WORKPLAN FOR SOIL DISPOSAL, OVEREXCAVATION, AND GROUND WATER MONITORING WELL INSTALLATION

3749

SITE LOCATION:

706 Harrison Street
Oakland, California

Prepared For:

Mr. Bo K. Gin
Oakland Auto Parts

Oakland, California

Prepared By:

John H. Sammons, Ph.D.
Principal Scientist

Reviewed By:

REGISTERED GEOLOGIST
WALTER H. HOWE
No. 730
Exp 6/'94
STATE OF CALIFORNIA

Walter H. Howe
Registered Geologist

Dennis Bates Associates, Inc

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13 January 1993

I. INTRODUCTION

A. Scope of Work

The scope of work included in this workplan encompasses:

1) a review by Dennis Bates Associates (DB) of previous work done at the site,

2) a report to describe the work done by the Miller Environmental Company (MEC) and,

3) a proposed course of action to bring the site into compliance with the Alameda County Department of Environmental Health (ACDEH) and San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) requirements.

This proposed course of action will include:

1) the disposal of soil stockpiled on-site from the original tank removal activities in January, 1991,

2) the excavation and removal, to the extent possible, of hydrocarbon impacted soil remaining in-situ in the tank excavation adjacent to Harrison Street,

3) the backfilling and compaction of the existing and over-excavated tank cavities.

4) the installation, developing and initial sampling of one groundwater monitoring well (GWM) and,

5) the preparation of a final technical report.

B. Site Location

The Site is a vacant lot located at the southeast corner of the intersection of Seventh and Harrison Streets in the City of Oakland, California. It is located in a highly congested area of downtown Oakland with emphasis on commercial use. PLATE 1.

C. Background

The Site was operated by Mr. Gin as a service station with two pump islands from 1963 to 1985 when retail operations ceased. We understand that, at the time retail operations ceased all fuel was removed from the tanks and "sawdust" was

placed in ~~the~~ each tank to absorb any remaining fuel. We also understand that, in 1963, there were four 1000 gallon steel underground storage tanks (UST) in operation and that the two additional 6000 gallon UST's were installed between 1978 and 1980. All tanks were removed in January of 1991.

We understand that records of tank removal operations are not available and that the contractor who removed the tanks and appurtenances is no longer in business.

We further understand that a Preliminary Soils Assessment was done at the Site in August of 1988. Dennis Bates Associates has reviewed the Report by Frank Lee & Associates (FLA) dated October 14, 1988. The FLA report was prepared as part of a soil investigation report preparatory to the construction of a building on the site. A copy of the above-referenced report is included in Appendix A.

D. Site History

The site is presently a vacant lot. The previously existing service station buildings were demolished and seven (7) Underground Storage Tanks (UST's) were excavated and removed in January of 1991.

The site contained two 6000 gallon UST's and four 1000 gallon single wall steel UST's which were used to store Supreme Unleaded, Regular Unleaded, and Regular gasolines. We understand that the four smaller (1000 gallon) tanks were manifolded together by the Robert J. Miller Company in 1978. The UST's served two pump islands. In addition, the site contained one (250) gallon waste oil tank (WOT). PLATE 2 shows the approximate locations of the buildings, UST's, WOT and pump islands.

Available records indicate that Tank Protect Engineering of Northern California removed the overburden from above the UST's and stockpiled it on site in three separate piles. These piles remain on site. The tanks were then excavated and removed. There is no indication of how the tanks were prepared or removed in the information available to DBA at this time. The only manifest available to DBA, (Appendix B), indicates that four 1000 gallon tanks were transported by "Jack Parker Truck" to Erickson in Richmond, CA on 17 January 1991. No manifests or shipping data available for the remaining three tanks. **Note:** Erickson Inc. of Richmond, CA has indicated that the remaining manifests may be available from their archives but can only be obtained by Tank Protect or by official request from Alameda County.

yes it was 2-6-91 by TPE

To the best of our knowledge, no unauthorized release form has been submitted for this site. This being the case the appropriate form will be submitted by DBA.

No documentation exists regarding the testing of the tanks during the period of time that the station was in operation. The owner has informed DBA that the fluid in the tanks was regularly measured by "sticking" the tank and there was no evidence of product loss.

There is no estimate of product loss at the Site and the owner does not recall any incidents resulting in overfill or spillage.

II. SITE DESCRIPTION

A. Hydrology

Geologic setting

San Francisco Bay lies in a low area in the Coast Range province, a region of northwest trending faults, hills and valleys. The site itself is situated on the flatlands, approximately 3500 feet from the eastern edge of the present Bay (Alameda Harbor). The Bay is a drowned valley which is thought to have originally formed by erosion of the ancestral Sacramento River (Jenkins, 1951) and subsequently widened by subsidence and a rise in sea level. Sediments deposited in Pleistocene and recent time, in what is now the Bay, include both shallow marine and continental deposits.

The youngest surficial deposit is known as "Bay Mud" which occurs in areas adjacent to the Bay. Bay Mud is generally composed of unconsolidated, olive gray, blue gray or black silty clay. Bay Mud has been deposited in the Bay for almost 10,000 years (Helley et al., 1979) and continues to be deposited today.

In the Oakland area, several other sedimentary units are noted by Radbruch and Case (1967). The upper two units, the Merritt Sand and the San Antonio Formation, lie within 100 feet below ground surface; this was documented at Clay and 12th Streets approximately 3/4 mile north of the site, by Woodward-Clyde (1987). A deeper sedimentary formation (the Alameda Formation) is also present and is assumed to overlie Jurassic/Cretaceous bedrock known as the Franciscan Formation. The Franciscan Formation is a complex assemblage of deformed and altered sediments and volcanic rocks which commonly form bedrock in the San Francisco Bay region.

Site Hydrogeology

The geologic materials observed in the existing excavations and encountered during the hand-augering by Miller Environmental consisted of relatively clean to clay-rich sands. The sandy unit consisted of fine-grained brown sand with varying proportions of clay.

The sandy unit may be equivalent to the Merritt Sands which were deposited as dune and beach sediment. The clay in this locality probably represents Bay Mud interfingering with the sand. Porosity and permeability is reduced by the presence of the clay fraction.

Ground water levels are estimated to be between 25 and 30 feet below ground surface.

Other ground water studies in the area report that ground water gradients are not consistent and flow directions are sometimes altered by subsurface construction or dewatering. Harding-Lawson Associates (personal comm., David Leland) stated that they determined a northeasterly flow direction one block away at 9th and Webster, but anticipated a return to the natural westerly flow pattern when their dewatering pumps were shut off.

Ground water can be considered essentially non-potable in this area. These factors are important in evaluating this site because maximum contaminant levels (MCLs) set by the Department of Health Services generally apply to drinking water aquifers.

B. Existing soil contamination and excavation results.

Frank Lee and Associates, Fremont, CA, Appendix A, installed seven boreholes at the Site in August of 1988. This work was done to investigate the presence of petroleum hydrocarbons and lead beneath the Site and was done in conjunction with a soils and foundation investigation at the site.

Minor soil contamination was discovered in the vicinity of the four 1000 gallon UST's and the 6000 gallon UST located to the northeast adjacent to the Shell Oil Station located at the corner of Eighth and Harrison Streets. Total Petroleum Fuel Hydrocarbons were detected at 19 ppm in a composite sample from 15 and 20 feet BLS in boring B2, at 5.1 ppm in a composite sample from 10 and 15 feet BLS in boring B3 and at 5.1 ppm from 10 feet BLS in boring B5.
Benzene at 0.83 ppm, Toluene at 1.5 ppm, Ethyl Benzene at 0.88 ppm and Xylenes at 2.6 ppm were detected in the

composite soil sample from boring B2. The only other BTEX detection was for Xylenes at 0.34 ppm in the sample from boring B5. **Table 1** presents these data in tabular form.

It is unfortunate that the 15 and 20 foot BLS samples were composited for these analyses since a true representative picture of the depth to which the hydrocarbons had migrated is impossible to obtain. In any event, in 1988, some three years after the tanks had been taken out of service and emptied there appeared minimal hydrocarbon contamination present at four separate sample locations in and around the empty tanks.

The results of soil sampling from the Lee report are provided below for your review. No boring logs were included with the report.

TABLE 1 Frank Lee + Assoc. Aug '88

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION

Sample	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	total Lead (mg/kg)
B1-1	ND	ND	ND	ND	ND	NA
Composite B2-3, B2-4	19	0.83	1.5	0.88	2.6	2.1 ole - but it's a composite
Composite B3-1, B3-3	1.3	ND	ND	ND	ND	2.3 ole
B5-2	5.1	ND	ND	ND	0.34	NA

ALL RESULTS REPORTED IN PPM (MILLIGRAMS/KILOGRAM OF SOIL)
TPH - Low to Medium Boiling Point Hydrocarbons
ND - Not Detected
NA - Not Analyzed

Subsequent to the removal of the UST,s at the Site, Tank Protect Engineering of Northern California collected two samples from beneath the pump island adjacent to Seventh Street, twelve samples from beneath each end of the UST's and one sample from beneath the Waste Oil Tank. These samples were submitted to Sequoia Analytical to be analyzed for Total Petroleum Hydrocarbons with BTEX Distinction, Total Lead by Atomic Absorption, Total Petroleum Fuel Hydrocarbons and Total Recoverable Petroleum Oil. One sample from beneath the

Waste Oil Tank was also analyzed for Cadmium, Chromium, Lead, Nickel, Zinc, Halogenated Volatile Organics and Semi-Volatile Organics.

Tank Protect Engineering also submitted three soil samples from the three spoils piles. These samples were analyzed by Sequoia Analytical for the same compounds as described above.

Tables 2 and 3, following page 6 of this document present these data in tabular forms and copies of the laboratory results are included in Appendix C.

PLEASE NOTE THAT DBA HAS NO RECORD OF OR KNOWLEDGE OF THE SAMPLE COLLECTION METHODOLOGY, SAMPLING HANDLING TECHNIQUE OR QUALIFICATIONS OF THE INDIVIDUAL OR INDIVIDUALS COLLECTING THE SAMPLES. THESE DATA ARE PRESENTED ONLY TO ENSURE AS COMPLETE A RECORD AS POSSIBLE OF THE CONDITIONS AT THE SITE.

As previously noted, there are no records, logs or field notes available that describe the techniques and procedures used to excavate and remove the UST's nor are copies of any required permits available.

gas odor at tank removal - see PES inspection report.

C. Site Vicinity Research

Dennis Bates Associates, Inc. has reviewed the records of underground fuel leak cases on file at the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for the last quarter of 1989. A number of groundwater contamination problems were found to exist in the nearby area. Within a 1/2 mile radius of the 706 Harrison Street site there were sixteen reported cases of petroleum releases to the subsurface, with half of these being classified as groundwater problems.

Site-specific groundwater flow gradients are reported for four of these sites. These include flow to the north at 461 Eighth Street, to the northwest at Jefferson and 13th Street and at 1330 Martin Luther King and to the north-northeast at 1111 Broadway.

There is a Shell Oil Service Station immediately adjacent to the Site at the corner of Eighth and Harrison Streets, there are no groundwater monitoring wells at this station and the operator denies any fuel releases.

Directly across Eighth Street from the Shell Station is a Unocal (76) Service Station which is known to have groundwater monitoring wells in-place.

tank removal

TABLE 2
TANK PROTECT ENGINEERING - SOIL ANALYSIS RESULTS Jan 91

SAMP. #	TPH-G (PPM)	B (PPM)	T (PPM)	EB (PPM)	X (PPM)	TRPH (PPM)	TOTAL LEAD MG/KG
S1-S	390	0.69	0.56	3.10	8.70	NA	ND
S1-N	ND	0.07	0.063	0.013	0.054	NA	ND
S2-S	5,700	82.00	280.00	85.00	460.00	NA	5.50
S2-N	6,800	75.00	290.00	98.00	540.00	NA	ND
S3-S	4,600	30.00	210.00	78.00	470.00	NA	ND
S3-N	3,600	19.00	100.00	53.00	280.00	NA	ND
S4-S	8,000	7.90	56.00	84.00	450.00	NA	ND
S4-N	ND	0.013	0.010	ND	0.026	NA	ND
S5-S	12	0.023	0.016	0.053	0.190	NA	3.30
S5-N	9,400	17.00	160.00	97.00	650.00	NA	4.70
S6-W	ND	0.010	0.010	ND	0.030na	NA	ND
S6-E	400	0.21	0.57	5.00	9.80	NA	4.30
Island-N I1-N	ND	ND	0.088	ND	0.02	NA	370.00
" - S I1-S	ND	0.005	0.012	0.009	0.050	NA	45.00
WO-1	ND	ND	ND	ND	ND	ND	28.00

NOTES:

1. BH - DESIGNATES SAMPLE OBTAINED FROM BOREHOLE
2. SP - DESIGNATES SAMPLE OBTAINED FROM SPOILS PILE
3. TPH-G EPA METHODS 5013/8015/8020 (LUFT)
4. TPH-WO EPA METHOD 3550 AND SM 5520
5. PPM - PARTS PER MILLION/MILLIGRAMS PER KILOGRAM OF SOIL
6. BDL - BELOW METHOD DETECTION LIMIT

8270:

		DL (ppm)
WO-1 had	.100 ppm benzo(a)pyrene	.100
	.110 " fluoranthene	.100
	.150 " pyrene	.100

TABLE 3
TANK PROTECT ENGINEERING - SOILS PILE ANALYSES

SAMP. #	TPH-G (PPM)	B (PPM)	T (PPM)	EB (PPM)	X (PPM)	TRPH (PPM)	TOTAL LEAD MG/KG
SP1-4	ND	ND	ND	ND	ND	NA	31.00
SPP1-4	30	0.009	0.012	0.150	1.300	NA	NA
SPWO1	ND	0.016	0.016	ND	0.022	200.000	430.000

SPWO1 NO HALOGENATED VOLATILE ORGANICS (EPA 8010) DETECTED CHROMIUM AT 5.5, NICKEL AT 14 AND ZINC AT 380 MG/KG

NOTES:

3. TPH-G EPA METHODS 5013/8015/8020 (LUFT)
4. TRPH - EPA METHOD 3550 AND SM 5520
5. PPM - PARTS PER MILLION/MILLIGRAMS PER KILOGRAM OF SOIL
6. ND - BELOW METHOD DETECTION LIMIT

The Mandarin Auto Service site (EXON) At the intersection of Eighth and Alice Streets, one block to the northeast of the Site, is known to have significant sub-surface hydrocarbon contamination and is presently in a remediation status.

what does this conclude?

III. PROPOSED SCOPE OF WORK

A. Task Summary

DBA proposes the following scope of work and, after appropriate approvals, will implement the proposed work in a timely manner.

The following is an outline and approximate order of the work to be completed:

TASK 1. Submit this workplan to the Alameda County Health Department and the SFBRWQCB and obtain approval to proceed with the proposed work.

TASK 2. Prepare a Site Safety Plan (included with this workplan) discussing the precautions and protective equipment required for the work. Include emergency route map to hospital.

TASK 4. Obtain appropriate permits (drilling, etc.) to ~~drill soil borehole~~ install one ground water monitoring well.

TASK 5. Dispose of existing soil currently stockpiled on site.

TASK 6. Remove hydrocarbon impacted soil from the location of the previous 1000 gallon UGTs adjacent to Harrison Street.

to what action level?

TASK 7. Stockpile and characterize the excavated soil on-site.

for what analytes? TPH-g, BTEX

TASK 8. Backfill and compact the existing excavations.

TASK 9. Install one groundwater monitoring well in the immediate vicinity of the over-excavated area to investigate possible groundwater contamination beneath the site.

TASK 10. Collect one soil sample from the boring at five foot intervals starting at 10 feet below grade. Ground water is anticipated to be at approximately 25 feet below grade.

TASK 11. Develop and sample the groundwater monitoring well. The groundwater sample will be analyzed for TPH/gasoline and the purgeable constituents benzene, toluene, ethylbenzene and xylene (BTEX) and [redacted] (LUFT). OK

TASK 12. Interpret field and laboratory data, including analysis of samples collected from the soil borings,

TASK 13. Prepare a report documenting field methodology, laboratory analyses results, hydrogeologic setting, conclusions and appropriate recommendations.

B. Discussion of Specific Tasks

dates?

TASK 5. Disposal of soil currently stockpiled on site. which?

The Tank Protect Engineering and Miller Environmental analysis of one of the soil piles indicated that there were no detectable amounts of Total Petroleum Fuel Hydrocarbons, Benzene, Toluene, Ethyl Benzene or Xylene(s) in this soil.

Tank Protect Engineering detected Low/Medium B.P. Hydrocarbons in a second soil pile at 30 ppm, Benzene at 0.0094 ppm, Toluene at 0.012 ppm, Ethyl Benzene at 0.012 ppm and Xylene(s) at 1.3 ppm. Miller Environmental, in September of 1992, did not detect any of these compounds in composite samples collected from each of the three soil piles on site.

Tank Protect Engineering collected one soil sample from two of the three soil piles for total lead analysis. The results of this testing indicated the presence of lead in one pile at 31 mg/kg (ppm) and from the waste oil tanks soil pile at 430 mg/kg (ppm)

Based on these data as well as the data contained in Tables 2 and 3 (following page 7), DBA recommends that the Soil Piles SP1 and SP2, as shown on Plate 3, be used to backfill the existing excavations. Excess material from these "clean fill" stockpiles would to be used as backfill for the over-excavated area.

The remaining stockpiled soil from the Waste Oil excavation will be transported to an appropriate Landfill/Disposal Site.

TASK 6. Remove hydrocarbon impacted soil from the location of the previous 1000 gallon UGTs adjacent to Harrison Street.

The 12 December 1992 Miller Environmental letter report, Appendix D, discussing the hand augering at the Site indicates that the hydrocarbons have migrated to a depth of greater than ~~20 feet BLS~~ and are present at this depth in amounts greater than 100 ppm.

16' bgs

The sidewalls on the Harrison Street side of this excavation (PLATE 3) are beneath the previous sidewalk and almost under the street. Any additional excavation towards Harrison Street will endanger the stability of the street and will be avoided. The angle boring, done by Miller Environmental, seems to indicate that the hydrocarbons have migrated vertically with little or no lateral movement.

don't agree no samples!

nothing

The entire bottom of the excavation will be deepened to 10 to 12 feet BLS and soil samples will be collected at 10 foot intervals from the bottom of the excavation. These samples will be collected from the excavator bucket. This collection method is being used because the pit will not be shored and workers cannot enter an un-shored excavation of this depth. These samples will be analyzed in the field using an OVM. If volatile hydrocarbons are detected at 100 ppm or greater the excavation will be deepened another two feet and the analyses repeated.

± it's now ~8' bgs

This process will be continued until either the depth of the excavation reaches 18 feet BLS or the OVM readings are less than 100 ppm. Given the status/stability of the soil in this area the excavation cannot exceed 18 feet BLS without shoring. If the stability of the sidewalls becomes questionable, that portion of the excavation where the OVM readings are less than 100 ppm will be immediately back-filled to 4-6 feet BLS and compacted before any additional excavation is done.

Any area continuing to exhibit significant volatile hydrocarbon contamination at the 18 foot BLS depth will be evaluated by soil borings after the excavation is back-filled. If this work is required this Workplan will be amended accordingly.

ok

All soil removed during this Task will be placed on, and covered with, visquene. This soil will remain on site pending characterization and proper disposal.

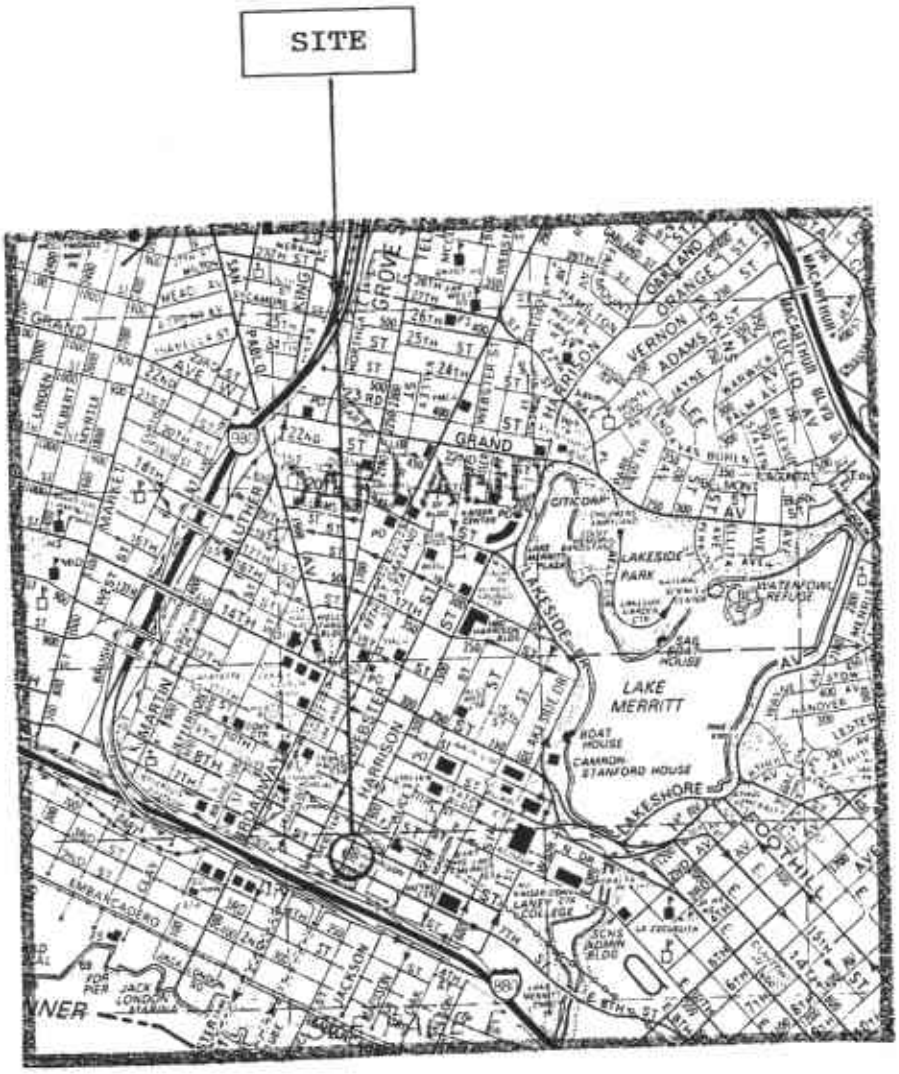


PLATE 1
SITE LOCATION MAP
706 HARRISON STREET, OAKLAND, CA
From Thomas Brothers Alameda & Contra Costa Street Guide
1989 Edition

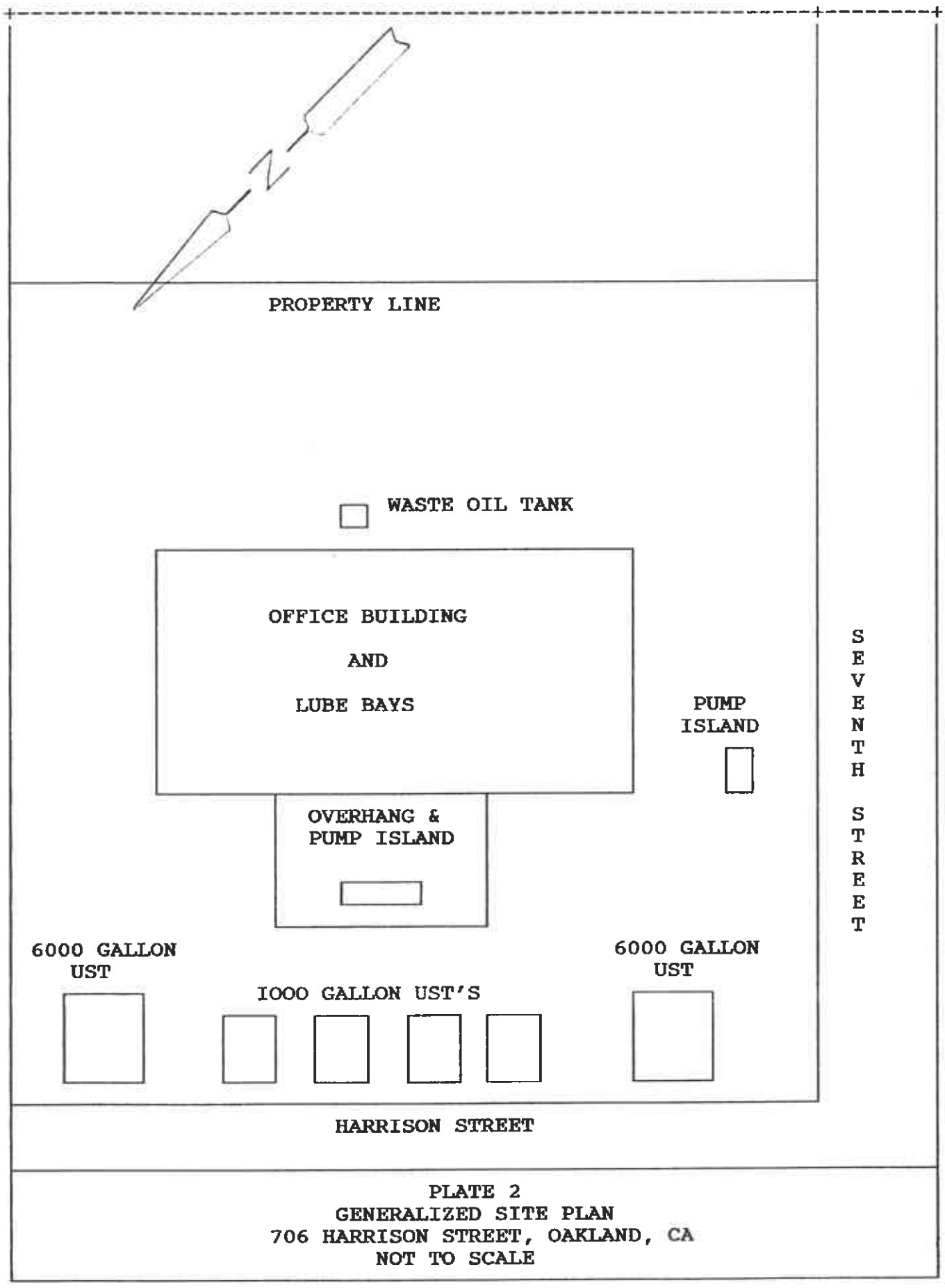


PLATE 2
GENERALIZED SITE PLAN
706 HARRISON STREET, OAKLAND, CA
NOT TO SCALE

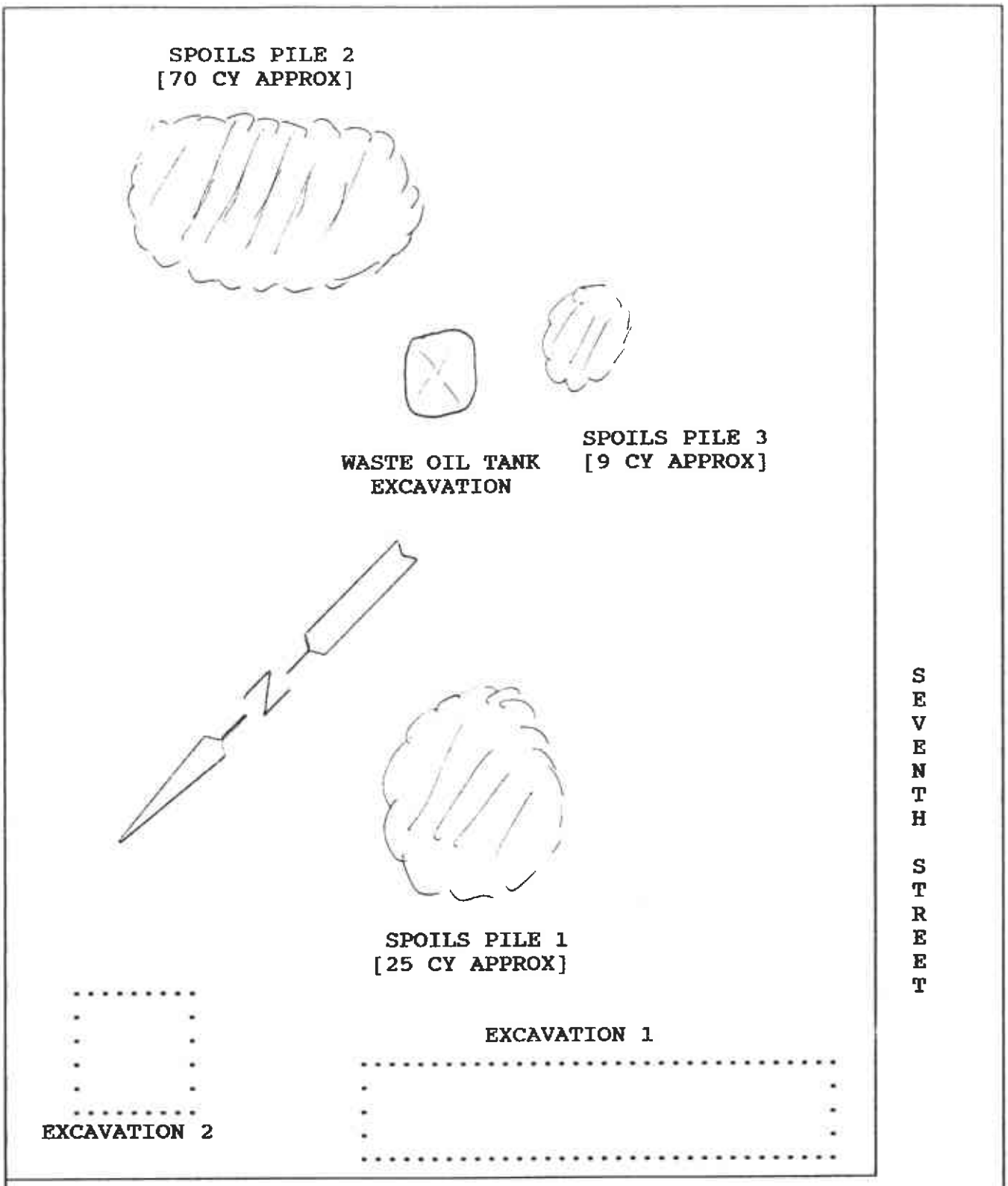


PLATE 3
SITE PLAN SHOWING EXCAVATIONS AND SPOILS PILES
706 HARRISON STREET, OAKLAND, CA
NOT TO SCALE

APPENDIX A

FRANK LEE AND ASSOCIATES REPORT

FRANK LEE & ASSOCIATES
GEOTECHNICAL CONSULTANTS
10 KOOTENAI COURT, FREMONT, CALIFORNIA 94539
(415) 657-7792

October 14, 1988
Job No: 8888L

Mr. Bo Gin
288 11th Street
Oakland, California 94607

Subject: PRELIMINARY SOILS CHEMICAL TESTING
706 Harrison Street
Oakland, California

Dear Mr. Gin:

This letter is to report the results of preliminary soils chemical testing for petroleum hydrocarbons as gasoline and lead at the subject site. This preliminary work was performed at your request to investigate the presence of the above-listed compounds beneath the site, and was conducted in conjunction with work completed for a soils and foundation investigation at the site.

The site is presently occupied by a closed gasoline station with six existing on-site underground gasoline storage tanks, and one underground waste oil tank. Exploration in the vicinity of the waste oil tank was not a part of this investigation. We understand that the gasoline has been pumped out of the gasoline tanks. Four of the gasoline tanks are located just outside of the southwest property boundary beneath the City sidewalk. Five of the seven borings drilled as a part of the soils and foundation investigation were located as nearly as possible to the underground gasoline storage tanks, the locations of which were reported to us by you. The approximate locations of the underground tanks and the borings are shown on the Generalized Site Plan.

Soil samples were collected from the borings at depths of approximately 15 feet in Borings B-1, B-2, B-4, and B-5, and 10 feet in Boring B-3 (below the depth of the underground gasoline storage tanks) in 6-inch brass liners for chemical testing. Because a chemical odor was detected in the sample from 15 feet in Boring B-2, a sample was also taken at 20 feet. The samples were obtained in accordance with standard protocol for petroleum compounds. All tools that contacted samples were thoroughly cleaned before and between samplings with trisodium phosphate, double-rinsed, and air-dried. The samples were sealed in the field in their original liners with aluminum foil and clean plastic caps wrapped with aluminized duct tape, and immediately placed on ice for transport to the laboratory. In addition to the odor noted in the sample from 15 feet deep in Boring B-2, slight

petroleum odor was also noted in the samples from approximately 15 feet deep during the drilling of Borings B-1 and -5.

The soils samples from Borings B-1 and B-5, a composite of the two samples from Boring B-2, and a composite of the samples from Borings B-3 and -4 near the gasoline tanks were tested for the presence and concentration of total petroleum hydrocarbons as gasoline with BTEX (benzene, toluene, ethyl benzene, xylenes) distinction. The samples were tested by Sequoia Analytical Laboratory of Redwood City, California, a state-certified laboratory. The results of the laboratory testing, as shown on the attached Laboratory Data Sheets, indicate that none of the compounds tested for were detected at concentrations at or above State Regional Water Quality Control Board action levels. The composite samples from Boring B-2 and Borings B-3 and -4 were additionally tested for lead, which indicated lead below the soluble threshold limit concentration (STLC) as designated in Title 22 of the California Administrative Code.

While the results of this preliminary chemical testing do not indicate the presence of the compounds tested for at or above regulatory action levels at the site, these results do not preclude the existence of these compounds at such levels at the site. A more complete investigation of the presence of these or other contaminants at the site, if necessary and/or possible, would include research to determine the number, types, sizes, and locations of any former underground storage tanks, and the history of chemical use at the site. In addition, any underground storage tanks remaining beneath the site must be either properly closed or monitored in accordance with the requirements of the City of Oakland. If the underground tanks are removed at a later date, it may be possible to obtain samples to help confirm the results of the present investigation.

We are pleased to be working with you on this project. If you have any questions or if we can be of any other service, please feel free to call. Thank you.

Very truly yours,

FRANK LEE & ASSOCIATES

Frank Lee

Frank Lee
Professional Engineer 34975

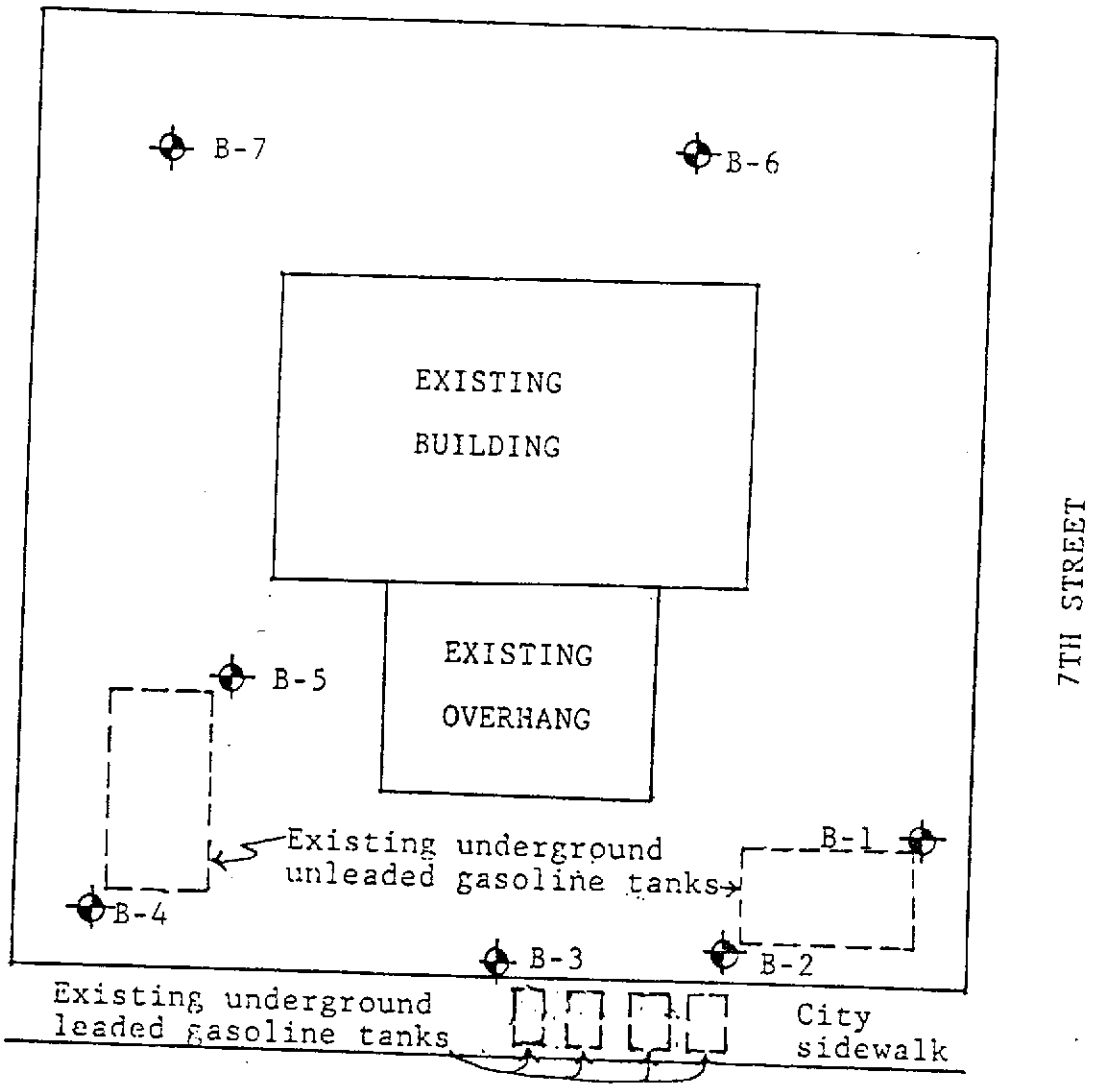
REGISTERED PROFESSIONAL ENGINEER
FRANK TZONG-HIN LEE
C 34975
CIVIL
STATE OF CALIFORNIA

Frank Lee 10/14/88

EHP 9/30/91

Attachment: Generalized Site Plan
Laboratory Data Sheets and Chain of Custody

Copies: Addressee (2)



GENERALIZED SITE PLAN

706 HARRISON STREET

OAKLAND, CALIFORNIA

Scale: 1" = approx. 20'

Job No: 8888-S1

APPENDIX A

LABORATORY DATA SHEETS

AND CHAIN OF CUSTODY

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222 • FAX (415) 364-9233

Frank Lee & Associates
10 Kootenia Court
Fremont, CA 94539
Attn: Frank Lee

Date Sampled: 08/18/88
Date Received: 08/19/88
Date Analyzed: 09/07/88
Date Reported: 09/20/88

Project: #8888, 706 Harrison St., Oakland

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION

Sample Number	Sample Description Soil	Low to Medium Boiling Point Hydrocarbons ppm	Benzene ppm	Toluene ppm	Ethyl Benzene ppm	Xylenes ppm
8082072	B1-1	N.D.	N.D.	N.D.	N.D.	N.D.
8082073	Composite B2-3, B2-4	19	0.83	1.5	0.88	2.6
8082074	Composite B3-1, B4-3	1.3	N.D.	N.D.	N.D.	N.D.
8082075	B5-2	5.1	N.D.	N.D.	N.D.	0.34
Detection Limits:		1.0	0.05	0.1	0.1	0.1

Method of Analysis: EPA 5030 or 3810/8015/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222 • FAX (415) 364-9233

Frank Lee & Associates
10 Kootenia Court
Fremont, CA 94539
Attn: Frank Lee

Date Sampled: 08/18/88
Date Received: 08/19/88
Date Reported: 09/20/88

LABORATORY ANALYSIS

Project: #8888, 706 Harrison St., Oakland

Analyte: Lead, mg/kg

Sample Number	Sample Description Soil, Composite	Detection Limit	Sample Result
8082073	B2-3, B2-4	0.05	2.1
8082074	B3-1, B4-3	0.05	2.3

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

CHAIN OF CUSTODY RECORD

PROJ. NO. 8888

PROJECT NAME: 706 Harrison Street, Oakland

SAMPLERS: Signature: Diane Barclay

DEPTH	STA NO.	DATE	TIME	COMP.	GRAB	INSTRUCTIONS/STATION LOCATION	NO OF CONTAINERS 6" brass liners
15-15½'	B-1-1	8/18/88			✓	Total volatile hydrocarbons with BTEX	1
15½-16'	B-2-3	"			✓	Composite these 2 samples, test for Total Volatile Hydrocarbons with BTEX and lead	1
20-20½'	B-2-4	"			✓		1
10-10½'	B-3-1	"			✓	Composite these 2 samples, test for Total Volatile Hydrocarbons with BTEX and lead	1
15½-16'	B-4-3				✓		1
15-15½'	B-5-2	↓			✓	Total volatile hydrocarbons with BTEX	1

REMARKS

Relinquished by:Signature	Date/Time	Received by:Signature	Date/Time
Diane Barclay	8/19 8AM	Frank Lee	8/19/88 8AM
Frank Lee	8/19/88 10:05 AM	M Tague	8/19/88 10:15 AM

REMARKS: Please send results to:
Frank Lee & Associates
10 Kootenai Court
Fremont, CA 94539
(415) 657-7792

Please use standard turnaround times.

APPENDIX B

UNIFORM HAZARDOUS WASTE MANIFEST

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Department of Health Services
Toxic Substances Control Division
Sacramento, California

73891

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAC000551104 | Manifest Document No.: 00017
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.
A. State Manifest Document Number: 89891353
B. State Generator's ID

3. Generator's Name and Mailing Address: Bodin Harrison St. Oakland
4. Generator's Phone (415) 763-4???
5. Transporter 1 Company Name: Jack Parker Truck | 6. US EPA ID Number
7. Transporter 2 Company Name | 8. US EPA ID Number
9. Designated Facility Name and Site Address:
Erickson, Inc.
255 Parr Blvd.
Richmond, Ca. 94801
10. US EPA ID Number: CAD009466392
G. State Facility's ID: CAD0094?6392
H. Facility's Phone: (415) 235-1393

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Empty Storage Tank & ACSO Piping NON-RCRA Hazardous Waste Solid.	4	TP	4000	P	State 512; EPA/Other NONE
b.					State; EPA/Other
c.					State; EPA/Other
d.					State; EPA/Other

J. Additional Descriptions for Materials Listed Above
Qty. 4/00 Empty Storage Tank (s) #5???, 5???, 5??? ,____. Tank (s) have been inerted with 15 lbs.
Dry Ice per 1000 Gal. Capacity.

K. Handling Codes for Wastes Listed Above
a. b. c. 573.01 d.

15. Special Handling Instructions and Additional Information
Keep away from sources of ignition. Always wear hardhats when working around U.S.T.'s 24 Hr. Contact Name Dino Gonis & Phone 415 ??? ????

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: ~~Bill Moran~~ Dino Gonis | Signature: [signature] | Month Day Year: 01

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bill Moran | Signature: [signature] | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space
12.) S/B 4 - three cans 4 UST shipped and 4 received. Yrk (DR)
3.) 706 Harrison St. Oakland Ca. 94612 17.) Not Dated S/B 1/17/91

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Donald H. Rosson Jr. | Signature: Ronald H Rosson | Month Day Year: 01 17 91

Do Not Write Below This Line

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete.

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

APPENDIX C

TANK PROTECT ENGINEERING ANALYTICAL REPORTS

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif
2821 Whipple Road
Union City, CA 94587
Attention: Josie

Client Project ID: #123A-011791-1
Matrix Descript: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 101-0527

Sampled: Jan 17, 1991
Received: Jan 22, 1991
Analyzed: 1/29-1/30/91
Reported: Feb 5, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
101-0527	S1-S	390	0.69	0.56	3.1	8.7
Detection Limits:		5.0	0.025	0.025	0.025	0.025

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <1>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled: Jan 17, 1991
2821 Whipple Road	Matrix Descript:	Soil	Received: Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 5030/8015/8020	Analyzed: 1/29-1/30/91
Attention: Josie	First Sample #:	101-0528	Reported: Feb 5, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
101-0528	S1-N	N.D.	0.070	0.063	0.013	0.054
101-0530	S3-S	4,600	30	210	78	470
101-0531	S2-N	6,800	75	290	98	540
101-0532	S3-N	3,600	19	100	53	280
101-0533	S5-S	12	0.023	0.016	0.053	0.19
101-0534	S4-S	8,000	7.9	56	84	450
101-0535	S5-N	9,400	17	160	97	650
101-0536	S4-N	N.D.	0.013	0.010	N.D.	0.026
101-0537	S6-W	N.D.	0.010	0.010	N.D.	0.030
101-0538	S6-E	400	0.21	0.57	5.0	9.8
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <2>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled:	Jan 17, 1991
2821 Whipple Road	Matrix Descript:	Soil	Received:	Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jan 30, 1991
Attention: Josie	First Sample #:	101-0539	Reported:	Feb 5, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
101-0539	I1-N	N.D.	N.D.	0.0088	N.D.	0.022
101-0540	I1-S	N.D.	0.0050	0.012	0.0092	0.050
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled: Jan 17, 1991
2821 Whipple Road	Matrix Descript:	Soil	Received: Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 5030/8015/8020	Analyzed: 1/29-1/30/91
Attention: Josie	First Sample #:	101-0529	Reported: Feb 5, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
101-0529	S2-S	5,700	82	280	85	460
Detection Limits:		**50**	**0.25**	**0.25**	**0.25**	**0.25**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <4>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled:	Jan 17, 1991
2821 Whipple Road	Sample Descript:	Soil	Received:	Jan 22, 1991
Union City, CA 94587	Analysis for:	Total Lead by AA	Extracted:	Jan 25, 1991
Attention: Josie	First Sample #:	101-0527	Analyzed:	Jan 30, 1991
			Reported:	Feb 5, 1991

LABORATORY ANALYSIS FOR: Total Lead by AA

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
101-0527	S1-S	0.50	N.D.
101-0528	S1-N	0.50	N.D.
101-0529	S2-S	0.50	5.5
101-0530	S3-S	0.50	N.D.
101-0531	S2-N	0.50	N.D.
101-0532	S3-N	0.50	N.D.
101-0533	S5-S	0.50	3.3
101-0534	S4-S	0.50	N.D.
101-0535	S5-N	0.50	4.7
101-0536	S4-N	0.50	N.D.
101-0537	S6-W	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif
2821 Whipple Road
Union City, CA 94587
Attention: Josie

Client Project ID: #123A-011791-1
Sample Descript: Soil
Analysis for: Total Lead by AA
First Sample #: 101-0538

Sampled: Jan 17, 1991
Received: Jan 22, 1991
Extracted: Jan 25, 1991
Analyzed: Jan 30, 1991
Reported: Feb 5, 1991

LABORATORY ANALYSIS FOR: Total Lead by AA

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
101-0538	S6-E	0.50	4.3 ✓
101-0539	I1-N	5.0	370 ✓
101-0540	I1-S	0.50	45 ✓

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <6>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled: Jan 17, 1991
2821 Whipple Road	Sample Descript.:	Soil, WO1	Received: Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 5030/8015/8020	Analyzed: Feb 1, 1991
Attention: Josie	Lab Number:	101-0526	Reported: Feb 5, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes	0.0050	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <7>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	WO 1
2821 Whipple Road	Matrix Descript:	Soil	
Union City, CA 94587	Analysis Method:	EPA 3550/8015	
Attention: Josie	First Sample #:	101-0526	

Sampled:	Jan 17, 1991
Received:	Jan 22, 1991
Extracted:	Jan 29, 1991
Analyzed:	Jan 30, 1991
Reported:	Feb 5, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
101-0526	WO1	N.D.

Detection Limits:	1.0

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

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <8>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled:	Jan 17, 1991
2821 Whipple Road	Matrix Descript:	Soil, WO1	Received:	Jan 22, 1991
Union City, CA 94587	Analysis Method:	SM 5520 E&F (Gravimetric)	Extracted:	Jan 25, 1991
Attention: Josie	First Sample #:	101-0526	Analyzed:	Jan 25, 1991
			Reported:	Feb 5, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
101-0526	WO1	N.D.

Detection Limits:	30

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <9>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif
2821 Whipple Road
Union City, CA 94587
Attention: Josie

Client Project ID: #123A-011791-1
Sample Descript: Soil, WO1

Lab Number: 101-0526

Sampled: Jan 17, 1991
Received: Jan 22, 1991
Extracted: Jan 24, 1991
Analyzed: 1/25-1/31/91
Reported: Feb 5, 1991

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	0.50	N.D.
Chromium	0.25	33
Lead	0.25	28
Nickel	2.5	26
Zinc	0.50	710

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <10>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled: Jan 17, 1991
2821 Whipple Road	Sample Descript:	Soil, WO1	Received: Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 5030/8010	Analyzed: Jan 30, 1991
Attention: Josie	Lab Number:	101-0526	Reported: Feb 5, 1991

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010527.TPE <11>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled:	Jan 17, 1991
2821 Whipple Road	Sample Descript:	Soil, WO1	Received:	Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 8270	Extracted:	Jan 23, 1991
Attention: Josie	Lab Number:	101-0526	Analyzed:	Feb 5, 1991
			Reported:	Feb 5, 1991

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acenaphthene	100	N.D.
Acenaphthylene	100	N.D.
Aniline	100	N.D.
Anthracene	100	N.D.
Benzidine	2,500	N.D.
Benzoic Acid	500	N.D.
Benzo(a)anthracene	100	N.D.
Benzo(b)fluoranthene	100	N.D.
Benzo(k)fluoranthene	100	N.D.
Benzo(g,h,i)perylene	100	N.D.
Benzo(a)pyrene	**100**	**100**
Benzyl alcohol	100	N.D.
Bis(2-chloroethoxy)methane	100	N.D.
Bis(2-chloroethyl)ether	100	N.D.
Bis(2-chloroisopropyl)ether	100	N.D.
Bis(2-ethylhexyl)phthalate	500	N.D.
4-Bromophenyl phenyl ether	100	N.D.
Butyl benzyl phthalate	100	N.D.
4-Chloroaniline	100	N.D.
2-Chloronaphthalene	100	N.D.
4-Chloro-3-methylphenol	100	N.D.
2-Chlorophenol	100	N.D.
4-Chlorophenyl phenyl ether	100	N.D.
Chrysene	100	N.D.
Dibenz(a,h)anthracene	100	N.D.
Dibenzofuran	100	N.D.
Di-N-butyl phthalate	500	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,2-Dichlorobenzene	100	N.D.
3,3-Dichlorobenzidine	500	N.D.
2,4-Dichlorophenol	100	N.D.
Diethyl phthalate	100	N.D.
2,4-Dimethylphenol	100	N.D.
Dimethyl phthalate	100	N.D.
4,6-Dinitro-2-methylphenol	500	N.D.
2,4-Dinitrophenol	500	N.D.

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif
2821 Whipple Road
Union City, CA 94587
Attention: Josie

Client Project ID: #123A-011791-1
Sample Descript: Soil, WO1
Analysis Method: EPA 8270
Lab Number: 101-0526

Sampled: Jan 17, 1991
Received: Jan 22, 1991
Extracted: Jan 23, 1991
Analyzed: Feb 5, 1991
Reported: Feb 5, 1991

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
2,4-Dinitrotoluene	100	N.D.
2,6-Dinitrotoluene	100	N.D.
Di-N-octyl phthalate	100	N.D.
Fluoranthene	**100**	**110**
Fluorene	100	N.D.
Hexachlorobenzene	100	N.D.
Hexachlorobutadiene	100	N.D.
Hexachlorocyclopentadiene	100	N.D.
Hexachloroethane	100	N.D.
Indeno(1,2,3-cd)pyrene	100	N.D.
Isophorone	100	N.D.
2-Methylnaphthalene	100	N.D.
2-Methylphenol	100	N.D.
4-Methylphenol	100	N.D.
Naphthalene	100	N.D.
2-Nitroaniline	500	N.D.
3-Nitroaniline	500	N.D.
4-Nitroaniline	500	N.D.
Nitrobenzene	100	N.D.
2-Nitrophenol	100	N.D.
4-Nitrophenol	500	N.D.
N-Nitrosodiphenylamine	100	N.D.
N-Nitroso-di-N-propylamine	100	N.D.
Pentachlorophenol	500	N.D.
Phenanthrene	100	N.D.
Phenol	100	N.D.
Pyrene	**100**	**150**
1,2,4-Trichlorobenzene	100	N.D.
2,4,5-Trichlorophenol	500	N.D.
2,4,6-Trichlorophenol	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-1	Sampled:	
2821 Whipple Road	Sample Descript:	Soil	Received:	Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 8270 & "Open Scan"	Extracted:	
Attention: Josie	Lab Number:		Analyzed:	
			Reported:	

SEMI-VOLATILE ORGANICS by GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Detection Limit µg/kg	Sample Results µg/kg

No additional peaks > 250 µg/kg were identified by the Mass Spectral Library.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

Please Note:
All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA NIST library. Positive identification or specification between isomers cannot be made without retention time standards.

TANK PROTECT ENGINEERING

2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

CHAIN OF CUSTODY

PROJECT NO.	SITE NAME & ADDRESS
123A-011791-1 BD Eng.	706 Harrison St. Oakland, Ca.

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER
Tank Protect Engineering
2821 Whipple Rd. Union City, Ca. 94587

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	ANALYTES REQUESTED: TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER	REMARKS
WO-1	1/17/91	3:05	✓		1010526								gas/btex; diesel; TOG; 8010: Cd, Cr, Ni, Pb, Zn; 82
S1-S	"	3:20	✓		527								All required analyses by TRI Regional Guidelines for ~~waste oil~~
S1-N	"	3:28	✓		526								TPH G & BTEX & Total Lead (AA)
S2-S	"	3:40	✓		529								" "
S3-S	"	3:45	✓		530								" "
S2-N	"	3:52	✓		531								" "
S3-N	"	3:58	✓		532								" "
S5-S	"	4:05	✓		533								" "
S4-S	"	4:20	✓		534								" "

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
[signature]	1-22-91/13:20PM	Patrick Hook			
Patrick Hook	1-22-91/1:30PM				
Relinquished by : (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		[signature]	1/22 1:15PM		

DATE: _____

TANK PROTECT ENGINEERING

Environmental Management

TANK PROTECT ENGINEERING

2021 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

CHAIN OF CUSTODY

PROJECT NO.	SITE NAME & ADDRESS
123A-011791-1 BOC m	706 Harrison St, Oakland, CA 94567

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER: Tank Protect Engineering, 2821 Whipple Rd. Union City, CA 94587

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	ANALYTES REQUESTED	TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER	REMARKS
S5-N	1/22/91	4:25	✓		1010535									TPH-G & BTEX & Total Lead (AA)
S4-N	〃	4:28	✓		536									〃 〃
S6-W	〃	4:50	✓		537									〃 〃
S6-E	〃	4:54	✓		538									〃 〃
I1-N		5:00	✓		[Isla 539 .th]									〃 〃
I1-S		5:03	✓		540 .th)									〃 〃

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
[illegible]	1-22-91 / 12:20pm	Patrick Hook			

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Patrick Hook	1-22-91 / 1:15pm				

Relinquished by : (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks

DATE :

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-2	Sampled: Jan 17, 1991
2821 Whipple Road	Matrix Descript:	Soil	Received: Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 5030/8015/8020	Analyzed: Jan 28, 1991
Attention: John Mrakovich	First Sample #:	101-0544 A-D	Reported: Feb 1, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
1010544 A-D	SP1-4	N.D.	N.D.	N.D.	N.D.	0.014
1010545 A-D	SPWO1-4	N.D.	0.016	0.016	N.D.	0.022
1010546 A-D	SPP1-4	30	0.0094	0.012	0.15	1.3
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-2	Sampled: Jan 17, 1991
2821 Whipple Road	Matrix Descript:	Soil	Received: Jan 22, 1991
Union City, CA 94587	Analysis Method:	SM 5520 E&F (Gravimetric)	Extracted: Jan 25, 1991
Attention: John Mrakovich	First Sample #:	101-0545 A-D	Analyzed: Jan 28, 1991
			Reported: Feb 1, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
1010545 A-D	SPWO1-4	200

Detection Limits:	30

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010544.TPE <3>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-2	Sampled: Jan 17, 1991
2821 Whipple Road	Sample Descript:	Soil SPWO1-4	Received: Jan 22, 1991
Union City, CA 94587	Analysis Method:	EPA 5030/8010	Analyzed: Jan 23, 1991
Attention: John Mrakovich	Lab Number:	101-0545 A-D	Reported: Feb 1, 1991

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010544.TPE <4>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-2		Sampled:	Jan 17, 1991
2821 Whipple Road	Sample Descript:	Soil		Received:	Jan 22, 1991
Union City, CA 94587	Analysis for:	Total Lead		Extracted:	Jan 25, 1991
Attention: John Mrakovich	First Sample #:	101-0544	A-D	Analyzed:	Jan 30, 1991
				Reported:	Feb 1, 1991

LABORATORY ANALYSIS FOR: Total Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
1010544 A-D	SP1-4	0.50	31 ✓
1010545 A-D	SPWO1-4	5.0	430 ✓

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010544.TPE <5>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Tank Protect Engineering of N. Calif	Client Project ID:	#123A-011791-2		Sampled:	Jan 17, 1991
2821 Whipple Road	Sample Descript:	Soil	SPWO1-4	Received:	Jan 22, 1991
Union City, CA 94587				Extracted:	Jan 25, 1991
Attention: John Mrakovich	Lab Number:	101-0545	A-D	Analyzed:	1/29-2/1/91
				Reported:	Feb 1, 1991

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Cadmium	0.50	N.D.
Chromium	2.5	5.5
Nickel	2.5	14
Zinc	50	380

pb?,

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

1010544.TPE <6>

TANK PROTECT ENGINEERING

2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

CHAIN OF CUSTODY

PROJECT NO.	SITE NAME & ADDRESS
123A-011791-1 BD Gin	706 Harrison St. Oakland, Ca.

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER
Tank Protect Engineering
2821 Whipple Rd. Union City, Ca. 94587

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	ANALYTES REQUESTED: TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER	REMARKS
W.O-1	1/17/91	3:05	✓		1010526								gas/btex; diesel; TOG; 8010; Cd, Cr, Ni, Pb, Zn; 827
S1-S	"	3:20	✓		527								All required analyses by TRI - Rigional Guidelines for WASTE OIL
S1-N	"	3:28	✓		526								TPH G & BTEX & Total Lead (AA)
S2-S	"	3:40	✓		529								" "
S3-S	"	3:45	✓		530								" "
S2-N	"	3:52	✓		531								" "
S3-N	"	3:58	✓		532								" "
S5-S	"	4:05	✓		533								" "
S4-S	"	4:20	✓		534								" "

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
	1-22-91/3:20PM	Patrick Hook			
Patrick Hook	1-22-91/4:05PM				
Relinquished by : (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
			1/22 11:15AM		

DATE: _____

TANK PROTECT ENGINEERING

TANK PROTECT ENGINEERING
Environmental Management

2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

CHAIN OF CUSTODY

PROJECT NO.: 123A-011791-1 Bocin

SITE NAME & ADDRESS: 766 Harrison St, Oakland, Ca 94527

SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER: Tank Protect Engineering, 2821 Whipple Rd. Union City, Ca 94587

(1) TYPE OF CONTAINER

ANALYTES REQUESTED: TOTAL LIGHT HC / AROMATIC HC (BTX) / TOTAL HEAVY HC / OIL & GREASE / VOC SCAN (624's) / OTHER

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	TYPE OF CONTAINER	TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER	REMARKS
S5-N	1/17/91	4:25	✓		1010535								TPHG & BTEX & Total Lead (AA)
S4-N	"	4:28	✓		536								" "
S6-W	"	4:50	✓		537								" "
S6-E	"	4:54	✓		538								" "
I1-N		5:00	✓		(Island North) 539								" "
I1-S		5:03	✓		" 540 (South)								" "

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
[signature]	1-22-91 / 12:20 pm	Patrick Hook			
Patrick Hook	1-22-91 / 1:15 pm				

Relinquished by : (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks

DATE: ______________

APPENDIX D

MILLER ENVIRONMENTAL COMPANY, INC. REPORT

Dennis Bates
associates
INCORPORATED

12 January 1993

Mr. Bo K. Gin
Oakland Auto Parts
288 11th Street
Oakland, CA 94607

RE: 706 Harrison Street, Oakland, CA

Dear Mr. Gin:

This is a letter report to you concerning the hand-augering done at the above referenced site. A copy of this report has been forwarded, as per your request, to Ms. Jennifer Eberle of the Alameda County Department of Environmental Health, UST Local Oversight Program.

SCOPE OF ACTIVITIES

Dennis Bates Associates, Inc. has reviewed the work completed by Miller Environmental Co., (MEC) at the Harrison St. site. We understand that representatives of MEC were on site on 28 September 1992 to hand auger in the base of the existing tank excavations to determine, if possible, the depth that the gasoline hydrocarbons had migrated. An additional task was to collect four representative soil samples from each 50 cubic yards of material stockpiled on site. These samples were to be composited by the laboratory to reflect the composite values per each 50 cubic yards of material. PLATE 1 is a generalized site plan of the site as it existed on 28 September 1993.

FIELD ACTIVITIES/SAMPLE COLLECTION

MEC completed two borings, as shown on PLATE 2, which were done in the bottom of the large excavation, Excavation 1, adjacent to Harrison Street. One boring, BH-1 was advanced to 10 feet below the bottom of the excavation (about 16 feet below land surface -BLS). The auger encountered rusty brown silty fine sand. One boring, BH-2 was advanced to 12 feet at an angle of about 30 degrees towards Harrison street. The lateral distance from the bottom of BH-1 and BH-2 was calculated to be six feet. No samples were collected for laboratory analysis from BH-2 because of caving of the

borehole walls at depths greater than six feet. We further understand that this excavation was the result of the removal of four, 1000-gallon leaded gasoline tanks and one 6000-gallon unleaded gasoline tank.

One boring, BH-3, was advanced to three feet BLS in the bottom of the excavation, Excavation 2, that is perpendicular to Harrison Street adjacent to the Shell Oil Service station at the corner of Harrison and 8 th Street. This excavation was the result of the removal of an additional 6000-gallon unleaded gasoline tank.

Samples for field analysis were collected by advancing the sand auger to the desired depth, removing the auger and placing the contents of the auger into a plastic Zip-Loc bag. The bag containing the soil was then allowed to sit at ambient temperature for 15 minutes. At the end of the 15 minute time period the bag was punctured with the probe of a Thermo Environmental OVM Photoionization detector and the volatile hydrocarbon content of the vapor recorded. The instrument was calibrated in the field using a standard gas (iso-propylene - 250 ppm).

Samples for laboratory analysis were collected by using a sampler containing a 2 inch by 6 inch brass sleeve. The sand auger was advanced to the desired depth, removed and replaced by the sampler containing the tube and the equipment advanced another six to eight inches. The sampler was removed, opened, the ends of the brass tube covered with Teflon tape, capped with plastic caps, sealed with duct tape, labeled and placed in a cooler containing Blue-Ice. Samples were then transported under chain-of-custody procedures to Mobil Chem-Labs Inc., a state certified laboratory, for analysis.

Samples from the three spoils piles on-site were obtained and handled using the same methodology as described above. Four separate/discrete samples were obtained at varying depths from each 25 - 30 cubic yards (approximate) of soil. The four samples were composited by the laboratory into one for analysis.

PLATE 3 is a line drawing showing the sampling intervals and relative lateral distances between BH-1 and BH-2.

RESULTS

Analytical results of both field and laboratory measurements are presented in Table 1 following page 2 of this report.

TABLE 1
SOIL ANALYSIS RESULTS

SAMP. #	DEPTH (FEET)	TPH-G (PPM)	B (PPM)	T (PPM)	EB (PPM)	X (PPM)	TOG (PPM)	
BH1-5	5	BDL	BDL	BDL	BDL	BDL	NA	
BH1-6	6	1.90	0.014	0.017	0.14	0.15	NA	
BH1-10	10	870	0.43	15	19	120	NA	
BH3-3	5	BDL	BDL	BDL	BDL	BDL	NA	
SP1		BDL	BDL	BDL	BDL	BDL	NA	
SP2A		BDL	BDL	BDL	BDL	BDL	NA	
SP2B		BDL	BDL	BDL	BDL	BDL	NA	
SP3		BDL	BDL	BDL	BDL	BDL	300	

NOTES:

1. BH - DESIGNATES SAMPLE OBTAINED FROM BOREHOLE
2. SP - DESIGNATES SAMPLE OBTAINED FROM SPOILS PILE
3. TPH-G EPA METHODS 8020 (LUFT)
4. TPH-WO EPA METHOD 3550 AND SM 5520
5. PPM - PARTS PER MILLION/MILLIGRAMS PER KILOGRAM OF SOIL
6. BDL - BELOW METHOD DETECTION LIMIT

DISCUSSION OF RESULTS

Analytical results from BH-1 indicate that gasoline range hydrocarbons have migrated vertically in the soil column to a depth of at least 10 feet below the bottom of the open excavation and at least 18 feet BLS. The angle boring, BH-2, did not exhibit qualitative indications of hydrocarbon contamination at depth, 12.5 feet. This depth approximates the bottom-hole depth of BH-1, 10 feet, and represents soil from about 6 feet towards Harrison Street (North). The OVM readings from soil obtained at depth from BH-2 did not indicate the presence of volatile hydrocarbons.

Analytical results from BH-3 indicate that Total Petroleum Hydrocarbons as Gasoline, Benzene, Toluene, Ethyl Benzene or Xylene(s) above the Method Detection Limit are not present in the soil at a depth of 2.5 -3 feet below the bottom of Excavation 2.

Composite analytical results from Spoils Piles 1 and 2 (SP1, SP2A and SP2B) indicate that Total Petroleum Hydrocarbons as Gasoline, Benzene, Toluene, Ethyl Benzene or Xylene(s) were not detected above the Method Detection Limit. These composite samples represent about 100 cubic yards of soil.

Composite analytical results from Spoils Pile 3 (SP3) indicate that Total Petroleum Hydrocarbons as Gasoline, Benzene, Toluene, Ethyl Benzene or Xylene(s) were not detected above the Method Detection Limit. However, Gravimetric Waste Oil as Petroleum Oil was detected at 300 parts per million (ppm). This composite sample represents about 9 cubic yards of soil.

RECOMMENDATIONS

Submit this letter report to the Alameda County Department of Environmental Health, UST Local Oversight Program.

Submit a Workplan to the Alameda County Department of Environmental Health, UST Local Oversight Program that reviews past activities at the site and proposes remedial activities to bring the site to closure.

These remedial actions should:

1. Address the disposal of the soil stockpiled at the site.

2. Provide a plan for the excavation and disposal of the hydrocarbon impacted soil detected in boring BH-1.

3. Specify the location, installation, development and sampling of at least one groundwater monitoring well.

As requested by you a copy of this letter along with the Attachments has been forwarded to the Alameda County Department of Environmental Health, UST Local Oversight Program.

For Dennis Bates Associates, Inc.

John H. Sammons, Ph.D.

Walter H. Howe, R.G.

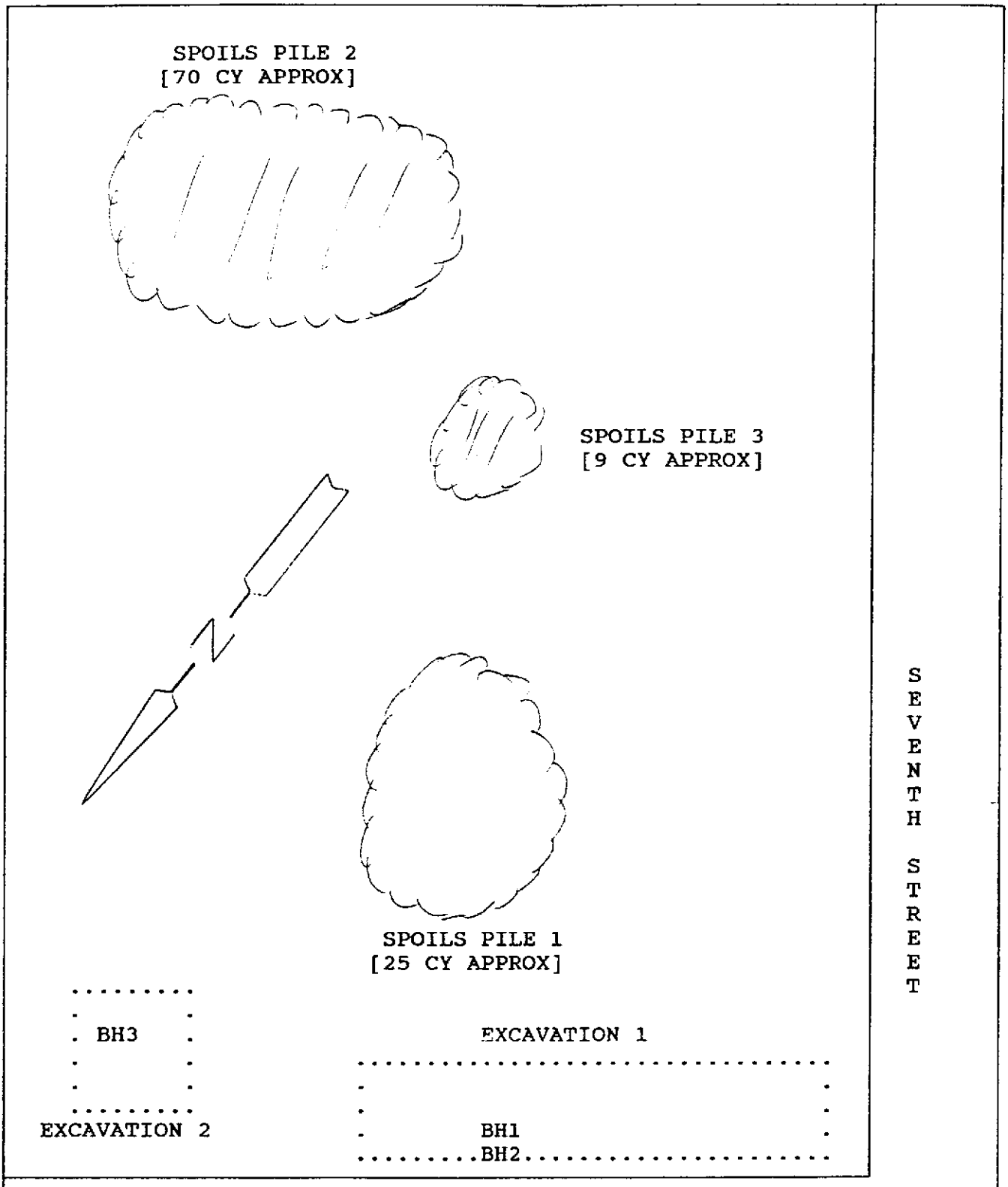


PLATE 2
BORING/BOREHOLE LOCATIONS
NOT TO SCALE

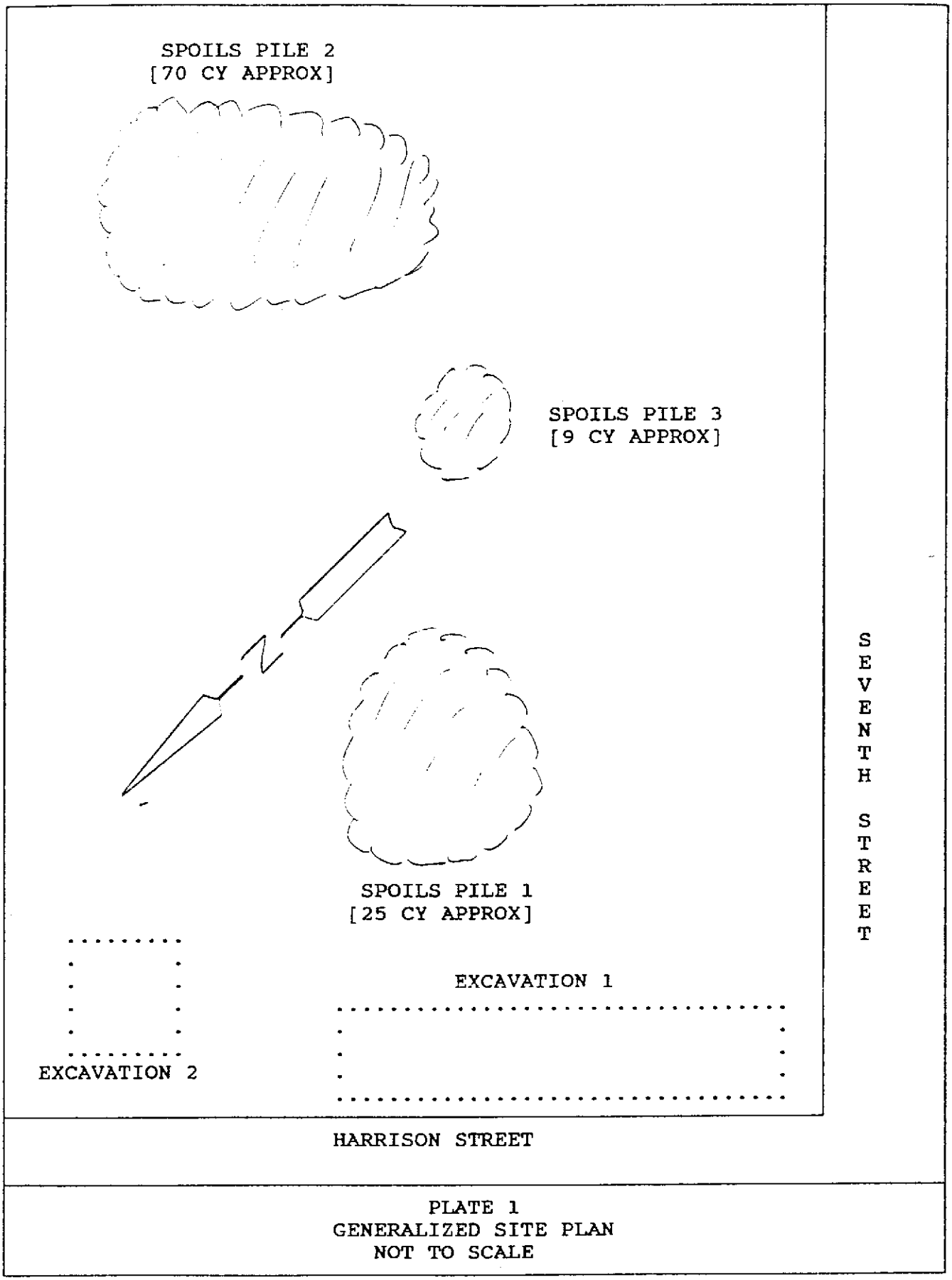


PLATE 1
GENERALIZED SITE PLAN
NOT TO SCALE

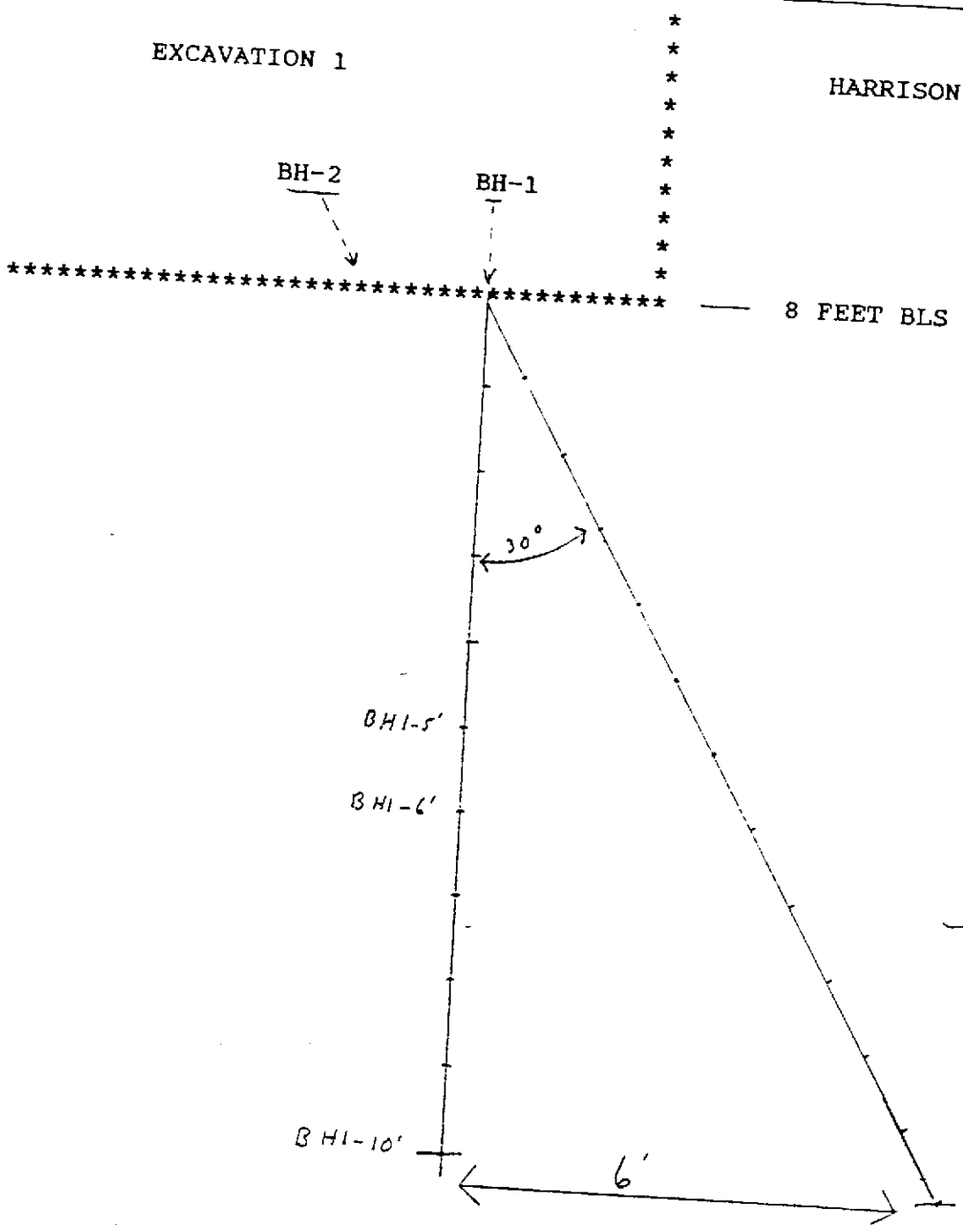


PLATE 3

SAMPLING INTERVALS AND RELATIVE LATERAL DISTANCES
BETWEEN
BORINGS BH1 AND BH2

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

1223\012168

Miller Environmental Company
999 Anderson Drive, #120
San Rafael, CA 94901
Attn: Darin Reinhodlt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-08-92

Sample Number	Sample Description
092566	Oakland Auto BH1-5' SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

1223\012168

Miller Environmental Company
999 Anderson Drive, #120
San Rafael, CA 94901
Attn: Darin Reinhodlt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-08-92

Sample Number	Sample Description
092567	Oakland Auto BH1-6' SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	1.9
Benzene	0.005	0.014
Toluene	0.005	0.017
Xylenes	0.005	0.14
Ethylbenzene	0.005	0.15

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

1223\012168

Miller Environmental Company
999 Anderson Drive, #120
San Rafael, CA 94901
Attn: Darin Reinhodlt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-08-92

Sample Number	Sample Description
092568	Oakland Auto BH1-10' SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	870
Benzene	0.005	0.43
Toluene	0.005	15
Xylenes	0.005	120
Ethylbenzene	0.005	19

QA/QC: Sample blank is none detected
Duplicate Deviation is 12.6%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

1223\012168

Miller Environmental Company
999 Anderson Drive, #120
San Rafael, CA 94901
Attn: Darin Reinhodlt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-08-92

Sample Number	Sample Description	
092565	Oakland Auto BH3-3'	SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

1223\012168

Miller Environmental Company
999 Anderson Drive, #120
San Rafael, CA 94901
Attn: Darin Reinhodlt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-08-92

Sample Number	Sample Description
092569	Oakland Auto SP1 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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1223\012168

Miller Environmental Company
999 Anderson Drive, #120
San Rafael, CA 94901
Attn: Darin Reinhodlt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-08-92

Sample Number	Sample Description
092571	Oakland Auto SP2A SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

1223\012168

Miller Environmental Company
999 Anderson Drive, #120
San Rafael, CA 94901
Attn: Darin Reinhodlt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-08-92

Sample Number	Sample Description
092572	Oakland Auto SP2B SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected
Spike Recovery is 89%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

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San Rafael, CA 94901
Attn: Darin Reinhodlt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-08-92

Sample Number	Sample Description
092570	Oakland Auto SP3 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

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1223\012168

Miller Environmental
999 Anderson Drive, #120
San Rafael, CA 94901
Attn: Darin Reinholdt
Project Manager

Date Sampled: 09-28-92
Date Received: 09-28-92
Date Analyzed: 10-12-92

Sample Number	Sample Description	Detection Limit ppm	SOIL Gravimetric Waste Oil as Petroleum Oil ppm
	Oakland Auto		
092570	SP3	10	300

QA/QC: Freon Blank is none detected.
Spike Recovery is 105%
Duplicate Deviation is 9%

Note: Analysis was performed using EPA extraction method 3550 with Trichlorotrifluoroethane as solvent, and gravimetric determination by standard methods 5520
(ppm) = (mg/kg)

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Phone (415) 372-3700 • Fax (415) 372-6955

CHAIN OF CUSTODY

SAMPLER: J Sammons

DATE/TIME OF COLLECTION: 9/28/92 - 0900 15:

TURNAROUND TIME: NTAT

SAMPLE DESCRIPTION AND PROJECT NUMBER: Soil Oakland Auto

SAMPLE #	ANALYSIS	GRAB OR COMP.	NUMBER OF CONTAINERS	SOIL/ WATER
BH3-3'	TPH6-BTEX	Grab	1	Soil
BH1-5'	TPH6-BTEX	Grab	1	Soil
BH1-6'	TPH6-BTEX	Grab	1	Soil
BH1-10'	TPH6-BTEX	Grab	1	Soil
(1) SP1	TPH6-BTEX	Grab	4	Soil
(2) SP3	TPH6-BTEX/TOG	Grab	2	Soil
(3) SP2A	TPH6-BTEX	Grab	4	Soil
(4) SP2B	TPH6-BTEX	Grab	4	Soil

RELINQUISHED BY*	TIME/DATE	RECEIVED BY*	TIME/DATE
1. [signature]	1425/9/28/92	Darin J Reinholdt	
2. Darin J Reinholdt	9/28/92 1545	C. Lecce	9/28/92 3:50pm
3.			
4.			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS:

(1) Composite 4 to 1
(2) Composite 2 to 1
(3) Composite 4 to 1
(4) Composite 4 to 1

SITE SAFETY PLAN
FOR EXCAVATION AND MONITORING WELL INSTALLATION

at
706 Harrison Street
Oakland, CA
Site

INTRODUCTION

This Site Safety Plan delineates the basic safety requirements for the subsurface investigation project. The provisions set forth in this Plan will apply to the employees of Dennis Bates Associates, Inc. (DBA) and its subcontractors working on the Site. The subcontractors may elect to modify these provisions, but only to upgrade or increase the safety requirements, and only with the concurrence of DBA, as designated and accepted in writing.

This Site Safety Plan will address the expected potential hazards that may be encountered for this project. Field activities are planned to begin two weeks after approval of this workplan and receipt of the appropriate permits, with the duration of the project estimated at two to three weeks. If changes in site or working conditions occur as the activities progress, addenda to this Plan will be provided by DBA.

AUTHORITY FOR SITE SAFETY

name? phone?

The employee responsible for the project safety is the Project Supervisor for DBA. The Project Supervisor is responsible for implementing the provisions of this Plan and providing a copy of this Plan to each subcontractor firm working under DBA on the project. The Project Supervisor has the authority to audit site activities for compliance with the provisions of this Plan and may suspend or modify work practices or dismiss contractors whose conduct does not meet the requirements specified in this Plan.

HAZARD ASSESSMENT

Work at this site will involve activities around an unshored excavation whose depth exceeds the CAL-OSHA requirements for entry.

NO DBA EMPLOYEE OR SUBCONTRACTOR WILL BE ALLOWED TO ENTER THE EXCAVATION. ✓ good

The major contaminant that may be encountered on the project is gasoline. Inhalation and dermal contact will be the potential exposure pathways of concern. Protective clothing will be mandatory for all field personnel as specified in this Plan. In addition, respiratory protective devices will be within easy reach should irritating odors or irritation of the respiratory tract become detectable.

Using the National Institute for Occupational Safety and Health Pocket Guide to Chemical Hazards a brief synopsis of the physical characteristics, incompatibilities, toxic effects, routes of entry, and target organs has been summarized below for the major components of the anticipated contaminants to be encountered.

Benzene

Benzene is a colorless liquid with an aromatic odor. Benzene may potentially create an explosion hazard. Benzene is irritating to the eyes, nose and respiratory system. Prolonged exposure may result in giddiness, headache, nausea, staggering gait, fatigue, bone marrow depression, or abdominal pain. Routes of entry include inhalation, absorption, ingestion, and skin and eye contact. The target organs are blood, the central nervous system (CNS), skin, bone marrow, eyes, and respiratory system. Benzene is a carcinogenic.

Ethylbenzene

Ethylbenzene is a colorless liquid with an aromatic odor. Ethylbenzene may potentially create an explosion hazard. Ethylbenzene is irritating to the eyes and mucous membranes. Prolonged exposure may result in headaches, dermatitis, narcosis, or coma. Routes of entry include inhalation, ingestion, and skin or eye contact. The target organs are the eyes, upper respiratory system, skin and CNS.

Toluene

Toluene is a colorless liquid with an aromatic odor. Toluene may potentially create an explosion hazard. Prolonged exposure may result in fatigue, confusion, euphoria, dizziness, headache, dilation of pupils, lacrimation, insomnia, dermatitis or photophobia. Routes of entry are inhalation, absorption, ingestion, and skin or eye contact. The target organs are the CNS, liver, kidneys, and skin.

Xylene Isomers

Xylene is a colorless liquid with an aromatic odor. Xylene may potentially create an explosion hazard. Xylene is irritating to the eyes, nose and throat. Prolonged exposure may result in dizziness, excitement, drowsiness, staggering gait, corneal vacuolization, vomiting, abdominal pain and dermatitis. Routes of entry are inhalation, absorption, ingestion, skin or eye contact. The target organs are the CNS, eyes, gastrointestinal tract, blood, liver, kidneys and skin.

GENERAL PROJECT SAFETY REQUIREMENTS

Project activities will be conducted in accordance with the following minimum safety requirements:

- Eating, drinking and smoking will be restricted to a designated area.

- Gross decontamination and removal of all personal protective equipment will be performed prior to leaving the site. Contaminated clothing will be removed and collected for proper disposal.

- Prevention of accidental ignition:

  * No smoking allowed within delineated work area.
  * Reasonable precaution against open flame and sparks shall be taken whenever working on-site.

- The Project Supervisor will be responsible for taking necessary steps to protect employees from physical hazards, including:

  * Slipping or falling into an open excavation
  * Falling objects, such as tools or equipment
  * Tripping over hoses, pipes, tools, or equipment
  * Slipping on wet or oily surfaces
  * Insufficient or faulty protective equipment
  * Insufficient or faulty equipment or tools.

- All personnel will be required to wash hands and faces before eating, drinking or smoking in the aforementioned areas.

- Field operations personnel will be cautioned to inform each other of the non-visual effects of the presence of toxics, such as:
  - Headaches
  - Dizziness
  - Nausea
  - Blurred vision
  - Cramps
  - Irritation of eyes, skin or respiratory tract
  - Changes in complexion or skin discoloration
  - Changes in apparent motor coordination
  - Changes in personality or demeanor
  - Excessive salivation or changes in pupillary response
  - Changes in speech ability or pattern.
- Alcoholic beverages are not allowed on-site.

PROTECTIVE EQUIPMENT REQUIREMENTS

Field personnel and visitors are required to wear the following clothing, as a minimum, while in the work area at the 706 Harrison Street, Oakland project site:

- Appropriate work clothing
- Steel-toed boots

Field personnel engaged in work operations are required to wear the following additional equipment:

- Standard Tyvek (when required)
- Gloves (when required)
- Respirator (readily available and usable if required)
- Hard hat (when required)
- Safety glasses (when required)

WORK ZONES AND SECURITY MEASURES

The Project Supervisor will contact the Underground Services Alert (USA) and the utilities will be marked before any excavating is performed on site.

The area where drilling and/or deep excavation is being performed will be designated as an Exclusion Zone. Only essential personnel will be allowed into the Exclusion Zone.

Cones, wooden barricades, portable fences or a suitable alternative will be used to deny public access to the Exclusion Zone. The public will not be allowed close to the work area under any conditions. If for any reason the safety of a member of the public may be endangered, work will cease until the situation is remedied. Cones and warning signs will be used when necessary to redirect pedestrians.

DECONTAMINATION PROCEDURES

Excavating equipment and personal protective equipment will undergo gross decontamination onsite. This gross decontamination will include the washing of contaminated equipment with a trisodium phosphate (TSP) solution. Steam-cleaning is an acceptable alternative.

EMERGENCY RESPONSE PROCEDURES

In the event of an accident resulting in physical injury, first aid will be administered and the injured worker will be transported to the nearest hospital or emergency medical clinic for emergency treatment. A physician's attention is required regardless of the severity of the injury.
In the event of a fire, explosion, or property damage, DBA will be immediately notified. If necessary, local fire or response agencies will be called.

EMERGENCY TELEPHONE NUMBERS

Fire and Police 911

Ambulance 911

Hospital - Summit Medical Center 420-6080
350 Hawthorne Avenue, Oakland

Directions
Northeast on Harrison Street to 20 th Street, Left on 20th to Telegraph, Right on Telegraph to Hawthorne, Right on Hawthorne to Webster, Left on Webster to Emergency Room.
Note: Route is well marked once on Hawthorne.

names?

ADDITIONAL CONTINGENCY TELEPHONE NUMBERS

Poison Control Center	(800) 523-2222
Dennis Bates Associates	(408) 646-0668
Dennis Bates Associates.....	(415) 892-4131
Dennis Bates (Mobile).....	(415) 298-4572

This Site Safety Plan has been reviewed by the following person:

DBA Project Supervisor: ----------
John H. Sammons

Amendments or modifications to this Plan may be written on a separate page and attached to this Plan. Any amendments or modifications must be reviewed and approved by the personnel named above.