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Allterra Environmental, Inc.
849 Almar Avenue, Suite C
No. 281
Santa Cruz, California 95060

Client:	Manwel and Samira Shuwayhat
Project Location:	160 Holmes Street, Livermore, California
Subject:	In-Situ Soil and Groundwater Remedial Implementation Report
Report Date:	August 19, 2011

To Whom It May Concern:

I have reviewed the report referenced above and approve its distribution to the necessary regulatory agencies. Should any of the regulatory agencies require it, "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached proposal or report is true and correct to the best of my knowledge."

Sincerely,

Manwel Shuwayhat

In-Situ Soil and Groundwater Remedial Implementation Report

Fuel Leak Case No. RO0000324
Livermore Gas and Mini-Mart
160 Holmes Street, Livermore, California

Date:
August 19, 2011

Prepared For:
Manwel and Samira Shuwayhat
54 Wolfe Canyon Road
Kentfield, California 94904

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August 19, 2011

Manwel and Samira Shuwayhat
54 Wolfe Canyon Road
Kentfield, California 94904

Subject: In-Situ Soil and Groundwater Remedial Implementation Report for Fuel Leak Case No. RO0000324, Livermore Gas and Mini-Mart, 160 Holmes Street, Livermore, California

Dear Mr. and Mrs. Shuwayhat:

On your behalf, Allterra Environmental, Inc. (Allterra) has prepared this *In-Situ Soil and Groundwater Remedial Implementation Report* for the property located at 160 Holmes Street in Livermore, California (Site). The purpose of the completed work scope was to remediate hydrocarbon-impacted soil and groundwater in the defined source area beneath the Site. The in-situ soil and groundwater remediation was performed in accordance with Allterra's *Revised Work Plan for In-Situ Soil and Groundwater Remediation* dated March 10, 2011. All work was also conducted in accordance with Alameda County Environmental Health (ACEH) and Regional Water Quality Control Board (RWQCB) guidelines, and Allterra's field protocols presented in Appendix A.

Site Location and Description

The Site is located at the northeast intersection of Holmes Street and Second Street in Livermore, California (Figure 1). A gasoline fuel station currently occupies the Site and the surrounding area is primarily residential with scattered retail businesses along 1st and 2nd Streets. The approximate surface elevation at the Site is 465 feet above mean sea level (MSL) and the surface slightly slopes to the northwest. Pertinent site features, including the locations of the former underground storage tanks (USTs), existing monitoring and extraction wells, and previous soil borings, are presented on Figures 2 and 3.

Site Geology and Hydrogeology

Subsurface sediments encountered beneath the Site primarily consist of clayey sand and silty clay fill material from surface grade to approximately eight (8) feet below ground surface (bgs), underlain by native material consisting of silty clay, sandy silt, and silty sand to approximately 28 feet bgs. A generally continuous coarse-grained deposit consisting of sandy gravel with varying amounts of silt and clay occurs from approximately 28 feet bgs to depths ranging from approximately 54 to 69 feet bgs, where a sandy to silty clay layer exists. The thickness of this clay layer has not been determined; however, a thickness of at least five feet was confirmed in previous boring MW-1B.

First-encountered groundwater beneath the Site has fluctuated between depths of approximately 28 and 44 feet bgs. The fluctuating groundwater elevation appears to be largely dependent upon regional factors including, but not limited to, regional groundwater pumping, seasonal drought conditions, and government managed groundwater recharge programs. Based on recent quarterly groundwater monitoring data, shallow groundwater generally flows to the northwest at an approximate gradient of 0.0147 feet per foot (ft/ft) (Figure 2).

Site Background

Previous Site Investigations

Extensive soil and groundwater investigation work has been performed at the Site since 2000, including the advancement of more than forty-three (43) soil borings and the installation of 19 monitoring wells on- and off-site. Site investigation work has resulted in full characterization of the lateral and vertical extent of petroleum constituents in soil and groundwater beneath and downgradient of the Site. The locations of previous soil borings and monitoring wells are presented on Figures 2 and 3, and associated analytical data is presented in Tables 1 and 2.

In addition to characterizing the extent of petroleum-impacts, previous site investigation activities have identified a subsurface area of the Site containing the majority of high-level concentrations of petroleum constituents in soil and groundwater. The highest levels of soil and groundwater contamination were detected in samples collected from previous Geoprobe® borings installed the area between the current northwestern fuel dispenser and USTs. This source area or "area of concern" is generally located between borings GP-8, GP-9, GP-14, and well EW-3 at depths between approximately 24 and 34 feet bgs. This area of concern has been the primary target for pilot scale remedial efforts conducted at the Site.

Pilot Scale Remedial Activities in 2010

During the second and fourth quarters of 2010, Allterra completed pilot scale soil vapor extraction (SVE) and groundwater extraction (GWE) from on-site extraction wells EW-1 and EW-3. The goal of the remedial effort was to use pilot scale equipment to initiate remediation of the area of concern. Data collected during pilot scale operations was used to evaluate remedial effectiveness and to determine the best approach for completing remediation in this area of the Site.

Pilot scale remediation activities varied from more SVE focused to GWE focused as groundwater elevations beneath the Site changed and remedial performance data was gathered. Pilot scale remediation was intended to include SVE only (based on a 20 foot drop in groundwater elevations observed from 2007 to 2009). However, as interim remediation commenced in early 2010, water elevations increased significantly and performing SVE was not technically feasible. Therefore, GWE was added to remedial operations to lower the water table and improve SVE performance. After the first month of operation, influent vapor levels for the SVE system dropped by an order of magnitude and the contaminant mass removal rate decreased. During this time, GWE contaminant mass removal rates were high and GWE influent levels were elevated, with TPHg levels up to 78,000 µg/L and MTBE levels up to 310,000 µg/L. In total, approximately 13 pounds of TPHg and 45 pounds of MTBE were removed from the subsurface through SVE and GWE activities in 2010.

During the fourth quarter of 2010, groundwater levels at the Site dropped slightly to approximately 27 feet bgs (as measured in EW-3). This drop in groundwater levels, as well as other potential factors, decreased the groundwater extraction flow rate from approximately 2 gallons per minute (gpm) to <0.5 gpm, which made GWE ineffective. The SVE system was tested again, however, SVE was also ineffective and indicated a very low SVE flow rate due to a saturated smear zone.

Target Groundwater Cleanup Levels

The corrective action described in this report is focused on treating contaminant mass in soil and groundwater in the area of concern to minimize continued degradation of groundwater, minimize future offsite migration of contaminants, and reduce contaminant concentrations to levels at which natural processes will provide further attenuation of contaminants to the ultimate cleanup goals.

The ultimate cleanup goals for groundwater quality at this Site are the San Francisco Bay Regional Water Quality Control Board (RWQCB) environmental screening levels (ESLs) when groundwater is a current or potential source of drinking water. These final screening levels generally use the most conservative published criterion and consider gross contamination, ecotoxicity, human health, vapor intrusion, and groundwater protection. The applicable groundwater ESLs for this Site are listed below:

TPHg	100 µg/L
TPHd	100 µg/L
Benzene	1.0 µg/L
Toluene	40 µg/L
Ethylbenzene	30 µg/L
Xylenes	20 µg/L
MTBE	5.0 µg/L
TBA	12 µg/L

To achieve the groundwater goals specified, active remedial efforts may cease once contaminant concentrations are reduced to levels at which at which natural attenuation will allow further reduction of concentrations to the ultimate cleanup levels within a reasonable timeframe.

Soil and Groundwater Remedial Evaluation

Based on the results of extensive soil and groundwater investigation work and pilot scale remedial activities conducted at the Site, Allterra has determined that there is a localized hot spot of petroleum-impacted soil and groundwater in the vicinity of well EW-3 (area of concern) that required further remediation to immediately reduce contaminant mass and ultimately attain the proposed groundwater cleanup goals for the Site. Allterrra initially screened several potential remedial strategies and abatement technologies to address petroleum impacts in the area of concern. As a result of this initial screening, a remedial alternative using two innovative in-situ treatment products provided by Regenesis was selected as the preferred remedial alternative for this Site. These products are considered very safe and include the chemical oxidant RegenOx™ and the slow release technology known as Oxygen Release Compound Advanced (ORC Advanced™).

RegenOx™ is an in-situ chemical oxidation process using a solid oxidant complex (sodium percarbonate/catalytic formulation) and an activator complex (a composition of ferrous salt embedded in a micro-scale catalyst gel). RegenOx™ is an aggressive, fast acting oxidative technology capable of treating a broad range of soil and groundwater contaminants. It was engineered as an easily handled and applied high contaminant concentration mass reduction product that can be coupled with the less aggressive slow release technology known as ORC Advanced™ without negative effects on either products contaminant destructive ability or the soil/aquifer geochemistry. RegenOx™ was specifically designed to facilitate a seamless transition to "polishing" with passive in-situ bioremediation.

ORC Advanced™ is an innovative in-situ product designed to stimulate aerobic bioremediation through controlled release of oxygen within the subsurface. It offers maximum oxygen release for periods up to 12 months on a single injection ensuring long-term destruction of the remaining contaminants at the Site.

Remedial Implementation Activities

The following is a discussion of in-situ remedial activities performed at the Site. These activities were implemented to immediately reduce contaminant mass, stabilize and reduce the size of the contaminant plume, satisfy requirements for low-risk case closure, and ultimately attain the proposed groundwater cleanup goals for the Site.

<u>Permitting and Underground Utility Locating</u>

Prior to drilling activities, soil boring permits were acquired from the Zone 7 Water Agency for all of the remedial injection borings.

A private utility locating contractor, Cruz Brothers Locators Inc., was retained to identify underground utilities at each proposed boring location. Additionally, the Underground Service Alert (USA) was notified prior to the commencement of drilling activities to identify the public service utilities in the work area. Allterra's field personnel also hand cleared each boring location to approximately 5 feet bgs to mitigate the risk of encountering fuel dispenser piping.

<u>Preliminary Aquifer Volume Testing</u>

On April 7 and 11, 2011, clean, potable water was injected into the subsurface at the Site for the purpose of evaluating the shallow aquifer's capacity to accept the designed volume of RegenOx™ and ORC Advanced™. Aquifer testing activities were conducted in the vicinity of existing monitoring well MW-3A, up- and cross-gradient of the treatment area (Figure 3), using a truck-mounted Geoprobe® rig, equipped with 2-inch diameter push core drilling equipment. Direct-injection techniques were used to deliver clean water into the subsurface within the same depth interval targeted for in-situ treatment (approximately 24 to 34 feet bgs). Detailed direct-push injection procedures are presented in Appendix B. Approximately 50 gallons of water was pressure injected at two feet intervals from 24 bgs to 34 bgs. A total of 300 gallons of clean potable water was injected at this location. No high backpressure or surfacing was observed during these activities leading us to conclude that subsurface materials beneath the Site will accommodate the designed volume of RegenOx™ and ORC Advanced™ solution originally proposed.

Geoprobe® Drilling and Injection Activities

To facilitate in-situ treatment of petroleum-impacted soil and groundwater, Geoprobe® borings were advanced in an offset grid pattern at a total of 32 locations in the area of concern at the Site. All of the borings were advanced using a truck-mounted Geoprobe® rig equipped with 2-inch diameter push core drilling equipment. The RegenOx™ application process enables the two-part product to be combined, and then pressure injected into the zone of contamination and moved out into the unsaturated zone and aquifer media. Based on the lithology and hydrogeologic characteristics of native sediments beneath the Site, multiple injection events were implemented to facilitate the injection of the designed volume of RegenOx™(~4,000 lbs) and ORC Advanced™ (~600 lbs) and to minimize potential adverse affects at the ground surface (i.e. surfacing, high back pressure). Using the Geoprobe® rig and direct-injection techniques to ensure thorough distribution across heterogeneous soils, RegenOx™ was delivered to the subsurface in a series of three injection events spaced two weeks apart to allow for monitoring the effects of the injection events prior to proceeding with subsequent injection events. A total of 10, 10, and 12 evenly spaced injection points were advanced during the first, second, and third injection events, respectively. The injection point locations were offset by at least 10 lateral feet from one injection event to the next to facilitate even distribution of the RegenOx™ and ORC Advanced™ and to mitigate aforementioned adverse affects at the ground surface. The distribution of the injection points over the three injection events are shown on Figure 4. Figure 5 presents a detailed schematic of the pressure activated injection probe.

The first and second remedial injection events were completed during the weeks of April 11, 2011 and May 2, 2011, respectively. During these events, 30 lbs of RegenOx™ was injected into the subsurface at 2-foot intervals throughout the treatment zone from 24 to 34 feet bgs. This approach resulted in the application of a total of 180 lbs of RegenOx™ per borehole and a total of 1,800 lbs of RegenOx™ during both the first and second injection events. During the second event, minor surfacing occurred during the injection of remedial solution into boreholes B-3 and B-4. This surfacing could have been caused by several factors, including but not limited to, over saturation of the aquifer media, stratigraphic heterogeneity, and high back pressures caused by increased reaction rates in localized areas with high contaminant concentrations. The primary method used to mitigate surfacing during the injection process simply included stopping work and waiting for the aquifer to equilibrate and off-gas before proceeding with further injection activities. Due to surfacing, it was not feasible to inject a total of 30 lbs of RegenOx™ into borehole B-3, therefore the excess remedial solution was injected into borehole B-5.

The third remedial injection event was completed during the week of May 23, 2011. During this event, 10 lbs RegenOx™ and 10 lbs ORC Advanced™ were injected into the subsurface at 2-foot intervals throughout the treatment zone from 24 to 32 feet bgs. This approach resulted in the application of a total of 50 lbs of both RegenOx™ and ORC Advanced™ per borehole and a total of 600 lbs of both RegenOx™ and ORC Advanced™ during the third injection event. The ORC Advanced™ was injected into the treatment zone during the third and final injection event to ensure long-term treatment of remaining contaminates. Minor surfacing occurred during the injection of remedial solution into borehole C-6, therefore it was not feasible to inject the entire remedial solution volume into this borehole. The excess remedial solution was injected into borehole C-7.

Overall, a total of approximately 4,000 lbs of RegenOx™ and 600 lbs of ORC Advanced™ were injected into the treatment area during the three injection events completed at the Site. Upon completion of drilling and injection activities, the borings were backfilled to surface grade with neat cement containing 5% bentonite. Detailed direct-push injection procedures are presented in Appendix B.

Waste Disposal

Soil cuttings generated during drilling were temporarily stored on-site in labeled, DOT-approved 55-gallon drums. Soil drums will be sampled, analyzed, and profiled for disposal under waste manifest at an appropriate disposal facility.

Wastewater generated during drilling, aquifer testing, injection, and sampling activities was temporarily stored on-site in labeled, DOT-approved 55-gallon drums pending disposal and/or treatment and permitted discharge to the sanitary sewer system.

Remedial Data Collection and Monitoring

Implementation of a data collection program developed to provide information that can be used to evaluate the effectiveness of in-situ remedial efforts was started in April 2011. Data collected includes the following:

- Groundwater samples collected during the second quarter 2011 groundwater monitoring event (April 2011) were used to establish baseline conditions for petroleum constituents prior to the remedial implementation. Additional samples collected from eight select wells (see list of select wells below) prior to remedial activities were analyzed for additional laboratory parameters not currently included in the groundwater monitoring program for the Site. A complete list of laboratory analytes required for remedial monitoring is presented in the following section.
- Groundwater samples and field parameter measurements (see list of parameters below) were collected from eight select monitoring wells after the first and between each subsequent injection event to allow for monitoring the effects of each event prior to proceeding with subsequent events.
- For the first month following the completion of remedial activities, biweekly groundwater samples and field parameter measurements were collected from eight select wells (June 2011).
- The current semi-annual groundwater monitoring program at the Site has been modified to include quarterly monitoring of all wells to evaluate groundwater quality under varying seasonal conditions and assess the efficiency of remedial efforts at the Site.
- The eight select wells included during remedial monitoring activities included EW-1, EW-2, EW-3, MW-1A/B, MW-2A, and MW-7A/B.
- Additional field parameters measured during remedial monitoring activities include dissolved oxygen, pH, temperature, specific conductivity, and oxidation-reduction potential.

- If required, confirmatory soil samples may also be collected from the source area following the completion of remedial activities to further evaluate contaminant mass removal in the smear zone. This sampling event would likely occur approximately one year after in-situ remedial implementation.

Laboratory Analysis

During each sampling event, groundwater samples were collected from eight select wells (five monitoring wells and three extraction wells) to monitor the effectiveness of remedial efforts and evaluate potential fluctuations in general water quality as a result of the remedial implementation process. Groundwater samples were submitted under chain-of-custody documentation to McCampbell Analytical, Inc., of Pittsburg, California, a State of California certified laboratory (ELAP #1644). All samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd) by EPA method 8015B; benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tert-butyl ether (MTBE) by EPA Method 8021B; fuel oxygenates tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), and MTBE, and lead scavengers 1,2-dibromoethane (EDB) and 1,2-dichloroethane (1,2-DCA) by EPA Method 8260B. Additionally, all samples were sampled for arsenic and chromium by EPA Method E200.8; hexachrome by EPA Method E218.6; sulfate by EPA Method E300.1; carbonate, bicarbonate, and hydroxide by EPA Method 2320B; iron, manganese, and sodium by EPA Method E 200.7; dissolved oxygen by EPA Method 4500OG; ferrous iron by EPA Method 3500-Fe; carbon dioxide and methane by EPA Method RSK174/175; and total dissolved solids (TDS) by EPA Method SM2540C. Copies of the chain-of-custody documentation and the certified analytical reports, including quality assurance and quality control (QA/QC) data, are included in Appendix C.

Remedial Implementation Results

Groundwater Gradient and Flow Direction

On April 6, 2011, Allterra personnel measured and recorded depths to groundwater from the tops of well casings (TOC) for each well. Recorded depths to groundwater ranged from 18.30 to 21.78 feet below TOC. For the April 2011 monitoring event, the general groundwater flow direction was to the northwest at a gradient of approximately 0.0147 feet per foot (ft/ft). Groundwater elevation contours for this event are presented on Figure 2.

The groundwater gradient generally decreased during the three injection events, but the overall direction of groundwater flow did not change significantly. The groundwater gradient calculated from depth to water measurements collected on June 1, 2011 was approximately 0.0046 ft/ft to the northwest. This change from the baseline event in April 2011 may indicate that the volume of fluid injected into the aquifer during remedial activities may have created a localized zone of temporary groundwater mounding, leading to a decrease in the overall slope of the potentiometric surface. Historical data also indicates seasonal variations in the potentiometric surface during summer months, but not the extent observed following remedial implementation at the Site. The groundwater gradient calculated from depth to water measurements collected on June 30, 2011 did increase slightly to 0.0063 ft/ft to the northwest, indicating a partial recovery to pre-remedial implementation conditions.

Analytical Results – Baseline Monitoring Event (BL)

Petroleum constituents were detected in seven of the eight wells sampled during this event on April 8 and 11, 2011. A summary of historical groundwater analytical results is presented in Table 2. A summary of baseline groundwater analytical results is presented in Tables 3 and 4. Trend plots depicting petroleum constituent concentrations in groundwater during multiple remedial monitoring events are presented in Appendix C. A discussion of petroleum-related groundwater analytical results for the baseline sampling event is presented below:

- TPHg was detected in five wells at concentrations ranging from 110 micrograms per liter (µg/L) in MW-7B to 8,400 µg/L in EW-3.
- TPHd was detected in three wells at concentrations of 180 in MW-1A µg/L and 590 µg/L in EW-3.
- Benzene was detected in three wells at concentrations ranging from 2.0 µg/L in MW-1A to 110 µg/L in EW-3.
- Toluene was detected in six wells at concentrations ranging from 0.77 µg/L in MW-2A to 37 µg/L in EW-3.
- Ethylbenzene was detected in two wells at concentrations of 3.1 µg/L in EW-1 and 690 µg/L in EW-3.
- Xylenes were detected in four wells at concentrations ranging from 4.4 µg/L in MW-1A to 820 µg/L in EW-3.
- MTBE was detected in six wells at concentrations ranging from 0.65 µg/L in EW-2 to 79,000 µg/L in EW-3.
- TBA was detected in seven wells at concentrations ranging from 2.1 µg/L in EW-2 to 67,000 µg/L in EW-3.

Analytical Results – First Remedial Monitoring Event (E1)

Petroleum constituents were detected in seven of the eight wells sampled during this event on April 18, 2011. A summary of remedial groundwater analytical results is presented in Tables 3 and 4. Trend plots depicting petroleum constituent concentrations in groundwater during multiple remedial monitoring events are presented in Appendix C. A discussion of petroleum-related groundwater analytical results for the first remedial monitoring event is presented below:

- TPHg was detected in five wells at concentrations ranging from 91 µg/L in MW-7A to 7,300 µg/L in EW-3.
- TPHd was detected in four wells at concentrations of 90 in MW-7A µg/L and 1,300 µg/L in EW-3.
- Benzene was detected in two wells at concentrations of 0.56 µg/L in MW-1A and 81 µg/L in EW-3.
- Toluene was detected in four wells at concentrations ranging from 0.94 µg/L in MW-7A to 100 µg/L in EW-3.
- Ethylbenzene was detected in two wells at concentrations of 1.1 µg/L in EW-1 and 350 µg/L in EW-3.
- Xylenes were detected in five wells at concentrations ranging from 0.6 µg/L in MW-7B to 870 µg/L in EW-3.

- MTBE was detected in six wells at concentrations ranging from 0.7 µg/L in EW-2 to 85,000 µg/L in EW-3.
- TBA was detected in six wells at concentrations ranging from 24 µg/L in MW-2A to 50,000 µg/L in EW-3.

Analytical Results – Second Remedial Monitoring Event (E2)

Petroleum constituents were detected in seven of the eight wells sampled during this event on May 9, 2011. A summary of remedial groundwater analytical results is presented in Tables 3 and 4. Trend plots depicting petroleum constituent concentrations in groundwater during multiple remedial monitoring events are presented in Appendix C. A discussion of petroleum-related groundwater analytical results for the second remedial monitoring event is presented below:

- TPHg was detected in three wells at concentrations ranging from 62 µg/L in EW-1 to 5,400 µg/L in EW-3.
- TPHd was detected in two wells at concentrations of 69 in MW-7A µg/L and 2,200 µg/L in EW-3.
- Benzene was detected in two wells at concentrations of 1.2 µg/L in EW-1 and 56 µg/L in EW-3.
- Toluene was detected in two wells at concentrations of 1.4 µg/L in EW-1 and 2.0 µg/L in MW-7B.
- Ethylbenzene was detected in one well at a concentration of 160 µg/L in EW-3.
- Xylenes were detected in one well at a concentration of 350 µg/L in EW-3.
- MTBE was detected in six wells at concentrations ranging from 3.7 µg/L in MW-2A to 79,000 µg/L in EW-3.
- TBA was detected in seven wells at concentrations ranging from 2.8 µg/L in EW-2 to 40,000 µg/L in EW-3.

Analytical Results – Third Remedial Monitoring Event (E3)

Petroleum constituents were detected in seven of the eight wells sampled during this event on June 1 and 2, 2011. A summary of remedial groundwater analytical results is presented in Tables 3 and 4. Trend plots depicting petroleum constituent concentrations in groundwater during multiple remedial monitoring events are presented in Appendix C. A discussion of petroleum-related groundwater analytical results for the third remedial monitoring event is presented below.

- TPHg was detected in four wells at concentrations ranging from 58 µg/L in MW-7A to 4,800 µg/L in EW-3.
- TPHd was detected in three wells at concentrations ranging from 52 in MW-1A µg/L to 3,700 µg/L in EW-3.
- Benzene was detected in two wells at concentrations of 1.3 µg/L in EW-1 and 53 µg/L in EW-3.
- Toluene was detected in three wells at concentrations ranging from 0.76 µg/L in MW-7A to 2.1 µg/L in EW-1.
- Ethylbenzene was detected in two wells at concentrations of 0.79 µg/L in MW-7A and 170 µg/L in EW-3.

- Xylenes were detected in three wells at concentrations ranging from 0.6 µg/L in EW-1 to 300 µg/L in EW-3.
- MTBE was detected in six wells at concentrations ranging from 2.8 µg/L in MW-2A to 76,000 µg/L in EW-3.
- TBA was detected in seven wells at concentrations ranging from 12 µg/L in EW-2 to 43,000 µg/L in EW-3.

Analytical Results – First Bi-Weekly Monitoring Event (BW1)

Petroleum constituents were detected in seven of the eight wells sampled during this event on June 15, 2011. A summary of remedial groundwater analytical results is presented in Tables 3 and 4. Trend plots depicting petroleum constituent concentrations in groundwater during multiple remedial monitoring events are presented in Appendix C. A discussion of petroleum-related groundwater analytical results for the first bi-weekly monitoring event is presented below.

- TPHg was detected in three wells at concentrations ranging from 60 µg/L in EW-1 to 8,200 µg/L in EW-3.
- TPHd was detected in three wells at concentrations ranging from 70 µg/L in MW-1A µg/L to 2,200 µg/L in EW-3.
- Benzene was detected in one well at a concentration of 66 µg/L in EW-3.
- Toluene was detected in two wells at concentrations of 1.8 µg/L in EW-1 and 2.2 µg/L in MW-7B.
- Ethylbenzene was detected in one well at a concentration of 270 µg/L in EW-3.
- Xylenes were detected in one well at a concentration of 360 µg/L in EW-3.
- MTBE was detected in six wells at concentrations ranging from 2.3 µg/L in EW-2 to 93,000 µg/L in EW-3.
- TBA was detected in six wells at concentrations ranging from 19 µg/L in MW-2A to 47,000 µg/L in EW-3.

Analytical Results – Second Bi-Weekly Monitoring Event (BW2)

Petroleum constituents were detected in seven of the eight wells sampled during this event on June 30, 2011. A summary of remedial groundwater analytical results is presented in Tables 3 and 4. Trend plots depicting petroleum constituent concentrations in groundwater during multiple remedial monitoring events are presented in Appendix C. A discussion of petroleum-related groundwater analytical results for the second bi-weekly monitoring event is presented below.

- TPHg was detected in three wells at concentrations ranging from 74 µg/L in EW-1 to 8,000 µg/L in EW-3.
- TPHd was detected in two wells at concentrations of 54 in MW-1A µg/L and 1,900 µg/L in EW-3.
- Benzene was detected in one well at a concentration of 64 µg/L in EW-3.
- Toluene was detected in two wells at concentrations of 2.0 µg/L in EW-1 and 2.4 µg/L in MW-7B.
- Ethylbenzene was detected in one well at a concentration of 260 µg/L in EW-3.

- Xylenes were detected in one well at a concentration of 260 µg/L in EW-3.
- MTBE was detected in six wells at concentrations ranging from 2.4 µg/L in EW-2 to 100,000 µg/L in EW-3.
- TBA was detected in six wells at concentrations ranging from 13 µg/L in MW-2A to 51,000 µg/L in EW-3.

Discussion

During and following remedial implementation activities, petroleum constituents generally exhibited decreasing trends throughout the treatment area with the exception of the "hot spot" near EW-3. The increase in petroleum constituent concentrations (particularly MTBE), and some metals, observed in EW-3 may be attributed to the release of isolated areas of immobilized contaminates previously trapped within heterogeneous soils. Contaminates can often become relatively immobilized in argillaceous soils and/or finer grained zones within a heterogeneous soil, even if this soil is below the phreatic zone. The aggressive, fast acting RegenOx™ is known to forcefully remove contaminates from soils in difficult settings. The observed increase in petroleum-related concentrations in EW-3 could represent liberated contaminates being released into the groundwater from clayey soils in this area. However, the extraction of immobilized contaminates from relatively impermeable soils will be beneficial to achieving long-term clean up goals. The slower acting ORC Advanced™ will continue to augment natural processes that break down the contaminates over time and facilitate further attenuation of contaminate concentrations.

Increases in other constituents in groundwater (including sodium, carbonates, and dissolved oxygen) also occurred during and following remedial implementation activities (Table 4). Generally, these increases were expected due to the composition and nature of the remedial products being applied at the Site.

Conclusions

Based on the completion of remedial implementation and the results of remedial monitoring activities, Allterra concludes the following:

- The overall groundwater flow direction was to the northwest with an estimated gradient of 0.0147 ft/ft during the baseline sampling event in April 2011. The groundwater flow direction remained consistent during remedial activities, but the gradient decreased to approximately 0.0046 ft/ft in June 2011. This temporary mounding of the potentiometric surface was likely caused by the large volume of remedial solution injected into the aquifer media during a relatively short period of time.

- The designed volume of RegenOx™ and ORC Advanced™ remedial solution was successfully applied to the area of concern during three separate injection events, with insignificant adverse affects (i.e. minor surfacing).

- Petroleum constituents in groundwater generally exhibited decreasing trends following remedial implementation activities with the exception of the "hot spot" near extraction well EW-3. Post-remedial concentrations of petroleum constituents (particularly MTBE) in EW-3 could represent liberated contaminates being released into the groundwater from clayey soils in this area of the Site. However, the extraction of immobilized contaminates from relatively impermeable soils will be beneficial to achieving long-term clean up goals.

- The slower acting ORC Advanced™, designed to stimulate aerobic bioremediation through controlled release of oxygen within the subsurface, will continue to augment natural processes that break down petroleum constituents over time ensuring further long-term destruction of the remaining contaminants at the Site.

- A complete evaluation of the effectiveness of in-situ remedial efforts cannot be performed until at least one year following injection activities due to the nature and design of the remedial approach implemented at the Site.

Recommendations
Based on the conclusions presented above, Allterra recommends the following:

- Continue with the current quarterly groundwater monitoring program at the Site to evaluate groundwater quality under varying seasonal conditions and further assess the efficiency of remedial efforts at the Site.

- Upcoming quarterly groundwater monitoring reports should include time trend plots and iso-concentration maps for petroleum constituents in groundwater in select wells. These visual tools will aid in the further evaluation of the effectiveness of in-situ remedial efforts.

- If required, confirmatory soil samples may also be collected from the source area following the completion of remedial activities to further evaluate contaminant mass removal in the smear zone. This sampling event would likely occur approximately one year after in-situ remedial implementation.

Limitations
The data, information, interpretation, and recommendations contained in this Work Plan are presented solely as preliminary to the existing environmental conditions at 160 Holmes Street. Site conditions can change over time; therefore, data, information, interpretation, and recommendations presented in this work plan are only applicable to the timeframe of this study. The conclusions and professional opinions presented herein were developed by Allterra in accordance with environmental principles and practices generally accepted at this time and location, no warranties are expressed or implied.

If you have any questions, please call Allterra at (831) 425-2608.

Sincerely,
Allterra Environmental, Inc.

PROFESSIONAL GEOLOGIST
JOSEPH C. MANGINE
No. 8423
STATE OF CALIFORNIA

Aaron Powers
Project Geologist

Joe Mangine, P.G. 8423
Senior Geologist

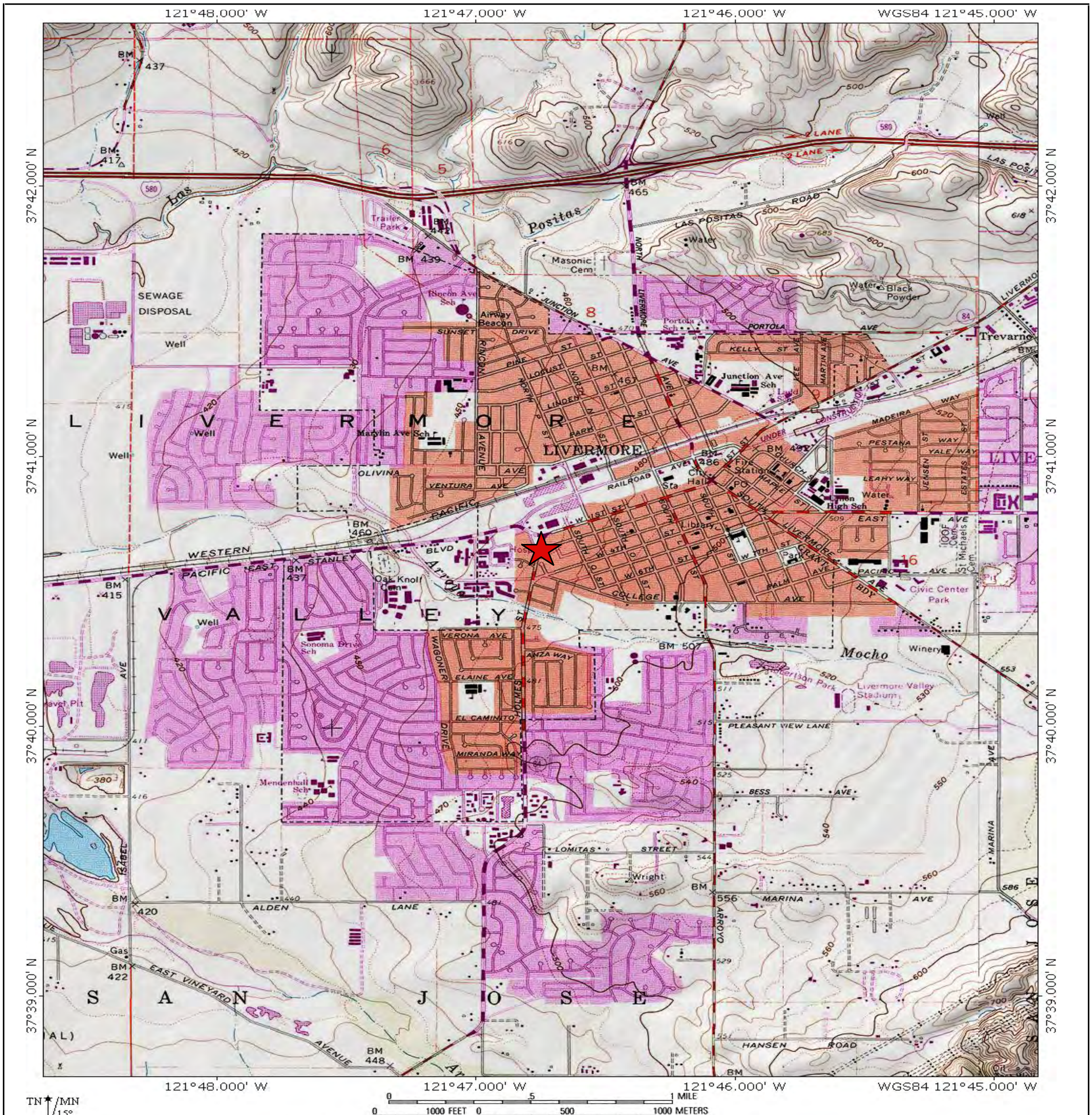
Attachments:
Figure 1, Site Vicinity Map
Figure 2, Shallow Groundwater Potentiometric Map for 4-6-11
Figure 3, Site Plan With Treatment Area
Figure 4, Remedial Injection Boring Locations
Figure 5, Typical Injection Boring Detail

Table 1, Historical Soil Analytical Results
Table 2, Historical Groundwater Analytical Results
Table 3, Remedial Groundwater Analytical Results, Petroleum Constituents
Table 4, Remedial Groundwater Analytical Results, Other Constituents

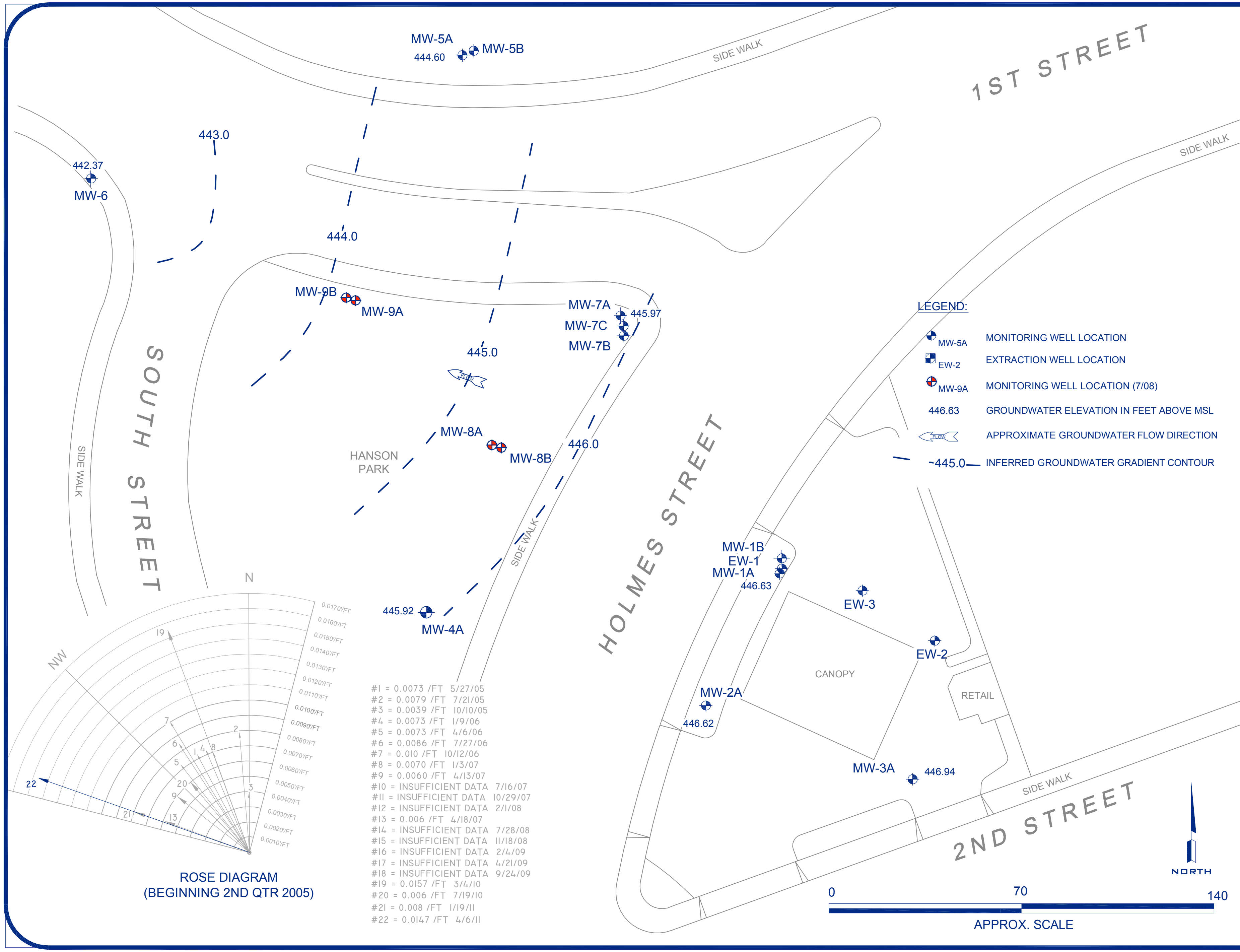
Appendix A: Allterra's Site Investigation Field Protocol
Appendix B: Regenesis Product Application Procedures
Appendix C: Time-Trend Plots – Petroleum Constituents in Groundwater

cc: Mr. Jerry Wickham, ACEHS

FIGURES 1 - 5



Site Vicinity Map Livermore Gas and Minimart 160 Holmes Street Livermore, California	Figure 1 — 8/19/11 849 Almar Avenue, Suite C, No. 281 Santa Cruz, California http://www.allterraenv.com



General Notes

stamp

160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT

PREPARED BY:
ALLTERRA

No.	Revision/Issue	Date
0	DRAFT/REVIEW	8/17

Firm Name and Address
ALLTERRA
ENVIRONMENTAL, INC.
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SANTA CRUZ, CALIFORNIA
831-425-2608 FAX 831-425-2609
www.allterraenv.com

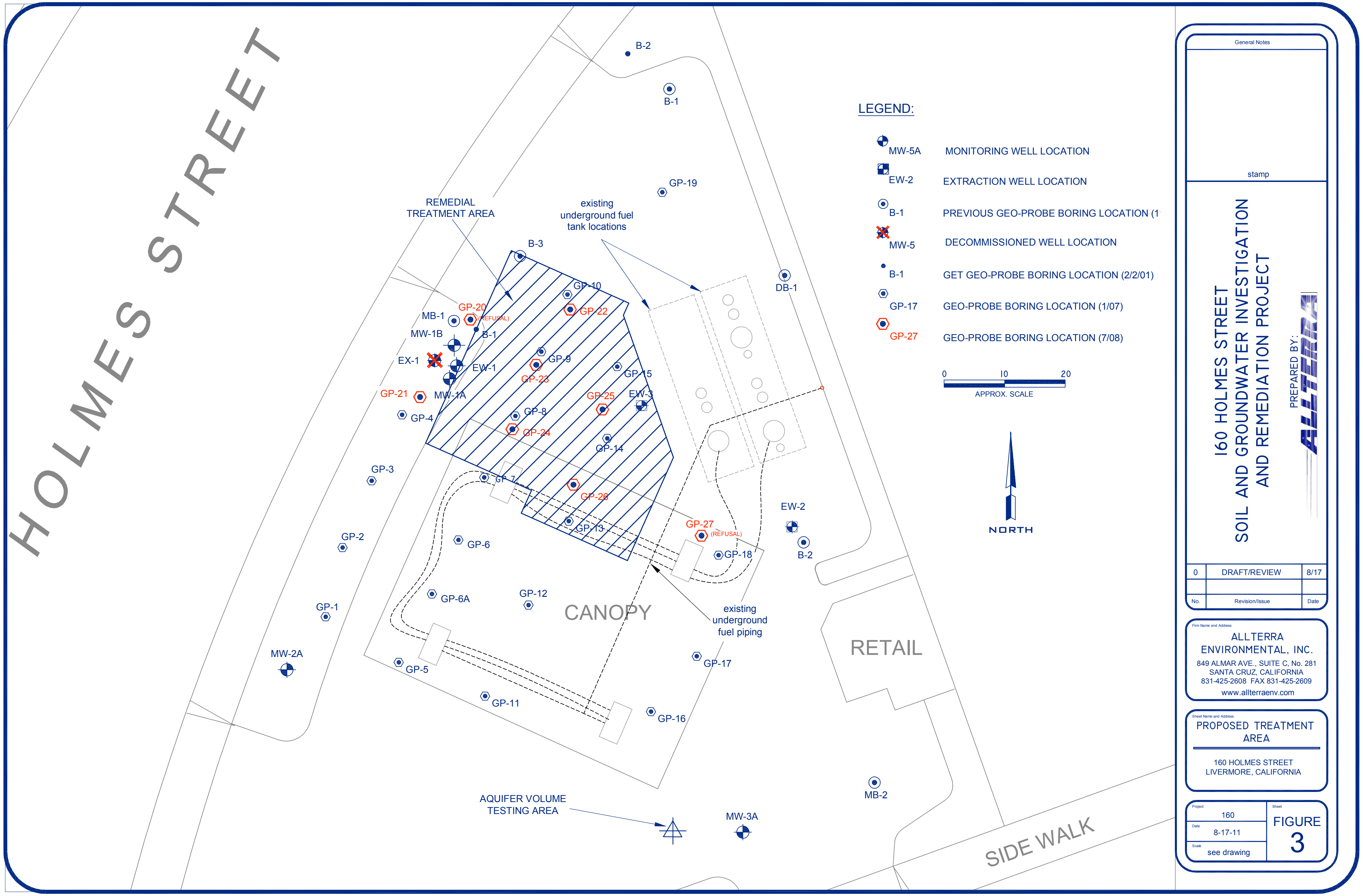
Sheet Name and Address
SHALLOW-GROUNDWATER
POTENTIOMETRIC
MAP FOR 4-6-11

SECOND QUARTER 2011
GROUNDWATER MONITORING
REPORT

Project: 160
Date: 8-17-11
Scale: see drawing

Sheet: FIGURE 2

FNAME
REVDATE
USER



HOLMES STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
B-1 PREVIOUS GEO-PROBE BORING LOCATION (1
MW-5 DECOMMISSIONED WELL LOCATION
B-1 GET GEO-PROBE BORING LOCATION (2/2/01)
GP-17 GEO-PROBE BORING LOCATION (1/07)
GP-27 GEO-PROBE BORING LOCATION (7/08)
0 10 20
APPROX. SCALE
NORTH
REMEDIAL TREATMENT AREA
existing underground fuel tank locations
existing underground fuel piping
AQUIFER VOLUME TESTING AREA
CANOPY
RETAIL
SIDE WALK
B-2
B-1
B-3
GP-19
DB-1
GP-10
GP-20
(REFUSAL)
GP-22
MB-1
MW-1B
B-1
EX-1
EW-1
GP-9
GP-15
GP-23
GP-21
MW-1A
GP-25
EW-3
GP-4
GP-8
GP-24
GP-14
GP-3
GP-7
GP-26
GP-27
(REFUSAL)
EW-2
B-2
GP-13
GP-18
GP-2
GP-6
GP-1
GP-6A
GP-12
MW-2A
GP-5
GP-17
GP-11
GP-16
MB-2
MW-3A
General Notes
stamp
160 HOLMES STREET
SOIL AND GROUNDWATER INVESTIGATION
AND REMEDIATION PROJECT
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0 DRAFT/REVIEW 8/17
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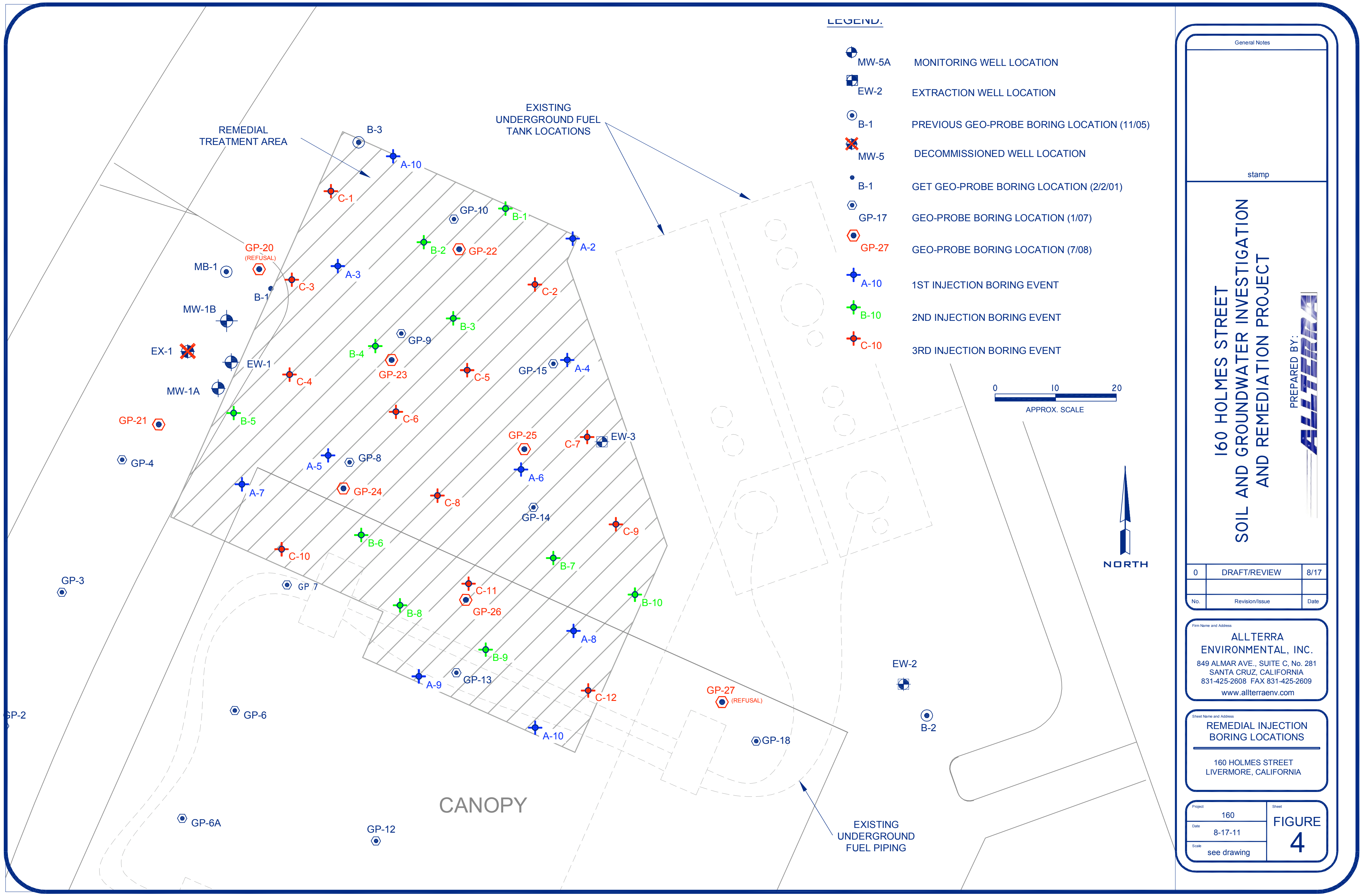
PROPOSED TREATMENT AREA
160 HOLMES STREET
LIVERMORE, CALIFORNIA
Project 160
Date 8-17-11
Scale see drawing
FIGURE 3


LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
B-1 PREVIOUS GEO-PROBE BORING LOCATION (11/05)
MW-5 DECOMMISSIONED WELL LOCATION
B-1 GET GEO-PROBE BORING LOCATION (2/2/01)
GP-17 GEO-PROBE BORING LOCATION (1/07)
GP-27 GEO-PROBE BORING LOCATION (7/08)
A-10 1ST INJECTION BORING EVENT
B-10 2ND INJECTION BORING EVENT
C-10 3RD INJECTION BORING EVENT
0 10 20
APPROX. SCALE
NORTH
REMEDIAL TREATMENT AREA
EXISTING UNDERGROUND FUEL TANK LOCATIONS
EXISTING UNDERGROUND FUEL PIPING
CANOPY
B-3
A-10
C-1
GP-10
B-1
A-2
GP-20 (REFUSAL)
MB-1
B-1
C-3
A-3
B-2
GP-22
C-2
MW-1B
B-3
GP-9
EX-1
EW-1
B-4
GP-23
C-4
C-5
GP-15
A-4
MW-1A
B-5
C-6
GP-21
GP-25
C-7
EW-3
A-5
GP-8
GP-4
A-6
A-7
GP-24
C-8
GP-14
C-9
C-10
B-6
B-7
GP-3
GP 7
C-11
B-8
GP-26
B-10
A-8
B-9
EW-2
GP-2
A-9
GP-13
C-12
GP-27 (REFUSAL)
GP-6
B-2
A-10
GP-18
GP-6A
GP-12
General Notes
stamp
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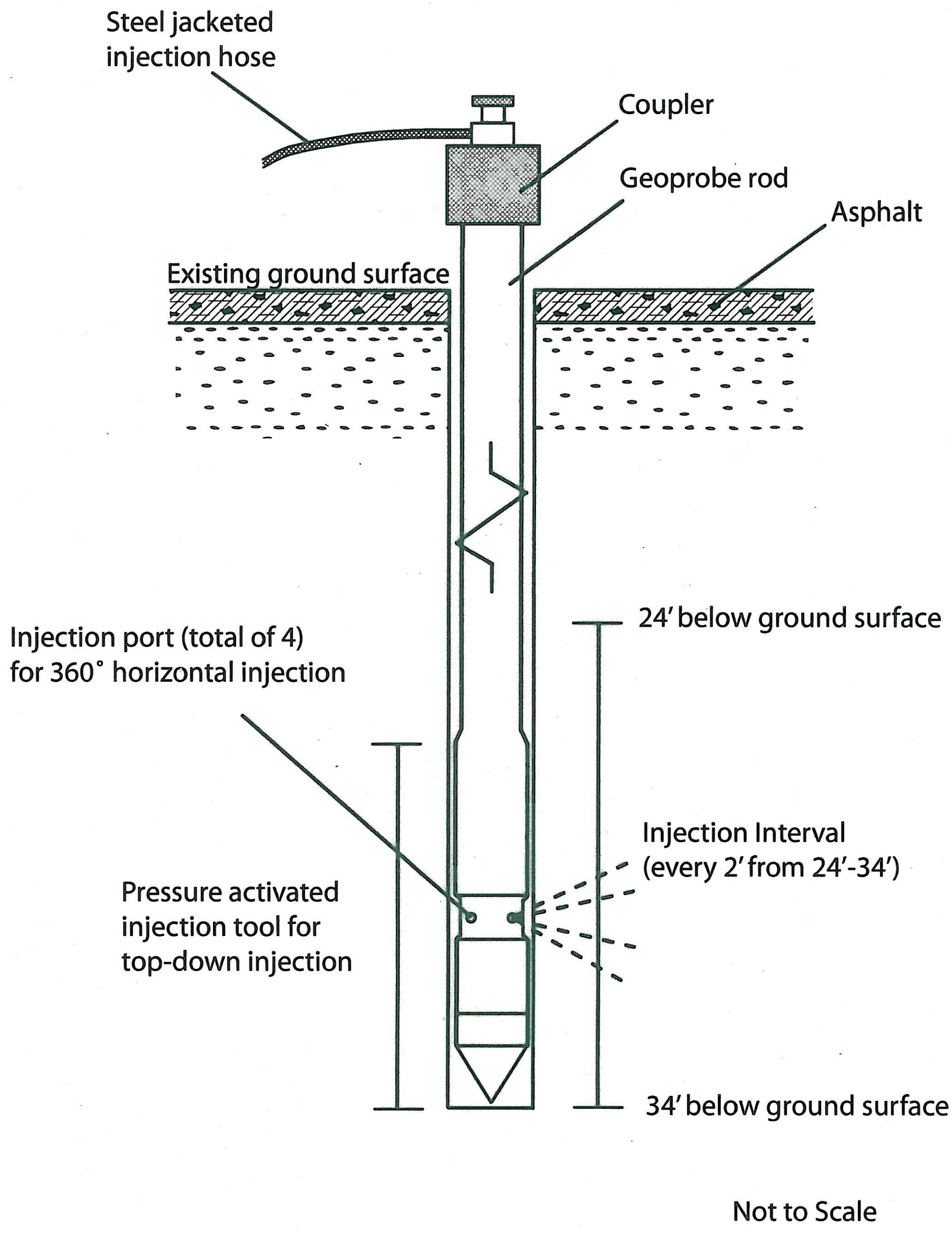
Sheet Name and Address
REMEDIAL INJECTION BORING LOCATIONS
160 HOLMES STREET
LIVERMORE, CALIFORNIA
Project 160
Date 8-17-11
Scale see drawing
Sheet
FIGURE 4



ALLTERRA 207 McPherson Street Santa Cruz, CA 95060	**Typical Injection Boring Detail** *160 Holmes* 160 Holmes Street Livermore, CA	FIGURE # **5** JOB # **160 Holmes**

TABLES 1 - 4

Table 1

Historical Soil Analytical Data

160 Holmes Street, Livermore, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Fuel Oxygenates				
										TAME	TBA	DIPE	ETBE	MTBE
T1-West	NA	4/5/99	<20	<1.0	<1.2	<1.2	<1.2	<1.2	24	--	--	--	--	--
T2-West	NA	4/5/99	<100	--	<6.2	<6.2	<6.2	<6.2	47	--	--	--	--	--
T3-West	NA	4/5/99	<200	--	<12	<12	<12	<12	41	--	--	--	--	--
T4-West	NA	4/5/99	<200	--	<12	<12	<12	<12	100	--	--	--	--	--
T1-East	NA	5/6/99	17	<1.0	<0.62	<0.62	<0.62	<0.62	7.7	--	--	--	--	--
T2-East	NA	5/6/99	31	--	<0.62	<0.62	<0.62	<0.62	28	--	--	--	--	--
T3-East	NA	5/6/99	<50	--	<3.1	<3.1	<3.1	<3.1	41	--	--	--	--	--
T4-East	NA	5/6/99	14	--	<0.62	<0.62	<0.62	<0.62	20	--	--	--	--	--
Dispenser 1	NA	5/20/99	49	--	0.015	0.084	0.033	0.041	<0.0050	--	--	--	--	--
Dispenser 2	NA	5/20/99	<1.0	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--	--	--	--
Dispenser 3	NA	5/20/99	6,500	--	<31	81	120	940	<31	--	--	--	--	--
Dispenser 4	NA	5/20/99	--	--	--	--	--	--	--	--	--	--	--	--
Dispenser 5	NA	5/20/99	32	--	0.040	0.62	0.29	3.0	<0.0050	--	--	--	--	--
Dispenser 6	NA	5/20/99	<1.0	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--	--	--	--
Diesel-D	NA	5/20/99	160	1,300	0.032	0.20	0.089	15	<0.62	--	--	--	--	--
MW-1	15	7/26/00	<10	--	<0.62	<0.62	<0.62	<0.62	0.93	--	--	--	--	--
MW-1	19	7/26/00	800	--	<6.2	36	18	100	21	--	--	--	--	--
MW-2	15	7/26/00	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--
MW-2	20	7/26/00	1.1	--	0.0092	0.013	0.053	0.13	0.11	--	--	--	--	--
MW-3	15	7/26/00	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--
MW-3	20	7/26/00	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--
MB-1	18	11/11/05	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
MB-1	22	11/11/05	78	23	0.028	0.073	1.0	4.8	2.3	--	--	--	--	--
MB-1	26	11/11/05	110	18	0.27	0.51	2.0	1.7	14	--	--	--	--	--

Table 1
Historical Soil Analytical Data
160 Holmes Street, Livermore, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Fuel Oxygenates				
										TAME	TBA	DIPE	ETBE	MTBE
MB-3	20	11/11/05	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
MB-3	28	11/11/05	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
MB-3	32	11/11/05	1,400	100	<0.5	5.0	20	67	<5.0	--	--	--	--	--
B-1	28	11/10/05	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
B-2	16	11/10/05	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
B-2	20	11/10/05	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
B-2	24	11/10/05	5.7	9.5	<0.005	0.018	0.076	0.25	1.7	--	--	--	--	--
B-2	28	11/10/05	11	2.4	0.075	0.073	0.26	0.14	7.2	--	--	--	--	--
B-3	16	11/10/05	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
B-3	20	11/10/05	<1.0	--	<0.005	0.0058	0.0071	0.024	<0.05	--	--	--	--	--
B-3	24	11/10/05	9.0	1.4	0.077	0.037	0.32	1.1	<1.0	--	--	--	--	--
B-3	28	11/10/05	48	6.1	0.053	0.20	0.53	0.49	<1.0	--	--	--	--	--
DB-1	26	11/10/05	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
MW-1B	61	2/23/06	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
MW-5B	55	2/27/06	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
MW-7C	70	2/27/06	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
EW-2	41.5	2/24/06	1.4	--	<0.005	<0.005	<0.005	<0.005	0.22	--	--	--	--	--
GP-1	8	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-1	24	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-1	28	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--

Table 1
Historical Soil Analytical Data
160 Holmes Street, Livermore, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Fuel Oxygenates				
										TAME	TBA	DIPE	ETBE	MTBE
GP-2	8	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-2	24	1/10/07	51	--	<0.050	<0.050	0.13	0.20	<0.50	--	--	--	--	--
GP-3	8	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-3	24	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-3	28	1/10/07	100	--	<0.050	0.40	2.1	3.2	2.6	--	--	--	--	--
GP-4	8	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-4	16	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-4	28	1/10/07	13	--	0.021	0.096	0.24	0.32	4.4	--	--	--	--	--
GP-5	8	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-5	20	1/10/07	5.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-5	28	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-6	8	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	0.090	--	--	--	--	--
GP-6	18	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-6	24	1/10/07	<1.0	--	<0.005	<0.005	<0.005	0.013	0.11	--	--	--	--	--
GP-6	28	1/10/07	23	--	0.0057	0.021	0.052	0.16	0.056	--	--	--	--	--
GP-6A	4	1/11/07	11	--	<0.005	<0.005	0.0081	<0.005	<0.10	--	--	--	--	--
GP-6A	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	0.011	<0.10	--	--	--	--	--
GP-6A	16	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-6A	20	1/11/07	1.6	--	<0.005	<0.005	0.0052	0.0065	0.066	--	--	--	--	--
GP-6A	24	1/11/07	2.0	--	<0.005	0.013	0.0062	0.015	0.44	--	--	--	--	--
GP-6A	28	1/11/07	17	--	<0.010	<0.010	0.40	0.028	0.34	--	--	--	--	--
GP-7	4	1/11/07	2.0	--	<0.005	0.014	0.0080	0.092	0.086	--	--	--	--	--
GP-7	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-7	14	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	0.062	--	--	--	--	--

Table 1
Historical Soil Analytical Data
160 Holmes Street, Livermore, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Fuel Oxygenates				
										TAME	TBA	DIPE	ETBE	MTBE
GP-8	8	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-8	24	1/10/07	30	--	0.030	0.19	0.46	2.4	9.6	--	--	--	--	--
GP-9	8	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-9	12	1/10/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-9	24	1/10/07	110	--	0.27	1.2	1.6	9.5	22	--	--	--	--	--
GP-10	21	1/10/07	35	--	0.033	0.35	0.56	3.6	1.5	--	--	--	--	--
GP-10	24	1/10/07	2.2	--	0.0081	0.011	0.023	0.12	3.9	--	--	--	--	--
GP-11	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-11	24	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-11	28	1/11/07	3.7	--	<0.005	<0.005	<0.005	<0.005	0.057	--	--	--	--	--
GP-12	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	0.072	--	--	--	--	--
GP-12	24	1/11/07	15	--	<0.005	<0.005	0.13	0.14	0.092	--	--	--	--	--
GP-12	28	1/11/07	11	--	0.0061	<0.005	0.47	0.014	0.36	--	--	--	--	--
GP-13	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-13	24	1/11/07	9.1	--	<0.005	<0.005	<0.005	0.014	<0.05	--	--	--	--	--
GP-13	28	1/11/07	100	--	0.17	0.39	2.6	6.7	8.9	--	--	--	--	--
GP-14	8	1/11/07	6.4	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-14	12	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-14	16	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-14	24	1/11/07	320	--	0.43	14	7.0	40	50	--	--	--	--	--
GP-14	28	1/11/07	120	--	0.47	3.3	2.0	11	140	--	--	--	--	--
GP-15	12	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	0.078	--	--	--	--	--
GP-15	19	1/11/07	1.5	--	<0.005	0.012	0.026	0.054	0.49	--	--	--	--	--
GP-15	24	1/11/07	1.6	--	<0.005	0.0077	0.015	0.11	0.40	--	--	--	--	--
GP-15	28	1/11/07	6.7	--	0.047	0.24	0.13	0.72	9.5	--	--	--	--	--

Table 1
Historical Soil Analytical Data
160 Holmes Street, Livermore, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Fuel Oxygenates				
										TAME	TBA	DIPE	ETBE	MTBE
GP-16	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	0.061	--	--	--	--	--
GP-16	24	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	0.10	--	--	--	--	--
GP-16	28	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-17	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-17	24	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-17	28	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-18	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-18	16	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	0.070	--	--	--	--	--
GP-18	24	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-18	28	1/11/07	110	--	<0.010	0.16	0.37	1.3	0.20	--	--	--	--	--
GP-19	8	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-19	21	1/11/07	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
GP-19	24	1/11/07	5.8	--	<0.005	0.0072	0.12	0.23	0.074	--	--	--	--	--
GP-21	32	7/9/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.050	4.6	<0.050	<0.050	<0.050
GP-21	36	7/9/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.010	1.1	<0.010	<0.010	<0.010
GP-21	40	7/9/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.010	0.72	<0.010	<0.010	<0.010
GP-21	44	7/9/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
GP-21	48	7/9/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
GP-21	52	7/9/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
GP-22	32	7/8/08	1.2	--	<0.005	<0.005	0.0059	<0.005	<0.05	<0.025	2.9	<0.025	<0.025	0.051
GP-22	36	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.050	3.6	<0.050	<0.050	<0.050
GP-22	40	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.010	1.3	<0.010	<0.010	<0.010
GP-22	44	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
GP-22	47	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005

Table 1
Historical Soil Analytical Data
160 Holmes Street, Livermore, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Fuel Oxygenates				
										TAME	TBA	DIPE	ETBE	MTBE
GP-23	32	7/7/08	56	--	0.093	0.089	0.73	0.61	7.0	<0.33	<3.3	<0.33	<0.33	8.5
GP-23	36	7/7/08	<1.0	--	<0.005	<0.005	0.010	0.0067	0.081	<0.050	3.0	<0.050	<0.050	0.063
GP-23	40	7/7/08	<1.0	--	<0.005	<0.005	0.0087	<0.005	<0.05	<0.005	0.34	<0.005	<0.005	0.010
GP-23	44	7/7/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	0.010
GP-23	50	7/7/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
GP-24	32	7/7/08	<1.0	--	<0.005	<0.005	0.015	<0.005	0.12	<0.010	1.2	<0.010	<0.010	0.23
GP-24	36	7/7/08	<1.0	--	<0.005	<0.005	0.016	<0.005	<0.05	<0.025	1.7	<0.025	<0.025	<0.025
GP-24	40	7/7/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.010	0.91	<0.010	<0.010	0.088
GP-24	44	7/7/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
GP-24	48	7/7/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005
GP-25	32	7/8/08	4.5	--	0.18	0.015	0.18	<0.005	3.3	<0.25	<2.5	<0.25	<0.25	2.8
GP-25	36	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.010	0.85	<0.010	<0.010	0.85
GP-25	40	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	0.014
GP-25	44	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	0.012
GP-25	50	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	0.015
GP-26	32	7/8/08	3.1	--	0.0074	0.015	0.082	0.012	4.6	<0.33	<3.3	<0.33	<0.33	5.1
GP-26	36	7/8/08	3.4	--	0.023	0.0087	0.053	0.010	1.7	<0.33	<3.3	<0.33	<0.33	2.0
GP-26	40	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	0.013
GP-26	44	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	0.0061
GP-26	48	7/8/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	0.010
MW-8B	28	7/16/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--
MW-8B	32	7/16/08	<1.0	--	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	--	--

Notes:
-- : not analyzed
NA : not available
All results are in milligrams per kilogram (mg/kg)
TPHg was analyzed by EPA Method 8015CM
Benzene, toluene, ethylbenzene, xylenes, and MTBE were analyzed by EPA Method 8021B
MTBE, TAME, ETBE, TBA, and DIPE were analyzed by EPA Method 8260B
Refusal in borings GP-20 and GP-27 - no samples

TPHg: Total Petroleum Hydrocarbons as gasoline
MTBE = methyl tertiary butyl ether
TAME = tert-amyl methyl ether
TBA = tert-butyl alcohol
DIPE = di-isopropyl ether
ETBE = ethyl tert-butyl ether

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Table 2
Historical Groundwater Analytical Results
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-1A*	8/11/00	--	170,000	57,000	6,400	7,600	4,200	9,700	320,000	--	--	--	--	--	--	--	--	--
	10/19/00	443.09	170,000	17,000	8,400	3,200	2,700	10,000	200,000	--	--	--	--	--	--	--	--	--
	2/22/01	442.12	82,000	11,000	5,100	1,000	13,000	8,700	190,000	--	--	--	--	--	--	--	--	--
	5/30/01	DRY	not sampled - well dry							--	--	--	--	--	--	--	--	--
	11/14/01	DRY	not sampled - well dry							--	--	--	--	--	--	--	--	--
	5/7/02	DRY	not sampled - well dry							--	--	--	--	--	--	--	--	--
	9/11/02	438.87	130,000	NA	7,700	1,100	4,500	1,500	<5000	--	--	--	--	--	--	--	--	--
	12/1/02	437.48	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
	3/14/03	442.40	180,000	3,800	7,100	3,200	4,300	6,000	220,000	--	--	--	--	--	--	--	--	--
	6/25/03	442.93	71,000	3,100	7,500	4,700	4,800	8,900	210,000	--	--	--	--	--	--	--	--	--
	9/16/03	440.12	37,000	3,600	4,600	220	3,600	930	150,000	--	--	--	--	--	--	--	--	--
	12/22/03	443.28	44,000	4,000	6,800	1,500	4,000	3,800	180,000	--	--	--	--	--	--	--	--	--
	3/10/04	447.58	72,000	3,100	6,000	11,000	3,900	10,000	260,000	--	--	--	--	--	--	--	--	--
	6/15/04	442.65	42,000	4,300	5,000	1,800	3,700	6,000	210,000	--	--	--	--	--	--	--	--	--
	9/17/04	439.42	24,000	2,900	2,800	<33	2,900	500	83,000	--	--	--	--	--	--	--	--	--
	12/10/04	442.85	31,000	2,700	4,600	190	4,400	2,800	200,000	--	--	--	--	--	--	--	--	--
	3/2/05	448.08	58,000	2,800	4,000	2,500	4,500	7,800	230,000	--	--	--	--	--	--	--	--	--
	5/27/05	446.61	79,000	4,600	4,300	6,200	5,100	13,000	240,000	--	--	--	--	--	--	--	--	--
	7/21/05	443.65	80,000	NS	4,300	5,300	5,400	14,000	300,000	--	--	--	--	--	--	--	--	--
	10/10/05	442.54	58,000	NS	4,300	240	5,600	8,300	170,000	--	--	--	--	--	--	--	--	--
	1/9/06	446.98	47,000	3,700	3,100	1,100	4,400	5,900	180,000	<2,500	<25,000	<2,500	<2,500	240,000	<250,000	<2,500,000	<2,500	<2,500
	4/6/06	449.43	18,000	1,900	1,200	280	2,400	2,200	110,000	<2,500	<25,000	<2,500	<2,500	87,000	<250,000	<2,500,000	<2,500	<2,500
	7/27/06	442.61	24,000	2,400	2,100	350	3,400	5,300	130,000	<5000	<50,000	<5000	<5000	160,000	--	--	--	--
	10/12/06	441.57	19,000	1,700	1,000	26	2,000	1,000	68,000	<1,200	<12,000	<1,200	<1,200	84,000	<120,000	<1,200,000	--	--
	1/3/07	444.03	27,000	2,300	1,300	53	2,500	1,900	120,000	<1,700	<1,7000	<1,700	<1,700	110,000	<170,000	<1,700,000	<1,700	<1,700
	4/13/07	441.79	28,000	3,000	1,600	74	3,700	1,800	190,000	<5,000	<50,000	<5,000	<5,000	200,000	<500,000	<5,000,000	<5,000	<5,000
	7/16/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/18/08	437.69	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	430.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	436.98	1,300	NA	140	<5.0	26	6.0	16,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/19/10	441.18	400	NA	1.2	1.3	<0.5	0.76	880	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	441.91	150	130	1.4	0.6	<0.5	1.4	300	<250	40,000	<250	<250	330	NA	NA	<250	<250
	4/8/11	**442.37**	**200**	**180**	**2.0**	**1.9**	**<0.5**	**4.4**	**1,300**	**<120**	**24,000**	**<120**	**<120**	**2,300**	**NA**	**NA**	**<120**	**<120**
MW-1B	3/13/06	446.44	<50	<50	<0.5	<0.5	<0.5	<0.5	8.2	<0.5	<5.0	<0.5	<0.5	7.9	<50	<500	<0.5	<0.5
	4/6/06	449.43	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	1.0	<50	<500	<0.5	<0.5
	7/27/06	442.55	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
	10/12/06	441.51	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	--	--
	1/3/07	443.98	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/13/07	441.72	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/16/07	429.45	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	NA	NA	NA	NA
	10/29/07	417.70	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5

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Table 2
Historical Groundwater Analytical Results
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-1B cont.	2/1/08	431.12	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/18/08	437.67	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/29/08	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	418.19	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/21/09	427.92	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/24/09	427.26	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	1.1	NA	NA	NA	NA
	3/4/10	437.61	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/19/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	441.92	<50	130	<0.5	<0.5	<0.5	<0.5	<5.0	<250	40,000	<250	<250	330	NA	NA	<250	<250
	4/8/11	**446.62**	**<50**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**<0.5**	**<2.0**	**<0.5**	**<0.5**	**<0.5**	**NA**	**NA**	**<0.5**	**<0.5**
MW- 2A*	8/11/00	NC	4,500	1,900	220	52	160	170	3,000	--	--	--	--	--	--	--	--	--
	10/19/00	443.14	3,400	1,300	150	21	100	70	1,900	--	--	--	--	--	--	--	--	--
	2/22/01	442.07	7,600	880	25	<10	69	25	2,200	--	--	--	--	--	--	--	--	--
	5/30/01	DRY	not sampled - well dry							--	--	--	--	--	--	--	--	--
	11/14/01	DRY	not sampled - well dry							--	--	--	--	--	--	--	--	--
	5/7/02	438.24	400	86	5.4	<0.5	1.9	2.3	230	--	--	--	--	--	--	--	--	--
	9/11/02	438.98	260	NA	1.3	<0.5	0.57	0.77	200	--	--	--	--	--	--	--	--	--
	12/1/02	437.38	250	120	7.9	1.6	13	9.9	180	--	--	--	--	--	--	--	--	--
	3/14/03	442.53	830	110	56	<0.5	<0.5	<1.0	1,200	--	--	--	--	--	--	--	--	--
	6/25/03	442.97	260	180	0.92	2.9	3.1	8.1	2,000	--	--	--	--	--	--	--	--	--
	9/16/03	440.24	420	260	3.6	3.4	5.2	2.4	1,300	--	--	--	--	--	--	--	--	--
	12/22/03	443.36	240	120	0.82	3.1	7.8	3.9	1,400	--	--	--	--	--	--	--	--	--
	3/10/04	447.63	280	210	9.4	4.2	14	11	1,400	--	--	--	--	--	--	--	--	--
	6/15/04	442.76	150	150	2.1	2.4	2.2	1.3	1,500	--	--	--	--	--	--	--	--	--
	9/17/04	439.50	61	70	<0.5	1.0	<0.5	<0.5	730	--	--	--	--	--	--	--	--	--
	12/10/04	442.94	84	110	<0.5	1.2	<0.5	1.5	1,300	--	--	--	--	--	--	--	--	--
	3/2/05	448.19	63	91	0.55	<0.5	0.63	0.51	1,000	--	--	--	--	--	--	--	--	--
	5/27/05	446.65	270	59	14	3.9	19	6.8	1,100	--	--	--	--	--	--	--	--	--
	7/21/05	444.48	280	NS	8.6	2.5	17	2.5	1,500	--	--	--	--	--	--	--	--	--
	10/10/05	442.64	<50	NS	<.5	<.5	<.5	<.5	680	--	--	--	--	--	--	--	--	--
	1/9/06	447.27	1,700	890	4.4	1.3	120	18	530	<10	330	<10	<10	590	<1000	<10,000	<10	<10
	4/7/06	449.47	110	160	0.61	0.80	4.1	<0.5	270	<5.0	660	<5.0	<5.0	240	<500	<5,000	<5.0	<5.0
	7/27/06	442.67	<50	120	<0.5	0.84	<0.5	<0.5	87	<5.0	870	<5.0	<5.0	110	--	--	--	--
	10/12/06	441.59	<50	70	<0.5	<0.5	<0.5	<0.5	29	<5.0	480	<5.0	<5.0	30	<500	<5000	--	--
	1/3/07	444.04	55	60	0.57	<0.5	<0.5	<0.5	8.5	<2.5	590	<2.5	<2.5	7.8	<250	<2,500	<2.5	<2.5
	4/13/07	441.78	86	130	<0.5	0.60	<0.5	<0.5	16	<5.0	740	<5.0	<5.0	16	<500	<5,000	<5.0	<5.0
	7/16/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/18/08	437.68	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	439.82	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	439.09	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/21/11	439.64	<50	<50	<0.5	<0.5	<0.5	<0.5	2.8	<5.0	<5.0	<5.0	<5.0	2.8	NA	NA	<5.0	<5.0
	4/8/11	**446.64**	**<50**	**<50**	**<0.5**	**0.77**	**<0.5**	**6.2**	**<5.0**	**<0.5**	**15**	**<0.5**	**<0.5**	**3.3**	**NA**	**NA**	**<0.5**	**<0.5**

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Table 2
Historical Groundwater Analytical Results
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW- 3A*	8/11/00	--	59	260	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	10/19/00	443.39	<50	<65	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	2/22/01	442.33	<50	100	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	5/30/01	DRY	not sampled - well dry							--	--	--	--	--	--	--	--	--
	11/14/01	DRY	not sampled - well dry							--	--	--	--	--	--	--	--	--
	5/7/02	DRY	not sampled - well dry							--	--	--	--	--	--	--	--	--
	9/11/02	439.23	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/1/02	437.66		NS						--	--	--	--	--	--	--	--	--
	3/14/03	442.80	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	6/25/03	443.25	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	9/16/03	440.51	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/22/03	443.47	<50	69	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	3/10/04	447.96	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	6/15/04	443.02	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	9/17/04	439.75	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/10/04	443.19	<50	<50	<0.5	<0.5	<0.5	<0.5	7.6	--	--	--	--	--	--	--	--	--
	3/2/05	448.51	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	5/27/05	446.95	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	7/21/05	444.74	<50	NS	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	10/10/05	442.90	<50	NS	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	1/9/06	447.60	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<50	<500	<0.5	<0.5
	4/7/06	449.82	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/27/06	442.94	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
	10/12/06	441.85	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	--	--
	1/3/07	444.32	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/13/07	442.06	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/16/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/18/08	437.98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	437.89	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/19/10	439.29	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	442.21	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/8/11	**446.94**	**<50**	**NA**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-4**	11/14/01	431.31	510	90	4.0	<0.5	<0.5	<0.5	14	--	--	--	--	--	--	--	--	--
	5/7/02	438.40	150	<50	3.5	0.5	<0.5	<0.5	48	--	--	--	--	--	--	--	--	--
	9/11/02	438.49	<50	NA	<0.5	<0.5	<0.5	<0.5	15	--	--	--	--	--	--	--	--	--
	12/1/02	436.76	<50	<50	<0.5	<0.5	<0.5	<0.5	24	--	--	--	--	--	--	--	--	--
	3/14/03	442.01	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--	--
	6/25/03	442.43	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--	--
	9/16/03	439.76	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/22/03	442.73	<50	69	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	3/10/04	446.95	<50	<50	<0.5	<0.5	<0.5	<0.5	37	--	--	--	--	--	--	--	--	--

Table 2

Historical Groundwater Analytical Results

160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-4** cont.	6/15/04	442.20	<50	<50	<0.5	<0.5	<0.5	<0.5	7.4	--	--	--	--	--	--	--	--	--
	9/17/04	439.03	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/10/04	442.42	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	3/2/05	447.55	<50	<50	<0.5	<0.5	<0.5	<0.5	14	--	--	--	--	--	--	--	--	--
	5/27/05	446.01	<50	<50	<0.5	<0.5	<0.5	<0.5	9.6	--	--	--	--	--	--	--	--	--
	7/21/05	443.90	<50	NS	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	10/10/05	442.30	<50	NS	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	1/9/06	446.61	<50	<50	<0.5	<0.5	<0.5	<0.5	0.86	<0.5	<5.0	<0.5	<5.0	0.86	<50	<500	<5.0	<5.0
MW-4A	3/13/06	445.87	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.70	<50	<500	<0.5	<0.5
	4/7/06	448.77	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	1.1	<50	<500	<0.5	<0.5
	7/28/06	442.09	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	3.0	--	--	--	--
	10/13/06	441.06	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	2.0	<50	<500	--	--
	1/4/07	443.44	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.79	<50	<500	<0.5	<0.5
	4/13/07	441.18	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.51	<50	<500	<0.5	<0.5
	7/16/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/18/08	437.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	439.30	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	440.71	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	441.32	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/7/11	**436.16**	**<50**	**NA**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-5**	11/14/01	429.71	<50	<66	<0.5	<0.5	<0.5	<0.5	8.2	--	--	--	--	--	--	--	--	--
	5/7/02	436.75	140	<50	<0.5	<0.5	<0.5	<0.5	110	--	--	--	--	--	--	--	--	--
	9/11/02	436.66	<50	NA	<0.5	<0.5	<0.5	<0.5	6.3	--	--	--	--	--	--	--	--	--
	12/1/02	435.15	73	<50	<0.5	<0.5	<0.5	<0.5	160	--	--	--	--	--	--	--	--	--
	3/14/03	440.39	110	<50	<0.5	<0.5	<0.5	<0.5	170	--	--	--	--	--	--	--	--	--
	6/25/03	440.64	<50	<50	<0.5	<0.5	<0.5	<0.5	89	--	--	--	--	--	--	--	--	--
	9/16/03	437.82	630	<50	<0.5	3.5	<0.5	2.6	1500	--	--	--	--	--	--	--	--	--
	12/22/03	440.97	<0.5	<50	<0.5	<0.5	<0.5	<0.5	630	--	--	--	--	--	--	--	--	--
	3/10/04	445.43	57	<50	<0.5	<0.5	<0.5	<0.5	1100	--	--	--	--	--	--	--	--	--
	6/15/04	440.45	<50	<50	<0.5	<0.5	<0.5	<0.5	750	--	--	--	--	--	--	--	--	--
	9/17/04	436.97	<50	<50	<0.5	<0.5	<0.5	<0.5	780	--	--	--	--	--	--	--	--	--
	12/10/04	440.72	<50	<50	<0.5	<0.5	<0.5	<0.5	120	--	--	--	--	--	--	--	--	--
	3/2/05	446.09	<50	<50	<0.5	<0.5	<0.5	<0.5	320	--	--	--	--	--	--	--	--	--
	5/27/05	444.50	<50	<50	<0.5	<0.5	<0.5	<0.5	120	--	--	--	--	--	--	--	--	--
	7/21/05	442.10	<50	NS	<0.5	<0.5	<0.5	<0.5	97	--	--	--	--	--	--	--	--	--
	10/10/05	441.30	<50	NS	<0.5	<0.5	<0.5	<0.5	41	--	--	--	--	--	--	--	--	--
	1/9/06	445.12	<50	<50	<0.5	<0.5	<0.5	<0.5	37	<0.5	<5.0	<0.5	<5.0	<5.0	<50	<500	<0.5	<0.5

Table 2
Historical Groundwater Analytical Results
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-5A	3/13/06	444.48	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/7/06	447.29	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/28/06	440.24	<50	62	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
	10/13/06	439.06	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	6.3	<0.5	<0.5	0.61	<50	<500	--	--
	1/4/07	442.11	<50	320	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/16/07	439.87	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/16/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	430.61	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	1.3	<50	<500	<0.5	<0.5
	4/18/08	436.51	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	464.64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	435.87	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	440.07	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/19/11	440.12	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/7/11	**436.16**	**<50**	**NA**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-5B	3/13/06	444.46	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.69	<50	<500	<0.5	<0.5
	4/7/06	447.15	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.98	<50	<500	<0.5	<0.5
	7/28/06	440.50	<50	<50	<0.5	<0.5	<0.5	<0.5	6.8	<0.5	6.3	<0.5	<0.5	0.61	--	--	--	--
	10/13/06	439.42	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	3.6	<50	<500	--	--
	1/4/07	442.15	<50	89	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	1.3	<50	<500	<0.5	<0.5
	4/16/07	439.26	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	1.5	<50	<500	<0.5	<0.5
	7/17/07	428.09	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	1.4	NA	NA	NA	NA
	10/29/07	416.69	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	2/1/08	431.34	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	1.9	<50	<500	<0.5	<0.5
	4/18/08	435.82	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	1.5	<50	<500	<0.5	<0.5
	7/29/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	412.94	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	1.2	<50	<500	<0.5	<0.5
	2/4/09	416.96	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/22/09	427.59	<50	NA	<0.5	<0.5	<0.5	<0.5	48	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/24/09	424.86	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	1.3	<50	<500	<0.5	<0.5
	3/4/10	435.62	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/19/10	439.19	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/19/11	440.07	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/6/11	**444.66**	**<50**	**NA**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-6	11/14/01	430.25	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	5/7/02	437.12	<50	<67	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	9/11/02	437.10	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/1/02	435.36	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--	--
	3/14/03	440.67	<50	<50	<0.5	<0.5	<0.5	<1.0	<1.0	--	--	--	--	--	--	--	--	--
	6/25/03	441.05	<50	<50	<0.5	<0.5	<0.5	<1.0	<1.0	--	--	--	--	--	--	--	--	--
	9/16/03	438.36	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/22/03	441.54	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--

Table 2
Historical Groundwater Analytical Results
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-6 cont.	3/10/04	445.48	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	6/15/04	440.82	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	9/17/04	437.57	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/10/04	441.04	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	3/2/05	446.09	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	5/27/05	444.56	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	7/21/05	442.53	<50	NS	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	10/10/05	441.92	<50	NS	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	1/9/06	445.14	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	0.86	<50	<500	<0.5	<0.5
	4/6/06	447.13	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<50	<500	<0.5	<0.5
	7/28/06	440.68	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
	10/13/06	439.77	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	--	--
	1/4/07	442.10	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/16/07	439.73	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/16/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	431.08	<50	<50	<0.5	<0.5	<0.5	0.91	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/18/08	435.93	<50	<50	<0.5	<0.5	<0.5	0.91	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/22/09	425.42	<50	NS	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/24/09	425.87	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	3/4/10	438.11	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/19/20	439.48	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/19/11	440.13	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/6/11	**442.37**	**<50**	**NA**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-7A	3/13/06	445.85	6,200	1,800	140	21	200	560	6,900	<100	4400	<100	<100	6,300	<10,000	<100,000	<100	<100
	4/7/06	448.71	5,300	1,700	130	26	330	420	5,900	<100	7,500	<100	<100	6,600	<10,000	<100,000	<100	<100
	7/28/06	441.92	2,200	470	28	18	60	0.85	240	<25	4,700	<25	<25	240	--	--	--	--
	10/12/06	440.82	6,500	2,400	83	38	300	160	980	<17	4,700	<10	<17	1200	<1700	<17,000	--	--
***	11/21/06	NM	1,400	NA	25	17	65	<0.5	45	<10	1,400	<10	<10	42	<1,000	<10,000	<10	<10
	1/4/07	443.52	1,000	440	12	18	48	8.3	75	<5.0	1,100	<5.0	<5.0	73	<500	<5000	<5.0	<5.0
	4/16/07	441.27	520	470	17	5.6	2.6	0.88	140	<12	2,500	<12	<12	170	<1,200	<12,000	<12	<12
	7/16/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/18/08	437.16	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	439.02	83	NA	<0.5	0.81	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/19/10	440.54	680	NA	<0.5	10	4.9	4.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	441.72	580	310	<0.5	7.3	7.2	1.5	<5.0	<2.5	490	<2.5	<2.5	5.8	NA	NA	<2.5	<2.5
	4/11/11	**445.97**	**140**	**<50**	**<0.5**	**1.7**	**<0.5**	**<0.5**	**<5.0**	**<2.5**	**540**	**<2.5**	**<2.5**	**5.8**	**NA**	**NA**	**<2.5**	**<2.5**

Table 2
Historical Groundwater Analytical Results
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-7B	3/13/06	445.64	230	<50	1.8	4.7	<0.5	2.2	1,500	<50	7300	<50	<50	1,300	<5,000	<50,000	<50	<50
	4/7/06	448.54	81	<50	1.9	1.6	1.1	0.58	1,000	<50	9,200	<50	<50	930	<5,000	<50,000	<50	<50
	7/28/06	441.67	150	<50	<0.5	1.9	<0.5	<0.5	1,500	<50	16,000	<50	<50	1,900	--	--	--	--
	10/12/06	440.65	110	<50	<0.5	1.3	<0.5	<0.5	900	<17	15,000	<17	<17	860	<1700	<17,000	--	--
***	11/21/06	NM	61	NA	<0.5	0.76	<0.5	<0.5	740	<50	10,000	<50	<50	680	<5,000	<50,000	<50	<50
	1/4/07	443.21	91	<50	<0.5	2.1	<0.5	<0.5	200	<50	11,000	<50	<50	180	<5000	<50,000	<50	<50
	4/16/07	440.98	94	<50	<0.5	2.6	<0.5	<0.5	35	<50	10,000	<50	<50	<50	<5000	<50,000	<50	<50
	7/17/07	428.99	<50	<50	0.61	0.63	<0.5	<0.5	13	<17	4,000	<17	<17	<17	--	--	--	--
	10/29/07	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	431.55	420	<50	0.77	17	<0.5	0.97	45	<25	4000	<25	<25	49	<2500	<25000	<25	<25
	4/18/08	436.87	650	100	3.4	15	8.3	<0.5	150	<25	3800	<25	<25	140	<2500	<25000	<25	<25
	7/28/08	--	<50	<50	<0.5	0.56	<0.5	<0.5	17	<5.0	760	<5.0	<5.0	22	<500	<5000	<5.0	<5.0
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	418.74	620	NA	<0.5	23	<0.5	2.7	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/21/09	428.56	170	NA	2.1	5.8	<0.5	0.78	190	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/24/09	426.13	<50	NA	<0.5	1.8	<0.5	<0.5	210	<5.0	470	<5.0	<5.0	220	<500	<5000	<5.0	<5.0
	3/4/10	436.76	140	NA	<0.5	2.1	<0.5	<0.5	25	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/19/10	440.34	74	NA	<0.5	1.3	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	441.24	190	69	<0.5	4.1	<0.5	<0.5	<5.0	<25.0	4,400	<25.0	<25.0	<25.0	NA	NA	<25.0	<25.0
	4/11/11	**443.61**	**110**	**<50**	**<0.5**	**2.7**	**<0.5**	**<0.5**	**<5.0**	**<17**	**2,900**	**<17**	**<17**	**<17**	NA	NA	**<17**	**<17**
MW-7C	3/13/06	445.34	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.60	<50	<500	<0.5	<0.5
	4/7/06	448.21	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/28/06	441.24	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
	10/13/06	440.65	89	<50	<0.5	1.4	<0.5	<0.5	900	<17	12,000	<17	<17	820	<1700	<17,000	--	--
***	11/21/06	NM	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	24	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	1/4/07	442.86	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	24	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/16/07	440.66	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/17/07	428.69	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
	10/29/07	417.14	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	2/1/08	431.39	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/18/08	436.64	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	7/28/08	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<05	<0.5	<50	<500	<0.5	<0.5
	11/18/08	415.77	97	<50	<0.5	<0.5	<0.5	<0.5	<90	<1.0	<4.0	<1.0	<1.0	<1.0	<100	<1000	<1.0	<1.0
	2/4/09	417.50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/22/09	428.41	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/24/09	425.90	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	3/4/10	438.73	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/19/10	440.01	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	440.89	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/7/11	**445.51**	**<50**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-8A	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	67	<50	<0.5	2.6	<0.5	1.6	<5.0	<0.5	<2.0	<0.5	<0.5	4.9	<50	<500	<0.5	<0.5
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/7/11	**NC**	**<50**	**NA**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Table 2
Historical Groundwater Analytical Results
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-8B	7/28/08	--	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<05	2.5	<50	<500	<0.5	<0.5
	11/18/08	NC	<50	120	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	5.1	<50	<500	<0.5	<0.5
	2/4/09	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/22/09	NC	50	NA	<0.5	<0.5	<0.5	<0.5	1300	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/24/09	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	3/4/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/7/11	**NC**	**<50**	**NA**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
MW-9A	7/28/08	DRY	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	NC	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	74	<0.5	<0.5	1.1	<50	<500	<0.5	<0.5
	4/7/11	**NC**	**<50**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**<0.5**	**65**	**<0.5**	**<0.5**	**0.74**	**NA**	**NA**	**<0.5**	**<0.5**
MW-9B	7/29/08	--	<50	63	<0.5	<0.5	<0.5	<0.5	100	<10	2,800	<10	<10	160	<1000	<10,000	<10	<10
	11/18/08	NC	<50	1000	<0.5	<0.5	<0.5	<0.5	7.0	<0.5	4.6	<0.5	<0.5	7.5	<50	<500	<0.5	<0.5
	2/4/09	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/22/09	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	470	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/24/09	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	5.4	<0.5	<2.0	<0.5	<0.5	7.2	<50	<500	<0.5	<0.5
	3/4/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	NC	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	8.9	<0.5	<0.5	0.65	<50	<500	<0.5	<0.5
	4/7/11	**NC**	**<50**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**<0.5**	**22**	**<0.5**	**<0.5**	**1.2**	**NA**	**NA**	**<0.5**	**<0.5**
EX-1**	11/14/01	431.89	13,000	2,000	180	1,000	330	3,200	2,200	--	--	--	--	--	--	--	--	--
	5/7/02	437.72	7,700	560	320	<25	66	150	6,200	--	--	--	--	--	--	--	--	--
	9/11/02	NC	2,800	NA	32	<13	14	<13	2,500	--	--	--	--	--	--	--	--	--
	12/1/02	437.32	3,000	100	81	<0.5	44	<1.0	4,800	--	--	--	--	--	--	--	--	--
	3/14/03	442.28	750	50	<0.5	<0.5	7.7	13	1,200	--	--	--	--	--	--	--	--	--
	6/25/03	442.89	120	<50	3.2	3.7	4.2	7.6	260	--	--	--	--	--	--	--	--	--
	9/16/03	440.65	170	<50	0.5	1.5	<0.5	0.9	1,600	--	--	--	--	--	--	--	--	--
	3/10/04	447.31	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
	6/15/04	442.82	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
	9/17/04	439.39	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
	12/10/04	NC	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
	3/2/05	NC	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
	5/27/05	446.62	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
	7/21/05	443.75	<50	NS	<0.5	<0.5	<0.5	<0.5	610	--	--	--	--	--	--	--	--	--
	10/10/05	442.57	<50	NS	<0.5	<0.5	<0.5	<0.5	31	--	--	--	--	--	--	--	--	--
	1/9/06	447.25	580	55	40	25	45	43	4,200	<170	<1,700	<170	<170	5,200	<170,000	<17,000	<170	<170
EW-1	3/13/06	446.47	210	120	5.0	4.1	7.5	12	3,400	<50	<100	<50	<50	2,300	<5,000	<50,000	<50	<50
	4/7/06	449.46	1,900	190	66	170	110	380	7,900	<100	<1000	<100	<100	6,400	<10,000	<100,000	<100	<100
	7/27/06	441.60	280	100	7.4	5.5	12	28	8,400	<500	<5,000	<500	<500	12,000	--	--	--	--
	10/12/06	441.94	2,100	130	86	19	100	310	2,400	<50	1,400	<50	<50	2,800	<5,000	180,000	--	--

Table 2

Historical Groundwater Analytical Results

160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
EW-1 cont.l	1/4/07	444.00	1,600	150	56	27	110	240	5,000	<50	2,900	<50	<50	4,900	<5,000	<50,000	<50	<50
	4/13/07	441.76	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/16/07	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/18/08	437.62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/28/08	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	NC	4,400	NA	460	<25	380	<25	31,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	441.10	400	NA	4.4	6.6	1.8	4.4	590	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/20/11	441.87	570	190	21	6.4	14	57	3,500	<50	15,000	<50	<50	3,300	NA	NA	<50	<50
	4/8/11	**446.60**	**410**	**220**	**11**	**4.2**	**3.1**	**43**	**2,400**	**<50**	**8,200**	**<50**	**<50**	**3,300**	**NA**	**NA**	**<50**	**<50**
EW-2	3/13/06	446.81	<250	69	<2.5	<2.5	<2.5	<2.5	5,400	<100	<1,000	<100	<100	5,100	<10,000	<100,000	<100	<100
	4/7/06	449.79	470	160	15	2.5	24	13	2,000	<50	<500	<50	<50	1,800	<5,000	<50,000	<50	<50
	7/27/06	442.89	260	350	2.2	1.7	6.1	3.0	8,700	<500	<5,000	<500	<500	12,000	--	--	--	--
	10/12/06	444.51	110	<50	2.0	1.0	3.1	3.9	620	<12	<120	<12	<12	680	<1200	<12,000	--	--
	1/4/07	444.33	<500	<50	5.3	<5.0	16	7.1	4,500	<50	<500	<50	<50	4,200	<5000	<50,000	<50	<50
	4/13/07	442.06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/16/07	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/29/07	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/1/08	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/18/08	437.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7/28/08	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	NC	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	441.54	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/21/11	442.27	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	2.8	<0.5	<0.5	2.1	NA	NA	<0.5	<0.5
	4/11/11	**446.99**	**<50**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**<0.5**	**2.1**	**<0.5**	**<0.5**	**0.65**	NA	NA	**<0.5**	**<0.5**
EW-3	11/18/08	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/4/09	NC	<10,000	NA	<100	<100	<100	<100	420,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4/21/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/24/09	NC	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/4/10	NC	140,000	NA	240	900	320	28,000	340,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
	7/20/10	NC	23,000	NA	240	940	760	3,100	150,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1/21/11	NC	15,000	5,200	230	93	1,100	1,900	150,000	<2,500	72,000	<2,500	<2,500	150,000	NA	NA	<2,500	<2,500
	4/11/11	**NC**	**8,400**	**590**	**110**	**37**	**690**	**820**	**68,000**	**<2,500**	**67,000**	**<2,500**	**<2,500**	**79,000**	NA	NA	**<2,500**	**<2,500**
Exxon1	2/26/99	30	100,000		6,100	16,000	2,500	11,000	60,000	--	--	--	--	--	--	--	--	--
B1	2/2/01	30	650,000	13,000	6,300	10000.0	<2,500	12,000	290,000	--	--	--	--	--	--	--	--	--
B2	2/2/01	30	56	<0.5	<0.5	<0.5	<0.5	<0.5	47	--	--	--	--	--	--	--	--	--
B3	2/2/01	30	6,200	NA	<50	<50	<50	<50	3,800	--	--	--	--	--	--	--	--	--
B4	2/2/01	30	12,000	NA	<50	<50	<50	<50	6,000	--	--	--	--	--	--	--	--	--
B5	2/2/01	30	<25,000	960	<250	<250	<250	<250	16,000	--	--	--	--	--	--	--	--	--

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Table 2

Historical Groundwater Analytical Results

160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MB-1-A	11/10/01	28	21,000	4,300	970	<25	3,300	1200	NA	<2,500	<25,000	<2,500	<2,500	100,000	--	--	--	--
MB-1-B	11/10/01	50	470	210	7.8	0.97	31	48	NA	<25	<250	<25	<25	1,500	--	--	--	--
MB-1-C	11/10/01	70	990	NA	17	1.3	89	160	NA	<25	<250	<25	<25	1,200	--	--	--	--
MB-2-A	11/9/01	28	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
MB-2-B	11/10/01	50	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
MB-3-A	11/10/01	28	40,000	41,000	120	130	1,700	2,800	NA	<50	2,500	<50	<50	<4,500	--	--	--	--
MB-3-B	11/13/01	50	1,400	210	0.93	9.3	14	27	NA	<50	6,200	<50	<50	190	--	--	--	--
MB-3-C	11/13/01	70	930	260	1.7	3.8	33	100	NA	<100	16,000	<100	<100	330	--	--	--	--
DB-1-A	11/9/01	28	160	NA	<0.5	<0.5	<0.5	<0.5	NA	<1.7	<17	<1.7	<1.7	86	--	--	--	--
DB-2-A	11/10/01	28	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
DB-3-A	11/13/01	28	<50	51	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
DB-4-A	11/13/01	28	<50	57	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
DB-5-A	11/10/01	28	<50	910	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
B-1-A	11/9/01	28	<50	230	<0.5	<0.5	<0.5	<0.5	NA	<0.5	<5.0	<0.5	<0.5	28	--	--	--	--
B-2-A	11/9/01	28	25,000	6,200	900	<50	2,000	2,600	NA	<1,700	<17,000	<1,700	<1,700	80,000	--	--	--	--
B-3-A	11/9/01	28	42,000	14,000	530	140	2,400	7,800	NA	<500	<5,000	<500	<500	19,000	--	--	--	--
HP-1-A	11/13/01	28	<50	NA	<0.5	<0.5	<0.5	0.80	NA	<50	24	<50	<50	12	--	--	--	--
GP-1	1/10/07	28	270	--	<0.5	<0.5	2.6	0.85	61	--	--	--	--	--	--	--	--	--
GP-2	1/10/07	28	2,000	--	61	46	93	280	2,600	--	--	--	--	--	--	--	--	--
GP-3	1/10/07	28	11,000	--	38	27	1,100	980	37,000	--	--	--	--	--	--	--	--	--
GP-4	1/10/07	28	20,000	--	820	260	1,400	3,200	35,000	--	--	--	--	--	--	--	--	--
GP-5	1/10/07	28	4,100	--	64	6.6	13	550	780	--	--	--	--	--	--	--	--	--
GP-6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
GP-6A	1/11/07	28	11,000	--	360	150	1,500	480	6,100	--	--	--	--	--	--	--	--	--
GP-7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
GP-8	1/10/07	28	61,000	--	2,800	490	2,600	4,400	190,000	--	--	--	--	--	--	--	--	--
GP-9	1/10/07	28	100,000	--	5,600	3,400	3,500	24,000	260,000	--	--	--	--	--	--	--	--	--
GP-10	1/10/07	28	44,000	--	2,400	590	3,600	3,300	92,000	--	--	--	--	--	--	--	--	--
GP-11	1/11/07	28	550	--	1.4	1.3	2.1	36	110	--	--	--	--	--	--	--	--	--
GP-12	1/11/07	28	15,000	--	68	20	1,800	94	6,600	--	--	--	--	--	--	--	--	--
GP-13	1/11/07	28	88,000	--	5,100	<50	5,500	7,400	87,000	--	--	--	--	--	--	--	--	--
GP-14	1/11/07	28	210,000	--	11,000	26,000	4,600	21,000	1,500,000	--	--	--	--	--	--	--	--	--
GP-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
GP-16	1/11/07	28	160	--	5.2	3.2	18	7.5	210	--	--	--	--	--	--	--	--	--
GP-17	1/11/07	28	460	--	7.7	4.8	8.0	7.4	790	--	--	--	--	--	--	--	--	--
GP-18	1/11/07	28	35,000	--	250	72	2,800	380	13,000	--	--	--	--	--	--	--	--	--
GP-19	1/11/07	28	430	--	8.9	1.6	24	31	430	--	--	--	--	--	--	--	--	--
GP-21	7/9/08	52	<50	--	<0.5	<0.5	0.73	3.3	9.2	<0.5	4.5	<0.5	<0.5	7.9	--	--	--	--
GP-22	7/8/08	47	<50	--	<0.5	<0.5	<0.5	0.55	8.3	<0.5	31	<0.5	<0.5	8.7	--	--	--	--
GP-23	7/7/08	50	220	--	7.1	9.1	7.0	30	61	<2.5	<10	<2.5	<2.5	76	--	--	--	--
GP-24	7/7/08	48	800	--	4.3	0.89	39	180	1,100	<50	<200	<50	<50	1300	--	--	--	--
GP-25	7/8/08	50	210	--	4.9	18	7.2	19	63	<2.5	<10	<2.5	<2.5	69	--	--	--	--
GP-26	7/8/08	48	<50	--	1.6	<0.5	2.6	5.1	<50	<0.5	2.2	<0.5	<0.5	24	--	--	--	--

Table 2

Historical Groundwater Analytical Results

160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)							Lead Scavengers (µg/L)	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA

Notes:

Samples analyzed for TPHg and TPHd by EPA Method 8015Cm, BTEX by EPA Method 8021B, MTBE by EPA Method 8021B and/or 8260B, and the fuel oxygenates DIPE, ETBE, TAME, EDB, 1,2-DCA, ethanol, methanol, and TBA by EPA Method 8260B.

µg/L = micrograms per liter

-- = Not Analyzed

NA = Not Analyzed

NM = Not Monitored

NS = Not Sampled

MTBE = methyl tertiary butyl ether

TAME - tert-Amyl Methyl Ether

TBA = tert-Butanol

DIPE =Di-isoprpopyl Ether

ETBE = Ethyl tert-Butyl Ether

EDB = 1,2-Dibromoether

1,2-DCA = 1,2-Dichloroethane

* = Well MW-1 renamed MW-1A, well MW-2 renamed MW-2A, Well MW-3 renamed MW-3A in February 2006

** = Well destroyed in February 2006

*** = Anomalous data observed in MW-7C from October 12, 2006 sample. Therfore, wells MW-7A, MW-7B, and MW-7C were resampled on November 21, 2006.

No samples were collected from Borings GP-20 and GP-27

Table 3
Remedial Groundwater Analytical Results, Petroleum Consituents
160 Holmes St, Livermore, California

Sample ID	Date Collected	Monitoring Event	Total Petroleum Hydrocarbons as		Aromatic Volatile Organic Compounds					Oxygenated Volatile Organic Compounds					Lead Scavengers	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	MTBE	TAME	TBA	DIPE	ETBE	1,2-DCA	EDB
Analytical Method:			8015B	8015B	8021B	8021B	8021B	8021B	8021B	8260B	8260/B	8260B	8260B	8260B	8260B	8260B
Units:			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Groundwater ESLs (residential):			100	100	1.0	40	30	20	20	5.0	NL	12	NL	NL	0.5	0.05
MW-1A	4/8/11	BL	200	180	2.0	1.9	<0.5	4.4	1,300	2,300	<120	24,000	<120	<120	<120	<120
	4/18/11	E1	140	130	0.56	<0.5	<0.5	4.2	1,500	1,200	<50	11,000	<50	<50	<0.5	<50
	5/9/11	E2	<50	<50	<0.5	<0.5	<0.5	<0.5	880	1,000	<50	12,000	<50	<50	<50	<50
	6/1/11	E3	<50	52	<0.5	<0.5	<0.5	<0.5	350	480	<50	12,000	<50	<50	<50	<50
	6/15/11	BW1	<50	70	<0.5	<0.5	<0.5	<0.5	310	330	<100	9,000	<100	<100	<100	<100
	6/30/11	BW2	<50	54	<0.5	<0.5	<0.5	<0.5	150	170	<50	6,200	<50	<50	<50	<50
MW-1B	4/8/11	BL	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
	4/18/11	E1	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
	5/9/11	E2	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
	6/1/11	E3	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
	6/15/11	BW1	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
	6/30/11	BW2	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
MW-2A	4/8/11	BL	<50	<50	<0.5	0.77	<0.5	6.2	<5.0	3.3	<0.5	15	<0.5	<0.5	<0.5	<0.5
	4/18/11	E1	<50	<50	<0.5	<0.5	<0.5	2.6	<5.0	2.7	24	24	<0.5	<0.5	<0.5	<0.5
	5/9/11	E2	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.7	<0.5	26	<0.5	<0.5	<0.5	<0.5
	6/1/11	E3	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.8	<0.5	13	<0.5	<0.5	<0.5	<0.5
	6/15/11	BW1	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.8	<0.5	19	<0.5	<0.5	<0.5	<0.5
	6/30/11	BW2	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.0	<0.5	13	<0.5	<0.5	<0.5	<0.5
EW-1	4/8/11	Bl	410	220	11	4.2	3.1	43	2,400	3,300	<50	8,200	<50	<50	<50	<50
	4/18/11	E1	200	130	<0.5	1.7	1.1	3.0	4,400	3,600	<50	14,000	<50	<50	<50	<50
	5/9/11	E2	62	<50	1.2	1.4	<0.5	<0.5	520	390	<25	4,800	<25	<25	<25	<25
	6/1/11	E3	83	<50	1.3	2.1	<0.5	0.6	180	240	<100	9,600	<100	<100	<100	<100
	6/15/11	BW1	60	<50	<0.5	1.8	<0.5	<0.5	97	100	<100	6,300	<100	<100	<100	<100
	6/30/11	BW2	74	<50	<0.5	2.0	<0.5	<0.5	200	200	<50	5,700	<50	<50	<50	<50
EW-2	4/11/11	BL	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.65	<0.5	2.1	<0.5	<0.5	<0.5	<0.5
	4/18/11	E1	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.7	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
	5/9/11	E2	<50	<50	<0.5	<0.5	<0.5	<0.5	15	12	<0.5	2.8	<0.5	<0.5	<0.5	<0.5
	6/2/11	E3	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	6.2	<0.5	12	<0.5	<0.5	<0.5	<0.5
	6/15/11	BW1	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.3	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
	6/30/11	BW2	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.4	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5
EW-3	4/11/11	BL	8,400	590	110	37	690	820	68,000	79,000	<2,500	67,000	<2,500	<2,500	<2,500	<2,500
	4/18/11	E1	7,300	1,300	81	100	350	870	85,000	72,000	<1,700	50,000	<1,700	<1,700	<1,700	<1,700
	5/9/11	E2	5,400	2,200	56	<50	160	350	79,000	62,000	<1,000	40,000	<1,000	<1,000	<1,000	<1,000
	6/2/11	E3	4,800	3,700	53	<25	170	300	50,000	76,000	<1,000	43,000	<1,000	<1,000	<1,000	<1,000
	6/15/11	BW1	8,200	2,200	66	<50	270	360	93,000	85,000	<2,500	47,000	<2,500	<2,500	<2,500	<2,500
	6/30/11	BW2	8,000	1,900	64	<50	260	260	100,000	100,000	<2,500	51,000	<2,500	<2,500	<2,500	<2,500

Table 3
Remedial Groundwater Analytical Results, Petroleum Consituents
160 Holmes St, Livermore, California

Sample ID	Date Collected	Monitoring Event	Total Petroleum Hydrocarbons as		Aromatic Volatile Organic Compounds					Oxygenated Volatile Organic Compounds					Lead Scavengers	
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	MTBE	TAME	TBA	DIPE	ETBE	1,2-DCA	EDB
		Analytical Method:	8015B	8015B	8021B	8021B	8021B	8021B	8021B	8260B	8260/B	8260B	8260B	8260B	8260B	8260B
		Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		Groundwater ESLs (residential):	100	100	1.0	40	30	20	20	5.0	NL	12	NL	NL	0.5	0.05
MW-7A	4/11/11	BL	140	<50	<0.5	1.7	<0.5	<0.5	<5.0	5.8	<2.5	540	<2.5	<2.5	<2.5	<2.5
	4/18/11	E1	91	90	<0.5	0.94	<0.5	<0.5	8.5	5.8	400	400	<2.5	<2.5	<2.5	<2.5
	5/9/11	E2	<50	69	<0.5	<0.5	<0.5	<0.5	<5.0	5.9	<1.7	350	<1.7	<1.7	<1.7	<1.7
	6/1/11	E3	58	77	<0.5	0.76	0.79	0.97	5.2	5.5	<1.7	250	<1.7	<1.7	<1.7	<1.7
	6/15/11	BW1	<50	80	<0.5	<0.5	<0.5	<0.5	<5.0	3.8	<1.0	190	<1.0	<1.0	<1.0	<1.0
	6/30/11	BW2	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.5	<0.5	81	<0.5	<0.5	<0.5	<0.5
MW-7B	4/11/11	BL	110	<50	<0.5	2.7	<0.5	<0.5	<5.0	<17	<17	2,900	<17	<17	<17	<17
	4/18/11	E1	160	<50	<0.5	4.3	<0.5	0.6	<5.0	<17	<17	3,300	<17	<17	<17	<17
	5/9/11	E2	79	<50	<0.5	2.0	<0.5	<0.5	<5.0	<17	<17	3,000	<17	<17	<17	<17
	6/1/11	E3	72	<50	<0.5	1.9	<0.5	<0.5	<5.0	<50	<50	3,100	<50	<50	<50	<50
	6/15/11	BW1	100	<50	<0.5	2.2	<0.5	<0.5	<5.0	<50	<50	2,700	<50	<50	<50	<50
	6/30/11	BW2	100	<50	<0.5	2.4	<0.5	<0.5	<5.0	<25	<25	2,900	<25	<25	<25	<25

Notes:
ESLs = Environmental Screening Levels for residential groundwater where groundwater is a current or potential drinking water resource as developed cy the California Regional Water Quality Control Board, San Francisco Bay Region, November 2007 (rev. May 2008)
µg/L = micrograms per liter
NL = Not listed
BL = Base line monitoring event
E1 = Fist remedial monitoring event
E2 = Second remedial monitoring event
E3 = Third remedial monitoring event
BW1 = First bi-weekly monitoring event
BW2 = Second bi-weekly monitoring event
The symbol "<" (less than) indicates that the analyte was not detected at a concentration above the aboratory detection limit specified.
MTBE = methyl tertiary butyl ether
TAME - tert-Amyl Methyl Ether
TBA = tert-Butanol
DIPE =Di-isoprpopyl Ether
ETBE = Ethyl tert-Butyl Ether
1,2-DCA = 1,2-Dichloroethane
EDB = 1,2-Dibromoether

Table 4
Remedial Groundwater Analytical Results, Other Consituents
160 Holmes St, Livermore, California

Sample ID	Date Collected	Monitoring Event	Metals		Hexachrome	Inorganic Anions	Total and Speciated Alkalinity as Calcium Carbonate				Alkali Metals			Dissolved Oxygen	Ferrous Iron	Carbon Dioxide	Methane	Total Dissolved Solids
			Arsenic	Chromium		Sulfate	Total	Carbonate	Biocarbonate	Hydroxide	Iron	Maganese	Sodium					
		Analytical Method:	E200.8	E200.8	E218.6	E300.1	2320B	2320B	2320B	2320B	E200.7	E200.7	E200.7	4500OG	3500-Fe B4c	RSK174/175	RSK174/175	SM2540C
		Units:	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L
MW-1A	4/8/11	BL	6.1	11	<0.2	73	541	<1.0	541	<1.0	5,000	4,000	45,000	1.19 @ 19.7C	1,300	370,000	13	634
	4/18/11	E1	150	160	<10	680	8,810	6,540	2,270	<1.0	71,000	3,100	4,200,000	26.44 @ 20.7C	<50	1,700	1.1	11,100
	5/9/11	E2	88	36	5.6	220	1,844	234	1,610	<1.0	15,000	590	1,200,000	24.70 @ 6.78C	68	880,000	3.2	2,490
	6/1/11	E3	70	6.4	1.3	190	1,370	<1.0	1,370	<1.0	2,500	480	1,000,000	9.37 @ 10.6C	190	790,000	2.5	2,470
	6/15/11	BW1	40	5.1	0.66	140	1,180	<1.0	11,180	<1.0	3,500	970	880,000	8.12 @22.4C	<50	490,000	1.3	1,550
	6/30/11	BW2	22	4.2	0.54	150	1,090	<1.0	1,090	<1.0	3,900	700	650,000	5.66 @26.0C	840	550,000	1.6	1,970
MW-1B	4/8/11	BL	0.56	58	2.5	53	225	<1.0	225	<1.0	1,400	42	43,000	7.42 @ 19.8C	<50	110,000	<0.4	361
	4/18/11	E1	0.59	6.6	2.4	46	217	<1.0	217	<1.0	1,700	44	47,000	7.26 @ 20.0C	<50	210,000	<0.4	330
	5/9/11	E2	0.99	6.7	2.4	43	218	<1.0	218	<1.0	2,300	560	46,000	7.49 @ 12.7C	<50	370,000	<0.4	374
	6/1/11	E3	<0.5	2.5	1.4	48	216	<1.0	216	<1.0	250	<20	44,000	8.21 @ 9.31C	<50	200,000	<0.4	386
	6/15/11	BW1	<0.5	5.1	1.8	49	220	<1.0	220	<1.0	200	<20	45,000	6.87 @17.8C	<50	130,000	<0.4	354
	6/30/11	BW2	<0.5	4.4	2.1	46	220	<1.0	220	<1.0	1,000	31	50,000	6.51 @25.0C	<50	130,000	<0.4	386
MW-2A	4/8/11	BL	1.8	5.3	<0.2	640	333	<1.0	333	<1.0	2,300	14,000	49,000	1.62 @ 17.8C	430	330,000	<0.4	1,250
	4/18/11	E1	2.7	18	<0.2	330	349	<1.0	349	<1.0	8,200	10,000	47,000	1.48 @19.8C	99	51,000	0.54	836
	5/9/11	E2	4.9	7.9	<0.2	140	376	<1.0	376	<1.0	4,300	2,800	59,000	3.57 @ 6.93C	<50	450,000	1.6	594
	6/1/11	E3	3.4	28	<0.2	99	382	<1.0	382	<1.0	12,000	4,700	41,000	3.65 @ 12.6C	83	370,000	0.91	574
	6/15/11	BW1	1.4	1.8	<0.2	99	366	<1.0	366	<1.0	1,100	3,900	39,000	2.53 @22.2C	<50	250,000	1.2	681
	6/30/11	BW2	2.7	15.0	<0.2	500	356	<1.0	356	<1.0	7,200	5,200	44,000	2.02 @24.7C	90	240,000	2.5	561
EW-1	4/8/11	Bl	2.6	5.8	<0.2	61	437	<1.0	437	<1.0	2,700	3,300	46,000	1.58 @ 19.0C	62	290,000	32	559
	4/18/11	E1	32	30	6.1	120	1,250	243	1,010	<1.0	12,000	2,600	550,000	16.08 @20.2C	<50	630,000	9.2	1,660
	5/9/11	E2	1.2	8.1	<50	50	367	<1.0	367	<1.0	3,200	7,000	44,000	3.39 @ 12.1 C	120	570,000	30	549
	6/1/11	E3	5.7	4.2	<0.2	50	352	<1.0	352	<1.0	2,400	2,800	63,000	6.50 @ 12.5 C	180	320,000	16	512
	6/15/11	BW1	6.6	32.0	<0.2	50	315	<1.0	315	<1.0	15,000	4,700	56,000	3.43 @19.8C	360	200,000	34	550
	6/30/11	BW2	7.4	42.0	<0.2	42	299	<1.0	299	<1.0	20,000	4,500	52,000	1.96 @16.5C	300	260,000	30	462
EW-2	4/11/11	BL	2.0	18	0.65	51	250	<1.0	250	<1.0	5,900	1,700	47,000	4.35 @ 7.72C	<50	140,000	<0.4	575
	4/18/11	E1	3.0	24	0.51	42	256	<1.0	256	<1.0	9,500	1,400	47,000	4.36 @ 19.6C	<50	230,000	<0.4	433
	5/9/11	E2	<0.5	2.7	0.70	46	251	<1.0	251	<1.0	330	<20	50,000	5.08 @ 10.3 C	<50	290,000	<0.4	469
	6/2/11	E3	16	18	14	75	470	357	<1.0	113	2,100	1,300	250,000	28.86 @ 15.2C	<50	240,000	<0.4	694
	6/15/11	BW1	9.3	6.5	5.4	57	553	189	364	<1.0	910	2,200	120,000	19.20 @20.8C	<50	240,000	<0.4	589
	6/30/11	BW2	8.5	19	2.3	53	477	62.4	415	<1.0	6,500	3,200	100,000	9.93 @24.8C	55	360,000	<0.4	637
EW-3	4/11/11	BL	23	1.9	<0.2	52	747	<1.0	747	<1.0	12,000	4,400	82,000	1.96 @ 8.21C	10,000	520,000	290	934
	4/18/11	E1	23	30	0.35	100	1,140	<1.0	1,140	<1.0	15,000	2,500	320,000	13.26 @ 19.9C	1,100	300,000	86	1,350
	5/9/11	E2	43	6.3	7.0	220	2,672	422	2,250	<1.0	1,700	540	990,000	20.22 @ 13.6C	240	760,000	22	3,290
	6/2/11	E3	310	190	160	640	9,620	6,700	<1.0	2,910	2,800	100	840,000	27.78 @ 15.1C	<50	160	8.6	10,900
	6/15/11	BW1	230	150	180	440	4,980	2,230	<1.0	2,750	7,200	370	2,400,000	22.11 @21.5C	<50	50	8.3	5,770
	6/30/11	BW2	49	77	110	280	2,800	721	<1.0	2,080	4,700	1,500	1,600,000	27.54 @24.9C	<50	330	16	3,440

Table 4

Remedial Groundwater Analytical Results, Other Consituents

160 Holmes St, Livermore, California

Sample ID	Date Collected	Monitoring Event	Metals		Hexachrome	Inorganic Anions	Total and Speciated Alkalinity as Calcium Carbonate				Alkali Metals			Dissolved Oxygen	Ferrous Iron	Carbon Dioxide	Methane	Total Dissolved Solids
			Arsenic	Chromium		Sulfate	Total	Carbonate	Biocarbonate	Hydroxide	Iron	Maganese	Sodium					
		Analytical Method:	E200.8	E200.8	E218.6	E300.1	2320B	2320B	2320B	2320B	E200.7	E200.7	E200.7	4500OG	3500-Fe B4c	RSK174/175	RSK174/175	SM2540C
		Units:	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L
MW-7A	4/11/11	BL	4.9	69	<0.2	83	367	<1.0	367	<1.0	27,000	5,100	57,000	1.96 @ 9.58C	66	340,000	6.7	781
	4/18/11	E1	4.2	48	<0.2	81	385	<1.0	385	<1.0	21,000	4,800	61,000	1.38 @20.2C	<50	330,000	5.8	555
	5/9/11	E2	1.4	<0.5	<0.2	76	372	<1.0	372	<1.0	680	3,000	47,000	2.68 @ 12.0 C	<50	540,000	6.6	574
	6/1/11	E3	3.0	35	<0.2	89	369	<1.0	369	<1.0	14,000	3,900	57,000	4.24 @ 9.16C	54	340,000	5.8	567
	6/15/11	BW1	0.97	2.3	<0.2	86	353	<1.0	353	<1.0	830	3,800	54,000	1.78 @23.2C	67	210,000	6.1	645
	6/30/11	BW2	1.3	0.79	<0.2	87	320	<1.0	320	<1.0	730	2,900	49,000	1.89 @24.9C	55	230,000	5.0	575
MW-7B	4/11/11	BL	1.5	1.9	<0.2	34	386	<1.0	386	<1.0	1,300	3,100	45,000	2.55 @ 7.72C	400	350,000	0.68	636
	4/18/11	E1	1.7	0.7	<0.2	29	415	<1.0	415	<1.0	1,000	3,600	47,000	1.96 @19.8C	560	330,000	12	543
	5/9/11	E2	2.2	17	<0.2	33	382	<1.0	382	<1.0	6,700	4,200	52,000	2.36 @ 16.3 C	470	350,000	13	478
	6/1/11	E3	1.4	0.90	<0.2	39	369	<1.0	369	<1.0	720	2,700	43,000	5.13 @ 11.1C	440	320,000	14	428
	6/15/11	BW1	1.4	<0.5	<0.2	40	374	<1.0	374	<1.0	600	2,800	44,000	2.23 @22.8C	460	260,000	20	564
	6/30/11	BW2	3.7	47	<0.2	36	372	<1.0	372	<1.0	21,000	4,500	52,000	2.32 @25.2C	370	270,000	23	493

Notes:
mg/L = millograms per Liter
µg/L = micrograms per liter
BL = Base line monitoring event
E1 = Fist remedial monitoring event
E2 = Second remedial monitoring event
E3 = Third remedial monitoring event
BW1 = First bi-weekly monitoring event
BW2 = Second bi-weekly monitoring event
The symbol "<" (less than) indicates that the analyte was not detected at a concentration above the aboratory detection limit specified.

APPENDIX A
Allterra's Site Investigation Field Protocol

APPENDIX A
Allterra's Site Investigation Field Protocol

Geoprobe Boring Installations and Sampling: A truck-mounted Geoprobe rig hydraulically pushes a 4-foot steel core barrel (usually 2.5-inch diameter) equipped with an acetate liner into undisturbed soil. Four-foot core soil samples are collected in the acetate liner. The core barrel is extracted from the boring and the liner is removed. Soil samples from the necessary depth is cut from the acetate liner and capped with Teflon® sheets and plastic caps. The sample is labeled and stored on ice in an ice chest. The remainder of the acetate liner is then cut open and examined for lithology according to the Unified Soil Classification System. Job location, boring location, boring name, date, soil types, observations and activities are recorded on the boring logs. A portion of each sample is field screened using portable photo-ionization detector (PID). The core barrel is decontaminated between each boring. If groundwater samples are not necessary, the hole is filled with a cement grout and bentonite mixture from the bottom of the boring to surface grade.

Once the borings are advanced to the necessary depth, water samples are collected using a clean stainless steel bailer. If the boring does not stay open, a temporary well casing and screen is lowered into the boring to aid in water sample collection. Recovered water is transferred into labeled sample containers placed on ice. After the water samples are collected, the temporary well casing and screen are removed from the boring and is filled with a cement grout and bentonite mixture from the bottom of the boring to surface grade.

Soil Gas Sampling: Using a Geoprobe drill rig, a two-inch diameter vapor probe will be driven to depths of five and fifteen feet bgs by advancing two separate boreholes. A Post Run Tubing System (PRT) will be used allowing to the collection of soil vapor samples at the desired sampling depth without the time-consuming complications associated with rod leakage and contamination. O-ring connections will enable the PRT system to deliver a vacuum-tight seal that prevented sample contamination from up hole, and will assure that the sample is taken from the desired depth at the bottom of the hole. The sample is drawn through the point holder, through the adapter, and into the sample tubing. The tubing is initially purged using a designated purge canister; subsequently, the purge canister is closed and the vapors are collected in the sample canister. The internal surfaces of the stainless steel canisters will be passivated using the "Summa" process and are therefore referred to as Summa Canisters.

URS uses 5-micron (or a 7-micron, depending) particulate filters to prevent particulate matter from entering the canisters and to increase canister fill times. A vacuum gage will be used to measure the initial vacuum of the canister before sampling and the final vacuum upon completion. The gages typically have ranges from 0 to 30 inches of mercury (in. Hg). The canisters vacuums are used to draw the sample, which is referred to as passive sampling (instead of using pumps). After confirming an initial pressure of -30 in. Hg, the canister is left open until the pressure increases to approximately -5 in. Hg. The filled canister is sealed with a brass cap, placed into the original shipping container, and shipped to a state-certified analytical laboratory, using Chain-of-Custody procedures.

Monitoring Well Installation/Construction and Soil Sampling: A truck-mounted, hollow-stem auger drill rig is used to drill boreholes for monitoring wells. The borehole diameter is a minimum of 4-inches larger than the outside diameter of the casing when installing well screen. The hollow-stem auger provides minimal interruption of drilling while permitting soil sampling at desired intervals. An Allterra geologist or engineer will continuously log each borehole during drilling and will constantly check drill cuttings for indications of both the first recognizable occurrence of groundwater and volatile organic compounds using a portable photoionization detector (PID).

During drilling, soil samples are collected in 2-inch by 6-inch brass sleeves. Three brass tubes are placed in an 18-inch long split-barrel (spoon) sampler of the appropriate inside-diameter. The split-barrel sampler is driven its entire length using a 140-pound hammer, or until refusal. The sampler is extracted from the borehole and the bottom brass sleeve is capped with Teflon® sheets and plastic caps, labeled, and stored on ice. The two other brass sleeves are used for soil lithology classification (according to the Unified Soil Classification System) and field screening using a PID.

All soil borings not converted into monitoring wells are backfilled with a mixture of neat cement with 5% bentonite powder to surface grade.

Monitoring wells are constructed with blank and factory-perforated Schedule 40 polyvinyl chloride (PVC). The perforated interval consists of slotted casing, generally with 0.02-inch wide by 1.5-inch long slots, with 42 slots per foot. A threaded PVC cap is secured to the bottom of the casing. After setting the casing inside the hollow-stem auger, sand or gravel filter material is poured into the annular space to fill from boring bottom to generally 1 to 2 feet above the screened interval. A 1- to 2-foot thick bentonite seal is set above this sand/gravel pack. Neat cement containing approximately 5% bentonite is then tremmied into the annular space from the top of the bentonite plug to approximately 0.5 feet below ground surface. A traffic-rated well box is installed around each wellhead.

Monitoring Well Development: After installation, the wells are thoroughly developed to remove residual drilling materials from the wellbore and fine material from the filter pack. Typically, 10 well volumes are removed from the well and field parameters, such as pH, temperature, and conductivity, are recorded between each well volume. Well development techniques used may include surging, swabbing, bailing, and/or pumping All development water is collected either in drums or tanks for temporary storage, and properly disposed of pending laboratory analytical results. Following development, the well is typically allowed to stand undisturbed for a minimum of 48 hours before its first sampling.

Well Monitoring and Sample Collection: A Teflon bailer or submersible pump was used to purge a minimum of three well volumes of groundwater from each well. After each well volume is purged, field parameters such as pH, temperature, and conductivity are recorded. Wells are purged until field parameters have stabilized or a maximum of 10 well volumes of groundwater have been removed. If the well yield is low and the well was dewatered, the well is allowed to recharge to 80% of its original volume prior to sample collection. Field parameter measurements and pertinent qualitative observations, such as groundwater color and odor, are recorded in Groundwater Sampling Field Logs. Groundwater samples are collected in appropriate bottles and stored on ice for delivery, under chain-of-custody documentation, to a state-certified laboratory for analysis.

Sample Identification and Chain-Of-Custody Procedures: Each sample container submitted for analysis is labeled to identify the job number, date, time of sample collection, a sample number unique to the sample, any in-field measurements made, sampling methodology, name(s) of on-site personnel, and any other pertinent field observations also recorded on the field excavation or boring log. During shipment, the person with custody or the samples will relinquish them to the next person by signing the chain-of-custody form(s) and noting the date and time.

Equipment Decontamination: All drilling, sampling, well construction, and well development equipment is cleaned in a solution of laboratory grade detergent and distilled water or steam cleaned before use at each sampling point.

Field Personnel: During groundwater sampling activities, sampling personnel will wear pertinent attire to minimize risks to health and safety. Field personnel will also use a pair of clean, powderless, surgical gloves for each successive sampling point. Used surgical gloves will be placed into waste drums for future disposal.

Waste Disposal: Soil generated during drilling will be stored in DOT-approved 55-gallon waste drums pending proper disposal. Water generated during well development, purging, and sampling activities will be placed into DOT-approved 55-gallon waste drums pending disposal and/or permitted discharge to the sanitary sewer.

APPENDIX B
Regenesis Product Application Procedures

REGENESIS

RegenOx™ CHEMICAL OXIDATION REDEFINED

RegenOx™ *In Situ* Chemical Oxidation Application Instructions

Using Direct-Push Injection (Step-by-Step Procedures)

RegenOx™ is the new generation of chemical oxidation. RegenOx™ is a proprietary (patent-applied-for) *in situ* chemical oxidation process using a solid oxidant complex (sodium percarbonate/catalytic formulation) and an activator complex (a composition of ferrous salt embedded in a micro-scale catalyst gel). RegenOx™ with its catalytic system has very high activity, capable of treating a very broad range of soil and groundwater contaminants including both petroleum hydrocarbons and chlorinated solvents.

Instructions

1) Prior to the installation of RegenOx™, any surface or overhead impediments should be identified as well as the location of all underground structures. Underground structures include but are not limited to utility lines; tanks; distribution piping; sewers; drains; and landscape irrigation systems. The planned installation locations should be adjusted to account for all impediments and obstacles. These considerations should be part of the SSHP or HASP.

2) Pre-mark the installation locations, noting any points that may have different vertical application requirements or total depth.

3) Set up the direct push unit over each point and follow the manufacturer standard operating procedures (SOP) for the direct push equipment. Care should be taken to assure that probe holes remain in the vertical.

4) For most applications, Regenesis suggests using 1.5-inch O.D./0.625-inch I.D drive rods. However, some applications may require the use of 2.125-inch O.D./1.5-inch I.D. or larger drive rods.

5) Advance drive rods through the surface pavement, as necessary, following SOP.

6) Push the drive rod assembly with an expendable tip to the desired maximum depth. Regenesis suggests pre-counting the number of drive rods needed to reach depth prior to starting injection activities.

7) After the drive rods have been pushed to the desired depth, the rod assembly should be withdrawn three to six inches. Then the expendable tip can be dropped from the drive rods, following SOP. If an injection tool was used instead of an expendable tip, the application of material can take place without any preliminary withdrawal of the rods.

8) In some cases, introduction of a large column of air prior to RegenOx™ application may be problematic because the air can block water flow to the treatment area. This is particularly the case in deep injections (>50 ft) with large diameter rods (>1.5-inch O.D.). To prevent the injection of air into the aquifer during RegenOx™ application, as well as to prevent problems associated with heaving sands, fill the drive rods with water, or the RegenOx™ mixture prior dropping the expendable tip or exposing the injection tool.

9) The RegenOx™ percent of the oxidizer in solution should range between 3% to 5%. Although solutions up to 8% may be used, this will likely increase the difficulty of injection due to reactivity. Solutions with greater than 8% oxidizer in solution will result in excess reaction and flocculation prior to injection and are not typically recommended

   Measure the appropriate quantity of RegenOx™ Oxidizer for one to four vertical foot of injection into a 55 gallon drum or mixing tank. The volume of water per injection location can be calculated from the following formula:

$$\frac{\text{RegenOx Oxidizer lbs/foot}}{(8.34\text{ lbs/gal water})(\%\ \mathrm{R}egenOx\_Oxidizer\text{ solids})}\left[1-(\%\ \mathrm{R}egenOx\_Oxidizer\text{ solids})\right]$$

   Tighter formations (clays and silts), and even some fine sand formations will likely require higher oxidant percentages since less volume can be injected per location. The following are guides to various RegenOx™ mixing ratios based on the above equation.

   - to make a roughly 3% oxidant solution for every 10 lbs of oxidant and 10 lbs of activator (20 lbs total RegenOx™), use 38 gallons of water.

   - to make a roughly 4% oxidant solution for every 10 lbs of oxidant and 10 lbs of activator (20 lbs total RegenOx™), use 28 gallons of water.

   - to make a roughly 5% oxidant solution for every 10 lbs of oxidant and 10 lbs of activator (20 lbs total RegenOx™), use 22 gallons of water.

10) Pour the pre-measured quantity of RegenOx™ Oxidizer into the pre-measured volume of water to make the desired target % oxidant in solution. NOTE: always pour the Oxidizer into water, do not pour water into the Oxidizer. Mix the water and oxidant with a power drill and paint stirrer or other mechanical mixing device to ensure that the Oxidizer has dissolved in the water.

11) Pour the applicable quantity of the pre-mixed RegenOx™ Activator into the oxidant:water solution. Mix the Oxidant and Activator using a power drill paint stirrer or other mechanical mixing device for at least 5 minutes until a homogenous mixture is formed. After mixing the RegenOx™ mixture should be injected into the subsurface as soon as possible.

12) Do not mix more RegenOx™ material than will be used over roughly 1 to 4 feet of injection so as to minimize potential above ground reaction/flocculation prior to injection.

    Transfer the contents of the mixing tank to the pump using gravity feed or appropriate transfer pump. (See Section 9.2: Pump Selection) For some types of pumps, it may be desirable to perform a volume check prior to injecting RegenOx™

13) Connect the delivery hose to the pump outlet and the delivery sub-assembly. Circulate RegenOx™ though the hose and the delivery sub-assembly to displace air in the hose. NOTE: an appropriately sized pressure gauge should be placed between the pump outlet and the delivery sub-assembly in order to monitor application pump pressure and detect changes in aquifer backpressures during application.

14) Connect the sub-assembly to the drive rod. After confirming that all of the connections are secure, pump the RegenOx™ through the delivery system to displace the water/fluid in the rods.

15) Slowly withdraw the drive rods. Commonly RegenOx™ injection progress at 1-foot intervals. However, continuous injection while slowly withdrawing single lengths of drive rod (3 or 4 feet) is an acceptable option. The pre-determined volume of RegenOx™ should be pumped into the aquifer across the desired treatment interval.

16) Remove one section of the drive rod. The drive rod may contain some residual RegenOx™. Place the RegenOx™-filled rod in a clean, empty bucket and allow the RegenOx to drain. Eventually, the RegenOx™ should be returned to the RegenOx™ pump hopper for reuse.

17) Monitor for any indications of aquifer refusal. This is typically indicated by a spike in pressure as indicated or (in the case of shallow applications) RegenOx™ "surfacing" around the injection rods or previously installed injection points. At times backpressure caused by reaction off-gassing will impede the pumps delivery volume. This can be corrected by bleeding the pressure off using a pressure relief/bypass valve (placed inline between the pump discharge and the delivery sub-assembly) and then resume pumping. If aquifer acceptance appears to be low, as indicated by high back pressure, allow sufficient time for the aquifer to equilibrate prior to removing the drive rod.

18) Repeat steps 13 through 23 until treatment of the entire contaminated vertical zone has been achieved. It is recommended that the procedure extend to the top of the capillary fringe/smear zone, or to the top of the targeted treatment interval.

19) Install an appropriate seal, such as bentonite, above the RegenOx™ material through the entire vadose zone. Prior to emplacing the borehole seal, we recommend placing clean sand in the hole to the top of the RegenOx™ treatment zone (especially important in holes that stay open). Bentonite chips or granular bentonite should be placed immediately above the treatment zone, followed by a cement/bentonite grout to roughly 0.5 feet below ground surface. Quick-set concrete should then be used as a surface seal.

20) Remove and clean the drive rods as necessary.

21) Finish the borehole at the surface as appropriate (concrete or asphalt cap, as needed). We recommend a quick set concrete to provide a good surface seal with minimal set up time.

22) A proper borehole and surface seal assures that the RegenOx™ remains properly placed and prevents contaminant migration from the subsurface. Each borehole should be sealed immediately following RegenOx™ application to minimize RegenOx™ surfacing during the injection process. If RegenOx™ continues to "surface" up the direct push borehole, an appropriately sized (oversized) disposable drive tip or wood plug/stake can be used to plug the hole until the aquifer pressures equilibrates and the RegenOx™ stops surfacing. If wells are used for RegenOx™ injection the RegenOx™ injection wells and all nearby groundwater monitoring wells should be tightly capped to reduce potential for surfacing through nearby wells.

23) Periodically compare the pre- and post-injection volumes of RegenOx™ in the holding tank or pump hopper using the pre-marked volume levels. Volume level may not be present on all tanks or pump hoppers. In this case, volume level markings can be temporarily added using known amounts of water and a carpenter's grease pencil (Kiel crayon).

24) Move to the next probe point, repeating steps 8 through 29. We recommend that the next RegenOx™ injection point be as far a distance as possible within the treatment zone from the previous RegenOx™ injection point. This will further minimize RegenOx™ surfacing and short circuiting up an adjacent borehole. When possible, due to the high volumes of liquid being injected, working from the outside of the injection area towards the center will limit expansion of the plume.

Pump Selection

Regenesis has evaluated a number of pumps and many are capable of delivering RegenOx™ to the subsurface at a sufficient pressure and volumetric rate. However, even though a number of the evaluated pumps may be capable of delivering the RegenOx™ to the subsurface based on adequate pressures and delivery rates, each pump has its own set of practical issues that may make it more or less difficult to manage in a field setting.

In general, Regenesis strongly recommends using a pump with a pressure rating of 200 pounds per square inch (psi) in sandy soil settings, and 800 psi in silt, clay or weathered bedrock settings. Any pump under consideration should have a minimum delivery rate of 5 gallons per minute (gpm). A lower gpm rated pump may be used; however, they are not recommended due to the amount of time required to inject the volume of liquids typically associated with a RegenOx™ injection (i.e. 1,000 lbs of RegenOx™ [500 lbs Oxidant/500 lbs Activator] require roughly 1,100 gallons of water to make a 5% Oxidant solution).

Quite often diaphragm pumps are used for the delivery of chemical oxidants. Generally, these pumps operate pressures from 50-150 psi. Some of these pumps do not have the pressure head necessary to overcome the back pressure encountered in silt and clay lenses. In these cases the chemical oxidant thus ends up being delivered to the surrounding sands (the path of least resistance) and is not delivered to soil with residual adsorbed contamination. The use of a positive displacement pump such as a piston pump or a progressing cavity pump is may be superior because these pumps have the pressure necessary to overcome the resistance of low permeability soils. NOTE: be aware that application at pressures that are too high may over-consolidate the soil and minimize the direct contact of the oxidant. The key is to inject at a rate and pressure that maximizes the radius of influence without causing preferential flow. This can be achieved by injecting at the minimum pressure necessary to overcome the particular pressures associated with your site soil conditions.

Whether direct injection or wells are used, it is best to start by injecting RegenOx™ outside the contaminated area and spiral laterally inwards toward the source. Similarly, RegenOx™ should be applied starting vertically at the bottom elevation of contamination, through the layer of contamination, and a couple of feet above the layer of contamination. The reagents can be pushed out from the well bore with some water.

Pump Cleaning

For best results, flush all moving parts and hoses with clean water at the end of the day; flush the injection system with a mixture of water and biodegradable cleaner such as Simple Green.

For more information or technical assistance please call Regenesis at 949-366-8000

REGENESIS

February 26, 2007

RegenOx and ORC *Advanced* Simultaneous Application

RegenOx[TM] is a two part chemical oxidant capable of treating a broad range of soil and groundwater contaminants. RegenOx was designed as an easily handled and applied high-contaminant-concentration mass reduction technology. RegenOx is an aggressive fast acting oxidative technology that can be coupled with a less aggressive slow release technology like Oxygen Release Compound Advanced (ORC *Advanced*) without negative effects on either products contaminant destructive ability or the aquifer/soil geochemistry.

ORC *Advanced*[TM] is a state-of-the-art innovative product designed to stimulate aerobic bioremediation through controlled release of oxygen within the subsurface. It offers unparalleled, maximum oxygen release for periods up to 12 months on a single injection and is specifically designed to minimize oxygen waste while maximizing contaminant remediation.

Preliminary Aquifer Volume Testing

Prior to application of the RegenOx + ORC *Advanced* material, it is critical that a clear water injection be performed at the site. The injection a non-reactive (clear water) material at a volume that is approximately 25% greater than the anticipated application volume of RegenOx will provide good evidence of the aquifers capacity to accept the designed volume of RegenOx + ORC-*Advanced*.

RegenOx Solution Mixing Calculation

RegenOx s a two part product, the RegenOx Part A is an oxidant and the Part B is an activator. Depending on the relative aquifer capacity (effective pore volume) of the target zone soil matrix a RegenOx solution should be applied as a solution ranging from 3-5% by weight. The volume of water required to make a 3-5% RegenOx solution can be calculated using the formula provided below (a detailed discussion on RegenOx Mixing Instructions is attached).

Volume of water (gallons/vertical foot of injection):

$$\frac{\text{RegenOx Oxidizer lbs/foot}}{(8.34\ \text{lbs/gal water})(\%\ \text{R}egenOx\_Oxidizer\ \text{solids})}\left[1-(\%\ \text{R}egenOx\_Oxidizer\ \text{solids})\right]$$

Quick Reference Solution Estimates

- Approximate 3% oxidant solution: 10 lbs of Part A oxidant mixed with 39 gallons of water.
- Approximate 4% oxidant solution: 10 lbs of Part A oxidant mixed with 29 gallons of water.
- Approximate 5% oxidant solution: 10 lbs of Part A oxidant mixed with 23 gallons of water.

ORC *Advanced* Solutions Mixing Calculation

ORC *Advanced* can be mixed in to a slurry solution ranging from 15-35% by weight with water. This slurry is well documented in the literature. For a detailed discussion of these techniques please see the ORC/ORC *Advanced* mixing instructions available on the Regenesis website (www.regenesis.com).

NOTE: for this coupled technology application we strongly recommend that ORC-A be applied as an amendment to the site specific design volume of RegenOx material. This will ensure that the more reactive RegenOx material is applied in a stable and format that will facilitate optimal oxidative contaminant destruction.

RegenOx + ORC-A Solution Mixing & Application

A solution ranging from 3-5% RegenOx solution can be easily mixed directly together with the recommended quantity of ORC *Advanced* and injected simultaneously as described below:

1. Prepare the site specific designed RegenOx Part A solution (3-5% solution).

2. Open the 5-gallon bucket and remove the pre-measured bag of ORC *Advanced* (each bag contains 25 lbs of ORC *Advanced*).

2. Measure and pour the ORC Advanced powder into the previously prepared RegenOx solution.

3. Use an appropriate mixing device to thoroughly mix the ORC *Advanced* into the RegenOx solution. A hand-held drill with a “jiffy mixer” or a stucco mixer on it may be used in conjunction with a small paddle to scrape the bottom and sides of the container. Standard environmental slurry mixers may also be used, following the equipment instructions for operation.

4. Transfer the contents of the mixing tank to the pump hopper using a gravity drain or a sump pump.

5. For some types of pumps (e.g. piston pumps), it may be desirable to perform a volume check prior to injecting RegenOx/ORC *Advanced*. Determining the volume displaced per pump stroke can be accomplished in two easy steps.

   a) Determine the number of pump strokes needed to deliver 3 gallons of RegenOx/ORC *Advanced* (use a graduated bucket for this)

   b) Divide the resulting 3 gallons by the results from the first step to determine the number of gallons of RegenOx/ORC *Advanced* delivered by each pump stroke.

6. Connect the delivery hose to the pump outlet and the delivery sub-assembly. Circulate RegenOx/ORC *Advanced* through the hose and the delivery sub-assembly to displace air in the hose.

7. Connect the sub-assembly to the drive rod. After confirming that all of the connections are secure, pump the RegenOx/ORC *Advanced* through the delivery system to displace the water/fluid in the rods.

8. Slowly withdraw the drive rods. Commonly RegenOx/ORC *Advanced* injection progress at 1-foot intervals. However, continuous injection while slowly withdrawing single lengths of drive rod (3 or 4 feet) is an acceptable option. The pre-determined volume of RegenOx/ORC *Advanced* should be pumped into the aquifer across the desired treatment interval.

9. Remove one section of the drive rod. The drive rod may contain some residual RegenOx/ORC *Advanced* solution. Place the RegenOx/ORC *Advanced*-filled rod in a clean, empty bucket and allow the RegenOx/ORC *Advanced* to drain. Eventually, the RegenOx/ORC *Advanced* should be returned to the pump hopper for reuse.

10. Observe any indications of aquifer refusal. This is typically indicated by a high-pitched squeal in the pump's hydraulic system or (in the case of shallow applications) RegenOx/ORC *Advanced* "surfacing" around the injection rods or previously installed injection points. At times backpressure caused by gassing will impede pump movement. This can be corrected by bleeding the pressure off using a pressure relief/bypass valve (placed inline between the pump discharge and the delivery sub-assembly) and then resume pumping. If aquifer acceptance appears to be low, allow enough time for the aquifer to equilibrate prior to removing the drive rod.

11. Repeat steps 1 through 11 until treatment of the entire contaminated vertical zone has been achieved. It is recommended that the procedure extend to the top of the capillary fringe/smear zone, or to the top of the targeted treatment interval.

12. Install an appropriate seal, such as bentonite, above the RegenOx/ORC *Advanced* material through the entire vadose zone. Prior to emplacing the borehole seal, we recommend placing clean sand in the hole to the top of the RegenOx/ORC *Advanced* treatment zone (especially important in holes that stay open). Bentonite chips or granular bentonite should be placed immediately above the treatment zone, followed by a cement/bentonite grout to roughly 0.5 feet below ground surface. Quick-set concrete should then be used as a surface seal.

13. Remove and clean the drive rods as necessary.

14. Finish the borehole at the surface as appropriate (concrete or asphalt cap, if necessary). We recommend a quick set concrete to provide a good surface seal with minimal set up time.

15. A proper borehole and surface seal assures that the RegenOx/ORC *Advanced* remains properly placed and prevents contaminant migration from the surface. Each borehole should be sealed immediately following RegenOx/ORC *Advanced* application to minimize RegenOx/ORC *Advanced* surfacing during the injection process. If RegenOx/ORC *Advanced* continues to "surface" up the direct push borehole, an appropriately sized (oversized) disposable drive tip or wood plug/stake can be used to plug the hole until the aquifer equilibrates and the RegenOx/ORC *Advanced* stops surfacing. If wells are used for RegenOx/ORC *Advanced* injection the injection wells and all nearby groundwater monitoring wells should be tightly capped to reduce potential for surfacing through nearby wells.

16. Periodically compare the pre- and post-injection volumes of RegenOx/ORC *Advanced* in the pump hopper using pre-marked volume levels. Volume level indicators are not on all pump hoppers. In

this case, volume level markings can be temporarily added using known amounts of water and a carpenter's grease pencil (Kiel crayon). We suggest marking the water levels in 3-gallon increments.

17. Move to the next probe point, repeating steps 1 through 17. We recommend that the next RegenOx/ORC *Advanced* injection point be as far a distance as possible within the treatment zone from the previous RegenOx/ORC *Advanced* injection point. This will further minimize RegenOx/ORC *Advanced* surfacing and short circuiting up an adjacent borehole. When possible, due to the high volumes of liquid being injected, working from the outside of the injection area towards the center will limit expansion of the plume.

Pump Information

Regenesis has evaluated a number of pumps that are capable of delivering RegenOx/ORC *Advanced* to the subsurface at a sufficient pressure and volumetric rate. Although a number of pumps may be capable of delivering the RegenOx/ORC *Advanced* to the subsurface at adequate pressures and volume, each pump has a set of practical issues that make it difficult to manage in a field setting. In general, Regenesis strongly recommends using a pump with a minimum pressure rating of 200 pounds per square inch (psi) in sandy formations or 800 psi in silt, clay or weathered bedrock formations, and a minimum delivery rate of 5 gallons per minute (gpm). A lower gpm rated pump can be used; however, they are not recommended due to the amount of time required to inject the volume of liquids typically associated with a RegenOx/ORC *Advanced* injection.

Pump Cleaning

For best results, use a hot water pressure washer (150 - 170 °F or 66 - 77 °C) to clean equipment and rods periodically throughout the day. Internal pump mechanisms and hoses can be easily cleaned by circulating hot water and a biodegradable cleaner such as Simple Green through the pump and delivery hose. Further cleaning and decontamination (if necessary due to subsurface conditions) should be performed according to the equipment supplier's standard procedures and local regulatory requirements.

Personal Protective Equipment

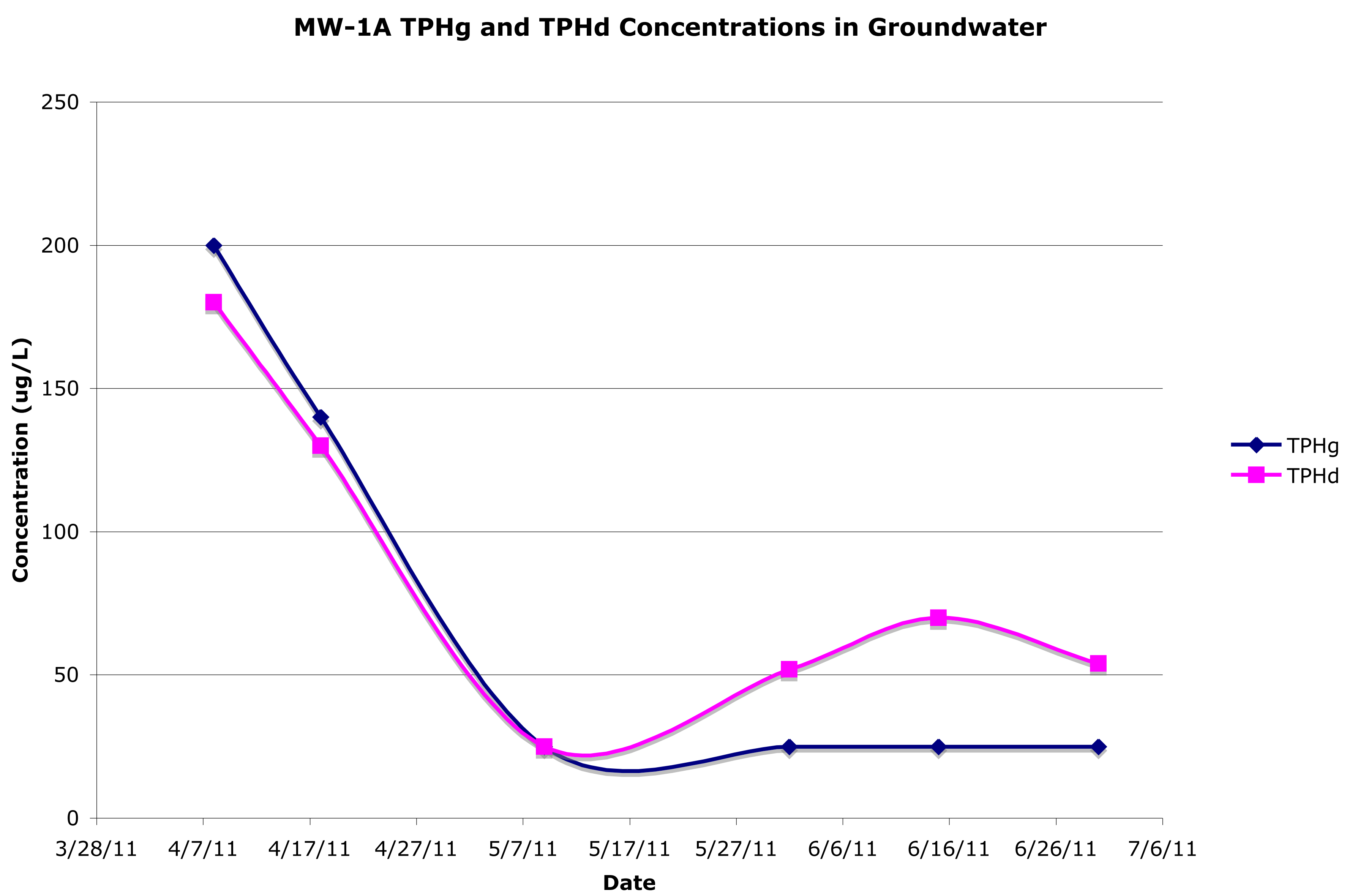
Personnel working with or in areas of potential contact with RegenOx/ORC *Advanced* should be required at a minimum to be fitted with modified Level D personal protective equipment:

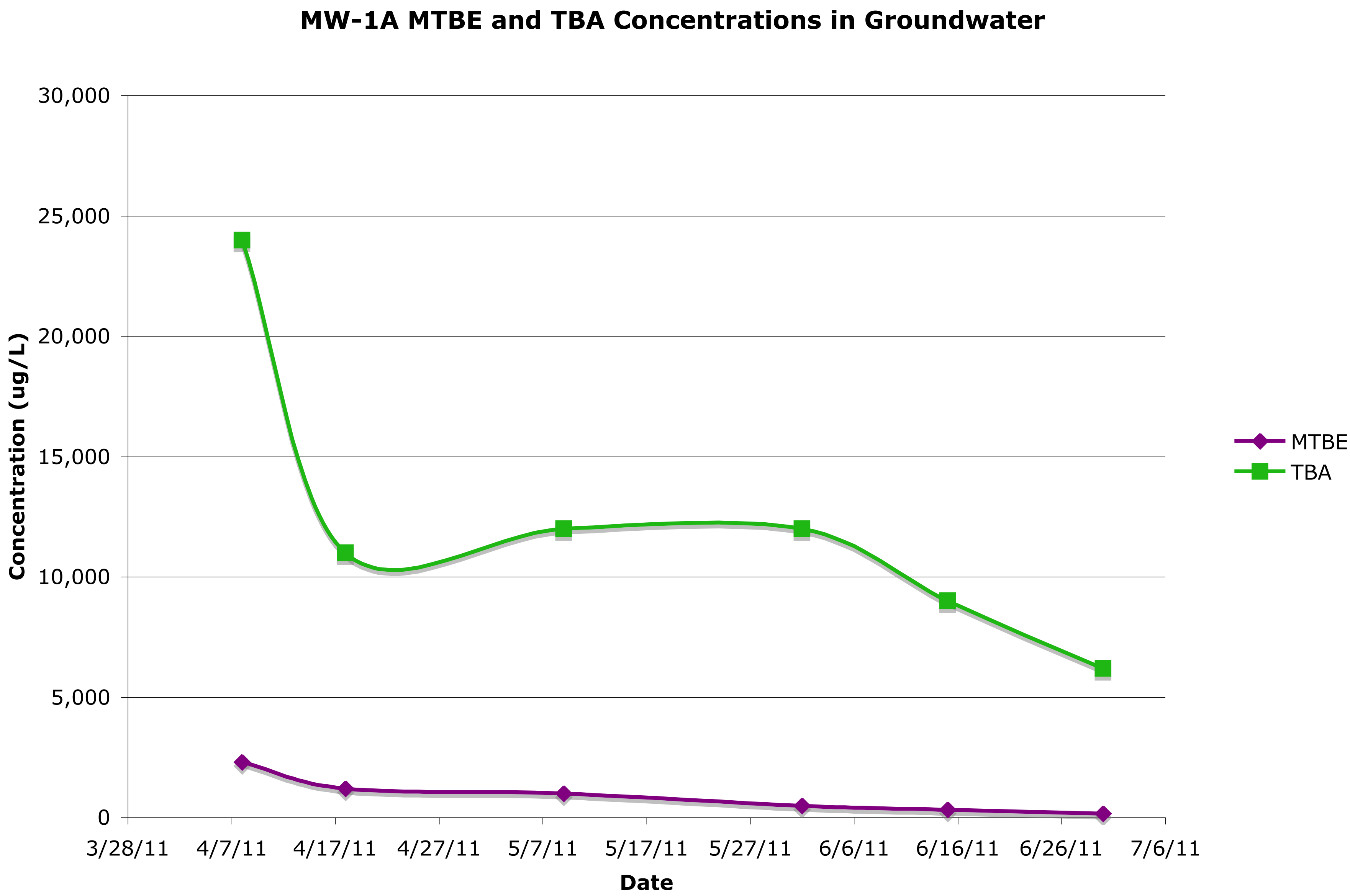
- Eye protection – Wear well sealed goggles or a face shield (face shield recommended for full face protection)
- Head – Hard hat when required
- Respiratory – Use dust respirator approved by NIOSH/MSA
- Hands – Wear neoprene gloves
- Feet – Wear steel toe shoes with chemical resistant soles or neoprene boots
- Clothing – Wear long sleeve shirts and long pant legs. Consider using a Tyvek® body suit, Carhartt® coverall or splash gear

Typical Installation Equipment

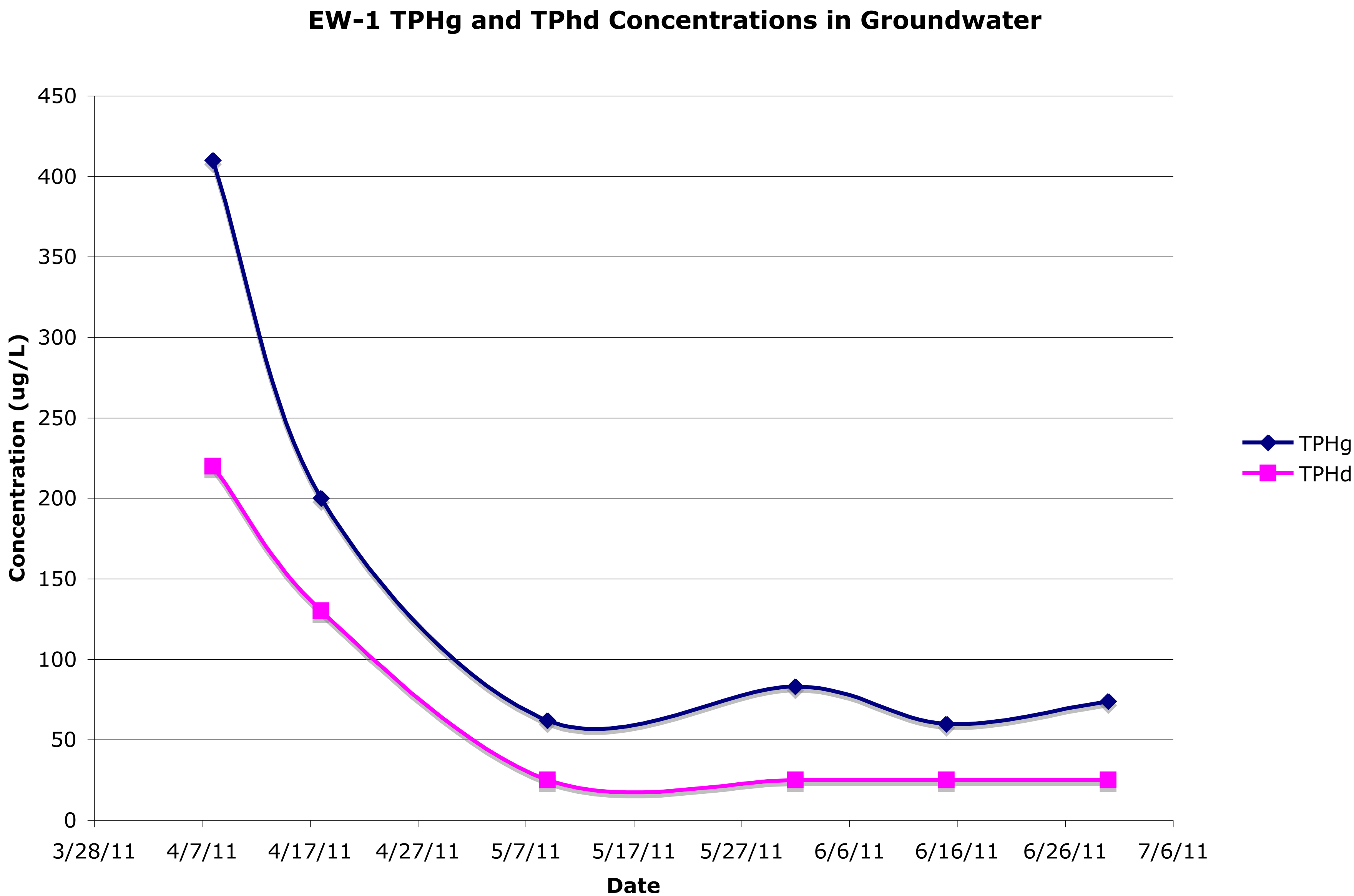
- Direct push rig
- Drive Rods (typically 1 ½-inch O.D.) & Injection Tooling with fluid deliver sub-assembly
- Injection Pump rated for 5 gpm @ 200 psi for sandy formations and 800 psi for silt and clay formations (Geoprobe DP-800, Yamada, Moyno, Rupe Models 9-1500 and 9-1600, Wilden, etc.)
- Injection hosing and a pressure relief valve with a bypass
- Clear hosing between mixing tank/drum and pump
- Pressure gauges
- Power drill paint stirrer (3-inch diameter or smaller propeller tip)
- Plastic bucket lid puller tool/opener tool
- 5-amp sump pump (such as Little Giant) and hose
- Three to four 55-gallon drums or similarly sized mixing tanks for RegenOx and ORC *Advanced* mixing
- Sand, bentonite chips, granular bentonite, cement, hydraulic cement, and quick-set concrete for closing and sealing temporary injection holes
- Wood plugs or similar for temporarily sealing injection holes prior to grout sealing
- Access to water
- Access to electricity

APPENDIX C
Time Trend Plots – Petroleum Constituents in Groundwater

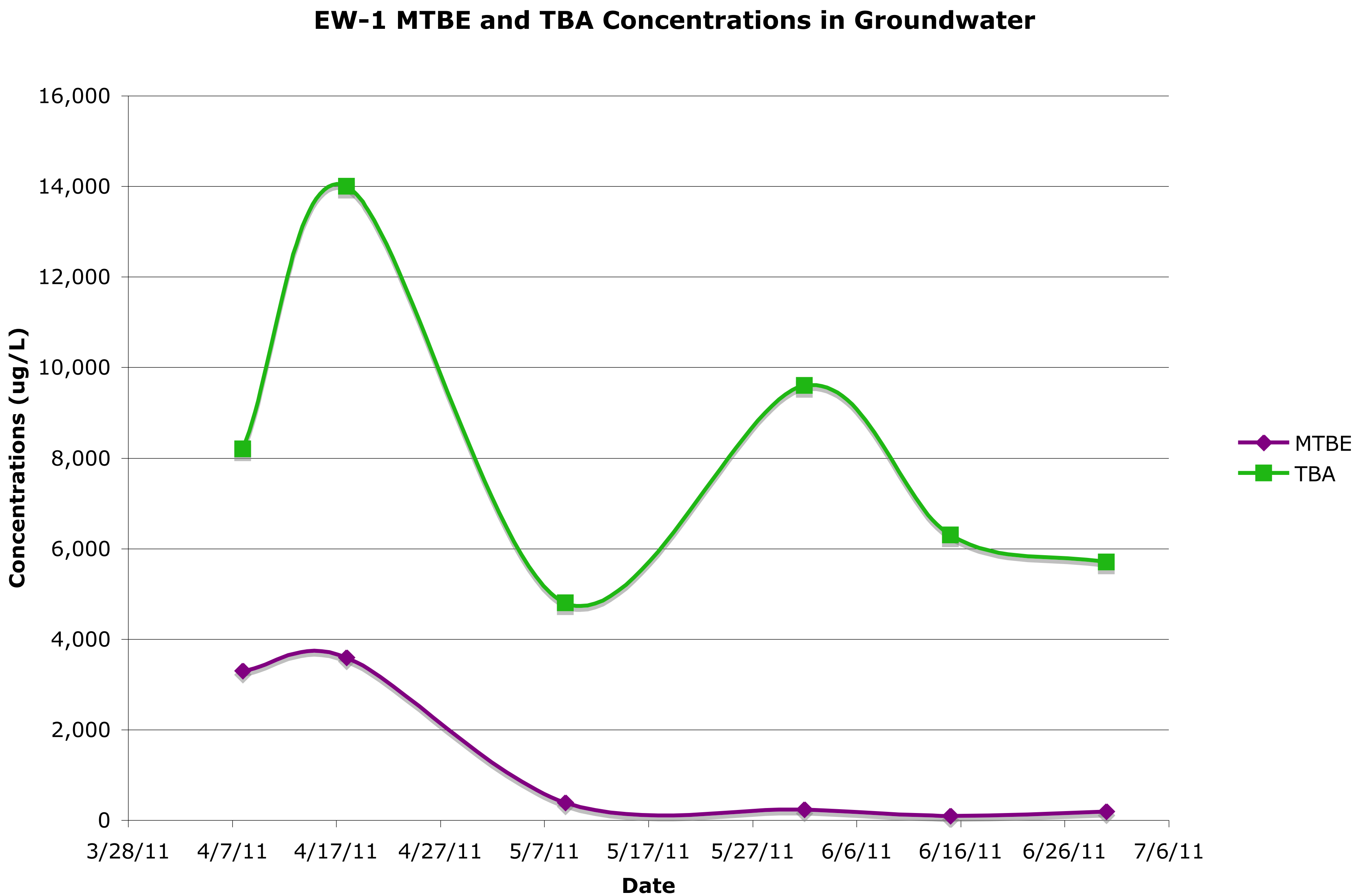

MW-1A TPHg and TPHd Concentrations in Groundwater
250
200
150
100
50
0
Concentration (ug/L)
3/28/11
4/7/11
4/17/11
4/27/11
5/7/11
5/17/11
5/27/11
6/6/11
6/16/11
6/26/11
7/6/11
Date
TPHg
TPHd

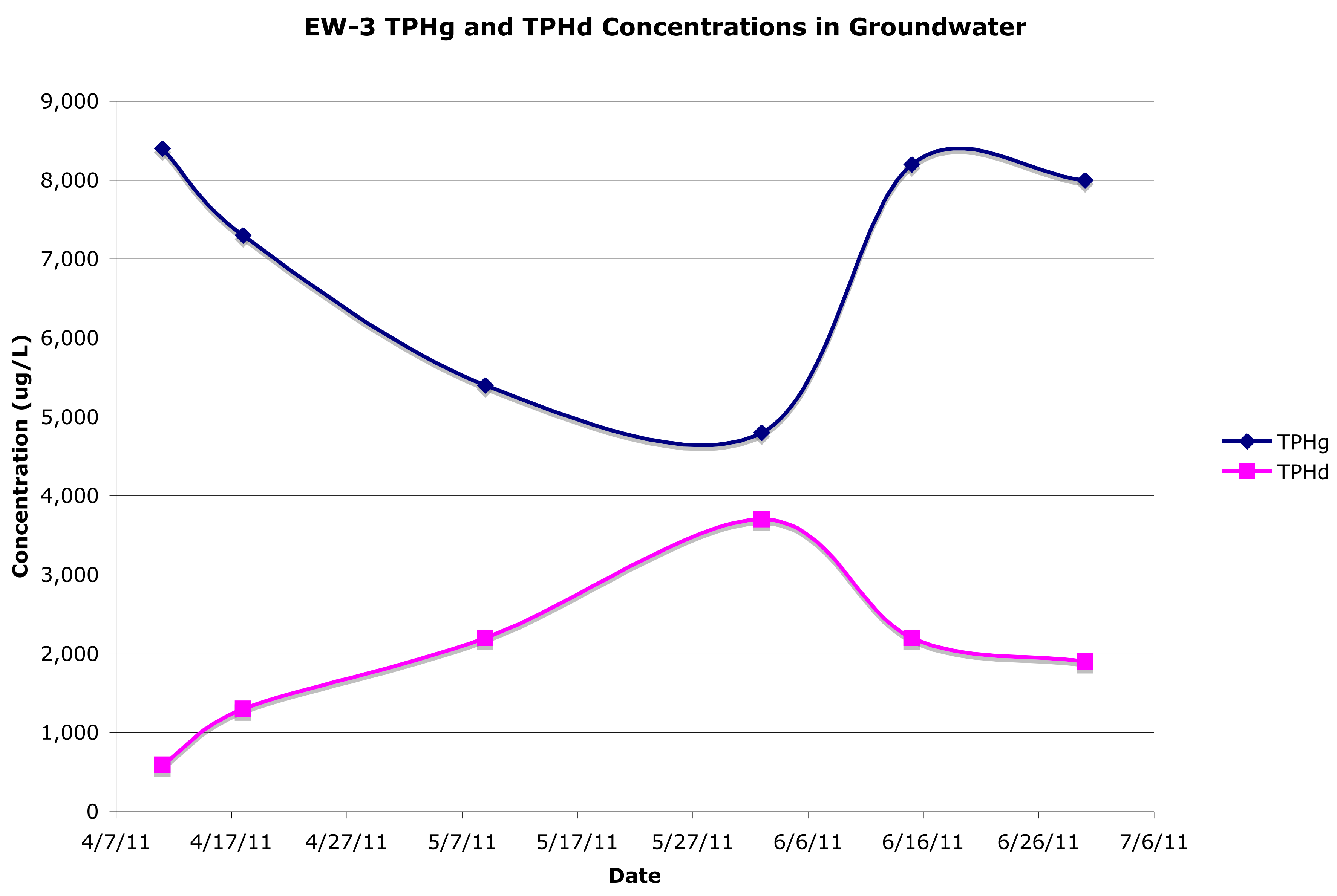


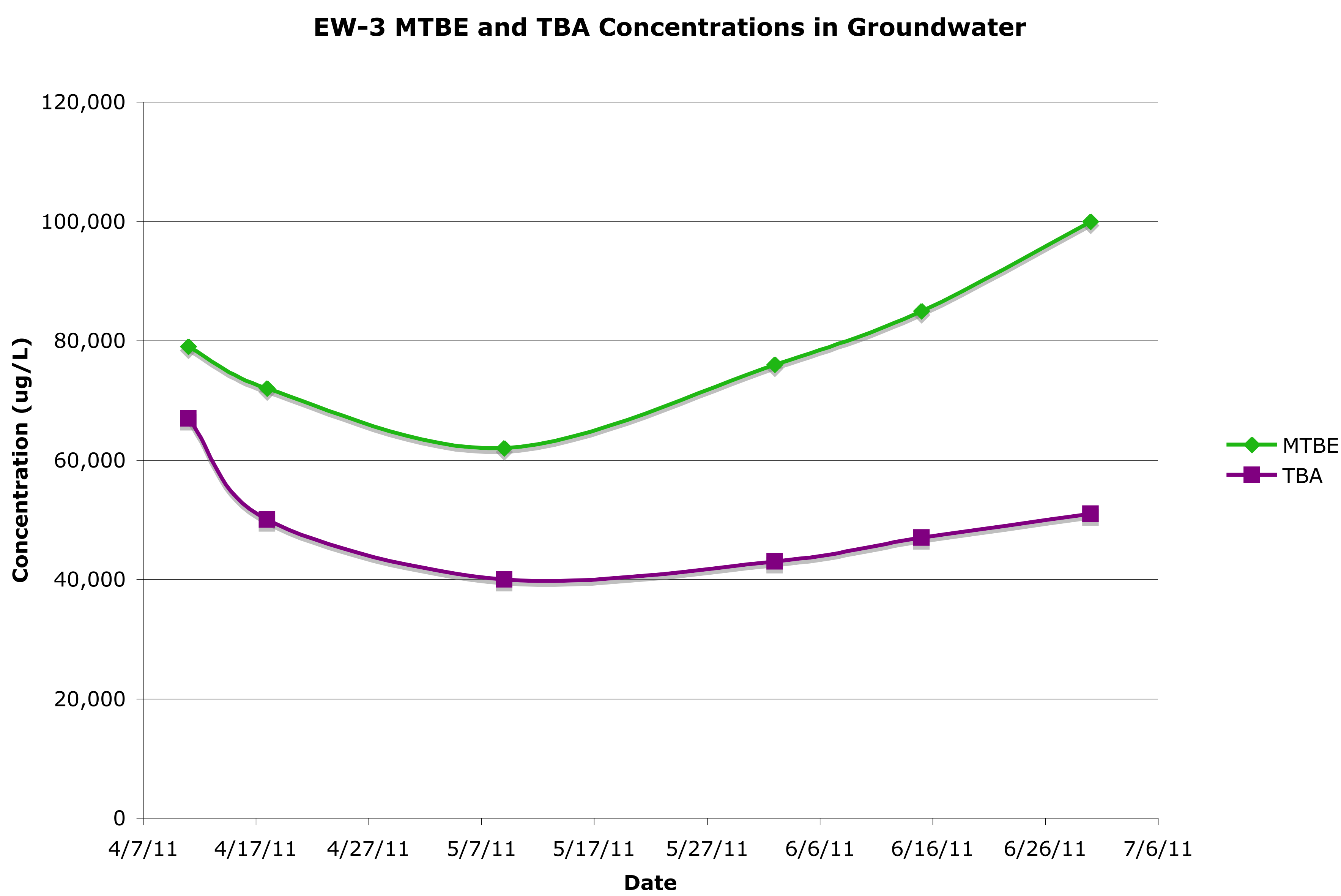
MW-1A MTBE and TBA Concentrations in Groundwater
30,000
25,000
20,000
15,000
10,000
5,000
0
Concentration (ug/L)
3/28/11
4/7/11
4/17/11
4/27/11
5/7/11
5/17/11
5/27/11
6/6/11
6/16/11
6/26/11
7/6/11
Date
MTBE
TBA



EW-1 TPHg and TPhd Concentrations in Groundwater
Concentration (ug/L)
450
400
350
300
250
200
150
100
50
0
3/28/11
4/7/11
4/17/11
4/27/11
5/7/11
5/17/11
5/27/11
6/6/11
6/16/11
6/26/11
7/6/11
Date
TPHg
TPHd


EW-1 MTBE and TBA Concentrations in Groundwater
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Concentrations (ug/L)
3/28/11
4/7/11
4/17/11
4/27/11
5/7/11
5/17/11
5/27/11
6/6/11
6/16/11
6/26/11
7/6/11
Date
MTBE
TBA


EW-3 TPHg and TPHd Concentrations in Groundwater
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Concentration (ug/L)
4/7/11
4/17/11
4/27/11
5/7/11
5/17/11
5/27/11
6/6/11
6/16/11
6/26/11
7/6/11
Date
TPHg
TPHd


EW-3 MTBE and TBA Concentrations in Groundwater
Concentration (ug/L)
120,000
100,000
80,000
60,000
40,000
20,000
0
4/7/11
4/17/11
4/27/11
5/7/11
5/17/11
5/27/11
6/6/11
6/16/11
6/26/11
7/6/11
Date
MTBE
TBA