN LUTHER KING JR. WAY – OAK.

JOB NUMBER	DATE	APPROVED
430.010	8/29/94	MK

PLATE 1

EUREKA LABORATORIES, INC.

Corporate Office:
6790 FLORIN PERKINS ROAD
SACRAMENTO, CA 95828
TEL: (916) 381-7953
FAX: (916) 381-4013

Branch Office:
17403 N.E. 28th STREET
REDMOND, WA 98052
TEL: (206) 885-0284
FAX: (206) 885-0284

Air Pollution
Chemical Analysis,
Research & Testing
Environmental Studies
Robotics
Toxicology

August 25, 1994

Mr. Mark Kawakami
SUBSURFACE CONSULTANTS
171 12th Street, Suite 201
Oakland, CA 94607

Reference - ELI Order #: 94-08-021
Project: MLK - Groundwater Study
Project #: 430.010

Dear Mr. Kawakami:

Eureka Laboratories, Inc. is pleased to submit a laboratory report for the subject project. This report presents analytical results for four (4) aqueous samples for the following analyses:

ANALYSIS	METHOD	SAMPLE ID.
Gasoline	CA LUFT	EW-1, MW42, MW39, MW58
Purgeable Aromatics	EPA 602	Same as above

Sincerely,
EUREKA LABORATORIES, INC.

By: Shao-Pin Yo
Shao-Pin Yo, Ph.D.
QA/QC Director

SPY/pvc

Attachment

August 25, 1994

CASE NARRATIVE

ELI ORDER NUMBER : 94-08-021

Two of the samples analyzed in this workorder (EW-1 and MW-42) have gasoline reported positive. As noted in the data report, the hydrocarbons in the gasoline range which were quantified, were not the same pattern as ELI's gasoline standard. The hydrocarbon pattern of these samples contained relatively fewer lighter hydrocarbon fractions compared to the standard. This difference in hydrocarbon patterns makes the quantification of these samples uncertain, resulting in a possible underestimation of the hydrocarbon content.

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

ELI SAMPLE ID: 9408021-05A
SAMPLE ID: METHOD BLANK

DATE SAMPLED:	NA
DATE RECEIVED:	08/12/94
DATE EXTRACTED:	NA
DATE ANALYZED:	08/12/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	NA
DILUTION FACTOR:	1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow — August 25, 1994
Chemist — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED:	08/11/94
DATE RECEIVED:	08/12/94
DATE EXTRACTED:	NA
DATE ANALYZED:	08/12/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5ml
DILUTION FACTOR:	1

ELI SAMPLE ID: 9408021-01A
SAMPLE ID: EW-1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	370	20
CARBON NO. RANGE		
Gasoline Range	C6-C13	
PEAK CARBON NO.		
Gasoline Range	C9	

Note: Hydrocarbon in the gasoline range are detected in the sample. However, their patterns are different from our standard. Therefore, area equivalent is used to quantitate this sample.
NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

ELI SAMPLE ID: 9408021-02A
SAMPLE ID: MW42

DATE SAMPLED:	08/11/94
DATE RECEIVED:	08/12/94
DATE EXTRACTED:	NA
DATE ANALYZED:	08/12,15/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	50ul
DILUTION FACTOR:	100

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	6910	2000 *
CARBON NO. RANGE		
Gasoline Range	C6-C13	
PEAK CARBON NO.		
Gasoline Range	C9	

* Higher detection limit is due to high analyte concentration.
Note: Hydrocarbon in the gasoline range are detected in the sample. However, their patterns are different from our standard. Therefore, area equivalent is used to quantitate this sample.
NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: 08/11/94
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/12/94
INSTRUMENT ID: SVG7
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9408021-03A
SAMPLE ID: MW39

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

ELI SAMPLE ID: 9408021-04A
SAMPLE ID: MW58

DATE SAMPLED:	08/11/94
DATE RECEIVED:	08/12/94
DATE EXTRACTED:	NA
DATE ANALYZED:	08/12/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5ml
DILUTION FACTOR:	1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK GROUNDWATER STUDY	DATE RECEIVED: 08/12/94
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 08/12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9408021-07A	SAMPLE VOL./WT.: 5ml
SAMPLE ID: MW58 MATRIX SPIKE RECOVERY	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	92%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK GROUNDWATER STUDY	DATE RECEIVED: 08/12/94
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 08/12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9408021-08A	SAMPLE VOL./WT.: 5ml
SAMPLE ID: MW58 MATRIX SPIKE RECOVERY DUP.	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	91%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK GROUNDWATER STUDY	DATE RECEIVED: 08/12/94
JOB #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 08/12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9408021-09A	SAMPLE VOL./WT.: NA
SAMPLE ID: REAGENT SPIKE RECOVERY	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	103%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

TOTAL PETROLEUM HYDROCARBONS (GASOLINE)
CALIFORNIA LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED:	NA
DATE RECEIVED:	08/12/94
DATE EXTRACTED:	NA
DATE ANALYZED:	08/12/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	NA
DILUTION FACTOR:	1

ELI SAMPLE ID: 9408021-10A
SAMPLE ID: REAGENT SPIKE RECOVERY DUP.

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	86%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Huey-Chen Chow — August 25, 1994
Chemist — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/17/94
INSTRUMENT ID: VG-1
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: NA
DILUTION FACTOR: 1

ELI SAMPLE ID: 9408021-05A
SAMPLE ID: METHOD BLANK

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: 08/11/94
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/17/94
INSTRUMENT ID: VG-1
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9408021-01A
SAMPLE ID: EW-1

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	3.4	0.5

Note: All positively identified compounds were second column or second detector confirmed.
NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: 08/11/94
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/17/94
INSTRUMENT ID: VG-1
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 50

ELI SAMPLE ID: 9408021-02A
SAMPLE ID: MW42

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L * ug/L (ppb)
V1	Benzene	37	25
V2	Chlorobenzene	<25	25
V3	1,2-Dichlorobenzene	<25	25
V4	1,3-Dichlorobenzene	<25	25
V5	1,4-Dichlorobenzene	<25	25
V6	Ethyl benzene	221	25
V7	Toluene	<25	25
V8	Xylenes (Dimethyl benzenes)	417	25

* Higher detection limit is due to high analyte concentration.
Note: All positively identified compounds were second column or second detector confirmed.
NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: 08/11/94
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/17/94
INSTRUMENT ID: VG-1
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9408021-03A
SAMPLE ID: MW39

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	0.5	0.5
V7	Toluene	0.7	0.5
V8	Xylenes (Dimethyl benzenes)	1.4	0.5

Note: All positively identified compounds were second column or second detector confirmed.
NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: 08/11/94
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/17/94
INSTRUMENT ID: VG-1
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9408021-04A
SAMPLE ID: MW58

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/17/94
INSTRUMENT ID: VG-1
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9408021-07A
SAMPLE ID: MW58 MATRIX SPIKE RECOVERY

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	113%
V2	Chlorobenzene	110%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	117%
V7	Toluene	113%
V8	Xylenes (Dimethyl benzenes)	117%

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/17/94
INSTRUMENT ID: VG-1
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9408021-08A
SAMPLE ID: MW58 MATRIX SPIKE RECOVERY DUP.

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	114%
V2	Chlorobenzene	111%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	116%
V7	Toluene	114%
V8	Xylenes (Dimethyl benzenes)	116%

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 08/12/94
DATE EXTRACTED: NA
DATE ANALYZED: 08/17/94
INSTRUMENT ID: VG-1
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: NA
DILUTION FACTOR: 1

ELI SAMPLE ID: 9408021-09A
SAMPLE ID: REAGENT SPIKE RECOVERY

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	92%
V2	Chlorobenzene	91%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	91%
V7	Toluene	93%
V8	Xylenes (Dimethyl benzenes)	93%

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 602

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-08-021
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK GROUNDWATER STUDY
JOB #: 430.010

DATE SAMPLED:	NA
DATE RECEIVED:	08/12/94
DATE EXTRACTED:	NA
DATE ANALYZED:	08/17/94
INSTRUMENT ID:	VG-1
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	NA
DILUTION FACTOR:	1

ELI SAMPLE ID: 9408021-10A
SAMPLE ID: REAGENT SPIKE RECOVERY DUP.

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	92%
V2	Chlorobenzene	93%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	92%
V7	Toluene	91%
V8	Xylenes (Dimethyl benzenes)	93%

NA = Not Applicable

Huey-Chen Chow — Chemist
August 25, 1994 — Date

CHAIN OF CUSTODY FORM

94.08.021 GCV 8/19

PAGE 1 OF 1

PROJECT NAME: MLK Groundwater Study

JOB NUMBER: 430.010 LAB: Eureka Labs

PROJECT CONTACT: Mark Kawakami TURNAROUND: normal

SAMPLED BY: C.O'Dea REQUESTED BY: Mark Kawakami

ANALYSIS REQUESTED: TPH-GAS, BTX&E, MDL, 7°C

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR	CONTAINERS: VOA	LITER	PINT	TUBE	METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES
1A	EW-1	X				3				X			X		08	11	94	1400	XX
2A	MW42	X				3				X			X		08	11	94	1400	XX
3A	MW39	X				3				X			X		08	11	94	1400	XX
4A	MW58	X				3				X			X		08	11	94	1400	XX

AUG 25 1994

OFFICIAL NOTICE FROM ELI: After 30 days from _____ samples will be disposed of in a licensed waste disposal site unless client requests their return or has special arrangement for a long holding period. Charges for sample returns are $2.00 per sample to cover cost of handling and shipping.

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
[signature]	8/11/94 4:30pm	[signature]	8/12/94 10:10

COMMENTS & NOTES:

Subsurface Consultants, Inc.

171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607

(510) 268-0461 • FAX: 510-268-0137

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

June 22, 1994
STID 3623

Donnell Choy
Deputy City Attorney
Oakland City Attorney Office
505-14th St., 12th Floor
Oakland CA 94612

RE: 1330 Martin Luther King Jr. Way at 14th St., Oakland CA 94612

Dear Mr. Choy,

We are in receipt of the "Request to Discontinue Soil and Groundwater Remediation, Gasoline Contamination" report for the above site, dated 4/15/94, prepared by Subsurface Consultants Inc. (SCI).

This request is acceptable. Please note that page 9 states that "we propose to monitor Wells EW-1, 42 and 59" on a quarterly basis. However, the 4/22/94 "Quarterly Groundwater Monitoring" report by SCI proposes to sample wells 58, 39, 42, and EW-1 in future sampling events. The latter proposal was discussed in a telephone conversation between myself and Jim Bowers of SCI on 4/20/94, and was accepted by this office.

If you have any questions, please contact me at 510-271-4530.

Sincerely,

Jennifer Eberle
Hazardous Materials Specialist

cc: David Ralph, City of Oakland, OEDE, 1333 Broadway, #900, Oakland CA 94612
Andrew Clark-Clough, City of Oakland, Environmental Affairs, 1333 Broadway, #330, Oakland CA 94612
Jim Bowers, Subsurface Consultants, Inc., 171-12th St., Suite 201, Oakland CA 94607
Kevin Graves, RWQCB
Ed Howell/file

je 3623-B

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

June 9, 1994
STID 3623

Donnell Choy
Deputy City Attorney
Oakland City Attorney Office
505-14th St., 12th Floor
Oakland CA 94612

RE: 1330 Martin Luther King Jr. Way at 14th St., Oakland CA 94612

Dear Mr. Choy,

We are in receipt of the Quarterly Groundwater Monitoring, Gasoline Contamination Report for the above site, dated 4/22/94, prepared by Subsurface Consultants Inc. (SCI). This report documents groundwater sampling conducted on 2/2/94 in wells 11, 31, 39, 42, and 43. This report also proposes to sample wells 58, 39, 42, and EW-1 in future sampling events. This proposal is acceptable; it was discussed in a telephone conversation between myself and Jim Bowers of SCI on 4/20/94.

If you have any questions, please contact me at 510-271-4530.

Sincerely,

Jennifer Eberle
Hazardous Materials Specialist

cc: David Ralph, City of Oakland, OEDE, 1333 Broadway, #900, Oakland CA 94612
Andrew Clark-Clough, City of Oakland, Environmental Affairs, 1333 Broadway, #330, Oakland CA 94612
Jim Bowers, Subsurface Consultants, Inc., 171-12th St., Suite 201, Oakland CA 94607
Kevin Graves, RWQCB
Ed Howell/file

je 3623-A

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

June 2, 1994
STID 3623

Donnell Choy
Deputy City Attorney
Oakland City Attorney Office
505-14th St., 12th Floor
Oakland CA 94612

RE: 13th and Jefferson Streets, Oakland CA 94612

Dear Mr. Choy,

We are in receipt of the "Request for Site Closure, Hydrocarbon and Lead Contamination Sites, 13th and Jefferson Streets, Oakland California," prepared by Subsurface Consultants, Inc. (SCI), dated 4/15/94. As we discussed by phone today, we cannot grant case closure for this site because it is the same parcel of land as the ongoing groundwater monitoring at 14th St. and Martin Luther King Way. If these two areas were subdivided, then we could begin the case closure process.

Upon review of the above named report, this office concurs that **no further cleanup or monitoring work is warranted for the site at 13th St. and Jefferson St., as shown on the attached map.** This map is Plate 1 of SCI's 4/15/94 "Request for Site Closure, Hydrocarbon and Lead Contamination Sites, 13th and Jefferson Streets, Oakland California." Please understand that this statement is different from a Remedial Actions Completion Certification, aka a "closure letter," which is signed by our Assistant Agency Director (currently Rafat Shahid).

If you have any questions, please contact me at 510-271-4530.

Sincerely,

Jennifer Eberle
Hazardous Materials Specialist

cc: David Ralph, City of Oakland, OEDE, 1333 Broadway, #900, Oakland CA 94612
Andrew Clark-Clough, City of Oakland, Environmental Affairs, 1333 Broadway, #330, Oakland CA 94612
Jim Bowers, Subsurface Consultants, Inc., 171-12th St., Suite 201, Oakland CA 94607
Kevin Graves, RWQCB
Ed Howell/file

attachment
je

James P. Bowers, PE
R. William Rudolph, Jr., PE

May 31, 1994
SCI 430.010

Ms. Jennifer Eberle
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

Quarterly Groundwater Monitoring
Gasoline Contamination
1330 Martin Luther King, Jr. Way
at 14th Street
Oakland, California

Dear Ms. Eberle:

This letter presents quarterly groundwater monitoring results for the referenced site. Groundwater monitoring has been performed as a result of an underground gasoline tank release. The location of the site is presented on Plate 1.

Contaminated soil and groundwater resulting from the gasoline release were remediated. Site remediation consisted of (1) vapor extraction, and (2) groundwater extraction and treatment. The vapor extraction system removed all measurable free product in the area. The groundwater extraction system has significantly lowered dissolved product concentrations and reduced the extent of the dissolved product plume. Soil and groundwater remediation were terminated on November 18, 1993, per your verbal approval.

During this event, Wells 39, 42, MW-58 and EW-1 were sampled. The groundwater monitoring event consist of (1) measuring groundwater levels, (2) purging water from each well until pH, conductivity and temperature had stabilized, and (3) sampling the wells with pre-cleaned disposable samplers. The samples were retained in glass containers and preserved with hydrochloric acid. The containers were placed in an ice filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-custody documents accompanied the samples to the laboratory.

Analytical testing was performed by Eureka Laboratories, Inc., a State of California Department of Health Services certified laboratory for hazardous waste and water testing. The analytical tests included:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector), and

2. Benzene, toluene, xylenes and ethylbenzene (BTXE), sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a flame ionization detector).

A summary of the current and previous analytical test results and groundwater elevation data are presented in the attached Tables 1 and 2. Analytical test reports and chain-of-custody documents are also attached.

Conclusions

The groundwater level data indicate that the regional groundwater flow direction is toward the west-northwest at a gradient of approximately 1 percent. This groundwater flow direction and gradient remain consistent with previous measurements.

In general, the analytical results indicate that dissolved hydrocarbon concentrations in groundwater remain generally consistent with the previous monitoring event. Hydrocarbons were detected in Wells 39, 42 and EW-1; hydrocarbons were not detected at concentrations above the reporting limits in Well 58.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

James P. Bowers
Geotechnical Engineer 157 (expires 3/31/95)

MK:JPB:clh

Attachments: Table 1 - Contaminant Concentrations in Groundwater
Table 2 - Groundwater Elevation Data
Plate 1 - Site Plan
Analytical Test Reports
Chain-of-Custody Documents

cc: Mr. David W. Ralph
Office of Economic Development and Employment
1333 Broadway, Suite 900
Oakland, California 94612

Mr. Eddy So
Regional Water Quality Control Board
2101 Webster Street, Room 500
Oakland, California 94612

Mr. Donnell Choy
Office of City Attorney
City of Oakland
905 14th Street, 12th Floor
Oakland, California 94612

Mr. Andrew Clark-Clough
City of Oakland
Environmental Affairs
1331 Broadway, Suite 800
Oakland, California 94612

Table 1. CONTAMINANT CONCENTRATIONS IN GROUNDWATER

Test Boring	Sample Date	TVH[1] (ug/L)[5]	B[2] (ug/L)	T[2] (ug/L)	X[2] (ug/L)	E[2] (ug/L)	Total Organic Lead (ug/L)	EDB[3] (ug/L)	1,2 DCA[4] (ug/L)
11	07/05/88	10,000	1,800	ND[6]	1,200	ND	--[7]	--	--
	04/03/89	53,000	7,100	4,000	2,400	380	--	--	--
	07/06/89	22,000	5,300	3,200	2,300	390	ND	26	--
	11/08/89	120,000	18,000	8,000	21,000	4,500	ND	37	--
	07/18/90	26,000	950	19	98	ND	--	--	--
	10/23/90	4,200	1,600	8.5	170	28	--	0.2	--
	01/21/91	1,900	600	6.2	84	60	--	0.15	--
	04/24/91	4,800	1,100	3.5	46	120	--	--	--
	07/24/91	950	330	0.9	1.8	12	--	--	--
	10/24/91	970	350	1.6	1.6	14	--	ND	--
	01/23/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	340	77	0.6	0.6	ND	--	--	--
	08/06/92	220	54	ND	ND	ND	--	--	--
	11/16/92	159	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
	05/12/93	ND	ND	ND	ND	ND	--	--	--
	08/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	02/02/94	ND	ND	ND	ND	ND	--	--	--
EW-1	09/02/88	890	431	75.4	84	ND	ND	9.2	--
(28)	07/06/89	13,000	4,900	1,500	1,300	100	ND	27	--
	05/04/94	**103**	**ND**	**ND**	**15.1**	**ND**	**--**	**--**	**--**
29	09/02/88	ND	ND	8.1	ND	ND	ND	ND	--
	04/03/89	450	ND	2.0	6.7	2.0	--	--	--
	07/06/89	ND	ND	15	ND	ND	ND	ND	--
	11/08/89	780	ND	14	32	7.9	ND	ND	--
	10/23/90	1,800	1.2	6.5	4.8	2.7	--	--	--
	01/21/91	1,100	ND	3.7	4.9	1.3	--	ND	--
	03/28/91	500	ND	1.6	0.8	ND	--	--	--
31	09/02/88	ND	ND	ND	ND	ND	ND	ND	--
	04/03/89	ND	ND	ND	ND	ND	--	--	--
	07/06/89	ND	ND	ND	ND	ND	ND	ND	--
	11/08/89	ND	ND	ND	ND	ND	ND	ND	--
	07/18/90	ND	ND	ND	ND	ND	--	--	--
	01/21/91	ND	ND	0.6	2.1	ND	--	ND	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	01/23/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	ND	ND	ND	ND	ND	--	--	--
	08/07/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	43	ND	ND	ND	ND	--	--	--
	12/17/92[8]	35.3	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
	05/12/93	ND	ND	ND	ND	ND	--	--	--
	08/17/93	ND	ND	ND	ND	ND	--	--	--
	02/02/94	ND	ND	ND	ND	ND	--	--	--

Table 1. CONTAMINANT CONCENTRATIONS IN GROUNDWATER (continued)

Test Boring	Sample Date	TVH[1] (ug/L)[5]	B[2] (ug/L)	T[2] (ug/L)	X[2] (ug/L)	E[2] (ug/L)	Total Organic Lead (ug/L)	EDB[3] (ug/L)	1,2 DCA[4] (ug/L)
32	10/23/90	48,000	7,600	8,200	5,600	150	--	3.8	--
	01/21/91	96,000	9,600	15,000	16,000	2,000	--	ND	--
	04/24/91	170	ND	ND	ND	ND	--	--	--
39	04/03/89	2,000	250	11	210	ND	--	--	--
	07/06/89	7,900	2,700	1,300	860	97	ND	3.0	--
	11/08/89	9,300	4,500	760	310	150	ND	4.0	36
	07/18/90	ND	4.1	ND	ND	ND	--	--	--
	10/23/90	160	12	6.4	5.0	ND	--	ND	ND
	01/21/90	200	23	0.9	2.0	1.2	--	ND	--
	03/28/91	ND	ND	ND	ND	ND	--	--	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	1.4	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	ND	--
	01/23/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	ND	ND	ND	ND	ND	--	--	--
	08/07/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
	05/12/93	ND	ND	ND	ND	ND	--	--	--
	08/18/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	02/02/94	20	ND	ND	2.9	2.2	--	--	--
	05/04/94	**ND**	**3.0**	**0.9**	**2.3**	**1.2**	**--**	**--**	**--**
42	07/06/89	13,000	4,500	100	1,000	ND	ND	8.0	--
	10/23/90	8,800	420	580	910	91	--	0.7	--
	07/24/91	21,000	2,200	300	650	180	--	--	--
	10/24/91	18,000	2,300	1,100	1,000	260	--	16	--
	01/23/92	10,000	1,100	280	430	300	--	--	--
	05/01/92	16,000	1,200	330	580	220	--	--	--
	08/07/92	12,000	890	510	1,000	340	--	--	--
	11/16/92	587	1.2	4.3	43	ND	--	--	--
	02/16/93	6730	386	51	411	183	--	--	--
	05/12/93	13400	748	238	777	ND	--	--	--
	08/17/93	4120	268	ND	323	377	--	--	--
	11/16/93	8350	143	41	199	133	--	--	--
	02/02/94	1080	7.4	11.2	144	67.1	--	--	--
	05/04/94	**4580**	**ND**	**ND**	**845**	**347**	**--**	**--**	**--**
43	10/24/91	6,300	ND	ND	130	9.1	--	--	--
	05/01/92	930	ND	ND	3.8	ND	--	--	--
	08/07/92	450	ND	2.4	3.5	1.5	--	--	--
	11/16/92	614	ND	2.0	34.4	1.6	--	--	--
	02/16/93	123	12.5	4.3	60.9	18.6	--	--	--
	05/12/93	96.4	ND	ND	ND	ND	--	--	--
	08/17/93	ND	ND	ND	ND	ND	--	--	--
	11/16/93	ND	ND	ND	ND	ND	--	--	--
	02/02/94	ND	ND	ND	ND	ND	--	--	--

Table 1 CONTAMINANT CONCENTRATIONS IN GROUNDWATER (continued)

Test Boring	Sample Date	TVH[1] (ug/L)[5]	B[2] (ug/L)	T[2] (ug/L)	X[2] (ug/L)	E[2] (ug/L)	Total Organic Lead (ug/L)	EDB[3] (ug/L)	1,2 DCA[4] (ug/L)
45	12/05/89	ND	ND	ND	ND	ND	ND	ND	--
	10/23/90	ND	0.9	1.4	1.8	ND	--	--	--
	01/21/91	ND	ND	ND	ND	ND	--	ND	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	01/24/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	ND	ND	ND	ND	ND	--	--	--
	08/06/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
46	11/30/89	ND	2.1	1.9	2.0	ND	ND	ND	--
	07/18/90	ND	ND	ND	ND	ND	--	--	--
	10/23/90	ND	ND	0.6	ND	0.5	--	--	--
	01/21/91	ND	ND	ND	ND	ND	--	ND	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
58	01/30/91	ND	ND	ND	ND	ND	--	--	--
	03/28/91	ND	ND	ND	ND	ND	--	--	--
	04/24/91	ND	ND	ND	ND	ND	--	--	--
	07/24/91	ND	ND	ND	ND	ND	--	--	--
	10/24/91	ND	ND	ND	ND	ND	--	--	--
	01/24/92	ND	ND	ND	ND	ND	--	--	--
	05/01/92	ND	ND	ND	ND	ND	--	--	--
	08/06/92	ND	ND	ND	ND	ND	--	--	--
	11/16/92	ND	ND	ND	ND	ND	--	--	--
	02/16/93	ND	ND	ND	ND	ND	--	--	--
	05/04/94	**ND**	**ND**	**ND**	**ND**	**ND**	**--**	**--**	**--**
59	02/16/93	ND	ND	ND	ND	ND	--	--	--

---

[1] TVH = Total Volatile Hydrocarbons
[2] BTXE = Benzene, Toluene, Xylene, and Ethylbenzene
[3] EPA 8011, ethylene dibromide
[4] EPA 8010, 1, 2-dichloroethane
[5] ug/L = micrograms per liter
[6] ND = None detected, chemicals not present at concentrations above the detection limits
[7] -- = Test not requested
[8] Well resampled

Table 2. GROUNDWATER ELEVATION DATA

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
11	99.66	01/19/89	26.82	72.84	--
		04/03/89	26.35	73.31	--
		07/05/89	26.95	72.71	--
		11/09/89	27.28	72.83	--
		01/24/90	27.40	72.26	--
		04/30/90	27.56	72.10	--
		07/03/90	28.89	70.77	--
		10/23/90	28.93	70.73	--
		01/21/91	27.75	71.97	--
		04/24/91	28.14	71.52	--
		07/24/91	28.78	70.88	--
		10/24/91	29.09	70.57	--
		01/23/92	29.85	69.81	--
		05/01/92	27.44	72.22	--
		08/07/92	27.86	71.80	--
		11/16/92	27.84	71.82	--
		02/16/93	25.94	73.72	--
		05/12/93	27.13	72.53	--
		08/17/93	27.20	72.46	--
		11/16/93	26.85	72.81	--
		02/02/94	26.64	73.02	--
		05/04/94	24.52	75.14	--
28	98.99	01/19/89	26.16	72.83	--
		04/03/89	25.70	73.29	--
		07/05/89	26.26	72.73	--
		11/08/89	26.59	72.40	--
		01/24/90	26.81	72.18	--
	97.79	05/10/90	31.83	65.96	1.22
		07/03/90	31.95	65.84	0.04
		10/23/90	31.25	66.54	1.38
		01/21/91	28.00	69.79	0.00
		10/24/91	27.26	70.53	0.00
		01/23/92	32.99	64.89	0.00
		08/07/92	26.95	70.84	--[2]
		11/16/92	25.95	71.84	--
		02/16/93	24.06	73.73	--
		05/12/93	25.48	72.31	--
		08/17/93	25.55	72.24	--
		11/16/93	24.92	72.87	--
		05/04/94	24.80	72.99	--
29	97.95	01/19/89	26.14	71.81	--
		04/03/89	25.88	72.07	--
		07/05/89	26.19	71.76	--
		11/09/89	26.51	71.44	--
		01/24/90	26.66	71.29	--
		04/30/90	26.73	71.22	--
		07/03/90	27.22	70.73	--
		10/23/90	27.40	70.55	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
29		01/21/91	26.89	71.06	--
		03/28/91	27.04	70.91	--
		10/24/91	27.47	70.48	--
		01/23/92	27.89	70.06	--
		11/16/92	26.78	71.17	--
		02/16/93	25.60	72.35	--
		05/12/93	26.04	71.91	--
		08/17/93	26.25	71.70	--
		11/16/93	26.22	71.73	--
		02/02/94	26.08	71.92	--
		05/04/94	26.88	73.35	--
30	99.30	01/19/89	27.50	71.80	1.56
		04/03/89	28.44	70.86	2.56
		07/05/89	28.90	70.40	3.38
		11/09/89	29.52	69.78	3.67
		04/30/90	27.23	72.07	0.29
		07/03/90	29.07	70.23	0.57
		10/23/90	29.07	70.23	1.27
		01/21/91	29.09	70.23	2.27
		04/24/91	27.80	71.50	0.19
		05/31/91	28.08	71.23	0.49
		10/24/91	28.94	70.36	0.00
		11/16/92	27.29	72.01	--
		02/16/93	25.42	73.88	--
		05/12/93	27.10	72.20	--
		08/17/93	27.01	72.29	--
		11/16/93	26.30	73.00	--
		02/02/94	26.08	73.22	--
		05/04/94	25.95	73.35	--
31	98.90	01/19/89	26.15	72.75	--
		04/03/89	25.90	73.00	--
		07/05/89	26.28	72.76	--
		11/09/89	26.64	72.26	--
		01/24/90	26.84	72.06	--
		04/30/90	26.87	72.03	--
		07/03/90	27.50	71.40	--
		09/23/90	27.52	71.36	--
		01/21/91	27.09	71.81	--
		04/24/91	27.12	71.78	--
		07/24/91	27.60	71.30	--
		10/24/91	28.81	70.09	--
		01/23/92	28.31	70.59	--
		05/01/92	26.70	72.20	--
		08/07/92	27.00	71.90	--
		11/16/92	27.04	71.86	--
		02/16/93	25.63	73.27	--
		05/12/93	26.20	72.70	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
		08/17/93	26.41	72.49	--
		11/16/93	26.25	72.65	--
		02/02/94	26.07	72.83	--
		05/04/94	25.90	73.00	--
32	98.53	01/24/90	25.64	72.89	--
		04/30/90	25.82	72.71	--
		06/01/90	26.30	72.23	--
		10/23/90	26.70	71.83	--
		01/21/91	26.06	72.47	--
		04/24/91	26.40	72.13	--
		10/24/91	27.05	71.48	--
39	99.00	04/03/89	25.87	73.13	--
		07/05/89	26.38	72.62	--
		11/09/89	26.70	72.30	--
		01/24/90	26.86	72.14	--
		04/30/90	26.97	72.03	--
		07/03/90	28.17	70.83	--
		10/23/90	28.17	70.83	--
		01/21/91	27.15	71.85	--
		03/28/91	27.76	71.24	--
		04/24/91	27.33	71.67	--
		07/24/91	27.91	71.09	--
		10/24/91	28.26	70.74	--
		01/23/92	29.00	70.00	--
		05/01/92	26.82	72.18	--
		08/07/92	27.18	71.82	--
		11/16/92	27.19	71.81	--
		02/16/93	25.53	73.47	--
		05/12/93	26.52	72.48	--
		08/17/93	26.65	72.35	--
		11/16/93	26.30	72.70	--
		02/02/94	26.10	72.90	--
		05/04/94	25.96	73.04	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
42	99.12	04/03/89	25.77	73.35	--
		07/05/89	26.30	72.89	--
		11/09/89	26.66	72.46	--
		01/24/90	26.82	72.30	--
		04/18/90	26.94	72.18	--
		07/03/90	28.58	70.54	--
		10/23/90	28.58	70.54	0.08
		07/24/91	28.10	71.02	0.00
		10/24/91	28.24	70.88	--
		01/23/92	29.33	69.79	--
		05/01/92	26.88	72.44	--
		08/07/92	27.10	72.02	--
		11/16/92	26.68	72.44	--
		02/16/93	25.41	73.71	--
		05/12/93	26.74	72.38	--
		08/17/93	26.80	72.32	--
		11/16/93	26.25	72.87	--
		02/02/94	26.03	73.09	--
		05/04/94	25.90	73.22	--
43	98.87	04/03/89	25.32	73.55	0.08
		07/05/89	26.80	72.07	1.34
		11/09/89	28.44	70.43	2.89
		04/30/90	27.05	71.82	0.79
		07/03/90	28.36	70.51	0.70
		10/23/90	28.19	70.68	0.83
		10/24/91	26.30	72.57	0.00
		01/24/92	28.25	70.62	0.02
		05/01/92	25.44	73.43	0.00
		08/07/92	25.11	73.76	--
		11/16/92	26.42	72.45	--
		02/16/93	24.35	74.52	--
		05/12/93	25.90	72.97	--
		08/17/93	25.50	73.37	--
		11/16/93	25.21	73.66	--
		02/02/94	24.98	73.89	--
		05/04/94	24.68	74.19	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
		02/16/93	24.35	74.52	--
45	100.90	12/05/89	28.71	72.19	--
		04/30/90	28.85	72.05	--
		07/03/90	29.45	71.45	--
		10/23/90	29.50	71.40	--
		01/21/91	29.03	71.87	--
		04/24/91	28.87	72.03	--
		07/25/91	29.63	71.27	--
		10/24/91	29.62	71.28	--
		01/23/92	30.45	70.45	--
		05/01/92	28.42	72.48	--
		08/07/92	28.70	72.20	--
		11/16/92	28.84	72.06	--
		02/16/93	27.14	73.76	--
		05/12/93	28.00	72.90	--
		08/17/93	28.35	72.55	--
		11/16/93	28.15	72.75	--
		02/02/94	27.95	72.95	--
46	98.11	12/19/89	27.40	70.71	--
		04/30/90	27.46	70.63	--
		07/03/90	27.75	70.36	--
		10/23/90	27.86	70.25	--
		01/21/91	27.60	70.51	--
		04/24/91	27.40	70.71	--
		07/24/91	28.73	69.38	--
		10/24/91	27.88	70.23	--
		01/23/92	28.31	69.80	--
		08/07/92	27.28	70.83	--
		11/16/92	27.42	70.69	--
		02/16/93	26.44	71.67	--
		05/12/93	26.78	71.33	--
		08/17/93	27.01	71.10	--
		11/16/93	27.10	71.01	--
		02/02/94	26.86	71.25	--

Table 2. GROUNDWATER ELEVATION DATA (continued)

Monitoring Well	TOC Elev[1] (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Free Product Thickness (feet)
58	98.89	01/30/91	28.25	70.64	--
		03/28/91	27.81	71.08	--
		04/24/91	27.55	71.34	--
		07/24/91	33.42	65.47	--
		10/24/91	28.29	70.60	--
		01/23/92	28.75	70.14	--
		05/01/92	27.10	71.79	--
		08/07/92	27.40	71.49	--
		11/16/92	27.44	71.45	--
		02/16/93	26.10	72.79	--
		05/12/93	26.68	72.21	--
		08/17/93	26.88	72.01	--
		11/16/93	26.77	72.12	--
		02/02/94	26.58	72.31	--
		05/04/94	26.42	72.47	--

[1] Elevation reference: PG&E manhole approximately 30 feet south of 14th Street on Martin Luther King Jr. Way, assumed to be 100.00 feet, TOC = Top of casing

[2] -- = No free product present

MONITORING WELL

TVH — TOTAL VOLATILE HYDROCARBONS, AS GASOLINE

BTXE — BENZENE, TOLUENE, XYLENES, ETHYLBENZENE

ND — NOT DETECTED

CONCENTRATIONS IN ug/l

31

29

58
TVH ND
BTXE ND

14TH STREET

TVH ND
B 3.0
T 0.9
X 2.3
39 E 1.2

46

TVH 4580
B ND
T ND
X 845
42 E 347

TVH ND
BTXE ND
43

30

28

EXISTING BUILDING

PARKING

EXISTING BUILDING

11

MARTIN LUTHER KING JR. WAY

EW-1
TVH 103
B ND
T ND
X 15.1
E ND

GW TREATMENT PLANT

32
PREVIOUS TANK

59

REFERENCE NORTH

TRUE NORTH

APPROXIMATE SCALE (feet)
0 20 40

45

SITE PLAN

Subsurface Consultants

1330 MARTIN LUTHER KING JR. WAY – OAK.

JOB NUMBER	DATE	APPROVED
430.010	5/27/94	

PLATE 1

EUREKA LABORATORIES, INC.

Corporate Office:
6790 FLORIN PERKINS ROAD
SACRAMENTO, CA 95828
TEL: (916) 381-7953
FAX: (916) 381-4013

Branch Office:
17403 N.E. 28th STREET
REDMOND, WA 98052
TEL: (206) 885-0284
FAX: (206) 885-0284

Air Pollution
Chemical Analysis,
Research & Testing
Environmental Studies
Robotics
Toxicology

May 20, 1994

Mr. Fernando Velez
SUBSURFACE CONSULTANTS
171 12th Street
Oakland, CA 94607

Reference - ELI Order #: 94-05-024
Project: MLK - Groundwater
Project #: 430.010

Dear Mr. Velez:

Eureka Laboratories, Inc. is pleased to submit a laboratory report for the subject project. This report presents analytical results for four (4) aqueous samples for the following analyses:

ANALYSIS	METHOD	SAMPLE ID.
Gasoline	California LUFT	MW-39, MW-42, MW-58, EW-1
Purgeable Aromatics	EPA 8020	Same as above

Sincerely,
EUREKA LABORATORIES, INC.

By: Shao-Pin Yo
Shao-Pin Yo, Ph.D.
QA/QC Director

SPY/hft

Attachment

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 05/06/94
DATE EXTRACTED: NA
DATE ANALYZED: 05/09/94
INSTRUMENT ID: VG-3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: NA
DILUTION FACTOR: 1

ELI SAMPLE ID: 9405024-05A
SAMPLE ID: METHOD BLANK

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED: 05/04/94
DATE RECEIVED: 05/06/94
DATE EXTRACTED: NA
DATE ANALYZED: 05/09/94
INSTRUMENT ID: VG-3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5 ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9405024-01A
SAMPLE ID: MW-39

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	3.0	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	1.2	0.5
V7	Toluene	0.9	0.5
V8	Xylenes (Dimethyl benzenes)	2.3	0.5

Note: All positively identified compounds were second column or second detector confirmed.
NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED: 05/04/94
DATE RECEIVED: 05/06/94
DATE EXTRACTED: NA
DATE ANALYZED: 05/09/94
INSTRUMENT ID: VG-3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 20 ul
DILUTION FACTOR: 50

ELI SAMPLE ID: 9405024-02A
SAMPLE ID: MW-42

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L * ug/L (ppb)
V1	Benzene	<25	25
V2	Chlorobenzene	<25	25
V3	1,2-Dichlorobenzene	<25	25
V4	1,3-Dichlorobenzene	<25	25
V5	1,4-Dichlorobenzene	<25	25
V6	Ethyl benzene	347	25
V7	Toluene	<25	25
V8	Xylenes (Dimethyl benzenes)	845	25

* Higher detection limit is due to matrix interference and high analyte concentration.
Note: All positively identified compounds were second column or second detector confirmed.
NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED: 05/04/94
DATE RECEIVED: 05/06/94
DATE EXTRACTED: NA
DATE ANALYZED: 05/09/94
INSTRUMENT ID: VG-3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5 ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9405024-03A
SAMPLE ID: MW-58

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L ug/L (ppb)
V1	Benzene	<0.5	0.5
V2	Chlorobenzene	<0.5	0.5
V3	1,2-Dichlorobenzene	<0.5	0.5
V4	1,3-Dichlorobenzene	<0.5	0.5
V5	1,4-Dichlorobenzene	<0.5	0.5
V6	Ethyl benzene	<0.5	0.5
V7	Toluene	<0.5	0.5
V8	Xylenes (Dimethyl benzenes)	<0.5	0.5

NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED: 05/04/94
DATE RECEIVED: 05/06/94
DATE EXTRACTED: NA
DATE ANALYZED: 05/09/94
INSTRUMENT ID: VG-3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 1 ml
DILUTION FACTOR: 5

ELI SAMPLE ID: 9405024-04A
SAMPLE ID: EW-1

COMP NO.	COMPOUND	CONC. ug/L (ppb)	D/L * ug/L (ppb)
V1	Benzene	<2.5	2.5
V2	Chlorobenzene	<2.5	2.5
V3	1,2-Dichlorobenzene	<2.5	2.5
V4	1,3-Dichlorobenzene	<2.5	2.5
V5	1,4-Dichlorobenzene	<2.5	2.5
V6	Ethyl benzene	<2.5	2.5
V7	Toluene	<2.5	2.5
V8	Xylenes (Dimethyl benzenes)	15.1	2.5

* Higher detection limit is due to matrix interference and high analyte concentration.
Note: All positively identified compounds were second column or second detector confirmed.
NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 05/06/94
DATE EXTRACTED: NA
DATE ANALYZED: 05/09/94
INSTRUMENT ID: VG-3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5 ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9405024-07A
SAMPLE ID: MATRIX SPIKE RECOVERY *

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	80%
V2	Chlorobenzene	108%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	105%
V7	Toluene	109%
V8	Xylenes (Dimethyl benzenes)	110%

* This set of matrix spike is from another sample of the same matrix and of the same analytical batch.
NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 05/06/94
DATE EXTRACTED: NA
DATE ANALYZED: 05/09/94
INSTRUMENT ID: VG-3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: 5 ml
DILUTION FACTOR: 1

ELI SAMPLE ID: 9405024-08A
SAMPLE ID: MATRIX SPIKE RECOVERY DUPLICATE *

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	77%
V2	Chlorobenzene	108%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	106%
V7	Toluene	109%
V8	Xylenes (Dimethyl benzenes)	109%

* This set of matrix spike is from another sample of the same matrix and of the same analytical batch.
NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED: NA
DATE RECEIVED: 05/06/94
DATE EXTRACTED: NA
DATE ANALYZED: 05/09/94
INSTRUMENT ID: VG-3
MATRIX: AQUEOUS
% MOISTURE: NA
REPORT WT.: NA
SAMPLE VOL./WT.: NA
DILUTION FACTOR: 1

ELI SAMPLE ID: 9405024-09A
SAMPLE ID: REAGENT SPIKE RECOVERY

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	85%
V2	Chlorobenzene	102%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	99%
V7	Toluene	101%
V8	Xylenes (Dimethyl benzenes)	102%

NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

PURGEABLE AROMATICS
EPA METHOD 8020

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

DATE SAMPLED:	NA
DATE RECEIVED:	05/06/94
DATE EXTRACTED:	NA
DATE ANALYZED:	05/09/94
INSTRUMENT ID:	VG-3
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	NA
DILUTION FACTOR:	1

ELI SAMPLE ID: 9405024-10A
SAMPLE ID: REAGENT SPIKE RECOVERY DUPLICATE

COMP NO.	COMPOUND	SPIKE RECOVERY
V1	Benzene	87%
V2	Chlorobenzene	103%
V3	1,2-Dichlorobenzene	-
V4	1,3-Dichlorobenzene	-
V5	1,4-Dichlorobenzene	-
V6	Ethyl benzene	102%
V7	Toluene	103%
V8	Xylenes (Dimethyl benzenes)	105%

NA = Not Applicable

Huey-Chen Chow — Chemist
May 20, 1994 — Date

GASOLINE
California LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK - GROUNDWATER	DATE RECEIVED: 05/06/94
PROJECT #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 05/11,12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9405024-05A	SAMPLE VOL./WT.: NA
SAMPLE ID: METHOD BLANK	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Jeannette Chen — May 20, 1994
Chemist — Date

GASOLINE
California LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: 05/04/94
PROJECT: MLK - GROUNDWATER	DATE RECEIVED: 05/06/94
PROJECT #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 05/11,12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9405024-01A	SAMPLE VOL./WT.: 5 ml
SAMPLE ID: MW-39 *	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

Note: Hydrocarbons in the gasoline range are detected in the sample. However, their patterns are different from our standard.
* Unknown peaks have been observed in this sample
NA = Not Applicable

Jeannette Chen — Chemist
May 20, 1994 — Date

GASOLINE
California LUFT

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(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

ELI SAMPLE ID: 9405024-02A
SAMPLE ID: MW-42 *

DATE SAMPLED:	05/04/94
DATE RECEIVED:	05/06/94
DATE EXTRACTED:	NA
DATE ANALYZED:	05/11,12/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5 ml
DILUTION FACTOR:	1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	4580	2000 **
CARBON NO. RANGE		
Gasoline Range	C6-C13	
PEAK CARBON NO.		
Gasoline Range	C9	

Note: Hydrocarbons in the gasoline range are detected in the sample. However, their patterns are different from our standard. Therefore, area equivalent is used to quantitate this sample.
* Unknown peaks have been observed in this sample
** Higher detection limit is due to high analyte concentration.
NA = Not Applicable

Jeannette Chen — May 20, 1994
Chemist — Date

GASOLINE
California LUFT

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Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

ELI SAMPLE ID: 9405024-03A
SAMPLE ID: MW-58

DATE SAMPLED:	05/04/94
DATE RECEIVED:	05/06/94
DATE EXTRACTED:	NA
DATE ANALYZED:	05/11,12/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5 ml
DILUTION FACTOR:	1

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	<20	20
CARBON NO. RANGE		
Gasoline Range	-	
PEAK CARBON NO.		
Gasoline Range	-	

NA = Not Applicable

Jeannette Chen
Chemist

May 20, 1994
Date

GASOLINE
California LUFT

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Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS
PROJECT: MLK - GROUNDWATER
PROJECT #: 430.010

ELI SAMPLE ID: 9405024-04A
SAMPLE ID: EW-1 *

DATE SAMPLED:	05/04/94
DATE RECEIVED:	05/06/94
DATE EXTRACTED:	NA
DATE ANALYZED:	05/11,12/94
INSTRUMENT ID:	SVG7
MATRIX:	AQUEOUS
% MOISTURE:	NA
REPORT WT.:	NA
SAMPLE VOL./WT.:	5 ml
DILUTION FACTOR:	5

PETROLEUM HYDROCARBONS	CONCENTRATION [ug/L (ppb)]	DETECTION LIMIT [ug/L (ppb)]
Gasoline Range	103	100 **
CARBON NO. RANGE		
Gasoline Range	C6-C13	
PEAK CARBON NO.		
Gasoline Range	C9	

Note: Hydrocarbons in the gasoline range are detected in the sample. However, their patterns are different from our standard. Therefore, area equivalent is used to quantitate this sample.
* Unknown peaks have been observed in this sample
** Higher detection limit is due to high analyte concentration.
NA = Not Applicable

Jeannette Chen — May 20, 1994
Chemist — Date

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Sacramento, CA 95828
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Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK - GROUNDWATER	DATE RECEIVED: 05/06/94
PROJECT #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 05/11,12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9405024-07A	SAMPLE VOL./WT.: 5 ml
SAMPLE ID: MATRIX SPIKE RECOVERY *	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	100%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

* This set of matrix spike is from another sample of the same matrix and of the same analytical batch.
NA = Not Applicable

Jeannette Chen — May 20, 1994
Chemist — Date

GASOLINE
California LUFT

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK - GROUNDWATER	DATE RECEIVED: 05/06/94
PROJECT #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 05/11,12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9405024-08A	SAMPLE VOL./WT.: 5 ml
SAMPLE ID: MATRIX SPIKE RECOVERY DUPLICATE *	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	92%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

* This set of matrix spike is from another sample of the same matrix and of the same analytical batch.
NA = Not Applicable

Jeannette Chen — May 20, 1994
Chemist — Date

GASOLINE
California LUFT

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Sacramento, CA 95828
(916) 381-7953

Order No.: 94-05-024
Hazardous Waste Testing
Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK - GROUNDWATER	DATE RECEIVED: 05/06/94
PROJECT #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 05/11,12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9405024-09A	SAMPLE VOL./WT.: NA
SAMPLE ID: REAGENT SPIKE RECOVERY	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	81%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Jeannette Chen — May 20, 1994
Chemist — Date

GASOLINE
California LUFT

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Order No.: 94-05-024
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Certification: 1165

CLIENT: SUBSURFACE CONSULTANTS	DATE SAMPLED: NA
PROJECT: MLK - GROUNDWATER	DATE RECEIVED: 05/06/94
PROJECT #: 430.010	DATE EXTRACTED: NA
	DATE ANALYZED: 05/11,12/94
	INSTRUMENT ID: SVG7
	MATRIX: AQUEOUS
	% MOISTURE: NA
	REPORT WT.: NA
ELI SAMPLE ID: 9405024-10A	SAMPLE VOL./WT.: NA
SAMPLE ID: REAGENT SPIKE RECOVERY DUPLICATE	DILUTION FACTOR: 1

PETROLEUM HYDROCARBONS	% SPIKE RECOVERY
Gasoline Range	92%
CARBON NO. RANGE	
Gasoline Range	-
PEAK CARBON NO.	
Gasoline Range	-

NA = Not Applicable

Jeannette Chen — May 20, 1994
Chemist — Date

CHAIN OF CUSTODY FORM

94.05.02A ECV8/19

PAGE OF

PROJECT NAME: MLK - GROUNDWATER

JOB NUMBER: 430.010

PROJECT CONTACT: MARK KAWAKAMI

SAMPLED BY: CHRIS O'DEA

LAB: EUREKA LABORATORIES

TURNAROUND: NORMAL

REQUESTED BY: FERNANDO VELEZ

ANALYSIS REQUESTED

Fed Exp
1292809346
8°C

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR	CONTAINERS: VOA	LITER	PINT	TUBE	METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES: TPH-G	BTXE
1A	MW-39	X				3				X			X		05	04	94		X	X
2A	MW-42	X				3				X			X		05	04	94		X	X
3A	MW-5B	X				3				X			X		05	04	94		X	X
4A	EW-1	X				3				X			X		05	04	94		X	X

OFFICIAL NOTICE FROM ELI: After 30 days from MAY 20 1994 samples will be disposed of at a licensed waste disposal site unless client makes other return or by special arrangement for a long holding period. Charges for sample returns are $2.00 per sample to cover costs of handling and shipping.

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
[signature]	5-5-94 15:00		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
		[signature]	5/6/94 9:30

COMMENTS & NOTES:

Subsurface Consultants, Inc.
171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
(510) 268-0461 • FAX: 510-268-0137