

Fiesta Beverages
7150 Island Queen Dr.
Sparks, NV 89436

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June 24, 2008

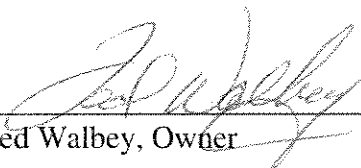
Ms. Barbara Jakub
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

RECEIVED
9:05 am, Jul 17, 2008
Alameda County
Environmental Health

Re: Perjury Statement
Former Fiesta Beverages Facility
966 89th Avenue
Oakland, California
ACDEH Fuel Leak Site # RO0000314

Dear Ms. Jakub,

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



Ted Walbey, Owner

Second Quarter 2008 Groundwater Monitoring Event

Former Fiesta Beverages Facility
966 89th Avenue
Oakland, California 94621
ACHCSA Fuel Leak Site # RO0000314

June 10, 2008
BEI Job No. 203004

Prepared for:

Mr. Ted Walbey
Fiesta Beverages
7150 Island Queen Dr.
Sparks, NV 89436

Prepared by:

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Limitations

Services performed by Blymyer Engineers, Inc. have been provided in accordance with generally accepted professional practices for the nature and conditions of similar work completed in the same or similar localities, at the time the work was performed. The scope of work for the project was conducted within the limitations prescribed by the client. This report is not meant to represent a legal opinion. No other warranty, expressed or implied, is made. This report was prepared for the sole use of the client, Fiesta Beverages.

Blymyer Engineers, Inc.

By: Mark E. Detterman
Mark E. Detterman, CEG
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Michael S. Lewis, REA
Vice President, Technical Services

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1.0 Introduction and Background

In August 1990, one 500-gallon and one 1,000-gallon gasoline underground storage tanks (USTs) were removed from the subject site (Figures 1 and 2). Soil and groundwater were reported to be impacted from releases from one or both USTs. Overexcavation of the former UST basins occurred in January 1991. The excavations were reported to have reached approximately 15 feet by 8 feet by 14 feet deep and 12 feet by 7 feet by 14 feet deep, respectively, on January 14, 1991. Beginning in April 1991, aeration of the soil occurred onsite. In April 1993, 74.28 tons of soil were transported to the Remco recycling facility.

In June 1993, groundwater monitoring wells MW-1, MW-2, and MW-3 were installed. In general, the wells encountered black to grey to light brown clay to a depth of approximately 15 below grade surface (bgs). At 15 feet bgs, the three bores encountered a 0.5- to 2.0-foot-thick clayey sand. Below this unit a light brown to grey clay was present to a depth of 18 to 21 feet bgs. Underneath this unit, a 1- to 3-foot-thick sand was encountered in bores MW-1 and MW-2, while a clayey silt was encountered in bore MW-3. Below approximately 21 feet bgs, a green-grey or black clay was encountered to the full explored depth of 26.5 feet bgs in bore MW-1 and to 25 feet bgs in bores MW-2 and MW-3. Saturated soil was encountered below a depth of approximately 13 feet bgs (in clay overlaying the uppermost sand unit). The wells were installed with a screened interval between 10 and 25 feet bgs. Groundwater from the three wells was sampled six times between August 1993 and December 1998.

In November 1999, after obtaining appropriate permits, AllCal Property Services, Inc. (AllCal) installed four Geoprobe⁷ soil bores downgradient from the former location of the two USTs. The bores were installed in the public right-of-way across 89th Avenue from the subject site, in an unpaved portion of the roadway. Soil bores SB-1 and SB-2 were logged to a depth of 16 feet bgs. Silty clay was encountered to a depth of approximately 13 to 14 feet bgs. Below that depth, soil consisted of clayey silt that alternated between moist and saturated for several vertical feet. Bore SB-1 also encountered a poorly graded sand at 16 feet bgs. Hydrocarbon odors were present in both bores at a depth of approximately 6 feet bgs and green discolored soil was present at 10 feet bgs in bore SB-1. Discolored soil and gasoline odors were noted in both bores throughout the clayey silt, while brownish colored clay was present in both bores just above the silt. The

groundwater interface appears to have been encountered at an approximate depth of 16 feet bgs in the sand. A sheen was noted at that depth in SB-1. Groundwater samples were obtained from bores SB-1 and SB-2 after pushing the Geoprobe⁷ system to a total depth of 18 feet bgs. Soil bores SB-3 and SB-4 were directly pushed to a total depth of 18 feet bgs in order to obtain grab groundwater samples. Groundwater samples from bores SB-1 and SB-2 contained elevated concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline, and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Significantly lower concentrations of TPH as gasoline and total xylenes were encountered in the groundwater sample from soil bore SB-3, while all analytes were nondetectable in groundwater collected from soil bore SB-4. No soil samples were submitted for laboratory analysis from the four Geoprobe⁷ bores.

After the review of the January 2001 groundwater monitoring report, the Alameda County Health Care Services Agency (ACHCSA) approved the application of a 7% solution of hydrogen peroxide to the wells in an attempt to remediate dissolved constituents. On March 7, 2001, the solution was applied by AllCal and on April 25, 2001, a groundwater monitoring event was conducted to determine if a reduction in dissolved constituents had occurred. Based on the analytical data, a reduction was seen in wells MW-1 and MW-2, with some reductions also seen in well MW-3. This sampling event and subsequent interpretation was complicated by the presumed mis-marking of samples from wells MW-1 and MW-3. No further work at the site is known to have occurred between April 2001 and the March 2003 groundwater monitoring event.

On January 16, 2003, a new case manager, Mr. Amir Gholami, was appointed by the ACHCSA. On September 17, 2003, a workplan for a Geoprobe⁷ investigation of the site was submitted to the ACHCSA. The intent was to attempt to determine the lateral and vertical extent of impacted soil and groundwater in order to better target the residual contamination in future remedial actions to be determined. Due to the lack of a response from the ACHCSA, on February 17, 2004, Blymyer Engineers issued a *Letter of Intent to Proceed: Geoprobe⁷ Investigation*.

The *Fourth Quarter 2003 Groundwater Monitoring Event* report, dated January 6, 2004, recommended that analysis for fuel oxygenates by EPA Method 8260B be eliminated from the analytical program. It was reasoned that the data generated to date had been very consistent, and further quantification would not significantly add to the level of understanding at the site.

Additionally, the concentration of methyl *tert*-butyl ether (MTBE) can be monitored using EPA Method 8021B for no additional cost, and the resultant concentration of MTBE can be used as a proxy for the approximate concentration of the remaining fuel oxygenates. Based on the lack of response from the ACHCSA, it has been presumed that this was found reasonable and acceptable.

On March 15, 2004, Blymyer Engineers issued a letter entitled *Recommendation for Reduction of Groundwater Monitoring* that provided additional rationale for decreasing the groundwater sampling interval from quarterly to semi-annually. It argued that generation of quarterly analytical data would not significantly improve the level of understanding of impacts to the subsurface at the site, and recommended a reduction of the sampling interval to semi-annual. Based on the lack of response from the ACHCSA, it has been presumed that this was found reasonable and acceptable.

On December 14, 2004, Blymyer Engineers issued to the ACHCSA the *Report on a Geoprobe[®] Subsurface Investigation* which documented the installation of nine Geoprobe[®] soil bores at the site. The work further refined the known lateral and vertical extent of soil impacted by the petroleum release at the site. Grab groundwater samples in the upgradient and the eastern cross-gradient directions defined all petroleum compounds in groundwater to concentrations below the San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs). Grab groundwater samples in the downgradient and western cross-gradient directions were unable to define most petroleum compounds to concentrations below the RWQCB ESLs. The installation of additional permanent groundwater monitoring wells was recommended as appropriate at the site in order to allow for groundwater sampling from a “repeatedly accessed location”. It was reasoned that data generated from these locations will assist in determining appropriate remedial actions, and in monitoring remedial progress.

On July 6, 2005, the new case manager for the ACHCSA, Mr. Barney Chan, issued the letter *Fuel Leak Case RO0000314* commenting on the December 14, 2004 report. The ACHCSA determined that the collection of additional data is needed to progress the site towards closure. The letter requested a workplan to clear well MW-1 of several feet of sediment due to the potential for groundwater gradient biasing, requested further definition of the groundwater and soil plumes through the installation of additional wells and soil bores, requested a conduit study, and requested a Feasibility Study and Remedial Action Plan.

Blymyer Engineers submitted the *Workplan for Remedial Investigation / Feasibility Study*, on October 10, 2005. The Workplan detailed the procedures for the collection of Remediation by Natural Attenuation (RNA) analytical parameters from existing wells as an initial phase of a Remedial Investigation / Feasibility Study (RI/FS), as well as the installation of four additional groundwater monitoring wells, and the destruction and reinstallation of groundwater monitoring well MW-1. On November 18, 2005, the ACHCSA issued the letter *Fuel Leak Case RO0000314* commenting on the Workplan. The ACHCSA requested the following:

- The addition of two wells at specified locations for further plume characterization,
- Use of a maximum of 10 feet of screen in the wells,
- Confirmation of the presence of MTBE by EPA Method 8260 if MTBE concentrations rose significantly, and
- Collection of the RNA parameters.

The ACHCSA requested confirmation that the additional wells would be added by December 19, 2005, and that a RI/FS report would be submitted by February 19, 2006. Confirmation that the additional wells would be included was provided by telephone in December 2005; however, permitting issues delayed installation of the wells. The *Remedial Investigation / Feasibility Study Report* (RI/FS Report), dated September 8, 2006, was submitted to ACHCSA on October 6, 2006.

The RI/FS Report documented the destruction of well MW-1, the installation of replacement well MW-1R, and the installation of wells MW-4 through MW-9. The soil and groundwater data collected in the effort achieved vertical delineation, as well as upgradient, lateral, and downgradient delineation of all hydrocarbon compounds in soil and groundwater, with the exception of MTBE in groundwater. MTBE was delineated to below the MCL and the *non-drinking water* ESL goal for the compound, but was slightly above the *drinking water* goal. Because the site is in an area that is not known to extensively use groundwater as a drinking water source, the numeric remedial goals were predominantly compared to the *non-drinking water* ESL goals; however, the ACHCSA may ultimately apply *drinking water* ESL goals to remedial efforts at the site.

Higher concentrations of TPH as gasoline appear to be relatively isolated near the former source (MW-1, MW-1R, GP-5, and GP-2; the latter based on PID results only). The presence of slightly

higher concentrations at GP-6 or GP-8 likely indicates lateral migration through the clay units in the vadose zone in very thin, interbedded coarser grained deposits with more permeability and porosity. A conduit survey indicated that, due to depth of burial, the utility corridors do not appear to be acting as significant conduits in the site vicinity for groundwater movement and therefore contaminant migration. A notable decrease in analyte concentrations in soil is apparent with increasing depth. Generic *non-drinking water* ESL goals for soil were not exceeded for any compound beneath approximately 12 feet bgs.

The distribution of nitrate, methane and dissolved oxygen indicate that the TPH as gasoline groundwater plume is undergoing anaerobic degradation. Specifically, the elevated concentrations of nitrate observed in perimeter wells MW-4 through MW-9, in comparison to the concentration of nitrate in plume core wells MW-1/1R, MW-2 and MW-3, where the concentration is reduced to essentially one-half of its perimeter levels, and the correspondingly high methane concentrations in the plume core area suggest that active anaerobic degradation is occurring. The source of nitrate is likely leaking sewer lines located along 89th Avenue.

For the site as a whole, the limited area of hydrocarbon degradation suggested by the RNA data, collectively with the laboratory notes indicating relatively unmodified gasoline range hydrocarbons are present in soil and groundwater samples, and the continued recontamination of groundwater documented by graphs depicted on Figures 10 through 13 of the RI/FS Report, appear to document a release that is undergoing anaerobic microbial degradation, that RNA is oxygen limited, has reached stability with the surrounding area, and will not progress significantly further without remedial efforts.

Six potential remedial options were evaluated for appropriateness at the site; monitored natural attenuation (MNA), groundwater pump and treat, enhanced insitu bioremediation (EIB), air sparging-vapor recovery (ASVR), dual phase extraction, and insitu chemical oxidation (ISCO). A combination of EIB and ISCO was selected as the most appropriate remedial technology for the site due to multiple factors. ISCO was selected for the vicinity of the former tank excavation and would consist of the injection of the commercial oxidation product RegenOx. Chemical oxidation of residual source soil and groundwater containing higher hydrocarbon concentrations is anticipated to eliminate potential residual free-phase hydrocarbons in the tank vicinity. EIB using Oxygen

Releasing Compound Advanced (ORC Advanced) was selected for the larger area around and downgradient of the former tank location. Petroleum hydrocarbon compounds are recognized to degrade favorably and rapidly under aerobic (oxygen rich) conditions. To stimulate aerobic bacterial activity and increase the rate of biodegradation within the hydrocarbon plume, non-toxic inorganic chemicals (bionutrients) can be added to the groundwater that release oxygen, nitrogen and phosphate, such as ORC Advanced and bionutrient compounds (typically, nitrogen/phosphorus/potassium (NPK) fertilizer). At sites where stagnant hydrocarbon plumes are present, one or more of the essential bio-nutrient elements is commonly depleted, and natural attenuation of the hydrocarbon plume due to microbial activity ceases. By determining a site's "bio-needs," the missing elements can be injected into the hydrocarbon plume to boost bioactivity.

At the site, dissolved oxygen in groundwater is depleted to less than 1 mg/L, and based on available information the lack of dissolved oxygen is the limiting factor retarding current biological activity. For EIB, the supply of bio-nutrients is assessed prior to and during remediation. During the course of remediation, if nutrient concentrations are found to be inadequate, then further nutrient addition is performed.

On December 18, 2006, the ACHCSA issued a letter indicating that it was in agreement with the proposed plan of action, namely EIB with localized ISCO, using a combination of ORC Advanced and RegenOx, respectively. The December 18, 2006 letter requested an interim corrective action plan (ICAP) by January 19, 2007, and quarterly monitoring reports by January 30, and April 30, 2007. A request for deadline extension was later submitted to, and approved by, the ACHCSA. The *Interim Corrective Action Plan* was submitted on February 7, 2007, and was approved by the ACHCSA on May 4, 2007. A pre-remedial groundwater sampling event to determine pre-remedial bacterial populations in groundwater, in the event of a bacterial die-off related to remedial injections, occurred on April 27, 2007. Remedial activities began on May 22, 2007 with a volume test injection. The first injection of RegenOx occurred between June 4 and June 7, 2007, and the second event occurred on June 26 and 27, 2007. It was not possible to inject the entire volume of RegenOx specified by Regenesi due to resurfacing of the injected material. On August 9, 2007, an abbreviated interim round of sampling occurred on selected wells (MW-1R, MW-2, MW-3, and MW-5) to help determine the progress of the remedial actions at the site. Elevated concentrations

of hydrocarbons were detected in plume core wells MW-1R and MW-3. As a consequence, an additional round of RegenOx injection occurred on September 12 and 13, 2007. These events were reported under separate cover.

On August 28, 2007, twenty-three 55-gallon drums of soil and fifteen 55-gallon drums of purge water, development water, and groundwater were removed from the subject site. The drums were transported by NRC Environmental to Crosby and Overton in Long Beach, California. The drums of soil represented soil cuttings from the installation of all soil bores and wells since 1993. The drums of water had accumulated since the installation of wells MW-1R, and MW-4 through MW-9, as well as water return flow to the surface during remedial injection activities.

On March 28, 2008, Blymyer Engineers received word that a new case worker, Ms. Barbara Jakub, had been assigned to the project by the ACEHD.

2.0 Groundwater Sample Collection and Analytical Methods

This report documents the interim sampling of groundwater conducted for the Second Quarter 2008 groundwater monitoring event at the subject site (Figure 1). Quarterly groundwater samples were collected from monitoring wells MW-1R and MW-2 through MW-9 on May 29, 2008. The groundwater samples were collected by Blaine Tech Services, Inc. (Blaine) in accordance with Blaine *Standard Operating Procedures* for groundwater gauging, purging, and sampling. A copy is included as Appendix A. Depth to groundwater was measured in all wells during the sampling event. Temperature, pH, conductivity, and turbidity were measured initially, and then after removal of each of three well casing volumes for each well. Dissolved Oxygen (DO), Oxygen-Reduction Potential (ORP), and Ferrous Iron were measured post-purge. These measurements are generally useful in determining if an adequate supply of oxygen is present in groundwater to allow microbial growth. The groundwater depth measurements and details of the monitoring well purging and sampling for each event are presented on the *Well Monitoring Data Sheets* and *Well Gauging Data Sheets* generated by Blaine and included as Appendix B. Depth-to-groundwater measurements are presented in Table I. All purge and decontamination water was temporarily stored in a Department of Transportation-approved 55-gallon drum for future disposal by the owner.

The groundwater samples were analyzed by McCampbell Analytical, Inc., a California-certified laboratory, on a 5-day turnaround time. Groundwater samples from all wells were analyzed for TPH as gasoline by Modified EPA Method 8015; and BTEX and MTBE by EPA Method 8021B. Tables II to V summarize current and previous analytical results for groundwater samples. The laboratory analytical report is included as Appendix C.

3.0 Groundwater Flow Data and Groundwater Sample Analytical Results

Previously surveyed top-of-casing (TOC) elevations were used to construct a groundwater gradient map (Figure 2). Groundwater depths during this monitoring event ranged between 8.39 to 9.06 feet below the top of the casings. Depth to groundwater in general has increased an average of 0.47 feet since the March 2008 sampling event; however, there were significant divergences from the average. In well MW-6 the depth to water decreased 1.4 feet, in well MW-1R it increased by 0.02 feet, and in well MW-2 it increased 1.35 feet. In the previous event, mounding in the vicinity of wells MW-2 and MW-3 suggested the infiltration of rainwater in the vicinity well MW-2. It had been observed that the integrity of pavement in the area of well MW-2 had been impacted as a result of the vigorousness of remedial chemical oxidation of hydrocarbons in the vicinity of the well. The current record dry spring appears to have returned the groundwater flow direction to the typical flow direction for the site. Flows to the west are generally consistent with historical data. Conversely, southern and eastern flow directions have also been observed previously. The average gradient was calculated at approximately 0.014 feet/foot for the current event.

Between the February and May sampling events, concentrations of TPH as gasoline and BTEX rose modestly in well MW-1R, but continued to decrease in wells MW-2 and MW-3. All compounds were non-detectable in well MW-2, while only benzene was detected in well MW-3. All other wells (upgradient, downgradient, and lateral) were non-detectable for TPH as gasoline and BTEX. TPH as gasoline and benzene in well MW-1R were over the generic non-drinking water ESL. During the previous quarter, all contaminants in all wells were below their respective non-drinking water ESL. Recent previous higher concentrations in wells immediately adjacent to the former tank basin are presumed to have been the result of the mobilization of hydrocarbons from soil to groundwater during the injection of RegenOx between June and September 2007. The September 2007 injection (third and last) was concentrated in the vicinity of wells MW-1R, MW-2, and upgradient of MW-3, and likely mobilized contaminants near these locations.

Concentrations of MTBE were not detected any of the wells sampled during the May 2008 sampling event. MTBE has not been detected in all wells for three consecutive quarters.

Data gathered prior to remedial injections have provided evidence at the site for recontamination of groundwater upon rise up into contaminated soil (MW-3; Figures 3 and 4) as well as drainage from

soil to groundwater as groundwater drops in elevation at the site (MW-1 / MW-1R; Figures 5 and 6). Data from the current quarter is consistent with these historical trends. This is a departure from the two previous monitoring events. Data from the two previous quarters is assumed to have been related to the injection of RegenOx fluids, and was presumed to indicate some progress in remedial treatments. Data from MW-1R over the past two quarters tended to suggest that granular backfill and the soil immediately adjacent to and beneath the 6-inch-diameter gas main located approximately 5 feet to the north of well MW-1R and former MW-1 might be providing a reservoir for hydrocarbons not easily and effectively reached. (For consistency all groundwater elevations in Figures 3 to 6 utilized the GeoTracker wellhead survey elevations to determine the groundwater elevation.)

Four quarters of groundwater samples have been analyzed for the fuel oxygenates di-isopropyl ether (DIPE), ethyl *tert*-butyl ether (ETBE), MTBE, *tert*-amyl methyl ether (TAME), and *tert*-butyl alcohol (TBA), by EPA Method 8260B. Ethanol and methanol have also been analyzed and were nondetectable. Due to the consistency of the data, fuel oxygenate analysis was eliminated. Only MTBE and TAME have been detected in groundwater (June 2003; Table III). Only MTBE has an MCL; listed at 13 Fg/L.

4.0 Intrinsic Bioremediation Groundwater Sample Analytical Results

Intrinsic bioremediation laboratory analytical parameters were not collected during the May sampling event; however, post-purge field parameters were collected. RNA parameters were collected near the bottom of the well, within the screened interval, to collect representative values of vicinity groundwater and to minimize the effect of standard purging on the parameters. Tables IV and V present the analytical results of current and previous RNA indicator parameters. Microbial use of petroleum hydrocarbons as a food source is affected by the concentration of a number of chemical compounds dissolved in groundwater at a site. RNA monitoring parameters were established by research conducted by the Air Force Center for Environmental Excellence. The research results were used to develop a technical protocol for documenting RNA in groundwater at petroleum hydrocarbon release sites (Wiedemeier, Wilson, Kampbell, Miller and Hansen, 1995, *Technical Protocol for Implementing the Intrinsic Remediation with Long Term Monitoring for Natural Attenuation of Fuel Contamination Dissolved in Groundwater, Volumes I and II*, U.S. Air Force Center for Environmental Excellence, Brooks Air Force Base, Texas). The protocol focuses on documenting both aerobic and anaerobic degradation processes whereby indigenous subsurface bacteria use various dissolved electron acceptors to degrade dissolved petroleum hydrocarbons.

In the order of preference, the following electron acceptors and metabolic by-products are used and generated, respectively, by the subsurface microbes (aerobes, Mn – Fe reducers, and methanogens) to degrade petroleum hydrocarbons: oxygen to carbon dioxide, nitrate to nitrogen, insoluble manganese (Mn^{4+}) to soluble manganese (Mn^{2+}), insoluble ferric iron (Fe^{3+}) to soluble ferrous iron (Fe^{2+}), sulfate to hydrogen sulfide, and carbon dioxide to methane. With the exception of oxygen, the use of all other electron acceptor pathways by microbes indicates increasingly anaerobic degradation. Aerobic degradation takes place first, and oxygen inhibits anaerobic degradation. As oxygen is consumed and an anoxic zone develops, the Mn – Fe reducers and methanogens begin to grow and release dissolved Mn, dissolved Fe, and methane (Commission on Geosciences, Environment and Resources, *Natural Attenuation for Groundwater Remediation*, 2000). Investigation of each of these electron acceptor pathways was conducted in selected wells at the site as part of the evaluation of RNA chemical parameters. Previous analytical results appear to have documented oxygen and nutrient (nitrate) limited natural biodegradation at the site.

Microbial use of petroleum hydrocarbons as a food source is principally affected by the concentration of dissolved oxygen (DO) in the groundwater present at a site. DO was present in a moderately tight range of concentrations in post-purge groundwater (ranging from 0.72 milligrams per liter (mg/L) to 1.75 mg/L). The current concentrations are generally higher than previous recent data, although previous sampling events in June of a given year have generally yielded higher DO concentrations. This tends to suggest that the higher concentrations of DO are related to infiltration of rainwater into the subsurface as opposed to overly vigorous purging. As seen previously at the site, the lower concentrations of DO have been identified as a limiting factor retarding biological activity. While this may be less prevalent this quarter, it is likely that this is a continuing trend.

ORP is another measure of the supply and use of oxygen at a site. The higher the reading in millivolts (mV), the more oxygenated the subsurface environment is, and the lower the readings, the more anaerobic or reducing the subsurface environment is. In general, plume core well MW-1R and downgradient wells MW-7, MW-8, and MW-9 contain lower ORP concentrations than the remaining wells. This suggests a two-fold process of more oxygenated rainwater infiltration in the vicinity of the tank basin that has not yet fully migrated across the entire area of study, and also suggests a higher demand for oxygen in the vicinity of well MW-1R. Higher ORP values have previously been located outside the plume core which suggests that the strongest demand for oxygen is located in the plume core. The lower ORP value in well MW-1R tends to suggest that the residual benefit from the injection of the RegenOx remedial product has dissipated.

Ferrous iron was also investigated during the current sampling event and was only detected in wells MW-1R and MW-3. During the previous monitoring event all wells were non-detectable for ferrous iron. This change also suggests that the supply of DO from the injection of the RegenOx remedial product has ceased. The presence of ferrous iron in well MW-1R indicates that Mn – Fe degrading microbial colonies near this well have resumed microbial degradation of the contaminants (at a significantly slower rate) due to the relative lack of DO in the vicinity of the well. It is likely that the concentration of DO in other wells has not allowed these colonies to reestablish sufficiently yet.

For a more in-depth review of recent RNA parameters, please refer to the *Remedial Investigation / Feasibility Study Report*, dated September 8, 2006.

5.0 Conclusions and Recommendations

The following summary and conclusions were generated from the available data discussed above:

- Depth to groundwater in general has increased an average of 0.47 feet since the March 2008 sampling event; however, there were significant divergences from the average. This is likely due to the record dry spring and the lack of rainwater infiltration into the subsurface in the vicinity of wells MW-2 and MW-3 (mounding was documented during the previous monitoring and sampling event). For the current event, an average gradient was calculated at approximately 0.014 feet/foot.
- Between the February and May sampling events, concentrations of TPH as gasoline and BTEX rose modestly in well MW-1R, but continued to decrease in wells MW-2 and MW-3. Both represent predictable trends based on declining groundwater levels alone. All other wells were non-detectable for TPH as gasoline and BTEX.
- MTBE was not detected in any of the wells during the May 2008 sampling event. MTBE has not been detected in all wells for three consecutive quarters.
- Only TPH as gasoline in well MW-1R was over the generic non-drinking water ESL. During the previous quarter, all contaminants in all wells were below their respective non-drinking water ESL.
- Recent higher concentrations in the vicinity of the former tank basin are presumed to have been the result of a mobilization of hydrocarbons from soil to groundwater due to the injection of RegenOx fluids between June and September 2007. The last injection was focused near plume core wells and likely mobilized contaminants near the locations.
- Current concentrations of DO are generally higher than recent data; however, previous data from mid-year sampling events have generally yielded higher concentrations of DO. This line of evidence suggests the higher concentrations are related to rainwater infiltration. Lower concentrations of DO have typically been identified as a limiting factor at the site.
- ORP values in plume core well MW-1R and downgradient wells MW-7, MW-8, and MW-9 contain lower ORP concentrations than, upgradient, and lateral wells. This is likely related to a

two-fold process of more oxygenated rainwater infiltrating in the vicinity of the tank basin that has not yet migrated to the downgradient wells, and also a higher oxygen demand in the plume core as represented by well MW-1R. Higher ORP values in wells outside the plume core have previously suggested the strongest demand for oxygen is appropriately located in the plume core. The lower ORP value in well MW-1R suggests that the benefits from the injection RegenOx has largely ceased.

- Ferrous iron was detected only in wells MW-1R and MW-3 this quarter, while all wells have been non-detectable previously for ferrous iron. The presence of ferrous iron in these two wells suggest that the supply of DO derived from the injected RegenOx has been largely used.
- The low DO and ferrous iron in well MW-1R indicate that Mn – Fe degrading microbial colonies near this well have resumed microbial degradation of the contaminants at a significantly slower rate.
- Pre-remedial injection data have documented recontamination of groundwater upon rise up into contaminated soil as well as drainage from soil to groundwater as groundwater drops in elevation at the site. Data from the current quarter is again consistent with these historical trends. This is a change from the two previous monitoring events which were affected by the injection of RegenOx fluids at the site.
- Data from MW-1R for the previous two quarters has suggested that granular backfill and the soil immediately adjacent to and beneath the 6-inch-diameter gas main located approximately 5 feet to the north of well MW-1R and former MW-1 might be providing a reservoir for hydrocarbons not easily and effectively reached.

The following recommendations were generated from the available data discussed above:

- The next quarterly groundwater sampling event should occur in August 2008.
- Collection of limited RNA indicator data should be continued as a modest cost saving measure. The collection of DO, ORP, and ferrous iron field data may help contribute to the understanding of biodegradation beneath the site. Collection of additional laboratory RNA indicator data can be resumed if a need is documented.

- Interim corrective actions should be continued in accordance with the approved ICAP. Future quarterly monitoring events can be used to gauge the effectiveness of corrective actions.
- A copy of this report will be forwarded to:

Ms. Barbara Jakub
Alameda County Environmental Health Department
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Tables

Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-1	8/6/1993	18.72	8.96	9.76
	1/12/1996		8.55	10.17
	4/16/1996		7.65	11.07
	7/15/1996		8.76	9.96
	10/16/1996		9.04	9.68
	12/15/1998		8.38	10.34
	1/18/2001		8.49	10.23
	4/25/2001		8.24	10.48
	3/17/03*		8.08	10.64
	6/23/2003		8.63	10.09
	9/18/2003		8.90	9.82
	12/15/2003		8.15	10.57
	6/15/2004		8.67	10.05
	12/15/2004		7.99	10.73
	6/29/2005		7.88	10.84
	5/8/2006	21.70	Destroyed	Destroyed
	2/19/2007		Destroyed	Destroyed
	6/21/2007		Destroyed	Destroyed
	11/8/2007		Destroyed	Destroyed
	2/28/2008		Destroyed	Destroyed
5/29/2008	Destroyed		Destroyed	
MW-1R	6/12/2006	21.73	8.49	13.24
	2/19/2007		7.94	13.79
	6/21/2007		8.71	13.02
	8/9/2007		8.83	12.90
	11/8/2007		9.80	11.93
	2/28/2008		8.74	12.99
	5/29/2008		8.76	12.97

**Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California**

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-2	8/6/1993	18.44	8.68	9.76
	1/12/1996		8.24	10.20
	4/16/1996		7.41	11.03
	7/15/1996		8.45	9.99
	10/16/1996		8.73	9.71
	12/15/1998		8.05	10.39
	1/18/2001		8.24	10.20
	4/25/2001		7.88	10.56
	3/17/03*		7.08	11.36
	6/23/2003		8.90	9.54
	9/18/2003		8.61	9.83
	12/15/2003		7.97	10.47
	6/15/2004		8.42	10.02
	12/15/2004		8.00	10.44
	6/29/2005		9.51	8.93
	6/12/2006	21.45	8.25	13.20
	2/19/2007		8.12	13.33
	6/21/2007		9.00	12.45
	8/9/2007		8.62	12.83
	11/8/2007		8.60	12.85
2/28/2008	7.20		14.25	
5/29/2008	8.55		12.90	

Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-3	8/6/1993	19.01	9.07	9.94
	1/12/1996		8.65	10.36
	4/16/1996		7.82	11.19
	7/15/1996		8.88	10.13
	10/16/1996		9.16	9.85
	12/15/1998		8.45	10.56
	1/18/2001		8.57	10.44
	4/25/2001		8.29	10.72
	3/17/03*		8.50	10.51
	6/23/2003		9.05	9.96
	9/18/2003		9.11	9.90
	12/15/2003		8.03	10.98
	6/15/2004		8.85	10.16
	12/15/2004		8.84	10.17
	6/29/2005		9.00	10.01
	6/12/2006	22.02	8.62	13.40
	2/19/2007		8.12	13.90
	6/21/2007		9.86	12.16
	8/9/2007		9.60	12.42
	11/8/2007		8.83	13.19
2/28/2008	7.99		14.03	
5/29/2008	8.57		13.45	
MW-4	6/12/2006	21.34	8.37	12.97
	2/19/2007		7.77	13.57
	6/21/2007		8.48	12.86
	11/8/2007		8.61	12.73
	2/28/2008		7.73	13.61
	5/29/2008		8.39	12.95

**Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California**

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-5	6/12/2006	22.53	8.75	13.78
	2/19/2007		8.61	13.92
	6/21/2007		9.05	13.48
	8/9/2007		9.17	13.36
	11/8/2007		9.11	13.42
	2/28/2008		8.18	14.35
	5/29/2008		9.06	13.47
MW-6	6/12/2006	21.97	8.59	13.38
	2/19/2007		7.93	14.04
	6/21/2007		9.83	12.14
	11/8/2007		9.58	12.39
	2/28/2008		9.90	12.07
	5/29/2008		8.50	13.47
MW-7	6/12/2006	21.21	8.31	12.90
	2/19/2007		7.85	13.36
	6/21/2007		8.51	12.70
	11/8/2007		8.68	12.53
	2/28/2008		7.81	13.40
	5/29/2008		8.60	12.61
MW-8	6/12/2006	20.97	8.37	12.60
	2/19/2007		7.99	12.98
	6/21/2007		8.53	12.44
	11/8/2007		8.61	12.36
	2/28/2008		7.79	13.18
	5/29/2008		8.61	12.36

**Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California**

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-9	6/12/2006	20.98	8.50	12.48
	2/19/2007		8.08	12.90
	6/21/2007		8.55	12.43
	11/8/2007		8.67	12.31
	2/28/2008		8.02	12.96
	5/29/2008		8.51	12.47

Notes:

TOC = Top of Casing

* = Initial data set collected under direction of Blymyer Engineers, Inc.

NM = Not measured

¹ = Resurveyed on February 7, or June 22, 2006 by CSS Environmental Services, Inc

Elevations in feet above mean sea level

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)	EPA Method 8020 or 8021B (µg/L)					
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	
MCL		N/A	1	150	700	1,750	13	
<i>Drinking Water Source</i> ¹		100	1	40	30	20	5	
<i>Non-Drinking Water Source</i> ²		500	46	130	290	100	1,800	
MW-1	8/6/1993	17,000	7.1	8.4	9.2	53	NA	
	1/12/1996	12,000	1,900	840	370	1,100	NA	
	4/16/1996	3,500	700	55	100	180	NA	
	7/15/1996	11,000	2,300	450	350	910	NA	
	10/16/1996	21,000	4,200	2,200	650	2,600	NA	
	12/15/1998	10,000	1,800	520	270	1,100	<350	
	1/18/2001	11,000^a	2,000	320	320	1,100	<120	
	4/25/2001	2,100^{a,c}	270	46	59	130	<5.0	
	3/17/2003*	2,200^a	260	19	36	54	NA ^d	
	6/23/2003	6,100^a	930	53	99	200	NA	
	9/18/2003	3,800^a	660	13	24	34	NA	
	12/15/2003	260^a	19	1.1	<0.5	1.5	NA	
	6/15/2004	5,200^a	520	13	38	39	<50	
	12/15/2004	2,400^a	370	8.2	13	14	<15	
	6/29/2005	5,500^a	750	27	94	140	<100	
	5/8/2006	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
	2/19/2007	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
6/21/2007	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	
11/8/2007	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	
2/28/2008	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	
5/29/2008	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)	EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MCL		N/A	1	150	700	1,750	13
<i>Drinking Water Source</i> ¹		100	1	40	30	20	5
<i>Non-Drinking Water Source</i> ²		500	46	130	290	100	1,800
MW-1R	6/13/2006	90^a	24	<0.5	<0.5	1.9	7.0
	2/19/2007	200^a	8	0.80	12	8.7	<5.0
	6/21/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	8/9/2007	870^a	140	6.30	23	22	<10
	11/8/2007	3,800^a	330	22	140	130	<30
	2/28/2008	150^a	5.5	<0.5	3.9	2.2	<5.0
	5/29/2008	690^a	44	2	35	7.8	<5.0

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)	EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MCL		N/A	1	150	700	1,750	13
<i>Drinking Water Source</i> ¹		100	1	40	30	20	5
<i>Non-Drinking Water Source</i> ²		500	46	130	290	100	1,800
MW-2	8/6/1993	2,700	1.3	1.7	2.0	8.1	NA
	1/12/1996	2,700	600	310	94	220	NA
	4/16/1996	190	39	11	10	14	NA
	7/15/1996	700	160	33	34	48	NA
	10/16/1996	190	48	8.2	10	13	NA
	12/15/1998	200	62	17	4.9	14	4.4^b
	1/18/2001	300^a	74	26	7.3	21	7.3
	4/25/2001	<50 ^c	4.5	2.2	0.6	1.9	<5.0
	3/17/2003*	78^a	26	3.3	1.5	3.5	NA ^d
	6/23/2003	160^a	51	1.6	1.2	1.8	NA
	9/18/2003	<50	2.1	<0.5	<0.5	<0.5	NA
	12/15/2003	<50	12	<0.5	<0.5	<0.5	NA
	6/15/2004	95^a	15	1.3	1.8	1.2	<30
	12/15/2004	<50	11	0.97	0.6	0.9	7.8
	6/29/2005	130	29	2.000	3.3	3.4	6.7
	6/13/2006	150^a	59	3.0	3.4	2.7	11
	2/19/2007	51^a	8	1.6	1.0	2.8	7.1
	6/21/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	8/9/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	11/8/2007	160^a	23	5.0	5.3	14	<10
2/28/2008	<50	1.3	<0.5	<0.5	<0.5	<5.0	
5/29/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)	EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MCL		N/A	1	150	700	1,750	13
<i>Drinking Water Source</i> ¹		100	1	40	30	20	5
<i>Non-Drinking Water Source</i> ²		500	46	130	290	100	1,800
MW-3	8/6/1993	5,200	2.1	2.9	3.6	17	NA
	1/12/1996	4,500	280	180	120	470	NA
	4/16/1996	5,400	370	340	160	580	NA
	7/15/1996	1,800	200	220	66	250	NA
	10/16/1996	2,000	340	140	100	300	NA
	12/15/1998	1,400	200	39	72	150	<22
	1/18/2001	1,800^a	240	41	86	120	<10
	4/25/2001	8,300^{a,c}	300	330	200	1,100	<20
	3/17/2003*	2,100^a	240	78	10	280	NA ^d
	6/23/2003	<50	2.5	0.6	0.69	1.4	NA
	9/18/2003	<50	<0.5	<0.5	<0.5	<0.5	NA
	12/15/2003	2,400	300	120	140	260	NA
	6/15/2004	<50	1.1	<0.5	<0.5	<0.5	6.2
	12/15/2004	1,600^a	140	83	83	230	<15
	6/29/2005	230^a	27	6.1	7.2	15	<15
	6/13/2006	68^a	3.1	1.8	<0.5	<0.5	<5.0
	2/19/2007	280^a	49	11	18	23	<5.0
	6/21/2007	1,500^a	120	64	62	250	<50
	8/9/2007	2,400^a	140	19	100	110	<65
11/8/2007	440^a	7.2	3.3	8.6	26	<15	
2/28/2008	320^a	10	5.8	9.6	32	<12	
5/29/2008	<50	1.0	<0.5	<0.5	<0.5	<5.0	

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)	EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MCL		N/A	1	150	700	1,750	13
<i>Drinking Water Source</i> ¹		100	1	40	30	20	5
<i>Non-Drinking Water Source</i> ²		500	46	130	290	100	1,800
MW-4	6/12/2006	<50	<0.5	<0.5	<0.5	<0.5	5.7
	2/19/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	6/21/2007	<50	<0.5	<0.5	<0.5	<0.5	5.9
	11/8/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/28/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	5/29/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-5	6/12/2006	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/19/2007	<50	<0.5	<0.5	<0.5	<0.5	5.6
	6/21/2007	<50	<0.5	<0.5	<0.5	<0.5	5.4
	11/8/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/28/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	5/29/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6	6/13/2006	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/19/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	6/21/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	11/8/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/28/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	5/29/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)	EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MCL		N/A	1	150	700	1,750	13
<i>Drinking Water Source</i> ¹		100	1	40	30	20	5
<i>Non-Drinking Water Source</i> ²		500	46	130	290	100	1,800
MW-7	6/12/2006	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/19/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	6/21/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	11/8/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/28/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	5/29/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-8	6/12/2006	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/19/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	6/21/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	11/8/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/28/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	5/29/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-9	6/12/2006	<50	<0.5	<0.5	<0.5	<0.5	5.6
	2/19/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	6/21/2007	<50	<0.5	<0.5	<0.5	<0.5	5.6
	11/8/2007	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/28/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	5/29/2008	<50	<0.5	<0.5	<0.5	<0.5	<5.0

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)	EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MCL		N/A	1	150	700	1,750	13
<i>Drinking Water Source</i> ¹		100	1	40	30	20	5
<i>Non-Drinking Water Source</i> ²		500	46	130	290	100	1,800

- Notes:
- ug/L = micrograms per liter
 - TPH = Total Petroleum Hydrocarbons
 - EPA = Environmental Protection Agency
 - MTBE = Methyl *tert*-Butyl Ether
 - ¹ = From Table A; RWQCB Environmental Screening Levels (ESLs); Groundwater IS a Current or Potential Source of Drinking Water
 - ² = From Table B; RWQCB Environmental Screening Levels (ESLs); Groundwater IS NOT a Current or Potential Source of Drinking Water
 - RWQCB = California Regional Water Quality Control Board, San Francisco Bay Region
 - ESL = Environmental Screening Level
 - N/A = Not applicable
 - NA = Not analyzed
 - RBSL = Risk Based Screening Level
 - <x = Analyte not detected at reporting limit x
 - * = Initial data set collected under direction of Blymyer Engineers, Inc.
 - ^a = Laboratory note indicates the unmodified or weakly modified gasoline is significant.
 - ^b = Confirmed with EPA Method 8260.
 - ^c = Groundwater samples for MW-1 and MW-3 suspected to have been switched (mismarked) in field. First collection of groundwater samples after application of Hydrogen Peroxide on March 7, 2001.
 - ^d = Analysis conducted by EPA Method 8260. See Table III.

Bold results indicate detectable analyte concentrations.



Note: Shaded cell indicates that detected concentration exceeds *Non-Drinking Water* ESL

Table III, Summary of Groundwater Sample Fuel Oxygenate Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	EPA Method 8260B (ug/L)								
		TAME	TBA	EBD	1,2-DCA	DIPE	Ethanol	ETBE	Methanol	MTBE
<i>Drinking Water Source</i> ¹		NV	12	0.05	0.5	NV	50,000	NV	NV	5
<i>Non-Drinking Water Source</i> ²		NV	18,000	152	204	NV	50,000	NV	NV	1,800
MW-1	3/17/2003	8.3	<5.0	NA	NA	<0.50	NA	<0.50	NA	10.0
	6/23/2003	6.4	<25	NA	NA	<2.5	NA	<2.5	NA	8.0
	9/18/2003	5.3	<25	NA	NA	<2.5	NA	<2.5	NA	8.5
	12/15/03 ³	9.0	<5.0	NA	NA	<0.5	NA	<0.5	NA	12.0
MW-2	3/17/2003	2.1	6.0	NA	NA	<0.50	NA	<0.50	NA	13.0
	6/23/2003	4.5	<5.0	NA	NA	<0.50	NA	<0.50	NA	11.0
	9/18/2003	0.7	<25	NA	NA	<2.5	NA	<2.5	NA	5.0
	12/15/03 ³	3.2	5.2	NA	NA	<0.5	NA	<0.5	NA	13.0
	6/13/2006	4.5	6.5	<5.0	<5.0	<5.0	<50	<0.5	<500	7.6
MW-3	3/17/2003	4.3	8.6	NA	NA	<0.50	NA	<0.50	NA	10.0
	6/23/2003	2.6	<5.0	NA	NA	<0.50	NA	<0.50	NA	5.6
	9/18/2003	3.6	<25	NA	NA	<2.5	NA	<2.5	NA	10.0
	12/15/03 ³	2.7	<5.0	NA	NA	<0.5	NA	<0.5	NA	13.0
MW-4	6/12/2006	NA	NA	NA	NA	NA	NA	NA	NA	6.1

**Table III, Summary of Groundwater Sample Fuel Oxygenate Analytical Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California**

Well ID	Sample Date	EPA Method 8260B (ug/L)								
		TAME	TBA	EBD	1,2-DCA	DIPE	Ethanol	ETBE	Methanol	MTBE
<i>Drinking Water Source</i> ¹		NV	12	0.05	0.5	NV	50,000	NV	NV	5
<i>Non-Drinking Water Source</i> ²		NV	18,000	152	204	NV	50,000	NV	NV	1,800

Notes: TAME = Methyl tert-Amyl Ether

TBA = tert-Butyl Alcohol

EDB = 1,2-Dibromoethane

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

(µg/L) = Micrograms per liter

NV = No value

NA = Not analyzed

¹ = From Table A; Environmental Screening Levels (ESLs); Groundwater IS a Current or Potential Source of Drinking Water

² = From Table B; RWQCB Environmental Screening Levels (ESLs); Groundwater IS NOT a Current or Potential Source of Drinking Water

³ = In general after this date, fuel oxygenates were monitored using MTBE detected by EPA Method 8020B, as a proxy for the approximate concentration of the remaining fuel oxygenates.

Bold results indicate detectable analyte concentrations.

Note: Shaded cell indicates that detected concentration exceeds ESL

**Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California**

Well ID	Sample Date	Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
		Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Ferrous Iron (Fe 2+)	Field Temperature (o F / o C)	Field pH pH units
MW-1	3/17/2003	NA	NA	NA	60.4 / 60.0 *	7.1 / 7.3
	6/23/2003	0.4	NA	NA	61.0 / 61.0 *	6.9 / 6.9
	9/18/2003	0.4	NA	NA	65.1 / 62.9 *	7.1 / 6.9
	12/15/2003	1.1	NA	NA	13.1 / 13.4	6.8 / 6.7
	6/15/2004	0.1	NA	NA	64.5 / 63.4 *	6.9 / 7.0
	12/15/2004	NA	NA	NA	15.4 / 17.5	7.0 / 6.9
	6/29/2005	0.24 / 0.17	1.0	4.5	19.78 / 21.63	7.15 / 7.08
	5/8/2006	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
	2/19/2007	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
	6/21/2007	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
	11/8/2007	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
	2/28/2008	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
	5/29/2008	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed
MW-1R	6/13/2006	0.87 / 0.37	172.9 / 172.9	0 / 0	17.31 / 17.36	6.90 / 6.92
	2/19/2007	0.48	8.0	NA	12.2 / 15.8	6.95 / 6.86
	6/21/2007	0.62	22.0	NA	19.6	7.1
	11/8/2007	0.3	-60	NA	64.4	6.9
	2/28/2008	0.28	156	0.0	63.2	6.98
	5/29/2008	0.72	97	0.6	17.3	7.12

**Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California**

Well ID	Sample Date	Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
		Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Ferrous Iron (Fe 2+)	Field Temperature (o F / o C)	Field pH pH units
MW-2	3/17/2003	NA	NA	NA	66.0 / 64.2 *	7.4 / 7.9
	6/23/2003	0.6	NA	NA	62.1 / 61.8 *	6.8 / 7.1
	9/18/2003	1.3	NA	NA	66.7 / 63.7 *	6.7 / 6.9
	12/15/2003	1.6	NA	NA	13.2 / 13.4	6.6 / 6.6
	6/15/2004	0.1	NA	NA	64.5 / 65.0 *	6.3 / 7.1
	12/15/2004	NA	NA	NA	16.9 / 17.0	7.1 / 7.1
	6/29/2005	0.19 / 0.24	0.7	0.7	18.58 / 21.18	7.12 / 7.13
	6/13/2006	0.80 / 0.42	168.0 / 168.0	0 / 0	17.49 / 17.70	6.97 / 6.98
	2/19/2007	0.2	80	NA	13.6 / 16.3	7.24 / 7.06
	6/21/2007	0.18	46	NA	18.3	7.1
	11/8/2007	0.4	209	NA	64.0	7.07
	2/28/2008	0.29	191	0.0	63.1	6.98
	5/29/2008	1.53	212	0.0	17.8	7.18

Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
		Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Ferrous Iron (Fe 2+)	Field Temperature (o F / o C)	Field pH pH units
MW-3	3/17/2003	NA	NA	NA	63.3 / 60.9 *	7.4 / 7.6
	6/23/2003	0.7	NA	NA	66.4 / 66.9 *	7.3 / 7.2
	9/18/2003	0.4	NA	NA	63.7 / 62.6 *	7.1 / 7.1
	12/15/2003	1.6	NA	NA	14.7 / 15.1	6.5 / 6.4
	6/15/2004	0.0	NA	NA	63.1 / 62.3 *	7.5 / 7.1
	12/15/2004	NA	NA	NA	15.4 / 16.7	7.2 / 7.0
	6/29/2005	0.72 / 0.78	141.7 / -67.6	0.9	17.65 / 18.79	6.94 / 7.02
	6/13/2006	1.01 / 0.41	170.0 / 168.5	0 / 0	17.30 / 17.15	7.02 / 6.98
	2/19/2007	0.08	81	NA	13.7 / 15.6	7.10 / 6.95
	6/21/2007	0.10	39	NA	18.1	7.2
	11/8/2007	0.30	-30	NA	62.5	7.04
	2/28/2008	0.32	132	0.0	61.2	5.45
	5/29/2008	0.77	186	0.6	16.3	7.19
MW-4	6/12/2006	0.67 / 0.33	164.3 / 161.0	0.5 / 0	16.90 / 16.79	6.82 / 6.79
	2/19/2007	0.21	98	NA	13.7 / 15.0	7.14 / 7.03
	6/21/2007	0.31	118	NA	16.4	7.0
	11/8/2007	0.30	222	NA	62.7	6.96
	2/28/2008	0.28	173	0.0	61.6	7.01
	5/29/2008	1.07	228	0.0	16.2	6.81

Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California

Well ID	Sample Date	Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
		Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Ferrous Iron (Fe 2+)	Field Temperature (o F / o C)	Field pH pH units
MW-5	6/12/2006	0.61 / 0.31	175.2 / 169.0	0 / 0	18.40 / 18.01	7.01 / 6.94
	2/19/2007	1.98	-114	NA	12.7 / 14.1	6.93 / 6.73
	6/21/2007	1.23	99	NA	16.8	7.1
	11/8/2007	0.30	211	NA	63.9	6.85
	2/28/2008	0.26	213	0.0	62.6	7.14
	5/29/2008	0.80	249	0.0	16.5	7.18
MW-6	6/13/2006	3.10 / 0.81	181.2 / 174.8	0 / 0	17.25 / 17.32	6.94 / 6.83
	2/19/2007	0.21	-30	NA	14.6 / 15.6	6.58 / 6.74
	6/21/2007	0.26	102	NA	16.2	7.1
	11/8/2007	0.60	-8	NA	63.5	6.99
	2/28/2008	0.37	212	0.0	60.8	6.93
	5/29/2008	1.75	194	0.0	16.3	7.22
MW-7	6/12/2006	0.59 / 0.27	172.5 / 171.8	0.5 / 0.2	18.14 / 18.00	6.90 / 6.87
	2/19/2007	0.10	110	NA	16.2 / 17.2	7.69 / 7.21
	6/21/2007	0.14	123	NA	17.3	7.0
	11/8/2007	0.30	227	NA	64.5	6.90
	2/28/2008	0.27	142	0.0	64.2	7.00
	5/29/2008	1.47	83	0.0	17.8	7.17

**Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results
BEI Job No. 203004, Former Fiesta Beverage
966 89th Avenue, Oakland, California**

Well ID	Sample Date	Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
		Dissoved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Ferrous Iron (Fe 2+)	Field Temperature (o F / o C)	Field pH pH units
MW-8	6/12/2006	0.37 / 0.33	186.1 / 180.4	0 / 0	18.55 / 18.39	6.85 / 6.85
	2/19/2007	0.11	102	NA	15.2 / 16.6	7.23 / 7.07
	6/21/2007	0.12	111	NA	17.2	7.1
	11/8/2007	0.30	232	NA	64.3	7.01
	2/28/2008	0.26	206	0.0	63.1	7.08
	5/29/2008	1.23	72	0.0	17.5	7.22
MW-9	6/12/2006	2.01 / 1.87	206.0 / 191.0	0 / 0	16.88 / 16.91	6.63 / 6.66
	2/19/2007	0.08	101	NA	15.8 / 16.3	7.56 / 7.23
	6/21/2007	0.12	112	NA	16.5	7.1
	11/8/2007	0.40	230	NA	65.1	6.94
	2/28/2008	0.26	208	0.0	62.1	7.01
	5/29/2008	1.44	94	0.0	17.1	7.33

Notes: mV = Millivolts
mg/L = Milligrams per liter
° F / ° C = degrees Fahrenheit / degrees Centigrade
* = degrees Fahrenheit
2.6 / 2.2 = Initial reading (pre-purge) / Final reading (post-purge)
NA = Not analyzed

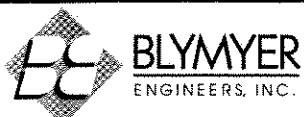
Table V, Summary of Groundwater Intrinsic Bioremediation Analytical Results BEI Job No. 203004, Former Fiesta Beverage 966 89th Avenue, Oakland, California					
Well ID	Sample Date	Method SM 5310B	Method E300.1		Method RSK 174
		CO ₂	Nitrate (as N)	Sulfate	Methane
		mg/L			µg/L
MW-1	6/29/2005	490	<0.1	5	5,900
	5/8/2006	Destroyed	Destroyed	Destroyed	Destroyed
MW-1R	6/13/2006	290	4.3	46	24
MW-2	6/29/2005	250	4.1	42	68
	6/13/2006	290	3.2	44	45
MW-3	6/29/2005	230	3.5	33	370
	6/13/2006	220	3.5	33	55
MW-4	6/12/2006	260	8.6	44	1.1
MW-5	6/12/2006	240	6.8	45	1.5
MW-6	6/13/2006	290	7.2	50	<0.5
MW-7	6/12/2006	260	6	51	<0.5
MW-8	6/12/2006	330	7.3	46	<0.5
MW-9	6/12/2006	240	8.3	44	1.1

Notes: SM = Standard Method
mg/L = Milligrams per liter
µg/L = Micrograms per liter
CO₂ = Carbon Dioxide

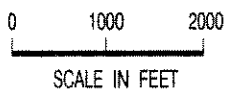
Figures



UNITED STATES GEOLOGICAL SURVEY 7.5' QUADS. "OAKLAND EAST, CA & SAN LEANDRO, CA", BOTH PHOTOREVISED 1981.



BEI JOB NO. 203004 DATE 3-19-03



SITE LOCATION MAP

FORMER FIESTA BEVERAGE
966 89TH AVE.
OAKLAND, CA

FIGURE

1

Figure 3: Concentration TPHG vs. Time in MW-3

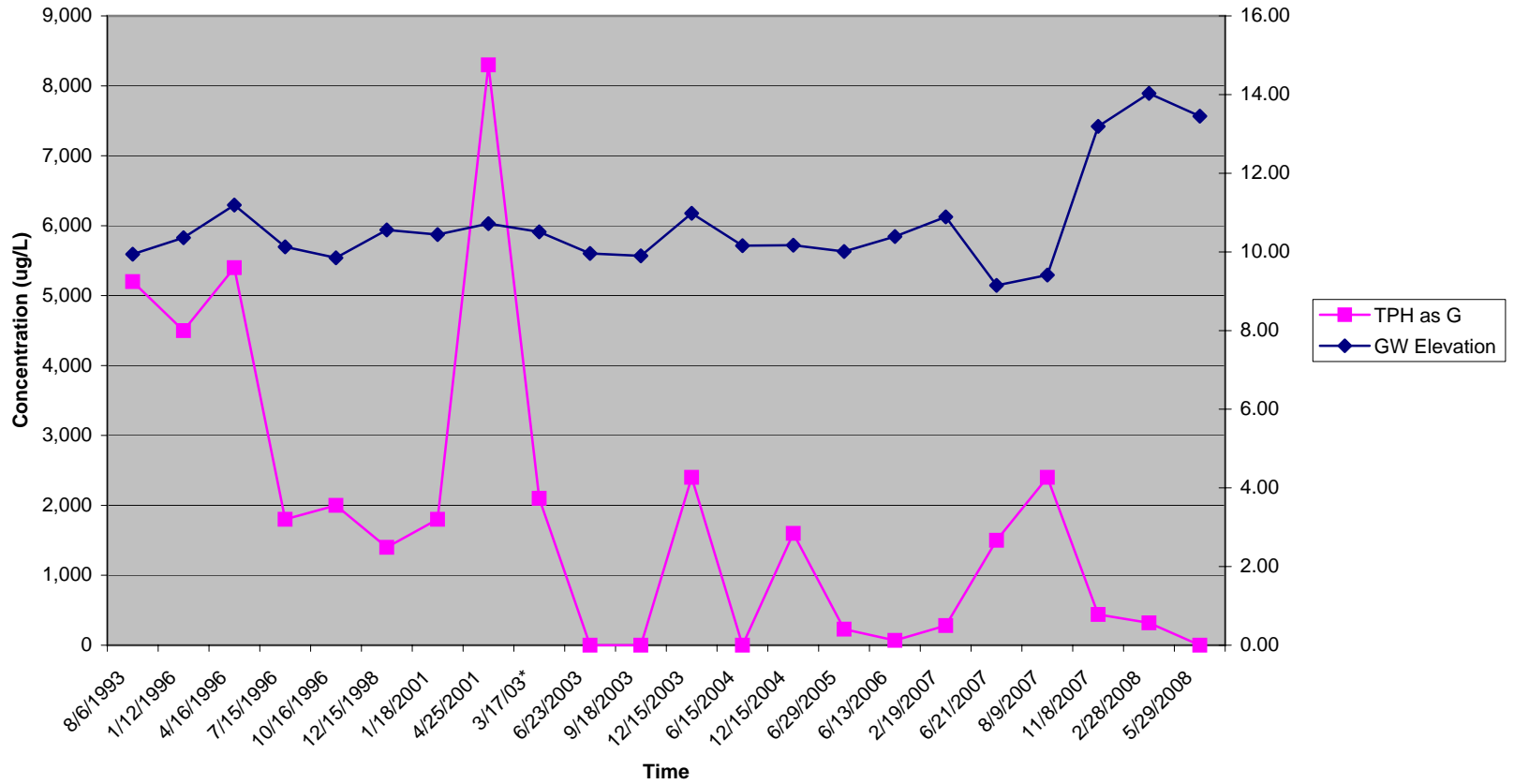


Figure 4: Concentration Benzene vs. Time in MW-3

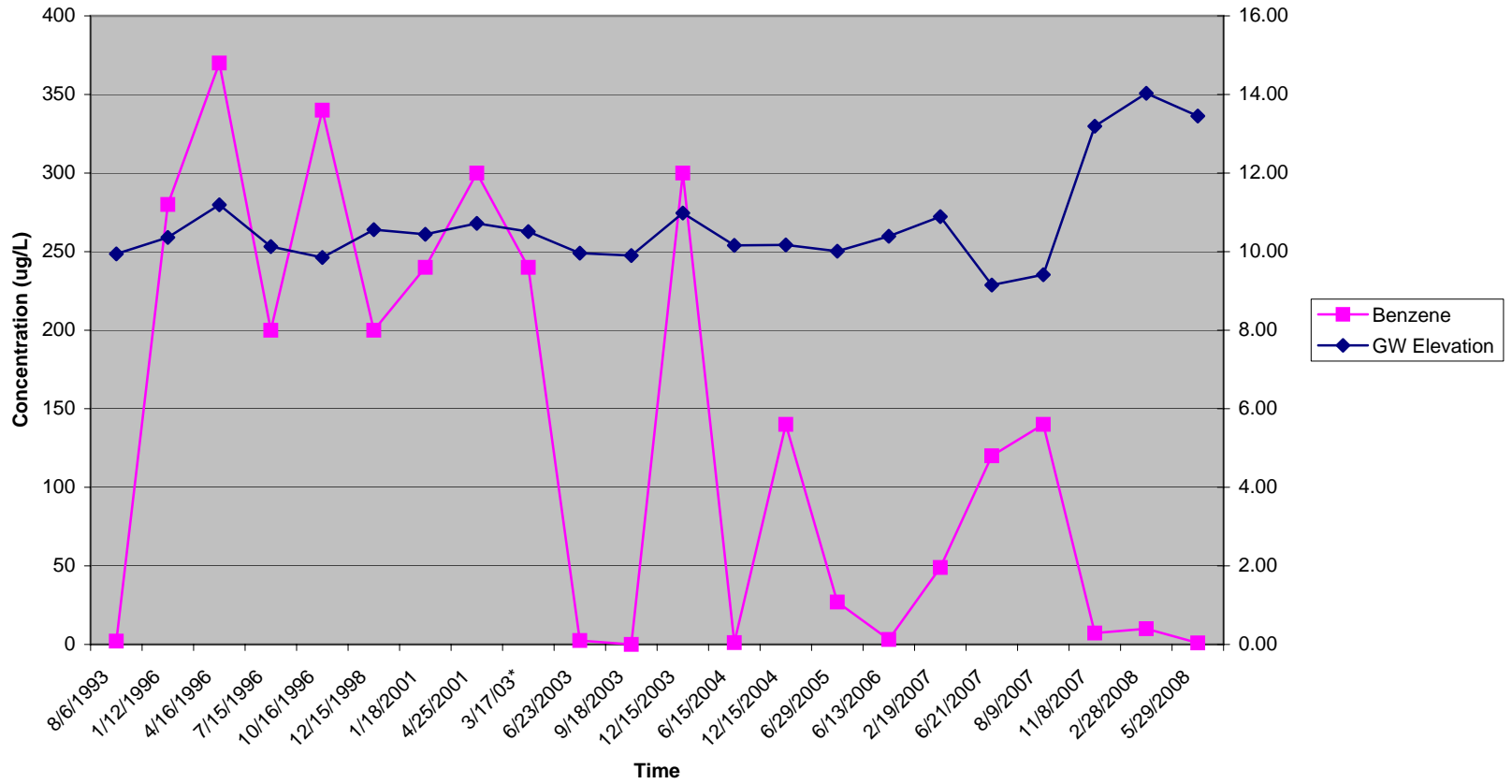


Figure 5: Concentration TPHG vs. Time in MW-1 / MW-1R

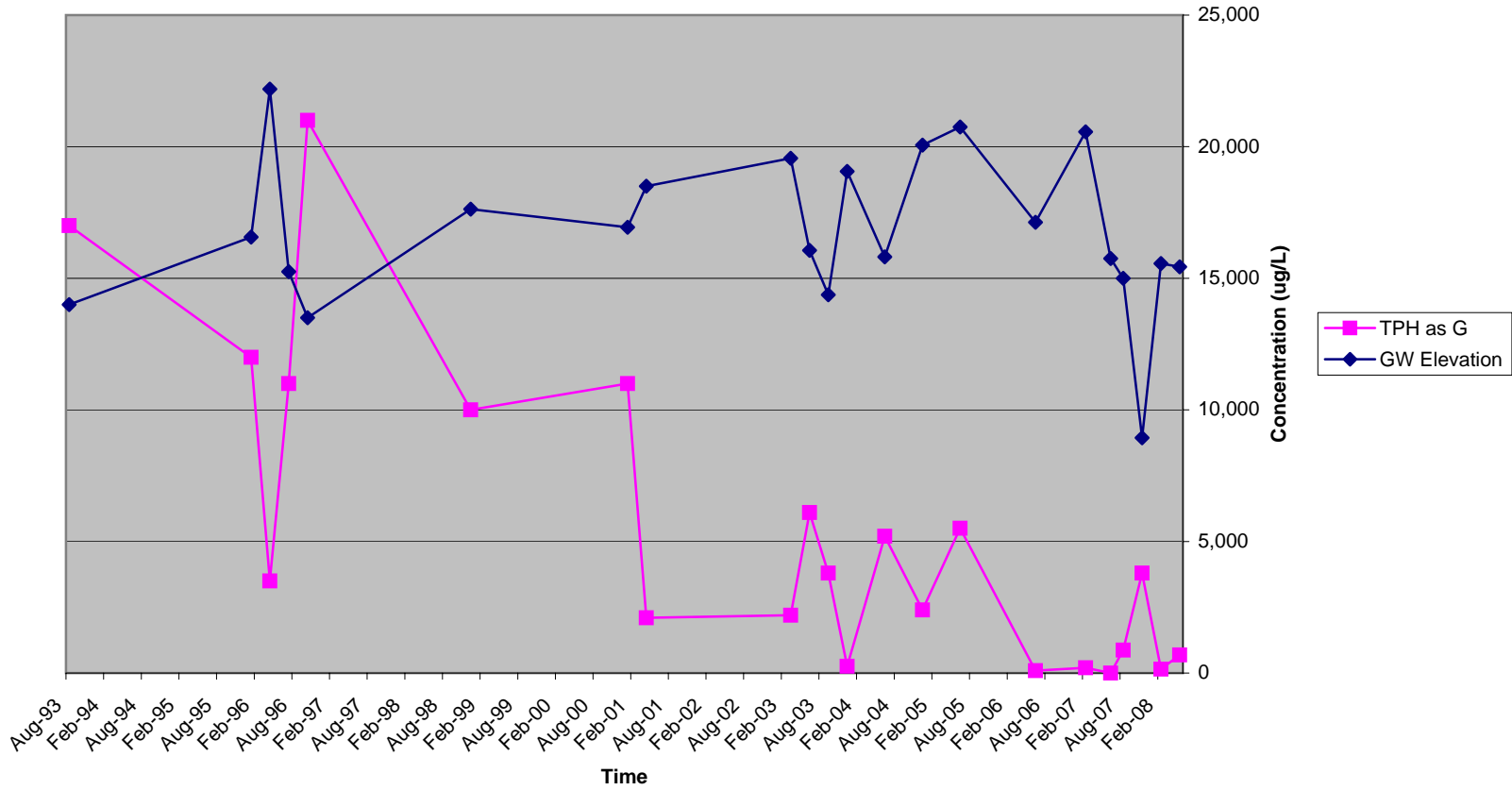
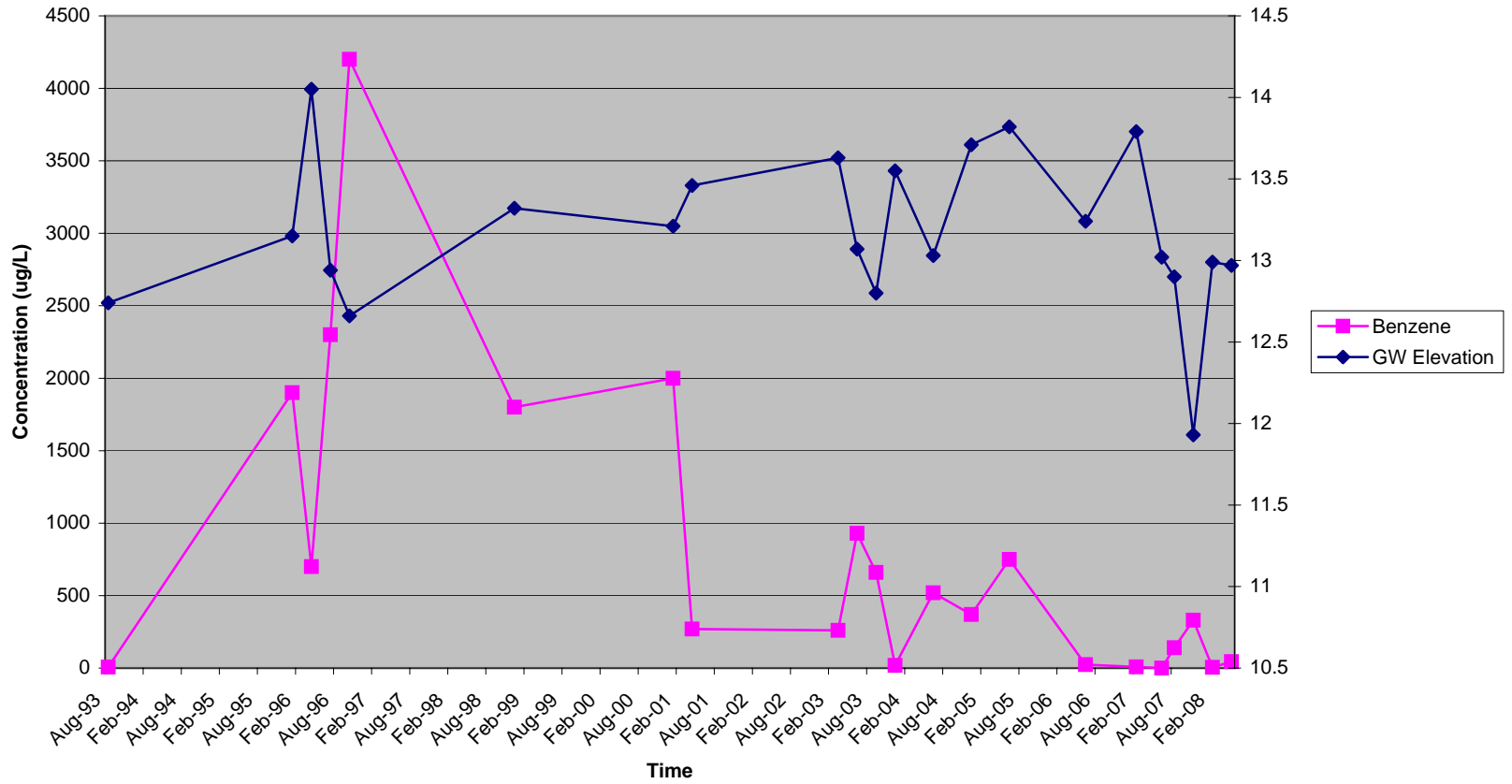


Figure 6: Concentration Benzene vs. Time in Well MW-1 / MW-1R



Appendix A

Standard Operating Procedures

Blaine Tech Services, Inc.

Blaine Tech Services, Inc.
Standard Operating Procedure

WATER LEVEL, SEPARATE PHASE LEVEL AND TOTAL WELL DEPTH MEASUREMENTS (GAUGING)

Routine Water Level Measurements

1. Establish that water or debris will not enter the well box upon removal of the cover.
2. Remove the cover using the appropriate tools.
3. Inspect the wellhead (see Wellhead Inspections).
4. Establish that water or debris will not enter the well upon removal of the well cap.
5. Unlock and remove the well cap lock (if applicable). If lock is not functional cut it off.
6. Loosen and remove the well cap. **CAUTION: DO NOT PLACE YOUR FACE OR HEAD DIRECTLY OVER WELLHEAD WHEN REMOVING THE WELL CAP. WELL CAP MAY BE UNDER PRESSURE AND/OR MAY RELEASE ACCUMULATED AND POTENTIALLY HARMFUL VAPORS.**
7. Verify and identify survey point as written on S.O.W.
TOC: If survey point is listed as Top of Casing (TOC), look for the exact survey point in the form of a notch or mark on the top of the casing. If no mark is present, use the north side of the casing as the measuring point.
TOB: If survey point is listed as Top of Box (TOB), the measuring point will be established manually. Place the inverted wellbox lid halfway across the wellbox opening and directly over the casing. The lower edge of the inverted cover directly over the casing will be the measuring point.
8. Put new Latex or Nitrile gloves on your hands.
9. Slowly lower the Water Level Meter probe into the well until it signals contact with water with a tone and/or flashing a light.
10. Gently raise the probe tip slightly above the water and hold it there. Wait momentarily to see if the meter emits a tone, signaling rising water in the casing. Gently lower the probe tip slightly below the water. Wait momentarily to see if the meter stops emitting a tone, signaling dropping water in the casing. Continue process until water level stabilizes indicating that the well has equilibrated.
11. While holding the probe at first contact with water and the tape against the measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on Well Gauging Sheet under Depth to Water column.
12. Recover probe, replace and tighten well cap, replace lock (if applicable), replace well box cover and tighten hardware (if applicable)

Water Level and Separate Phase Thickness Measurements in Wells Suspected of Containing Separate Phase

1. Establish that water or debris will not enter the well box upon removal of the cover.
2. Remove the cover using the appropriate tools.
3. Inspect the wellhead (see Wellhead Inspections).
4. Establish that water or debris will not enter the well upon removal of the well cap.

5. Unlock and remove the well cap lock (if applicable). If lock is not functional cut it off.
6. Loosen and remove the well cap. CAUTION: DO NOT PLACE YOUR FACE OR HEAD DIRECTLY OVER WELLHEAD WHEN REMOVING THE WELL CAP. WELL CAP MAY BE UNDER PRESSURE AND/OR MAY RELEASE ACCUMULATED AND POTENTIALLY HARMFUL VAPORS.
7. Verify and identify survey point as written on S.O.W.
 - TOC: If survey point is listed as Top of Casing (TOC), look for the exact survey point in the form of a notch or mark on the top of the casing. If no mark is present, use the north side of the casing as the measuring point.
 - TOB: If survey point is listed as Top of Box (TOB), the measuring point will be established manually. Place the inverted well box lid halfway across the well box opening and directly over the casing. The lower edge of the inverted cover directly over the casing will be the measuring point.
8. Put new Nitrile gloves on your hands.
9. Slowly lower the tip of the Interface Probe into the well until it emits either a solid or broken tone.
 - BROKEN TONE: Separate phase layer is not present. Go to Step 8 of Routine Water Level Measurements shown above to complete gauging process using the Interface probe as you would a Water Level Meter.
 - SOLID TONE: Separate phase layer is present. Go to the next step.
10. Gently raise the probe tip slightly above the separate phase layer and hold it there. Wait momentarily to see if the meter emits a tone, signaling rising water in the casing. Gently lower the probe tip slightly below the separate phase layer. Wait momentarily to see if the meter stops emitting a tone, signaling dropping water in the casing. Continue process until water level stabilizes indicating that the well has equilibrated.
11. While holding the probe at first contact with the separate phase layer and the tape against the measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on Well Gauging Sheet under Depth to Product column.
12. Gently lower the probe tip until it emits a broken tone signifying contact with water. While holding the probe at first contact with water and the tape against the measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on Well Gauging Sheet under Depth to Water column.
13. Recover probe, replace and tighten well cap, replace lock (if applicable), replace well box cover and tighten hardware (if applicable).

Routine Total Well Depth Measurements

1. Lower the Water Level Meter probe into the well until it lightens in your hands, indicating that the probe is resting at the bottom of well.
2. Gently raise the tape until the weight of the probe increases, indicating that the probe has lifted off the well bottom.
3. While holding the probe at first contact with the well bottom and the tape against the well measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on Well Gauging Sheet under Total Well Depth column.

4. Recover probe, replace and tighten well cap, replace lock (if applicable), replace well box cover and tighten hardware (if applicable).

Blaine Tech Services, Inc.
Standard Operating Procedure

WELL WATER EVACUATION (PURGING)

Purpose

Evacuation of a predetermined minimum volume of water from a well (purging) while *simultaneously* measuring water quality parameters is typically required prior to sampling. Purging a minimum volume guarantees that actual formation water is drawn into the well. Measuring water quality parameters either verifies that the water is stable and suitable for sampling or shows that the water remains unstable, indicating the need for continued purging. Both the minimum volume and the stable parameter qualifications need to be met prior to sampling. This assures that the subsequent sample will be representative of the formation water surrounding the well screen and not of the water standing in the well.

Defining Casing Volumes

The predetermined minimum quantity of water to be purged is based on the wells' casing volume. A casing volume is the volume of water presently standing within the casing of the well. This is calculated as follows:

$$\text{Casing Volume} = (\text{TD} - \text{DTW}) \text{ VCF}$$

1. Subtract the wells' depth to water (DTW) measurement from its total depth (TD) measurement. This is the height of the water column in feet.
2. Determine the well casings' volume conversion factor (VCF). The VCF is based on the diameter of the well casing and represents the volume, in gallons, that is contained in one (1) foot of a particular diameter of well casing. The common VCF's are listed on our Well Purge Data Sheets.
3. Multiply the VCF by the calculated height of the water column. This is the casing volume, the amount of water in gallons standing in the well.

Remove Three to Five Casing Volumes

Prior to sampling, an attempt will be made to purge all wells of a minimum of three casing volumes and a maximum of five casing volumes except where regulations mandate the minimum removal of four casing volumes.

Choose the Appropriate Evacuation Device Based on Efficiency

In the absence of instructions on the SOW to the contrary, selection of evacuation device will be based on efficiency.

Measure Water Quality Parameters at Each Casing Volume

At a minimum, water quality measurements include pH, temperature and electrical conductivity (EC). Measurements are made and recorded at least once every casing volume. They are considered stable when all parameters are within 10% of their previous measurement.

Note: The following instructions assume that well has already been properly located, accessed, inspected and gauged.

Prior to Purging a Well

1. Confirm that the well is to be purged and sampled per the SOW.
2. Confirm that the well is suitable based on the conditions set by the client relative to separate phase.
3. Calculate the wells' casing volume.
4. Put new Latex or Nitrile gloves on your hands.

Purging With a Bailer (Stainless Steel, Teflon or Disposable)

1. Attach bailer cord or string to bailer. Leave other end attached to spool.
2. Gently lower empty bailer into well until well bottom is reached.
3. Cut cord from spool. Tie end of cord to hand.
4. Gently raise full bailer out of well and clear of well head. Do not let the bailer or cord touch the ground.
5. Pour contents into graduated 5-gallon bucket or other graduated receptacle.
6. Repeat purging process.
7. Upon removal of first casing volume, fill clean parameter cup with purgewater, empty the remainder of the purgewater into the bucket, lower the bailer back into the well and secure the cord on the Sampling Vehicle.
8. Use the water in the cup to collect and record parameter measurements.
9. Continue purging until second casing volume is removed.
10. Collect parameter measurements.
11. Continue purging until third casing volume is removed.
12. Collect parameter measurements. If parameters are stable, stop purging. If parameters remain unstable, continue purging until stabilization occurs or the fifth casing volume is removed.

Purging With a Pneumatic Pump

1. Position Pneumatic pump hose reel over the top of the well.
2. Gently unreel and lower the pump into the well. Do not contact the well bottom.
3. Secure the hose reel.
4. Begin purging into graduated 5-gallon bucket or other graduated receptacle.
5. Adjust water recharge duration and air pulse duration for maximum efficiency.
6. Upon removal of first casing volume, fill clean parameter cup with water.
7. Use the water in the cup to collect and record parameter measurements.
8. Continue purging until second casing volume is removed.

9. Collect parameter measurements.
10. Continue purging until third casing volume is removed.
11. Collect parameter measurements. If parameters are stable, stop purging. If parameters remain unstable, continue purging until stabilization occurs or the fifth casing volume is removed.
12. Upon completion of purging, gently recover the pump and secure the reel.

Purging With a Fixed Speed Electric Submersible Pump

1. Position Electric Submersible hose reel over the top of the well.
2. Gently unreel and lower the pump to the well bottom.
3. Raise the pump 5 feet off the bottom.
4. Secure the hose reel.
5. Begin purging.
6. Verify pump rate with flow meter or graduated 5-gallon bucket
7. Upon removal of first casing volume, fill clean parameter cup with water.
8. Use the water in the cup to collect and record parameter measurements.
9. Continue purging until second casing volume is removed.
10. Collect parameter measurements.
11. Continue purging until third casing volume is removed.
12. Collect parameter measurements. If parameters are stable, stop purging. If parameters remain unstable, continue purging until stabilization occurs or the fifth casing volume is removed.
13. Upon completion of purging, gently recover the pump and secure the reel.

Blaine Tech Services, Inc.
Standard Operating Procedure

**SAMPLE COLLECTION
FROM GROUNDWATER WELLS USING BAILERS**

Sampling with a Bailer (Stainless Steel, Teflon or Disposable)

1. Put new Latex or Nitrile gloves on your hands.
2. Determine required bottle set.
3. Fill out sample labels completely and attach to bottles.
4. Arrange bottles in filling order and loosen caps (see Determine Collection Order below).
5. Attach bailer cord or string to bailer. Leave other end attached to spool.
6. Gently lower empty bailer into well until water is reached.
7. As bailer fills, cut cord from spool and tie end of cord to hand.
8. Gently raise full bailer out of well and clear of well head. Do not let the bailer or cord touch the ground. If a set of parameter measurements is required, go to step 9. If no additional measurements are required, go to step 11.
9. Fill a clean parameter cup, empty the remainder contained in the bailer into the sink, lower the bailer back into the well and secure the cord on the Sampling Vehicle. Use the water in the cup to collect and record parameter measurements.
10. Fill bailer again and carefully remove it from the well.
11. Slowly fill and cap sample bottles. Fill and cap volatile compounds first, then semi-volatile, then inorganic. Return to the well as needed for additional sample material.

Fill 40-milliliter vials for volatile compounds as follows: Slowly pour water down the inside on the vial. Carefully pour the last drops creating a convex or positive meniscus on the surface. Gently screw the cap on eliminating any air space in the vial. Turn the vial over, tap several times and check for trapped bubbles. If bubbles are present, repeat process.

Fill 1 liter amber bottles for semi-volatile compounds as follows: Slowly pour water into the bottle. Leave approximately 1 inch of headspace in the bottle. Cap bottle.

Field filtering of inorganic samples using a stainless steel bailer is performed as follows: Attach filter connector to top of full stainless steel bailer. Attach 0.45 micron filter to connector. Flip bailer over and let water gravity feed through the filter and into the sample bottle. If high turbidity level of water clogs filter, repeat process with new filter until bottle is filled. Leave headspace in the bottle. Cap bottle.

Field filtering of inorganic samples using a disposable bailer is performed as follows: Attach 0.45 micron filter to connector plug. Attach connector plug to bottom of full disposable bailer. Water will gravity feed through the filter and into the sample bottle. If high turbidity level of water clogs filter, repeat process with new filter until bottle is filled. Leave headspace in the bottle. Cap bottle.

12. Bag samples and place in ice chest.
13. Note sample collection details on well data sheet and Chain of Custody.

Appendix B

Well Monitoring Data Sheets and Well Gauging Data,

Blaine Tech Services, Inc.

May 29, 2008

BLAINE

TECH SERVICES, INC.

1680 ROGERS AVENUE
 SAN JOSE, CALIFORNIA 95112-1105
 FAX (408) 573-7771
 PHONE (408) 573-0555

CONDUCT ANALYSIS TO DETECT

LAB

McC Campbell

DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

- EPA
- LIA
- OTHER

RWQCB REGION _____

SPECIAL INSTRUCTIONS

Invoice and Report to : Blymyer Engineers, Inc.
 Attn: Mark Detterman
 EDF Format Required.

CHAIN OF CUSTODY

BTS # 080529-wwi

CLIENT Blymyer Engineers, Inc.

SITE Former Fiesta Beverage

966 89th Avenue

Oakland, CA

C = COMPOSITE ALL CONTAINERS

TPH-G (8015M)

BTEX & MTBE (8021B)

SAMPLE I.D.	DATE	TIME	S = SOIL W = H ₂ O	CONTAINERS		TPH-G (8015M)	BTEX & MTBE (8021B)										ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #	
				TOTAL																	
MW-1R	05/29/08	1245	W	3	HCL Voa	X	X														
MW-2		1157	W	3	HCL Voa	X	X														
MW-3		1218	W	3	HCL Voa	X	X														
MW-4		0956	W	3	HCL Voa	X	X														
MW-5		1027	W	3	HCL Voa	X	X														
MW-6		1050	W	3	HCL Voa	X	X														
MW-7		1305	W	3	HCL Voa	X	X														
MW-8		1330	W	3	HCL Voa	X	X														
MW-9		1355	W	3	HCL Voa	X	X														

SAMPLING COMPLETED DATE 05/29/08 TIME 1612 SAMPLING PERFORMED BY WILLIAM WONT

RESULTS NEEDED NO LATER THAN As contracted

RELEASED BY <i>[Signature]</i>	DATE 05/29/08	TIME 1612	RECEIVED BY <i>[Signature]</i>	SAMPLE WSTADIAN	DATE 05/29/08	TIME 1612
RELEASED BY <i>[Signature]</i> (Sample Custodian)	DATE 5/30/08	TIME 1308	RECEIVED BY <i>[Signature]</i>		DATE 5/30/08	TIME 1308
RELEASED BY	DATE	TIME	RECEIVED BY		DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #
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SPH or Purge Water Drum Log

Client: Blymer
 Site Address: 966 89th Ave. Oakland CA

STATUS OF DRUM(S) UPON ARRIVAL

Date	6/21/07	8/09/07	11/8/07	2/28/08	05/29/08
Number of drum(s) empty:					
Number of drum(s) 1/4 full:		1		1	1
Number of drum(s) 1/2 full:			1		
Number of drum(s) 3/4 full:					
Number of drum(s) full:	4		5 4	4	5
Total drum(s) on site:	4 (4 non BTS)	4	5	5	6 7
Are the drum(s) properly labeled?	Y	Y	Y	Y	4 NON BTS 2 BTS Yes
Drum ID & Contents:	Injection	Purge H ₂ O	Purge H ₂ O	Purge H ₂ O	Purge H ₂ O
If any drum(s) are partially or totally filled, what is the first use date:		06/02/06		NO DATE	NA

- If you add any SPH to an empty or partially filled drum, drum must have at least 20 gals. of Purgewater or DI Water.
- If drum contains SPH, the drum MUST be steel AND labeled with the appropriate label.
- All BTS drums MUST be labeled appropriately.

STATUS OF DRUM(S) UPON DEPARTURE

Date	6/21/07	08/09/07	11/8/07	2/28/08	05/29/08
Number of drums empty:					
Number of drum(s) 1/4 full:	1			1	0
Number of drum(s) 1/2 full:		1	1		0
Number of drum(s) 3/4 full:					(WV) 1
Number of drum(s) full:	5 1 BTS 4 NON	5 1 BTS 4 NON	5 1 BTS 4 NON	5	6
Total drum(s) on site:	6	6	6	6	4 NON BTS 3 BTS
Are the drum(s) properly labeled?	Y	Y	Y	Y	Y
Drum ID & Contents:	Purge H ₂ O	Purge H ₂ O	Purge H ₂ O	Purge H ₂ O	Purge H ₂ O

LOCATION OF DRUM(S)

Describe location of drum(s): Behind building through roll up door - DON'T LET SLIDING DOOR DOGS OUT

FINAL STATUS

Number of new drum(s) left on site this event	2	2/10/07	1	1	0
Date of inspection:	6/21/07	8/09/07	11/8/07	2/28/08	05/29/08
Drum(s) labelled properly:	Y	N/A	Y	Y	Y
Logged by BTS Field Tech:	DR	WW	KF	IW	WW
Office reviewed by:	WV	WV	WV	WV	WV

WELLHEAD INSPECTION CHECKLIST

Date 05/29/08 Client BLUMER
 Site Address 98 966 89th AVE, OAKLAND, CA
 Job Number 80529-NW1 Technician NW

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-1R	X							
* MW-2		2 1/2 BOLTS MISSING			X	COVERED BY METAL PLATE		
MW-3	X							
* MW-4	X	NOTE: UNDER METAL PLATE						*
MW-5	✓	SMALL HOLE ANNULAR SEAL (0.5")						
MW-6	X							
MW-7	X							
MW-8	X ^(NW)	HOLE IN ANNULAR SEAL (0.5")						
MW-9		HOLE IN ANNULAR SEAL (0.5")						

NOTES: _____

WELL GAUGING DATA

Project # 080529-WW1 Date 05/29/08 Client BLYMER

Site 966 89th AVE, OAKLAND, CA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1R	0853	2					8.76	21.50	↓	
* MW-2	0933	2					8.55	23.75		PLATE
MW-3	0908	2					8.57	23.90		
* MW-4	0942	2					8.39	21.77		PLATE
MW-5	0916	2					9.06	19.70		
MW-6	0914	2					8.50	19.75		
MW-7	0858	2					8.60	21.68		
MW-8	0900	2					8.61	19.64		
MW-9	0902	2					8.51	22.04		

WELL MONITORING DATA SHEET

Project #: 080529-WW1	Client: BLYMER ENG
Sampler: WW	Date: 05/29/08
Well I.D.: MW-1R	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 21.50	Depth to Water (DTW): 8.76
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: (1.3)	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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$\underline{2.0} \text{ (Gals.)} \times \underline{3} = \underline{6.0} \text{ Gals.}$ 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1236	18.0	7.43	778	>1000	2	odor
1238	17.9	7.18	822	>1000	4	"
1240	17.3	7.12	833	>1000	6	"
post purge readings @ 18'						Fe ²⁺ : 0.6

Did well dewater? Yes No Gallons actually evacuated: **6**

Sampling Date: **05/29/08** Sampling Time: **1245** Depth to Water: **9.00**

Sample I.D.: **MW-1R** Laboratory: Kiff CalScience Other: **McCAMPBELL**

Analyzed for: **TPH-G BTEX MTBE** TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ _____ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:		mg/L	Post-purge:	0.72	mg/L
O.R.P. (if req'd):	Pre-purge:		mV	Post-purge:	97	mV

WELL MONITORING DATA SHEET

Project #: 080529-WWI	Client: BLYMER ENG
Sampler: WW	Date: 05/29/08
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 23.75	Depth to Water (DTW): 8.55
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.59	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

Other: _____

2.4 (Gals.) X 3 = 7.2 Gals.	<small>Well Diameter Multiplier</small>	<small>Well Diameter Multiplier</small>
1 Case Volume Specified Volumes Calculated Volume	1" 0.04	4" 0.65
	2" 0.16	6" 1.47
	3" 0.37	Other radius ² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1108	19.0	7.33	825	448	2.1	
1110	17.9	7.20	815	417	4.2	
1112	17.8	7.18	813	522	6.3	
post purge readings taken @ 18' 20'						Fe ²⁺ : 0

Did well dewater? Yes No

Gallons actually evacuated: 6.3

Sampling Date: 05/29/08 Sampling Time: 1117 Depth to Water: 11.09

Sample I.D.: MW-2 Laboratory: Kiff CalScience Other: McCAMPBELL

Analyzed for: (TPH-G BTEX MTBE) TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ _____ Time Duplicate I.D. (if applicable): _____

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.53 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	212 mV

WELL MONITORING DATA SHEET

Project #: 080529-WW1	Client: BLYMER ENG
Sampler: WW	Date: 05/29/08
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 23.90	Depth to Water (DTW): 8.57
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.64	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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2.5 (Gals.) X **3** = **7.5** Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1207	15.8	7.38	996	140	2.5	odor
1209	15.8	7.2	939	78	5	"
1211	16.3	7.19	877	>1000	7.5	"
post purge parameters @ 20"						Fe ²⁺ : 0.6

Did well dewater? Yes No Gallons actually evacuated: **7.5**

Sampling Date: **05/29/08** Sampling Time: **1218** Depth to Water: **11.64**

Sample I.D.: **MW-3** Laboratory: Kiff CalScience Other: **McCAMPBELL**

Analyzed for: **(TPH-G BTEX MTBE)** TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ _____ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.77 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	186 mV

WELL MONITORING DATA SHEET

Project #: 080529-WW1	Client: BLYMER ENG
Sampler: WW	Date: 05/29/08
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 21.77	Depth to Water (DTW): 8.39
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.07	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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$2.1 \text{ (Gals.)} \times 3 = 6.3 \text{ Gals.}$ 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0948	16.7	6.78	719	373	2.1	
0950	16.6	6.82	674	959	4.2	
0951	16.2	6.81	6.80 669	>1000	6.3	
post purge readings taken @ 18'						Fe ²⁺ : 0

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: 6.3
Sampling Date: 05/29/08 Sampling Time: 0956 Depth to Water: 9.70	
Sample I.D.: MW-4 Laboratory: Kiff CalScience Other: McCAMPBELL	
Analyzed for: (TPH-G BTEX MTBE) TPH-D Oxygenates (5) Other:	
EB I.D. (if applicable): @ _____ Time Duplicate I.D. (if applicable):	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:	
D.O. (if req'd): Pre-purge: _____ mg/L Post-purge: 1.07 mg/L	
O.R.P. (if req'd): Pre-purge: _____ mV Post-purge: 228 mV	

WELL MONITORING DATA SHEET

Project #: 080529-WW1	Client: BLYMER ENG
Sampler: WW	Date: 05/29/08
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8 _____
Total Well Depth (TD): 19.70	Depth to Water (DTW): 9.06
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.64	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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1.7 (Gals.) X	3 Specified Volumes =	5.1 Gals. Calculated Volume
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Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1018	16.1	7.24	727	>1000	1.7	
1020	16.5	7.16	716	>1000	3.4	
1022	16.5	7.18	698	>1000	5.1	
post purge parameters @ 16'						Fe ²⁺ : 0

Did well dewater? Yes No Gallons actually evacuated: **5.1**

Sampling Date: **05/29/08** Sampling Time: **1027** Depth to Water: **9.12**

Sample I.D.: **MW-5** Laboratory: Kiff CalScience Other: **McCAMPBELL**

Analyzed for: **(TPH-G BTEX MTBE)** TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.80 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	249 mV

WELL MONITORING DATA SHEET

Project #: 080529-WW1	Client: BLYMER ENG
Sampler: WW	Date: 05/29/08
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 19.75	Depth to Water (DTW): 8.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.75	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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1.8 (Gals.) X **3** = **5.4** Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1041	16.4	7.31	773	>1000	1.8	odor
1043	16.8	7.17	771	>1000	3.6	"
1045	16.3	7.22	764	>1000	5.4	"
post purge parameters taken @ 16'						Fe ²⁺ = 0
Did well dewater? Yes <input checked="" type="checkbox"/> No		Gallons actually evacuated: 5.4				
Sampling Date: 05/29/08		Sampling Time: 1050		Depth to Water: 10.66		
Sample I.D.: MW-6		Laboratory: Kiff CalScience Other McCAMPBELL				
Analyzed for: (TPH-G BTEX MTBE) TPH-D Oxygenates (5) Other:						
EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):						
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:						
D.O. (if req'd): Pre-purge:		mg/L		Post-purge:		1.75 mg/L
O.R.P. (if req'd): Pre-purge:		mV		Post-purge:		199 mV

WELL MONITORING DATA SHEET

Project #: 080529-WW1	Client: BLYMER ENG
Sampler: WW	Date: 05/29/08
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8 _____
Total Well Depth (TD): 21.68	Depth to Water (DTW): 8.60
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.22	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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$2.1 \text{ (Gals.)} \times 3 = 6.3 \text{ Gals.}$ 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1304	18.5	7.36	743	>1000	2.1	odor
1307	18.3	7.16	745	>1000	4.2	"
1300	17.8	7.17	742	>1000	6.3	"
post purge readings @ 17'						Fe ²⁺ : 0

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: 6.3
Sampling Date: 05/29/08 Sampling Time: 1305 Depth to Water: 8.71	
Sample I.D.: MW-7 Laboratory: Kiff CalScience Other: McCAMPBELL	
Analyzed for: (TPH-G BTEX MTBE) TPH-D Oxygenates (5) Other:	
EB I.D. (if applicable): @ _____ Time Duplicate I.D. (if applicable):	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:	
D.O. (if req'd): Pre-purge: _____ mg/L	Post-purge: 1.47 mg/L
O.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: 83 mV

WELL MONITORING DATA SHEET

Project #: 080529-WW1	Client: BLYMER ENG
Sampler: WW	Date: 05/29/08
Well I.D.: MW-8	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 19.64	Depth to Water (DTW): 8.61
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (FVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.82	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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1.8 (Gals.) X 3 = 5.4 Gals. I Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1320	19.1	7.40	799	>1000	1.8	
1322	18.2	7.22	803	>1000	3.6	
1325	17.5	7.22	788	>1000	5.4	
post purge readings @ 16'						Feet: 0

Did well dewater? Yes No Gallons actually evacuated: **5.4**

Sampling Date: **05/29/08** Sampling Time: **1330** Depth to Water: **8.73**

Sample I.D.: **MW-8** Laboratory: Kiff CalScience Other: **McCAMPBELL**

Analyzed for: **(TPH-G BTEX MTBE)** TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ _____ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.23 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	-72 mV

WELL MONITORING DATA SHEET

Project #: 080529-WW1	Client: BLYMER ENG.
Sampler: WW	Date: 05-29-08
Well I.D.: MW-9	Well Diameter: (2) 3 4 6 8
Total Well Depth (TD): 2204	Depth to Water (DTW): 8.51
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.22	

Purge Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Positive Air Displacement Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Dedicated Tubing Other: _____
--	--	---

2.2 (Gals.) X	3	= 6.6 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1344	17.7	7.80	672	552	2.2	odor
1347	16.9	7.37 7.33	674	471	4.4	"
1350	17.1	7.33	674	713	6.6	"
post purge readings @ 19'						Fe ²⁺ : 0

Did well dewater? Yes No Gallons actually evacuated: 6.6

Sampling Date: 05/29/08 Sampling Time: 1355 Depth to Water: 8.72

Sample I.D.: MW-9 Laboratory: Kiff CalScience Other: McCAMPBELL

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd): Pre-purge: mg/L Post-purge: 1.44 mg/L

O.R.P. (if req'd): Pre-purge: mV Post-purge: 94 mV

Appendix C
Analytical Laboratory Report

McC Campbell Analytical, Inc.
June 5, 2008



McC Campbell Analytical, Inc.

"When Quality Counts"

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

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: #080529-WW1; Former Fiesta Beverage, Oakland	Date Sampled: 05/29/08
	Client Contact: Mark Detterman	Date Received: 05/30/08
	Client P.O.:	Date Reported: 06/05/08
		Date Completed: 06/05/08

WorkOrder: 0805790

June 05, 2008

Dear Mark:

Enclosed within are:

- 1) The results of the **9** analyzed samples from your project: **#080529-WW1; Former Fiesta Beve**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

0805790

BLAINE

TECH SERVICES, INC.

1680 ROGERS AVENUE
 SAN JOSE, CALIFORNIA 95112-1105
 FAX (408) 573-7771
 PHONE (408) 573-0555

LAB McCampbell

DHS #

CONDUCT ANALYSIS TO DETECT

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

EPA RWQCB REGION _____
 LIA
 OTHER

CHAIN OF CUSTODY

BTS # 080529-ww1

CLIENT Blymyer Engineers, Inc.

SITE Former Fiesta Beverage

966 89th Avenue

Oakland, CA

C = COMPOSITE ALL CONTAINERS

TPH-G (8015M)

BTEX & MTBE (8021B)

SPECIAL INSTRUCTIONS

Invoice and Report to : Blymyer Engineers, Inc.
 Attn: Mark Detterman
 EDF Format Required.

SAMPLE I.D.	DATE	TIME	S= SOIL W=H ₂ O	TOTAL	CONTAINERS	TPH-G (8015M)	BTEX & MTBE (8021B)	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-1R	05/29/08	1245	W	3	HCL Voa	X	X				
MW-2		1117	W	3	HCL Voa	X	X				
MW-3		1218	W	3	HCL Voa	X	X				
MW-4		0956	W	3	HCL Voa	X	X				
MW-5		1027	W	3	HCL Voa	X	X				
MW-6		1650	W	3	HCL Voa	X	X				
MW-7		1305	W	3	HCL Voa	X	X				
MW-8		1330	W	3	HCL Voa	X	X				
MW-9		1355	W	3	HCL Voa	X	X				

ICE / I
 GOOD CONDITION
 HEAD SPACE ABSENT
 DECHLORINATED IN LAB
 PRESERVATION

APPROPRIATE CONTAINERS PRESERVED IN LAB
 VOAS 10 & G METALS OTHER

SAMPLING COMPLETED	DATE 05/29/08	TIME	SAMPLING PERFORMED BY WILLIAM WONG	RESULTS NEEDED NO LATER THAN	As contracted
RELEASED BY [Signature]	DATE 05/29/08	TIME 1612	RECEIVED BY [Signature]	DATE 05/29/08	TIME 1612
RELEASED BY [Signature] (Sample Custodian)	DATE 5/30/08	TIME 1308	RECEIVED BY [Signature]	DATE 5/30/08	TIME 1308
RELEASED BY [Signature]	DATE 5/30/08	TIME 1645	RECEIVED BY [Signature]	DATE 5/30/08	TIME
SHIPPED VIA	DATE SENT	TIME SENT	COOLER #		

McC Campbell Analytical, Inc.



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0805790

ClientCode: BEIA

WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:
 Mark Detterman
 Blymyer Engineers, Inc.
 1829 Clement Avenue
 Alameda, CA 94501-1395
 (510) 521-3773 FAX (510) 865-2594

Email: MDetterman@blymyer.com
cc:
PO:
ProjectNo: #080529-WW1; Former Fiesta Beverage, Oakland

Bill to:
 Accounts Payable
 Blymyer Engineers, Inc.
 1829 Clement Avenue
 Alameda, CA 94501-1395

Requested TAT: 5 days
Date Received: 05/30/2008
Date Printed: 05/30/2008

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0805790-001	MW-1R	Water	5/29/2008 12:45	<input type="checkbox"/>	A	A											
0805790-002	MW-2	Water	5/29/2008 11:17	<input type="checkbox"/>	A												
0805790-003	MW-3	Water	5/29/2008 12:18	<input type="checkbox"/>	A												
0805790-004	MW-4	Water	5/29/2008 9:56	<input type="checkbox"/>	A												
0805790-005	MW-5	Water	5/29/2008 10:27	<input type="checkbox"/>	A												
0805790-006	MW-6	Water	5/29/2008 10:50	<input type="checkbox"/>	A												
0805790-007	MW-7	Water	5/29/2008 13:05	<input type="checkbox"/>	A												
0805790-008	MW-8	Water	5/29/2008 13:30	<input type="checkbox"/>	A												
0805790-009	MW-9	Water	5/29/2008 13:55	<input type="checkbox"/>	A												

Test Legend:

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

Prepared by: Ana Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



Sample Receipt Checklist

Client Name: **Blymyer Engineers, Inc.** Date and Time Received: **5/30/2008 7:19:10 PM**
 Project Name: **#080529-WW1; Former Fiesta Beverage, Oakland** Checklist completed and reviewed by: **Ana Venegas**
 WorkOrder N°: **0805790** Matrix Water Carrier: Derik Cartan (MAI Courier)

Chain of Custody (COC) Information

Chain of custody present? Yes No
 Chain of custody signed when relinquished and received? Yes No
 Chain of custody agrees with sample labels? Yes No
 Sample IDs noted by Client on COC? Yes No
 Date and Time of collection noted by Client on COC? Yes No
 Sampler's name noted on COC? Yes No

Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes No NA
 Shipping container/cooler in good condition? Yes No
 Samples in proper containers/bottles? Yes No
 Sample containers intact? Yes No
 Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: 8.6°C NA
 Water - VOA vials have zero headspace / no bubbles? Yes No No VOA vials submitted
 Sample labels checked for correct preservation? Yes No
 TTLC Metal - pH acceptable upon receipt (pH<2)? Yes No NA

* NOTE: If the "No" box is checked, see comments below.

Client contacted: Date contacted: Contacted by:

Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

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

Blymyer Engineers, Inc.
1829 Clement Avenue
Alameda, CA 94501-1395

Client Project ID: #080529-WW1; Former Fiesta Beverage, Oakland

Client Contact: Mark Detterman

Client P.O.:

Date Sampled: 05/29/08

Date Received: 05/30/08

Date Extracted: 06/01/08-06/03/08

Date Analyzed 06/01/08-06/03/08

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

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0805790

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1R	W	690,a	ND	44	1.9	35	7.8	1	116
002A	MW-2	W	ND	ND	ND	ND	ND	ND	1	98
003A	MW-3	W	ND	ND	1.0	ND	ND	ND	1	93
004A	MW-4	W	ND	ND	ND	ND	ND	ND	1	96
005A	MW-5	W	ND	ND	ND	ND	ND	ND	1	94
006A	MW-6	W	ND	ND	ND	ND	ND	ND	1	98
007A	MW-7	W	ND	ND	ND	ND	ND	ND	1	102
008A	MW-8	W	ND	ND	ND	ND	ND	ND	1	118
009A	MW-9	W	ND	ND	ND	ND	ND	ND	1	93

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	0.5	1	µg/L
	S	NA	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 McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request; p) see attached narrative.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0805790

EPA Method SW8021B/8015Cm	Extraction SW5030B			BatchID: 35964			Spiked Sample ID: 0805735-001A					
	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	RPD	LCS/LCSD	RPD
TPH(btex) [£]	ND	60	81.5	97.1	17.5	77.6	85.8	10.0	70 - 130	20	70 - 130	20
MTBE	ND	10	77.6	94	19.2	74.2	80.8	8.47	70 - 130	20	70 - 130	20
Benzene	ND	10	76.6	89.2	15.1	77.9	82	5.18	70 - 130	20	70 - 130	20
Toluene	ND	10	75.7	91.2	18.6	76.8	80.5	4.80	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	76.2	88.3	14.8	78.6	82.6	5.01	70 - 130	20	70 - 130	20
Xylenes	ND	30	76.4	85.3	11.1	72.8	77.3	6.03	70 - 130	20	70 - 130	20
%SS:	102	10	101	102	1.55	101	101	0	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 35964 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0805790-001A	05/29/08 12:45 PM	06/03/08	06/03/08 3:35 AM	0805790-002A	05/29/08 11:17 AM	06/01/08	06/01/08 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.

NR = matrix interference and/or 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, or inconsistency in sample containers.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0805790

EPA Method SW8021B/8015Cm	Extraction SW5030B			BatchID: 36010			Spiked Sample ID: 0805790-008A					
	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	RPD	LCS/LCSD	RPD
TPH(btex) [£]	ND	60	92.9	91.4	1.69	82.8	81.1	2.09	70 - 130	20	70 - 130	20
MTBE	ND	10	103	103	0	89.3	90.2	1.00	70 - 130	20	70 - 130	20
Benzene	ND	10	87.2	88.8	1.78	80.5	74.8	7.35	70 - 130	20	70 - 130	20
Toluene	ND	10	96.3	98.6	2.34	89.3	86.5	3.24	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	94.1	96.8	2.90	86.8	82.4	5.18	70 - 130	20	70 - 130	20
Xylenes	ND	30	104	107	2.56	96.4	94.7	1.74	70 - 130	20	70 - 130	20
%SS:	118	10	92	93	0.630	94	93	0.392	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 36010 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0805790-003A	05/29/08 12:18 PM	06/01/08	06/01/08 1:49 AM	0805790-004A	05/29/08 9:56 AM	06/01/08	06/01/08 2:21 AM
0805790-005A	05/29/08 10:27 AM	06/01/08	06/01/08 2:53 AM	0805790-006A	05/29/08 10:50 AM	06/01/08	06/01/08 3:25 AM
0805790-007A	05/29/08 1:05 PM	06/01/08	06/01/08 3:56 AM	0805790-008A	05/29/08 1:30 PM	06/01/08	06/01/08 4:28 AM
0805790-009A	05/29/08 1:55 PM	06/01/08	06/01/08 5:00 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 = matrix interference and/or 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, or inconsistency in sample containers.