RO2612

# UFST-RELATED SUBSURFACE SITE INVESTIGATION

## 6999 DEL VALLE ROAD
## LIVERMORE, CALIFORNIA

*Prepared for:*

**EAST BAY REGIONAL PARK DISTRICT**

**December 2005**

STELLAR
ENVIRONMENTAL SOLUTIONS, INC.
GEOSCIENCE & ENGINEERING CONSULTING

R0261Z

**STELLAR ENVIRONMENTAL SOLUTIONS**
2198 SIXTH STREET, BERKELEY, CA 94710
TEL: 510.644.3123 ★ FAX: 510.644.3859

**TRANSMITTAL MEMORANDUM**

TO: ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY

1131 HARBOR BAY PARKWAY, SUITE 250
ALAMEDA, CALIFORNIA 94502

DATE: DECEMBER 12, 2005

ATTENTION: MR. JERRY WICKHAM

FILE: SES-2005-67

SUBJECT: EBRPD LAKE DEL VALLE BOAT LAUNCH SERVICE YARD
6999 DEL VALLE ROAD
LIVERMORE, CA

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WE ARE SENDING: (HEREWITH) UNDER SEPARATE COVER

(VIA MAIL) VIA

THE FOLLOWING: REPORT OF FINDING DATED DECEMBER 8, 2005 (ONE COPY)

(AS REQUESTED) FOR YOUR APPROVAL

FOR REVIEW (FOR YOUR USE)

FOR SIGNATURE (FOR YOUR FILES)

COPIES TO: STEPHEN GEHRETT
EAST BAY REG. PARK DISTRICT
2501 GRIZZLY PEAK BLVD.
ORINDA, CA 94563

BY: Bruce Rucker

STELLAR
ENVIRONMENTAL SOLUTIONS, INC.

2198 SIXTH STREET, SUITE 201 · BERKELEY, CA 94710
TEL: (510)644-3123 · FAX: (510)644-3859
GEOSCIENCE & ENGINEERING CONSULTING

December 8, 2005

Mr. Jerry Wickham
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Division
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502



Subject: Report of Findings for UFST-Related Subsurface Site Investigation
EBRPD Lake Del Valle Boat Launch Service Yard
6999 Del Valle Road, Livermore, California
Fuel Leak Case No. RO0002612. GeoTracker Global ID TO600170837

Dear Mr. Wickham:

This report discusses a UFST-related investigation conducted pursuant to the Alameda County Health request of September 30, 2005. Exploratory boreholes were advanced and sampled (soil and groundwater) to evaluate conditions beyond the initial UFST removal soil samples that showed trace levels of gasoline and MTBE in shallow soils. No contamination was detected in any of the soil samples or the grab-groundwater sample collected in the current investigation. Depth to groundwater at the former UFST is over 50 feet. There appears to be no potential impact to groundwater, surface water or site usage associated with the minor residual soil contamination at the source area. We hereby petition Alameda County Health, on behalf of the East Bay Regional Park District, to issue a no further action or equivalent letter granting site closure.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge. Please call the undersigned at (510) 644-3123 if you have any questions regarding this report of findings. Thank you again for the opportunity to provide you with the requested technical services.

Sincerely,

Bruce M. Rucker

Bruce Rucker, R.G., R.E.A.
Associate/Senior Geologist

Richard S. Makdisi, R.G., R.E.A.
Principal/Project Manager

cc: Mr. Stephen Gehrett – East Bay Regional Park District
Mr. Wyman Hong – Zone 7 Water Agency

# UFST-RELATED SUBSURFACE SITE INVESTIGATION

## 6999 DEL VALLE ROAD
## LIVERMORE, CALIFORNIA

*Prepared for:*

EAST BAY REGIONAL PARK DISTRICT
2501 GRIZZLY PEAK BLVD.
ORINDA, CA 94563

*Prepared by:*

STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET, SUITE 201
BERKELEY, CALIFORNIA 94710

**December 8, 2005**

Project No. 2005-67

# TABLE OF CONTENTS

# TABLE OF CONTENTS

**Appendices**

# TABLES AND FIGURES

# EXECUTIVE SUMMARY

Stellar Environmental Solutions, Inc. (SES) was contracted by East Bay Regional Parks District to perform a subsurface site investigation at the District's Lake Del Valle boat launch yard located at 6999 Del Valle Road in Livermore, California.

One 550-gallon gasoline UFST was removed in January 2004. Soil contaminants detected include 1.82 mg/kg gasoline (12' sample beneath the former UFST) and approximately 0.014 mg/kg MTBE (2' sample at the dispenser). Contaminants analyzed for and not detected included BTEX, lead scavengers and fuel oxygenates. Lead was not present at concentrations of concern.

Five boreholes were drilled and sampled in November 2005 at and immediately downgradient of the former UFST location. Six soil samples were collected from depths between 2.5 feet at the dispenser location to 40 feet at the former UFST. No soil contamination was detected.

One grab-groundwater sample was collected at a downgradient location approximately 185 feet downgradient of the former UFST and contained no groundwater contamination. Groundwater was not encountered in the other boreholes at and immediately downgradient of the UFST.

Shallowest groundwater was encountered at a depth of 30 feet in the BH-05, approximately 185 feet downgradient of the former UFST. Groundwater was not encountered at a depth of 52 feet (at the former UFST) or at 32 feet (borehole mid-way between the former UFST and BH-5). Groundwater appears to occur under non-confining conditions. The direction of groundwater flow is presumed to be to the west based on local topography and a dry creek bed in the area of investigation.

The data shows no Water Board ESL's have been exceeded based on the previous and current data collected at the site. Only low to trace concentrations of gasoline and MTBE contamination are present (as represented by the UFST removal results), and this residual contamination is confined to the area immediately below the dispenser (approximately 3 feet) and the former UFST excavation (approximately 12 feet). The residual contamination is at least 40 feet above first occurrence of groundwater, separated by low-permeability clay, based on the exploratory bore logging. The minor residual hydrocarbons concentration in the soil, depth to groundwater, and lithology between the hydrocarbon in soil and groundwater suggests the hydrocarbon will

attenuate with depth to non-detection before impacting groundwater. Thus, based on the depth to groundwater and the residual soil concentrations, this site has very little potential to impact groundwater, surface water or site usage.

## PETITION FOR CLOSURE

Based on the available data, we hereby petition Alameda County Health, on behalf of East Bay Regional Park District, to issue a no-further action or equivalent letter granting site closure.

# 1.0 INTRODUCTION

## BACKGROUND AND PREVIOUS FINDINGS

Stellar Environmental Solutions, Inc. (SES) was retained by East Bay Regional Park District (EBRPD, property owner) to conduct an environmental drilling investigation at the referenced site, related to a former gasoline underground fuel storage tank (UFST). The work was conducted to satisfy the requirements of Alameda County Health Care Services Agency (Alameda County Health) as stipulated in their September 30, 2005 letter to EBRPD.

The following summarizes previous UFST-related activities.

- One 550-gallon gasoline UFST was removed from the subject property in January 2004 (Golden Gate Tank Removal, Inc., 2004).
- A soil sample collected at 12 feet below grade from the center of the UFST excavation contained 0.014 milligrams per kilogram (mg/kg) of methyl *tertiary*-butyl ether (MTBE), and no detectable total petroleum hydrocarbons (TPH) or benzene, toluene, ethylbenzene, and xylenes (BTEX).
- A soil sample collected at 2 feet below grade (below a dispenser line) contained 1.82 mg/kg of gasoline, a trace level of xylenes, and no BTEX.
- The second sample collected at 2 feet below the dispenser line contained no contamination.
- Lead was not present at concentrations of concern.
- Neither lead scavengers (EDB and EDC) nor fuel oxygenates (ETBE, TAME, DIPE, TBA, and ethanol) were detected in any of the samples.
- No groundwater samples were collected, and the depth to groundwater was unknown prior to the current investigation.

A following section discusses the analytical results.

## SUBJECT PROPERTY DESCRIPTION

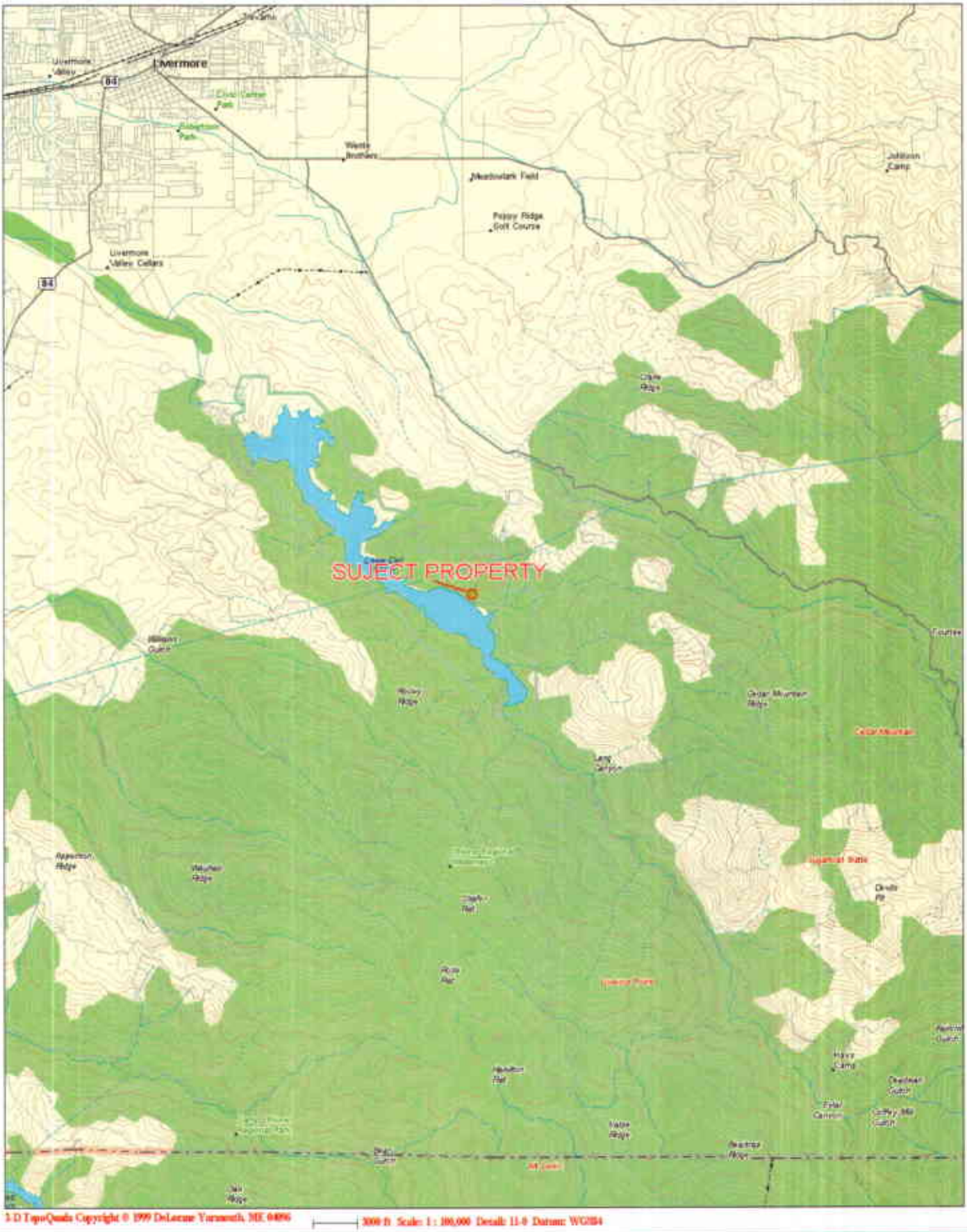
The site is an EBRPD boat rental service yard adjacent to Lake Del Valle. [Note that the address of the site is variously referred to as 6999 Del Valle Road (by Alameda County Health) and 7000 Del Valle Road (in the UFST removal report).] The former UFST is located approximately 400 feet north of the lake shoreline, at an elevation of approximately 40 to 60 feet above the lake surface.

Figure 1 shows the site location. Figure 2 is a site plan showing the location of the former UFST and drilling area. Appendix A contains the figure from the UST removal report that shows the UST removal area and sampling locations.

## REGULATORY STATUS AND ELECTRONIC REPORTING

Alameda County Health has assigned the case to its fuel leak release case system (RO0002612). The State of California "GeoTracker" system Global ID for the case is TO600170837. In accordance with Alameda County Health and GeoTracker requirements, the following electronic reporting tasks have been conducted:

- EBRPD assigned SES as the Authorized Representative to make required GeoTracker uploads.
- SES electronically "claimed" the case on the GeoTracker system.
- Field Point IDs (borehole names) were uploaded.
- A map of the borehole drilling locations ("Geo Map") was uploaded.
- Electronic Data Deliverable (EDD) of the current investigation borehole analytical results was uploaded.
- Borehole logs ("GeoWell") were uploaded.
- An electronic copy of this report was uploaded to both the GeoTracker system and Alameda County Health's "FTP" Electronic Report Upload system.

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# SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP

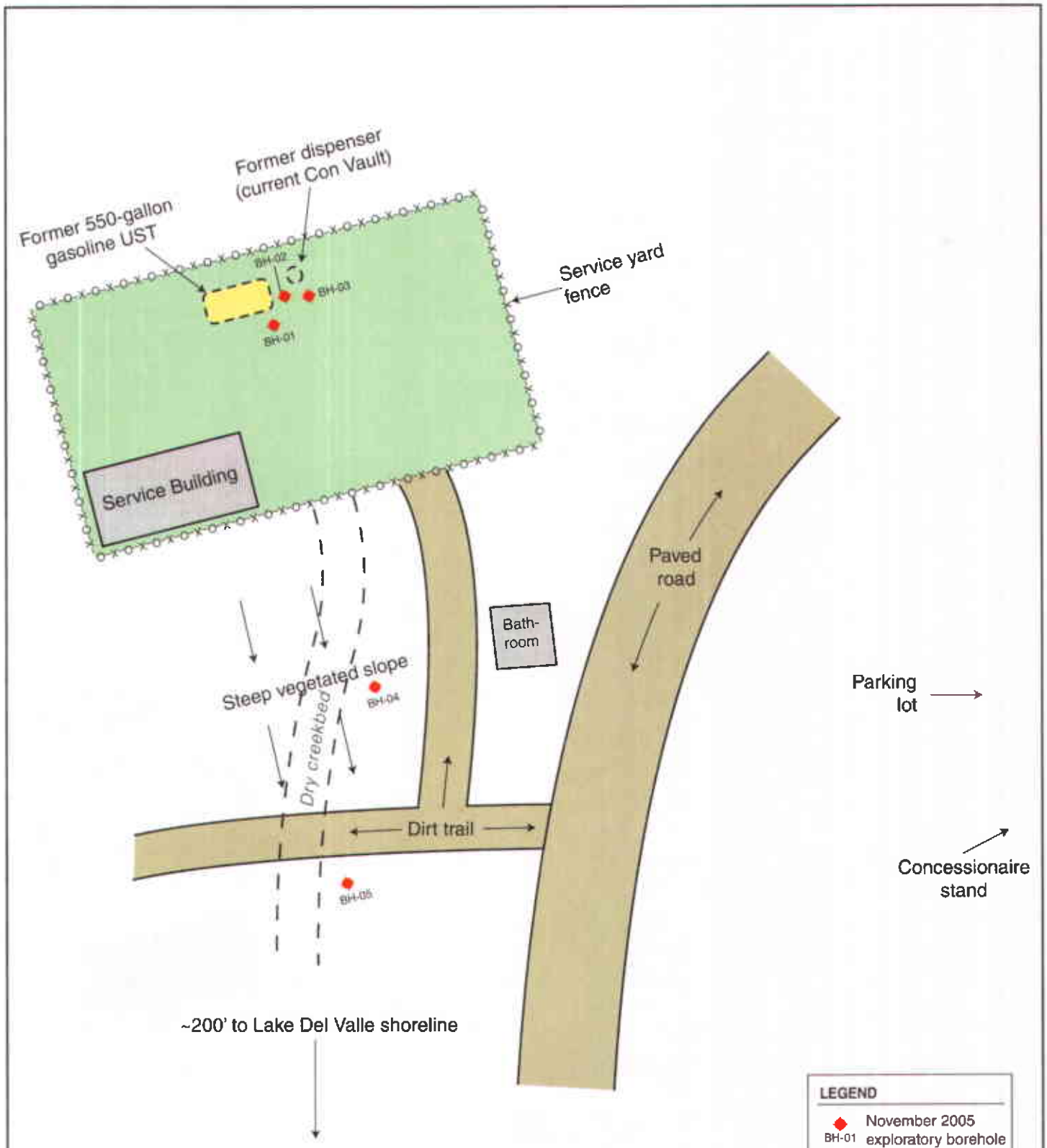
6999 Del Valle Rd,
Livermore, CA

By: MJC | SEPTEMBER 2005

Figure 1

★ Stellar Environmental Solutions, Inc.
Geoscience & Engineering Consulting

2005-67-01

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# SITE PLAN AND SAMPLING LOCATIONS

| | | |
|---|---|---|
| Lake Del Valle Boat Launch<br>Service Yard, Livermore, CA | By: MJC | NOVEMBER 2005 |
| | FIGURE 2 | |

STELLAR
ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2005-67-02

# 2.0 EXPLORATORY BOREHOLE DRILLING

## TECHNICAL OBJECTIVES

The objective of the proposed work was to evaluate residual soil and/or groundwater contamination associated with the former UFST. The ultimate goal is to evaluate whether Lake Del Valle has been, or could be at some point, adversely impacted by the detected contamination. Therefore, we implemented an exploratory borehole drilling and sampling program in the immediate vicinity of (and downgradient of) the former UFST excavation.

## BOREHOLE LOCATION SELECTION

Local groundwater flow direction is very likely to the south (toward Lake Del Valle) following local topography. We drilled in the following locations to achieve the technical objectives (locations shown on Figure 2):

- **BH-01.** Located midway between the previous UFST excavation and the dispenser soil sampling locations. Both soil and groundwater sampling was proposed for this borehole, however groundwater was not encountered..
- **BH-02** and **BH-03.** Located in the immediate vicinity of the former dispenser (soil sampling only).
- **BH-04.** Located approximately 115 feet to the west (downgradient direction, based on local topography) of the former UFST, along the gravel roadway between the service yard and the lake. This location was within 5 feet of the dry creek bed that runs downhill from the service yard. This borehole was proposed for groundwater sampling only, and groundwater was not encountered.
- **BH-05.** Located approximately 70 feet to the west of BH-04 (approximately 185 feet west of the former UFST) along the dirt trail below the bathroom. This location was within 5 feet of the dry creek bed that runs downhill from the service yard. Only a groundwater sample was collected from this borehole.

## PERMITTING AND PLANNING

Prior to drilling, SES submitted to Alameda County Health a technical workplan for the proposed investigation (Stellar Environmental Solutions, Inc., 2005). Alameda County Health approved the workplan in their November 8, 2005 letter.

Prior to drilling, SES marked the drilling locations with white paint and reported the planned drilling activities to Underground Service Alert of Northern California (USA North), which notified local utility companies to conduct a site-specific survey and mark underground utilities. We applied for and obtained the required borehole drilling permit from Zone 7 Water Agency (permit copy included as Appendix B). We notified Zone 7 of the drilling schedule, however, they did not conduct an inspection.

## BOREHOLE DRILLING AND SAMPLING ACTIVITIES

Exploratory borehole drilling and sampling was conducted on November 16, 2005. Drilling was conducted by EnProb Environmental Probing (C-57 License No. 777007), under the direct supervision of a SES field representative. The boreholes were drilled with a truck-mounted Geoprobe™ rig. Boreholes were drilled with 2-inch-diameter steel outer drive casing lined with acetate sampling sleeves. Soil samples were screened in the field for evidence of contamination by visual observation, smell and a photoionization detector (PID). Site lithology was determined by geologic logging of continuous core samples (results discussed in a subsequent section). Figure 2 shows the borehole locations. Appendix C contains photodocumentation of the drilling activities.

Site conditions dictated some deviations from the proposed plan. The following discusses the field program.

- The most downgradient borehole (BH-05) was advanced first. Groundwater was encountered at a depth of approximately 30 feet, and soil and groundwater samples were collected.

- A hydropunch tool was advanced at the next upslope borehole (BH-04), which was approximately 5 feet higher in elevation than BH-05. The borehole was advanced to a depth of 38' and the drill string was pulled up to expose the 4-foot long screen from 38' to 34'. No water entered the screen, and the string was raised another 4 feet, and again no water entered the screen, for a period of over 2 hours. This bore was abandoned.

- The Geoprobe drilling rig was then moved to the location of borehole BH-01, immediately west of the former UST. The borehole then advanced to a depth of 52 feet

below grade. No groundwater was encountered in this borehole. Soil samples were collected.

- Boreholes BH-02 and BH-03 were located to address potential leaks from the dispenser line. They were advanced to a depth of 2-2.5 feet for soil sampling.

Soil samples were submitted for laboratory analysis included the following:

- BH-01: 12' (coincident with the base of the former UFST excavation); 18', 30' & 40'
- BH-02 and BH-03: 2' deep

A grab-groundwater sample was collected from BH-05 with a new disposable bailer. Soil and groundwater samples were labeled, chilled, and transported to the analytical laboratory under chain-of-custody documentation.

Following completion of drilling and sampling activities, the boreholes were tremie-grouted to surface with a slurry of neat Portland cement and potable water. Drill cuttings from the investigation were placed in a labeled, capped, 10-gallon bucket, which was left onsite.

## LABORATORY ANALYSES

The soil and groundwater samples were analyzed for:

- Total volatile hydrocarbons (TVH), gasoline range – by EPA Method 8015M
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl *tertiary*-butyl ether (MTBE) – by EPA Method 8260
- Fuel oxygenates and lead scavengers – by EPA Method 8260

Curtis and Tompkins, Ltd. (a California-certified analytical laboratory) completed all laboratory analyses.

# 3.0 PHYSICAL SETTING AND REGULATORY CONSIDERATIONS

## TOPOGRAPHY AND DRAINAGE

The mean elevation of the property is approximately 50 to 60 feet above mean sea level (amsl), and the general topographic gradient in the site vicinity is steep and to the south (toward Lake Del Valle). There are no storm drains in the vicinity, and site stormwater runoff would be expected to infiltrate into the unpaved ground. There is a dry creek bed that runs from the western edge of the service yard, along the north side of the dirt trail, adjacent to BH-04 and BH-05.

## LITHOLOGY, AND HYDROGEOLOGY

Shallow site lithology was determined in the current investigation by the visual method of the Unified Soils Classification System (USCS) using continuous core soil samples from the site boreholes (BH-01 and BH-05). Lithology encountered in the site boreholes is typical of East Bay colluvial materials. Source area borehole BH-01 (advanced to 52 feet bgs) encountered five feet of stiff, dry clayey silt. This was underlain to the total borehole depth by silty (occasionally sandy and/or gravelly) clay that was predominantly dense, stiff and friable. Downgradient borehole BH-05 (advanced to 32 feet bgs) showed 5 feet of dry clayey silt, underlain by a dry and stiff silty clay to a depth of 17 feet bgs. A clayey, gravelly sand was encountered from 17 feet bgs to 22 feet bgs, which was underlain by an approximately 2-foot-thick silty clay. A clayey, gravelly sand was present from 24 feet to the base of the borehole (32 feet bgs). Appendix D contains the borehole geologic logs.

Shallowest groundwater was encountered at a depth of 30 feet in the BH-05, approximately 185 feet downgradient of the former UFST. Groundwater was not encountered at a depth of 52 feet (at the former UFST) or at 32 feet (borehole mid-way between the former UFST and BH-05). Groundwater appears to occur under non-confining conditions. The direction of groundwater flow is presumed to be to the west based on local topography and a dry creek bed in the area of investigation.

## REGULATORY CONSIDERATIONS

### Environmental Screening Levels

The Water Board has established Environmental Screening Levels (ESLs) for evaluating the likelihood of environmental impact. ESLs are conservative screening-level criteria for soil and groundwater, designed to be generally protective of both drinking water resources and aquatic environments; they incorporate both environmental and human health risk considerations. ESLs are not cleanup criteria (i.e., health-based numerical values or disposal-based values). Rather, they are used as a preliminary guide in determining whether additional remediation and/or investigation may be warranted. Exceedance of ESLs may warrant additional actions, such as monitoring plume stability to demonstrate no risk to sensitive receptors in the case of sites where drinking water is not threatened.

Different ESLs are published for: commercial/industrial vs. residential land use; sites where groundwater is a potential drinking water resource vs. is not a drinking water resource; and whether the nearest receiving surface water body is freshwater, marine or estuary.

Given the drinking water status of the Del Valle water body, the appropriate ESLs for the subject site are for residential land use, where groundwater is a potential drinking water resource and a freshwater receiving surface water body.

# 4.0 INVESTIGATION FINDINGS

This section discusses the findings of subsurface site investigation and also presents the preceding site investigation data. Based on these data, a conceptual site model has been developed.

## DRILLING OBSERVATIONS AND ANALYTICAL RESULTS

### Drilling Observations

No evidence of contamination was noted in any of the boreholes, either by odor, staining or positive PID readings.

### Analytical Results

Table 1 summarizes the analytical results for the soil and groundwater samples. Appendix E contains the certified analytical laboratory report and chain-of-custody record.

As shown in Table 1, no fuel-related contamination was detected in any of the soil or groundwater samples collected in the current November 2005 investigation. No soil or groundwater ESL are exceeded in the initial sampling program at the time of the UST removal.

# Table 1
## January 2004 and November 2005 Analytical Results
## EBRPD Lake Del Valle Boat Launch Service Yard
## 6999 Del Valle Road, Livermore, California

| Sample ID (showing depth) | TVHg | Benzene | Toluene | Ethyl-Benzene | Total Xylenes | MTBE | Fuel Oxygenates |
|---|---|---|---|---|---|---|---|
| **January 2004 UFST Removal Soil Samples (mg/kg) (b)** | | | | | | | |
| 8445-CTR [12'] (center of UFST excavation) | *<0.5* | *<0.005* | *<0.005* | *<0.005* | *<0.01* | 0.014 | *All ND* |
| 8445-D [2'] (beneath dispenser) | *<0.5* | *<0.005* | *<0.005* | *<0.005* | *<0.01* | *<0.005* | *All ND* |
| 8445-D2 [2'] (beneath dispenser line) | 1.82 | *<0.005* | *<0.005* | *<0.005* | *<0.01* | *<0.005* | *All ND* |
| 8445-SP (stockpile) | *<0.5* | *<0.005* | *<0.005* | *<0.005* | *<0.01* | *<0.005* | *All ND* |
| **November 2005 Borehole Soil Samples** | | | | | | | |
| BH-01-12' | *< 0.93* | *<0.0046* | *<0.0046* | *<0.0046* | *< 0.0092* | *< 0.019* | *All ND* |
| BH-01-18' | *< 0.92* | *<0.0046* | *<0.0046* | *<0.0046* | *< 0.0092* | *< 0.018* | *All ND* |
| BH-01-30' | *< 0.92* | *<0.0046* | *<0.0046* | *<0.0046* | *< 0.0092* | *< 0.018* | *All ND* |
| BH-01-40' | *< 1.1* | *<0.0054* | *<0.0054* | *<0.0054* | *< 0.0108* | *< 0.022* | *All ND* |
| BH-02-2' | *< 1.1* | *<0.0056* | *<0.0056* | *<0.0056* | *< 0.0112* | *< 0.022* | *All ND* |
| BH-03-3' | *< 1.1* | *<0.0054* | *<0.0054* | *<0.0054* | *< 0.0108* | *< 0.022* | *All ND* |
| **Soil ESLs** [a] | 100 | 0.044 | 2.9 | 3.3 | 1.5 | 0.023 | Various |
| **November 2005 Borehole Groundwater Sample (µg/L)** | | | | | | | |
| BH-05-GW | *< 50* | *<0.50* | *<0.50* | *<0.50* | *<0.50* | *<2.0* | *All ND* |
| **Groundwater ESLs** [a] | 100 | 0.044 | 2.9 | 3.3 | 1.5 | 0.023 | Various |

Notes:

[a] ESLs = Water Board Environmental Screening Levels for residential sites where groundwater is a potential drinking water resource.
[b] Other contaminants analyzed for and not detected include: ETBE, TAME, DIPE, TBA, EDB, EDC and ethanol. Lead detected at background concentrations
TVHg = total volatile hydrocarbons as gasoline MTBE = methyl *tertiary*-butyl ether

# 5.0 CONCLUSIONS AND RECOMMENDATIONS

## CONCLUSIONS

- One 550-gallon gasoline UFST was removed in January 2004. Soil contaminants detected include 1.82 mg/kg gasoline (12' sample beneath the former UFST) and approximately 0.014 mg/kg MTBE (2' sample at the dispenser). Contaminants analyzed for and not detected included BTEX, lead scavengers and fuel oxygenates. Lead was not present at concentrations of concern.
- Five boreholes were drilled and sampled in November 2005 at and immediately downgradient of the former UFST location.
- Six soil samples were collected from depths between 2.5 feet at the dispenser location to 40 feet at the former UFST. No soil contamination was detected.
- One grab-groundwater sample was collected at a downgradient location approximately 185 feet downgradient of the former UFST and contained no groundwater contamination. Groundwater was not encountered in the other boreholes at and immediately downgradient of the UFST.
- Shallow soils encountered are typical colluvial deposits. A surficial (0' to 5') clayey silt layer is underlain by a dense, stiff and friable silty clay (occasionally sandy and/or gravelly). This clay layer extended to at least 52' deep in the area of the former UFST, and showed no evidence of groundwater. At the downgradient borehole, the silty clay was underlain predominantly by a clayey, gravelly sand.
- Shallowest groundwater was encountered at a depth of 30 feet in the downgradient borehole BH-05, approximately 185 feet downgradient of the former UFST. Groundwater was not encountered at a depth of 52 feet (at the former UFST) or at 32 feet (borehole mid-way between the former UFST and BH-05). Groundwater appears to occur under non-confining conditions. The direction of groundwater flow is presumed to be to the west (toward Lake Del Valle) based on local topography and a dry creek bed in the area of investigation.
- No contamination was detected in any of the 6 soil samples or in the grab-groundwater sample.

- No regulatory ESLs were exceeded in any soil or groundwater data collected, in the initial [January 2004] or most recent [November 2005] sampling. The data suggests that only minor (well below Water Board ESL criteria) gasoline and MTBE contamination is present (as represented by the UFST removal results), and it is confined to the area immediately below the dispenser (approximately 3 feet) and the former UFST excavation (approximately 12 feet). The residual contamination is at least 40 feet above first occurrence of groundwater, separated by low-permeability clay. Based on the depth to groundwater and the residual soil concentrations, in our opinion, this site has a negligible potential to impact groundwater, surface water or site usage.
- Based on the absence of soil contamination in the boreholes, the currently containerized drill cuttings at the site can be disposed of as non-regulated waste.

## PETITION FOR CLOSURE

- Based on the available data, we hereby petition Alameda County Health, on behalf of East Bay Regional Park District, to issue a no-further action or equivalent letter granting site closure.

# 6.0 LIMITATIONS

This report has been prepared for the exclusive use of East Bay Regional Parks District, the regulators, and their authorized representatives and/or assigns. No reliance on this report shall be made by anyone other than those for whom it was prepared.

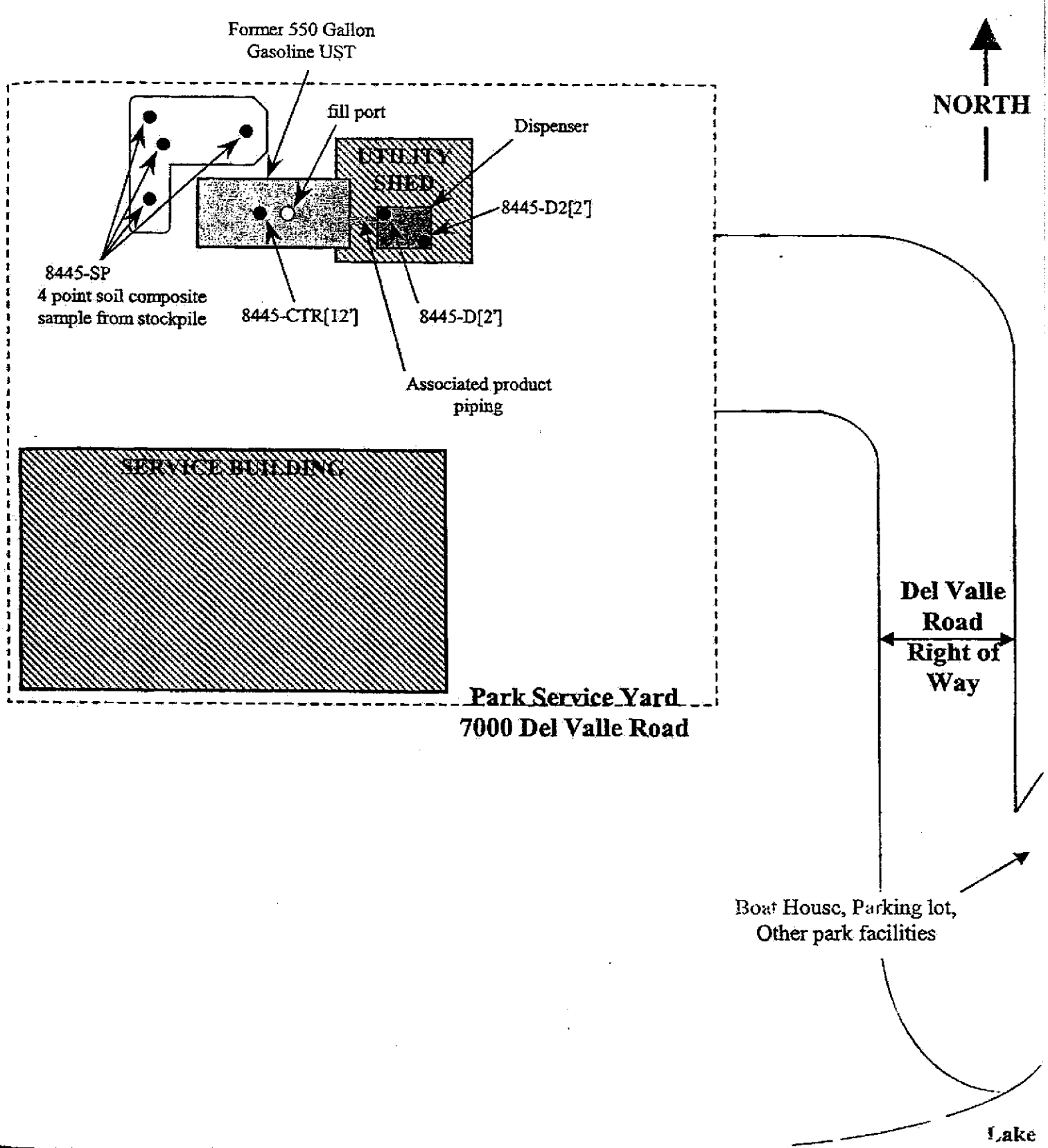
The findings and conclusions presented in this report are based solely on the findings of the November 2005 drilling investigation conducted by SES, and our review of the UFST removal report. This report provides neither a certification nor guarantee that the property is free of hazardous substance contamination. This report has been prepared in accordance with generally accepted methodologies and standards of practice. The SES personnel who performed this investigation are qualified to perform such investigations and have accurately reported the information available, but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

The findings of this report are valid as of the present. Site conditions may change with the passage of time, natural processes, or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the current site conditions as based on the investigation and remediation completed.

# 7.0 REFERENCES

Golden Gate Tank Removal, Inc., 2004. Tank Closure Report – 7000 Del Valle Road, Livermore, California. January 15.

Stellar Environmental Solutions, Inc., 2005. Technical Workplan for Initial Site Characterization – 6999 Del Valle Road, Livermore, California. November 3.




| GOLDEN GATE TANK REMOVAL, INC<br>255 Shipley Street<br>San Francisco, California 94107<br>Telephone (415) 512-1555 Fax (415) 512-0964 | SITE PLAN<br>Commercial Property<br>7000 Del Valle Road<br>Livermore, California 94550 | | | |
|---|---|---|---|---|
| Project Number 8445 | January 2004 | By: April F. | Not to scale | Figure 3 |

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100 NORTH CANYONS PARKWAY, LIVERMORE, CA 94551 PHONE (925) 454-5000

Novermber 16, 2005

Mr. Bruce Rucker
Stellar Environmental Solutions, Inc.
2198 Sixth Street, #201
Berkeley, CA 94710

Dear Mr. Rucker:

Enclosed is drilling permit 25194 for a contamination investigation at 6999 Del Valle Road (Lake Del Valle Boat Launch Yard) in Livermore for East Bay Regional Park District. Also enclosed are current drilling permit applications for your files.

Please note that permit conditions A-2 and G requires that a report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, permit number and any analysis of the soil and water samples. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact me at extension 5056 or Matt Katen at extension 5071.

Sincerely,

Wyman Hong

Wyman Hong
Water Resources Technician II

Enc.

P:\WRE\GPOs\GPO1\GPO1.CONTAMINATION.wpd

# ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 454-5728

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Lake Del Valle Boat Launch Yard
6999 Del Valle Road
Livermore, California

California Coordinates Source _____ ft. Accuracy± _____ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT
Name East Bay Regional Park District
Address 2501 Grizzly Peak Blvd Phone 510-544-2705
City Orinda, California Zip 94563

APPLICANT
Name Stellar Environmental Solutions, Inc.
Fax 510-644-3859
Address 2198 Sixth Street # 201 Phone 510-644-3123
City Berkeley, California Zip 94710

TYPE OF PROJECT

| Well Construction | | Geotechnical Investigation | |
|---|---|---|---|
| Cathodic Protection | ☐ | General | ☐ |
| Water Supply | ☐ | Contamination | X |
| 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 | X | Other _____ | ☐ |

DRILLING COMPANY EnProb Environmental Probing
DRILLER'S LICENSE NO. C-57 777007

WELL PROJECTS
Drill Hole Diameter _____ in. Maximum
Casing Diameter _____ in. Depth _____ ft.
Surface Seal Depth _____ ft. Number _____

SOIL BORINGS
Number of Borings 5 Maximum
Hole Diameter 2 in. Depth 30 ft.

ESTIMATED STARTING DATE November 16, 2005
ESTIMATED COMPLETION DATE November 16, 2005

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

APPLICANT'S SIGNATURE Bruce M. Fluker Date 11/1/05
Bruce M. Ryker

ATTACH SITE PLAN OR SKETCH

PERMIT NUMBER 25194
WELL NUMBER _____
APN _____

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 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 or equivalent for well projects or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
4. A sample port is required on the discharge pipe near the weilhead.

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

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

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

F. WELL DESTRUCTION. See attached.

(G.) SPECIAL CONDITIONS. Submit to Zone 7 within 60 days after the completion of permitted work the well installation report including all soil and water laboratory analysis results.

Approved Wyman Hong Date 11/14/05
Wyman Hong

Revised: April 27, 2005

| | |
|---|---|
| Subject: Borehole drilling rig at BH-05, looking to the southwest. | |
| Site: Lake Del Valle Boat Launch Service Yard, 6999 Del Valle Road, Livermore, Alameda County, California | |
| Date Taken: November 16, 2005 | Project No.: SES 2005-67 |
| Photographer: Bruce Rucker | Photo No.: 01 |

| | |
|---|---|
| Subject: View to the north from BH-05, looking toward BH-04 (middle foreground) and service yard (gate in background) | |
| Site: Lake Del Valle Boat Launch Service Yard, 6999 Del Valle Road, Livermore, Alameda County, California | |
| Date Taken: November 16, 2005 | Project No.: SES 2005-67 |
| Photographer: Bruce Rucker | Photo No.: 02 |

| | |
|---|---|
| Subject: Borehole drilling rig at BH-4, looking to the north. | |
| Site: Lake Del Valle Boat Launch Service Yard, 6999 Del Valle Road, Livermore, Alameda County, California | |
| Date Taken: November 16, 2005 | Project No.: SES 2005-67 |
| Photographer: Bruce Rucker | Photo No.: 03 |

| | |
|---|---|
| Subject: Borehole drilling rig at BH-01, with current ConVault (former dispenser location) at right. | |
| Site: Lake Del Valle Boat Launch Service Yard, 6999 Del Valle Road, Livermore, Alameda County, California | |
| Date Taken: November 16, 2005 | Project No.: SES 2005-67 |
| Photographer: Bruce Rucker | Photo No.: 04 |

| | |
|---|---|
| Subject: Borehole drilling rig at BH-03, with BH-01 at left (orange cone at left) and BH-02 (orange cone at right). | |
| Site: Lake Del Valle Boat Launch Service Yard, 6999 Del Valle Road, Livermore, Alameda County, California | |
| Date Taken: November 16, 2005 | Project No.: SES 2005-67 |
| Photographer: Bruce Rucker | Photo No.: 05 |

| | |
|---|---|
| Subject: Looking to the south (toward Lake Del Valle) from service yard; BH-04 at right middle foreground and BH-05 at background) | |
| Site: Lake Del Valle Boat Launch Service Yard, 6999 Del Valle Road, Livermore, Alameda County, California | |
| Date Taken: November 16, 2005 | Project No.: SES 2005-67 |
| Photographer: Bruce Rucker | Photo No.: 06 |

STELLAR
ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

# Soil Boring Log

BORING NUMBER BH-01 Page 1 of 3

PROJECT Lake Del Valle Boat Yard
OWNER East Bay Regional Park District
LOCATION 6999 Del Valle Road, Livermore, CA
PROJECT NUMBER 2005-67
TOTAL DEPTH 52'
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED not encountered
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER J. Edmond
GEOLOGIST B. Rucker
DATE DRILLED 11/16/2005

| DEPTH (feet) | GRAPHIC LOG | SAMPLE INTERVAL/ RECOVERY | BLOW COUNTS | INSTRUMENT READING | DESCRIPTION/SOIL CLASSIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| 0 | | | | | Light brown clayey silt (ML), dry, stiff, friable, minor sm. gravel | "Instrument" is a photo ionization detector. "Readings" are in parts per million by volume air. |
| 2 | | | | 2' = 0 | | |
| 4 | | | | 4' = 0 | | |
| 6 | | | | 6' = 0 | Light brown silty clay (CL), very dry, stiff, friable, v. dense, small gravel ~20% | |
| 8 | | | | 8' = 0 | | |
| 10 | | | | 10' = 0 | | |
| 12 | BH-01-12' | | | 12' = 0 | 12.5' Gravel absent | |
| 14 | | | | 14' = 0 | | |
| 16 | | | | 16' = 0 | | |
| 18 | BH-01-18' | | | 18' = 0 | | |
| 20 | | | | 20' = 0 | | |

2005-67-05

STELLAR
ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

**Soil Boring Log**

BORING NUMBER BH-01 Page 2 of 3

PROJECT Lake Del Valle Boat Yard
OWNER East Bay Regional Park District
LOCATION 6999 Del Valle Road, Livermore, CA
PROJECT NUMBER 2005-67
TOTAL DEPTH 52'
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED not encountered
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER J. Edmond
GEOLOGIST B. Rucker
DATE DRILLED 11/16/2005

| DEPTH (feet) | GRAPHIC LOG | SAMPLE INTERVAL/ RECOVERY | BLOW COUNTS | INSTRUMENT READING | DESCRIPTION/SOIL CLASSIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| 20 | | | | | | |
| 22 | | | | | | |
| 24 | | | | 24' = 0 | | |
| | | | | | 25' minor gravel. Lithology same as above | |
| 26 | | | | | | |
| 28 | | | | 28' = 0 | | |
| 30 | BH-01-30' | | | | | |
| | | | | | 31' Several large cobbles, becoming sandy (fine-grained), v. dry, v. dense, friable, gravel ~30% | |
| 32 | | | | 32' = 0 | | |
| | | | | | 33.5' Gravel minor, sand absent | |
| 34 | | | | | | |
| | | | | | 35.5' Gravel ~30%, slightly sandy, v. stiff, dense, sl. moist | |
| 36 | | | | 36' = 0 | | |
| 38 | | | | | | |
| | | | | | 38.5' Gravel absent, sandy clay, sl. stiff, med. cohesive, sl. moist | |
| 40 | BH-01-40' | | | 40' = 0 | 39.5' Gravel minor, sand absent | |

2005-67-06

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ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

# Soil Boring Log

BORING NUMBER BH-01 Page 3 of 3

PROJECT Lake Del Valle Boat Yard
OWNER East Bay Regional Park District
LOCATION 6999 Del Valle Road, Livermore, CA
PROJECT NUMBER 2005-67
TOTAL DEPTH 52'
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED not encountered
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER J. Edmond
GEOLOGIST B. Rucker
DATE DRILLED 11/16/2005

| DEPTH (feet) | GRAPHIC LOG | SAMPLE INTERVAL/ RECOVERY | BLOW COUNTS | INSTRUMENT READING | DESCRIPTION/SOIL CLASSIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| 40 | | | | | 41' minor small gravel, sandy, dry | |
| 42 | | | | | 42' gravel and sand absent, silty, dense, stiff, sl. moist | |
| 44 | | | | 44' = 0 | | |
| 46 | | | | | 45.5' small gravel (~20%), sandy, dry<br>46.5' gravel and sand absent, silty clay, dense, cohesive | |
| 48 | | | | 48' = 0 | | |
| 50 | | | | | 49.5' becomes sl. stiff | |
| 52 | | | | 51' = 0 | 51.5' gravelly clay, v. dense, stiff, sl. cohesive, dry | Groundwater not encountered in this borehole |
| | | | | | Bottom of borehole = 52' | |

2005-67-07

STELLAR
ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

# Soil Boring Log

BORING NUMBER BH-05 Page 1 of 2

PROJECT Lake Del Valle Boat Yard
OWNER East Bay Regional Park District
LOCATION 6999 Del Valle Road, Livermore, CA
PROJECT NUMBER 2005-67
TOTAL DEPTH 32 feet
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED ~30'
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER J. Edmond
GEOLOGIST B. Rucker
DATE DRILLED 11/16/2005

| DEPTH (feet) | GRAPHIC LOG | SAMPLE INTERVAL/ RECOVERY | BLOW COUNTS | INSTRUMENT READING | DESCRIPTION/SOIL CLASSIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| 0 | | | | | Light brown clayey silt (ML), dry, v. friable, stiff | "Instrument" is a photo ionization detector. "Readings" are in parts per million by volume air. |
| 2 | | | | 2' = 0 | | |
| 4 | | | | 4' = 0 | | |
| 6 | | | | 6' = 0 | Gray-brown silty clay (CL), v. dry, friable, mod. stiff, minor sm. gravel | |
| 8 | | | | 8' = 0 | | |
| 10 | | | | 10' = 0 | | |
| 12 | | | | 12' = 0 | 11' Gravel absent, sl. cohesive, sl. moist | |
| 14 | | | | 14' = 0 | 14' Becomes sl. stiff-soft, cohesive, sl. plastic, sl. moist | |
| 16 | | | | 16' = 0 | 15' Becomes mod. stiff | |
| 18 | | | | 18' = 0 | Brown w/blue-grey mottling, clayey, gravelly sand (SC), friable, sl. cohesive, mod. stiff, sl. moist, sand is fine-med. grained | |
| 20 | | | | 20' = 0 | 18' Gravel ↑ to 40% | |

2005-67-03

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GEOSCIENCE & ENGINEERING CONSULTING

**Soil Boring Log**

BORING NUMBER BH-05 Page 2 of 2

PROJECT Lake Del Valle Boat Yard
OWNER East Bay Regional Park District
LOCATION 6999 Del Valle Road, Livermore, CA
PROJECT NUMBER 2005-67
TOTAL DEPTH 32 feet
BOREHOLE DIA. 2-inch
SURFACE ELEV. Unknown
WATER FIRST ENCOUNTERED ~30'
DRILLING COMPANY EnProb
DRILLING METHOD GeoProbe
DRILLER J. Edmond
GEOLOGIST B. Rucker
DATE DRILLED 11/16/2005

| DEPTH (feet) | GRAPHIC LOG | SAMPLE INTERVAL/ RECOVERY | BLOW COUNTS | INSTRUMENT READING | DESCRIPTION/SOIL CLASSIFICATION | REMARKS |
|---|---|---|---|---|---|---|
| 20 | | | | | 21' Gravel ↓ to 10% | "Instrument" is a photo ionization detector. "Readings" are in parts per million by volume air. |
| 22 | | | | 22' = 0 | Brown silty clay (CL), stiff, v. cohesive, sl. moist | |
| 24 | | | | 24' = 0 | Brown clayey, gravelly sand (SC), v. stiff, dry, friable, sand is fine-med. grained, gravel is small | |
| 26 | | | | 26' = 0 | 27' Several cobbles up to 1" | |
| 28 | | | | 28' = 0 | 27.5' Becomes clayey sand, no gravel, sl. moist, cohesive, friable, sl. stiff, sand is fine-grained | Hole swells shut at 28' after drilling to 32'. |
| 30 | | | | 30' = 0 | 28'-29' Minor sm. gravel<br>29.5' Becomes soft, sl. cohesive, wet | Insert temporary casing<br>water level = ~28' after several minutes. |
| 32 | | | | 31.5' = 0 | 31' Sand becomes very fine grained, moist<br>31.5' Sl. moist | Collect "BH-05-GW" |
| 34 | | | | | Bottom of borehole = 32' | |
| 36 | | | | | | |
| 38 | | | | | | |
| 40 | | | | | | |

2005-67-04

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

# ANALYTICAL REPORT

Prepared for:

Stellar Environmental Solutions
2198 6th Street
Suite 201
Berkeley, CA 94710

Date: 02-DEC-05
Lab Job Number: 183240
Project ID: 2005-67
Location: Lake Del Valle Boat

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

Curtis & Tompkins, Ltd.

# CASE NARRATIVE

| | |
|---|---|
| Laboratory number: | 183240 |
| Client: | Stellar Environmental Solutions |
| Project: | 2005-67 |
| Location: | Lake Del Valle Boat |
| Request Date: | 11/16/05 |
| Samples Received: | 11/16/05 |

This hardcopy data package contains sample and QC results for six soil samples and one water sample, requested for the above referenced project on 11/16/05. The samples were received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B) Water:**
No analytical problems were encountered.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B) Soil:**
No analytical problems were encountered.

**Volatile Organics by GC/MS (EPA 8260B) Water:**
No analytical problems were encountered.

**Volatile Organics by GC/MS (EPA 8260B) Soil:**
No analytical problems were encountered.

# Chain of Custody Record

Lab job no. _____

Date _____

Page 1 of 1

Laboratory: Curtis and Tompkins, Ltd.
Address: 2323 Fifth Street, Berkeley, California 94710, 510-486-0900

Method of Shipment: Hand Delivery
Shipment No. _____
Airbill No. _____
Cooler No. _____

Project Owner: East Bay Regional Park District
Site Address: 6999 Del Valle Road, Livermore CA
Project Name: Lake Del Valle Boat Launch Yard
Project Number: 2005-63

Project Manager: Bruce Rucker
Telephone No.: (510) 644-3123
Fax No.: (510) 644-3859
Samplers: (Signature) B.M. Rucker

| | Field Sample Number | Location/ Depth | Date | Time | Sample Type | Type/Size of Container | Preservation: Cooler | Preservation: Chemical | Filtered | No. of Containers | Analysis Required: TVHg + BTEX + MTBE | Analysis Required: Fuel Oxygenates + (and Scavengers (including ethanol)) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | BH-05-GW | ~30' | 11/14/05 | 1020 | H2O | 40 ml VOAs | ✓ | HCl | | 3 | X | X | |
| -2 | BH-01-12' | 12' | | 1140 | Soil | acetate sleeve | ✓ | — | | 1 | X | X | |
| -3 | BH-01-18' | 18' | | 1155 | | | ✓ | — | | 1 | X | X | |
| -4 | BH-01-30' | 30' | | 1300 | | | ✓ | — | | 1 | X | X | |
| -5 | BH-01-40' | 40' | | 1315 | | | ✓ | — | | 1 | X | X | |
| -6 | BH-02-2' | 2' | | 1425 | | | ✓ | — | | 1 | X | X | |
| -7 | BH-03-3' | 3' | | 1435 | | | ✓ | — | | 1 | X | X | |

| Relinquished by: | Date | Received by: | Date | Relinquished by: | Date | Received by: | Date |
|---|---|---|---|---|---|---|---|
| Signature: B.M. Rucker | ~~11/03~~ 11/16/05 | Signature: Lavanna Curtis | 11-16-05 | Signature: | | Signature: | |
| Printed: Bruce Rucker | Time: | Printed: Lavanna Curtis | Time: | Printed: | Time: | Printed: | Time: |
| Company: Stellar Environmental | 1645 | Company: Curtis & Tompkins | 5:45 | Company: | | Company: | |

Turnaround Time: 5 Day TAT

Comments: RE:D intact, on ice

| Relinquished by: | Date | Received by: | Date |
|---|---|---|---|
| Signature: | | Signature: | |
| Printed: | Time: | Printed: | Time: |
| Company: | | Company: | |

2000-00-01

**Steven Stanley**

**From:** "Joe Dinan" <jdinan@stellar-environmental.com>
**To:** <steve@ctberk.com>
**Sent:** Wednesday, November 30, 2005 8:56 AM
**Subject:** Correction to Job 183240

Hello Steve,

As discussed there are two corrections that need to be made to the referenced project (183240). Please correct the Stellar job number to be 2005-67 and not the currently listed 2005-63. Also, please change the project name from "Block San Pablo UST" to "Lake Del Valle Boat Launch Yard" as this is the project name indicated on the November 16, 2005 Chain-of-Custody.

Thank you for your assistance,

Joe

Joseph Dinan
Senior Environmental Scientist
Stellar Environmental Solutions, Inc.
2198 Sixth Street, Suite 201
Berkeley, CA 94710
Tel: (510) 644-3123 Fax: (510) 644-3859
www.stellar-environmental.com

Curtis & Tompkins, Ltd.

# Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | | |
| Field ID: | BH-05-GW | Batch#: | 107843 |
| Matrix: | Water | Sampled: | 11/16/05 |
| Units: | ug/L | Received: | 11/16/05 |
| Diln Fac: | 1.000 | Analyzed: | 11/17/05 |

Type: SAMPLE Lab ID: 183240-001

| Analyte | Result | RL | Analysis |
|---|---|---|---|
| Gasoline C7-C12 | ND | 50 | EPA 8015B |
| MTBE | ND | 2.0 | EPA 8021B |
| Benzene | ND | 0.50 | EPA 8021B |
| Toluene | ND | 0.50 | EPA 8021B |
| Ethylbenzene | ND | 0.50 | EPA 8021B |
| m,p-Xylenes | ND | 0.50 | EPA 8021B |
| o-Xylene | ND | 0.50 | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 96 | 62-141 | EPA 8015B |
| Bromofluorobenzene (FID) | 109 | 78-134 | EPA 8015B |
| Trifluorotoluene (PID) | 106 | 67-127 | EPA 8021B |
| Bromofluorobenzene (PID) | 121 | 80-122 | EPA 8021B |

Type: BLANK Lab ID: QC317465

| Analyte | Result | RL | Analysis |
|---|---|---|---|
| Gasoline C7-C12 | ND | 50 | EPA 8015B |
| MTBE | ND | 2.0 | EPA 8021B |
| Benzene | ND | 0.50 | EPA 8021B |
| Toluene | ND | 0.50 | EPA 8021B |
| Ethylbenzene | ND | 0.50 | EPA 8021B |
| m,p-Xylenes | ND | 0.50 | EPA 8021B |
| o-Xylene | ND | 0.50 | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 86 | 62-141 | EPA 8015B |
| Bromofluorobenzene (FID) | 96 | 78-134 | EPA 8015B |
| Trifluorotoluene (PID) | 99 | 67-127 | EPA 8021B |
| Bromofluorobenzene (PID) | 107 | 80-122 | EPA 8021B |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8021B |
| Type: | BS | Diln Fac: | 1.000 |
| Lab ID: | QC317466 | Batch#: | 107843 |
| Matrix: | Water | Analyzed: | 11/17/05 |
| Units: | ug/L | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| MTBE | 20.00 | 21.21 | 106 | 72-124 |
| Benzene | 20.00 | 20.58 | 103 | 80-120 |
| Toluene | 20.00 | 20.72 | 104 | 80-120 |
| Ethylbenzene | 20.00 | 20.38 | 102 | 80-120 |
| m,p-Xylenes | 20.00 | 19.90 | 99 | 80-120 |
| o-Xylene | 20.00 | 20.03 | 100 | 80-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (PID) | 101 | 67-127 |
| Bromofluorobenzene (PID) | 112 | 80-122 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8015B |
| Type: | LCS | Diln Fac: | 1.000 |
| Lab ID: | QC317467 | Batch#: | 107843 |
| Matrix: | Water | Analyzed: | 11/17/05 |
| Units: | ug/L | | |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 2,000 | 1,876 | 94 | 80-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 115 | 62-141 |
| Bromofluorobenzene (FID) | 108 | 78-134 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8021B |
| Type: | BSD | Diln Fac: | 1.000 |
| Lab ID: | QC317602 | Batch#: | 107843 |
| Matrix: | Water | Analyzed: | 11/18/05 |
| Units: | ug/L | | |

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| MTBE | 20.00 | 20.33 | 102 | 72-124 | 4 | 27 |
| Benzene | 20.00 | 20.68 | 103 | 80-120 | 0 | 20 |
| Toluene | 20.00 | 20.67 | 103 | 80-120 | 0 | 20 |
| Ethylbenzene | 20.00 | 20.26 | 101 | 80-120 | 1 | 20 |
| m,p-Xylenes | 20.00 | 19.77 | 99 | 80-120 | 1 | 20 |
| o-Xylene | 20.00 | 20.10 | 100 | 80-120 | 0 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (PID) | 96 | 67-127 |
| Bromofluorobenzene (PID) | 106 | 80-122 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8015B |
| Field ID: | ZZZZZZZZZZ | Batch#: | 107843 |
| MSS Lab ID: | 183265-001 | Sampled: | 11/17/05 |
| Matrix: | Water | Received: | 11/17/05 |
| Units: | ug/L | Analyzed: | 11/18/05 |
| Diln Fac: | 1.000 | | |

Type: MS Lab ID: QC317603

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | 86.78 | 2,000 | 2,288 | 110 | 80-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 138 | 62-141 |
| Bromofluorobenzene (FID) | 130 | 78-134 |

Type: MSD Lab ID: QC317604

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 2,000 | 2,251 | 108 | 80-120 | 2 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 137 | 62-141 |
| Bromofluorobenzene (FID) | 128 | 78-134 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

# Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | | |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Basis: | as received | Received: | 11/16/05 |
| Diln Fac: | 1.000 | Analyzed: | 11/18/05 |
| Batch#: | 107922 | | |

Field ID: BH-01-12' Lab ID: 183240-002
Type: SAMPLE

| Analyte | Result | RL | Units | Analysis |
|---|---|---|---|---|
| Gasoline C7-C12 | ND | 0.93 | mg/Kg | EPA 8015B |
| MTBE | ND | 19 | ug/Kg | EPA 8021B |
| Benzene | ND | 4.6 | ug/Kg | EPA 8021B |
| Toluene | ND | 4.6 | ug/Kg | EPA 8021B |
| Ethylbenzene | ND | 4.6 | ug/Kg | EPA 8021B |
| m,p-Xylenes | ND | 4.6 | ug/Kg | EPA 8021B |
| o-Xylene | ND | 4.6 | ug/Kg | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 112 | 59-140 | EPA 8015B |
| Bromofluorobenzene (FID) | 116 | 62-149 | EPA 8015B |
| Trifluorotoluene (PID) | 100 | 63-125 | EPA 8021B |
| Bromofluorobenzene (PID) | 104 | 71-129 | EPA 8021B |

Field ID: BH-01-18' Lab ID: 183240-003
Type: SAMPLE

| Analyte | Result | RL | Units | Analysis |
|---|---|---|---|---|
| Gasoline C7-C12 | ND | 0.92 | mg/Kg | EPA 8015B |
| MTBE | ND | 18 | ug/Kg | EPA 8021B |
| Benzene | ND | 4.6 | ug/Kg | EPA 8021B |
| Toluene | ND | 4.6 | ug/Kg | EPA 8021B |
| Ethylbenzene | ND | 4.6 | ug/Kg | EPA 8021B |
| m,p-Xylenes | ND | 4.6 | ug/Kg | EPA 8021B |
| o-Xylene | ND | 4.6 | ug/Kg | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 130 | 59-140 | EPA 8015B |
| Bromofluorobenzene (FID) | 136 | 62-149 | EPA 8015B |
| Trifluorotoluene (PID) | 116 | 63-125 | EPA 8021B |
| Bromofluorobenzene (PID) | 122 | 71-129 | EPA 8021B |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | | |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Basis: | as received | Received: | 11/16/05 |
| Diln Fac: | 1.000 | Analyzed: | 11/18/05 |
| Batch#: | 107922 | | |

Field ID: BH-01-30' Lab ID: 183240-004
Type: SAMPLE

| Analyte | Result | RL | Units | Analysis |
|---|---|---|---|---|
| Gasoline C7-C12 | ND | 0.92 | mg/Kg | EPA 8015B |
| MTBE | ND | 18 | ug/Kg | EPA 8021B |
| Benzene | ND | 4.6 | ug/Kg | EPA 8021B |
| Toluene | ND | 4.6 | ug/Kg | EPA 8021B |
| Ethylbenzene | ND | 4.6 | ug/Kg | EPA 8021B |
| m,p-Xylenes | ND | 4.6 | ug/Kg | EPA 8021B |
| o-Xylene | ND | 4.6 | ug/Kg | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 128 | 59-140 | EPA 8015B |
| Bromofluorobenzene (FID) | 134 | 62-149 | EPA 8015B |
| Trifluorotoluene (PID) | 114 | 63-125 | EPA 8021B |
| Bromofluorobenzene (PID) | 123 | 71-129 | EPA 8021B |

Field ID: BH-01-40' Lab ID: 183240-005
Type: SAMPLE

| Analyte | Result | RL | Units | Analysis |
|---|---|---|---|---|
| Gasoline C7-C12 | ND | 1.1 | mg/Kg | EPA 8015B |
| MTBE | ND | 22 | ug/Kg | EPA 8021B |
| Benzene | ND | 5.4 | ug/Kg | EPA 8021B |
| Toluene | ND | 5.4 | ug/Kg | EPA 8021B |
| Ethylbenzene | ND | 5.4 | ug/Kg | EPA 8021B |
| m,p-Xylenes | ND | 5.4 | ug/Kg | EPA 8021B |
| o-Xylene | ND | 5.4 | ug/Kg | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 122 | 59-140 | EPA 8015B |
| Bromofluorobenzene (FID) | 128 | 62-149 | EPA 8015B |
| Trifluorotoluene (PID) | 113 | 63-125 | EPA 8021B |
| Bromofluorobenzene (PID) | 116 | 71-129 | EPA 8021B |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | | |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Basis: | as received | Received: | 11/16/05 |
| Diln Fac: | 1.000 | Analyzed: | 11/18/05 |
| Batch#: | 107922 | | |

Field ID: BH-02-2' Lab ID: 183240-006
Type: SAMPLE

| Analyte | Result | RL | Units | Analysis |
|---|---|---|---|---|
| Gasoline C7-C12 | ND | 1.1 | mg/Kg | EPA 8015B |
| MTBE | ND | 22 | ug/Kg | EPA 8021B |
| Benzene | ND | 5.6 | ug/Kg | EPA 8021B |
| Toluene | ND | 5.6 | ug/Kg | EPA 8021B |
| Ethylbenzene | ND | 5.6 | ug/Kg | EPA 8021B |
| m,p-Xylenes | ND | 5.6 | ug/Kg | EPA 8021B |
| o-Xylene | ND | 5.6 | ug/Kg | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 129 | 59-140 | EPA 8015B |
| Bromofluorobenzene (FID) | 137 | 62-149 | EPA 8015B |
| Trifluorotoluene (PID) | 119 | 63-125 | EPA 8021B |
| Bromofluorobenzene (PID) | 124 | 71-129 | EPA 8021B |

Field ID: BH-03-3' Lab ID: 183240-007
Type: SAMPLE

| Analyte | Result | RL | Units | Analysis |
|---|---|---|---|---|
| Gasoline C7-C12 | ND | 1.1 | mg/Kg | EPA 8015B |
| MTBE | ND | 22 | ug/Kg | EPA 8021B |
| Benzene | ND | 5.4 | ug/Kg | EPA 8021B |
| Toluene | ND | 5.4 | ug/Kg | EPA 8021B |
| Ethylbenzene | ND | 5.4 | ug/Kg | EPA 8021B |
| m,p-Xylenes | ND | 5.4 | ug/Kg | EPA 8021B |
| o-Xylene | ND | 5.4 | ug/Kg | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 111 | 59-140 | EPA 8015B |
| Bromofluorobenzene (FID) | 115 | 62-149 | EPA 8015B |
| Trifluorotoluene (PID) | 101 | 63-125 | EPA 8021B |
| Bromofluorobenzene (PID) | 105 | 71-129 | EPA 8021B |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | | |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Basis: | as received | Received: | 11/16/05 |
| Diln Fac: | 1.000 | Analyzed: | 11/18/05 |
| Batch#: | 107922 | | |

Type: BLANK Lab ID: QC317802

| Analyte | Result | RL | Units | Analysis |
|---|---|---|---|---|
| Gasoline C7-C12 | ND | 0.20 | mg/Kg | EPA 8015B |
| MTBE | ND | 4.0 | ug/Kg | EPA 8021B |
| Benzene | ND | 1.0 | ug/Kg | EPA 8021B |
| Toluene | ND | 1.0 | ug/Kg | EPA 8021B |
| Ethylbenzene | ND | 1.0 | ug/Kg | EPA 8021B |
| m,p-Xylenes | ND | 1.0 | ug/Kg | EPA 8021B |
| o-Xylene | ND | 1.0 | ug/Kg | EPA 8021B |

| Surrogate | %REC | Limits | Analysis |
|---|---|---|---|
| Trifluorotoluene (FID) | 114 | 59-140 | EPA 8015B |
| Bromofluorobenzene (FID) | 115 | 62-149 | EPA 8015B |
| Trifluorotoluene (PID) | 101 | 63-125 | EPA 8021B |
| Bromofluorobenzene (PID) | 104 | 71-129 | EPA 8021B |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd

Batch QC Report

## Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8021B |
| Matrix: | Soil | Diln Fac: | 1.000 |
| Units: | ug/Kg | Batch#: | 107922 |
| Basis: | as received | Analyzed: | 11/18/05 |

Type: BS Lab ID: QC317803

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| MTBE | 100.0 | 113.2 | 113 | 71-130 |
| Benzene | 100.0 | 106.5 | 107 | 80-120 |
| Toluene | 100.0 | 105.5 | 105 | 80-120 |
| Ethylbenzene | 100.0 | 101.7 | 102 | 80-120 |
| m,p-Xylenes | 100.0 | 101.6 | 102 | 80-120 |
| o-Xylene | 100.0 | 104.4 | 104 | 80-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (PID) | 105 | 63-125 |
| Bromofluorobenzene (PID) | 108 | 71-129 |

Type: BSD Lab ID: QC317804

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| MTBE | 100.0 | 109.1 | 109 | 71-130 | 4 | 20 |
| Benzene | 100.0 | 103.0 | 103 | 80-120 | 3 | 20 |
| Toluene | 100.0 | 101.1 | 101 | 80-120 | 4 | 20 |
| Ethylbenzene | 100.0 | 100.5 | 100 | 80-120 | 1 | 20 |
| m,p-Xylenes | 100.0 | 95.68 | 96 | 80-120 | 6 | 20 |
| o-Xylene | 100.0 | 98.88 | 99 | 80-120 | 5 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (PID) | 104 | 63-125 |
| Bromofluorobenzene (PID) | 104 | 71-129 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

## Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8015B |
| Type: | LCS | Basis: | as received |
| Lab ID: | QC317805 | Diln Fac: | 1.000 |
| Matrix: | Soil | Batch#: | 107922 |
| Units: | mg/Kg | Analyzed: | 11/18/05 |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| Gasoline C7-C12 | 10.00 | 11.21 | 112 | 80-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 137 | 59-140 |
| Bromofluorobenzene (FID) | 129 | 62-149 |

Curtis & Tompkins, Ltd.

Batch QC Report

## Curtis & Tompkins Laboratories Analytical Report

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8015B |
| Field ID: | BH-01-18' | Diln Fac: | 1.000 |
| MSS Lab ID: | 183240-003 | Batch#: | 107922 |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Units: | mg/Kg | Received: | 11/16/05 |
| Basis: | as received | Analyzed: | 11/19/05 |

Type: MS Lab ID: QC317806

| Analyte | MSS Result | Spiked | Result | %REC | Limits |
|---|---|---|---|---|---|
| Gasoline C7-C12 | <0.1011 | 10.64 | 9.943 | 93 | 44-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 129 | 59-140 |
| Bromofluorobenzene (FID) | 124 | 62-149 |

Type: MSD Lab ID: QC317807

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| Gasoline C7-C12 | 10.75 | 10.26 | 95 | 44-120 | 2 | 23 |

| Surrogate | %REC | Limits |
|---|---|---|
| Trifluorotoluene (FID) | 132 | 59-140 |
| Bromofluorobenzene (FID) | 123 | 62-149 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

# Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Field ID: | BH-05-GW | Batch#: | 108184 |
| Matrix: | Water | Sampled: | 11/16/05 |
| Units: | ug/L | Received: | 11/16/05 |
| Diln Fac: | 1.000 | Analyzed: | 11/29/05 |

Type: SAMPLE Lab ID: 183240-001

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethanol | ND | 1,000 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 80-121 |
| 1,2-Dichloroethane-d4 | 117 | 80-125 |
| Toluene-d8 | 98 | 80-120 |
| Bromofluorobenzene | 105 | 80-124 |

Type: BLANK Lab ID: QC318893

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethanol | ND | 1,000 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 96 | 80-121 |
| 1,2-Dichloroethane-d4 | 115 | 80-125 |
| Toluene-d8 | 99 | 80-120 |
| Bromofluorobenzene | 107 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Field ID: | BH-05-GW | Batch#: | 108184 |
| Matrix: | Water | Sampled: | 11/16/05 |
| Units: | ug/L | Received: | 11/16/05 |
| Diln Fac: | 1.000 | Analyzed: | 11/29/05 |

Type: BLANK Lab ID: QC318894

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 10 |
| MTBE | ND | 0.5 |
| Isopropyl Ether (DIPE) | ND | 0.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 0.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 0.5 |
| 1,2-Dichloroethane | ND | 0.5 |
| 1,2-Dibromoethane | ND | 0.5 |
| Ethanol | ND | 1,000 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 80-121 |
| 1,2-Dichloroethane-d4 | 115 | 80-125 |
| Toluene-d8 | 97 | 80-120 |
| Bromofluorobenzene | 106 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Matrix: | Water | Batch#: | 108184 |
| Units: | ug/L | Analyzed: | 11/29/05 |
| Diln Fac: | 1.000 | | |

Type: BS Lab ID: QC318891

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 106.8 | 85 | 66-138 |
| MTBE | 25.00 | 21.49 | 86 | 72-120 |
| Isopropyl Ether (DIPE) | 25.00 | 21.90 | 88 | 74-121 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 24.38 | 98 | 77-123 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 23.45 | 94 | 77-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 80-121 |
| 1,2-Dichloroethane-d4 | 114 | 80-125 |
| Toluene-d8 | 100 | 80-120 |
| Bromofluorobenzene | 101 | 80-124 |

Type: BSD Lab ID: QC318892

| Analyte | Spiked | Result | %REC | Limits | RPD | Lim |
|---|---|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 125.0 | 108.3 | 87 | 66-138 | 1 | 25 |
| MTBE | 25.00 | 21.83 | 87 | 72-120 | 2 | 20 |
| Isopropyl Ether (DIPE) | 25.00 | 21.26 | 85 | 74-121 | 3 | 20 |
| Ethyl tert-Butyl Ether (ETBE) | 25.00 | 24.30 | 97 | 77-123 | 0 | 20 |
| Methyl tert-Amyl Ether (TAME) | 25.00 | 23.62 | 94 | 77-120 | 1 | 20 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 94 | 80-121 |
| 1,2-Dichloroethane-d4 | 112 | 80-125 |
| Toluene-d8 | 98 | 80-120 |
| Bromofluorobenzene | 101 | 80-124 |

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

# Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Field ID: | BH-01-12' | Diln Fac: | 0.9804 |
| Lab ID: | 183240-002 | Batch#: | 107844 |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Units: | ug/Kg | Received: | 11/16/05 |
| Basis: | as received | Analyzed: | 11/17/05 |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 98 |
| MTBE | ND | 4.9 |
| Isopropyl Ether (DIPE) | ND | 4.9 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.9 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.9 |
| 1,2-Dichloroethane | ND | 4.9 |
| 1,2-Dibromoethane | ND | 4.9 |
| Ethanol | ND | 980 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 92 | 80-120 |
| 1,2-Dichloroethane-d4 | 102 | 80-123 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 100 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Field ID: | BH-01-18' | Diln Fac: | 0.9091 |
| Lab ID: | 183240-003 | Batch#: | 107844 |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Units: | ug/Kg | Received: | 11/16/05 |
| Basis: | as received | Analyzed: | 11/17/05 |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 91 |
| MTBE | ND | 4.5 |
| Isopropyl Ether (DIPE) | ND | 4.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.5 |
| 1,2-Dichloroethane | ND | 4.5 |
| 1,2-Dibromoethane | ND | 4.5 |
| Ethanol | ND | 910 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 90 | 80-120 |
| 1,2-Dichloroethane-d4 | 103 | 80-123 |
| Toluene-d8 | 99 | 80-120 |
| Bromofluorobenzene | 95 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Field ID: | BH-01-30' | Diln Fac: | 0.9091 |
| Lab ID: | 183240-004 | Batch#: | 107844 |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Units: | ug/Kg | Received: | 11/16/05 |
| Basis: | as received | Analyzed: | 11/17/05 |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 91 |
| MTBE | ND | 4.5 |
| Isopropyl Ether (DIPE) | ND | 4.5 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.5 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.5 |
| 1,2-Dichloroethane | ND | 4.5 |
| 1,2-Dibromoethane | ND | 4.5 |
| Ethanol | ND | 910 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 80-120 |
| 1,2-Dichloroethane-d4 | 106 | 80-123 |
| Toluene-d8 | 98 | 80-120 |
| Bromofluorobenzene | 97 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd

# Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Field ID: | BH-01-40' | Diln Fac: | 0.9804 |
| Lab ID: | 183240-005 | Batch#: | 107844 |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Units: | ug/Kg | Received: | 11/16/05 |
| Basis: | as received | Analyzed: | 11/17/05 |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 98 |
| MTBE | ND | 4.9 |
| Isopropyl Ether (DIPE) | ND | 4.9 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.9 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.9 |
| 1,2-Dichloroethane | ND | 4.9 |
| 1,2-Dibromoethane | ND | 4.9 |
| Ethanol | ND | 980 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 95 | 80-120 |
| 1,2-Dichloroethane-d4 | 104 | 80-123 |
| Toluene-d8 | 99 | 80-120 |
| Bromofluorobenzene | 98 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

# Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Field ID: | BH-02-2' | Diln Fac: | 0.9615 |
| Lab ID: | 183240-006 | Batch#: | 107844 |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Units: | ug/Kg | Received: | 11/16/05 |
| Basis: | as received | Analyzed: | 11/17/05 |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 96 |
| MTBE | ND | 4.8 |
| Isopropyl Ether (DIPE) | ND | 4.8 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 4.8 |
| Methyl tert-Amyl Ether (TAME) | ND | 4.8 |
| 1,2-Dichloroethane | ND | 4.8 |
| 1,2-Dibromoethane | ND | 4.8 |
| Ethanol | ND | 960 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 96 | 80-120 |
| 1,2-Dichloroethane-d4 | 104 | 80-123 |
| Toluene-d8 | 101 | 80-120 |
| Bromofluorobenzene | 98 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

## Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Field ID: | BH-03-3' | Diln Fac: | 1.000 |
| Lab ID: | 183240-007 | Batch#: | 107844 |
| Matrix: | Soil | Sampled: | 11/16/05 |
| Units: | ug/Kg | Received: | 11/16/05 |
| Basis: | as received | Analyzed: | 11/17/05 |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 100 |
| MTBE | ND | 5.0 |
| Isopropyl Ether (DIPE) | ND | 5.0 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.0 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Ethanol | ND | 1,000 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 102 | 80-120 |
| 1,2-Dichloroethane-d4 | 104 | 80-123 |
| Toluene-d8 | 98 | 80-120 |
| Bromofluorobenzene | 101 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd

Batch QC Report

## Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Type: | BLANK | Basis: | as received |
| Lab ID: | QC317471 | Diln Fac: | 1.000 |
| Matrix: | Soil | Batch#: | 107844 |
| Units: | ug/Kg | Analyzed: | 11/17/05 |

| Analyte | Result | RL |
|---|---|---|
| tert-Butyl Alcohol (TBA) | ND | 100 |
| MTBE | ND | 5.0 |
| Isopropyl Ether (DIPE) | ND | 5.0 |
| Ethyl tert-Butyl Ether (ETBE) | ND | 5.0 |
| Methyl tert-Amyl Ether (TAME) | ND | 5.0 |
| 1,2-Dichloroethane | ND | 5.0 |
| 1,2-Dibromoethane | ND | 5.0 |
| Ethanol | ND | 1,000 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 80-120 |
| 1,2-Dichloroethane-d4 | 104 | 80-123 |
| Toluene-d8 | 97 | 80-120 |
| Bromofluorobenzene | 97 | 80-124 |

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

## Gasoline Oxygenates by GC/MS

| | | | |
|---|---|---|---|
| Lab #: | 183240 | Location: | Lake Del Valle Boat |
| Client: | Stellar Environmental Solutions | Prep: | EPA 5030B |
| Project#: | 2005-67 | Analysis: | EPA 8260B |
| Type: | LCS | Basis: | as received |
| Lab ID: | QC317468 | Diln Fac: | 1.000 |
| Matrix: | Soil | Batch#: | 107844 |
| Units: | ug/Kg | Analyzed: | 11/17/05 |

| Analyte | Spiked | Result | %REC | Limits |
|---|---|---|---|---|
| tert-Butyl Alcohol (TBA) | 250.0 | 244.3 | 98 | 59-143 |
| MTBE | 50.00 | 46.21 | 92 | 72-121 |
| Isopropyl Ether (DIPE) | 50.00 | 44.81 | 90 | 68-127 |
| Ethyl tert-Butyl Ether (ETBE) | 50.00 | 52.06 | 104 | 73-127 |
| Methyl tert-Amyl Ether (TAME) | 50.00 | 49.44 | 99 | 73-120 |

| Surrogate | %REC | Limits |
|---|---|---|
| Dibromofluoromethane | 97 | 80-120 |
| 1,2-Dichloroethane-d4 | 102 | 80-123 |
| Toluene-d8 | 100 | 80-120 |
| Bromofluorobenzene | 96 | 80-124 |