August 31, 2006

# GROUNDWATER MONITORING REPORT
# 3rd Quarter, 2006

796 66th Avenue
Oakland, California 94621

AEI Project No. 110566
ACHCSA Case No. RO0002449

Prepared For

Cruise America, Inc.
11 West Hampton Avenue
Mesa, AZ 85210

Prepared By

**AEI Consultants**
2500 Camino Diablo, Suite 200
Walnut Creek, CA 94597
(925) 283-6000

AEI

AEI CONSULTANTS
2500 Camino Diablo, Suite 200, Walnut Creek, CA 94597
Phone: (925) 283-6000 Fax: (925) 944-2895

August 31, 2006

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

**Subject:** **Quarterly Groundwater Monitoring Report**
**3rd Quarter, 2006**
796 66th Avenue
Oakland, California
AEI Project No. 110566
ACHCSA Case No. RO0002449

Dear Mr. Kauffman:

AEI Consultants (AEI) has prepared this report on behalf of Cruise America, Inc. to document to groundwater monitoring activities performed at the above referenced site (Figure 1: Site Location Map). The mitigation and monitoring has been required by the Alameda County Health Care Services Agency (ACHCSA) to document groundwater quality associated with the release of gasoline fuel from the former underground storage tank (UST) located on the property. This report documents the monitoring and sampling event conducted during the 3rd Quarter 2006 on July 11, 2006.

## I Background

The site is currently occupied by Cruise America, a recreational vehicle (RV) rental facility. The property is approximately five acres in size. Currently, two buildings exist on the site, surrounded by paved vehicle storage areas. The buildings consist of an office building located on the eastern side of the property and a service building located centrally on the property. Cruise America acquired the property from McGuire Huster in August 1988.

In July 2001, AEI performed a Phase II investigation on the site that included advancing six (6) soil borings (SB-1 through SB-6). The investigation was performed to assess whether the soil or groundwater beneath the site was impacted by two former UST locations on the property (Figure 2). Although low concentrations of Total Petroleum Hydrocarbons as gasoline (TPH-g) and diesel (TPH-d) were reported in the groundwater beneath the site, high levels of Methyl tertiary-Butyl Ether (MTBE) were detected in boring SB-1.

In September of 2001, AEI advanced five (5) additional soil borings (SB-7 through SB-11) in order to determine the source of the high levels of MTBE found in SB-1. Samples collected from SB-7 and SB-8 did not contain MTBE above laboratory reporting limits. MTBE

concentrations ranged from 630 micrograms per liter (µg/L) in SB-9 to 13,000 µg/L in SB-10. These data indicated a leak in the remaining 10,000-gallon gasoline UST on the southern portion of the property as the most likely source of the MTBE.

AEI removed the 10,000-gallon gasoline UST in November of 2001. Concentrations of TPH-g in four of the five soil samples ranged from 4.1 milligrams per kilogram (mg/kg) to 280 mg/kg. Concentrations of MTBE and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) were also detected in the five soil samples. The highest concentrations of MTBE and Benzene detected in the soil during the tank removal were 53 mg/kg and 13 mg/kg, respectively, detected along the southern and eastern sidewalls of the excavation at approximately 6.5 feet below ground surface (bgs). Elevated concentrations of TPH-g and MTBE were present in the groundwater sample at concentrations of 44,000 µg/L and 42,000 µg/L, respectively.

Following removal of the tank, the ACHCSA requested further investigation of the release from the 10,000 gallon UST. On September 6, 2002, six (6) soil borings (SB-12 through SB-17) were advanced. The data from these soil borings was used to determine the placement of five (5) groundwater monitoring wells, which were installed on September 19, 2002. These five wells have been monitored on a quarterly basis since installation. The locations of these borings and wells are shown on Figures 2 and 3.

Based on the findings of the investigation and monitoring activities, the ACHCSA required that corrective action be undertaken. AEI prepared and submitted an *Interim Corrective Action Plan*, dated April 5, 2004, outlining an evaluation and scope of work to implement a treatment program for the release. A sparging system was installed around the release area in July 2004, major features of which are shown on Figure 4. Implementation of the plan was documented in the *Interim Corrective Action Progress Report*, February 11, 2005, to which the reader is referred for details.

## II Summary of Activities

AEI measured depth to groundwater in five (5) wells (MW-1 to MW-5) on July 11, 2006. Wells were first opened and water levels allowed to equilibrate with atmospheric pressure. The depth to water from the top of the well casings was measured prior to sampling with an electric water level indicator. The wells were then purged of at least three well volumes using a battery powered submersible pump.

Temperature, pH, specific conductivity, and dissolved oxygen were measured and the turbidity was visually noted during the purging of the wells. Once the wells were allowed to recharge to a minimum of 90% of their original water volume, a water sample was collected. Groundwater samples were collected from each well using clean, disposable bailers.

Groundwater samples were collected from each well into three 40-milliliter (ml) volatile organic analysis (VOA) vials. The VOAs were capped so that neither head space nor air bubbles were

visible within the sample containers. Samples were labeled with unique identifiers including time and date sampled, stored in a cooler over water ice, and placed under chain of custody. The samples were transported under chain of custody protocol to McCampbell Analytical, Inc. of Bay Point, California (Department of Health Services Certification #1644).

The five (5) groundwater samples were analyzed for TPH-g by EPA Method 8015Cm, BTEX and MTBE by EPA Method 8021B, and MTBE and tertiary-Butyl Alcohol (TBA) by EPA Method 8260B.

## III Field Results

No sheen or free product was encountered during monitoring activities. Groundwater levels for the current monitoring episode ranged from 3.80 to 6.67 feet above mean sea level (amsl). These groundwater elevations were an average of 1.04 feet lower than the previous episode, although it should be noted that the groundwater elevation for well MW-3 increased by 0.49 feet. The direction of the groundwater flow at the time of measurement was towards the east-southeast with a hydraulic gradient of approximately 0.03 ft/ft. This flow direction and gradient observed during this episode is generally consistent with previous monitoring events.

Groundwater elevation data is summarized in Tables 1 and 2. The groundwater elevation contours and the groundwater flow direction are shown in Figure 5. Refer to Appendix A for the Groundwater Monitoring Well Field Sampling Forms.

## IV Groundwater Quality

Overall, TPH-g and BTEX concentrations remained low to non-detect. TPH-g concentrations TPH-g concentrations decreased in wells MW-1 and MW-2 from 80 µg/L to non-detect levels and 50 µg/L to non-detect levels, respectively. Benzene continues to not exceed laboratory detection limits since the first quarter of 2005. Toluene concentrations decreased in all of the wells, ranging from 2.8 µg/L to non-detect. Ethylbenzene concentrations decreased slightly in wells MW-2 and MW-3 from 1.5 µg/L to non-detect levels and 0.78 µg/L to non-detect levels, respectively. Total xylene concentrations decreased slightly in wells MW-2, MW-3 and MW-4 from 6.1 µg/L to non-detect levels, 3.3 µg/L to 1.1 µg/L, and 1.1 µg/L to non-detect levels, respectively. TBA concentrations increased in wells MW-1 and MW-5 from 160 µg/L to 240 µg/L and 806 µg/L to 1,200 µg/L, respectively. The TBA concentration in MW-4 remained constant, 120 µg/L. Using EPA Method 8260, MTBE concentrations slightly increased in all of the wells, excluding MW-1, to concentrations ranging from 0.67 µg/L (MW-3) to 24 µg/L (MW-1). No other target analytes were detected exceeding laboratory detection limits in the groundwater samples analyzed.

A summary of groundwater sample analytical data is presented in Table 1 and on Figure 6. Laboratory analytical and chain of custody documentation are included in Appendix B.

## V Sparging Operations

A manufacturer-based upgrade was performed on the sparging control system in late April 2006. Programming was also adjusted in late April 2006 to focus on residual hotspot areas around wells MW-1, MW-4, and MW-5. The system had since been running with no power outages at approximately 100% of the system's programmed up-time since the upgrade, which is set at 80% of each day. However, the system went down during the early part of the week of July 24, 2006. An AEI engineer inspected the system shortly after and found the problem to be a shorted main switch, likely caused by extreme hot weather.

## VI Summary

Overall, TPH-g and BTEX concentrations have been reduced to very low to non-detect levels in all wells. MTBE and TBA concentrations have been reduced appreciably as well. Based on the overall reduction in contaminant concentrations, a site summary report is being prepared in order for case closure evaluation and will be submitted shortly after the delivery of this 3rd Quarter 2006 report. Depending on the results of the 4th quarter sampling, which will be reviewed for an indication of rebound, the system will be restarted if needed.

The next quarterly monitoring episode is tentatively scheduled to occur in October 2006.

## VII Report Limitation

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

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

If you have any questions regarding our investigation, please do not hesitate to contact Mr. McIntyre at (925) 283-6000, extension 104.

Sincerely,
**AEI Consultants**

Adrian Michael Angel
Project Geologist

Peter McIntyre, P.G.
Senior Project Manager

REGISTERED GEOLOGIST
PETER J. MCINTYRE
Exp 9-30-08
No 7702
STATE OF CALIFORNIA

***Figures***

*Figure 1: Site Location Map*
*Figure 2: Property Map*
*Figure 3: Site Plan*
*Figure 4: Sparge Well Locations*
*Figure 5: Water Table Contours (7/11/06)*
*Figure 6: Groundwater Sample Analytical Data (7/11/06)*

***Tables***

*Table 1: Groundwater Sample Analytical Data*
*Table 2: Water Table Data Summary*

***Attachments***

*Appendix A: Monitoring Well Field Sampling Forms*
*Appendix B: Laboratory Analytical and Chain of Custody Documentation*

Distribution: Cruise America, Inc.
11 West Hampton Avenue
Mesa, AZ 85210

Mr. Don Hwang
ACHCSA
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501

# FIGURES

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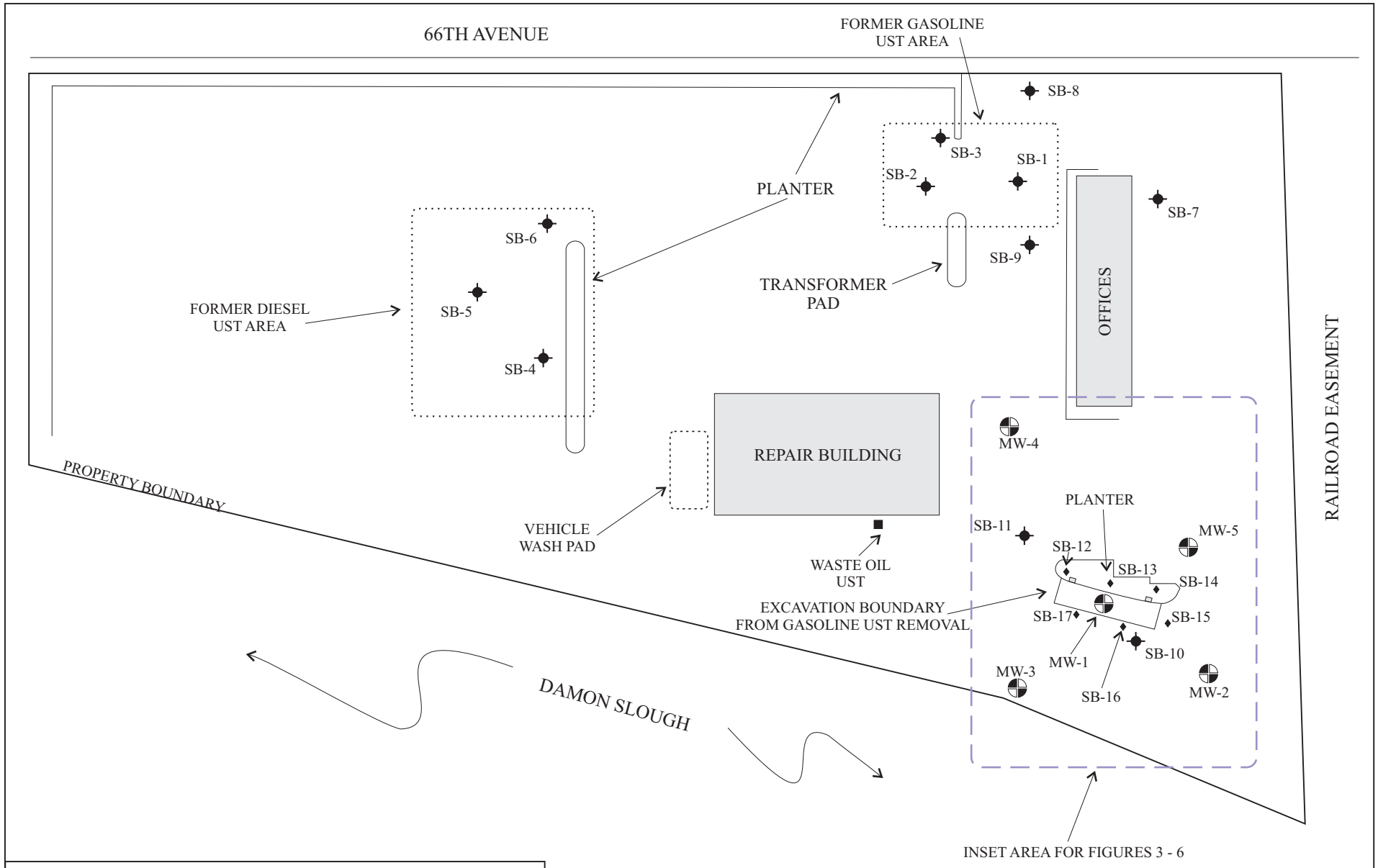
| AEI CONSULTANTS | |
|---|---|
| **SITE LOCATION MAP** | |
| 796 66th AVENUE<br>OAKLAND, CALIFORNIA | **FIGURE 1**<br>PROJECT NO. 110566 |

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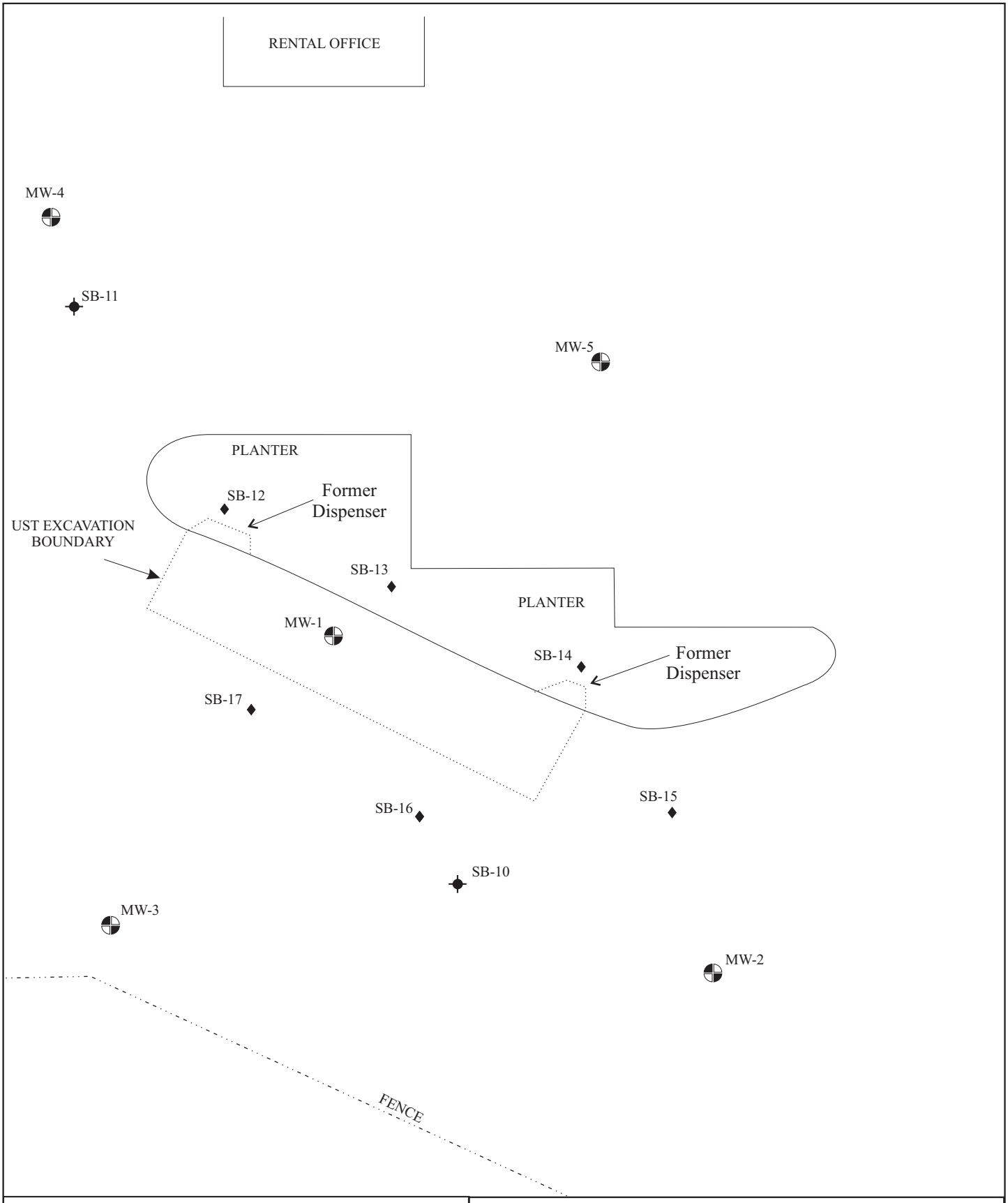
2500 CAMINO DIABLO BLVD, STE 200, WALNUT CREEK, CA

## PROPERTY MAP

796 66th AVENUE
OAKLAND, CALIFORNIA

**FIGURE 2**
AEI PROJECT NO 110566




**LEGEND**

- Soil Boring: July & Sept. 2001
- Soil Boring: Sept. 2002
- Monitoring Wells

N

0' 10' 20'

SCALE: 1 in = 20 ft

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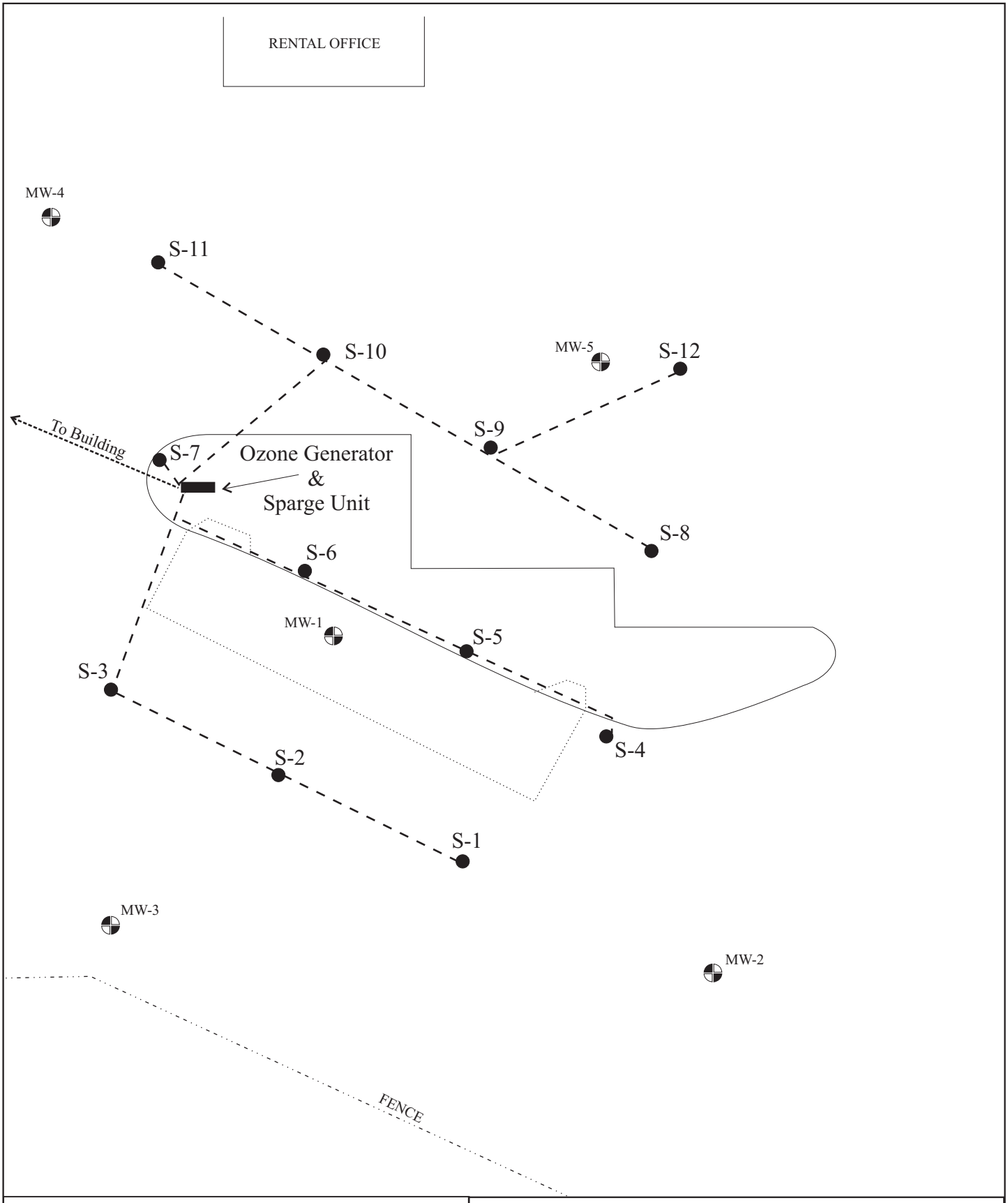
## Site Plan

796 66TH AVENUE
OAKLAND, CALIFORNIA

**FIGURE 3**
AEI PROJECT NO 110566




**LEGEND**

- Monitoring Wells
- Sparge Well Points
- Sparge Lines and Conduit
- Electrical Conduit

N

0' 10' 20'

SCALE: 1 in = 20 ft

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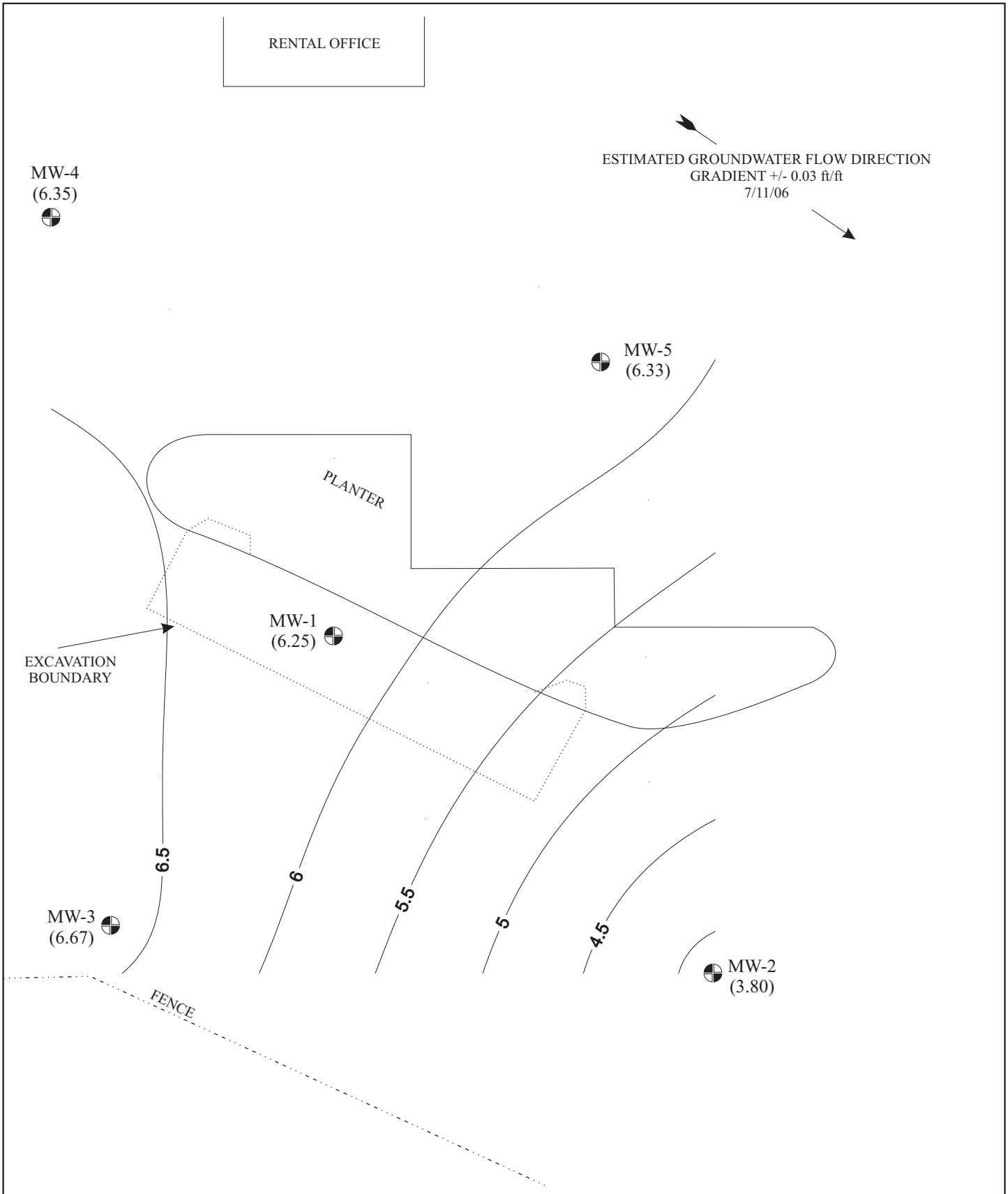
## Sparge Well Locations

796 66TH AVENUE
OAKLAND, CALIFORNIA

**FIGURE 4**
AEI PROJECT NO 110566




## LEGEND

MONITORING WELL LOCATION

Groundwater elevation data as of 7/11/06 in feet above mean sea level (amsl).
Contour drawn in Surfer (R) v. 7.0.
Contour Interval = 0.5
See Table 1 for details.

N

0' 10' 20'

SCALE: 1 in = 20 ft

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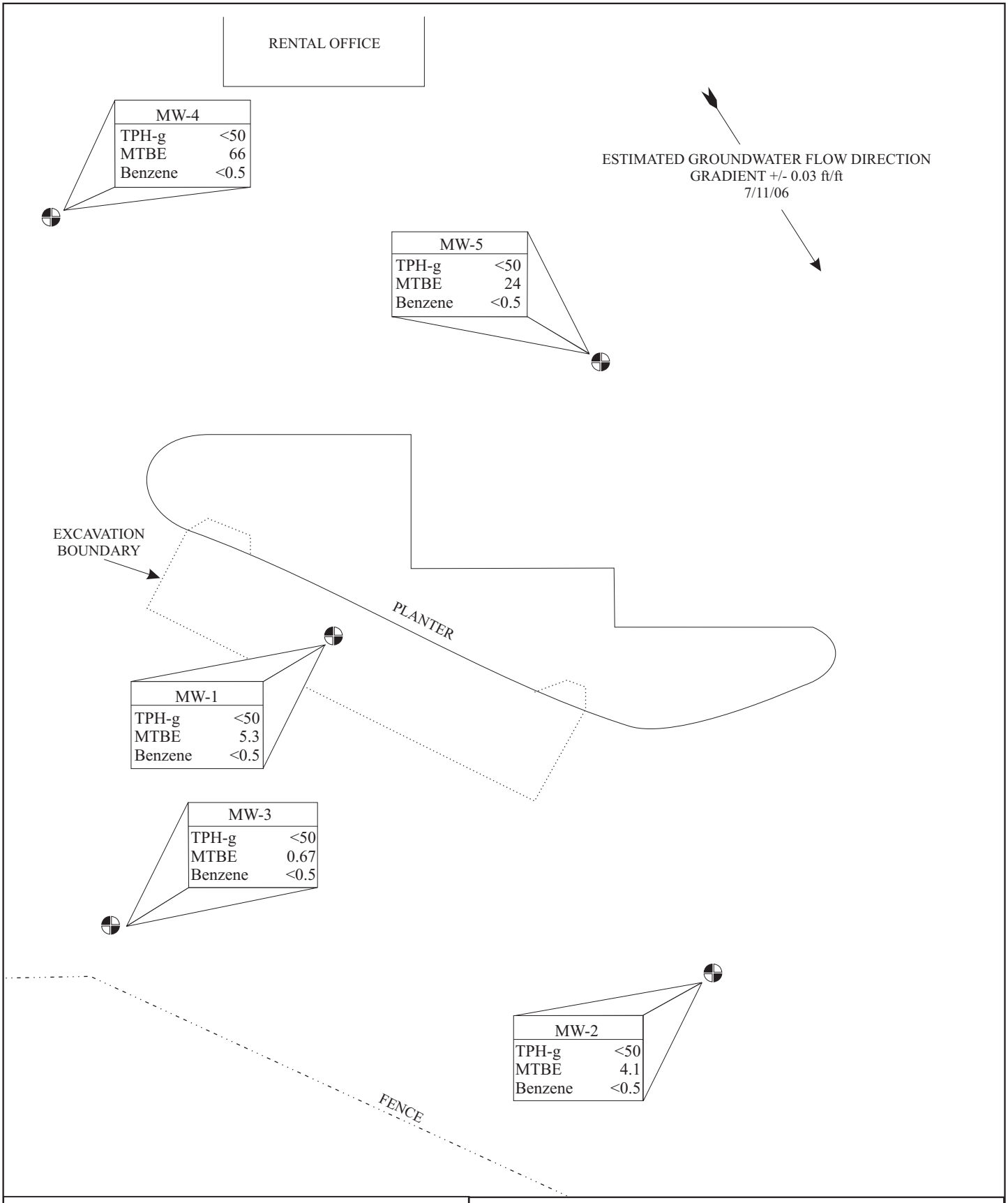
## Water Table Contours (7/11/06)

796 66TH AVENUE
OAKLAND, CALIFORNIA

**FIGURE 5**
AEI PROJECT NO 110566




## LEGEND

MONITORING WELL LOCATION

TPH-g = Total Petroleum Hydrocarbons as gasoline.
MTBE = Methyl tertiary-Butyl Ether (8260B).
Analytical data from 7/11/06 event with results in micrograms per liter (µg/L).
See Table 1 for details.

N

0' 10' 20'

SCALE: 1 in = 20 ft

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## Groundwater Sample Analytical Data (7/11/06)

796 66TH AVENUE
OAKLAND, CALIFORNIA

**FIGURE 6**
AEI PROJECT NO 110566

# TABLES

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**Table 1**
**Groundwater Monitoring Data**

| Well ID (screen interval in ft bgs) | Date Sampled | Well Elevation (ft amsl) | Depth to Water (ft from TOC) | Water Table Elevation (ft amsl) | TPH-g *(8015Cm)* µg/L | Benzene µg/L | Toluene µg/L | Ethylbenzene µg/L | Xylenes µg/L | MTBE *(8021B)* µg/L | MTBE *(8260B)* µg/L | TBA *(8260B)* µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | *(EPA method 8021B)* | | | | | | |
| **MW-1** | 9/30/2002 | 10.88 | 5.41 | 5.47 | 1,800 | 50 | 15 | 16 | 18 | 19,000 | 13,000 | <5,000 |
| (4-14) | 1/2/2003 | 10.88 | 4.77 | 6.11 | 660 | 24 | 6.4 | <2.5 | <2.5 | 7,800 | 8,900 | - |
| | 3/31/2003 | 10.88 | 4.95 | 5.93 | 660 | 11 | 6.4 | <5.0 | <5.0 | 16,000 | 20,000 | - |
| | 6/30/2003 | 10.88 | 4.54 | 6.34 | 830 | <5.0 | 6.8 | <5.0 | <5.0 | 16,000 | 17,000 | - |
| | 10/1/2003 | 10.88 | 4.66 | 6.22 | 720 | <5.0 | <5.0 | <5.0 | <5.0 | 14,000 | 13,000 | - |
| | 1/5/2004 | 10.88 | 4.07 | 6.81 | <300 | 7.8 | 2.9 | <3.0 | <3.0 | - | 8,700 | - |
| | 4/5/2004 | 10.88 | 4.33 | 6.55 | 100 | 2.8 | 3.0 | <1.0 | <1.0 | 2,300 | 3,000 | <500 |
| | 7/7/2004 | 10.88 | 4.97 | 5.91 | 190 | <1.7 | 2.0 | <1.7 | <1.7 | 4,900 | 5,500 | <1,000 |
| | 7/19/2004 | 10.88 | 5.12 | 5.76 | 340 | <2.5 | 4.0 | <2.5 | <2.5 | 8,000 | 9,200 | <1,700 |
| | 8/6/2004 | 10.88 | 5.13 | 5.75 | 280 | <0.5 | 5.6 | <0.5 | <0.5 | 7,200 | 5,900 | <1,000 |
| | 8/20/2004 | 10.88 | 5.31 | 5.57 | <250 | <2.5 | <2.5 | <2.5 | <2.5 | 4,600 | - | - |
| | 9/3/2004 | 10.88 | 5.22 | 5.66 | <250 | <2.5 | <2.5 | <2.5 | <2.5 | 5,700 | 4,700 | <1,000 |
| | 10/13/2004 | 10.88 | 5.23 | 5.65 | 170 | <0.5 | 4.8 | <0.5 | <0.5 | 3,700 | 4,400 | - |
| | 1/11/2005 | 10.88 | 4.69 | 6.19 | 110 | 8.8 | 4.2 | <0.5 | <0.5 | 880 | 990 | 910 |
| | 4/13/2005 | 10.88 | 5.02 | 5.86 | 230 | <0.5 | 9.0 | <0.5 | <0.5 | 140 | 100 | 2,600 |
| | 7/6/2005 | 10.88 | 5.06 | 5.82 | 200 | <0.5 | 8.3 | <0.5 | <0.5 | <75 | 50 | 1,600 |
| | 10/6/2005 | 10.88 | 4.92 | 5.96 | 110 | <0.5 | 6.8 | <0.5 | <0.5 | <20 | 8.4 | 640 |
| | 1/9/2006 | 10.88 | 3.90 | 6.98 | <50 | <0.5 | 1.8 | <0.5 | <0.5 | 260 | 280 | 560 |
| | 4/10/2006 | 10.88 | 3.97 | 6.91 | 80 | <0.5 | 3.1 | <0.5 | <0.5 | 100 | 70 | 160 |
| | **7/11/2006** | **10.88** | **4.63** | **6.25** | **<50** | **<0.5** | **2.8** | **<0.5** | **<0.5** | **<5.0** | **5.3** | **240** |
| **MW-2** | 9/30/2002 | 10.77 | 8.00 | 2.77 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | 0.84 | <5.0 |
| (4-14) | 1/2/2003 | 10.77 | 5.91 | 4.86 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 19 | 20 | - |
| | 3/31/2003 | 10.77 | 5.15 | 5.62 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | 3.9 | - |
| | 6/30/2003 | 10.77 | 5.91 | 4.86 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 7.0 | 9.6 | - |
| | 10/1/2003 | 10.77 | 6.69 | 4.08 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 7.7 | 6.7 | - |
| | 1/5/2004 | 10.77 | 6.18 | 4.59 | 71 | 4.7 | 13 | 2.7 | 12 | - | 7.8 | - |
| | 4/5/2004 | 10.77 | 7.22 | 3.55 | 210 | 14 | 39 | 6.6 | 27 | 16 | 13 | <5.0 |
| | 7/7/2004 | 10.77 | 6.83 | 3.94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 5.7 | 5.6 | <5.0 |
| | 10/13/2004 | 10.77 | 7.18 | 3.59 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | 2.6 | - |
| | 1/11/2005 | 10.77 | 7.27 | 3.50 | 74 | 2.6 | 11 | 2.1 | 10 | <5.0 | 4.4 | <5.0 |
| | 4/13/2005 | 10.77 | 6.66 | 4.11 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | <0.5 | <5.0 |

**Table 1**
**Groundwater Monitoring Data**

| Well ID (screen interval in ft bgs) | Date Sampled | Well Elevation (ft amsl) | Depth to Water (ft from TOC) | Water Table Elevation (ft amsl) | TPH-g *(8015Cm)* µg/L | Benzene µg/L | Toluene µg/L | Ethylbenzene µg/L | Xylenes µg/L | MTBE *(8021B)* µg/L | MTBE *(8260B)* µg/L | TBA *(8260B)* µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | *(EPA method 8021B)* | | | | | | |
| **MW-2 cont.** | 7/6/2005 | 10.77 | 6.83 | 3.94 | <50 | <0.5 | 0.77 | <0.5 | <0.5 | <5.0 | 2.9 | <5.0 |
| | 10/6/2005 | 10.77 | 7.05 | 3.72 | <50 | <0.5 | 0.81 | <0.5 | 0.54 | <5.0 | 2.1 | <5.0 |
| | 1/9/2006 | 10.77 | 6.18 | 4.59 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 6.1 | 7.6 | <5.0 |
| | 4/10/2006 | 10.77 | 6.27 | 4.50 | 50 | <0.5 | 8.0 | 1.5 | 6.1 | <5.0 | 1.1 | <5.0 |
| | **7/11/2006** | **10.77** | **6.97** | **3.80** | **<50** | **<0.5** | **0.72** | **<0.5** | **<0.5** | **<5.0** | **4.1** | **<5.0** |
| **MW-3** | 9/30/2002 | 10.20 | 5.21 | 4.99 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | <0.5 | <5.0 |
| (4-14) | 1/2/2003 | 10.20 | 5.31 | 4.89 | <50 | 0.89 | 0.50 | <0.5 | 0.72 | 15 | 14 | - |
| | 3/31/2003 | 10.20 | 4.58 | 5.62 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | 0.62 | - |
| | 6/30/2003 | 10.20 | 3.83 | 6.37 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | 1.6 | - |
| | 10/1/2003 | 10.20 | 4.02 | 6.18 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | <0.5 | - |
| | 1/5/2004 | 10.20 | 6.18 | 4.02 | 71 | 4.7 | 13 | 2.7 | 12 | - | 7.8 | - |
| | 4/5/2004 | 10.20 | 3.79 | 6.41 | 120 | 8.8 | 22 | 3.2 | 13 | <5.0 | <0.5 | <5.0 |
| | 7/7/2004 | 10.20 | 3.76 | 6.44 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | 4.0 | <5.0 |
| | 10/13/2004 | 10.20 | 4.45 | 5.75 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | <0.5 | - |
| | 1/11/2005 | 10.20 | 5.21 | 4.99 | 68 | 2.2 | 9.0 | 1.7 | 8.5 | <5.0 | <0.5 | <5.0 |
| | 4/13/2005 | 10.20 | 4.44 | 5.76 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | <0.5 | <5.0 |
| | 7/6/2005 | 10.20 | 3.91 | 6.29 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | <0.5 | <5.0 |
| | 10/6/2005 | 10.20 | 4.16 | 6.04 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | <0.5 | <5.0 |
| | 1/9/2006 | 10.20 | 4.44 | 5.76 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | <0.5 | <5.0 |
| | 4/10/2006 | 10.20 | 4.02 | 6.18 | <50 | <0.5 | 4.0 | 0.78 | 3.3 | <5.0 | <0.5 | <5.0 |
| | **7/11/2006** | **10.20** | **3.53** | **6.67** | **<50** | **<0.5** | **0.51** | **<0.5** | **1.1** | **<5.0** | **0.67** | **<5.0** |
| **MW-4** | 9/30/2002 | 11.07 | 5.50 | 5.57 | <100 | <0.5 | <0.5 | <0.5 | <0.5 | 790 | 750 | <100 |
| (4-14) | 1/2/2003 | 11.07 | 4.90 | 6.17 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 420 | 460 | - |
| | 3/31/2003 | 11.07 | 4.81 | 6.26 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 1,500 | 1,400 | - |
| | 6/30/2003 | 11.07 | 4.61 | 6.46 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 1,600 | 1,200 | - |
| | 10/1/2003 | 11.07 | 4.76 | 6.31 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 1,800 | 1,400 | - |
| | 1/5/2004 | 11.07 | 4.32 | 6.75 | <50 | 3.0 | 6.7 | 1.4 | 6.1 | - | 1,200 | - |
| | 4/5/2004 | 11.07 | 4.43 | 6.64 | <50 | 0.79 | 2.0 | <0.5 | 2.2 | 800 | 840 | <250 |
| | 7/7/2004 | 11.07 | 5.08 | 5.99 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 1,400 | 2,100 | <250 |
| | 7/19/2004 | 11.07 | 5.19 | 5.88 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 1,200 | 1,300 | <500 |

**Table 1**
**Groundwater Monitoring Data**

| Well ID (screen interval in ft bgs) | Date Sampled | Well Elevation (ft amsl) | Depth to Water (ft from TOC) | Water Table Elevation (ft amsl) | TPH-g *(8015Cm)* µg/L | Benzene µg/L | Toluene µg/L | Ethylbenzene µg/L | Xylenes µg/L | MTBE *(8021B)* µg/L | MTBE *(8260B)* µg/L | TBA *(8260B)* µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | *(EPA method 8021B)* | | | | | | |
| **MW-4 cont.** | 8/6/2004 | 11.07 | 5.20 | 5.87 | <50 | 0.76 | <0.5 | <0.5 | <0.5 | 1,300 | 1,200 | <500 |
| | 8/20/2004 | 11.07 | 5.37 | 5.70 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 460 | - | - |
| | 9/3/2004 | 11.07 | 5.35 | 5.72 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 440 | 370 | <50 |
| | 10/13/2004 | 11.07 | 5.35 | 5.72 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 330 | 360 | - |
| | 1/11/2005 | 11.07 | 4.99 | 6.08 | <50 | 1.0 | 2.1 | <0.5 | 1.8 | 450 | 430 | <100 |
| | 4/13/2005 | 11.07 | 5.17 | 5.90 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 340 | 200 | <50 |
| | 7/6/2005 | 11.07 | 5.18 | 5.89 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 300 | 290 | 330 |
| | 10/6/2005 | 11.07 | 5.03 | 6.04 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 380 | 350 | 430 |
| | 1/9/2006 | 11.07 | 4.11 | 6.96 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 140 | 150 | 200 |
| | 4/10/2006 | 11.07 | 4.13 | 6.94 | <50 | <0.5 | 1.0 | <0.5 | 1.1 | 52 | 39 | 120 |
| | **7/11/2006** | **11.07** | **4.72** | **6.35** | **<50** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | **56** | **66** | **120** |
| **MW-5** | 9/30/2002 | 11.18 | 5.62 | 5.56 | <2,000 | <5.0 | <5.0 | <5.0 | <5.0 | 19,000 | 18000 | <2,500 |
| (4-14) | 1/2/2003 | 11.18 | 5.12 | 6.06 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 7,000 | 7,000 | - |
| | 3/31/2003 | 11.18 | 4.93 | 6.25 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 14,000 | 12,000 | - |
| | 6/30/2003 | 11.18 | 4.75 | 6.43 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 13,000 | 15,000 | - |
| | 10/1/2003 | 11.18 | 4.88 | 6.30 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 12,000 | 11,000 | - |
| | 1/5/2004 | 11.18 | 4.19 | 6.99 | <1,000 | <10 | <10 | <10 | <10 | - | 11,000 | - |
| | 4/5/2004 | 11.18 | 4.57 | 6.61 | <250 | <2.5 | <2.5 | <2.5 | <2.5 | 9,400 | 13,000 | <2,500 |
| | 7/7/2004 | 11.18 | 5.19 | 5.99 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 15,000 | 19,000 | <2,000 |
| | 7/19/2004 | 11.18 | 5.32 | 5.86 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 16,000 | 14,000 | <2,500 |
| | 8/6/2004 | 11.18 | 5.33 | 5.85 | 110 | <0.5 | <0.5 | <0.5 | <0.5 | 12,000 | 11,000 | <2,500 |
| | 8/20/2004 | 11.18 | 5.49 | 5.69 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 7,200 | - | - |
| | 9/3/2004 | 11.18 | 5.48 | 5.70 | <500 | <2.5 | <2.5 | <2.5 | <2.5 | 8,500 | 7,200 | <1,700 |
| | 10/13/2004 | 11.18 | 5.49 | 5.69 | <250 | <2.5 | <2.5 | <2.5 | <2.5 | 6,700 | 7,700 | - |
| | 1/11/2005 | 11.18 | 5.08 | 6.10 | <100 | 1.5 | 3.3 | <1.0 | 2.3 | 3,000 | 4,800 | 1,200 |
| | 4/13/2005 | 11.18 | 5.24 | 5.94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 510 | 320 | 2,600 |
| | 7/6/2005 | 11.18 | 5.27 | 5.91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 43 | 51 | 4,900 |
| | 10/6/2005 | 11.18 | 5.14 | 6.04 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 25 | <25 | 1,900 |
| | 1/9/2006 | 11.18 | 4.23 | 6.95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 70 | 84 | 2,000 |

**Table 1**
**Groundwater Monitoring Data**

| Well ID (screen interval in ft bgs) | Date Sampled | Well Elevation (ft amsl) | Depth to Water (ft from TOC) | Water Table Elevation (ft amsl) | TPH-g *(8015Cm)* µg/L | Benzene *(EPA method 8021B)* µg/L | Toluene *(EPA method 8021B)* µg/L | Ethylbenzene *(EPA method 8021B)* µg/L | Xylenes *(EPA method 8021B)* µg/L | MTBE *(8021B)* µg/L | MTBE *(8260B)* µg/L | TBA *(8260B)* µg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MW-5 cont.** | 4/10/2006 | 11.18 | 4.24 | 6.94 | <50 | <0.5 | 0.59 | <0.5 | <0.5 | 13 | 11 | 860 |
| | **7/11/2006** | **11.18** | **4.85** | **6.33** | **<50** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | **20** | **24** | **1,200** |

Notes:

bgs = below ground surface

ft amsl = feet above mean sea level

TOC = Top of Casing; all well elevations and depths to water are measured from TOC

TPH-g = Total Petroleum Hydrocarbons as gasoline

µg/L = micrograms per liter

MTBE = Methyl tertiary-Butyl Ether

TBA = tertiary-Butyl Alcohol

- = Sample not analyzed by this method

## Table 2
## Water Table Data Summary

| Episode | Date Sampled | Average Water Table Elevation* | Change From Previous Episode | Gradient (direction) |
|---|---|---|---|---|
| 1 | 9/30/2002 | 4.87 | - | 0.005 (S) |
| 2 | 1/2/2003 | 5.62 | 0.75 | 0.022 (SSE) |
| 3 | 3/31/2003 | 5.94 | 0.32 | 0.006 (SSE) |
| 4 | 6/30/2003 | 6.09 | 0.16 | 0.020 (SE) |
| 5 | 10/1/2003 | 5.82 | -0.27 | 0.029-0.001 (SE) |
| 6 | 1/5/2004 | 6.06 | 0.24 | 0.03 (SE) |
| 7 | 4/5/2004 | 5.95 | -0.11 | 0.02 (E) |
| 8 | 7/7/2004 | 5.65 | -0.30 | 0.02 (E) |
| 9 | 7/19/2004 | 5.83 | 0.18 | nc |
| 10 | 8/6/2004 | 5.82 | -0.01 | nc |
| 11 | 8/20/2004 | 5.65 | -0.17 | nc |
| 12 | 9/3/2004 | 5.69 | 0.04 | nc |
| 13 | 10/13/2004 | 5.28 | -0.41 | 0.02 (E) |
| 14 | 1/11/2005 | 5.37 | 0.09 | 0.02 (E) |
| 15 | 4/13/2005 | 5.51 | 0.14 | 0.02 (E) |
| 16 | 7/6/2005 | 5.57 | 0.06 | 0.024 (E) |
| 17 | 10/6/2005 | 5.56 | -0.01 | 0.03 (E) |
| 18 | 1/9/2006 | 6.25 | 0.69 | 0.04 (ESE) |
| 19 | 4/10/2006 | 6.29 | 0.05 | 0.03 (ESE) |
| **20** | **7/11/2006** | **5.88** | **-0.41** | **0.03 (ESE)** |

Notes:

*Average Water Table Elevation value calculated in Microsoft Excel

nc = not calculated

# APPENDIX A

# MONITORING WELL FIELD SAMPLING FORMS

AEI CONSULTANTS

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-1**

| | | | |
|---|---|---|---|
| Project Name: | Cruise America | Date of Sampling: | 7/11/2006 |
| Job Number: | 110566 | Name of Sampler: | Adrian Nieto |
| Project Address: | 796 - 66th Avenue, Oakland, CA 94621 | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 4 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 10.88 | | |
| Depth of Well | 14.00 | | |
| Depth to Water (from top of casing) | 4.63 | | |
| Water Elevation (feet above msl) | 6.25 | | |
| Well Volumes Purged | 3 | | |
| Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft) | **18.3** | | |
| Actual Volume Purged (gallons) | 21.0 | | |
| Appearance of Purge Water | Initially grey, clears at 1.5 gallons | | |
| Free Product Present? | No | Thickness (ft): | n/a |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 4 40-ml VOA vials

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 4 | 21.11 | 7.20 | 4249 | 3.13 | -104.2 | |
| | 8 | 21.30 | 7.24 | 3972 | 2.76 | -103.3 | |
| | 12 | 21.42 | 7.21 | 3889 | 2.00 | -98.8 | |
| | 16 | 21.42 | 7.21 | 3895 | 1.83 | -97.6 | |
| | 20 | 21.43 | 7.20 | 3910 | 1.74 | -96.7 | |
| | | | | | | | |
| | | | | | | | |

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

Light petroleum odors noted.

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-2**

| | | | |
|---|---|---|---|
| Project Name: | Cruise America | Date of Sampling: | 7/11/2006 |
| Job Number: | 110566 | Name of Sampler: | Adrian Nieto |
| Project Address: | 796 - 66th Avenue, Oakland, CA 94621 | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 10.77 | | |
| Depth of Well | 14.00 | | |
| Depth to Water (from top of casing) | 6.97 | | |
| Water Elevation (feet above msl) | 3.80 | | |
| Well Volumes Purged | 3 | | |
| Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft) | **3.4** | | |
| Actual Volume Purged (gallons) | 4.0 | | |
| Appearance of Purge Water | Initially yellowish brown, clears quickly | | |
| Free Product Present? | No | Thickness (ft): | n/a |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 4 40-ml VOA vials

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 1 | 20.79 | 7.32 | 10306 | 5.20 | -144.5 | |
| | 3 | 22.54 | 7.18 | 17799 | 3.56 | -157.7 | |
| | 4 | 21.13 | 7.25 | 18897 | 3.14 | -156.3 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

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

No petroleum odors noted.

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-3**

| | | | |
|---|---|---|---|
| Project Name: | Cruise America | Date of Sampling: | 7/11/2006 |
| Job Number: | 110566 | Name of Sampler: | Adrian Nieto |
| Project Address: | 796 - 66th Avenue, Oakland, CA 94621 | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 10.20 | | |
| Depth of Well | 14.00 | | |
| Depth to Water (from top of casing) | 3.53 | | |
| Water Elevation (feet above msl) | 6.67 | | |
| Well Volumes Purged | 3 | | |
| Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft) | **5.0** | | |
| Actual Volume Purged (gallons) | 6.0 | | |
| Appearance of Purge Water | Clear | | |
| Free Product Present? | No | Thickness (ft): | n/a |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 4 40-ml VOA vials

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 2 | 21.18 | 7.06 | 14331 | 6.28 | -146.5 | |
| | 4 | 21.88 | 7.02 | 14122 | 4.60 | -147.8 | |
| | 6 | 21.75 | 6.99 | 14111 | 3.82 | -147.9 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

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

No petroleum odor noted.

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-4**

| | | | |
|---|---|---|---|
| Project Name: | Cruise America | Date of Sampling: | 7/11/2006 |
| Job Number: | 110566 | Name of Sampler: | Adrian Nieto |
| Project Address: | 796 - 66th Avenue, Oakland, CA 94621 | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 11.07 | | |
| Depth of Well | 14.00 | | |
| Depth to Water (from top of casing) | 4.72 | | |
| Water Elevation (feet above msl) | 6.35 | | |
| Well Volumes Purged | 3 | | |
| Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft) | **4.5** | | |
| Actual Volume Purged (gallons) | 5.0 | | |
| Appearance of Purge Water | Initially very dark brown, clears quickly | | |
| Free Product Present? | No | Thickness (ft): | n/a |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 4 40-ml VOA vials

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 2 | 22.67 | 8.01 | 2330 | 2.91 | -177.9 | |
| | 4 | 22.81 | 8.09 | 2322 | 2.50 | -191.9 | |
| | 6 | 22.89 | 8.25 | 2327 | 2.02 | -215.7 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

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

No petroleum odors noted.

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-5**

| | | | |
|---|---|---|---|
| Project Name: | Cruise America | Date of Sampling: | 7/11/2006 |
| Job Number: | 110566 | Name of Sampler: | Adrian Nieto |
| Project Address: | 796 - 66th Avenue, Oakland, CA 94621 | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 11.18 | | |
| Depth of Well | 14.00 | | |
| Depth to Water (from top of casing) | 4.85 | | |
| Water Elevation (feet above msl) | 6.33 | | |
| Well Volumes Purged | 3 | | |
| Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft) | **4.4** | | |
| Actual Volume Purged (gallons) | 6.0 | | |
| Appearance of Purge Water | Initially milky brown, clears at 2.5 gallons | | |
| Free Product Present? | No | Thickness (ft): | n/a |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 4 40-ml VOA vials

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 2 | 23.10 | 7.43 | 4616 | 3.84 | -126.1 | |
| | 4 | 23.25 | 7.45 | 4375 | 3.02 | -135.3 | |
| | 6 | 23.34 | 7.44 | 4136 | 2.35 | -148.9 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

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

Light petroleum odors noted.

# APPENDIX B

# LABORATORY ANALYTICAL AND CHAIN OF CUSTODY DOCUMENTATION

AEI CONSULTANTS

**McCampbell Analytical, Inc.**
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

| | | |
|---|---|---|
| AEI Consultants<br>2500 Camino Diablo, Ste. #200<br>Walnut Creek, CA 94597 | Client Project ID: #110566; Cruise America | Date Sampled: 07/11/06 |
| | | Date Received: 07/11/06 |
| | Client Contact: Adrian Angel | Date Reported: 07/18/06 |
| | Client P.O.: | Date Completed: 07/18/06 |

**WorkOrder: 0607128**

July 18, 2006

Dear Adrian:

Enclosed are:

1). the results of **5** analyzed samples from your **#110566; Cruise America project,**

2). a QC report for the above samples

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

4). a bill for analytical services.

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

Best regards,

Angela Rydelius, Lab Manager

0607128

# McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? ☒ Yes ☐ No Email PDF Report: YES

| | |
|---|---|
| Report To: Adrian Angel | Bill To: Same |
| Company: AEI Consultants | |
| 2500 Camino Diablo, Suite 200 | |
| Walnut Creek, CA 94597 | E-Mail: aangel@aeiconsultants.com |
| Tel: (925) 944-2899, extension 132 | Fax: (925) 944-2895 |
| Project #: 110566 | Project Name: Cruise America |
| Project Location: Oakland, CA | |
| Sampler Signature: Adrian Angel | |

| | SAMPLE ID (Field Point Name) | LOCATION | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | Soil | Air | Sludge | Other | METHOD PRESERVED Ice | HCl | $HNO_3$ | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| + | MW-1 | | 7/11/06 | 11:50 | 3 | Voas | X | | | | | X | X | | |
| + | MW-2 | | | 11:39 | | | X | | | | | X | X | | |
| + | MW-3 | | | 11:45 | | | X | | | | | X | X | | |
| + | MW-4 | | | 11:25 | | | X | | | | | X | X | | |
| + | MW-5 | | | 11:33AM | | | X | | | | | X | X | | |

| Analysis Request | Other | | | | Comments |
|---|---|---|---|---|---|
| BTEX & TPH as Gas (602/8020 + 8015)/MTBE | TPH-g by 8015Cm | BTEX + MTBE by 8021B | MTBE + TBA by 8260B | | |
| TPH as Diesel (8015) | | | | | |
| Total Petroleum Oil & Grease (5520 E&F/B&F) | | | | | |
| Total Petroleum Hydrocarbons (418.1) | | | | | |
| HVOCs EPA 8260 (8010 list) | | | | | |
| BTEX ONLY (EPA 602 / 8020) | | | | | |
| Pesticides EPA 608 / 8080 | | | | | |
| PCBs EPA 608 / 8080 | | | | | |
| VOCs EPA 624 / 8260 | | | | | |
| EPA 625 / 8270 | | | | | |
| PAH's / PNA's by EPA 625 / 8270 / 8310 | | | | | |
| CAM-17 Metals | | | | | |
| LUFT 5 Metals | | | | | |
| Lead (7240/7421/239.2/6010) | | | | | |
| RCI | | | | | |
| | X | X | X | | |
| | X | X | X | | |
| | X | X | X | | |
| | X | X | X | | |
| | X | X | X | | |

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| Adrian Angel | 7/11/06 | 4:30p | Mel Vall |
| Relinquished By: | Date: | Time: | Received By: |
| Relinquished By: | Date: | Time: | Received By: |

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____

PRESERVATION ✓ APPROPRIATE CONTAINERS ✓
PERSERVED IN LAB_____

| VOAS | O&G | METALS | OTHER |
|---|---|---|---|
| | | | |

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 0607128** **ClientID: AEL** **EDF: YES**

**Report to:**
Adrian Angel
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
TEL: (925) 283-6000
FAX: (925) 283-6121
ProjectNo: #110566; Cruise America
PO:

**Bill to:**
Denise Mockel
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597

**Requested TAT:** 5 days

***Date Received:*** 07/11/2006
***Date Printed:*** 07/11/2006

| Sample ID | ClientSampID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0607128-001 | MW-1 | Water | 7/11/06 11:50:00 | ☐ | B | A | A | | | | | | | | | |
| 0607128-002 | MW-2 | Water | 7/11/06 11:39:00 | ☐ | B | A | | | | | | | | | | |
| 0607128-003 | MW-3 | Water | 7/11/06 11:45:00 | ☐ | B | A | | | | | | | | | | |
| 0607128-004 | MW-4 | Water | 7/11/06 11:25:00 | ☐ | B | A | | | | | | | | | | |
| 0607128-005 | MW-5 | Water | 7/11/06 11:33:00 | ☐ | B | A | | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5-OXYS_W | 2 | G-MBTEX_W | 3 | PREDF REPORT | 4 | | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Maria Venegas**

**Comments:**

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

**McCampbell Analytical, Inc.**
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

| | | |
|---|---|---|
| AEI Consultants<br>2500 Camino Diablo, Ste. #200<br>Walnut Creek, CA 94597 | Client Project ID: #110566; Cruise America | Date Sampled: 07/11/06 |
| | | Date Received: 07/11/06 |
| | Client Contact: Adrian Angel | Date Extracted: 07/15/06-07/18/06 |
| | Client P.O.: | Date Analyzed: 07/15/06-07/18/06 |

**Methyl-t-butyl ether and t-Butyl alcohol by P&T and GC/MS***

Extraction method: SW5030B Analytical methods: SW8260B Work Order: 0607128

| Lab ID | Client ID | Matrix | t-Butyl alcohol (TBA) | Methyl-t-butyl ether (MTBE) | DF | % SS |
|---|---|---|---|---|---|---|
| 0607128-001B | MW-1 | W | 240 | 5.3 | 3.3 | 100 |
| 0607128-002B | MW-2 | W | ND | 4.1 | 1 | 107 |
| 0607128-003B | MW-3 | W | ND | 0.67 | 1 | 97 |
| 0607128-004B | MW-4 | W | 120 | 66 | 5 | 99 |
| 0607128-005B | MW-5 | W | 1200 | 24 | 20 | 99 |
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|---|---|---|---|---|
| Reporting Limit for DF =1;<br>ND means not detected at or<br>above the reporting limit | W | 5.0 | 0.5 | µg/L |
| | S | NA | NA | mg/Kg |

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

**McCampbell Analytical, Inc.**
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: #110566; Cruise America | Date Sampled: 07/11/06 |
| 2500 Camino Diablo, Ste. #200 | | Date Received: 07/11/06 |
| Walnut Creek, CA 94597 | Client Contact: Adrian Angel | Date Extracted: 07/15/06 |
| | Client P.O.: | Date Analyzed: 07/15/06 |

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0607128

| Lab ID | Client ID | Matrix | TPH(g) | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes | DF | % SS |
|---|---|---|---|---|---|---|---|---|---|---|
| 001A | MW-1 | W | ND | ND | ND | 2.8 | ND | ND | 1 | 110 |
| 002A | MW-2 | W | ND | ND | ND | 0.72 | ND | ND | 1 | 95 |
| 003A | MW-3 | W | ND | ND | ND | 0.51 | ND | 1.1 | 1 | 96 |
| 004A | MW-4 | W | ND | 56 | ND | ND | ND | ND | 1 | 99 |
| 005A | MW-5 | W | ND | 20 | ND | ND | ND | ND | 1 | 96 |
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|---|---|---|---|---|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 5.0 | 0.5 | 0.5 | 0.5 | 0.5 | 1 | µg/L |
| | S | NA | NA | NA | NA | NA | NA | 1 | mg/Kg |

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request; p) see attached narrative.

DHS ELAP Certification N° 1644

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# QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0607128

| EPA Method: SW8021B/8015Cm | Extraction: SW5030B | BatchID: 22606 | Spiked Sample ID: 0607133-001A |
|---|---|---|---|

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | LCSD | LCS-LCSD | Acceptance Criteria (%) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | % Rec. | % RPD | MS / MSD | LCS / LCSD |
| TPH(btex) £ | ND | 60 | 120 | 107 | 10.9 | 107 | 105 | 2.08 | 70 - 130 | 70 - 130 |
| MTBE | ND | 10 | 105 | 103 | 1.21 | 95.3 | 98.3 | 3.10 | 70 - 130 | 70 - 130 |
| Benzene | ND | 10 | 96.9 | 96.4 | 0.499 | 93.7 | 94.7 | 1.00 | 70 - 130 | 70 - 130 |
| Toluene | ND | 10 | 88.9 | 87.8 | 1.22 | 87.3 | 88.5 | 1.39 | 70 - 130 | 70 - 130 |
| Ethylbenzene | ND | 10 | 94.1 | 97.1 | 3.14 | 94.6 | 95.8 | 1.33 | 70 - 130 | 70 - 130 |
| Xylenes | ND | 30 | 87.3 | 92 | 5.20 | 92.7 | 96.3 | 3.88 | 70 - 130 | 70 - 130 |
| %SS: | 97 | 10 | 91 | 94 | 2.92 | 89 | 91 | 2.09 | 70 - 130 | 70 - 130 |

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 22606 SUMMARY

| Sample ID | Date Sampled | Date Extracted | Date Analyzed | Sample ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 0607128-001A | 7/11/06 11:50 AM | 7/15/06 | 7/15/06 2:41 PM | 0607128-002A | 7/11/06 11:39 AM | 7/15/06 | 7/15/06 3:17 PM |
| 0607128-003A | 7/11/06 11:45 AM | 7/15/06 | 7/15/06 3:53 PM | 0607128-004A | 7/11/06 11:25 AM | 7/15/06 | 7/15/06 5:24 PM |
| 0607128-005A | 7/11/06 11:33 AM | 7/15/06 | 7/15/06 4:29 PM | | | | |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS ELAP Certification N° 1644

QA/QC Officer

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# QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0607128

| EPA Method: SW8260B | Extraction: SW5030B | BatchID: 22607 | Spiked Sample ID: 0607121-014B |
|---|---|---|---|

| Analyte | Sample | Spiked | MS | MSD | MS-MSD | LCS | LCSD | LCS-LCSD | Acceptance Criteria (%) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | % Rec. | % RPD | MS / MSD | LCS / LCSD |
| tert-Amyl methyl ether (TAME) | ND | 10 | 101 | 102 | 1.27 | 97.3 | 96.6 | 0.751 | 70 - 130 | 70 - 130 |
| t-Butyl alcohol (TBA) | ND | 50 | 99.1 | 100 | 1.16 | 91 | 95.2 | 4.47 | 70 - 130 | 70 - 130 |
| Diisopropyl ether (DIPE) | ND | 10 | 110 | 103 | 6.90 | 100 | 96.5 | 3.67 | 70 - 130 | 70 - 130 |
| Ethyl tert-butyl ether (ETBE) | ND | 10 | 104 | 105 | 0.814 | 96.9 | 94.1 | 2.85 | 70 - 130 | 70 - 130 |
| Methyl-t-butyl ether (MTBE) | ND | 10 | 104 | 104 | 0 | 105 | 102 | 2.92 | 70 - 130 | 70 - 130 |
| %SS1: | 99 | 10 | 102 | 96 | 5.63 | 97 | 96 | 1.41 | 70 - 130 | 70 - 130 |

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 22607 SUMMARY

| Sample ID | Date Sampled | Date Extracted | Date Analyzed | Sample ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 0607128-001B | 7/11/06 11:50 AM | 7/18/06 | 7/18/06 7:28 AM | 0607128-002B | 7/11/06 11:39 AM | 7/15/06 | 7/15/06 8:00 PM |
| 0607128-003B | 7/11/06 11:45 AM | 7/15/06 | 7/15/06 8:48 PM | 0607128-004B | 7/11/06 11:25 AM | 7/18/06 | 7/18/06 8:11 AM |
| 0607128-005B | 7/11/06 11:33 AM | 7/18/06 | 7/18/06 8:55 AM | | | | |

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.