

# SPRINGTOWN GAS

909 BLUEBELL DRIVE  
LIVERMORE, CA 94551

RECEIVED

11:21 am, Jul 08, 2008

Alameda County  
Environmental Health

July 2, 2008

**Mr. Jerry Wickham**

Hazardous Materials Specialist  
ACHCSA-EHS  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

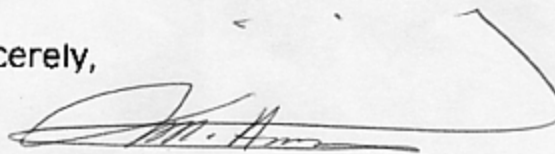
**SUBJECT: OFF-SITE DRILLING AND VAPOR EXTRACTION  
PILOT TEST AT THE PROPERTY**  
909 Bluebell Drive, Livermore, CA

Dear Mr. Wickham:

Enclosed, please find a copy of the July 1, 2008 subject Off-Site Drilling and Vapor Extraction Pilot Test report prepared by my consultant, Enviro Soil Tech Consultants.

I declare, under penalty of perjury, that the information and/or recommendations contained in this report are true and correct to the best of my knowledge.

Sincerely,



MASOOD AMINI

**OFF-SITE DRILLING AND VAPOR EXTRACTON  
PILOT TEST AT THE PROPERTY  
LOCATED AT 909 BLUEBELL DRIVE  
LIVERMORE, CALIFORNIA  
JULY 1, 2008**

**PREPARED FOR:  
MR. MASOOD AMINI FILABADI  
SPRINGTOWN GAS  
909 BLUEBELL DRIVE  
LIVREMORE, CALIFORNIA 94551**

**BY:  
ENVIRO SOIL TECH CONSULTATNS  
131 TULLY ROAD  
SAN JOSE, CALIFORNIA 95111**

**ENVIRO SOIL TECH CONSULTANTS**

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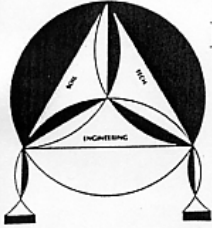
**Page Number**

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Photographs

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Accutest Laboratories Reports and Chain-of Custody Records



## **ENVIRO SOIL TECH CONSULTANTS**

Environmental & Geotechnical Consultants

*131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111*

Tel: (408) 297-1500

Fax: (408) 292-2116

July 1, 2008

File No. 10-93-567-ST

**Mr. Masood Amini Filabadi**  
Springtown Gas  
909 Bluebell Drive  
Livermore, California 94551

**SUBJECT: OFF-SITE DRILLING AND VAPOR EXTRACTION  
PILOT TEST AT THE PROPERTY**

Located at 909 Bluebell Drive, in  
Livermore, California

Dear Mr. Filabadi:

This report presents the results of field and laboratory activities performed by Enviro Soil Tech Consultants (ESTC) for the subject property. These activities were requested and approved by the Alameda County Health Care Services Agency (ACHCSA) in correspondence issued in March 26, 2008.

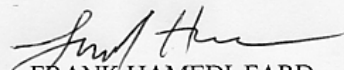
The investigation of gasoline contamination at the site was extended in May 2008, when five borings were drilled on adjacent properties in an effort to delineate the lateral extent of gasoline in the subsurface. In addition, two wells were installed on your property in May and a vapor extraction pilot test was conducted in these wells in June. The purpose of that test was to determine whether soil vapor extraction is a viable method for remediating the contamination beneath the site.

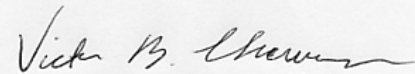
File No. 10-93-567-ST  
July 1, 2008

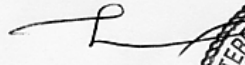
If you have any questions or require additional information, please feel free to contact our office at 408-297-1500 or via email at [info@envirosoiltech.com](mailto:info@envirosoiltech.com).

Sincerely yours,

**ENVIRO SOIL TECH CONSULTANTS**

  
FRANK HAMEDI-FARD  
GENERAL MANAGER

  
VICTOR B. CHERVEN, Ph.D.  
P.G. #3475

  
LAWRENCE KOO  
C. E. #34928



**ENVIRO SOIL TECH CONSULTANTS**

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## **BACKGROUND**

Enviro Soil Tech Consultants (ESTC) conducted an initial subsurface investigation of gasoline contamination at 909 Bluebell Drive in Livermore in February 2007. The site is located at the intersection of Springtown Boulevard and Bluebell Drive (Figure 1). The results were presented in a *Preliminary Investigation and Evaluation Report* (PIER) that was submitted to the regulatory agency (Alameda County Health Care Services Agency) in March. Based on those results, the health care agency requested further investigation, and ESTC drilled two cone penetrometer test (CPT) borings in June. Those results were reported in the *Cone Penetrometer Drilling* report, which was subsequently followed by the installation of three monitor wells in August. The wells were monitored and sampled in September (third quarter), and again in December (fourth quarter).

Due to the presence of gasoline constituents in soil and groundwater samples, ACHCSA requested further investigation of the extent of the contamination. ESTC submitted a work plan on your behalf in December 2007 and subsequently revised it in February. The work was performed in May and June, and this report presents the results.

## **SCOPE OF WORK**

- Obtain drilling permits from Alameda County and adjacent property owners.
- Mark proposed drilling locations and contact Underground Services Alert to mark nearby utility lines.
- Mobilize a trailer-mounted direct-push drilling rig (Geoprobe®) and drill five soil borings and two vapor extraction test wells.
- Collect soil and water samples from each boring.

July 1, 2008

- Submit groundwater samples to a state-certified analytical laboratory for hydrocarbon analysis.
- Mobilize a trailer-mounted vapor extraction unit consisting of an internal combustion (IC) engine and related hoses and gauges.
- Conduct a short-term vapor extraction test in wells VE-1 and VE-2 while measuring induced vacuum in nearby observation wells.
- Collect a vapor sample from the test well.
- Submit vapor sample to state-certified testing laboratory.
- Review the results and prepare a report.

## **FIELD PROCEDURES**

### *DRILLING AND SAMPLING*

The Geoprobe® was mobilized to the site on May 9. Five borings were advanced, at the locations shown in Figure 2. Boring GP-6 was to be drilled in the median island in Bluebell Drive, but numerous underground utilities in that area precluded drilling there. The borings were drilled to a depth of 20 feet and were continuously sampled in clear polyethylene liners. After drilling was completed, the liners were examined, samples were extracted at 5-foot intervals for laboratory analysis, and boring logs were prepared. The logs are contained in Appendix "E". The soil samples were covered with plastic end caps, labeled, and placed into a cooled ice chest for transport to the analytical laboratory.

After each boring was completed, small-diameter PVC casing was temporarily run to the bottom and a bailer was lowered through it to collect a groundwater sample. The samples were poured into 40-ml glass vials and preserved in the ice chest for subsequent laboratory analysis. The sampling was conducted in accordance with ESTC's Standard Operation Procedures (Appendix "D").

Two vapor extraction test wells were installed on May 7, 2008. The primary test well (VE-1) was located in the area where the highest concentrations of gasoline contaminants had previously been detected. The second well, intended primarily as an observation well to determine the radius of influence of the test well, was located in the planter area near the northern site boundary (Figure 2). Both wells were drilled with the Geoprobe®, which was equipped with 8-inch diameter hollow-stem augers. In accordance with the work plan, the wells were drilled to a depth of 10 feet and were constructed with 7 feet of screened 4-inch diameter PVC casing. The screened interval is within the unsaturated zone above the water table.

### *VAPOR EXTRACTION PILOT TESTING*

CEECON provided the equipment and supervised the vapor extraction test under contract to ESTC on June 6, 2008. The vapor-extraction equipment consisted of: a six-cylinder internal combustion (I.C.) engine; a sampling pump; instrumentation for measuring air flow, air velocity, air pressure, temperature, and volatile organic compound concentrations; and polyvinyl chloride (PVC) piping, fittings, and, wellhead connections. The VEPT was conducted in accordance with Bay Area Air Quality Management District (BAAQMD) guidelines.



There is often a pressure difference between the vapor-extraction wells and atmospheric pressure. This may be caused by a number of factors including fluctuations in groundwater elevation and gradient and soil temperature change. (The site is largely covered with asphalt/concrete, and the VEPT was performed on a hot day.) ESTC measured the change in *induced vacuum* against the initial pressure readings rather than atmospheric pressure to isolate the effects of the vapor-extraction equipment.

ESTC initially tested VE-1 while monitoring the effects on nearby observation wells STMW-1, STMW-2, and VE-2. A vacuum was applied to well VE-1 for approximately 60 minutes. Induced vacuum was measured periodically with a magnehelic gauge on each observation well. The initial applied vacuum at VE-1 was 8 inches of water. As requested by ACHCSA, the induced vacuum was increased at 15-minute intervals to evaluate the *air-flow/vacuum* characteristics of the extraction wells for use in a vapor-extraction system (VES). Well *air-flow/vacuum* characteristics are used to estimate the maximum air flow to be extracted from the well, and to assist in sizing a vapor-extraction blower and abatement equipment.

At the end of the test, a Tedlar bag was connected to the sampling port on the IC engine and a vapor sample was collected. The vapor-extraction equipment was operated to evaluate whether the initial hydrocarbon concentrations in extracted vapor would decrease with time, and to collect additional screening data to determine the radius of influence of this vapor-extraction well.

The vapor-extraction equipment was then operated in a similar manner on VE-2, while monitoring its effects on STMW-1, STMW-2, STMW-3, and VE-1. This test lasted approximately 100 minutes. No vapor samples were collected because no organic vapors were detected with the field equipment.

## **RESULTS**

### *LITHOLOGY AND COMPARISON TO ON-SITE BORINGS*

In general, the lithology encountered in the off-site borings was less variable than in the on-site borings. Numerous beds of poorly-sorted and variably colored silty clay or clayey silt were identified in the on-site borings, but most of the off-site borings encountered thicker, more uniform beds of silty clay. However, as we reported in the October 2007 *Preliminary Investigation and Evaluation Report*, several of the on-site borings penetrated a sand bed that varies from clayey to gravely and reaches a maximum thickness in excess of 9 feet in boring GP-4. The bed thins to the east and is only about 3 feet thick in STMW-1 and dies out before reaching GP-1 or GP-5, and the on-site borings suggested that the sand bed has a northerly trend [Figures 3 and 4 (Cross-Section A-A)]. The off-site borings confirm that interpretation, and the sand bed reaches a thickness of more than 10 feet in boring GP-8 (Figure 4 – Cross Section B-B'). The bed thins to the east and west of that (Figure 4 – Cross Section C-C') but becomes coarser grained. In GP-7, the sand is coarse-grained and gray to white in color, and is present between 15 and 18 feet, and in GP-9 it is brown and gravely between 17 and 20 feet.

Both of the vapor extraction wells were completed within the silty clay that overlies the sand bed (see Appendix "E"). Hence, neither well could be screened within a highly permeable zone. It would have been necessary to drill them a few feet deeper in order to reach the sand bed, in which case they would have been screened below the water table and would not have been suitable for vapor extraction.

### *ANALYTICAL RESULTS*

A total of 16 soil samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), volatile aromatics (Benzene, Toluene, Ethylbenzene, and Total Xylenes), gasoline oxygenates (Methyl Tertiary Butyl Ether, Tertiary Butanol, Tertiary Amyl Ether, Di-isopropyl Ether, and Ethyl Tertiary Butyl Ether), and lead scavengers (Ethylene Dibromide and 1,2-Dichloroethane). The analytical results are presented in Table 1, and the laboratory report is in Appendix "I".

The laboratory did not detect TPHg or BTEX in any of the samples. MTBE was present in three borings, and TBA was present in one. MTBE concentrations ranged from a low of 0.0065 mg/Kg in sample B-5-10 to a high of 0.440 mg/Kg in sample GP-8-10. That sample also had the highest TBA concentration (2.3 mg/Kg).

Water sample results were slightly different. TPHg was reported in both GP-5 and GP-8, at concentrations of 560 µg/L and 530 µg/L, respectively. Toluene was reported at a concentration of 1.7 µg/L in GP-7, and MTBE was detected in GP-7, GP-8, and GP-9. TBA was detected only in GP-8.

The results indicate that gasoline oxygenates have migrated to the north in a relatively straight line toward GP-8. Evidently, the silty to coarse-grained sand bed that is mapped in Figure 3 is a linear stream-channel deposit that formed a preferential pathway for groundwater flow, and hydrocarbons released at the site migrated along this channel to GP-8 and to a lesser extent GP-7 and GP-9 along the margins of the channel. This is depicted in Figure 5, which is a composite isoconcentration map of MTBE using laboratory data collected over a span of more than 1 year (the data for SB-1 through SB-9

were collected in February 2007, the data for CPT-1 and CPT-2 were collected in June 2007, the data for GP-1 through GP-4 were collected in August 2007, the data for monitoring wells STMW-1 through STMW-3 were collected in September 2007, and the data for GP-5 through GP-10 were collected in May 2008). Although the data do not represent a single point in time and probably do not accurately reflect current conditions over the entire site area, they illustrate the overall situation. An elongate plume of MTBE and TBA-impacted groundwater extends to the north and northwest from the vicinity of the underground storage tanks and crosses Bluebell Drive. The plume is evidently more than 250 feet long in this direction and about 150 feet wide in its widest portion. BTEX and other hydrocarbons are much more restricted in extent, but we will await the results from the second quarter monitoring event to construct TPHg and Benzene concentration maps.

#### *VAPOR EXTRACTION PILOT TEST RESULTS*

At a vacuum of 25.0 inches of water column, a flow rate of approximately 76 cubic feet per minute (CFM) was attained from VE-1. This is a respectable rate. With the vapor-extraction equipment operating at a steady-state, there was a slight decrease in observed vacuum near the end of the test, and a slight increase in the observed extracted air flow rate. This may have been caused by a gradual drying of the soil.

Overall, however, the results of the test were disappointing. No significant induced vacuum responses were seen in any observation well at any time during the test. The absence of response in the groundwater monitoring wells is likely due to the fact that the screened interval was below the static water level. The absence of response in either vapor test well is likely due to the fact that the screened interval is within the silty clay rather than in the permeable sand bed.

ESTC used a portable organic vapor monitor (GasTech GT202 calibrated with methane) to observe oxygen and hydrocarbon levels in extracted vapor. During the test, vapor concentrations were mostly less than 10 parts per million by volume (ppmv), with a maximum concentration of 85 ppm near the end of the VE-1 test. The lone vapor sample that was obtained was collected when field instruments indicated the highest vapor concentration, but as shown in Table 3, the laboratory did not detect any hydrocarbons in the sample. Such low concentrations are normally reached in the end stages of successful vapor extraction operations, after the bulk of the hydrocarbons have been removed.

The oxygen concentration ranged from 20.9% down to 18.5 % in VE-1, but was mostly near 20% during the test of VE-2. These results, along with the low hydrocarbon concentrations, suggest that the wells were being short-circuited by fresh air entering from the surface or from the nearby underground storage tank cavity, which has been backfilled with clean fill material.

## **CONCLUSIONS AND RECOMMENDATIONS**

Field data indicate that a fine-to-coarse-grained sand bed crosses beneath the site and underlies a portion of the dispenser island. The bed is not present beneath the underground storage tank cavity, and gasoline leaking from the UST's did not leach directly into this bed during the time of the unauthorized release. Over time, the gasoline (particularly the more mobile oxygenates MTBE and TBA), has migrated with groundwater into the sand bed and dispersed northward along the trend of the bed. Previous well measurements imply that the general groundwater flow direction is to the northwest. MTBE is probably present at least 200 feet north of the site, and we recommend drilling a groundwater monitoring well roughly 75 feet north of GP-8. (However, construction work is currently ongoing in that area and site access conditions are continuously changing, so it may be difficult to locate there.)

The high water table and the lack of permeable soil above it make vapor extraction a rather unfavorable method of remediation for this site. It might be possible to design a dual-phase remediation system, in which groundwater extraction wells are used to lower the water table and expose more of the impacted sand bed for vapor extraction, and we recommend drilling a couple of relatively closely spaced extraction wells and conducting a pumping test to evaluate this method.

## **LIMITATIONS**

This report and the schedule work have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. The contents of this report reflect the conditions of the site at this particular time. The findings of this report are based on:

1. The observations of field personnel.
2. The results of laboratory analyses performed by a state-certified laboratory.

This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that the information herein is called to the attention of the Local Environmental Agency.

Services performed by ESTC has been in accordance with generally accepted environmental professional practices for the nature and conditions of the work complete in the sample or similar localities at the time the work was performed. This report is not meant to represent a legal opinion. No other warranty, express or implied is made.

File No. 10-93-567-ST  
July 1, 2008

# **A P P E N D I X "A"**

## **TABLES**

**ENVIRO SOIL TECH CONSULTANTS**

## TABLE 1 SUMMARY OF SOIL SAMPLES ANALYTICAL RESULTS FROM GP BOREHOLES

Date	Sample No.	Depth feet	TPHg mg/Kg	B µg/Kg	T µg/Kg	E µg/Kg	X µg/Kg	MTBE µg/Kg	DIPE µg/Kg	ETBE µg/Kg	TAME µg/Kg	TBA µg/Kg	EDB µg/Kg	1,2-DCA µg/Kg
5/09/08	GP-5-5	5	ND<0.46	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-5-10	10	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-5-15	15	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-7-5	5	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-7-10	10	ND<0.46	ND<5	ND<5	ND<5	ND<10	6.5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-7-15	15	ND<0.5	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-8-5	5	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-8-10	10	ND<0.5	ND<25	ND<25	ND<25	ND<50	440	ND<25	ND<25	ND<25	2300	ND<25	ND<25
	GP-8-15	15	ND<0.49	ND<5	ND<5	ND<5	ND<10	44	ND<5	ND<5	ND<5	270	ND<5	ND<5
	GP-9-5	5	ND<0.48	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-9-10	10	ND<0.49	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-9-15	15	ND<0.45	ND<5	ND<5	ND<5	ND<10	14	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-10-5	5	ND<0.49	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-10-10	10	ND<0.45	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
	GP-10-15	15	ND<0.46	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5
↓	GP-10-20	20	ND<0.49	ND<5	ND<5	ND<5	ND<10	ND<5	ND<5	ND<5	ND<5	ND<40	ND<5	ND<5

**TPHg** – Total Petroleum Hydrocarbon as gasoline  
**MTBE** – Methyl Tertiary Butyl Ether  
**ETBE** – Tertiary Butyl Ethyl Ether  
**TBA** – Tertiary Butanol  
**1,2-DCA** – 1,2-Dichloroethane  
**µg/Kg** – Microgram per Kilogram  
**ND** – Not Detected (below laboratory detection limit)

**BTEX** – Benzene, Toluene, Ethylbenzene, Total Xylenes  
**DIPE** – Diisopropyl Ether  
**TAME** – Tertiary Amyl Methyl Ether  
**EDB** – 1,2-Dibromoethane  
**mg/Kg** – Milligram per Kilogram



**TABLE 2**  
**SUMMARY OF WATER SAMPLES**  
**ANALYTICAL RESULTS FROM GP BOREHOLES**  
**IN MICROGRAMS PER LITER (µg/L)**

Date	Sample No.	TPHg	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA	EDB	1,2-DCA
5/09/08	GP-5-W	560a	ND<10	ND<10	ND<10	ND<20	ND<20	ND<100	ND<100	ND<100	ND<200	ND<10	ND<10
	GP-7-W	ND<50	ND<0.5	1.7	ND<0.5	ND<1	40	ND<5	ND<5	ND<5	ND<10	ND<0.5	ND<0.5
	GP-8-W	530a	ND<5	ND<5	ND<5	ND<10	970	ND<50	ND<50	ND<50	4100	ND<5	ND<5
	GP-9-W	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	8.7	ND<5	ND<5	ND<5	ND<10	ND<0.5	ND<0.5
↓	GP-10-W	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<1	ND<5	ND<5	ND<5	ND<10	ND<0.5	ND<0.5

**TPHg** – Total Petroleum Hydrocarbon as gasoline

**MTBE** – Methyl Tertiary Butyl Ether

**ETBE** – Tertiary Butyl Ethyl Ether

**TBA** – Tertiary Butanol

**1,2-DCA** – 1,2-Dichloroethane

**ND** – Not Detected (below laboratory detection limit)

**a** – A typical pattern

**BTEX** – Benzene, Toluene, Ethylbenzene, Total Xylenes

**DIPE** – Diisopropyl Ether

**TAME** – Tertiary Amyl Methyl Ether

**EDB** – 1,2-Dibromoethane

**TABLE 3  
RESULTS OF LABORATORY ANALYSES  
OF VAPOR SAMPLES**

<b>Date</b>	<b>Sample No.</b>	<b>TPHg mg/m<sup>3</sup></b>	<b>B mg/m<sup>3</sup></b>	<b>T mg/m<sup>3</sup></b>	<b>E mg/m<sup>3</sup></b>	<b>X mg/m<sup>3</sup></b>	<b>MTBE mg/m<sup>3</sup></b>
6/06/08	VE-1	ND<20	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2

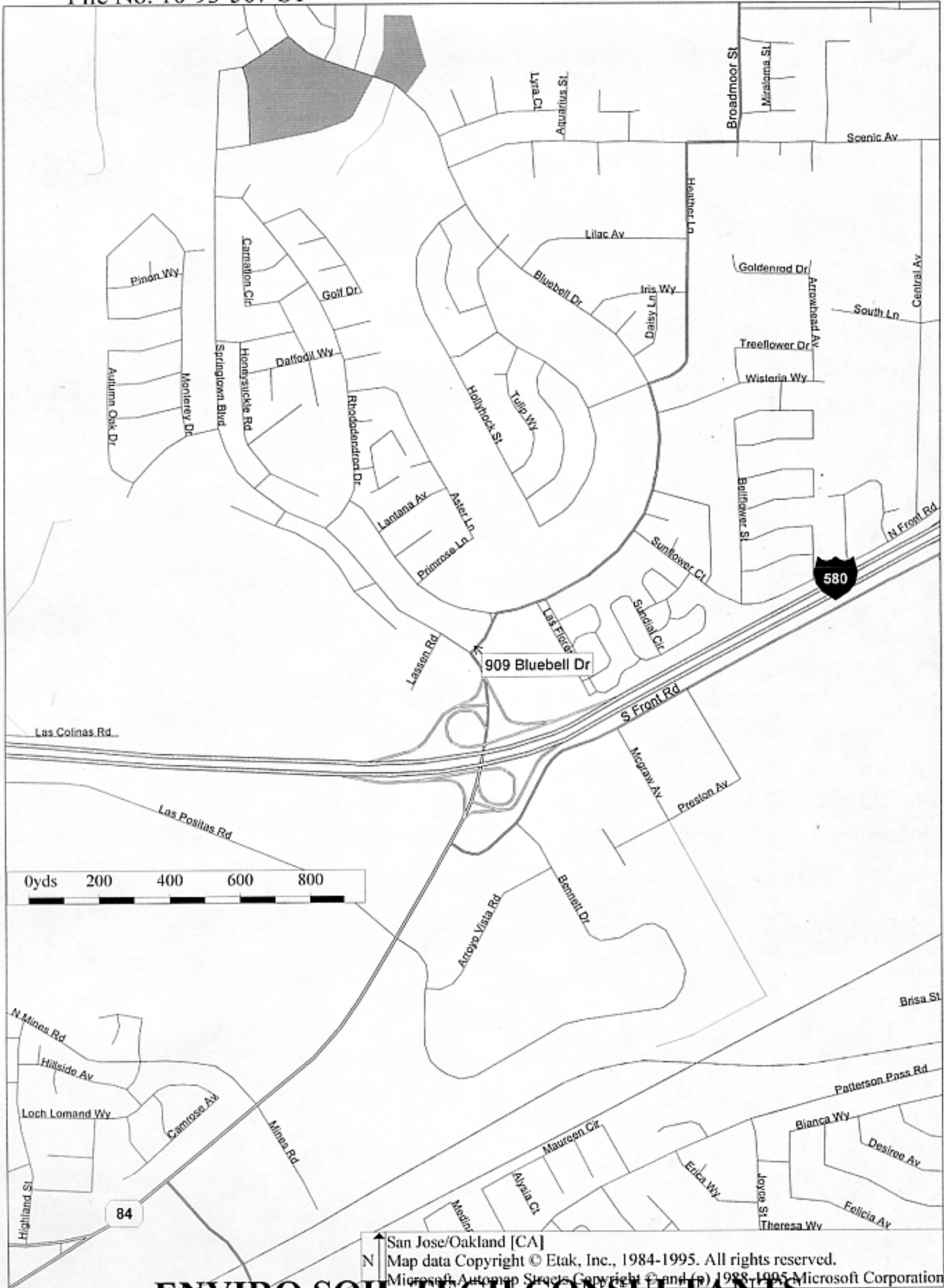
**TPHg:** Total Petroleum Hydrocarbons as gasoline (analyzed by EPA Method 8015MOD)  
**BTEX:** Benzene, Toluene, Ethylbenzene, Total Xylene Isomers (analyzed by EPA 8020)  
**mg/m<sup>3</sup>:** Concentrations reported in milligrams per cubic meter  
**ND:** None detected (less than the laboratory detection limit)

File No. 10-93-567-ST  
July 1, 2008

## **A P P E N D I X "B"**

### **FIGURES**

**ENVIRO SOIL TECH CONSULTANTS**



**ENVIRO SOIL TECH CONSULTANTS**

Figure 1

M1

Enviro Soil Tech  
Consultants

131 Tully Road  
San Jose, CA 95111

PROJECT

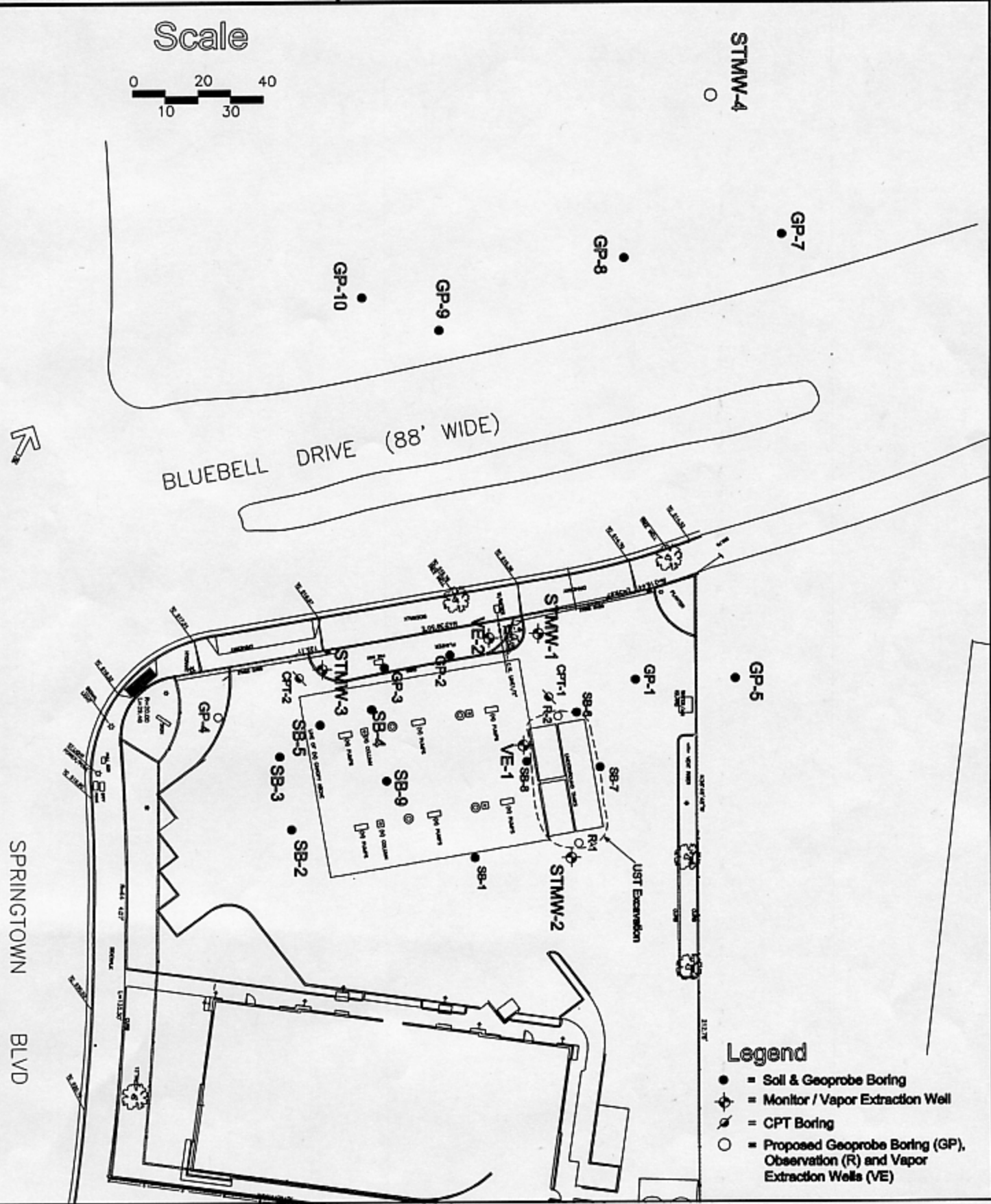
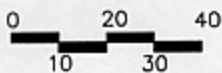
909 Bluebell Drive  
Livermore, California

PROJECT # 10-93-567-ST  
DATE: 7/2/2008

Figure 2

Site Map

Scale



Legend

- = Soil & Geoprobe Boring
- ⊕ = Monitor / Vapor Extraction Well
- ⊙ = CPT Boring
- = Proposed Geoprobe Boring (GP), Observation (R) and Vapor Extraction Wells (VE)



Enviro Soil Tech  
Consultants

131 Tully Road  
San Jose, CA 95111

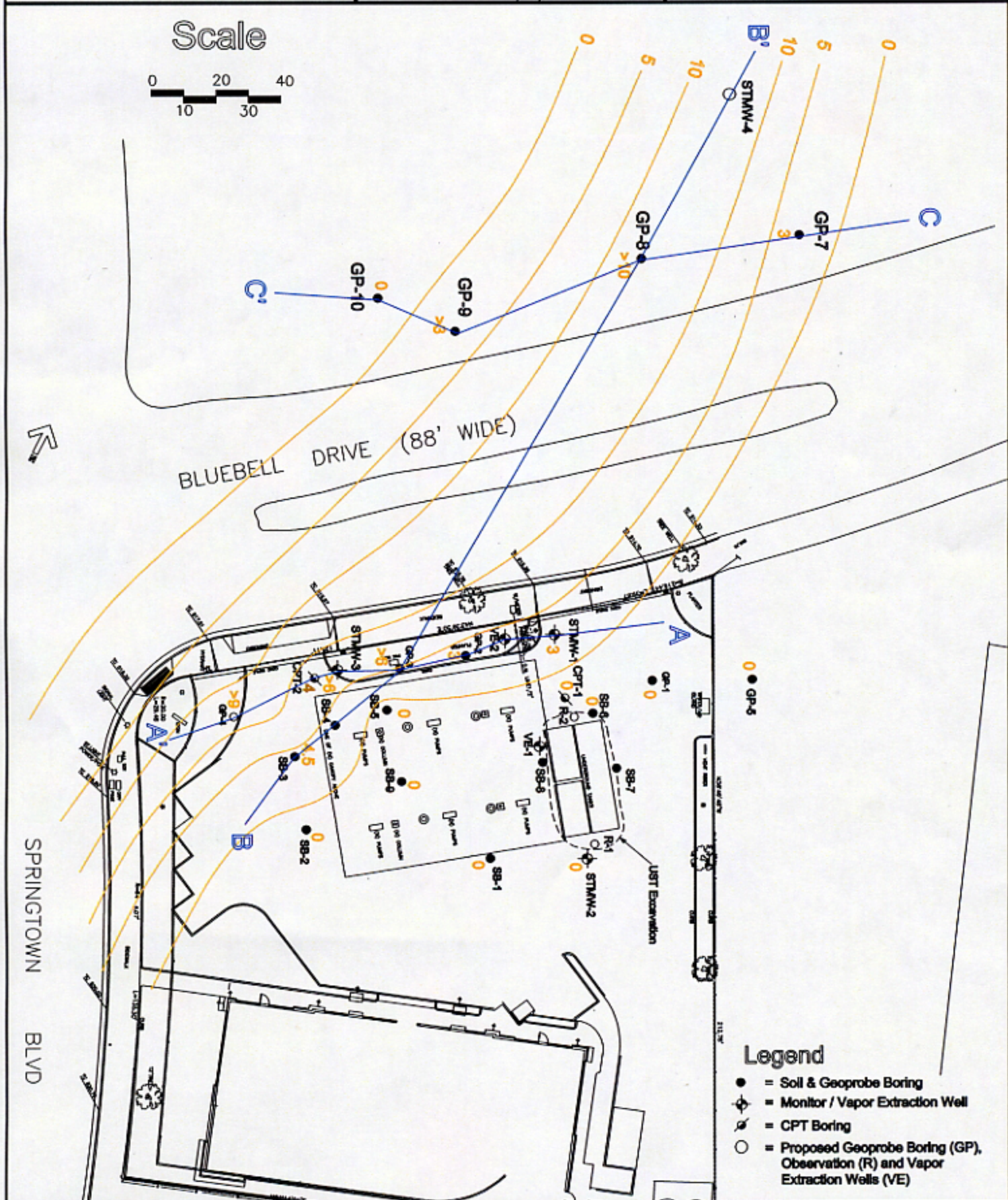
PROJECT

909 Bluebell Drive  
Livermore, California

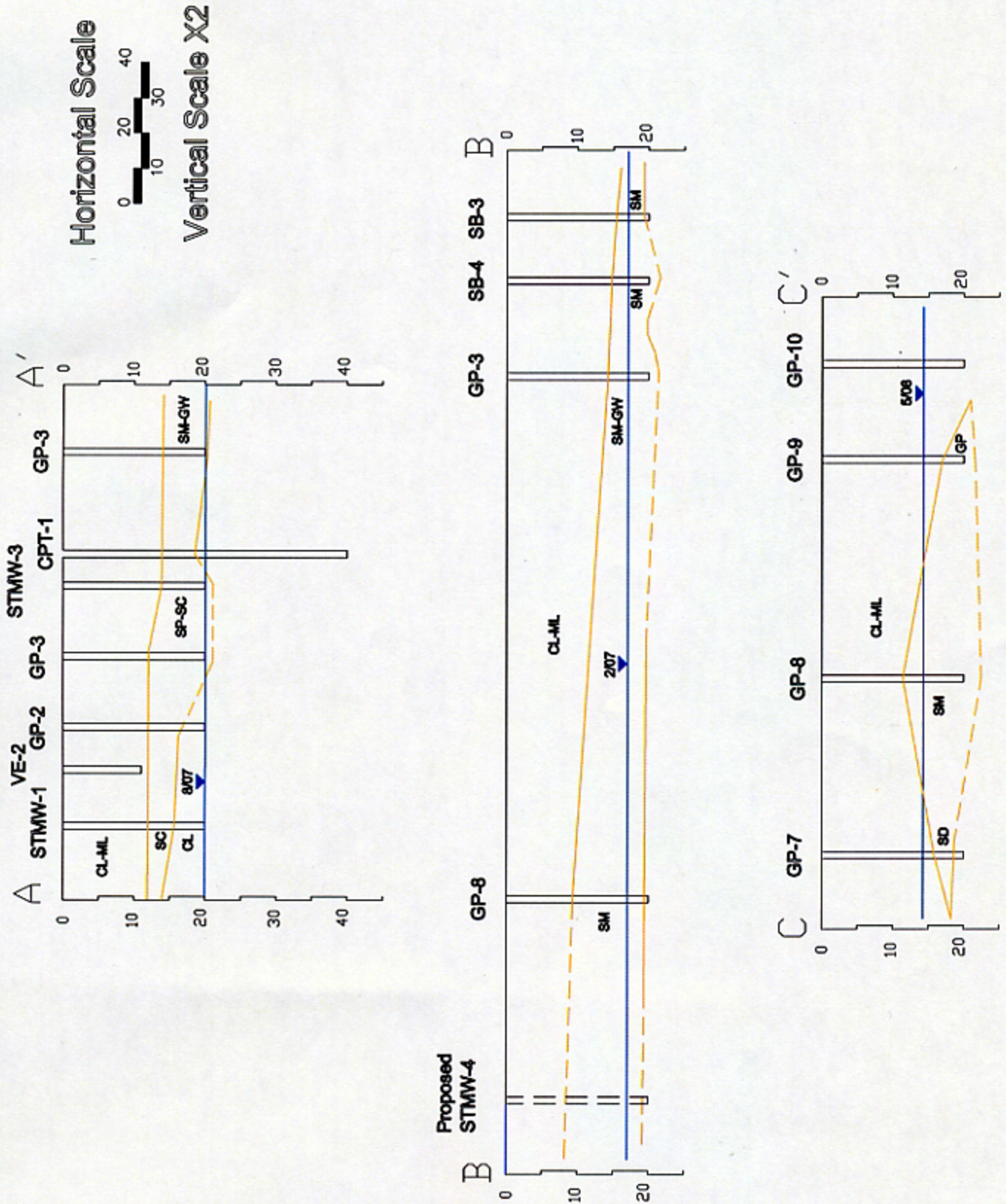
PROJECT # 10-93-567-ST  
DATE: 7/2/2008

Figure 3

Isocontours of First  
Sand Bed









Enviro Soil Tech  
Consultants

131 Tully Road  
San Jose, CA 95111

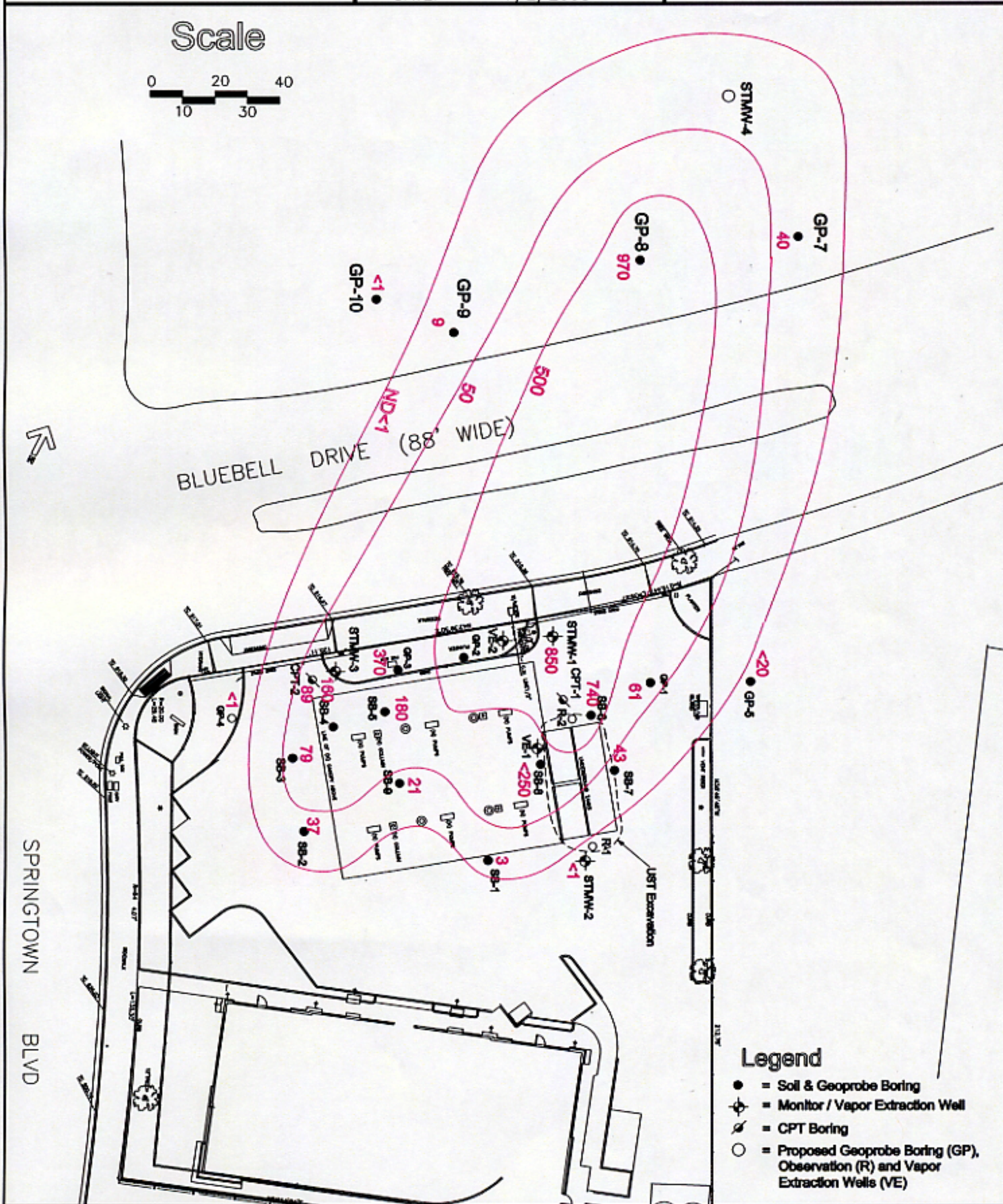
PROJECT

909 Bluebell Drive  
Livermore, California

PROJECT # 10-93-567-ST  
DATE: 7/2/2008

Figure 5

Isocontours of MTBE in  
Groundwater (Composite Summary)



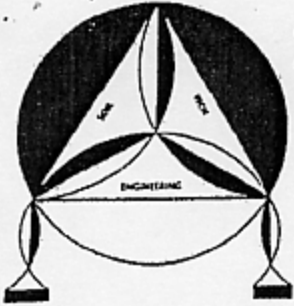


File No. 10-93-567-ST  
July 1, 2008

**A P P E N D I X "C"**

**ADJACENT PROPERTY ACCESS  
COOPERATION REQUEST**

**ENVIRO SOIL TECH CONSULTANTS**



# ENVIRO SOIL TECH CONSULTANTS

Environmental & Geotechnical Consultants

131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111

Tel: (408) 297-1500

Fax: (408) 292-2116

## Adjacent Property Owner-Access Cooperation Request

April 22, 2008

### Springtown Inn

Attention: Owner(s)

933 Bluebell Drive

Livermore, California 94551

**Subject: Property Access by Enviro Soil Tech Consultants  
Responsible for the Investigation and Cleanup of  
Petroleum Hydrocarbon and Additives Pollution  
at 909 Bluebell Drive, Livermore, California**

Dear Sirs or Madams:

Alameda County Health Care Services Agency-Environmental Health Services (ACHCSA-EHS) is overseeing the investigation and cleanup of gasoline and additives from the fuel underground storage tanks at 909 Bluebell Drive, in Livermore site. We do not know how far the contamination from the tanks had moved; however, it appears that the contamination may have moved to underneath yours property (933 Bluebell Drive, Livermore, CA).

The ACHCSA-EHS is requiring Enviro Soil Tech Consultants (ESTC) to investigate and cleanup contaminated soil and groundwater at the site to prevent the gasoline and gasoline additives contamination from spreading to other properties and/or to drinking

Springtown Inn  
April 22, 2008

water sources. To properly determine the extent of that contamination in groundwater, ESTC must perform additional off-site investigation. Therefore, we need your help in allowing access to your property by ESTC in order to properly define the extent of contamination.

Please include your property parcel number (for the purpose obtaining drilling permit) and all telephone numbers where we could reach you when we are going to start working on your property. If you have any questions or require additional information, please feel free to contact our office at (408) 297-1500 or Mr. Jerry Wickham (510) 567-6791 with ACHCSA-EHS.

Sincerely,

***ENVIRO SOIL TECH CONSULTANTS***



FRANK HAMEDI-FARD  
GENERAL MANAGER

cc: Mr. Jerry Wickham  
ACHCSA-EHS  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**ENVIRO SOIL TECH CONSULTANTS**

Springtown Inn  
April 22, 2008

I/we, John Ahn, hereby give Enviro Soil Tech Consultants  
(Please Print Name)

permission to enter onto the property at 933 Bluebell Drive, Livermore, CA 94551 for the purpose of running a soil and groundwater investigation and cleanup, as ordered by ACHCSA-EHS.

In addition, the property (933 Bluebell Drive, Drive, CA) will be returned to the conditions prior to testing, and if contamination is found, Owner(s) of Springtown Inn will be held harmless. All the financial responsibility of the cleanup following on Mr. Masood Amini Filibadi (909 Bluebell Drive property owner).

John Ahn, G.M. / ABM, Inc.  
OWNER:

4/28/08  
DATE:

925 449-2211 / 925 548-5670 cell  
PHONE NUMBER:

\_\_\_\_\_  
OWNER:

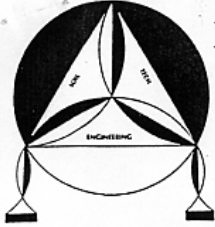
\_\_\_\_\_  
DATE:

\_\_\_\_\_  
PHONE NUMBER:

\_\_\_\_\_  
OWNER:

\_\_\_\_\_  
DATE:

\_\_\_\_\_  
PHONE NUMBER:



## **ENVIRO SOIL TECH CONSULTANTS**

Environmental & Geotechnical Consultants

*131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111*

Tel: (408) 297-1500

Fax: (408) 292-2116

### **Adjacent Property Owner-Access Cooperation Request**

April 22, 2008

**Mr. Kieran Bulhley**  
Don Bauer Company  
543 Hubo Street  
San Francisco, California 94122

**Subject: Property Access by Enviro Soil Tech Consultants  
Responsible for the Investigation and Cleanup of  
Petroleum Hydrocarbon and Additives Pollution  
at 909 Bluebell Drive, Livermore, California**

Dear Mr. Bulhley:

Alameda County Health Care Services Agency-Environmental Health Services (ACHCSA-EHS) is overseeing the investigation and cleanup of gasoline and additives from the fuel underground storage tanks at 909 Bluebell Drive, in Livermore site. We do not know how far the contamination from the tanks had moved; however, it appears that the contamination may have moved to underneath yours property (940 Larkspur Drive, Livermore, CA).

The ACHCSA-EHS is requiring Enviro Soil Tech Consultants (ESTC) to investigate and cleanup contaminated soil and groundwater at the site to prevent the gasoline and gasoline additives contamination from spreading to other properties and/or to drinking


Mr. Kieran Bulhley  
April 22, 2008

water sources. To properly determine the extent of that contamination in groundwater, ESTC must perform additional off-site investigation. Therefore, we need your help in allowing access to your property by ESTC in order to properly define the extent of contamination.

Please include your property parcel number (for the purpose obtaining drilling permit) and all telephone numbers where we could reach you when we are going to start working on your property. If you have any questions or require additional information, please feel free to contact our office at (408) 297-1500 or Mr. Jerry Wickham (510) 567-6791 with ACHCSA-EHS.

Sincerely,

***ENVIRO SOIL TECH CONSULTANTS***

  
FRANK HAMEDI-FARD  
GENERAL MANAGER

cc: Mr. Jerry Wickham  
ACHCSA-EHS  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**ENVIRO SOIL TECH CONSULTANTS**

2

Mr. Kieran Bulhley

April 22, 2008

I/we, \_\_\_\_\_, hereby give Enviro Soil Tech Consultants  
(Please Print Name)

permission to enter onto the property at 940 Larkspur Drive, Livermore, CA 94551 for the purpose of running a soil and groundwater investigation and cleanup, as ordered by ACHCSA-EHS.

In addition, the property (940 Larkspur Drive, Livermore, CA) will be returned to the conditions prior to testing, and if contamination is found, Mr. Kieran Bulhley will be held harmless with all the financial responsibility of the cleanup following on Mr. Masood Amini Filibadi (909 Bluebell Drive property owner).

\_\_\_\_\_  
**KIERAN BULHLEY, OWNER:**

\_\_\_\_\_  
**DATE:**

\_\_\_\_\_  
**PHONE NUMBER:**

File No. 10-93-567-ST  
July 1, 2008

## **A P P E N D I X "D"**

### **STANDARD OPERATION PROCEDURES**

**ENVIRO SOIL TECH CONSULTANTS**



## **DRILLING AND SOIL SAMPLING PROCEDURE**

A direct push technology (Geoprobe) tool with hollow-stem auger was used in drilling the soil borings to the desired depths.

Prior to drilling, all drilling equipment was thoroughly steam-cleaned to minimize the possibility of cross-contamination and/or vertical migration of possible contaminants.

In addition, sampling equipment was washed between samples with Tri-sodium Phosphate (TSP) solution or an equivalent EPA-approved detergent followed by a rinse in distilled water.

During the drilling operation, undisturbed soil samples were taken from the required depth by forcing a 2-inch sampler lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole by means of hydraulic push technologies.

The selected sampling tubes were immediately trimmed, the ends covered tightly with aluminum foil and plastic caps, sealed with tape labeled, placed in a plastic bag and stored in a cold ice chest in order to minimize the escape of any volatile present in the samples. Soil samples were sent to a state-certified hazardous waste laboratory for analysis accompanied by a chain-of-custody record.

File No. 10-93-567-ST

July 1, 2008

Soil samples collected at each sampling interval were inspected for any possible contamination (odor or peculiar colors). Soil vapor concentrations were measured in the field by using a Photoionization Detector (PID), Photovac Tip Air Analyzer. The soil sample was sealed in a Zip-Loc plastic bag and placed in the sun to enhance volatilization of the hydrocarbons from the sample. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons and to establish which soil samples were analyzed at the laboratory. The data was recorded on the drilling log at the depth corresponding to the sampling point.

Other soil samples may be collected to document the stratigraphy and estimate relative permeability of the subsurface materials.

Soil tailings that are obtained during drilling were stored at the site, pending the analytical test results to determine proper disposal.

## **GROUNDWATER SAMPLING**

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer or tubing) were cleaned by pumping TSP water solution followed by distilled water.

Temporary well casings were installed in the borings for the purpose of groundwater sampling. The wells were bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivities and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.) glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample was being decanted into each VOA vial in such a manner that there was a meniscus at the top. The cap quickly was placed over the top of the vial and securely tightened. The VOA vial and glass bottle were then be inverted and tapped to see if air bubbles are present. If none is present, then the sample was labeled and refrigerated for delivery under chain-of-custody to the laboratory. The label information has included a sample identification number, job identification number, date, time, type of analysis requested and the sampler's name.

File No. 10-93-567-ST  
July 1, 2008

## **A P P E N D I X "E"**

### **BORING LOGS**

**ENVIRO SOIL TECH CONSULTANTS**

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION:		TOP OF WELL CASING ELEVATION:		
DRILLING AGENCY	Vironex, Inc.	DRILLER	J. McAssey		DATE STARTED:	5/07/08	
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft)		10'		
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER		SAMPLER	2" polyethene	
SIZE AND TYPE OF CASING	4-inch PVC Schedule 40		NUMBER OF SAMPLES		BULK:	DRIVE:	
TYPE OF PERFORMANCE	0.020-inch PVC Schedule 40	FROM	3'	TO	10'	WATER FIRST: DEPTH	
SIZE AND TYPE OF PACK	Sand #3	FROM	2 1/2'	TO	10'	LOGGED BY	Frank Hamedi
						CHECKED BY	Lawrence Koo







TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO	<b>LOG OF BORING VE-1</b>
	No. 1: Cement	0	1'	No. 3:			
	No. 2: Bentonite	1'	2 1/2'	No. 4:			

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES			INDEX PROPERTIES		
								NUMBER TYPE	POCKET PEN, 15'	BLOWS/foot	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMPRESSIVE STRENGTH (psf)
0	12-inch reinforced Concrete.						0						
	6-inch gray Baserock.												
	Black Clay (medium to high PI), damp, stiff.	CL-CH											
5	Black silty Clay, very stiff, damp.	CL-ML					5						
	Dark gray sandy silty Clay with few small size pea gravel, very stiff, damp.	CL-ML											
	Very dark brown silty Clay with minor sand.	CL-ML											
10	Light brown silty Sand (medium size sand), dense, moist. Boring terminated	SM					10						
15							15						
20							20						
25							25						
30							30						
35							35						

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	909 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:	
DRILLING AGENCY	Vironex, Inc.	DRILLER	J. McAssey	
DRILLING EQUIPMENT	Geoprobe		COMPLETION DEPTH (ft)	10'
DRILLING METHOD	Rapid push hollow-stem auger	DRILL BIT	HAMMER	SAMPLER 2" polyethene
SIZE AND TYPE OF CASING	4-inch PVC Schedule 40		NUMBER OF SAMPLES	BULK: DRIVE:
TYPE OF PERFORMANCE	0.020-inch slotted PVC Schedule 40	FROM 3' TO 10'	WATER FIRST: DEPTH	COMPL.: 24 hrs.
SIZE AND TYPE OF PACK	Sand #3	FROM 2½' TO 10'	LOGGED BY	Frank Hamedi
			CHECKED BY	Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO	<b>LOG OF BORING VE-2</b>
	No. 1: Cement	0	1'	No. 3:			
	No. 2: Bentonite	1'	2½'	No. 4:			

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES			INDEX PROPERTIES		
								NUMBER TYPE	POCKET PEN, 1st	BLOWS/ foot	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Black clayey Silt (landscaping material) , soft, moist.	ML					0						
	Black silty Clay, moist, stiff.	CL-ML											
5							5						
	Gray silty Clay, moist, stiff.	CL-ML											
10	Light greenish-gray silty Clay, moist, very stiff.	CL-ML					10						
	Boring terminated.												
15							15						
20							20						
25							25						
30							30						
35							35						

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	933 Bluebell Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:	
DRILLING AGENCY	Vironex, Inc.	DRILLER	J. McAssey	
DRILLING EQUIPMENT	Geoprobe		DATE STARTED:	5/09/08
DRILLING METHOD	Rapid push hollow-stem auger		DATE FINISHED:	5/09/08
SIZE AND TYPE OF CASING			COMPLETION DEPTH (ft)	25'
TYPE OF PERFORATION	FROM	TO	HAMMER	SAMPLER 2" polyethene
SIZE AND TYPE OF PACK	FROM	TO	NUMBER OF SAMPLES	BULK: 3 DRIVE:
			WATER FIRST DEPTH	COMPL.: 24 hrs.
			LOGGED BY	Frank Hamedi
			CHECKED BY	Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO	<b>LOG OF BORING GP-5</b>
	No. 1:			No. 3:			
	No. 2:			No. 4:			

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES			INDEX PROPERTIES		
								NUMBER TYPE	POCKET PEN 1st	BLOWS/feet	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Light brown sandy silty Clay, moist, stiff.	CL-ML					0						
5	Black silty Clay, moist, stiff.	CL-ML					5						
	Dark brown silty Clay, moist, stiff.						5.5						
	Light brown silty Clay, moist, stiff.						10						
10							10						
	Light brown to light gray silty Clay (high PI), moist, stiff.	CL-ML					15						
15							15						
	Light brown silty Clay (high PI), very stiff, moist.						20						
20							20						
25	Boring terminated.						25						
30							30						
35							35						



ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION	940 Larkspur Drive, Livermore, CA		GROUND SURFACE ELEVATION:		TOP OF WELL CASING ELEVATION:		
DRILLING AGENCY	Vironex, Inc.	DRILLER	J. McAssey		DATE STARTED:	5/09/08	
DRILLING EQUIPMENT	Geoprobe				DATE FINISHED:	5/09/08	
DRILLING METHOD	Rapid push hollow-stem auger		DRILL BIT			COMPLETION DEPTH (ft)	20'
SIZE AND TYPE OF CASING					NUMBER OF SAMPLES	BULK: 3 DRIVE:	
TYPE OF PERFORATION	FROM	TO	WATER FIRST: DEPTH		COMPL.:	24 hrs.	
SIZE AND TYPE OF PACK	FROM	TO	LOGGED BY		Frank Hamedi	CHECKED BY	Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO	<b>LOG OF BORING GP-7</b>
	No. 1:			No. 3:			
	No. 2:			No. 4:			

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES			INDEX PROPERTIES		
								NUMBER TYPE	POCKET PEN 1st	BLOWS/ foot	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Black silty Clay (high PI), very stiff, moist.	CL-ML					0						
5	Light brown silty Clay, moist, stiff.						5						
10	Dark brown silty Clay, moist, stiff.	CL-ML					10						
	Light brown sandy silty Clay, moist, stiff.	CL-ML											
15	Gray/white coarse Sand with some small pea gravel, dense, wet.	SP					15						
	Light brown sandy silty Clay, moist, stiff.	CL-ML											
20	Boring terminated.						20						
25							25						
30							30						
35							35						

SPRINGTOWN GAS

PROJECT NO. 10-93-567-ST



FIGURE:



ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION 940 Larkspur Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:	
DRILLING AGENCY Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 5/09/08	DATE FINISHED: 5/09/08
DRILLING EQUIPMENT Geoprobe		COMPLETION DEPTH (ft) 20'	
DRILLING METHOD Rapid push hollow-stem auger	DRILL BIT	HAMMER	SAMPLER 2" polyethene
SIZE AND TYPE OF CASING		NUMBER OF SAMPLES BULK: 3	DRIVE:
TYPE OF PERFORMANCE		FROM TO	WATER FIRST: DEPTH
SIZE AND TYPE OF PACK		FROM TO	COMPL.: 24 hrs.
		LOGGED BY Frank Hamedi	CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO	<b>LOG OF BORING GP-8</b>
	No. 1:			No. 3:			
	No. 2:			No. 4:			

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES			INDEX PROPERTIES		
								NUMBER TYPE	POCKET PEN, tsf	BLOWS/ foot	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Light brown silty Sand, dry, dense.	SM					0						
	Black silty Clay, moist, stiff.	CL-ML					5						
5	Light brown silty Clay, very moist, stiff.						5-5						
10	Light brown sandy Silt to silty Sand, dense, wet.	SM					10						
15							15						
20	Boring terminated.						20						
25							25						
30							30						
35							35						

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION 940 Larkspur Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:	
DRILLING AGENCY Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 5/09/08	DATE FINISHED: 5/09/08
DRILLING EQUIPMENT Geoprobe		COMPLETION DEPTH (ft) 20'	
DRILLING METHOD Rapid push hollow-stem auger	DRILL BIT	HAMMER	SAMPLER 2" polyethylene
SIZE AND TYPE OF CASING		NUMBER OF SAMPLES BULK: 3	DRIVE:
TYPE OF PERFORMANCE	FROM TO	WATER FIRST: DEPTH	COMPL.: 24 hrs.
SIZE AND TYPE OF PACK	FROM TO	LOGGED BY Frank Hamedi	CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO	<b>LOG OF BORING GP-9</b>
	No. 1:			No. 3:			
	No. 2:			No. 4:			

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES			INDEX PROPERTIES		
								NUMBER TYPE	POCKET PEN, 15f	BLOWS/foot	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Chocolate-brown to black silty Clay, moist, stiff.	CL-ML					0						
5	Light brown gravelly sandy Silt, dense, moist.	ML					5	9-5					
10	Light brown silty Clay, moist, stiff.	CL-ML					10	9-10					
15							15	9-15					
20	Light brown sandy Gravel, dense, moist.	GP					20						
20	Boring terminated.						20						
25							25						
30							30						
35							35						

ENVIRO SOIL TECH CONSULTANTS

BORING LOCATION 940 Larkspur Drive, Livermore, CA		GROUND SURFACE ELEVATION: TOP OF WELL CASING ELEVATION:	
DRILLING AGENCY Vironex, Inc.	DRILLER J. McAssey	DATE STARTED: 5/09/08	DATE FINISHED: 5/09/08
DRILLING EQUIPMENT Geoprobe		COMPLETION DEPTH (ft) 20'	
DRILLING METHOD Rapid push hollow-stem auger	DRILL BIT	HAMMER	SAMPLER 2" polyethene
SIZE AND TYPE OF CASING		NUMBER OF SAMPLES BULK: 3	DRIVE:
TYPE OF PERFORATION		FROM TO	WATER FIRST: DEPTH
SIZE AND TYPE OF PACK		FROM TO	LOGGED BY Frank Hamedl
			CHECKED BY Lawrence Koo

TYPE OF SEAL	TYPE	FR	TO	TYPE	FR	TO	<b>LOG OF BORING GP-10</b>
	No. 1:			No. 3:			
	No. 2:			No. 4:			

DEPTH (feet)	MATERIAL DESCRIPTION	USCS	SOIL GRAPHIC	WELL GRAPHIC	PID, ppm	WATER LEVEL	DEPTH (feet)	SAMPLES			INDEX PROPERTIES		
								NUMBER TYPE	POCKET PEN. 1s/	BLOWS/ foot	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONFINED COMPRESSIVE STRENGTH (psf)
0	Light brown silty Sand, dry, dense.	SM					0						
	Black silty Clay, moist, stiff.	CL-ML											
5	Light brown silty Clay, moist, stiff.	CL-ML					5						
10	Light brown sandy silty Clay, moist, stiff.	CL-ML					10						
15	Light brown silty Clay (high PI), moist, very stiff.	CL-ML					15						
20	Boring terminated.						20						
25							25						
30							30						
35							35						

File No. 10-93-567-ST  
July 1, 2008

## **A P P E N D I X "F"**

### **PERMITS**

**ENVIRO SOIL TECH CONSULTANTS**





# ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 245-9306

E-MAIL [whong@zone7water.com](mailto:whong@zone7water.com)

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 909 Bluebell Drive  
Livermore, CA 94551

California Coordinates Source \_\_\_\_\_ ft. Accuracy \_\_\_\_\_ ft.  
CCN \_\_\_\_\_ ft. COE \_\_\_\_\_ ft.  
APN 099-0022-001-00

CLIENT Name Masood Amini Filabadi  
Address 909 Bluebell Drive Phone 925-371-0994  
City Livermore Zip 94551

APPLICANT Name Enviro Soil Tech Consultants  
Address 131 Tully Road Fax 408-292-2116  
City San Jose Phone 408-297-1500  
Zip 95111

TYPE OF PROJECT  
Well Construction \_\_\_\_\_ Geotechnical Investigation \_\_\_\_\_  
Cathodic Protection .. General  ..  
Water Supply .. Contamination ..  
Monitoring .. Well Destruction ..

PROPOSED WELL USE  
New Domestic .. Irrigation ..  
Municipal .. Remediation ..  
Industrial .. Groundwater Monitoring ..  
Dewatering ..... Other..... ..

DRILLING METHOD:  
Mud Rotary .. Air Rotary .. Hollow Stem Auger ..  
Cable Tool .. Direct Push  Other ..

DRILLING COMPANY Vironex, Inc.  
DRILLER'S LICENSE NO. 705927

WELL PROJECTS  
Drill Hole Diameter 10 in. Maximum \_\_\_\_\_  
Casing Diameter 4 in. Depth 10 ft.  
Surface Seal Depth 3 ft. Number 3

SOIL BORINGS  
Number of Borings 6 Maximum \_\_\_\_\_  
Hole Diameter 8 in. Depth 20 ft.

ESTIMATED STARTING DATE 4/30/08  
ESTIMATED COMPLETION DATE 5/02/08

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

APPLICANT'S SIGNATURE [Signature] Date 4/21/08

ATTACH SITE PLAN OR SKETCH

PERMIT NUMBER 28053  
WELL NUMBER 3S/2E-3G19 to 3G21 (VE-1, VE-2, R-1)  
APN 099-0022-001-00

### PERMIT CONDITIONS (Circled Permit Requirements Apply)

- A. GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to your proposed starting date.
  2. Submit to Zone 7 within 60 days after completion of permitted work the original **Department of Water Resources Water Well Drillers Report (DWR Form 188), signed by the driller.**
  3. Permit is void if project not begun within 90 days of approval date.

- B. WATER SUPPLY WELLS
1. Minimum surface seal diameter is four inches greater than the well casing diameter.
  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.
  3. Grout placed by tremie.
  4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
  5. A sample port is required on the discharge pipe near the wellhead.

- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
  2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
  3. Grout placed by tremie.

- 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. Submit to Zone 7 within 60 days after completion of permitted work the well installation report **including all soil and water laboratory analysis results.**

Approved [Signature] Date 4/24/08  
Wyman Hong



June 2<sup>nd</sup>, 2008

Mr. Robert E. Cave  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, California 94109

**Subject:** VAPOR-EXTRACTION AND AIR-SPARGING TEST for the Former UST Site, 909 Blue Bell Drive, Livermore, California.

Mr. Cave:

On behalf of Enviro Soil Tech Consultants, CEECON Testing, Inc. (CEECON) is officially notifying the Bay Area Air Quality Management District (BAAQMD) of a vapor-extraction and air-sparging test (VE-AS-T) to be performed at the Former Underground Storage Tank (UST) Site 909 Blue Bell Drive, Livermore, California. This VET is being conducted in accordance with BAAQMD guidelines. The one-day test is scheduled for June 6<sup>th</sup>, 2008.

The VET will be conducted with the CEECON C-2000 internal combustion engine. The C-2000 schematics and process flow are shown on the VAPOR-EXTRACTION INTERNAL COMBUSTION ENGINE DIAGRAM (VET-1) and VAPOR- EXTRACTION INTERNAL COMBUSTION ENGINE PROCESS FLOW DIAGRAM (VET-2). The engine will extract subsurface vapor from wells and process the extracted vapor. The test will be conducted at a maximum flow rate of 150 standard cubic feet per minute. A second C-2000 (or similar equipment) will be used to sparge air into a single air-sparging well at this site.

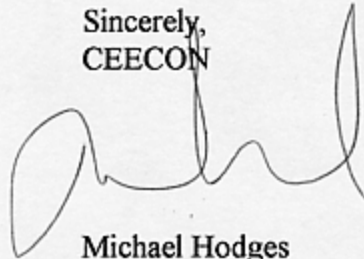
Influent and effluent samples will be collected during the test. These samples will be submitted to a State-certified laboratory and analyzed for total petroleum hydrocarbons reported as gasoline (TPHg) and the gasoline constituents benzene, ethyl benzene, toluene, and total xylene isomers (BTEX) using EPA methods 8020/8015. The system will be shut down at the end of the test.

NOTIFICATION OF VAPOR-EXTRACTION & AIR-SPARGING TEST  
909 Blue Bell Drive, Livermore, California

June 2<sup>nd</sup>, 2008  
CEECON

Testing will comply with Regulation 8, Rule 47 requirements of the BAAQMD. If there are any questions I can be contacted at (650) 827-7474. Please call if you have any questions or need additional information.

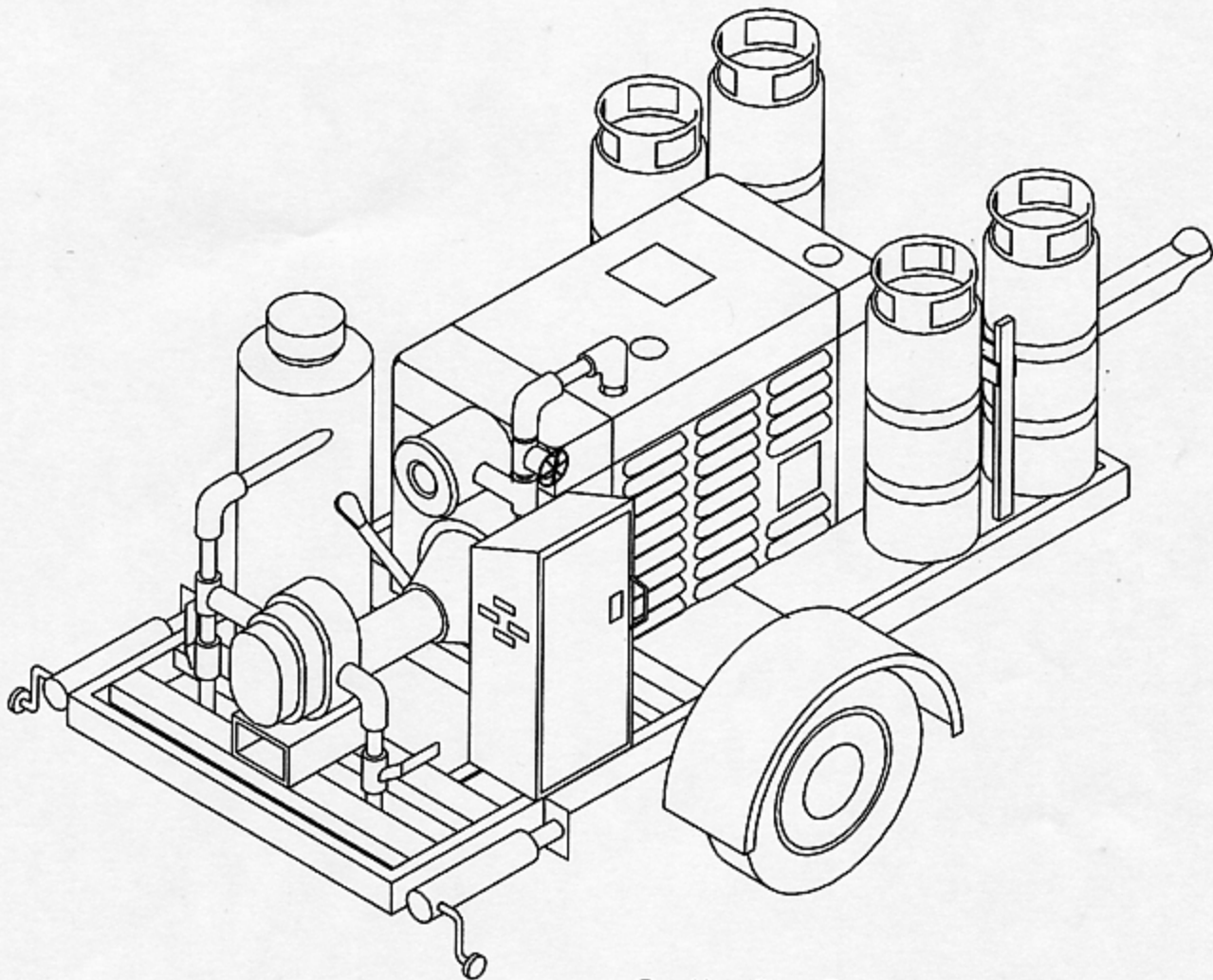
Sincerely,  
CEECON

A handwritten signature in black ink, appearing to read "Michael Hodges", written over a horizontal line.

Michael Hodges  
President

Attachment: VET-1, Vapor Extraction Internal Combustion Engine Diagram  
VET-2, Vapor Extraction Internal Combustion Engine Process Flow  
Diagram





Soil & Groundwater  
Remediation Project  
Former UST Site  
San Jose, California  
Enviro Soil Tech Consultants

CEEC  CON  
CALIFORNIA ENVIRONMENTAL ENGINEERS & CONTRACTORS

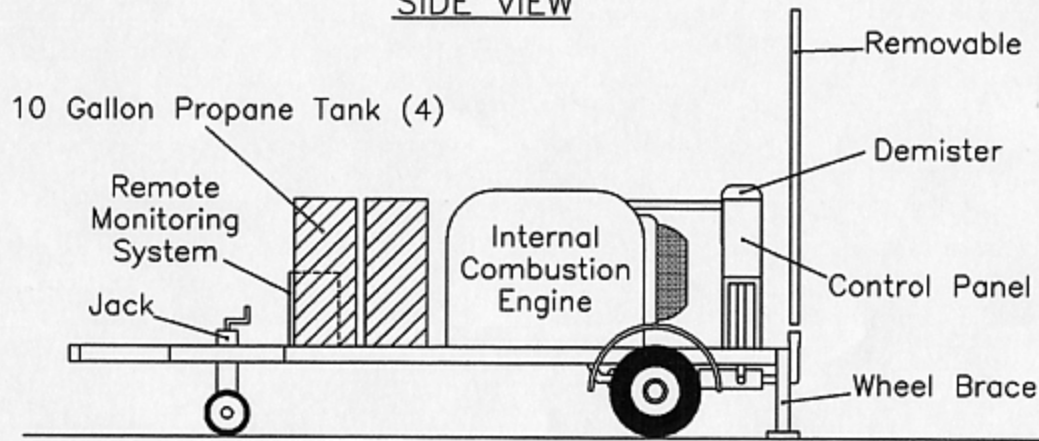
Trailer-Mounted  
Remediation  
Engine

Drawing: RE-2

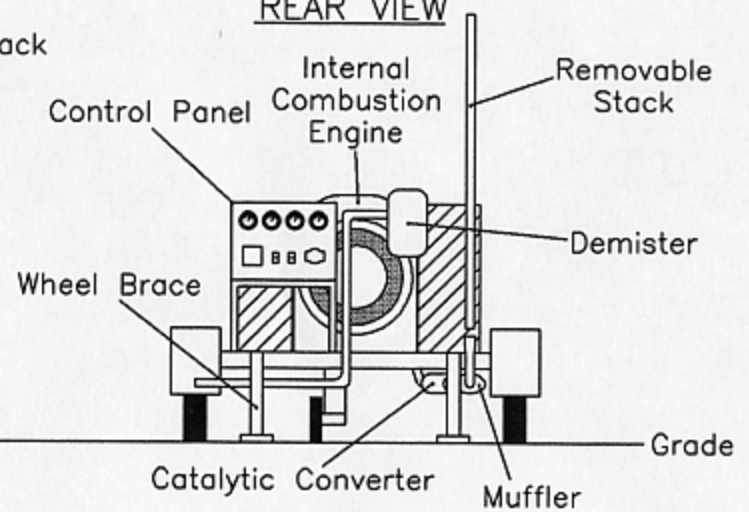
Date: 6/2/08



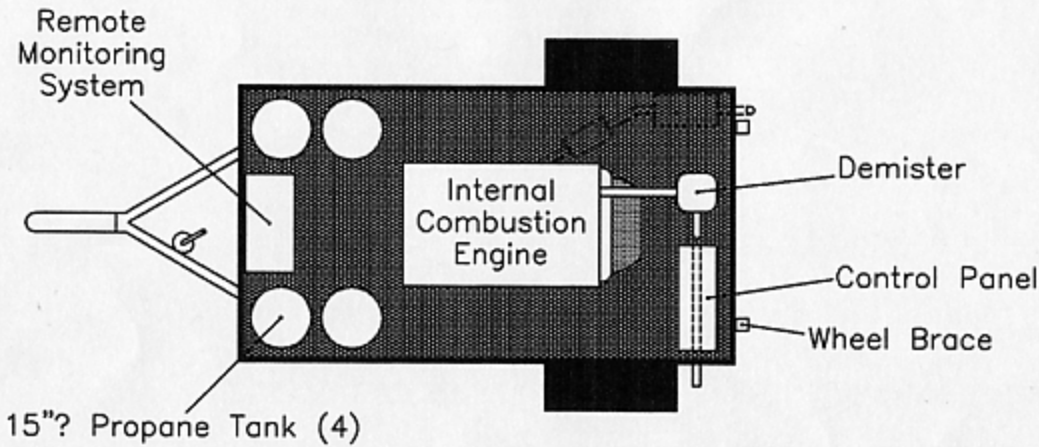
SIDE VIEW



REAR VIEW



PLAN VIEW



Instrumentation Readouts

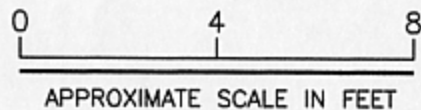
- Engine Flow Meter
- Engine R.P.M.
- Engine Temperature In Degrees Fahrenheit
- Engine Intake Vacuum In Inches Of Mercury
- Well Vacuum In Inches Of Water Column
- Well Air Flow In Cubic Feet Per Minute
- Well Air Flow Temperature In Degrees Fahrenheit

Sample Ports

- Influent (Engine Intake)
- Effluent (Stack)

Remote Signals

- Propane Level
- Engine ON/OFF Status

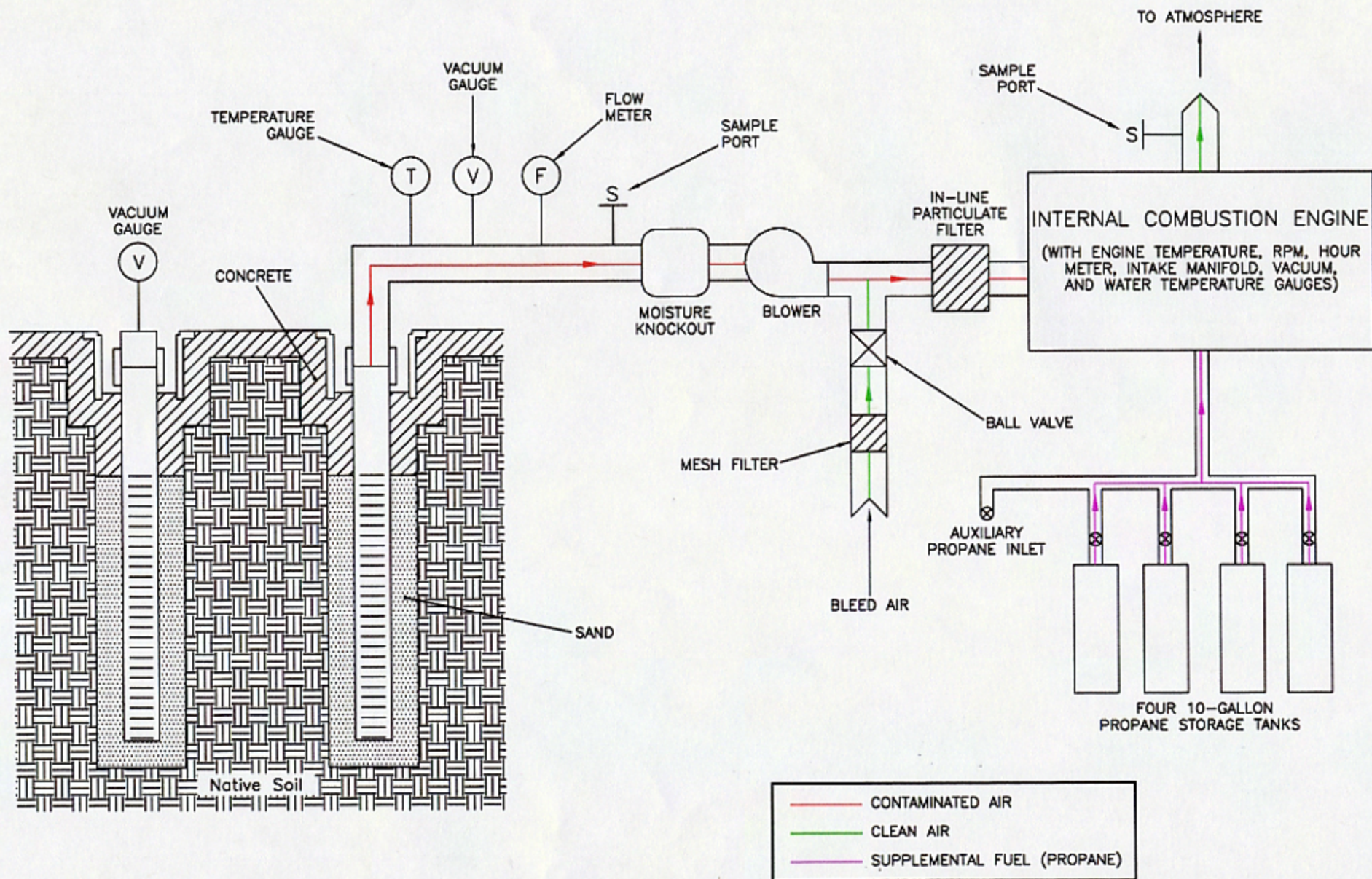


Drawing: VET-1

Date: 6/2/08

Vapor-Extraction  
Internal Combustion  
Engine - ESTC









939 Ellis Street, San Francisco, CA 94109  
(415) 749-4990

FAX: (415) 749-4949

**Toxic Evaluation Section**  
Of The  
**Engineering Division**

# Fax

To: MIKE HODGES

Company: CELCON

Fax: (650) 827 7476 No. of Pages: 2 plus cover

From: ROBERT CAVE

Date: 5/20/08

Message: THE PILOT TEST MAGNA CARTA

If you have any transmittal problems, call me at 749-50418

**Interoffice Memorandum**  
April 1, 1992  
To: John Swanson  
From: Barry Young  
Subject: Gas Characterization Tests  
Page 2 of 2

A reasonable period for such gas characterization tests would not exceed 5 days. The carbon adsorption control system should be equipped with a sample port between the canisters. The gas between the two canisters should be monitored daily for breakthrough with a flame ionization detector or a photoionization detector. Upon breakthrough detection, the first canister in series should be changed out with fresh carbon immediately.

Any testing which does not provide equivalent control, or extends beyond five days, should be considered operation of a source without a permit.

Please indicate your concurrence.

INTEROFFICE MEMORANDUM  
 APRIL 1, 1992  
 Page 1 of 2

TO: JOHN SWANSON *Concur JJS 4/17*  
 DIRECTOR, PERMIT SERVICES

VIA: SANDRA LOPEZ *SLC*  
 BILL DEBOISBLANC *WdB*

FROM: BARRY YOUNG *Barry Young*  
 AIR QUALITY ENGINEER II, NSR

SUBJECT: GAS CHARACTERIZATION TESTS FOR ON-SITE SOIL  
 DECONTAMINATION PROJECTS

This policy memo supercedes the attached 10/27/87 policy memo from S. Hill to J. Swanson.

Organic compound gas samples need to be collected and analyzed in order to characterize the emissions from, and design controls for, on-site soil decontamination projects.

I recommend that operation of soil vapor extraction equipment during the collection of gas samples for analysis be considered exempt from District permit requirements, provided the emissions are controlled by:

1. Two carbon adsorption canisters arranged in series, each canister shall contain at least 100 pounds of carbon; or
2. An internal combustion engine with catalytic converter; or
3. Other equivalent control devices approved in writing by the District.

A written notification letter of the gas characterization test should be received by the Permit Services Division no later than three days prior to the test.

The written notification letter shall include the following information:

1. The name of the company conducting the test.
2. The exact dates the test will be conducted.
3. The address and zip code where the test will be conducted.
4. A written description of the emission control devices to be used.
5. A statement of compliance with Regulation 8, Rule 47 requirements.
6. The name, position, and telephone number of the appropriate contact person for the test.

If the test is approved by the Permit Services Division, the test contact person will be given verbal approval via telephone. After verbal approval of the test, the written notification letter shall be routed to the Enforcement Division for their reference.

File No. 10-93-567-ST  
July 1, 2008

## **A P P E N D I X "G"**

### **PHOTOGRAPHS**

**ENVIRO SOIL TECH CONSULTANTS**















File No. 10-93-567-ST  
July 1, 2008

**A P P E N D I X "H"**

**WELL COMPLETION REPORTS**

**ENVIRO SOIL TECH CONSULTANTS**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**



File No. 10-93-567-ST  
July 1, 2008

**A P P E N D I X "I"**

**LABORATORY REPORTS**

**ENVIRO SOIL TECH CONSULTANTS**

**Frank Hamedi**  
Enviro Soil Tech Consultants  
131 Tully Road  
San Jose, CA 95111

**Lab Order Number: C0857**  
**Issued: 05/21/2008**

**Project Number: 10-93-567-ST**  
**Project Name: 909 Bluebell Drive**  
**Project Location: Livermore**

**Global ID: T06019716197**

## Certificate of Analysis - Final Report

On May 12, 2008, samples were received under chain of custody for analysis. Accutest-Northern California analyzes samples "as received" unless otherwise noted. The following results are included:

<u>Matrix</u>	<u>Test / Comments</u>
Solid	VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B Electronic Deliverables for Geotracker TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

Accutest-Northern California is certified for environmental analyses by the State of California (#2346). Subcontracted work is the responsibility of the subcontract laboratory, this includes turn-around-time and data quality. If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,



Laurie Glantz-Murphy  
Laboratory Director



Northern California

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**Enviro Soil Tech Consultants**  
**131 Tully Road**  
**San Jose, CA 95111**  
**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-001    Sample ID: GP-5-5    Matrix: Solid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.92	0.46	mg/Kg	N/A	N/A	05/13/2008	SGC080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: JAbidog					
4-Bromofluorobenzene	91.5	65 - 135		Reviewed by: MaiChiTu					

### VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: EricKum					
4-Bromofluorobenzene	96.1	60 - 130		Reviewed by: MaiChiTu					
Dibromofluoromethane	101	60 - 130							
Toluene-d8	94.3	60 - 130							



Northern California

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**Enviro Soil Tech Consultants**  
**131 Tully Road**  
**San Jose, CA 95111**  
**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-002    Sample ID: GP-5-10    Matrix: Solid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.95	0.48	mg/Kg	N/A	N/A	05/13/2008	SGC080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>					Analyzed by: JAbidog	
4-Bromofluorobenzene	96.9		65 - 135					Reviewed by: MaiChiTu	

### VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>		<b>Control Limits (%)</b>					Analyzed by: EricKum	
4-Bromofluorobenzene	96.2		60 - 130					Reviewed by: MaiChiTu	
*** 72.0 ug/Kg PCE in sample.									
Dibromofluoromethane	102		60 - 130						
Toluene-d8	92.6		60 - 130						



Northern California

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**Enviro Soil Tech Consultants**  
**131 Tully Road**  
**San Jose, CA 95111**  
**Attn: Frank Hamed**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-003    Sample ID: GP-5-15    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.96	0.48	mg/Kg	N/A	N/A	05/13/2008	SGC080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: JAbidog					
4-Bromofluorobenzene	101	65 - 135		Reviewed by: MaiChiTu					

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: EricKum					
4-Bromofluorobenzene	95.8	60 - 130		Reviewed by: MaiChiTu					
*** 54.0 ug/Kg PCE in sample.									
Dibromofluoromethane	105	60 - 130							
Toluene-d8	92.4	60 - 130							

Detection Limit = Detection Limit for Reporting.

ND = Not Detected at or above the Detection Limit.

D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.

Qual = Data Qualifier





Northern California

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**Enviro Soil Tech Consultants**  
**131 Tully Road**  
**San Jose, CA 95111**  
**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-004    Sample ID: GP-7-5    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.96	0.48	mg/Kg	N/A	N/A	05/13/2008	SGC080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.9	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/13/2008	SM3080513
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/13/2008	SM3080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97.0	60 - 130
Dibromofluoromethane	106	60 - 130
Toluene-d8	92.9	60 - 130

Analyzed by: EricKum  
 Reviewed by: MaiChiTu



Northern California

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**Enviro Soil Tech Consultants**  
**131 Tully Road**  
**San Jose, CA 95111**  
**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-005    Sample ID: GP-7-10    Matrix: Solid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.93	0.46	mg/Kg	N/A	N/A	05/13/2008	SGC080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	91.4	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

### VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Methyl-t-butyl Ether	<b>6.5</b>		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.9	60 - 130
Dibromofluoromethane	104	60 - 130
Toluene-d8	94.9	60 - 130

Analyzed by: EricKum  
 Reviewed by: MaiChiTu



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**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-006    Sample ID: GP-7-15    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	0.50	mg/Kg	N/A	N/A	05/13/2008	SGC080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	93.1	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	97.0	60 - 130
Dibromofluoromethane	107	60 - 130
Toluene-d8	93.4	60 - 130

Analyzed by: EricKum  
 Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.

ND = Not Detected at or above the Detection Limit.

D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.

Qual = Data Qualifier



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Project Number: 10-93-567-ST  
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 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-007    Sample ID: GP-8-5    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.95	0.48	mg/Kg	N/A	N/A	05/13/2008	SGC080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: JAbidog					
4-Bromofluorobenzene	90.1	65 - 135		Reviewed by: MaiChiTu					

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: EricKum					
4-Bromofluorobenzene	95.4	60 - 130		Reviewed by: MaiChiTu					
Dibromofluoromethane	105	60 - 130							
Toluene-d8	92.2	60 - 130							

Detection Limit = Detection Limit for Reporting.

ND = Not Detected at or above the Detection Limit.

D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.

Qual = Data Qualifier



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## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

Lab #: C0857-008    Sample ID: GP-8-10    Matrix: Solid    Sample Date: 05/09/2008

### TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.99	0.50	mg/Kg	N/A	N/A	05/13/2008	SGC080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	95.7	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

### VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Toluene	ND		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Ethyl Benzene	ND		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Xylenes, Total	ND		5.0	50	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Methyl-t-butyl Ether	440		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butyl Ethyl Ether	ND		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butanol (TBA)	2300		5.0	200	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Diisopropyl Ether	ND		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Amyl Methyl Ether	ND		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dichloroethane	ND		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dibromoethane (EDB)	ND		5.0	25	µg/Kg	N/A	N/A	05/20/2008	SM3080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	95.8	60 - 130
Dibromofluoromethane	104	60 - 130
Toluene-d8	94.7	60 - 130

Analyzed by: EricKum  
 Reviewed by: MaiChiTu





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## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

Lab #: C0857-009    Sample ID: GP-8-15    Matrix: Solid    Sample Date: 05/09/2008

### TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.97	0.49	mg/Kg	N/A	N/A	05/13/2008	SGC080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: JAbidog					
4-Bromofluorobenzene	88.7	65 - 135		Reviewed by: MaiChiTu					

### VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Methyl-t-butyl Ether	<b>44</b>		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butanol (TBA)	<b>270</b>		1.0	40	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: EricKum					
4-Bromofluorobenzene	95.9	60 - 130		Reviewed by: MaiChiTu					
Dibromofluoromethane	102	60 - 130							
Toluene-d8	93.9	60 - 130							



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## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-010    Sample ID: GP-9-5    Matrix: Solid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.96	0.48	mg/Kg	N/A	N/A	05/13/2008	SGC080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: JAbidog					
4-Bromofluorobenzene	92.3	65 - 135		Reviewed by: MaiChiTu					

### VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/15/2008	SM3080515
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/15/2008	SM3080515
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: EricKum					
4-Bromofluorobenzene	96.0	60 - 130		Reviewed by: MaiChiTu					
Dibromofluoromethane	108	60 - 130							
Toluene-d8	91.8	60 - 130							



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 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
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## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-011    Sample ID: GP-9-10    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.98	0.49	mg/Kg	N/A	N/A	05/13/2008	SGC080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: JAbidog					
4-Bromofluorobenzene	90.3	65 - 135		Reviewed by: MaiChiTu					

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: EricKum					
4-Bromofluorobenzene	94.2	60 - 130		Reviewed by: MaiChiTu					
Dibromofluoromethane	104	60 - 130							
Toluene-d8	93.2	60 - 130							

Detection Limit = Detection Limit for Reporting.

ND = Not Detected at or above the Detection Limit.

D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.

Qual = Data Qualifier



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## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-012    Sample ID: GP-9-15    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.91	0.45	mg/Kg	N/A	N/A	05/13/2008	SGC080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.2	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Methyl-t-butyl Ether	<b>14</b>		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.1	60 - 130
Dibromofluoromethane	102	60 - 130
Toluene-d8	94.6	60 - 130

Analyzed by: EricKum  
 Reviewed by: MaiChiTu





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 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-013    Sample ID: GP-10-5    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.97	0.49	mg/Kg	N/A	N/A	05/13/2008	SGC080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.4	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.1	60 - 130
Dibromofluoromethane	104	60 - 130
Toluene-d8	94.0	60 - 130

Analyzed by: EricKum  
 Reviewed by: MaiChiTu



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**131 Tully Road**  
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**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-014    Sample ID: GP-10-10    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.91	0.45	mg/Kg	N/A	N/A	05/14/2008	SGC080513
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: JAbidog					
4-Bromofluorobenzene	87.7	65 - 135		Reviewed by: MaiChiTu					

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
<b>Surrogate</b>	<b>Surrogate Recovery</b>	<b>Control Limits (%)</b>		Analyzed by: EricKum					
4-Bromofluorobenzene	94.9	60 - 130		Reviewed by: MaiChiTu					
Dibromofluoromethane	104	60 - 130							
Toluene-d8	93.0	60 - 130							

Detection Limit = Detection Limit for Reporting.

ND = Not Detected at or above the Detection Limit.

D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.

Qual = Data Qualifier



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**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-015    Sample ID: GP-10-15    Matrix: Solid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.92	0.46	mg/Kg	N/A	N/A	05/14/2008	SGC080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	88.8	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

### VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.0	60 - 130
Dibromofluoromethane	102	60 - 130
Toluene-d8	94.4	60 - 130

Analyzed by: EricKum  
 Reviewed by: MaiChiTu



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**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0857-016    Sample ID: GP-10-20    Matrix: Solid    Sample Date: 05/09/2008**

**TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		0.97	0.49	mg/Kg	N/A	N/A	05/14/2008	SGC080513

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	89.8	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

**VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Toluene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Ethyl Benzene	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Xylenes, Total	ND		1.0	10	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Methyl-t-butyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Butanol (TBA)	ND		1.0	40	µg/Kg	N/A	N/A	05/20/2008	SM3080520
Diisopropyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dichloroethane	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520
1,2-Dibromoethane (EDB)	ND		1.0	5.0	µg/Kg	N/A	N/A	05/20/2008	SM3080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	95.8	60 - 130
Dibromofluoromethane	103	60 - 130
Toluene-d8	94.6	60 - 130

Analyzed by: EricKum  
 Reviewed by: MaiChiTu





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Method Blank - Solid - TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

QC Batch ID: SGC080513

Validated by: MaiChiTu - 05/14/08

QC Batch Analysis Date: 5/13/2008

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	0.50	mg/Kg
<b>Surrogate for Blank</b>	<b>% Recovery</b>	<b>Control Limits</b>		
4-Bromofluorobenzene	94.7	65 - 135		



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**Method Blank - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

**QC Batch ID: SM3080513**

Validated by: MaiChiTu - 05/14/08

**QC Batch Analysis Date: 5/13/2008**

Parameter	Result	DF	PQLR	Units
1,2-Dibromoethane (EDB)	ND	1	5.0	µg/Kg
1,2-Dichloroethane	ND	1	5.0	µg/Kg
Benzene	ND	1	5.0	µg/Kg
Diisopropyl Ether	ND	1	5.0	µg/Kg
Ethyl Benzene	ND	1	5.0	µg/Kg
Methyl-t-butyl Ether	ND	1	5.0	µg/Kg
tert-Amyl Methyl Ether	ND	1	5.0	µg/Kg
tert-Butanol (TBA)	ND	1	40	µg/Kg
tert-Butyl Ethyl Ether	ND	1	5.0	µg/Kg
Toluene	ND	1	5.0	µg/Kg
Xylenes, Total	ND	1	10	µg/Kg

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	97.3	60 - 130
Dibromofluoromethane	99.3	60 - 130
Toluene-d8	95.2	60 - 130



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**Method Blank - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

**QC Batch ID: SM3080515**

Validated by: MaiChiTu - 05/19/08

**QC Batch Analysis Date: 5/15/2008**

Parameter	Result	DF	PQLR	Units
1,2-Dibromoethane (EDB)	ND	1	5.0	µg/Kg
1,2-Dichloroethane	ND	1	5.0	µg/Kg
Benzene	ND	1	5.0	µg/Kg
Diisopropyl Ether	ND	1	5.0	µg/Kg
Ethyl Benzene	ND	1	5.0	µg/Kg
Methyl-t-butyl Ether	ND	1	5.0	µg/Kg
tert-Amyl Methyl Ether	ND	1	5.0	µg/Kg
tert-Butanol (TBA)	ND	1	40	µg/Kg
tert-Butyl Ethyl Ether	ND	1	5.0	µg/Kg
Toluene	ND	1	5.0	µg/Kg
Xylenes, Total	ND	1	10	µg/Kg

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	<b>95.8</b>	60 - 130
Dibromofluoromethane	<b>104</b>	60 - 130
Toluene-d8	<b>93.6</b>	60 - 130



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**Method Blank - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

**QC Batch ID: SM3080520**

Validated by: MaiChiTu - 05/21/08

**QC Batch Analysis Date: 5/20/2008**

Parameter	Result	DF	PQLR	Units
1,2-Dibromoethane (EDB)	ND	1	5.0	µg/Kg
1,2-Dichloroethane	ND	1	5.0	µg/Kg
Benzene	ND	1	5.0	µg/Kg
Diisopropyl Ether	ND	1	5.0	µg/Kg
Ethyl Benzene	ND	1	5.0	µg/Kg
Methyl-t-butyl Ether	ND	1	5.0	µg/Kg
tert-Amyl Methyl Ether	ND	1	5.0	µg/Kg
tert-Butanol (TBA)	ND	1	40	µg/Kg
tert-Butyl Ethyl Ether	ND	1	5.0	µg/Kg
Toluene	ND	1	5.0	µg/Kg
Xylenes, Total	ND	1	10	µg/Kg

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	94.1	60 - 130
Dibromofluoromethane	100	60 - 130
Toluene-d8	96.3	60 - 130





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**LCS / LCSD - Solid - TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B**

**QC Batch ID: SGC080513**

Reviewed by: MaiChiTu - 05/14/08

**QC Batch ID Analysis Date: 5/13/2008**

**LCS**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<0.50	2.5	2.27	mg/Kg	90.8	65 - 135
<b>Surrogate</b>	<b>% Recovery</b>	<b>Control Limits</b>				
4-Bromofluorobenzene	93.3	65 - 135				

**LCSD**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<0.50	2.5	2.32	mg/Kg	92.8	2.2	30.0	65 - 135
<b>Surrogate</b>	<b>% Recovery</b>	<b>Control Limits</b>						
4-Bromofluorobenzene	97.8	65 - 135						



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**LCS / LCSD - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

**QC Batch ID: SM3080513**

Reviewed by: MaiChiTu - 05/14/08

**QC Batch ID Analysis Date: 5/13/2008**

**LCS**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	0.0	40	45.3	µg/Kg	113	65 - 135
Benzene	<5.0	40	45.0	µg/Kg	112	65 - 135
Chlorobenzene	0.0	40	40.0	µg/Kg	100	65 - 135
Methyl-t-butyl Ether	<5.0	40	40.2	µg/Kg	100	65 - 135
Toluene	<5.0	40	39.0	µg/Kg	97.5	65 - 135
Trichloroethene	0.0	40	45.5	µg/Kg	114	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	93.5	60 - 130
Dibromofluoromethane	99.4	60 - 130
Toluene-d8	93.2	60 - 130

**LCSD**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	0.0	40	44.4	µg/Kg	111	2.0	30.0	65 - 135
Benzene	<5.0	40	43.6	µg/Kg	109	3.2	30.0	65 - 135
Chlorobenzene	0.0	40	39.5	µg/Kg	98.8	1.3	30.0	65 - 135
Methyl-t-butyl Ether	<5.0	40	41.5	µg/Kg	104	3.2	30.0	65 - 135
Toluene	<5.0	40	38.5	µg/Kg	96.2	1.3	30.0	65 - 135
Trichloroethene	0.0	40	43.2	µg/Kg	108	5.2	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	95.4	60 - 130
Dibromofluoromethane	103.0	60 - 130
Toluene-d8	93.8	60 - 130



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**LCS / LCSD - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

**QC Batch ID: SM3080515**

Reviewed by: MaiChiTu - 05/19/08

**QC Batch ID Analysis Date: 5/15/2008**

**LCS**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	0.0	40	42.4	µg/Kg	106	65 - 135
Benzene	<5.0	40	42.8	µg/Kg	107	65 - 135
Chlorobenzene	0.0	40	38.9	µg/Kg	97.2	65 - 135
Methyl-t-butyl Ether	<5.0	40	37.6	µg/Kg	94.0	65 - 135
Toluene	<5.0	40	38.9	µg/Kg	97.2	65 - 135
Trichloroethene	0.0	40	43.9	µg/Kg	110	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	<b>95.9</b>	60 - 130
Dibromofluoromethane	<b>97.6</b>	60 - 130
Toluene-d8	<b>93.9</b>	60 - 130

**LCSD**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	0.0	40	45.1	µg/Kg	113	6.2	30.0	65 - 135
Benzene	<5.0	40	44.1	µg/Kg	110	3.0	30.0	65 - 135
Chlorobenzene	0.0	40	41.2	µg/Kg	103	5.7	30.0	65 - 135
Methyl-t-butyl Ether	<5.0	40	39.9	µg/Kg	99.8	5.9	30.0	65 - 135
Toluene	<5.0	40	40.3	µg/Kg	101	3.5	30.0	65 - 135
Trichloroethene	0.0	40	47.1	µg/Kg	118	7.0	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	<b>97.6</b>	60 - 130
Dibromofluoromethane	<b>102.0</b>	60 - 130
Toluene-d8	<b>95.3</b>	60 - 130



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**LCS / LCSD - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

**QC Batch ID: SM3080520**

Reviewed by: MaiChiTu - 05/21/08

**QC Batch ID Analysis Date: 5/20/2008**

**LCS**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	0.0	40	36.1	µg/Kg	90.2	65 - 135
Benzene	<5.0	40	38.8	µg/Kg	97.0	65 - 135
Chlorobenzene	0.0	40	36.3	µg/Kg	90.8	65 - 135
Methyl-t-butyl Ether	<5.0	40	36.2	µg/Kg	90.5	65 - 135
Toluene	<5.0	40	34.8	µg/Kg	87.0	65 - 135
Trichloroethene	0.0	40	38.6	µg/Kg	96.5	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	<b>94.6</b>	60 - 130
Dibromofluoromethane	<b>99.9</b>	60 - 130
Toluene-d8	<b>95.7</b>	60 - 130

**LCSD**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	0.0	40	48.2	µg/Kg	120	29	30.0	65 - 135
Benzene	<5.0	40	47.4	µg/Kg	118	20	30.0	65 - 135
Chlorobenzene	0.0	40	44.8	µg/Kg	112	21	30.0	65 - 135
Methyl-t-butyl Ether	<5.0	40	38.6	µg/Kg	96.5	6.4	30.0	65 - 135
Toluene	<5.0	40	44.8	µg/Kg	112	25	30.0	65 - 135
Trichloroethene	0.0	40	49.2	µg/Kg	123	24	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	<b>94.9</b>	60 - 130
Dibromofluoromethane	<b>97.6</b>	60 - 130
Toluene-d8	<b>97.3</b>	60 - 130



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MS / MSD - Solid - TPH-Purgeable - GC: EPA 5030B (or 5035A for Encore Samples only) / EPA 8015B

QC Batch ID: SGC080513

Reviewed by: MaiChiTu - 05/14/08

QC Batch ID Analysis Date: 5/13/2008

MS Sample Spiked: C0857-001

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
TPH as Gasoline	ND	1	2.5	2.00	mg/Kg	5/13/2008	80.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	91.3	65 - 135

MSD Sample Spiked: C0857-001

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	ND	1	2.5	2.27	mg/Kg	5/13/2008	90.8	13	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	91.3	65 - 135





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**MS / MSD - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

**QC Batch ID: SM3080513**

Reviewed by: MaiChiTu - 05/14/08

**QC Batch ID Analysis Date: 5/13/2008**

**MS Sample Spiked: C0857-004**

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
Benzene	ND	1	40	40.5	µg/Kg	5/13/2008	101	65 - 135
Methyl-t-butyl Ether	ND	1	40	39.1	µg/Kg	5/13/2008	97.8	65 - 135
Toluene	ND	1	40	36.3	µg/Kg	5/13/2008	90.8	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.6	60 - 130
Dibromofluoromethane	102.0	60 - 130
Toluene-d8	94.8	60 - 130

**MSD Sample Spiked: C0857-004**

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	ND	1	40	49.6	µg/Kg	5/13/2008	124	20	30.0	65 - 135
Methyl-t-butyl Ether	ND	1	40	41.5	µg/Kg	5/13/2008	104	6.0	30.0	65 - 135
Toluene	ND	1	40	44.3	µg/Kg	5/13/2008	111	20	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.9	60 - 130
Dibromofluoromethane	99.6	60 - 130
Toluene-d8	93.4	60 - 130



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**MS / MSD - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

QC Batch ID: SM3080515

Reviewed by: MaiChiTu - 05/19/08

QC Batch ID Analysis Date: 5/15/2008

**MS Sample Spiked: C0857-010**

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
Benzene	ND	1	40	47.8	µg/Kg	5/15/2008	120	65 - 135
Methyl-t-butyl Ether	ND	1	40	39.6	µg/Kg	5/15/2008	99.0	65 - 135
Toluene	ND	1	40	42.4	µg/Kg	5/15/2008	106	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.4	60 - 130
Dibromofluoromethane	103.0	60 - 130
Toluene-d8	94.8	60 - 130

**MSD Sample Spiked: C0857-010**

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	ND	1	40	47.5	µg/Kg	5/15/2008	119	0.63	30.0	65 - 135
Methyl-t-butyl Ether	ND	1	40	39.2	µg/Kg	5/15/2008	98.0	1.0	30.0	65 - 135
Toluene	ND	1	40	42.5	µg/Kg	5/15/2008	106	0.24	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	97.6	60 - 130
Dibromofluoromethane	103.0	60 - 130
Toluene-d8	94.2	60 - 130



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**MS / MSD - Solid - VOCs: EPA 5030B (or 5035A for Encore Samples only)/EPA 8260B**

**QC Batch ID: SM3080520**

Reviewed by: MaiChiTu - 05/21/08

**QC Batch ID Analysis Date: 5/20/2008**

**MS Sample Spiked: C0857-013**

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
Benzene	ND	1	40	47.3	µg/Kg	5/20/2008	118	65 - 135
Methyl-t-butyl Ether	ND	1	40	35.9	µg/Kg	5/20/2008	89.8	65 - 135
Toluene	ND	1	40	45.1	µg/Kg	5/20/2008	113	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	94.6	60 - 130
Dibromofluoromethane	96.4	60 - 130
Toluene-d8	97.3	60 - 130

**MSD Sample Spiked: C0857-013**

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	ND	1	40	48.4	µg/Kg	5/20/2008	121	2.3	30.0	65 - 135
Methyl-t-butyl Ether	ND	1	40	38.4	µg/Kg	5/20/2008	96.0	6.7	30.0	65 - 135
Toluene	ND	1	40	46.5	µg/Kg	5/20/2008	116	3.1	30.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	94.4	60 - 130
Dibromofluoromethane	98.1	60 - 130
Toluene-d8	95.1	60 - 130

CHAIN OF CUSTODY RECORD

PROJ. NO. 10-93-567-ST NAME 909 Bluebell Drive, Livermore

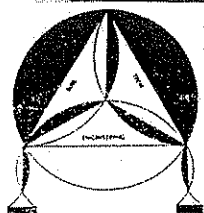
SAMPLERS: (Signature) *Frank Hamed* C0857

NO.	DATE	TIME	SOIL	WATER	LOCATION	CON-TAINER	ANALYSES REQUESTED (2)			REMARKS
							TPH	BY	ED	
1	5/09/08		✓		GP-5-5 001	1	✓	✓	✓	EDF #T06019716197
2			✓		GP-5-10 002	1	✓	✓	✓	
3			✓		GP-5-15 003	1	✓	✓	✓	
4			✓		GP-7-5 004	1	✓	✓	✓	
5			✓		GP-7-10 005	1	✓	✓	✓	
6			✓		GP-7-15 006	1	✓	✓	✓	Note: Please label the field points according to location on the Chain.
7			✓		GP-8-5 007	1	✓	✓	✓	
8			✓		GP-8-10 008	1	✓	✓	✓	
9			✓		GP-8-15 009	1	✓	✓	✓	
10			✓		GP-9-5 010	1	✓	✓	✓	
11			✓		GP-9-10 011	1	✓	✓	✓	
12			✓		GP-9-15 012	1	✓	✓	✓	
13			✓		GP-10-5 013	1	✓	✓	✓	Rec'd @ Acetate each
14			✓		GP-10-10 014	1	✓	✓	✓	
15			✓		GP-10-15 015	1	✓	✓	✓	w/4.8" Temp

Relinquished by: (Signature) *Frank Hamed* Date / Time 5/12/08 1013 Received by: (Signature) *[Signature]* Relinquished by: (Signature) Date / Time Receive by: (Signature)

Relinquished by: (Signature) *[Signature]* Date / Time 5/12/08 1043 Received by: (Signature) *[Signature]* Relinquished by: (Signature) Date / Time Received by: (Signature)

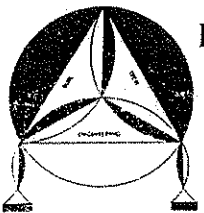
Relinquished by: (Signature) Date / Time Received for Laboratory by: (Signature) Date / Time Remarks Please send lab report to Frank Hamed



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 Environmental & Geotechnical Consultants  
 131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111  
 Tel: (408) 297-1500 Fax: (408) 292-2116

CHAIN OF CUSTODY RECORD

PROJ. NO. 10-93-567-JT		NAME 909 Bluebell Drive, Livermore			CON-TAINER	ANALYSES REQUESTED @ 10/19/04 by 8015 mcl SIX ANALYSES @ EDR # 12-DA(820)	REMARKS	
SAMPLERS: (Signature) <i>Frank Hamed</i> C0857								
NO.	DATE	TIME	SOIL	WATER				LOCATION
10	5/09/08		✓		GP-10-20 016	✓ ✓ ✓	EDF #T06019716197	
							Note: Please label the field point according to location on the Chain.	
Relinquished by: (Signature) <i>Frank Hamed</i>		Date / Time 5/12/08 1013	Received by: (Signature) <i>[Signature]</i>		Relinquished by: (Signature)		Date / Time	Received by: (Signature)
Relinquished by: (Signature) <i>[Signature]</i>		Date / Time 5/12/08 1043	Received by: (Signature) <i>Handwritten</i>		Relinquished by: (Signature)		Date / Time	Received by: (Signature)
Relinquished by: (Signature)		Date / Time	Received for Laboratory by: (Signature)		Date / Time	Remarks Please send lab report to Frank Hamed		



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**Frank Hamedi**  
**Enviro Soil Tech Consultants**  
**131 Tully Road**  
**San Jose, CA 95111**

**Lab Order Number: C0856**  
**Issued: 05/27/2008**

**Project Number: 10-93-567-ST**  
**Project Name: 909 Bluebell Drive**  
**Project Location: Livermore**

**Global ID: T06019716197**

## Certificate of Analysis - Final Report

On May 12, 2008, samples were received under chain of custody for analysis.  
Accutest-Northern California analyzes samples "as received" unless otherwise noted. The following results are included:

<u>Matrix</u>	<u>Test / Comments</u>
Liquid	VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater Electronic Deliverables for Geotracker TPH-Purgeable - GC : EPA 5030B / EPA 8015B

Accutest-Northern California is certified for environmental analyses by the State of California (#2346).  
Subcontracted work is the responsibility of the subcontract laboratory, this includes turn-around-time and data quality.  
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,



Laurie Glantz-Murphy  
Laboratory Director



Northern California

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

**Enviro Soil Tech Consultants**  
**131 Tully Road**  
**San Jose, CA 95111**  
**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0856-001    Sample ID: GP-5-W    Matrix: Liquid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC : EPA 5030B / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	560		5.0	250	µg/L	N/A	N/A	05/19/2008	WGC080519
Atypical pattern.									

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	93.7	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

### VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		20	10	µg/L	N/A	N/A	05/20/2008	WM2080520
Toluene	ND		20	10	µg/L	N/A	N/A	05/20/2008	WM2080520
Ethyl Benzene	ND		20	10	µg/L	N/A	N/A	05/20/2008	WM2080520
Xylenes, Total	ND		20	20	µg/L	N/A	N/A	05/20/2008	WM2080520
Methyl-t-butyl Ether	ND		20	20	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butyl Ethyl Ether	ND		20	100	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butanol (TBA)	ND		20	200	µg/L	N/A	N/A	05/20/2008	WM2080520
Diisopropyl Ether	ND		20	100	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Amyl Methyl Ether	ND		20	100	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dichloroethane	ND		20	10	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dibromoethane (EDB)	ND		20	10	µg/L	N/A	N/A	05/20/2008	WM2080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.3	60 - 130
Dibromofluoromethane	92.8	60 - 130
Toluene-d8	94.3	60 - 130

Analyzed by: TAF  
 Reviewed by: MaiChiTu



Northern California

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Enviro Soil Tech Consultants  
 131 Tully Road  
 San Jose, CA 95111  
 Attn: Frank Hamedi

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

Lab #: C0856-002    Sample ID: GP-7-W    Matrix: Liquid    Sample Date: 05/09/2008

### TPH-Purgeable - GC : EPA 5030B / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	50	µg/L	N/A	N/A	05/19/2008	WGC080519

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.6	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

### VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Toluene	1.7		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Xylenes, Total	ND		1.0	1.0	µg/L	N/A	N/A	05/20/2008	WM2080520
Methyl-t-butyl Ether	40		1.0	1.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	05/20/2008	WM2080520
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dichloroethane	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dibromoethane (EDB)	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.8	60 - 130
Dibromofluoromethane	100	60 - 130
Toluene-d8	97.4	60 - 130

Analyzed by: TAF  
 Reviewed by: MaiChiTu



Northern California

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**San Jose, CA 95111**  
**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0856-003    Sample ID: GP-8-W    Matrix: Liquid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC : EPA 5030B / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	530		4.0	200	µg/L	N/A	N/A	05/22/2008	WGC080522
Atypical pattern.									

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	93.9	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

### VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		10	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
Toluene	ND		10	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
Ethyl Benzene	ND		10	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
Xylenes, Total	ND		10	10	µg/L	N/A	N/A	05/20/2008	WM2080520
Methyl-t-butyl Ether	970		10	10	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butyl Ethyl Ether	ND		10	50	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butanol (TBA)	4100		10	100	µg/L	N/A	N/A	05/20/2008	WM2080520
Diisopropyl Ether	ND		10	50	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Amyl Methyl Ether	ND		10	50	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dichloroethane	ND		10	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dibromoethane (EDB)	ND		10	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	92.5	60 - 130
Dibromofluoromethane	99.7	60 - 130
Toluene-d8	97.7	60 - 130

Analyzed by: TAF  
 Reviewed by: MaiChiTu



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**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0856-004    Sample ID: GP-9-W    Matrix: Liquid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC : EPA 5030B / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	50	µg/L	N/A	N/A	05/19/2008	WGC080519

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	100	65 - 135

Analyzed by: JAbidog  
 Reviewed by: MaiChiTu

### VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Xylenes, Total	ND		1.0	1.0	µg/L	N/A	N/A	05/20/2008	WM2080520
Methyl-t-butyl Ether	<b>8.7</b>		1.0	1.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	05/20/2008	WM2080520
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dichloroethane	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dibromoethane (EDB)	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	93.0	60 - 130
Dibromofluoromethane	99.1	60 - 130
Toluene-d8	99.6	60 - 130

Analyzed by: TAF  
 Reviewed by: MaiChiTu





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**Attn: Frank Hamedi**

Project Number: 10-93-567-ST  
 Project Name: 909 Bluebell Drive  
 Project Location: Livermore  
 GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 05/12/2008  
 Sample Collected by: Client

**Lab # : C0856-005    Sample ID: GP-10-W    Matrix: Liquid    Sample Date: 05/09/2008**

### TPH-Purgeable - GC : EPA 5030B / EPA 8015B

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	50	µg/L	N/A	N/A	05/17/2008	WGC080517

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	95.8	65 - 135

Analyzed by: JABidog  
 Reviewed by: MaiChiTu

### VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
Xylenes, Total	ND		1.0	1.0	µg/L	N/A	N/A	05/20/2008	WM2080520
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	05/20/2008	WM2080520
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dichloroethane	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520
1,2-Dibromoethane (EDB)	ND		1.0	0.50	µg/L	N/A	N/A	05/20/2008	WM2080520

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	92.9	60 - 130
Dibromofluoromethane	96.4	60 - 130
Toluene-d8	96.6	60 - 130

Analyzed by: TAF  
 Reviewed by: MaiChiTu



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Method Blank - Liquid - TPH-Purgeable - GC : EPA 5030B / EPA 8015B

QC Batch ID: WGC080517

Validated by: MaiChiTu - 05/20/08

QC Batch Analysis Date: 5/17/2008

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L
<b>Surrogate for Blank</b>	<b>% Recovery</b>	<b>Control Limits</b>		
4-Bromofluorobenzene	92.7	65 - 135		



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Method Blank - Liquid - TPH-Purgeable - GC : EPA 5030B / EPA 8015B

QC Batch ID: WGC080519

Validated by: MaiChiTu - 05/20/08

QC Batch Analysis Date: 5/19/2008

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L
<b>Surrogate for Blank</b>	<b>% Recovery</b>	<b>Control Limits</b>		
4-Bromofluorobenzene	99.3	65 - 135		



Northern California 3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - TPH-Purgeable - GC : EPA 5030B / EPA 8015B

QC Batch ID: WGC080522

Validated by: MaiChiTu - 05/27/08

QC Batch Analysis Date: 5/22/2008

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L
<b>Surrogate for Blank</b>	<b>% Recovery</b>	<b>Control Limits</b>		
4-Bromofluorobenzene	95.3	65 - 135		



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**Method Blank - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater**

**QC Batch ID: WM2080520**

Validated by: MaiChiTu - 05/21/08

**QC Batch Analysis Date: 5/20/2008**

Parameter	Result	DF	PQLR	Units
1,2-Dibromoethane (EDB)	ND	1	0.50	µg/L
1,2-Dichloroethane	ND	1	0.50	µg/L
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	1.0	µg/L
<b>Surrogate for Blank</b>	<b>% Recovery</b>	<b>Control Limits</b>		
4-Bromofluorobenzene	<b>94.9</b>	60 - 130		
Dibromofluoromethane	<b>94.8</b>	60 - 130		
Toluene-d8	<b>97.1</b>	60 - 130		





Northern California 3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - TPH-Purgeable - GC : EPA 5030B / EPA 8015B

QC Batch ID: WGC080517

Reviewed by: MaiChiTu - 05/20/08

QC Batch ID Analysis Date: 5/17/2008

**LCS**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<50	120	142	µg/L	114	65 - 135
<b>Surrogate</b>	<b>% Recovery</b>	<b>Control Limits</b>				
4-Bromofluorobenzene	113.0	65 - 135				

**LCSD**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<50	120	122	µg/L	97.6	15	25.0	65 - 135
<b>Surrogate</b>	<b>% Recovery</b>	<b>Control Limits</b>						
4-Bromofluorobenzene	96.2	65 - 135						



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**LCS / LCSD - Liquid - TPH-Purgeable - GC : EPA 5030B / EPA 8015B**

**QC Batch ID: WGC080519**

Reviewed by: MaiChiTu - 05/20/08

**QC Batch ID Analysis Date: 5/19/2008**

**LCS**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<50	120	127	µg/L	102	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	93.8	65 - 135

**LCSD**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<50	120	139	µg/L	111	9.0	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	99.0	65 - 135



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LCS / LCSD - Liquid - TPH-Purgeable - GC : EPA 5030B / EPA 8015B

QC Batch ID: WGC080522

Reviewed by: MaiChiTu - 05/27/08

QC Batch ID Analysis Date: 5/22/2008

**LCS**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<50	120	134	µg/L	107	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	98.5	65 - 135

**LCSD**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<50	120	121	µg/L	96.8	10	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	110.0	65 - 135



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**LCS / LCSD - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater**

**QC Batch ID: WM2080520**

Reviewed by: MaiChiTu - 05/21/08

**QC Batch ID Analysis Date: 5/20/2008**

**LCS**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	0.0	20	18.0	µg/L	90.0	70 - 130
Benzene	<0.50	20	19.4	µg/L	97.0	70 - 130
Chlorobenzene	0.0	20	18.9	µg/L	94.5	70 - 130
Methyl-t-butyl Ether	<1.0	20	19.2	µg/L	96.0	70 - 130
Toluene	<0.50	20	18.3	µg/L	91.5	70 - 130
Trichloroethene	0.0	20	19.6	µg/L	98.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	97.5	60 - 130
Dibromofluoromethane	98.3	60 - 130
Toluene-d8	98.1	60 - 130

**LCSD**

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	0.0	20	18.8	µg/L	94.0	4.3	25.0	70 - 130
Benzene	<0.50	20	20.4	µg/L	102	5.0	25.0	70 - 130
Chlorobenzene	0.0	20	20.3	µg/L	102	7.1	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	18.7	µg/L	93.5	2.6	25.0	70 - 130
Toluene	<0.50	20	19.6	µg/L	98.0	6.9	25.0	70 - 130
Trichloroethene	0.0	20	20.9	µg/L	104	6.4	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	94.3	60 - 130
Dibromofluoromethane	96.0	60 - 130
Toluene-d8	97.9	60 - 130



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MS / MSD - Liquid - TPH-Purgeable - GC : EPA 5030B / EPA 8015B

QC Batch ID: WGC080517

Reviewed by: MaiChiTu - 05/20/08

QC Batch ID Analysis Date: 5/17/2008

MS Sample Spiked: C0856-005

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
TPH as Gasoline	ND	1	120	128	µg/L	5/17/2008	102	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	113.0	65 - 135

MSD Sample Spiked: C0856-005

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	ND	1	120	126	µg/L	5/17/2008	101	1.6	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	116.0	65 - 135





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MS / MSD - Liquid - TPH-Purgeable - GC : EPA 5030B / EPA 8015B

QC Batch ID: WGC080522

Reviewed by: MaiChiTu - 05/27/08

QC Batch ID Analysis Date: 5/22/2008

MS Sample Spiked: C0856-003

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
TPH as Gasoline	526	1	500	973	µg/L	5/22/2008	89.4	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	118.0	65 - 135

MSD Sample Spiked: C0856-003

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	526	1	500	992	µg/L	5/22/2008	93.2	1.9	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	121.0	65 - 135



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MS / MSD - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM2080520

Reviewed by: MaiChiTu - 05/23/08

QC Batch ID Analysis Date: 5/20/2008

**MS Sample Spiked: C0856-005**

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
Benzene	ND	1	20	21.1	µg/L	5/20/2008	106	70 - 130
Methyl-t-butyl Ether	ND	1	20	21.4	µg/L	5/20/2008	107	70 - 130
Toluene	0.204	1	20	19.9	µg/L	5/20/2008	98.5	70 - 130

**Surrogate % Recovery Control Limits**

4-Bromofluorobenzene	93.6	60 - 130
Dibromofluoromethane	99.5	60 - 130
Toluene-d8	96.6	60 - 130

**MSD Sample Spiked: C0856-005**

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	ND	1	20	20.6	µg/L	5/20/2008	103	2.4	25.0	70 - 130
Methyl-t-butyl Ether	ND	1	20	20.1	µg/L	5/20/2008	100	6.3	25.0	70 - 130
Toluene	0.204	1	20	19.7	µg/L	5/20/2008	97.5	1.0	25.0	70 - 130

**Surrogate % Recovery Control Limits**

4-Bromofluorobenzene	93.5	60 - 130
Dibromofluoromethane	97.0	60 - 130
Toluene-d8	95.4	60 - 130

**CHAIN OF CUSTODY RECORD**

PROJ. NO. 10-93-567-51 NAME 909 Bluebell Drive, Livermore

SAMPLERS: (Signature) *[Signature]* C0856

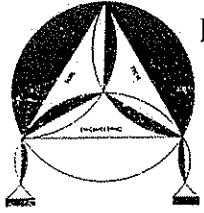
ANALYSES REQUESTED  
 IDHA BY 8/15/10  
 DISTRICT 10  
 SLOAN COUNTY  
 EDR & 12-11-10 (8260)

CONTAINER

REMARKS

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED	REMARKS
1	5/09/08			✓	GP-5-W 001	8	✓ ✓ ✓	EDF #T06019716197.
2				✓	GP-7-W 002	8	✓ ✓ ✓	
3				✓	GP-8-W 003	8	✓ ✓ ✓	
4				✓	GP-9-W 004	8	✓ ✓ ✓	
5				✓	GP-10-W 005	8	✓ ✓ ✓	
								Note: Please label the field points according to Location on the Chain.
Rec'd 8 VOA's HCL each								
w/48° Temp								

Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 5/12/08	Received by: (Signature) <i>[Signature]</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature) <i>[Signature]</i>	Date / Time 5/12/08	Received by: (Signature) <i>[Signature]</i>	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Please send lab report to Frank Hamedi	



**ENVIRO SOIL TECH CONSULTANTS**  
 Environmental & Geotechnical Consultants  
 131 TULLY ROAD, SAN JOSE, CALIFORNIA 95111  
 Tel: (408) 297-1500 Fax: (408) 292-2116

**Frank Hamedi**  
Enviro Soil Tech Consultants  
131 Tully Road  
San Jose, CA 95111

**Lab Order Number: C1198**  
**Issued: 06/10/2008**

**Project Number: 10-93-567-ST**  
**Project Name: 909 Bluebell Drive**  
**Project Location: Livermore**

**Global ID: T06019716197**

## Certificate of Analysis - Final Report

On June 06, 2008, a sample was received under chain of custody for analysis. Accutest-Northern California analyzes samples "as received" unless otherwise noted. The following results are included:

<u>Matrix</u>	<u>Test / Comments</u>
Air	Electronic Deliverables for Geotracker VOCs-GC-PID/FID: 8021B/8015B (from Tedlar Bag)

Accutest-Northern California is certified for environmental analyses by the State of California (#2346). Subcontracted work is the responsibility of the subcontract laboratory, this includes turn-around-time and data quality. If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,



Laurie Glantz-Murphy  
Laboratory Director



Northern California

3334 Victor Court, Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Enviro Soil Tech Consultants  
131 Tully Road  
San Jose, CA 95111  
Attn: Frank Hamedi

Project Number: 10-93-567-ST  
Project Name: 909 Bluebell Drive  
Project Location: Livermore  
GlobalID: T06019716197

## Certificate of Analysis - Data Report

Samples Received: 06/06/2008  
Sample Collected by: Client

Lab #: C1198-001    Sample ID: VE-1    Matrix: Air    Sample Date: 06/06/2008 12:30

VOCs-GC-PID/FID: 8021B/8015B (from Tedlar Bag)

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Methyl-t-butyl Ether	ND		1.0	2.0	mg/m3	N/A	N/A	06/08/2008 00:00	AGC080608
Benzene	ND		1.0	0.50	mg/m3	N/A	N/A	06/08/2008 00:00	AGC080608
Toluene	ND		1.0	0.50	mg/m3	N/A	N/A	06/08/2008 00:00	AGC080608
Ethyl Benzene	ND		1.0	0.50	mg/m3	N/A	N/A	06/08/2008 00:00	AGC080608
Xylenes, Total	ND		1.0	0.50	mg/m3	N/A	N/A	06/08/2008 00:00	AGC080608
TPH as Gasoline	ND		1.0	20	mg/m3	N/A	N/A	06/08/2008 00:00	AGC080608

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	106	70 - 130

Analyzed by: MaiChiTu

Reviewed by: EricKum



Northern California 3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Air - VOCs-GC-PID/FID: 8021B/8015B (from Tedlar Bag)

QC Batch ID: AGC080608

Validated by: EricKum - 06/09/08

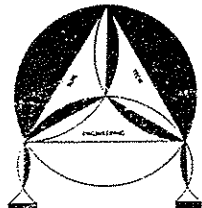
QC Batch Analysis Date: 6/8/2008

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	mg/m3
Ethyl Benzene	ND	1	0.50	mg/m3
Methyl-t-butyl Ether	ND	1	2.0	mg/m3
Toluene	ND	1	0.50	mg/m3
TPH as Gasoline	ND	1	20	mg/m3
Xylenes, Total	ND	1	0.50	mg/m3
<b>Surrogate for Blank</b>	<b>% Recovery</b>	<b>Control Limits</b>		
4-Bromofluorobenzene	91.2	70 - 130		



**CHAIN OF CUSTODY RECORD**

PROJ. NO. 10-93-567-51			NAME 909 Bluebell Dr., Livermore				ANALYSES REQUESTED @ 2015/03/30/14:17:18	C1198  REMARKS			
SAMPLERS: (Signature) <i>Victoria Chouinard</i>								CON-TAINER MYLAR			
NO.	DATE	TIME	SOIL	WATER	AIR	LOCATION					
1	6/06/08	12:30			✓	VE-1 -1	1	✓			EDF# T06019716197
											*Please report results in mg/m <sup>3</sup>
											Note: Please label the field point in accordance to location on Chain
						1x Fedlar Air Bag					
						Rec'd @ 23.5°C					
Relinquished by: (Signature) <i>Victoria Chouinard</i>		Date / Time 06/06/08 17:01		Received by: (Signature) <i>[Signature]</i>		Relinquished by: (Signature)		Date / Time		Receive by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)			Date / Time		Remarks Please send lab report to Frank Hamed		



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