January 28, 1998

PHASE II SUBSURFACE INVESTIGATION AND MONITORING WELL INSTALLATION REPORT

4045 Broadway
Oakland, California

Project No. 1630

Prepared for

Ms. C.J. Gong
Gong Associates
637 Beacon Street
Oakland, CA 94610

Prepared by

All Environmental, Inc.
3364 Mt. Diablo Blvd.
Lafayette, CA 94549
(510) 283-6000

AEI

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

AEI

1.0 INTRODUCTION

All Environmental, Inc. (AEI) has prepared this report on behalf of Ms. C. J. Gong, in response to her request for a soil and groundwater investigation at 4045 Broadway in Oakland, California (Figure 1: Site Location Map). The investigation was initiated by the property owner in accordance with the requirements of the Alameda County Health Care Services Agency (ACHCSA). The investigation was conducted to further assess petroleum hydrocarbon concentrations found in the soil and groundwater beneath the site.

2.0 SITE DESCRIPTION AND BACKGROUND

The subject property currently supports the operation of Acc-U-Tune and Brake, an automotive repair facility.

On December 21, 1995, All Environmental, Inc. (AEI) removed one 550 gallon waste oil underground storage tank from behind the property building. Soil samples collected from beneath the tank indicated up to 470 mg/kg total oil and grease (TOG), 6.0 mg/kg total petroleum hydrocarbons (TPH) as diesel, 0.012 mg/kg xylenes, and minor concentrations of lead, nickel, zinc and chromium. Analysis for TPH as gasoline, benzene, toluene, ethylbenzene, poly nuclear aromatic hydrocarbons and volatile halocarbons were not detected within the soil samples above the reporting limit. The stockpiled soil generated from the tank removal was transported and disposed of off-site on August 2, 1996. Clean soil was imported and used to backfill the excavation.

On February 1, 1996 a geophysical survey was performed at the property to investigate the potential for underground storage tanks (USTs) beneath a large asphalt patch area located in the northeastern portion of the property. The geophysical survey did not reveal any magnetic anomalies consistent with the presence of USTs, however vent lines were traced from vent pipes located on the northwestern corner of the building. The vent lines were found to truncate in the center of the lot at the edge of the asphalt patch, suggesting that USTs probably previously existed in the area.

AEI performed a subsurface investigation at the property on May 31, 1996. The investigation included the advancement of three soil borings using a Geoprobe drilling rig. Soil samples collected during the investigation indicated the presence of up to 150 mg/kg TPH as gasoline, 86 mg/kg TPH as diesel, 0.16 mg/kg benzene, 0.30 mg/kg toluene, 0.18 mg/kg ethylbenzene, 0.67 mg/kg xylenes and 0.52 mg/kg MTBE. Grab groundwater samples collected from the borings

indicated up to 1,200 µg/l of TPH as gasoline, 1,800 µg/l TPH as diesel, 1.4 µg/l toluene, 3.8 µg/l ethylbenzene and 3.7 µg/l xylenes present. Benzene and MTBE were not present within the groundwater samples above the detection limits.

Due to the presence of elevated levels of petroleum hydrocarbon contamination present within groundwater, ACHCSA requested the installation and subsequent monitoring of groundwater wells at the site. On September 11, 1996, AEI installed three groundwater monitoring wells (MW-1, MW-2 and MW-3) in the locations shown on the attached figure.

Significant concentrations of petroleum hydrocarbons (2,900 mg/kg) were present in soil samples collected at 10 feet bgs during the installation of MW-2. MW-2 is located down-gradient from suspected former fuel tanks.

The three wells were sampled in September, 1996 and February, 1997. Groundwater was measured between 8 and 10 feet bgs with a southerly flow direction during the sampling episodes. No sheen or free product was observed during the monitoring activities.

During the initial monitoring episode, maximum TPH as gasoline and benzene concentrations were detected in MW-2 at 18,000 µg/l and 1.6 µg/l, respectively. No concentrations of TPH as gasoline and benzene were detected in groundwater samples from MW-3. TPH as gasoline was detected at a concentration of 190 µg/l in MW-2. Benzene was not present in MW-2 at concentrations above the detection limit.

During the February, 1997 monitoring episode concentrations of petroleum hydrocarbons in MW-1 and MW-2 decreased significantly. TPH as gasoline concentrations in MW-1 decreased from 190 µg/l in September, 1996 to non-detect in February, 1997. No benzene was detected in MW-1. Concentrations of TPH as gasoline and benzene in MW-2 decreased from 18,000 µg/l and 440 µg/l in September to 2,100 µg/l and 71 µg/l, respectively. No detectable concentrations of petroleum hydrocarbons were present in MW-3 during the February, 1997 sampling episode.

Based upon soil and groundwater results from the groundwater monitoring well installations and subsequent sampling episodes, the ACHCSA requested further investigation into the petroleum hydrocarbon contamination present in the soil and groundwater beneath the site.

3.0 PERMITS

Prior to drilling, a work plan was submitted to the ACHCSA by AEI. The workplan was approved by Ms. Madhulla Logan, Hazardous Materials Specialist on August 19, 1997. A well construction permit was obtained from the Alameda County Public Works Agency (ACPWA), Water Resources Section. The property owner and operator were notified of the drilling schedule. A copy of the ACPWA permit to perform the soil borings and monitoring well installation is included in Appendix A.

4.0 GEOLOGY AND HYDROGEOLOGY

According to logs of the soil borings advanced by AEI, the near surface sediments beneath the site consist of mainly clayey and silty sand to approximately eighteen feet below ground surface (bgs). The water-bearing stratum consists of silty sand which grades to a clean sand present at twenty feet bgs.

Water level measurements made during the current groundwater monitoring and sampling episode on September 24, 1997, indicate that static water ranges from about 8.76 to 10.19 feet bgs. Elevations of the tops of the well casings were surveyed relative to Mean Sea Level (MSL) by Logan Surveying on October 15, 1997. Refer to Appendix B for the Groundwater Monitoring Well Field Sampling Forms.

The water level measurements were collected in order to calculate the groundwater gradient and flow direction. Based on these measurements, the groundwater flow is southwest at a gradient less than 0.02 feet per foot. The groundwater flow direction is depicted in Figure 3. Water elevations to date are summarized in Table 1.

5.0 SOIL BORINGS

On September 3, 1997, eight soil borings (SB-1 through SB-8) were advanced at the site in the locations shown on Figure 2. Soil borings SB-1, SB-2, SB-3 and SB-4 were advanced in order to delineate soil contamination around the former tank excavation. Soil borings SB-5, SB-6 and SB-7 were advanced in order to assess potential soil contamination south of the former tank excavation and in the assumed location of a former pump island(s). Soil boring SB-8 was advanced near the southern property boundary to further delineate the petroleum hydrocarbon groundwater plume. On September 12, 1997, one soil boring SB-9 was advanced in the vicinity of SB-8 and converted to groundwater monitoring well, MW-4.

Soil borings SB-1 through SB-8 were advanced with a Geoprobe drilling rig. Borings SB-1 through SB-7 were advanced to 12 feet bgs. Boring SB-8 was advanced to 16 feet bgs. Undisturbed soil samples were collected at approximate 5 foot intervals. The borings were continuous cored and soil was collected in 7/8-inch acrylic liners. A six-inch section of the liner was selected for chemical analysis. Groundwater was encountered in boring SB-8 at approximately 15 feet bgs. Grab groundwater samples were collected from the boring. Groundwater was not encountered during the advancement of SB-1 through SB-7.

A Mobile B-61 rotary drill with hollow stem augers was used to drill boring SB-9. Samples were collected at 5 feet intervals with a hammer-driven California Modified split spoon sampler. Drilling proceeded to a depth of 20.0 feet. The sampler, containing two-inch diameter brass sample tubes, was advanced ahead of the auger tip by successive hammer blows.

Boring logs were maintained during drilling by one of AEI's geologists using the Unified Soil Classification System. The logs are presented in Appendix B. Cuttings generated during drilling were stored on-site in 55 gallon drums for future off-site disposal.

Soil and groundwater samples were put in a cooler containing ice and transported under proper chain of custody to Chromolab, Inc. in Pleasanton, California.

6.0 WELL CONSTRUCTION

Soil boring SB-9 was converted to groundwater monitoring well, labeled MW-4. The well was constructed with 4.0 feet of 2" flush threaded blank Schedule 40 PVC blank casing, and 15.5 feet of .020" factory-slotted well screen that was installed through the hollow auger. The blank casing extends from 0.5 feet to 4.5 feet bgs. The slotted casing extends from 4.5 feet to the total depth of the boring at 20.0 feet bgs, respectively. The well screen was fitted with a flush-threaded bottom

cap. No. 3 Monterey sand was poured through the auger to form a sand pack from the bottom of the well to 2.5 feet bgs (2 feet above the slotted well screen). Approximately 1 foot of bentonite pellets were placed above the sand and hydrated with tap water. The remainder of the boring was filled to about 0.5 feet below grade with neat cement grout. A flush mounted traffic rated well box was installed over the casing, and an expanding, locking inner cap was placed on the casing top. Refer to the boring logs (Appendix B) for a visual description of the well construction.

7.0 Well Development and Sampling

MW-4 was developed on September 22, 1997 by bailing water into a 55 gallon drum until the water appeared to be reasonably clear with a minimum of 10 well volumes removed. The bailed water was turbid at first, but became clear by the end of the well development. The water level returned to a static level in approximately 30 minutes. The Groundwater Well Sampling Field Logs are included in Appendix B.

Groundwater samples were collected from the newly installed well (MW-4) and from the three existing wells (MW-1, MW-2 and MW-3) on September 24, 1997. Groundwater was checked for sheen and free product prior to purging and sampling. A petroleum odor was observed during groundwater sample collection from MW-2. No sheen or free product was observed in any of the wells. Depth to groundwater was measured prior to purging the wells. The wells were purged by bailing water into a 55 gallon drum until the groundwater temperature, pH and conductivity stabilized. The groundwater samples were collected using clean disposable bailers. Water was poured from the bailers into amber liter bottles, 40 ml VOA vials and 500 milliliter plastic containers and capped so that there was no head space or visible air bubbles within the sample containers. The samples were labeled and placed on ice and transported under chain of custody protocol for analysis to McCampbell Analytical, Inc.

8.0 Analytical Results of Samples

Soil and groundwater samples collected from SB-1 through SB-9 were analyzed by Chromolab, Inc. of Pleasanton, California. Two soil samples from each boring and the groundwater sample from SB-8 were analyzed for TPH as gasoline, TPH as diesel, methyl tertiary butyl ether (MTBE), and benzene, toluene, ethylbenzene, and xylenes (BTEX).

Groundwater samples collected from monitoring wells MW-1, MW-2, MW-3 and MW-4 were analyzed by McCampbell Analytical, Inc. of Pacheco, California. The groundwater samples were analyzed for TPH as gasoline, TPH as diesel, methyl tertiary butyl ether (MTBE), and benzene,

toluene, ethylbenzene, and xylenes (BTEX). In addition, the groundwater sample from MW-3 was analyzed for total oil & grease (TOG).

TPH as gasoline was present at concentrations above 100 mg/kg in soil samples collected at 10 feet bgs from SB-2, SB-4, SB-8 and SB-9. In addition, TPH as gasoline was detected at 1700 mg/kg in SB-6, 5' and 470 mg/kg in SB-5, 7'. Benzene concentrations were above 1.0 mg/kg in samples SB-5, SB-6 and SB-9 collected at 7, 5 and 10 feet bgs, respectively. The highest concentrations of petroleum hydrocarbons were detected in soil samples collected south of the former tank excavation in the approximate location of former dispenser islands.

Refer to Table 2 for a summary of the soil sample analyses.

TPH as gasoline, TPH as diesel, MTBE and BTEX were not detected in MW-1 and MW-3. Total oil and grease was not detected in MW-3. TPH as gasoline and benzene were detected at 260 µg/l and 5.6 µg/l in MW-2. TPH as gasoline was detected at a concentration of 160 µg/l in MW-4. Benzene was detected at a concentration of 19 µg/l in MW-4.

The groundwater sample analytical data is summarized in Table 3.

Laboratory results and chain of custody documentation are included in Appendix C.

9.0 SUMMARY AND RECOMMENDATIONS

AEI advanced nine soil borings and installed one groundwater monitoring well (MW-4) to assess soil and groundwater contamination at the site. Soil borings were advanced around the perimeter of the former tank hold and in the likely location of former dispenser islands. Soil samples collected during the investigation indicated elevated levels of petroleum hydrocarbons in the vicinity of the former dispenser islands and along the southern property boundary. The elevated petroleum hydrocarbon levels appear to be localized based on analytical results from nearby borings.

Petroleum hydrocarbons were detected in MW-2 and MW-4. No concentrations were detected in MW-1 or MW-3. The TPH as gasoline groundwater plume appears to be concentrated in the vicinity of MW-2 with decreasing concentrations in the down-gradient direction toward MW-4. However, benzene concentrations are significantly higher in MW-4, the down gradient well, at 19 µg/l compared to 5.6 µg/l in MW-2. MTBE was not detected in any of the wells.

AEI recommends the continued groundwater monitoring of the four on-site wells. The next monitoring episode should occur in January, 1998.

10.0 REPORT LIMITATIONS AND SIGNATURES

This report presents a summary of work completed by All Environmental, Inc., including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

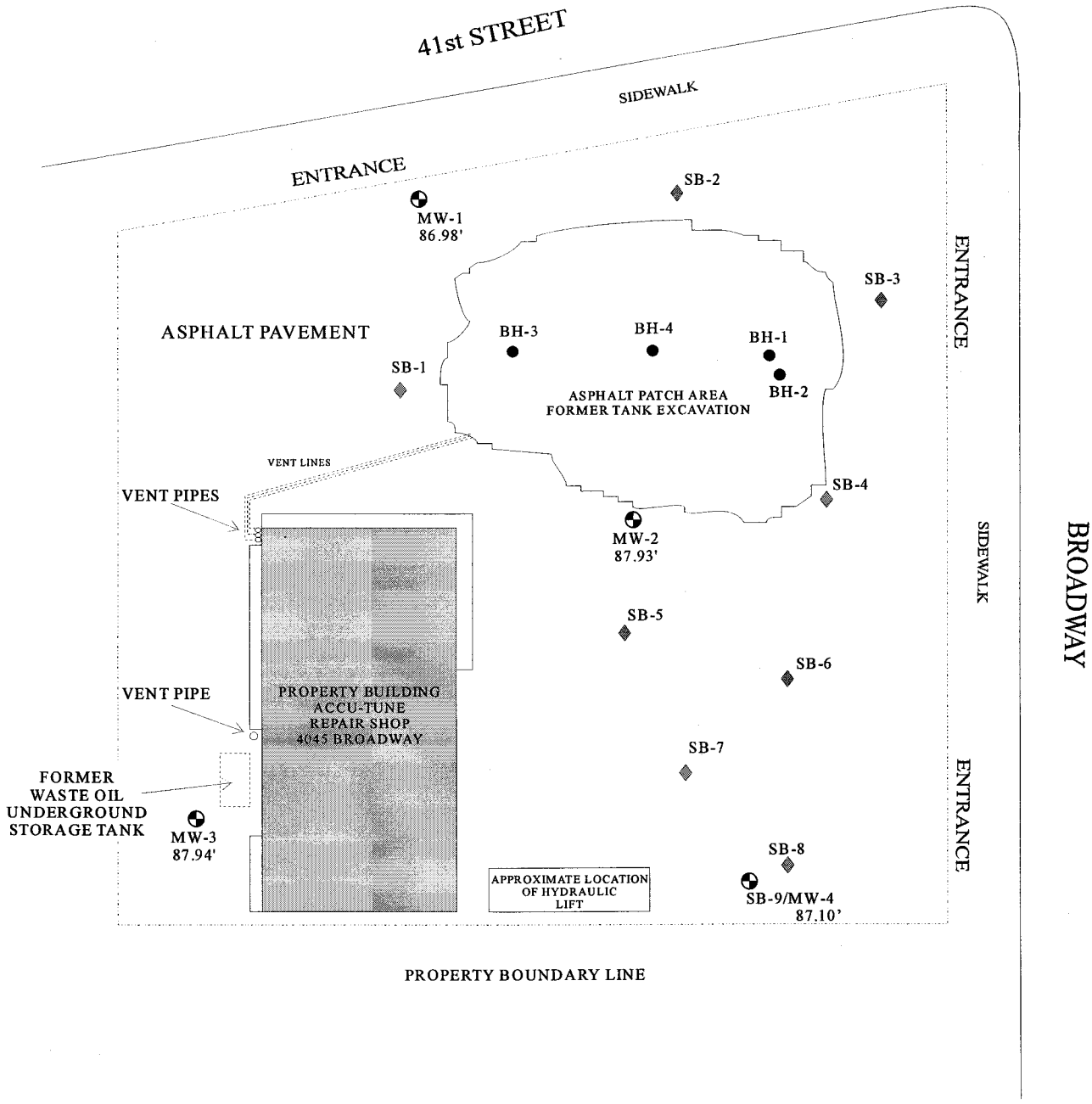
These services were performed in accordance with generally accepted practices in the environmental engineering and construction field that existed at the time and location of the work.

All Environmental, Inc.

Jennifer Pucci
Project Manager

Joseph P. Derhake, PE, CAC
Senior Author

AEI



KEY

- ● FORMER SOIL BORING LOCATION ADVANCED 5/31/96
- ⊕ GROUNDWATER MONITORING WELL LOCATION
- ◆ SOIL BORING LOCATION

N

ALL ENVIRONMENTAL, INC.

3364 MT. DIABLO BOULEVARD, LAFAYETTE

SCALE: 1 IN = 20 FT	APPROVED BY:	DRAWN BY: J. PUCCI
DATE: 24 SEPTEMBER 97		REVISED: J. PUCCI

SOIL BORING AND WELL LOCATION MAP

4045 BROADWAY OAKLAND, CALIFORNIA	DRAWING NUMBER: FIGURE 2

KEY

- ● FORMER SOIL BORING LOCATION ADVANCED 5/31/96
- ⊕ GROUNDWATER MONITORING WELL LOCATION
- ◆ SOIL BORING LOCATION

N

ALL ENVIRONMENTAL, INC.

3364 MT. DIABLO BOULEVARD, LAFAYETTE

SCALE: 1 IN = 20 FT	APPROVED BY:	DRAWN BY: J. PUCCI
DATE: 24 SEPTEMBER 97		REVISED: J. PUCCI

GROUNDWATER MAP

4045 BROADWAY OAKLAND, CALIFORNIA	DRAWING NUMBER: FIGURE 3

Table 1
Groundwater Data

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	9/24/96	86.98	8.75	78.23
	2/21/97	86.98	8.98	78.00
	9/24/97	86.98	8.76	78.22
MW-2	9/24/96	87.93	9.90	78.03
	2/21/97	87.93	10.05	77.88
	9/24/97	87.93	9.95	77.98
MW-3	9/24/96	87.94	10.20	77.74
	2/21/97	87.94	10.22	77.72
	9/24/97	87.94	10.19	77.75
MW-4	9/24/97	87.10	9.41	77.69

Notes: All well elevations are measured from the top of casing.
ft msl = feet above mean sea level

Table 2
Soil Sample Analytical Data

Sample ID	TPH as gasoline (mg/kg)	TPH as diesel (mg/kg)	MTBE (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)
SB-1, 3'	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005
SB-1, 5'	<1.0	3.4	0.018	0.0083	<0.005	<0.005	0.0074
SB-2, 8'	1.8	95*	0.0078	0.024	0.017	0.012	0.028
SB-2, 10'	240	150*	<0.62	<0.62	0.97	0.78	1.3
SB-3, 5'	<1.0	3.7*	<0.005	<0.005	<0.005	<0.005	<0.005
SB-3, 10'	ND<120	11	ND<.62	ND<.62	ND<.62	0.71	1.8
SB-4, 5'	<1.0	14*	0.012	0.086	<0.005	<0.005	0.024
SB-4, 10'	180	17	0.8	ND<.62	ND<.62	1.3	4.6
SB-5, 3'	<1.0	20*	<0.005	<0.005	<0.005	<0.005	<0.005
SB-5, 7'	470	3.4	1.6	1.8	ND<1.2	10	20
SB-6, 3'	4.9	<1.0	0.054	0.18	0.015	0.3	0.033
SB-6, 5'	1700	84	5.3	4.3	8.1	21	18
SB-7, 5'	<1.0	4.9	0.0057	0.009	<0.005	<0.005	0.0086
SB-7, 10'	<120	<1.0	ND<.62	ND<.62	ND<.62	ND<.62	ND<.62
SB-8, 5'	3.3	<1.0	0.071	0.056	0.022	0.064	0.073
SB-8, 10'	140	6	ND<.62	ND<.62	ND<.62	1.4	7.5
SB-9, 5'	<1.0	46	<0.005	<0.005	<0.005	<0.005	<0.005
SB-9, 10'	1400	45	27	6.8	3.3	23	110

* Motor oil detected in sample

Table 3
Groundwater Sample Analytical Data

Well ID	Date	TPH as gasoline (ug/l)	TPH as diesel (ug/l)	Total Oil & Grease (mg/l)	MTBE (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-Benzene (ug/l)	Xylenes (ug/l)
SB-8, H	9/3/97	50	51	NA	<5.0	4.4	1.50	0.80	3.80
MW-1	9/24/96	190	110	NA	<5.0	<0.5	<0.5	<0.5	5.7
	2/21/97	<50	<50	NA	<5.0	<0.5	<0.5	<0.5	<0.5
	9/24/97	<50	<50	NA	<5.0	<0.5	<0.5	<0.5	<0.5
MW-2	9/24/96	18,000	6800	NA	170	440	1200	190	2200
	2/21/97	2,100	1,600	NA	27	71	82	30	110
	9/24/97	260	170	NA	<5.0	5.6	6.8	3.2	9.4
MW-3	9/24/96	<50	<50	NA	<5.0	<0.5	<0.5	<0.5	5.7
	2/21/97	<50	<50	NA	<5.0	<0.5	<0.5	<0.5	<0.5
	9/24/97	<50	<50	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5
MW-4	9/24/97	160	68	NA	ND<10	19	1.5	<0.5	18

NA - Not Analyzed
ug/l - micrograms per liter (ppb)
mg/l - milligrams per liter (ppm)

APPENDIX A

PERMITS and NOTIFICATION DOCUMENTS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 300, HAYWARD, CA 94545-2651
PHONE (510) 670-6575 ANDREAS GODFREY FAX (510) 670-6363
(510) 670-5248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Accutuna
4045 Broadway Ave.
Oakland, CA 94611

California Coordinate Source _____ ft. Accuracy ± ___ ft.
CCN _____ ft. CCR _____ ft.
APN _____

CLIENT
Name Mrs. G. T. Geong
Address 637 Beacon Street Phone (510) 531-6674
City Oakland, CA 94610 Zip 94610

APPLICANT
Name All Environmental, Inc. Fax (510)283-6121
Bryce Campbell Phone (510)286-6000
Address 3364 Mt Diablo Blvd.
City Lafayette Zip 94549

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. 485165

WELL PROJECTS
Drill Hole Diameter 6 in. Maximum
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth 2 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 9/12/97
ESTIMATED COMPLETION DATE 9/12/97

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

APPLICANT'S SIGNATURE _____ DATE 9/9/97

FOR OFFICE USE

PERMIT NUMBER 97WR105
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

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

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

(C) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

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

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

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED A. Kan DATE 9/10/97

TOTAL P.02

APPENDIX B

BORING AND WELL LOGS/
WELL SAMPLING FIELD LOGS

PROJECT: GONG - #1630	**LOG OF BOREHOLE:** SB-1
BORING LOC.: West of former tank hold	ELEVATION, TOC: --
DRILLING CONTRACTOR: GREGG	START DATE: 9/3/97 / END DATE: 9/3/97
DRILLING METHOD: DIRECT PUSH	TOTAL DEPTH: 12.0'
DRILLING EQUIPMENT: GEOPROBE	DEPTH TO WATER: NA
SAMPLING METHOD: CONTINUOUS CORE	LOGGED BY: B. CAMPBELL
HAMMER WEIGHT and FALL: N/A	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
1	AB	Concrete Pad Foundation; 3" Aggregate Base.				
2			L-1			Strong Hyd. Odor 30.0 ppm
3						
4	CL	Clay: dark gray with green mottling' moderate plasticity				
5			L-2			Strong Hyd. Odor 10.0 ppm
6						
7						
8		Clay (cont.)				
9						
10			L-3			Slight Hyd. Odor 10.0 ppm
11						
12		Borehole terminated.				Borehole backfilled with cement grout.
13						
14						

PROJECT: GONG - #1630	**LOG OF BOREHOLE:** SB-2
BORING LOC.: North of former tank hold	ELEVATION, TOC: --
DRILLING CONTRACTOR: GREGG	START DATE: 9/3/97 / END DATE: 9/3/97
DRILLING METHOD: DIRECT PUSH	TOTAL DEPTH: 12.0'
DRILLING EQUIPMENT: GEOPROBE	DEPTH TO WATER: NA
SAMPLING METHOD: CONTINUOUS CORE	LOGGED BY: B. CAMPBELL
HAMMER WEIGHT and FALL: N/A	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0		Concrete Pad Foundation; 3" Aggregate Base.				
1	AB					
2	CL	Clay; dark gray with green mottling' low plasticity				Slight Hyd. Odor 50.0 ppm
3			L-1			
4						
5						
6						
7						
8		Clay (cont.); Low plasticity	L-2			Slight Hyd. Odor 137.0 ppm
9	SC	Clayey Sand; dark gray				
10			L-3			Slight Hyd. Odor 359.0 ppm
11						
12		Borehole terminated.				Borehole backfilled with cement grout.
13						
14						

PROJECT: GONG - #1630	**LOG OF BOREHOLE:** SB-3
BORING LOC.: East of former tank hold	ELEVATION, TOC: --
DRILLING CONTRACTOR: GREGG	START DATE: 9/3/97 / END DATE: 9/3/97
DRILLING METHOD: DIRECT PUSH	TOTAL DEPTH: 12.0'
DRILLING EQUIPMENT: GEOPROBE	DEPTH TO WATER: NA
SAMPLING METHOD: CONTINUOUS CORE	LOGGED BY: B. CAMPBELL
HAMMER WEIGHT and FALL: N/A	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
1	AB	Concrete Pad Foundation; 3" Aggregate Base.				
2	CL	Silty Clay; dark gray; low plasticity				Slight Hyd. Odor 11.0 ppm
3			L-1			
4						
5		Clay (cont.)	L-2			Slight Hyd. Odor 11.0 ppm
6						
7						
8						
9	SM	Silty Sand; gray, with dark yellowish orange modeling.				
10			L-3			Strong Hyd. Odor 245.0 ppm
11						
12		Borehole terminated.				Borehole backfilled with cement grout.
13						
14						

PROJECT: GONG - #1630	**LOG OF BOREHOLE:** SB-4
BORING LOC.: South of former tank hold	ELEVATION, TOC: --
DRILLING CONTRACTOR: GREGG	START DATE: 9/3/97 / END DATE: 9/3/97
DRILLING METHOD: DIRECT PUSH	TOTAL DEPTH: 12.0'
DRILLING EQUIPMENT: GEOPROBE	DEPTH TO WATER: NA
SAMPLING METHOD: CONTINUOUS CORE	LOGGED BY: B. CAMPBELL
HAMMER WEIGHT and FALL: N/A	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0		Concrete Pad Foundation; 3" Aggregate Base.				
1	AB					
2	CL	Silty Clay; dark gray with dark green modeling.				Slight Hyd. Odor 5.0 ppm
3			L-1			
4						
5		Clay (cont.)	L-2			Slight Hyd. Odor 11.0 ppm
6						
7						
8						
9	SM	Silty Sand; gray, with dark yellowish orange modeling.				
10			L-3			Strong Hyd. Odor 88.0 ppm
11						
12		Borehole terminated.				Borehole backfilled with cement grout.
13						
14						

PROJECT: GONG - #1630	**LOG OF BOREHOLE:** SB-5
BORING LOC.: South of former tank hold	ELEVATION, TOC: --
DRILLING CONTRACTOR: GREGG	START DATE: 9/3/97 / END DATE: 9/3/97
DRILLING METHOD: DIRECT PUSH	TOTAL DEPTH: 12.0'
DRILLING EQUIPMENT: GEOPROBE	DEPTH TO WATER: NA
SAMPLING METHOD: CONTINUOUS CORE	LOGGED BY: B. CAMPBELL
HAMMER WEIGHT and FALL: N/A	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0		Concrete Pad Foundation; 3" Aggregate Base.				
1	AB					
2		Clay; greenish gray; moderate plasticity.				Strong Hyd. Odor 119.0 ppm
3			L-1			
4	CL					
5						
6						
7		Clay; dark gray with dark green modeling, moderate plasticity.	L-2			Slight Hyd. Odor 48.0 ppm
8						
9						
10		Clay (cont.)	L-3			Strong Hyd. Odor 100.0 ppm
11						
12		Borehole terminated.				Borehole backfilled with cement grout.
13						
14						

PROJECT: GONG - #1630	**LOG OF BOREHOLE:** SB-6
BORING LOC.: South of former tank hold	ELEVATION, TOC: --
DRILLING CONTRACTOR: GREGG	START DATE: 9/3/97 / END DATE: 9/3/97
DRILLING METHOD: DIRECT PUSH	TOTAL DEPTH: 12.0'
DRILLING EQUIPMENT: GEOPROBE	DEPTH TO WATER: NA
SAMPLING METHOD: CONTINUOUS CORE	LOGGED BY: B. CAMPBELL
HAMMER WEIGHT and FALL: N/A	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
1	AB	Concrete Pad Foundation; 3" Aggregate Base.				
2	CL	Silty Clay; dark gray with green modeling; low plasticity.				Strong Hyd. Odor 191.0 ppm
3			L-1			
4						
5		Silty Clay (cont.)	L-2			Strong Hyd. Odor 147.0 ppm
6						
7						
8						
9						
10		Clay (cont.)	L-3			Strong Hyd. Odor 136.0 ppm
11						
12		Borehole terminated.				Borehole backfilled with cement grout.
13						
14						

PROJECT: GONG - #1630	**LOG OF BOREHOLE:** SB-7
BORING LOC.: South of former tank hold	ELEVATION, TOC: --
DRILLING CONTRACTOR: GREGG	START DATE: 9/3/97 / END DATE: 9/3/97
DRILLING METHOD: DIRECT PUSH	TOTAL DEPTH: 12.0'
DRILLING EQUIPMENT: GEOPROBE	DEPTH TO WATER: NA
SAMPLING METHOD: CONTINUOUS CORE	LOGGED BY: B. CAMPBELL
HAMMER WEIGHT and FALL: N/A	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0	AB	Concrete Pad Foundation; 3" Aggregate Base.				
1						
2	CL	Silty Clay; moderate yellowish brown with green modeling.				Slight Hyd. Odor 4.0 ppm
3			L-1			
4						
5		Silty Clay (cont.)	L-2			Slight Hyd. Odor 24.0 ppm
6						
7						
8						
9						
10		Silty Clay (cont.)	L-3			Slight Hyd. Odor 79.0 ppm
11						
12		Borehole terminated.				Borehole backfilled with cement grout.
13						
14						

PROJECT: GONG - #1630	**LOG OF BOREHOLE:** SB-8
BORING LOC.: Near southern property boundary	ELEVATION, TOC: --
DRILLING CONTRACTOR: GREGG	START DATE: 9/3/97 / END DATE: 9/3/97
DRILLING METHOD: DIRECT PUSH	TOTAL DEPTH: 16.0'
DRILLING EQUIPMENT: GEOPROBE	DEPTH TO WATER: NA
SAMPLING METHOD: CONTINUOUS CORE	LOGGED BY: B. CAMPBELL
HAMMER WEIGHT and FALL: N/A	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0		Concrete Pad Foundation; 3" Aggregate Base.				
1	AB					
2	CL	Clay; dark gray with dark green modeling, moderate plasticity.				Slight Hyd. Odor 40.0 ppm
3			L-1			
4						
5		Clay (cont.)	L-2			Slight Hyd. Odor 67.0 ppm
6						
7						
8						
9						
10		Silty Clay (cont.)	L-3			Strong Hyd. Odor 236.0 ppm
11						
12						
13		Silty Sand, dark yellowish orange.				
14						

PROJECT: GONG - #1630

LOG OF BOREHOLE: SB-8

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
15	SM	Silty Sand (cont.)	L-4			Slight Hyd. Odor 61.0 ppm
16		Borehole terminated.				Borehole backfilled with cement grout.
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

PROJECT: GONG # 1630	**LOG OF WELL NUMBER:** SB-9/MW-4
BORING LOC.: SOUTH OF FORMER TANK HOLD	ELEVATION, TOC: 87.10
DRILLING CONTRACTOR: GREGG DRILLING	START DATE: 9/12/97 / END DATE: 9/12/97
DRILLING METHOD: HOLLOW STEM AUGER	TOTAL DEPTH: 20' / SCREEN INT: 4.5-20'
DRILLING EQUIPMENT: MOBILE B-61	DEPTH TO WATER: 12' / CASING: 2" PVC
SAMPLING METHOD: 2" DRIVE SAMPLER	LOGGED BY: BC
HAMMER WEIGHT and FALL: 140 lb, 30"	RESPONSIBLE PROFESSIONAL: JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	WELL CONSTRUCTION DETAILS
0	AB	0.0 - 0.6; Asphalt, 3" Aggregate Base.				Universal Well Cover; Locking Wing Nut
1						
2						Neat Cement Grout
3						
4	CL					Blank SCH 40 PVC (2")
5		0.6 - 9.0; Clay; dark gray, mod plasticity, slight hyd. Odor.	S-1			Bentonite
6						
7						
8						
9						
10	CL	9.0 - 12.0; Clay, dark yellowish orange with light olive gray modeling, moderate plasticity, slight hyd. odor.	S-2			No. 3 Monterey Sand
11						
12						.020" Slotted Well Screen
13		12.0 - 20.0; Silty Sand, dark yellowish orange, clasts up to 1/4", coarse, slight hyd. odor.				
14						

PROJECT: GONG #1434 | **LOG OF BOREHOLE:** SB-9/MW-4

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	WELL CONSTRUCTION DETAILS
15			S-3			
16	SM	12.0 - 20.0; Silty Sand (cont.)				
17						
18						
19						
20		Terminated at 20.0'				End Cap
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-1

Project Name: Gong	Date of Sampling: 9/24/97
Job Number: 1630	Name of Sampler: DR
Project Address: 4045 Broadway	
Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	concrete/good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	86.98
Depth of Well	18.30
Depth to Water	8.76
Water Elevation	78.22
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	4.6
4" casing: (TD - DTW)(0.65)(3)	NA
6" casing: (TD - DTW)(1.44)(3)	NA
Actual Volume Purged (gallons)	7
Appearance of Purge Water	turbid

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 Voas/1 Liter

Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Comments
	1	76.0	6.54	729	
	2	76.0	6.40	722	
	4	76.0	6.37	718	
	7	76.0	6.35	718	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Turbid, No odor, fast recharge

TD - Total Depth of Well
DTW - Depth To Water

ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-2

Project Name: Gong	Date of Sampling: 9/24/97
Job Number: 1630	Name of Sampler: DR
Project Address: 4045 Broadway	
Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	concrete/good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	87.93
Depth of Well	18.50
Depth to Water	9.95
Water Elevation	77.98
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	4.10
4" casing: (TD - DTW)(0.65)(3)	NA
6" casing: (TD - DTW)(1.44)(3)	NA
Actual Volume Purged (gallons)	7
Appearance of Purge Water	greyish

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 Voas/1 Liter

Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Comments
	1	74.8	6.72	1129	
	2	74.8	6.65	1125	
	4	74.8	6.62	1123	
	7	74.8	6.61	1123	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Strong odor

TD - Total Depth of Well
DTW - Depth To Water

ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-3

Project Name: Gong	Date of Sampling: 9/24/97
Job Number: 1630	Name of Sampler: DR
Project Address: 4045 Broadway	
Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	concrete/good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	87.94
Depth of Well	19.70
Depth to Water	10.19
Water Elevation	77.75
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	4.56
4" casing: (TD - DTW)(0.65)(3)	NA
6" casing: (TD - DTW)(1.44)(3)	NA
Actual Volume Purged (gallons)	7
Appearance of Purge Water	turbid

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 Voas/1 Liter

Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Comments
	1	76.1	7.15	1127	
	2	76.1	6.96	792	
	4	76.1	6.91	758	
	7	76.1	6.86	754	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Turbid, No odor, fast recharge

TD - Total Depth of Well
DTW - Depth To Water

ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-4

Project Name: Gong	Date of Sampling: 9/24/97
Job Number: 1630	Name of Sampler: DR
Project Address: 4045 Broadway	
Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	concrete/good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	87.10
Depth of Well	19.50
Depth to Water	9.41
Water Elevation	77.69
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	4.84
4" casing: (TD - DTW)(0.65)(3)	NA
6" casing: (TD - DTW)(1.44)(3)	NA
Actual Volume Purged (gallons)	7
Appearance of Purge Water	turbid

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 Voas/1 Liter

Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Comments
	1	75.3	6.82	1171	
	2	73.9	6.72	1171	
	4	73.9	6.68	1171	
	7	73.9	6.70	1164	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Turbid, No odor, fast recharge

TD - Total Depth of Well
DTW - Depth To Water

APPENDIX C

SAMPLE ANALYTICAL DOCUMENTATION

CHROMALAB, INC.

Environmental Services (SDB)

October 22, 1997 *Submission #:* 9710280

ALL ENVIRONMENTAL INC

Atten: Brian Campbell

Project: GONG *Project#:* 1630
Received: September 12, 1997

re: 1 sample for Lead analysis.
Method: *EPA 3050A/7420A*

Matrix: SOIL *Extracted:* October 22, 1997
Sampled: September 12, 1997 *Run#:* 9281 *Analyzed:* October 22, 1997

Spl#	CLIENT SPL ID	LEAD (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
153008	SB-9,5',10'	98	5.0	N.D.	108	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

283-6121 PM 10/24

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

280/153008-

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

ADD ON/CHANGE ORDER

New Submission No: 9710280

Order No: 36169

Original Submission Info

Client Name: All Environmental

Project Mgr: Brian Campbell

Project Name: Gong

Project No: 1630

PO#:

Date Received: 9/12/97

Submission No: 9709211

Name of Caller: Brian Campbell

Call Date: 10/17/97 Time: 1645

Add on Due Date: 10/24/97 Date Sampled 9/12/97

Comments: * Composite Samples 2:1 *

SUBM #: 9710280 REP: PM
CLIENT: ALL
DUE: 10/24/97
REF #:36169/9709211

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBOI (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 41		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
SB-9, 5'	9/12	—	Soil	—															COMPOSITE	X	SAMPLES 2:1				1
SB-9-10'	↓	—	↓	—																					1

9065 [redacted] 35350

Chain of Custody

ALL ENVIRONMENTAL, INC.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-6121

SUBM #: 9709065 REP: PM
CLIENT: ALL
DUE: 09/11/97
REF #: 35350

DATE: 9/3/97 PAGE: 1 OF: 3

AEI PROJECT MANAGER: Bryan Campbell
PROJECT NAME: Gong
PROJECT NUMBER: 1630
SIGNATURE:
TOTAL # OF CONTAINERS: 13
RECD. GOOD COND./COLD:

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5080.8015)	TPH-Gasoline (EPA 5080.8015) w/ BTEX and MTBE (EPA 602.8020)	TPH-Diesel (EPA 3510/3550.8015)	PURGEABLE AROMATICS BTEX and MTBE (EPA 602.8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7130,7190,7420,7520,7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66261.21-3)	Hold			NUMBER OF CONTAINERS
SB-8, 3'	9/3/97	9:18am	Soil											X			1
SB-8, 5'		9:20am			X	X											1
SB-8, 10'		9:24am			X	X											1
SB-8, 15'		9:30am												X			1
SB-1, 3'		10:02am			X	X											1
SB-1, 5'		10:08am			X	X											1
SB-1, 10'		10:11am												X			1
SB-2, 3'		10:30am												X			1
SB-2, 8'		10:35am			X	X											1
SB-2, 10'		10:38am			X	X											1
SB-3, 3'		10:45am												X			1
SB-3, 5'		10:49am			X	X											1
SB-3, 10'		10:55am			X	X											1

ANALYTICAL LAB: Chromalab
ADDRESS:
PHONE: ( ) - FAX: ( ) -
INSTRUCTIONS/COMMENTS: 5-Day TAT

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature	Signature	Signature	Signature
Bryan Campbell	B Morrow	B Morrow	Michel Naranjo
Printed Name	Printed Name	Printed Name	Printed Name
AEC	Chromalab	Chromalab	
Company	Company	Company	Company
Time Date 9/4/97	Time 9-4-97 Date 1530	Time 1725 Date 9-4-97	Time 1725 Date 9/4/97

9709065 5550

Chain of Custody

ALL ENVIRONMENTAL, INC.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-6121

DATE: 9/3/97 PAGE: 2 OF: 3

AEI PROJECT MANAGER: Bryan Campbell
PROJECT NAME: Gong
PROJECT NUMBER: 1630
SIGNATURE:
TOTAL # OF CONTAINERS: 12
RECD. GOOD COND./COLD:

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030.8015)	TPH-Gasoline (EPA 5030.8015) w/ BTEX and MTBE (EPA 602.8020)	TPH-Diesel (EPA 3510/3550.8015)	PURGEABLE AROMATICS BTEX and MTBE (EPA 602.8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7130,7190,7420,7520,7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66261.21-3)	Hold			NUMBER OF CONTAINERS
SB-4, 3'	9/3/97	11:08am	Soil											X			1
SB-4, 5'		11:12am			X	X											1
SB-4, 10'		11:20am			X	X											1
SB-5, 3'		11:30am			X	X											1
SB-5, 7'		11:40am			X	X											1
SB-5, 10'		11:48am												X			1
SB-6, 3'		12:03pm			X	X											1
SB-6, 5'		12:07pm			X	X											1
SB-6, 10'		12:13pm												X			1
SB-7, 3'		12:24pm												X			1
SB-7, 5'		12:30pm			X	X											1
SB-7, 10'		12:35pm			X	X											1

ANALYTICAL LAB: Chromalab
ADDRESS:
PHONE: ( ) - FAX: ( ) -

INSTRUCTIONS/COMMENTS: 5-Day TAT

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature	Signature	Signature	Signature
Bryan Campbell	B. Morrow	B. Morrow	Mike Narango
Printed Name	Printed Name	Printed Name	Printed Name
AEI	Chromalab	Chromalab	
Company	Company	Company	Company
Time Date 9/4	Time 1530 Date 9-4-97	Time 1725 Date 9/4/97	Time 1725 Date 9/4/97

ALL ENVIRONMENTAL, INC.

9709065 3530 Chain of Custody

3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-6121

DATE: 9/3/97 PAGE: 3 OF: 3

AEI PROJECT MANAGER: Bryan Campbell
PROJECT NAME: Gong
PROJECT NUMBER: 1630
SIGNATURE:
TOTAL # OF CONTAINERS: 3
RECD. GOOD COND./COLD:

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030.8015)	TPH-Gasoline (EPA 5030.8015) w/ BTEX and MTBE (EPA 602.8020)	TPH-Diesel (EPA 3510/3550.8015)	PURGEABLE AROMATICS BTEX and MTBE (EPA 602.8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7130,7190,7420,7520,7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66261.21-3)			NUMBER OF CONTAINERS
SB-8 H	9/3/97		Water		X	X										3

ANALYTICAL LAB: Chromalab
ADDRESS:
PHONE: ( ) - FAX: ( )
INSTRUCTIONS/COMMENTS: 5-Day TAT

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature	Signature	Signature	Signature
Bryan Campbell	B. Morrow	B. Morrow	Mike Naranjo
Printed Name	Printed Name	Printed Name	Printed Name
AEI	Chromalab	Chromalab	
Company	Company	Company	Company
Time Date 9/4/97	Time 1530 Date 9-4-97	Time 1725 Date 9/4/97	Time 1725 Date 9/4/97

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-1,3'**
Spl#: 146258 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8491 *Analyzed:* September 5, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	91	1
MTBE	N.D.	0.0050	N.D.	95	1
BENZENE	N.D.	0.0050	N.D.	104	1
TOLUENE	N.D.	0.0050	N.D.	103	1
ETHYL BENZENE	N.D.	0.0050	N.D.	101	1
XYLENES	N.D.	0.0050	N.D.	98	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-1,5'**
Spl#: 146259 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8491 *Analyzed:* September 5, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	91	1
MTBE	0.018	0.0050	N.D.	95	1
BENZENE	0.0083	0.0050	N.D.	104	1
TOLUENE	N.D.	0.0050	N.D.	103	1
ETHYL BENZENE	N.D.	0.0050	N.D.	101	1
XYLENES	0.0074	0.0050	N.D.	98	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-2,8'**
Spl#: 146260 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8491 *Analyzed:* September 5, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	1.8	1.0	N.D.	91	1
MTBE	0.0078	0.0050	N.D.	95	1
BENZENE	0.024	0.0050	N.D.	104	1
TOLUENE	0.017	0.0050	N.D.	103	1
ETHYL BENZENE	0.012	0.0050	N.D.	101	1
XYLENES	0.028	0.0050	N.D.	98	1

Note: Estimated concentration for gasoline due to overlapping fuel patterns.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-2,10'**
Spl#: 146261 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8579 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	240	120	N.D.	--	1
MTBE	N.D.	0.62	N.D.	82	1
BENZENE	N.D.	0.62	N.D.	96	1
TOLUENE	0.97	0.62	N.D.	95	1
ETHYL BENZENE	0.78	0.62	N.D.	94	1
XYLENES	1.3	0.62	N.D.	96	1

Note: Estimated concentration for gasoline due to overlapping fuel patterns.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-3,5'**
Spl#: 146262 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8491 *Analyzed:* September 6, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	91	1
MTBE	N.D.	0.0050	N.D.	95	1
BENZENE	N.D.	0.0050	N.D.	104	1
TOLUENE	N.D.	0.0050	N.D.	103	1
ETHYL BENZENE	N.D.	0.0050	N.D.	101	1
XYLENES	N.D.	0.0050	N.D.	98	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-3,10'**
Spl#: 146263 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8579 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	120	N.D.	--	1
MTBE	N.D.	0.62	N.D.	82	1
BENZENE	N.D.	0.62	N.D.	96	1
TOLUENE	N.D.	0.62	N.D.	95	1
ETHYL BENZENE	0.71	0.62	N.D.	94	1
XYLENES	1.8	0.62	N.D.	96	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-4,5'**
Spl#: 146264 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8586 *Analyzed:* September 10, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	91	1
MTBE	0.012	0.0050	N.D.	75	1
BENZENE	0.086	0.0050	N.D.	83	1
TOLUENE	N.D.	0.0050	N.D.	82	1
ETHYL BENZENE	N.D.	0.0050	N.D.	81	1
XYLENES	0.024	0.0050	N.D.	79	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-4,10'**
Spl#: 146265 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8579 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	180	120	N.D.	--	1
MTBE	0.80	0.62	N.D.	82	1
BENZENE	N.D.	0.62	N.D.	96	1
TOLUENE	N.D.	0.62	N.D.	95	1
ETHYL BENZENE	1.3	0.62	N.D.	94	1
XYLENES	4.6	0.62	N.D.	96	1

Note: Surrogate Recoveries biased high due to Hydrocarbon co-elution.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-5,3'**
Spl#: 146266 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8586 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	91	1
MTBE	N.D.	0.0050	N.D.	75	1
BENZENE	N.D.	0.0050	N.D.	83	1
TOLUENE	N.D.	0.0050	N.D.	82	1
ETHYL BENZENE	N.D.	0.0050	N.D.	81	1
XYLENES	0.0062	0.0050	N.D.	79	1

Note: Surrogate Recoveries demonstrate Matrix interference.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-5,7'**
Spl#: 146267 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8579 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	470	240	N.D.	--	2
MTBE	1.6	1.2	N.D.	82	2
BENZENE	1.8	1.2	N.D.	96	2
TOLUENE	N.D.	1.2	N.D.	95	2
ETHYL BENZENE	10	1.2	N.D.	94	2
XYLENES	20	1.2	N.D.	96	2

Note: Surrogate Recoveries biased high due to Hydrocarbon co-elution.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V135 O:BTEXQC0220
ALEXANDM 21:12

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-6,3'**
Spl#: 146268 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8586 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	4.9	1.2	N.D.	91	1
MTBE	0.054	0.0050	N.D.	75	1
BENZENE	0.18	0.0050	N.D.	83	1
TOLUENE	0.015	0.0050	N.D.	82	1
ETHYL BENZENE	0.30	0.0050	N.D.	81	1
XYLENES	0.033	0.0050	N.D.	79	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-6,5'**
Spl#: 146269 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8579 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	1700	600	N.D.	--	5
MTBE	5.3	3.1	N.D.	82	5
BENZENE	4.3	3.1	N.D.	96	5
TOLUENE	8.1	3.1	N.D.	95	5
ETHYL BENZENE	21	3.1	N.D.	94	5
XYLENES	18	3.1	N.D.	96	5

Note: Estimated concentration for gasoline due to overlapping fuel patterns. Surrogate Recoveries biased high due to Hydrocarbon co-elution.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V135 O:BTEXQC0220
ALEXANDM 21:17

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-7,5'**
Spl#: 146270 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8586 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	91	1
MTBE	0.0057	0.0050	N.D.	75	1
BENZENE	0.0090	0.0050	N.D.	83	1
TOLUENE	N.D.	0.0050	N.D.	82	1
ETHYL BENZENE	N.D.	0.0050	N.D.	81	1
XYLENES	0.0086	0.0050	N.D.	79	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V132 O:BTEXQC0220
ALEXANDM 20:40

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-7,10'**
Spl#: 146271 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8579 *Analyzed:* September 11, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	120	N.D.	--	1
MTBE	N.D.	0.62	N.D.	82	1
BENZENE	N.D.	0.62	N.D.	96	1
TOLUENE	N.D.	0.62	N.D.	95	1
ETHYL BENZENE	N.D.	0.62	N.D.	94	1
XYLENES	N.D.	0.62	N.D.	96	1

Note: Reporting Limit Increased Due To sampleInterferences.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V135 O:BTEXQC0220
ALEXANDM 21:17

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-8,5'**
Spl#: 146256 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8491 *Analyzed:* September 5, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	3.3	1.0	N.D.	91	1
MTBE	0.071	0.0050	N.D.	95	1
BENZENE	0.056	0.0050	N.D.	104	1
TOLUENE	0.022	0.0050	N.D.	103	1
ETHYL BENZENE	0.064	0.0050	N.D.	101	1
XYLENES	0.073	0.0050	N.D.	98	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-8,10'**
Spl#: 146257 *Matrix:* SOIL
Sampled: September 3, 1997 *Run#:* 8579 *Analyzed:* September 10, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	140	120	N.D.	--	1
MTBE	N.D.	0.62	N.D.	82	1
BENZENE	N.D.	0.62	N.D.	96	1
TOLUENE	N.D.	0.62	N.D.	95	1
ETHYL BENZENE	1.4	0.62	N.D.	94	1
XYLENES	7.5	0.62	N.D.	96	1

Note: Surrogate Recoveries biased high due to Hydrocarbon co-elution.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V135 O:BTEXQC0220
ALEXANDM 20:40

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-8 H**
Spl#: 146272 *Matrix:* WATER
Sampled: September 3, 1997 *Run#:* 8569 *Analyzed:* September 10, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	50	50	N.D.	96	1
MTBE	N.D.	5.0	N.D.	94	1
BENZENE	4.4	0.50	N.D.	102	1
TOLUENE	1.5	0.50	N.D.	101	1
ETHYL BENZENE	0.80	0.50	N.D.	101	1
XYLENES	3.8	0.50	N.D.	98	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 Submission #: 9709065

ALL ENVIRONMENTAL INC
3364 MT. DIABLO BLVD
LAFAYETTE, CA 94549

Attn: Bryan Campbell

RE: Analysis for project GONG, number 1630.

REPORTING INFORMATION

Samples were received cold and in good condition on September 4, 1997. They were refrigerated upon receipt and analyzed as described in the attached report. ChromaLab followed EPA or equivalent methods for all testing reported.

No discrepancies were observed or difficulties encountered with the testing.

Motor oil was found in sample SB-2,10'.
Motor oil was found in sample SB-2,8'.
Motor oil was found in sample SB-3,5'.
Motor oil was found in sample SB-4,5'.
Motor oil was found in sample SB-5,3'.

Bruce Havlik
Chemist

Michael R. Tam For
Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997 *Submission #:* 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 4, 1997

re: 17 samples for TPH - Diesel analysis.
Method: *EPA 8015M*

Matrix: WATER *Extracted:* September 9, 1997
Sampled: September 3, 1997 *Run#:* 8552 *Analyzed:* September 10, 1997

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
146272	SB-8 H	51	50	N.D.	103	1

Note: *Hydrocarbon reported is in the early Diesel range and does not match our Diesel standard. Estimated concentration due to overlapping fuel patterns.*

Matrix: SOIL *Extracted:* September 10, 1997
Sampled: September 3, 1997 *Run#:* 8574 *Analyzed:* September 10, 1997

Spl#	CLIENT SPL ID	DIESEL (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
146256	SB-8,5'	N.D.	1.0	N.D.	93.7	1
146257	SB-8,10'	6.0	1.0	N.D.	93.7	1

Note: *Hydrocarbon reported is in the early Diesel Range and does not match our Diesel Standard. Estimated concentration due to overlapping fuel patterns.*

146258	SB-1,3'	N.D.	1.0	N.D.	93.7	1
146262	SB-3,5'	3.7	2.0	N.D.	93.7	2

Note: *Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard.*

146270	SB-7,5'	4.9	2.0	N.D.	93.7	2

Note: *Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard.*

146271	SB-7,10'	N.D.	1.0	N.D.	93.7	1

Matrix: SOIL *Extracted:* September 10, 1997
Sampled: September 3, 1997 *Run#:* 8574 *Analyzed:* September 11, 1997

Spl#	CLIENT SPL ID	DIESEL (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
146259	SB-1,5'	3.4	2.0	N.D.	93.7	2

Note: *Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard.*

146260	SB-2,8'	95	2.0	N.D.	93.7	2

Note: *Estimated concentration due to overlapping fuel patterns.*

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1997

Submission #: 9709065

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG
Project#: 1630
Received: September 4, 1997

re: 17 samples for TPH - Diesel analysis, continued.
Method: *EPA 8015M*

Matrix: SOIL
Sampled: September 3, 1997 *Run#:* 8574
Extracted: September 10, 1997
Analyzed: September 11, 1997

Spl#	CLIENT SPL ID	DIESEL (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
146261	SB-2,10'	150	2.0	N.D.	93.7	2
	Note: Hydrocarbon reported is in the early Diesel Range and does not match our Diesel Standard. Estimated concentration due to overlapping fuel patterns.					
146263	SB-3,10'	11	2.0	N.D.	93.7	2
	Note: Hydrocarbon reported is in the early Diesel Range and does not match our Diesel Standard. Estimated concentration due to overlapping fuel patterns.					
146264	SB-4,5'	14	4.0	N.D.	93.7	4
	Note: Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard. Estimated concentration due to overlapping fuel patterns.					
146265	SB-4,10'	17	2.0	N.D.	93.7	2
	Note: Estimated concentration due to overlapping fuel patterns.					
146266	SB-5,3'	20	10	N.D.	93.7	10
	Note: Hydrocarbon reported is in the late Diesel Range and does not match our Diesel Standard.					
146267	SB-5,7'	3.4	1.0	N.D.	93.7	1
	Note: Hydrocarbon reported is in the early Diesel Range and does not match our Diesel Standard. Estimated concentration due to overlapping fuel patterns.					
146268	SB-6,3'	N.D.	1.0	N.D.	93.7	1
146269	SB-6,5'	84	1.0	N.D.	93.7	1
	Note: Hydrocarbon reported is in the early Diesel Range and does not match our Diesel Standard. Estimated concentration due to overlapping fuel patterns.					

Bruce Havlik
Chemist

Michael R. Tam for
Alex Tam
Semivolatiles Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

Chain of Custody

ALL ENVIRONMENTAL, INC.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-612_

SUBM #: 9709211 REP: PM
CLIENT: ALL
DUE: 09/19/97
REF #:3550

DATE: 9/12/97 PAGE: 1 OF: 1

AEI PROJECT MANAGER: Bryan Campbell
PROJECT NAME: Wong
PROJECT NUMBER: 1630
SIGNATURE:
TOTAL # OF CONTAINERS: 3
RECD. GOOD COND./COLD:

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030.8015)	TPH-Gasoline (EPA 5030.8015) w/ BTEX and MTBE (EPA 602.8020)	TPH-Diesel (EPA 3510/3550.8015)	PURGEABLE AROMATICS BTEX and MTBE (EPA 602.8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7130,7190,7420,7520,7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66261.21-3)	Hold			NUMBER OF CONTAINERS
SB-9, 5'	9/12/97	9:23am	Soil		X	X											1
SB-9, 10'	↓	9:29am	↓		X	X											1
SB-9, 15'	↓	9:37am	↓											X			1

ANALYTICAL LAB:
ADDRESS:
PHONE: ( ) - FAX: ( ) -
INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature	Signature	Signature	Signature
Bryan Campbell	ERIC TOM	ERIC TOM	Chris Rowley
Printed Name	Printed Name	Printed Name	Printed Name
AEI	CL	CL	Chromalab
Company	Company	Company	Company
Time 1620 Date 9/12	Time 1620 Date 9/12/97	Time 1655 Date 9/12/97	Time 1658 Date 9/12/97

CHROMALAB, INC.

Environmental Services (SDB)

September 25, 1997 *Submission #:* 9709211

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 12, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-9,5'**
Spl#: 147495 *Matrix:* SOIL
Sampled: September 12, 1997 *Run#:* 8808 *Analyzed:* September 24, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	125	1
MTBE	N.D.	0.0050	N.D.	82	1
BENZENE	N.D.	0.0050	N.D.	90	1
TOLUENE	N.D.	0.0050	N.D.	89	1
ETHYL BENZENE	N.D.	0.0050	N.D.	88	1
XYLENES	N.D.	0.0050	N.D.	85	1

Note: Surrogate Recoveries biased high due to Hydrocarbon co-elution.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

283-6121

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V132 O: BTEXQC0220
KAYVAN 10:58

CHROMALAB, INC.

Environmental Services (SDB)

September 25, 1997 *Submission #:* 9709211

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 12, 1997

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **SB-9,10'**
Spl#: 147496 *Matrix:* SOIL
Sampled: September 12, 1997 *Run#:* 8809 *Analyzed:* September 24, 1997

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	1400	40	N.D.	--	4
MTBE	27	2.5	N.D.	--	4
BENZENE	6.8	2.5	N.D.	97	4
TOLUENE	3.3	2.5	N.D.	101	4
ETHYL BENZENE	23	2.5	N.D.	99	4
XYLENES	110	2.5	N.D.	106	4

Note: Surrogate Recoveries biased high due to Hydrocarbon co-elution.

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

PM V135 O:BTEXQC0220
KAYVAN 10:22

CHROMALAB, INC.

Environmental Services (SDB)

September 19, 1997 *Submission #:* 9709211

ALL ENVIRONMENTAL INC

Atten: Bryan Campbell

Project: GONG *Project#:* 1630
Received: September 12, 1997

re: 2 samples for TPH - Diesel analysis.
Method: *EPA 8015M*

Matrix: SOIL *Extracted:* September 17, 1997
Sampled: September 12, 1997 *Run#:* 8701 *Analyzed:* September 17, 1997

Spl#	CLIENT SPL ID	DIESEL (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
147496	SB-9,10'	45	5.0	N.D.	93.2	5

Note: Hydrocarbon reported does not match the pattern of our Diesel standard.

Matrix: SOIL *Extracted:* September 17, 1997
Sampled: September 12, 1997 *Run#:* 8701 *Analyzed:* September 18, 1997

Spl#	CLIENT SPL ID	DIESEL (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
147495	SB-9,5'	46	5.0	N.D.	93.2	5

Note: Estimated concentration due to overlapping fuel patterns.

Bruce Havlik
Chemist

Alex Tam
Semivolatiles Supervisor

283-6121 PM 09/19

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #1630; Gong	Date Sampled: 09/24/97
		Date Received: 09/25/97
	Client Contact: Bryan Campbell	Date Extracted: 09/25/97
	Client P.O:	Date Analyzed: 09/25/97

10/02/97

Dear Bryan:

Enclosed are:

1). the results of **4** samples from your **#1630; Gong** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc.	Client Project ID: #1630; Gong	Date Sampled: 09/24/97
3364 Mt. Diablo Blvd.		Date Received: 09/25/97
Lafayette, CA 94549	Client Contact: Bryan Campbell	Date Extracted: 09/27/97
	Client P.O:	Date Analyzed: 09/27/97

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
81225	MW-1	W	ND	ND	ND	ND	ND	ND	105
81226	MW-2	W	260,a	ND	5.6	6.8	3.2	9.4	102
81227	MW-3	W	ND	ND	ND	ND	ND	ND	94
81228	MW-4	W	160,a	ND<10	19	1.5	ND	18	95
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc.	Client Project ID: #1630; Gong	Date Sampled: 09/24/97
3364 Mt. Diablo Blvd.		Date Received: 09/25/97
Lafayette, CA 94549	Client Contact: Bryan Campbell	Date Extracted: 09/26/97
	Client P.O:	Date Analyzed: 09/26/97

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
81225	MW-1	W	ND	108
81226	MW-2	W	170,d	107
81227	MW-3	W	ND	106
81228	MW-4	W	68,d	108
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #1630; Gong	Date Sampled: 09/24/97
		Date Received: 09/25/97
	Client Contact: Bryan Campbell	Date Extracted: 09/26/97
	Client P.O:	Date Analyzed: 09/26/97

Petroleum Oil & Grease (with Silica Gel Clean-up) *

EPA methods 413.1, 9070 or 9071; Standard Methods 5520 D/E&F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids

Lab ID	Client ID	Matrix	Oil & Grease*
81227	MW-3	W	ND
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	5 mg/L
		S	50 mg/kg

* water samples are reported in mg/L, wipe samples in mg/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in mg/L

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/26/97 Matrix: Water

Analyte	Concentration (mg/L) Sample #(81010)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	107.5	102.1	100.0	107.5	102.1	5.2
Benzene	0.0	10.4	10.2	10.0	104.0	102.0	1.9
Toluene	0.0	10.5	10.3	10.0	105.0	103.0	1.9
Ethyl Benzene	0.0	10.6	10.5	10.0	106.0	105.0	0.9
Xylenes	0.0	31.8	31.4	30.0	106.0	104.7	1.3
TPH(diesel)	0	169	162	150	113	108	4.5
TRPH (oil & grease)	0	28.4	27.1	27.3	104	99	4.7

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 09/27/97 Matrix: Water

Analyte	Concentration (mg/L) Sample #(81013)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	97.3	97.2	100.0	97.3	97.2	0.1
Benzene	0.0	9.7	10.0	10.0	97.0	100.0	3.0
Toluene	0.0	10.4	10.7	10.0	104.0	107.0	2.8
Ethyl Benzene	0.0	10.5	10.7	10.0	105.0	107.0	1.9
Xylenes	0.0	32.2	33.3	30.0	107.3	111.0	3.4
TPH(diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

ALL ENVIRONMENTAL, INC.
2641 Crow Canyon Road, Ste. 5
San Ramon, CA 94583
(510) 820-3224 FAX: (510) 838-2687

Chain of Custody

DATE: 9/24/97 PAGE: 1 OF: 1

9516xale183.doc

AEI PROJECT MANAGER: Bryan Campbell
PROJECT NAME: GONC
PROJECT NUMBER: 1630
SIGNATURE:
TOTAL # OF CONTAINERS: 13
RECD. GOOD COND./COLD: YES

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030/8015)	TPH-Gasoline (EPA 5030/8015) w/ BTEX (EPA 602/8020) MTBE	TPH-Diesel (EPA 3510/3550/8015)	PURGEABLE AROMATICS BTEX (EPA 602/8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 624/8240)	LUFT Metals (EPA 7190/7160/7380/7740/7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR, Article 11.5)	[redacted]	NUMBER OF CONTAINERS
*MW-1	9/24/97		W		X	X									3
*MW-2	"		W		X	X									3
*MW-3	"		W		X	X		X							4
*MW-4	"		W		X	X									3

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓

PRESERVATION ✓
APPROPRIATE ✓
CONTAINERS ✓

VOAS | O&G | METALS | OTHER

ANALYTICAL LAB:
ADDRESS:
PHONE: ( ) - FAX: ( ) -
INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature: Dusty Roy	Signature: Heidi Ricca	Signature:	Signature:
Printed Name: Dusty Roy	Printed Name: Heidi Ricca	Printed Name:	Printed Name:
Company: AEI	Company: NAI	Company:	Company:
Time: 4:45 pm Date: 9/25/97	Time: 4:45 Date: 9/26/97	Time: Date:	

August 5, 1997

PHASE II SUBSURFACE INVESTIGATION AND MONITORING WELL INSTALLATION WORKPLAN

4045 Broadway
Oakland, California

Project No. 1630

8/12/97

Prepared for

Ms. C.J. Gong
Gong Associates
637 Beacon Street
Oakland, CA 94610

Prepared by

All Environmental, Inc.
3364 Mt. Diablo Blvd.
Lafayette, CA 94549
(510) 283-6000

AEI

ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

August 5, 1997

Ms. Madhulla Logan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: Workplan
4045 Broadway, Oakland, California
Project No. 1630

Dear Ms. Logan:

This letter is a proposed workplan for your review and approval for further investigation of petroleum hydrocarbon impacted soil and groundwater at the above referenced property. This workplan is in response to your March 11, 1997 correspondence. All Environmental, Inc. (AEI) is providing environmental engineering consulting and construction services to Ms. C.J. Gong of Gong Associates, and is submitting this letter on her behalf.

Site Description and Background

The subject property currently supports the operation of Acc-U-Tune and Brake, an automotive repair facility.

On December 21, 1995, All Environmental, Inc. (AEI) removed one 550 gallon waste oil underground storage tank from behind the property building. Soil samples collected from beneath the tank indicated up to 470 ppm total oil and grease (TOG), 6.0 ppm total petroleum hydrocarbons (TPH) as diesel, 0.012 ppm xylenes, and minor concentrations of lead, nickel, zinc and chromium. Analysis for TPH as gasoline, benzene, toluene, ethylbenzene, poly nuclear aromatic hydrocarbons and volatile halocarbons were not detected within the soil samples above the reporting limit. The stockpiled soil generated from the tank removal was transported and disposed of off-site on August 2, 1996. Clean soil was imported and used to backfill the excavation.

On February 1, 1996 a geophysical survey was performed at the property to investigate the potential for underground storage tanks (USTs) beneath a large asphalt patch area located in the northeastern portion of the property. The geophysical survey did not reveal any magnetic anomalies consistent with the presence of USTs, however vent lines were traced from vent pipes located on the northwestern corner of the building. The vent lines were found to truncate in the center of the lot at the edge of the asphalt patch, suggesting that USTs probably previously existed in the area.

AEI performed a subsurface investigation at the property on May 31, 1996. The investigation included the advancement of three soil borings using a Geoprobe drilling rig. Soil samples collected during the investigation indicated the presence of up to 150 ppm TPH as gasoline, 86 ppm TPH as diesel, 0.16 ppm benzene, 0.30 ppm toluene, 0.18 ppm ethylbenzene, 0.67 ppm xylenes and 0.52 MTBE. Grab groundwater samples collected from the borings indicated up to 1,200 ppb of TPH as gasoline, 1,800 ppb TPH as diesel, 1.4 ppb toluene, 3.8 ppb ethylbenzene and 3.7 ppb xylenes present. Benzene and MTBE were not present within the groundwater sample above the detection limits.

ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

August 13, 1996
Project No. 1258

Ms. C.J. Gong
Gong Associates
637 Beacon Street
Oakland, CA 94610

Re: 4045 Broadway, Oakland, California

Dear Ms. Gong:

The following letter report describes the activities surrounding the transportation and disposal of contaminated soil from the above referenced property. At the request of Hazardous Materials Inspector Madhulla Logan of the Alameda County Health Care Services Agency (ACHCSA), petroleum hydrocarbon contaminated soil originating from the removal of a waste oil underground storage tank (UST) was hauled off-site and disposed of as non-hazardous waste.

1 sample from excavation & 1 sample for

I Site Description and Background

The subject property is currently occupied by Accu-Tune and Brake, an automotive repair facility.

On December 21, 1995, AEI removed one 550-gallon waste oil underground storage tank from the property. Soil samples collected from the bottom of the excavation were impacted with up to 470 ppm total oil and grease (TOG), 6.0 ppm TPH as diesel, 0.012 xylenes, 69 ppm chromium, 86 ppm nickel and 67 ppm zinc. TPH as gasoline, benzene, toluene, ethylbenzene, polynuclear aromatic hydrocarbons (PAHs) and volatile halocarbons were not present within the excavation bottom samples above the detection limits. Soil samples collected from the stockpiled material were impacted with 410 ppm ~~TOG~~, 32 ppm TPH as gasoline, 120 ppm TPH as diesel, 0.31 ppm xylenes, 52 ppm chromium, 0.023 ppm lead, 90 ppm nickel and 55 ppm zinc. Benzene, ethylbenzene, volatile halocarbons, cadmium and PAHs were not found above the detection limits.

Due to the elevated concentrations of petroleum hydrocarbon contamination present, Ms. Madhulla Logan of the ACHCSA requested the off-site disposal of the contaminated stockpiled soil.

II Transportation and Disposal of Stockpile

The stockpiled soil was profiled and accepted for disposal at the Browning Ferris Industries (BFI) disposal facility in Livermore, California. The landfill required the analysis of the stockpiled soil for CAM 17 metals and soluble threshold limit concentration (STLC) chromium and lead prior to acceptance. The analytical results for CAM 17 and STLC are attached to this report.

On August 2, 1996, the stockpiled soil was loaded and transported, under non-hazardous waste manifest to the landfill for disposal. Approximately 10.2 tons of contaminated soil was removed and disposed. A copy of the non-hazardous waste manifest is attached to this report.

III Backfilling and Resurfacing

On August 2, 1996 the excavation was backfilled with clean imported soil. The excavation was backfilled in one foot lifts and compacted to approximately 90% compaction to reduce long term settlement. The excavation was subsequently resurfaced by Forseth Masonry on August 8, 1996 to match the existing surroundings.

IV Summary and Conclusions

On December 21, 1995, one 550-gallon waste oil underground storage tank was removed from behind the subject property building. Soil samples collected from the bottom of the excavation were impacted with 470 ppm TOG and minor concentrations of TPH as diesel, xylenes and metals. Soil samples collected from the stockpiled material were impacted with 410 ppm TOG, 32 ppm TPH as gasoline, 120 ppm TPH as diesel and minor concentrations of toluene, xylenes and metals.

Ms. Madhulla Logan of the ACHCSA requested the off-site disposal of the contaminated stockpiled soil.

On August 2, 1996, a total of 10.2 tons of contaminated soil was profiled and disposed of at the BFI disposal facility in Livermore, California. Clean import was used to backfill the excavation. The excavation was resurfaced to match the existing surroundings on August 8, 1996.

V Report Limitations

This report presents a summary of work completed by All Environmental, Inc., including observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, but it cannot be assumed that they are representative of areas not sampled. All conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

All Environmental, Inc. warrants that all services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work.

If you have any questions regarding any aspect of the tank removal or soil disposal project, please do not hesitate to contact me at (510) 283-6000.

Sincerely,

Jennifer Anderson
Project Manager

Craig Hertz
Registered Environmental Assessor (REA)

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1258; Gong	Date Sampled: 05/31/96
		Date Received: 06/03/96
	Client Contact: Jennifer Anderson	Date Extracted: 07/24-07/26/96
	Client P.O:	Date Analyzed: 07/26-07/30/96

LUFT Metals*

EPA analytical methods 6010/200.7, 239.2+

Lab ID	Client ID	Matrix	Extraction°	Cadmium	Chromium	Lead	Nickel	Zinc	% Rec. Surrogate
65608	STKP (1-3)	S	STLC	---	0.19	1.9	---	---	NA
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		S	TTLC	0.5 mg/L	0.5	3.0	2.0	1.0	
		W	TTLC	0.01 mg/kg	0.005	0.005	0.02	0.01	
		---	STLC,TCLP	0.01 mg/L	0.05	0.2	0.05	0.05	

* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

+ Lead is analysed using EPA method 6010 (ICP)for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

surrogate diluted out of range; N/A means surrogate not applicable to this analysis

i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1258; Gong	Date Sampled: 05/31/96
		Date Received: 06/03/96
	Client Contact: Jennifer Anderson	Date Extracted: 07/17/96
	Client P.O:	Date Analyzed: 07/18/96

CAM / CCR 17 Metals*

EPA methods 6010/200.7; 7470/245.1 (Hg); 7060/206.2 (As); 7740/270.2 (Se); 7841/279.2 (Tl); 239.2 (Pb, water matrix)

Lab ID	65608				Reporting Limit		
Client ID	STKP (1-3)						
Matrix	S				S	W	STLC / TCLP
Extraction°	TTLC				TTLC	TTLC	
Compound	Concentration*				mg/kg	mg/L	mg/L
Antimony (Sb)	ND				2.5	0.05	0.05
Arsenic (As)	8.7				2.5	0.005	0.25
Barium (Ba)	200				1.0	0.05	0.05
Beryllium (Be)	ND				0.5	0.01	0.01
Cadmium (Cd)	ND				0.5	0.01	0.01
Chromium (Cr)	56				0.5	0.005	0.05
Cobalt (Co)	13				2.0	0.02	0.05
Copper (Cu)	30				2.0	0.02	0.05
Lead (Pb)	60				3.0	0.005	0.2
Mercury (Hg)	0.12				0.06	0.0008	0.0008
Molybdenum (Mo)	ND				2.0	0.05	0.05
Nickel (Ni)	83				2.0	0.02	0.05
Selenium (Se)	ND				2.5	0.005	0.25
Silver (Ag)	ND				1.0	0.01	0.05
Thallium (Tl)	ND				0.5	0.001	0.05
Vanadium (V)	42				2.0	0.05	0.05
Zinc (Zn)	96				1.0	0.05	0.05
% Recovery Surrogate	96						
Comments							

* water samples are reported in mg/L, soil samples in mg/kg and all TCLP & STLC extracts in mg/L

ND means not detected above the reporting limit

o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

surrogate diluted out of range; N/A means surrogate not applicable to this analysis

i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR AA METALS

Date: 07/29/96 Matrix: Soil/STLC

Analyte	Concentration (mg/kg,mg/L) Sample	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
Total Lead	0.0	4.37	4.30	5.0	87	86	1.6
Total Cadmium	0.0	4.57	4.48	5.0	91	90	1.9
Total Chromium	0.0	4.36	4.41	5.0	87	88	1.2
Total Nickel	0.0	4.55	4.29	5.0	91	86	5.7
Total Zinc	0.0	4.46	4.41	5.0	89	88	1.1
Total Copper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachrome	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR METALS

Date: 07/18/96 Matrix: Soil

Extraction: TTLC

Analyte	Concentration (mg/kg) Sample	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
Arsenic	0.0	5.2	5.2	5.0	103	104	0.8
Selenium	0.0	5.0	5.0	5.0	100	100	0.2
Molybdenum	0.0	4.9	4.9	5.0	99	99	0.0
Silver	0.0	0.6	0.6	0.5	113	114	0.8
Thallium	0.0	5.2	5.3	5.0	105	106	1.3
Barium	0.0	4.6	4.6	5.0	91	91	0.1
Nickel	0.0	5.1	5.0	5.0	102	101	1.3
Chromium	0.0	5.0	5.1	5.0	101	102	0.6
Vanadium	0.0	5.0	5.0	5.0	100	100	0.0
Beryllium	0.0	5.1	5.2	5.0	103	103	0.4
Zinc	0.0	5.1	5.1	5.0	102	101	0.5
Copper	0.0	4.5	4.6	5.0	91	91	0.6
Antimony	0.0	5.1	5.2	5.0	102	103	1.0
Lead	0.0	4.9	4.9	5.0	97	98	1.5
Cadmium	0.0	5.3	5.3	5.0	106	106	0.5
Cobalt	0.0	5.1	5.0	5.0	101	100	1.4
Mercury	0.000	0.252	0.232	0.25	101	93	8.3

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

ALL ENVIRONMENTAL, INC.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-6121

Chain of Cus

6505-A
6505AALEX46

DATE: 5/31/96 PAGE: 1 OF: 1

AEI PROJECT MANAGER: JENNIFER ANDERSON
PROJECT NAME: GONG
PROJECT NUMBER: 1258
SIGNATURE: [signature]
TOTAL # OF CONTAINERS: 26
RECD. GOOD COND./COLD: YES

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030/8015)	TPH-Gasoline (EPA 5030/8015) w/ BTEX (EPA 602/8020) +MTBE	TPH-Diesel (EPA 3510/3550/8015)	PURGEABLE AROMATICS BTEX (EPA 602/8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	[redacted]	[redacted]CTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66261.21-3)	PNAs	STLC Pb, Cr 5 day	[illegible]		NUMBER OF CONTAINERS
STKP(1-3) *	5/31/96		SOIL					X				X	X	X		3
EB-10	5/31/96		↓					X				X				1
BH-1, L-1, 6	↓	900	↓		Hold											1
BH-2, L-2, 11	↓	945	↓		X	X			X							1
BH-3, L-1, 6'	↓	1010	↓		Hold											1
BH-3, L-2, 11'	↓	1025	↓		X	X			X							1
BH-4, L-1, 6'	↓	1045	↓		Hold											1
BH-4, L-2, 11'	↓	1050	↓		X	X			X							1
W-1	5/31/96		WATER		Hold											8
W-2	5/31/96		WATER		X	X			X							8

VOAS	O&G	METALS	OTHER

ICE/T° ✓
PRESERVATIVE ✓ ✓
GOOD CONDITION ✓
APPROPRIATE CONTAINERS ✓
HEAD SPACE ABSENT ✓

ANALYTICAL LAB: McCAMPBELL ANALYTICAL
ADDRESS:
PHONE: (510) 798-1620 FAX: ( )

INSTRUCTIONS/COMMENTS:
* COMPOSITE

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
[signature] Signature	[signature] Signature	Signature	Signature
Jennifer Anderson Printed Name	HEIDI RICCA Printed Name	Printed Name	Printed Name
AEI Company	MAI Company	Company	Company
Time 4:10 Date 6/3/96	Time 4:10 Date 6/3/96	Time Date	Time Date

BFI

HAI ENVIRO MENTAL

NON-HAZARDOUS SPECIAL WASTE & ASBESTOS MANIFEST

If waste is asbestos waste, complete Sections I, II, III and IV.
If waste is NOT asbestos waste, complete only Sections I, II and III.

No. 910974

Section I GENERATOR (Generator completes all of Section I)

a. Generator Name: Ms CJ Gong
b. Generating Location: ACCUTUNE
c. Address: 637 Bonnon Street, Oakland, CA 94610
d. Address: 4045 Broadway, Oakland
e. Phone No.: (510) 531 6094
f. Phone No.: (570) [redacted] 658 8863

If owner of the generating facility differs from the generator, provide:

g. Owner's Name: Ms. C.J. Gong
h. Owner's Phone No.: (570) 531 6094

i. BFI WASTE CODE: CA 405 073196 00083 Containers

TYPE: DM - METAL DRUM; DP - PLASTIC DRUM; B - BAG; BA - 6 MIL. PLASTIC BAG or WRAP; T - TRUCK; O - OTHER

j. Description of Waste: SOIL CONTAMINATED WITH WASTE OIL

k. Quantity: 7 Units: Y³ No.: 01 TYPE: T

UNITS: P - POUNDS; Y - YARDS; M³ - CUBIC METERS; Y³ - CUBIC YARDS; O - OTHER

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; **AND, if the waste is a treatment residue of a previously restricted hazardous waste** subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 40 CFR Part 261.

Dusty Roy (Generator Authorized Agent Name) — Dusty Roy (Signature) — 080296 (Shipment Date)

Section II TRANSPORTER (Generator completes a-e; Transporter I completes e-g; Transporter II completes h-n)

TRANSPORTER I

a. Name: DELLA FOSSE
b. Address: [illegible] Union City 94587
c. Driver Name/Title: GUSTAVO PEÑA (PRINT/TYPE)
d. Phone No.: 510 5350153
e. Truck No.: 9069
f. Vehicle License No./State: 9A31000
Acknowledgement of Receipt of Materials.
g. [signature] (Driver Signature) — 080296 (Shipment Date)

TRANSPORTER II

h. Name:
i. Address:
j. Driver Name/Title: (PRINT/TYPE)
k. Phone No.:
l. Truck No.:
m. Vehicle License No./State:
Acknowledgement of Receipt of Materials.
n. (Driver Signature) — (Shipment Date)

Section III DESTINATION (Generator completes a-d; destination site completes e-f.)

a. Site Name:
b. Physical Address:
c. Phone No.:
d. Mailing Address
e. Discrepancy Indication Space:

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

f. Name of Authorized Agent — Signature — AEC296 (Receipt Date)

Section IV ASBESTOS (Generator completes a-d, if a Operator* completes e-f.)

a. Operator's* Name:
b. Operator's* Phone No.:
c. Operator's* Address:
d. Special Handling Instructions and additional information:

OPERATOR'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 government regulations.

e. Operator's* Name & Title: (Print/Type) — (Operator's Signature) — (Date)

f. Name and Address of Responsible Agency:

g. ☐ Friable; ☐ Non-friable; ☐ Both _____ % friable _____ % nonfriable

* Operator refers to the company which owns, leases, operates, controls, or supervises the facility being demolished or renovated, or the demolition or renovation operation, or both.

REORDER ONLY THROUGH BFI / UARCO CONTRACT

RETURN TO OPERATOR

260-720B 5/93

ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

June 26, 1996
Project No. 1258

Ms. C.J. Gong
Gong Associates
637 Beacon Street
Oakland, CA 94610

Subject: **4045 Broadway, Oakland, California**

Dear Ms. Gong:

The following letter report describes the activities and results of the subsurface investigation conducted by All Environmental, Inc. (AEI) at the above referenced property. The investigation was conducted in response to your request, dated February 21, 1996, to investigate for the presence of potential hydrocarbon contamination in the vicinity of a large asphalt patch area assumed to be a former tank excavation.

I Property Description

The subject property currently supports the operation of Acc-U-Tune and Brake, an automotive repair facility (Attachment A: Site Location Map).

On February 1, 1996 a geophysical survey was performed at the property to investigate the potential for underground storage tanks (USTs) beneath a large asphalt patch area located in the northeastern portion of the property. The geophysical survey did not reveal any magnetic anomalies consistent with the presence of USTs, however vent lines were traced from vent pipes located on the northwestern corner of the building. The vent lines were found to truncate in the center of the lot at the edge of the asphalt patch, suggesting that USTs probably previously existed in the area.

On February 21, 1996, Ms. Madhulla Logan of the Alameda County Health Care Services Agency (ACHCSA) requested additional investigation for potential petroleum hydrocarbon contamination. The following report describes the Phase II Site Assessment performed in response to the ACHCSA's request.

II Investigative Efforts

All Environmental, Inc. (AEI) performed a subsurface investigation at the property on May 31, 1996. The investigation included the advancement of three soil borings using a Geoprobe drilling rig. During the advancement of the BH-1, refusal was encountered at 8 feet bgs. Therefore, BH-2 was advanced in the vicinity of BH-1 to 11 feet bgs. Borings BH-3 and BH-4 were also advanced to a depth of 11 feet below ground surface (bgs). Soil samples were collected at 6 and 11 feet bgs from the borings. Refer to Attachment A: Site Plan for soil boring locations. The near surface sediments encountered during the boring advancement included silty sands with intermittent clays.

Groundwater was encountered at approximately 11 feet bgs during the advancement of the borings. Grab groundwater samples were collected from BH-2 and BH-3 and labeled W-1 and W-2, respectively. One soil sample collected at 11 feet bgs was analyzed from each boring. Soil samples were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline (EPA method 5030/8015), TPH as diesel (EPA method 8015/3510), benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tertiary butyl ether (MTBE) (EPA method 8020/602), and total lead (AA). The groundwater sample collected from BH-3 was analyzed for the same constituents.

IV Findings

Soil and groundwater samples collected during the investigation were transported to McCampbell Analytical, Inc. (DOHS Certification Number 1644) on June 3, 1996 for analysis. Analytical results of soil collected at eleven feet bgs from the borings indicated the presence of up to 150 ppm TPH as gasoline, 86 ppm TPH as diesel, 0.16 ppm benzene, 0.30 ppm toluene, 0.18 ppm ethylbenzene, 0.67 ppm xylenes and 0.52 MTBE.

The groundwater sample, W-2, collected from BH-3 indicated up to 1,200 ppb of TPH as gasoline, 1,800 ppb TPH as diesel, 1.4 ppb toluene, 3.8 ppb ethylbenzene and 3.7 ppb xylenes. Benzene and MTBE were not present within the groundwater sample above the detection limits.

The following tables summarize the soil and groundwater analytical results. The analytical results and chain of custody are included as Attachment B.

Table 1 - Soil Sample Analyses

Sample Identification	TPHg mg/kg	TPHd mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	MTBE mg/kg	Lead mg/kg
BH-2, L-2, (11')	30	86	0.028	0.059	0.13	0.11	0.087	16
BH-3, L-2, (11')	130	40	<0.005	0.14	0.16	<0.005	<0.1	18
BH-4, L-2, (11')	150	54	0.16	0.30	3.8	3.7	0.52	34

Table 2 - Groundwater Sample Analyses

Sample Identification	TPHg ug/L	TPHd ug/L	Benzene ug/L	Toluene ug/L	Ethyl-benzene ug/L	Xylenes ug/L	MTBE ug/L	Lead mg/L
W-2	1200	1800	<0.05	1.4	3.8	3.7	<0.05	1.9

Total Petroleum Hydrocarbons as gasoline = TPHg
Total Petroleum Hydrocarbons as diesel = TPHd
mg/kg = ppm
ug/L = ppb

V Recommendations/Additional Investigations

Analytical results from the subsurface investigation revealed moderate levels of gasoline and diesel present within groundwater beneath the site. Benzene was not present at detectable concentrations within the groundwater samples. The source of the impacted soil and groundwater is most likely the result of the storage of petroleum hydrocarbons within previously removed USTs. The USTs were removed at an earlier date, however moderate levels of contamination remain in the soil at the base of the excavation and is most likely acting as the source for the groundwater contamination.

Due to the moderate levels of contamination within the soil and groundwater, AEI does not believe that any additional removal of soil is warranted. However, further investigation into the impact on groundwater will probably be required by the ACHCSA. The investigation should include the installation of three groundwater monitoring wells to determine groundwater gradient beneath the site and to evaluate the petroleum hydrocarbon plume.

If you have any questions regarding our investigation, please do not hesitate to contact me at (510) 283-6000.

Sincerely,

Jennifer Anderson
Project Manager

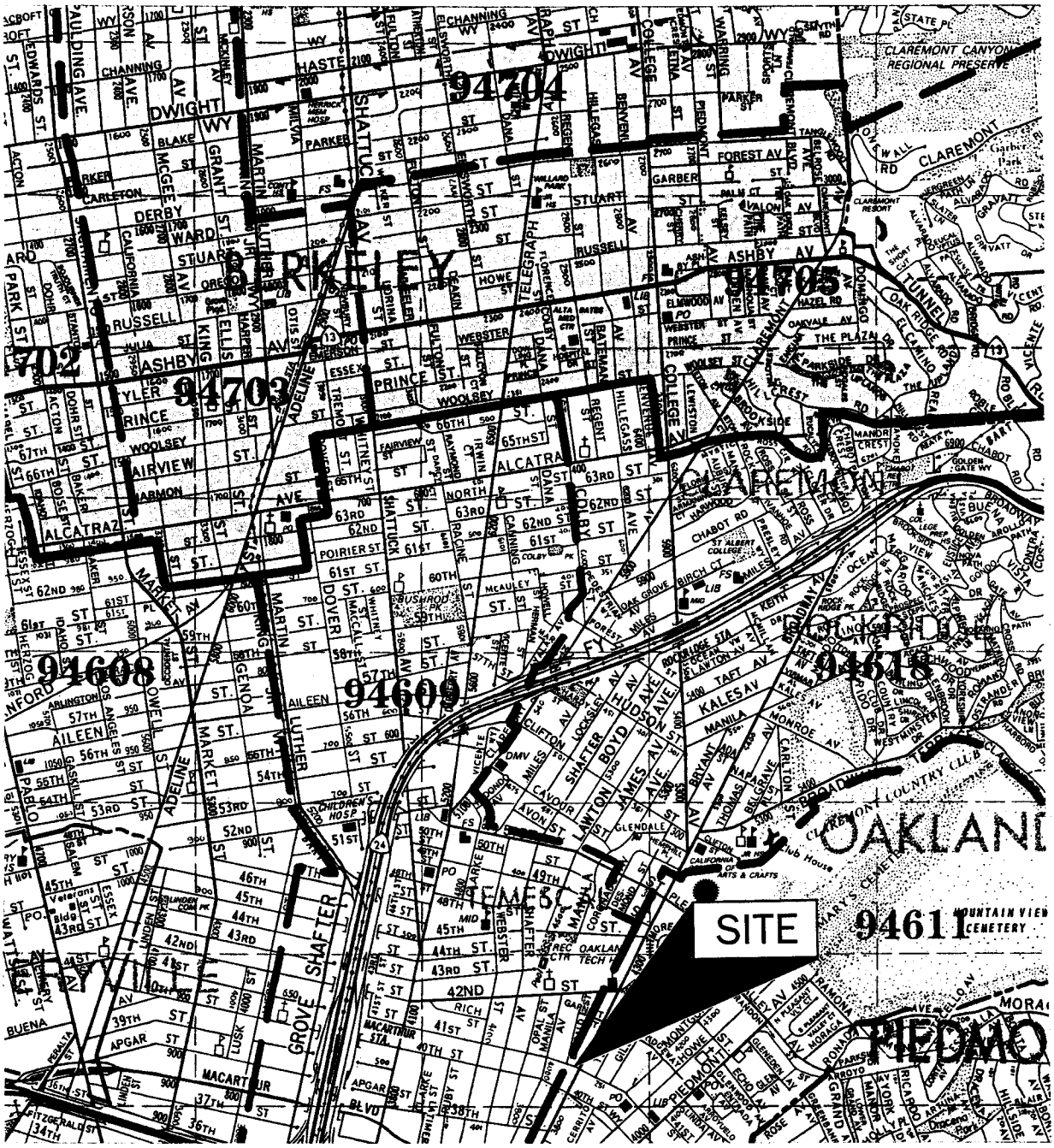
Michael C. Carey
Engineering Geologist
CEG 1351

CERTIFIED ENGINEERING GEOLOGIST
MICHAEL C. CAREY
C.E.G. 1351
Exp: 10-29-96
STATE OF CALIFORNIA

Attachment A
Attachment B

cc: Mr. Jonathon Chase
Ms. Madhulla Logan

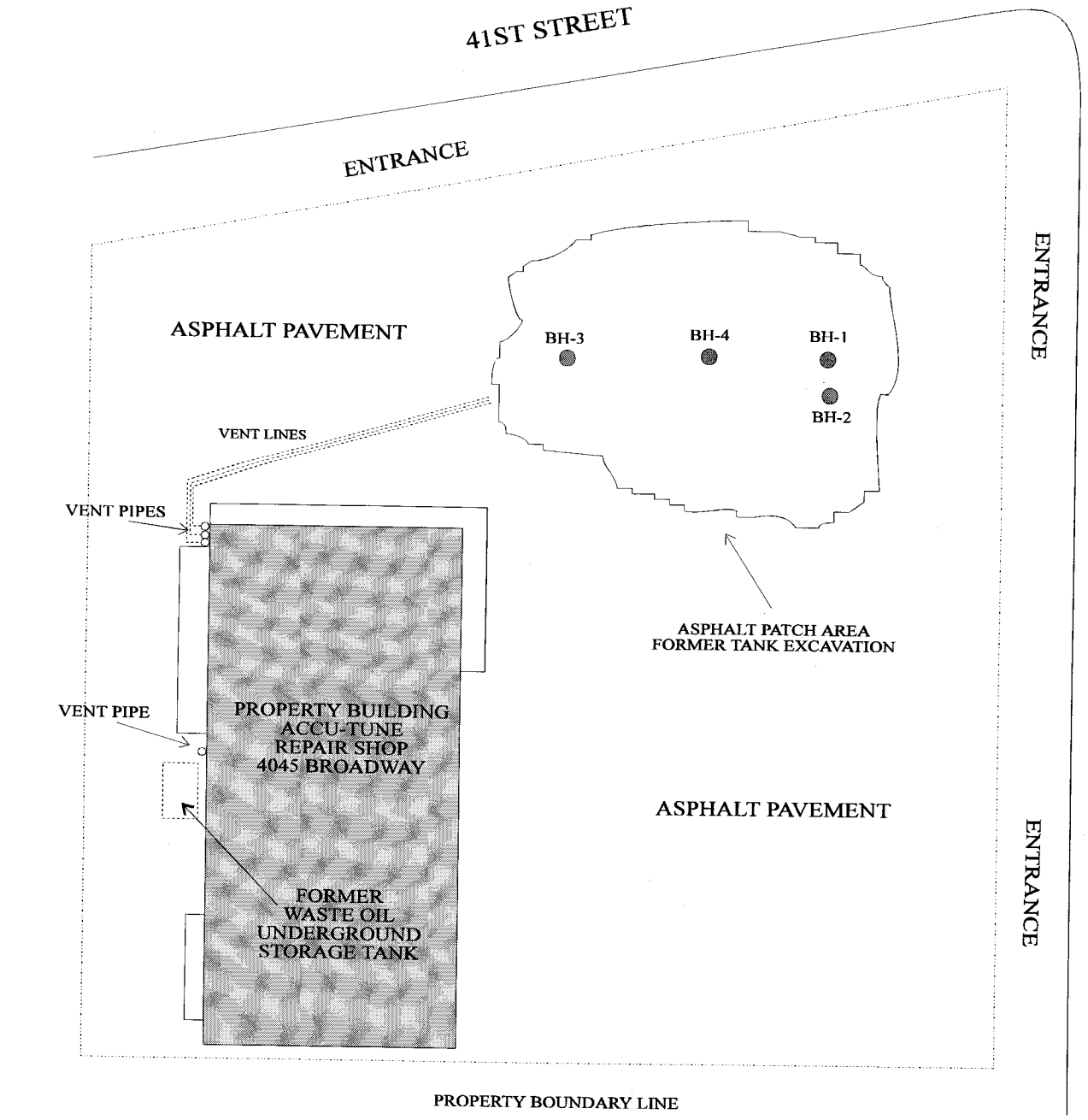
ATTACHMENT A



N

THOMAS BROS. MAPS
1994

ALL ENVIRONMENTAL, INC. 3364 MT. DIABLO BOULEVARD, LAFAYETTE		
SCALE: 1 IN = 2200 FT	APPROVED BY:	DRAWN BY:
DATE: 17 JUNE 96		REVISED:
SITE LOCATION MAP		
4045 BROADWAY OAKLAND		DRAWING NUMBER: FIGURE 1



N

ALL ENVIRONMENTAL, INC. 3364 MT. DIABLO BOULEVARD, LAFAYETTE		
SCALE: 1 IN = 20 FT	APPROVED BY:	DRAWN BY: C. SPARKS
DATE: 17 JUNE 96		REVISED: J.S. ANDERSON
SITE PLAN		
4045 BROADWAY OAKLAND		DRAWING NUMBER: FIGURE 2

ATTACHMENT B

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1258; Gong	Date Sampled: 05/31/96
		Date Received: 06/03/96
	Client Contact: Jennifer Anderson	Date Extracted: 06/03/96
	Client P.O:	Date Analyzed: 06/03-06/04/96

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with MTBE & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
65611	BH-2, L-2, 11'	S	30,j	0.087	0.028	0.059	0.13	0.11	107
65613	BH-3, L-2, 11'	S	130,j	ND< 0.1	ND	0.14	0.16	ND	95
65615	BH-4, L-2, 11'	S	150,j	0.52	0.16	0.30	0.18	0.67	---#
65617	W-2	W	1200,j,i	ND	ND	1.4	3.8	3.7	106
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1258; Gong	Date Sampled: 05/31/96
		Date Received: 06/03/96
	Client Contact: Jennifer Anderson	Date Extracted: 06/03/96
	Client P.O:	Date Analyzed: 06/03-06/04/96

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
65611	BH-2, L-2, 11'	S	86,d,b/g	99
65613	BH-3, L-2, 11'	S	40,d,g	100
65615	BH-4, L-2, 11'	S	54,d,b/g	100
65617	W-2	W	1800,d,g,i	101
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water samples are reported in ug/L, soil samples in mg/kg, and all TCLP and STLC extracts in mg/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1258; Gong	Date Sampled: 05/31/96
		Date Received: 06/03/96
	Client Contact: Jennifer Anderson	Date Extracted: 06/03/96
	Client P.O:	Date Analyzed: 06/04/96

Lead*

EPA analytical methods 6010/200.7, 239.2+

Lab ID	Client ID	Matrix	Extraction°	Lead*	% Recovery Surrogate
65611	BH-2, L-2, 11'	S	TTLC	16	97
65613	BH-3, L-2, 11'	S	TTLC	18	100
65615	BH-4, L-2, 11'	S	TTLC	34	100
65617	W-2	W	TTLC	1.9,i	106
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		S	TTLC	3.0 mg/kg	
		W	TTLC	0.005 mg/L	
		---	STLC,TCLP	0.2 mg/L	

* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

+ Lead is analysed using EPA method 6010 (ICP)for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

surrogate diluted out of range; N/A means surrogate not applicable to this analysis

i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/03/96 Matrix: Soil

Analyte	Concentration (mg/kg) Sample (#63467)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.000	1.811	1.832	2.03	89	90	1.2
Benzene	0.000	0.174	0.184	0.2	87	92	5.6
Toluene	0.000	0.178	0.184	0.2	89	92	3.3
Ethylbenzene	0.000	0.178	0.186	0.2	89	93	4.4
Xylenes	0.000	0.532	0.556	0.6	89	93	4.4
TPH (diesel)	0	285	286	300	95	95	0.7
TRPH (oil and grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/04/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#65417)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	104.5	103.1	100.0	104.5	103.1	1.4
Benzene	0.0	9.1	9.1	10.0	91.0	91.0	0.0
Toluene	0.0	9.1	9.2	10.0	91.0	92.0	1.1
Ethyl Benzene	0.0	9.1	9.0	10.0	91.0	90.0	1.1
Xylenes	0.0	27.0	26.7	30.0	90.0	89.0	1.1
TPH (diesel)	0	144	142	150	96	95	1.6
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/06/96 Matrix: Soil

Analyte	Concentration (mg/kg) Sample (#65367)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil and grease)	0.0	10.7	11.1	10	107	111	3.7

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR AA METALS

Date: 06/04/96 Matrix: Soil

Analyte	Concentration (mg/kg,mg/L)			Amount	% Recovery		
	Sample	MS	MSD	Spiked	MS	MSD	RPD
Total Lead	0.0	5.22	5.15	5.0	104	103	1.3
Total Cadmium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Chromium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Nickel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Zinc	N/A	N/A	N/A	N/A	N/A	N/A	N/A
STLC Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SPLP Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR AA METALS

Date: 06/04/96 Matrix: Water

Analyte	Concentration (mg/L)			Amount	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
Total Lead	0.00	5.50	5.57	5.00	110	111	1.3
Total Chromium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Cadmium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Nickel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Zinc	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Copper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Organic Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

ALL ENVIRONMENTAL, INC.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-6121

Chain of Custody

DATE: 5/31/96 PAGE: 1 OF: 1

6505 AALEX46

AEI PROJECT MANAGER: JENNIFER ANDERSON
PROJECT NAME: GONG
PROJECT NUMBER: 1258
SIGNATURE: [signature]
TOTAL # OF CONTAINERS: 26
RECD. GOOD COND./COLD: YES

ANALYSIS REQUEST

	SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030,8015)	TPH-Gasoline (EPA 5030,8015) w/ BTEX (EPA 602,8020) +MTBE	TPH-Diesel (EPA 3510/3550,8015)	PURGEABLE AROMATICS BTEX (EPA 602,8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	…ATILE ORGANIC …POUNDS …A 8240)	…T Metals 7130,7190,7420,7520,7950	…C CAM 17 …A 1310/6010)	…ACTIVITY, CORROSIVITY, …GNITABILITY (Title 22, CCR 66261.21-3)	PNAs	Lab No. (stamp)	NUMBER OF CONTAINERS
	STKP(1-3) *	5/31/96		SOIL					X						X	65608	3
	EB-10	5/31/96		↓					X						X	65609	1
	BH-1, L-1, 6	↓	900	↓		Hold										65610	1
	BH-2, L-2, 11	↓	945	↓		X	X			X						65611	1
	BH-3, L-1, 6'	↓	1010	↓		Hold										65612	1
	BH-3, L-2, 11'	↓	1025	↓		X	X			X						65613	1
	BH-4, L-1, 6'	↓	1045	↓		Hold										65614	1
	BH-4, L-2, 11'	↓	1050	↓		X	X			X						65615	1
+5	W-1	5/31/96		WATER		Hold										65616	8
5+	W-2	5/31/96		WATER		X	X			X						65617	8

ICE ✓ VOAS … ✓ ✓
…CONDITION ✓ PRESERVATIVE ✓
HEAD SPACE ABSENT ✓ APPROPRIATE CONTAINERS ✓

ANALYTICAL LAB: McCAMPBELL ANALYTICAL
ADDRESS:
PHONE: (510) 798-1620 FAX: ( )

INSTRUCTIONS/COMMENTS:
* COMPOSITE

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature: [signature]	Signature: [signature]	Signature	Signature
Printed Name: Jennifer Anderson	Printed Name: HEIDI RICCA	Printed Name	Printed Name
Company: AEI	Company: MAI	Company	Company
Time 4:10 Date 6/3/96	Time 4:10 Date 6/3/96	Time Date	Time

ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

ITAL
ON

1:27

February 20, 1996

Ms. Madhulla Logan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: 4045 Broadway, Oakland, California

Dear Madhulla:

On February 1, 1996, a geophysical survey was performed by Norcal Geophysical Consultants, Inc. at the above referenced property. The survey was completed at your request to investigate the possibility of underground storage tanks existing at the property.

The survey was completed using Ground Penetrating Radar (GPR) and a magnetometer. No anomalies indicative of the presence of underground storage tanks were discovered during the investigation. Vent lines were traced from vent pipes located on the northwestern corner of the property building to the center of the lot using elecrtomagnetic line locating methods. The vent lines were found to truncate in the center of the lot near a large asphalt patched area. The geophysical survey report is attached.

Currently, the waste oil tank excavation remains open. We would like to backfill and resurface this excavation as soon as possible to eliminate the pedestrian hazard. Please contact us as soon as possible as to the status of this tank removal.

If you have any questions, please do not hesitate to contact me at (510) 820-3224.

Thank you,
All Environmental, Inc.

Jennifer Anderson
Project Manager

attachments

Corporate Headquarters:
2641 Crow Canyon Rd., #5
San Ramon, CA 94583
(510) 820-3224

Los Angeles Office:
5031 Pacific Coast Hwy., #178
Torrance, CA 90505
(310) 328-8878

NORCAL GEOPHYSICAL CONSULTANTS INC.

NORCAL

February 15, 1996

Ms. Jennifer Anderson
All Environmental Inc.
2641 Crow Canyon Road, Suite 5
San Ramon, CA 94583

Dear Ms. Anderson,

The purpose of this letter is to present the findings of a geophysical investigation performed by NORCAL Geophysical Consultants, Inc. at the Accu-Tune property at 4045 Broadway Street in Oakland, California. The field survey was conducted on February 1, 1996 by NORCAL Geophysicist, Ted A. Heinse.

The purpose of the investigation was to obtain data that will aid in characterizing the shallow subsurface and determine whether UST's exist within the limits of the survey area.

SITE DESCRIPTION

The site measures approximately 120 ft by 110 ft. The garage occupies approximately 30 ft by 60 ft of this area. The survey limits encompassed the accessible areas to the north and east of this garage. The Location Map, Plate 1, shows the limits of the survey area and the locations of the pertinent features described below. Site surface conditions include the reinforced concrete pump island to the east of the office portion of the garage, and asphalt over the remainder of the site. We observed a variation in both color and texture of the asphalt in the northern portion of the site. This area was described by All Environmental as a possible former excavation and its approximate location is shown. We observed numerous above ground metallic features within the survey limits, including parked cars to the north and east of the garage, a hydraulic lift in the extreme southern portion of the site, vertical sign and light poles to the northwest and northeast of the garage, and three vertical pipes attached to the northwestern corner of the garage. These pipes extend vertically 1 foot above ground surface and were described by All Environmental as possible vent pipes.

METHODOLOGY AND DATA ACQUISITION

For this investigation, we employed the vertical magnetic gradient (VMG), the ground penetrating radar (GPR), and electromagnetic line locating (EMLL) methods. The VMG

method was used to determine the presence of buried ferrous metal. We used an EDA OMNI IV Tie-Line magnetometer to obtain the VMG data. VMG data were collected over the site where access allowed. These measurements were taken at 10 foot intervals along north-south trending traverses spaced 10 feet apart over the area shown on the Location Map, Plate 1.

Ground penetrating radar (GPR) data were collected over the anomalous features delineated by the VMG data. These data were collected with a Geophysical Survey Systems Inc. SIR-2 radar system equipped with a 500 MHz antenna.

The electromagnetic line locating equipment was used to further aid in defining the VMG anomalies, and trace the suspected vent pipes. We used a Radiodetection RD-400 and a Fisher TW-6 inductive pipe and cable locator for this investigation.

DATA ANALYSIS

VMG Data Computer Processing

We down loaded the VMG data to a computer and converted it into a format suitable for computer contouring. The contouring software computed an evenly spaced array of values (grid) based on the observed field data. These values were then contoured to produce the Vertical Magnetic Gradient Contour Map, on Plate 1.

Contour Map Interpretation

Generally, natural magnetic values will vary smoothly throughout a given region. Within culturally active areas or where shallow buried metallic objects exist, the vertical magnetic gradient tends to be relatively large. Within these areas the vertical magnetic gradient may be defined by closely spaced contours that are typically considered anomalous.

Depending on their size and depth, UST's typically produce VMG anomalies with magnitudes in excess of several hundred gammas/meter. These anomalies are generally represented by closely spaced contours that form circular to elliptical closures. These closures may or may not have paired high and low values indicative of a magnetic dipole. In either case, magnetic anomalies typically cover an area somewhat larger than the UST. However, actual anomaly magnitude and shape are

method was used to determine the presence of buried ferrous metal. We used an EDA OMNI IV Tie-Line magnetometer to obtain the VMG data. VMG data were collected over the site where access allowed. These measurements were taken at 10 foot intervals along north-south trending traverses spaced 10 feet apart over the area shown on the Location Map, Plate 1.

Ground penetrating radar (GPR) data were collected over the anomalous features delineated by the VMG data. These data were collected with a Geophysical Survey Systems Inc. SIR-2 radar system equipped with a 500 MHz antenna.

The electromagnetic line locating equipment was used to further aid in defining the VMG anomalies, and trace the suspected vent pipes. We used a Radiodetection RD-400 and a Fisher TW-6 inductive pipe and cable locator for this investigation.

DATA ANALYSIS

VMG Data Computer Processing

We down loaded the VMG data to a computer and converted it into a format suitable for computer contouring. The contouring software computed an evenly spaced array of values (grid) based on the observed field data. These values were then contoured to produce the Vertical Magnetic Gradient Contour Map, on Plate 1.

Contour Map Interpretation

Generally, natural magnetic values will vary smoothly throughout a given region. Within culturally active areas or where shallow buried metallic objects exist, the vertical magnetic gradient tends to be relatively large. Within these areas the vertical magnetic gradient may be defined by closely spaced contours that are typically considered anomalous.

Depending on their size and depth, UST's typically produce VMG anomalies with magnitudes in excess of several hundred gammas/meter. These anomalies are generally represented by closely spaced contours that form circular to elliptical closures. These closures may or may not have paired high and low values indicative of a magnetic dipole. In either case, magnetic anomalies typically cover an area somewhat larger than the UST. However, actual anomaly magnitude and shape are

dependent on the relative position and size of the UST with respect to the location of the data points and surrounding cultural features.

GPR Profiles

We examined the GPR records for hyperbolic reflection patterns characteristic of UST's and underground utilities, as well as changes in reflection character that may indicate variations in the site materials. These variations may be associated with previous UST's and utility trench excavations or other site material features.

RESULTS

The results of the VMG investigation are shown on the Vertical Magnetic Gradient Contour Map, on Plate 1. This map shows significant magnetic variations throughout the site. Steep magnetic gradients are shown immediately north and east of the garage and are probably due to the proximity of the building. The southeastern portion of the site is also characterized by steep magnetic gradients. These variations are probably due in part to the parked cars and the reinforced concrete slab. The northern portion of the site is characterized by moderate magnetic gradients. These variations are probably due to the presence of the parked car and the proximity of the light and sign poles. The gradients in the central portion of the site form circular closures and may be due in part to the reinforced concrete slab.

The GPR data collected over these areas indicated varying subsurface conditions. We observed reflection patterns indicative of underground utilities, disturbed soils, and uniform subsurface conditions. We did not observe large parabolic reflection patterns indicative of underground storage tanks.

We were able to determine the location of the suspected vent pipes. The locations of these lines were marked in the field with spray paint during the investigation, and are shown on the Location Map, Plate 1. These three lines extend to the north from the northwestern corner of the garage, then bend and trend to the northeast about 40 ft where they truncate. These lines truncate at the edge of the possible former excavation described above.

STANDARD CARE AND WARRANTY

The scope of NORCAL's services for this project consisted of using geophysical methods to explore for UST's in the shallow subsurface. The accuracy of our findings is subject to specific site conditions and limitations inherent to the techniques used. We performed our services in a manner consistent with the level of skill ordinarily exercised by members of the profession currently employing similar methods. No warranty, with respect to the performance of services or products delivered under this agreement, expressed or implied, is made by NORCAL.

We appreciate having the opportunity to provide our services to All Environmental, Inc. on this project. If you have any questions, or require additional geophysical services, please do not hesitate to call.

Respectfully,

NORCAL Geophysical Consultants, Inc.

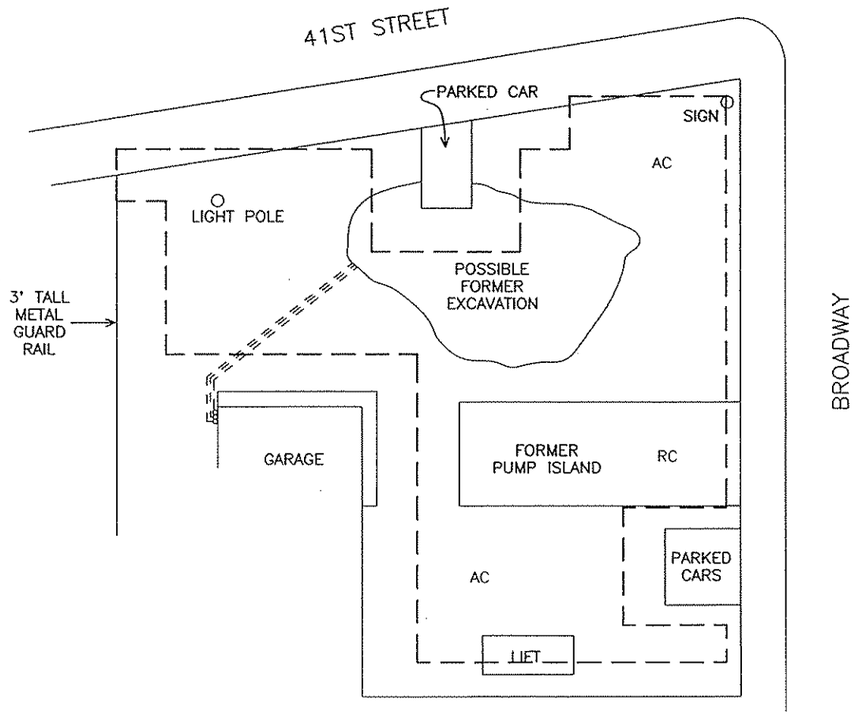
Ted A. Heinse
Staff Geophysicist

Kenneth G. Blom
Geophysicist, GP-887

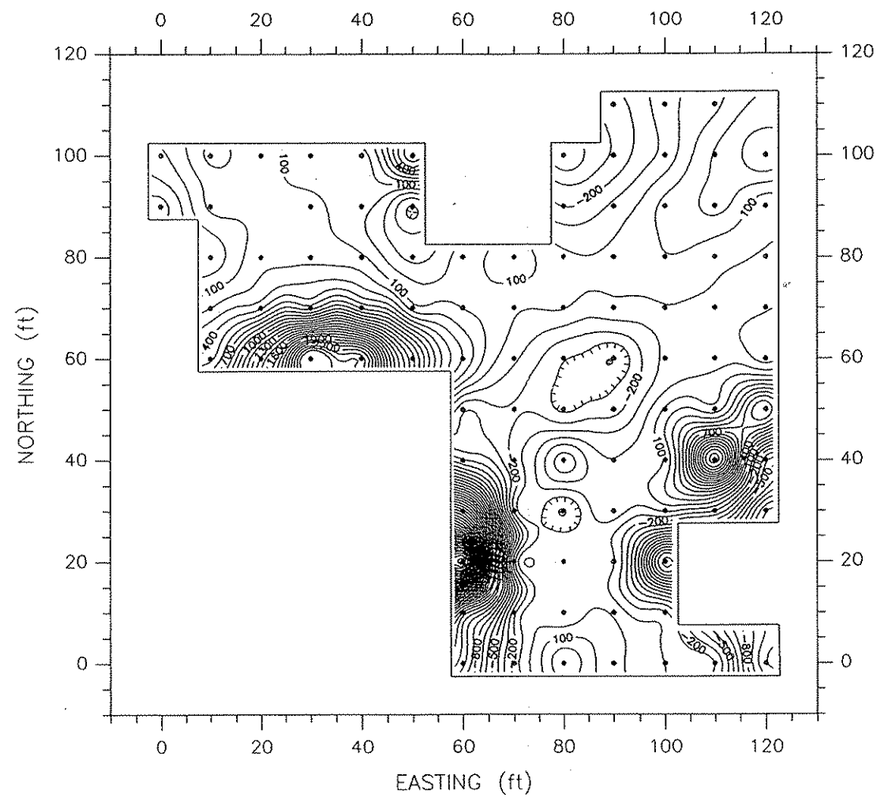
TAH/KGB/jh

Enclosure: Plate 1

LOCATION MAP



VERTICAL MAGNETIC GRADIENT CONTOUR MAP



LEGEND

- VERTICAL MAGNETIC GRADIENT (VMG) CONTOUR
  CONTOUR INTERVAL = 100 g/m
- LIMITS OF VMG SURVEY
- SUSPECTED VENT LINE
- AC — ASPHALT
- RC — REINFORCED CONCRETE

0 30 60
SCALE (FT)

NORCAL GEOPHYSICAL CONSULTANTS INC. NORCAL			GEOPHYSICAL SURVEY MAP 4045 BROADWAY OAKLAND, CA
JOB: 96-387.02	APPR: TAH	DATE: 2/96	PLATE 1