BLYMYER
ENGINEERS, INC.

July 22, 2005
BEI Job No. 203004

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

Subject: **Spring 2005 Semi-Annual Groundwater Monitoring Event**
Former Fiesta Beverage Facility
966 89th Avenue
Oakland, California
ACEH Site [redacted]

Alameda County
OCT 0 6 2005
Environmental Health

Dear Mr. Walbey:

This letter documents the Spring 2005 semi-annual groundwater monitoring event at the subject site (Figure 1). This is the seventh groundwater monitoring event and the third semi-annual event conducted by Blymyer Engineers, Inc. at the former Fiesta Beverage site in Oakland, California.

1.0 Background

In August 1990, one 500-gallon and one 1,000-gallon gasoline underground storage tanks (USTs) were removed from the subject site (Figure 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 Geoprobe® 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 Geoprobe® 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 Geoprobe® bores.

After the review of the January 2001 groundwater monitoring report, the Alameda County Environmental Health (ACEH) 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 ACEH. On September 17, 2003, a workplan for a Geoprobe® investigation of the site was submitted to the ACEH. 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 ACEH, on February 17, 2004, Blymyer Engineers issued a *Letter of Intent to Proceed: Geoprobe® 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 ACEH, 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 ACEH, it has been presumed that this was found reasonable and acceptable.

On December 14, 2004, Blymyer Engineers issued to the ACEH 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 ACEH, Mr. Barney Chan, issued the letter *Fuel Leak Case RO0000314* commenting on the December 14, 2004 report. The ACEH 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. A submittal deadline of August 8, 2005, was placed on the workplan for further plume delineation.

2.0 Redevelopment of Well MW-1 and Well Maintenance

On March 17, 2003, at the request of the ACEH, an attempt to redevelop well MW-1 was undertaken by Blaine Tech Services, Inc. (Blaine). The wells are approximately 25 feet in total depth; however, over 7 feet of sediment had apparently accumulated in well MW-1. During the previous groundwater monitoring event in April 2001, the total depth measured in well MW-1 was recorded at 17.85 feet, in contrast to wells MW-2 and MW-3 which were measured at approximately 25 feet. Prior to redevelopment, Blaine measured the total depth of well MW-1 at 17.63 feet. After redeveloping the well with a surge block, the total depth of well MW-1 was measured at 14.43 feet. Blaine also attempted to remove the accumulated sediment with a Middleburg sampling pump. The first pump became clogged and a second pump was then put into service, but a significant amount of sediment could not be removed. Field notes completed by the Blaine field technician afterward contain references to "large sand particles" and "coarse sand and gravel" in the water column. Additional notes indicate that these particles were too large to be removed by the sampling pump, but that samples of the material were obtained with a Teflon® bailer. Well casing breaks or offsets were not noted by the technician (personal communication, March 17, 2003). However, because well MW-1 is located within the asphalt repair installed after soil overexcavation, it is likely that a shift in the backfill material may have decoupled the casing at the joint between the screen and blank portions of the casing. The log for well MW-1 notes only native soil. The well is thus assumed to have been installed immediately outside of the UST excavation.

Because it had been a period of time since the wells were installed or sampled, several well maintenance issues were also encountered at the time of groundwater sampling in March 2003. In particular the well expansion caps were found to be aged with poor sealing capabilities and broken bolts which can interfere with well security (locking). Because these conditions compromise the security of the wells, the caps and locks were replaced on wells MW-2 and MW-3. The well cap and lock for well MW-1 were replaced in September 2003.

3.0 Groundwater Sample Collection and Analytical Methods

Groundwater samples were collected from monitoring wells MW-1, MW-2, and MW-3 on June 29, 2005. 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. A flow cell was utilized to obtain dissolved oxygen (DO) readings and purging and sampling was conducted using a low-flow positive air displacement pump in order to minimize entrainment of oxygen into the groundwater sample. Blaine utilized a YSI 556 Flow Cell to obtain Remediation by Natural Attenuation (RNA) values. Depth to groundwater was measured in all wells at the site. Temperature, pH, conductivity, and turbidity were measured initially, and then after removal of each purge volume. The flow rate varied between 300 and 900 ml per minute. Besides DO, Oxidation Reduction Potential (ORP) was additionally monitored after each purge volume. Ferrous iron was monitored post-purge. The groundwater depth measurements and details of the monitoring well purging and sampling are presented on the *Well Monitoring Data Sheets* and *Well Gauging Data* sheet 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 Department of Transportation-approved 55-gallon drums 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 were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline by Modified EPA Method 8015; and benzene, toluene, ethylbenzene, and total xylenes (BTEX) and MTBE by EPA Method 8021B. Groundwater samples from all wells were analyzed for Carbon Dioxide by Standard Method 5310B; Nitrate and Sulfate by Standard Method E300.1; and Methane by Method RSK 174. Tables II to V summarize current and previous analytical results for groundwater samples. The laboratory analytical report for the current sampling event is included as Appendix C.

4.0 Groundwater Sample Analytical Results and Groundwater Flow Data

Concentrations of all of the chemical compounds related to gasoline were present in each well this quarter. Wells MW-1 and MW-2 contained TPH as gasoline and BTEX, all at concentrations higher than the previous period's results. While low flow purge methodology is generally accepted to yield higher ("worst-case") contaminant concentrations from wells, the hydrocarbon concentrations yielded from these two wells are well within the range of previous concentrations collected using higher purge volume methodologies. Additionally, all analyte concentrations in well MW-3 decreased this quarter, but again are well within the range of previous concentrations obtained from groundwater samples collected from this well. The continued fluctuation in results amongst all wells suggests a mobilization of residual contamination from soil to groundwater at the site.

The concentration of TPH as gasoline ranged from 130 (well MW-2) to 5,500 micrograms per liter (μg/L) in well MW-1. Benzene ranged between a concentration of 27 μg/L (well MW-3) and 750 μg/L (well MW-1). Toluene was present up to a concentration of 27 μg/L, ethylbenzene up to 94 μg/L, and total xylenes to up 140 μg/L (all in well MW-1).

As is typical, the concentration of benzene in groundwater exceeded the drinking water Maximum Contaminant Level (MCL) in all wells this monitoring and sampling event; however, Blymyer Engineers does not believe that groundwater at this location should be considered as drinking water. Consequently, Blymyer Engineers also includes the Environmental Screening Levels (ESL) promulgated by the RWQCB. Only the RWQCB provides a look-up value for TPH, and for a non-drinking water designation of groundwater.

At the request of the ACEH, four quarters of groundwater samples have previously been analyzed for the fuel oxygenates di-isopropyl ether (DIPE), ethyl *tert*-butyl ether (ETBE), methyl *tert*-butyl ether (MTBE), *tert*-amyl methyl ether (TAME), and *tert*-butyl alcohol (TBA), by EPA Method 8260B. Due to the consistency of the data, analysis by this EPA method was eliminated as an unnecessary expense. This is the third groundwater event since that recommendation. Using EPA Method 8021B, MTBE was detected in well MW-2, at a concentration of 6.7 μg/L. Slightly elevated detection limits for MTBE were encountered for groundwater samples obtained from wells MW-1 and MW-3. Although not detected, it is likely that MTBE is present in wells MW-1 and MW-3 at similar concentrations, and that TAME is also present, at slightly lower concentrations, such as was documented in the June 2003 sampling event (Table III). Of the fuel oxygenates, only MTBE has an MCL, listed at 13 μg/L.

5.0 Intrinsic Bioremediation Groundwater Sample Analytical Results

Tables IV and V present the analytical results of the 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. A copy of the results of groundwater intrinsic bioremediation analyses is included in Appendix D.

In the order of preference, the following electron acceptors and metabolic by-products are used and generated, respectively, by the subsurface microbes to degrade petroleum hydrocarbons: oxygen to carbon dioxide, nitrate to nitrogen, manganese (Mn^{4+} to Mn^{2+}), ferric iron (Fe^{3+}) to ferrous iron (Fe^{2+}), sulfate to hydrogen sulfide, and carbon dioxide to methane. With the exception of oxygen, use of all other electron acceptor pathways indicates anaerobic degradation. Investigation of each of these electron acceptor pathways, with the exception of the manganese pathway, was conducted at the site as part of the evaluation of RNA chemical parameters.

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; it is the preferred electron acceptor for the biodegradation of hydrocarbons. Both pre-purge and post-purge values were recorded during this event. DO was present in pre-purge groundwater in concentrations ranging from 0.19 milligrams per liter (mg/L) in well MW-2 to 0.72 mg/L in the groundwater sample from well MW-3. General trends in post-purge DO results appear to be discernable. Post-purge DO concentrations were lowest in the well with the highest hydrocarbon concentrations (MW-1), were highest in the most upgradient well (MW-3); and were low to intermediate in well MW-2; likely indicative of groundwater upgradient of this well that is already partially depleted in DO due to contamination. Post-purge DO concentrations in wells MW-2 and MW-3 increased slightly. This may be indicative of modestly higher concentrations of DO in the surrounding groundwater, relative to the DO concentration in groundwater surrounding well MW-1, which decreased after purging. In general it appears that oxygen is an RNA-limiting reaction.

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. This is the first time this data has been collected at the site. The pre-purge ORP values generally mimic the trends observed in the DO data during this event (highest in well upgradient MW-3, lowest in well MW-1, intermediate in well MW-2). The post-purge ORP values in all wells decreased; generally indicating the low concentration of DO in groundwater beneath the area of investigation.

One of the by-products of microbial hydrocarbon degradation is the conversion of oxygen to carbon dioxide. Reviewing the generated data, well MW-1 contained the highest concentration of carbon dioxide, while upgradient well MW-3 contained the lowest, and downgradient well MW-2 contained an intermediate concentration. Thus, trends in carbon dioxide between wells are very consistent with DO concentrations and ORP values and reflect higher microbial activity in well MW-1.

Should oxygen be in insufficient supply in groundwater, the next preferred electron acceptor is nitrate, which creates denitrifying conditions. In denitrifying conditions, nitrate concentrations decrease in the contaminant plume over background nitrate concentrations. This is the general trend at the site. Well MW-1 contains the lowest (non-detectable) concentration of nitrate at the site. If the trends seen for DO, ORP, and carbon dioxide were to hold for nitrate, the concentration would be expected to be slightly higher in well MW-3 in comparison to well MW-2; however, there was a moderate reversal of these trends for nitrate.

Following the continuing trend of electron acceptors at the site, ferrous iron concentrations were evaluated at the site. Ferrous iron concentrations are expected to rise as subsurface microbes convert ferric iron to ferrous iron. Ferric iron concentrations were not quantified, however ferrous iron concentration was significantly elevated in the most impacted well MW-1 (4.5 mg/L), while only a moderate difference was observed between wells MW-2 and MW-3. The relatively low ferrous iron concentration in wells MW-2 and MW-3 may suggest contaminant concentrations in these wells during this time period may not require the microbes to resort to significant conversion of ferric to ferrous iron.

Continuing the trend of electron acceptors at the site, sulfate concentrations were also evaluated as part of the evaluation of RNA chemical parameters. If utilized by the microbes, sulfate concentrations, like nitrate concentrations, decrease in the contaminant plume over background sulfate concentrations. This is the trend seen at the site. The highest concentrations of sulfate are again found in groundwater collected from wells MW-2 and MW-3, with a significantly lower concentration found in groundwater from well MW-1. Conversion of the sulfate to hydrogen sulfide can influence the pH of the groundwater (lower pH values with higher hydrogen sulfide concentrations). This was not clearly observed at the site.

Further along the trend of electron acceptors, the conversion of carbon dioxide to methane was investigated at the site. The presence of methane in groundwater can be attributed to fermentation of natural organic matter as well as petroleum hydrocarbons. However, if utilized by the microbes, methane would increase relative to carbon dioxide. This is the trend observed at the site. Well MW-1 contained the highest concentration of methane, and this is presumed to represent degradation of the petroleum hydrocarbons, while wells MW-2 and MW-3 contained significantly lower concentrations of methane. Well MW-2 has through time contained the lowest contaminant concentrations, and this may be reflected in the concentration of methane in groundwater obtained from the well. It contained the lowest concentration of the three wells. A further analysis of groundwater from well MW-2, shows that it contained the highest sulfate concentration, the lowest ferrous iron concentration, the highest nitrate concentration, and moderate carbon dioxide concentrations. All of these substantiate that groundwater around the well is the least impacted of the three wells.

6.0 Groundwater Flow Data

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 7.88 to 9.51 feet below the top of the casings. Depth to groundwater increased an average of 0.52 feet; however, this can be misleading. The depth to groundwater in well MW-1 decreased. The depth to groundwater in well MW-2 increased 1.51 feet, while it increased only 0.16 feet in well MW-3. Thus there was a significant rotation of the direction of groundwater flow back to a direction generally more consistent with historic trends. Groundwater appears to have flowed to the west during this event. Except for the First Quarter of 2003, previous sampling reports available for review indicate that the historic groundwater flow direction has been to the northwest to north-northwest. During the First Quarter of 2003 an unusual eastward directed gradient was documented, and during the previous semi-annual event groundwater appeared to be flowing towards the south. Surficial infiltration has been previously suspected; however, it does not appear to have been a factor during the present sampling event. The average groundwater gradient was calculated to be very steep at 0.126 feet/foot for the current monitoring event.

7.0 Conclusions and Recommendations

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

- Concentrations of hydrocarbons were present in all wells this monitoring period. Concentrations increased in two of three wells. This is the first sampling event to utilize low-flow purge techniques in order to collect representative RNA parameters at the site. Typically low flow techniques are anticipated to yield higher or "worst-case" concentrations; however, all concentrations in all wells are within historic concentration bounds.

- Benzene, total xylenes, and TPH as gasoline are over generic RWQCB ESLs for groundwater (non-drinking water); however, only benzene is over the MCL goals.

- MTBE was detected in well MW-2, at a concentration of 6.7 μg/L. Although not detected, it is likely that MTBE is present in the other wells. TAME has previously been detected in groundwater at the site, thus it is likely that it is present beneath the site. Of fuel oxygenates, only MTBE has an MCL, listed at 13 μg/L.

- RNA chemical parameters were investigated to help determine the level of biological degradation of the petroleum hydrocarbons at the site. DO, ORP, carbon dioxide, nitrate, ferrous iron, sulfate, and methane were analyzed. Microbial use of petroleum hydrocarbons as a food source appears to be principally affected by the concentration of DO in the groundwater; it is the preferred electron acceptor for the biodegradation of hydrocarbons. Because each of the other electron acceptors, in the listed order, is preferred less by microbes to degrade hydrocarbons, and because each parameter was apparently fully utilized by microbes beneath the site, it appears that biological degradation of hydrocarbons is occurring in groundwater beneath the investigation area, and that the process is oxygen-limited.

- Groundwater flow appears to be towards the west and the average groundwater gradient was calculated at a very steep 0.126 feet/foot for this monitoring event.

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

- The next semi-annual groundwater sampling event should occur in December 2005.

- Collection of RNA indicator data should be continued in order to obtain documentation of consistent results for a period of time. Typically two to three events may be required to establish consistent data trends. Thereafter, the collection of additional data will likely not significantly increase the understanding of biodegradation beneath the site. Collection of RNA indicator data could be resumed thereafter should a need be documented.

- A copy of this letter report should be forwarded to:

Mr. Barney Chan
Alameda County Health Care Services Agency
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

8.0 Limitations

Services performed by Blymyer Engineers have been provided in accordance with generally accepted professional practices for the nature and conditions of the 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 our client.

Please call Mark Detterman at (510) 521-3773 with any questions or comments.

Sincerely,

Blymyer Engineers, Inc.

By: Mark E.
Mark Detterman, C.E.G. 1788
Senior Geologist

MARK E. DETTERMAN
No. 1788
8-9/07

And:
Michael S. Lewis
Vice President, Technical Services

Enclosures:

Table I:	Summary of Groundwater Elevation Measurements
Table II:	Summary of Groundwater Sample Hydrocarbon Analytical Results
Table III:	Summary of Groundwater Sample Fuel Oxygenate Analytical Results
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Figure 1:	Site Location Map
Figure 2:	Site Plan and Groundwater Gradient, June 29, 2005
Appendix A:	*Standard Operating Procedures*, Blaine Tech Services, Inc.
Appendix B:	*Well Monitoring Data Sheets* and *Well Gauging Data,* Blaine Tech Services, Inc., Dated June 29, 2005
Appendix C:	Analytical Laboratory Report, McCampbell Analytical, Inc., Dated July 7, 2005

Tables

Table 1 - Summary of Groundwater Elevation Measurements
BEI Job No. 203018, [illegible]
[illegible] Avenue, Oakland, California

Well Identification	Sampling Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-1	8/6/93	18.72	8.96	9.76
	1/12/96		8.55	10.17
	4/16/96		7.65	11.07
	7/15/96		8.76	9.96
	10/16/96		9.04	9.68
	12/15/98		8.38	10.34
	1/18/01		8.49	10.23
	4/25/01		8.24	10.48
	3/17/03*		8.08	10.64
	6/23/03		8.63	10.09
	9/18/03		8.90	9.82
	12/15/03		8.15	10.57
	6/15/04		8.67	10.05
	12/15/04		7.99	10.73
	6/29/05		7.88	10.84

Table 1: Summary of Groundwater Elevation Measurements
[illegible] Beverages
[illegible] 59th Avenue, Oakland, California

Well Identification	Sampling Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-2	8/6/93	18.44	8.68	9.76
	1/12/96		8.24	10.2
	4/16/96		7.41	11.03
	7/15/96		8.45	9.99
	10/16/96		8.73	9.71
	12/15/98		8.05	10.39
	1/18/01		8.24	10.20
	4/25/01		7.88	10.56
	3/17/03*		7.08	11.36
	6/23/03		8.90	9.54
	9/18/03		8.61	9.83
	12/15/03		7.97	10.47
	6/15/04		8.42	10.02
	12/15/04		8.00	10.44
	6/29/05		9.51	8.93

Table 1: Summary of Groundwater Elevation Measurements
[illegible]
[illegible] Avenue, Oakland, California

Well Identification	Sampling Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-3	8/6/93	19.01	9.07	9.94
	1/12/96		8.65	10.36
	4/16/96		7.82	11.19
	7/15/96		8.88	10.13
	10/16/96		9.16	9.85
	12/15/98		8.45	10.56
	1/18/01		8.57	10.44
	4/25/01		8.29	10.72
	3/17/03*		8.50	10.51
	6/23/03		9.05	9.96
	9/18/03		9.11	9.90
	12/15/03		8.03	10.98
	6/15/04		8.85	10.16
	12/15/04		8.84	10.17
	6/29/05		9.00	10.01

Notes:
TOC = Top of casing
* = Initial data set collected under direction of Blymyer Engineers, Inc.
NM = Not measured

Elevations in feet above mean sea level

Table 1: Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 201004, [illegible]
960 89th Avenue, Oakland, California

Sample ID	Date	Modified EPA Method 8015 (μg/L)	EPA Method 8020 or 8021B (μg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-1	8/6/93	**17,000**	**7.1**	**8.4**	**9.2**	**53**	NA
	1/12/96	**12,000**	**1,900**	**840**	**370**	**1,100**	NA
	4/16/96	**3,500**	**700**	**55**	**100**	**180**	NA
	7/15/96	**11,000**	**2,300**	**450**	**350**	**910**	NA
	10/16/96	**21,000**	**4,200**	**2,200**	**650**	**2,600**	NA
	12/15/98	**10,000**	**1,800**	**520**	**270**	**1,100**	<350
	1/18/01	**11,000** [a]	**2,000**	**320**	**320**	**1,100**	<120
	4/25/01	**2,100** [a, c]	**270**	**46**	**59**	**130**	<5.0
	3/17/03*	**2,200** [a]	**260**	**19**	**36**	**54**	NA [d]
	6/23/03	**6,100** [a]	**930**	**53**	**99**	**200**	NA
	9/18/03	**3,800** [a]	**660**	**13**	**24**	**34**	NA
	12/15/03	**260** [a]	**19**	**1.1**	<0.5	**1.5**	NA
	6/15/04	**5,200** [a]	**520**	**13**	**38**	**39**	<50
	12/15/04	**2,400** [a]	**370**	**8.2**	**13**	**14**	<15
	6/29/05	**5,500** [a]	**750**	**27**	**94**	**140**	<100

Table 1. Summary of Groundwater Sample Hydrocarbon Analytical Results
[illegible]
[illegible] Avenue, Oakland, California

Sample ID	Date	Modified EPA Method 8015 (μg/L)	EPA Method 8020 or 8021B (μg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-2	8/6/93	**2,700**	1.3	**1.7**	**2.0**	**8.1**	NA
	1/12/96	**2,700**	600	310	**94**	**220**	NA
	4/16/96	**190**	[illegible]	**11**	**10**	**14**	NA
	7/15/96	**700**	160	**33**	**34**	**48**	NA
	10/16/96	**190**	46	**8.2**	**10**	**13**	NA
	12/15/98	**200**	62	**17**	**4.9**	**14**	**4.4** [b]
	1/18/01	**300** [a]	[illegible]	**26**	**7.3**	**21**	**7.3**
	4/25/01	<50 [c]	1.5	**2.2**	**0.57**	**1.9**	<5.0
	3/17/03*	**78** [a]	[illegible]	**3.3**	**1.5**	**3.5**	NA [d]
	6/23/03	**160** [a]	[illegible]	**1.6**	**1.2**	**1.8**	NA
	9/18/03	<50	[illegible]	<0.5	<0.5	<0.5	NA
	12/15/03	<50	[illegible]	<0.5	<0.5	<0.5	NA
	6/15/04	**95** [a]	[illegible]	**1.3**	**1.8**	**1.2**	<30
	12/15/04	<50	11	**0.97**	**0.57**	**0.91**	**7.8**
	6/29/05	**130**	25	**2.0**	**3.3**	**3.4**	**6.7**

Table II - Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 203004, Pepsi Beverage
[illegible] Avenue, Oakland, California

Sample ID	Date	Modified EPA Method 8015 (µg/L)	EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-3	8/6/93	**5,200**	**2.1**	**2.9**	**3.6**	**17**	NA
	1/12/96	**4,500**	**280**	**180**	**120**	**470**	NA
	4/16/96	**5,400**	**370**	**340**	**160**	**580**	NA
	7/15/96	**1,800**	**200**	**220**	**66**	**250**	NA
	10/16/96	**2,000**	**340**	**140**	**100**	**300**	NA
	12/15/98	**1,400**	**200**	**39**	**72**	**150**	<22
	1/18/01	**1,800** [a]	**240**	**41**	**86**	**120**	<10
	4/25/01	**8,300** [a, c]	**300**	**330**	**200**	**1,100**	<20
	3/17/03*	**2,100** [a]	**240**	**78**	**10**	**280**	NA [d]
	6/23/03	<50	**2.5**	**0.60**	**0.69**	**1.4**	NA
	9/18/03	<50	<0.5	<0.5	<0.5	<0.5	NA
	12/15/03	**2,400**	**300**	**120**	**140**	**260**	NA
	6/15/04	<50	**1.1**	<0.5	<0.5	<0.5	6.2
	12/15/04	**1,600** [a]	**140**	**83**	**83**	**230**	<15
	6/29/05	**230** [a]	**27**	**6.1**	**7.2**	**15**	<15
MCL		N/A	1.0	150	700	1,750	13
RWQCB RBSL Commercial / Industrial Land Use; Groundwater Not a Potential Source of Drinking Water		500	46	130	290	13	1,800

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results; continued

Notes: μg/L = Micrograms per liter
mg/L = Milligrams per liter
TPH = Total Petroleum Hydrocarbons
MTBE = Methyl *tert*-butyl ether
DO = Dissolved oxygen
<x = Less than the analytical detection limit (x)
EPA = Environmental Protection Agency
N/A = Not applicable
NA = Not analyzed
MCL = Maximum Contaminant Level
>Sol. = Greater than the solubility of pure product in water
RWQCB = Regional Water Quality Control Board
RBSL = Risk Based Screening Level
[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.
* = Initial data set collected under direction of Blymyer Engineers, Inc.

Bold results indicate detectable analyte concentrations.
Shaded results indicate analyte concentrations above the MCL.

Table 3. Summary of Groundwater Sample Fuel Oxygenate Analytical Results
[illegible]
[illegible] California

Sample ID	Date	EPA Method 8260B				
		DIPE (μg/L)	ETBE (μg/L)	MTBE (μg/L)	TAME (μg/L)	TBA (μg/L)
MW-1	3/17/03	<0.50	<0.50	**10**	**8.3**	<5.0
	6/23/03	<2.5	<2.5	**8.0**	**6.4**	<25
	9/18/03	<2.5	<2.5	**8.5**	**5.3**	<25
	12/15/03[1]	<0.5	<0.5	**12**	**9.0**	<5.0
MW-2	3/17/03	<0.50	<0.50	**13**	**2.1**	**6.0**
	6/23/03	<0.50	<0.50	**11**	**4.5**	<5.0
	9/18/03	<2.5	<2.5	**5.0**	**0.74**	<25
	12/15/03[1]	<0.5	<0.5	**13**	**3.2**	**5.2**
MW-3	3/17/03	<0.50	<0.50	**10**	**4.3**	**8.6**
	6/23/03	<0.50	<0.50	**5.6**	**2.6**	<5.0
	9/18/03	<2.5	<2.5	**10**	**3.6**	<25
	12/15/03[1]	<0.5	<0.5	**13**	**2.7**	<5.0

Notes: DIPE = Di-isopropyl ether
ETBE = Ethyl *tert*-Butyl ether
MTBE = Methyl *tert*-butyl ether
TAME = *tert*-Amyl methyl ether
TBA = *tert*-Butyl alcohol
μg/L = Micrograms per liter
[1] = 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.

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

Sample 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+}) mg/L	Field Temperature ° F / ° C	Field pH pH units
MW-1	3/17/03	NA	NA	NA	60.4 / 60.0 *	7.1 / 7.3
	6/23/03	0.4	NA	NA	61.0 / 61.0 *	6.9 / 6.9
	9/18/03	0.4	NA	NA	65.1 / 62.9 *	7.1 / 6.9
	12/15/03	1.1	NA	NA	13.1 / 13.4	6.8 / 6.7
	6/15/04	0.05	NA	NA	64.5 / 63.4 *	6.9 / 7.0
	12/15/04	NA	NA	NA	15.4 / 17.5	7.0 / 6.9
	6/29/05	0.24 / 0.17	-150.7 / -157.2	4.5	19.78 / 21.63	7.15 / 7.08
MW-2	3/17/03	NA	NA	NA	66.0 / 64.2 *	7.4 / 7.9
	6/23/03	0.6	NA	NA	62.1 / 61.8 *	6.8 / 7.1
	9/18/03	1.3	NA	NA	66.7 / 63.7 *	6.7 / 6.9
	12/15/03	1.6	NA	NA	13.2 / 13.4	6.6 / 6.6
	6/15/04	0.05	NA	NA	64.5 / 65.0 *	6.3 / 7.1
	12/15/04	NA	NA	NA	16.9 / 17.0	7.1 / 7.1
	6/29/05	0.19 / 0.24	-86.0 / -119.1	0.7	18.58 / 21.18	7.12 / 7.13
MW-3	3/17/03	NA	NA	NA	63.3 / 60.9 *	7.4 / 7.6
	6/23/03	0.7	NA	NA	66.4 / 66.9 *	7.3 / 7.2
	9/18/03	0.4	NA	NA	63.7 / 62.6 *	7.1 / 7.1
	12/15/03	1.6	NA	NA	14.7 / 15.1	6.5 / 6.4
	6/15/04	0.04	NA	NA	63.1 / 62.3 *	7.5 / 7.1
	12/15/04	NA	NA	NA	15.4 / 16.7	7.2 / 7.0
	6/29/05	0.72 / 0.78	141.7 / -67.6	0.9	17.65 / 18.79	6.94 / 7.02

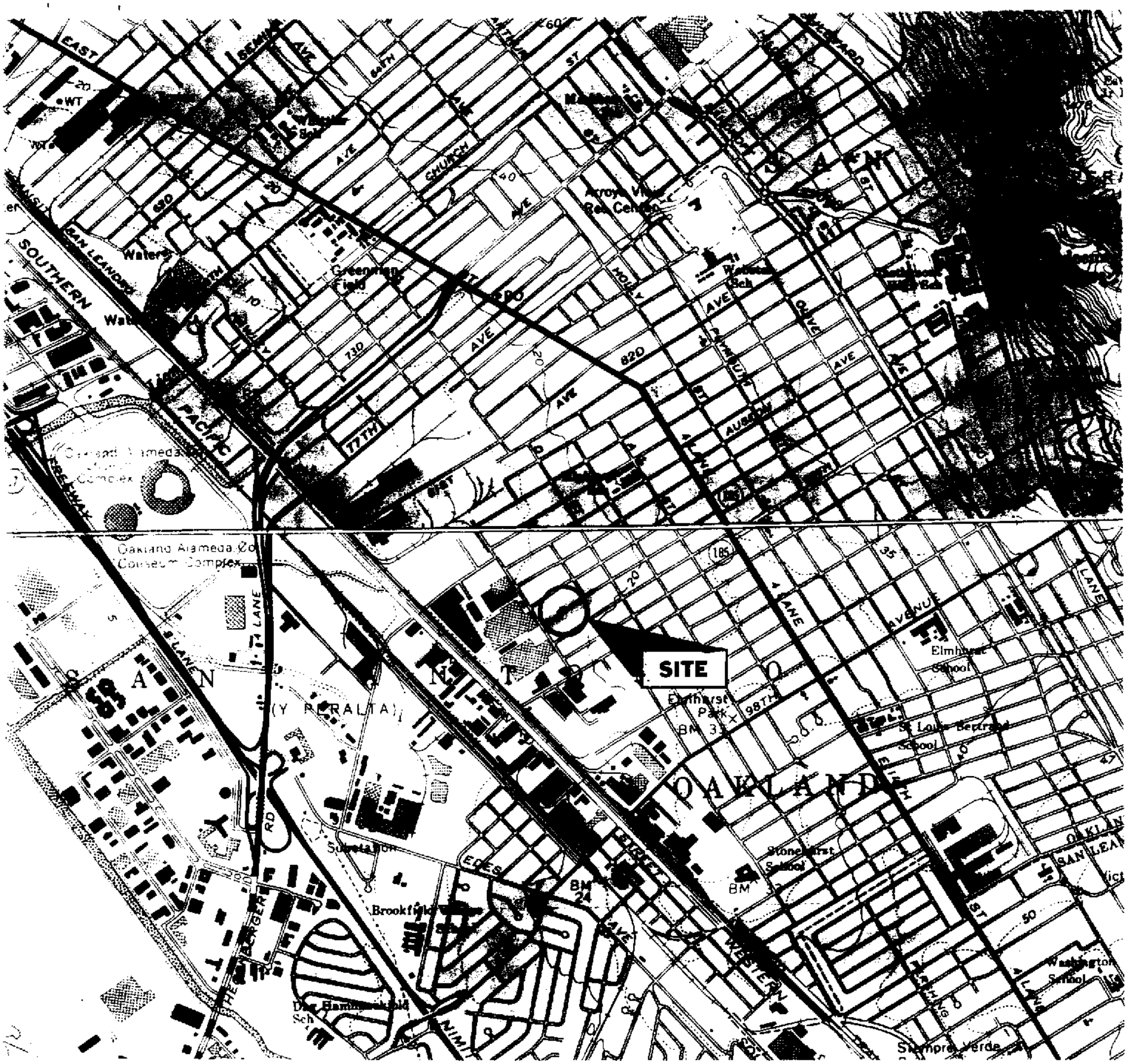
Notes:
mV = Millivolt
mg/L = milligrams per liter
° F / ° C = degrees Fahrenheit / degrees Centigrade
* = degrees Fahrenheit
NA = Not analyzed
2.6 / 2.2 = Initial reading (pre-purge) / Final reading (post-purge)

Table V. Summary of Groundwater Intrinsic Bioremediation Analytical Results
BBI Job No. 203006, Fiesta Beverage
966 89th Avenue, Oakland, California

ID	Date	SM 5310B	Method E300.1		Method RSK 174
		CO_2	Nitrate (as N)	Sulfate	Methane
		mg/L			µg/L
MW-1	6/29/05	490	<0.1	5.4	5,900
MW-2	6/29/05	250	4.1	42	68
MW-3	6/29/05	230	3.5	33	370

Notes:
SM = Standard Method
mg/L = Milligrams per liter
µg/L = Micrograms per liter
CO_2 = Carbon dioxide

Figures



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


QUADRANGLE LOCATION

BLYMYER
ENGINEERS, INC.

BEI JOB NO. 203004

DATE 3-19-03

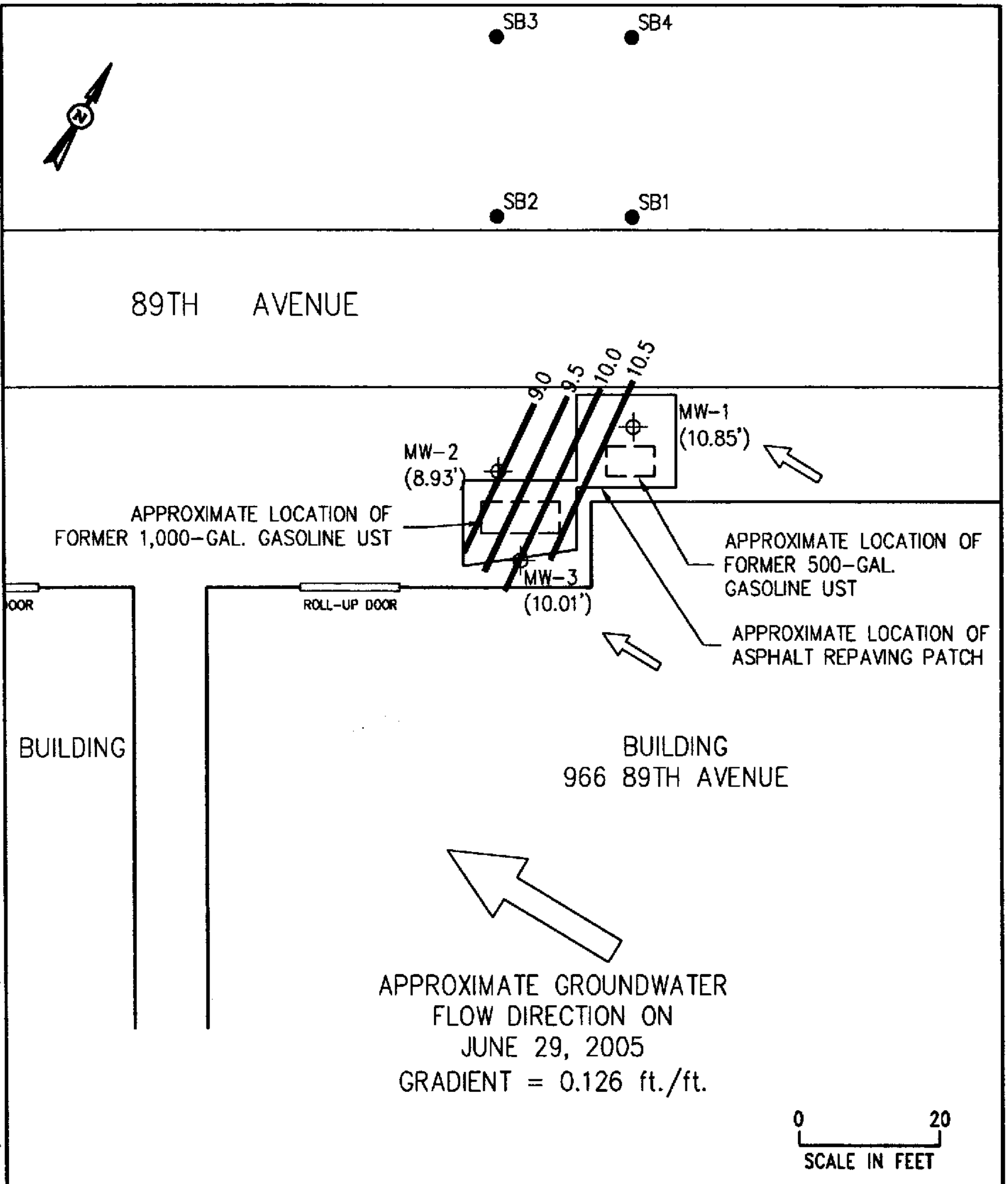
0 1000 2000
SCALE IN FEET

N

SITE LOCATION MAP

FORMER FIESTA BEVERAGE
966 89TH AVE.
OAKLAND, CA

FIGURE
1



REFERENCE: "ALLCAL ENVIRONMENTAL GROUNDWATER GRADIENT MAP 08-23-01"

BLYMYER
ENGINEERS, INC.

BEI JOB NO.	DATE
203004	7-27-05

LEGEND

UST UNDERGROUND STORAGE TANK

⌖ GROUNDWATER MONITORING WELL

⇦ GROUNDWATER FLOW DIRECTION

SITE PLAN & GROUNDWATER GRADIENT MAP

JUNE 29, 2005
FORMER FIESTA BEVERAGE
966 89TH AVE.
OAKLAND, CA

FIGURE
2

L:\Acad\2003dwg\203004\203004fig2g.dwg July 27, 2005 - 10:46AM lwittstock

Appendix A

Standard Operating Procedures

Blaine Tech Services, Inc.

Blaine Tech Services, Inc.
Standard Operating Procedure

FLOW CELL PURGING AND SAMPLING

Flow Cell purging provides the user with a constant stream of real time, highly accurate water quality information during the purge process. Typically, this equipment is utilized as part of the Low-Flow sampling process, where parameter stabilization is the most important prerequisite prior to sample collection and/or when very accurate Dissolved Oxygen measurements are required.

The Flow Cell system consists a flow cell, a sonde, a display unit and various hose lines. Flow cell system brands commonly used by BLAINE include YSI, HORIBA and QED. A separate pump must be used to supply the flow of water to the Flow Cell. The pump must be capable of purging water at rates that are variable and low. The most common purge pump used is the Grunfos Redi-Flo II variable speed electric submersible pump. Both peristaltic and pneumatic bladder pumps are common alternatives.

As the Low-Flow methodology stipulates sampling through the purge tube (as opposed to a bailer) to minimize disturbance to the water column, dedicated, small-diameter tubing is typically used.

Flow cell purging and sampling using dedicated, in-place, pump

1. Plug the display unit into the sonde.
2. Calibrate the sonde for all parameters using the supplied calibration fluids, following the manufacturer's instruction manual.
3. Connect the flow cell to the sonde.
4. Without disturbing the water column in the well, connect the water line from the in-place pump to the lower end of the flow cell.
5. Connect a water discharge line to the upper end of the flow cell.
6. Without disturbing the water column, connect the power source (electricity, compressed air, etc.) to the in-place pump.
7. Lower an electronic water level indicator (sounder) slowly into the well until it hits the water surface.
8. While monitoring the sounder, commence pumping at a rate that does not induce draw-down in the well.
9. Collect parameter measurements from the display unit as per job specifications (ie. every 1 minute, every 3 minutes, etc.).
10. Monitor flow cell to make sure it remains free of air bubbles.
11. Once parameters have stabilized, adjust the pump rate to the lowest technically feasible setting.
12. Disconnect the water line from the lower end of the flow cell.
13. Fill the appropriate sample containers.
14. Remove power supply and sounder from well.

Appendix B

Well Monitoring Data Sheets and *Well Gauging Data,*

Dated June 29, 2005

Blaine Tech Services, Inc.

WELLHEAD INSPECTION CHECKLIST

Page 1 of 1

Date 6/29/05 Client Blymer Eng.

Site Address Former Fiesta Beverage, Oakland

Job Number 050629-DC1 Technician D.Cornish

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-1	✓	✓	✓					
MW-2							✓	
MW-3	✓		✓					

NOTES: MW-2 - 2/2 tabs broken ; 2/2 bolts missing ; wellhead belowgrade ; wellbox full of mud.

M~~W-1 1/2 tabs stripped~~ R

WELL GAUGING DATA

Project # 050629·PC1 Date 6/29/05 Client Blymer Eng.

Site 966 89th Ave, Oakland

Well ID	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]	
MW-1	2					7.68	14.44	TOC	
MW-2	2					9.51	24.00	↓	
MW-3	2					9.08	24.95	↓	

LOW FLOW WELL MONITORING DATA SHEET

Project #: 050629-PC1	Client: Blymer
Sampler: PC	Start Date: 6/29/05
Well I.D.: MW-1	Well Diameter: [✓ 2] 3 4 6 8 ____
Total Well Depth: 14.44	Depth to Water Pre: 7.88 Post:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: [✓ PVC] Grade	Flow Cell Type: YSI 556

Purge Method: [✓ 2" Grundfos Pump] Peristaltic Pump Bladder Pump

Sampling Method: Dedicated Tubing [✓ New Tubing] Other ____

Flow Rate: 900 ml/min

Pump Depth: 13'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	(ft) DTW: Observations
1040	19.78	7.15	887	>1000	0.24	-150.7	900	8.47
1043	20.27	7.09	897	940	0.32	-165.8	1800	8.48
1046	20.60	7.10	906	138	0.27	-172.4	2700	8.48
1049	21.05	7.10	911	52	0.19	-165.6	3600	8.48
1052	21.54	7.08	913	42	0.18	-155.5	4500	8.48
1055	21.63	7.08	916	40	0.17	-157.7	5400	8.48

PostPurge Fe^{2+} → 4.5 mg/L

Did well dewater? Yes [✓ No]	Amount actually evacuated: 5.4L
Sampling Time: 1102	Sampling Date: 6/29/05
Sample I.D.: MW-1	Laboratory: McCampbell
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 050629-PC1	Client: Blymer
Sampler: PC	Start Date: 6/29/05
Well I.D.: MW-2	Well Diameter: [✓ 2] 3 4 6 8 ___
Total Well Depth: 24.00	Depth to Water Pre: 9.81 Post:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: [✓ PVC] Grade	Flow Cell Type: YSI 556

Purge Method: [✓ 2" Grundfos Pump] Peristaltic Pump Bladder Pump

Sampling Method: Dedicated Tubing [✓ New Tubing] Other ______

Flow Rate: 300 ml/min

Pump Depth: 22'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	(ft.) DTW: Observations
952	18.58	7.12	679	>1000	0.19	-86.0	900	9.18
955	18.83	7.12	678	938	0.19	-106.2	1800	9.18
958	19.67	7.08	677	486	0.28	-119.6	2700	9.20
1001	20.31	7.08	678	276	0.33	-118.5	3600	921
1004	20.64	7.10	682	149	0.32	-114.8	4500	9.28
1007	20.97	7.11	681	99	0.29	-119.1	5400	9.28
1010	20.86	7.12	681	75	0.26	-124.1	6300	9.27
1013	21.18	7.13	679	68	0.24	-119.1	7200	9.27
			PostPurge	Fe^{2+} → 0.7	mg/L			

Did well dewater? Yes [✓ No]

Amount actually evacuated: 7.3 L

Sampling Time: 1018

Sampling Date: 6/29/05

Sample I.D.: MW-2

Laboratory: McCampbell

Analyzed for: TPH-G BTEX MTBE TPH-D Other: see COC

Equipment Blank I.D.: @ Time

Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 050	Client: Blymer
Sampler: PC	Start Date: 6/29/05
Well I.D.: MW-3	Well Diameter: [✓ 2] 3 4 6 8 ___
Total Well Depth: 24.95	Depth to Water Pre: 9.00 Post:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: [✓ PVC] Grade	Flow Cell Type: YSI 556

Purge Method: [✓ 2" Grundfos Pump] Peristaltic Pump Bladder Pump
Sampling Method: Dedicated Tubing [✓ New Tubing] Other ______
Flow Rate: 350 ml/min Pump Depth: 22'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	(ft.) DTW. Observations
850	17.65	6.94	610	>1000	0.72	141.7	1050	8.99
853	17.63	6.83	605	>1000	0.73	47.6	2100 ~~1800~~ R	8.99
856	17.69	6.82	604	>1000	0.73	21.6	3250 ~~2550~~ R	8.99
859	18.10	6.87	604	>1000	0.74	-10.6	4300 ~~3700~~ R	8.99
902	18.39	6.89	604	122	0.74	-19.1	5450 ~~4050~~ R	8.99
905	18.60	6.92	604	[illegible]	0.76	-32.8	6500 ~~[illegible]~~ R	9.00
908	18.67	6.95	604	32	0.87	-49.9	7650	9.00
911	18.77	6.97	604	26	0.86	-61.6	8700	9.00
914	18.81	6.99	605	16	0.84	-71.7	9750	9.00
917	18.79	7.02	[illegible]	16	0.78	-67.6	1080	9.00

Post Purge Fe²⁺ = 0.9 mg/L

Did well dewater? Yes [✓ No]	Amount actually evacuated: 10.8L
Sampling Time: 922	Sampling Date: 6/29/05
Sample I.D.: MW-3	Laboratory: McCampbell
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see COC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

BLAINE
TECH SERVICES, INC.

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

CHAIN OF CUSTODY BTS # 050629-PC1

CLIENT Blymyer Engineers, Inc.

SITE Former Fiesta Beverage
966 89th Avenue
Oakland, CA

LAB McCampbell
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.

CONDUCT ANALYSIS TO DETECT

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TPH-G (8015)	BTEX & MTBE (8021B)		Nitrate, Sulfate (300.1)	Methane (RSK 174)	Carbon Dioxide (SM 5310B)		ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-1	6/29/05	1102	W	8		✓	✓		✓	✓	✓					
MW-2	↓	1018	↓	8		✓	✓		✓	✓	✓					
MW-3	↓	922		8		✓	✓		✓	✓	✓					

SAMPLING COMPLETED DATE 6/29/05 TIME 1110
SAMPLING PERFORMED BY P. Cornish
RESULTS NEEDED NO LATER THAN As contracted

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	6/29/05	1524	SAMPLE CUSTODIAN	6/29/05	1524
SAMPLE CUSTODIAN	6/29/05	1628		6/29/05	428

SHIPPED VIA
DATE SENT
TIME SENT
COOLER #

Appendix C

Analytical Laboratory Report

Dated July 7, 2005

McCampbell Analytical, Inc.

McCampbell Analytical, Inc.

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

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Former Fiesta Beverage	Date Sampled:	06/29/05
		Date Received:	06/29/05
	Client Contact: Mark Detterman	Date Reported:	07/07/05
	Client P.O.:	Date Completed:	07/07/05

WorkOrder: 0506549

July 07, 2005

Dear Mark:

Enclosed are:

1). the results of 3 analyzed samples from your **Former Fiesta Beverage project,**

2). a QC report for the above samples

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

4). a bill for analytical services.

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

Yours truly,

Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Former Fiesta Beverage	Date Sampled: 06/29/05
		Date Received: 06/29/05
	Client Contact: Mark Detterman	Date Extracted: 07/01/05-07/02/05
	Client P.O.:	Date Analyzed: 07/01/05-07/02/05

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0506549

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	5500,a	ND<100	750	27	94	140	10	119
002A	MW-2	W	130,a	6.7	29	2.0	3.3	3.4	1	95
003A	MW-3	W	230,a	ND<15	27	6.1	7.2	15	1	113

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Former Fiesta Beverage	Date Sampled: 06/29/05
		Date Received: 06/29/05
	Client Contact: Mark Detterman	Date Extracted: 06/29/05
	Client P.O.:	Date Analyzed: 06/29/05-06/30/05

Inorganic Anions by IC*

Extraction method: E300.1

Analytical methods: E300.1

Work Order: 0506549

Lab ID	Client ID	Matrix	Nitrate as N	Sulfate	DF	% SS
0506549-001B	MW-1	W	ND	5.4	1	101
0506549-002B	MW-2	W	4.1	42	1	102
0506549-003B	MW-3	W	3.5	33	1	101

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.1	0.1	mg/L
	S	NA	NA	mg/Kg

* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg, wipe samples in mg/wipe, product/oil/non-aqueous liquid samples in mg/L.

surrogate diluted out of range or surrogate coelutes with another peak; N/A means surrogate not applicable to this analysis.

h) a lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted/raised due to high inorganic content/matrix interference; k) sample arrived with head space.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Former Fiesta Beverage	Date Sampled: 06/29/05 Date Received: 06/29/05
	Client Contact: Mark Detterman	Date Extracted: 07/01/05
	Client P.O.:	Date Analyzed: 07/01/05

Methane*

Analytical Method: RSK174

Work Order: 0506549

Lab ID	Client ID	Matrix	Methane	DF
0506549-001C	MW-1	W	5900	5000
0506549-002C	MW-2	W	68	50
0506549-003C	MW-3	W	370	200

Reporting Limit for DF = 1: ND means not detected at or above the reporting limit	W	0.5 µg/L
	S	NA

* water samples are reported in µg/L.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Former Fiesta Beverage	Date Sampled: 06/29/05
		Date Received: 06/29/05
	Client Contact: Mark Detterman	Date Extracted: 06/29/05
	Client P.O.:	Date Analyzed: 07/01/05

Inorganic Carbon as Carbon Dioxide (CO2)*

Analytical Method: SM5310 B

Work Order: 0506549

Lab ID	Client ID	Matrix	IC as CO2	DF
0506549-001D	MW-1	W	490	5
0506549-002D	MW-2	W	250	5
0506549-003D	MW-3	W	230	5

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	2.6 mg/L
	S	NA

* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg.

* Non-Purgeable Organic Carbon=NPOC; TOC=Total Organic Carbon; DOC=Dissolved Organic Carbon; POC=Purgeable Organic Cabon; IC=Inorganic Carbon.

i) liquid sample contains greater than ~1 vol. % sediment.

DHS Certification No. 1644

AR Angela Rydelius, Lab Manager

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0506549

EPA Method: SW8021B/8015Cm **Extraction: SW5030B** **BatchID: 16913** **Spiked Sample ID: 0506550-010A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	103	95.9	6.67	103	100	2.56	70 - 130	70 - 130
MTBE	ND	10	93	98	5.23	96.2	89.4	7.41	70 - 130	70 - 130
Benzene	ND	10	92.6	95	2.50	89.6	93.3	4.02	70 - 130	70 - 130
Toluene	ND	10	93.4	92.7	0.813	91	94.7	3.92	70 - 130	70 - 130
Ethylbenzene	ND	10	94.3	96.2	2.04	96.8	103	5.91	70 - 130	70 - 130
Xylenes	ND	30	85.7	86	0.388	92.3	96.7	4.59	70 - 130	70 - 130
%SS:	112	10	104	104	0	110	109	1.39	70 - 130	70 - 130

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

NONE

BATCH 16913 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0506549-001A	6/29/05 11:02 AM	7/01/05	7/01/05 10:58 PM	0506549-002A	6/29/05 10:18 AM	7/02/05	7/02/05 10:20 AM
0506549-003A	6/29/05 9:22 AM	7/02/05	7/02/05 7:02 PM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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

DHS Certification No. 1644

QA/QC Officer

QC SUMMARY REPORT FOR RSK174

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0506549

EPA Method: RSK174 **Extraction: RSK174** **BatchID: 16918** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Methane	N/A	1.5	N/A	N/A	N/A	117	119	2.25	N/A	80 - 120

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

NONE

BATCH 16918 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0506549-001C	6/29/05 11:02 AM	7/01/05	7/01/05 5:13 PM	0506549-002C	6/29/05 10:18 AM	7/01/05	7/01/05 4:14 PM
0506549-003C	6/29/05 9:22 AM	7/01/05	7/01/05 4:44 PM				

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

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

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

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

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

DHS Certification No. 1644

M QA/QC Officer

QC SUMMARY REPORT FOR E300.1

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0506549

EPA Method: E300.1 **Extraction: E300.1** **BatchID: 16917** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Nitrate as N	N/A	1	N/A	N/A	N/A	95.4	94.8	0.615	N/A	85 - 115
Sulfate	N/A	1	N/A	N/A	N/A	113	106	5.76	N/A	85 - 115
%SS:	N/A	0.10	N/A	N/A	N/A	104	102	1.67	N/A	90 - 115

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

NONE

BATCH 16917 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0506549-001b	6/29/05 11:02 AM	6/29/05	6/29/05 11:01 AM	0506549-002b	6/29/05 10:18 AM	6/29/05	6/29/05 11:30 AM
0506549-002b	6/29/05 10:18 AM	6/29/05	6/30/05 8:31 PM	0506549-003b	6/29/05 9:22 AM	6/29/05	6/29/05 11:58 PM

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

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

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

N/A = not applicable to this method.

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

DHS Certification No. 1644

QA/QC Officer

QC SUMMARY REPORT FOR SM5310B

W.O. Sample Matrix: Water   QC Matrix: Water   WorkOrder: 0506549

EPA Method: SM5310 B   **Extraction: SM5310B**   **BatchID: 16919**   **Spiked Sample ID: 0506549-003D**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
IC as CO2	230	36.7	NR	NR	NR	103	104	1.35	80 - 120	80 - 120

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

NONE

BATCH 16919 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0506549-001D	6/29/05 11:02 AM	6/29/05	7/01/05 3:37 PM	0506549-002D	6/29/05 10:18 AM	6/29/05	7/01/05 3:44 PM
0506549-003D	6/29/05 9:22 AM	6/29/05	7/01/05 3:51 PM				

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

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

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

N/A = not applicable to this method.

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

DHS Certification No. 1644   QA/QC Officer

Beiq 0506549

BLAINE
TECH SERVICES, INC.

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

CHAIN OF CUSTODY
BTS # 050629-PC1

CLIENT: Blymyer Engineers, Inc.

SITE: Former Fiesta Beverage
966 89th Avenue
Oakland, CA

LAB: McCampbell
DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ RWQCB REGION ______
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

Invoice and Report to : Blymyer Engineers, Inc.

Attn: Mark Detterman

EDF Format Required.

CONDUCT ANALYSIS TO DETECT

	SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H₂O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	TPH-G (8015)	BTEX & MTBE (8021B)		Nitrate, Sulfate (300.1)	Methane (RSK 174)	Carbon Dioxide (SM 5310B)			ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
+	MW-1	6/29/05	1102	W	8			^	^		^	^	^						
+	MW-2	↓	1016	↓	8			^	^		^	^	^						
+	MW-3	↓	922		8			^	^		^	^	^						

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

SAMPLING COMPLETED: DATE 6/29/05 TIME 1110
SAMPLING PERFORMED BY: P. Cornish

RESULTS NEEDED NO LATER THAN: As contracted

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
P.	6/29/05	1524	SAMPLE CUSTODIAN	6/29/05	1524
SAMPLE CUSTODIAN	6/29/05	1628		6/29/05	428
	6/29/05	610			

SHIPPED VIA | DATE SENT | TIME SENT | COOLER #

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0506549 **ClientID: BEIA**

Report to:
Mark Detterman
Blymyer Engineers, Inc.
1829 Clement Avenue
Alameda, CA 94501-1395

TEL: (510) 521-3773
FAX: (510) 865-2594
ProjectNo: Former Fiesta Beverage
PO:

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

Requested TAT: 5 days

Date Received: 06/29/2005
Date Printed: 06/29/2005

Requested Tests (See legend below)

Sample ID	**ClientSampID**	**Matrix**	**Collection Date**	**Hold**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0506549-001	MW-1	Water	6/29/05 11:02:00	☐	B	A	D	A	C										
0506549-002	MW-2	Water	6/29/05 10:18:00	☐	B	A	D		C										
0506549-003	MW-3	Water	6/29/05 9:22:00 AM	☐	B	A	D		C										

Test Legend:

1	300_1_W	2	G-MBTEX_W	3	IC_W	4	PREDF REPORT	5	RSK174_W
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

Comments:

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