

July 11, 2002

JUL 16 2002

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501

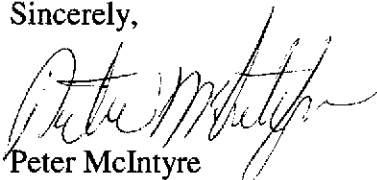
Re: Workplan – Site Investigation
796 66th Avenue
Oakland, California
AEI Project # 5311

Dear Mr. Chan:

Enclosed is the requested workplan prepared by AEI for the above referenced property.

Please call me at (925) 283-6000 to discuss the proposed scope of work.

Sincerely,


Peter McIntyre
Project Manager, Geologist

July 11, 2002

JUL 16 2002

**SITE INVESTIGATION
WORKPLAN**

796 66th Avenue
Oakland, California

AEI Project No. 5311

Prepared For

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501

Prepared By

AEI Consultants
3210 Old Tunnel Road, Suite B
Lafayette, CA 94549
(925) 283-6000

AEI

July 11, 2002

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501

Re: Workplan – Site Investigation
796 66th Avenue
Oakland, California
AEI Project # 5311

Dear Mr. Chan:

The following workplan has been prepared on behalf of the Cruise America, owner of the above referenced property. AEI Consultants (AEI) has been retained by Cruise America to provide environmental engineering and consulting services associated with the release of fuel hydrocarbons from the recently removed underground storage tank. This workplan has been prepared in response to a request by the Alameda County Health Care Services Agency (ACHCSA) to begin assessment of the nature and extent of the release.

SITE DESCRIPTION AND BACKGROUND

The subject property (hereinafter referred to as the "site" or "property") is located on the southern side of 66th Avenue, between a railroad easement and Coliseum Way, an entrance to the Oakland Coliseum Complex. ~~The southern boundary of the property is the Demon Slough.~~ The property is approximately 4.5 acres in size and is currently occupied by Cruise America, a recreational vehicle rental and sales business. Currently, two buildings exist on the site, surrounded by paved vehicle storage areas. Cruise America acquired the property from McGuire and Hester, a construction company, in August 1988.

~~In February 1987, three underground storage tanks (USTs) were removed from the property by Applied GeoSystems. The tanks consisted of one (1) 1,000 gallon gasoline UST, one (1) 5,000 gallon gasoline UST, and one (1) 3,000 gallon diesel UST.~~ The former areas of these tanks are shown on Figure 2. Soil sample analyses following removal of the tanks indicated that a release of both gasoline and diesel had occurred at the site.

Records were reviewed at the Oakland Fire Services Agency, Office of Emergency Services for information regarding the investigation and/or cleanup of the release. No records were available at the Alameda County Health Care Services Agency (ACHCSA) although they had a file number for the USTs, nor were any records available at the Regional Water Quality Control

Board (RWQCB). Both the RWQCB and the ACHCSA generally would oversee the investigation and cleanup of sites with hazardous materials releases to groundwater resources.

A total of six groundwater monitoring wells and approximately 14 temporary soil borings had been installed at the site between 1987 and 1988 to investigate impacted groundwater associated with ~~both the diesel and gasoline releases~~. Groundwater samples reportedly contained concentrations of 60,000 µg/l of total hydrocarbons and fuel product sheen was observed.

Kaldveer Associates performed a geotechnical investigation on the property in July 1988. According to field observations, significant hydrocarbon odors were noted in seven of the borings advanced; however chemical analyses were not performed.

In August 1988, Purcell, Rhodes, & Associates excavated soil from the area of the former diesel UST ~~and dispensing system~~. Excavation sidewall and bottom soil samples and soil samples from the stockpiled soil reportedly contained concentration of Total Petroleum Hydrocarbons (TPH) ranging from non-detect to 3,400 mg/kg. The soil was reportedly aerated on the western portion of the property; however final sampling or the disposition of the soil is not known. In addition, groundwater with free phase fuel present was reportedly removed from the excavation (assumed to be the diesel UST excavation); however, no details were available on the liquid removal.

The monitoring wells mentioned above could not be located in July 2001, and are assumed either decommissioned and ~~landfilled under asphalt paving~~. It should be noted that site plans in the Applied GeoSystems report were not to scale in showing the locations of the former tanks or sampling, nor were they in later reports that were reviewed. In addition, laboratory reports were incomplete or not included in the reports reviewed by AEI.

As of July 2001, one (1) 10,000 gallon gasoline tank and one (1) 550 gallon waste oil tank existed on the property. No indication of a release for either of the current USTs had been identified during a records review.

In July 2001, ~~AEI~~ was retained to investigate soil and groundwater conditions around the former tank areas, as part of environmental due diligence. Based on research of historical investigation and cleanup records, AEI advanced a total of six (6) soil borings in the locations shown on ~~Figure 2~~. Although low concentrations of TPH as gasoline, TPH as diesel, or benzene, toluene, ethyl benzene, and xylenes (BTEX) were not unexpected, ~~methyl tert butyl ether (MTBE) was~~ detected in the groundwater in one of the borings, SB-1, at 670 µg/l. Based on the low to non-detect concentrations of TPH as gasoline and BTEX in groundwater samples from the borings and the highly soluble and mobile nature of MTBE in groundwater, it was concluded that the MTBE in SB-1 was evidence of a larger MTBE plume.

Upon review of files for two nearby leaking underground storage tank (LUST) cases, it was concluded that the source of the MTBE might have been the on-site 10,000 gallon gasoline UST. Based on these conclusions and in an effort to better characterize the extent of the MTBE plume, AEI advanced ~~an additional five (5) soil borings (labeled SB-7 through SB-11) in September~~

2001. Based on the analyses of groundwater samples, it was evident that the source of the MTBE was the on-site 10,000 gallon gasoline UST.

In December 2001, AEI removed the tank. Soil and groundwater sample analyses confirmed that a release had occurred from this tank. Refer to *Underground Storage Tank Removal Draft Report*, dated March 4, 2002 for details on the tank removal activities.

Please refer to Figure 2 for locations of the borings advanced by AEI and to Figure 3 for details of tank removal sampling locations. Analytical results of soil and groundwater samples collected by AEI are summarized in Tables 1 and 2.

ENVIRONMENTAL SETTING

The ~~Bannon Slough~~ is located along the southern boundary of the property, and is the nearest surface water body. The water levels of the slough are likely influenced by tidal variations and there is likely hydraulic connection between the groundwater encountered in the tank excavation and that of the slough. The site is located at approximately 5 feet above mean sea level and the topography of the area is flat.

Generally the soils beneath the site consisted of engineered fill material from 1 to 3 feet thick. Clays and sandy clays were encountered between 6 and 8 feet below ground surface (bgs). Groundwater was encountered in the borings at between 5 and 7 feet bgs. Groundwater was present in the tank excavation at approximately 6 feet bgs. The water bearing deposits generally consisted of coarse gravels and clayey gravels. In borings SB-10 and SB-11, evidence of anthropogenic debris was encountered at 6 ½ to 7 feet bgs.

SCOPE OF WORK

AEI is proposing a two-fold scope of work to better define the extent of impacted soil and groundwater associated with the release from the former 10,000 gallon gasoline tank. In addition, a preliminary receptor assessment will be performed to better locate suspected well fields and other potential groundwater receptors that may be threatened by the release.

Soil Investigation

The first portion of the investigation will consist of six (6) additional temporary soil borings (labeled ~~SB-12 through SB-17~~) advanced around the former tank excavation to assess the extent of hydrocarbon impacted soils in the immediate vicinity of the release. The locations of the borings were selected based on the results of shallow soil samples collected during the tank removal activities. The proposed borings locations are shown on Figures 2 & 3.

The temporary borings will be advanced with a Geoprobe™ direct-push drilling rig to depths of approximately 10 feet in each boring. Soils will be continuously collected within 2" diameter

acrylic liners. Soil samples will be cut from the liners at approximately 3' to 4' bgs and in the apparent smear zone. Groundwater samples will also be collected from each boring.

It is anticipated that one to two soil samples and one groundwater sample will be analyzed from each boring. The selected samples will be analyzed for TPH as gasoline, BTEX and MTBE by EPA method 8015M/8020 and for lead [EPA method 6010 (TTLC extraction for soils) and EPA method 239.2 (dissolved)]. Selected soil samples and each groundwater sample will be analyzed for MTBE by EPA method 8260B. Please note that the fuel oxygenates DIPE, ETBE, TAME, and tertiary-butanol were not detected by EPA method 8260 during the previous groundwater investigation.

TPH B 3

Groundwater Investigation

~~The second portion of the investigation will consist of the installation of five (5) monitoring wells (labeled MW-1 through MW-5).~~ The well locations were chosen based on previous groundwater sample analytical results to begin a characterization of the extent and dynamics of the dissolved phase hydrocarbon plume.

~~Well MW-1 will be constructed with 4" diameter PVC well casing and wells MW-2 through MW-5 will be constructed of 2" diameter casing.~~ Each well will be screened from 4' bgs to 14' bgs. The wells will be installed with a hollow stem auger drilling rig, running 8 ¼ or 10 ½ inch diameter augers, depending on the size of the well casing to be installed. A sand pack will be installed in the annulus of each well to 1 foot above the screen interval. A bentonite seal will be placed above the sand and the remainder of the boring will be sealed with cement grout.

Soil samples will be collected at 5' intervals during the well installation phase of the project with a split spoon sampler advanced ahead of the auger bit. Samples will be utilized to characterize the sediments beneath the site and for possible chemical analyses.

The wells will be developed no sooner than 3 days after setting the well seals by surging, bailing, and purging to remove accumulated fines from the casing and sand pack.

Each well will be surveyed relative to each other, mean sea level, and a known datum by a California licensed land surveyor.

Monitoring and sampling will occur on a quarterly basis for a period of one year, with the first episode to occur within approximately 1 week of well development. Water levels will be measured in each well and the wells will be purged of approximately 3 well volumes of water prior to sample collection. Monitoring parameters will include temperature, pH, specific conductivity, and dissolved oxygen, and samples will be analyzed for TPH as gasoline, BTEX, and MTBE (EPA methods 8015, 8020 and 8260) and dissolved lead. If a strong correlation between MTBE concentrations by EPA method 8020 and 8260 is observed, method 8260 will be removed from the analytical suite.

Receptor Survey

The proposed receptor survey will include an area reconnaissance, review of area maps, and a survey of registered wells in the area to be performed by the Department of Water Resource. In addition, AEI will research the suspected Fitchburg and Damon well fields, as they relate to this release. Results of the receptor survey will be presented with the results of the soil and groundwater investigation.

Waste Storage

Drill cuttings will be stored in 55-gallon drums, pending the results of sample analyses. On-site treatment or off-site disposal of cuttings is not included in this scope of work. Equipment rinse water and well purge water will be stored in 55-gallon drums. It is likely that waste materials will be transported from the site under appropriate manifest to an approved disposal or recycling facility.

REPORTING

Following receipt of all analytical and survey data, a technical report will be prepared. The report will include figures, data tables, logs of borings, and interpretation of the contaminant distributions. Contaminants of concern will be identified and recommendations will be made if further investigation appears necessary. The results of the receptor survey will be evaluated along with the distribution of contaminants to assess whether immediate interim remedial action is warranted.

Quarterly monitoring reports will be submitted within approximately 1 month of monitoring and sample collection.

SITE SAFETY

Prior to commencement of field activities, a site safety meeting will be held at a designated command post near the working area. Emergency procedures will be outlined at this meeting, including an explanation of the hazards of the known or suspected chemicals of interest. All site personnel will be in Level D personal protection equipment, which is the anticipated maximum amount of protection needed. A working area will be established with barricades and warning tape to delineate the zone where hard hats and steel-toed shoes must be worn, and where unauthorized personnel will not be allowed. A site safety plan conforming to Part 1910.120 (i) (2) of 29 CFR will be on site at all times during the project.


ESTIMATED SCHEDULE

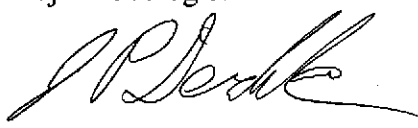
Permits will be obtained from Alameda County Public Works Department for boring and well construction once a scope of work has been agreed upon by Cruise America, ACHCSA, and AEI. It is anticipated that the project will be completed within approximately 8 to 12 weeks

from permitting through submission of the final report. ACHCSA will be notified of the field sampling activities to schedule a site visit if necessary.

AEI requests your comments and approval to proceed with this project. Please contact either of the undersigned at (925) 283-6000 if you have any questions or need any additional information.

Sincerely,
AEI Consultants


Peter McIntyre
Project Geologist


Joseph P. Derhake, PE
Principal

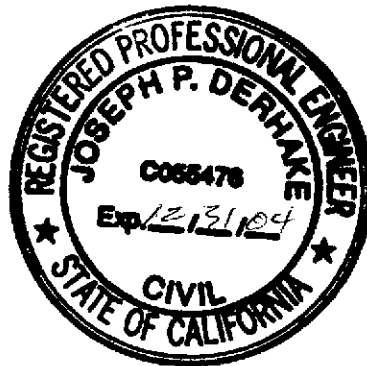


Figure 1 – Site location map

Figure 2 – Site Plan

Figure 3 – Tank Detail

Table 1 – Soil Sample Analytical Data

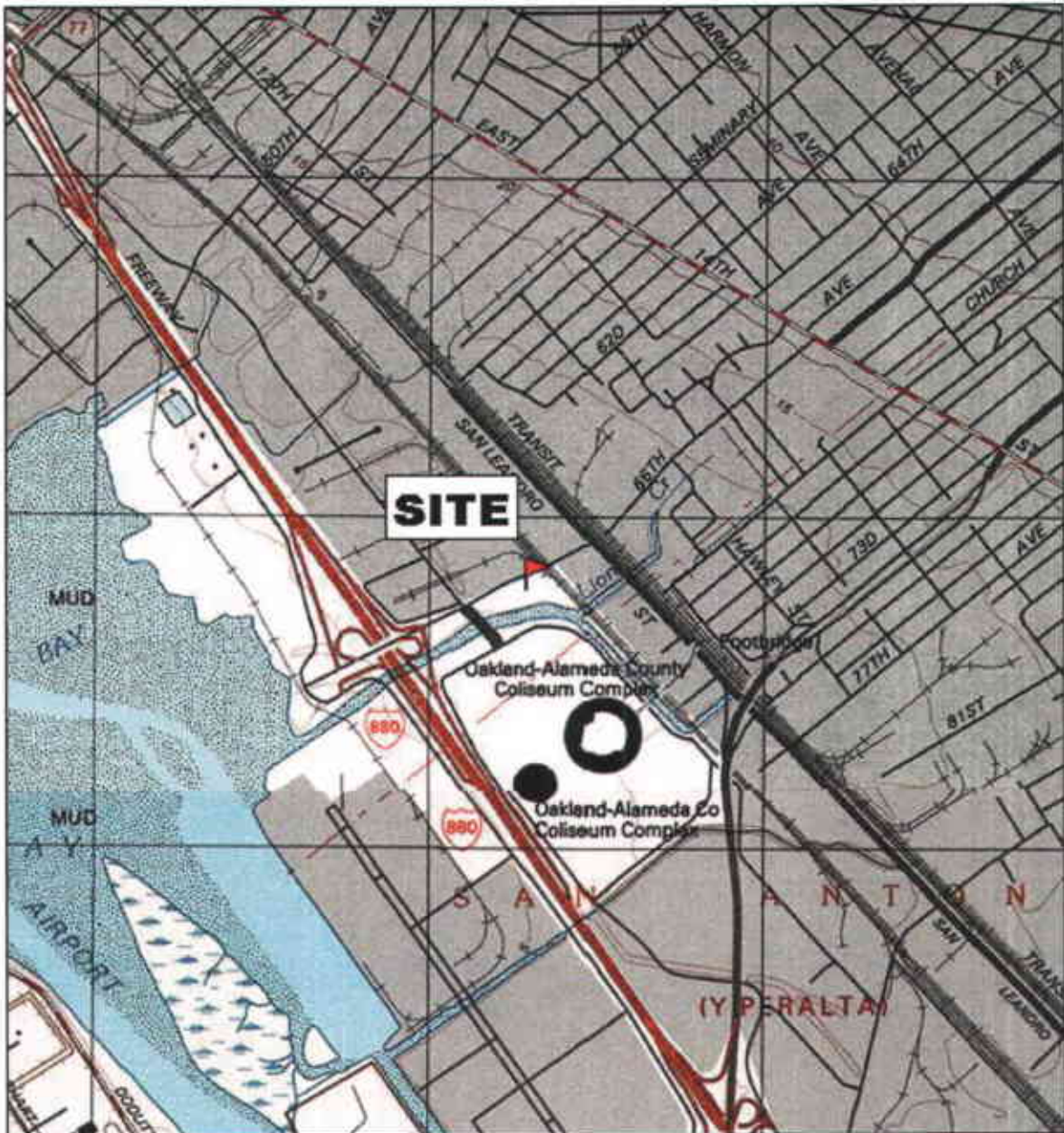
Table 2 – Groundwater Sample Analytical Data

Attachments – Previous Analytical Reports (SB-1 through SB-11)

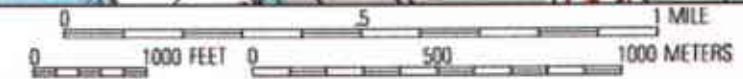
Distribution: Mr. Cory Kauffman
Cruise America
11 West Hampton Avenue
Mesa, AZ 85210

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501

AEI Files (Project # 5311)



TN ↗ MN
15°

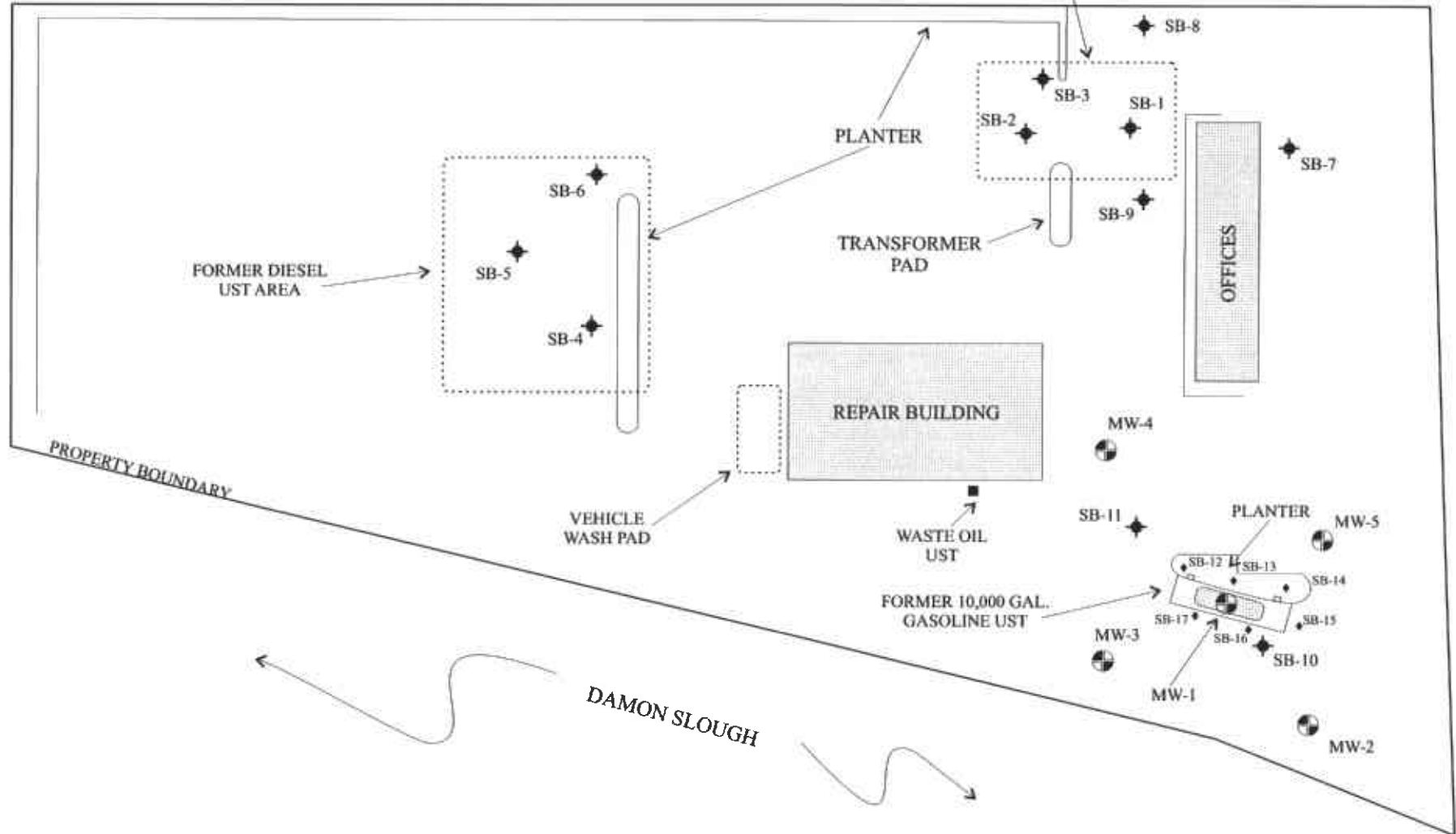


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<p>AEI CONSULTANTS 3210 OLD TUNNEL RD, STE B, LAFAYETTE, CA</p>	
<p>SITE LOCATION MAP</p>	
<p>796 66TH AVENUE OAKLAND, CALIFORNIA</p>	<p>FIGURE 1 PROJECT NO. 5311</p>

66TH AVENUE

FORMER GASOLINE
UST AREA



RAILROAD EASEMENT

PROPERTY BOUNDARY

DAMON SLOUGH

AEI CONSULTANTS

3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

SITE PLAN

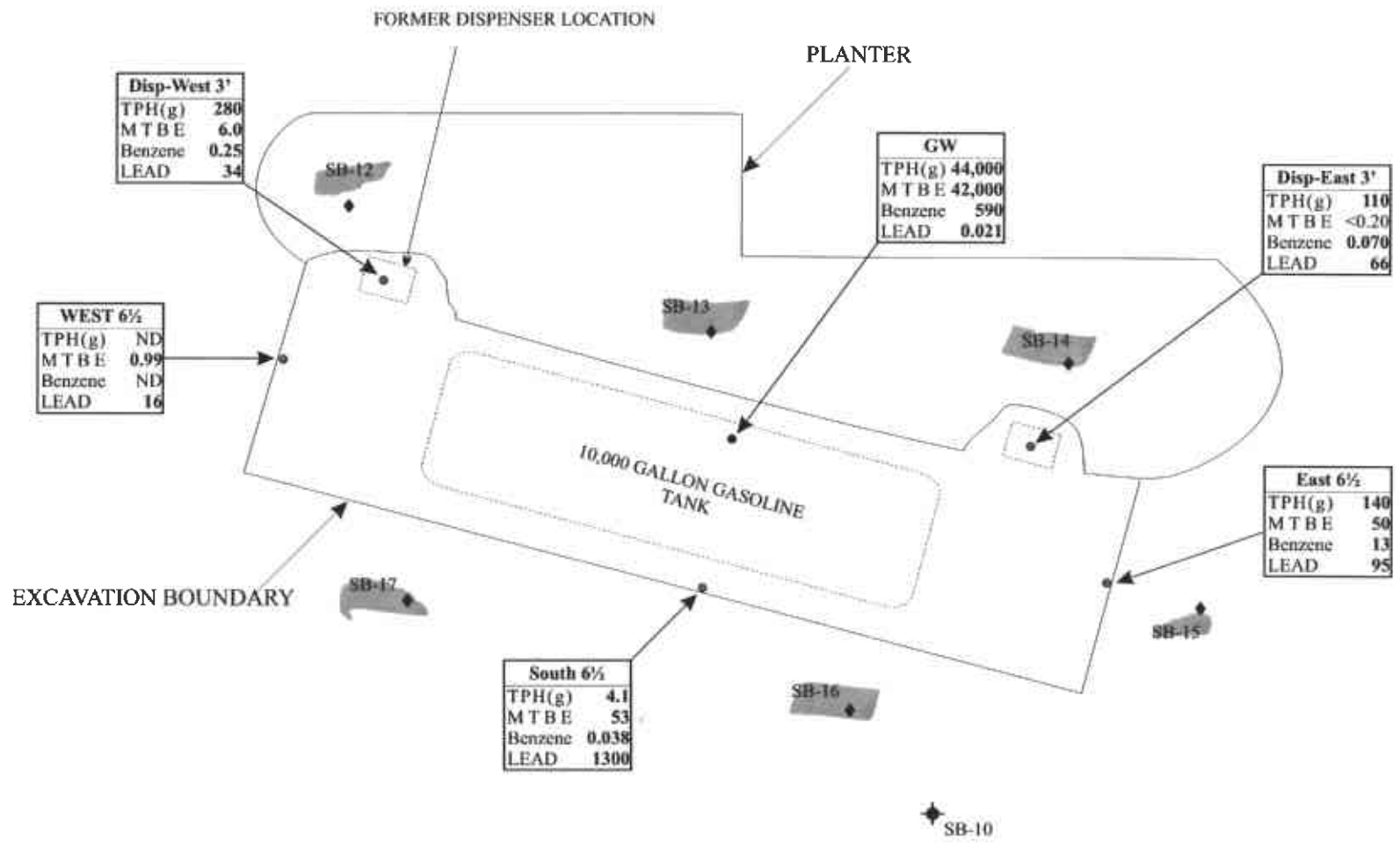
796 66th AVENUE
OAKLAND, CALIFORNIA

FIGURE 2
AEI PROJECT NO 5311

- SB-X ◆ LOCATION OF BORINGS
ADVANCED BY AEI
July & September 2001
- MW-1 ● PROPOSED MONITORING
WELL LOCATIONS
- SB-X ◆ PROPOSED BORING
LOCATIONS

0' 25' 50' 75'





KEY

- GROUNDWATER SAMPLE LOCATION
 - SOIL SAMPLE LOCATION
- TPH(g) TOTAL PETROLEUM HYDROCARBON AS GASOLINE
 MTBE METHYL TERTIARY BUTYL ETHER
 LEAD TOTAL LEAD
 GROUNDWATER RESULTS IN µg/L.
 SOIL SAMPLE RESULTS IN mg/kg
- ◆ PROPOSED TEMPORARY BORING LOCATION

AEI Consultants
 3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

SCALE: 1" = 11' DRAWN BY: J. ORMEROD DATE: 12/17/01

TANK DETAIL

796 66TH AVENUE
 OAKLAND, CALIFORNIA

FIGURE 3
 AEI PROJECT NO 5311



**Table 1:
Soil Sample Analytical Data**

Sample ID	Date	TPH as gasoline mg/kg	TPH as diesel mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes mg/kg
SB-1 7'	7/17/2001	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005
SB-2 6'	7/17/2001	<1.0	26	<0.05	<0.005	<0.005	<0.005	<0.005
SB-2 10'	7/17/2001	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005
SB-3 4'	7/17/2001	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005
SB-4 6'	7/17/2001	<1.0	2.8	<0.05	<0.005	<0.005	<0.005	<0.005
SB-5 4'	7/17/2001	5.0	13	<0.05	0.1600	0.058	0.11	0.21
SB-5 7'	7/17/2001	9.7	37	<0.05	0.059	0.012	0.007	0.056
SB-6 7'	7/17/2001	1.5	11	<0.05	0.008	0.018	<0.005	<0.005
SB-6 15'	7/17/2001	<1.0	<1.0	<0.05	<0.005	<0.005	<0.005	<0.005
SB-8 4'	9/28/2001	16	-	<0.05	0.053	0.11	0.031	0.14
SB-8 11'	9/28/2001	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005
Disp-East 3"	11/30/2001	110	-	<0.20	0.07	1.2	0.16	5.2
Disp-West 3'	11/30/2001	280	-	6	0.25	7.5	4.1	26
South 6 1/2	11/30/2001	4.1	-	53	0.038	0.16	0.034	0.19
West 6 1/2	11/30/2001	<50	-	0.99	<0.005	0.014	0.011	0.046
East 6 1/2	11/30/2001	140	-	50	13	3.9	7.9	18
MDL		1.0	1.0	0.05	0.005	0.005	0.005	0.005

MDL = Method Detection Limit

ND = Not detected above the Method Detection Limit (unless otherwise noted)

ug/kg = micrograms per kilogram (ppb)

mg/kg = milligrams per kilogram (ppm)

- = Sample not analyzed by this method

**Table 2:
Groundwater Sample Analytical Data**

Sample ID	Date	TPH as gasoline µg/L	TPH as diesel µg/L	MTBE µg/L (EPA 8020) (EPA 8260*)	Benzene µg/L	Toluene µg/L	Ethyl- benzene µg/L	Xylenes µg/L
SB-1 W	7/17/2001	<50	-	650	-	0.63	<0.5	<0.5
SB-2 W	7/17/2001	<50	-	<5.0	-	<0.5	<0.5	<0.5
SB-3 W	7/17/2001	120	-	<5.0	-	<0.5	4.6	<0.5
SB-4 W	7/17/2001	<50	990	<5.0	-	<0.5	<0.5	<0.5
SB-5 W	7/17/2001	68	410	<5.0	-	<0.5	0.66	<0.5
SB-6 W	7/17/2001	240	590	<5.0	-	<0.5	2.9	<0.5
SB-7 W	9/28/2001	<50	-	<5.0	<0.5	<0.5	0.74	<0.5
SB-9 W	9/28/2001	<50	-	670	630	<0.5	1.0	<0.5
SB-10 W	9/28/2001	<500	-	15,000	13000	<2.0	<2.0	2.5
SB-11 W	9/28/2001	58	-	1,900	1700	2.4	1.8	<0.5
GW**	11/30/2001	44,000	-	42,000	-	590	5100	640
MDL		50	50	5.0		0.5	0.5	0.5

MDL = Method Detection Limit

ND = Not detected above the Method Detection Limit (unless otherwise noted)

µg/L = micrograms per liter (ppb)

mg/L = milligrams per liter (ppm)

- = Sample not analyzed by this method

* DIPE, ETBE, TAME, & tert Butanol were not detected above reporting limits by EPA method 8260

** Sample GW was collected from standing water within the tank excavation

ATTACHMENTS

SAMPLE ANALYTICAL DOCUMENTATION



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3210 Old Tunnel Road, Suite B Lafayette, CA 94549-4157	Client Project ID: #4557; Cruise America	Date Sampled: 09/28/01
		Date Received: 09/28/01
	Client Contact: Peter McIntyre	Date Extracted: 09/28/01
	Client P.O:	Date Analyzed: 09/28/01

10/05/01

Dear Peter:

Enclosed are:

- 1). the results of 6 samples from your #4557; Cruise America 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.

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 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3210 Old Tunnel Road, Suite B Lafayette, CA 94549-4157	Client Project ID: #4557; Cruise America	Date Sampled: 09/28/01
	Client Contact: Peter McIntyre	Date Received: 09/28/01
	Client P.O:	Date Extracted: 10/05/01
		Date Analyzed: 10/05/01

Oxygenated Volatile Organics By GC/MS

EPA method 8260 modified

Lab ID	79832	79833	79834	79835	Reporting Limit	
Client ID	SB-7 W	SB-9 W	SB-10 W	SB-11 W		
Matrix	W	W	W	W	S	W
Compound	Concentration*				ug/kg	ug/L
Di-isopropyl Ether (DIPE)	ND	ND<10	ND<330	ND<25	5.0	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	ND<10	ND<330	ND<25	5.0	1.0
Methyl-tert Butyl Ether (MTBE)	ND	630	13,000	1700	5.0	1.0
tert-Amyl Methyl Ether (TAME)	ND	ND<10	ND<330	ND<25	5.0	1.0
tert-Butanol	ND	ND<50	ND<1700	ND<130	25	5.0

Surrogate Recoveries (%)

Dibromofluoromethane	105	105	103	104	
Comments:	i	i	i	i	

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipes in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L
 ND means not detected above the reporting limit; N/A means surrogate not applicable to this analysis
 (h) lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content

DHS Certification No. 1644

 Edward Hamilton, Lab Director



McCAMPBELL ANALYTICAL INC.

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 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT

EPA 8015m + 8020

Date: 09/28/01-09/29/01

Extraction: EPA 5030

Matrix: Soil

Compound	Concentration: ug/kg			%Recovery		RPD
	Sample	MS	MSD	MS	MSD	

SampleID: 92801

Instrument: GC-3

Surrogate1	ND	103.000	102.000	100.00	103	102	1.0
Xylenes	ND	0.320	0.324	0.30	107	108	1.2
Ethylbenzene	ND	0.106	0.107	0.10	106	107	0.9
Toluene	ND	0.105	0.107	0.10	105	107	1.9
Benzene	ND	0.105	0.106	0.10	105	106	0.9
MTBE	ND	0.105	0.110	0.10	105	110	4.7
TPH (gas)	ND	0.833	0.842	1.00	83	84	1.1

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 100$$

RPD means Relative Percent Deviation



McCAMPBELL ANALYTICAL INC.

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<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT

EPA 8015m + 8020

Date: 09/28/01-09/29/01

Extraction: EPA 5030

Matrix: Water

Compound	Concentration: ug/L			%Recovery		RPD
	Sample	MS	MSD	MS	MSD	

SampleID: 92701

Instrument: GC-12

Surrogate1	ND	107.0	99.0	100.00	107	99	7.8
Xylenes	ND	35.8	33.5	30.00	119	112	6.6
Ethylbenzene	ND	11.4	11.4	10.00	114	114	0.0
Toluene	ND	11.0	10.8	10.00	110	108	1.8
Benzene	ND	10.4	10.1	10.00	104	101	2.9
MTBE	ND	9.1	8.8	10.00	91	88	3.4
TPH (gas)	ND	87.2	92.0	100.00	87	92	5.4

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 100$$

RPD means Relative Percent Deviation



McCAMPBELL ANALYTICAL INC.

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

QC REPORT

VOCs (EPA 8240/8260)

Date: 10/05/01-10/06/01

Extraction: EPA 5030

Matrix: Water

Compound	Concentration: ug/L			%Recovery		RPD
	Sample	MS	MSD	MS	MSD	

SampleID: 92801

Instrument: GC-10

Surrogate	ND	96.0	96.0	100.00	96	96	0.0
tert-Amyl Methyl Ether	ND	10.1	9.9	10.00	101	99	2.0
Methyl tert-Butyl Ether	ND	10.7	10.5	10.00	107	105	1.9
Ethyl tert-Butyl Ether	ND	10.3	10.2	10.00	103	102	1.0
Di-isopropyl Ether	ND	10.2	10.1	10.00	102	101	1.0
Toluene	ND	9.8	10.0	10.00	98	100	2.0
Benzene	ND	10.7	10.8	10.00	107	108	0.9
Chlorobenzene	ND	10.4	10.6	10.00	104	106	1.9
Trichloroethane	ND	8.4	8.3	10.00	84	83	1.2
1,1-Dichloroethene	ND	9.6	9.4	10.00	96	94	2.1

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 100$$

RPD means Relative Percent Deviation

280292ale.444.doc

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HOUR 48 HOUR 5 DAY

Report To: Peter McIntyre

Bill To:

Company: All Environmental

3210 Old Tunnel Road, Suite B

Lafayette, CA 94549-4157

Tele: (925) 283-6000

Fax: (925) 283-6121

Project #: 4557

Project Name: Cruise America

Project Location: Oatland, CA

Sampler Signature: *[Signature]*

Analysis Request

Other Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED		BTEX & TPH as Gas (602/8020 + 8015) MTBE TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Fuel Oxy's (8260 B) MTBE	Other	Comments			
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl																		HNO ₃	Other	
SB-7 W		9/28/01		3	WEX	X					X	X																				79832
SB-9 W				4	"	X					X	X																				79833
SB-10 W				5	"	X					X	X																				79834
SB-11 W				5	"	X					X	X																				79835
SB-7 3.5'				1	WEX	X					X	X																				79836 #
SB-8 4'				1	"	X					X	X																				79837
SB-8 5'				1	"	X					X	X																				79838 #
SB-8 11'				1	"	X					X	X																				79839
SB-9 3.5'				1	"	X					X	X																				Hold
SB-10 4'				1	"	X					X	X																				Hold
SB-11 3.5'				1	"	X					X	X																				Hold

Relinquished By: <i>[Signature]</i>	Date: 9/28/01	Time: 5:32 PM	Received By: Yen Cao	Date: 9/28/01
Relinquished By:	Date:	Time:	Received By:	Date:
Relinquished By:	Date:	Time:	Received By:	Date:

Remarks:

ICE GOOD CONDITION PRESERVATION APPROPRIATE CONTAINERS.

VOAS O&G METALS OTHER

79840 #
79841 #
79842 #



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3210 Old Tunnel Road, Suite B Lafayette, CA 94549-4157	Client Project ID: #4434	Date Sampled: 07/17/01
		Date Received: 07/17/01
	Client Contact: Peter McIntyre	Date Extracted: 07/17/01
	Client P.O:	Date Analyzed: 07/17/01

07/24/01

Dear Peter:

Enclosed are:

- 1). the results of 15 samples from your #4434 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



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All Environmental, Inc. 3210 Old Tunnel Road, Suite B Lafayette, CA 94549-4157	Client Project ID: #4434	Date Sampled: 07/17/01
		Date Received: 07/17/01
	Client Contact: Peter McIntyre	Date Extracted: 07/17-07/24/01
	Client P.O:	Date Analyzed: 07/17-07/24/01

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	Ethyl-benzene	Xylenes	% Recovery Surrogate
72708	SB-1 7'	S	ND	ND	ND	ND	ND	ND	111
72709	SB-2 6'	S	ND	ND	ND	ND	ND	ND	100
72710	SB-2 10'	S	ND	ND	ND	ND	ND	ND	88
72711	SB-3 4'	S	ND	ND	ND	ND	ND	ND	101
72712	SB-4 6'	S	ND	ND	ND	ND	ND	ND	100
72713	SB-5 4'	S	5.0,a	ND	0.16	0.058	0.11	0.21	---#
72714	SB-5 7'	S	9.7,a	ND	0.059	0.012	0.007	0.056	---#
72716	SB-6 7'	S	1.5,a	ND	0.0084	0.018	ND	ND	100
72718	SB-6 15'	S	ND	ND	ND	ND	ND	ND	96
72719	SB-1 W	W	ND	650	0.63	ND	ND	ND	101
72720	SB-2 W	W	ND,i	ND	ND	ND	ND	ND	100
72721	SB-3 W	W	120,g,b,i	ND	ND	4.6	ND	ND	101
72722	SB-4 W	W	ND,i	ND	ND	ND	ND	ND	105
72723	SB-5 W	W	68,b,i	ND	ND	0.66	ND	ND	99
72724	SB-6 W	W	240,j,i	ND	ND	2.9	ND	ND	119
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.



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<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3210 Old Tunnel Road, Suite B Lafayette, CA 94549-4157	Client Project ID: #4434	Date Sampled: 07/17/01
	Client Contact: Peter McIntyre	Date Received: 07/17/01
	Client P.O.:	Date Extracted: 07/17/01
		Date Analyzed: 07/18-07/23/01

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
72709	SB-2 6'	S	26,b,g	102
72712	SB-4 6'	S	2.8,g	96
72713	SB-5 4'	S	13,g	101
72714	SB-5 7'	S	37,g,b	118
72716	SB-6 7'	S	11,g	103
72718	SB-6 15'	S	ND	108
72722	SB-4 W	W	990,g,i	114
72723	SB-5 W	W	410,g,b,i	101
72724	SB-6 W	W	590,g,b,i	95

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



QC REPORT

EPA 8015m + 8020

Date: 07/17/01

Matrix: Soil

Compound	Concentration: ug/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	

SampleID: 71201

Extraction: EPA 5030

Instrument: GC-12

Surrogate1	ND	97.000	107.000	100.00	97	107	9.8
Xylenes	ND	0.318	0.319	0.30	106	106	0.3
Ethylbenzene	ND	0.103	0.107	0.10	103	107	3.8
Toluene	ND	0.102	0.112	0.10	102	112	9.3
Benzene	ND	0.102	0.112	0.10	102	112	9.3
MTBE	ND	0.107	0.110	0.10	107	110	2.8
TPH (gas)	ND	0.899	0.871	1.00	90	87	3.2

SampleID: 71301

Extraction: TTLC

Instrument: MB-1

Oil & Grease	ND	19.700	19.800	20.80	95	95	0.5
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SampleID: 70501

Extraction: EPA 3550

Instrument: GC-6 A

Surrogate1	ND	92.000	90.000	100.00	92	90	2.2
TPH (diesel)	ND	170.000	177.500	150.00	113	118	4.3

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 100$$

RPD means Relative Percent Deviation



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QC REPORT

EPA 8015m + 8020

Date: 07/18/01

Matrix: Soil

Compound	Concentration: mg/kg				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	

SampleID: 71301

Extraction: EPA 5030

Instrument: GC-7

Surrogate1	ND	93.000	94.000	100.00	93	94	1.1
Xylenes	ND	0.277	0.288	0.30	92	96	3.9
Ethylbenzene	ND	0.087	0.085	0.10	87	85	2.3
Toluene	ND	0.095	0.095	0.10	95	95	0.0
Benzene	ND	0.086	0.087	0.10	86	87	1.2
MTBE	ND	0.093	0.093	0.10	93	93	0.0
TPH (gas)	ND	1.084	1.167	1.00	108	117	7.4

SampleID: 71501

Extraction: TTLC

Instrument: MB-1

Oil & Grease	ND	20.000	20.000	20.80	96	96	0.0
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SampleID: 71501

Extraction: EPA 3550

Instrument: GC-2 A

Surrogate1	ND	95.000	95.000	100.00	95	95	0.0
TPH (diesel)	ND	148.500	148.500	150.00	99	99	0.0

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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PACHECO, CA 94553

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD
TURN AROUND TIME

RUSH 24 HOUR 48 HOUR 5 DAY

Report To: Peter McIntyre

Bill To: *Same*

Company: All Environmental

3210 Old Tunnel Road, Suite B

Lafayette, CA 94549-4157

Tele: (925) 283-6000

Fax: (925) 283-6121

Project #: *4434*

Project Name: *4434*

Project Location: *96th Ave Oakland*

Sampler Signature: *[Signature]*

Analysis Request

Other Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Other	Comments																		
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO ₃	Other			BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239-2/6010)	RCI			
SB-1	7'	<i>7/11</i>		1	<i>Red</i>	X	X									X	X																	72708
SB-2	6'		1	"	X	X											X	X																72709
SB-2	10'		1	"	X	X											X	X																72710
SB-3	4'		1	"	X	X											X	X																72711
SB-4	6'		1	"	X	X											X	X																72712
SB-5	4'		1	"	X	X											X	X																72713
SB-5	7'		1	"	X	X											X	X																72714
SB-6	4'		1	"	X	X											X	X																72715
SB-6	7'		1	"	X	X											X	X																Hold
SB-6	11'		1	"	X	X											X	X																Hold
SB-6	15'	1	"	X	X											X	X																Hold	
SB-1 W				2		X										X	X																	72719
SB-2 W				4		X										X	X																	72720
SB-3 W				3		X										X	X																	72721
SB-4 W				3		X										X	X																	72722

20
150
15
15

Relinquished By:	Date:	Time:	Received By:
<i>[Signature]</i>	<i>7/11/00</i>	<i>1:32</i>	<i>[Signature]</i>
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

