Soil and Groundwater Investigation Report for Fuel Leak Case No. RO0000324, Livermore Gas and Mini-Mart, 160 Holmes Street, Livermore, California

Date:
May 2, 2006

Project No.:
015-01-014

Prepared For:
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Kentfield, California 94904

Subject: **Soil and Groundwater Investigation 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 Soil and Groundwater Investigation Report to document investigation activities recently completed at 160 Holmes Street in Livermore, California (Site). The purpose of the investigation was to evaluate the vertical and lateral extent of petroleum hydrocarbons in soil and groundwater beneath and down-gradient of the Site. The work was conducted pursuant to the June 30, 2005 *Soil and Groundwater Investigation Work Plan*, the December 8, 2005 *Preliminary Soil and Groundwater Data Submittal and Proposed Boring and Well Locations*, and Alameda County Environmental Health – Local Oversight Program (ACEH) directives from March to December 2005. Additionally, work was conducted in accordance with Tri-Regional and Zone 7 Alameda County Flood Control and Water Conservation District (Zone 7) guidelines and Allterra's field protocol presented in Appendix A.

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

Site Geology and Hydrology
Site geology, as described by previous consultants, consists primarily of clayey sand and silty clay fill material from surface grade to approximately 8 feet below surface grade (bgs). Underlying the fill material, silty clay occurs to approximately 11 feet bgs and is in turn underlain by sandy silt and silty sand to approximately 28 feet bgs. Beneath the silts and sands, coarse grained materials occur to the total depth investigated (approximately 55 feet bgs). Groundwater typically occurs at depths between approximately 17 and 21 feet bgs and is inferred to flow to the north.

Soil and Groundwater Investigation Activities

The following is a discussion of soil and groundwater investigation activities completed at the Site in order to assess the subsurface geology and hydrology and evaluate the vertical and lateral extent of hydrocarbons in soil and groundwater beneath and down-gradient of the Site. This report includes the formal results of data collected during Geoprobe® soil boring installations completed in November 2005 (presented informally in the December 8, 2005 *Preliminary Soil and Groundwater Data Submittal and Proposed Boring and Monitoring Well Locations*), as well as well installation activities completed in February 2006.

Permitting

Zone 7 Drilling Permits

Prior to drilling activities, a soil boring and well construction permit (no. 25166) was acquired form Zone 7. Additionally, a well destruction permit (no. 26037) was obtained prior to decommissioning wells MW-4, MW-5, and EX-1. Zone 7 permits are included in Appendix B.

City of Livermore Encroachment Permit

An encroachment permit (no. EN050518) was obtained from the City of Livermore to allow for drilling in the public right-of-way. The encroachment permit is included in Appendix B.

Private Property Access

Before drilling adjacent to well MW-5, an access agreement allowing for drilling and sampling on private property was acquired the owners of Vintner Square Shopping Center. A copy of the access agreement is included in Appendix C.

Utility Checks

Underground Service Alert (USA) was notified to identify the public service utilities in the area prior to commencing drilling activities.

Geoprobe® Investigation – November 2005

Geoprobe® Drilling

On November 10, 11, and 14, 2005, Allterra supervised the installation of Geoprobe® soil borings (continuous core and/or hydropunch) MB-1, MB-2, MB-3, DB-1, DB-2, DB-5, B-1, B-2, B-3, and HP-1. Borings MB-1 through MB-3, DB-1, DB-2, DB-5, and B-1 through B-3 were installed using a truck-mounted Geoprobe® rig and a limited access track-mounted Geoprobe® rig was used to install borings DB-3, DB-4, and HP-1 (in order to minimize impacts to Hansen Park). Boring locations are presented in Figure 2.

Nine borings were continuously logged to approximately 32 feet below ground surface (bgs), two borings (MB-1 and MB-2) were continuously logged to approximately 52 feet bgs, and one hydropunch boring (HP-1) was advanced to approximately 28 feet bgs. Hydropunch borings, which were not logged, were installed at borings MB-1 through MB-3 in order to collect depth discrete groundwater samples. Groundwater samples were collected at 28 feet bgs from all borings, at 52 feet bgs from borings MB-1 through MB-3, and at approximately 70 feet bgs from borings MB-1 and MB-3.

Soil Classification and Sample Collection

During drilling, soil samples were collected continuously from each boring (with the exception of hydropunch borings) for lithological description and classification under the Unified Soil Classification System (USCS). Nine borings were continuously logged to approximately 32 feet bgs and two borings (MB-1 and MB-2) were continuously logged to approximately 52 feet bgs. Soil from the borings was field screened for volatile organic compounds (VOCs) using a photoionization detector (PID) at approximately four-foot intervals. Sixteen soil samples were selected for laboratory analyses. In general, samples were selected for laboratory analyses based on location (on-site and/or within core of contaminant plume) and observed PID levels.

Seventeen groundwater samples were collected from the Geoprobe® borings/hydropunches for submittal to a laboratory for analyses. Samples were collected at 28 feet bgs from all borings (and HP-1), at 52 feet bgs from hydropunch borings MB-1 through MB-3, and at approximately 70 feet bgs from hydropunch borings MB-1 and MB-3. Logs of borings are presented in Appendix D.

Well Drilling Activities – February 2006

Discussion of Rational for Well Locations and Screen Intervals

Allterra reviewed and evaluated data collected during the Geoprobe® investigation in order to develop the most appropriate groundwater monitoring well network for the Site. Preliminary investigation results, along with a proposed monitoring well network, were submitted for review and approval to ACEH in the December 8, 2005 *Preliminary Soil and Groundwater Data Submittal and Proposed Boring and Well Locations*. In accordance with establishing a "Site Conceptual Model", the December 8, 2005 submittal included a brief discussion of subsurface geology and hydrology encountered, a review of soil and groundwater sample analytical results, and conclusions drawn from the results of the investigation. The investigative results and conclusions were used to formulate a series of hypotheses regarding subsurface conditions beneath and down-gradient of the Site and several "recommended actions" for testing the hypotheses. These hypotheses and recommended actions were used to develop the proposed monitoring well network for the Site. The December 8, 2005 *Preliminary Soil and Groundwater Data Submittal and Proposed Boring and Well Locations* is included as Appendix E.

During December 2005, Allterra and ACEH worked together to develop a monitoring well network appropriate for the Site based on the preliminary Geoprobe® data. The new monitoring well network included the following:

- The installation of a series of monitoring wells with depth-discrete screen intervals for evaluating hydrocarbons levels with depth and measuring vertical hydraulic gradients. The new wells were designated MW-1B, MW-4A, MW-5A, MW-5B, MW-7A, MW-7B, and MW-7C and, in general, A-zone wells were screened from approximately 15 to 30 feet bgs, B-zone wells were screened from approximately 50 to 55 feet bgs, and the C-zone well was screened from 65 to 70 feet bgs.
- Previously installed wells MW-1, MW-2, and MW-3, which have screen intervals in the A-zone (from 15 to 30 feet bgs), were renamed MW-1A, MW-2A, and MW-3A.

- Two on-site extraction wells were installed for use during dual-phase extraction remedial pilot testing and for future remedial actions. These wells include EW-1, located adjacent to well MW-1 (known "hot" well), and EW-2, located adjacent to Geoprobe® boring B-2.
- Decommissioning wells EX-1 (replaced with EW-1), MW-4 (replaced with MW-4A), and MW-5 (replaced with MW-5A).

Well Decommissioning Activities
On February 22, 2006, Allterra oversaw the decommissioning of on-site well EX-1 and off-site wells MW-4 and MW-5. Decommissioning activities included drilling out each well to total depth and backfilling each boring with neat cement using a tremmie pipe. The well destruction permit (no. 26037) is included in Appendix B.

Well Drilling
On February 23, 24, 27, and 28, 2006, Allterra personnel supervised the drilling of nine wells designated MW-1B, MW-4A, MW-5A, MW-5B, MW-7A, MW-7B, MW-7C, EW-1, and EW-2. Truck-mounted hollow-stem auger drill-rigs were used to drill and install the monitoring wells to depths ranging from approximately 30 to 70 feet bgs. The locations of the monitoring wells are presented in Figure 2 and a description of Allterra's well drilling and installation protocol is presented in Appendix A.

Soil Classification and Sample Collection
Each new well was drilled adjacent to previous drilling locations; therefore, soil sampling, lithology descriptions, and USCS classifications were only completed on an as-need basis (and in accordance with the ACEH approved work scope). During drilling, soil from well-borings was field screened for VOCs using a PID. Six soil samples were selected for submittal to the laboratory and four were analyzed. Logs of borings are presented in Appendix D. A more detailed description of soil classification and sample collection activities for each well is presented below:

- MW-1B: Drilled to 61 feet bgs adjacent to boring MB-1, which was continuously logged to 50 feet bgs. MW-1B was logged continuously for lithology from 50 to 61 feet bgs in order to locate a suspected clay aquitard. Soil samples were collected at 57 feet and 61 feet bgs for submittal to an analytical laboratory.
- MW-4A: Drilled to 30 feet bgs adjacent to MW-4, which was previously logged to 50 feet bgs. Therefore, soil sampling and lithological description was not completed for this well.
- MW-5A: Drilled to 35 feet bgs adjacent to well MW-5B, which was logged for lithological description to 55 feet bgs. Therefore, soil sampling and lithological description was not completed for this well.
- MW-5B: Drilled to 55 feet bgs, soil samples collected for description at five-foot intervals from surface grade to 40 feet bgs and logged continuously from 40 to 55 feet bgs in order to locate a suspected clay aquitard. A soil sample was collected at 55 feet bgs for submittal to an analytical laboratory.

- MW-7A: Drilled to 30 feet bgs adjacent to boring MB-3, which was logged continuously to 32 feet bgs. Therefore, soil sampling and lithological description was not completed for this well.
- MW-7B: Drilled to 50 feet bgs adjacent to boring MB-3 and MW-7C, which were logged continuously to 70 feet bgs (when combined). Therefore, soil sampling and lithological description was not completed for this well.
- MW-7C: Drilled to 70 feet bgs adjacent to boring MB-3, which was logged continuously to 32 feet bgs. MW-7B was logged continuously for lithology from 32 to 70 feet bgs in order to locate a suspected clay aquitard.
- EW-1: Drilled to 40 feet bgs adjacent to boring MB-1, which was logged continuously to 50 feet bgs. Therefore, soil sampling and lithological description was not completed for this well.
- EW-2: Drilled to 40 feet bgs adjacent to boring B-2, which was logged continuously to 30 feet bgs. EW-2 was sampled for lithology at five-foot intervals from 30 to 40 feet bgs. Soil samples were collected at 36.5 feet and 41.5 feet bgs for submittal to an analytical laboratory.

Well Construction

Well depths and construction varied based on the soil types encountered at each location and the future usage of the well. In general, the wells were constructed with Schedule 40 Polyvinyl Chloride (PVC) casing with machine slotted well screen at varying depths. The annular space in each well was backfilled with clean, well-sorted sand (No. 2 sand for "MW" wells and No. 3 sand for "EW" wells) from the bottom of the casing to approximately two feet above the top of the screened interval. A two-foot bentonite transition seal was used in each well and the wells were sealed to surface grade using neat cement. Well construction details are presented in Appendix D and a brief discussion of well construction information is presented below.

A-Zone Monitoring Wells – MW-4A, MW-5A, MW-7A: Monitoring wells MW-4A, MW-5A, and MW-7A were constructed with two-inch diameter well casing with a 15-foot screen interval consisting of 0.010-inch slotted screen. Wells MW-4A and MW-7A were installed to total depths of 30 feet bgs with a screen interval from approximately 15 to 30 feet bgs and well MW-5A was installed to a total depth of 35 feet bgs with a screen interval from approximately 20 to 35 feet bgs.

B-Zone Monitoring Wells – MW-1B, MW-5B, MW-7B: Monitoring wells MW-1B, MW-5B, and MW-7B were constructed with two-inch diameter well casing with a 5-foot screen interval consisting of 0.010-inch slotted screen. Wells MW-1B and MW-5B were installed to total depths of 55 feet bgs with a screen interval from approximately 50 to 55 feet bgs and well MW-7B was installed to a total depth of 50 feet bgs with a screen interval from approximately 45 to 50 feet bgs. Additionally, well-bore MW-1B was drilled to 61 feet bgs in order to establish a minimum thickness and competency for the clay layer. Once the clay layer was verified, the bottom five feet of the borehole (56 to 61 feet bgs) was backfilled with bentonite and a 1-foot sand layer was installed from 60 to 61 feet bgs prior to well construction.

C-Zone Monitoring Well – MW-7C: Monitoring well MW-7C was installed to a depth of 70 feet bgs and was constructed with two-inch diameter well casing with a 5-foot screen interval (0.010-inch machine slot) from 65 to 70 feet bgs.

Extraction Wells – EW-1, EW-2: Wells EW-1 and EW-2 were installed to depths of 40 feet bgs and were constructed with four-inch diameter well casing with a 25-foot screen interval (0.020-inch slot) from 15 to 40 feet bgs.

Well Survey
On March 24, 2006, the horizontal and vertical relationship of the wells relative to MSL was surveyed by Mid Coast Engineers (C.L.S.#5029). Results of the well survey are presented in Appendix F.

Well Development and Sample Collection
Between March 1 and 10, 2006, Allterra personnel developed newly installed wells MW-1B, MW-4A, MW-5A, MW-5B, MW-7A, MW-7B, MW-7C, EW-1, and EW-2. Activities consisted of measuring static groundwater levels in each well to the nearest 0.01 foot using an electronic depth sounder and measuring well depths. The wells were then developed by purging several well volumes of water to remove fine-grained material from the well and surrounding soil disturbed during well installation and improve the yield of the well. Depth to groundwater data and groundwater elevations, relative to MSL, for the new wells are included in Table 1. Well Development Field Logs are included in Appendix G.

On March 13, 2006, wells MW-1B, MW-4A, MW-5A, MW-5B, MW-7A, MW-7B, MW-7C, EW-1, and EW-2 were purged and sampled for laboratory analyses. Groundwater Sample Field Logs are included in Appendix G and a description of Allterra's sampling protocol is included in Appendix A.

Soil and Groundwater Sample Analyses
Selected soil and all groundwater samples were submitted for chemical testing to McCampbell Analytical, Inc., of Pacheco, California, a state of California certified laboratory (ELAP #1644). Each soil sample (from Geoprobe® borings and well-borings) submitted to the laboratory was analyzed for total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8015Cm and benzene, toluene, ethylbenzene and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. Additionally, the following soil samples were analyzed for TPH as diesel (TPHd) by EPA Method 8015Cm: MB-1-18', MB-1-22', MB-1-26', MB-3-20', MB-3-28', MB-3-32', B-1-28', B-2-24', B-2-28', B-3-24', B-3-28', DB-1-26'. Soil analytical data is presented in Table 2 and copies of the chain-of-custody records and analytical results for the soil samples are included in Appendix H.

Groundwater samples from Geoprobe® borings were analyzed for TPHg by EPA Method 8015Cm, BTEX/MTBE by EPA Method 8021B, and tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA) di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), and MTBE by EPA Method 8260B. Additionally, with the exception of samples MB-1-C, DB-1-A, and HP-1A

(insufficient groundwater for a 1-liter sample bottle), water samples from Geoprobe® borings were analyzed for TPHd by EPA Method. 8015Cm. Groundwater samples collected from newly installed wells were analyzed for TPHg and TPHd by EPA Method 8015Cm, BTEX/MTBE by EPA Method 8021B, and TAME, TBA, DIPE, ETBE, MTBE, ethanol, methanol, 1,2-dibromoethane (EDB), and 1,2-dichloroethane (1,2-DCA) by EPA Method 8260B. Groundwater analytical data is presented in Table 3 and copies of the chain-of-custody records and analytical results for the groundwater samples are included in Appendix I.

Waste Disposal

Soil cuttings and purge water generated during drilling, well development, and groundwater sampling were temporarily stored on-site in labeled, U.S. Department of Transportation (DOT)-approved 55-gallon drums. Following waste profiling, the soil and purge-water drums will be transported and disposed of.

Soil and Groundwater Investigation Results

Subsurface Geology and Hydrogeology

The local soil conditions encountered during drilling at the site generally consisted of:

- Clayey silt with varying amounts of gravel and sand, from the ground surface to about 5 to 10 feet bgs;
- Gravel-sand-silt and gravel-sand-clay of variable composition underlying the clayey silt and generally extending to the depth of first-encountered groundwater, approximately 28 feet. (However, this layer may extend to depths of up to 50 feet bgs near MW-3 and MB-2);
- Brown silty clay, with an average thickness of about 5 feet, located within the above-referenced gravel-sand-silt/gravel-sand-clay layer;
- Relatively small and laterally discontinuous lenses of clayey sand and clay encountered in some borings at or near the groundwater table;
- Coarse-grained materials, generally consisting of sandy gravel with varying amounts of clay/silt, encountered in borings that were logged below the uppermost groundwater table (approximately 28 feet bgs);
- The coarse-grained materials were generally continuous from approximately 28 feet bgs to depths ranging from approximately 54 to 69 feet bgs, where a sandy to silty clay layer was encountered.
- The depth to the top of the clay layer varied from roughly 55 feet bgs (MW-1B and MW-5B) to 69 feet bgs (boring MW-7C). The thickness of the clay layer was not determined during this investigation; however, a thickness of at least five feet was confirmed in boring MW-1B.
- During drilling, initial groundwater was encountered at approximately 28 feet bgs and static groundwater levels in newly installed wells ranged from 18.58 feet bgs to 20.16 feet bgs.

In general, subsurface geology shows interlayering coarse- and fine-grained strata that are sometimes discontinuous above the water table. Boring logs from Geoprobe® and well drilling are presented in Appendix D. The upper aquifer (Aquifer 1) consists of sandy gravel with varying amounts of clay/silt that extends vertically to depths between 54 and 69 feet bgs, where a suspected clay aquitard was encountered. Soil lithology encountered during drilling was used to prepare two geologic cross sections. The first section, A to A', extends from on-site boring MB-2 to wells MW-5A/B with the flow of groundwater (Figure 3). The second section, B to B', extends from boring DB-4 to DB-5, perpendicular to groundwater flow (Figure 4).

Soil Sample Analytical Data

Concentrations of petroleum hydrocarbons were detected in nine of the twenty soil samples analyzed. TPHg was detected in eight samples at concentrations ranging from 1.4 milligrams per kilogram (mg/kg) in EW-2@41.5' to 1,400 mg/kg in MB-3@32'. Concentrations of TPHd were found in seven samples (twelve soil samples analyzed for TPHd) at levels between 1.4 mg/kg (B-3@24') and 100 mg/kg (MW-3@32'). Benzene concentrations were detected in five samples at levels from 0.028 mg/kg (MB-1@22') to 0.27 mg/kg (MB-1@26'). MTBE was detected in five samples at levels between 0.22 mg/kg in EW-2@41.5' and 14 mg/kg in MB-1@ 26'. Soil analytical results are presented in Table 2.

Groundwater Sample Analytical Results

Concentrations of petroleum hydrocarbons were detected in 22 of the 26 groundwater samples analyzed. TPHg was detected in twelve of the 26 samples at concentrations ranging from 160 micrograms per liter (µg/L) in sample DB-1-A to 42,000 µg/L in B-3-A. Concentrations of TPHd were found in fourteen samples at levels between 51 µg/L and 41,000 µg/L in samples DB-3-A and MB-3-A, respectively. Benzene concentrations were detected in eleven samples at levels ranging from 0.93 µg/L (MB-3-B) to 970 µg/L (MB-1-A). Dissolved MTBE was detected in 18 samples at concentrations from 0.60 µg/L in MW-7C to 100,000 in MB-1-A. The oxygenate TBA was found in six samples at levels ranging from 24 µg/L (HP-1-A) to 16,000 µg/L (MB-3-C). Groundwater analytical results are presented in Table 3 and the distribution of dissolved hydrocarbons from Geoprobe® borings and new wells are in Figures 5 and 6, respectively.

Conclusions

Based on the results of this investigative scope, Allterra concludes the following:

- Subsurface soils encountered during drilling consisted of clayey silt, silty clay, sandy clay, gravel-sand-silt and gravel-sand-clay, and sandy gravel from near ground surface to at least the total depth of the logged portion of the borings, which ranged from 28 to 70 feet bgs. In general, fine- to medium-grained soil was encountered from surface grade to approximately 28 feet bgs, coarse-grained materials were encountered from approximately 28 feet bgs to depths ranging from 54 to 69 feet bgs, and fine-grained material (a suspected clay aquitard) exits below the coarse-grained layer.

- During drilling, initial groundwater was encountered at approximately 28 feet bgs and the static groundwater surface stabilized at approximately 20 feet bgs. The rise of groundwater surface suggests the shallow aquifer beneath the Site is at least locally partially confined.

- Soil analytical data and field screening results indicated that the majority of hydrocarbon-impacted soil resides between 20 and 32 feet bgs, with the highest levels of TPHg in soil (1,400 mg/kg) occurring at 32 feet bgs (below the water table) in boring MB-3. Soil samples collected from the suspected clay aquitard (MW-1B at 61 feet bgs, MW-5B at 55 feet bgs, and MW-7C at 70 feet bgs) provided vertical delineation of hydrocarbon-impacted soil.

- Elevated levels of petroleum hydrocarbons and MTBE were detected in groundwater samples collected from Geoprobe® borings and new wells. The highest levels of dissolved TPHg, benzene, and MTBE were detected on-site in samples from borings MB–1 and B-3 (down-gradient edge of Site) and the highest levels of dissolved TPHd and TBA were found in samples from boring MB-3 (down-gradient of Site in Hansen Park)

- Groundwater analytical results indicate lateral definition of the dissolved hydrocarbon plume up-gradient to the south (MB-2) and cross-gradient to the west (DB-2). Additionally, groundwater sample data from borings and wells indicates lateral definition of dissolved TPHg to the south, west, and north and lateral definition of dissolved MTBE to the south and west.

- In general, the highest levels of hydrocarbon concentrations in groundwater were detected in the "A-zone" (approximately 28 to 35 feet bgs) and levels generally decrease with depth.

- The "core" of the dissolved hydrocarbon plume appears to be fairly narrow (in regard to cross-gradient advection to the southwest and northeast) and is directed down-gradient toward the MW-7A/B/C well network.

- The newly installed well network appears to be appropriate for monitoring dissolved contaminants over time in both the lateral and vertical directions.

- Groundwater extraction wells EW-1 and EW-2 appear to be appropriately located for controlling future off-site advection of the dissolved plume and for removing contaminant mass.

Updated Hypothesis and Recommended Actions Regarding Future Corrective Action

Data collected during this investigation was evaluated in order to revise previous hypotheses and develop new hypotheses regarding subsurface conditions surrounding the Site. The following

discussion presents Allterra's revised hypotheses for subsurface conditions along with recommended actions for future corrective action work.

Hypothesis 1	
Hypothesis	Shallow groundwater beneath and down-gradient of the Site is highly contaminated and hydrocarbon concentrations decrease with depth.
Rationale	Analytical data from the new monitoring well network indicates that hydrocarbon levels within the core of the groundwater plume decrease dramatically with depth. For example, recent sample data for wells MW-1A and MW-1B indicated TPHg and MTBE levels of 47,000 µg/L and 240,000 µg/L in MW-1A and <50 µg/L and 8.2 µg/L in well MW-1B. Furthermore, data from well network MW-7A/B/C indicated a decreasing trend in contaminant levels (TPHg levels from 6,200 µg/L to 230 µg/L to <50 µg/L and MTBE levels from 6,300 µg/L to 1,300 µg/L to 0.60 µg/L).
Recommended Action	Incorporate the new well network into the quarterly groundwater monitoring program in order to monitor and evaluate dissolved contaminant levels with depth over time.

Hypothesis 2	
Hypothesis	The flow-path of the dissolved hydrocarbon plume appears to narrow (or limited laterally to the southwest and northeast).
Rationale	Sample data from cross-gradient Geoprobe® borings and monitoring wells borings indicate low to "non-detect" levels of petroleum hydrocarbons, which are much lower than contaminant levels in wells MW-1A/B and MW-7A/B.
Recommended Action	Monitor hydrocarbon concentrations in cross-gradient wells in order to confirm that the flow-path of the dissolved plume is directed toward the MW-7 well network

Hypothesis 3	
Hypothesis	The distal end of the hydrocarbon plume has reached well MW-5B and is approaching MW-5A.
Rationale 1	A-zone well MW-5A is located directly down-gradient of the core of the hydrocarbon plume; therefore, elevated hydrocarbon levels were expected. However, sample results from MW-5A indicated "non-detect" levels for all constituents tested.
Rationale 2	With the exception of 0.69 µg/L of MTBE, sample results from well MW-5B indicated "non-detect" levels for all constituents tested.
Rationale 3	The non-detect to trace levels of dissolved contaminants in wells MW-5A and MW-5B provide lateral characterization of the distal end of the hydrocarbon plume.
Recommended Action	Monitor groundwater in wells MW-5A and MW-5B over time in order to evaluate movement of the distal end of the groundwater plume.

Hypothesis 4	
Hypothesis	The first aquifer beneath the Site (Aquifer 1) begins at approximately 28 feet bgs and extends to depths between 54 and 69 feet bgs
Rationale	Observations made during drilling indicated a transition from fine- to medium-grained soil to coarse-grained material in each boring at the approximate depth of initial groundwater, estimated at approximately 28 to 30 feet bgs. Lithology encountered in borings MW-1B, MW-5B, and MW-7C indicated that the coarse-grained material was continuous from initial groundwater to the clay layer encountered between 54 and 69 feet bgs.
Recommended Action	Use the new monitoring well network to evaluate the vertical extent of dissolved contamination within Aquifer 1 over time. This data will be used to determine if investigating Aquifer 2 is warranted.

Limitations

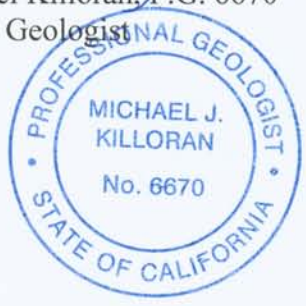
Allterra prepared this report for the use of Mr. Manwel and Mrs. Samira Shuwayhat and ACEH in evaluating site conditions at selected on-site locations at the time of this study. Statements, conclusions, and recommendations in this document are based solely on the field observations and analytical results related to work performed by Allterra and there is no warranty, expressed or implied. Site conditions and data can change over time; therefore, data presented in this report is only applicable to the timeframe of this study. Allterra's services have been performed in accordance with environmental principles generally accepted at this time and location.

Should you have any questions, please contact Allterra at (831) 425-2608.

Sincerely,
Allterra Environmental, Inc.

James Allen, R.E.A.
Project Manager

Michael Killoran, P.G. 6670
Senior Geologist



Attachments:

Figure 1, Vicinity Map
Figure 2, Site Plan
Figure 3, Geologic Cross Section A-A'
Figure 4, Geologic Cross Section B-B'
Figure 5, Fuel-Related Compounds in Groundwater in Geoprobe® Borings
Figure 6, Fuel-Related Compounds in Groundwater in New Wells

Table 1, Groundwater Elevation Data
Table 2, Soil Analytical Results
Table 3, Groundwater Analytical Results

Appendix A, Allterra's Site Investigation Field Protocol
Appendix B, Permits
Appendix C, Access Agreements
Appendix D, Boring Logs
Appendix E, December 8, 2005 *Preliminary Soil and Groundwater Data Submittal and Proposed Boring and Well Locations*
Appendix F, Well Survey Report
Appendix G, Well Development and Well Sampling Field Logs
Appendix H, Soil Analytical Reports and Chain of Custody Documentation
Appendix I, Groundwater Analytical Reports and Chain of Custody Documentation

cc: Mr. Jerry Wickham, ACEH
State of California GeoTracker Database

FIGURES 1-6

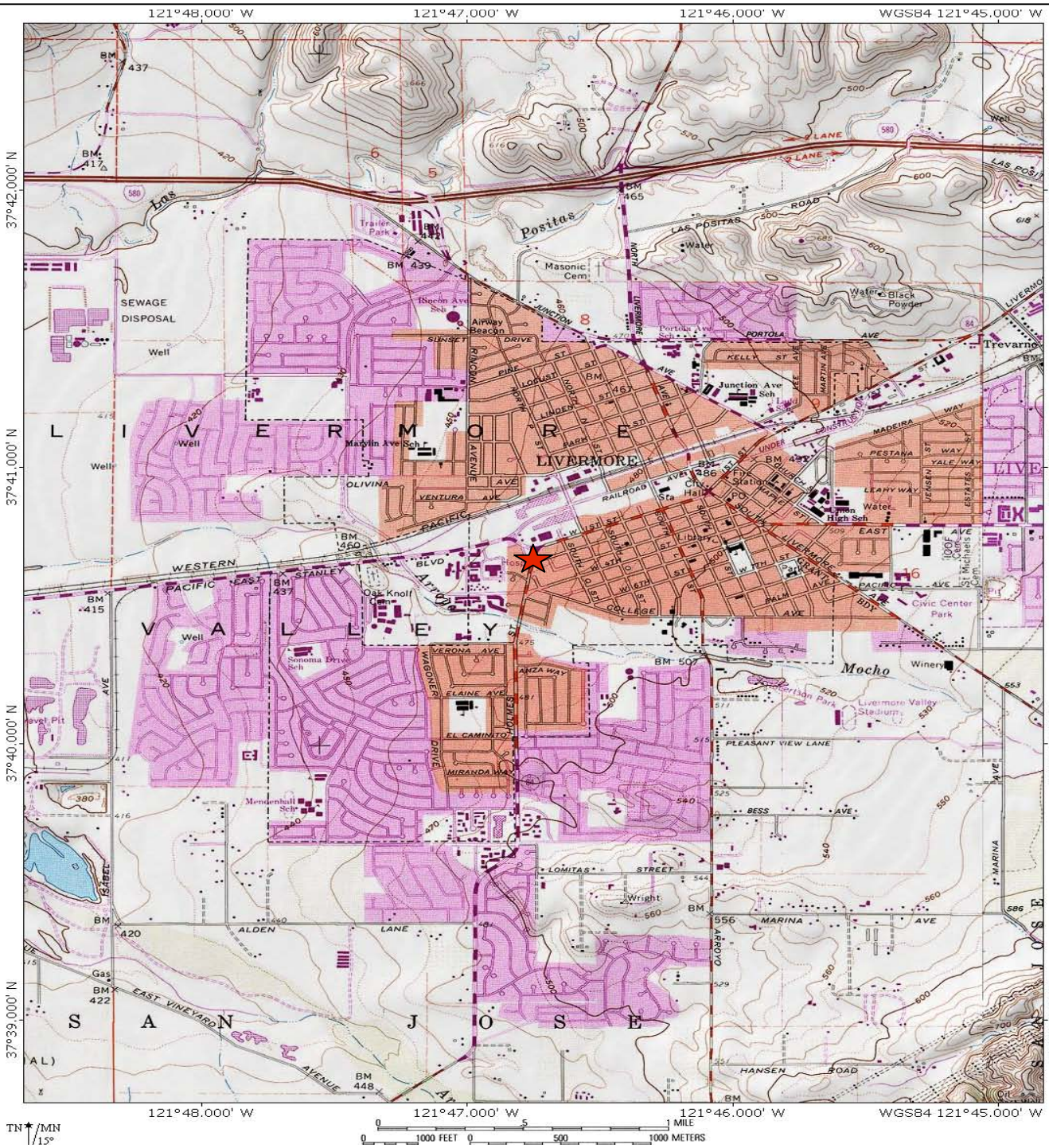
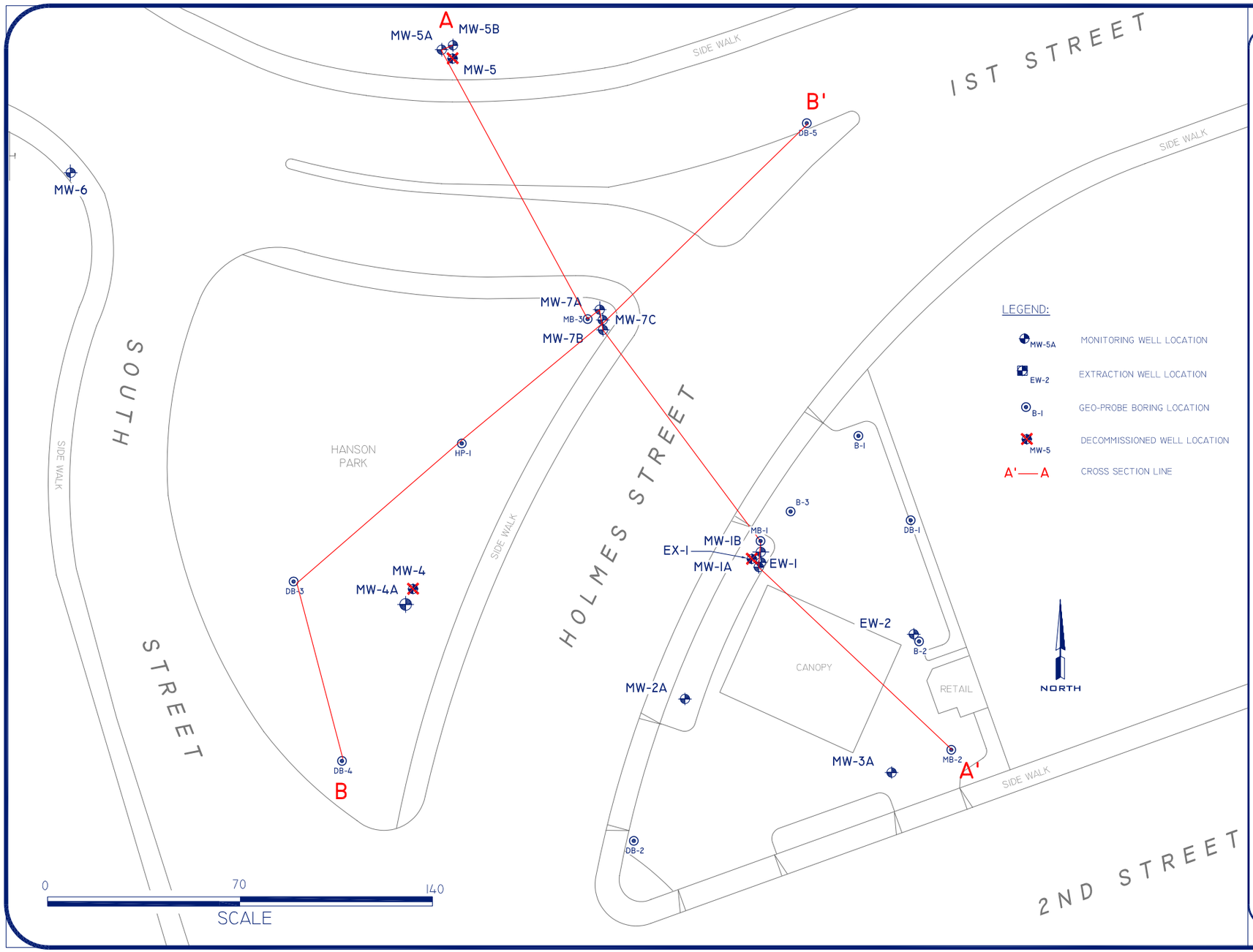


Figure 1	3/31/06

Vicinity Map

Livermore Gas and Mini-mart
160 Holmes Street
Livermore, California

ALLTERRA
849 Almar Avenue, Suite C, No. 281
Santa Cruz, California
http://www.allterraenv.com



General Notes

STAMP

160 HOLMES STREET
SOIL AND GROUNDWATER INVESTIGATION AND REMEDIATION PROJECT

PREPARED BY: ALLTERRA

No.	Revision/Issue	Date
0	DRAFT/REVIEW	4/28

Firm Name and Address
ALLTERRA ENVIRONMENTAL, INC.
849 ALMAR AVE., SUITE C, No. 281
SANTA CRUZ, CALIFORNIA
831-425-2608 FAX 831-425-2609
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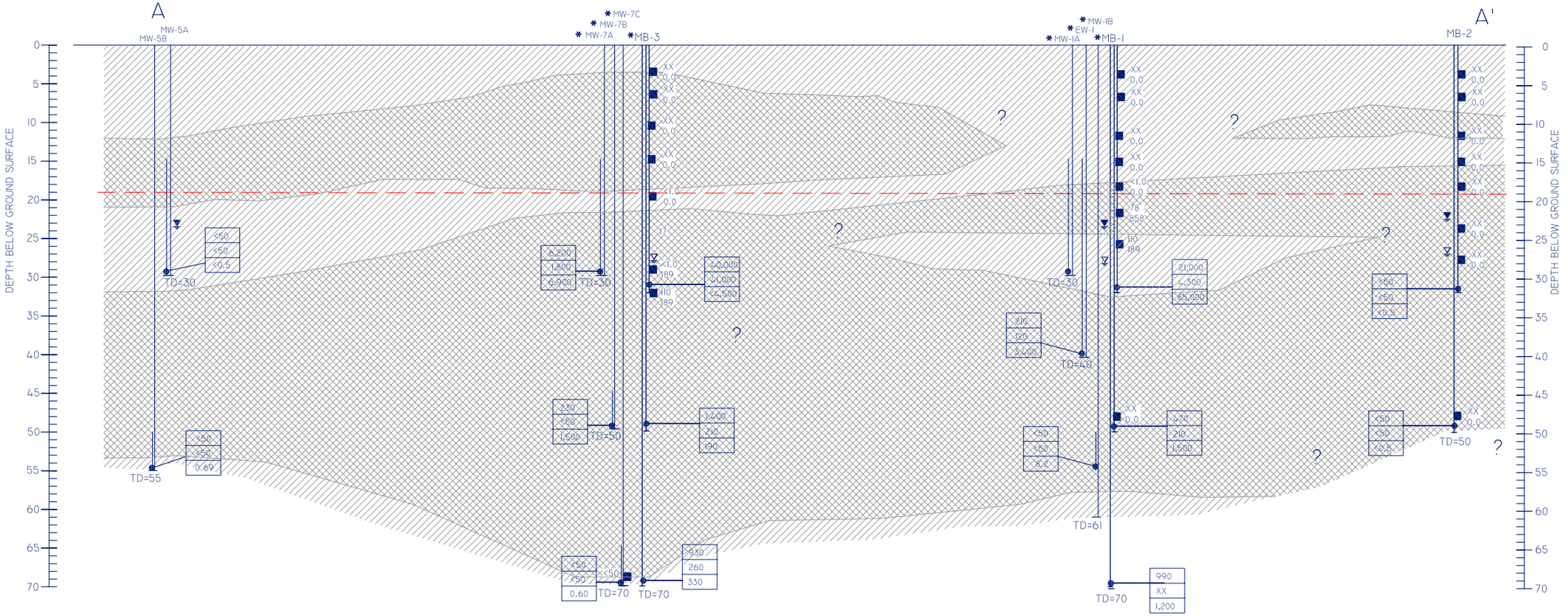
Sheet Name and Address
SITE PLAN
160 HOLMES STREET
LIVERMORE, CALIFORNIA

Project	Sheet
015-01-014	FIGURE 2
Date: 4-28-06	
Scale: SEE DRAWING	

FNAME
REVDATE
USER



MW-1 — BORING DESIGNATION

SOIL SAMPLE COLLECT FOR LABARATORY ANALYSIS

6.6 / 720 — TPHG CONCENTRATION IN SOIL (MG/KG) / PID MEASURED IN PPM / XX = NOT ANALYZED

STATIC GROUNDWATER

SCREENED INTERVAL — INITIAL GROUNDWATER

TD=30 — BORING DEPTH

GROUNDWATER SAMPLE

470 — CONCENTRATION OF TPHG IN UG/L

210 — CONCENTRATION OF DIESEL IN UG/L

1,200 — CONCENTRATION OF MTBE IN UG/L

PREDOMINATELY FINE GRAIN MATERIAL

PREDOMINATELY COARSE GRAIN MATERIAL

* HORIZONTAL SCALE AND ORIENTATION HAVE BEEN ALTERED FOR PRESENTATION

GROUNDWATER ELEV.

? UNKNOWN BOUNDARY

VERTICAL SCALE

0 10 20 30

HORZONTAL SCALE

0 20 40 60

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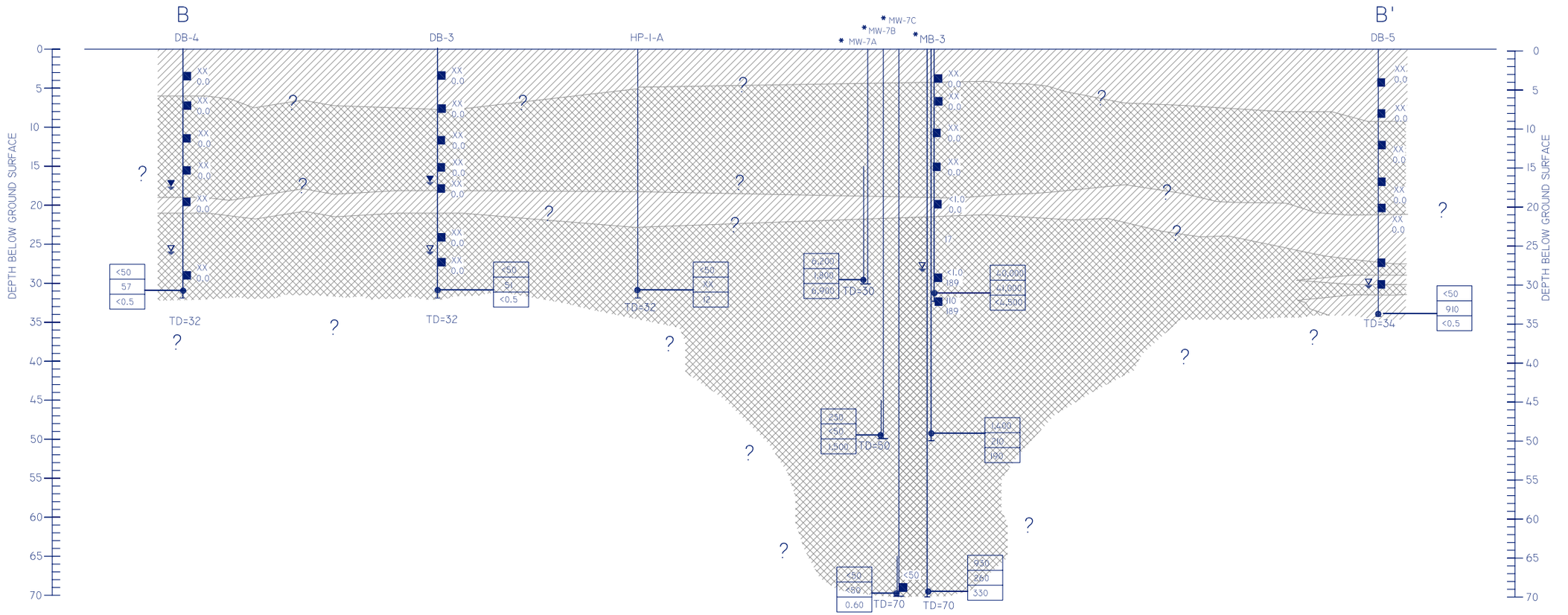
GEOLOGIC CROSS SECTION A-A'

160 HOLMES STREET
LIVERMORE, CALIFORNIA

FIGURE 3
5/1/06



MW-1 BORING DESIGNATION

SOIL SAMPLE COLLECT FOR LABARATORY ANALYSIS

6.6 / 720 TPHg CONCENTRATION IN SOIL (MG/KG)
PID MEASURED IN PPM / XX = NOT ANALYZED

STATIC GROUNDWATER

SCREENED INTERVAL — INITIAL GROUNDWATER

TD=30 BORING DEPTH

GROUNDWATER SAMPLE

470 CONCENTRATION OF TPHg IN ug/L
210 CONCENTRATION OF DIESEL IN ug/L
1,200 CONCENTRATION OF MTBE IN ug/L

PREDOMINATELY FINE GRAIN MATERIAL

PREDOMINATELY COARSE GRAIN MATERIAL

* HORIZONTAL SCALE AND WELL ORIENTATION HAVE BEEN ALTERED FOR PRESENTATION

? UNKNOWN BOUNDARY

VERTICAL SCALE
0 10 20 30

HORZONTAL SCALE
0 20 40 60

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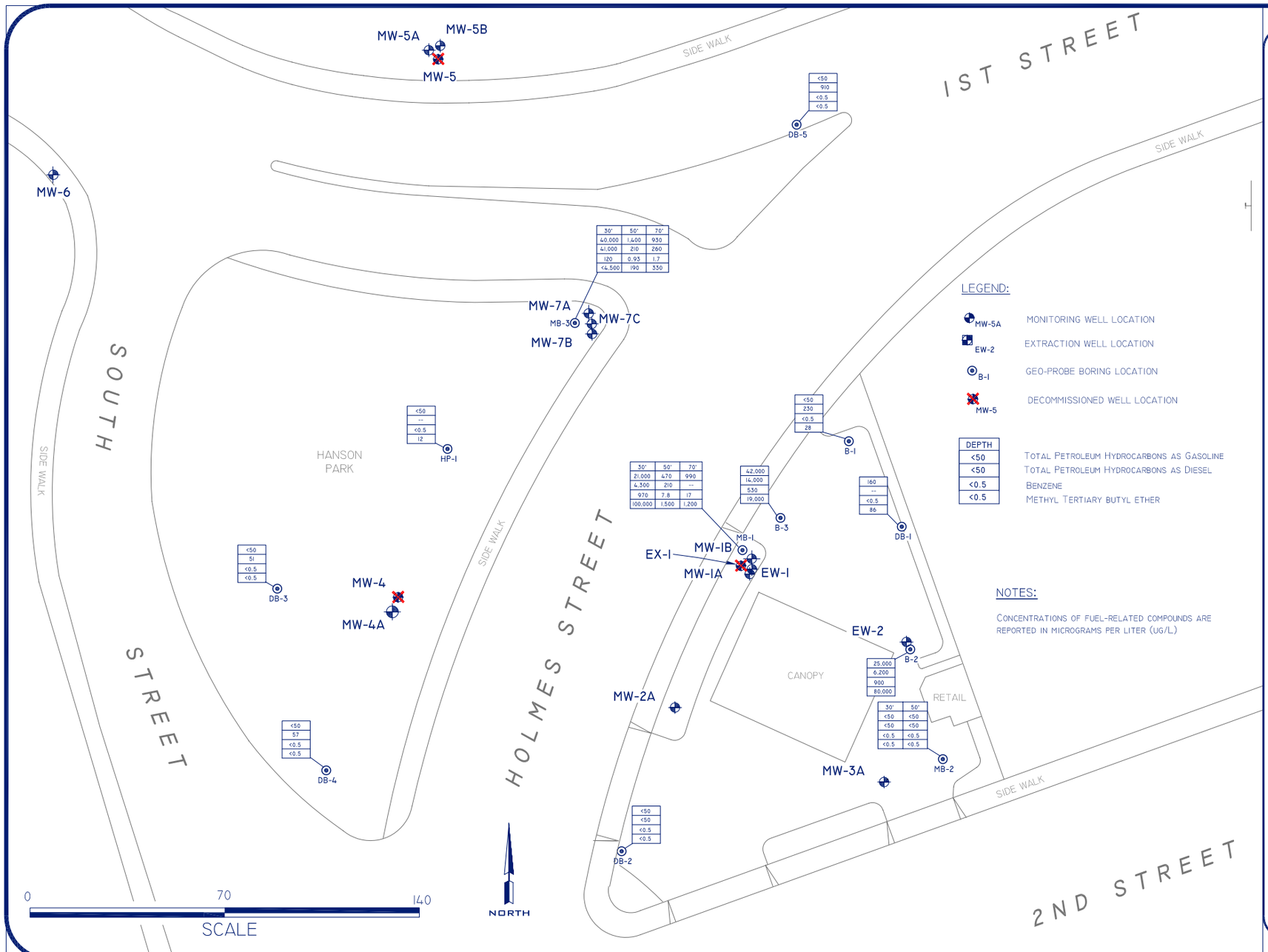
GEOLOGIC CROSS SECTION B-B'

160 HOLMES STREET
LIVERMORE, CALIFORNIA

FIGURE 4
5/1/06



LEGEND:

- MW-5A — MONITORING WELL LOCATION
- EW-2 — EXTRACTION WELL LOCATION
- B-1 — GEO-PROBE BORING LOCATION
- MW-5 — DECOMMISSIONED WELL LOCATION

DEPTH	
<50	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
<50	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
<0.5	BENZENE
<0.5	METHYL TERTIARY BUTYL ETHER

NOTES:

CONCENTRATIONS OF FUEL-RELATED COMPOUNDS ARE REPORTED IN MICROGRAMS PER LITER (UG/L)

General Notes

STAMP

160 HOLMES STREET
SOIL AND GROUNDWATER INVESTIGATION AND REMEDIATION PROJECT

PREPARED BY: ALLTERRA

No.	Revision/Issue	Date
0	DRAFT/REVIEW	4/28

Firm Name and Address
ALLTERRA ENVIRONMENTAL, INC.
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Sheet Name and Address
CONCENTRATION OF FUEL-RELATED HYDROCARBONS IN GEOPROBE BORINGS

160 HOLMES STREET
LIVERMORE, CALIFORNIA

Project	Sheet
015-01-002	FIGURE 5
Date: 4-28-06	
Scale: SEE DRAWING	

FNAME
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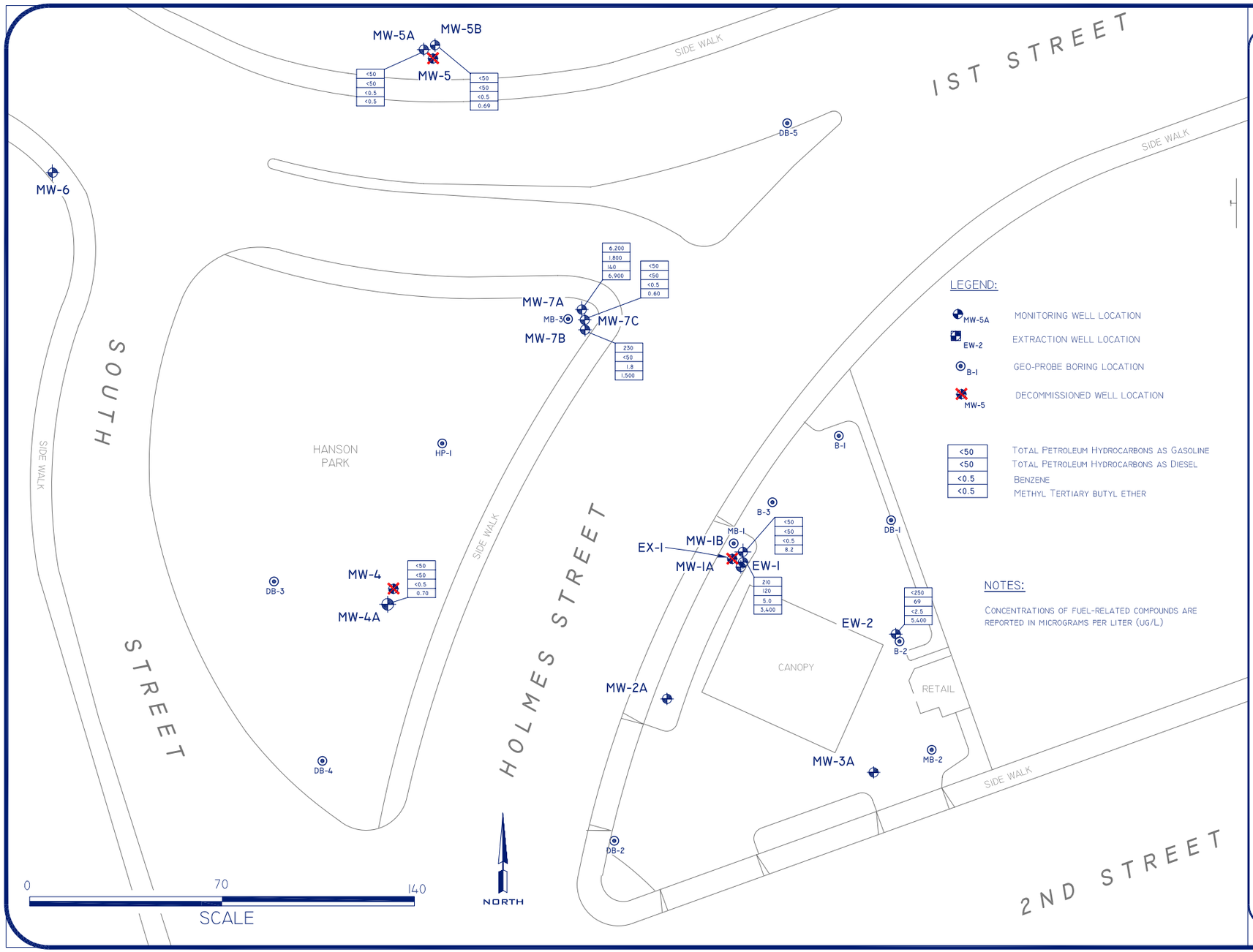
USER



General Notes

STAMP

160 HOLMES STREET
SOIL AND GROUNDWATER INVESTIGATION AND REMEDIATION PROJECT

PREPARED BY:
ALLTERRA

No.	Revision/Issue	Date
0	DRAFT/REVIEW	4/28

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Sheet Name and Address
CONCENTRATION OF FUEL-RELATED HYDROCARBONS IN NEW WELLS

160 HOLMES STREET
LIVERMORE, CALIFORNIA

Project	Sheet
015-01-002	FIGURE 6
Date: 4-28-06	
Scale: SEE DRAWING	

FNAME
REVDATE
USER

TABLES 1-3

Table 1
Groundwater Elevation Data
160 Holmes Street, Livermore

Monitoring Well ID	Date	Top of Casing Elevation (feet, msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet, msl)
MW-1B	3/13/06	465.02	18.58	446.44
MW-4A	3/13/06	464.96	19.09	445.87
MW-5A	3/13/06	464.64	20.16	444.48
MW-5B	3/13/06	464.59	20.13	444.46
MW-7A	3/13/06	465.32	19.47	445.85
MW-7B	3/13/06	465.39	19.75	445.64
MW-7C	3/13/06	465.39	20.05	445.34
EW-1	3/13/06	465.45	18.98	446.47
EW-2	3/13/06	465.99	19.18	446.81

notes:
MSL: Mean sea level
bgs: Below ground surface

Table 2

Soil Analytical Results

160 Holmes Street, Livermore, California

Sample ID (Field Point)	Sample Depth (feet)	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
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
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

Notes:
All results are in milligrams per kilogram (mg/kg)
TPHg and TPHd were analyzed by EPA Method 8015CM
Benzene, toluene, ethylbenzene, xylenes, and MTBE were analyzed by EPA Method 8021B
-- : not analyzed
TPHg: Total Petroleum Hydrocarbons as gasoline
TPHd: Total Petroleum Hydrocarbons as diesel
MTBE = methyl tertiary butyl ether

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Table 3
Groundwater Analytical Results
160 Holmes Street, Livermore, California

Sample ID	Approximate Sample Depth (feet)	Date Collected	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**	28	11/11/05	21,000	4,300	970	<25	3,300	1200	--	<2,500	<25,000	<2,500	<2,500	100,000	--	--	--	--
MB-1-B	50	11/11/05	470	210	7.8	0.97	31	48	--	<25	<250	<25	<25	1,500	--	--	--	--
MB-1-C	70	11/11/05	990	--*	17	1.3	89	160	--	<25	<250	<25	<25	1,200	--	--	--	--
MB-2-A	28	11/10/05	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
MB-2-B	50	11/11/05	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
MB-3-A	28	11/11/05	40,000	41,000	120	130	1,700	2,800	--	<50	2,500	<50	<50	<4,500	--	--	--	--
MB-3-B	50	11/14/05	1,400	210	0.93	9.3	14	27	--	<50	6,200	<50	<50	190	--	--	--	--
MB-3-C	70	11/14/05	930	260	1.7	3.8	33	100	--	<100	16,000	<100	<100	330	--	--	--	--
DB-1-A	28	11/10/05	160	--*	<0.5	<0.5	<0.5	<0.5	--	<1.7	<17	<1.7	<1.7	86	--	--	--	--
DB-2-A	28	11/11/05	<50	<50	<0.5	<0.5	<0.5	<0.5	--	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
DB-3-A	28	11/14/05	<50	51	<0.5	<0.5	<0.5	<0.5	--	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
DB-4-A	28	11/14/05	<50	57	<0.5	<0.5	<0.5	<0.5	--	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
DB-5-A	28	11/11/05	<50	910	<0.5	<0.5	<0.5	<0.5	--	<0.5	<5.0	<0.5	<0.5	<0.5	--	--	--	--
B-1-A	28	11/10/05	<50	230	<0.5	<0.5	<0.5	<0.5	--	<0.5	<5.0	<0.5	<0.5	28	--	--	--	--
B-2-A	28	11/10/05	25,000	6,200	900	<50	2,000	2,600	--	<1,700	<17,000	<1,700	<1,700	80,000	--	--	--	--
B-3-A	28	11/10/05	42,000	14,000	530	140	2,400	7,800	--	<500	<5,000	<500	<500	19,000	--	--	--	--
HP-1-A	28	11/14/05	<50	--*	<0.5	<0.5	<0.5	0.80	--	<50	24	<50	<50	12	--	--	--	--
MW-1B	55	3/13/06	<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
MW-4A	30	3/13/06	<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
MW-5A	35	3/13/06	<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
MW-5B	55	3/13/06	<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
MW-7A	30	3/13/06	6,200	1,800	140	21	200	560	6,900	<100	4400	<100	<100	6,300	<10,000	<100,000	<100	<100
MW-7B	50	3/13/06	230	<50	1.8	4.7	<0.5	2.2	1,500	<50	7300	<50	<50	1,300	<5,000	<50,000	<50	<50
MW-7C	70	3/13/06	<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
EW-1	40	3/13/06	210	120	5.0	4.1	7.5	12	3,400	<50	<100	<50	<50	2,300	<5,000	<50,000	<50	<50
EW-2	40	3/13/06	<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

Notes:

TPHg and TPHd were analyzed by EPA Method 8015CM

Benzene, toluene, ethylbenzene, xylenes, and MTBE were analyzed by EPA Method 8021B

MTBE, DIPE, ETBE, TAME, TBA, ethanol, methanol, EDB, 1,2-DCA were analyzed by EPA Method 8260b.

--* = insufficient groundwater available TPHd analysis

**: MB-1-A samples tested for fuel oxygenates by EPA Method 8260 were past laboratory hold time

µg/L = micrograms per liter

-- = not analyzed

MTBE = methyl tertiary butyl ether

DIPE = Di-isoprpopyl Ether

ETBE = Ethyl tert-Butyl Ether

TAME - tert-Amyl Methyl Ether

TBA = tert-Butanol

1,2-DCA = 1,2-dichloroethane

EDB = 1,2-dibromoethane

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APPENDIX A
Allterra's Site Investigation Field Protocol

Appendix A
Site Investigation Field Protocol

Geoprobe® Drilling

Soil Boring Installations and Sampling

Geoprobe® soil borings are installed by pushing a clean, 2.5-inch diameter, 4-foot long, steel core barrel into undisturbed soil. The core barrel, equipped with a new, clean acetate liner, is pushed with the aid of a hydraulic hammer. The soil sample is collected in the acetate liner. The core barrel is removed from the borehole and the acetate liner is removed from the core barrel. The desired interval is immediately cut from the acetate liner, capped with Teflon® sheets and plastic caps. The sample is then labeled and placed on ice in a cooler.

A portion of each sample is retained for field screening purposes. A small amount of soil (approximately 1 ounce) is placed in a plastic bag and placed in the sun for approximately 15 minutes. The bag is then pierced by the tip of a portable photo-ionization detector (PID) and the air in the bag is analyzed for total volatile hydrocarbons. The purpose of the field screening is to qualitatively determine the presence or absence of chemical organic compounds in order to aid in the selection of samples to be analyzed at the laboratory. The data is then recorded on the boring logs at the depth corresponding to the sampling point.

Upon completion of each soil boring, the hole is filled with a cement grout and bentonite mixture from the bottom of the boring to surface grade. The purpose of grouting the hole is to prevent future surface contamination from having a conduit to the groundwater table.

Water Sampling

Once the borings are advanced to the desired depth, water samples are collected. If the boring stays open, a clean stainless steel bailer is lowered into the boring to retrieve water samples. If the boring does not stay open, a new, clean, temporary, well casing and screen will be lowered into the boring to aid in water sample collection. The water is then carefully transferred from the bailer into the sample containers. The containers are then capped, labeled and placed on ice. After the water samples are collected, the temporary well casing and screen are removed from the boring and properly disposed of.

Hydropunch Water Sampling

The hydropunch groundwater sampler is assembled with the expendable drive point, the drive head, the protective sheath, the inner stainless steel screen (or PVC) and the O-ring seal. A drive rod is added to the top of the sampler and the entire assembly is driven into the subsurface using the percussion of the direct push rig. By adding a series of hardened steel, hollow drive rods, the sampler is advanced to the desired depth. Once the desired depth is achieved, extension rods are placed down the center of the drive rods to knock the expendable point loose and to hold the screen in position as the rods are retracted approximately 4 feet. The stainless steel screen is exposed to the aquifer and fills with groundwater. The groundwater is extracted using tubing which is inserted down the center of the rods into the stainless screen sampler. The most common methods of extracting the groundwater are a bailer, a check valve, or a peristaltic pump, depending upon the contaminant, the volume desired, and the local protocols.

Monitoring Well Installation

Hollow Stem Auger Technique

Boreholes for monitoring wells are drilled using a truck-mounted, hollow-stem auger drill rig. The borehole diameter will be 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 either a portable photoionization detector (PID), flame ionization detector (FID), or an explosimeter.

Soil Boring Sampling

During drilling, soil samples are collected in 2-inch by 6-inch long brass tubes. 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, either hydraulically or using a 140-pound hammer, or until refusal is encountered. The sampler is

extracted from the borehole and the brass tubes are immediately trimmed and capped with Teflon® sheets and plastic caps. The samples are then sealed, labeled, and placed in chilled storage (refrigerated) for delivery, under chain of custody to the state-certified analytical laboratory. These procedures minimize the potential for cross contamination and volatilization of volatile organic compounds (VOCs) prior to chemical analysis.

A portion of each sample is retained for field screening purposes. A small amount of soil (approximately 1 ounce) is placed in a plastic bag and placed in the sun for approximately 15 minutes. The bag is then pierced by the tip of a portable photo-ionization detector (PID) and the air in the bag is analyzed for total volatile hydrocarbons. The purpose of the field screening is to qualitatively determine the presence or absence of chemical organic compounds in order to aid in the selection of samples to be analyzed at the laboratory. The data is then recorded on the boring logs at the depth corresponding to the sampling point.

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

Soil Classification

Soil from borings is examined for lithology according to the Unified Soil Classification System under the supervision of a California Registered Geologist. Job location, boring location, boring name, date, soil types, observations and activities are recorded on the boring logs.

Monitoring Well Construction

Monitoring wells are cased with threaded, factory-perforated and blank Schedule 40 polyvinyl chloride (PVC). The perforated interval consists of slotted casing, generally with either 0.01- or 0.02-inch wide by 1.5-inch long slots, with 42 slots per foot. A PVC cap is secured to the bottom of the casing with stainless steel screws; no solvents or cements are used. Centering devices may be fastened to the casing to ensure even distribution of filter material and grout within the borehole annulus.

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 2 feet above the perforated interval. A 1 - to 2-foot thick bentonite plug is set above this filter material to prevent grout from infiltrating the filter pack. Neat cement containing about 5 percent bentonite is then tremmied into the annular space from the top of the bentonite plug to near surface. A traffic-rated vault is installed around each wellhead for wells located in parking lots or driveways, while steel "stovepipes" are usually set over wellheads in landscaped areas.

Well Development

After installation, the wells are thoroughly developed to remove residual drilling materials from the wellbore, and to improve well performance by removing fine material from the filter pack that may pass into the well. Well development techniques used may include pumping, surging, bailing, swabbing, jetting, flushing, and airlifting. 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 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 ten (10) well volumes of groundwater have been removed. When possible, purge rates will not exceed the recharge rate for the well. However, 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 Disposal: Soil generated during drilling will be stored in DOT-approved 55-gallon waste drums pending proper disposal.

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

APPENDIX B
Permits

ZONE 7 WATER AGENCY

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

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 160 Holmes St. Livermore, CA 94550

California Coordinates Source _____ ft. Accuracy _____ ft.
CCN _____ ft. CCE _____ ft.
APN 99-82-7-7

CLIENT
Name Manwel and Samira Shuwayhat
Address 54 Wolfe Canyon Rd. Phone _____
City Kentfield, CA Zip 94904

APPLICANT
Name Allterra Environmental Inc. (Mike Killoran)
Address 849 Almar Ave, Suite C #281 Fax _____
Phone 831-425-2608
City Santa Cruz Zip 95060

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection	General
Water Supply	Contamination
✓ Monitoring	Well Destruction

PROPOSED WELL USE

New Domestic	Irrigation
Municipal	✓ Remediation
Industrial	✓ Groundwater Monitoring
Dewatering	Other _____

DRILLING METHOD:

Mud Rotary	Air Rotary	✓ Hollow Stem Auger
Cable Tool	✓ Direct Push	Other _____

DRILLING COMPANY Exploration GeoServices
DRILLER'S LICEN 484288

WELL PROJECTS
Drill Hole Diameter 8.25 in. Maximum
Casing Diameter 2 in. Depth 50 ft.
Surface Seal Depth 20+ ft. Number 7

SOIL BORINGS
Number of Borings 15 Maximum
Hole Diameter 2 in. Depth 50 ft.

ESTIMATED STARTING DATE 10/13/05
ESTIMATED COMPLETION DATE 10/14/05

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S SIGNATURE _____ Date 9/30/05
Michael Killoran, Allterra

ATTACH SITE PLAN OR SKETCH

FOR OFFICE USE

PERMIT NUMBER 25166
WELL NUMBER 3S/2E-17C32 to 17C37 (MW-1R to 6R)
APN 097-0082-007-07

PERMIT CONDITIONS

(Circled Permit Requirements Apply)

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

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

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

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

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

F. WELL DESTRUCTION. See attached.

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

Approved Wyman Hong Date 10/12/05
Wyman Hong

Revised: April 27, 2005

ZONE 7 WATER AGENCY

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

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 160 Holmes St. Livermore, CA 94550

California Coordinates Source _____ Accuracy± _____ ft.
CCN _____ ft. CCE _____ ft.
APN 97-82-7-7

CLIENT
Name Manwel Shuwayhat
Address 54 Wolfe Canyon Rd Phone _____
City Kentfield Zip 94904

APPLICANT
Name Allterra Environmental, Inc.
Fax (831)425-2609
Address 849 Almar Ave, Suite C-281 Phone (831) 425-2608
City Santa Cruz Zip 95060

TYPE OF PROJECT:

Well Construction	☐	Geotechnical Investigation	☐
Well Destruction	☑	Contamination Investigation	☐
Cathodic Protection	☐	Other _____	☐

PROPOSED WELL USE:

Domestic	☐	Irrigation	☐
Municipal	☐	Remediation	☐
Industrial	☐	Groundwater Monitoring	☐
Dewatering	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Hollow Stem Auger	☑
Cable Tool	☐	Direct Push	☐	Other _____	☐

DRILLING COMPANY Exploration Geoservices
DRILLER'S LICENSE NO. 484288

WELL SPECIFICATIONS:
Drill Hole Diameter 8 in. Maximum Depth 50 ft.
Casing Diameter 2 in.
Surface Seal Depth _____ ft. Number MW-4, MW-5
6" EX-1 (55')

SOIL BORINGS:
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE Feb 22, 2006
ESTIMATED COMPLETION DATE Mar-3, 2006

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.
APPLICANT'S SIGNATURE James Allen Date 2-8-06
ATTACH SITE PLAN OR SKETCH

FOR OFFICE USE

PERMIT NUMBER 26037
WELL NUMBER 3S/2E-17C29 (EX1), 3S/2E-17C30 (MW4)
APN 097-0082-007-07 3S/2E-17C31 (MW5)

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

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

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

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

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

(F.) WELL DESTRUCTION. See attached.

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

Approved Wyman Hong Date 2/21/06
Wyman Hong

CUST.

City of Livermore

Community Development Department
1052 S. Livermore Avenue
Livermore, CA 94550
(925) 960-4500

Encroachment
Permit No. EN050518
Other

PERMIT TO DO WORK IN ACCORDANCE WITH CHAPTER 12.08 OF THE LIVERMORE MUNICIPAL CODE AND SPECIFICATIONS AS ADOPTED BY THE CITY OF LIVERMORE AND ANY SPECIAL REQUIREMENTS SHOWN OR LISTED HEREIN.

Permit Fee:	$53.00
Inspection Fee:	$240.00
Bond:	$0.00
Total:	***$293.00***

Applicant/Permittee:
Name: Allterra Inc.
Address: 849 Almar Ave Suite C # 281
Santa Cruz, CA, 95060
Phone: (831) 425-2608

Contractor:
Name: Allterra Inc.
Address: 849 Almar Ave Suite C # 281
Santa Cruz, CA 95060
Phone: (831) 425-2608

PLEASE READ THIS PERMIT CAREFULLY. KEEP IT AT THE WORK SITE. TO ARRANGE FOR AN INSPECTION, PHONE (925) 960-4500 AT LEAST 24 HOURS BEFORE YOU START WORK.

JOB LOCATION: ***160 Holmes Street***
DESCRIPTION OF WORK: ***Take four soil borings as shown on attached location map. Convert all soil borings to monitoring wells as needed. Remove and replace a fifth monitoring well.***

Length of Excavation: .4 ft. x 5 L.F. **Width:** .4 ft. x 5 L.F. **Depth:** 20-50 ft. L.F.

Attention is directed to the General Provisions printed on the reverse side of this permit and to the attached special requirements (to be determined as needed by the Engineering Division).

Prosecution of Work: All work authorized by the permit shall be performed in a workmanlike, diligent, and expeditious manner, and must be completed to the satisfaction of the City Engineer.

Liability and Damages: The permittee shall be responsible for all liability imposed by law for personal injury or property damage which may arise out of the work permitted and done by permittee under this permit, or which may arise out of the failure on the part of the permittee to perform his obligations under said permit in respect to maintenance and encroachment. The permittee shall protect and indemnify the City of Livermore, its officers and employees, and save them harmless in every way from all action at law for damage or injury to persons or property that may arise out of or be occasioned in any way because of his operations as provided in this permit.

Signature of Permittee: [signature]

By: _____

Date: 11/10/05

City Engineer

By: Pamela Young

Date of Issue: 11/9/05

Work Completed:

Date: _____

Inspector: _____

City of Livermore

Encroachment Permit No. EN050518

Community Development Department
1052 S. Livermore Avenue
Livermore, CA 94550
(925) 960-4500

SPECIAL REQUIREMENTS APPLICABLE TO WORK ASSOCIATED WITH

JOB LOCATION: *160 Holmes Street*

DESCRIPTION OF WORK: *Take four soil borings as shown on attached location map. Convert all soil borings to monitoring wells as needed. Remove and replace a fifth monitoring well.*

1: See Attached Drawing/Plans

2: All lane closures/ traffic control shall be done per Cal Trans Standards.

3: Contractor shall repair/replace all damaged curb, gutter and sidewalk damaged as a result of current work being completed per the City Livermore Standard Details.

4: Pedestrian access must be maintained at all times, including if necessary, escorting pedestrians through the work area.

5: Traffic control shall be completed per Cal Trans Standards and any additional requirements deemed necessary by the City Engineer.

6: All work shall be completed between the hours of 9 a.m. and 3 p.m.

7: All trenchwork and small excavations in the street shall be completed per City Std Detail G-1.

8: Contact City Maintenance Services at 925-960-8020 (contact Mike Perry) to coordinate boring placement in Hansen Park with regard to irrigation lines and other utilities. Provide traffic control plans if you will need to block a lane at any time.
Repair and replace to the City's satisfaction all landscaping that is damaged from work.

9: Keep sight distance clear at corner of Hansen Park where First street and Holmes Street intersect. Provide cones and/or fencing as required to delineate work area.

CITY OF LIVERMORE GENERAL PROVISIONS

1. The permittee shall begin work as authorized under this permit within 30 days from the date of issuance, unless a different date is stated in the permit. If the work is not begun within 30 days or the time stated in the permit, the permit shall become void. The permit shall be valid for a term of 90 days from the date of issuance, or as otherwise stated on the permit, unless discontinued by the use or removal of the encroachment for which the permit was issued.

2. This permit is issued only for that portion of work in the City of Livermore public right-of-way.

3. All construction shall be in accordance with City Standard Details and Specifications.

4. Permittee shall notify Underground Service Alert (U.S.A.) at 800-227-2600 prior to excavation. All underground contractors must have U.S.A. inquiry identification number.

5. Permittee is hereby cautioned that unless otherwise noted herein, traffic signal detector loops, wiring, etc., shall not be disturbed. Request marking from the City of Livermore Street Maintenance Dept. at 960-8020.

6. All excavations shall conform to the requirement of the State of California Division of Occupational Safety and Health.

7. Permittee shall furnish all safeguards and post warning signs in advance of work area for vehicular traffic and shall clear the roadway of any obstructions or debris at the end of each work day. All safety devices shall conform to the latest edition of the State of California "Manual of Warning Signs, Lights, and Devices for Use in Performance of Work Upon Highways".

8. No public road under the jurisdiction of the City Engineer shall be closed to travel by the general public without special permission, in writing, from the City Engineer (Sec. 12.08.180 Livermore Municipal Code). No lane closures will be allowed between 6:00 a.m. and 9:00 a.m. or between 3:30 p.m. and 6:30 p.m. At other times, at least one lane of traffic shall be kept open to the general public.

9. No more than 300 linear feet of continuous excavation shall be opened at one time. Excavate only that length of trench which can be backfilled and compacted to specified requirements the same day. Temporary pavement must be placed the same day.

10. Backfill shall be placed in accordance with the current City Standard Detail S-1.

11. Metal plates of sufficient thickness for legal load traffic or temporary paving, 1½" ,minimum thickness, shall be placed over any unpaved areas at the end of each work day. Temporary pavement must be placed around all edges of said plates. Sidewalk construction areas shall be left in a safe condition.

12. Material excavated from within the City road right-of-way under this permit shall be removed from within the right-of-way and disposed of in a legal manner. (Sec. 12.08.170 Livermore Municipal Code)

13. The right-of-way shall be left clean and orderly daily to the satisfaction of the City Engineer or his representative. The permittee shall give particular attention to maintaining the project in a dust-free condition while performing the various items of work and during non-working periods, including weekends.

14. Job sites left in an unsafe condition will be secured by City personnel and the permittee will be billed for all expenses incurred by the City.

15. Final asphalt concrete surfacing shall be placed within 14 days of completion of each 300 linear feet of excavation. If the edges of the trench have been ravelled prior to final surfacing, the edges shall be re-sawn.

16. Where concrete is placed in a planter strip, score lines, construction joints and expansion joints shall be continued across entire sidewalk area. Where curb, gutter and sidewalk are placed monolithically, the "back edge" of the curb shall be scored.

17. No culverts or storm drains are to be cut or disturbed. Direction of flow and capacity of existing surface water drainage facilities shall not be materially changed.

18. Access to public and private properties adjacent to the public road in which work is authorized shall not be denied by reason of such work. Special measures shall be taken to insure passage for emergency vehicles over and at the site of work at all times.

19. In the event that any future improvement of the road right-of-way necessitates the relocation of the encroachment for which this permit is issued, the permittee shall relocate same at his sole expense.

20. Priority shall be given to operations performed under this contract let by the City of Livermore for certain work at this location. Coordination shall be effected through said Contractor and the Project Representative for the City.

21. Any existing facilities damaged or removed in the course of the work shall be replaced in kind or better, including ground and pavement surfaces, signs, striping, markers, curb, gutter, survey monuments, trees and other vegetation, etc., to the satisfaction of the owner of said facility.

22. In accordance with the Livermore Municipal Code, a cash deposit or surety bond may be required. The deposit placed for this work will be held for 90 days after the final inspection.

PERMITTEE SHALL NOTIFY CITY INSPECTOR AT 960-4500
WITHIN THREE (3) DAYS AFTER WORK IS COMPLETED.

FAILURE TO COMPLY WITH THESE PROVISIONS WILL RESULT IN
THE CITY'S TAKING WHATEVER MEASURES NECESSARY
TO CONFORM TO PERMIT CONDITIONS AND
THE PERMITTEE WILL BE BILLED FOR ALL EXPENSES INCURRED.

APPENDIX C
Access Agreements

PROPERTY ACCESS AGREEMENT

This Property Access Agreement (Agreement), dated October 7, 2005, is made between Anderson Living Trust, Dorothy J. Anderson, Trustee, in c/o Gallagher & Meirsch, (Concord, CA), for the Vintner Square Shopping Center, located on the north side of 1st Street, between South S and Holmes Streets, in Livermore, CA; and Manwel and Samira Shuwayhat, (property owner of the Vallero Gas Station located at 160 Holmes Street, Livermore, CA (referred to as "Mr. Shuwayhat").

BACKGROUND

Underground storage tanks (USTs) were previously operated at the real property located at 160 Holmes Street, Livermore, California. Current environmental data indicates that a contaminated groundwater plume has migrated northward such that it is beneath the Vintner Square Shopping Center. Access to the Vintner Square Shopping Center property is required to facilitate the installation of groundwater monitoring wells and the collection of soil and groundwater samples. In order to minimize future potential business disruptions at the Property, time is of the essence in initiating the investigative work on the Property and instituting corrective measures. This investigative work has been mandated by the Alameda County Health Care Services Agency, Environmental Health Services (ACEH).

Allterra Environmental, Inc. (Allterra) has been retained to continue the investigations necessary to delineate the extent of petroleum hydrocarbons in the subsurface and implement remedial action to reduce concentrations of petroleum hydrocarbons in groundwater below the 160 Holmes Street property. A Workplan prepared by Allterra (copy enclosed) details the location of new groundwater monitoring wells, extraction wells, and soil borings to be advanced on the property. The currently approved work involves the installation of seven monitoring wells, one extraction well, and fifteen borings located at the 160 Holmes Street site and in the area north that includes Hanson Park and nearby portions of South S Street (Valley Care Health Services) and 1st Street [Vintner Square Shopping Center and Mountain Mike's Pizza (Mountain Mike's Pizza is not part of the Vintner Square Shopping Center)]. The location of these new wells and borings are shown on Figure 2 of the attached workplan. Temporary borings will be grouted to surface grade following collection of soil and groundwater samples. Groundwater monitoring wells will be developed to insure that the well functions properly and that initial groundwater samples to be collected are relatively sediment free. Subsequent monitoring events will be conducted by Allterra on a quarterly basis. Such quarterly monitoring will be required until the contaminant levels have been reduced to levels satisfactory to ACEH.

This Agreement provides conditions of access that is deemed acceptable to all parties to the Agreement. This Agreement contains provisions for general liability insurance coverage during and subsequent to the boring and/or well installations, provisions for the removal and relocation of the wells as directed by Mr. Scott Gallagher of Gallagher & Meirsch and provides conditions for access notification and the sharing of technical data generated from the investigative and corrective action work.

TERMS AND CONDITIONS

In consideration of the mutual promises and covenants of the party's contained herein and for other good and adequate consideration, the RP's and Mr. Scott Gallagher on behalf of Gallagher & Meirsch agree as follows:

Scope of Agreement.

- The RP's and their agents are granted the right to enter the Property at reasonable times upon seven days written advance notice for the sole purpose of conducting the groundwater monitoring well installations, and quarterly sampling activities on the Property. For purposes of this Agreement, a copy of a schedule notice transmitted by facsimile or electronic mail shall be satisfactory. All costs incurred by the RP's in the course of the activities conducted at the Property shall be borne solely by the RP's.

- The RP's and their agents shall conduct all activities on the Property in compliance with all applicable laws, regulations, and ordinances.

- The RP's shall be responsible for the proper removal and disposal of all soil cuttings, water, and any other materials generated in connection with its activities on the Property. Upon closure of the wells, the RP's shall return the Property to its original condition, subject to normal wear and tear.

- The activities of the RP's on the Property shall be conducted in a manner that shall at all times minimize disruption of the business use of the Property.

Removal and Replacement of Wells

To facilitate the future planned development of the Property, RP's shall be responsible for the removal and replacement of all wells that Gallagher & Meirsch determine interfere with such future planned development. To facilitate payment for the removal and replacement of the wells, the ACEH will provide a written directive for the removal of such wells as requested by Mr. Gallagher or Gallagher & Meirsch. To facilitate planning, Mr. Gallagher shall provide written notification to the RP's a minimum of 120 days in advance of the date the wells need to be removed. The California Underground Storage Tank Cleanup Fund (Fund) will reimburse for the costs to replace the wells as directed by ACEH; provided RP's duty to remove any wells is required whether or not such reimbursement is forthcoming.

Insurance

Allterra and all contractors or subcontractors to perform work on the property (i.e. installation of wells, sampling of wells, etc.) shall be responsible for providing $2,000,000 in general liability insurance. Evidence of such insurance coverage shall be provided through the issuance of a Certificate of Insurance naming Anderson Living Trust, Dorothy J. Anderson, Trustee, in c/o Gallagher & Meirsch as an additional insured. This insurance shall remain in force at all times that Allterra and all contractors or subcontractors shall perform required work on the Property in conformance with the provisions of this Agreement.

In addition to the insurance to be provided by Allterra, the RP shall provide $1,000,000 in general liability coverage for the purpose of insuring the remedial activities. Evidence of such insurance coverage shall be provided through the issuance of a Certificate of Insurance naming the property owners as an additional insured.

Disclosure of Results

The RP's shall keep the property owners informed as to its activities on the Property and shall provide the property owners a copy of all reports and laboratory analyses pertaining to its work conducted on the Property.

Indemnification

The RP shall defend, hold harmless and indemnify the property owners from any and all claims, damages, injuries (to persons or property), costs and expenses (including attorney's fees) caused by or arising from RP and/or RP's agents' and representatives' activities on the Property pursuant to this agreement.

Miscellaneous

- By virtue of entering into this Agreement, the property owner does not assume control of or responsibility for federal, state or local public agency reporting requirements with respect to the activities and findings of the RP's agents. The RP agrees to notify the appropriate federal, state or local public agencies as required by law, or otherwise disclose, in a timely manner, any information that may be necessary to prevent any danger to health, safety or the environment.

- Nothing contained in this Agreement shall be construed or interpreted as requiring the property owner to assume the status of generator, storer, treater, transporter or disposal facility within the meaning of any similar federal, state or local law, regulation or ordinance.

- The parties agree that this Agreement is intended by the parties as the final, complete and exclusive expression of the terms and conditions of their Agreement, This Agreement shall supersede all prior written or oral agreements between the parties hereto.

- This Agreement shall be governed by and construed in accordance with the laws of the State of California and shall be binding on the parties hereto and the respective heirs, successors, assigns and legal representatives.

- The invalidity or unenforceability of any provision of this Agreement shall not effect or render invalid or unenforceable any other provision.

- This Agreement may be executed in counterparts and when executed, all such counterparts shall constitute one agreement which shall be binding upon all Parties hereto, notwithstanding that the signatures of the Parties do not appear on the same page.

IN WITNESS WHEREOF, the Parties into this Agreement have duly executed and delivered the Agreement on the day and year written above.

Manwel and Samira Shuwayat

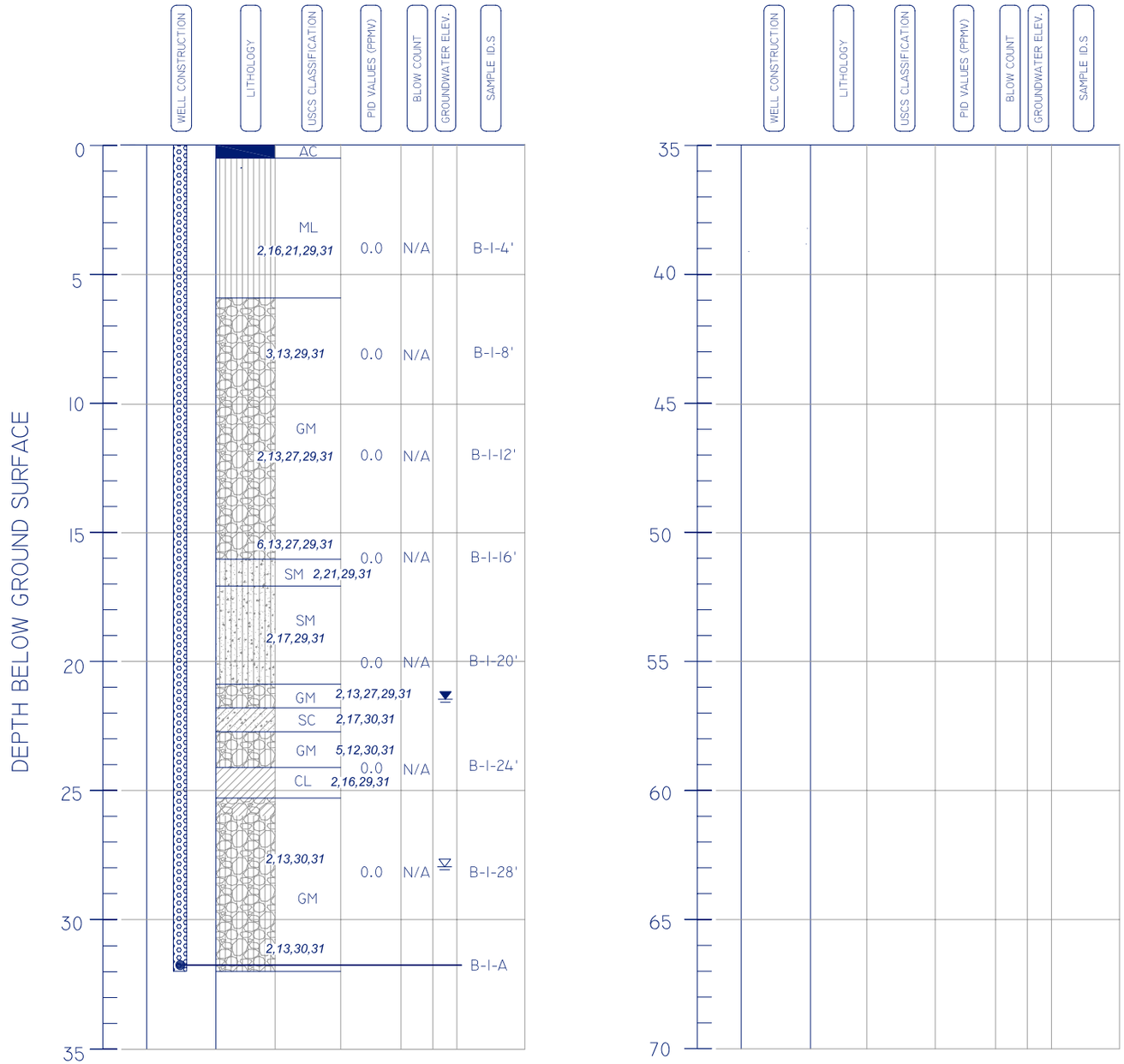
By: _____ Greg Nolan, Allterra
for the above

Gallagher & Meirsch, Agent for Anderson Living Trust

By: _____

Attachments: Soil and Groundwater Investigation Workplan

APPENDIX D
Boring Logs



BORING INFORMATION

WELL I.D.	B-1	TOTAL DEPTH	32'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/10/05

LEGEND

WELL CONSTRUCTION

- BENTONITE
- NO. 2 SAND
- CONCRETE
- LANDSCAPE
- ASPHALT
- NEAT CEMENT

USCS CLASSIFICATIONS

PT	PEET
OL	ORGANIC SILT OR CLAY
CL	SILTY OR SANDY CLAY
ML	CLAYEY SILT
SC	CLAYEY SAND
SM	SILTY SAND

USCS CLASSIFICATIONS

SP	POORLY GRADED SAND
SW	WELL GRADED SAND
GC	CLAYEY GRAVEL
GM	SILTY GRAVEL
GP	POORLY GRADED GRAVEL
GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A — NOT APPLICABLE
- GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

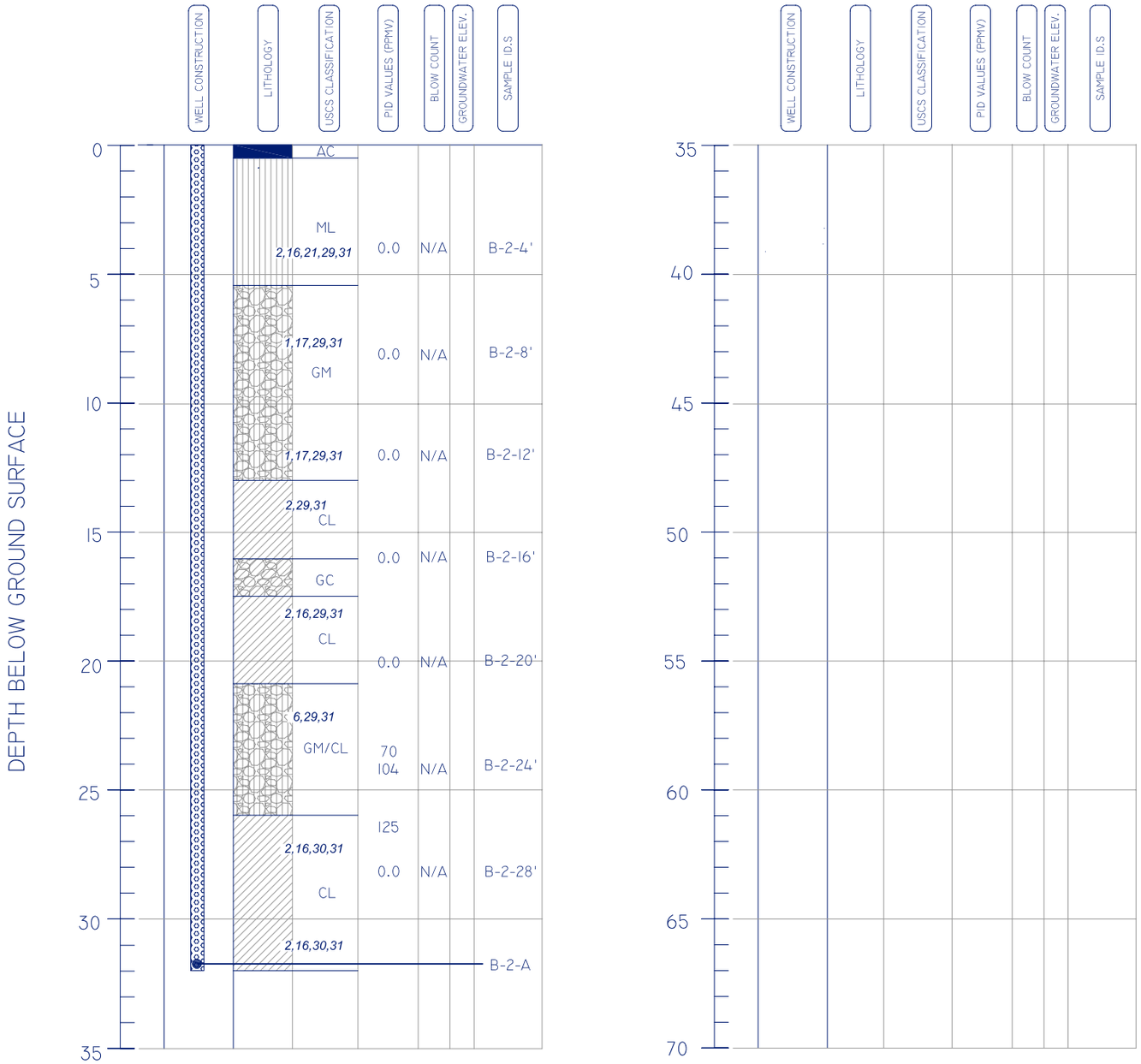
1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
6	RUSTY BROWN	17	< 20% COARSE MATERIAL < 4.75 MM	28	DRY
7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
8	MEDIUM OLIVE	19	< 45% COARSE MATERIAL < 4.75 MM	30	WET (FREE WATER)
9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

ALLTERRA
849 ALMAR AVE., SUITE C, No. 281
SANTA CRUZ, CALIFORNIA
WWW.ALLTERRAENV.COM

BORING LOG B-1

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	B-2	TOTAL DEPTH	32'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/10/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

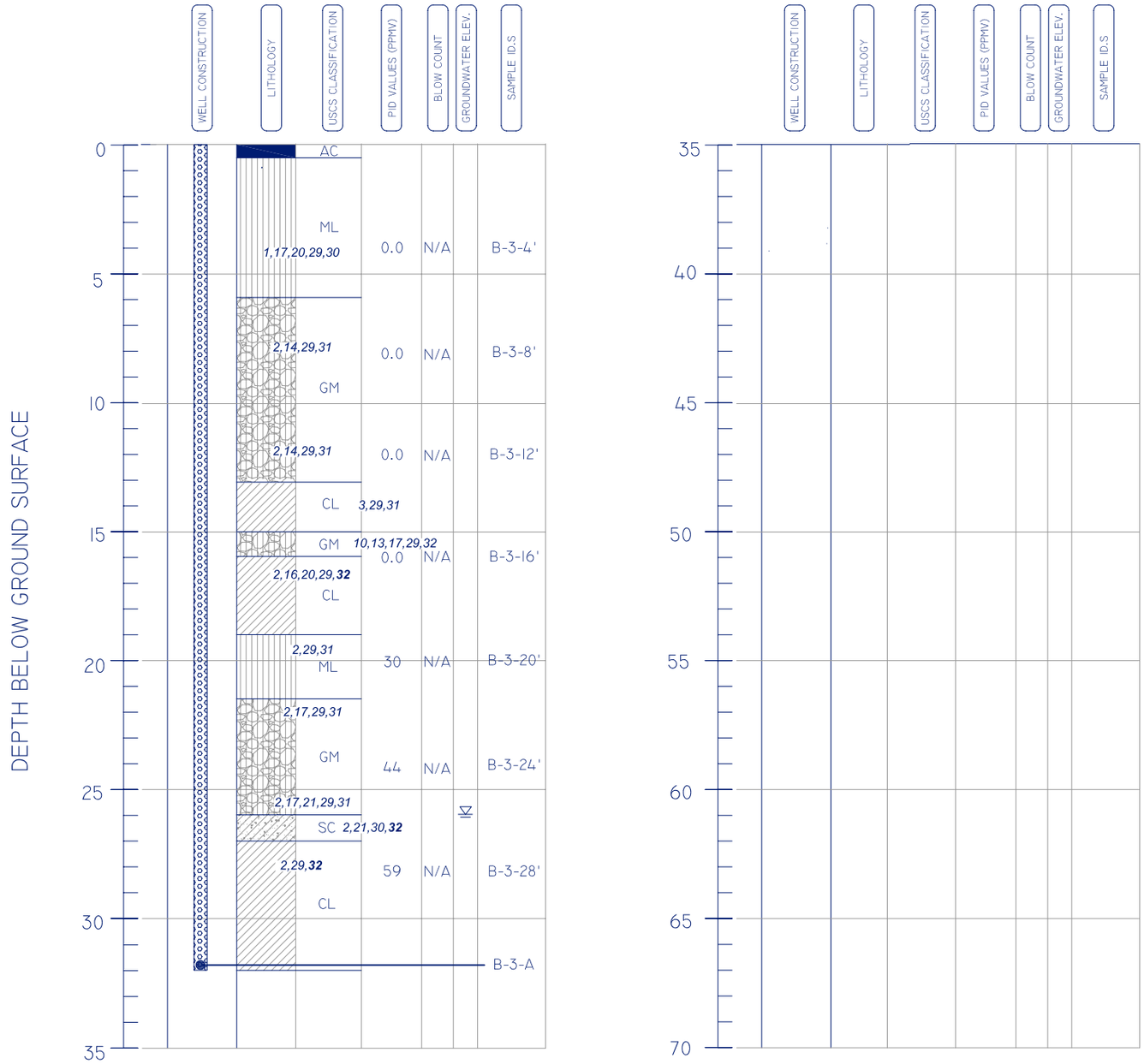
1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
6	RUSTY BROWN	17	< 20% COARSE MATERIAL < 4.75 MM	28	DRY
7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
8	MEDIUM OLIVE	19	< 45% COARSE MATERIAL < 4.75 MM	30	WET (FREE WATER)
9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

ALLTERRA
849 ALMAR AVE., SUITE C, No. 281
SANTA CRUZ, CALIFORNIA
WWW.ALLTERRAENV.COM

BORING LOG B-2

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	B-3	TOTAL DEPTH	32'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/10/05

LEGEND

WELL CONSTRUCTION

- BENTONITE
- NO. 2 SAND
- CONCRETE
- LANDSCAPE
- ASPHALT
- NEAT CEMENT

USCS CLASSIFICATIONS

PT	PEET
OL	ORGANIC SILT OR CLAY
CL	SILTY OR SANDY CLAY
ML	CLAYEY SILT
SC	CLAYEY SAND
SM	SILTY SAND

USCS CLASSIFICATIONS

SP	POORLY GRADED SAND
SW	WELL GRADED SAND
GC	CLAYEY GRAVEL
GM	SILTY GRAVEL
GP	POORLY GRADED GRAVEL
GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A — NOT APPLICABLE
- GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
6	RUSTY BROWN	17	< 20% COARSE MATERIAL < 4.75 MM	28	DRY
7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
8	MEDIUM OLIVE	19	< 45% COARSE MATERIAL < 4.75 MM	30	WET (FREE WATER)
9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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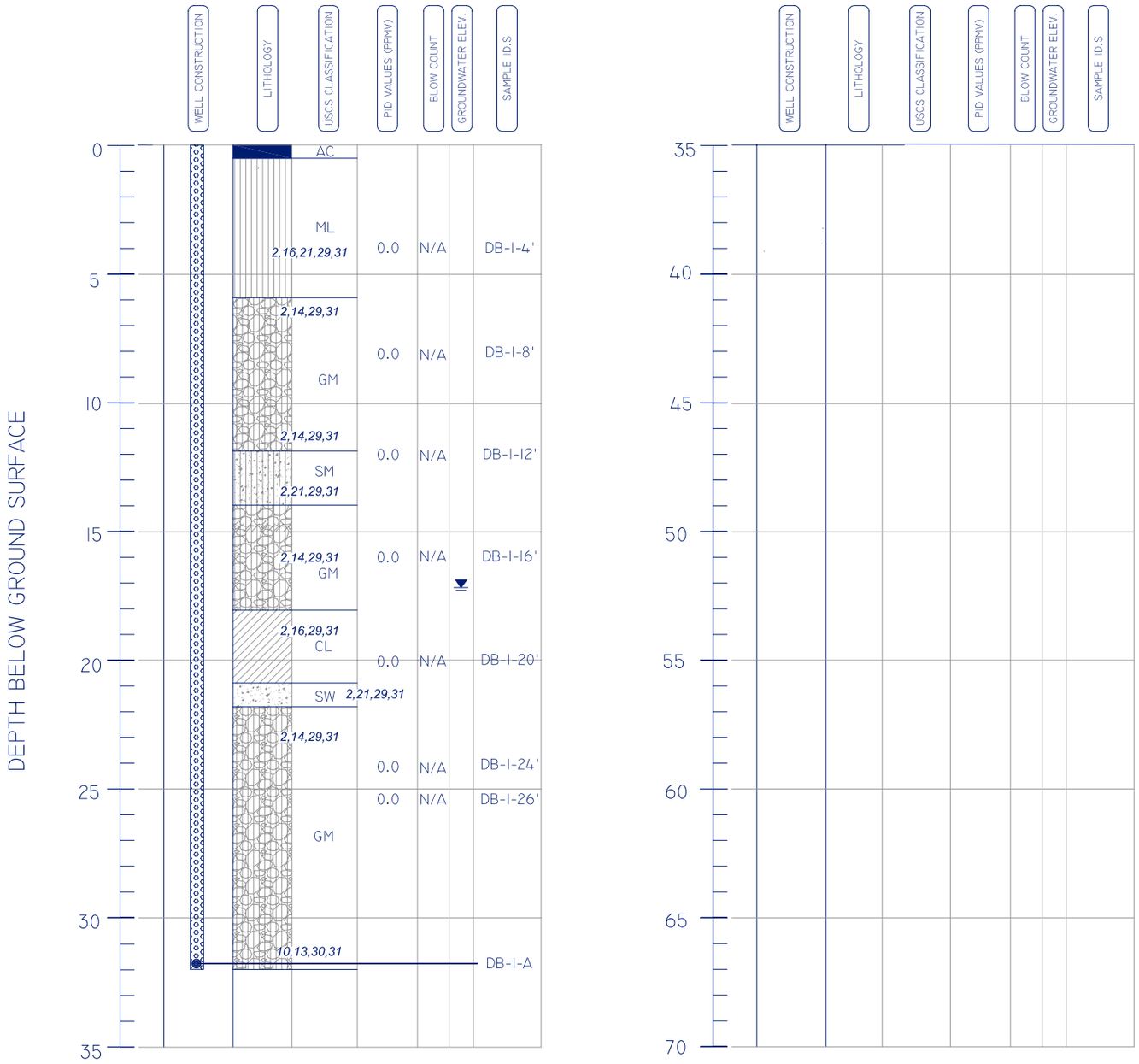
BORING LOG B-3

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-I	TOTAL DEPTH	32'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/10/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
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9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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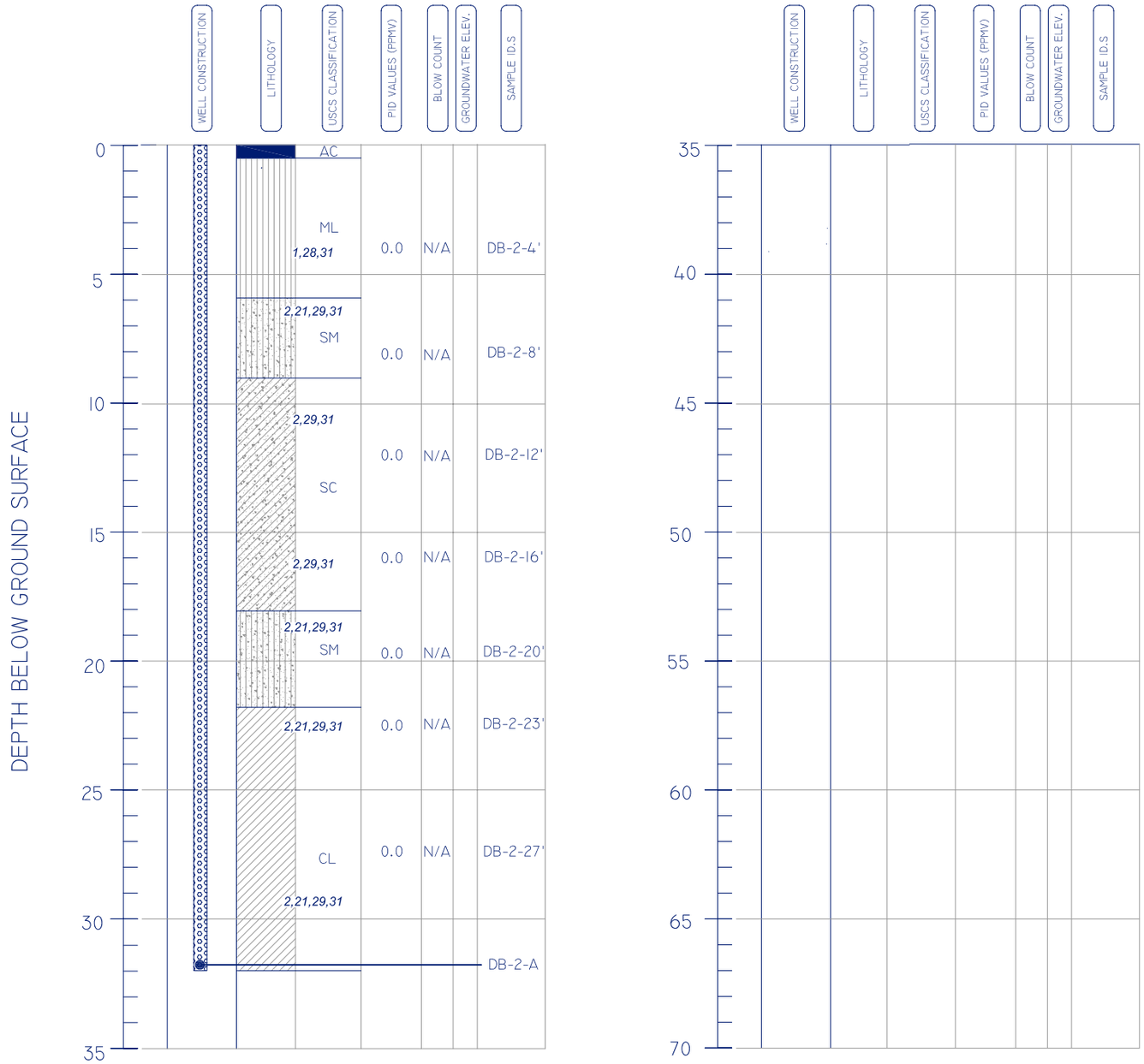
BORING LOG DB-I

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-2	TOTAL DEPTH	32'
LOGGED BY:	ERIK ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/11/05
BORING DIA.	2 1/2"	COMPLETION	11/11/05

LEGEND

WELL CONSTRUCTION		USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND	
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND	
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL	
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL	
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL	
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL	

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
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10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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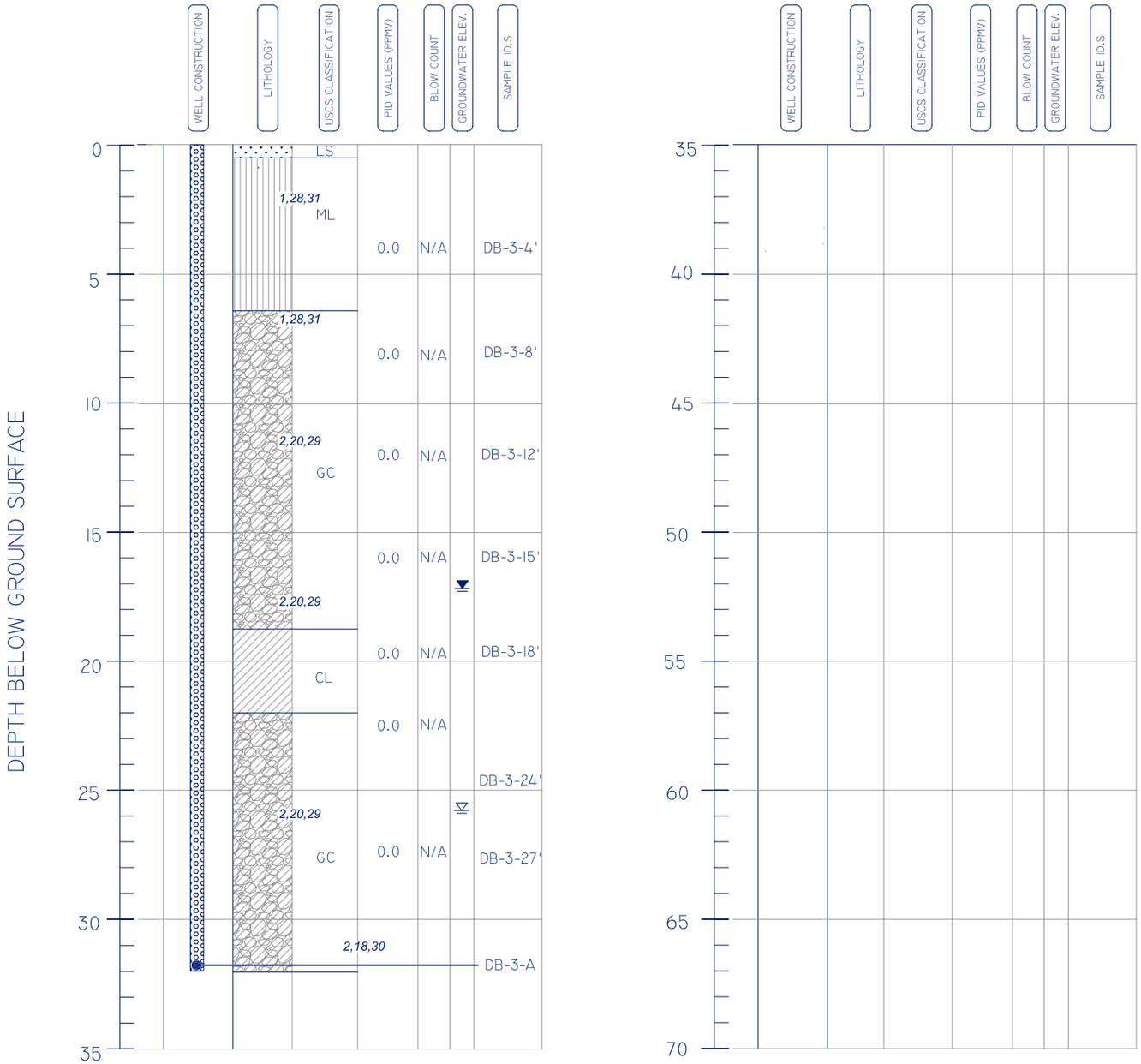
BORING LOG DB-2

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-3	TOTAL DEPTH	32'
LOGGED BY:	ERIK ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/14/05
BORING DIA.	2 1/2"	COMPLETION	11/14/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
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11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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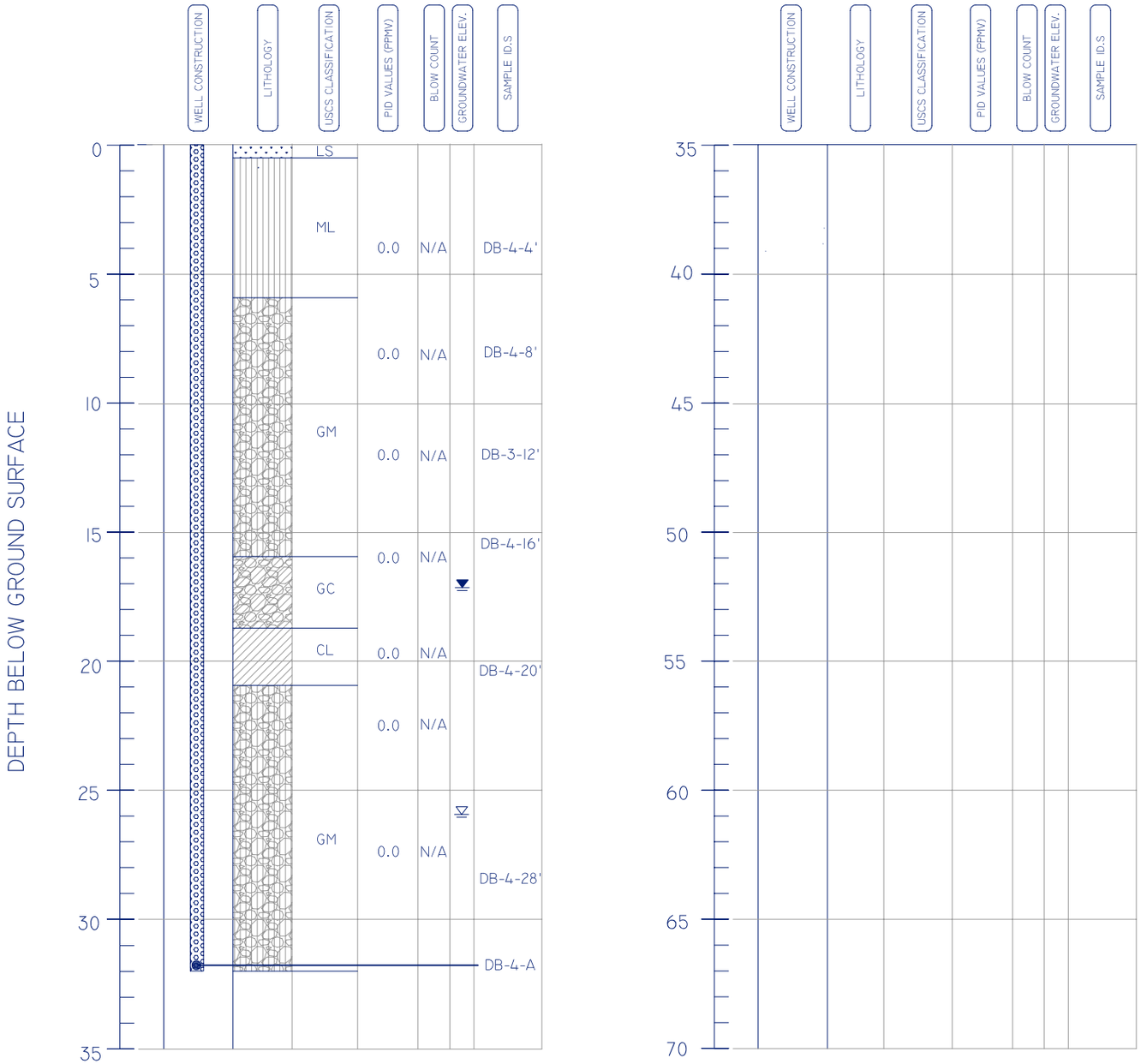
160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-4	TOTAL DEPTH	32'
LOGGED BY:	JAMES ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/14/05
BORING DIA.	2 1/2"	COMPLETION	11/14/05

LEGEND

WELL CONSTRUCTION		USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND	
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND	
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL	
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL	
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL	
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL	

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL) — N/A NOT APPLICABLE

GROUNDWATER ELEV. (STATIC) — GROUNDWATER SAMPLE

1,17,20,29,30

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
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10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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160 HOLMES STREET
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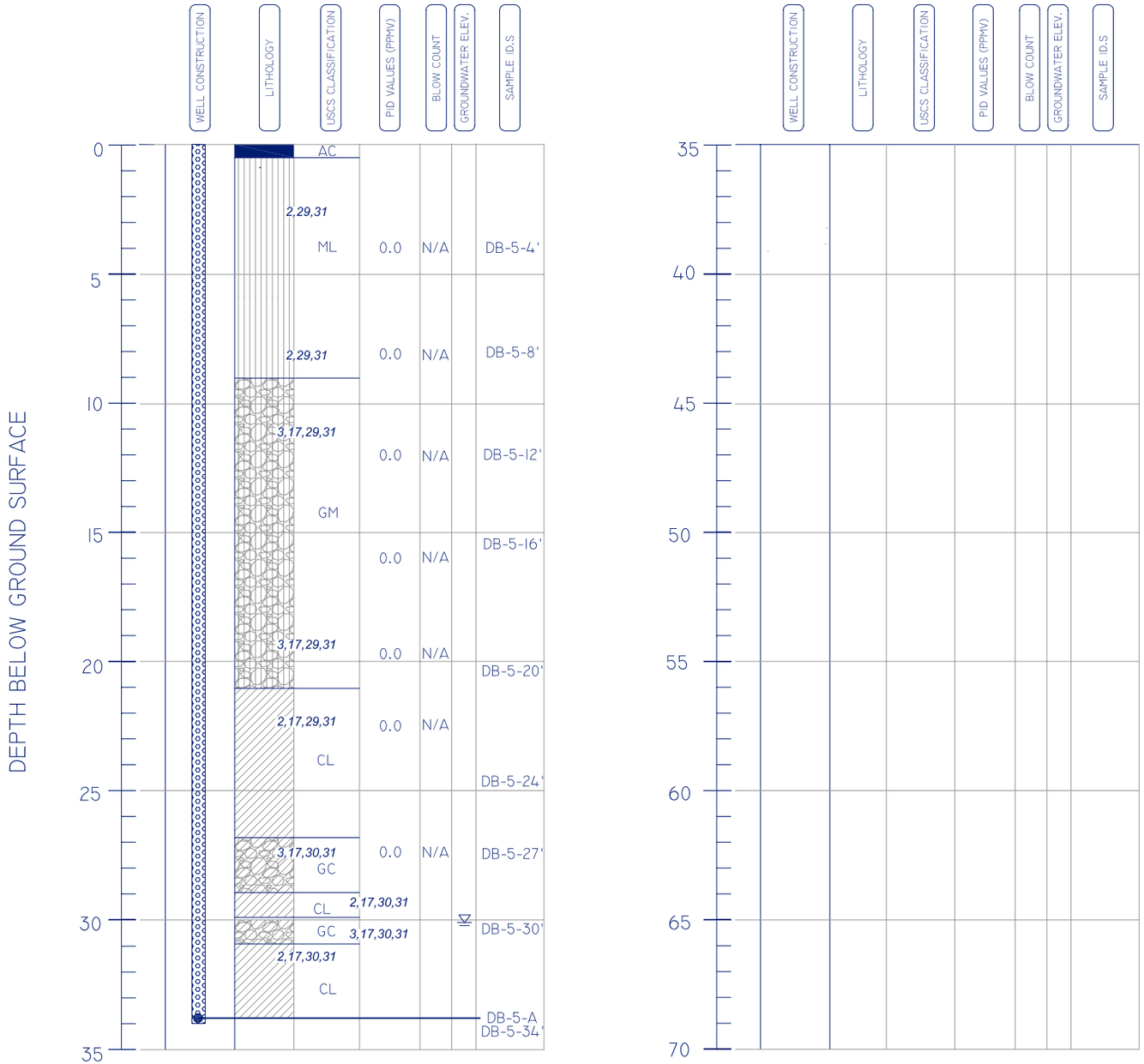
11/21/05



BORING INFORMATION

WELL I.D.	DB-5	TOTAL DEPTH	34'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	34'
METHODE	GEO PROBE	START DATE	11/11/05
BORING DIA.	2 1/2"	COMPLETION	11/11/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
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7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
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10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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BORING LOG DB-5

160 HOLMES STREET
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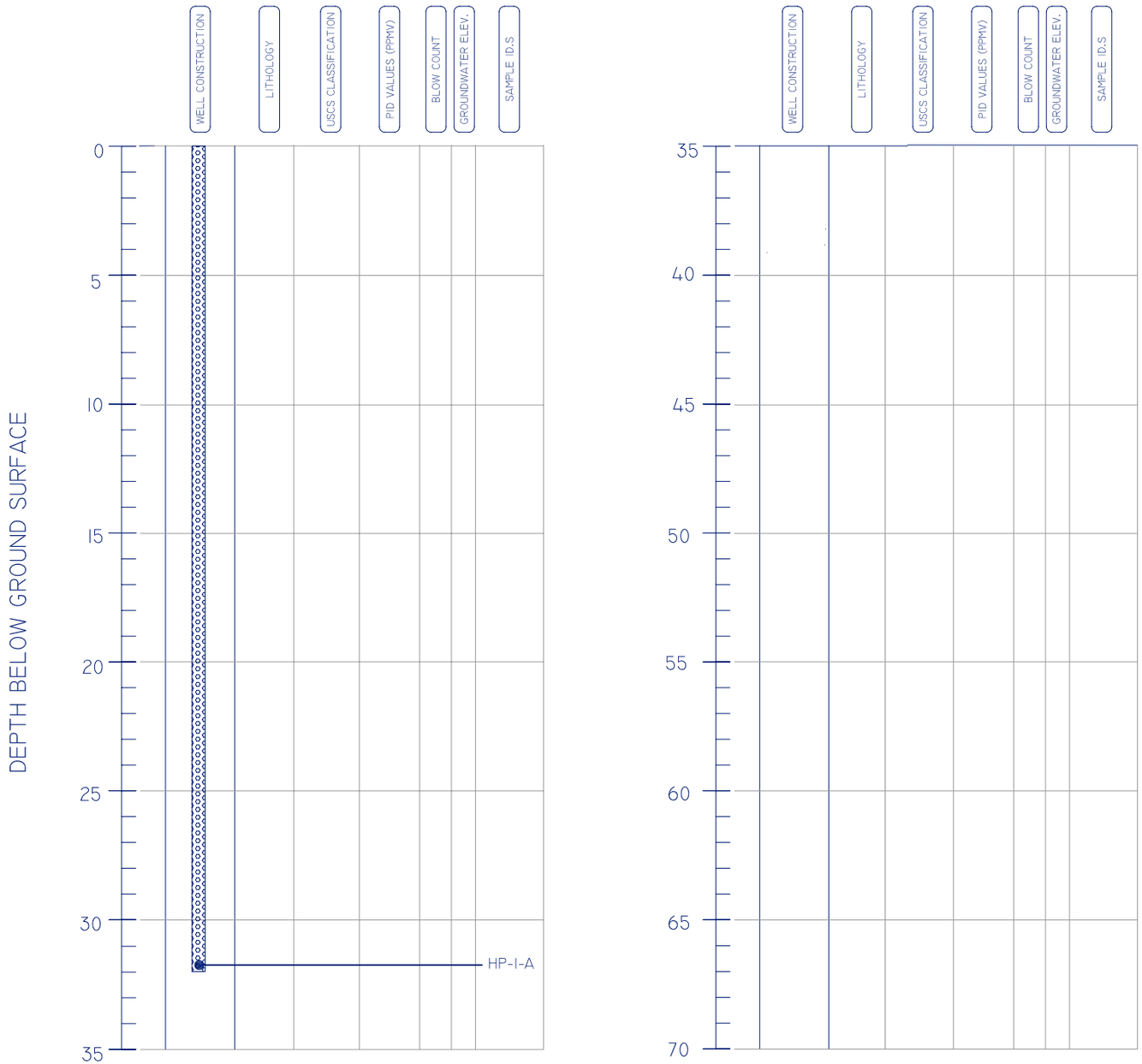
11/21/05



BORING INFORMATION

WELL I.D.	HP-I-A	TOTAL DEPTH	32'
LOGGED BY:	JAMES ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/14/05
BORING DIA.	2 1/2"	COMPLETION	11/14/05

LEGEND

WELL CONSTRUCTION

- BENTONITE
- NO. 2 SAND
- CONCRETE
- LANDSCAPED SURFACE
- ASPHALT
- NEAT CEMENT

USCS CLASSIFICATIONS

- OL ORGANIC SILT OR CLAY
- CL SILTY OR SANDY CLAY

USCS CLASSIFICATIONS CONT.

- ML CLAYEY SILT
- SC CLAYEY SAND
- SM SILTY SAND
- SP POORLY GRADED SAND
- SW WELL GRADED SAND
- GC CLAYEY GRAVEL
- GM SILTY GRAVEL
- GP POORLY GRADED GRAVEL
- GW WELL GRADED GRAVEL

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A NOT APPLICABLE
- GROUNDWATER SAMPLE

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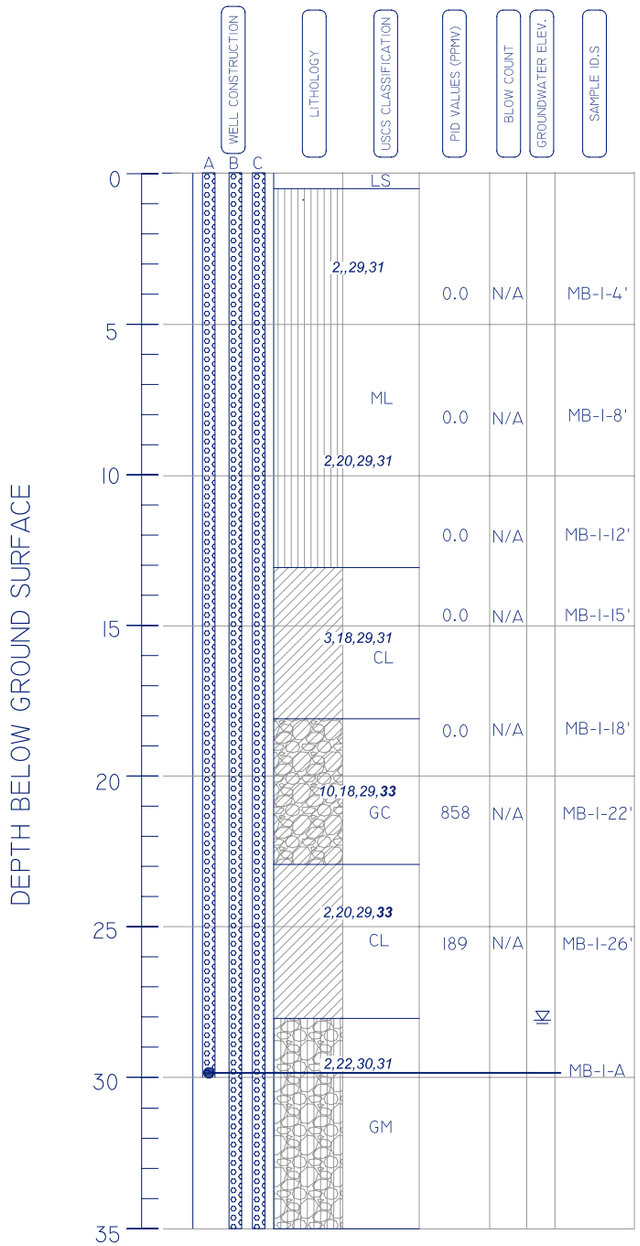
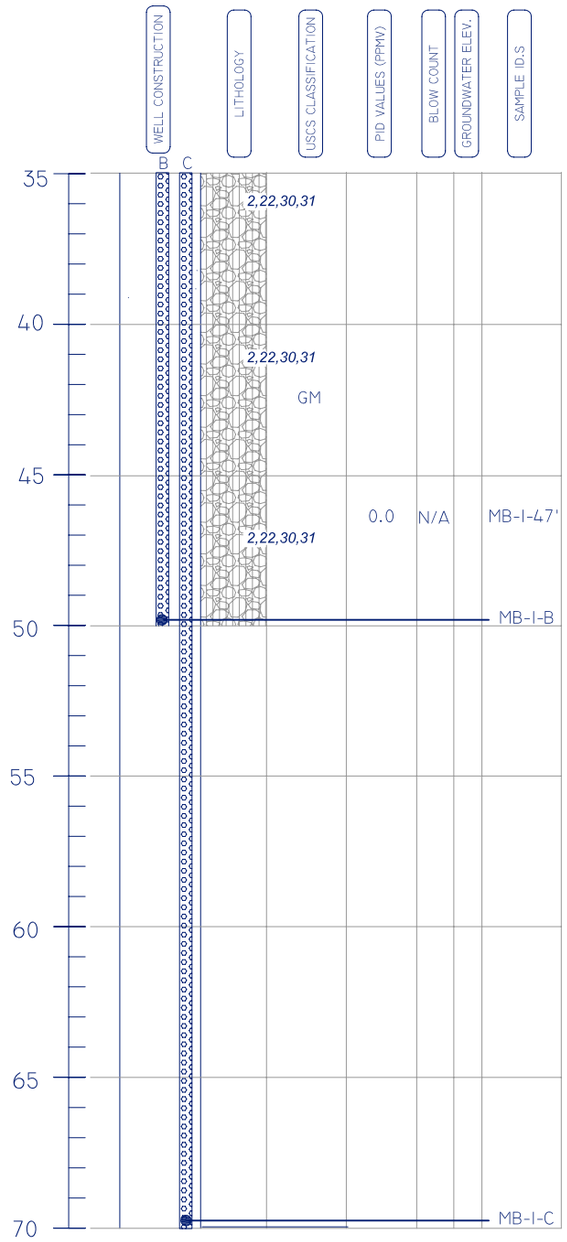
BORING LOG HP-I-A

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05





BORING INFORMATION

WELL I.D.	MB-IA,B,C	TOTAL DEPTH	70'
LOGGED BY:	JAMES ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/11/05
BORING DIA.	2 1/2"	COMPLETION	11/11/05

LEGEND

WELL CONSTRUCTION

- BENTONITE
- NO. 2 SAND
- CONCRETE
- LANDSCAPE
- ASPHALT
- NEAT CEMENT

USCS CLASSIFICATIONS

PT	PEET
OL	ORGANIC SILT OR CLAY
CL	SILTY OR SANDY CLAY
ML	CLAYEY SILT
SC	CLAYEY SAND
SM	SILTY SAND

USCS CLASSIFICATIONS

SP	POORLY GRADED SAND
SW	WELL GRADED SAND
GC	CLAYEY GRAVEL
GM	SILTY GRAVEL
GP	POORLY GRADED GRAVEL
GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A NOT APPLICABLE
- GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
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BORING LOG MB-I

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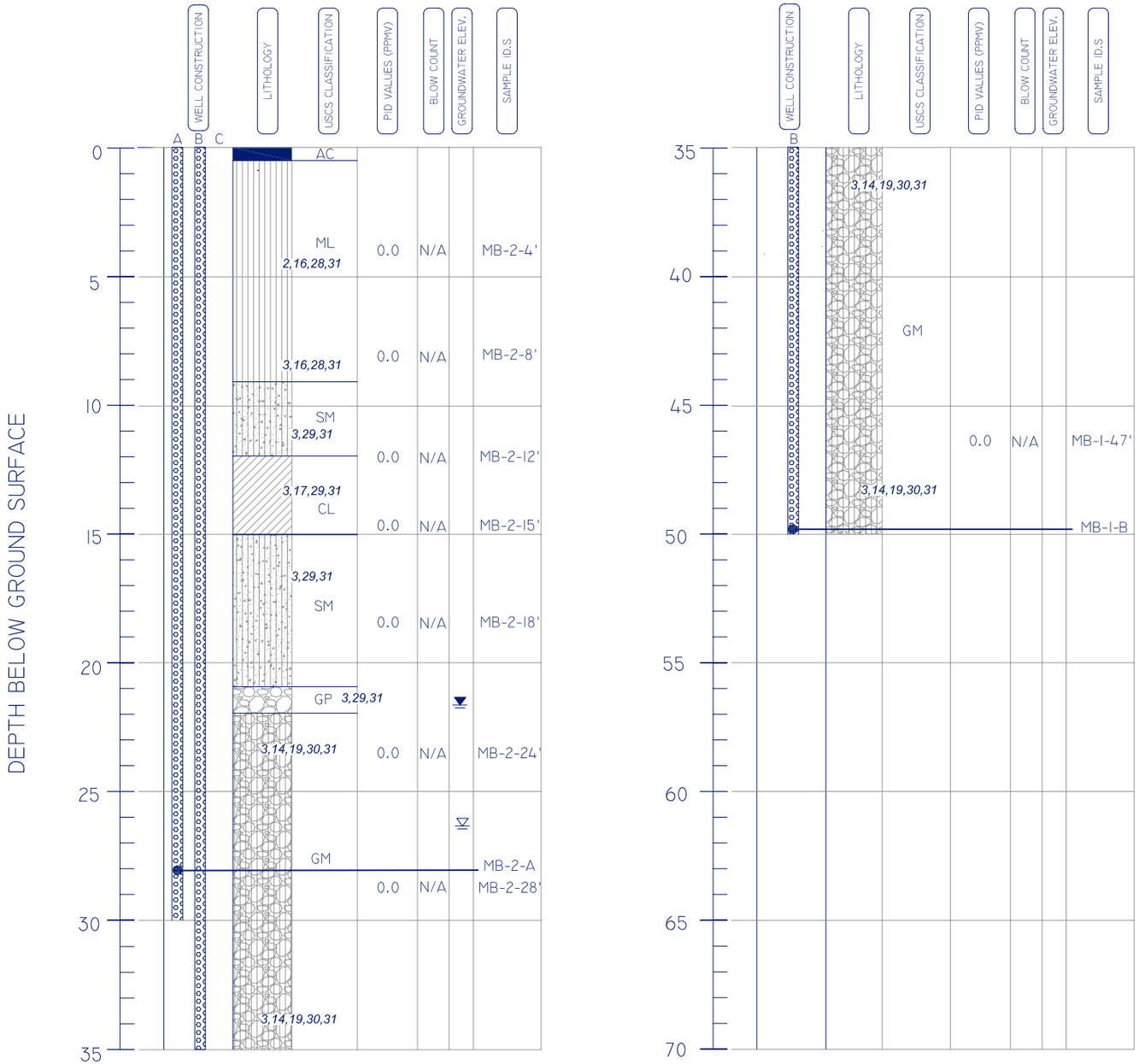
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	MB-2A,B	TOTAL DEPTH	50'
LOGGED BY:	JAMES ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	50'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/11/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
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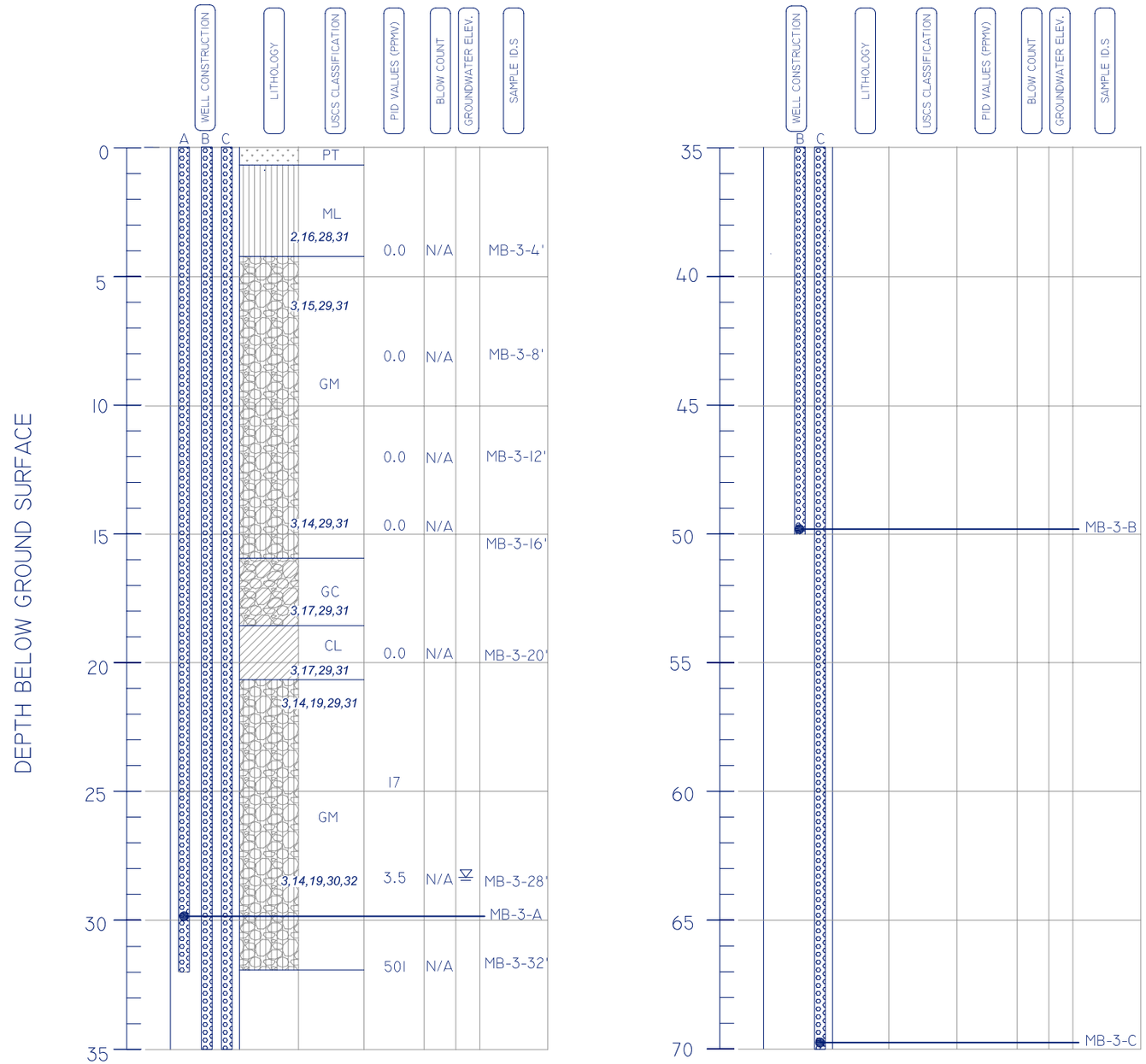


BORING INFORMATION

WELL I.D.	MB-3A,B,C	TOTAL DEPTH	70'
LOGGED BY:	ERIK ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	70'
METHODE	GEO PROBE	START DATE	11/11/05
BORING DIA.	2 1/2"	COMPLETION	11/12/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A NOT APPLICABLE
- GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
6	RUSTY BROWN	17	< 20% COARSE MATERIAL < 4.75 MM	28	DRY
7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
8	MEDIUM OLIVE	19	< 45% COARSE MATERIAL < 4.75 MM	30	WET (FREE WATER)
9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

ALLTERRA
849 ALMAR AVE., SUITE C, No. 281
SANTA CRUZ, CALIFORNIA
WWW.ALLTERRAENV.COM

BORING LOG MB-3

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-1B**	Page: 1 of 2
	Project Number: 015-01-012	
	Date: 2/23/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: JA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, 50 to 55 feet below ground surface (bgs) screen interval	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Soil at ground surface
				2			
				3			
				4			
				5			Boring MB-1 was logged continuously for lithology from surface
				6			grade to 50 feet bgs. See Boring log from MB-1 for lithology
				7			information for first 50 feet
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information		
Date	Time	Depth (feet)
2/23/06	11:45	36.05

When applicable 31-60 feet bgs on page 2

Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID **MW-1B** Page: 2 of 2

Project Number: 015-01-012

Date: 2/23/06

Location: 160 Holmes St., Livermore, CA

Logged By: JA

Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 2-inch casing, 8-inch bore hole, 50 to 55 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			Boring MB-1 was logged continuously for lithology from surface
				34			grade to 50 feet bgs. See Boring log from MB-1 for lithology
				35		▽	information for first 50 feet
				36			
				37			
				38			
				39			
				40			
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
	ND			50		GM	Silty gravel, medium brown, 35% medium plasticity fines, 25% medium
				51			to coarse sand, 40% mediaum to coarse gravel, medium dense, wet, NPO
				52			
				53			
				54			
	ND	7,11,13		55		GM	As above
				56			
	ND		MW-1B@57	57		CL	Silty clay with some fine to medium sand, brown, 60% low to med.
		5,6,10		58			plasticity fines, 40% fine to med. sand, med. stiff, moist, NPO
				59			
				60		CL	As above, 65% low to medium plasticity fines, 35% fine sand
	ND		MW-1B@61	61			

Special Note: Sandy/silty clay was initially encountered at approximately 57 feet bgs. Drilling was continued to 61 feet bgs to verify that the clay layer was significant. After verification, the boring was backfilled with bentonite from 56 to 61 feet. A 1-foot sand transition layer was used above the bentonite

Notes:

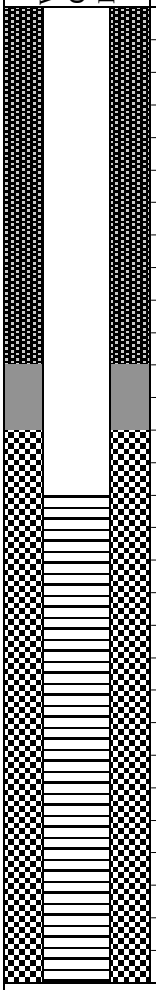
= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-4A**	Page: 1 of 1
	Project Number: 015-01-012	
	Date: 2/28/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: JA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	

Casing installation data: 2-inch casing, 8-inch bore hole, 15 to 30 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Soil at ground surface
				2			
				3			
				4			
				5			Well MW-4 (50 feet deep) was drilled within 5 feet of MW-4A, therefore
				6			soil from MW-4A boring was not classified
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			Total depth = 30 feet bgs

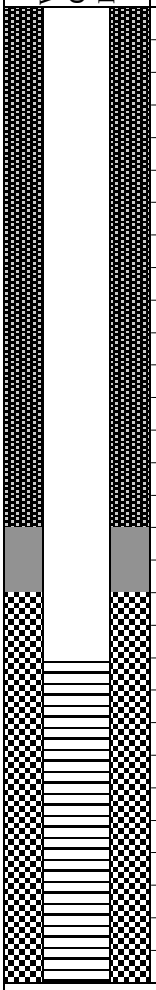
Water Level Information		
Date	Time	Depth (feet)

Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-5A**	Page: 1 of 2
	Project Number: 015-01-012	
	Date: 2/27/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: NA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 20 to 35 feet below ground surface (bgs)	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Landscaping at ground surface
				2			
				3			
				4			
				5			
				6			
				7			Boring MW-5B was sampled for lithology at 5-ft intervals to 40 feet bgs.
				8			See boring log for MW-5B for lithology information
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information		
Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-5A**	Page: 2 of 2
	Project Number: 015-01-012	
	Date: 2/27/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: NA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 20 to 35 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			
				34			
				35			Total depth = 35 feet bgs
				36			
				37			
				38			
				39			
				40			
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
				51			
				52			
				53			
				54			
				55			
				56			
				57			
				58			
				59			
				60			
				61			

Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

▽ = initial water level

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-5B**	Page: 1 of 2
	Project Number: 015-01-012	
	Date: 2/27/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: NA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, 50 to 55 feet below ground surface (bgs) screen interval	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Landscaping at ground surface
				2			
				3			
				4			
				5		ML	Clayey silt, medium brown, 65% low plasticity fines, 30% fine to coarse
				6			sand, 5%, fine to medium gravel, dry, NPO
				7			
				8			
				9			
	ND			10		ML	As above, moist
				11			
				12			
				13			
				14			
				15		GM	Silty gravel with some sand, light brown, 25% low plasticity fines, 15%
				16			fine to coarse sand, 60% fine to medium gravel, moist, NPO
				17			
				18			
				19			
	ND			20		GM	As above
				21			
				22			
				23			
				24			
	ND			25		CL	Sandy clay, medium brown, 55% low to medium plasticity fines, 45%
				26			fine to coarse sand, moist, NPO
				27			
				28			
				29			
	ND			30		CL	As above, very moist

Water Level Information		
Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-5B**	Page: 2 of 2
	Project Number: 015-01-012	
	Date: 2/27/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: NA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 50 to 55 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			
				34			
	ND			35		GM	Silty gravel, medium brown, 35% medium plasticity fines, 25% medium
				36			to coarse sand, 40% mediaum to coarse gravel, medium dense, wet, NPO
				37			
				38			
				39			
				40			
	ND			41		GM	As above, 20% medium to coarse sand, 45% med. to coarse gravel,
				42			some cobbles
				43			
				44			
				45			
	ND			46		GM	As above, 25% medium to coarse sand, 40% med. to coarse gravel
				47			
				48			
				49			
				50			
	ND			51		GM	As above
				52			
				53			
				54			
	ND		MW-5B@55	55		CL	Silty clay with some fine to medium sand, brown, 65% low to med.
				56			plasticity fines, 35% fine to med. sand, med. stiff, moist, NPO
				57			
				58			
				59			Total depth = 55 feet bgs
				60			
				61			

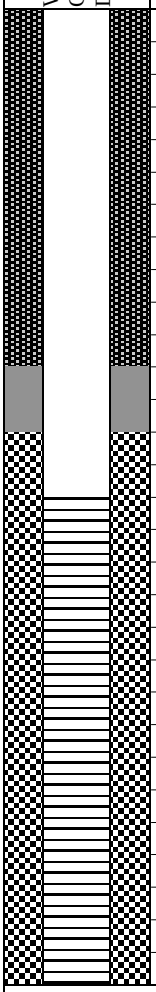
Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

▽ = initial water level

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-7A**	Page: 1 of 1
	Project Number: 015-01-012	
	Date: 2/27/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: JA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 15 to 30 feet below ground surface (bgs)	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Lawn (landscaping)
				2			
				3			
				4			
				5			
				6			Boring MB-3 was logged continuously for lithology from surface
				7			grade to 32 feet bgs. See Boring log from MB-3 for lithology
				8			information
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information		
Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-7B**	Page: 1 of 2
	Project Number: 015-01-012	
	Date: 2/28/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: NA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 45 to 50 feet below ground surface (bgs)	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Grass (landscaping)
				2			
				3			
				4			
				5			
				6			
				7			Boring MB-3 was logged continuously for lithology from surface
				8			grade to 32 feet bgs and boring MW-7C was logged continuously
				9			from 32 to 70 feet bgs. See Boring logs from MB-3 and MW-7C for
				10			lithology information
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information		
Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

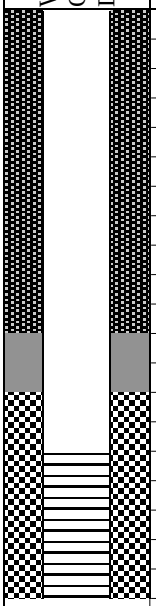
Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-7B**	Page: 2 of 2
	Project Number: 015-01-012	
	Date: 2/28/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: EA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 45 to 50 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			
				34			
				35			
				36			
				37			
				38			
				39			
				40			
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
				51			
				52			Total depth = 50 feet bgs
				53			
				54			
				55			
				56			
				57			
				58			
				59			
				60			
				61			

Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

▽ = initial water level

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID**	**MW-7C** Page: 1 of 3
	Project Number: 015-01-012	
	Date: 2/27/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: JA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 65 to 70 feet below ground surface (bgs)	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Grass (landscaping)
				2			
				3			
				4			
				5			
				6			
				7			Boring MB-3 was logged continuously for lithology from surface
				8			grade to 32 feet bgs. See Boring log from MB-3 for lithology
				9			information for first 32 feet
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information		
Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID **MW-7C** Page: 2 of 3

Project Number: 015-01-012

Date: 2/28/06

Location: 160 Holmes St., Livermore, CA

Logged By: EA

Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 65 to 70 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
	ND			33		GM	Silty gravel, light brown, 35% medium plasticity fines, 25% medium
				34			to coarse sand, 40% medium to coarse gravel, medium dense, wet, MPO
				35			
				36			
				37			
	ND			38		GM	As above, NPO
				39			
				40			
				41			
				42			
				43			
				44			
	ND			45		GM	As above, medium brown, 25% low to medium plasticity fines, 30%
				46			medium to coarse sand, 45% meium to coarse gravel
				47			
				48			
				49			
				50			
				51		GM	As above
				52			
				53			
				54			
				55			
				56			
	ND			57		GM	As above
				58			
				59			
				60			
				61			

When applicable 61-90 feet bgs on page 3

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **MW-7C**	Page: 3 of 3
	Project Number: 015-01-012	
	Date: 2/27/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: JA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 65 to 70 feet below ground surface (bgs)	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				61			
	ND			62		GM	As above, some cobbles
				63			
				64			
				65			
				66			
				67		GM	As above
				68			
				69			
	ND		MW-7C@70	70		CL	Silty clay with some fine sand, light brown, 65% low to medium
				71			plasticity fines, 35% fine sand, med. stiff, moist, NPO
				72			
				73			
				74			
				75			
				76			
				77			
				78			
				79			
				80			
				81			
				82			Total depth = 70 feet bgs
				83			
				84			
				85			
				86			
				87			
				88			
				89			
				90			

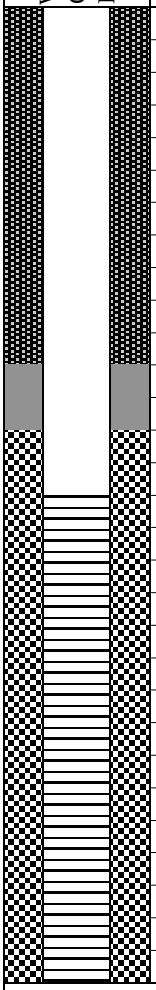
Notes:

- = Cement
- = Bentonite
- = #2 Sand
- = 0.001 inch slotted PVC screen
- = Blank PVC casing

▽ = initial water level

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **EW-1**	Page: 1 of 2
	Project Number: 015-01-012	
	Date: 2/24/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: MK	
Drilling Method/Boring Diameter (inches): Hollow stem auger/ 12	Driller: Exploration Geoservices	
	Casing installation data: 4-inch casing, 12-inch bore hole, 15 to 40 feet below ground surface (bgs) screen interval	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Soil at ground surface
				2			
				3			
				4			
				5			Boring MB-1 was logged continuously for lithology from surface
				6			grade to 50 feet bgs. See Boring log from MB-1 for lithology
				7			information for first 40 feet
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19		▽	
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information		
Date	Time	Depth (feet)
2/24/06	14:49	19.46

When applicable 31-60 feet bgs on page 2

Notes:

- = Cement
- = Bentonite
- = #3 Sand
- = 0.002 inch slotted PVC screen
- = Blank PVC casing

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **EW-1**	Page: 2 of 2
	Project Number: 015-01-012	
	Date: 2/24/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: MK	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 4-inch casing, 12-inch bore hole, 15 to 40 feet below ground surface (bgs) screen interval	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			Boring MB-1 was logged continuously for lithology from surface
				34			grade to 50 feet bgs. See Boring log from MB-1 for lithology
				35			information for first 50 feet
				36			
				37			
				38			
				39			
				40			Total depth = 40 feet bgs
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
				51			
				52			
				53			
				54			
				55			
				56			
				57			
				58			
				59			
				60			
				61			

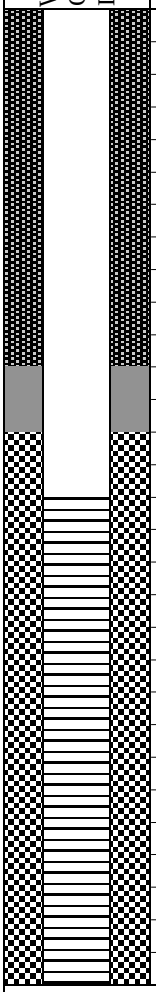
Notes:

- = Cement
- = Bentonite
- = #3 Sand
- = 0.002 inch slotted PVC screen
- = Blank PVC casing

▽ = initial water level

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **EW-2**	Page: 1 of 2
	Project Number: 015-01-012	
	Date: 2/24/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: MK	
Drilling Method/Boring Diameter (inches): Hollow stem auger/ 12	Driller: Exploration Geoservices	
	Casing installation data: 4-inch casing, 12-inch bore hole, 15 to 40 feet below ground surface (bgs) screen interval	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Soil at ground surface
				2			
				3			
				4			
				5			Boring B-2 was logged continuously for lithology from surface
				6			grade to 30 feet bgs. See Boring log from B-2 for lithology
				7			information for first 30 feet
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information		
Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

- = Cement
- = Bentonite
- = #3 Sand
- = 0.002 inch slotted PVC screen
- = Blank PVC casing

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Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** **EW-2**	Page: 2 of 2
	Project Number: 015-01-012	
	Date: 2/24/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: MK	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	

Casing installation data: 4-inch casing, 12-inch bore hole, 15 to 40 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
	ND			31			Silty gravel, medium brown, 35% medium plasticity fines, 25% medium
				32			to coarse sand, 40% mediaum to coarse gravel, medium dense, wet, NPO
				33			
				34			
				35			
	ND		EW-2@36.5	36		GM	As above
				37			
				38			
				39			
				40		GM	As above
	ND		EW-2@41.5	41			Total depth = 40 feet bgs
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
				51			
				52			
				53			
				54			
				55			
				56			
				57			
				58			
				59			
				60			
				61			

Notes:

- = Cement
- = Bentonite
- = #3 Sand
- = 0.002 inch slotted PVC screen
- = Blank PVC casing

▽ = initial water level

APPENDIX E

December 8, 2005 *Preliminary Soil and Groundwater Data Submittal and Proposed Boring and Well Locations*

December 8, 2005
Project No.: 015-01-008

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

Subject: Preliminary Soil and Groundwater Data Submittal and Proposed Boring and Monitoring Well Locations for 160 Holmes Street, Livermore, California

Dear Mr. and Mrs. Shuwayhat:

On your behalf, Allterra Environmental, Inc. (Allterra) has prepared this document to provide Alameda County Environmental Health – Local Oversight Program (ACEH) with preliminary soil and groundwater data from recent investigation activities and propose locations for new groundwater monitoring wells for the property located at 160 Holmes Street in Livermore, California (Site).

Soil and Groundwater Investigation Activities

The following is a brief discussion of recent Geoprobe® drilling activities that were conducted at the Site in order to evaluate the subsurface geology and hydrology and determine the vertical and lateral extent of hydrocarbon in soil and groundwater beneath and down-gradient of the Site. The data collected during recent investigation work was reviewed and evaluated in order to determine the best groundwater monitoring well network for the Site. The data discussed herein will be formally presented in a technical report (with laboratory analytical reports, permits, boring logs, data tables, etc.) upon completion of soil and groundwater investigation activities.

Geoprobe® Borings

On November 10, 11, and 14, 2005, Allterra supervised the installation of Geoprobe® soil borings (continuous core and/or hydropunch) MB-1, MB-2, MB-3, DB-1, DB-2, DB-3, DB-4, DB-5, B-1, B-2, B-3, and HP-1 Boring locations are presented in Figure 1. Nine borings were continuously logged to approximately 32 feet below ground surface (bgs), two borings (MB-1 and MB-2) were continuously logged to approximately 52 feet bgs, and one boring (HP-1) was a hydropunch to approximately 28 feet bgs. Hydropunch borings, which were not logged, were installed at borings MB-1 through MB-3 in order to collect depth discrete groundwater samples. Groundwater samples were collected at 28 feet bgs from all borings, at 52 feet bgs from borings MB-1 through MB-3, and at approximately 70 feet bgs from borings MB-1 and MB-3. A formal presentation of Geoprobe® boring installations and sample collection will be presented in a technical report following completion of investigation activities.

Soil and Groundwater Sample Analyses

Selected soil and all groundwater samples were submitted for chemical testing to McCampbell Analytical, Inc., of Pacheco, California, a state of California certified laboratory (ELAP #1644). Soil and groundwater samples collected from Geoprobe® borings were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd) by EPA Method 8015Cm and benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8021b. Groundwater samples were also analyzed for MTBE, di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butyl alcohol (TBA) by EPA Method 8260B.

Soil and Groundwater Investigation Results

Subsurface Geology and Hydrogeology

The local soil conditions encountered during drilling at the site generally consisted of:

- Clayey silt with varying amounts of gravel and sand, from the ground surface to about 5-10 feet bgs;
- Gravel-sand-silt and gravel-sand-clay of variable composition underlying the clayey silt and generally extending to the depth of first-encountered groundwater, approximately 28 feet. (However, this layer may extend to depths of up to 50 feet bgs near MW-3 and MB-2);
- Brown silty clay, with an average thickness of about 5 feet, located within the above-referenced gravel-sand-silt/gravel-sand-clay layer;
- Relatively small and discontinuous lenses of clayey sand and clay encountered in some borings at or near the groundwater table;
- Coarse-grained materials, generally consisting of sandy gravel with varying amounts of clay/silt, encountered in those borings that were logged below the uppermost groundwater table; and
- Possible clay layer at about 70 feet. Water samples were collected from the bottom of two hydropunch borings that were advanced to 70 feet. Although logging of soil was not possible in these borings, resistance encountered at 68-70 feet bgs by the driller in both hydropunch borings, may be indicative of the clay aquitard described by other consultants in surrounding nearby areas. Furthermore, water subsequently rose within both borings, after retrieving water samples, to about 44 feet bgs, suggesting that this water-bearing zone may be confined or partially confined, and distinct from the zone encountered at approximately 30 feet.

Boring logs from Geoprobe® drilling are presented in Appendix A. The generalized geology and updated SCM, simplified to show potentially water-bearing coarser-grained material, and finer-grained material that is generally not considered water bearing, shows interlayering coarse- and fine-grained strata that are sometimes discontinuous above the water table, and an upper aquifer consisting of sandy gravel with varying amounts of clay/silt. We present the hypothesis that the hydropunch borings may have hit the top of a clay aquitard, and propose to confirm our hypothesis during future drilling that includes advancement of a deep monitoring well. The generalized cross section is presented in Appendix B.

Soil and Groundwater Analytical Data

Soil and groundwater analytical results are presented in Tables 1 and 2 respectively. A formal presentation of the soil and groundwater data will be included in a technical report following completion of the soil and groundwater investigation. A general discussion of laboratory analytical results from soil and groundwater samples is presented below:

- Soil analytical results generally indicated moderate levels of hydrocarbon contamination between approximately 22 and 28 feet bgs in on-site borings adjacent to the former UST pit.
- High levels of dissolved TPHg (up to 42,000 µg/L), TPHd (up to 41,000 µg/L), and MTBE (up to 85,000 µg/L) were detected in groundwater samples collected at 28 feet bgs (initial groundwater) from borings MB-1, MB-3, B-2, and B-3. These borings were installed adjacent to the former UST pit (MB-1, B-2, and B-3) and directly down-gradient to the north (MB-3).
- Depth-discrete groundwater samples collected from borings MB-1 and MB-3 at depths of approximately 50 feet bgs indicated levels of TPHg up to 1,400 µg/L (MB-3) and MTBE up to 1,500 µg/L (MB-1).
- Depth-discrete groundwater samples collected from borings MB-1 and MB-3 at depths of approximately 70 feet bgs indicated levels of TPHg up to 990 µg/L (MB-1) and MTBE up to 1,200 µg/L (MB-1).

Conclusions

Based on field observations and laboratory data from Geoprobe® drilling activities, Allterra concludes the following:

- Subsurface soils encountered while advancing the Geoprobe® borings consisted of clayey silt, silty clay, sandy clay, gravel-sand-silt and gravel-sand-clay, and sandy gravel from near ground surface to at least the total depth of the logged portion of the borings, which ranged from 28 to 52 feet bgs.

- During drilling, initial groundwater was encountered at approximately 28 feet bgs and the static groundwater surface stabilized at approximately 22 feet bgs. The rise of groundwater surface suggests the shallow aquifer beneath the Site is locally confined to semi-confined.

- Soil types encountered from approximately 28 feet bgs (initial groundwater) to approximately 52 feet bgs consisted of coarse-grained material and no apparent aquitard (clay layer) was encountered within this interval.

- Groundwater analytical results indicate lateral definition of the dissolved hydrocarbon plume up-gradient to the south (MB-2) and cross-gradient to the west (DB-2).

- When compared to data from borings in the core of the dissolved plume (MB-1, MB-3, B-2, and B-3), concentrations of petroleum hydrocarbons are relatively low in samples from cross-gradient borings (B-1, DB-1, and DB-5 to the east and DB-2, DB-3, DB-4, and HP-1 to the west).

- In general, the highest levels of hydrocarbon concentrations in groundwater were detected at approximately 28 feet bgs and levels generally decrease with depth.

- Previously installed groundwater monitoring wells MW-1, MW-2, and MW-3 extend to approximately 30 feet bgs and have a screen interval from 15 to 30 feet bgs. These wells appear to be appropriately constructed and do not appear to have a screen interval that extends through multiple water-bearing zones.

- Previously installed groundwater monitoring wells MW-4, MW-5, and MW-6 extend to approximately 50 feet bgs and have a screen interval from 20 to 50 feet bgs. These wells appear to be appropriately constructed and do not appear to have a screen interval that extends through multiple water-bearing zones.

- Previously installed well EX-1 extends to approximately 55 feet bgs and is screened from 30 to 55 feet bgs. While well EX-1's screen interval does not appear to extend through multiple water-bearing zones, its construction is not ideal for use as an extraction well for remediation. Dual-phase extraction will likely be the best approach for cleanup of the site and, therefore, the screen interval for extraction wells should have a screen interval that extends above the water table.

Hypothesis and Recommended Actions Regarding Subsurface Conditions

The following discussion presents Allterra's general hypothesis for subsurface conditions beneath and down-gradient of the Site. Our hypotheses are based on previous investigative findings at the Site, discussions with ACEH, a review of files for other LUFT projects in the Livermore area, and field observations and analytical results from recent Geoprobe® drilling.

Hypothesis 1:

- Shallow groundwater (at approximately 30 feet bgs), in the immediate vicinity if the former UST pit and directly north (inferred down-gradient direction), is highly contaminated with petroleum hydrocarbons. The core of the dissolved plume extends laterally down-gradient to the north, directly toward boring MB-3, and appears to be fairly narrow (limited laterally to the east and west).
- Hydrocarbon levels within the groundwater plume generally decrease with depth; yet appear to have impacted Aquifer 1 throughout its vertical extent.
- Fourth quarter 2005 sampling data indicated TPHg and MTBE levels in well MW-1 of 58,000 µg/L and 170,000 µg/L respectively, while TPHg and MTBE levels in well EX-1 (located approximately 5 feet from MW-1) were <50 µg/L and 31 µg/L, respectively. Allterra's hypothesis for the disparity of contaminant levels is based on each well's screen interval and is as follows: Well MW-1's screen interval extends approximately 2

feet into the top of the first aquifer and virtually "skims" LNAPL contaminants, such as hydrocarbons, off the top of the aquifer, resulting in elevated contaminant levels. By contrast, well EX-1's screen interval extends from just below the top of the aquifer to 55 feet bgs, which appears to block off the top 2 feet of the aquifer (where it appears that the majority of the LNAPL contaminants reside) and allows the surrounding formation groundwater to dilute the hydrocarbon contaminants in the well.

Recommended Action 1:

- In order to evaluate hydrocarbons levels with depth and measure vertical hydraulic gradients, groundwater monitoring wells with depth-discrete screen intervals will be installed in two key locations. One location will be at boring MB-3 and will consist of three separate 2-inch diameter wells designated MW-7A, MW-7B, and MW-7C. Well MW-7A will be constructed with a screen interval from 15 to 30 feet bgs, MW-7B will be screened from 45 to 50 feet bgs, and MW-7C will be screened from 65 to 70 feet bgs. The other depth-discrete sampling location will be at well MW-1, and will consist of two separate 2-inch diameter wells designated MW-1B and MW-1C (MW-1 will be renamed MW-1A). Well MW-1B will be constructed with a screen interval from 45 to 50 feet bgs and MW-1C will be screened from 65 to 70 feet bgs. The new wells will allow for depth discrete data collection from within the core of the hydrocarbon plume. A typical well construction diagram for the proposed wells is presented in Figure 3.

Hypothesis 2:

- Well MW-5 is located directly down-gradient of "hot" well MW-1 and "hot" boring MB-3, yet historical groundwater monitoring data indicates relatively low levels of TPHg and MTBE (when compared to MW-1 and MB-3). Allterra's hypothesis for the relatively low hydrocarbon levels is based on well MW-5's screen interval and is as follows: Well MW-5 has a screen interval that extends from 20 to 50 feet bgs, which allows formation water from approximately 28 to 50 feet bgs into the well. Allterra believes that groundwater from the deeper portions of the aquifer enters the well and dilutes LNAPL hydrocarbon contaminants that enter the well from the top portion of the aquifer.

Recommended Action 2:

- In order to evaluate hydrocarbon levels in the uppermost portion of the shallow aquifer down-gradient of MB-3, Allterra recommends installing a Geoprobe® boring (MB-4) near well MW-5 (see Figure 2) and collecting a groundwater sample from the top of the aquifer (at approximately 28 feet bgs).
- In order to evaluate hydrocarbon concentrations at approximately 50 feet bgs, a hydropunch Geoprobe® boring will be installed adjacent to MB-4 in order to collect a depth discrete groundwater sample at approximately 50 feet bgs.
- Data collected from boring MB-4 will be used to evaluate the need for re-installing well MW-5 with a different screen interval.

Hypothesis 3:

- Based on the high levels for petroleum hydrocarbons observed in borings B-2, B-3, and MB-1, it appears as though the source of hydrocarbon contamination is the area surrounding the former UST pit. Therefore, in order to begin interim remediation of the suspected source area, dual-phase extraction wells should be installed in appropriate locations and an interim remediation system should be installed.

Recommended Action 3:

- Well EX-1 appears to be appropriately located; however, its screen interval is not ideal for remediation. Therefore, Allterra recommends drilling out well EW-1 and re-installing it to a depth of 40 feet bgs with a screen interval from 15 to 40 feet bgs.
- Allterra recommends installing a second extraction well (EX-2) at boring B-2. Well EX-2 will also be installed to an approximate depth of 40 feet bgs and have a screen interval from 15 to 40 feet bgs.
- After the new extractions wells are installed, Allterra recommends performing dual-phase extraction pilot testing using the new extraction wells. Pilot testing at the new extraction wells will provide Allterra with the necessary data to design, permit, and construct an interim remediation system at the site.

Hypothesis 4:

- The first aquifer (Aquifer 1) beneath the Site begins at approximately 28 feet bgs and extends to approximately 70 feet bgs and is locally confined to semi-confined.
- An aquitard of undetermined thickness (estimated to be approximately 40 feet) exists beneath Aquifer 1 and a second aquifer (Aquifer 2) underlies the aquitard.
- Allterra hypothesizes that the hydrocarbon plume originating from the Site has not impacted Aquifer 2.

Recommended Action 4:

- Over the next several quarters, Allterra recommends monitoring groundwater quality at 70 feet bgs from within Aquifer 1 using data from the proposed "C-level" wells (MW-1C and MW-7C).
- If monitoring data indicates that hydrocarbons have impacted the lower portion of Aquifer 1, then it may be necessary to install a boring to the second aquifer, estimated to be approximately 110 feet bgs, and complete the boring as a groundwater monitoring well in order to monitor groundwater quality in Aquifer 2. The well will be sealed off from Aquifer 1 and be constructed with a five-foot screen interval at the top of Aquifer 2. The well will be designated MW-7D and its proposed location is presented in Figure 2.

Limitations

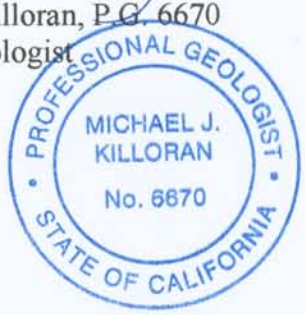
Allterra prepared this document for the use of Mr. Manwel and Mrs. Samira Shuwayhat and ACEH in evaluating site conditions at selected on-site locations at the time of this study. Statements, conclusions, and recommendations in this document are based solely on the field observations and analytical results related to work performed by Allterra and there is no warranty, expressed or implied. Site conditions and data can change over time; therefore, data presented in this report is only applicable to the timeframe of this study. Allterra's services have been performed in accordance with environmental principles generally accepted at this time and location.

Should you have any questions, please contact Allterra at (831) 425-2608.

Sincerely,
Allterra Environmental, Inc.

for
James Allen, R.E.A.
Project Scientist

Michael Killoran, P.G. 6670
Senior Geologist



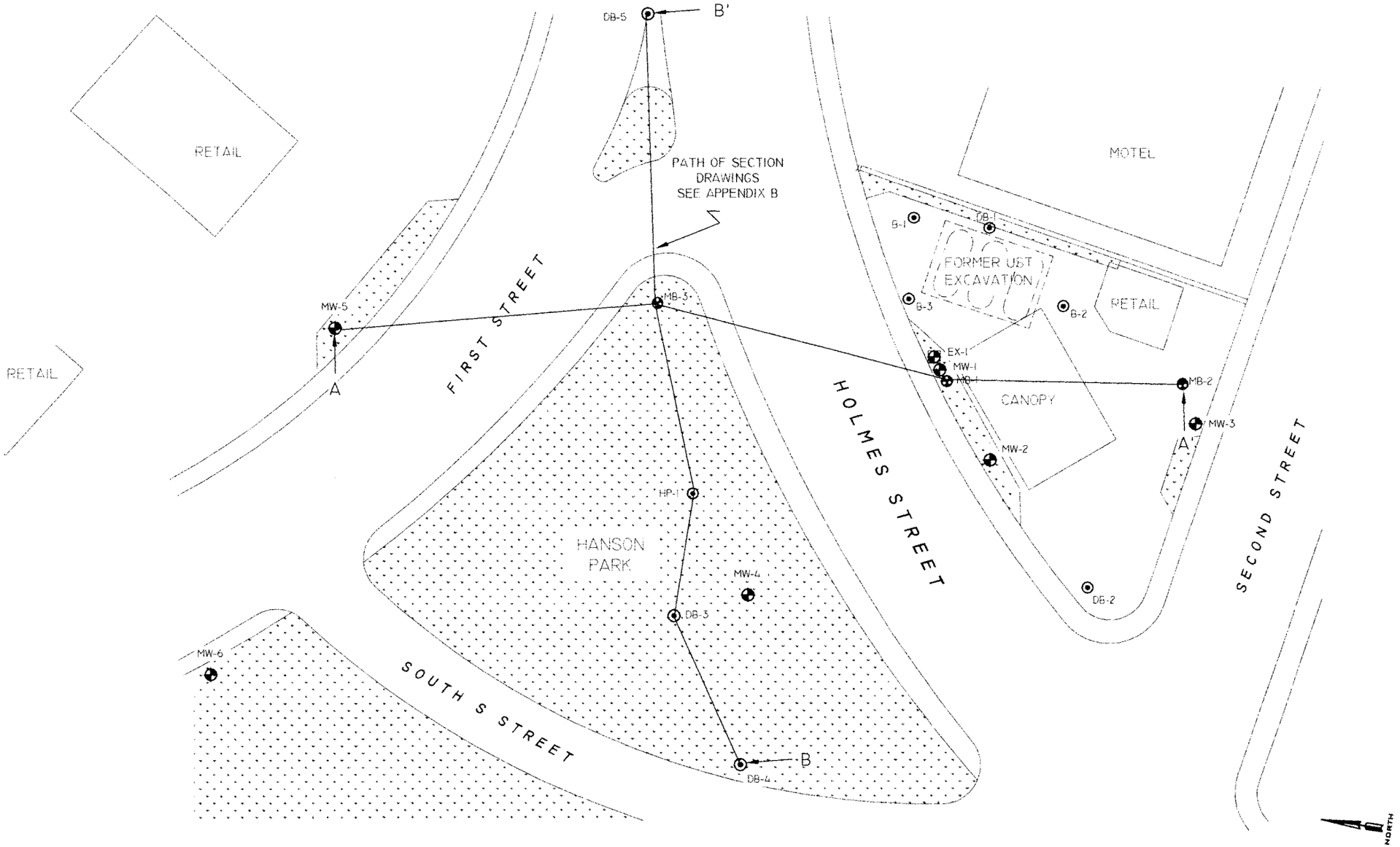
Attachments:
Figure 1, Site Plan
Figure 2, Proposed Boring and Well Location Plan
Figure 3, Typical Well Construction Diagram

Table 1, Preliminary Soil Analytical Results
Table 2, Preliminary Groundwater Analytical Results

Appendix A, Boring Logs
Appendix B, Generalized Cross Sections

cc: Mr. Jerry Wickham, ACEH

FIGURES 1-3



LEGEND:

- MW-4 — MONITORING WELL LOCATION
- EX-1 — EXTRACTION WELL LOCATION
- B-1 — SOIL BORING LOCATION
- MB-1 — MULTI-POINT SOIL BORING LOCATION

0 70 140

SCALE

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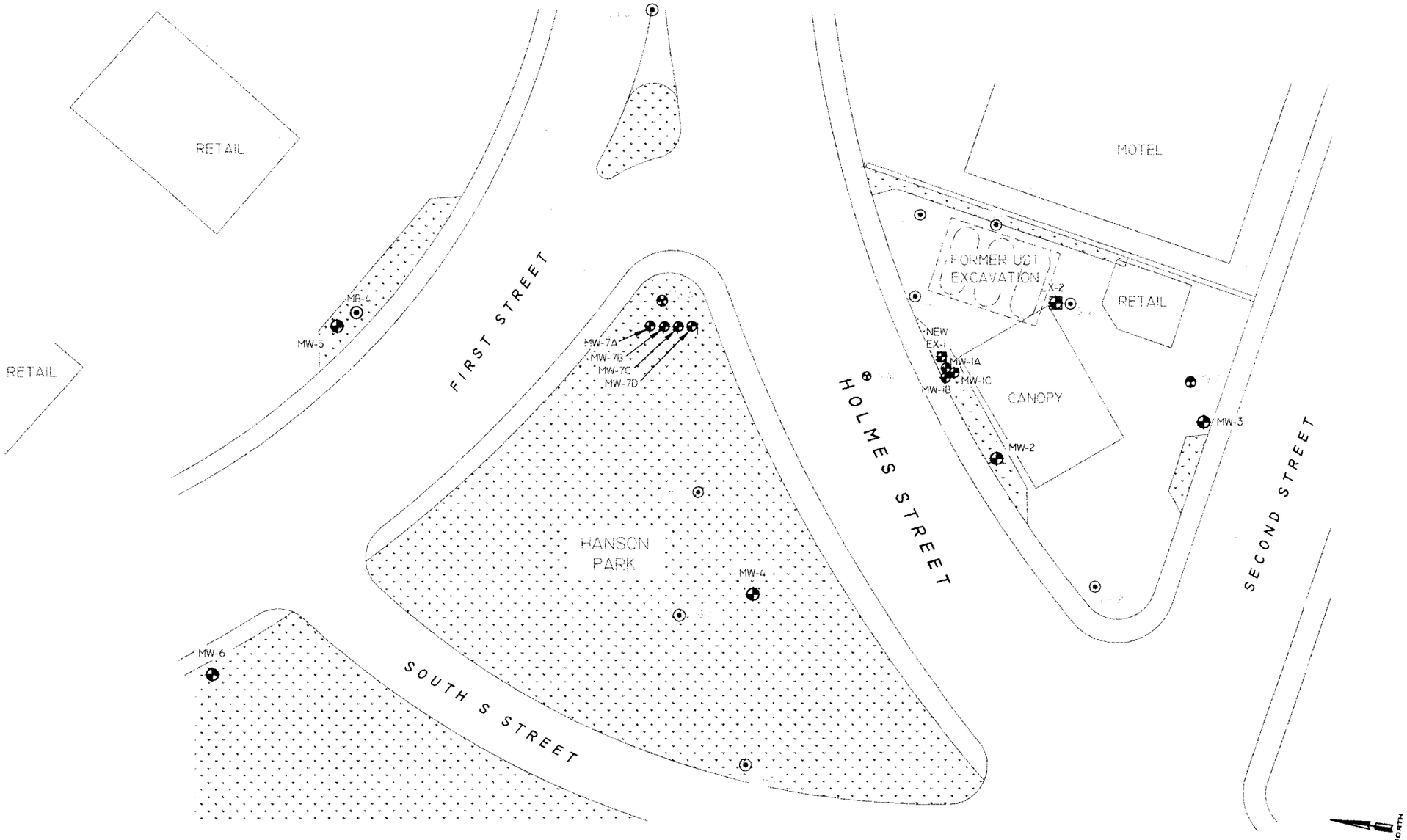
SITE MAP
160 HOLMES STREET
LIVERMORE, CALIFORNIA

FIGURE 1
12/5/05



LEGEND:

- MW-4 — MONITORING WELL LOCATION
- EX-1 — EXTRACTION WELL LOCATION
- SOIL BORING LOCATION
- MULTI-POINT SOIL BORING LOCATION
- EX-2 — PROPOSED EXTRACTION WELL LOCATION
- MW-4 — PROPOSED MONITORING WELL LOCATION
- MB-4 — PROPOSED SOIL BORING LOCATION

0 70 140

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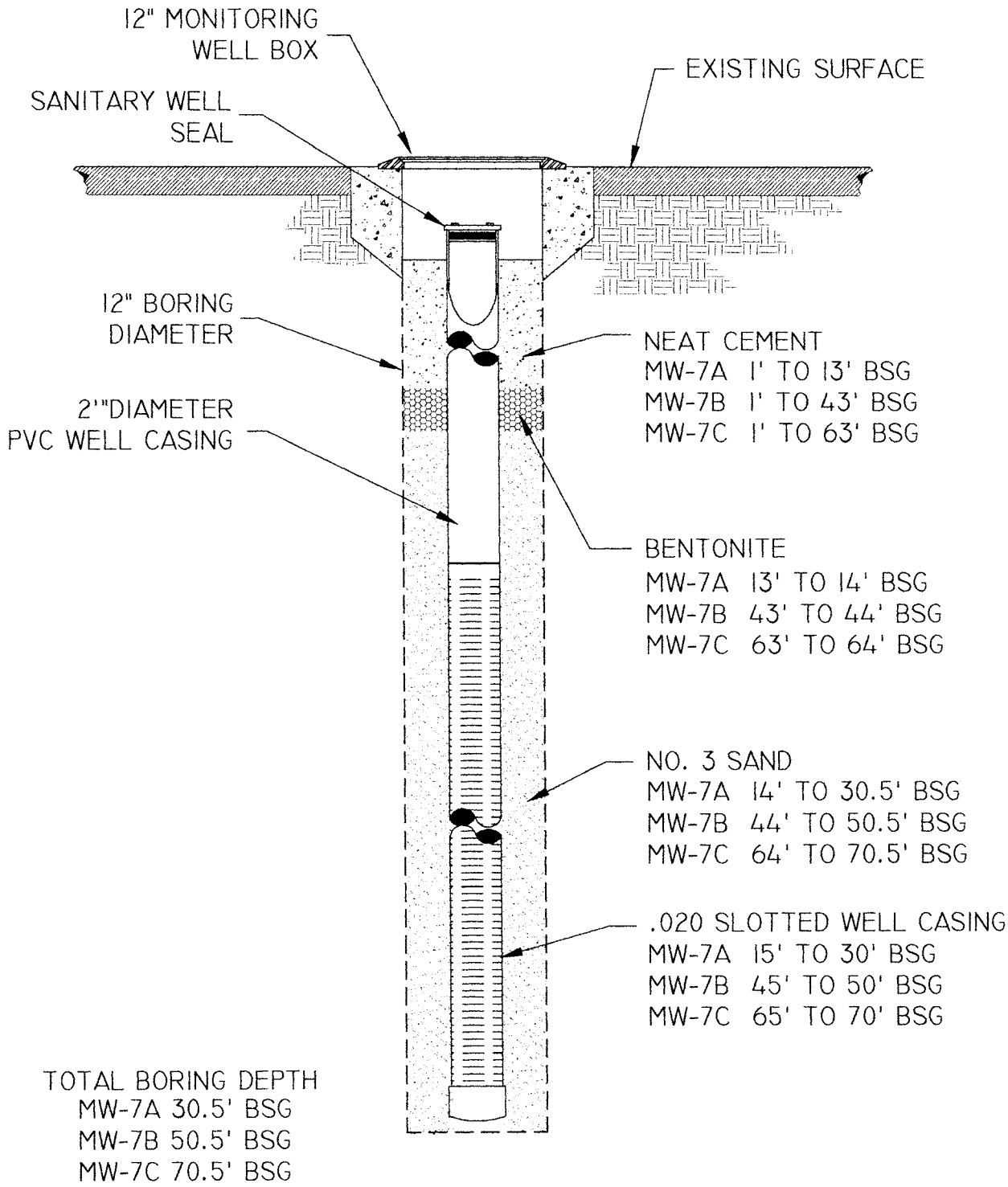
PROPOSED BORING LOCATIONS

160 HOLMES STREET
LIVERMORE, CALIFORNIA

FIGURE 2
12/5/05



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TYPICAL MONITORING WELL CONSTRUCTION DIAGRAM

160 HOLMES STREET
LIVERMORE, CALIFORNIA

FIGURE 3
12/05/05

TABLES 1-2

Table 1

Preliminary Soil Analytical Results
160 Holmes Street, Livermore, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
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
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

Notes and Definitions:
All results are in milligrams per kilogram (mg/kg)
TPHg and TPHd were analyzed by EPA Method 8015CM
Benzene, toluene, ethylbenzene, and xylenes were analyzed by EPA Method 8021B
-- : not analyzed
ND: Not Detected at or above laboratory reporting limits
TPHg: Total Petroleum Hydrocarbons as gasoline
TPHd: Total Petroleum Hydrocarbons as diesel
MTBE = methyl tertiary butyl ether

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

Sample ID	Sample Depth (feet)	Date Collected	Total Petroleum Hydrocarbons as (µg/L)		Aromatic Volatile Organic Compounds (µg/L)				Oxygenated Volatile Organics (µg/L)				
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	DIPE	ETBE	TAME	TBA
MB-1-A**	28	11/11/05	21,000	4,300	970	<25	3,300	1200	100,000	<2,500	<2,500	<2,500	<25,000
MB-1-B	50	11/11/05	470	210	7.8	0.97	31	48	1,500	<25	<25	<25	<250
MB-1-C	70	11/11/05	990	--*	17	1.3	89	160	1,200	<25	<25	<25	<250
MB-2-A	28	11/10/05	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MB-2-B	50	11/11/05	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
MB-3-A	28	11/11/05	40,000	41,000	120	130	1,700	2,800	<4,500	<50	<50	<50	2,500
MB-3-B	50	11/14/05	1,400	210	0.93	9.3	14	27	190	<50	<50	<50	6,200
MB-3-C	70	11/14/05	930	260	1.7	3.8	33	100	330	<100	<100	<100	16,000
DB-1-A	28	11/10/05	160	--*	<0.5	<0.5	<0.5	<0.5	86	<1.7	<1.7	<1.7	<17
DB-2-A	28	11/11/05	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
DB-3-A	28	11/14/05	<50	51	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
DB-4-A	28	11/14/05	<50	57	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
DB-5-A	28	11/11/05	<50	910	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
B-1-A	28	11/10/05	<50	230	<0.5	<0.5	<0.5	<0.5	28	<0.5	<0.5	<0.5	<5.0
B-2-A	28	11/10/05	25,000	6,200	900	<50	2,000	2,600	80,000	<1,700	<1,700	<1,700	<17,000
B-3-A	28	11/10/05	42,000	14,000	530	140	2,400	7,800	19,000	<500	<500	<500	<5,000
HP-1-A	28	11/14/05	<50	--*	<0.5	<0.5	<0.5	0.80	12	<50	<50	<50	24

Notes:

µg/L = micrograms per liter
NS = Not Sampled
NA = Not Analyzed
TPHg and TPHd were analyzed by EPA Method 8015CM
Benzene, toluene, ethylbenzene, and xylenes were analyzed by EPA Method 8021B
MTBE, DIPE, ETBE, TAME, and TBA were analyzed by EPA Method 8260b.
--* = insufficient groundwater available TPHd analysis
**: MB-1-A samples tested for fuel oxygenates by EPA Method 8260 were past laboratory hold time

MTBE = methyl tertiary butyl ether
DIPE = Di-isoprpopyl Ether
ETBE = Ethyl tert-Butyl Ether
TAME - tert-Amyl Methyl Ether
TBA = tert-Butanol

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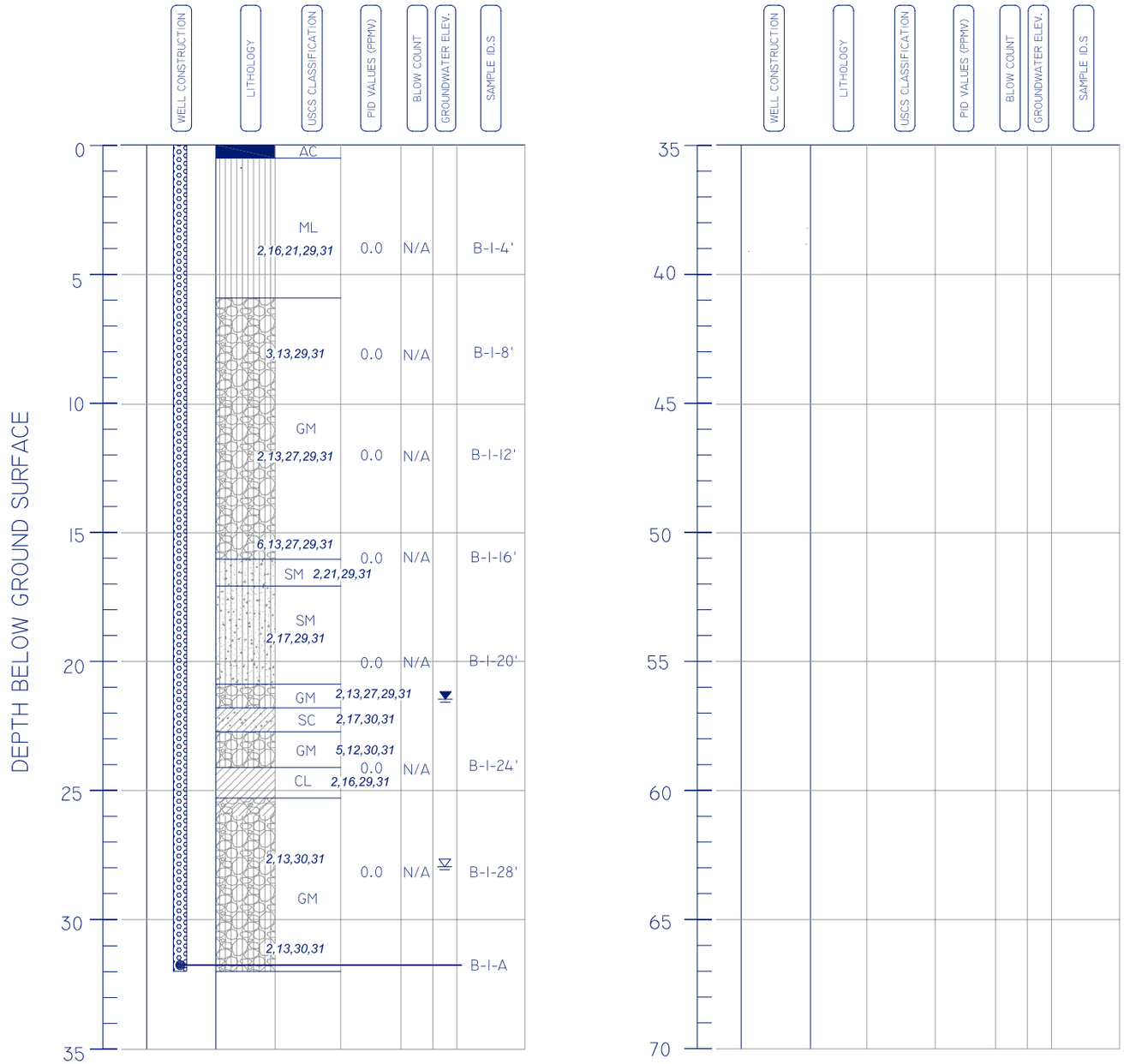
APPENDIX A, Boring Logs



BORING INFORMATION

WELL I.D.	B-1	TOTAL DEPTH	32'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/10/05

LEGEND

WELL CONSTRUCTION

- BENTONITE
- NO. 2 SAND
- CONCRETE
- LANDSCAPE
- ASPHALT
- NEAT CEMENT

USCS CLASSIFICATIONS

PT	PEET
OL	ORGANIC SILT OR CLAY
CL	SILTY OR SANDY CLAY
ML	CLAYEY SILT
SC	CLAYEY SAND
SM	SILTY SAND

USCS CLASSIFICATIONS

SP	POORLY GRADED SAND
SW	WELL GRADED SAND
GC	CLAYEY GRAVEL
GM	SILTY GRAVEL
GP	POORLY GRADED GRAVEL
GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A — NOT APPLICABLE
- GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
6	RUSTY BROWN	17	< 20% COARSE MATERIAL < 4.75 MM	28	DRY
7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
8	MEDIUM OLIVE	19	< 45% COARSE MATERIAL < 4.75 MM	30	WET (FREE WATER)
9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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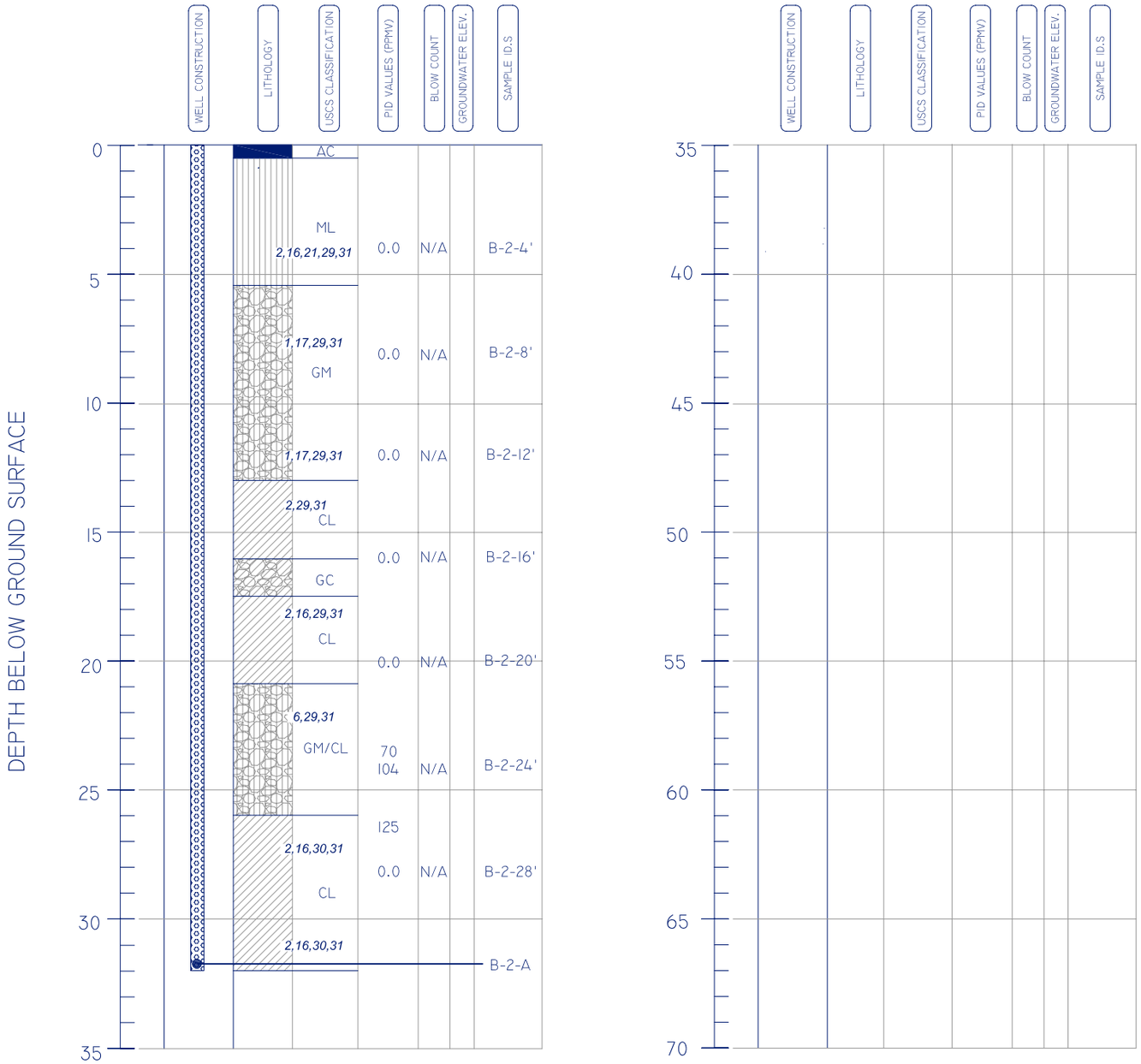
BORING LOG B-1

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	B-2	TOTAL DEPTH	32'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/10/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
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9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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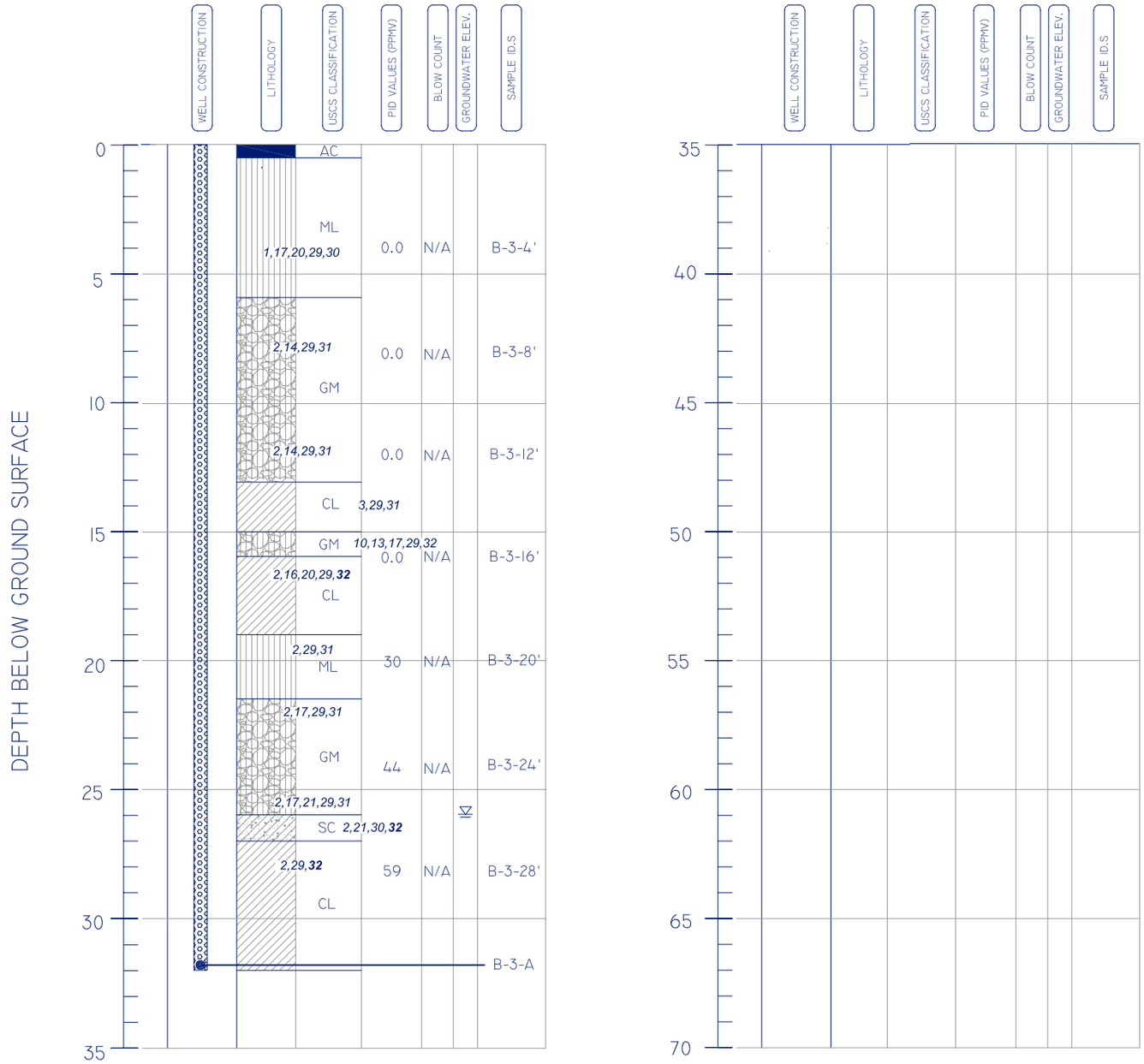
BORING LOG B-2

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	B-3	TOTAL DEPTH	32'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/10/05

LEGEND

WELL CONSTRUCTION

- BENTONITE
- NO. 2 SAND
- CONCRETE
- LANDSCAPE
- ASPHALT
- NEAT CEMENT

USCS CLASSIFICATIONS

PT	PEET
OL	ORGANIC SILT OR CLAY
CL	SILTY OR SANDY CLAY
ML	CLAYEY SILT
SC	CLAYEY SAND
SM	SILTY SAND

USCS CLASSIFICATIONS

SP	POORLY GRADED SAND
SW	WELL GRADED SAND
GC	CLAYEY GRAVEL
GM	SILTY GRAVEL
GP	POORLY GRADED GRAVEL
GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A — NOT APPLICABLE
- GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

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10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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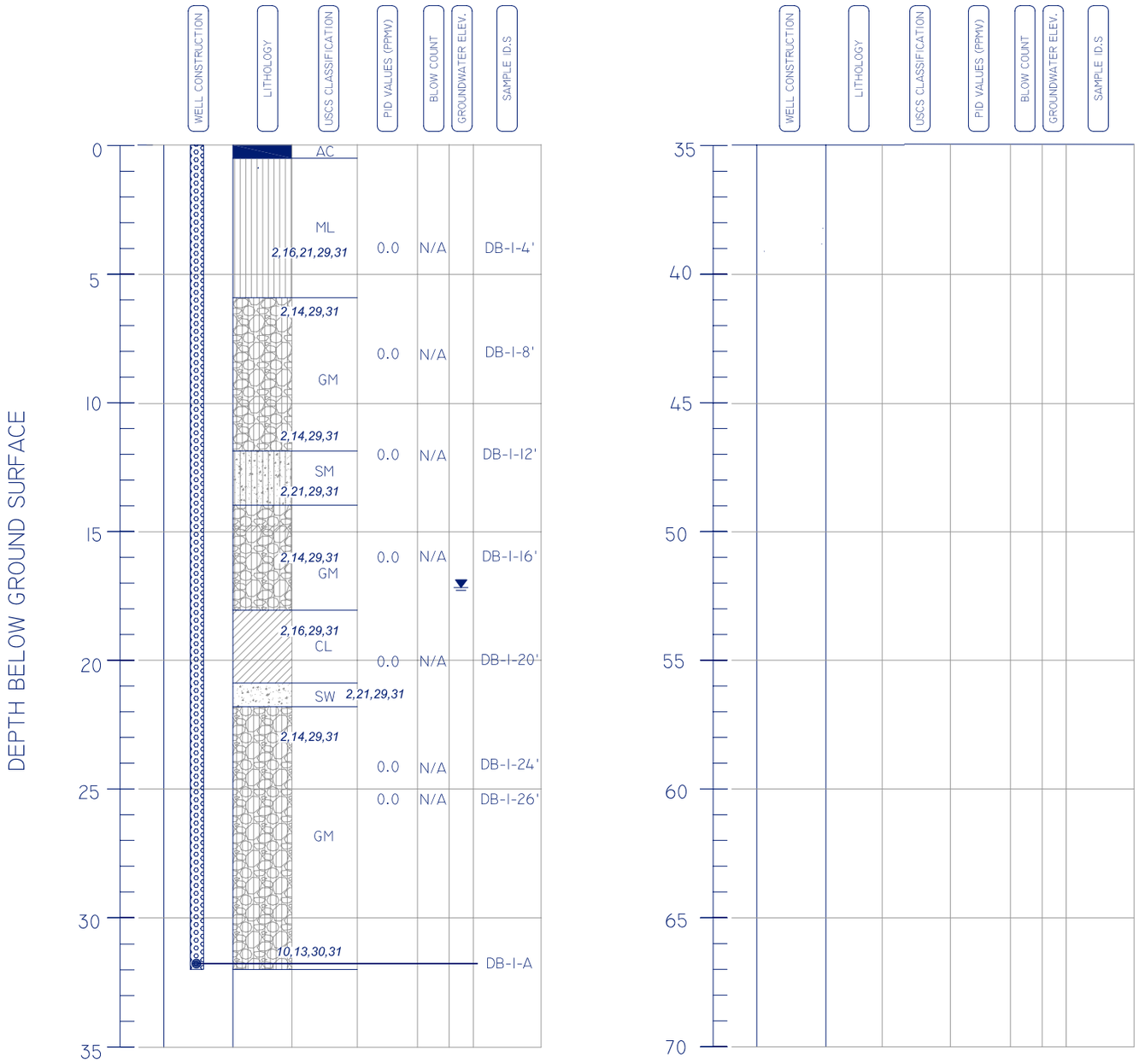
BORING LOG B-3

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-I	TOTAL DEPTH	32'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/10/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
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11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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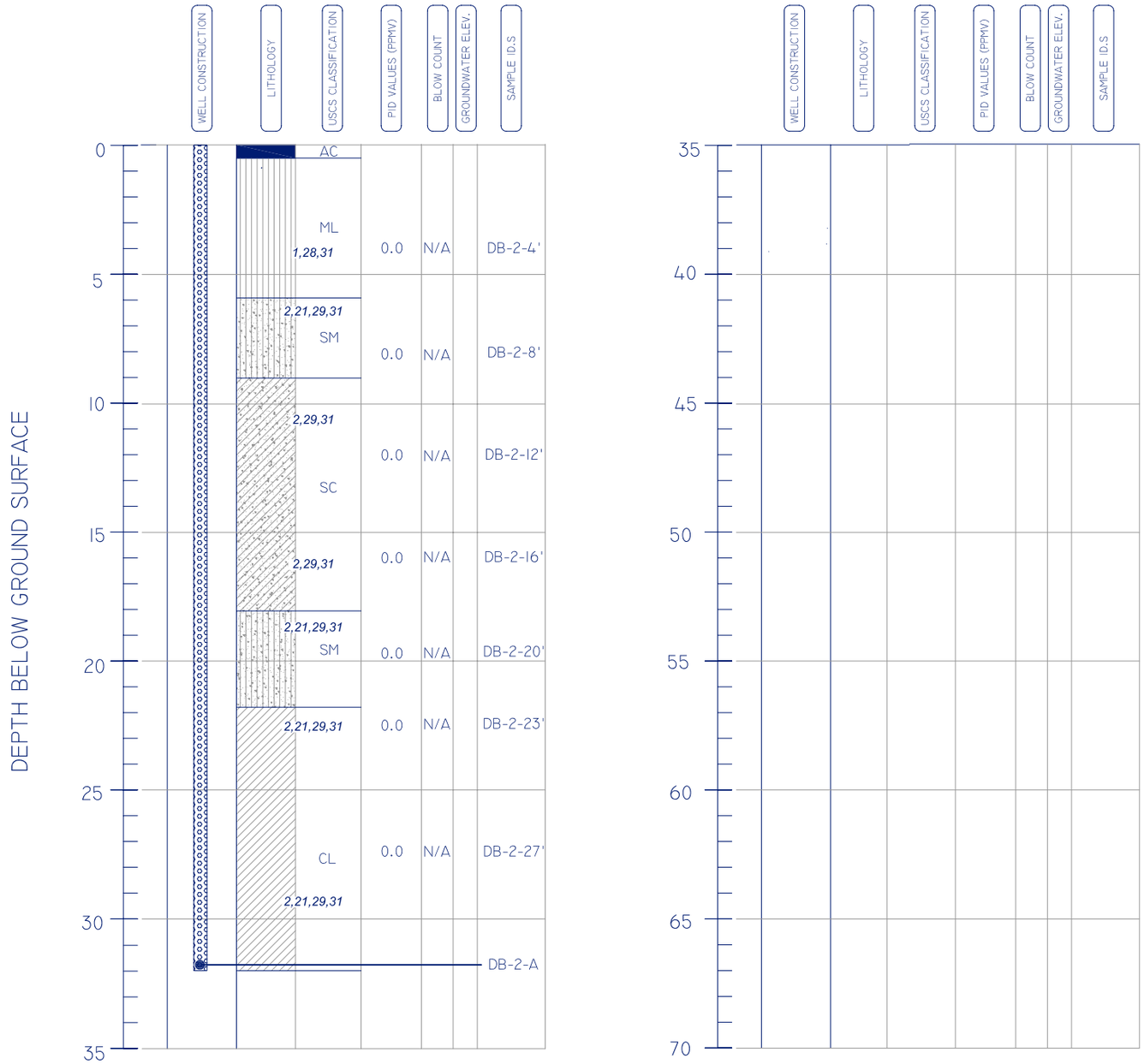
BORING LOG DB-I

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-2	TOTAL DEPTH	32'
LOGGED BY:	ERIK ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/11/05
BORING DIA.	2 1/2"	COMPLETION	11/11/05

LEGEND

WELL CONSTRUCTION		USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND	
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND	
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL	
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL	
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL	
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL	

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
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3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
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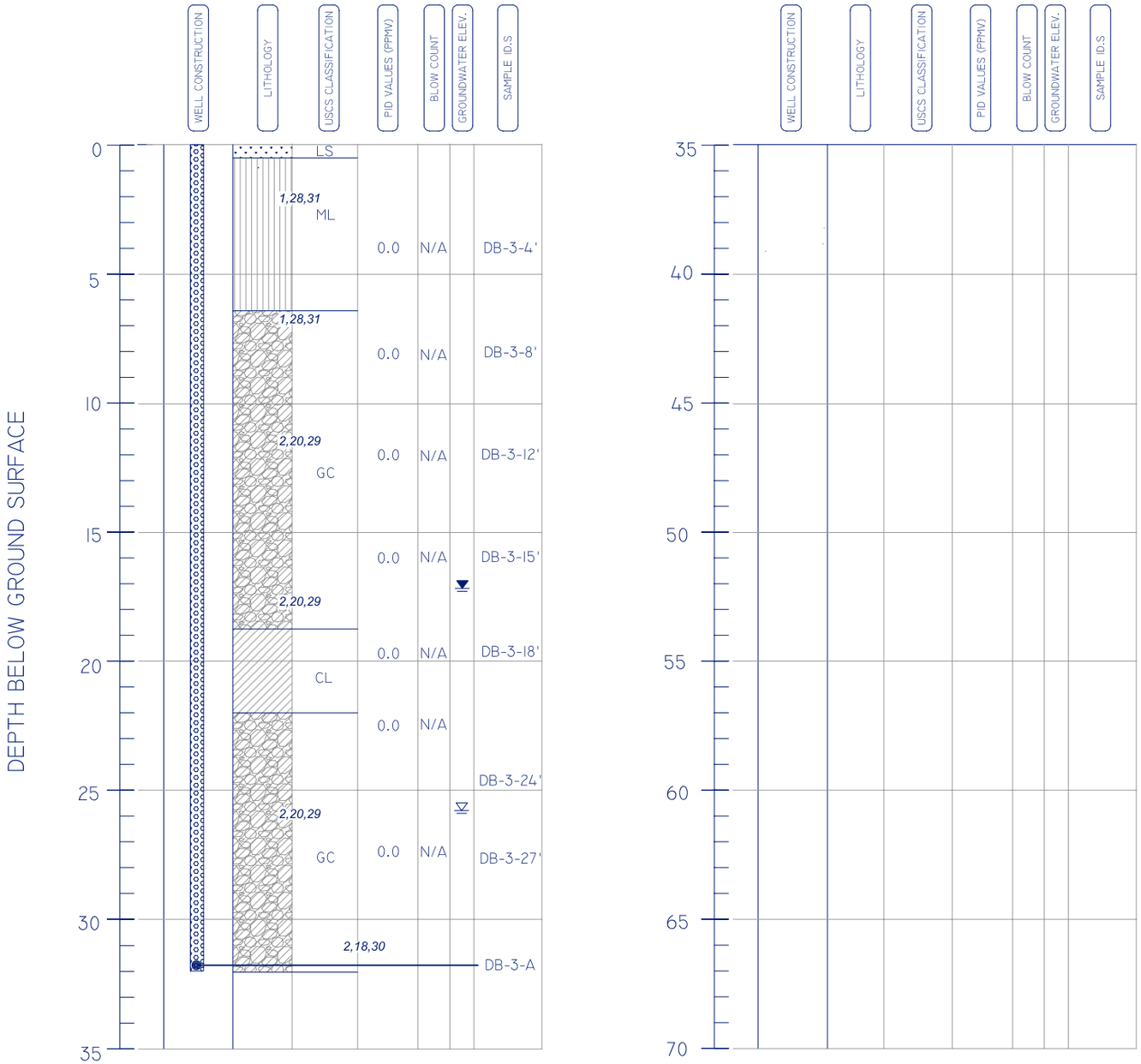
BORING LOG DB-2

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-3	TOTAL DEPTH	32'
LOGGED BY:	ERIK ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/14/05
BORING DIA.	2 1/2"	COMPLETION	11/14/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
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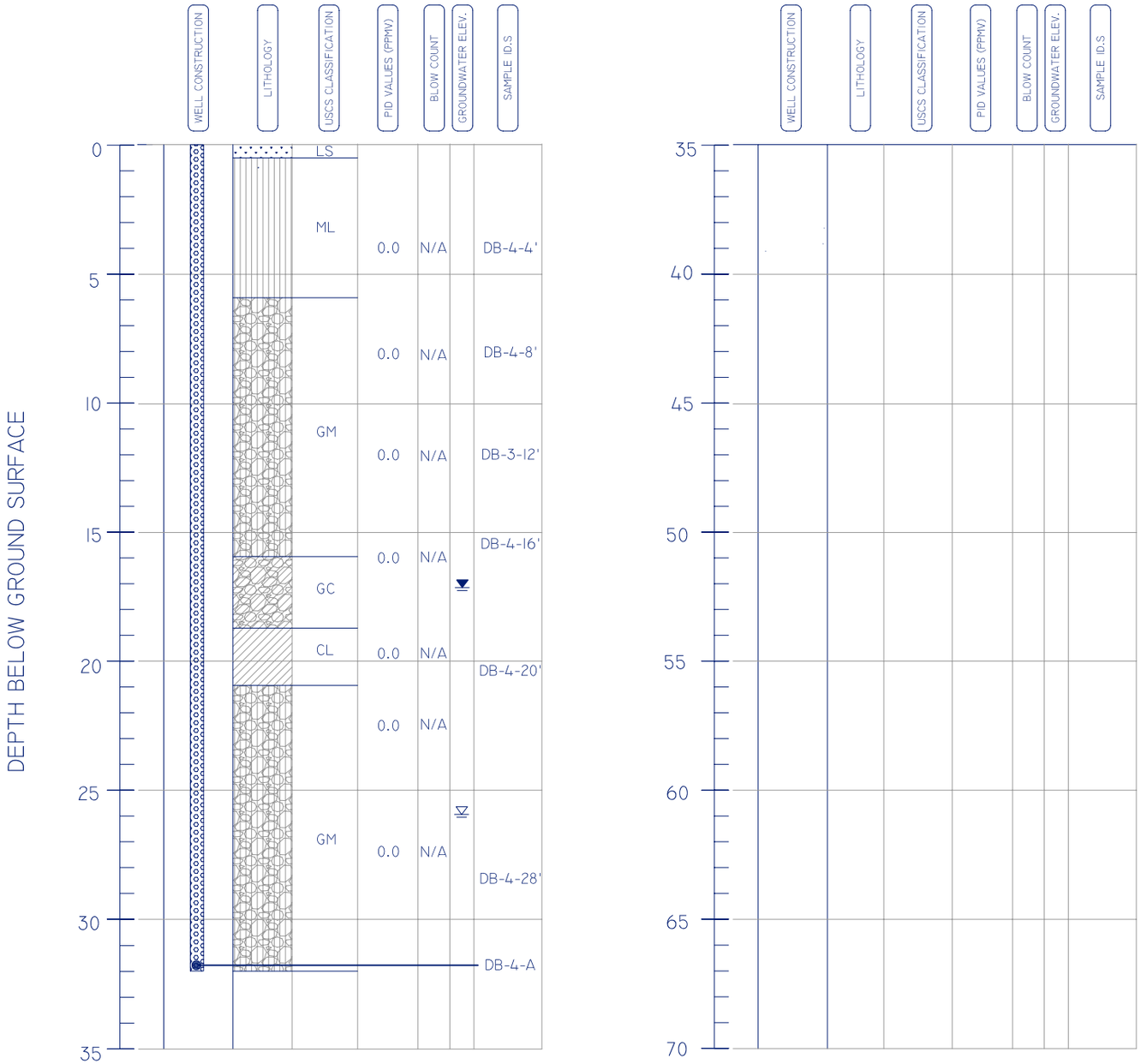
BORING LOG DB-3

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-4	TOTAL DEPTH	32'
LOGGED BY:	JAMES ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/14/05
BORING DIA.	2 1/2"	COMPLETION	11/14/05

LEGEND

WELL CONSTRUCTION		USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND	
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND	
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL	
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL	
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL	
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL	

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL) — N/A NOT APPLICABLE

GROUNDWATER ELEV. (STATIC) — GROUNDWATER SAMPLE

1,17,20,29,30

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
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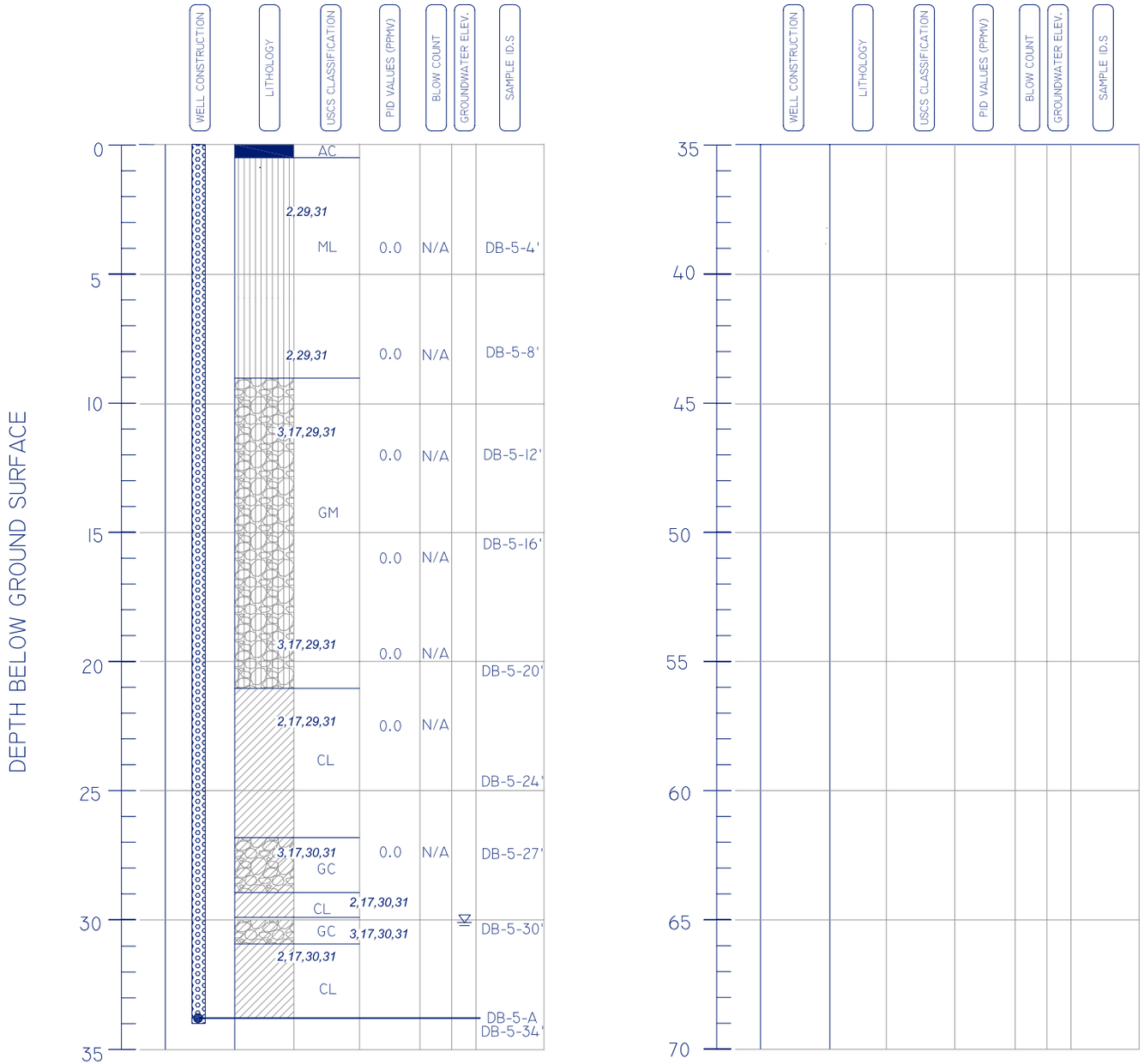
BORING LOG DB-4

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	DB-5	TOTAL DEPTH	34'
LOGGED BY:	MICHAEL KILLORAN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	34'
METHODE	GEO PROBE	START DATE	11/11/05
BORING DIA.	2 1/2"	COMPLETION	11/11/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
6	RUSTY BROWN	17	< 20% COARSE MATERIAL < 4.75 MM	28	DRY
7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
8	MEDIUM OLIVE	19	< 45% COARSE MATERIAL < 4.75 MM	30	WET (FREE WATER)
9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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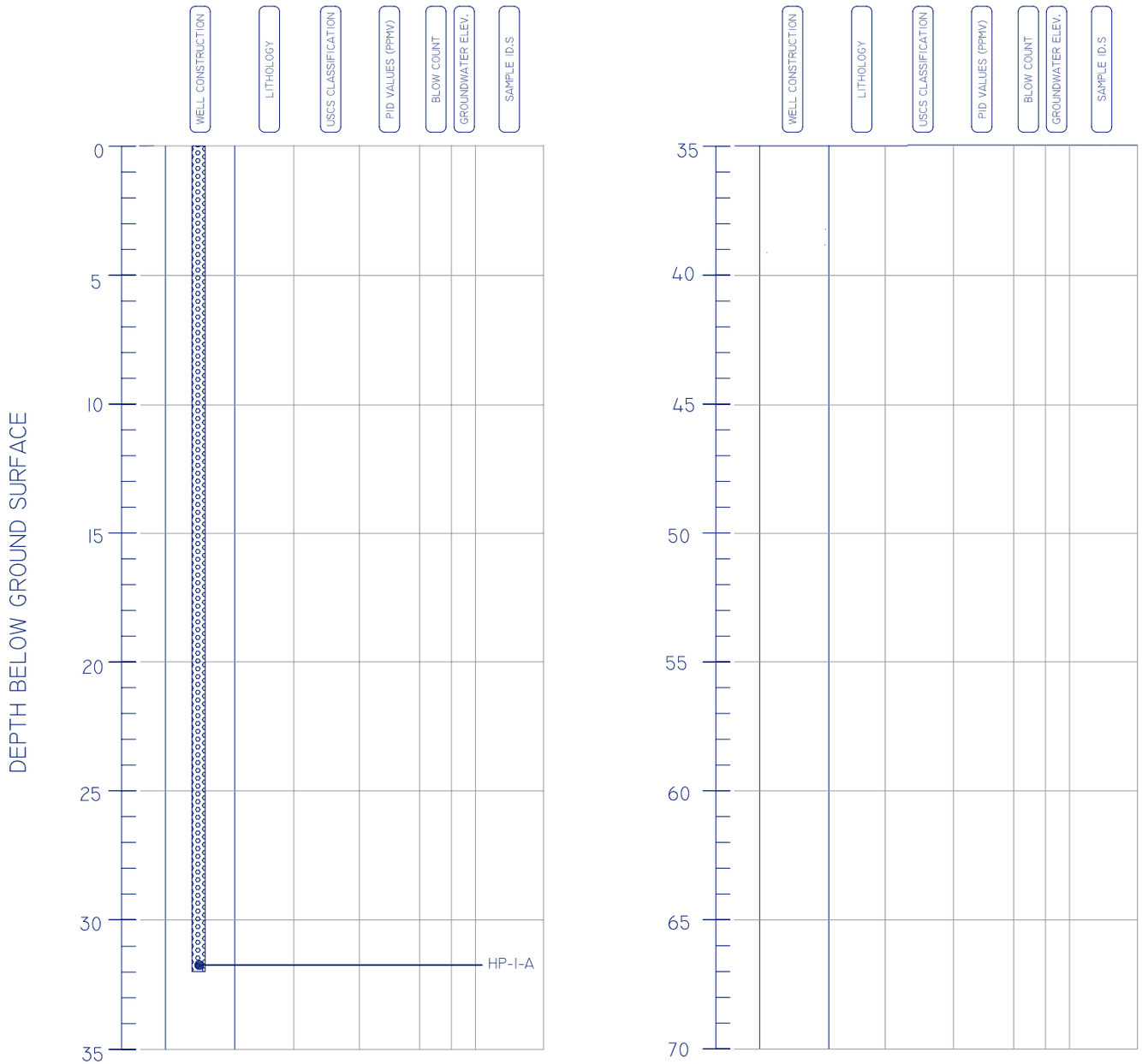
WWW.ALLTERRAENV.COM

BORING LOG DB-5

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	HP-I-A	TOTAL DEPTH	32'
LOGGED BY:	JAMES ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/14/05
BORING DIA.	2 1/2"	COMPLETION	11/14/05

LEGEND

WELL CONSTRUCTION

- BENTONITE
- NO. 2 SAND
- CONCRETE
- LANDSCAPED SURFACE
- ASPHALT
- NEAT CEMENT

USCS CLASSIFICATIONS

- OL — ORGANIC SILT OR CLAY
- CL — SILTY OR SANDY CLAY

USCS CLASSIFICATIONS CONT.

- ML — CLAYEY SILT
- SC — CLAYEY SAND
- SM — SILTY SAND
- SP — POORLY GRADED SAND
- SW — WELL GRADED SAND
- GC — CLAYEY GRAVEL
- GM — SILTY GRAVEL
- GP — POORLY GRADED GRAVEL
- GW — WELL GRADED GRAVEL

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A — NOT APPLICABLE
- GROUNDWATER SAMPLE

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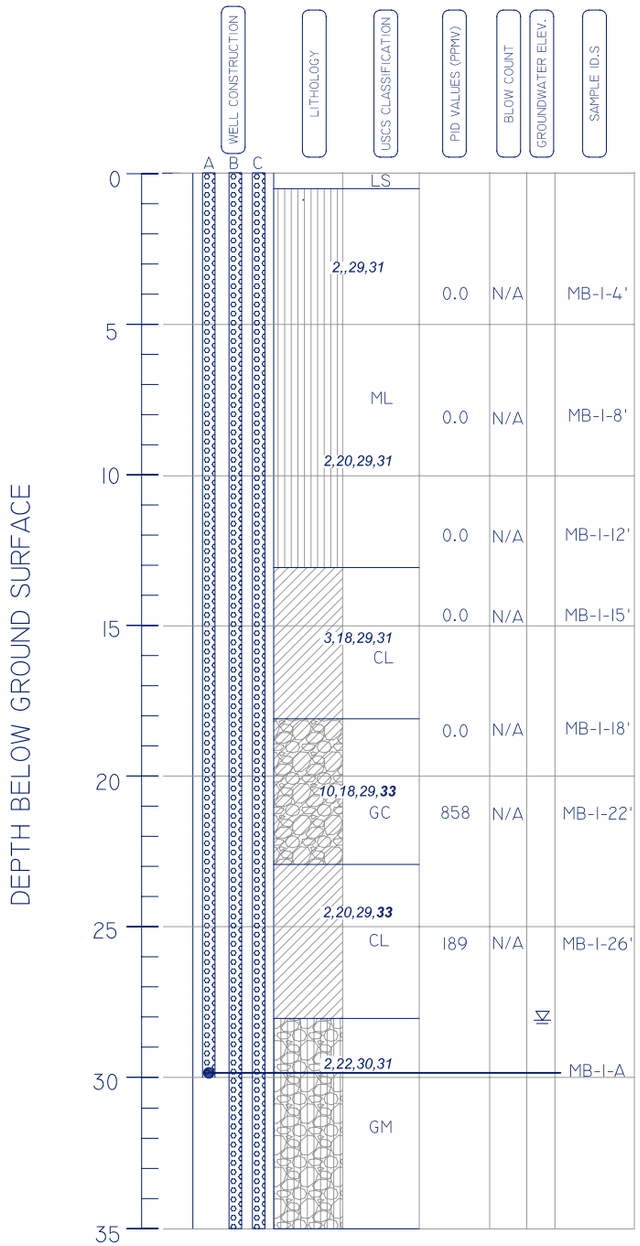
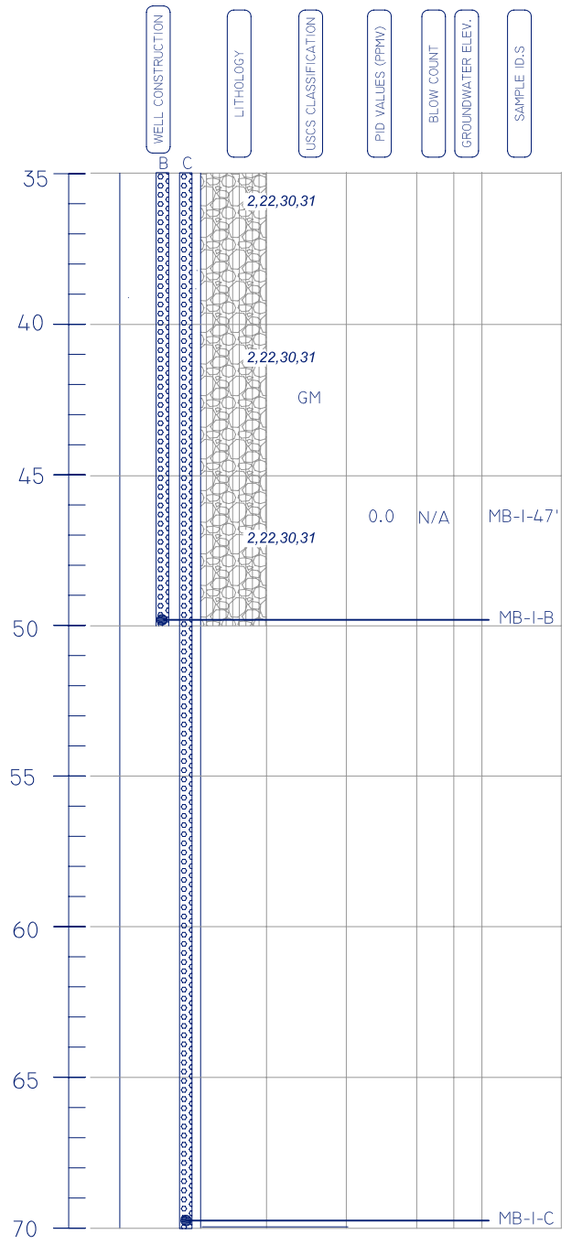
BORING LOG HP-I-A

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05





BORING INFORMATION

WELL I.D.	MB-IA,B,C	TOTAL DEPTH	70'
LOGGED BY:	JAMES ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	32'
METHODE	GEO PROBE	START DATE	11/11/05
BORING DIA.	2 1/2"	COMPLETION	11/11/05

LEGEND

WELL CONSTRUCTION

- BENTONITE
- NO. 2 SAND
- CONCRETE
- LANDSCAPE
- ASPHALT
- NEAT CEMENT

USCS CLASSIFICATIONS

PT	PEET
OL	ORGANIC SILT OR CLAY
CL	SILTY OR SANDY CLAY
ML	CLAYEY SILT
SC	CLAYEY SAND
SM	SILTY SAND

USCS CLASSIFICATIONS

SP	POORLY GRADED SAND
SW	WELL GRADED SAND
GC	CLAYEY GRAVEL
GM	SILTY GRAVEL
GP	POORLY GRADED GRAVEL
GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A NOT APPLICABLE
- GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
6	RUSTY BROWN	17	< 20% COARSE MATERIAL < 4.75 MM	28	DRY
7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
8	MEDIUM OLIVE	19	< 45% COARSE MATERIAL < 4.75 MM	30	WET (FREE WATER)
9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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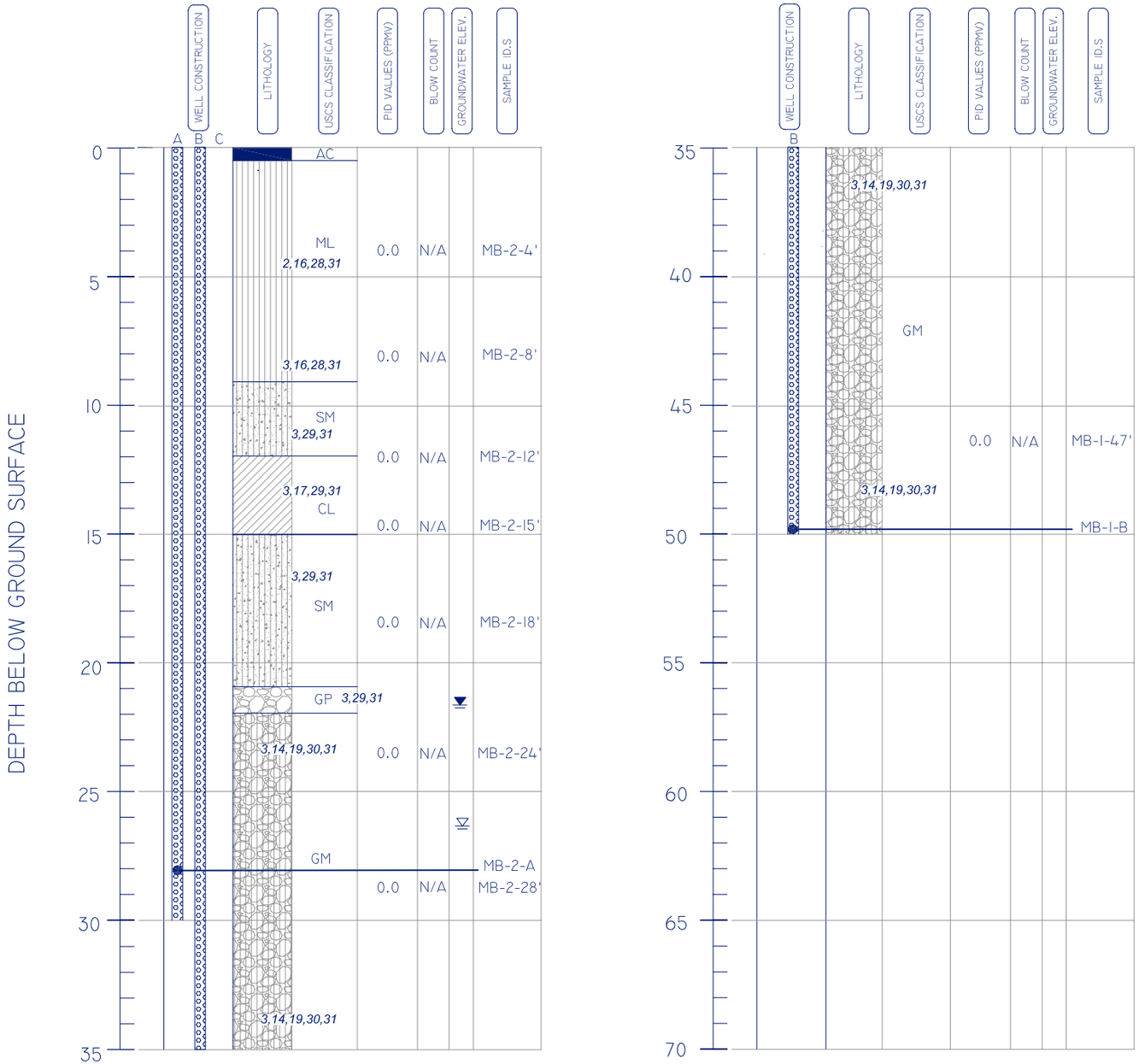
BORING LOG MB-I

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	MB-2A,B	TOTAL DEPTH	50'
LOGGED BY:	JAMES ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	50'
METHODE	GEO PROBE	START DATE	11/10/05
BORING DIA.	2 1/2"	COMPLETION	11/11/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

GROUNDWATER ELEV. (INITIAL)

GROUNDWATER ELEV. (STATIC)

N/A NOT APPLICABLE

GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
6	RUSTY BROWN	17	< 20% COARSE MATERIAL < 4.75 MM	28	DRY
7	DARK OLIVE	18	< 35% COARSE MATERIAL < 4.75 MM	29	MOIST
8	MEDIUM OLIVE	19	< 45% COARSE MATERIAL < 4.75 MM	30	WET (FREE WATER)
9	LIGHT OLIVE	20	< 5% COARSE MATERIAL > 4.75 MM	31	NO PRODUCT ODOR
10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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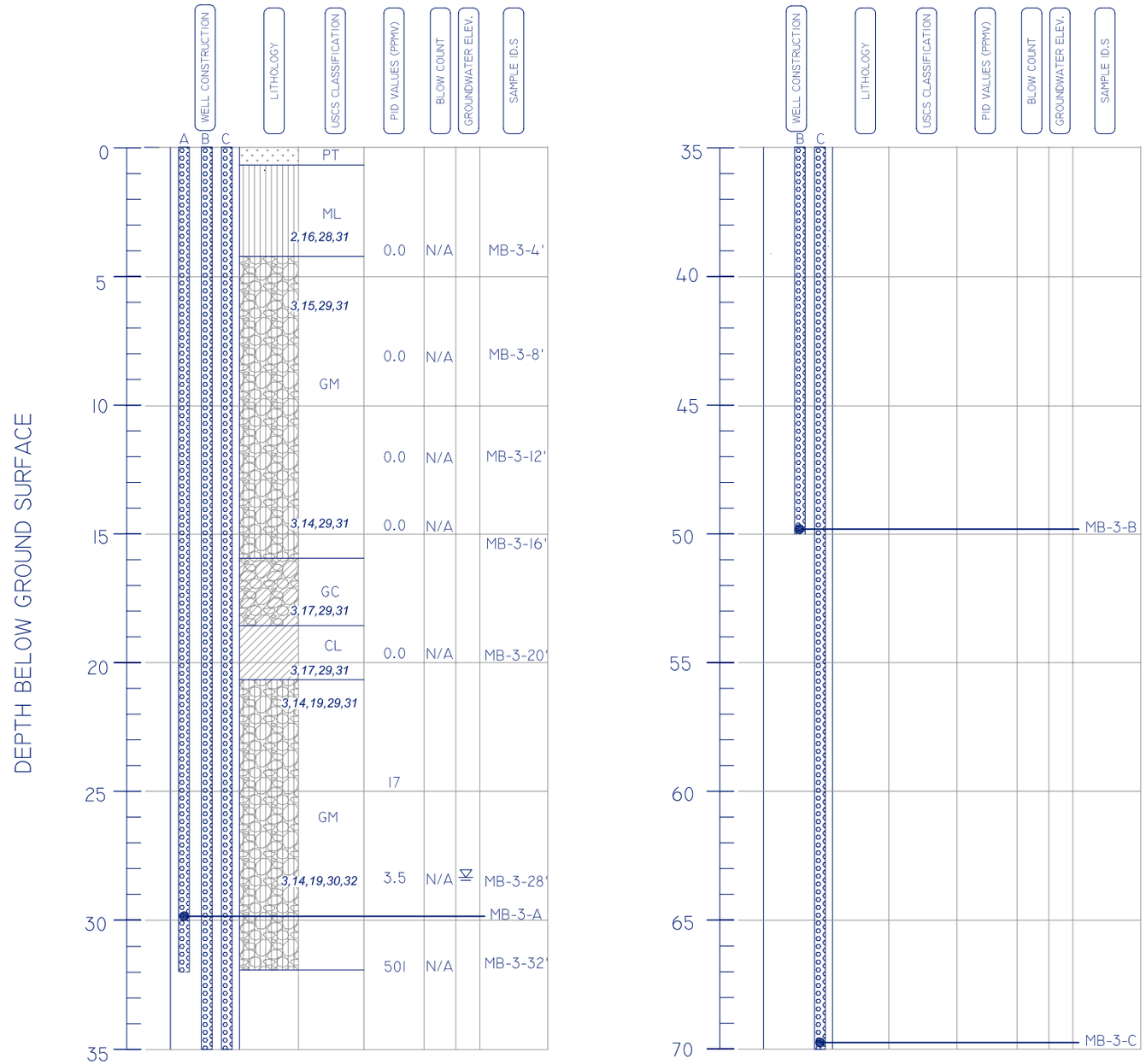
BORING LOG MB-2

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05



BORING INFORMATION

WELL I.D.	MB-3A,B,C	TOTAL DEPTH	70'
LOGGED BY:	ERIK ALLEN	CASING DIA.	NONE
CONTRACTOR	ECA	DRILLED DEPTH	70'
METHODE	GEO PROBE	START DATE	11/11/05
BORING DIA.	2 1/2"	COMPLETION	11/12/05

LEGEND

WELL CONSTRUCTION	USCS CLASSIFICATIONS		USCS CLASSIFICATIONS	
BENTONITE	PT	PEET	SP	POORLY GRADED SAND
NO. 2 SAND	OL	ORGANIC SILT OR CLAY	SW	WELL GRADED SAND
CONCRETE	CL	SILTY OR SANDY CLAY	GC	CLAYEY GRAVEL
LANDSCAPE	ML	CLAYEY SILT	GM	SILTY GRAVEL
ASPHALT	SC	CLAYEY SAND	GP	POORLY GRADED GRAVEL
NEAT CEMENT	SM	SILTY SAND	GW	WELL GRADED GRAVEL

NOTE: "H" USED INPLACE OF "L" FOR THE SECOND LETTER OF THE ABOVE DENOTES LIQUID LIMITS OF 50% OR GREATER

- GROUNDWATER ELEV. (INITIAL)
- GROUNDWATER ELEV. (STATIC)
- N/A NOT APPLICABLE
- GROUNDWATER SAMPLE

SOIL DESCRIPTION KEY

1	DARK BROWN	12	<5% CLAY AND SILT	23	NOT USED
2	MEDIUM BROWN	13	<20% CLAY AND SILT	24	NOT USED
3	LIGHT BROWN	14	<35% CLAY AND SILT	25	NOT USED
4	LIGHT RUST	15	<45% CLAY AND SILT	26	FRACTURED ROCK
5	RUST	16	< 5% COARSE MATERIAL < 4.75 MM	27	WEATHERED ROCK
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10	GREY BROWN	21	< 20% COASRE MATERIAL > 4.75 MM	32	MODERATE PRODUCT ORDR
11	LT GREY BROWN	22	< 35% COASRE MATERIAL > 4.75 MM	33	STRONG PRODUCT ODOR

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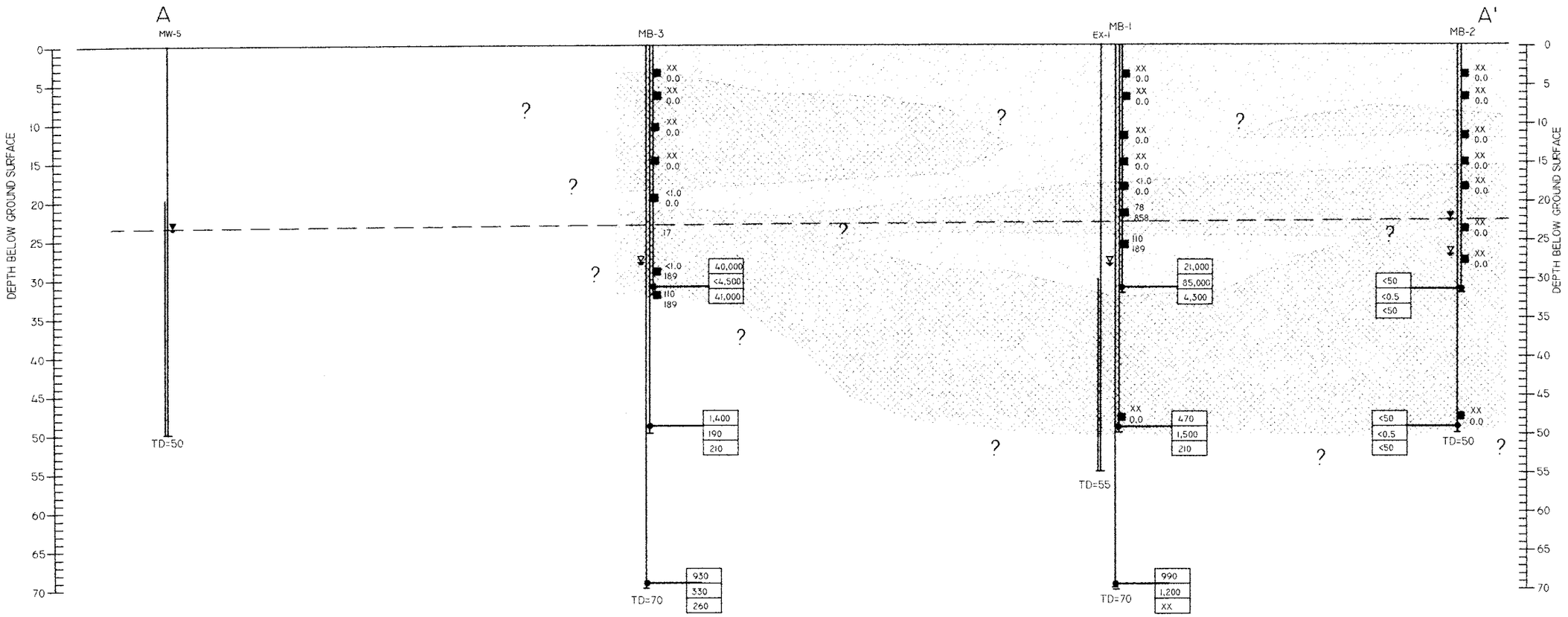
BORING LOG MB-3

160 HOLMES STREET
LIVERMORE, CALIFORNIA

11/21/05

APPENDIX B, Generalized Cross Sections



MW-1 BORING DESIGNATION

SOIL SAMPLE COLLECT FOR LABARATORY ANALYSIS

6.6 TPHg CONCENTRATION IN SOIL (MG/KG)
720 PID MEASURED IN PPM / XX = NOT ANALYZED

STATIC GROUNDWATER

SCREENED INTERVAL — INITIAL GROUNDWATER

TD=30 BORING DEPTH

GROUNDWATER SAMPLE

470 CONCENTRATION OF TPHG IN UG/L
1,200 CONCENTRATION OF MTBE IN UG/L
210 CONCENTRATION OF DIESEL IN UG/L

PREDOMINATELY FINE GRAIN MATERIAL

PREDOMINATELY COARSE GRAIN MATERIAL

GROUNDWATER ELEV.

? UNKNOWN BOUNDARY

VERTICAL SCALE
0 10 20 30

HORZONTAL SCALE
0 20 40 60

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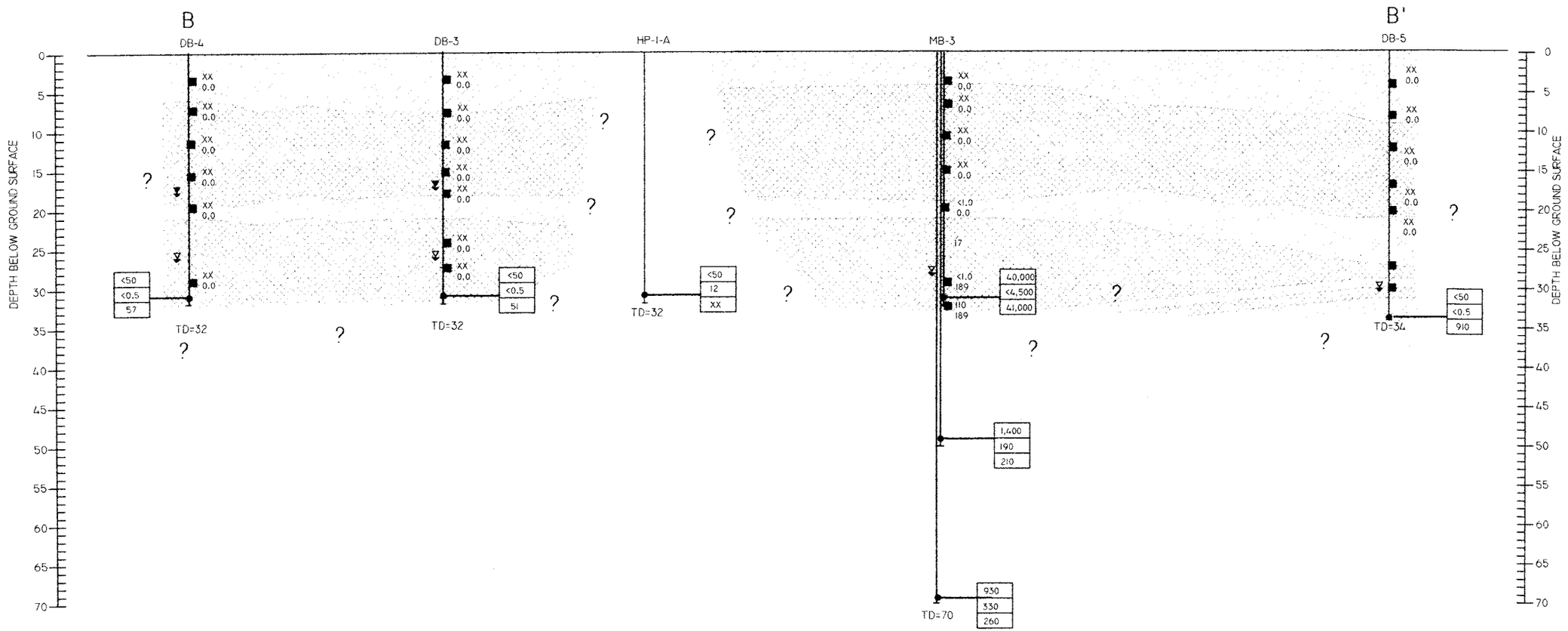
CROSS SECTION A-A' OF THE SITE CONCEPTUAL MODEL

160 HOLMES STREET
LIVERMORE, CALIFORNIA

12/1/05



MW-1 BORING DESIGNATION

SOIL SAMPLE COLLECT FOR LABARATORY ANALYSIS

6.6 / 720 TPHG CONCENTRATION IN SOIL (MG/KG) / PID MEASURED IN PPM / XX = NOT ANALYZED

STATIC GROUNDWATER

SCREENED INTERVAL

INITIAL GROUNDWATER

TD=30 BORING DEPTH

GROUNDWATER SAMPLE

470 CONCENTRATION OF TPHG IN UG/L

1,200 CONCENTRATION OF MTBE IN UG/L

210 CONCENTRATION OF DIESEL IN UG/L

PREDOMINATELY FINE GRAIN MATERIAL

PREDOMINATELY COARSE GRAIN MATERIAL

? UNKNOWN BOUNDARY

VERTICAL SCALE 0 10 20 30

HORZONTAL SCALE 0 20 40 60

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CROSS SECTION B-B' OF THE SITE CONCEPTUAL MODEL

160 HOLMES STREET
LIVERMORE, CALIFORNIA

12/5/05

APPENDIX F
Well Survey Report

Mid Coast Engineers

Civil Engineers and Land Surveyors

70 Penny Lane, Suite A - Watsonville, CA 95076
Phone: (831) 724-2580
Fax: (831) 724-8025
e-mail: lee@midcoastengineers.com

Richard A. Wadsworth
Civil Engineer

Arthur L. Bliss
Civil Engineer

Stanley O. Nielsen
Land Surveyor

Lee D. Vaage
Land Surveyor

Jeff S. Nielsen
Land Surveyor

LETTER OF TRANSMITTAL

To: James Allen
ALLTERRA
849 Almar Avenue
Suite C, #281
Santa Cruz, CA 95060

Date: 30 March 2006

Job No.: 04128X

Re: 160 Holmes St.
Livermore

We are transmitting herewith:

Letter

Coordinate listings

Copy To:

Signed: Lee Vaage L. S. 5029

If enclosures are not as noted, kindly notify us at once.

Mid Coast Engineers
Civil Engineers and Land Surveyors
70 Penny Lane, Suite A - Watsonville, CA 95076
phone: (831) 724-2580
fax: (831) 724-8025
e-mail: lee@midcoastengineers.com

Richard A. Wadsworth
Civil Engineer
Stanley O. Nielsen
Land Surveyor
Lee D. Vaage
Land Surveyor
Jeff S. Nielsen
Land Surveyor

March 30, 2006

James Allen
ALLTERRA
849 Almar Avenue, Suite C, No. 281
Santa Cruz, CA 95060

Re: **Livermore Gas and Minimart, 160 Holmes Street, Livermore, California**; ALLTERRA Project , MCE Job No. 04128X

Dear Mr. Allen,

As you requested, on March 24 we surveyed nine ground water wells located at the referenced site. Our findings are shown on the attached sheets, expressed in State Plane Coordinates and Latitude/Longitude, and are consistent with our previous survey of July 30, 2004, for Geo Environmental Technology.

A notch was cut in the north rim of the PVC casing (TOC) and a cross chiseled in the north rim of the standard box (TOB).

Measurements were obtained from conventional survey techniques in combination with GPS techniques (Code CGPS), using control points AA3815 (HPGN D CA 04 FK) and AA3816 (HPGN D CA 04 FL), as published by NGS/NOAA and listed on their web site. Latitude and Longitude as shown were determined from the California Coordinate System, Zone 3, NAD 83 Datum. The accuracy range of the reported information is +/- 1cm. GPS equipment is the Trimble 5700 system (Code T57).

The benchmark used for this survey is City of Livermore 2K-747, a chiseled square in the top of curb at a storm water inlet at the west end of a bus turnout on the north side of Stanley Boulevard. Elevation = 459.491 feet, NGVD '29, 2000 City BM Datum.

Please let me know if you have questions or need additional information.

Yours truly,

Lee D. Vaage

LIVERMORE GAS AND MINIMART
160 Holmes Street
Livermore, California

ALLTERRA Project

Project : 04128X
User name MCE Date & Time 9:35:30 AM 3/29/2006
Coordinate System US State Plane 1983 Zone California Zone 3 0403
Project Datum NAD 1983 (Conus)
Vertical Datum NGVD29
Coordinate Units US survey feet
Distance Units US survey feet
Elevation Units US survey feet

Point Number	Northing	Easting	Elevation	Description
104	2071925.16	6191543.03	465.45	EW-1toc
105	2071925.67	6191543.03	465.67	EW-1tob
102	2071898.86	6191598.60	465.99	EW-2toc
103	2071899.22	6191598.51	466.53	EW-2tob
106	2071928.80	6191542.92	465.02	MW-1Btoc
107	2071929.08	6191542.84	465.65	MW-1Btob
93	2071909.54	6191414.04	464.96	MW-4Atoc
94	2071909.73	6191413.83	465.48	MW-4Atob
76	2072111.72	6191426.77	464.64	MW-5Atoc
77	2072111.89	6191426.49	465.25	MW-5Atob
78	2072113.42	6191431.62	464.59	MW-5Btoc
79	2072113.59	6191431.38	465.39	MW-5Btob
88	2072016.95	6191481.70	465.71	MW-7Atob
87	2072016.80	6191481.93	465.32	MW-7Atoc
91	2072010.68	6191482.62	465.39	MW-7Btoc
92	2072010.92	6191482.60	465.69	MW-7Btob
89	2072013.26	6191482.57	465.39	MW-7Ctoc
90	2072013.47	6191482.66	465.76	MW-7Ctob

LIVERMORE GAS AND MINIMART
160 Holmes Street
Livermore, California

ALLTERRA Project

Project : 04128X
User name MCE Date & Time 9:35:30 AM 3/29/2006
Coordinate System US State Plane 1983 Zone California Zone 3 0403
Project Datum NAD 1983 (Conus)
Vertical Datum NGVD29
Coordinate Units US survey feet
Distance Units US survey feet
Elevation Units US survey feet

Point Number	Latitude	Longitude	Elevation	Description
104	37.678160682°N	121.778982254°W	465.45	EW-1toc
105	37.678162082°N	121.778982273°W	465.67	EW-1tob
102	37.678090533°N	121.778789005°W	465.99	EW-2toc
103	37.678091540°N	121.778789317°W	466.53	EW-2tob
106	37.678170681°N	121.778982810°W	465.02	MW-1Btoc
107	37.678171449°N	121.778983073°W	465.65	MW-1Btob
93	37.678112952°N	121.779427169°W	464.96	MW-4Atoc
94	37.678113464°N	121.779427932°W	465.48	MW-4Atob
76	37.678668628°N	121.779392753°W	464.64	MW-5Atoc
77	37.678669086°N	121.779393716°W	465.25	MW-5Atob
78	37.678673495°N	121.779376068°W	464.59	MW-5Btoc
79	37.678673943°N	121.779376903°W	465.39	MW-5Btob
87	37.678410032°N	121.779197695°W	465.32	MW-7Atoc
88	37.678410443°N	121.779198493°W	465.71	MW-7Atob
91	37.678393270°N	121.779194991°W	465.39	MW-7Btoc
92	37.678393925°N	121.779195103°W	465.69	MW-7Btob
89	37.678400354°N	121.779195285°W	465.39	MW-7Ctoc
90	37.678400917°N	121.779195001°W	465.76	MW-7Ctob

	A	B	C	D	E	F	G	H	I	J	K	L
1	**LIVERMORE GAS AND MINIMART**											
2	**160 Holmes Street**											
3	**Livermore, California**											
4												
5	**ALLTERRA Project**											
6												
7	Project : 04128X											
8	User name MCE		Date & Time 9:35:30 AM 3/29/2006									
9	Coordinate System US State Plane 1983		Zone California Zone 3 0403									
10	Project Datum NAD 1983 (Conus)											
11	Vertical Datum NGVD29											
12	Coordinate Units US survey feet											
13	Distance Units US survey feet											
14	Elevation Units US survey feet											
15												
16		EW-1	MW	03/24/2006	37.6781607	-121.7789823	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing
17		EW-2	MW	03/24/2006	37.6780905	-121.7787890	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing
18												
19		MW-1B	MW	03/24/2006	37.6781707	-121.7789828	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing
20		MW-4A	MW	03/24/2006	37.6781130	-121.7794272	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing
21		MW-5A	MW	03/24/2006	37.6786686	-121.7793928	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing
22		MW-5B	MW	03/24/2006	37.6786735	-121.7793761	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing
23		MW-7A	MW	03/24/2006	37.6784100	-121.7791977	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing
24		MW-7B	MW	03/24/2006	37.6783933	-121.7791950	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing
25		MW-7C	MW	03/24/2006	37.6784004	-121.7791953	CGPS	NAD83	1	Mid Coast Engineers	T57	top of casing

	A	B	C	D	E	F	G	H	I	J	K
1	**LIVERMORE GAS AND MINIMART**										
2	**160 Holmes Street**										
3	**Livermore, California**										
4											
5	**ALLTERRA Project**										
6											
7	Project : 04128X										
8	User name MCE		Date & Time	9:35:30 AM 3/29/2006							
9	Coordinate System	US State Plane 1983		Zone	California Zone 3 0403						
10	Project Datum	NAD 1983 (Conus)									
11	Vertical Datum	NGVD29									
12	Coordinate Units	US survey feet									
13	Distance Units	US survey feet									
14	Elevation Units	US survey feet									
15											
16		EW-1	03/24/2006	465.45	CGPS	29	0.5		Mid Coast Engineers		top of casing
17		EW-2	03/24/2006	465.99	CGPS	29	0.5		Mid Coast Engineers		top of casing
18											
19		MW-1B	03/24/2006	465.02	CGPS	29	0.5		Mid Coast Engineers		top of casing
20		MW-4A	03/24/2006	464.96	CGPS	29	0.5		Mid Coast Engineers		top of casing
21		MW-5A	03/24/2006	464.64	CGPS	29	0.5		Mid Coast Engineers		top of casing
22		MW-5B	03/24/2006	464.59	CGPS	29	0.5		Mid Coast Engineers		top of casing
23		MW-7A	03/24/2006	465.32	CGPS	29	0.5		Mid Coast Engineers		top of casing
24		MW-7B	03/24/2006	465.39	CGPS	29	0.5		Mid Coast Engineers		top of casing
25		MW-7C	03/24/2006	465.39	CGPS	29	0.5		Mid Coast Engineers		top of casing

APPENDIX G
Well Development and Well Sampling Field Logs

Allterra Environmental, Inc.

Well Development Field Log

Site Address 166 Holmes	Date 3-1-06, 3-2-06
Project Number	Field Personnel JM

Monitoring Well Information

Monitoring Well ID MW-1B	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 18.7	Water Column (feet) 36.1
Total Depth (feet) 55'	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 6.13
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
1:50	18.9	6.13	834 µS	18.4°C	8.05	High	brown	none
2:05			754 µS	18.0°C	8.61	High	brown	none
2:50			713 µS	17.9°C	8.61	High	brown	none
3-2-06 11:06			690 µS	17.8°C	8.56	High	brown	none
11:20			690 µS	17.4°C	8.31	High	brown	none
11:33			690 µS	17.5°C	8.15	High	brown	none
11:47			694 µS	17.4°C	8.23	High	brown	none
1:14			691 µS	17.5°C	8.20	High	brown	none
1:25			674 µS	17.6°C	8.16	High	brown	none
1:35			669 µS	17.6	7.89	moderate	brown	none

Total Purge Volume 6.13

Groundwater Sampling Information

Sample ID MW-1B	Sample Time
Sample Containers (Number/Type)	
Comments	

Allterra Environmental, Inc.

Well Development Field Log

Site Address 160 Holmes	Date 3-8-06
Project Number	Field Personnel SR

Monitoring Well Information

Monitoring Well ID MW-4A	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 19.25	Water Column (feet) 10.35
Total Depth (feet) 29.6	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 1.75
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
Surge 10:25	19.25	1.75	1129 µS	18.3°C	7.36	High	brown	none
10:40			1246 µS	18.2°C	7.39	High	brown	none
10:45			1065 µS	18.2°C	7.33	High	brown	none
Surge 10:50			1001 µS	18.2°C	7.69	High	brown	none
10:55			953 µS	18.2°C	7.44	High	brown	none
11:00			924 µS	18.3°C	7.41	High	brown	none
Surge 11:05			881 µS	18.0°C	7.74	High	brown	none
11:10			841 µS	18.2°C	7.52	High	brown	none
11:15			816 µS	18.2°C	7.57	High	brown	none
11:20			836 µS	18.2°C	7.31	High	brown	none

Total Purge Volume 17.5

Groundwater Sampling Information

Sample ID MW-4A	Sample Time
Sample Containers (Number/Type)	
Comments	

334-0605

Allterra Environmental, Inc.

Well Development Field Log

Site Address 160 Holmes	Date 3-10-06
Project Number	Field Personnel SR

Monitoring Well Information

Monitoring Well ID MW-5A	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 19.91	Water Column (feet) 14.29
Total Depth (feet) 34.20	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 2.42

Comments

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
12:46	19.91	2.42	1481 µS	13.2°C	7.51	High	brown	none
12:51			1480 µS	13.5°C	7.53	High	brown	none
12:57			1464 µS	13.7°C	7.42	High	brown	none
1:04			1346 µS	14.0°C	7.42	High	brown	none
1:10			1231 µS	14.0°C	7.37	High	brown	none
1:16			1216 µS	14.0°C	7.36	High	brown	none
1:21			1208 µS	14.2°C	7.33	High	brown	none
1:26			1197 µS	14.3°C	7.32	High	brown	none
1:34			1170 µS	14.0°C	7.35	High	brown	none
1:40			1182 µS	14.2°C	7.34	High	brown	none

Total Purge Volume 24.29

Groundwater Sampling Information

Sample ID MW-5A	Sample Time
Sample Containers (Number/Type)	

Comments

Allterra Environmental, Inc.

Well Development Field Log

Site Address [illegible] Holmes	Date 2-8-11
Project Number	Field Personnel SK

Monitoring Well Information

Monitoring Well ID MW-513	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 20.36	Water Column (feet) 33.84
Total Depth (feet) 54.2	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 5.75
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH 7.46	Turbidity	Color	Odor
1:00	20.36	5.75	757.3	18.1°C	High	~~br~~ High	brown	none
1:10			757.3	17.3°C	8.13	High	brown	none
1:20			741.3	16.8°C	7.93	High	brown	none
1:30			755.5	17.0°C	8.14	High	brown	none
1:40			[illegible]	16.6°C	8.10	High	brown	none
1:50			743.5	16.6°C	8.03	High	brown	none
2:00			746.5	16.9°C	8.12	High	brown	none
2:10			754.3	16.5°C	8.08	High	brown	none
2:20			740.3	16.7°C	8.02	High	brown	none
2:30			744.3	16.5°C	7.93	High	brown	none

Total Purge Volume 57.52

Groundwater Sampling Information

Sample ID MW-513	Sample Time
Sample Containers (Number/Type)	
Comments	

Allterra Environmental, Inc.

Well Development Field Log

Site Address 160 Holmes	Date 3-7-01
Project Number	Field Personnel JR

Monitoring Well Information

Monitoring Well ID MW-7A	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 14.66	Water Column (feet) 10.04
Total Depth (feet) 24.7	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 1.70
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
1:10	14.66	1.70	1141 µS	17.8°C	7.75	High	brown	moderate
1:12	~~same~~		1085 µS	18.7°C	7.56	High	brown	moderate
1:16	~~same~~		871 µS	18.3°C	7.62	High	brown	moderate
1:20			1033 µS	17.2°C	7.76	High	brown	moderate
1:25			1021 µS	18.0°C	7.58	High	brown	moderate
1:30			1007 µS	18.4°C	7.51	High	brown	moderate
1:35			1026 µS	17.7°C	7.74	High	brown	moderate
1:40			999 µS	18.1°C	7.61	High	brown	moderate
1:45			998 µS	18.5°C	7.41	High	brown	moderate
1:50			999 µS	17.8°C	7.71	High	brown	moderate

Total Purge Volume 17.06

Groundwater Sampling Information

Sample ID 7D	Sample Time
Sample Containers (Number/Type)	
Comments	

Allterra Environmental, Inc.

Well Development Field Log

Site Address 100 Holmes	Date 2-6-06 / 3-7-06
Project Number	Field Personnel SR

Monitoring Well Information

Monitoring Well ID ~~715~~ MW-713	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 20.76	Water Column (feet) 28.34
Total Depth (feet) 49.1	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 4.81
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
2:05	20.76	4.81	861 µS	18.5°C	7.86	High	brown	none
2:18			857 µS	18.1°C	7.57	High	brown	none
2:36			843 µS	17.8°C	7.91	High	brown	none
2:45			835	17.6°C	7.83	High	brown	none
2:53			832	17.5°C	7.65	High	brown	none
3-7-06 12:21			910 µS	18.5°C	7.90	High	brown	none
12:30			891 µS	18.2°C	7.35	High	brown	none
12:39			840 µS	18.1°C	7.36	High	brown	none
12:49			826 µS	17.1°C	8.00	High	brown	none
1:00			812 µS	17.6°C	7.73	High	brown	none

Total Purge Volume 48.1

Groundwater Sampling Information

Sample ID MW-713B	Sample Time
Sample Containers (Number/Type)	
Comments	

Allterra Environmental, Inc.

Well Development Field Log

Site Address 160 Holmes	Date 3 6 06
Project Number 015-01-012	Field Personnel EA

Monitoring Well Information

Monitoring Well ID MW-7C	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 20.62	Water Column (feet) 49.38
Total Depth (feet) 70.00	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 8.4
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conduc-tivity	Temper-ature	pH	Turbidity	Color	Odor
12:20	20.62	8.4	781 ms	18.3°C	8.11	high	brn	none
12:35		8.4	711 ms	18.0°C	7.97			
12:50			689 ms	18.8°C	8.12			
1:05			697 ms	17.1°C	7.98			
1:20			694 ms	17.3°C	7.92			
1:35			690 ms	17.1°C	7.85			
1:56			[illegible]	17.1°C	7.96			
2:05			685 ms	17.4°C	7.86			
2:20			684 ms	17.4°C	7.90			
2:35			689 ms	17.5°C	7.79			

Total Purge Volume

Groundwater Sampling Information

Sample ID	Sample Time
Sample Containers (Number/Type)	
Comments	

Allterra Environmental, Inc.

Well Development Field Log

Site Address 160 Holmes	Date 3-1-06
Project Number	Field Personnel JR

Monitoring Well Information

Monitoring Well ID EW-1	Monitoring Well Diameter (inches) 4.0
Depth to Water (feet) 18.90	Water Column (feet) 21.1
Total Depth (feet) 40	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 13.52
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
11:40	18.90	13.52	1108 µS	18.8°C	6.63	High	brown	none
12:10			1140 µS	18.7°C	6.94	High	brown	none
12:20			1084 µS	18.4°C	7.36	High	Brown	Mod-Strong
1:30			1112 µS	18.6°C	7.30	High	Brown	Moderate
2:00			957 µS	18.5°C	7.80	High	brow	slight
2:35			906 µS	18.5°C	7.75	High	brow	slight
3-2-06 1:47			809 µS	18.1°C	7.77	High	brown	slight
2:00			855 µS	18.4°C	7.66	High	brown	slight
2:07			831 µS	18.2°C	7.71	High	brown	slight
2:15			801 µS	18.2°C	7.58	High	brown	slight

Total Purge Volume 27.1 2137.2

Groundwater Sampling Information

Sample ID EW-1	Sample Time
Sample Containers (Number/Type)	
Comments	

36

Allterra Environmental, Inc.

Well Development Field Log

Site Address 160 Holmes	Date 3-2-03 & 3-6-03
Project Number	Field Personnel

Monitoring Well Information

Monitoring Well ID EW-2	Monitoring Well Diameter (inches)
Depth to Water (feet) 19.60	Water Column (feet) 17.3
Total Depth (feet) 36.90	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 11.41
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
2:54	19.60	11.41	1714 µS	18.0°C	7.80	High	brown	none
3:05			1480 µS	17.9°C	7.73	High	brown	~~none~~ slight
12:26			1267 µS	18.5°C	7.19	High	brown	none
12:35			1242 µS	18.1°C	7.35	High	brown	none
12:48			1078 µS	18.0°C	7.65	High	brown	slight
12:58			1127 µS	18.1°C	7.30	High	brown	slight
1:07			1036 µS	17.9°C	7.32	High	brown	slight
1:14			1012 µS	18.1°C	7.70	High	brown	slight
1:24			964 µS	19.0°C	8.01	High	brown	slight
1:38			919 µS	17.9°C	7.62	High	brown	slight

Total Purge Volume 114.18

Groundwater Sampling Information

Sample ID EW-2	Sample Time
Sample Containers (Number/Type)	
Comments	

ALLTERRA

Groundwater Sampling Field Log

Site Address 160 Holmes	Date 3-13-06
Project Number 015-01-012	Field Personnel EA

Monitoring Well Information

Monitoring Well ID EW-1	Monitoring Well Diameter (inches) 4.0
Depth to Water (feet) 18.98	Water Column (feet) 21.02
Total Depth (feet) 40.00	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 12.61
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
12:45	18.98	12.62	747ms	18.3°C	7.42	high	brn	moderate

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID EW-1	Sample Time 1:00
Sample Containers (Number/Type) 4 Vials, 1 Amber	
Comments	

Groundwater Sampling Field Log

Site Address 160	Date
Project Number	Field Personnel

Monitoring Well Information

Monitoring Well ID MW-1B	Monitoring Well Diameter (inches) 55.0
Depth to Water (feet) 18.58	Water Column (feet) 36.42
Total Depth (feet)	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 6.14
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
1:30	18.58	6.14	671ms	18.1°C	7.91	low	brn	none

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID MW-1B	Sample Time
Sample Containers (Number/Type) 4 Vials, 1 Amber	
Comments	

ALLTERRA

Groundwater Sampling Field Log

Site Address	Date
Project Number	Field Personnel

Monitoring Well Information

Monitoring Well ID EW-2	Monitoring Well Diameter (inches) 4.0
Depth to Water (feet) 19.18	Water Column (feet) 20.82
Total Depth (feet) 40.00	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) ~~13.00~~ 13.60
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
			876us	17.8°C	7.90	high	brn	strong

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID	Sample Time
Sample Containers (Number/Type)	
Comments	

Groundwater Sampling Field Log

Site Address	Date
Project Number	Field Personnel

Monitoring Well Information

Monitoring Well ID	Monitoring Well Diameter (inches)
Depth to Water (feet)	Water Column (feet)
Total Depth (feet)	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons)
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID	Sample Time
Sample Containers (Number/Type)	
Comments	

ALLTERRA

Groundwater Sampling Field Log

Site Address [illegible] Adams	Date 3-13-06
Project Number	Field Personnel SR

Monitoring Well Information

Monitoring Well ID MW-5A	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 20.16	Water Column (feet) 34.84
Total Depth (feet) 55	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 5.92
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	20.16	5.92	616.5	18.9°C	7.57	Low	clear	none

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID MW-5A	Sample Time
Sample Containers (Number/Type) 4	VOC 1 amber
Comments	

Groundwater Sampling Field Log

Site Address [illegible] Adams	Date 3-13-06
Project Number	Field Personnel SR

Monitoring Well Information

Monitoring Well ID MW-5D	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 20.13	Water Column (feet) 14.87
Total Depth (feet) 35	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 2.52
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	20.13	2.52	1111.5	17.1°C	7.37	moderate	brown	none

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID MW-5D	Sample Time
Sample Containers (Number/Type) 4	VOC 1 amber
Comments	

ALTERRA

Groundwater Sampling Field Log

Site Address 160 Holmes	Date 3·17·06
Project Number	Field Personnel EA

Monitoring Well Information

Monitoring Well ID MW-7A	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 19.47	Water Column (feet) 10.53
Total Depth (feet) 30.0	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 1.8
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conduc-tivity	Temper-ature	pH	Turbidity	Color	Odor
	19.47	1.8	963us	17.5°C	7.56	high	brn	strong

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID	Sample Time
Sample Containers (Number/Type)	
Comments	

Groundwater Sampling Field Log

Site Address 160 Holmes	Date
Project Number	Field Personnel

Monitoring Well Information

Monitoring Well ID MW-7C	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 20.05	Water Column (feet) 49.95
Total Depth (feet) 70.0	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 8.5
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conduc-tivity	Temper-ature	pH	Turbidity	Color	Odor
		8.5	633us	19.2°C	7.53	low	brn	none

Total Purge Volume	Comments

Groundwater Sampling Information

mple ID	Sample Time
ole Containers (Number/Type)	
ents	

ALLTERRA

Groundwater Sampling Field Log

Site Address	Date
Project Number	Field Personnel

Monitoring Well Information

Monitoring Well ID MW-7B	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 19.75	Water Column (feet) 30.25
Total Depth (feet) 50.0	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) 5.14
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
			879 µs	17.7°C	8.31	high	brown	none

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID	Sample Time
Sample Containers (Number/Type)	
Comments	

Groundwater Sampling Field Log

Site Address	Date
Project Number	Field Personnel

Monitoring Well Information

Monitoring Well ID MW-4A	Monitoring Well Diameter (inches) 2.0
Depth to Water (feet) 19.09	Water Column (feet) 10.91
Total Depth (feet) 30.0	80% Recharge Depth (feet)
Depth to Product (feet)	1 Well Volume (gallons) ~~3.55~~ 1.86
Comments	

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
			775 µs	17.3°C	7.97	high	brn	none

Total Purge Volume	Comments

Groundwater Sampling Information

Sample ID	Sample Time
Sample Containers (Number/Type)	
Comments	

APPENDIX H
Soil Analytical Reports and Chain of Custody Documentation

0511316

Chain of Custody Record

ALLTERRA
849 Almar Avenue, Suite C, #281
Santa Cruz, California 95060
Website: www.allterraenv.com
Phone: (831) 425-2608 Facsimile: (831) 425-2609

Turn Around Time (circle one) RUSH 24HR 48HR 72HR (5 Day)

Report and Bill to: Allterra Environmental, Inc.
Project Number: 015-01-008
Project Location: 160 Holmes, Livermore, CA
Project Name: Soil&GW Investigation
Sampler Signature:

Sample ID	Sample Collection		Sample Containers		Matrix					Preservation				TPHg and BTEX /MTBE (EPA 8015/8020)	BTEX (EPA 8020)	TPHd (EPA 8015)	5-fuel oxys (EPA 8260)	Ethanol and Methanol (EPA 8260)	Lead Scavengers (8260)	Total HVOCs (EPA 8260)	Hardness/Total dissolved solids	CAM-17 Metals (EPA 6010/6020)	LUFT 5 Metals (EPA 6010/6020)	PAH's/ PNA's (EPA 8270,625/8310)	Fish Toxicity/Bioassay	Lead (EPA 6010/200.9/200.8)	MTBE (EPA 8260B)	EDF required
	Date	Time	Number of Containers	Container Type	Air	Water	Soil	Sludge	Other	Ice	HCl	HNO3	Other																
MB-1-18'	11/11/05		1	Ac. Liner			X			X				X		X													X
MB-1-22'	11/11/05		1	Ac. Liner			X			X				X		X													X
MB-1-26'	11/11/05		1	Ac. Liner			X			X				X		X													X
MB-3-20'	11/11/05		1	Ac. Liner			X			X				X		X													X
MB-3-28'	11/11/05		1	Ac. Liner			X			X				X		X													X
MB-3-32'	11/11/05		1	Ac. Liner			X			X				X		X													X
B-1-28'	11/10/05		1	Ac. Liner			X			X				X		X													X
B-2-24'	11/10/05		1	Ac. Liner			X			X				X		X													X
B-2-28'	11/10/05		1	Ac. Liner			X			X				X		X													X
B-3-24'	11/10/05		1	Ac. Liner			X			X				X		X													X
B-3-28'	11/10/05		1	Ac. Liner			X			X				X		X													X
DB-1-26'	11/10/05		1	Ac. Liner			X			X				X		X													X

Sampled By:	Date: 11/15/05	Time: 1600	Received By:
Received By:	Date: 11/16/05	Time: 1215	Received By:
Received By:	Date:	Time:	Received By:

Comments:

ICE/t° ✓
GOOD CONDITION ✓ APPROPRIATE ✓
HEAD SPACE ABSENT ____ CONTAINERS ____
DECHLORINATED IN LAB ____ PRESERVED IN LAB ____

PRESERVATION	VOAS	O&G	METALS	OTHER

REC'D SEALED & INTACT VIA allterra Courier

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0511316 **ClientID: ATRS** **EDF: NO**

Report to:
James Allen
Allterra Environmental, Inc
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060
TEL: 831-425-2608
FAX: 831-425-2609
ProjectNo: #015-01-008; 160 Holmes, Livermore C
PO:

Bill to:
Accounts Payable
Allterra Environmental
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060

Requested TAT: 5 days

Date Received: 11/16/2005
Date Printed: 11/16/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0511316-001	MB-1-18'	Soil	11/11/05	☐	A	A										
0511316-002	MB-1-22'	Soil	11/11/05	☐	A	A										
0511316-003	MB-1-26'	Soil	11/11/05	☐	A	A										
0511316-004	MB-3-20'	Soil	11/11/05	☐	A	A										
0511316-005	MB-3-28'	Soil	11/11/05	☐	A	A										
0511316-006	MB-3-32'	Soil	11/11/05	☐	A	A										
0511316-007	B-1-28'	Soil	11/10/05	☐	A	A										
0511316-008	B-2-24'	Soil	11/10/05	☐	A	A										
0511316-009	B-2-28'	Soil	11/10/05	☐	A	A										
0511316-010	B-3-24'	Soil	11/10/05	☐	A	A										
0511316-011	B-3-28'	Soil	11/10/05	☐	A	A										
0511316-012	DB-1-26'	Soil	11/10/05	☐	A	A										

Test Legend:

1	G-MBTEX_S	2	TPH(D)_S	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments:

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

McCampbell Analytical, Inc.

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

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore CA	Date Sampled: 11/10/05-11/11/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/16/05
	Client P.O.:	Date Analyzed: 11/16/05-11/18/05

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0511316

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MB-1-18'	S	ND	ND	ND	ND	ND	ND	1	94
002A	MB-1-22'	S	78,b,m	2.3	0.028	0.073	1.0	4.8	1	107
003A	MB-1-26'	S	110,a	14	0.27	0.51	2.0	1.7	10	101
004A	MB-3-20'	S	ND	ND	ND	ND	ND	ND	1	85
005A	MB-3-28'	S	ND	ND	ND	ND	ND	ND	1	87
006A	MB-3-32'	S	1400,b,m	ND<5.0	ND<0.50	5.0	20	67	100	117
007A	B-1-28'	S	ND	ND	ND	ND	ND	ND	1	87
008A	B-2-24'	S	5.7,b	1.7	ND	0.018	0.076	0.25	1	89
009A	B-2-28'	S	11,a	7.2	0.075	0.073	0.26	0.14	1	82
010A	B-3-24'	S	9.0,a	4.5	0.077	0.037	0.32	1.1	1	98
011A	B-3-28'	S	48,b,m	ND<1.0	0.053	0.20	0.53	0.49	1	100
012A	DB-1-26'	S	ND	ND	ND	ND	ND	ND	1	102
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	NA	NA	NA	NA	NA	NA	1	ug/L
		S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644

_____Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore CA	Date Sampled: 11/10/05-11/11/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/16/05
	Client P.O.:	Date Analyzed: 11/16/05-11/18/05

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3550C Analytical methods: SW8015C Work Order: 0511316

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0511316-001A	MB-1-18'	S	ND	1	108
0511316-002A	MB-1-22'	S	23,d	1	119
0511316-003A	MB-1-26'	S	18,d	1	115
0511316-004A	MB-3-20'	S	ND	1	108
0511316-005A	MB-3-28'	S	ND	1	109
0511316-006A	MB-3-32'	S	100,d	1	102
0511316-007A	B-1-28'	S	ND	1	109
0511316-008A	B-2-24'	S	9.5,d,g	1	110
0511316-009A	B-2-28'	S	2.4,d	1	110
0511316-010A	B-3-24'	S	1.4,d	1	110
0511316-011A	B-3-28'	S	6.1,d	1	114
0511316-012A	DB-1-26'	S	ND	1	111

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	1.0	mg/Kg

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

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644 _____Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0511316

EPA Method: SW8021B/8015Cm	Extraction: SW5030B	BatchID: 19042	Spiked Sample ID: 0511316-004A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	0.60	111	115	3.76	104	96.4	7.38	70 - 130	70 - 130
MTBE	ND	0.10	81.9	81.2	0.882	90.7	92.1	1.56	70 - 130	70 - 130
Benzene	ND	0.10	98.1	98.9	0.761	96.9	91.8	5.45	70 - 130	70 - 130
Toluene	ND	0.10	85.7	87.3	1.87	87.3	83.6	4.35	70 - 130	70 - 130
Ethylbenzene	ND	0.10	106	107	1.60	110	107	2.22	70 - 130	70 - 130
Xylenes	ND	0.30	95.3	96	0.697	96.7	96	0.692	70 - 130	70 - 130
%SS:	85	0.10	100	94	5.66	85	82	3.23	70 - 130	70 - 130

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

NONE

BATCH 19042 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511316-001A	11/11/05	11/16/05	11/17/05 10:22 PM	0511316-002A	11/11/05	11/16/05	11/17/05 12:29 AM
0511316-003A	11/11/05	11/16/05	11/17/05 6:27 PM	0511316-004A	11/11/05	11/16/05	11/17/05 10:12 AM
0511316-005A	11/11/05	11/16/05	11/17/05 10:55 PM	0511316-006A	11/11/05	11/16/05	11/17/05 9:38 AM
0511316-007A	11/10/05	11/16/05	11/17/05 11:28 PM	0511316-008A	11/10/05	11/16/05	11/17/05 5:48 AM
0511316-009A	11/10/05	11/16/05	11/17/05 10:46 AM	0511316-009A	11/10/05	11/16/05	11/18/05 6:33 AM
0511316-010A	11/10/05	11/16/05	11/16/05 11:59 PM	0511316-011A	11/10/05	11/16/05	11/17/05 1:28 AM
0511316-012A	11/10/05	11/16/05	11/17/05 3:26 AM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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

DHS Certification No. 1644 _____QA/QC Officer

McCampbell Analytical, Inc.

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

QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0511316

EPA Method: SW8015C	Extraction: SW3550C	BatchID: 19036	Spiked Sample ID 0511310-010A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	1	20	103	105	1.27	105	106	0.291	70 - 130	70 - 130
%SS:	101	50	100	98	1.72	109	109	0	70 - 130	70 - 130

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

NONE

BATCH 19036 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511316-001A	11/11/05	11/16/05	11/16/05 8:52 PM	0511316-002A	11/11/05	11/16/05	11/16/05 9:59 PM
0511316-003A	11/11/05	11/16/05	1/16/05 11:05 PM	0511316-004A	11/11/05	11/16/05	l/17/05 12:10 AM
0511316-005A	11/11/05	11/16/05	11/17/05 1:16 AM	0511316-006A	11/11/05	11/16/05	11/17/05 2:22 AM
0511316-007A	11/10/05	11/16/05	11/17/05 3:28 AM	0511316-008A	11/10/05	11/16/05	11/18/05 4:31 AM
0511316-009A	11/10/05	11/16/05	11/17/05 4:33 AM	0511316-010A	11/10/05	11/16/05	11/17/05 5:39 AM
0511316-011A	11/10/05	11/16/05	11/17/05 6:45 AM	0511316-012A	11/10/05	11/16/05	11/17/05 7:50 AM

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

dtRS 0511479

PAGE 01

ALLTERRA ENV INC

11/28/2005 14:39 8314252609

ALLTERRA

849 Almar Avenue, Suite C, #281
Santa Cruz, California 95060
Website: www.allterraenv.com
Phone: (831) 425-2608 Facsimile (831) 425-2609

Chain of Custody Record

Turn Around Time (circle one) RUSH 24HR 48HR 72HR (5 Day)

Report and Bill to: Allterra Environmental, Inc.
Project Number: 015-01-008 PAGE 1 of 1
Project Location: 160 Holmes, Livermore, CA
Project Name: Soil&GW Investigation
Sampler Signature:

Sample ID	Sample Collection: Date	Sample Collection: Time	Sample Containers: Number of Containers	Sample Containers: Container Type	Matrix: Air	Matrix: Water	Matrix: Soil	Matrix: Sludge	Matrix: Other	Preservation: Ice	Preservation: HCl	Preservation: HNO3	Preservation: Other	TPHg and BTEX /MTBE (EPA 8015/8020)	BTEX (EPA 8020)	TPHd (EPA 8015)	5-fuel oxys (EPA 8260)	Ethanol and Methanol (EPA 8260)	Lead Scavengers (8260)	Total HVOCs (EPA 8260)	Hardness/Total dissolved solids	CAM-17 Metals (EPA 6010/6020)	LUFT 5 Metals (EPA 6010/6020)	PAH's/ PNA's (EPA 8270, 625/8310)	Fish Toxicity/Bioassay	Lead (EPA 6010/200.9/200.8)	MTBE (EPA 8260B)	EDF required
B-2-20'	11/10/05		1	Ac. Liner			X			X				X														X
B-2-16'	11/10/05		1	Ac. Liner			X			X				X														X
B-3-20'	11/10/05		1	Ac. Liner			X			X				X														X
B-3-16'	11-10-05		1	"			X			X				X														X

Sampled By:	Date:	Time:	Received By:
	11/28/05	1443	Mel Vall
Received By:	Date:	Time:	Received By:
Received By:	Date:	Time:	Received By:

Comments: Thanks

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

PRESERVATION	VOAS	O&G	METALS	OTHER

Rec'd 11/18 off hold 11/28

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0511479 **ClientID: ATRS** **EDF: YES**

Report to:
James Allen
Allterra Environmental, Inc
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060
TEL: 831-425-2608
FAX: 831-425-2609
ProjectNo: #015-01-008; Soil & GW Investigation
PO:

Bill to:
Accounts Payable
Allterra Environmental
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060

Requested TAT: 5 days

Date Received: 11/18/2005
Date Printed: 11/28/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0511479-001	B-2-20'	Soil	11/10/05	☐	A	A										
0511479-002	B-2-16'	Soil	11/10/05	☐	A											
0511479-003	B-3-20'	Soil	11/10/05	☐	A											
0511479-004	B-3-16'	Soil	11/10/05	☐	A											

Test Legend:

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

Prepared by: Melissa Valles

Comments: Rec'd 11/18 off hold 11/28

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

McCampbell Analytical, Inc.

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

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; Soil & GW Investigation	Date Sampled: 11/10/05
		Date Received: 11/18/05
	Client Contact: James Allen	Date Extracted: 11/28/05
	Client P.O.:	Date Analyzed: 11/30/05

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0511479

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	B-2-20'	S	ND	ND	ND	ND	ND	ND	1	106
002A	B-2-16'	S	ND	ND	ND	ND	ND	ND	1	95
003A	B-3-20'	S	ND	ND	ND	0.0058	0.0071	0.024	1	102
004A	B-3-16'	S	ND	ND	ND	ND	ND	ND	1	107

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644

_____Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0511479

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 19180 Spiked Sample ID 0511478-009A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	0.60	99.2	102	2.72	105	103	1.27	70 - 130	70 - 130
MTBE	ND	0.10	88.1	90.6	2.83	98.2	93.7	4.74	70 - 130	70 - 130
Benzene	ND	0.10	90.5	94.1	3.94	93.1	93.7	0.634	70 - 130	70 - 130
Toluene	ND	0.10	94.9	98.6	3.77	97.4	98	0.587	70 - 130	70 - 130
Ethylbenzene	ND	0.10	104	109	4.50	106	107	0.885	70 - 130	70 - 130
Xylenes	ND	0.30	107	110	3.08	110	110	0	70 - 130	70 - 130
%SS:	105	0.10	98	116	1.71	98	99	1.17	70 - 130	70 - 130

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

NONE

BATCH 19180 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511479-001A	11/10/05	11/28/05	11/30/05 5:07 AM	0511479-002A	11/10/05	11/28/05	11/30/05 7:17 AM
0511479-003A	11/10/05	11/28/05	11/30/05 9:00 PM	0511479-004A	11/10/05	11/28/05	11/30/05 1:17 AM

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644 QA/QC Officer

0603017

Chain of Custody Record

ALLTERRA
849 Almar Avenue, Suite C, #281
Santa Cruz, California 95060
Website: www.allterraenv.com
Phone: (831) 425-2608 Facsimile: (831) 425-2609

Turn Around Time (circle one) RUSH 24HR 48HR 72HR (5 Day)

Report and Bill to: Allterra Environmental, Inc.
Project Number: 015-01-01
Project Location: 160 Holmes
Project Name: Livermore
Sampler Signature: Erik Allen

Sample ID	Sample Collection: Date	Sample Collection: Time	Sample Containers: Number of Containers	Sample Containers: Container Type	Matrix: Air	Matrix: Water	Matrix: Soil	Matrix: Sludge	Matrix: Other	Preservation: Ice	Preservation: HCl	Preservation: HNO_3	Preservation: Other	TPHg/ BTEX/ MTBE (EPA 8015/8021)	BTEX (EPA 8020)	TPHd (EPA 8015)	5-fuel oxys (EPA 8260)	Ethanol and Methanol (EPA 8260)	Lead Scavengers (8260)	Total HVOCs (EPA 8260)	Hardness/Total dissolved solids	CAM-17 Metals (EPA 6010/6020)	LUFT 5 Metals (EPA 6010/6020)	PAH's/ PNA's (EPA 8270,625/8310)	Fish Toxicity/Bioassay	Lead (EPA 6010/200.9/200.8)		EDF required
EW-2@36.5	2-24-06		1	brass			X			X																		
EW-2@41.5	2-24-06		1	↓			↓			↓				X														X
MW-7C@70	2-24-06		1											X														X
MW-1B@57	2-23-06		1																									
MW-1B@61	2-23-06		1											X														X
MW-5B@55	2-27-06		1											X														X

Sampled By: Erik Allen
Date: 2-1-06
Time:
Received By:

Received By:
Date: 3/2/06
Time: 8am
Received By: Maura V&

Received By:
Date:
Time:
Received By:

Comments:
Hold "EW-2@36.5" and "MW-1B@57"
For EDF: make "field point names" EW-2, MW-1B, MW-5B, MW-7C

REC'D SEALED & INTACT VIA C10

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB
PRESERVATION | VOAS | O&G | METALS | OTHER

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0603017 **ClientID: ATRS** **EDF: YES**

Report to:
James Allen
Allterra Environmental, Inc
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060
TEL: 831-425-2608
FAX: 831-425-2609
ProjectNo: #015-01-012; Livermore
PO:

Bill to:
Accounts Payable
Allterra Environmental
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060

Requested TAT: 5 days

Date Received: 03/02/2006
Date Printed: 03/02/2006

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0603017-002	EW-2@41.5	Soil	2/24/06	☐	A	A										
0603017-003	MW-7C@70	Soil	2/24/06	☐	A											
0603017-005	MW-1B@61	Soil	2/24/06	☐	A											
0603017-006	MW-5B@55	Soil	2/24/06	☐	A											

Test Legend:

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

Prepared by: Maria Venegas

Comments:

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

McCampbell Analytical, Inc.

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

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-012; Livermore	Date Sampled: 02/24/06
		Date Received: 03/02/06
	Client Contact: James Allen	Date Extracted: 03/02/06
	Client P.O.:	Date Analyzed: 03/03/06-03/06/06

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0603017

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
002A	EW-2@41.5	S	1.4	0.22	ND	ND	ND	ND	1	94
003A	MW-7C@70	S	ND	ND	ND	ND	ND	ND	1	86
005A	MW-1B@61	S	ND	ND	ND	ND	ND	ND	1	93
006A	MW-5B@55	S	ND	ND	ND	ND	ND	ND	1	89

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644

_____Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0603017

EPA Method: SW8021B/8015Cm	Extraction: SW5030B	BatchID: 20572	Spiked Sample ID: 0603017-006A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	0.60	111	110	1.03	104	109	4.39	70 - 130	70 - 130
MTBE	ND	0.10	91.7	94.9	3.38	91.7	85.1	7.42	70 - 130	70 - 130
Benzene	ND	0.10	91.2	91.5	0.353	99	97.6	1.34	70 - 130	70 - 130
Toluene	ND	0.10	90.1	90.2	0.0953	82.6	83.5	1.16	70 - 130	70 - 130
Ethylbenzene	ND	0.10	92.7	92.2	0.604	99.5	103	3.14	70 - 130	70 - 130
Xylenes	ND	0.30	95	94.7	0.351	90.3	95.3	5.39	70 - 130	70 - 130
%SS:	89	0.10	102	98	4.00	95	103	8.08	70 - 130	70 - 130

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

NONE

BATCH 20572 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603017-002A	2/24/06	3/02/06	3/06/06 7:44 PM	0603017-003A	2/24/06	3/02/06	3/03/06 9:01 PM
0603017-005A	2/24/06	3/02/06	3/06/06 8:17 PM	0603017-006A	2/24/06	3/02/06	3/03/06 10:00 PM

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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

DHS Certification No. 1644 _____QA/QC Officer

APPENDIX I
Groundwater Analytical Reports and Chain of Custody Documentation

0511317

ALLTERRA

849 Almar Avenue, Suite C, #281
Santa Cruz, California 95060
Website: www.allterraenv.com
Phone: (831) 425-2608 Facsimile: (831) 425-2609

Chain of Custody Record

Turn Around Time (circle one) RUSH 24HR 48HR 72HR 5 Day

Report and Bill to: Allterra Environmental, Inc.
Project Number: **015-01-008**
Project Location: **160 Holmes, Livermore**
Project Name:
Sampler Signature:

	Sample ID	Sample Collection: Date	Sample Collection: Time	Sample Containers: Number of Containers	Sample Containers: Container Type	Matrix: Air	Matrix: Water	Matrix: Soil	Matrix: Sludge	Matrix: Other	Preservation: Ice	Preservation: HCl	Preservation: HNO_3	Preservation: Other	TPHg/ BTEX/ MTBE (EPA 8015/8021)	BTEX (EPA 8020)	TPHd (EPA 8015)	5-fuel oxys (EPA 8260)	Ethanol and Methanol (EPA 8260)	Lead Scavengers (8260)	Total HVOCs (EPA 8260)	Hardness/Total dissolved solids	CAM-17 Metals (EPA 6010/6020)	LUFT 5 Metals (EPA 6010/6020)	PAH's/ PNA's (EPA 8270,625/8310)	Fish Toxicity/Bioassay	Lead (EPA 6010/200.9/200.8)		EDF required
+10	MB-1-A	11/11/05		3,1	voa, amber		x				x	x			x		x												
+10	MB-1-B	11/11/05		2,1	voa, amber		x				x	x			x		x	x											x
+10	MB-1-C	11/11/05		3	voa		x				x	x			x			x											x
+10	MB-2-A	11/10/05		2,1	voa, amber		x				x	x			x		x	x											x
+10	MB-2-B	11/11/05		3,1	voa, amber		x				x	x			x		x	x											x
+1	MB-3-A	11/11/05		3,1	voa, amber		x				x	x			x		x	x											x
+30	MB-3-B	11/14/05		3,1	voa, amber		x				x	x			x		x	x											x
+30	MB-3-C	11/14/05		3,1	voa, amber		x				x	x			x		x	x											x
+80	DB-1-A	11/10/05		3	voa		x				x	x			x		x	x											x
+2	DB-2-A	11/11/05		3,1	voa, amber		x				x	x			x			x											x
+2	DB-3-A	11/14/05		3,1	voa, amber		x				x	x			x		x	x											x
+5	DB-4-A	11/14/05		3,1	voa, amber		x				x	x			x		x	x											x
+10	DB-5-A	11/11/05		3,1	voa, amber		x				x	x			x		x	x											x
+80	B-1-A	11/10/05		3,1	voa, amber		x				x	x			x		x	x											x
+30	B-2-A	11/10/05		3,1	voa, amber		x				x	x			x		x	x											x
+40	B-3-A	11/10/05		3,1	voa, amber		x				x	x			x		x	x											x
+20	HP-1-A	11/14/05		2,0	voa		x				x	x			x			x											x

Sampled By:	Date: 11/15/05	Time:	Received By:	
Received By:	Date: 11/16/05	Time: 12:15pm	Received By:	
Received By:	Date:	Time:	Received By:	

Comments:

ICE/t° ✓
GOOD CONDITION ✓ APPROPRIATE ✓
HEAD SPACE ABSENT ✓ CONTAINERS
DECHLORINATED IN LAB PRESERVED IN LAB

PRESERVATION	VOAS	O&G	METALS	OTHER
	✓			

REC'D SEALED & INTACT VIA Allterra Courier

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0511317 **ClientID: ATRS** **EDF: NO**

Report to:
James Allen
Allterra Environmental, Inc
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060
TEL: 831-425-2608
FAX: 831-425-2609
ProjectNo: #015-01-008; 160 Holmes, Livermore
PO:

Bill to:
Accounts Payable
Allterra Environmental
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060

Requested TAT: 5 days

Date Received: 11/16/2005
Date Printed: 11/16/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0511317-001	MB-1-A	Water	11/11/05	☐		A	B									
0511317-002	MB-1-B	Water	11/11/05	☐	C	A	B									
0511317-003	MB-1-C	Water	11/11/05	☐	B	A										
0511317-004	MB-2-A	Water	11/10/05	☐	C	A	B									
0511317-005	MB-2-B	Water	11/11/05	☐	C	A	B									
0511317-006	MB-3-A	Water	11/11/05	☐	C	A	B									
0511317-007	MB-3-B	Water	11/14/05	☐	C	A	B									
0511317-008	MB-3-C	Water	11/14/05	☐	C	A	B									
0511317-009	DB-1-A	Water	11/10/05	☐	B	A										
0511317-010	DB-2-A	Water	11/11/05	☐	C	A	B									
0511317-011	DB-3-A	Water	11/14/05	☐	C	A	B									
0511317-012	DB-4-A	Water	11/14/05	☐	C	A	B									
0511317-013	DB-5-A	Water	11/11/05	☐	C	A	B									
0511317-014	B-1-A	Water	11/10/05	☐	C	A	B									
0511317-015	B-2-A	Water	11/10/05	☐	C	A	B									

Test Legend:

1	5-OXYS_W	2	G-MBTEX_W	3	TPH(D)_W	4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments:

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

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0511317 **ClientID: ATRS** **EDF: NO**

Report to:
James Allen
Allterra Environmental, Inc
849 Almar Ave, Ste. C #281
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TEL: 831-425-2608
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ProjectNo: #015-01-008; 160 Holmes, Livermore
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Bill to:
Accounts Payable
Allterra Environmental
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060

Requested TAT: 5 days

Date Received: 11/16/2005
Date Printed: 11/16/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0511317-016	B-3-A	Water	11/10/05	☐	C	A	B									
0511317-017	HP-1-A	Water	11/14/05	☐	B	A										

Test Legend:

1	5-OXYS_W	2	G-MBTEX_W	3	TPH(D)_W	4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments:

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

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore	Date Sampled: 11/10/05-11/14/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/17/05-11/18/05
	Client P.O.:	Date Analyzed: 11/17/05-11/18/05

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0511317

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MB-1-A	W	21,000,a,i	85,000	970	ND<25	3300	1200	50	99
002A	MB-1-B	W	470,a,i	1500	7.8	0.97	31	48	1	109
003A	MB-1-C	W	990,a,i	1300	17	1.3	89	160	1	104
004A	MB-2-A	W	ND,i	ND	ND	ND	ND	ND	1	112
005A	MB-2-B	W	ND,i	ND	ND	ND	ND	ND	1	105
006A	MB-3-A	W	40,000,a,h,i	ND<4500	120	130	1700	2800	100	113
007A	MB-3-B	W	1400,a,i	140	0.93	9.3	14	27	1	112
008A	MB-3-C	W	930,a,i	250	1.7	3.8	33	100	1	105
009A	DB-1-A	W	160,m,i	68	ND	ND	ND	ND	1	101
010A	DB-2-A	W	ND,i	ND	ND	ND	ND	ND	1	104
011A	DB-3-A	W	ND,i	ND	ND	ND	ND	ND	1	99
012A	DB-4-A	W	ND,i	ND	ND	ND	ND	ND	1	99
013A	DB-5-A	W	ND,i	ND	ND	ND	ND	ND	1	104
014A	B-1-A	W	ND,i	26	ND	ND	ND	ND	1	102
015A	B-2-A	W	25,000,a,i	80,000	900	ND<50	2000	2600	100	101
016A	B-3-A	W	42,000,a,i	17,000	530	140	2400	7800	100	103
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644

_____Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore	Date Sampled: 11/10/05-11/14/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/17/05-11/18/05
	Client P.O.:	Date Analyzed: 11/17/05-11/18/05

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0511317

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
017A	HP-1-A	W	ND,i	12	ND	ND	ND	0.80	1	99

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644

_____Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore	Date Sampled: 11/10/05-11/14/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/16/05
	Client P.O.:	Date Analyzed: 11/17/05-11/23/05

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0511317

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0511317-001B	MB-1-A	W	4300,d,b,i	1	104
0511317-002B	MB-1-B	W	210,d,b,i	1	101
0511317-004B	MB-2-A	W	ND,i	1	107
0511317-005B	MB-2-B	W	61,b,i	1	110
0511317-006B	MB-3-A	W	41,000,d,b,h,i	10	108
0511317-007B	MB-3-B	W	210,d,i	1	104
0511317-008B	MB-3-C	W	260,d,b,i	1	107
0511317-010B	DB-2-A	W	ND,i	1	93
0511317-011B	DB-3-A	W	51,b,i	1	100
0511317-012B	DB-4-A	W	57,b,f,i	1	102
0511317-013B	DB-5-A	W	910,g,b,i	5	105
0511317-014B	B-1-A	W	230,g,a,i	1	108
0511317-015B	B-2-A	W	6200,d,i	20	115
0511317-016B	B-3-A	W	14,000,d,i	20	118

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

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

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644 _____Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore	Date Sampled: 11/10/05-11/14/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/17/05-11/21/05
	Client P.O.:	Date Analyzed: 11/17/05-11/21/05

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0511317

Lab ID	0511317-002C	0511317-003B	0511317-004C	0511317-005C	Reporting Limit for DF =1	
Client ID	MB-1-B	MB-1-C	MB-2-A	MB-2-B		
Matrix	W	W	W	W		
DF	50	50	1	1	S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<25	ND<25	ND	ND	NA	0.5
t-Butyl alcohol (TBA)	ND<250	ND<250	ND	ND	NA	5.0
Diisopropyl ether (DIPE)	ND<25	ND<25	ND	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<25	ND<25	ND	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	1500	1200	ND	ND	NA	0.5
Surrogate Recoveries (%)						
%SS1:	102	102	103	104		
Comments	i	i	i	i		

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

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

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

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore	Date Sampled: 11/10/05-11/14/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/17/05-11/21/05
	Client P.O.:	Date Analyzed: 11/17/05-11/21/05

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0511317

Lab ID	0511317-006C	0511317-007C	0511317-008C	0511317-009B	Reporting Limit for DF =1	
Client ID	MB-3-A	MB-3-B	MB-3-C	DB-1-A		
Matrix	W	W	W	W		
DF	100	100	200	3.3	S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<50	ND<50	ND<100	ND<1.7	NA	0.5
t-Butyl alcohol (TBA)	2500	6200	16,000	ND<17	NA	5.0
Diisopropyl ether (DIPE)	ND<50	ND<50	ND<100	ND<1.7	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<50	ND<50	ND<100	ND<1.7	NA	0.5
Methyl-t-butyl ether (MTBE)	3200	190	330	86	NA	0.5
Surrogate Recoveries (%)						
%SS1:	102	104	104	100		
Comments	h,i	i	i	i		

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

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

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

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

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Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore	Date Sampled: 11/10/05-11/14/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/17/05-11/21/05
	Client P.O.:	Date Analyzed: 11/17/05-11/21/05

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0511317

Lab ID	0511317-010C	0511317-011C	0511317-012C	0511317-013C	Reporting Limit for DF =1	
Client ID	DB-2-A	DB-3-A	DB-4-A	DB-5-A		
Matrix	W	W	W	W		
DF	1	1	1	1	S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND	ND	ND	ND	NA	0.5
t-Butyl alcohol (TBA)	ND	ND	ND	ND	NA	5.0
Diisopropyl ether (DIPE)	ND	ND	ND	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND	ND	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	ND	ND	ND	ND	NA	0.5
Surrogate Recoveries (%)						
%SS1:	103	103	103	106		
Comments	i	i	i	i		

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

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

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

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

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Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore	Date Sampled: 11/10/05-11/14/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 11/17/05-11/21/05
	Client P.O.:	Date Analyzed: 11/17/05-11/21/05

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0511317

Lab ID	0511317-014C	0511317-015C	0511317-016C	0511317-017B	Reporting Limit for DF =1	
Client ID	B-1-A	B-2-A	B-3-A	HP-1-A		
Matrix	W	W	W	W		
DF	1	3300	1000	1	S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND	ND<1700	ND<500	ND	NA	0.5
t-Butyl alcohol (TBA)	ND	ND<17,000	ND<5000	24	NA	5.0
Diisopropyl ether (DIPE)	ND	ND<1700	ND<500	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND<1700	ND<500	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	28	89,000	19,000	12	NA	0.5
Surrogate Recoveries (%)						
%SS1:	105	96	97	105		
Comments	i	i	i	i		

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

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

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

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

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0511317

EPA Method: SW8021B/8015Cm **Extraction: SW5030B** **BatchID: 19043** **Spiked Sample ID: 0511315-013A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) £	ND	60	105	106	0.446	95.8	105	9.19	70 - 130	70 - 130
MTBE	ND	10	91.1	98.1	7.43	94.4	90.3	4.43	70 - 130	70 - 130
Benzene	ND	10	95.8	99.1	3.39	93.3	93.8	0.465	70 - 130	70 - 130
Toluene	ND	10	99.5	103	3.26	97	97.1	0.129	70 - 130	70 - 130
Ethylbenzene	ND	10	109	111	2.04	108	107	0.904	70 - 130	70 - 130
Xylenes	ND	30	96.7	100	3.39	100	96.7	3.39	70 - 130	70 - 130
%SS:	100	10	105	111	5.79	103	104	0.457	70 - 130	70 - 130

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

NONE

BATCH 19043 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511317-001A	11/11/05	11/17/05	11/17/05 6:24 AM	0511317-001A	11/11/05	11/18/05	11/18/05 6:53 AM
0511317-002A	11/11/05	11/17/05	11/17/05 6:54 AM	0511317-002A	11/11/05	11/18/05	11/18/05 7:23 AM
0511317-003A	11/11/05	11/17/05	11/17/05 7:52 AM	0511317-003A	11/11/05	11/18/05	11/18/05 8:22 AM
0511317-004A	11/10/05	11/17/05	11/17/05 5:25 AM	0511317-005A	11/11/05	11/17/05	11/17/05 5:55 AM
0511317-006A	11/11/05	11/17/05	11/17/05 8:22 AM	0511317-007A	11/14/05	11/17/05	11/17/05 5:51 AM
0511317-008A	11/14/05	11/17/05	11/17/05 6:24 AM	0511317-009A	11/10/05	11/17/05	11/17/05 6:56 AM
0511317-010A	11/11/05	11/17/05	11/17/05 7:28 AM	0511317-011A	11/14/05	11/17/05	11/17/05 8:00 AM
0511317-012A	11/14/05	11/17/05	11/17/05 8:33 AM	0511317-013A	11/11/05	11/17/05	11/17/05 9:05 AM
0511317-014A	11/10/05	11/17/05	11/17/05 9:38 AM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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

DHS Certification No. 1644 _____QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0511317

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 19056 Spiked Sample ID: 0511334-001A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	115	112	2.57	105	101	3.22	70 - 130	70 - 130
MTBE	ND	10	78.7	79.7	1.28	86.1	92.8	7.52	70 - 130	70 - 130
Benzene	ND	10	102	107	4.44	96.3	99.7	3.46	70 - 130	70 - 130
Toluene	ND	10	111	114	2.82	98.3	107	8.16	70 - 130	70 - 130
Ethylbenzene	ND	10	114	116	1.73	103	105	1.59	70 - 130	70 - 130
Xylenes	ND	30	107	107	0	91.3	91.3	0	70 - 130	70 - 130
%SS:	106	10	105	107	1.64	101	103	2.03	70 - 130	70 - 130

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

NONE

BATCH 19056 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511317-015A	11/10/05	11/17/05	11/17/05 10:11 AM	0511317-015A	11/10/05	11/18/05	11/18/05 1:36 AM
0511317-016A	11/10/05	11/17/05	11/17/05 10:45 AM	0511317-017A	11/14/05	11/17/05	11/17/05 11:19 AM

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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

DHS Certification No. 1644 _____QA/QC Officer

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0511317

EPA Method: SW8015C	Extraction: SW3510C	BatchID: 19026	Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	102	101	1.40	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	107	106	1.22	N/A	70 - 130

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

NONE

BATCH 19026 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511317-001B	11/11/05	11/16/05	11/23/05 1:26 PM	0511317-002B	11/11/05	11/16/05	11/17/05 6:24 PM
0511317-004B	11/10/05	11/16/05	11/18/05 9:01 AM	0511317-005B	11/11/05	11/16/05	11/18/05 7:53 AM
0511317-006B	11/11/05	11/16/05	11/19/05 1:34 AM	0511317-007B	11/14/05	11/16/05	11/17/05 7:22 PM
0511317-008B	11/14/05	11/16/05	11/17/05 3:46 PM	0511317-010B	11/11/05	11/16/05	11/17/05 4:59 PM
0511317-011B	11/14/05	11/16/05	11/17/05 3:46 PM				

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

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

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

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

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

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0511317

EPA Method: SW8015C	Extraction: SW3510C	BatchID: 19057	Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	81.6	80.4	1.47	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	104	106	1.50	N/A	70 - 130

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

NONE

BATCH 19057 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511317-012B	11/14/05	11/16/05	11/17/05 4:59 PM	0511317-013B	11/11/05	11/16/05	11/18/05 2:16 AM
0511317-014B	11/10/05	11/16/05	11/17/05 8:38 AM	0511317-015B	11/10/05	11/16/05	11/17/05 11:59 PM
0511317-016B	11/10/05	11/16/05	11/17/05 10:51 PM				

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

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

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

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

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

DHS Certification No. 1644

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0511317

EPA Method: SW8260B **Extraction: SW5030B** **BatchID: 19044** **Spiked Sample ID: 0511315-011B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	106	108	2.03	114	113	0.509	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	85.7	91	6.06	91.3	91.2	0.0493	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	98.8	101	2.44	109	107	1.75	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	94.3	97.6	3.39	103	104	1.09	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	3	10	92	95	2.40	103	104	0.482	70 - 130	70 - 130
%SS1:	103	10	99	101	1.36	101	99	2.13	70 - 130	70 - 130

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

NONE

BATCH 19044 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511317-002C	11/11/05	11/17/05	11/17/05 2:56 PM	0511317-003B	11/11/05	11/17/05	11/17/05 3:48 PM
0511317-004C	11/10/05	11/17/05	11/17/05 4:42 PM	0511317-005C	11/11/05	11/17/05	11/17/05 10:04 PM

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

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

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

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

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

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

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0511317

EPA Method: SW8260B	Extraction: SW5030B	BatchID: 19058	Spiked Sample ID: 0511326-001A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	108	108	0	111	109	2.34	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	88.3	89.3	1.10	90.5	88.7	1.98	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	100	101	0.521	106	102	2.99	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	97.2	96	1.31	99.2	96.1	3.20	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	99.6	98.4	1.15	99.6	96.4	3.31	70 - 130	70 - 130
%SS1:	104	10	101	101	0	101	100	1.02	70 - 130	70 - 130

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

NONE

BATCH 19058 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511317-006C	11/11/05	11/18/05	11/18/05 3:25 PM	0511317-007C	11/14/05	11/21/05	11/21/05 1:44 PM
0511317-008C	11/14/05	11/21/05	11/21/05 2:28 PM	0511317-009B	11/10/05	11/18/05	11/18/05 6:13 PM
0511317-010C	11/11/05	11/18/05	11/18/05 3:30 AM	0511317-011C	11/14/05	11/18/05	11/18/05 4:13 AM
0511317-012C	11/14/05	11/18/05	11/18/05 4:55 AM	0511317-013C	11/11/05	11/18/05	11/18/05 4:25 AM
0511317-014C	11/10/05	11/18/05	11/18/05 5:12 AM	0511317-015C	11/10/05	11/18/05	11/18/05 6:00 AM
0511317-016C	11/10/05	11/18/05	11/18/05 6:47 AM	0511317-017B	11/14/05	11/18/05	11/18/05 7:34 AM

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

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

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

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

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

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

DHS Certification No. 1644 _____ QA/QC Officer

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0511317 **ClientID: ATRS** **EDF: YES**

Report to:
James Allen
Allterra Environmental, Inc
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060
TEL: 831-425-2608
FAX: 831-425-2609
ProjectNo: #015-01-008; 160 Holmes, Livermore
PO:

Bill to:
Accounts Payable
Allterra Environmental
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060

Requested TAT: 5 days
Date Received: 11/16/2005
Date Add-On: 11/30/2005
Date Printed: 12/01/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0511317-001	MB-1-A	Water	11/11/05	☐	C											

Test Legend:

1	5-OXYS_W	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments: 5-Oxys added 11/30/05 5 day TAT

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

McCampbell Analytical, Inc.

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

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-008; 160 Holmes, Livermore	Date Sampled: 11/11/05
		Date Received: 11/16/05
	Client Contact: James Allen	Date Extracted: 12/05/05
	Client P.O.:	Date Analyzed: 12/05/05

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0511317

Lab ID	0511317-001C				Reporting Limit for DF =1	
Client ID	MB-1-A					
Matrix	W					
DF	5000				S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<2500				NA	0.5
t-Butyl alcohol (TBA)	ND<25,000				NA	5.0
Diisopropyl ether (DIPE)	ND<2500				NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<2500				NA	0.5
Methyl-t-butyl ether (MTBE)	100,000				NA	0.5
Surrogate Recoveries (%)						
%SS1:	104					
Comments	i					

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

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

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

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

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Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0511317

EPA Method: SW8260B	Extraction: SW5030B	BatchID: 19216	Spiked Sample ID: 0511514-006B

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	105	107	2.00	108	106	1.55	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	90.6	91.5	1.06	91.5	94.7	3.53	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	104	106	1.05	109	107	1.86	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	96.6	96	0.670	99.4	98.2	1.17	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	96.8	97.3	0.502	95.3	96.5	1.24	70 - 130	70 - 130
%SS1:	100	10	98	98	0	98	97	0.742	70 - 130	70 - 130

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

NONE

BATCH 19216 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511317-001C	11/11/05	12/05/05	12/05/05 5:39 PM				

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

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

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

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

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

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

DHS Certification No. 1644 _____ QA/QC Officer

0603246

ALLTERRA

849 Almar Avenue, Suite C, #281
Santa Cruz, California 95060
Website: www.allterraenv.com
Phone: (831) 425-2608 Facsimile: (831) 425-2609

Chain of Custody Record

Turn Around Time (circle one) RUSH 24HR 48HR 72HR (5 Day)

Report and Bill to: Allterra Environmental, Inc.
Project Number: 015-01-002
Project Location: 160 holmes
Project Name: LIVERMORE GAS
Sampler Signature:

	Sample ID	Sample Collection		Sample Containers		Matrix					Preservation				TPHg, BTEX&MTBE (EPA 8015/8021)	BTEX (EPA 8020)	TPHd (EPA 8015)	5-fuel oxys (EPA 8260)	Ethanol and Methanol (EPA 8260)	Lead Scavengers (8260)	Total HVOCs (EPA 8260)	Hardness/Total dissolved solids	CAM-17 Metals (EPA 6010/6020)	LUFT 5 Metals (EPA 6010/6020)	PAH's/ PNA's (EPA 8270,625/8310)	Fish Toxicity/Bioassay	Lead (EPA 6010/200.9/200.8)	Total Toxic Organics (EPA 624)	EDF required
		Date	Time	Number of Containers	Container Type	Air	Water	Soil	Sludge	Other	Ice	HCl	HNO_3	Other																
+1	EW-1	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X
+5	EW-2	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X
+	MW-1B	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X
+1	MW-4A	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X
+	MW-5A	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X
+2	MW-5B	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X
+2	MW-7A	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X
+1	MW-7B	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X
(+)	MW-7C	3/13/06		5	voa/amber		X				X	X			X		X	X	X	X										X

Sampled By: JR 2/14/06 Time: Received By:

Received By: Date: 3/15/06 Time: 8am Received By:

Received By: Date: Time: Received By:

Comments:
ICE/t° ✓
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS ✓
DECHLORINATED IN LAB ____ PRESERVED IN LAB ____

PRESERVATION	VOAS	O&G	METALS	OTHER
	✓			

REC'D SEALED & INTACT VIA C/O

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0603246 **ClientID: ATRS** **EDF: YES**

Report to:
James Allen
Allterra Environmental, Inc
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060
TEL: 831-425-2608
FAX: 831-425-2609
ProjectNo: #015-01-002; Livermore Gas
PO:

Bill to:
Accounts Payable
Allterra Environmental
849 Almar Ave, Ste. C #281
Santa Cruz, CA 95060

Requested TAT: 5 days

Date Received: 03/15/2006
Date Printed: 03/15/2006

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0603246-001	EW-1	Water	3/13/06	☐	C	A	A	B								
0603246-002	EW-2	Water	3/13/06	☐	C	A		B								
0603246-003	MW-1B	Water	3/13/06	☐	C	A		B								
0603246-004	MW-4A	Water	3/13/06	☐	C	A		B								
0603246-005	MW-5A	Water	3/13/06	☐	C	A		B								
0603246-006	MW-5B	Water	3/13/06	☐	C	A		B								
0603246-007	MW-7A	Water	3/13/06	☐	C	A		B								
0603246-008	MW-7B	Water	3/13/06	☐	C	A		B								
0603246-009	MW-7C	Water	3/13/06	☐	C	A		B								

Test Legend:

1	9-OXYS_W	2	G-MBTEX_W	3	PREDF REPORT	4	TPH(D)_W	5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments:

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

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-002; Livermore Gas	Date Sampled: 03/13/06
		Date Received: 03/15/06
	Client Contact: James Allen	Date Extracted: 03/15/06-03/17/06
	Client P.O.:	Date Analyzed: 03/15/06-03/17/06

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0603246

Lab ID	0603246-001C	0603246-002C	0603246-003C	0603246-004C	Reporting Limit for DF =1	
Client ID	EW-1	EW-2	MW-1B	MW-4A		
Matrix	W	W	W	W		
DF	100	200	1	1	S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<50	ND<100	ND	ND	NA	0.5
t-Butyl alcohol (TBA)	ND<500	ND<1000	ND	ND	NA	5.0
1,2-Dibromoethane (EDB)	ND<50	ND<100	ND	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<50	ND<100	ND	ND	NA	0.5
Diisopropyl ether (DIPE)	ND<50	ND<100	ND	ND	NA	0.5
Ethanol	ND<5000	ND<10,000	ND	ND	NA	50
Ethyl tert-butyl ether (ETBE)	ND<50	ND<100	ND	ND	NA	0.5
Methanol	ND<50,000	ND<100,000	ND	ND	NA	500
Methyl-t-butyl ether (MTBE)	2300	5100	7.9	0.70	NA	0.5
Surrogate Recoveries (%)						
%SS1:	105	106	107	107		
Comments	i	i		i		

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-002; Livermore Gas	Date Sampled: 03/13/06
		Date Received: 03/15/06
	Client Contact: James Allen	Date Extracted: 03/15/06-03/17/06
	Client P.O.:	Date Analyzed: 03/15/06-03/17/06

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0603246

Lab ID	0603246-005C	0603246-006C	0603246-007C	0603246-008C	Reporting Limit for DF =1	
Client ID	MW-5A	MW-5B	MW-7A	MW-7B		
Matrix	W	W	W	W		
DF	1	1	200	100	S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND	ND	ND<100	ND<50	NA	0.5
t-Butyl alcohol (TBA)	ND	ND	4400	7300	NA	5.0
1,2-Dibromoethane (EDB)	ND	ND	ND<100	ND<50	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND<100	ND<50	NA	0.5
Diisopropyl ether (DIPE)	ND	ND	ND<100	ND<50	NA	0.5
Ethanol	ND	ND	ND<10,000	ND<5000	NA	50
Ethyl tert-butyl ether (ETBE)	ND	ND	ND<100	ND<50	NA	0.5
Methanol	ND	ND	ND<100,000	ND<50,000	NA	500
Methyl-t-butyl ether (MTBE)	ND	0.69	6300	1300	NA	0.5
Surrogate Recoveries (%)						
%SS1:	108	107	105	104		
Comments		i	i	i		

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-002; Livermore Gas	Date Sampled: 03/13/06
		Date Received: 03/15/06
	Client Contact: James Allen	Date Extracted: 03/15/06-03/17/06
	Client P.O.:	Date Analyzed: 03/15/06-03/17/06

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0603246

Lab ID	0603246-009C				Reporting Limit for DF =1	
Client ID	MW-7C					
Matrix	W					
DF	1				S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND				NA	0.5
t-Butyl alcohol (TBA)	ND				NA	5.0
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.5
Diisopropyl ether (DIPE)	ND				NA	0.5
Ethanol	ND				NA	50
Ethyl tert-butyl ether (ETBE)	ND				NA	0.5
Methanol	ND				NA	500
Methyl-t-butyl ether (MTBE)	0.60				NA	0.5
Surrogate Recoveries (%)						
%SS1:	107					
Comments						

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

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

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-002; Livermore Gas	Date Sampled: 03/13/06
		Date Received: 03/15/06
	Client Contact: James Allen	Date Extracted: 03/15/06-03/16/06
	Client P.O.:	Date Analyzed: 03/15/06-03/16/06

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0603246

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	EW-1	W	210,a,i	3400	5.0	4.1	7.5	12	3.3	105
002A	EW-2	W	ND<250,j,i	5400	ND<2.5	ND<2.5	ND<2.5	ND<2.5	5	97
003A	MW-1B	W	ND	8.2	ND	ND	ND	ND	1	104
004A	MW-4A	W	ND,i	ND	ND	ND	ND	ND	1	103
005A	MW-5A	W	ND	ND	ND	ND	ND	ND	1	107
006A	MW-5B	W	ND,i	ND	ND	ND	ND	ND	1	101
007A	MW-7A	W	6200,a,i	6900	140	21	200	560	10	108
008A	MW-7B	W	230,a,i	1500	1.8	4.7	ND	2.2	1	114
009A	MW-7C	W	ND	ND	ND	ND	ND	ND	1	102

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644

_____Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-002; Livermore Gas	Date Sampled: 03/13/06
		Date Received: 03/15/06
	Client Contact: James Allen	Date Extracted: 03/15/06
	Client P.O.:	Date Analyzed: 03/15/06

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0603246

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0603246-001B	EW-1	W	120,d,i	1	99
0603246-002B	EW-2	W	69,d,b,i	1	98
0603246-003B	MW-1B	W	ND	1	98
0603246-004B	MW-4A	W	ND,i	1	99
0603246-005B	MW-5A	W	ND	1	102
0603246-006B	MW-5B	W	ND,i	1	101
0603246-007B	MW-7A	W	1800,d,i	1	102
0603246-008B	MW-7B	W	ND,i	1	104
0603246-009B	MW-7C	W	ND	1	103

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

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

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644 _____Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603246

EPA Method: SW8260B	Extraction: SW5030B	BatchID: 20720	Spiked Sample ID 0603211-005C

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME	ND	10	103	90.4	12.9	85.6	84.4	1.42	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	95.1	102	7.14	96.1	91.2	5.31	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	115	114	0.458	106	105	1.43	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	114	108	6.05	98.8	94.9	4.01	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	115	110	4.15	100	100	0	70 - 130	70 - 130
Ethanol	ND	500	98.4	88.5	10.6	105	106	0.868	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	117	102	13.7	95.5	94.7	0.830	70 - 130	70 - 130
Methanol	ND	2500	93.7	94.9	1.25	98.6	98	0.665	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	116	105	10.5	96.8	94.9	2.04	70 - 130	70 - 130
%SS1:	101	10	107	102	4.25	105	104	0.473	70 - 130	70 - 130

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

NONE

BATCH 20720 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603246-001C	3/13/06	3/15/06	3/15/06 7:01 PM	0603246-002C	3/13/06	3/16/06	3/16/06 4:24 PM

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

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

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

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

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

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

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603246

EPA Method: SW8260B	Extraction: SW5030B	BatchID: 20738	Spiked Sample ID 0603246-009C

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME	ND	10	93.7	91.3	2.57	87.4	92	5.13	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	102	98.5	3.85	91.9	99.8	8.24	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	118	113	4.76	110	111	0.243	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	111	106	4.80	98.5	105	5.96	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	117	111	4.71	105	108	2.25	70 - 130	70 - 130
Ethanol	ND	500	100	107	6.70	106	95.5	10.3	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	106	102	3.87	98.7	102	2.88	70 - 130	70 - 130
Methanol	ND	2500	93.5	93.1	0.368	101	94	7.35	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	0.6	10	101	96.8	3.57	96.6	103	5.97	70 - 130	70 - 130
%SS1:	107	10	107	107	0	102	106	3.02	70 - 130	70 - 130

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

NONE

BATCH 20738 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603246-003C	3/13/06	3/15/06	3/15/06 8:26 PM	0603246-004C	3/13/06	3/15/06	3/15/06 9:08 PM
0603246-005C	3/13/06	3/15/06	3/15/06 11:16 PM	0603246-006C	3/13/06	3/15/06	3/15/06 11:59 PM
0603246-007C	3/13/06	3/17/06	3/17/06 5:32 PM	0603246-008C	3/13/06	3/16/06	3/16/06 1:24 AM
0603246-009C	3/13/06	3/16/06	3/16/06 2:06 AM				

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

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

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

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

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

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

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603246

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 20729 Spiked Sample ID 0603232-005A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	100	105	4.79	115	112	2.46	70 - 130	70 - 130
MTBE	ND	10	82.8	92.4	11.0	91.7	91.8	0.0745	70 - 130	70 - 130
Benzene	ND	10	92.7	99.1	6.62	97.6	98.8	1.28	70 - 130	70 - 130
Toluene	ND	10	87.2	92.5	5.88	99	100	1.06	70 - 130	70 - 130
Ethylbenzene	ND	10	94.8	98.5	3.82	99.4	101	1.27	70 - 130	70 - 130
Xylenes	ND	30	90	95	5.41	100	100	0	70 - 130	70 - 130
%SS:	105	10	102	100	2.53	99	100	1.62	70 - 130	70 - 130

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

NONE

BATCH 20729 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603246-001A	3/13/06	3/15/06	3/15/06 7:35 PM	0603246-001A	3/13/06	3/16/06	3/16/06 8:56 PM

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603246

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 20736 Spiked Sample ID 0603246-009A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	102	106	3.80	104	104	0	70 - 130	70 - 130
MTBE	ND	10	91.5	91.4	0.124	102	101	1.69	70 - 130	70 - 130
Benzene	ND	10	95.1	98.5	3.47	101	100	1.16	70 - 130	70 - 130
Toluene	ND	10	89.5	92.8	3.63	94.6	93.4	1.37	70 - 130	70 - 130
Ethylbenzene	ND	10	96.2	100	3.91	102	99.5	2.28	70 - 130	70 - 130
Xylenes	ND	30	90.7	95.3	5.02	99.3	95.7	3.76	70 - 130	70 - 130
%SS:	102	10	101	101	0	103	98	5.30	70 - 130	70 - 130

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

NONE

BATCH 20736 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603246-002A	3/13/06	3/15/06	3/15/06 11:03 PM	0603246-002A	3/13/06	3/16/06	3/16/06 9:25 PM
0603246-003A	3/13/06	3/16/06	3/16/06 4:29 AM	0603246-004A	3/13/06	3/16/06	3/16/06 4:58 AM
0603246-005A	3/13/06	3/16/06	3/16/06 5:28 AM	0603246-006A	3/13/06	3/16/06	3/16/06 5:57 AM
0603246-007A	3/13/06	3/16/06	3/16/06 2:30 AM	0603246-007A	3/13/06	3/16/06	3/16/06 9:55 PM
0603246-008A	3/13/06	3/16/06	3/16/06 3:59 AM	0603246-008A	3/13/06	3/16/06	3/16/06 10:25 PM
0603246-009A	3/13/06	3/16/06	3/16/06 6:57 AM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603246

EPA Method: SW8015C	Extraction: SW3510C	BatchID: 20719	Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	103	100	3.07	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	103	102	0.974	N/A	70 - 130

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

NONE

BATCH 20719 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603246-001B	3/13/06	3/15/06	3/15/06 7:55 PM	0603246-002B	3/13/06	3/15/06	3/15/06 9:01 PM
0603246-003B	3/13/06	3/15/06	3/15/06 10:07 PM				

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

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

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

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

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

DHS Certification No. 1644 _____ QA/QC Officer

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603246

EPA Method: SW8015C **Extraction: SW3510C** **BatchID: 20737** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	104	97.3	6.61	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	98	96	1.65	N/A	70 - 130

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

NONE

BATCH 20737 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603246-004B	3/13/06	3/15/06	3/15/06 11:13 PM	0603246-005B	3/13/06	3/15/06	3/15/06 5:43 PM
0603246-006B	3/13/06	3/15/06	3/15/06 6:49 PM	0603246-007B	3/13/06	3/15/06	3/15/06 7:55 PM
0603246-008B	3/13/06	3/15/06	3/15/06 9:01 PM	0603246-009B	3/13/06	3/15/06	3/15/06 10:07 PM

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

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

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

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

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

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