

Ro. 294

# DREISBACH

2530 East Eleventh Street P.O. Box 7509 Oakland, CA 94601-0509  
Voice: 510.534.6600 Fax: 510.534.2316 www.dreisbach.com info@dreisbach.com

FEB 21 2002

Eva Chu  
Alameda County Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, Ca 94502-6577

RE: StID 1445

Dear Eva:

Enclosed is a copy of the report I just received from Tim Babcock. Tim has sold his business to Jim Jacobs whom I believe you have worked with before.

I met with Jim this morning and gave him a copy of this report also. He will be contacting you in the near future to meet with you regarding proceeding towards closure of this case.

Hope all is well with you. I am sure we will be getting together soon.

Sincerely,



Allen E. Pelton Jr.  
Treasurer

Cc: Ron Dreisbach  
John Protopappas  
Jim Jacobs

FEB 21 2002

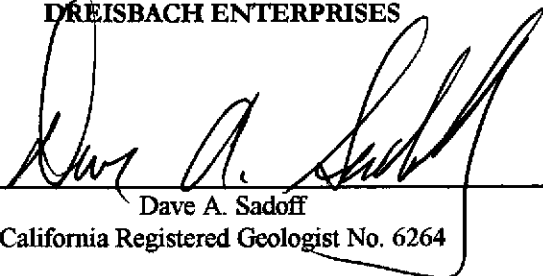
**SUBSURFACE EXPLORATION**

**Project #079-541A**

**23rd Avenue Partners**  
**1125 Miller Avenue**  
**Oakland, California**

*Dec 2001*

**PREPARED BY ENVIRONMENTAL BIO-SYSTEMS, INC.  
FOR  
DREISBACH ENTERPRISES**

  
Dave A. Sadoff  
California Registered Geologist No. 6264



**31 DECEMBER 2001**

## TABLE OF CONTENTS

<b>SECTION</b>	<b>PAGE</b>
1. INTRODUCTION-----	1
1.1. Scope of Work-----	1
2. SITE LOCATION & DESCRIPTION-----	1
2.1. Regional Geology-----	2
2.2. Site Geology-----	2
2.3. Previous Environmental Work-----	2
3. WORK PLAN-----	3
4. HEALTH AND SAFETY PLAN-----	3
5. FIELD PROCEDURES-----	3
5.1. Utility Location-----	3
5.2. Drilling-----	3
5.2.1. Soil Sampling-----	4
5.2.2. Soil Vapor Screening-----	4
5.2.3. Ground Water Sample Collection-----	4
5.2.4. Sample Labeling-----	4
5.2.5. Decontamination Procedures-----	5
5.2.6. Borehole Closure-----	5
6. SAMPLE ANALYSIS-----	5
6.1. Analytical Results-----	5
7. LIMITED RISK-BASED ANALYSIS-----	5
7.1. Subsurface Conduits-----	6
7.2. Ground Water Flow Direction And Gradient-----	6
7.3. Well Survey-----	6
7.4. Migration Pathways to Sensitive Receptors-----	6
8. SUMMARY-----	6
9. DISCUSSION-----	7
10. LIMITATIONS-----	10
11. REFERENCES-----	11
TABLE 1. SOIL SAMPLE RESULTS-----	12
TABLE 2. GROUND WATER SAMPLE RESULTS-----	12

### **APPENDICES**

APPENDIX A: FIGURES	
FIGURE 1: SITE LOCATION MAP	
FIGURE 2: SITE MAP	
FIGURE 3: SAMPLE RESULTS	
APPENDIX B: WORK PLAN	
APPENDIX C: BOREHOLE LITHOLOGIC LOGS	
APPENDIX D: LABORATORY ANALYTICAL REPORTS	
APPENDIX E: GROUND WATER WELL SURVEY MAP	



# Environmental Bio-Systems, Inc.

Innovative Solutions for a Better Environment

Contractor's License A-Haz 687236

## 1. INTRODUCTION

Environmental Bio-Systems, Inc. (EBS) performed the subsurface exploration described within this report on behalf of Dreisbach Enterprises (the Client). The work took place at 1125 Miller Avenue in Oakland, California (the Site) according to a signed contract between EBS and the client (EBS proposal #P99024A-R1). A site location map is included as Figure 1 in Appendix A, a site map is included as Figure 2 in Appendix A.

The scope of work described in this report is intended to assess the extent of petroleum hydrocarbon impact to site soil and ground water caused by an unauthorized fuel release from underground storage tanks (USTs). The release was discovered during the removal of two USTs in 1999. Preparation of this work plan has been requested by the Alameda County Health Care Services Agency (ACHCSA) in their letter to the Client dated 16 July 1999.

The Client owns the site. The principal project contacts are:

**Client:** Mr. Al Pelton, Dreisbach Enterprises, P.O. Box 7509, Oakland, CA 94601,  
(510) 533-6600.

**Consultant:** Mr. Dave A. Sadoff, Project Manager, Environmental Bio-Systems, Inc., P.O. Box 7171, San Jose, CA 95150-7171, (408) 979-8600.

### 1.1. Scope of Work

The scope of work described in this report encompasses the following major tasks:

- Clearing proposed core locations utilizing electromagnetic instruments.
- Drilling four soil cores (designated TW1, TW2, TW3 and D1).
- Collecting four soil samples from the cores.
- Installing pre-packed temporary well points in two of the cores.
- Submitting four soil samples and two ground water samples to a California State certified laboratory for the following analyses:
  - Total petroleum hydrocarbons as diesel (TPHd)
  - Benzene, toluene, ethyl benzene and total xylenes (BTEX)
  - Methyl t-butyl ether (MTBE)
- Interpretation of field and laboratory data.

## 2. SITE LOCATION & DESCRIPTION

The Site contains a single two-story building currently housing apartments and studio space. It is located at 1125 Miller Avenue, in the City of Oakland, County of Alameda, and California. The United States Geological Survey Oakland East Quadrangle Map shows the site to be located in Section six, Township two south, Range three west of the Mount Diablo Base and Meridian.

Miller Avenue bounds the Site from the southwest to north. Another apartment building lies across a small parking lot to the northeast. A fenced parking and storage lot abuts the southeast end of the building.

## 2.1. Regional Geology

The Site is located within the Coast Ranges Province of California. This province is bounded on the north by the Oregon State line, on the east by the South Fork Mountain and Coast Range thrusts bordering the Klamath Mountains and Great Valley Provinces, on the south by the Santa Ynez Fault and Transverse Ranges Province, and on the west by the continental borderland.

San Francisco Bay fills a late Pliocene structural depression that divides the Coast Ranges province into northern and southern portions. Extensive folding and faulting during the late Pliocene to mid-Pleistocene Epochs created northwest trending ranges within this province. The Franciscan Formation, found east of the San Andreas Fault, represents a subduction zone complex containing large blocks of thick graywacke sandstone interbedded with chert, shale, and serpentinite.

The area in which the Site is located has been geologically mapped as Quaternary (Holocene) Estuarine deposits (Bay Mud, Qhbm). The Hayward Fault Zone is mapped approximately 3½ miles east of the Site.

## 2.2. Site Geology

Soils encountered during drilling typically included ~~medium-grained dense sand to~~ approximately two feet below ground surface (bgs), at which depth ~~medium-stiff silty clay was~~ encountered. The clay become very stiff at ~~approximately four feet bgs, continuing to~~ approximately 16 feet bgs, at which depth clayey silty sand was encountered to the total drilled depth (22 feet bgs). Ground water was first encountered at between 16½ and 17 feet bgs.

## 2.3. Previous Environmental Work

### December 1998

EBS excavated and removed two 5,000-gallon diesel USTs and associated product piping from the site. Two soil samples were collected near the ends of each tank (a total of four samples) from approximately nine feet below ground surface (bgs). All four samples were subsequently analyzed for total petroleum hydrocarbons calculated as diesel (TPHd), benzene, toluene, ethylbenzene and total xylenes (BTEX), and methyl tertiary butyl ether (MtBE).

Sample locations adjacent to the ends of Tank A were both taken from the south pit wall due to access limitations. Of the two samples taken from the ends of this tank, the east end sample was found to contain 1,800 milligrams per kilogram (mg/kg) TPHd and 0.051 mg/kg xylenes. The west end sample from this tank was not found to contain detectable concentrations of any of the chosen analytes. Samples collected from the soil adjacent to the ends of Tank B (north and west pit walls) were not found to contain any of the chosen analytes.

### 3. WORK PLAN

EBS submitted Work Plan #079-541B to the ACHCSA for approval prior to commencement of field activities. A copy of this Work Plan is included in Appendix B.

### 4. HEALTH AND SAFETY PLAN

A Health and Safety Plan was prepared and maintained at the site. All on-site personnel associated with the project were familiarized with the plan, and acknowledged their review of the plan with their signature.

### 5. FIELD PROCEDURES

Fieldwork commenced on 19 October 2000 and terminated on 23 October 2000. All field activities were carried out under the direct supervision of an EBS California Registered Geologist. Descriptions of the various field activities are included in the following sections.

#### 5.1. Utility Location

EBS marked the proposed core locations with white paint on 19 October 2000. Underground service alert was notified of the anticipated fieldwork on that date. CU Surveys of San Ramon, California (CU) was contracted to clear the core locations using electromagnetic instruments. CU identified no ferrous underground obstructions at the proposed core locations.

#### 5.2. Drilling

EBS directed the drilling of soil cores TW1, TW2, TW3 and D1 at the site by Fast-Tek Engineering Support of Point Richmond, California (FTES) on 25 May 2000. FTES is a California licensed drilling contractor (C-57 # 589008). The cores were advanced using a Geoprobe™ model 5400 direct push technology rig.

An EBS geologist logged soil from the cores using the Uniform Soil Classification System. Copies of the lithologic logs are included in Appendix C. Ground water was encountered between 16½ and 17 feet bgs within the borings advanced to that depth.

All core locations are depicted on Figure 2 in Appendix A. Cores TW2 and TW3 were drilled to a total depth of 22 bgs, core D1 was drilled to a total depth of eight feet bgs. Core TW1 encountered an impenetrable obstruction at approximately three feet bgs. FTES attempted to bypass the obstruction by initiating additional cores at five separate nearby locations, but encountered refusal at each spot. Core TW1 was abandoned without soil or ground water sampling.

Soil cores TW1 through TW3 were drilled in the concrete-paved area surrounding the former UST excavation. Core D1 was drilled adjacent to the former dispenser location. The dispenser had been housed within an enclosed room at the north end of the building. This core was not initially proposed in the EBS workplan, but was requested by the ACHCSA as part of their conditional approval of the work plan.

*where was  
TW1*

### 5.2.1. Soil Sampling

Continuous soil borings were advanced at each sampling location using a 2-inch barrel sampler driven by the Geoprobe. Soil samples were collected in four-foot intervals inside clear acetate sleeves held within the barrel sampler.

Each sleeve was marked immediately upon removal from the sampler to designate the depth interval from which it was collected. Intervals to be submitted for laboratory analysis were cut from the adjacent soil, immediately covered with Teflon™ sheets, and sealed with plastic end caps.

Soil samples intended for laboratory analyses were collected from the capillary fringe within cores TW2 and TW3. Soil sample TW2-16.5' was collected from 16½ feet bgs from core TW2. Soil sample TW3-17' was collected from 17 feet bgs within core TW3. Soil samples collected from beneath the fuel dispenser were taken from three and eight feet bgs. These samples were designated D1-3' and D1-8', respectively.

### 5.2.2. Soil Vapor Screening

All soil samples were screened in the field using a portable organic vapor meter (OVM). The Thermo Environmental Instruments, Co. Model 580D OVM used for this purpose was calibrated at the beginning of the project to a 100 part per million (ppm) isobutylene standard.

Approximately 50 to 100 grams of soil were removed from the sleeves adjacent to intervals submitted for laboratory analyses. Additional sub-samples were also screened from significant changes in lithology and/or where obvious staining or odor was encountered. Sub-samples were immediately sealed within plastic bags, labeled with a unique designation to the project and allowed to remain undisturbed for approximately 20 minutes. The OVM was then used to measure the resulting accumulation of vapor in the headspace within the bag. The maximum value attained for each such sample was recorded in the field along with the corresponding soil sample designation. Vapor screening of all soil split samples yielded 0 parts per million (ppm) ionizable compounds, expressed as isobutylene equivalents.

### 5.2.3. Ground Water Sample Collection

Temporary well points made of new factory pre-packed slotted and threaded (0.020 inch slot size) one-inch nominal diameter stainless steel pipe were installed in TW2 and TW3 subsequent to the completion of soil sampling. The depth to water was then measured from the top of each boring using an electronic water level indicator. A clean small-diameter Teflon™ bailer was then lowered through the pre-packed well casing and used to collect samples of water contained within the temporary wells. Water collected from the wells in this manner was decanted into factory pre-cleaned 40 milliliter (mil) volatile organic analysis (VOA) vials containing hydrochloric acid as a preservative.

### 5.2.4. Sample Labeling

Unique labels were affixed to each sample tube and bottle identifying the Site and sample designation. All samples selected for laboratory analysis were then placed into a cooler on top of crushed ice and transported to Analytical Sciences of Petaluma, California (AS). AS is accredited through the DTSC ELAP (#2118) to perform the requested analyses. Chain of custody

documentation was initiated in the field and accompanied all samples to the laboratory. Copies of the analytical reports, chain of custody and sample receipt forms are included in Appendix C.

#### 5.2.5. Decontamination Procedures

All down-hole equipment was washed with a non-phosphorous contributing detergent solution and triple rinsed with clean distilled water between the collection of each soil and ground water sample. New acetate sleeves and PVC screen were used within each boring. Disposable bailers used to sample ground water from the temporary well points were discarded after a single use. All decontamination water was placed into a 55-gallon drum staged at the Site.

#### 5.2.6. Borehole Closure

The resulting boreholes were backfilled with neat cement at the conclusion of sampling. All boreholes were backfilled to existing grade.

### 6. SAMPLE ANALYSIS

A total of four soil samples and two ground water samples were delivered to Analytical Sciences, Inc. of Petaluma, California (AS) following standard chain of custody protocol. AS is certified by the State of California Environmental Laboratory Accreditation Program (ELAP #2118), and is certified for the requested analyses. The laboratory was instructed to analyze each of the samples for the following analytes:

- TPHd using the Environmental Protection Agency (EPA) Methods 3550/8015M
- BTEX and MTBE using EPA Methods 5030/8015M/8020

Copies of the chain of custody record and certified analytical reports documenting the results of analyses performed have been presented in Appendix D. The results of soil and ground water analyses have been summarized in Tables 1 and 2, respectively in addition to Figure 3.

#### 6.1. Analytical Results

Soil sample TW2-16.5' was found to contain 4,200 mg/kg TPHd and 1.4 mg/kg benzene. Soil sample TW3-17' was found to contain 2,700 mg/kg TPHd. Soil samples D1-3' and D1-8' were found to contain 3,400 and 34 mg/kg TPHd, respectively.

Ground water sample TW2-H<sub>2</sub>O was found to contain 660 µg/L TPHd, 65 µg/L benzene, 2.4 µg/L toluene, and 3.2 µg/L total xylenes. Ground water sample TW3-H<sub>2</sub>O was found to contain 800 µg/L TPHd and 0.9 µg/L benzene.

### 7. LIMITED RISK-BASED ANALYSIS

EBS initiated a limited risk-based analysis subsequent to the conclusion of fieldwork per Client request. The analysis included the evaluation of subsurface conduits, nearby ground water flow direction and gradient, a survey of nearby ground water wells, and rudimentary consideration of the potential for sensitive receptor contact with compounds of concern.



### 7.1. Subsurface Conduits

Subsurface conduits at the Site include relatively shallow utility trenches (i.e. gas, water and sewer). The nearest observed trench supplies a fire hydrant located approximately 12 feet northwest of TW3. According to the utility survey conducted during this project, the supply line for this hydrant approaches from the northwest (the supply line does not extend beneath the Site). Gas and sewer lines were not observed in proximity to the former UST excavation.

### 7.2. Ground Water Flow Direction and Gradient

According to an Earth Systems Environmental, Inc. letter report dated 26 July 1993, ground water flow direction at a nearby site (527 23rd Avenue) is to the north. Figure 2 of that report shows the gradient to be approximately 0.01 feet per foot.

### 7.3. Well Survey

EBS requested a well survey from the Alameda County Public Works Agency showing ground water wells within a ½-mile radius of the Site. The nearest down-gradient well is located approximately 300 feet to the north-northwest. According to the survey, this well was drilled to a total depth of 345 feet bgs on an unspecified date. The survey also states this well has been abandoned. No other wells are shown in proximity to the site.

### 7.4. Migration Pathways to Sensitive Receptors

The closest identified sensitive receptors are the occupants residing in the Site building. Additional receptors are located in the adjacent apartment building to the northeast of the Site.

The compound of greatest concern is benzene, a known carcinogen with relatively high vapor pressure. Although this compound was not well represented in soil samples (none of the excavation samples and only one of the core samples), it has been found in both water samples collected during the recent phase of sampling.

Asphalt and concrete pavement covering the surface of the Site provides a potentially effective vapor barrier between the residual benzene concentration in ground water and the closest receptors. The effectiveness of this barrier in preventing vapor phase contaminants from migration into the adjacent buildings correlates to the integrity of the slabs underlying them. We are; however, unable to comment on slab integrity within the limited scope of this project.

## 8. SUMMARY

1. Four exploratory soil cores were advanced at the Site. One of the cores was abandoned without sampling due to an impenetrable obstruction. Ground water was encountered in two of the borings at 16.5 and 17 feet bgs.
2. Screening of soil samples using an OVM yielded no detectable ionizable compounds.
3. Four soil samples were submitted for laboratory analysis to detect TPHd, BTEX, and MTBE.

4. Temporary wells were constructed of pre-packed well screen within two of the soil cores.
5. Ground water samples were collected from both temporary wells and submitted for laboratory analysis to detect TPHd, BTEX, and MTBE.
6. All soil cores were backfilled to grade with neat cement subsequent to sampling.
7. Soil samples were found to contain TPHd at concentrations up to 4,200 mg/kg, and benzene up to 1.4 mg/kg.
8. Ground water samples were found to contain TPHd at concentrations up to 800 µg/L, benzene up to 65 µg/L, toluene up to 2.4 µg/L, and total xylenes up to 3.2 µg/L.
9. Subsurface conduits at the Site include relatively shallow utility trenches (i.e. gas, water and sewer). The nearest observed trench supplies a fire hydrant located approximately 12 feet northwest of TW3. According to the utility survey conducted during this project, the supply line for this hydrant approaches from the northwest (the supply line does not extend beneath the Site). Gas and sewer lines were not observed in proximity to the former UST excavation.
10. According to an Earth Systems Environmental, Inc. letter report dated 26 July 1993, ground water flow direction at a nearby site (527 23rd Avenue) is to the north with a gradient of approximately 0.01 feet per feet.
11. An Alameda County Public Works Agency survey of ground water wells showed none active in the nearby vicinity.
12. The nearest sensitive receptors are present in residential dwellings on the Site and on an adjacent property immediately to the east of the Site.

## 9. DISCUSSION

Capillary fringe soil from within both borings adjacent to the former UST pit was impacted with moderately high concentrations of diesel. One of the samples was also found to contain a moderate concentration of benzene as well. Water sampled from within these two cores also displayed impact from diesel, benzene, toluene and xylenes. A core placed beneath the former fuel dispenser showed a moderately high concentration of diesel in shallow soil with only a low concentration found in a deeper sample collected well above the depth at which ground water was encountered in the other two borings. This sample was notably not found to contain any BTEX compounds.

The location of the dispenser within a shallow partition of the building inhibits removal of affected underlying soil. Impact found in the other two borings was indicative of capillary fringe contamination caused by contact with impacted ground water. The configuration of the site in close proximity to a City street, sidewalk and fire hydrant also inhibits further excavation of soil in the area surrounding the former UST pit. Further excavation of this soil would also yield negligible benefits given the extremely high probability that continued contact with contaminated ground water would re-impact clean soil used to backfill the excavation.

Preliminary discussion with the ACHCSA has indicated their receptiveness to considering alternative routes to closure of this site. To this end EBS reviewed a State Water Resource

Control Board (SWRCB) guidance document and compared published risk based screening levels (RBSLs) with site chemical data in an effort to determine whether or not reported concentrations pose a significant risk to human health or the environment.

RBSLs used for comparison were taken from the State Water Resources Control Board (SWRCB) Region II document "The Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil And Groundwater (Interim Final - August 2000)." The document references compounds commonly found at hazardous materials impacted sites and is intended as an aid in the decision making process rather than as a list of definitive clean-up levels. The Tier 1 RBSLs that we compared our results to provide a reportedly conservative quick reference of maximum levels beyond which a threat to health may be present.

Table D-1 displays values applicable to residential sites where soil impact is greater than three meters below ground surface (bgs) and where the ground water is not a current or potential source of drinking water. The final RBSL for benzene of 0.18 mg/kg was exceeded in the sample collected from the capillary fringe in core TW2. The RBSL for soil where leeching to ground water will occur, however, is 2.1 mg/kg. The maximum value reported to date for this compound in soil from pit walls or cores was nearly half this amount.

Table F-1 of the same document lists RBSLs where ground water is a potential drinking water resource (no data is listed when not a potential source of drinking water). Data from this table is presumably far more conservative than what would be considered appropriate for a site such as the subject property where affected ground water is too shallow to be suitable for drinking water. The general RBSL for benzene is 1.0 µg/L. The benzene RBSL for indoor air impacts from water contamination is 84 µg/L. This general RBSL was substantially exceeded by one of the two reported concentrations benzene found in site water, however the only two samples found to contain benzene (soil or water) were taken in the area of the former UST pit opposite from the building. The indoor air impacts RBSL for benzene is clearly well in excess of the maximum value reported in site samples.

Table F-1 also lists residential soil RBSLs for TPH middle distillates (including diesel). The RBSL for soil where leaching to ground water will occur is 500 mg/kg. Diesel values for soil samples collected from the cores significantly exceeded this value.

The northward direction of ground water flow documented at a nearby site strongly suggests that water borne contaminants would move away from the site building as well as the adjacent apartment building. Sample analytical data would seem to support that this flow direction remains accurate at the Site as the water soluble BTEX compounds have only been found in samples lying to the northwest of the former USTs. Given a northward direction of flow the probability of benzene or any of the other BTEX constituents found in the cores being present in ground water beneath the two nearby structures containing sensitive receptors can be assumed to be low.

Additional sensitive receptors in the assumed ground water flow direction are unlikely to be impacted given the regionally flat gradient and the length of distance before reaching further inhabited structures. Our research also revealed no potential conduits such as wells or utilities that are likely to aid in the migration of contaminants from the Site or into underlying deeper aquifers.

Although some of the RBSLs were exceeded by site samples we still believe that the ACHCSA should review this Site for conditional closure. The lack of RBSLs for configuration similar to this Site where the potability of affected ground water is not an issue make it difficult to draw conclusions from the referenced published figures alone.

Site specific and regional conditions do not indicate the probability for carcinogenic compounds associated with a release from the former USTs to be present beneath either of the adjacent inhabited structures. In light of this fact we believe this Site should be granted conditional closure.

Copies of this report should be submitted to the ACHCSA, the San Francisco Bay Region Water Quality Control Board, and other interested parties as required.

## 10. LIMITATIONS

The recommendations in this report were developed in accordance with generally accepted standards of current environmental practice in California. These recommendations are time-dependent and should not be considered valid after a one year period from the issue of this report. After 1 year from the issue of this report, site conditions and recommendations contained within this report should be reviewed.

This study was performed solely to evaluate environmental conditions of the site subsurface relative to hydrocarbon impact at the subject Site. No engineering or geotechnical references are implied or should be inferred. No industrial hygiene references are implied or should be inferred.

Evaluation of the condition of the Site, for the purpose of this study, was made from a limited number of observation points. Subsurface conditions may deviate away from these points. Additional work, including further study of the subsurface, can reduce the inherent uncertainties associated with this type of work.

The project was performed, and the report was prepared for the sole use of our client, Dreisbach Enterprises, Inc. The report and the findings contained herein shall not be disclosed to nor used by any other party, other than Dreisbach Enterprises without the prior written consent of Environmental Bio-Systems, Inc. It is the responsibility of the Client to convey all data, conclusions and recommendations to regulatory agencies and other parties, as appropriate.

The recommendations herein are professional opinions that our firm has endeavored to provide with competence and reasonable care. We are not able to eliminate the risks associated with environmental work. No guarantees or warrants, express or implied, are provided regarding our recommendations. It is the responsibility of the client to convey any and all recommendations to governmental agencies and other parties, as appropriate.

## 11. REFERENCES

Alameda County Health Care Services Agency, Letter to East 23rd Avenue Partners, 16 July 1999.

Earth Systems Environmental, Inc., Letter Report, Soil and Groundwater Investigation, 26 July 1993.

Environmental Bio-Systems, Inc., UST Excavation, 23rd Avenue Partners, 1125 Miller Avenue, Oakland, California, 21 April 1999.

United States Geological Survey, Oakland East, California Quadrangle Map, 7.5-Minute Series, Topographic, 1959, Photorevised 1980.

**TABLE 1. SOIL SAMPLE RESULTS**

<b>BORE-HOLE</b>	<b>DEPTH (feet)</b>	<b>TPHd (mg/kg)</b>	<b>BTEX (mg/kg)</b>	<b>MTBE (mg/kg)</b>
TW2	16.5	4,200	B=1.4	ND
TW3	17	2,700	ND	ND
D1	3	3,400	ND	ND
D1	8	34	ND	ND

**NOTES:**

TPHd: Total petroleum hydrocarbons quantified as diesel.  
 BTEX: Benzene, toluene, ethyl benzene, total xylenes.  
 MTBE: Methyl tert butyl ether.  
 mg/kg: Milligrams per kilogram.  
 ND: Not detected above the laboratory reporting limit.  
 See laboratory report for individual reporting limits.

**TABLE 2. GROUND WATER SAMPLE RESULTS**

<b>TEMPORARY WELL ID</b>	<b>TPHd (µg/L)</b>	<b>BTEX (µg/L)</b>	<b>MTBE (µg/L)</b>
TW2	660	B=65 T=2.4 X=3.2	ND
TW3	800	B=0.90	ND

**NOTES:**

TPHd: Total petroleum hydrocarbons quantified as diesel.  
 BTEX: Benzene, toluene, ethylbenzene, total xylenes.  
 MTBE: Methyl tert butyl ether.  
 (µg/L): Micrograms per Liter.  
 ND: Not detected above the laboratory reporting limit.  
 See laboratory report for individual reporting limits.

31 December, 2001

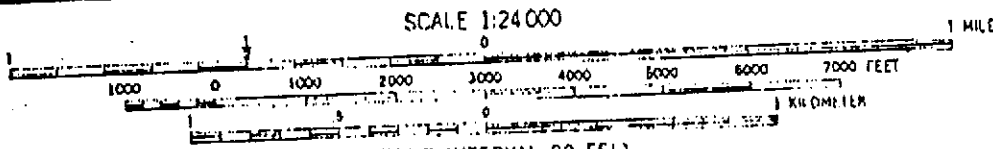
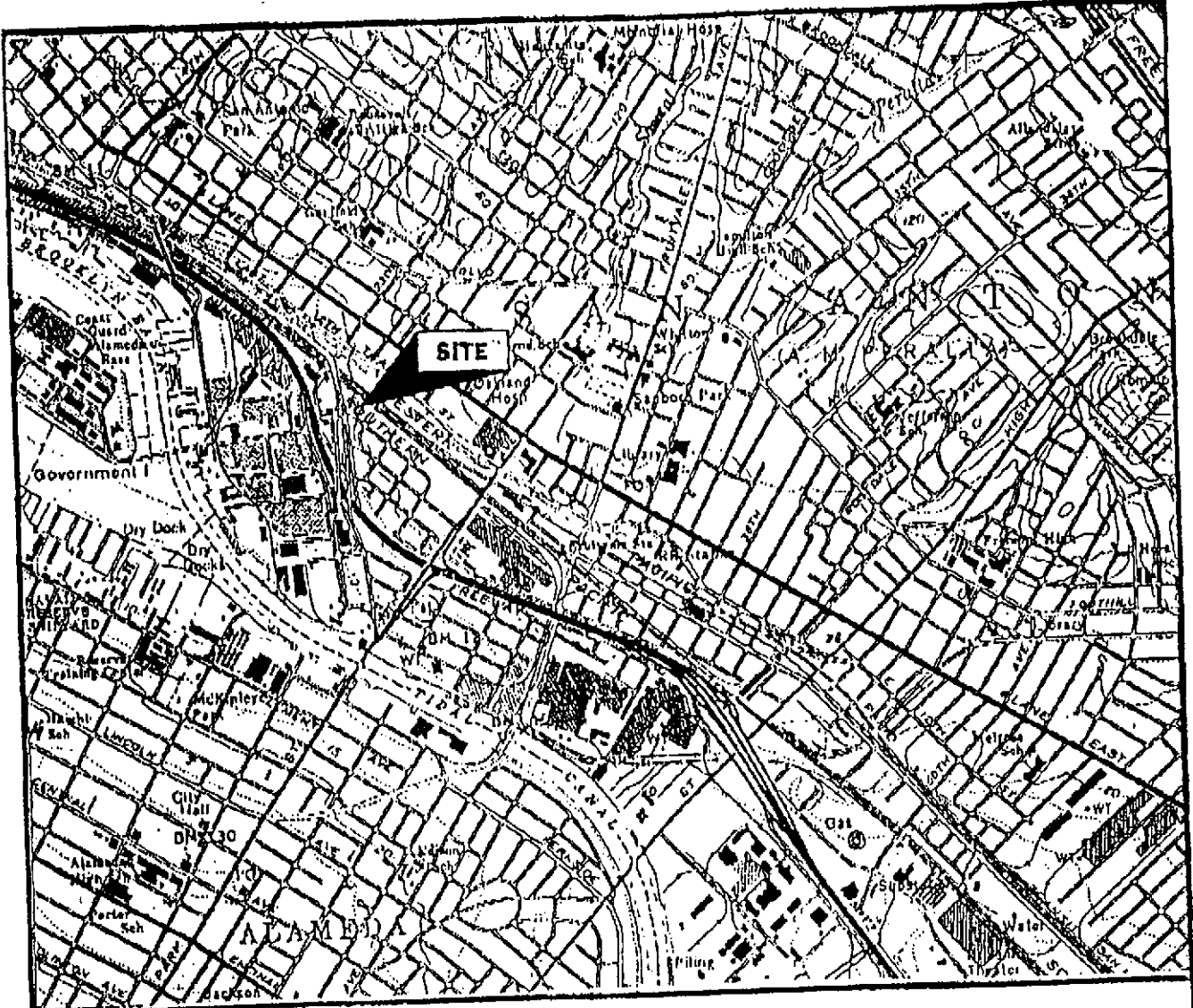
**Subsurface Exploration Report**  
Client: Dreisbach Enterprises  
Site: 1125 Miller Ave., Oakland, California

Appendix A

**APPENDIX A:**

**FIGURES**





CONTOUR INTERVAL 20 FEET  
 DOTTED LINES REPRESENT 5-FOOT CONTOURS  
 NATIONAL GEOGETIC VERTICAL DATUM OF 1929  
 DEPTH CURVES IN FEET--DATUM IS MEAN LOWER LOW WATER  
 THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE  
 SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF HIGH WATER  
 THE MEAN RANGE OF TIDE IS APPROXIMATELY 6 FEET



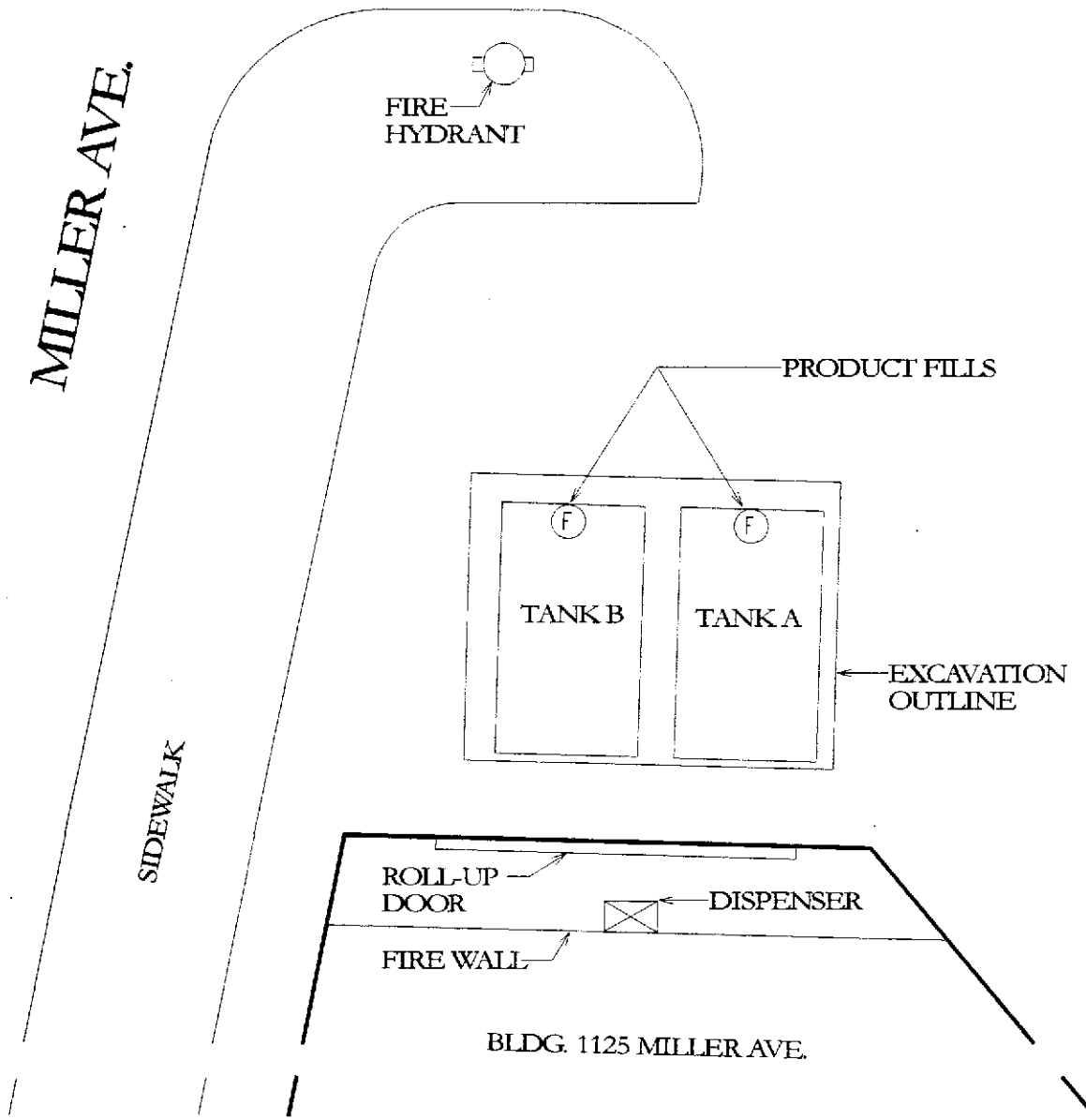
Source: USGS Oakland East, California 7.5 Minute Quadrangle Map



DATE:  
3/31/99  
 DRAWN BY:  
DAS  
 SCALE:  
1" = 2,000'



FIGURE 1:  
SITE LOCATION MAP  
 23rd AVENUE PARTNERS  
 1125 MILLER AVENUE  
 OAKLAND, CALIFORNIA



## FIGURE 2: SITE MAP

Client: 23rd Avenue Partners  
 Site: 1125 Miller Ave., Oakland, CA  
 Project: UST Removal  
 Prepared by Environmental Bio-Systems, Inc.  
 EBS Project #: 079-507A  
 Scale: 1 inch = 10 feet  
 Date of Work: 12/2/98



MILLER AVE.

SIDEWALK



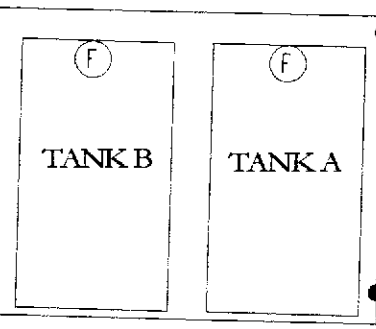
FIRE HYDRANT

TW3  
17'  
TPHd=2,700

TW2  
16.5'  
TPHd=4,200  
B=1.4

S2  
TPHd- 1,800 mg/kg  
Xylenes- 0.51 mg/kg

S3  
TPHd- ND  
BTEX/MTBE- ND



S1  
TPHd- ND  
BTEX/MTBE- ND

EXCAVATION  
OUTLINE

S4  
TPHd- ND  
BTEX/MTBE- ND

ROLL-UP  
DOOR

DISPENSER

D1  
3'  
TPHd=3,400  
8'  
TPHd=34

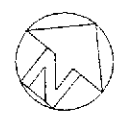
FIRE WALL

BLDG. 1125 MILLER AVE.

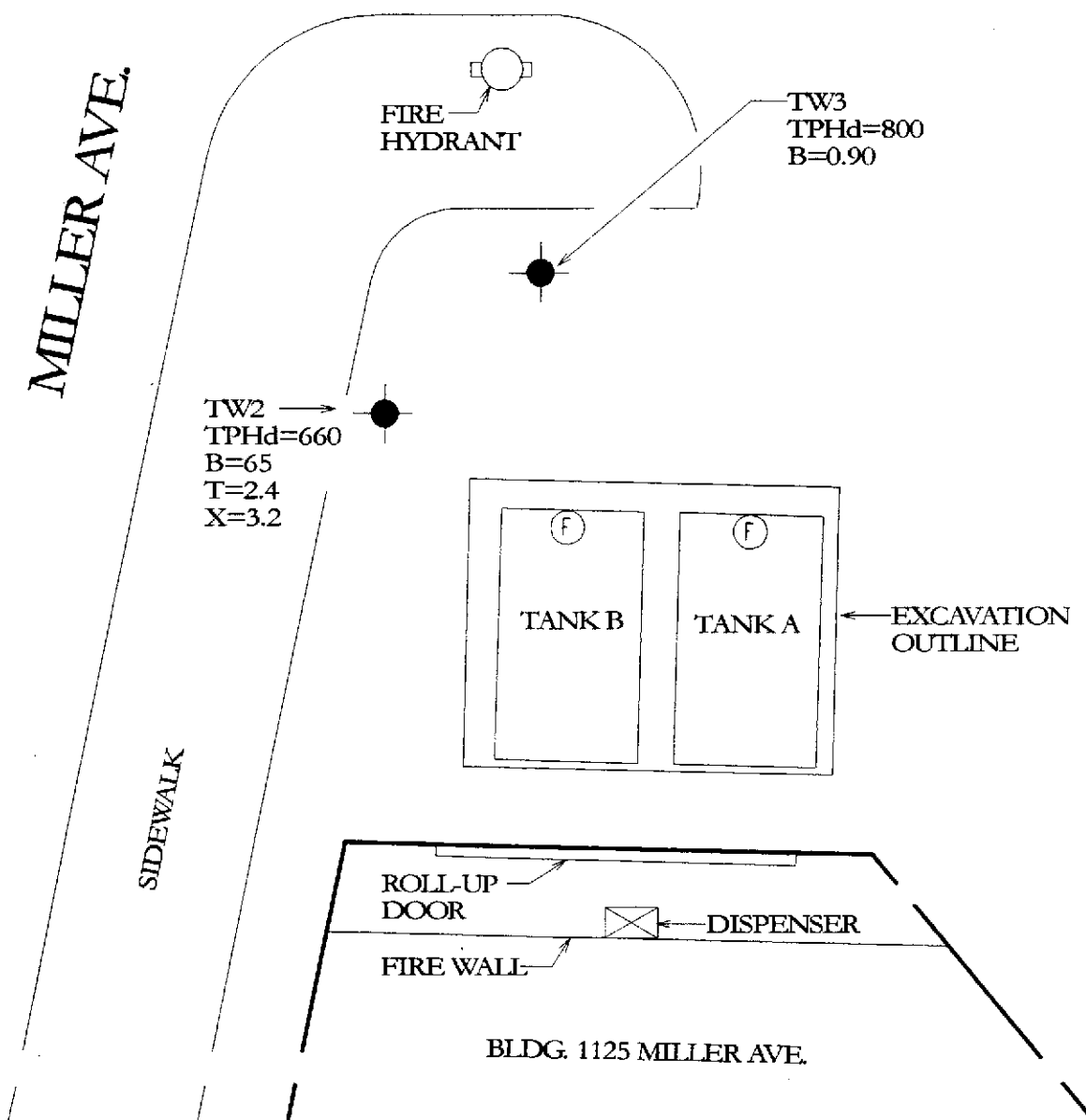
NOTES:

● Soil Core/Temporary Well Location and Designation  
Sample results expressed in milligrams per kilogram (mg/kg).

FIGURE 3: SOIL SAMPLE RESULTS



Client: 23rd Avenue Partners  
Site: 1125 Miller Ave., Oakland, CA  
Project: UST Removal  
Prepared by Environmental Bio-Systems, Inc.  
EBS Project #: 079-507A  
Scale: 1 inch = 10 feet  
Date of Work: 12/2/98



NOTES:

● Soil Core/Temporary Well Location and Designation  
 Sample results expressed in micrograms per liter (ug/l).

FIGURE 4: WATER SAMPLE RESULTS



Client: 23rd Avenue Partners  
 Site: 1125 Miller Ave., Oakland, CA  
 Project: UST Removal  
 Prepared by Environmental Bio-Systems, Inc.  
 EBS Project #: 079-507A  
 Scale: 1 inch = 10 feet  
 Date of Work: 12/2/98

31 December, 2001

**Subsurface Exploration Report**  
Client: Dreisbach Enterprises  
Site: 1125 Miller Ave., Oakland, California

Appendix B

**APPENDIX B:**

**WORK PLAN**

ALAMEDA COUNTY  
HEALTH CARE SERVICES



AGENCY  
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94602-6577  
(510) 567-6700  
FAX (510) 337-9335

StID 1445

May 2, 2000

Mr. Allen Pelton  
23<sup>rd</sup> Avenue Partners  
P.O.Box 7509  
Oakland, CA 94601

RE: Work Plan Approval for 1125 Miller Avenue, Oakland, CA

Dear Mr. Pelton:

I have completed review of Environmental BioSystems, Inc.'s February 2000 *Work Plan: Subsurface Exploration* and their April 2000 addendum to the work plan. The proposal to advance three exploratory borings around the former underground storage tank (UST) excavation and to advance one boring at the former dispenser area at the above referenced site is acceptable. Soil samples will be collected from each boring. Grab groundwater samples will be collected from the UST area. All samples will be analyzed for TPHd, BTEX, and MTBE.

Field work should commence within 60 days of the date of this letter. Please provide 72 hours notice prior to the start of field activities. If you have any questions, I can be reached at (510) 567-6762.

eva ohl  
Hazardous Materials Specialist

email: Tim Babcock ([TMBatEBS@aol.com](mailto:TMBatEBS@aol.com))

1125miller-3

**WORK PLAN:**  
**SUBSURFACE EXPLORATION**

**Project #079-541B**

**23rd Avenue Partners  
1125 Miller Avenue  
Oakland, California**

**PREPARED BY ENVIRONMENTAL BIO-SYSTEMS, INC.  
FOR  
DREISBACH ENTERPRISES**

---

**Dave A. Sadoff  
Project Geologist, California R.G. No. 6264**

**18 February 2000**

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1. <u>INTRODUCTION</u>	I
2. <u>PREVIOUS ENVIRONMENTAL WORK</u>	1
3. <u>HEALTH AND SAFETY PLAN</u>	2
4. <u>PERMITS</u>	2
5. <u>FIELD PROCEDURES</u>	2
5.1. <u>Subsurface Survey</u>	2
5.2. <u>Soil Core Locations and Drilling Methods</u>	2
5.3. <u>Soil Sampling</u>	2
5.3.1. <u>Drill Cuttings</u>	3
5.4. <u>Water Sampling</u>	3
5.5. <u>Sample Analyses</u>	3
5.6. <u>Decontamination Procedures</u>	3
6. <u>DOCUMENTATION</u>	3
7. <u>CONDITIONS</u>	4
8. <u>REFERENCES</u>	5

## APPENDIX

APPENDIX A. FIGURES	
FIGURE 1. SITE LOCATION MAP	
FIGURE 2. SITE MAP	





# **Environmental Bio-Systems, Inc.**

**Innovative Solutions for a Better Environment**

Contractor's License A-Haz 687236

## **1. INTRODUCTION**

Environmental Bio-Systems, Inc. (EBS) has been retained by Dreisbach Enterprises (the Client) to prepare and carry out this work plan at 1125 Miller Avenue in Oakland, California (the Site). Site location map and site maps are included as Figures 1 and 2 in Appendix A.

The site is currently owned by the Client. The principal project contacts are:

**Client:** Mr. Allen Pelton, Dreisbach Enterprises, P.O. Box 7509, Oakland, CA 94601,  
(510) 533-6600.

**Consultant:** Mr. Dave A. Sadoff, Project Manager, Environmental Bio-Systems, Inc.,  
P.O. Box 7171, San Jose, CA 95150-7171, (408) 979-8600.

The scope of work described in this work plan is intended to assess the extent of petroleum hydrocarbon impact to site soil and ground water caused by an unauthorized fuel release from underground storage tanks (USTs). The release was discovered during the removal of two USTs in 1999. Preparation of this work plan has been requested by the Alameda County Health Care Services Agency (ACHCSA) in their letter to the Client dated 16 July 1999.

Fieldwork will not begin until the work plan has been approved by the ACHCSA.

## **2. PREVIOUS ENVIRONMENTAL WORK**

### **December 1998**

Two 5,000-gallon diesel USTs and associated product piping were removed from the site and disposed of at ECI in Richmond, California. Two soil samples were collected near the ends of each tank (four total) from approximately nine feet below ground surface (bgs).

The two soil samples collected from the easternmost UST were not found to contain reportable concentrations of total petroleum hydrocarbons calculated as diesel (TPHd), benzene, toluene, ethylbenzene or total xylenes (BTEX) or methyl t-butyl ether (MTBE). One of the two samples collected from the second tank was not found to contain reportable concentrations of TPHd, BTEX or MTBE. The fourth sample, collected from the northwest corner of the UST excavation, was found to contain 1,800 milligrams per kilogram (mg/kg) TPHd and 0.051 mg/kg total xylenes.

### 3. HEALTH AND SAFETY PLAN

A site-specific health and safety plan will be produced prior to commencement of fieldwork. This plan will include anticipated hazards, personal protective equipment requirements for site workers, and emergency procedures.

### 4. PERMITS

A drilling permit will be procured from the Alameda County Public Works Agency prior to work commencement. Permits will also be secured from the City of Oakland Department of Public Works for drilling in a city sidewalk.

### 5. FIELD PROCEDURES

The scope of work described in this work plan outlines the drilling of 3 exploratory soil cores (to be designated SCT through SC3), the collection and analysis of soil and ground water samples, and the generation of a project report. All work will be performed by, or under, the direct supervision of a California Registered Geologist.

#### 5.1. SUBSURFACE SURVEY

Proposed soil core locations will be marked with white paint as required by Underground Service Alert (USA). USA will then be notified at least 48 hours prior to the beginning of field work. EBS will also utilize a private utility locator to mark ferrous subsurface improvements. Any proposed soil core locations which may impact known subsurface improvements as discovered during the USA and private utility locator surveys will be moved to the nearest cleared location.

#### 5.2. SOIL CORE LOCATIONS AND DRILLING METHODS

Three soil cores will be advanced via direct push technology using a truck mounted Geoprobe (or similar) rig. The borings will be drilled at or near the locations depicted on Figure 2.

#### 5.3. SOIL SAMPLING

Soil samples will be collected from the cores in clear acetate sleeves housed within the push-probe. The sleeves will be visually inspected and cut to remove appropriate sampling intervals. The ends of the cut sleeves will be sealed with Teflon™ sheets and tight fitting caps upon removal from the sampler. Each sleeve section will then be labeled with a unique designation for this project. A chain of custody will be initiated in the field and will accompany all submitted samples to the laboratory.

At least one soil sample will be submitted for laboratory analyses from each soil core at just above the soil/ground water interface. Ground water is anticipated to be encountered at approximately 10 feet bgs. Additional soil samples from other horizons may be submitted if field observations (e.g. elevated PID readings, soil discoloration) indicate the possibility of petroleum hydrocarbon impact.

### 5.3.1. Drill Cuttings

All soil cuttings generated during drilling will be contained within Department of Transportation (DOT) approved 5-gallon buckets. The labeled buckets will be staged on-site pending analytical results.

### 5.4. WATER SAMPLING

Water samples will be collected from each of the three soil cores through pre-packed well screen that will be inserted into the cores. A small diameter bailer will then be used to retrieve samples of accumulated water within the temporary wells. Water samples will be placed into appropriate containers and labeled with a unique designation for this project. All samples intended for chemical analysis will be placed inside an insulated cooler on top of crushed ice pending receipt by the laboratory. A chain of custody will be initiated in the field and will accompany all samples to the laboratory.

### 5.5. SAMPLE ANALYSES

All soil and ground water samples will be analyzed by Analytical Sciences, (AS) of Petaluma, California. AS is certified by the California environmental laboratory accreditation program (ELAP) for the requested analyses.

All soil and water samples submitted for laboratory analysis will be analyzed for the following:

- TPHd using the Environmental Protection Agency (EPA) Method 8015.
- BTEX and MTBE using EPA Method 8020 (MTBE confirmed by EPA 8260).

### 5.6. DECONTAMINATION PROCEDURES

All downhole drilling and sampling equipment will be cleaned using an Alconox solution, tap water rinse, and deionized water rinse prior to the drilling of each boring. All decontamination water will be stored in a labeled drum approved by the Department of Transportation (DOT) for this purpose. The drum will be staged on-site pending analytical results.

## 6. DOCUMENTATION

A final report documenting the observations, results, conclusions, and recommendations will be prepared and submitted upon completion of fieldwork. The report will include scaled diagrams, laboratory analytical reports, and chain of custody documentation.

## 7. CONDITIONS

The scope of work described in this work plan will be conducted in accordance with generally accepted standards of current environmental practice in California. All documentation generated during the project, including but not limited to additional Work Plans and reports with all conclusions, and recommendations contained therein, shall be time-dependent and should not be considered valid after a 1-year period from their issue. After 1 year from issue, site conditions and recommendations contained within Work Plans and reports should be reviewed.

Evaluation of the condition of the Site, for the purpose of this study, will be made from a limited number of observation points. Subsurface conditions may deviate away from these points. Additional work, including further study of the subsurface, can reduce the inherent uncertainties associated with this type of work.

This study will be performed, and the report prepared for the sole use of our client, Dreisbach Enterprises. All reports and the findings contained within are not to be disclosed to nor used by any other party without the prior written consent of Environmental Bio-Systems, Inc. It will be the responsibility of the client to convey any and all recommendations to regulatory agencies and other parties, as appropriate.

The recommendations to be provided in the summary project report will be professional opinions that our firm has endeavored to provide with competence and reasonable care. We are not able to eliminate the risks associated with environmental work. No guarantees or warrants, express or implied, are provided regarding our recommendations.

Any and all hazardous or non-hazardous wastes generated during this work are to remain the property of the Client to be disposed of properly. The maximum liability of EBS for any reason attendant to the services provided shall not exceed \$15,000.00.

It is the clients' responsibility to identify property lines and easements. EBS is not responsible for the accuracy of any property line, easement, or other markers identified by the client.

It is the clients' sole responsibility to inform EBS of any hazardous materials or conditions relating to the UST or the work area in general prior to the progression of fieldwork, or immediately upon their subsequent discovery.

EBS will contact Underground Service Alert (USA), a public utilities locating service which is provided by the utility companies. USA will mark the location of utilities on public property. USA is not responsible for the location of utilities on private property. The services of a private utility locator are also included in this scope of work. EBS will not be liable for any damages to underground structures as a result of subsurface activities.

**8. REFERENCES**

Alameda County Health Care Services Agency, Letter to East 23rd Avenue Partners, 16 July 1999.

Environmental Bio-Systems, Inc., UST Excavation, 23rd Avenue Partners, 1125 Miller Avenue, Oakland, California, 21 April 1999.

United States Geological Survey, Oakland East, California Quadrangle Map, 7.5-Minute Series, Topographic, 1959, Photorevised 1980.

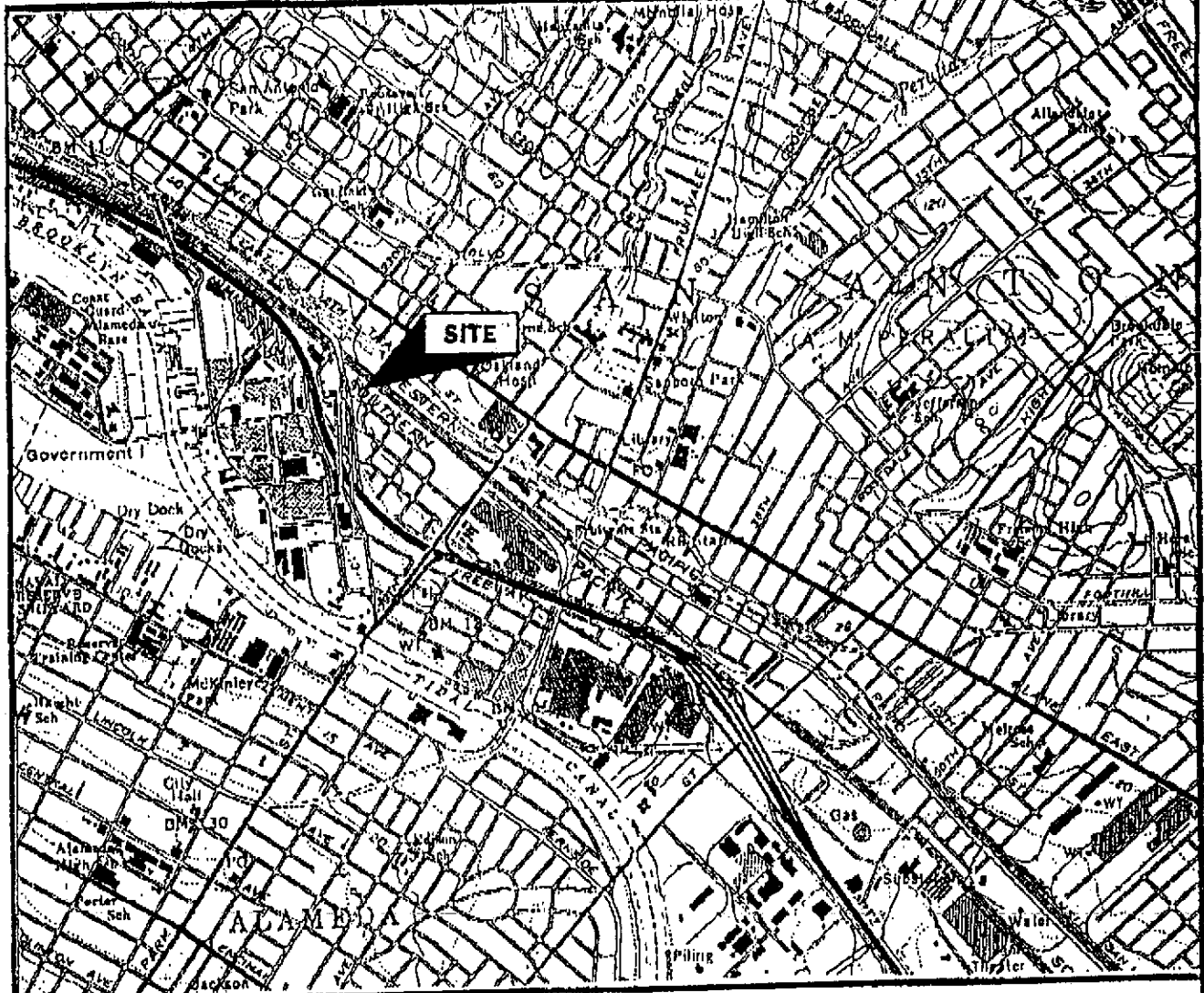
27 January 2000

**Work Plan: Subsurface Exploration**  
East Bay Dischargers Authority  
2651 Grant Avenue, San Lorenzo, California

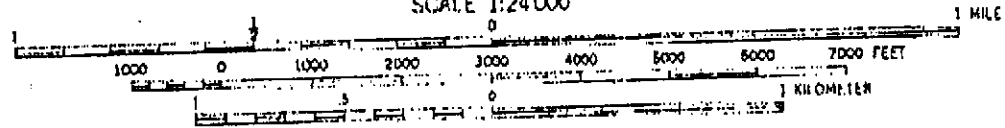
Appendix A

**APPENDIX A:**

**FIGURES**



SCALE 1:24000



CONTOUR INTERVAL 20 FEET

DOTTED LINES REPRESENT 5-FOOT CONTOURS  
 NATIONAL GEODETIC VERTICAL DATUM OF 1929  
 DEPTH CURVES IN FEET--DATUM IS MEAN LOWER LOW WATER  
 THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE  
 SHORELINE SHOWN REPRESENTS THE APPROXIMATE LIMIT OF HIGH WATER  
 THE MEAN RANGE OF TIDE IS APPROXIMATELY 6 FEET



QUADRANGLE LOCATION

Source: USGS Oakland East, California 7.5 Minute Quadrangle Map



ENVIRONMENTAL  
 BIO-SYSTEMS, INC.

DATE:  
 3/31/99

DRAWN BY:  
 DAS

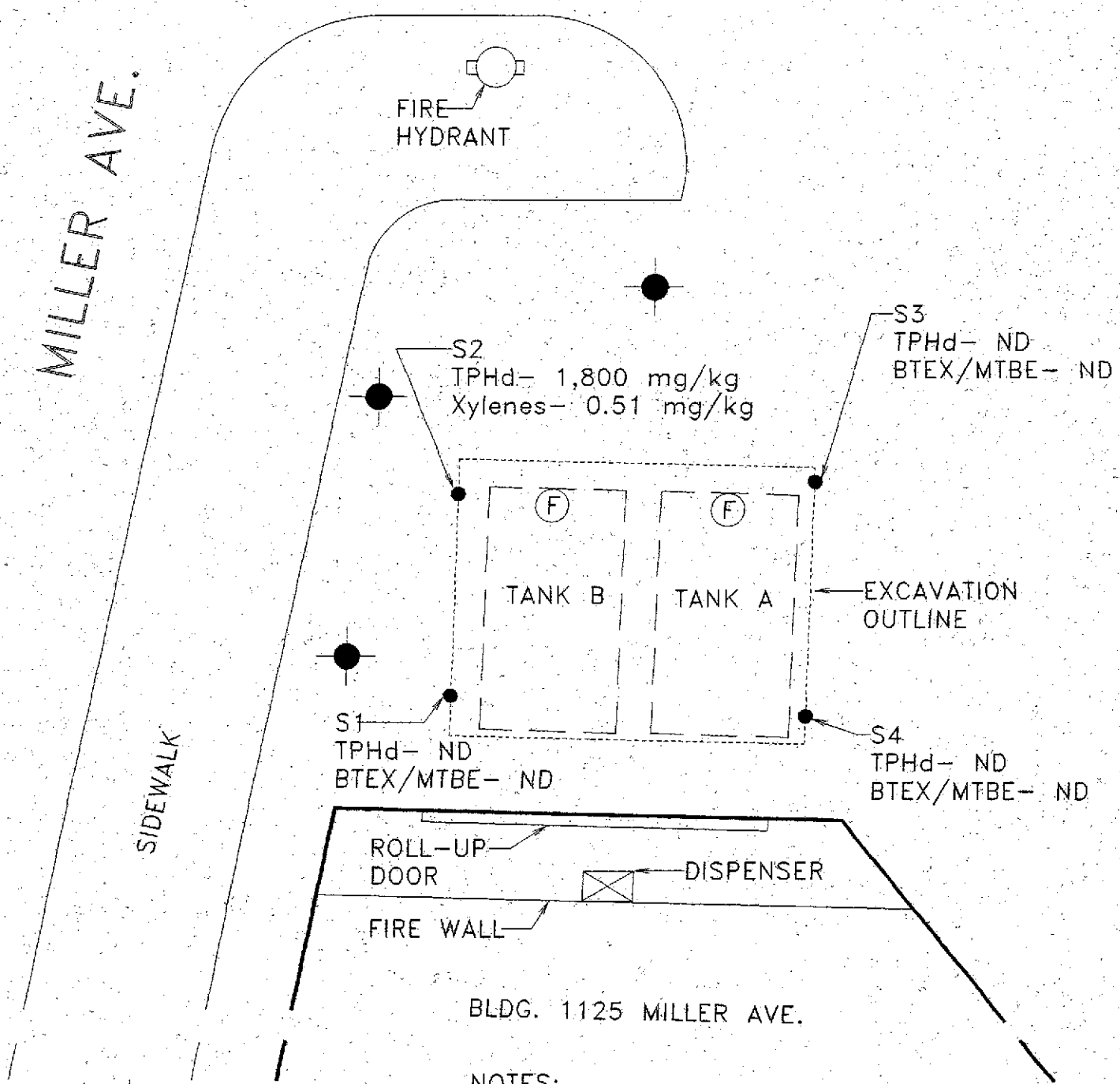
SCALE:  
 1" = 2,000'



FIGURE 1:  
 SITE LOCATION MAP

23rd AVENUE PARTNERS  
 1125 MILLER AVENUE  
 OAKLAND, CALIFORNIA

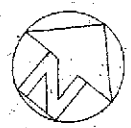
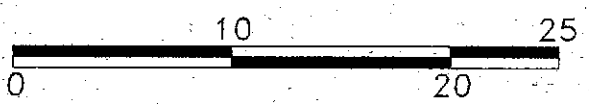
FIGURE 2: PROPOSED CORE LOCATIONS



NOTES:

● Proposed Soil Core and Temp. Well Locations  
 Sample results expressed in milligrams per kilogram (mg/kg).

SCALE (in feet)



Client: Dreisbach Enterprises  
 Site: 1125 Miller Ave., Oakland, CA  
 Project: Subsurface Exploration  
 EBS Project #: 079-541A  
 Date: 2/18/2000



31 December, 2001

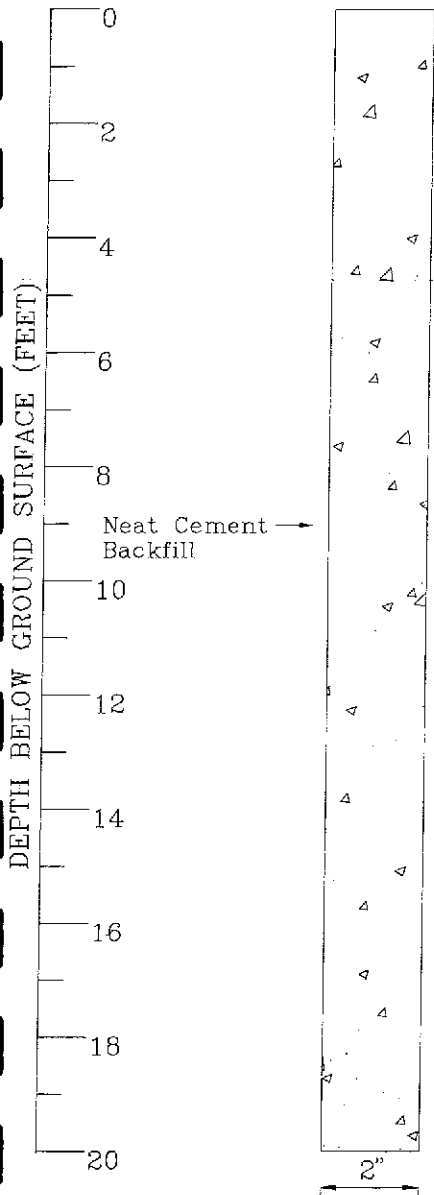
**Subsurface Exploration Report**  
Client: Dreisbach Enterprises  
Site: 1125 Miller Ave., Oakland, California

Appendix C

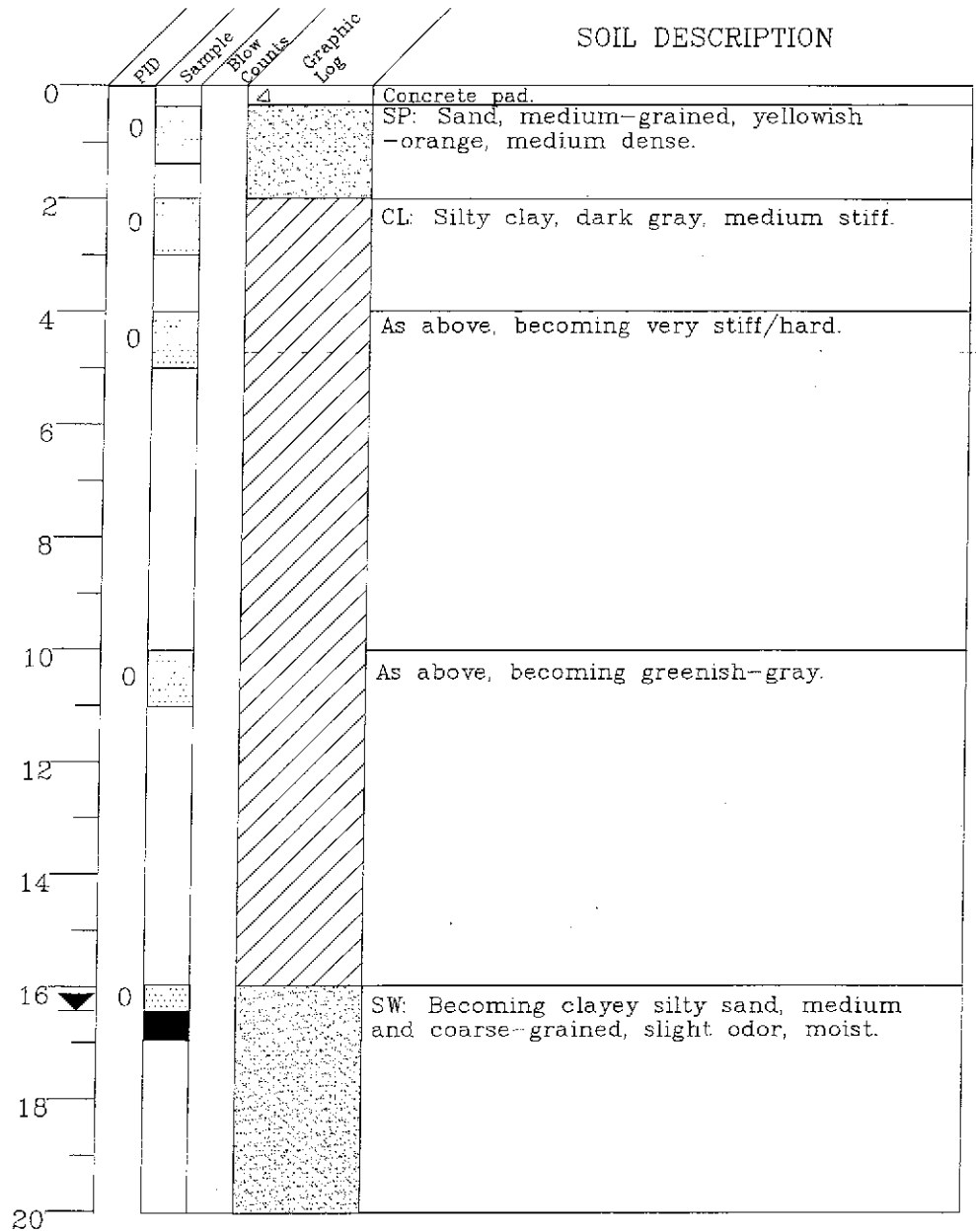
**APPENDIX C:**  
**BOREHOLE LITHOLOGIC LOGS**

# LOG OF SOIL BORING TW2

## SOIL CORE DETAILS



## SOIL DESCRIPTION



Logged by: DAS  
 Inspector: N/A  
 Date(s): 10/23/00

Drilling Contractor: Fast-Tek  
 Drilling Method: DPT  
 Driller: Art

Sanitary Seal/Backfill: Neat Cement  
 Sampler Type: 4' Spoon  
 Total Boring Depth: 20' bgs



### EXPLANATION

- water level during drilling
- gradational
- potentiometric water level
- NR no recovery
- drill sample
- CONTACTS:**
- chemical analysis sample
- certain
- sieve sample
- - - approximate
- grab sample
- uncertain

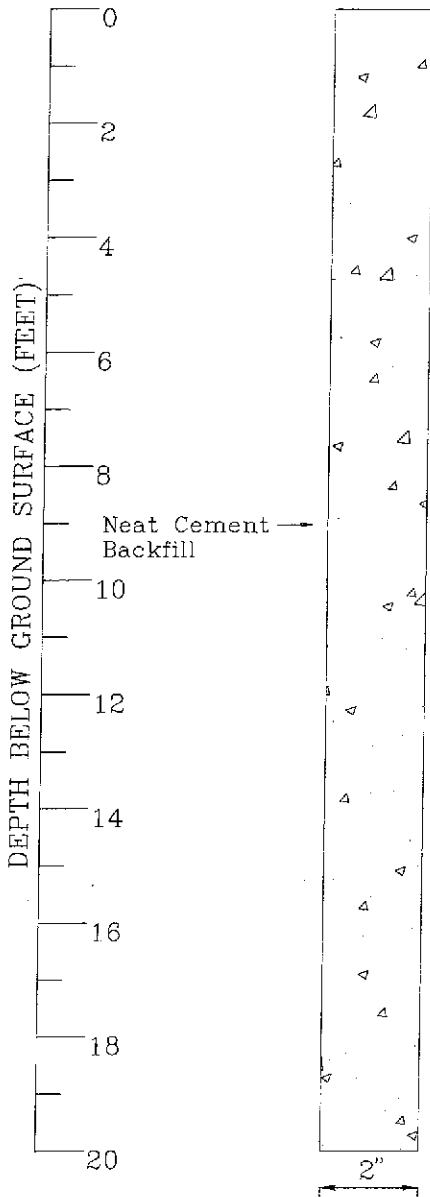
**SITE:**  
 1125 MILLER AVENUE  
 OAKLAND, CALIFORNIA

**PROJECT #:** 079-541A

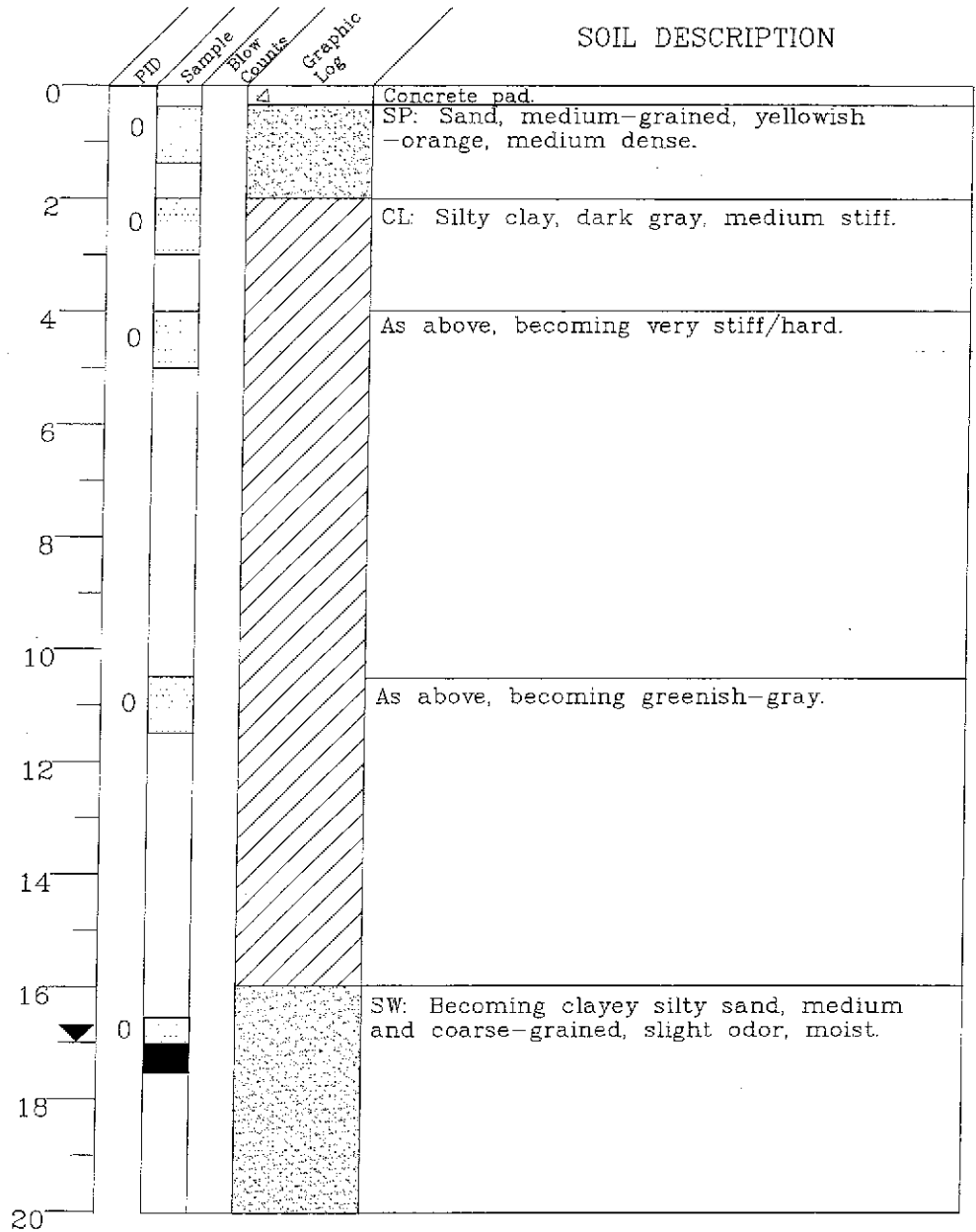
**CLIENT:**  
 DREISBACH ENTERPRISES  
 P.O. BOX 7509  
 OAKLAND, CALIFORNIA

# LOG OF SOIL BORING TW3

## SOIL CORE DETAILS



## SOIL DESCRIPTION



Logged by: DAS  
 Inspector: N/A  
 Date(s): 10/23/00

Drilling Contractor: Fast-Tek  
 Drilling Method: DPT  
 Driller: Art

Sanitary Seal/Backfill: Neat Cement  
 Sampler Type: 4' Spoon  
 Total Boring Depth: 20' bgs

### EXPLANATION

- water level during drilling
  - potentiometric water level
  - drill sample
  - chemical analysis sample
  - sieve sample
  - grab sample
  - gradational
  - NR no recovery
- CONTACTS:**
- certain
  - approximate
  - uncertain



**ENVIRONMENTAL  
 BIO-SYSTEMS, INC.**

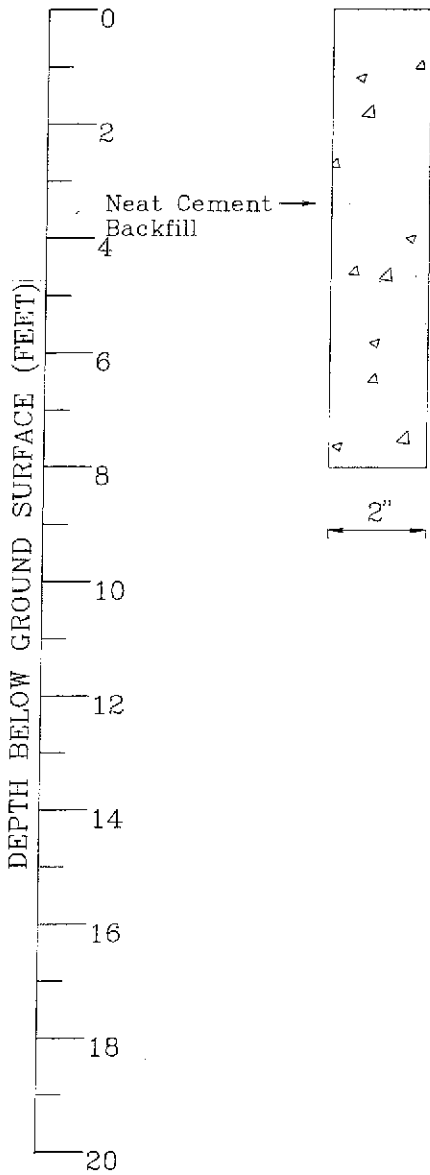
**SITE:**  
 1125 MILLER AVENUE  
 OAKLAND, CALIFORNIA

**PROJECT #:** 079-541A

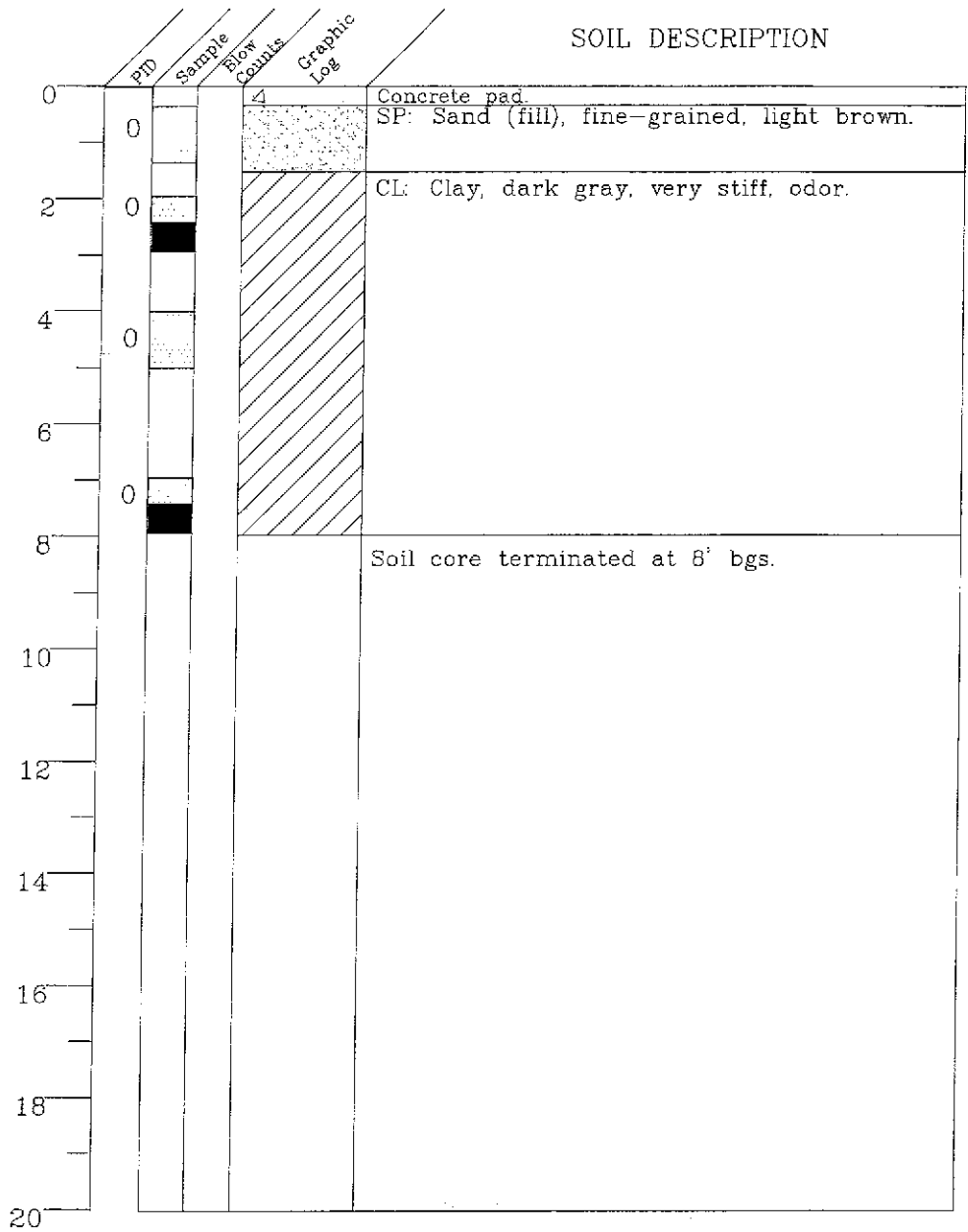
**CLIENT:**  
 DREISBACH ENTERPRISES  
 P.O. BOX 7509  
 OAKLAND, CALIFORNIA

# LOG OF SOIL BORING D1

## SOIL CORE DETAILS



## SOIL DESCRIPTION



Logged by: DAS  
 Inspector: N/A  
 Date(s): 10/23/00

Drilling Contractor: Fast-Tek  
 Drilling Method: DPT  
 Driller: Art

Sanitary Seal/Backfill: Neat Cement  
 Sampler Type: 4' Spoon  
 Total Boring Depth: 8' bgs

### EXPLANATION

- |                             |                   |
|-----------------------------|-------------------|
| water level during drilling | gradational       |
| potentiometric water level  | NR no recovery    |
| drill sample                | <b>CONTACTS:</b>  |
| chemical analysis sample    | — certain         |
| sieve sample                | - - - approximate |
| grab sample                 | — uncertain       |

SITE:  
 1125 MILLER AVENUE  
 OAKLAND, CALIFORNIA

PROJECT #: 079-541A

CLIENT:  
 DREISBACH ENTERPRISES  
 P.O. BOX 7509  
 OAKLAND, CALIFORNIA



ENVIRONMENTAL  
 BIO-SYSTEMS, INC.

31 December, 2001

**Subsurface Exploration Report**  
Client: Dreisbach Enterprises  
Site: 1125 Miller Ave., Oakland, California

Appendix D

**APPENDIX D:**

**LABORATORY ANALYTICAL REPORTS**



November 6, 2000

Dave Sadoff  
Environmental Bio-Systems, Inc.  
P.O. Box 7171  
San Jose, CA 95150-7171

Dear Dave,

Enclosed you will find Analytical Sciences' final report 0102502 for your Dreisbach Enterprises - 079-541A project site.

Should you or your client have any questions regarding this report please contact me at your convenience. We appreciate you selecting Analytical Sciences for this work and look forward to serving your analytical chemistry needs on projects in the future.

Sincerely,

Analytical Sciences

Mark A. Valentini



Report Date: November 6, 2000

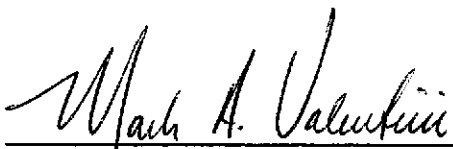
Environmental Bio-Systems, Inc.  
P.O. Box 7171  
San Jose, CA 95150-7171  
ATTN: Dave Sadoff

## LABORATORY REPORT

Project Name: **Dreisbach Enterprises 079-541A**

Lab Project Number: **0102502**

This 8 page report of analytical data has been reviewed and approved for release.

  
\_\_\_\_\_  
Mark A. Valentini, Ph.D.  
Laboratory Director



### MTBE & BTEX in Soil

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
01278	TW2-16.5'	MTBE	ND ①	2.0
		Benzene	1.4	0.50
		Toluene	ND	0.50
		Ethyl Benzene	ND	0.50
		Xylenes	ND	1.5

Date Sampled: 10/24/00 Date Analyzed: 11/02/00 QC Batch #: 1494  
Date Received: 10/25/00 Method: EPA 5030/8015M/8020

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
01279	TW3-17'	MTBE	ND ①	2.0
		Benzene	ND	0.50
		Toluene	ND	0.50
		Ethyl Benzene	ND	0.50
		Xylenes	ND	1.5

Date Sampled: 10/24/00 Date Analyzed: 11/02/00 QC Batch #: 1494  
Date Received: 10/25/00 Method: EPA 5030/8015M/8020

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
01280	D1-3'	MTBE	ND ①	2.0
		Benzene	ND	0.50
		Toluene	ND	0.50
		Ethyl Benzene	ND	0.50
		Xylenes	ND	1.5

Date Sampled: 10/24/00 Date Analyzed: 11/02/00 QC Batch #: 1494  
Date Received: 10/25/00 Method: EPA 5030/8015M/8020

① The sample required a significant dilution due to the presence of significant amounts of non-target hydrocarbons.





Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
01281	D1-8'	MTBE	ND	0.025
		Benzene	ND	0.005
		Toluene	ND	0.005
		Ethyl Benzene	ND	0.005
		Xylenes	ND	0.015

Date Sampled: 10/24/00 Date Analyzed: 11/02/00 QC Batch #: 1494  
Date Received: 10/25/00 Method: EPA 5030/8015M/8020

### MTBE & BTEX in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
01282	TW2-H <sub>2</sub> O	MTBE	ND	2.5
		Benzene	65	2.5
		Toluene	2.4	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	3.2	1.5

Date Sampled: 10/24/00 Date Analyzed: 10/31/00 QC Batch #: 1478  
Date Received: 10/25/00 Method: EPA 5030/8015M/8020

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
01283	TW3-H <sub>2</sub> O	MTBE	ND	2.5
		Benzene	0.90	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 10/24/00 Date Analyzed: 10/31/00 QC Batch #: 1478  
Date Received: 10/25/00 Method: EPA 5030/8015M/8020



TPH Diesel in Soil

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (mg/kg)</u>	<u>RDL (mg/kg)</u>
01278	TW2-16.5'	TPH/Diesel	4,200	25

Date Sampled: <u>10/24/00</u>	Date Extracted: <u>10/25/00</u>	QC Batch #: <u>1479</u>
Date Received: <u>10/25/00</u>	Date Analyzed: <u>10/26/00</u>	Method: <u>EPA 3550/8015M</u>

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (mg/kg)</u>	<u>RDL (mg/kg)</u>
01279	TW3-17'	TPH/Diesel	2,700	25

Date Sampled: <u>10/24/00</u>	Date Extracted: <u>10/25/00</u>	QC Batch #: <u>1479</u>
Date Received: <u>10/25/00</u>	Date Analyzed: <u>10/26/00</u>	Method: <u>EPA 3550/8015M</u>

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (mg/kg)</u>	<u>RDL (mg/kg)</u>
01280	D1-3'	TPH/Diesel	3,400	25

Date Sampled: <u>10/24/00</u>	Date Extracted: <u>10/25/00</u>	QC Batch #: <u>1479</u>
Date Received: <u>10/25/00</u>	Date Analyzed: <u>10/26/00</u>	Method: <u>EPA 3550/8015M</u>

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (mg/kg)</u>	<u>RDL (mg/kg)</u>
01281	D1-8'	TPH/Diesel	34	5.0

Date Sampled: <u>10/24/00</u>	Date Extracted: <u>10/25/00</u>	QC Batch #: <u>1479</u>
Date Received: <u>10/25/00</u>	Date Analyzed: <u>10/26/00</u>	Method: <u>EPA 3550/8015M</u>



TPH Diesel in Water

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (ug/L)</u>	<u>RDL (ug/L)</u>
01282	TW2-H <sub>2</sub> O	TPH/Diesel	660	100

Date Sampled: <u>10/24/00</u>	Date Extracted: <u>10/25/00</u>	QC Batch #: <u>1474</u>
Date Received: <u>10/25/00</u>	Date Analyzed: <u>10/25/00</u>	Method: <u>EPA 3510/8015M</u>

<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (ug/L)</u>	<u>RDL (ug/L)</u>
01283	TW3-H <sub>2</sub> O	TPH/Diesel	800	100

Date Sampled: <u>10/24/00</u>	Date Extracted: <u>10/25/00</u>	QC Batch #: <u>1474</u>
Date Received: <u>10/25/00</u>	Date Analyzed: <u>10/25/00</u>	Method: <u>EPA 3510/8015M</u>



# LABORATORY QUALITY ASSURANCE REPORT

QC Batch #: 1494

Lab Project #: 0102502

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
01293	CMS	TPH/Gas		NS	
	CMS	Benzene	0.0173	0.0217	79.7
	CMS	Toluene	0.0176	0.0217	81.1
	CMS	Ethyl Benzene	0.0178	0.0217	82.0
	CMS	Xylenes	0.0540	0.0652	82.8

Sample #	Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
01293	CMSD	TPH/Gas		NS		
	CMSD	Benzene	0.0177	0.0217	81.6	1.9
	CMSD	Toluene	0.0180	0.0217	83.0	2.0
	CMSD	Ethyl Benzene	0.0184	0.0217	84.8	3.3
	CMSD	Xylenes	0.0555	0.0652	85.1	2.7

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range



QC Batch #: 1479

Lab Project #: 0102502

<u>Sample ID</u>	<u>Compound</u>	<u>Result (mg/kg)</u>
MB	TPH/Diesel	ND

<u>Sample ID</u>	<u>Compound</u>	<u>Result (mg/kg)</u>	<u>Spike Level</u>	<u>% Recv.</u>
LCS	TPH/Diesel	217	246	88.2

<u>Sample ID</u>	<u>Compound</u>	<u>Result (mg/kg)</u>	<u>Spike Level</u>	<u>% Recv.</u>	<u>RPD</u>
LCSD	TPH/Diesel	222	246	90.2	2.3

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range

QC Batch #: 1474

Lab Project #: 0102502

<u>Sample ID</u>	<u>Compound</u>	<u>Result (ug/L)</u>
MB	TPH/Diesel	ND

<u>Sample ID</u>	<u>Compound</u>	<u>Result (ug/L)</u>	<u>Spike Level</u>	<u>% Recv.</u>
LCS	TPH/Diesel	2,380	2,730	87.2

<u>Sample ID</u>	<u>Compound</u>	<u>Result (ug/L)</u>	<u>Spike Level</u>	<u>% Recv.</u>	<u>RPD</u>
LCSD	TPH/Diesel	2,620	2,730	96.0	9.6

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range



QC Batch #: 1478

Lab Project #: 0102502

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
01199	CMS	TPH/Gas		NS	
	CMS	Benzene	7.04	8.00	88.0
	CMS	Toluene	6.86	8.00	85.8
	CMS	Ethyl Benzene	6.88	8.00	86.0
	CMS	Xylenes	20.7	24.0	86.3

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
01199	CMSD	TPH/Gas		NS		
	CMSD	Benzene	7.54	8.00	94.3	6.9
	CMSD	Toluene	7.38	8.00	92.3	7.3
	CMSD	Ethyl Benzene	7.46	8.00	93.3	8.1
	CMSD	Xylenes	22.2	24.0	92.5	6.9

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
 NS = Not Spiked; OR = Over Calibration Range



ENVIRONMENTAL BIO-SYSTEMS, INC.

Innovative Solutions for a Better Environment

P.O. Box 7171

San Jose, CA 95150-7171

(408) 979-8600

CHAIN OF CUSTODY

ADDITIONAL INSTRUCTIONS:

LAB PROJECT # 0102502

PROJECT NUMBER: 07A-541A

CLIENT: DREISBACH ENTERPRISES

SITE: 1125 MILLER AVE, OAKLAND, CA

COMPOSITE	ANALYSES					
	TPHd	BTEX/MDE				
X	X	X				
X	X	X				
X	X	X				
X	X	X				
X	X	X				
X	X	X				

SAMPLE I.D.	MATRIX	NUMBER OF CONTAINERS	TIME COLLECTED	TURNAROUND	LAB SAMPLE #
TW2-16.5'	SOIL	1	10/23 @ 14:13	5-DAY	01278
TW3-17'	"	1	10/23 @ 11:15		01279
D2-83'	"	1	10/24 @ 10:12		01280
D2-8'	"	1	10/24 @ 10:23		01281
TW2-H2O	H2O	3	10/23 @ 16:55		01282
TW3-H2O	"	3	10/23 @ 16:05		01283

DATE SAMPLING COMPLETED: 10/24/00 1:00

SAMPLING PERFORMED BY: DAVE A. SADOFF

RELEASED BY: Dave A. Sadoff

DATE: 10/24/00 TIME: 15:05

RECEIVED BY: Heather A. Allen

DATE: 10/25/00 TIME: 0945

RELEASED BY:

DATE: TIME:

RECEIVED BY:

DATE: TIME:

SHIPPED VIA: CAL OVERNIGHT

DATE SENT: 10/24/00 TIME SENT: 15:05

COOLER #:

31 December, 2001

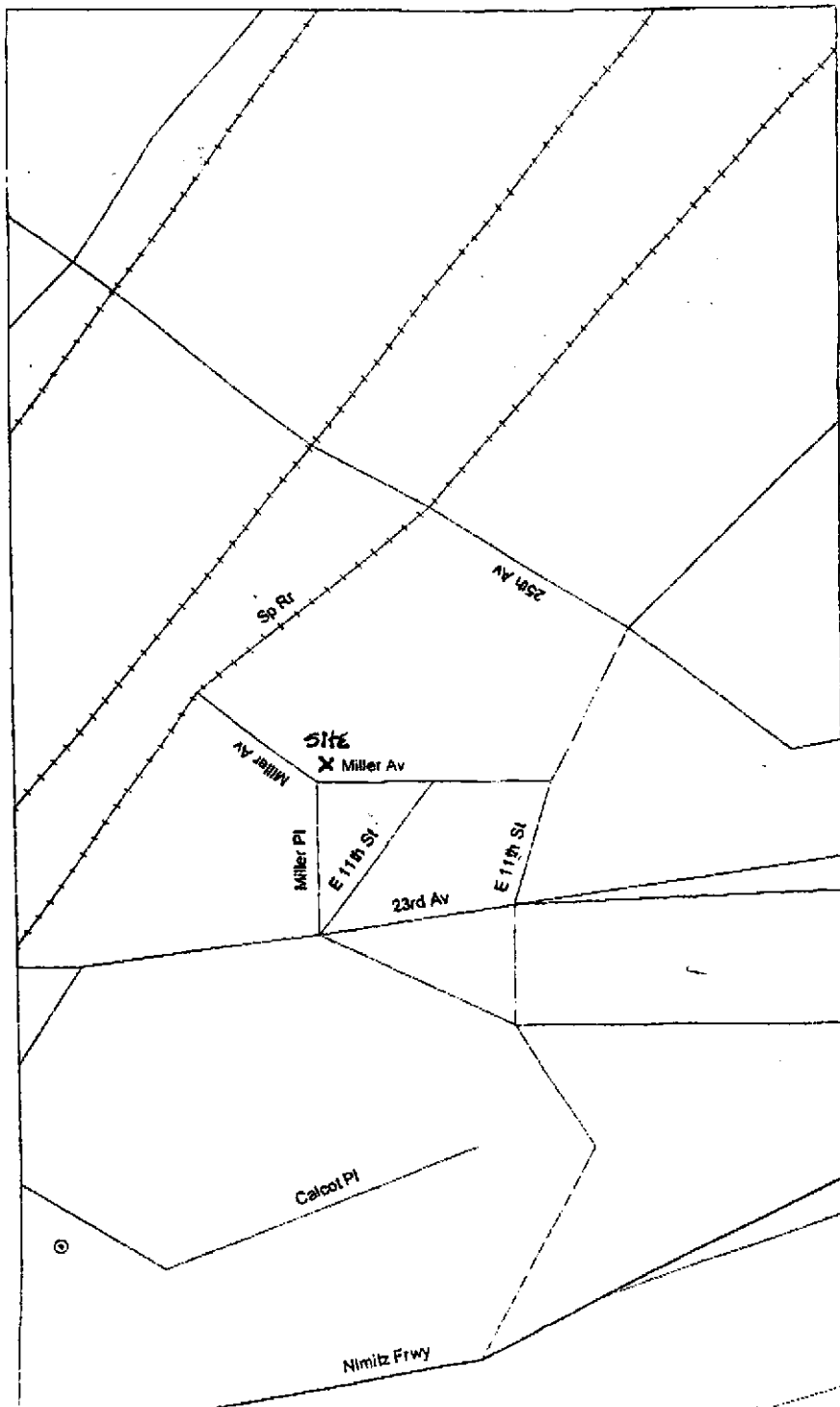
**Subsurface Exploration Report**  
Client: Dreisbach Enterprises  
Site: 1125 Miller Ave., Oakland, California

Appendix E

**APPENDIX E:**

**GROUND WATER  
WELL SURVEY MAP**





**FIGURE 5: WELL SEARCH MAP**



Client: 23rd Avenue Partners  
 Site: 1125 Miller Ave., Oakland, CA  
 Project: UST Removal  
 Prepared by Environmental Bio-Systems, Inc.  
 EBS Project #: 079-507A  
 Scale: 1 inch = 10 feet  
 Date of Work: 12/2/98