ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

March 3, 1997

PHASE II ENVIRONMENTAL SITE ASSESSMENT 625 HERGENBERGER ROAD OAKLAND, CALIFORNIA AEI PROJECT NO. B016

3/3/97

Prepared For:

Diversified Investment Management Group
400 Oyster Point Boulevard, Suite 415
South San Francisco, California

Prepared By:

All Environmental, Inc.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
Phone 800-801-3224

ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

March 3, 1997

Mr. Barney Chan
Alameda County Health Care Services
Environmental Health Division--Hazardous Materials Group
1131 Harbor Bay Pkwy.
Alameda, CA 94502

RE: Soil Remediation Summary Report
625 Hegenberger Road
Oakland, CA

Dear Mr. Chan:

On behalf of Diversified Investment Management Group, AEI is please to present this report summarizing the remedial activities at the this site over the last twelve months.

We hope that you will concur that the remedial effort successfully removed and remediated soil on the subject site above the action level. AEI believes this to be a large step in the direction of closing this site under the Regional Water Quality Control Board's as a "Low Risk Groundwater" site.

Please do not hesitate to contact Joseph P. Derhake at (310) 328-8878, if you have any questions.

Sincerely,

Brian Campbell
Project Geologist

Joseph P. Derhake, PE, CAC
Principal

Corporate Headquarters:
3364 Mt. Diablo Blvd.
Lafayette, CA 94549
Phone: (510) 283-6000
Fax: (510) 283-6121

Sacramento Office::
5524 Assembly Ct., Suite 19
Sacramento, CA 95823
Phone: (916) 429-0776
Fax: (916) 429-0685

Los Angeles Office:
111 N. Sepulveda Blvd., #250
Manhattan Beach, CA 90266
Phone: (310) 328-8878
Fax: (310) 798-2841


REGISTERED PROFESSIONAL ENGINEER
JOSEPH P. DEMARCO
CIVIL
STATE OF CALIFORNIA

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ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

JOSEPH P. DERHAKE, PE, CAC
Principal

111 North Sepulveda Blvd.
Suite 250
Manhattan Beach, CA 90266

(310) 328-8878
Fax: (310) 798-2841
Pager: (310) 655-1788

FIGURES:

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1.0 INTRODUCTION

All Environmental Inc. (AEI) has prepared this final report to document the excavation and remedial action performed at the former Gasoline Service Station at 625 Hegenberger Blvd., Oakland, California. The purpose of this project was to remove soil heavily impacted by gasoline, diesel, and/or motor oil, treat the soil, and reuse the soil on-site. The excavation took place in April of 1996 and the remediation was completed in September of 1996.

1.1 Authorization

AEI was authorized to perform the work described below by Diversified Investment Management Corporation by way of a signed contract. Mr. Denish Maniar, (referred to as the "Client") signed the contract on October 12, 1995. Mr. James Graeb and Mr. Maniar were AEI's primary contacts during the project. Mr. Maniar often gave AEI verbal authorization to perform tasks beyond the original scope of services; specifically, AEI was authorized to complete the demolition of the former garage and mini-market, as well as to remove ten hydraulic lifts from the subject site.

1.2 Scope of Work

AEI executed the scope of work described in AEI's Workplan, dated March 13, 1996. This workplan was submitted to the Alameda County Health Care Services Department for review. In April, 1996, Mr. Barney Chan of ACHCSD verbally approved this workplan and its associated action levels.

1.3 Action Levels

The contaminants of concern for the subject site were gasoline, diesel fuel, and waste oil, as is clearly shown in previous soil investigations performed by Levine-Fricke. The primary chemical of concern was benzene, as it is the most toxic component of the hydrocarbons found on-site.

AEI developed the following action levels with the intention of giving more emphasis to more hazardous chemicals such as benzene and relatively less emphasis to heavier hydrocarbons such as TPH-oil and TPH-diesel.

Table 1-- Approved Action Levels

Compound	Action Level
Benzene	0.05 mg/Kg
Total BTEX	1.0 mg/Kg
TPHg	500 mg/Kg
TPHd	1000 mg/Kg
TPHo	1000 mg/Kg

These action levels were approved by Barney Chan of the ACHCSA in April of 1996.

1.4 Site History

The site, located at the corner of Hegenberger Road and Collins Drive in Oakland, California (See Figure 1), is a former fuel service station, automobile tuneup shop, and convenience store. The cinder block building, which once contained the convenience store and automobile tuneup shop has been demolished.

In October 1993, three underground storage tanks (USTs) and related structures were removed from the site under the observation of Levine Fricke. Approximately 300 cubic yards (cy) of soil excavated during the UST Removal was stockpiled on-site. This soil was set on bermed plastic.

Levine Fricke and Subsurface Consultants performed several shallow soil borings, and installed six groundwater monitoring wells. Results of the comprehensive soil investigation, indicated that total petroleum hydrocarbons as gasoline (TPHg), the gasoline constituents benzene, toluene, and ethylbenzene, and xylene (BTEX), total petroleum hydrocarbons as diesel (TPHd), and total petroleum hydrocarbons as oil (TPHo) are present at elevated concentrations at the site. Please refer to Appendix C, Excerpt of Past Reports for an illustration of the areas of concern.

The quarterly monitoring of the six monitoring wells on-site was performed by Levine Fricke though January of 1995. AEI began monitoring the wells in October of 1995 and monitored for four consecutive quarters. In March of 1996, AEI destroyed one of the wells in anticipation of excavation activities.

2.0 EXCAVATION SUMMARY

Initially, AEI excavated a main excavation which included the tankhold; an East Pit, which addressed the dispenser pump; and a West Pit, which addressed an area of waste oil contamination west of the main excavation. However, as AEI excavated we found significantly more contamination in the area of the dispenser pumps and the East Pit was eventually connected to the main excavation. This resulted in one large excavation and one small excavation as shown in the Excavation Map, Figure 3.

2.1 Field Screening and Sampling Procedures

As AEI excavated, AEI collected confirmation samples from the perimeter and bottom of the excavation in order to document the extent of contamination. AEI collected over 100 soil screening samples, which were tested using a Photoionization Detector (PID). When soil screening samples were found to have relatively low volatile hydrocarbon concentrations, AEI collected discrete soil samples for laboratory analysis. **A total of 36 wall samples and 10 bottom samples were collected for laboratory analysis.**

2.1.1 Field Screening Procedure

AEI's field engineer would collect approximately 100 grams of soil from the desired location. This soil would be immediately inserted into a clean plastic sandwich bag and the bag was inserted into a glass mason jar. Aluminum foil was placed over the top of the open jar and the screw cap without the lid was screwed on over the aluminum foil. After approximately 10 minutes the probe of the PID was inserted through the aluminum foil and into the jar, and then a head space reading was taken. These readings were found to be rather consistent with laboratory results.

2.1.2 Discrete Soil Sample Collection Procedure

The desired sample location was identified by the field engineer and then approximately four inches of soil was removed from the surface of the sample location. A clean thin-wall sample tube was then pounded into the soil using a wooden hammer. The tube was retrieved and immediately capped with Teflon tape and plastic caps. The samples were placed in an iced cooler and shipped to the American Analytics in Chatsworth, California via Federal Express under proper chain of custody.

2.2 Excavation and Field Observations

AEI excavated approximately 1,600 cy of contaminated soil, pea gravel, and surface concrete and asphalt. The areas of excavation are shown in Figure 3. AEI expanded the main excavation until it connected with the east excavation.

Much of the excavation area was covered with asphalt or a concrete pad with the exception of the previous tankhold area, where the surface covering had been removed during the tankhold. The former tankhold had been backfilled with pea gravel (approximately 300 yards). AEI began by excavating all of the pea gravel and stockpiling the pea gravel separately. AEI proceeded to excavate contaminated soil to within six inches of the water table, which was encountered between 6 and 8 feet bgs (water levels varied tidily). Laterally, AEI excavated until the side wall samples below the action level was obtained.

AEI initially excavated 1,300 cy of soil on April 8th, 9th, and 10th, 1996 and then returned on April 12th, 1996 to excavate an additional 300 cy of soil from areas found to have elevated hydrocarbon concentrations in sidewall samples.

Much of the soil excavated was discolored and visibly impacted. The soil surrounding the tankhold and extending westward from the tankhold was greenish gray in color at depths between 3 feet and 6 feet bgs. The area near the southwest corner of the main excavation and the entire west excavation had darker staining indicative of waste oil contamination; note these areas were also documented as having elevated TPH-Oil and TPH-Diesel contamination in Levine-Fricke's report (Appendix C).

Of the 1,600 cy of excavated materials, 300 cy was pea gravel, 100 cubic yards was overburden and surfacing materials, and 1,200 cy was contaminated soil. Of the 1,200 cy in need of remediation, 20 cy of soil was contaminated with waste oil or diesel and 1,180 cy was contaminated with gasoline.

2.4 Analysis and Soil Sampling From The Excavation

As the excavation extended beyond the stained soil areas away from the source, the field screening results diminished. Once the results of the field screening tests dropped, AEI collected confirmation soil samples from the excavation side wall.

Initially, a total of sixteen sidewall soil samples were collected from the side walls of the excavations on April 9th and 10th, 1996 and three of these samples yield analytical results above the detection limit. The initial round of soil sampling yielded the following results.

Table 2: Summary of Initial Sidewall Samples Results

Sample Number	Sample Date	Depth ft bgs	TPHg mg/kg	Benz. mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	TOG mg/kg
SW-1	4/9/96	5	<1	0.028	<0.005	<0.005	<0.01	NA
SW-2	4/9/96	4.5	2.2	0.044	0.017	0.066	0.31	NA
SW-3	4/9/96	5	<1	0.025	<0.005	<0.005	<0.01	NA
EW-4	4/9/96	4	<1	0.054	<0.005	0.021	0.040	NA
EW-5	4/9/96	4.5	<1	<0.005	<0.005	<0.005	<0.01	NA
NW-6	4/9/96	4	<1	0.011	<0.005	<0.005	<0.01	NA
NW-7	4/9/96	4.5	<1	0.049	0.061	0.032	0.19	NA
NW-8	4/9/96	4.5	<1	0.070	<0.005	0.017	0.032	NA
WW-9	4/9/96	4.5	<1	0.035	<0.005	0.006	0.030	NA
WW-10	4/9/96	4	<1	<0.005	<0.005	<0.005	<0.01	NA
WW-11	4/9/96	5	1.6	0.23	0.062	0.032	0.12	NA
EP1	4/10/96	4.5	1.9	0.005	<0.005	0.007	0.011	NA
EP2	4/10/96	4.5	1.1	0.20	0.011	0.006	0.014	NA
EP3	4/10/96	4	<1	0.065	<0.005	<0.005	<0.01	NA
WP1	4/10/96	5	NA	NA	NA	NA	NA	16
WP2	4/10/96	5	NA	NA	NA	NA	NA	100

mg/kg = ppm
NA = Not Analyzed
SW-1 = South Wall Sample Number 1
Shaded samples are above the action level.

Samples EP1, NW8, and EW4 were considered above the action level. AEI returned on several occasions to excavate additional materials and collected more confirmation samples. AEI found significant contamination in the area of the former dispencer islands.

Table 3 shows the results of the additional sidewall samples and Figure 4 show the sample locations.

Table 3: Summary of Additional Sidewall Samples Results

Sample Number	Sample Date	Depth ft bgs	TPHg mg/kg	Benz. mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	TOG mg/kg
EP5	5/8/96	4.5	<1	0.22	0.051	0.008	0.10	NA
EP6	5/8/96	4.5	<1	0.13	0.013	0.006	0.034	NA
EP7	5/8/96	4.5	2.4	0.25	0.19	0.012	0.063	NA
EW17	5/8/96	5	<1	<0.005	<0.005	<0.005	<0.01	NA
EP8	7/12/96	5	<1	<0.005	<0.005	<0.005	<0.01	NA
EP9	7/12/96	5	<1	<0.005	<0.005	<0.005	<0.01	NA
EP10	7/12/96	4.5	<1	<0.005	<0.005	<0.005	<0.01	NA
EP11	7/12/96	4.5	<1	0.005	<0.005	<0.005	<0.01	NA
NW18	7/12/96	5	<1	0.005	<0.005	<0.005	<0.01	NA
EW12	4/12/96	5	38	0.060	0.43	0.28	2.0	NA
NW13	4/12/96	4.5	<1	0.018	<0.005	<0.005	<0.01	NA
NW14	4/12/96	4.5	25	0.21	1.0	0.14	1.0	NA
WW15	4/12/96	5	<1	<0.005	<0.005	<0.005	<0.01	NA
WW16	4/12/96	5	<1	<0.005	<0.005	<0.005	<0.01	NA

mg/kg = ppm
NA = Not Analyzed
SW-1 = South Wall Sample Number 1
Shaded samples are above the action level.

Eventually, a clean ring of perimeter soil samples was established with no more than 20' between any given sample along the perimeter.

An additional, ten soil samples were collected from the excavation floor within 6 inches of the water table. The analytical results for the bottom samples and the side wall samples are as follows.

Table 4: Summary of Bottom Sample Results

Sample Number	Sample Date	Depth ft bgs	TPHg mg/kg	Benz. mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	TOG mg/kg
BN	4/10/96	6	2700	7.1	23	34	170	NA
BNW	4/10/96	6	500	1.8	9.7	7.0	38	NA
BW	4/10/96	6	920	4.6	4.1	11	39	NA
BSW	4/10/96	6.5	550	16	1.2	6.9	5.0	NA
BS	4/10/96	6	1100	8.6	21	19	110	NA
BSE	4/10/96	6	6.2	0.69	0.005	0.1	0.085	NA
BE	4/10/96	6.5	130	1.4	<0.05	<0.5	6.3	NA
BNE	4/10/96	6.5	<1	<0.005	<0.005	<0.005	<0.01	NA
EP4	4/10/96	6.5	4.1	0.11	0.006	0.21	0.021	NA
WP3	4/10/96	6	NA	NA	NA	NA	NA	18

mg/kg = ppm
NA = Not Analyzed
BN = Bottom North Sample

Bottom samples were strictly intended to document soil conditions in the vadous zone. AEI did not excavate any soil beyond the water table.

2.5 Soil Stockpiling

All soil excavated was stockpiled around the tankhold. An effort was made to keep soil excavated from the same general location together. Furthermore, any soil excavated from an area known to be contaminated with waste oil or any soil exhibiting visual characteristics of waste oil contamination was stockpiled separately.

The soil was stockpiled on top of six mil plastic sheets and then covered with plastic to prevent uncontrolled vapor releases and stormwater runoff. Soil was stockpiled in a total of eight piles. Each pile was numbered and as is shown in Figure 5, stockpiles #1, #2, #3, #4, #6, and #7 were gasoline contaminated soil piles and stockpiles #5 and #8 were waste oil contaminated soil piles.

2.6 Baseline Soil Sampling and Analysis

A total of sixteen composite soil samples were collected from 1,200 cy of soil excavated by AEI in April, 1996 and six composite soil samples were collected from the 300 cy of soil excavated in 1993 at the time of the tankpull. Each of the baseline soil samples was a

composite sample of four discrete soil samples. All compositing was done by the laboratory. The discrete soil samples were collected in accordance with the methods described in Section 2.1.2.

The results of the laboratory analysis of the baseline soil sampling results is as follows.

Table 5: Baseline Soil Sample Results

Sample Number	Pile	Sample Date	TPHg mg/kg	Benz. mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg
OSP-1	#3	4/9/96	<1	<0.005	<0.005	<0.005	<0.01
OSP-2	#3	4/9/96	1.9	0.050	0.12	0.062	0.34
OSP-3	#3	4/9/96	<1	<0.005	<0.005	<0.005	<0.01
OSP-4	#3	4/9/96	<1	<0.005	<0.005	<0.005	<0.01
OSP-5	#3	4/9/96	<1	<0.005	<0.005	<0.005	<0.01
OSP-6	#3	4/9/96	<1	<0.005	<0.005	<0.005	<0.01
COMP P2C1	#2	4/22/96	<1	<0.005	<0.005	<0.005	<0.01
COMP P2C2	#2	4/22/96	<1	<0.005	<0.005	<0.005	<0.01
COMP P2C3	#2	4/22/96	<1	<0.005	<0.005	<0.005	0.020
COMP P2C4	#2	4/22/96	8.0	0.012	0.018	0.028	0.17
COMP P2C5	#2	4/22/96	<1	0.012	<0.005	<0.005	<0.01
COMP P2C6	#2	4/22/96	<1	<0.005	<0.005	<0.005	<0.01
COMP P2C7	#2	4/22/96	<1	<0.005	<0.005	<0.005	0.016
COMP P4C8	#4	4/22/96	9.4	0.033	0.009	0.047	0.22
COMP P4C9	#4	4/22/96	230	<0.05	0.76	1.7	7.7
COMP P4C10	#4	4/22/96	3.4	0.012	0.030	0.042	0.42
COMP P4C11	#4	4/22/96	1.1	<0.005	0.005	0.007	0.11
COMP P4C12	#4	4/22/96	3.2	0.006	0.017	0.039	0.55
COMP P4C13	#4	4/22/96	3.9	0.055	0.028	0.14	0.69
COMP P4C14	#4	4/22/96	4.0	0.014	0.096	0.046	0.57
Comp P6-C14	#6	5/8/96	<1	<0.005	<0.005	<0.005	<0.01
Comp P6-C15	#6	5/8/96	<1	<0.005	<0.005	<0.005	<0.01
Comp P6-C16	#6	5/8/96	<1	<0.005	<0.005	<0.005	<0.01
Comp P6-C17	#6	5/8/96	<1	<0.005	<0.005	<0.005	<0.01
Comp P6-C18	#6	5/8/96	<1	<0.005	<0.005	<0.005	<0.01
Comp P7-S1	#7	7/16/96	<1	<0.005	<0.005	<0.005	<0.01
Comp P7-S2	#7	7/16/96	<1	<0.005	<0.005	<0.005	<0.01

mg/kg = milligrams per kilogram
NA = Not Analyzed
OSP-1=Sample #1 from previous excavation
COMP P6C14 = Composite sample from Pile #6, Cell #14

2.7 Soil Profiling

As soil piles # 5 and # 8 were contaminated with non-volatile waste oil and were treated and recycled off-site, more detailed soil analysis was necessary for this soil. As per the requirements of Remedial Environmental Marketing Co., a soil recycling firm in Richmond, California, profiling of the soil consisted of the following analyses: Reactivity, Corrosively, and Ignitablity, the LUFT 5 Metals. Table 5 shows that laboratory data for this one composite soil sample, which was collected from piles #5 and #8.

Table 6 Soil Profiling

Analyses	Sample--Comp 5
Reactivity Cyanide	<0.1 mg/Kg
Reactivity Sulfide	<0.1 mg/Kg
Corrosively	7.5 pH
Ignitabiltiy	< 200 deg F
Lead	<1 mg/Kg
Cadmium	<1 mg/Kg
Chromium	40 mg/Kg
Nickel	61 mg/Kg
Zinc	110 mg/Kg

The analyses revealed no signs of hazardous components in the waste oil contaminated soil. These analyses showed the soil was eligible for treatment at Remedial Environmental Marketing Co..

3.0 SOIL REMEDIATION

Two remediation technologies were employed to treat and/or dispose of the contaminated soil. AEI treated 1,480 cy of gasoline contaminated soil (1,180 cy of soil excavated in April of 1996 and 300 cy of soil excavated in 1993 during the tank pull) by aerating the soil on-site. AEI hauled 20 cubic yards of waste oil contaminated soil to Remedial Environmental Marketing CO Inc. for thermal desorbtion and recycling into an asphalt base. Each procedure is describe in detail below.

3.1 Aeration Cell Construction

The Bay Area Air Quality Management District (BAAQMD) restricts the amount of soil that can be aerated at one time. The volume of soil that can be aerated depends on the concentrations of the hydrocarbons within the soil. As the mean soil concentration is below 50 parts per million, the volume of soil that can be aerated at once is not restricted by the BAAQMD (as per rule 8-40-301).

The north end of the subject site had 27,000 square feet available for aeration and all of this area was covered with asphalt. Due to space restrictions, AEI aerated the soil in two batches--each batch was aerated in one giant aeration cell 150' by 180' and 12 inches deep. Batch A included piles #2, #3, and #6 and Batch B included piles #1, #4, and #7.

The aeration cell was lined with hay bails and a six foot high fence to prevent stormwater runoff and unauthorized access. The asphault restricted vertical contaminent migration.

3.2 Tilling and Field Screening

The soil was tilled on a biweekly basis between April 12, 1996 and June 19, 1996 and between July 17, 1996 and September 5, 1996, for the respective batches.

During each tilling event soil screening tests were performed, in order to approximate the progress. For each batch, the organic vapor readings asymptotically approached the instrument detection limit as time passed. Once the vapor readings were low enough, AEI initiated the confirmation sampling.

3.3 Confirmation Sampling

Confirmation soil sampling was performed in accordance with AEI's Workplan and the EPA's "Test Methods for Evaluating Solid Waste" (SW-846). AEI collected twelve confirmation soil samples for the first batch of soil on June 19, 1996 and collected ten confirmation soil samples for the second batch of soil on September 5, 1996. These

samples were analyzed for Total Petroleum Hydrocarbons-Gasoline (TPH-Gas) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8020/8015.

The soil sample locations were selected from random locations throughout the cell. All soil samples were collected from soil six inches below ground surface or deeper, as the soil on the surface would more likely be free of contamination.

The twelve soil samples collected on June 19, 1996 from the first batch of aerated soil was found to have the following contaminant concentrations.

Table 7 Confirmation Soil Sample Analysis--Batch #A

Sample Number	Sample Date	TPHg mg/kg	Benz. mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg
AR1	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR2	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR3	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR4	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR5	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR6	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR7	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR8	6/19/96	<1	0.007	0.011	<0.005	<0.01
AR9	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR10	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR11	6/19/96	<1	<0.005	<0.005	<0.005	<0.01
AR12	6/19/96	<1	<0.005	<0.005	<0.005	<0.01

mg/kg = ppm
AR1 = Sample #1 of Random Sampling--Batch A

As only one sample (AR8) of the twelve soil samples collected contained detectable concentrations of the chemicals analyzed, the soil was considered to have satisfied the action level and was eligible for backfilling. EPA SW846 normally requires statistical analysis of analytical data to determine if the appropriate confidence interval has been reached; however, as 11 of 12 soil samples had results below the detection limit, statistical analysis was not necessary.

Similarly, on September 9, 1996 a total of 10 soil samples were collected and analyzed from random locations within the second batch of aerating soil and the results are as follows.

Table 8 Confirmation Soil Sample Analysis--Batch #2

Sample Number	Sample Date	TPHg mg/kg	Benz. mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg
B1	9/5/96	<1	<0.005	<0.005	<0.005	<0.01
B2	9/5/96	<1	<0.005	<0.005	<0.005	<0.01
B3	9/5/96	<1	<0.005	<0.005	<0.005	<0.01
B4	9/5/96	<1	<0.005	<0.005	<0.005	<0.01
B5	9/5/96	<1	<0.005	<0.005	<0.005	<0.01
B6	9/5/96	<1	<0.005	<0.005	<0.005	<0.01
B7	9/5/96	<1	<0.005	<0.005	<0.005	<0.01
B8	9/5/96	<1	<0.005	<0.005	<0.005	<0.01
B9	9/5/96	<1	<0.005	<0.005	<0.005	0.010
B10	9/5/96	<1	<0.005	<0.005	<0.005	<0.01

mg/kg = ppm
1 = Sample #1 of Random Sampling--Batch B.

As only one sample (B9) of the ten soil samples collected contained detectable concentrations of the chemicals analyzed, the soil samples were considered to have satisfied the action level and was eligible for backfilling. EPA SW846 normally requires statistical analysis of analytical data to determine if the appropriate confidence interval has been reached; however, as 9 of 10 soil samples had results below the detection limit, statistical analysis was not necessary.

In general, twenty two soil samples were collected from approximately 1,480 cy of soil and no significant hydrocarbon concentrations were detected. ACHCSA was provided these soil sample results in letters dated July 10, 1996 and September 17, 1996 and Mr. Barney Chan verbally approved of AEI's decision to backfill each batch of soil.

3.4 Off-Site Soil Recycling

The fifteen cubic yards of soil contaminated with waste oil was profiled as discussed in Section 2.7 and then shipped to Remedial Environmental Marketing Co. Inc. in Richmond, California under proper waste manifests (see Appendix D). The materials were manifested non-hazardous and hauled by Barr's Bobcat. Remedial Environmental Marketing Co. treated the soil using low temperature thermal desorbtion and recycled the material as asphalt aggregate.

4.0 SOIL BACKFILLING AND COMPACTION TESTING

4.1 Backfilling and Compaction

Backfilling of the excavation took place in three distinct phases. First, in April of 1996, AEI backfilled the excavation with the 300 cy of pea gravel excavated from the original tank hold. Pea gravel is self compacting; and therefore, no compaction testing was performed.

The first batch of remediated soil was backfilled in July of 1996 and the second batch of remediated soil was backfilled in September of 1996. The soil was backfilled in 12 inch lifts and compacted with a sheep's foot compactor.

4.2 Compaction Testing

Compaction testing was performed during each backfilling session. Construction Materials Testing, Inc. collected two fifty pound soil samples of the material to be backfilled and this material was analyzed to determine the optimum moisture content and the maximum dry density for this soil using ASTM Method DI557-A. The soil sample analyzed in July of 1996 was found to have an Optimum Moisture Content of 10.3% and a maximum dry density of 121.8 pounds per cubic foot (pcf). And the soil sample analyzed in September of 1996 was found to have a maximum dry density of 118 pcf and an Optimum Moisture Content of 9.0 %.

Mr. Bradshaw with Construction Materials Testing, Inc. performed nuclear density testing during the backfilling of the excavations. This data was measured with a nuclear density gauge and the results are as follows.

Table 9 Soil Compaction Data

Sample Number	Depth (feet)	Date	Moisture Content (%)	Dry Density (lbs/cu. ft.)	Percent of Maximum Dry Density (%)
1-NO-END	4.5	7/11/96	14.5	112	92
2-SO-END	4.5	7/11/96	10.8	111	92
3-West Side	2	9/18/96	9.2	110	94
4-So Side	2	9/18/96	10	112	95
5-No Side	2	9/18/96	9.4	112	95
6-Center	2	9/18/96	8.7	112	96
7-Center-EX2	3.5	9/18/96	11	107	91

AEI's contract with Diversified Management Investment Group specified that all materials would be compacted to at least 90% of maximum dry density. AEI fulfilled this requirement. CMI's materials testing report is included in Appendix B.

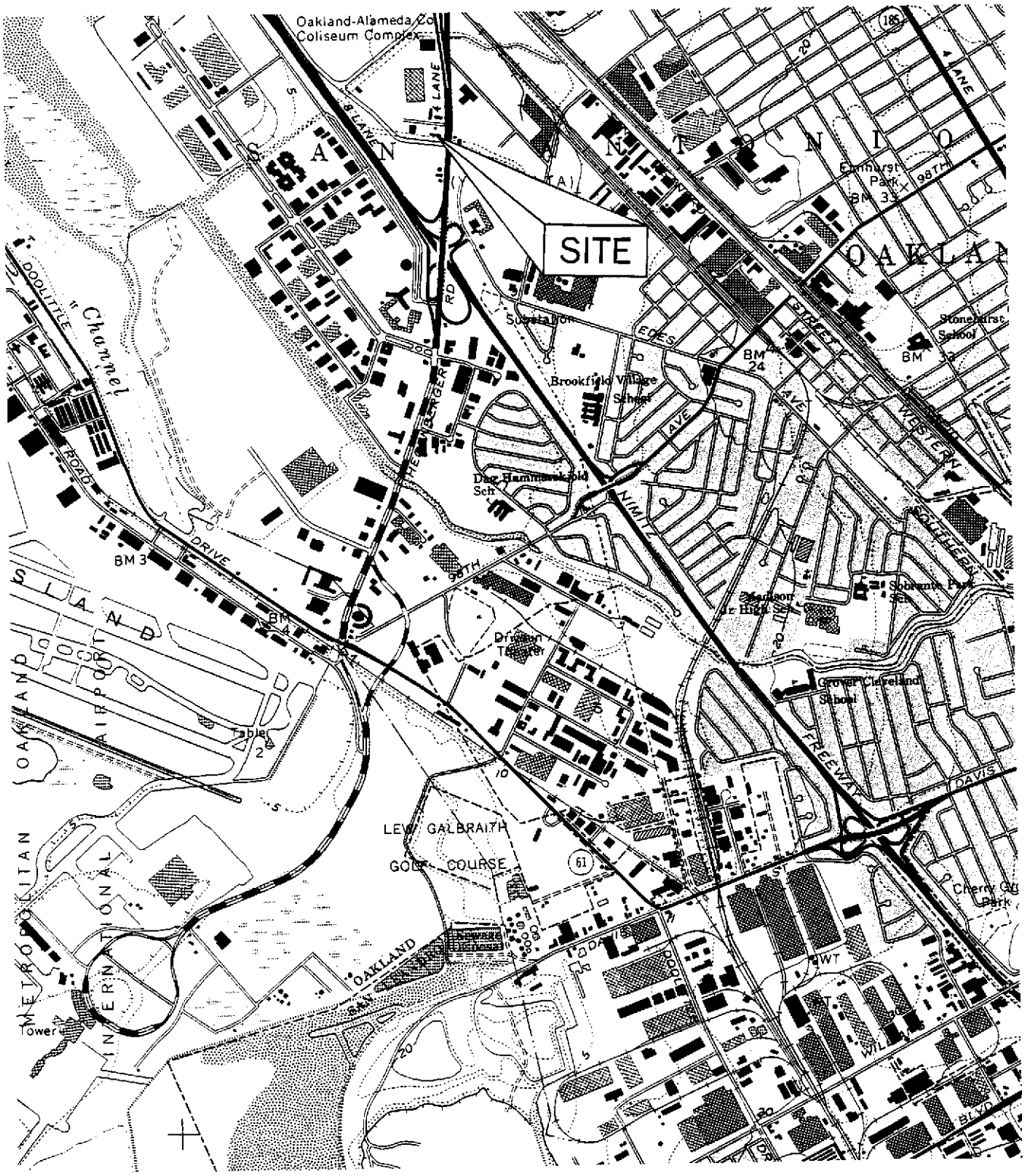
5.0 CONCLUSIONS AND RECOMMENDATIONS

Soil contaminated above the action level and above the water table has been removed and the work described in AEI's Workplan, dated March 13, 1996, has been completed. Residual soil contamination below the action levels remains in-place along the perimeter of the excavation and significant groundwater contamination remains. However, as the tanks and all heavily contaminated soil have been removed, AEI believes that continued degradation of the shallow groundwater will cease.

Furthermore, potential health risks to future users of the subject site have been greatly mitigated. AEI recommends that preparation of a risk assessment, which will quantify the risk remaining for users of the subject site as well as any risks the contaminated groundwater plume represents. AEI believes that the risk assessment will also successfully justify closure of the subject site under the Regional Board's "Low Risk Groundwater Contamination" criteria set, withstanding on-going quarterly groundwater monitoring.

FIGURE 1

VICINITY MAP



N

FROM:
US GEOLOGICAL SURVEY
SAN LEANDRO
QUADRANGLE
7.5 MINUTE SERIES
PHOTOREVISED 1980

ALL ENVIRONMENTAL, INC.

3364 MT. DIABLO BOULEVARD, LAFAYETTE, CA

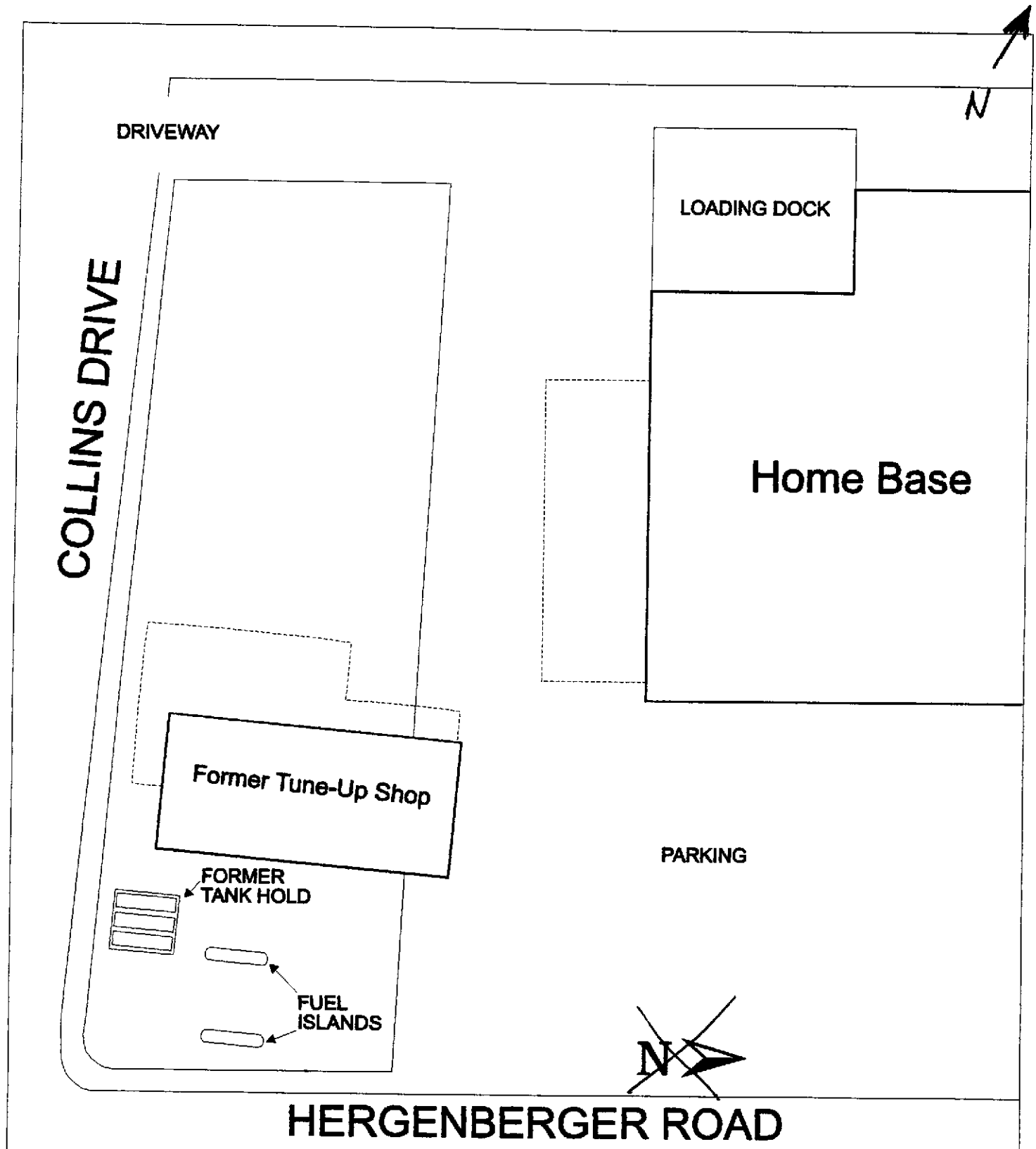
SCALE: 1:24000	APPROVED BY:	DRAWN BY:
DATE:		REVISED:

SITE LOCATION MAP

625 HEGENBERGER ROAD OAKLAND, CA	DRAWING NUMBER: FIGURE 1

FIGURE 2

SITE MAP



LEGEND

- Buildings (current & former)
- Fencing (current & former)

ALL ENVIRONMENTAL, INC.

3354 Mt Diablo Blvd., Lafayette, CA

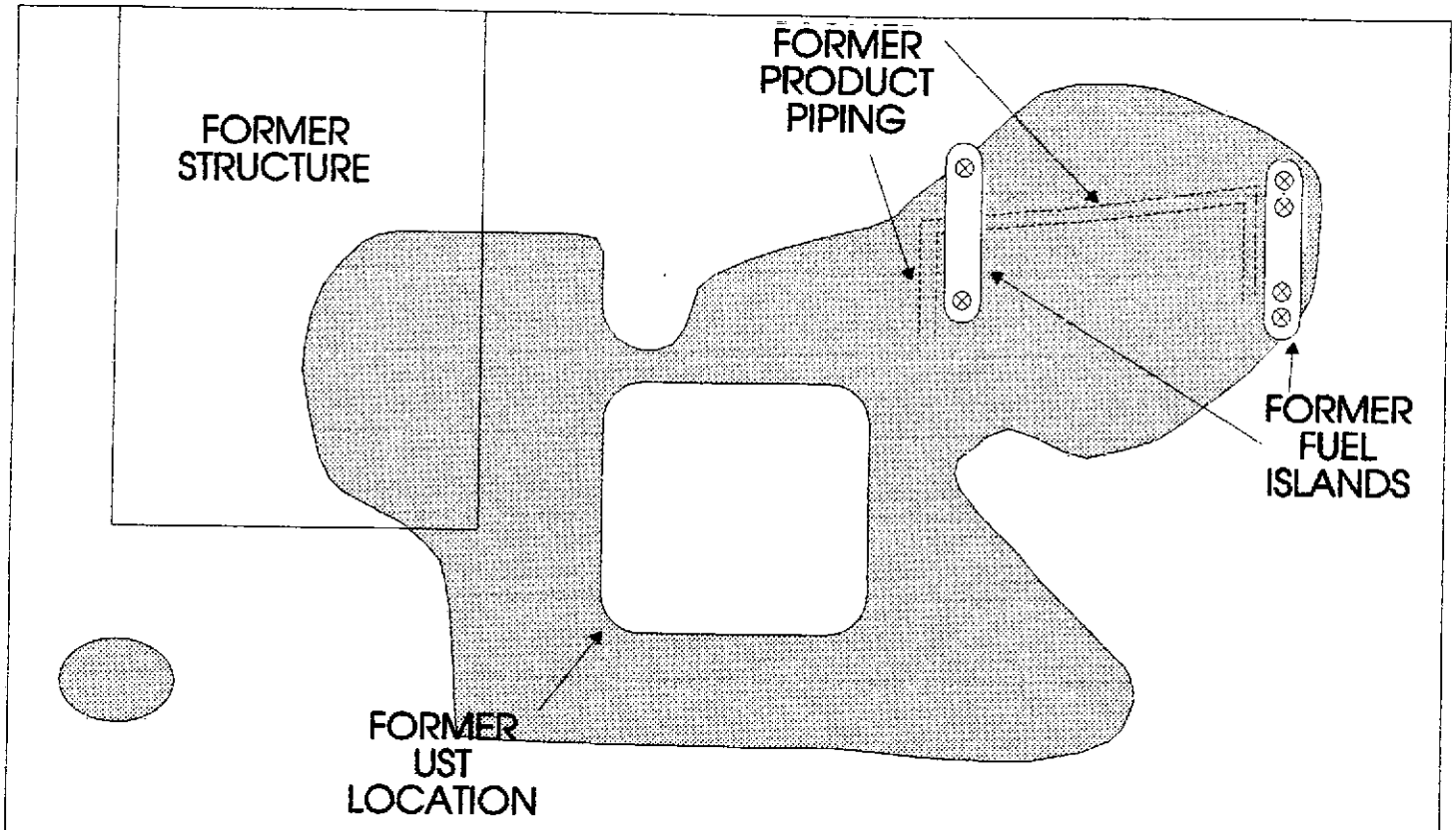
DRAWN BY: E. OCHSNER		REVISED BY:
DATE: MARCH 6, 1997		APPROVED BY: JPD

SITE MAP

625 Hegenberger Road, Oakland | FIGURE 2

FIGURE 3

EXCAVATION MAP



COLLINS ROAD

0 20 40 FEET

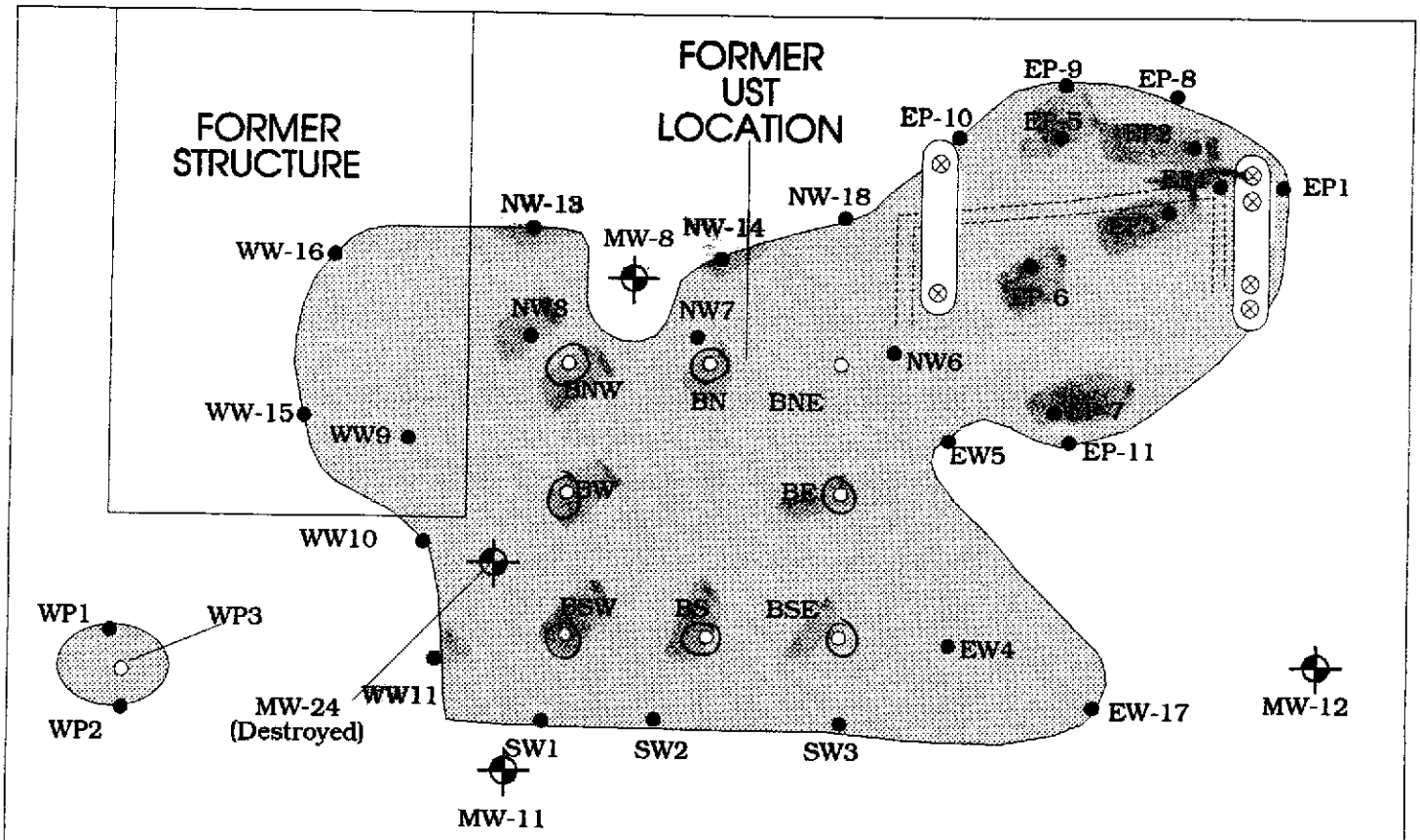
APPROX. SCALE: 1" = 20'

Excavated Area

ALL ENVIRONMENTAL, INC. 3364 Mt Diablo Blvd., Lafayette, CA		
DRAWN BY: B. CAMPBELL		REVISED BY: E. OCHSNER
DATE: MARCH 5, 1997		APPROVED BY: JPD
EXCAVATION LOCATION MAP		
625 Hegenberger Road, Oakland		FIGURE 3

FIGURE 4

SAMPLE LOCATION MAP



COLLINS ROAD

0 samples w/elevated benzene conc.

0 20 40 FEET

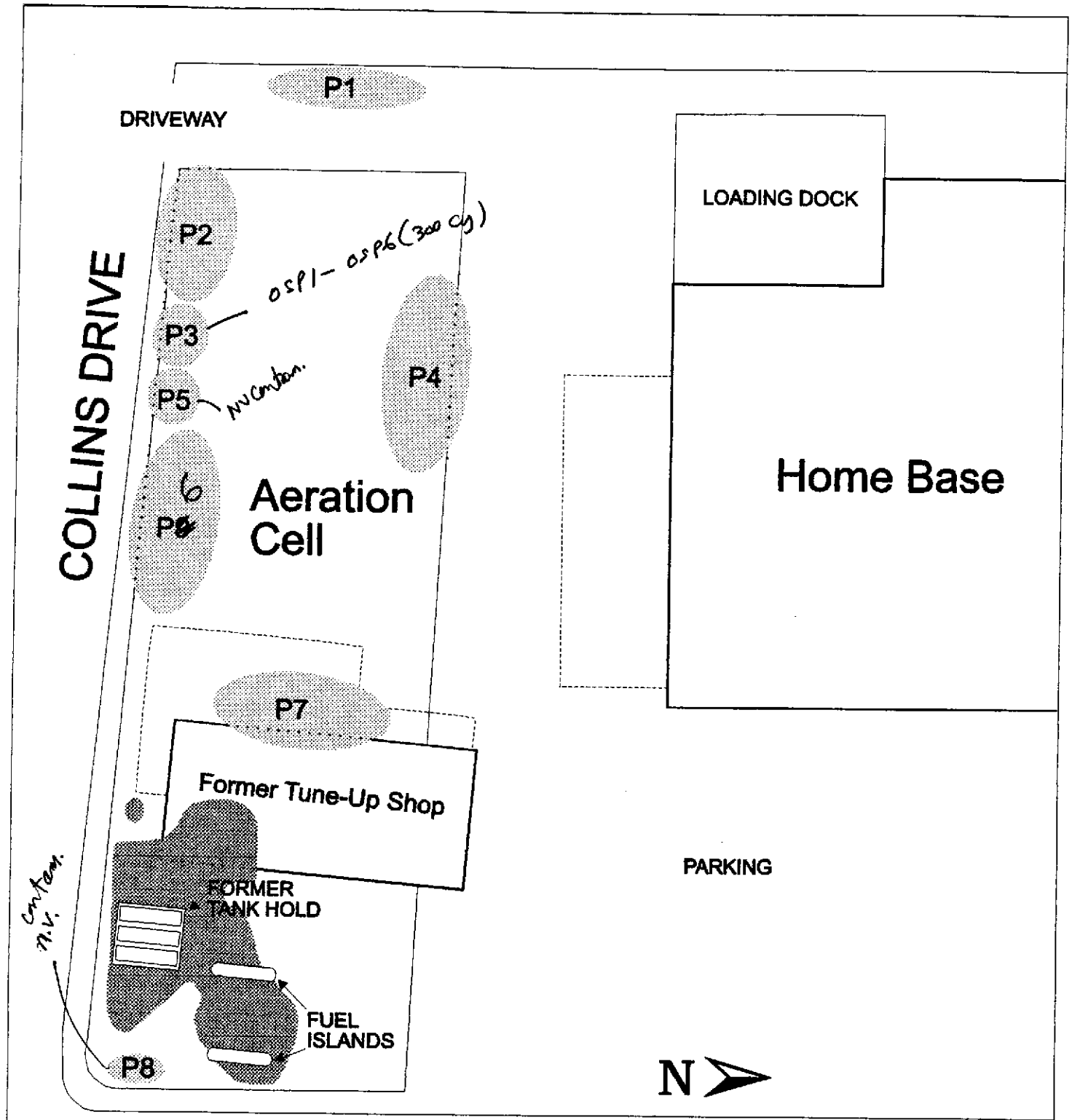
APPROX. SCALE: 1" = 20'

- ○ Bottom Sample
- • Sidewall Sample
- MW-8 ⊕ Monitoring Well

ALL ENVIRONMENTAL, INC. 2641 CROW CANYON ROAD, SAN RAMON, CA		
DRAWN BY: B. CAMPBELL		REVISED BY: E. OCHSNER
DATE: MARCH 5, 1997		APPROVED BY: JPD
SAMPLE LOCATION MAP		
625 Hegenberger Road, Oakland		FIGURE 4

FIGURE 5

CELL DIAGRAM



LEGEND

- Excavation
- Buildings (current & former)
- Aeration Piles
- Fencing (current & former)

ALL ENVIRONMENTAL, INC. 3354 Mt Diablo Blvd., Lafayette, CA		
DRAWN BY: E. OCHSNER		REVISED BY:
DATE: MARCH 6, 1997		APPROVED BY: JPD
CELL DIAGRAM MAP		
625 Hegenberger Road, Oakland		FIGURE 5

APPENDICES

APPENDIX A

LABORATORY DATA

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25907
Date Received: 04/11/96
Date Reported: 04/16/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
44880	BN	04/10/96	04/12/96	2700	1
44881	BNW	04/10/96	04/12/96	500	1
44882	BW	04/10/96	04/15/96	920	1
44883	BSW	04/10/96	04/12/96	550	1
44884	BS	04/10/96	04/15/96	1100	1
44885	BSE	04/10/96	04/12/96	6.2	1
44886	BE	04/10/96	04/12/96	130	1
44887	BNE	04/10/96	04/12/96	<1	1
44888	EP1	04/10/96	04/12/96	1.9	1
44889	EP2	04/10/96	04/12/96	1.1	1
44890	EP3	04/10/96	04/12/96	<1	1
44891	EP4	04/10/96	04/12/96	4.1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: 413.2 (Oil & Grease)

AA Project No.: A25907
Date Received: 04/11/96
Date Reported: 04/16/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Extracted	Date Analyzed	Results	MRL
44892	WP1	04/10/96	04/11/96	04/11/96	16	5
44893	WP2	04/10/96	04/11/96	04/11/96	100	5
44894	WP3	04/10/96	04/11/96	04/11/96	18	5

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25907
Date Received: 04/11/96
Date Reported: 04/16/96
Units: mg/Kg

Date Sampled:	04/10/96	04/10/96	04/10/96	04/10/96	
Date Analyzed:	04/12/96	04/12/96	04/15/96	04/12/96	
AA ID No.:	44880	44881	44882	44883	
Client ID No.:	BN	BNW	BW	BSW	MRL
Compounds:					
Benzene	7.1	1.8	4.6	16	0.005
Ethylbenzene	34	7.0	11	6.9	0.005
Toluene	23	9.7	4.1	1.2	0.005
Xylenes	170	38	39	5.0	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25907
Date Received: 04/11/96
Date Reported: 04/16/96
Units: mg/Kg

Date Sampled:	04/10/96	04/10/96	04/10/96	04/10/96	
Date Analyzed:	04/15/96	04/12/96	04/12/96	04/12/96	
AA ID No.:	44884	44885	44886	44887	
Client ID No.:	BS	BSE	BE	BNE	MRL
Compounds:					
Benzene	8.6	0.69	1.4	<0.005	0.005
Ethylbenzene	19	0.10	<0.5	<0.005	0.005
Toluene	21	0.005	<0.5	<0.005	0.005
Xylenes	110	0.085	6.3	<0.01	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25907
Date Received: 04/11/96
Date Reported: 04/16/96
Units: mg/Kg

Date Sampled:	04/10/96	04/10/96	04/10/96	04/10/96	
Date Analyzed:	04/12/96	04/12/96	04/12/96	04/12/96	
AA ID No.:	44888	44889	44890	44891	
Client ID No.:	EP1	EP2	EP3	EP4	MRL
Compounds:					
Benzene	0.005	0.20	0.068	0.11	0.005
Ethylbenzene	0.007	0.006	<0.005	0.21	0.005
Toluene	<0.005	0.011	<0.005	0.006	0.005
Xylenes	0.011	0.014	<0.01	0.021	0.01

MRL: Method Reporting Limit

George Havelias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25906
Date Received: 04/10/96
Date Reported: 04/11/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
44783	OSP-1	04/09/96	04/10/96	<1	1
44784	OSP-2	04/09/96	04/10/96	1.9	1
44785	OSP-3	04/09/96	04/10/96	<1	1
44786	OSP-4	04/09/96	04/10/96	<1	1
44787	OSP-5	04/09/96	04/10/96	<1	1
44788	OSP-6	04/09/96	04/10/96	<1	1
44789	NW-6	04/09/96	04/10/96	<1	1
44790	NW-7	04/09/96	04/10/96	<1	1
44791	NW-8	04/09/96	04/10/96	<1	1
44792	WW-9	04/09/96	04/10/96	<1	1
44793	WW-10	04/09/96	04/10/96	<1	1
44794	WW-11	04/09/96	04/10/96	1.6	1
44795	SW-1	04/09/96	04/10/96	<1	1
44796	SW-2	04/09/96	04/10/96	2.2	1
44797	SW-3	04/09/96	04/10/96	<1	1
44798	EW-4	04/09/96	04/10/96	<1	1
44799	EW-5	04/09/96	04/10/96	<1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25906
Date Received: 04/10/96
Date Reported: 04/11/96
Units: mg/Kg

Date Sampled:	04/09/96	04/09/96	04/09/96	04/09/96	
Date Analyzed:	04/10/96	04/10/96	04/10/96	04/10/96	
AA ID No.:	44783	44784	44785	44786	
Client ID No.:	OSP-1	OSP-2	OSP-3	OSP-4	MRL
Compounds:					
Benzene	<0.005	0.050	<0.005	<0.005	0.005
Ethylbenzene	<0.005	0.062	<0.005	<0.005	0.005
Toluene	<0.005	0.12	<0.005	<0.005	0.005
Xylenes	<0.01	0.34	<0.01	<0.01	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25906
Date Received: 04/10/96
Date Reported: 04/11/96
Units: mg/Kg

Date Sampled:	04/09/96	04/09/96	04/09/96	04/09/96	
Date Analyzed:	04/10/96	04/10/96	04/10/96	04/10/96	
AA ID No.:	44787	44788	44789	44790	
Client ID No.:	OSP-5	OSP-6	NW-6	NW-7	
Compounds:					**MRL**
Benzene	<0.005	<0.005	0.011	0.049	0.005
Ethylbenzene	<0.005	<0.005	<0.005	0.032	0.005
Toluene	<0.005	<0.005	<0.005	0.061	0.005
Xylenes	<0.01	<0.01	<0.01	0.19	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25906
Date Received: 04/10/96
Date Reported: 04/11/96
Units: mg/Kg

Date Sampled:	04/09/96	04/09/96	04/09/96	04/09/96	
Date Analyzed:	04/10/96	04/10/96	04/10/96	04/10/96	
AA ID No.:	44791	44792	44793	44794	
Client ID No.:	NW-8	WW-9	WW-10	WW-11	MRL
Compounds:					
Benzene	0.070	0.035	<0.005	0.23	0.005
Ethylbenzene	0.017	0.006	<0.005	0.032	0.005
Toluene	<0.005	<0.005	<0.005	0.062	0.005
Xylenes	0.032	0.030	<0.01	0.12	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25906
Date Received: 04/10/96
Date Reported: 04/11/96
Units: mg/Kg

Date Sampled:	04/09/96	04/09/96	04/09/96	04/09/96	
Date Analyzed:	04/10/96	04/10/96	04/10/96	04/10/96	
AA ID No.:	44795	44796	44797	44798	
Client ID No.:	SW-1	SW-2	SW-3	EW-4	MRL
Compounds:					
Benzene	0.028	0.044	0.025	0.054	0.005
Ethylbenzene	<0.005	0.066	<0.005	0.021	0.005
Toluene	<0.005	0.017	<0.005	<0.005	0.005
Xylenes	<0.01	0.31	<0.01	0.040	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 1286
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25906
Date Received: 04/10/96
Date Reported: 04/11/96
Units: mg/Kg

Date Sampled:	**04/09/96**	
Date Analyzed:	**04/10/96**	
AA ID No.:	**44799**	
Client ID No.:	**EW-5**	
Compounds:		**MRL**
Benzene	<0.005	0.005
Ethylbenzene	<0.005	0.005
Toluene	<0.005	0.005
Xylenes	<0.01	0.01

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 4/9/96

PAGE ___ OF ___

AA Client: All Environmental Inc		Phone	Sampler's Name
Project Manager: Joe Deshaw		P.O. No.	Sampler's Signature
Project Name: Hegenberger		Project No.	Project Manager's Signature
Job Name and Address: #1186 625 Hegenberger			

ANALYSIS REQUIRED

AA I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	Detection Limits / Test Name: TPH gas/BTEX	Test Requirements
	SW1	4/9/96	5:20				
	SW2						
	SW3						
	EW-4						
	EW-5						
	MW-6						
	MW-7						
	MW-8						
	MW-9						
	MW-10						
	MW-11						

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ___ No ___	Relinquished by:	Date: 4/9	Time: 6:45
Samples Properly Cooled	Yes ___ No ___	Relinquished by:	Date	Time
Samples Accepted	Yes ___ No ___	Relinquished by:	Date	Time
If Not Why:		Relinquished by:	Date	Time
AA Project No.				

Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 4/9/96

PAGE ____ OF ____

AA Client: All Environmental Inc	Phone / Sampler's Name
Project Manager: Joe Ibrahim	P.O. No. / Sampler's Signature
Project Name: Hegenberger	Project No. / Project Manager's Signature
Job Name # 1166 and Address: @ 15 Hegenberger	

AA LD.#	Client's LD.	Date	Time	Sample Type	Number of Containers	TPH-g/BTEX	Test Requirements
	OSP-1	4/9/96	4:30			X	
	OSP-2						
	OSP-3						
	OSP-4						
	OSP-5						
	OSP-6						

ANALYSIS REQUIRED

Detection Limits

Test Name

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact Yes ____ No ____

Samples Properly Cooled Yes ____ No ____

Samples Accepted Yes ____ No ____

If Not Why: ____

AA Project No.

Relinquished by:	Date	Time	Received by:
	4/9	6:45	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 4/10/96

PAGE 1 OF 1

AA Client: All Environmental Inc.	Phone: 310-820-1204	Sampler's Name	
Project Manager: Joe Berhane	P.O. No.	Sampler's Signature	
Project Name: Hegenberger	Project No. 1266	Project Manager's Signature	
Job Name and Address: 615 Hegenberger Rd			

ANALYSIS REQUIRED

Detection Limits

Test Name: TPH gas TPH diesel

Test Requirements: 24-HR

AA. I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers
	BN	4/10	12:10	Soil	
	BNW				
	BW				
	BSW				
	BS				
	BSE				
	BE				
	BNE				
	EP1				
	EP2				
	EP3				
	EP4				
	WP1				
	WP2				
	WP3				

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ____ No ____		
Samples Properly Cooled	Yes ____ No ____		
Samples Accepted	Yes ____ No ____		
If Not Why:			
AA Project No.			

Relinquished by:	Date	Time	Received by:
Hegenberger Complex			
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS

April 30, 1996

All Environmental
2319 Crest Drive
Manhattan Beach, CA 90266

Dear Mr. Derhake:

Enclosed are the results for the samples submitted to our laboratory on April 23, 1996. For your reference, your project has been assigned our laboratory no. A25908.

All analyses were performed in accordance with our Laboratory's Quality Assurance Program. Also, enclosed is a copy of the invoice sent to your company's accounts payable.

Should you have any questions, please give us a call at (818) 998-5547.

Respectfully submitted,

AMERICAN ANALYTICS

George Havalias
Laboratory Director

Enclosure: Invoice copy

GH/le

COMP P2C1, C2, 3, 4, 5, 6, 7

+ COMP P4C8, 9, 10, 11, 13, 14

DONE

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25908
Date Received: 04/23/96
Date Reported: 04/30/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
45299	Comp P2C1	04/22/96	04/24/96	<1	1
45304	Comp P2C2	04/22/96	04/24/96	<1	1
45309	Comp P2C3	04/22/96	04/24/96	<1	1
45314	Comp P2C4	04/22/96	04/24/96	8.0	1
45319	Comp P2C5	04/22/96	04/24/96	<1	1
45324	Comp P2C6	04/22/96	04/24/96	<1	1
45329	Comp P2C7	04/22/96	04/24/96	<1	1
45334	Comp P4C8	04/22/96	04/24/96	9.4	1
45339	Comp P4C9	04/22/96	04/29/96	230	1
45344	Comp P4C10	04/22/96	04/24/96	3.4	1
45349	Comp P4C11	04/22/96	04/24/96	1.1	1
45354	Comp P4C12	04/22/96	04/24/96	3.2	1
45359	Comp P4C13	04/22/96	04/24/96	3.9	1
45364	Comp P4C14	04/22/96	04/24/96	4.0	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 45304
Project No.: 96-B016
AA Project No.: A25908
Date Analyzed: 04/24/96
Date Reported: 04/30/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	0.99	99	1.01	101	2	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 45429
Project No.: 96-B016
AA Project No.: A25908
Date Analyzed: 04/29/96
Date Reported: 04/30/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	0.95	95	1.02	102	7	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25908
Date Received: 04/23/96
Date Reported: 04/30/96
Units: mg/Kg

Date Sampled:	**04/22/96**	**04/22/96**	**04/22/96**	**04/22/96**	
Date Analyzed:	**04/24/96**	**04/24/96**	**04/24/96**	**04/24/96**	
AA ID No.:	**45299**	**45304**	**45309**	**45314**	
Client ID No.:	**Comp P2C1**	**Comp P2C2**	**Comp P2C3**	**Comp P2C4**	**MRL**
Compounds:					
Benzene	<0.005	<0.005	<0.005	0.012	0.005
Ethylbenzene	<0.005	<0.005	<0.005	0.028	0.005
Toluene	<0.005	<0.005	<0.005	0.018	0.005
Xylenes	<0.01	<0.01	0.020	0.17	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25908
Date Received: 04/23/96
Date Reported: 04/30/96
Units: mg/Kg

Date Sampled:	04/22/96	04/22/96	04/22/96	04/22/96	
Date Analyzed:	04/24/96	04/24/96	04/24/96	04/24/96	
AA ID No.:	45319	45324	45329	45334	
Client ID No.:	Comp P2C5	Comp P2C6	Comp P2C7	Comp P4C8	MRL
Compounds:					
Benzene	0.012	<0.005	<0.005	0.033	0.005
Ethylbenzene	<0.005	<0.005	<0.005	0.047	0.005
Toluene	<0.005	<0.005	<0.005	0.009	0.005
Xylenes	<0.01	<0.01	0.016	0.22	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25908
Date Received: 04/23/96
Date Reported: 04/30/96
Units: mg/Kg

Date Sampled:	04/22/96	04/22/96	04/22/96	04/22/96	
Date Analyzed:	04/29/96	04/24/96	04/24/96	04/24/96	
AA ID No.:	45339	45344	45349	45354	
Client ID No.:	Comp P4C9	Comp P4C10	Comp P4C11	Comp P4C12	MRL
Compounds:					
Benzene	<0.05	0.012	<0.005	0.006	0.005
Ethylbenzene	1.7	0.042	0.007	0.039	0.005
Toluene	0.76	0.030	0.005	0.017	0.005
Xylenes	7.7	0.42	0.11	0.55	0.01

George Havallas
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25908
Date Received: 04/23/96
Date Reported: 04/30/96
Units: mg/Kg

Date Sampled:	**04/22/96**	**04/22/96**	
Date Analyzed:	**04/24/96**	**04/24/96**	
AA ID No.:	**45359**	**45364**	
Client ID No.:	**Comp P4C13**	**Comp P4C14**	**MRL**
Compounds:			
Benzene	0.055	0.014	0.005
Ethylbenzene	0.14	0.046	0.005
Toluene	0.28	0.096	0.005
Xylenes	0.69	0.57	0.01

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 45299
Project No.: 96-B016
AA Project No.: A25908
Date Analyzed: 04/24/96
Date Reported: 04/30/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0368	92.00	0.0354	89.00	3.31	65 - 135
Ethylbenzene	0.0392	98.00	0.0377	94.00	4.17	77 - 123
Toluene	0.0377	94.00	0.0359	90.00	4.35	66 - 134
Xylenes	0.0378	95.00	0.0387	97.00	2.08	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 45429
Project No.: 96-B016
AA Project No.: A25908
Date Analyzed: 04/29/96
Date Reported: 04/30/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0384	96.00	0.042	104.00	8.00	65 - 135
Ethylbenzene	0.0399	100.00	0.042	104.00	3.92	77 - 123
Toluene	0.0430	108.00	0.042	105.00	2.82	66 - 134
Xylenes	0.0392	98.00	0.042	105.00	6.90	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

AMERICAN ANALYTICS
9765 ETON AVE., CHATSWORTH, CA 91311
(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 4/22/96

AA Client: All Environmental Inc.		Phone	Sampler's Name
Project Manager: Joe Derhake		P.O. No.	Sampler's Signature
Project Name: Hegen berger		Project No.	Project Manager's Signature
Job Name and Address			

ANALYSIS REQUIRED

AA I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	Test Name: TPH (Modified)	Test Requirements
45310	P2C4-1	4/22		Soil			
45311	P2C4-2						
45312	P2C4-3						
45313	P2C4-4						
45314 Composite	P2C4					X	
45315	P2C5-1						
45316	P2C5-2						
45317	P2C5-3						
45318	P2C5-4						
45319 Composite	P2C5					X	
45320	P2C6-1						
45321	P2C6-2						
45322	P2C6-3						
45323	P2C6-4						
45324 Composite	P2C6	↓		↓		X	

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ____	No ____
Samples Properly Cooled	Yes ____	No ____
Samples Accepted	Yes ____	No ____

If Not Why: ____

AA Project No. A25908

Relinquished by:	Date	Time	Received by:
Bryan Campbell	4/22		
Fed Ex	4/23	1215	Michael Rayk

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

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DATE: 4/22/96

PAGE 3 OF 5

AA Client: All Environmental Inc		Phone	Sampler's Name
Project Manager		P.O. No.	Sampler's Signature
Project Name		Project No.	Project Manager's Signature
Job Name and Address			

ANALYSIS REQUIRED

AA I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	Detection Limits / Test Name: TPH + BTEX	Test Requirements
45325	P2C7-1	4/22		Soil			
45326	P2C7-2						
45327	P2C7-3						
45328	P2C7-4						
15329	Composite P2C7					X	
45330	P4C8-1						
45331	P4C8-2						
15332	P4C8-3						
45333	P4C8-4						
15334	Composite P4C8					X	
45335	P4C9-1						
45336	P4C9-2						
45337	P4C9-3						
45338	P4C9-4						
15339	Composite P4C9	↓		↓		X	

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ____	No ____
Samples Properly Cooled	Yes ____	No ____
Samples Accepted	Yes ____	No ____

If Not Why: ____

AA Project No. A25908

Relinquished by:	Date	Time	Received by:
Bryan Campbell	4/22		
Fed Ex	4/23	1215	Mich Rayk

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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DATE: 4/22/96
PAGE 4 OF 5

AA Client: All Environmental Inc		Phone	Sampler's Name
Project Manager		P.O. No.	Sampler's Signature
Project Name		Project No.	Project Manager's Signature
Job Name and Address			

ANALYSIS REQUIRED

AA I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	Detection Limits / Test Name: TPH/BTEX	Test Requirements
45340	P4C10-1	4/22		Soil			
45341	P4C10-2						
45342	P4C10-3						
45343	P4C10-4						
15344	Composite	P4C10				X	
45345	P4C11-1						
45346	P4C11-2						
45347	P4C11-3						
45348	P4C11-4						
15349	Composite	P4C11				X	
45350	P4C12-1						
45351	P4C12-2						
45352	P4C12-3						
45353	P4C12-4						
15354	Composite	P4C12				X	

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ____ No ____	Relinquished by: Bryan Campbell	Date 4/22	Time	Received by:
Samples Properly Cooled	Yes ____ No ____	Relinquished by: FedEx	Date 4/23	Time 12:15	Received by: Mich D Rayk
Samples Accepted	Yes ____ No ____	Relinquished by:	Date	Time	Received by:
If Not Why:		Relinquished by:	Date	Time	Received by:
AA Project No. A25908					

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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DATE: 4/22/96

PAGE 5 OF 5

AA Client: All Environmental Inc.		Phone	Sampler's Name
Project Manager		P.O. No.	Sampler's Signature
Project Name		Project No.	Project Manager's Signature
Job Name and Address			

AA I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	TPH-G/BTEX	Test Requirements
45355	P4C13-1	4/22		Soil			
45356	P4C13-2						
45357	P4C13-3						
45358	P4C13-4						
45359	Composite					X	
45360	P4C14-1						
45361	P4C14-2						
45362	P4C14-3						
45363	P4C14-4						
45364	Composite					X	

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact Yes ____ No ____

Samples Properly Cooled Yes ____ No ____

Samples Accepted Yes ____ No ____

If Not Why: ____

AA Project No. A25908

	Date	Time	
Relinquished by: Bryan Campbell	4/22		Received by:
Relinquished by: Fed Ex	4/23	12:15	Received by: Michel Rayndo
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS

May 2, 1996

All Environmental
2319 Crest Drive
Manhattan Beach, CA 90266

Dear Mr. Derhake:

Enclosed are the results for the samples submitted to our laboratory on April 24, 1996. For your reference, your project has been assigned our laboratory no. A25909.

All analyses were performed in accordance with our Laboratory's Quality Assurance Program. Also, enclosed is a copy of the invoice sent to your company's accounts payable.

Should you have any questions, please give us a call at (818) 998-5547.

Respectfully submitted,

AMERICAN ANALYTICS

George Havalias
Laboratory Director

EW-12
MW-13 & 14
MW-15 & 16

Enclosure: Invoice copy

GH/le

American Analytics • 9765 Eton Avenue, Chatsworth, California 91311
Tel: (818) 998-5547 • (800) 533-8378 • Fax: (818) 998-7258

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25909
Date Received: 04/23/96
Date Reported: 05/02/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
45378	EW-12	04/12/96	04/30/96	38	1
45379	NW-13	04/12/96	04/30/96	<1	1
45380	NW-14	04/12/96	04/30/96	25	1
45381	WW-15	04/12/96	04/30/96	<1	1
45382	WW-16	04/12/96	04/30/96	<1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 45382
Project No.: 96-B016
AA Project No.: A25909
Date Analyzed: 04/30/96
Date Reported: 05/02/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	0.96	96	1.02	102	6	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25909
Date Received: 04/23/96
Date Reported: 05/02/96
Units: mg/Kg

Date Sampled:	04/12/96	04/12/96	04/12/96	04/12/96	
Date Analyzed:	04/30/96	04/30/96	04/30/96	04/30/96	
AA ID No.:	45378	45379	45380	45381	
Client ID No.:	EW-12	NW-13	NW-14	WW-15	MRL
Compounds:					
Benzene	0.060	0.018	0.21	<0.005	0.005
Ethylbenzene	0.43	<0.005	1.0	<0.005	0.005
Toluene	0.28	<0.005	0.14	<0.005	0.005
Xylenes	2.0	<0.01	1.0	<0.01	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25909
Date Received: 04/23/96
Date Reported: 05/02/96
Units: mg/Kg

Date Sampled:	**04/12/96**	
Date Analyzed:	**04/30/96**	
AA ID No.:	**45382**	
Client ID No.:	**WW-16**	**MRL**
Compounds:		
Benzene	<0.005	0.005
Ethylbenzene	<0.005	0.005
Toluene	<0.005	0.005
Xylenes	<0.01	0.01

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 45382
Project No.: 96-B016
AA Project No.: A25909
Date Analyzed: 04/30/96
Date Reported: 05/02/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0422	106.00	0.0402	101.00	4.83	65 - 135
Ethylbenzene	0.0357	89.00	0.0329	82.00	8.19	77 - 123
Toluene	0.0347	87.00	0.0348	87.00	0.00	66 - 134
Xylenes	0.0328	82.00	0.0345	86.00	4.76	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

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DATE: 4/23/96

PAGE 1 OF 1

AA Client: All Environmental, Inc.		Phone: 510-820-3224	Sampler's Name
Project Manager: Joe Derhake		P.O. No.	Sampler's Signature
Project Name: Hegenberger		Project No. 96-B016	Project Manager's Signature
Job Name and Address: 625 Hegenberger Road			

ANALYSIS REQUIRED

A.A. I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	Test Name: TPH/BTEX	Test Requirements
45378	EW12	4/12		Soil		X	All Samples 72 hr Turn-Around
45379	NW13	↓		↓		X	
45380	NW14					X	
45381	WW15					X	
45382	WW16	↓		↓		X	

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ____	No ____	
Samples Properly Cooled	Yes ____	No ____	
Samples Accepted	Yes ____	No ____	
If Not Why:			
AA Project No. A-25909			

Relinquished by:	Date	Time	Received by:
Brian Campbell	4/23		
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: Reactivity*

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/31/96
Units: mg/Kg

Date Sampled:	05/06/96	
Date Analyzed:	05/29/96	
AA ID No.:	46417	
Client ID No.:	Comp 5	**MRL**
Compounds:		
Reactive Cyanide	<0.1	0.1
Reactive Sulfide	<0.1	0.1

MRL: Method Reporting Limit
*: Subcontracted to a DOHS State-Certified Laboratory.

DRAFT

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-5016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 9045 (pH Measurement)

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/31/96
Units: pH

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Result
46417	Comp 5	05/08/96	05/21/96	7.5

DRAFT

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: Flashpoint*

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/31/96
Units: deg F

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Result
48417	Comp 5	05/08/96	05/21/96	>200

*: Subcontracted to a DOHS State-Certified Laboratory.

DRAFT

George Havelias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: Total Metals*

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/31/96
Units: mg/Kg

Date Sampled:	05/08/96	
Date Analyzed:	05/29/96	
AA ID No.:	46417	
Client ID No.:	Comp 5	**MRL**
Compounds:		
Cadmium	<1	1
Chromium	40	1
Lead	<1	1
Nickel	61	1
Zinc	110	1

MRL: Method Reporting Limit
*: Subcontracted to a DOHS State-Certified Laboratory.

DRAFT

George Havallas
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

DRAFT

Client: All Environmental, Inc.
Project No.: 96-B018
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25912
Date Received: 07/15/96
Date Reported: 07/17/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
48200	EP8	07/12/96	07/16/96	<1	1
48201	EP9	07/12/96	07/16/96	<1	1
48202	EP10	07/12/96	07/16/96	<1	1
48203	EP11	07/12/96	07/16/96	<1	1
48204	NW18	07/12/96	07/16/96	<1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

DRAFT

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25912
Date Received: 07/15/96
Date Reported: 07/17/96
Units: mg/Kg

Date Sampled:	07/12/96	07/12/96	07/12/96	07/12/96	
Date Analyzed:	07/16/96	07/16/96	07/16/96	07/16/96	
AA ID No.:	48200	48201	48202	48203	
Client ID No.:	EP8	EP9	EP10	EP11	MRL
Compounds:					
Benzene	<0.005	<0.005	<0.005	0.005	0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	<0.005	<0.005	0.005
Xylenes	<0.01	<0.01	<0.01	<0.01	0.01

George Hevalias
Laboratory Director

AMERICAN ANALYTICS

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LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25912
Date Received: 07/15/96
Date Reported: 07/17/96
Units: mg/Kg

Date Sampled:	07/12/96	
Date Analyzed:	07/16/96	
AA ID No.:	48204	
Client ID No.:	NW18	
Compounds:		**MRL**
Benzene	<0.005	0.005
Ethylbenzene	<0.005	0.005
Toluene	<0.005	0.005
Xylenes	<0.01	0.01

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 7/12/11

PAGE 1 OF 1

AA Client: All Environmental, Inc.	Phone: [illegible]	Sampler's Name: Jon Campbell	
Project Manager:	P.O. No.	Sampler's Signature:	
Project Name: Hoge-berger	Project No. [illegible]	Project Manager's Signature	
Job Name and Address: 625 Hoge-berger Rd.			

ANALYSIS REQUIRED

Detection Limits

Test Name: TPH-G, BTEX

Test Requirements

A.A. I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	TPH-G, BTEX	Test Requirements
	EP8	7/11		Soil		X	
	EP9	↓		↓		X	
	EP10					X	
	EP11					X	
	MW16					X	

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ____ No ____		
Samples Properly Cooled	Yes ____ No ____		
Samples Accepted	Yes ____ No ____		
If Not Why:			
AA Project No.			

Relinquished by:	Date	Time	Received by:
Jon Campbell	7/11	5:00p	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS

June 5, 1996

All Environmental, Inc.
111 N. Sepulveda Blvd., Suite 250
Manhattan Beach, CA 90266

Dear Mr. Derhake:

Enclosed are the results for the samples submitted to our laboratory on May 15, 1996. For your reference, your project has been assigned our laboratory no. MB25910.

All analyses were performed in accordance with our Laboratory's Quality Assurance Program. Also, enclosed is a copy of the invoice sent to your company's accounts payable.

Should you have any questions, please give us a call at (818) 998-5547.

Respectfully submitted,

AMERICAN ANALYTICS

George Havalias
Laboratory Director

Enclosure: Invoice copy

GH/le

COMP G-14, 15, 16, 17, 18

COMP-5

EP 5, 6, 7

EW 17

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/30/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
46391	Comp 6-14	05/08/96	05/20/96	<1	1
46396	Comp 6-15	05/08/96	05/20/96	<1	1
46401	Comp 6-16	05/08/96	05/20/96	<1	1
46407	Comp 6-17	05/08/96	05/20/96	<1	1
46412	Comp 6-18	05/08/96	05/20/96	<1	1
46417	Comp 5	05/08/96	05/20/96	<1	1
46419	EP5	05/08/96	05/17/96	<1	1
46420	EP6	05/08/96	05/17/96	<1	1
46421	EP7	05/08/96	05/17/96	2.4	1
46422	EW17	05/08/96	05/17/96	<1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 46374
Project No.: 96-B016
AA Project No.: A25910
Date Analyzed: 05/17/96
Date Reported: 05/30/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	1.08	108	1.06	106	2	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 46456
Project No.: 96-B016
AA Project No.: A25910
Date Analyzed: 05/20/96
Date Reported: 05/30/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	1.04	104	1.08	108	4	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/30/96
Units: mg/Kg

Date Sampled:	05/08/96	05/08/96	05/08/96	05/08/96	
Date Analyzed:	05/20/96	05/20/96	05/17/96	05/17/96	
AA ID No.:	46412	46417	46419	46420	
Client ID No.:	Comp 6-18	Comp 5	EP5	EP6	MRL
Compounds:					
Benzene	<0.005	<0.005	0.22	0.13	0.005
Ethylbenzene	<0.005	<0.005	0.051	0.013	0.005
Toluene	<0.005	<0.005	0.008	0.006	0.005
Xylenes	<0.01	<0.01	0.10	0.034	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/30/96
Units: mg/Kg

Date Sampled:	**05/08/96**	**05/08/96**	
Date Analyzed:	**05/17/96**	**05/17/96**	
AA ID No.:	**46421**	**46422**	
Client ID No.:	**EP7**	**EW17**	**MRL**
Compounds:			
Benzene	0.25	<0.005	0.005
Ethylbenzene	0.19	<0.005	0.005
Toluene	0.012	<0.005	0.005
Xylenes	0.063	<0.01	0.01

MRL: Method Reporting Limit

George Havallas
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 46374
Project No.: 96-B016
AA Project No.: A25910
Date Analyzed: 05/17/96
Date Reported: 05/30/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0428	107.00	0.0352	88.00	19.49	65 - 135
Ethylbenzene	0.0426	107.00	0.0442	111.00	3.67	77 - 123
Toluene	0.0432	108.00	0.0489	122.00	12.17	66 - 134
Xylenes	0.0425	106.00	0.0434	109.00	2.79	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 46456
Project No.: 96-B016
AA Project No.: A25910
Date Analyzed: 05/20/96
Date Reported: 05/30/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0361	90.00	0.0414	104.00	14.43	65 - 135
Ethylbenzene	0.0417	104.00	0.0439	110.00	5.61	77 - 123
Toluene	0.0496	124.00	0.0470	118.00	4.96	66 - 134
Xylenes	0.0441	110.00	0.0417	104.00	5.61	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: Reactivity*

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/31/96
Units: mg/Kg

Date Sampled:	**05/08/96**	
Date Analyzed:	**05/29/96**	
AA ID No.:	**46417**	
Client ID No.:	**Comp 5**	**MRL**
Compounds:		
Reactive Cyanide	<0.1	0.1
Reactive Sulfide	<0.1	0.1

MRL: Method Reporting Limit
*: Subcontracted to a DOHS State-Certified Laboratory.

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 9045 (pH Measurement)

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/31/96
Units: pH

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Result
46417	Comp 5	05/08/96	05/21/96	7.5

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: Flashpoint*

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/31/96
Units: deg F

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Result
46417	Comp 5	05/08/96	05/21/96	>200

*: Subcontracted to a DOHS State-Certified Laboratory.

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: Total Metals*

AA Project No.: A25910
Date Received: 05/14/96
Date Reported: 05/31/96
Units: mg/Kg

Date Sampled:	**05/08/96**	
Date Analyzed:	**05/29/96**	
AA ID No.:	**46417**	
Client ID No.:	**Comp 5**	**MRL**
Compounds:		
Cadmium	<1	1
Chromium	40	1
Lead	<1	1
Nickel	61	1
Zinc	110	1

MRL: Method Reporting Limit
*: Subcontracted to a DOHS State-Certified Laboratory.

George Havalias
Laboratory Director

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 5/14/96

PAGE 1 OF 3

AA Client: All Environmental Inc-

Project Manager: Joe Perhane

Project Name: Hegenberger

Job Name and Address:

Phone: 1-310-746-4470

P.O. No.:

Project No.: 96-B016

Sampler's Name: Bryan

Sampler's Signature:

Project Manager's Signature:

ANALYSIS REQUIRED

Detection Limits:

Test Name: TPH GAS/BTEX

Test Requirements

A.A. I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	TPH GAS/BTEX
46387	6-14-1	5/8/96		Soil		
46388	6-14-2					
46389	6-14-3					
46390	6-14-4					
46391	Composit	6-14				X
46392	6-15-1					
46393	6-15-2					
46394	6-15-3					
46395	6-15-4					
46396	Composit	6-15				X
46397	6-16-1					
46398	6-16-2					
46399	6-16-3					
46400	6-16-4					
46401	Composit	6-16	↓		↓	X
46402						

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact: Yes ____ No ____

Samples Properly Cooled: Yes ____ No ____

Samples Accepted: Yes ____ No ____

If Not Why: ____

AA Project No.: A25910

Relinquished by:	Date	Time	Received by:
Bryan Campbell	5/14	3:30	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

[redacted] - [redacted], Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 5/14/96

PAGE 2 OF 3

AA Client: All Environmental Inc.		Phone	Sampler's Name
Project Manager		P.O. No.	Sampler's Signature
Project Name		Project No.	Project Manager's Signature
Job Name and Address			

ANALYSIS REQUIRED

AA LD.#	Client's LD.	Date	Time	Sample Type	Number of Containers	TPH/BTEX	LUFTS	RCI	Test Requirements
46403	6-17-1	5/8/96		Soil					LUFT 5 = (0.05 ppm D.L.)
46404	6-17-2								Cadmium 7130
46405	6-17-3								Chromium 7198
46406	6-17-4								Lead 7420
46407	Composit	6-17				X			Nickel 7520
46408	6-18-1								Zinc 7950
46409	6-18-2								
46410	6-18-3								
46411	6-18-4								
46412	Composit	6-18				X			
46413	5-1								
46414	5-2								
46415	5-3								
46416	5-4								
46417	Composit	5				X	X	X	
46418									

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes	No	
Samples Properly Cooled	Yes	No	
Samples Accepted	Yes	No	
If Not Why:			

AA Project No. A25910

Relinquished by:	Date	Time	Received by:
Bryan Campbell	5/14	9:30	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 5/14/96

PAGE 5 OF 3

AA Client: All Environmental Inc		Phone	Sampler's Name
Project Manager		P.O. No.	Sampler's Signature
Project Name		Project No.	Project Manager's Signature
Job Name and Address			

ANALYSIS REQUIRED

Detection Limits

Test Name: TPHG, BTEX

Test Requirements

A.A. I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	TPHG	BTEX
46414	EP5	5/6/96		Soil		X	X
46420	EP6	↓		↓		X	X
46421	EP7					X	X
46422	EW17					X	X

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact Yes ____ No ____

Samples Properly Cooled Yes ____ No ____

Samples Accepted Yes ____ No ____

If Not Why: ____

AA Project No. A25910

Relinquished by:	Date	Time	Received by:
Bryan Campbell	5/14	3:30	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Accountant Executive, Gold - Client

AMERICAN ANALYTICS

June 28, 1996

All Environmental, Inc.
111 N. Sepulveda Blvd., Suite 250
Manhattan Beach, CA 90266

Dear Mr. Derhake:

Enclosed are the results for the samples submitted to our laboratory on June 25, 1996. For your reference, your project has been assigned our laboratory no. A25911.

All analyses were performed in accordance with our Laboratory's Quality Assurance Program. Also, enclosed is a copy of the invoice sent to your company's accounts payable.

Should you have any questions, please give us a call at (818) 998-5547.

Respectfully submitted,

AMERICAN ANALYTICS

George Havalias
Laboratory Director

AR1 THRU 12

Enclosure: Invoice copy

GH/le

DONE

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25911
Date Received: 06/25/96
Date Reported: 06/28/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
47756	AR1	06/19/96	06/27/96	<1	1
47757	AR2	06/19/96	06/27/96	<1	1
47758	AR3	06/19/96	06/27/96	<1	1
47759	AR4	06/19/96	06/27/96	<1	1
47760	AR5	06/19/96	06/27/96	<1	1
47761	AR6	06/19/96	06/27/96	<1	1
47762	AR7	06/19/96	06/27/96	<1	1
47763	AR8	06/19/96	06/27/96	<1	1
47764	AR9	06/19/96	06/27/96	<1	1
47765	AR10	06/19/96	06/27/96	<1	1
47766	AR11	06/19/96	06/27/96	<1	1
47767	AR12	06/19/96	06/27/96	<1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 47759
Project No.: 96-B016
AA Project No.: A25911
Date Analyzed: 06/27/96
Date Reported: 07/01/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	1.046	105	0.996	100	5	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25911
Date Received: 06/25/96
Date Reported: 06/28/96
Units: mg/Kg

Date Sampled:	06/19/96	06/19/96	06/19/96	06/19/96	
Date Analyzed:	06/27/96	06/27/96	06/27/96	06/27/96	
AA ID No.:	47756	47757	47758	47759	
Client ID No.:	AR1	AR2	AR3	AR4	MRL
Compounds:					
Benzene	<0.005	<0.005	<0.005	<0.005	0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	<0.005	<0.005	0.005
Xylenes	<0.01	<0.01	<0.01	<0.01	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25911
Date Received: 06/25/96
Date Reported: 06/28/96
Units: mg/Kg

Date Sampled:	06/19/96	06/19/96	06/19/96	06/19/96	
Date Analyzed:	06/27/96	06/27/96	06/27/96	06/27/96	
AA ID No.:	47760	47761	47762	47763	
Client ID No.:	AR5	AR6	AR7	AR8	MRL
Compounds:					
Benzene	<0.005	<0.005	<0.005	0.007	0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	<0.005	0.011	0.005
Xylenes	<0.01	<0.01	<0.01	<0.01	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25911
Date Received: 06/25/96
Date Reported: 06/28/96
Units: mg/Kg

Date Sampled:	06/19/96	06/19/96	06/19/96	06/19/96	
Date Analyzed:	06/27/96	06/27/96	06/27/96	06/27/96	
AA ID No.:	47764	47765	47766	47767	
Client ID No.:	AR9	AR10	AR11	AR12	MRL
Compounds:					
Benzene	<0.005	<0.005	<0.005	<0.005	0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	<0.005	<0.005	0.005
Xylenes	<0.01	<0.01	<0.01	<0.01	0.01

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 47759
Project No.: 96-B016
AA Project No.: A25911
Date Analyzed: 06/27/96
Date Reported: 07/01/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0389	97.00	0.0426	107.00	9.80	65 - 135
Ethylbenzene	0.0433	108.00	0.0397	99.00	8.70	77 - 123
Toluene	0.0462	116.00	0.0420	105.00	9.95	66 - 134
Xylenes	0.0435	109.00	0.0399	100.00	8.61	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS

July 17, 1996

All Environmental, Inc.
111 N. Sepulveda Blvd., Suite 250
Manhattan Beach, CA 90266

Dear Mr. Derhake:

Enclosed are the results for the samples submitted to our laboratory on July 15, 1996. For your reference, your project has been assigned our laboratory no. A25912.

All analyses were performed in accordance with our Laboratory's Quality Assurance Program. Also, enclosed is a copy of the invoice sent to your company's accounts payable.

Should you have any questions, please give us a call at (818) 998-5547.

Respectfully submitted,

AMERICAN ANALYTICS

George Havalias
Laboratory Director

Enclosure: Invoice copy

GH/pj

EP-8,9,10,11
MW-18

American Analytics • 9765 Eton Avenue, Chatsworth, Calif... 91311
Tel:(818)998-5547 • (800)533-8378 • Fax:(818)998-7258

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25912
Date Received: 07/15/96
Date Reported: 07/17/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
48200	EP8	07/12/96	07/16/96	<1	1
48201	EP9	07/12/96	07/16/96	<1	1
48202	EP10	07/12/96	07/16/96	<1	1
48203	EP11	07/12/96	07/16/96	<1	1
48204	NW18	07/12/96	07/16/96	<1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 48201
Project No.: 96-B016
AA Project No.: A25912
Date Analyzed: 07/16/96
Date Reported: 07/17/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	1.19	119	1.09	109	9	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25912
Date Received: 07/15/96
Date Reported: 07/17/96
Units: mg/Kg

Date Sampled:	07/12/96	07/12/96	07/12/96	07/12/96	
Date Analyzed:	07/16/96	07/16/96	07/16/96	07/16/96	
AA ID No.:	48200	48201	48202	48203	
Client ID No.:	EP8	EP9	EP10	EP11	MRL
Compounds:					
Benzene	<0.005	<0.005	<0.005	0.005	0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	<0.005	<0.005	0.005
Xylenes	<0.01	<0.01	<0.01	<0.01	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25912
Date Received: 07/15/96
Date Reported: 07/17/96
Units: mg/Kg

Date Sampled:	**07/12/96**	
Date Analyzed:	**07/16/96**	
AA ID No.:	**48204**	
Client ID No.:	**NW18**	**MRL**
Compounds:		
Benzene	<0.005	0.005
Ethylbenzene	<0.005	0.005
Toluene	<0.005	0.005
Xylenes	<0.01	0.01

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 48201
Project No.: 96-B016
AA Project No.: A25912
Date Analyzed: 07/16/96
Date Reported: 07/17/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0399	100.00	0.0386	97.00	3.05	65 - 135
Ethylbenzene	0.0394	99.00	0.0380	95.00	4.12	77 - 123
Toluene	0.0402	101.00	0.0366	92.00	9.33	66 - 134
Xylenes	0.0391	98.00	0.0407	102.00	4.00	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 7/12/96

PAGE 1 OF 1

AA Client: All Environmental, Inc.		Phone: 510-283-6000	Sampler's Name: Bryan Campbell
Project Manager:		P.O. No.:	Sampler's Signature:
Project Name: Hegenberger		Project No.: 96-8016	Project Manager's Signature:
Job Name and Address: 625 Hegenberger Rd.			

A.A. I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers
48200	EP8	7/12		Soil	
48201	EP9				
48202	EP10				
48203	EP11				
48204	NW16				

ANALYSIS REQUIRED

Detection Limits / Test Name	TPH-g	BTEX										Test Requirements
	X	X										
	X	X										
	X	X										
	X	X										

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ✓ No	Relinquished by: Bryan Campbell	Date 7/12	Time 5:00pm	Received by: Michael Royek 7/15/96
Samples Properly Cooled	Yes ✓ No	Relinquished by:	Date	Time	Received by:
Samples Accepted	Yes ✓ No	Relinquished by:	Date	Time	Received by:
If Not Why:		Relinquished by:	Date	Time	Received by:

AA Project No. A25912

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS

July 25, 1996

All Environmental, Inc.
111 N. Sepulveda Blvd., Suite 250
Manhattan Beach, CA 90266

Dear Mr. Derhake:

Enclosed are the results for the samples submitted to our laboratory on July 18, 1996. For your reference, your project has been assigned our laboratory no. A25913.

All analyses were performed in accordance with our Laboratory's Quality Assurance Program. Also, enclosed is a copy of the invoice sent to your company's accounts payable.

Should you have any questions, please give us a call at (818) 998-5547.

Respectfully submitted,

AMERICAN ANALYTICS

George Havalias
Laboratory Director

comp P751 + 52

Enclosure: Invoice copy

GH/le

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25913
Date Received: 07/18/96
Date Reported: 07/24/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
48321	Composite P7S1	07/16/96	07/22/96	<1	1
48326	Composite P7S2	07/16/96	07/22/96	<1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 48420
Project No.: 96-B016
AA Project No.: A25913
Date Analyzed: 07/22/96
Date Reported: 07/24/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	0.98	98	1.1	110	12	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25913
Date Received: 07/18/96
Date Reported: 07/24/96
Units: mg/Kg

Date Sampled:	07/16/96	07/16/96	
Date Analyzed:	07/22/96	07/22/96	
AA ID No.:	48321	48326	
Client ID No.:	Composite P7S1	Composite P7S2	MRL
Compounds:			
Benzene	<0.005	<0.005	0.005
Ethylbenzene	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	0.005
Xylenes	<0.01	<0.01	0.01

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 48420
Project No.: 96-B016
AA Project No.: A25913
Date Analyzed: 07/22/96
Date Reported: 07/24/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0415	104.00	0.0458	115.00	10.05	65 - 135
Ethylbenzene	0.0396	99.00	0.0458	115.00	14.95	77 - 123
Toluene	0.0472	118.00	0.0430	108.00	8.85	66 - 134
Xylenes	0.0466	117.00	0.0405	101.00	14.68	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 7/17/96

PAGE 1 OF 1

AA Client: All Environmental, Inc.		Phone: (570) 283-6000	Sampler's Name: Dusty Roy
Project Manager: Joe Dorhauer		P.O. No.	Sampler's Signature
Project Name: Hegenberger		Project No. 96-8016	Project Manager's Signature
Job Name and Address: 625 Hegenberger Road.			

AA I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	TPH gas/BTEX	Test Requirements
48317	P751-1	7/16		Soil			
48318	P751-2	↓		↓			
48319	P751-3						
48320	P751-4						
Composite	P751					X	
48322	P752-1						
48323	P752-2						
48324	P752-3						
48325	P752-4						
Composite	P752	↓		↓		X	

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ✓	No
Samples Properly Cooled	Yes ✓	No
Samples Accepted	Yes ✓	No
If Not Why:		
AA Project No. A25913		

Relinquished by:	Date	Time	Received by:
Bryan Campbell	7/17	6:00p	7/18/96 1530
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

AMERICAN ANALYTICS

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 6/20/96

PAGE 1 OF 1

AA Client: All Environmental, Inc.		Phone: (510) 283-6000	Sampler's Name: Dusty Roy
Project Manager: Joe Darham		P.O. No.	Sampler's Signature
Project Name: Hegenberger		Project No.: 96-B016	Project Manager's Signature
Job Name and Address: Hegenberger — 625 Hegenberger Rd, Oakland, CA			

AA I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers
47756	AR1	6/19		Soil	
47757	AR2				
47758	AR3				
47759	AR4				
47760	AR5				
47761	AR6				
47762	AR7				
47763	AR8				
47764	AR9				
47765	AR10				
47766	AR11				
47767	AR12				

ANALYSIS REQUIRED

Detection Limits / Test Name	TPH-G/BTEX										Test Requirements
	X										
	X										
	X										
	X										
	X										
	X										
	X										
	X										
	X										
	X										
	X										
	X										

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ✓	No
Samples Properly Cooled	Yes ✓	No
Samples Accepted	Yes ✓	No
If Not Why:		

AA Project No. A2-911

Relinquished by:	Date	Time	Received by:
Bryan Campbell	6/24	3:30pm	[signature] 6/25/96
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - [illegible] Canary - Laboratory, Pink - Accounting Executive, Gold - Client

AMERICAN ANALYTICS

September 16, 1996

All Environmental, Inc.
111 N. Sepulveda Blvd., Suite 250
Manhattan Beach, CA 90266

Dear Mr. Derhake:

Enclosed are the results for the samples submitted to our laboratory on September 10, 1996. For your reference, your project has been assigned our laboratory no. A25915.

All analyses were performed in accordance with our Laboratory's Quality Assurance Program. Also, enclosed is a copy of the invoice sent to your company's accounts payable.

Should you have any questions, please give us a call at (818) 998-5547.

Respectfully submitted,

AMERICAN ANALYTICS

George Havalias
Laboratory Director

CLIENT ID 1 THRU 10

Enclosure: Invoice copy

DONE

GH/le

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8015M (Gasoline)

AA Project No.: A25915
Date Received: 09/10/96
Date Reported: 09/16/96
Units: mg/Kg

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
49860	1	09/05/96	09/12/96	<1	1
49861	2	09/05/96	09/12/96	<1	1
49862	3	09/05/96	09/12/96	<1	1
49863	4	09/05/96	09/12/96	<1	1
49864	5	09/05/96	09/12/96	<1	1
49865	6	09/05/96	09/12/96	<1	1
49866	7	09/05/96	09/13/96	<1	1
49867	8	09/05/96	09/12/96	<1	1
49868	9	09/05/96	09/13/96	<1	1
49869	10	09/05/96	09/12/96	<1	1

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 49905
Project No.: 96-B016
AA Project No.: A25915
Date Analyzed: 09/12/96
Date Reported: 09/16/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	1.14	114	1.16	116	2	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8015M (Gasoline)
Sample ID: Matrix Spike
Concentration: 1 mg/Kg

AA ID No.: 49866
Project No.: 96-B016
AA Project No.: A25915
Date Analyzed: 09/13/96
Date Reported: 09/17/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Gasoline Range Organics	1.16	116	1.18	118	2	51 - 149

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25915
Date Received: 09/10/96
Date Reported: 09/16/96
Units: mg/Kg

Date Sampled:	09/05/96	09/05/96	09/05/96	09/05/96	
Date Analyzed:	09/12/96	09/12/96	09/12/96	09/12/96	
AA ID No.:	49860	49861	49862	49863	
Client ID No.:	1	2	3	4	MRL
Compounds:					
Benzene	<0.005	<0.005	<0.005	<0.005	0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	<0.005	<0.005	0.005
Xylenes	<0.01	<0.01	<0.01	<0.01	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25915
Date Received: 09/10/96
Date Reported: 09/16/96
Units: mg/Kg

Date Sampled:	09/05/96	09/05/96	09/05/96	09/05/96	
Date Analyzed:	09/12/96	09/12/96	09/13/96	09/12/96	
AA ID No.:	49864	49865	49866	49867	
Client ID No.:	5	6	7	8	MRL
Compounds:					
Benzene	<0.005	<0.005	<0.005	<0.005	0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	<0.005	<0.005	0.005
Xylenes	<0.01	<0.01	<0.01	<0.01	0.01

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY ANALYSIS RESULTS

Client: All Environmental, Inc.
Project No.: 96-B016
Project Name: Hegenberger
Sample Matrix: Soil
Method: EPA 8020 (BTEX)

AA Project No.: A25915
Date Received: 09/10/96
Date Reported: 09/16/96
Units: mg/Kg

Date Sampled:	**09/05/96**	**09/05/96**	
Date Analyzed:	**09/13/96**	**09/12/96**	
AA ID No.:	**49868**	**49869**	
Client ID No.:	**9**	**10**	**MRL**
Compounds:			
Benzene	<0.005	<0.005	0.005
Ethylbenzene	<0.005	<0.005	0.005
Toluene	<0.005	<0.005	0.005
Xylenes	0.010	<0.01	0.01

MRL: Method Reporting Limit

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 49905
Project No.: 96-B016
AA Project No.: A25915
Date Analyzed: 09/12/96
Date Reported: 09/16/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0413	103.00	0.0427	107.00	3.81	65 - 135
Ethylbenzene	0.0391	98.00	0.0397	99.00	1.02	77 - 123
Toluene	0.0404	101.00	0.0363	91.00	10.42	66 - 134
Xylenes	0.0394	99.00	0.0360	90.00	9.52	73 - 126

George Havalias
Laboratory Director

AMERICAN ANALYTICS

LABORATORY QA/QC REPORT

Client: All Environmental, Inc.
Project Name: Hegenberger
Method: EPA 8020 (BTEX)
Sample ID: Matrix Spike
Concentration: 0.04 mg/Kg

AA ID No.: 49866
Project No.: 96-B016
AA Project No.: A25915
Date Analyzed: 09/13/96
Date Reported: 09/17/96

Compounds	Result (mg/Kg)	Spike Recovery (%)	Dup. Result (mg/Kg)	Spike/Dup. Recovery (%)	RPD (%)	Accept.Rec. Range (%)
Benzene	0.0402	101.00	0.0406	102.00	0.99	65 - 135
Ethylbenzene	0.0420	105.00	0.0426	107.00	1.89	77 - 123
Toluene	0.0403	101.00	0.0402	101.00	0.00	66 - 134
Xylenes	0.0432	108.00	0.0437	109.00	0.92	73 - 126

George Havallas
Laboratory Director

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

AMERICAN ANALYTICS

9765 ETON AVE., CHATSWORTH, CA 91311

(818) 998-5547 (818) 998-5548 1-800-533-TEST 1-800-533-8378 FAX (818) 998-7258

DATE: 9/9/96

PAGE 1 OF 1

AA Client: All Environmental		Phone: (510) 683-6000	Sampler's Name: Rusty Roy
Project Manager: Joe Derhave		P.O. No.	Sampler's Signature
Project Name: Hegenberger		Project No. 96-8016	Project Manager's Signature
Job Name and Address: 625 Hegenberger Rd, Oakland			

ANALYSIS REQUIRED

A.A. I.D.#	Client's I.D.	Date	Time	Sample Type	Number of Containers	Test Name: TPH gas/BTEX (Detection Limits)	Test Requirements
49860	1	9/5		Soil		X	
49861	2	"		"		X	
49862	3	"		"		X	
49863	4	"		"		X	
49864	5	"		"		X	
49865	6	"		"		X	
49866	7	"		"		X	
49867	8	"		"		X	
49868	9	"		"		X	
49869.	10	"		"		X	

SAMPLE INTEGRITY-TO BE FILLED IN BY RECEIVING LAB

Samples Intact	Yes ✓	No
Samples Properly Cooled	Yes ✓	No
Samples Accepted	Yes ✓	No
If Not Why:		
AA Project No.	A25915	

Relinquished by:	Date	Time	Received by:
Bryan Campbell	9/9		Michael Wright 9/10/96
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

DISTRIBUTION: White - Laboratory, Canary - Laboratory, Pink - Account Executive, Gold - Client

APPENDIX B

COMPACTION TEST RESULTS AND GEOTECHNICAL DATA

CMT CONSTRUCTION MATERIALS TESTING, INC.

Job Name: ALL ENVIRONMENTAL
Job No. 93294
Sample Description: VERY DARK BROWN CLAYEY SAND W/GRAVEL
Sample No:
Source:
Date: 7-11-96
Client No:
Sampled: Tested: BJM

COMPACTION CURVE

% Retained on 3/4": ASTM D1557 A (4" mold) ASTM D1557 B C or D (6" mold)

Trial No.		+4	+6	+8	Group Symbol:
Wet Wt.		1958	2028	2038	4" MOLD
Wet Den.					Wet Den. = .06614 x Wet Wt.
Dry Wt.		1809	1841	1821	Dry Den. = Wt Den. / 100 + % H_2O
Moisture					6" MOLD
% Moisture					Wet Den. = .02939 x Wet Wt.
Dry Den.					Dry Den. = Wt Den. / 100 + % H_2O

Sample

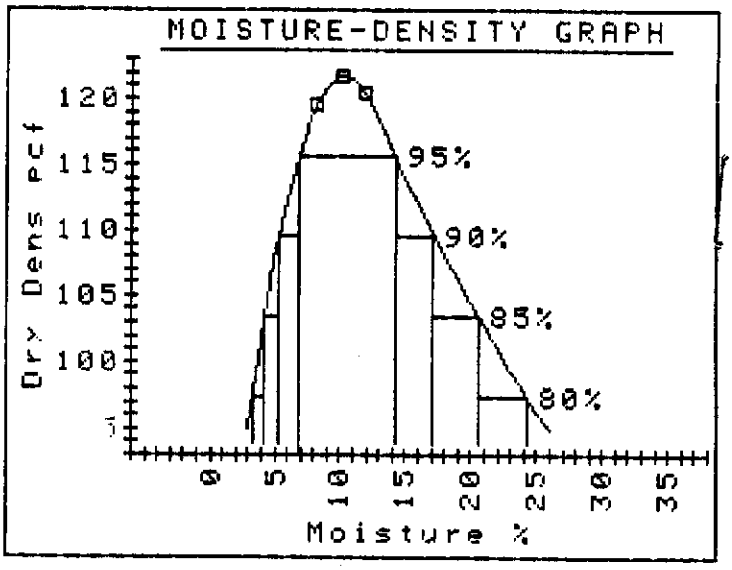
Maximum Dens. : 121.8 pcf
Optimum Mois. : 10.3 %

MOISTURE RANGE

	low	high
95%	6.8	14.2
90%	5.4	17.1
85%	4.2	20.5
80%	3.3	24.3

LAB DATA

	dens	mois
1.	119.6	8.2
2.	121.8	10.2
3.	120.4	11.9



1000-U Detroit Avenue . Concord, California 94518 . Telephone (510) 825-2840

DAILY FIELD REPORT

JOB NO. or P O NO. 93432

PAGE 1 OF 1

PROJECT NAME: 625 Hegenberger	CLIENT OR OWNER: ALL ENVIRONMENTAL	DAILY FIELD REPORT SEQUENCE NO.: 1	
GENERAL LOCATION OF WORK: Oakland	OWNER OR CLIENT'S REPRESENTATIVE: BRIAN	DATE: 7/11/96	DAY OF WEEK: THUR
GENERAL CONTRACTOR	GRADING CONTRACTOR: SAME	PROJECT ENGINEER	
TYPE OF WORK	GRADING CONTRACTOR'S SUPERINTENDENT OR FOREMAN: DUSTY ROY	SUPERVISOR	
SOURCE AND DESCRIPTION OF FILL MATERIAL (IMPORT OR SITE)		WEATHER: Clear	TECHNICIAN: Brasher

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, AND COMPACTING

TEST NUMBER	TEST LOCATION: TANK EXCAVATION BACKFILL	ELEV (feet): FG	FIELD TESTING: DRY DENSITY lbs/cu. ft.	FIELD TESTING: MOISTURE CONTENT %	FIELD TESTING: % OF MAXIMUM DRY DENSITY	REFERENCE CURVE: COMP CURVE NO.	REFERENCE CURVE: MAXIMUM DRY DENSITY lbs/cu. ft.	REFERENCE CURVE: OPTIMUM MOISURE CONTENT %	COMMENTS
1	NO END	-3'	112.2	14.5	92	1	121.8	10.2	
2	SO END	-3'	111.5	10.8	92				

NOTES (Describe work completed during the day, any problems and their solutions)

Contractor said he would be ready for testing at 11:00 AM. When I arrived at 11:00 he said he would not be ready until 1:30 P.M. When I arrived at 1:30 Dusty wanted to wait until Brian showed up. I took two compaction tests. I got good results on both tests taken. Brian showed up as I was beginning to take second test. Contractor has to spread and aerate more material so it can be used as fill.

TIME BILLED 4 HRS. NO. OF VISITS 2 CONTINUED ☐

RECEIVED BY COPY GIVEN TO

CMT-1

DAILY FIELD REPORT

JOB NO. or P.O. NO. 93432

PAGE 1 OF 1

PROJECT NAME: 625 Hegenberger	CLIENT OR OWNER: All Environmental	DAILY FIELD REPORT SEQUENCE NO.: 2	
GENERAL LOCATION OF WORK: Oakland	OWNER OR CLIENT'S REPRESENTATIVE: Brian	DATE: 9/	DAY OF WEEK: WED
GENERAL CONTRACTOR	GRADING CONTRACTOR: same	PROJECT ENGINEER	
TYPE OF WORK	GRADING CONTRACTOR'S SUPERINTENDENT OR FOREMAN: Dusty Roy	SUPERVISOR	
SOURCE AND DESCRIPTION OF FILL MATERIAL (IMPORT OR SITE) /	WEATHER: Clear	TECHNICIAN: Brosha	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, AND COMPACTING

TEST NUMBER	TEST LOCATION: TANK EXCAVATION BACK FILL	ELEV (feet) + −	FIELD TESTING: DRY DENSITY lbs/cu. ft.	FIELD TESTING: MOISTURE CONTENT %	FIELD TESTING: % OF MAXIMUM DRY DENSITY	REFERENCE CURVE: COMP CURVE NO.	REFERENCE CURVE: MAXIMUM DRY DENSITY lbs/cu. ft.	REFERENCE CURVE: OPTIMUM MOISURE CONTENT %	COMMENTS
3	#1 EXC. WEST SIDE	56-½	110.4	9.2	94	2	118.	9.0	94
4	" SO. SIDE	"	111.8	10	95	|	|	|	
5	" NO SIDE	"	112.1	9.4	95	|	|	|	
6	" CENTER	"	112.7	8.7	96	|	|	|	
7	#2 EXC. CENTER	56-2	107	11	91	|	|	|	

NOTES (Describe work completed during the day, any problems and their solutions)

Contractor is moisture conditioning and Compacting Tank excavation backfill. I tested Compaction at various locations and got good results on test taken.

TIME BILLED 4 HRS. NO. OF VISITS 1 CONTINUED ☐

RECEIVED BY COPY GIVEN TO

CMT-1

LABORATORY WORK SHEET

MOISTURE – DENSITY RELATIONSHIP TEST
(See Reverse Side for Calculations)

Client's No. _____ Order No. 93432
Date: 9-18-96 Report No: 2
Reported To: All Environmental

Project 625 Hegenberger Rd - Oakland

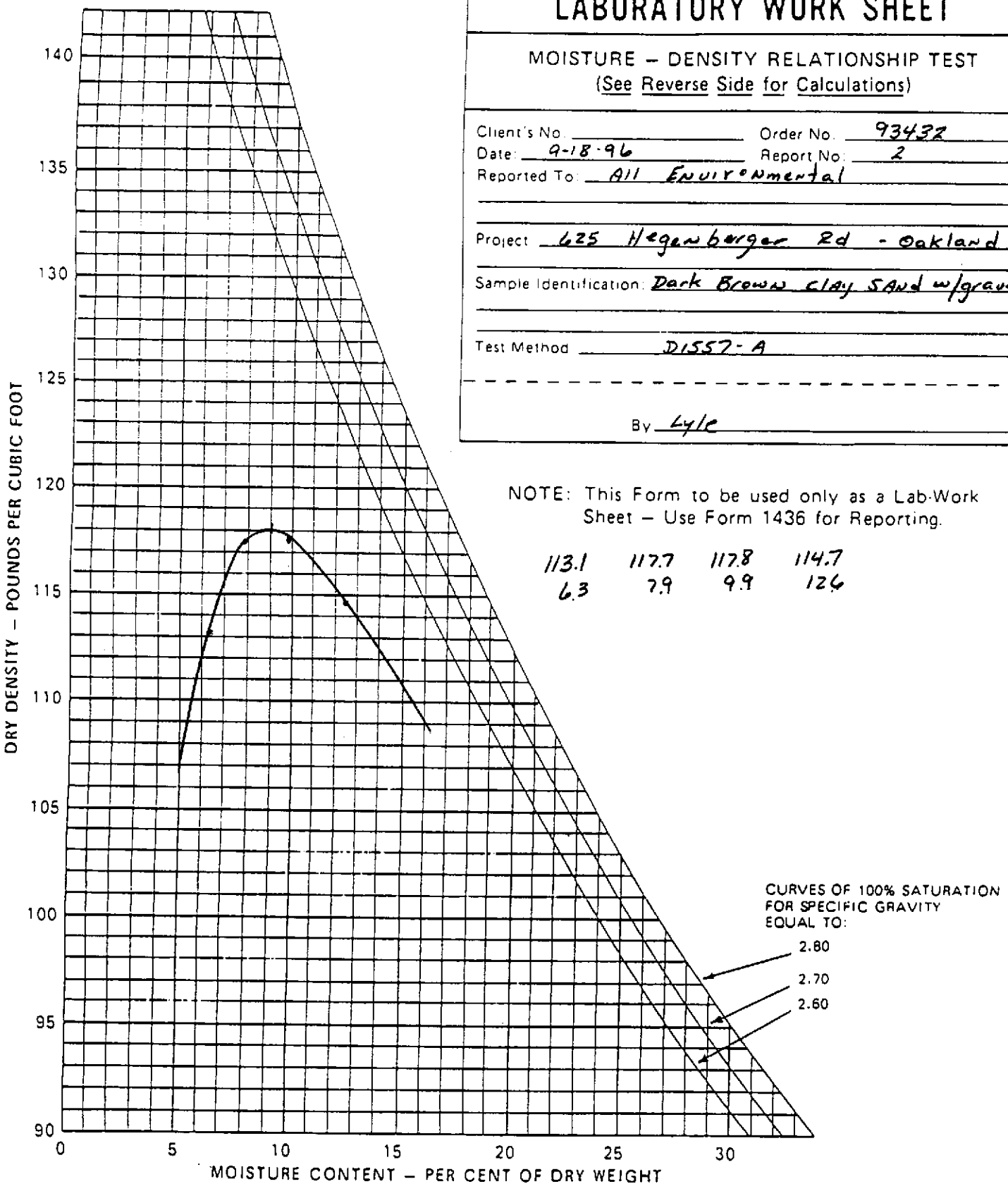
Sample Identification: Dark Brown clay SAND w/gravel

Test Method D1557-A

By Lyle

NOTE: This Form to be used only as a Lab-Work Sheet – Use Form 1436 for Reporting.

113.1	117.7	117.8	114.7
6.3	7.9	9.9	12.6



TEST RESULTS

MAXIMUM DRY DENSITY 1180 Lbs. Cu. Ft.

OPTIMUM MOISTURE 9.0 %

Form No. 1436-A

APPENDIX C

EXCERPTS FROM LAVINE FRICKE'S SITE CHARACTERIZATION REPORT

Report on a Supplemental Site Investigation and a Conceptual Remediation Plan 625 Hegenberger Road Oakland, California

April 5, 1995
3015.94

Prepared for
Diversified Investment and
Management Corporation
400 Oyster Point Boulevard, Suite 415
South San Francisco, California 94080

LEVINE·FRICKE

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

April 5, 1995 LF 3015

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, California 94621

Subject: Tank Closure Report on Removal of Underground Fuel Storage Tanks and Related Structures at the Former Gasoline Service Station Location at 625 Hegenberger Road, Oakland, California

Dear Mr. Chan:

Enclosed is the final Supplemental Site Investigation and a Conceptual Remediation report for the subject site. If you have any questions about the report, please call either of the undersigned.

Sincerely,

John Sturman, P.E., R.G.
Senior Geotechnical Engineer

Shellie Fletcher
Senior Staff Geotechnical Engineer

Enclosure

cc: James Graeb, Diversified Investment and Management Corp.

3015\3015-SSI.RPT:wkh

1900 Powell Street, 12th Floor
Emeryville, California 94608
(510) 652-4500
Fax (510) 652-2246

CONTENTS

CONTENTS (continued)

CERTIFICATION

All engineering information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a Levine·Fricke California Professional Engineer.

4/5/95

John O. Sturman
Senior Geotechnical Engineer
California Civil Engineer (049765)

April 5, 1995 LF 3015

REPORT ON A SUPPLEMENTAL SITE INVESTIGATION AND A CONCEPTUAL REMEDIATION PLAN 625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

1.0 INTRODUCTION AND BACKGROUND

This Supplemental Site Investigation Report and Conceptual Remedial Plan is submitted by Levine·Fricke, Inc. ("Levine·Fricke"), on behalf of Diversified Investment and Management Corp., for the former fuel service station location at 625 Hegenberger Road, Oakland, California, ("the Site"; Figure 1).

The work was performed in accordance with the "Work Plan for Supplemental Site Investigation and Conceptual Remedial Planning, 625 Hegenberger Road, Oakland, California," originally dated September 26, 1994, revised on October 14, 1994, and approved by Mr. Barney Chan of the Alameda County Department of Environmental Health (ACDEH). This report presents the results of the supplemental investigation conducted on January 5, 6 and 10, 1995, as well as the proposed conceptual remediation plan for bringing the Site into compliance with the requirements of the ACDEH.

1.1 Site Description

Underground fuel storage tanks (USTs) associated with the former fuel service station were removed from the Site in October 1993. An active tune-up shop and convenience store are located at the Site.

1.2 Previous Site Activities

1.2.1 Subsurface Consultants Investigations

Soil and ground-water investigations conducted by Subsurface Consultants Inc. (SCI) in 1988 and 1990 indicated that Site soil and ground water at the Site contained gasoline and diesel petroleum hydrocarbons, as well as petroleum hydrocarbons characterized as oil and grease (SCI 1988 and 1990). Approximate boring locations are shown on Figure 2. A thin layer (about ¼-inch) of floating gasoline was encountered during SCI 1988 investigation. The most elevated gasoline concentrations detected in soil were 5,600 milligrams per kilogram (mg/kg), 2,200 mg/kg, and 1,000 mg/kg in borings 6, 7, and 23, respectively. The highest diesel concentrations

in soil were 6,400 mg/kg and 5,000 mg/kg in borings 7 and 9, respectively. The highest total oil and grease (TOG) concentrations in soil were 100,000 mg/kg, 40,000 mg/kg, and 23,000 mg/kg in borings 7, 9, and 8 (MW-8), respectively.

Soil samples collected by SCI were also analyzed for total lead, soluble lead, organic lead, cyanide, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and ethylene dibromide. Total lead was detected in soil at concentrations well below 1,000 mg/kg, the State of California total threshold limit concentration (TTLC), and was detected in all soil samples analyzed. Soluble lead was detected in three of six samples at concentrations slightly in excess of the State of California soluble threshold limit concentration (STLC) of 5 milligrams per liter (mg/l). Organic lead was detected in one of six samples at 0.9 mg/kg, which is below the TTLC of 13 mg/kg. VOCs and SVOCs were not detected using EPA Methods 8010 and 8270. Ethylene dibromide was not detected. Cyanide was detected at 0.49 mg/kg in one of two soil samples analyzed.

Subsurface Consultants installed five shallow ground-water monitoring wells on the Site (Subsurface Consultants 1990).

1.2.2 HartCrowser Ground-Water Monitoring

Ground water in the five wells was monitored by HartCrowser on May 28, 1993 (HartCrowser 1993). Analytical test results indicated that total petroleum hydrocarbons (TPH) as gasoline (TPHg), BTEX, and TPH as diesel (TPHd) were present in wells MW-8, MW-11, and MW-16. The most elevated TPHg and benzene concentrations (19 mg/l and 6.4 mg/l, respectively) were detected in monitoring well MW-8, which is approximately downgradient from the pump islands. Ground-water samples were also analyzed for organic lead, which was not detected.

1.2.3 Levine·Fricke Activities

1.2.3.1 Underground Storage Tank Removal and Closure

In October 1993, three underground storage tanks (USTs) and related structures were removed from the Site under Levine·Fricke observation (Levine·Fricke 1994a). During UST removal and closure, the following were removed from the Site: two fuel islands; the dispensers; a canopy; three 12,000-gallon-capacity USTs; approximately 140 feet of associated piping; one 260-gallon-capacity sump; approximately 250 cubic yards (cy) of soil affected by petroleum hydrocarbons. The excavated soil is currently

stored on-site until a treatment plan is implemented. Soils have been set on bermed plastic and have been covered with plastic sheeting, in accordance with the UST Closure Plan developed by Levine·Fricke and approved by the ACDEH.

1.2.3.2 Soil Characterization

Hydrocarbons. Soil samples collected during UST removal and closure indicate that soil surrounding the USTs, the sump, and the product piping is affected by gasoline-, diesel-, and oil-range hydrocarbons. TPHg was detected at concentrations up to 7,600 mg/kg (see Figure 2). The fuel constituents, benzene, toluene, ethyl benzene and total xylenes (BTEX) were present at corresponding elevated concentrations. TPH as oil (TPHo) was detected at concentrations as high as 11,000 mg/kg. TPHd was frequently below detection limits; the highest concentration detected was 140 mg/kg.

The reported chemicals of concern at the Site are gasoline, diesel, and petroleum hydrocarbons in the TOG range. Results of ground-water monitoring, sampling of soil and ground water during the UST removal and closure operations, and sampling conducted previously by Subsurface Consultants indicate that gasoline, BTEX, diesel, and petroleum hydrocarbons in the TOG range are present in site soils and ground water.

The petroleum hydrocarbons in the TOG range have not yet been fully characterized. These hydrocarbons could potentially be constituents of motor oil and grease, resulting from service station operations. Alternatively, they could result from a tar-like substance that has been identified at adjacent sites as part of the earth fill materials used in the area of the Site (Barney Chan, Alameda County Health Care Services Agency, Department of Environmental Health [ACDEH], personal communication, August 17, 1994). On August 18, 1994, Levine·Fricke personnel examined the stockpile of excavated soil, and found some large chunks (gravel and cobble-sized) of solidified tar- or asphalt-like material. This material is believed to be part of the fill materials used in the area.

Lead. Soil samples collected during UST removal were also analyzed or tested for lead. Total lead was detected at concentrations well below the 1,000 mg/kg TTLC in all soil samples tested. Organic lead (methyl-ethyl and tetra-ethyl lead, additives in leaded gasoline) was detected in only 8 out of 23 soil samples, all below the TTLC of 13 mg/kg.

Five soil samples were analyzed for soluble lead. Four of the samples contained soluble lead below the STLC; one sample, in

which the highest concentration of total lead was detected, contained 6 mg/l soluble lead, slightly in excess of the STLC (5 mg/l).

Based on the Subsurface Consultants results for total and organic lead, it is our opinion that elevated lead present in site soils are likely due to the presence of lead in fill materials in the region.

1.2.3.3 Ground-Water Monitoring

Levine·Fricke collected ground-water samples from five monitoring wells during December 1993 and June 1994 (Levine·Fricke 1994b, 1994c). On August 15, 1994, the well casing elevation for monitoring well MW-16 was surveyed by Levine·Fricke personnel, and ground-water levels were measured over a six-hour period to assess tidal influence. A quarterly ground-water monitoring program has been implemented at the Site. Analysis of ground-water samples collected by Levine·Fricke during the past four quarterly monitoring events (Levine·Fricke 1994b, 1994c, 1994d, 1995a) indicate that:

- TPHg and BTEX were consistently present in only two of the wells: monitoring wells MW-8 and MW-11.
- There does not appear to be any trend of increase in TPHg and BTEX concentrations and the plume does not appear to be moving.
- Weathered diesel and oil, when present, were present in very low concentrations.
- Lead was not detected in any ground-water samples.

The most elevated TPHg and benzene concentrations were detected in monitoring well MW-8, which is immediately downgradient from the former pump and piping location and adjacent to the former tank location. Evaluation of ground-water levels indicated that tidal influence at the Site does not significantly affect the ground-water flow direction or gradient. Results of the quarterly ground-water sampling indicate that lead is not present in concentrations that exceed regulatory levels.

2.0 SUPPLEMENTAL SITE INVESTIGATION

2.1 Scope of Work

A supplemental site investigation was requested by ACDEH to further assess the extent of the petroleum hydrocarbons in the soil and ground water, and to develop a site cleanup plan. Additional soil sampling for petroleum hydrocarbons was necessary to estimate the total volume of soils that will require excavation and treatment, and to identify soils that may be segregated for treatment or backfill.

This scope of work included the following tasks:

- installation and sampling of 11 soil borings and 1 ground-water monitoring well
- laboratory analysis of 23 soil and 5 ground-water samples (4 ground-water samples were collected from soil borings; one ground-water sample was collected from the new well as part of quarterly monitoring in January 1995)
- data evaluation
- remedial evaluation and report preparation

2.2 Objectives

The specific objectives of the supplemental site investigation were as follows:

- Assess the lateral and vertical extent of petroleum hydrocarbons associated with the former USTs in the soil.
- Identify the petroleum hydrocarbons identified as TPHo or TOG, and determine if they are similar to the tar-like substance found in fill materials on adjacent sites.
- Better assess the lateral extent of affected ground water.
- Collect data to evaluate the potential of an off-site source(s) that may have affected site soil and/or ground water.
- Use the data collected during these activities to assess remediation options and costs.

2.3 Field Activities

2.3.1 Drilling Soil Borings

On January 5, 6, and 10th, 1995, Levine·Fricke installed 13 soil borings (LF-24 through LF-36) at the Site. Soil samples were collected and analyzed for petroleum hydrocarbons. Soil borings were sampled at selected depths to assess the vertical and lateral extent of petroleum hydrocarbons in soil and ground water. Soil borings extended to a maximum depth of approximately 9.75 to 13.75 feet below ground surface (bgs) and were backfilled to the ground surface after samples were collected. Soil boring logs are included in Appendix A.

2.3.2 Collecting Grab Ground-Water Samples and Installing One Well

Grab ground-water samples were collected from four soil borings (GG-25, GG-30, GG-33, GG-34) and were sent to American Environmental Network (AEN) of Pleasanton, California for analysis. On January 5, 1995, soil boring LF-24, located downgradient from the former UST location, was converted into ground-water monitoring well MW-24, which extends to a maximum depth of approximately 14 feet bgs. Monitoring well MW-24 was developed and sampled to fulfill the quarterly ground-water monitoring requirement of the ACDEH, as well as to gather information as a part of the supplementary investigation. The first quarter ground-water quality monitoring report (Levine·Fricke 1995) has been completed and filed with the ACDEH. Appendix B presents detailed field methods.

2.3.3 Field Observations

Four of the 11 soil borings had soil cuttings with elevated VOC readings (greater than 100 ppm) when measured using the field photoionization detector (PID). These borings were MW-24, LF-25, LF-28, and LF-33. All of the borings had some VOC readings, though most were relatively low (around 10 ppm or less).

The depth of fill materials at the Site appears to vary between about 2 to 6 feet. Although a few brick and glass fragments were observed, most of the fill materials appeared to be soil, primarily sandy and gravelly clay mixtures. The tar-like material previously observed (discussed in Section 1.2.3.2) was not observed in materials during this phase of the investigation.

Free water was encountered in eight of the thirteen borings. Based on this investigation, static shallow ground water appears to be found at about 7.5 to 9 feet bgs. This is generally consistent with the water levels measured as part of the quarterly monitoring program, though we did not allow the borings to remain open overnight in order to reach equilibrium. In some of the borings, free water did not enter the borehole until we had reached 10 or more feet bgs; then water rose to 7.5 to 9 feet bgs. This indicates that shallow ground water is confined, at least in some portions of the Site.

In boring LF-26, a dark, viscous oil entered the boring on top of water at a depth of about 8 feet, after drilling to 9 feet bgs. This layer of oil increased to approximately one-half foot in thickness. A sample of this oil was collected for hydrocarbon characterization (fuel fingerprinting). Borings LF-35 and LF-36 were drilled in the vicinity of LF-26 to assess the lateral extent of this oil, but the oil was not encountered in either boring, indicating that its extent is limited.

2.4 Analysis Results

Soil and ground-water samples were submitted to AEN of Pleasanton, California, a state-certified analytical laboratory for chemical analyses. Soil and ground-water samples were analyzed for TPHg and BTEX using EPA Method 8020. Select soil and ground-water samples were analyzed for TPHd using EPA Methods 3550/GCFID and 3510/GCFID, respectively. Select soil and ground-water samples were also analyzed for TPHo by EPA methods 3550/GCFID and 3510/GCFID, respectively.

2.4.1 Soil

Analytical test results indicate that petroleum hydrocarbons are present in soil at the Site (Table 1; Figure 2). TPHg was detected in 13 of 23 soil samples at concentrations ranging from 3,300 mg/kg in soil sample LF-24-6 to 0.5 mg/kg in soil samples LF-30-7.5 and LF-31-7.5. In addition to sample LF-24-6, TPHg was detected above 1,000 mg/kg in soil sample LF-24-9 at a concentration of 1,400 mg/kg. TPHg was detected above 100 mg/kg in three soil samples; in eight sample TPHg was detected above the laboratory detection limit (0.2 mg/kg and 1.0 mg/kg), but below 100 mg/kg.

Fifteen soil samples were analyzed for TPHd. Analytical tests detected TPHd above the laboratory detection limit only in sample LF-26-6 at a concentration of 9 mg/kg.

TPHo was detected in 11 of 15 soil samples at low concentrations, except for sample LF-34-6 in which TPHo was detected at the elevated concentration of 2,500 mg/kg. All other concentrations were below 1,000 mg/kg, with three soil samples above 100 mg/kg, but less than 1,000 mg/kg.

Benzene was detected above the laboratory detection limit in 12 of 23 soil samples at concentrations ranging from to 34 mg/kg in sample LF-24-6 to 0.018 mg/kg in sample LF-30-7.5. Benzene was detected above 10 mg/kg only in sample LF-24-6. Benzene was detected above 1 mg/kg in four soil samples; in seven soil samples it was detected above the laboratory detection limit (0.005 mg/kg) but below 1 mg/kg.

Toluene was detected above the laboratory detection limit in 8 of 23 soil samples at concentrations ranging from 210 mg/kg in sample LF-24-6 to 0.016 mg/kg in sample LF-24-13.5. Toluene was detected above 10 mg/kg in two soil samples and above the laboratory detection limits (0.005 mg/kg and 0.030 mg/kg) but less than 1 mg/kg in five samples.

Ethylbenzene was detected above the laboratory detection limit in 9 of 23 soil samples at concentrations ranging from 72 mg/kg in sample LF-24-6 to 0.067 mg/kg in sample LF-24-13.5. Ethylbenzene was detected above 10 mg/kg in three soil samples and above 1 mg/kg but below 10 mg/kg in two samples. Ethylbenzene was detected above the laboratory detection limit but below 1 mg/kg (0.1 mg/kg, 0.030 mg/kg and 0.005 mg/kg) in four samples.

Total xylenes were detected above the laboratory detection limit in 9 of 23 soil samples at concentrations ranging from 460 mg/kg in sample LF-24-6 to 0.046 mg/kg in sample LF-24-13.5.

Laboratory certificates are presented in Appendix C.

2.4.2 Ground Water

Grab ground-water samples were collected from soil borings LF-25, LF-30, LF-33 and LF-34. Analytical test results indicate that petroleum hydrocarbons are present in shallow ground water at the Site (Table 2; Figure 2).

TPHg was detected in all four grab ground-water samples (GG-25, GG-30, GG-33 and GG-34) at 29 mg/kg, 26 mg/kg, 30 mg/kg, and 2.9 mg/kg, respectively. TPHd was detected in samples GG-30 and GG-33 at a concentration of 0.5 mg/kg, and in sample GG-34 at a concentration of 0.3 mg/kg.

TPHo was detected in samples GG-30 and GG-34 at concentrations of 0.4 mg/kg and 0.5 mg/kg, respectively.

Benzene was detected in samples GG-25, GG-30, GG-33 and GG-34 at concentrations of 7.3 mg/kg, 12 mg/kg, 10 mg/kg, 0.700 mg/kg, respectively.

Toluene was detected in samples GG-25, GG-30, GG-33 and GG-34 at concentrations of 2.4 mg/kg, 0.044 mg/kg, 1.2 mg/kg, 0.002 mg/kg, respectively.

Ethylbenzene was detected in samples GG-25, GG-30, GG-33 and GG-34 at concentrations of 1.5 mg/kg, 0.480 mg/kg, 0.950 mg/kg, 0.003 mg/kg, respectively.

Total xylenes were detected in samples GG-25, GG-30, GG-33 and GG-34 at concentrations of 3.8 mg/kg, 0.990 mg/kg, 2.1 mg/kg, 0.004 mg/kg, respectively.

Laboratory certificates are presented in Appendix C.

2.4.3 Fuel Fingerprint Characterization

A sample of oil, which was encountered floating on ground water in soil boring LF-26, was collected and submitted to Friedman and Bruya, Inc, ("F&B") of Seattle, Washington for fingerprint characterization. In addition, soil sample LF-34-6, which appeared to contained a tar-like petroleum hydrocarbon substance was also sent to F&B for fingerprinting. The objective of fingerprint characterization of the tar-like substance was to assess whether the substance is at the Site as a result of gasoline fuel activities or whether the tar substance is associated with the regional fill materials. Results of fingerprinting characterization indicated that the floating oil at soil boring LF-26 and the tar like petroleum hydrocarbon in sample LF-34-6 most closely resemble a lubricating oil such as motor oil. Small amounts of weathered diesel or heating oil were also detected in the analysis of soil sample LF-26-6.

Laboratory certificates are presented in Appendix C.

2.5 Conclusions and Recommendations

2.5.1 Ground-Water Quality

Analytical test results indicate that TPHg and BTEX compounds are present at elevated concentrations in ground water at the

Site. Test results also suggest that petroleum hydrocarbons may be migrating off site along Collins Drive at low concentrations. The highest concentration of TPHg was detected at 30 mg/kg in soil boring LF-33, approximately 30 feet to the south of the UST excavation. The highest benzene concentration was detected in the downgradient soil boring LF-30 at a concentration of 12 mg/kg. However, it is possible that petroleum-affected soil particles can contact and affect with a grab ground-water sample, or that gasoline and the BTEX compounds may have more chance to volatilize when collected from an open borehole. Consequently test results from grab ground-water samples should not be considered as accurate as analyses of ground water collected from a monitoring well and should be used only for estimation and screening purposes. Test results do not suggest that there is an off-site source of contamination that has significantly affected soil or ground water at the Site.

The historical ground-water quality data suggests that the concentrations of TPHg, TPHd, TPHo, and BTEX have not changed significantly and have remained low during the past four quarterly monitoring events. Concentrations of petroleum hydrocarbons in the newly installed ground-water monitoring well, MW-24, are comparable to grab ground-water sample results and are only slightly higher than the other downgradient monitoring well, monitoring well MW-8. Since petroleum hydrocarbon concentrations are higher in MW-24 than have been detected in ground water at the Site, and since the concentrations of petroleum hydrocarbons increased slightly in ground-water monitoring well MW-8, more data is needed to determine if the increase in concentrations represents a trend.

A summary of historical ground-water quality data is presented in Table 3. Laboratory certificates are presented in Appendix C.

2.5.2 Soil Quality

The vertical and lateral extent of petroleum hydrocarbons has been defined based upon analytical test results. TPHg appears to extend laterally out from the center of the UST excavation approximately 40 to 90 feet (Figure 3). Analytical data suggests that petroleum hydrocarbons may extend under the building located at the Site. The vertical extent of TPHg varies across the Site. At highest concentrations, TPHg appears in a six-foot-thick layer from approximately 4 feet bgs to 10 feet bgs. The thickness of the affected layer diminishes outward from the excavation.

TPHo was encountered at elevated concentrations in soil boring LF-34 at a concentration of 2,500 mg/kg; Fingerprint characterization by F & B indicates that the oil most closely resembles lubricating oil such as motor oil, with small amounts of weathered diesel or heating oil. TPHd was encountered only at low concentrations. Oil encountered floating on ground water in soil boring LF-26 appears to be localized and not migrating. This is evidenced by test results of soil samples collected from borings LF-35 and LF-36 and by ground-water samples collected from MW-12. Soil borings LF-35 and LF-36 are located 10 to 15 feet downgradient from LF-26, while monitoring well MW-12 is located approximately 20 upgradient from LF-26.

No analytical test for TPHo in either soil samples collected from LF-35 and LF-36 or ground-water samples collected form MW-12 detected TPHo above the laboratory detection limit, except for a low concentration of 0.4 mg/kg in the June 20, 1994 ground-water sample from MW-8. Fingerprint characterization of the tar-like petroleum hydrocarbon collected from soil boring LF-24 was found to most closely resemble lubricating oil, such as motor oil.

2.5.3 Estimated Volumes of Petroleum-Affected Soil

Levine·Fricke has estimated the volume of petroleum-affected soil in place at the Site based upon analytical test results. According to our estimates, a total of approximately 5,000 to 8,500 in-place cubic yards of soil are affected with petroleum hydrocarbons, principally gasoline and the BTEX compounds. This estimate does not include fill materials which may be affected by petroleum hydrocarbon outside of the former UST area. Figure 3 shows the lateral extent of the petroleum hydrocarbons which are associated with the former USTs. The total volume of affected soil breaks down by concentration as follows:

- Approximately 350 to 500 cubic yards of in-place soil are estimated to be above a concentration of 3,000 mg/kg as TPHg.
- Approximately 300 to 450 cubic yards of in-place soil are estimated to be at concentrations above 1,000 mg/kg and less than 3,000 mg/kg as TPHg.
- Approximately 1,350 to 1,500 cubic-yards of in-place soil are estimated to be at concentrations above 100 mg/kg and less than 1,000 mg/kg as TPHg.

- Approximately 3,000 to 3,500 cubic yards of in-place soil are estimated to be above 50 mg/kg and less than 100 mg/kg as TPHg.

In addition, approximately 300 to 400 cubic yards of soil excavated during the UST removal are currently stockpiled on-site. Analytical test results (Table 4) of soil samples collected from the stockpile indicates that concentrations of petroleum hydrocarbons in the soil are relatively low and pending additional analytical results, the soil should be suitable for backfilling the excavation.

2.5.4 Recommendations

Based on the results of the supplemental site investigation, Levine·Fricke recommends that Diversified Investments work with ACDEH to develop and implement a site remediation program. A conceptual remediation plan is presented in the next section. Periodic ground-water quality monitoring should continue throughout this period and for a reasonable time after remediation is complete, to evaluate the effectiveness of the remedial program.

3.0 CONCEPTUAL REMEDIATION PLAN

This conceptual remediation plan:

- proposes appropriate cleanup goals to protect human health and the environment
- evaluates ways to achieve these cleanup goals
- develops a remedial strategy to bring the Site into regulatory compliance

After soil remediation is complete, Levine·Fricke recommends that the Site be considered under the Regional Water Quality Control Board's (RWQCB's) "Category I: Non-Attainment Area" policy, as discussed in Section 3.4 below.

3.1 Proposed Soil Cleanup Levels

To protect human health and the environment, Levine·Fricke recommends implementing cleanup goals for site soil remediation. At the concentrations proposed below, hydrocarbons remaining in site soils would have a low potential to affect human health. These levels are also

similar to RWQCB-approved goals for the adjacent former Malibu Grand Prix Site:

Compound	Level
Total BTEX Compounds	1 mg/kg
TPHg	100 mg/kg
TPHd	500 mg/kg
TPHo	1,000 mg/kg

3.2 Potential Remedial Alternatives

To find a cost-effective remedial technology by which these cleanup levels can be achieved, Levine·Fricke evaluated the following in-situ and ex-situ potential remedial methods for the Site:

- soil-vapor extraction (SVE)
- air sparging
- excavation and treatment and/or disposal of affected soils

3.2.1 Soil-Vapor Extraction

Soil-vapor extraction and treatment uses a vacuum applied to vadose-zone wells installed in the vicinity of hydrocarbon-affected soils. The vacuum enhances volatilization and draws vapors to the surface, where the vapors are treated using granulated activated carbon (GAC) adsorption and vented to the atmosphere. This method is effective in remediating relatively permeable hydorcarbon-affected soils.

SVE would probably not remediate soil at this Site within a reasonable time period, however, because of the soil's high clay content. Although SVE decreases vadose-zone contaminants, it does not effectively abate contaminants in the capillary or "smear" zones; therefore, SVE would not bring soils in these zones into conformance with cleanup goals.

3.2.2 Air Sparging

Under the right conditions, air sparging effectively remediates both soil and ground water affected by VOCs such as

petroleum hydrocarbons. Ambient surface air is pumped into affected ground water beneath affected soils, which causes VOCs to pass from the water and soil into the air. The air travels outward and upward, where it is captured and treated.

Site conditions (clayey soils with relatively low hydraulic conductivity and permeability) are far from ideal for this technology and air sparging would be ineffective in remediating these soils for the same reasoning as outlined in the Section discussing SVE.

3.2.3 Excavation and Treatment of Affected Soils

In this treatment method, affected soils are excavated and then treated on site (by aeration), off site (at a treatment facility), or by a combination of on- and off-site methods. Soil excavation and treatment appears to be the most effective remedial method for this Site:

- The ground-water level and the maximum depth of affected soils are both relatively shallow (about 10' or less).
- Although excavation is relatively labor-intensive, it requires less overall time than SVE or air sparging, and permits sampling to confirm the effectiveness of the source removal.

In addition, because of the Site's size, it is possible to treat soils using on-site aeration; this is an effective method of reducing gasoline hydrocarbons, which are the primary contaminant of concern at this Site.

3.3 Recommended Remedial Closure Strategy

Levine·Fricke recommends the following general remedial strategy at this Site:

- Source Removal. Remove and treat soils in the vadose (non-saturated) zone and capillary fringe that contain TPHg and BTEX above cleanup levels.
- Periodic Monitoring. Monitor BTEX and TPHg in site wells for five years, and establish a compliance well or wells downgradient from the Site to monitor potential plume migration.
- Contingency Plan. Develop a contingency plan, to be implemented if there is an increase in concentrations in the compliance well or wells.

Ground-water extraction and treatment should not be necessary under this strategy; Levine·Fricke recommends against ground-water extraction at this Site because of the many contaminant plumes at nearby sites in this area, which may be drawn to the Site if ground-water extraction is implemented.

3.3.1 Soil Excavation

Soil in the unsaturated zone affected with petroleum hydrocarbons should be excavated to the proposed cleanup goals. As discussed previously, Levine·Fricke estimates that approximately 2,000 to 4,000 in-place cubic yards of affected soil would be removed.

Soil samples would be collected from the sidewalls of the excavation to confirm that the cleanup goals are met. Clean over-burden soil and soil at concentrations lower than the cleanup goals would be stockpiled separately from affected soils and used to backfill the excavation. The stockpiled soil could also be sent to REMCO, PCM, or a class II landfill for disposal.

After the soils have been excavated to the cleanup goals, ground water present in the excavation would be removed and properly disposed.

3.3.2 Soil Treatment

Levine·Fricke evaluated both on-site and off-site soil treatment alternatives to determine the most cost effective treatment. Disposal at landfill facility was not evaluated due to high costs and high liability. The following were evaluated:

- aerate affected soil on site
- treat affected soils at REMCO treatment facility
- treat affected soils at Port Cost Materials treatment facility

Aerate Affected Soils. Excavated soil would be aerated on site in accordance with Bay Area Air Quality Management District (BAAQMD) regulations. Soil above the cleanup level for TPHg, except soils affected with oil above 1,000 mg/kg, would be aerated on-site. Soil above the cleanup goal would be treated as discussed in Section 3.3.2.

Aerated soils would be sampled to confirm that cleanup goals concentrations are met; these soils would then be used to backfill the excavation or could be sent to a Class II landfill facility.

Because of BAAQMD limits on the volume of soil that may be aerated per day per location, Levine·Fricke estimates that it could take five to six months to aerate all the affected soil to below the cleanup goal, if the soil were to be used for backfill. Soil samples would be collected from the aerated soil to confirm that concentrations of petroleum hydrocarbons in soil were below cleanup goals.

If the soil is to be sent to a class II landfill facility, soil samples will be collected to confirm that the soil meets contaminant level requirements of the facility.

Aerating all soil to the cleanup goal is the least expensive treatment alternative. However, aeration of all gasoline-affected soil would also take the most time. In addition, the aeration stockpile would be large, approximately 100,000 to 225,000 square feet, depending upon the volume of soil aerated and the thickness of the aeration stockpile.

Treat Affected Soils at REMCO Treatment Facility. Soil affected by less than 3,000 mg/kg of TPHg can be treated using the low temperature thermal desorption (LTTD) method at REMCO Inc., in Richmond, California. Soils containing more than 3,000 mg/kg would be aerated on site until concentrations fell below REMCO's 3,000 mg/kg TPHg acceptance limit, and then sent to REMCO for treatment. Levine·Fricke estimates that it would take approximately six weeks to aerate soil to a concentration less than 3,000 mg/kg. The excavation would be backfilled with clean imported fill supplied by REMCO. This alternative is more expensive than aerating all soil on site, but would be significantly faster.

Treat Affected Soils at Port Costa Materials Treatment Facility. Soil with concentrations below 1,000 mg/kg of TPHg can be treated using LTTD technology at the Port Costa Materials (PCM) facility in Port Costa, California. PCM uses a rotary kiln to treat soils at higher temperatures than REMCO, which is a more effective remediation for high-end hydrocarbons. Soils containing more than 1,000 mg/kg of TPHg would be aerated on site until concentrations were below 1,000 mg/kg. The aerated soil would then be sent to PCM for treatment. The excavation would be backfilled with clean imported fill supplied by PCM. Levine·Fricke estimates that it would take approximately 3 to 4 months to aerate soils to

concentrations less than 1,000 mg/kg. Treating soil at PCM would cost significantly more than aeration alone, but about the same as treatment at REMCO.

Soil with concentrations above 3,000 mg/kg would be aerated on-site until concentrations were less than 3,000 mg/kg. Soil then above 1,00 mg/kg and less than 3,000 mg/kg would be treated at REMCO. Soil below 1,000 mg/kg but above the clean-up goal would be treated at Port Costa Materials. The excavation would be backfilled with clean imported fill supplied by REMCO and PCM. Levine·Fricke estimates that treating all soil would be the fastest, although the most expensive treatment alternative.

Treat Affected soils at REMCO and Port Costa Materials. Soil affected by less than 3,000 mg/kg and greater than 1,000 mg/kg of TPHg would be treated at REMCO. Soil affected by less than 1,000 mg/kg and above the approved clean-up goal would be treated at PCM. Soil above 3,000 mg/kg as TPHg would be aerated on-site until concentrations were below 3,000 mg/kg and then treated at REMCO. The excavation would be backfilled with clean import fill supplied by REMCO and PCM.

Recommended Treatment Method. Because costs for off-site LTTD treatment are significantly higher than costs for on-site aeration, Levine·Fricke recommends that affected soils be aerated on site. Soil affected with elevated concentrations of TPHo which does not diminish in the presence of air, will still need to be treated at an LTTD treatment/disposal facility.

3.3.3 Periodic Monitoring

Levine·Fricke recommends that Diversified Investment develop a contingency plan which would be implemented if petroleum hydrocarbons are found to be migrating off-site in elevated concentrations. To confirm that concentrations of petroleum hydrocarbons are low and also to confirm that petroleum hydrocarbons are not migrating off-site, Levine·Fricke recommends periodic monitoring of ground-water monitoring wells at one site.

3.3.4 Contingency Plan

After completing source removal, Levine·Fricke recommends that Diversified Investments develop a contingency plan that would be implemented if petroleum hydrocarbons are found to be migrating off site at elevated concentrations. To confirm that petroleum hydrocarbons concentrations are low, and also

to confirm that petroleum hydrocarbons are not migrating off site, Levine·Fricke recommends periodic monitoring of monitoring wells at the Site.

3.4 Site Closure Under Non-Attainment Policy

After soil remediation is complete, Levine·Fricke recommends that the Site be considered for closure under the Regional Water Quality Control Board's (RWQCB's) "Category I: Non-Attainment Area" policy, which is applicable to "sites which have ground-water pollution and residual soil pollution with limited water quality, environmental, and human health risks." The Site fits this category for the following reasons:

- The Site is in a commercial and industrial area with several nearby contaminant plumes as indicated to us by Alameda County Department of Environmental Health.
- The Site is currently a paved car repair business. According to the owner, it will remain a paved, commercial area, thus limiting the potential of humans to contact the affected soils.
- The main chemicals of concern at the Site are petroleum hydrocarbons, which are known to degrade over time with microbial activity. No chlorinated solvents have been detected at the Site.
- The affected ground-water plume is of limited extent, and does not appear to be moving, based on periodic ground-water monitoring results.
- Natural mitigation of the affected ground-water plume (after source removal) is effective, because the soils are predominantly clay, and the ground-water gradient is very low, averaging approximately 0.002 ft/ft.
- The Site is not a Bay-margin site, and there are no adjacent or nearby wetlands or other surface water sources.
- Affected site ground water is not a drinking water source, because of its poor quality and high dissolved salt concentrations, as indicated by its high specific conductance (see Table 2).

REFERENCES

HartCrowser, 1993. Ground-Water Monitoring Report.

Levine•Fricke, 1993. Health and Safety Plan.

——. 1994a. Work Plan.

——. 1994b. Quarterly Ground-Water Monitoring Report. January.

——. 1994c. Quarterly Ground-Water Monitoring Report. September.

——. 1994d. Quarterly Ground-Water Monitoring Report. November.

——. 1995. Quarterly Ground-Water Monitoring Report. February.

Subsurface Consultants, 1988. Investigation Letter Report.

——. 1990. Investigation Report.

TABLE 1

SOIL SAMPLING RESULTS
SUPPLEMENTAL SITE INVESTIGATION
625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA
(concentrations reported in milligrams per kilogram [mg/kg])

Boring ID	Depth feet	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	TPHo
LF24	3 - 3.5	05-Jan-95	1.1	0.130	0.160	0.730	8.8	NA	NA
	6 - 6.5	05-Jan-95	34	210	72	460	3,300	<1	65
	9 - 9.5	05-Jan-95	5.1	38	29	210	1,400	<1	96
	13.5 - 14	05-Jan-95	0.180	0.016	0.067	0.046	1	NA	NA
LF25	6 - 6.5	05-Jan-95	0.920	0.470	1.5	6.4	120	<1	77
	9 - 9.5 (1)	05-Jan-95	3.3	11	16	77	630	<1	40
	10.5 - 11	05-Jan-95	0.240	0.200	0.130	0.580	9.9	NA	NA
LF26	6 - 6.5	05-Jan-95	<0.1	<0.1	<0.1	<0.1	69	9	740
LF27	2 - 2.5	05-Jan-95	0.009	<0.005	<0.005	<0.005	0.6	NA	NA
	6 - 6.5	05-Jan-95	<0.005	<0.005	<0.005	<0.005	<0.2	<5	450
	9 - 9.5	05-Jan-95	<0.005	<0.005	<0.005	<0.005	<0.2	NA	NA
LF28	6 - 6.5	05-Jan-95	0.100	<0.030	0.110	0.082	1.4	<1	30
	10.5 - 11	05-Jan-95	<0.005	<0.005	<0.005	<0.005	<0.2	<1	<5
LF29	6 - 6.5	05-Jan-95	<0.030	<0.030	<0.030	<0.030	<1.0	NA	NA
LF30	3.5 - 4	06-Jan-95	<0.005	<0.005	<0.005	<0.005	<0.2	NA	NA
	7.5 - 8	06-Jan-95	0.018	<0.005	<0.005	<0.005	0.5	<10	100
LF31	3 - 3.5	06-Jan-95	<0.030	<0.030	<0.030	<0.030	<1.0	NA	NA
	7.5 - 8	06-Jan-95	0.027	<0.005	<0.005	<0.005	0.5	<1	<5
LF32	8 - 8.5	06-Jan-95	<0.005	<0.005	<0.005	<0.005	<0.2	<1	<5
LF33	8 - 8.5	06-Jan-95	1.7	0.420	4.8	5.3	180	<5	65
LF34	6 - 6.5	06-Jan-95	<0.005	<0.005	<0.005	<0.005	<0.2	<10	2,500
LF35	8.5 - 9	06-Jan-95	<0.005	<0.005	<0.005	<0.005	<0.2	<1	<5
LF36	9 - 9.5	06-Jan-95	<0.005	<0.005	<0.005	<0.005	<0.2	<1	8

Data entered by KAC/26 Jan 95 Data proofed by SXS QA/QC by SXS 20 Jan 95.

TPHg - Total petroleum hydrocarbons as gasoline by EPA Method 5030. GCFID
TPHd - Total petroleum hydrocarbons as diesel by EPA Method 3550, GCFID
TPHo - Total petroleum hydrocarbons as oil by EPA Method 3550, GCFID
Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020
NA - not analyzed
(1) The values for benzene, toluene, ethyl benzene, total xylenes, and TPHg represent estimated concentrations, as the percent of surrogate recovery for EPA method 8020 and 5030/GCFID analysis was outside the quality control limits.

Analyses performed by American Environmental Network, Pleasant Hill, California.

TABLE 2

GRAB GROUND WATER SAMPLING RESULTS
SUPPLEMENTAL SITE INVESTIGATION
625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA
(concentrations reported in milligrams per liter (mg/l))

Sample ID	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	TPHo
GG-25	05-Jan-95	7.3	2.4	1.5	3.8	29	NA	NA
GG-30	06-Jan-95	12	0.044	0.480	0.990	26	0.5	0.4
GG-33	06-Jan-95	10	1.2	0.950	2.1	30	0.5	<0.2
GG-34	06-Jan-95	0.700	0.002	0.003	0.004	2.9	0.3	0.5
Trip Blank	06-Jan-95	<0.005	<0.005	<0.005	<0.002	<0.05	NA	NA

Data entered by KAC/20 Jan 95 Data proofed by SXS QA/QC by SXS 20 Jan 95.

TPHg - Total petroleum hydrocarbons as gasoline by EPA Method 5030, GCFID
TPHd - Total petroleum hydrocarbons as diesel by EPA Method 3510, GCFID
TPHo - Total petroleum hydrocarbons as oil by EPA Method 3510, GCFID
Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020
NA - not analyzed

Analyses performed by American Environmental Network, Pleasant Hill, California.

TABLE 3

HISTORICAL WATER QUALITY
625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA
(concentrations reported in milligrams per liter [mg/l])

Sample ID	Date Sampled	Consultant/ Lab		Benzene	Toluene		Ethyl-benzene	Xylenes	TPHg	TPHd	TPHo	Total Lead
MW-8	(1)	SUB	(2)	3.7	BDL		0.29	0.69	NA	NA	NA	BDL
	28-May-93	HC/SUP		6.4	0.028		0.16	0.036	19	1	NA	(3)
	22-Dec-93	LF/AEN	(4)	16	5.9993	(5)	0.65	2.7	56	0.3	<0.2	<0.04
	30-Jun-94	LF/AEN	(4)	11	4.8		2.2	8.2	41	<0.05	0.5	<0.04
	27-Sep-94	LF/AEN		8.5	0.26		1.6	5.2	28	0.62	<0.2	<0.04
	10-Jan-95	LF/AEN		10	11		2.4	12	58	0.07	<0.2	NA
MW-10	(1)	SUB		0.0017	BDL		BDL	BDL	NA	NA	NA	BDL
	28-May-93	HC/SUP		<0.0003	<0.0003		<0.0003	<0.0009	<0.05	0.054	NA	(3)
	22-Dec-93	LF/AEN		<0.0005	<0.0007	(5)	<0.0005	<0.002	<0.05	0.58	<0.2	<0.04
	30-Jun-94	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	<0.05	0.6	<0.04
	27-Sep-94	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	0.61	<0.2	<0.04
	10-Jan-95	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	0.6	<0.2	NA
MW-11	(1)	SUB	(6)	0.053	BDL		BDL	BDL	NA	NA	NA	0.21
	28-May-93	HC/SUP		0.45	0.0017		0.0015	0.0021	1.2	<0.05	NA	(3)
	22-Dec-93	LF/AEN		4.5	0.0383	(5)	0.012	0.043	9.2	0.53	<0.2	<0.04
	30-Jun-94	LF/AEN		1.5	0.013		0.69	1.2	8.8	<0.05	1.1	<0.04
duplicate	30-Jun-94	LF/AEN		1.7	0.014		0.73	1.3	9.7	NA	NA	NA
	27-Sep-94	LF/AEN		6.5	0.026		0.87	0.59	15	0.91	<0.2	<0.04
	10-Jan-95	LF/AEN		0.89	0.22		0.84	2.4	14	1.1	0.2	NA
MW-12	(1)	SUB		BDL	BDL		BDL	BDL	NA	NA	NA	BDL
	28-May-93	HC/SUP		<0.0003	<0.0003		<0.0003	<0.0009	<0.05	<0.05	NA	(3)
	22-Dec-93	LF/AEN		<0.0005	<0.0007	(5)	<0.0005	<0.002	0.05	0.3	<0.2	<0.04
	30-Jun-94	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	<0.05	0.4	<0.04
	27-Sep-94	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	0.4	<0.2	<0.04
duplicate	27-Sep-94	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	NA	NA	NA
	10-Jan-95	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	0.3	<0.2	NA
MW-16	(1)	SUB	(7)	BDL	BDL		BDL	BDL	NA	NA	NA	BDL
	28-May-93	HC/SUP		0.0028	<0.0003		0.0007	<0.0009	<0.05	<0.05	NA	(3)
	22-Dec-93	LF/AEN		<0.0005	<0.0007	(5)	<0.0005	<0.002	2.2	0.52	<0.2	<0.04
	30-Jun-94	LF/AEN		0.008	<0.0005		<0.0005	<0.002	<0.05	<0.05	0.9	<0.04
	27-Sep-94	LF/AEN		0.017	<0.0005		<0.0005	<0.002	0.07	0.59	<0.2	<0.04
	10-Jan-95	LF/AEN		0.19	<0.0005		<0.0005	<0.002	0.3	0.7	<0.2	NA
MW-24	10-Jan-95	LF/AEN		12	1.9		1.1	1.3	31	0.9	0.2	NA
duplicate	10-Jan-95	LF/AEN		12	2		1.1	1.3	31	0.8	0.2	NA
BLANKS												
Trip Blank	28-May-93	HC/SUP		<0.0003	<0.0003		<0.0003	<0.0009	<0.05	NA	NA	BDL
MW-12-BB	22-Dec-93	LF/AEN		<0.0005	0.0007		<0.0005	<0.002	<0.05	NA	NA	(3)
MW-16-BB	22-Dec-93	LF/AEN		NA	NA		NA	NA	NA	NA	NA	<0.04
MW-12-BB	30-Jun-94	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	NA	NA	<0.04
MW-12-BB	27-Sep-94	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	NA	NA	NA
Trip Blank	27-Sep-94	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	NA	NA	NA
MW-11-BB	10-Jan-95	LF/AEN		<0.0005	<0.0005		<0.0005	<0.002	<0.05	NA	NA	NA

TABLE 3

HISTORICAL WATER QUALITY
625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA
(concentrations reported in milligrams per liter [mg/l])

Sample ID	Date Sampled	Consultant/ Lab	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHg	TPHd	TPHo	Total Lead

NOTES:

BDL below detection limit; detection limit undocumented
NA not analyzed
TPHd total petroleum hydrocarbons as diesel
TPHg total petroleum hydrocarbons as gasoline
TPHo total petroleum hydrocarbons as oil

AEN American Environmental Network, Pleasant Hill, California
HC HartCrowser, San Francisco, California
LF Levine-Fricke, Emeryville, California
SUB Subsurface Consultants, Oakland, California
SUP Superior Analytical Laboratories, Martinez, California

(1) Date of ground-water sampling unavailable. Ground-water monitoring results accompanied Subsurface Consultants well development and boring logs dated March 1990 through June 1990.
(2) 18 mg/l total volatile hydrocarbons also detected.
(3) All May 1993 samples also analyzed for total organic lead (DHS Method). The compound was not detected above the detection limit of 4 mg/l.
(4) A slight hydrocarbon sheen was observed on the surface of the well water.
(5) Toluene detections for 22-Dec-93 were qualified using 0.0007 mg/l as a baseline. The bailer blank (MW-12-BB) contained toluene at 0.0007 mg/l.
(6) 0.24 mg/l total volatile hydrocarbons also detected.
(7) 0.38 mg/l total volatile hydrocarbons also detected.

All samples collected by Subsurface Consultants were also analyzed for total lead and organic lead. Both compounds were below detection limits (detection limits unavailable), except as noted.

Data entered by KAC/24 Jan 95 Data proofed by SXS

TABLE 4

STOCKPILE SOIL SAMPLING RESULTS
625 HEGENBERGER ROAD, OAKLAND, CALIFORNIA
(concentrations reported in milligrams per kilogram [mg/kg])

Boring ID	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHg	TPHd	TPHo
SP-7 & 8	18-Aug-94	<0.005	<0.005	<0.005	<0.005	<0.2	NA	NA
SP-9 & 10	18-Aug-94	<0.01	<0.01	<0.01	<0.01	2.6	NA	NA
SP-11 & 12	18-Aug-94	<0.01	<0.01	<0.01	35	4.7	NA	NA
composite*(1),(2)	18-Aug-94	<0.005	<0.005	<0.005	<0.01	NA	NA	NA

Data entered by KAC/27 Feb 95. Data proofed by SXS. QA/QC by SXS.

TPHg - Total petroleum hydrocarbons as gasoline by EPA Method 5030, GCFID
TPHd - Total petroleum hydrocarbons as diesel by EPA Method 3550, GCFID
TPHo - Total petroleum hydrocarbons as oil by EPA Method 3550, GCFID
Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020
NA - not analyzed

* A composite of SP's 7-8-9-10-11 & 12.
(1) All EPA 8240 VOC's non-detect, except as otherwise noted.
(2) Arsenic detected at 7 mg/kg, Barium at 96 mg/kg, Beryllium at 0.2 mg/kg, Cobalt at 8.9 mg/kg, Chromium at 38 mg/kg, Copper at 40 mg/kg, Nickel at 36 mg/kg, Lead at 38 mg/kg, Antimony at 1 mg/kg, Vanadium at 33 mg/kg and Zinc detected at 51 mg/kg. Silver, Cadmium, Mercury, Molybdenum, Selenium, and Thallium not detected.

Analyses performed by American Environmental Network, Pleasant Hill, California.

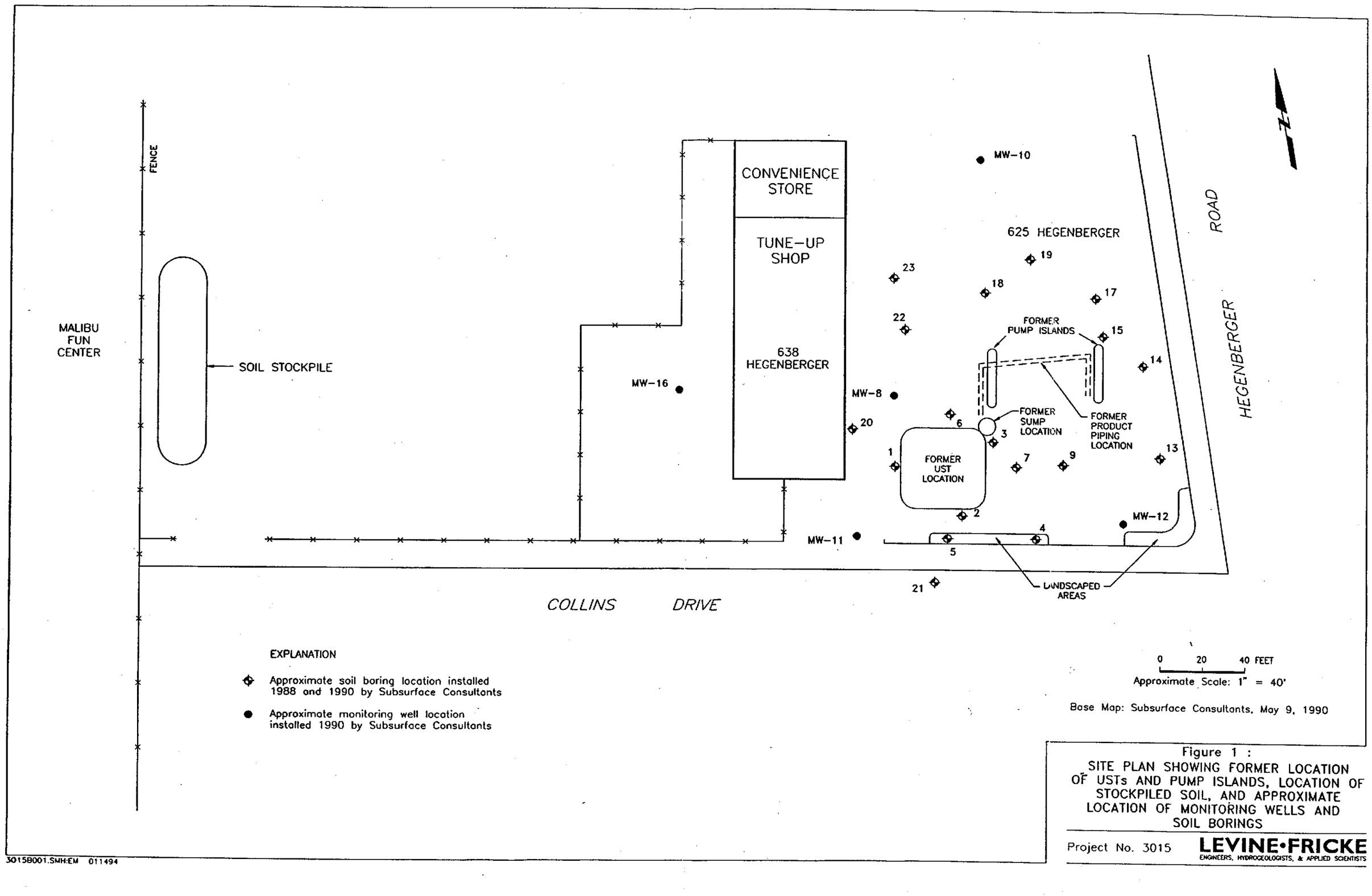


Figure 1 :
SITE PLAN SHOWING FORMER LOCATION OF USTs AND PUMP ISLANDS, LOCATION OF STOCKPILED SOIL, AND APPROXIMATE LOCATION OF MONITORING WELLS AND SOIL BORINGS

Project No. 3015

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

3015B001.SMH:EM 011494

3015C001.SMH:DAT/EM 013196

EXPLANATION

- Approximate location of soil borings. Soil borings designated "LF" installed by Levine•Fricke in 1995. Others installed by Subsurface Consultants in 1989-1990.
- Approximate location of monitoring wells. MW-24 was installed by Levine•Fricke in 1995. Others installed by Subsurface Consultants in 1989-1990.
- Soil sample by Levine•Fricke, UST Removal, 1993; (sample depth @ former UST location, 6-8 bgs) (sample depth @ former product piping location, 4-6 bgs)
- Approximate ground-water flow direction
- 5200 — TPHg concentration in parts per million (ppm)
- 1000 8' — TPHg concentration (ppm) @ 8 feet
- ND — Non-detect
- NA — Not analyzed

TPHg Total petroleum hydrocarbons as gasoline

CONVENIENCE STORE

TUNE-UP SHOP

638 HEGENBERGER

625 HEGENBERGER

HEGENBERGER ROAD

COLLINS DRIVE

MW-10 NA

MW-16 ND 6

MW-8 78 4' 4 6.5

MW-24 8.8 5' 3,700 6' 1,100 8' 7 10.5'

MW-11 NA

MW-12 NA

LF-29 ND 6'

LF-30 ND 5.0 0.5 7.5

LF-31 ND 5 0.5 7.5

LF-32 ND 6'

LF-34 ND 6'

LF-35 ND 6.5'

LF-36 ND 6'

1 NA

2 NA

3 NA

4 180 ND

5 28 8' 10 6' 8 7.5 200 8'

6 5800 5300

7 1500 6' 2200 7.5 ND 10.5'

8 1000 8'

9 170 6' 150 8.5 ND 9'

10 120 6' 830 7' 9.0 10.5'

11 ND 6' 11 8'

12 1.4 6' ND 8.5'

13 ND 1.5' ND 1.5'

14 ND 6.5'

15 590 74 940 14 1600 ND 450

16 ND 1.5'

17 ND 2.5 ND 11'

18 ND 4'

19 ND 1.5'

20 100 8.5' 150 11'

21 ND 3' ND 10'

22 1000 8'

23 ND 2.5 ND 11'

7600 NA 1300 9000 8900 5000 3200 5000 490

FORMER PUMP ISLANDS

FORMER PRODUCT PIPING LOCATION

FORMER SUMP LOCATION

FORMER UST LOCATION

LANDSCAPED AREAS

0 25 FEET

3015B003.SMH:DAT/EM 020395

Figure 2 :

APPROXIMATE LOCATIONS OF SOIL BORINGS AND MONITORING WELLS AND TPHg CONCENTRATIONS IN SOIL

Project No. 3015

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015C002.SRF:EM 021095

EXPLANATION

- Approximate location of soil borings. Soil borings designated "LF" installed by Levine•Fricke in 1995. Others installed by Subsurface Consultants in 1989-1990.
- Approximate location of monitoring wells. MW-24 was installed by Levine•Fricke in 1995. Others installed by Subsurface Consultants in 1989-1990.
- Soil sample by Levine•Fricke, UST Removal, 1993; (sample depth @ former UST location, 6-8 bgs) (sample depth @ former product piping location, 4-6 bgs)
- Approximate ground-water flow direction
- 50 ppm — Approximate extent of petroleum-affected soils in parts per million (ppm)

CONVENIENCE STORE

TUNE-UP SHOP

638 HEGENBERGER

625 HEGENBERGER

HEGENBERGER ROAD

COLLINS DRIVE

MW-10, MW-16, MW-8, MW-24, MW-11, MW-12

LF-29, LF-30, LF-31, LF-32, LF-33, LF-34, LF-35, LF-36, LF-25, LF-26, LF-27, LF-28

1, 2, 3, 4, 5, 6, 7, 9, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23

50 ppm, 100 ppm

FORMER PUMP ISLANDS

FORMER PRODUCT PIPING LOCATION

FORMER SUMP LOCATION

FORMER UST LOCATION

LANDSCAPED AREAS

0 25 FEET

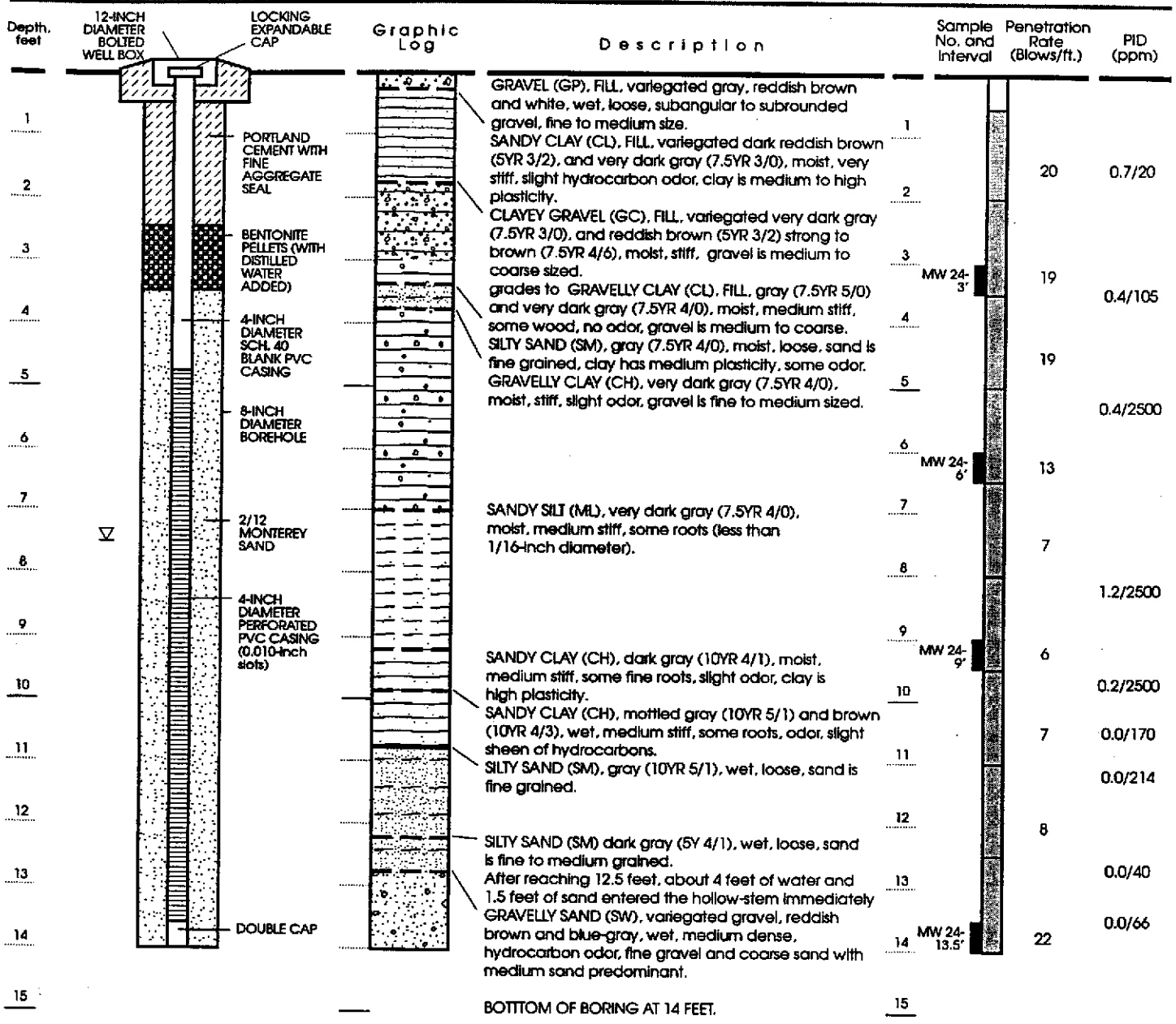
Figure 3 :

APPROXIMATE EXTENT OF PETROLEUM-AFFECTED SOILS

Project No. 3015

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015B003.SMH:DAT/EM 020395



Well Permit No.: 94822
Date well drilled: January 5, 1995
Drilling company: Gregg Drilling
Driller: Chris St. Pierre
Sampling Method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using Modified California Sampler
- Sample retained for chemical analysis
- Water level at time of drilling
- PID (ppm) Photoionization Detector reading (background value/sample value) in parts per million

Figure : WELL CONSTRUCTION AND LITHOLOGY FOR WELL MW-24

Project No. 3015

LEVINE•FRICKE
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3015L001.JOS:MPM/RYL 030795

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		GRAVEL (GP), FILL, variegated gray, white and blue, moist, loose.			
2		GRAVELLY SAND (SW), FILL, brown (7.5YR 5/3), moist, medium dense, gravel up to 1-inch diameter.		20	
3		GRAVELLY CLAY (CL), FILL, greenish gray (5G 5/1), moist, very stiff, some gravel-medium size, no odor.			0.0/22
4		SILTY CLAY (CH), variegated very dark gray (7.5YR 3/0) and dark gray (5Y 4/1), moist, stiff, high plasticity, some hydrocarbon odor, slight sheen.			
5					
6					
7		SILTY CLAY (CH), dark gray (7.5YR 4/0), moist, soft, hydrocarbon odor and sheen, decaying root observed.	LF 25-6.5'	15	0.0/1315
8					
9 ▽		CLAYEY SAND (SC) to SANDY CLAY (CH), dark greenish gray (5G 4/1), wet, loose (medium stiff), hydrocarbon odor.	LF 25-9.5'	9	0.0/739
10					
11		GRAVELLY CLAYEY SAND (SW), dark greenish gray (5G 4/1), wet, loose, gravel is fine grained, slight odor.	LF 25-11'	11	0.0/39
12		BOTTOM OF BORING AT 11 FEET.			

Well Permit No.: 94822
Date boring drilled: January 5, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using Modified California Sampler
- Sample retained for analysis
- ▽ Water level at time of drilling
- PID (ppm) Photolonization Detector reading (background value/sample value) in parts per million

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-25 *(page 1 of 1)*

Project No. 3015.94

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015L002:JOS:JSM/RYL 030795

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		ASPHALT CONCRETE PAVING SURFACE.			
1		GRAVELLY SAND (SW), FILL, variegated reddish brown (5YR 4/3) and light gray (5Y 6/1), moist, medium dense.			
2		SANDY GRAVELLY CLAY (CH), FILL, very dark gray (2.5Y 3/0), light olive brown (2.5Y 5/3), moist, very stiff, gravel 0.5-inch diameter.			
3		dark greenish gray (5G 4/1) discoloration, no odor.		20	0.0/2.5
3		SANDY CLAY (CH), very dark gray (2.5Y 3/0), moist, medium stiff, sand is fine to medium grained, visible hydrocarbon-appearing liquid.			
4					
5					
6			LF 26-5'	5	0.0/12
7					
7		No sample recovery (Bay Mud?).			
8					
8	▽				
9		No sample recovery at 9.5 feet, but about 1 foot of water with a dark viscous hydrocarbon liquid on the water entered the boring.		5	
9					
10		BOTTOM OF BORING AT 9.5 FEET.			
10					

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

- Interval sampled using Modified California Sampler
- Sample retained for analysis
- ▽ Water level at time of drilling
- PID (ppm) Photoionization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 5, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-26 *(page 1 of 1)*

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		GRAVELLY SAND (GP), Fill, variegated red/brown, dark gray, moist, soft, fine grained sand, fine and coarse gravel, bound with asphaltic-like material at 1 to 1.5 feet.			
2		SILTY CLAY (CH), FILL, very dark gray (2.5Y 4/0), grading to very dark grayish brown (2.5Y 4/2), moist, stiff, high plasticity odor.	LF 27-2.5'	19	
3					0.6/5.0
4					
5					
6		SILTY CLAY (CH-OH), black (2.5Y 2/0), moist, high plasticity, stiff, abundant organic material-root hairs, hydrogen sulfide odor, appears to be Bay Mud.	LF 27-6.5'	10	2.8/3.1
7					
8		SANDY CLAY (CH), dark gray (5Y 4/1), medium stiff, medium plasticity, sand is fine-grained, no odor.			
9			LF 27-9.5'	7	2.8/4.0
10		BOTTOM OF BORING AT 9.5 FEET. No free water encountered.			

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Modified California Sampler

Sample retained for analysis

PID (ppm) Photolonization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 5, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-27 *(page 1 of 1)*

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		SANDY GRAVEL (GW), FILL, variegated brown, moist, medium dense.			
2		SANDY CLAY (CH), FILL, very dark gray, moist, very stiff, some fine-grained gravel.		25	4.5/5.8
3					
4					
5					
6		CLAY (OH), very dark gray with brown wood and roots, moist, medium stiff, strong organic odor, some wood decaying.	LF 28-6.5'	7	0.0/1315
7		Minimal recovery—Silty Sand.			
8		SILTY CLAYEY SAND (SC), variegated gray (2.5Y N 5/0), wet, loose, clay is medium to high plasticity, gravel is fine-grained.			
9				5	
10					
11		BOTTOM OF BORING AT 11 FEET.	LF 28-11'	10	

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using Modified California Sampler
- Sample retained for analysis
- ▽ Water level at time of drilling
- PID (ppm) Photoionization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 5, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-28 *(page 1 of 1)*

Project No. 3015.94

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ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015L005:JOS:JSM/RYL 030795

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		CONCRETE. SANDY GRAVEL (GW), FILL, variegated gray (10YR 5/0) with some red and white and grayish brown (10YR 5.2), moist, medium dense, gravel is 1/2 to 1-inch diameter and angular.			
2		SANDY CLAY (CL), FILL, very dark gray (2.5Y 4/0), moist, medium stiff, some fine gravel.		23	
3		GRAVELLY CLAY (CL), FILL, very dark gray (2.5Y 4/0), moist to dry, very stiff, gravel is 1/4-inch to 1-inch diameter size and angular, some brick fragments observed.			4.4/4.7
4					
5					
6					
7		SILTY CLAY (CL), very dark gray (2.5Y 3/0), moist, medium stiff, organic odor, some roots, showing reddish brown color in decay.	LF 29-6.5'	6	4.4/5.1
8					
9					
10		CLAYEY SILTY SAND (SM) to SANDY SILT (ML), dark gray (2.5Y 4/0), moist, loose, some organic odor.		5	4.5/5.8
▽					
11		BOTTOM OF BORING AT 11 FEET.	LF 29-11'	10	4.5/6.5

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using Modified California Sampler
- Sample retained for analysis
- ▽ Water level at time of drilling
- PID (ppm) Photoionization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 5, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-29 *(page 1 of 1)*

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		CONCRETE PAVING SURFACE. SANDY GRAVEL (GW), FILL, grayish brown (10YR 5/2), moist, dense.			
2		GRAVELLY CLAY (CH), FILL, grayish brown (10YR 5/2), moist, medium stiff, gravel is 1/2 to 1 1/2-inch diameter, some glass shards observed.			
3					
4			LF 30-4'	7	0.1/5.4
5		SANDY GRAVELLY CLAY (CH), dark grayish brown (10YR 4/2), slight greenish gray mottling (5GY 5/1), moist, medium stiff, no odor.			
6					
7					
8		Slight hydrocarbon odor at 7.5 feet. SANDY CLAY (CH), greenish gray (5GY 5/1), moist, medium stiff, slight hydrocarbon odor, a few fine gravel pieces observed.	LF 30-11'	7	0.2/13.1
9					
10					
11					
12					
13		Based on cuttings and drill rig pressure, a sand layer is suspected at 12 feet. BOTTOM OF BORING AT 13 FEET. No free water encountered.			

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Modified California Sampler

Sample retained for analysis

PID (ppm) Photoionization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 6, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-30 *(page 1 of 1)*

Project No. 3015.94

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3015L007:JOS:JSM/RYL 030795

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		ASPHALT CONCRETE PAVING SURFACE. SANDY GRAVEL (GW), FILL, variegated gray and light brown, moist, dense.			
2		GRAVELLY CLAY (CH), FILL, very dark gray, moist, stiff, gravel is 1/4 to 1 1/2-inch diameter and angular, no odor, a piece of broken concrete observed.			
3					
4		Some greenish gray (5GY 6/1) mottling, slight odor at 3.5 feet.	LF 31-3.5'	13	0.2/11.4
5					
6		SILTY CLAY (CH), dark gray (N 4/), moist, medium stiff, minor sand, high plasticity, minor dark organic material in decay.			
7					
8			LF 31-8'	9	0.5/3.5
9		BOTTOM OF BORING AT 8.5 FEET. No free water encountered.			

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Modified California Sampler

Sample retained for analysis

PID (ppm) Photoionization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 6, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-31 *(page 1 of 1)*

Project No. 3015.94

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015L008:JOS:JSM/RYL 030795

LITHOLOGY				SAMPLE DATA		
Depth, feet	Graphic Log	Description		Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
		ASPHALT CONCRETE PAVING.				
1		SANDY GRAVEL (GW), FILL, gray, moist, medium dense.	1			
		SANDY GRAVELLY CLAY (CH), FILL, black (5Y 2.5/1), wet, soft, gravel is fine to coarse grained.				
2			2			
3 ▽		Stiffness increases at about 3 feet.	3			
4		CLAYEY SAND (SW), dark greenish gray (5GY 4/1), mottled dark olive-gray (5Y 3/2), moist, medium dense, some fine gravel, no odor.	4		28	0.0/2.1
5			5			
6			6			
7		SILTY CLAY (CH), black (5Y 2.5/1), moist, soft, no odor.	7			
8		Sand lens observed at 8 feet, fine to medium sand in clay.	8	LF 32-8.5'	4	0.0/1.7
9			9			
10		After reaching 10 feet, free water first entered the boring. BOTTOM OF BORING AT 10 FEET.	10			

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Modified California Sampler

Sample retained for analysis

▽ Water level at time of drilling

PID (ppm) Photolonization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 6, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-32 *(page 1 of 1)*

Project No. 3015.94

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015L009:JOS:JSM/RYL 030795

Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
		LITHOLOGY		**SAMPLE DATA**	
1		SANDY CLAY (CL), FILL, dark brown, moist, soft, abundant organic material (landscaping soil).			
2		GRAVELLY SANDY CLAY (CH), FILL, mottled dark reddish gray (5YR 4/2) and very dark gray (5YR 3/1), moist, soft, gravel is 1/4 to 1-inch diameter, some root hairs observed and decaying wood (small-possibly roots).			
3		Stiffness increases at about 3 feet.			
4		Slight organic odor at 3.5 feet.			
5				17	0.0/27
6		SANDY CLAY (CH), very dark gray (5YR 3/1), moist, medium stiff, some fine root hairs.			
7		color changes to dark greenish gray (5GY 4/1), some hydrocarbon odor at 7 feet. Slight reddish brown tint in some areas, small 1/4-inch diameter sand pockets which appear to be isolated within clay.			
8			LF 33-8.5'	8	0.0/293
9	▽				
10					
11		CLAYEY SAND (SC), gray (5Y 5/1), with white specks, moist, medium dense, sand is fine to coarse-grained, no odor, some small black mottling (less than 1/8-inch thick			
12		clay decreases in content. Free water enters boring after reaching 12.5 feet.		24	
13		BOTTOM OF BORING AT 12.5 FEET.			

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Modified California Sampler

Sample retained for analysis

▽ Water level at time of drilling

PID (ppm) Photolonization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 6, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R. G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-33 *(page 1 of 1)*

Project No. 3015.94

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015L010:JOS:JSM/RYL 030795

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and	Penetration Rate (Blows/ft.)	PID (ppm)
1		ASPHALT CONCRETE PAVING. SANDY GRAVEL (GW). FILL. gray, moist, dense. SANDY GRAVELLY CLAY (CH-GW), FILL, variegated brown, moist, medium stiff (medium dense), sand is medium to coarse grained, some concrete, tile and brick pieces.			
2					
3					
4		GRAVELLY SANDY CLAY (CH), very dark gray (7.5YR 4/1), moist, soft to medium stiff, slight organic odor.			
5		Sand content varies.			
6		Lens appears to have approximate equal sand and clay, color is dark greenish gray (5G 4/1).	LF 34-6.5'	10	0.0/2.6
7					
8		SANDY CLAY (CH), dark gray (N/4), moist, soft, slight greenish tint in some portions of sample.			
9	▽				
10		CLAY (CH), same as above but no sand observed.		3	0.0/3.6
11					
12		Free water first entered the boring after reaching 12 feet. BOTTOM OF BORING AT 12 FEET.			

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using Modified California Sample
- Sample retained for analysis
- ▽ Water level at time of drilling
- PID (ppm) Photolonization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 6, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-34 *(page 1 of 1)*

Project No. 3015.94

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015L011:JOS:JSM/RYL 030795

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		ASPHALT CONCRETE PAVING. SANDY GRAVEL (GW), FILL, gray, moist, medium dense.	1		
2		SANDY GRAVEL (GW), FILL, reddish brown (5YR 3/1), moist, medium dense.	2		
3		GRAVELLY SANDY CLAY (CH), FILL, mottled dark gray and dark greenish gray, moist, very stiff.	3	21	0.0/2.0
4			4		
5		SANDY SILTY CLAY (CH), very dark gray (7.5YR 4/10), moist, soft to medium stiff.	5		
6			6		
7			7		
8		Some small dark discoloration observed (~1/16-inch), slight oily odor.	8		
9			9 LF 35-9'	5	

BOTTOM OF BORING AT 9 FEET.
No free water encountered.

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Modified California Sampler

Sample retained for analysis

PID (ppm) Photolonization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 6, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: John Sturman/Bryan Croll

Approved by: John Sturman R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-35 *(page 1 of 1)*

Project No. 3015.94

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

3015L012:JOS:JSM/RYL 030795

LITHOLOGY			SAMPLE DATA		
Depth, feet	Graphic Log	Description	Sample No. and Interval	Penetration Rate (Blows/ft.)	PID (ppm)
1		ASPHALT CONCRETE, PAVING. SANDY GRAVEL (GW), FILL, gray (2.5Y 5/0), moist, dense, fine sand, fine gravel subround and subangular.			
2		SANDY SILTY CLAY (CH), very dark gray (5Y 3/1) moist, very stiff, high plasticity, no odor at 3 feet, some fine gravel for 3-inches, then no gravel observed immediately below.			
3			LF 36-3.5'	20	0.0/1.3
4					
5					
6					
7		SANDY CLAY (CH), dark gray (5Y 4/1), moist becoming wet at about 9-inch, stiff, grading to soft at about 9-inch, organic root hairs slightly decayed observed in abundance with some fine organics, grades, no fine sand observed at 9.5 feet.			
8					
9			LF 36-9.5'	12	0.0/2.5
10		BOTTOM OF BORING AT 9.5 FEET. No free water encountered.			

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Modified California Sample

Sample retained for analysis

PID (ppm) Photoionization detector reading (background value/sample value) in parts per million

Well Permit No.: 4822
Date boring drilled: January 6, 1995
Drilling Company: Gregg Drilling
Drilling method: Modified California Sampler
Hammer weight and drop: 140 lbs./30 inches
LF Engineer/Geologist: Bryan Croll

Approved by: John Stevens R.G. 5714

LITHOLOGY AND SAMPLE DATA FOR SOIL BORING LF-36 *(page 1 of 1)*

Project No. 3015.94

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3015L013:JOS:MPM/RYL 030795

APPENDIX D

WASTE MANIFEST

Application for soil disposal

A. Generator Business Name/Address
Business Name: Diversified Investment
Street: 400 Oyster Point Blvd., suite 415
City: S. San Francisco State: CA Zip: 94080
EPA I.D. # _____ BOE # _____

B. Mailing Address Same
Street: _____
City: _____ State: _____ Zip: _____
Attention: _____

C. Address of premise where waste is located:
Street: 625 Hegenberger Road
City: Oakland State: CA Zip: 94621
Attention: N/A

D. Transporter Information
Company: Dellafosse Trucking Contact: Larry
State #: _____ Phone: (510) 783-5390
EPA I.D.# CAD982505364

E. Person to be contacted about this application:
Name: Bryan Campbell Title: Project Geologist
Company: All Environmental, Inc. Phone: (510) 283-6000

F. Person to be contacted in case of emergency:
Name: Bryan Campbell Title: Project Geologist
Company: All Environmental, Inc. Phone: (510) 283-6000

G. CERTIFICATION: I certify that the information above and on the following pages is true and correct:

_____ 7/24/96
Authorized Signature Date

Bryan Campbell Project Geologist
Print Name Title

H. Person preparing this application:

_____ 7/24/96
Preparer Signature Date

Bryan Campbell Project Geologist
Print Name Title

APPLICATION FOR SOIL DISPOSAL
(Cont'd)

FLASH POINT

None: X > 200 F____ 140-199 F____ 100-139 F____ < 99 F____

AQUATIC TOXICITY (if necessary)_____

WASTE COMPOSITION
TPH, SOLVENTS, ETC.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

OTHER

Total Sulfides	_____
Total Cyanides	_____
Fluoride Salts	_____
PCBs	_____
Phenols	_____
Pesticides	_____
Asbestos	_____
Halogenated Organics	_____
Dioxin/Dibenzofurans	_____

Application for Soil Disposal (cont'd)

GENERATORS WASTE MATERIAL PROFILE SHEET

A. PHYSICAL CHARACTERISTICS OF WASTE

Soil Type	(Percent)	Debris	(Percent)	Moisture Content	
Boulders		Concrete	2	0-10%	X
Gravel	5	Rebar		10-20%	
Sand	60	Metals		> 20%	
Silt	30	Wood			
Clay	5	Plastic			
		Glass			
	Other				

B. CHEMICAL CHARACTERISTICS OF WASTE

TTLC Metals	(mg/kg)	Threshold value		STLC METALS	(MG/L)
Antimony		500	(mg/kg)		
Arsenic		500	(mg/kg)		
Barium		10000	(mg/kg)		
Beryllium		75	(mg/kg)		
Cadmium	<1	100	(mg/kg)		
Chromium	40	2500	(mg/kg)		
Cobalt		8000	(mg/kg)		
Copper		2500	(mg/kg)		
Lead	<1	1000	(mg/kg)		
Mercury		20	(mg/kg)		
Molybdenum		3500	(mg/kg)		
Nickel	61	2000	(mg/kg)		
Selenium		100	(mg/kg)		
Silver		500	(mg/kg)		
Thallium		700	(mg/kg)		
Vanadium		2400	(mg/kg)		
Zinc	110	5000	(mg/kg)		

Note: If 10% of the threshold value is exceeded, then an STLC analysis must be performed for that metal.

Application for Soil Disposal

Name of Waste: Contaminated Soil
Activity Producing Waste (Be specific) : Excavation of Contaminated soil as part of remedial activities.

Quantity - (approx) 13 tons

Is this a RCRA TCLP Waste? ___ YES X NO
If yes, waste must arrive at the appropriate TSD facility with a hazardous waste manifest including a completed box I with EPA codes.
Is this waste considered a hazardous waste by RCRA, DTSC or Title 22, C.C.R.., Articles II? ___ YES X NO
If no, the determination that the waste is non-hazardous is based upon certified laboratory analyses and/or generator knowledge of generation process and waste contaminants.

CERTIFICATION

I certify that the information on this application is true and correct and that the waste for which this waste disposal application is prepared does not and will not constitute "Hazardous Waste" under California and Federal Law. I am personally qualified to make this certification or I have consulted with a qualified professional who is qualified to make this certification.

( ) 1. I am a principal executive officer of at least the level of vice-president (if the generator is a corporation).
( ) 2. I am a general partner or proprietor (if the generator is a partnership or sole proprietorship respectively).
(X) 3. I am a duly authorized representative of the individual designated in 1 or 2 above (if such representative is responsible for the characterization of the waste)

Signature: _____ Title: Project Geologist, AEI
Name: (print) Bryan Campbell Date: 7/24/96

FACILITY DECISION

Accept: _____ Reject: _____

By: _____ Date: _____

NON-HAZARDOUS

001976

MATERIALS MANIFEST

GENERATOR

Site Address 625 HEINZERLING

Mailing 400 Oyster Pt. Blvd ste 415 SSF 94080

Phone :(415) 266-8030 Contact: DAVE CRAIG

TRANSPORTER Tidy

Address 777 E Stanley Blvd 101

Phone :(510) 443-6711 Contact:

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

Driver Name: Tidy Tidy Signature Tidy Tidy

Truck No. B1 Ship Date: 1/26/96

Time of Pick-Up: 10:00 Time of Delivery: 1:15

Consultant/Owner

Address ALL ENVIRONMENTAL INC.

2E 3364 Mt Diablo Blvd Lafayette 94549

Phone :(510) 283-6000 Contact: Al Brand Campbell

I herby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulation.

Name Dusty Rose Date: 1/26/96

Recycling Facility REMEDIAL ENVIRONMENTAL MARKETING CO. INC.
2717 GOODRICK AVENUE RICHMOND, CA 94801

RECEIVED BY:

DATE:

Control No:

A COPY OF THIS SHEET MUST ACCOMPANY EVERY LOAD. AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. LL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE. DELIVERIES MUST BE SCHEDULED ON DAILY BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.