Estate of Michael Dolan
Mr. Michael Fitzpatrick, Trustee
3215 Deer Park Dr.
Walnut Creek, CA 94598

RECEIVED
By lopprojectop at 11:03 am, May 03, 2006

5/1, 2006

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

Re: Perjury Statement
Dolan Property, 6393 Scarlett Court, Dublin, California; RO-210

Dear Mr Chan,

"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."

Michael Fitzpatrick
Michael Fitzpatrick, Trustee

c. Peter MacDonald, Esquire
Wanden Treanor, Esquire

BLYMYER
ENGINEERS, INC.

RECEIVED
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April 4, 2006
BEI Job No. 202016

Mr. Michael Fitzpatrick, Trustee
Estate of Michael Dolan
P.O. Box 31654
Walnut Creek, CA 94598

Subject: **First Quarter 2006 Groundwater Monitoring Event**
Dolan Trust Property
6393 Scarlett Court
Dublin, California
ACHCSA Fuel Leak Case No. RO0000210

Dear Mr. Fitzpatrick:

This letter documents the First Quarter 2006 groundwater monitoring event at the subject site (Figure 1). This is the eighth groundwater monitoring event conducted by Blymyer Engineers, Inc. and the first post-remediation groundwater monitoring event at the Dolan Property in Dublin, California.

1.0 Background

A 600-gallon underground storage tank (UST) was removed in February 1990 from the subject site (Figure 2). Although the UST had reportedly stored diesel more recently, soil and groundwater samples collected for laboratory analysis indicated that the contaminant of concern at the site was gasoline. Files maintained by the Alameda County Department of Environmental (ACDEH) do not contain waste manifests for the disposal of soil, although a *Uniform Hazardous Waste Manifest* is present documenting the disposal of a 600-gallon UST. This suggests that contaminated soil may not have been removed from the site. In October 1990, five soil bores were installed at the site, and soil and grab groundwater samples were collected. Additional delineation work was conducted in November 1991, when groundwater monitoring wells MW-1 through MW-4 were installed to a depth of 20 feet below grade surface (bgs). Soil and groundwater samples were collected. In November 1992, 14 additional soil bores were installed, and soil and grab groundwater samples were collected from selected bore locations. Although there were several data gaps in the perimeter zone of soil and groundwater delineation, the soil and groundwater plumes were largely defined as a result of this investigation. The groundwater plume did not appear to extend offsite; however, a thin free-phase layer was present immediately adjacent to the former UST basin, and at a location approximately 40 feet to the east. Additional wells were proposed to fill the existing data gaps and to monitor the lateral extent of impacted groundwater and free-phase. As a consequence, in March 1995, wells MW-5 and MW-6 were installed to a depth of 10 feet bgs. Intermittent groundwater sample collection or groundwater monitoring has occurred at the facility since 1991. In an August 1998 letter, the ACDEH suggested that a health risk analysis or the installation of an oxygen releasing compound (ORC) might be appropriate for the site. Also in the August 1998 letter, the ACDEH stated that groundwater sampling of wells MW-1, MW-3, MW-5, and MW-6 could be discontinued, stated that the sampling interval could be decreased to a semiannual basis, and requested resumption of groundwater monitoring.

In May 2002, Blymyer Engineers was retained by Mr. Michael Fitzpatrick, on behalf of Mr. Michael Dolan, to conduct semiannual groundwater sampling of wells MW-2 and MW-4, and to conduct a file review to help determine the next appropriate step at the site.

In May 2002, Blymyer Engineers located and rehabilitated the wells at the site. Well MW-5 required the most extensive rehabilitation work, and required resurveying due to a change in well casing elevation. In June 2002, wells MW-2 and MW-4 were sampled, while depth to groundwater was measured all of the wells. Except for a slight increase in benzene in groundwater from well MW-4, the concentration of all analytes in the two wells decreased from the August 1997 sampling event. Based upon a review of the results, the ACDEH recommended that well MW-5 be incorporated into the sampling program and that quarterly groundwater monitoring resume in order that contaminant concentrations and contaminant trends could be quickly generated for the recommended health risk assessment.

Two additional quarters were completed prior to the death of Mr. Dolan. Groundwater monitoring was on hold after January 2003 due to the Estate becoming established. During the groundwater monitoring event in December 2002, analysis for the fuel oxygenates was conducted by EPA Method 8260B. All fuel oxygenates were found to be non-detectable at good limits of detection. Consequently, all sporadic occurrences of methyl tert-butyl ether (MTBE) previously detected at the site have been attributed to 3-methyl-pentane, another gasoline related compound. This suggests that the release predates the use of MTBE and other fuel oxygenates as gasoline additives. All previously available data from the site has been tabulated on Tables I through III.

On June 13, 2003, a workplan was submitted to the ACDEH in order to allow further subsurface delineation of impacted soil at the site. In a telephone conversation on June 16, 2003, Mr. Scott Seery mentioned that it was unlikely that he would be able to respond in a timely manner due to the work load at the ACDEH, and noted that if a response was not issued 60 days after receipt, regulations stated that the workplan should be considered approved. Consequently, field work commenced on September 13, 2003. Nine Geoprobe[7] soil bores were installed at the site to augment existing soil data. The data indicated that the lateral and vertical extent of impacted soil at the site had been adequately delineated to relatively low concentrations, and the limits further refined for the purposes of determining appropriate remedial actions (*Geoprobe*[7] *Subsurface Investigation*, dated October 10, 2003).

Based on these data, and a lack of further comments by the ACDEH, a *Remedial Action Plan* (RAP), dated April 6, 2004, was issued. The plan detailed overexcavation and construction dewatering, as the principal method of remedial action. Introduction of ORC into the resulting excavation as an additional measure of insurance, should residual contamination be intentionally or unintentionally left in place, was also proposed. Use of ORC was proposed based on general knowledge that biodegradation of petroleum hydrocarbons is generally an oxygen limited process. A Request for Proposal (RFP) was generated in early May 2004 for contractor bidding purposes; however, it was not released due to a change in the timeline for sale closure. On September 2, 2004, Blymyer Engineers contacted Mr. Seery in order to determine the status of the RAP review. At that time, Mr. Seery notified Blymyer Engineers that Mr. Robert Schultz was the new case manager for the site. Mr. Schultz required time to review and become familiar with the file. On November 15, 2004, the ACDEH issued a 5-page response letter (*Fuel Leak Case No. RO0000210*) requesting extensive further work and containing several deadlines. A December 31, 2004 deadline was established for a workplan for additional site characterization. The *Workplan for Additional Investigation and Letter Report*, dated December 23, 2004, was submitted to the ACDEH on January 3, 2005.

In a letter dated January 24, 2005, the ACDEH approved the workplan provided four conditions were met:

- A pilot hole was to be used to identify lithology prior to collection of a groundwater sample from a deeper water-bearing zone,
- Should additional groundwater wells be required, the ACDEH would be consulted regarding well construction details,
- Should additional soil or groundwater samples be required, the ACDEH would be kept informed of planned changes and consistent dynamic investigation procedures, and
- A 72-hour written advanced warning would be provided.

On February 18, 2005, Blymyer Engineers mobilized to the site to install two to three dual-tube direct-push soil bores in an attempt to collect the approved soil and groundwater samples. As a precursor to the mobilization, a conduit survey was conducted. However, due to poor soil recovery an additional mobilization to the site was required. After notifying, and obtaining approval from, the ACDEH 72 hours in advance, a Cone Penetrometer Test (CPT) direct-push rig was mobilized to the site on March 28, 2005. Prior to the March 28, 2005 mobilization, the ACDEH approved a reduction in the quarterly analytical program, based on historical analytical trends. Specifically, hydrocarbon analysis of groundwater samples from wells MW-1, MW-3, and MW-6 was eliminated.

On April 13, 2005, CCS Environmental resurveyed all wells at the site. As of April 30, 2005, all tenant operations at the site ceased. This includes the batch plant used by Dublin Concrete.

On May 10, 2005, Blymyer Engineers submitted the *Additional Site Investigation Data Transmittal* to the ACDEH providing a brief summary of the results of the CPT bore installations. Based on the detection of hydrocarbon compounds in groundwater between 30 and 40 feet bgs, the letter proposed the installation of groundwater well MW-7 across a deeper water-bearing zone in a downgradient position. Shortly thereafter, the ACDEH reported that Mr. Schultz had left the employ of the agency and that the case had not been assigned to a new case worker yet. The ACDEH was apprised that due to the sale of the parcel, work would proceed, pending agency review.

As a part of another related project, Blymyer Engineers oversaw the permitted destruction of two old water production wells between May 16 and May 24, 2005. According to Zone 7, both wells appear to have dated from the 1940s or 1950s. Well "3S/1E 6F 1", located on the subject parcel was constructed of 8-inch-diameter steel casing and was 95 feet in total depth. Well "3S/1E 6F 2" was located on the adjacent parcel, also owned by Dolan Properties, and was constructed of 13-inch-diameter riveted steel casing and was 38 feet in total depth. All Zone 7 permit conditions were observed; however, the upper 6 to 7.5 feet of each well casing was removed by excavation seven days after it had been filled to the surface with cement grout. An approximately 6- to 12-inch-thick concrete mushroom cap was placed over and around the remaining casing at depths of 6 and 7.5 feet bgs, respectively (where the casing broke during removal). The excavation was backfilled with native soil, and track rolled.

On July 5 and July 8, 2005, Blymyer Engineers oversaw the installation of downgradient groundwater monitoring well MW-7 (Figure 2). The well was installed into the second water-bearing zone beneath the site due to the detection of hydrocarbon contamination in groundwater in both CPT bores at depths of approximately 30 to 40 feet bgs. A conductor casing was installed to a depth of 30 feet in order to exclude upper water-bearing zones, and to prevent cross-contamination of deeper water-bearing zones. A 2-inch-diameter PVC casing was installed through the conductor casing and the well was screened between 30 and 40 feet bgs.

On October 7, 2005, Blymyer Engineers issued the *Remedial Investigation / Feasibility Study* report documenting all field work conducted since January 2005, and the results of a feasibility study. The report evaluated three remedial alternatives, including monitored natural attenuation, dual-phase extraction, and source soil excavation and dewatering. It was found that, under monitored natural attenuation, benzene would require approximately 33 years to reach the Maximum Contaminant Level (MCL) and that the remedial cost was the highest of the three options. Remedial costs were the second highest under the dual-phase extraction scenario, and would be more intrusive with respect to the future owner's land use. Remedial costs were lowest, and the site presence was least intrusive in the longer term under the remedial overexcavation and dewatering scenario. This scenario additionally proposed to introduce oxygen releasing compound (ORC) into the remedial excavation to stimulate biodegradation of the residual hydrocarbon contamination by indigenous microbes; previously shown to be oxygen-limited at the site. This scenario additionally proposed to treat soil and groundwater outside the plume core with ORC injected through Geoprobe bores on an approximately 10-foot spacing interval. Principally because remedial costs were lowest, remedial excavation was selected as the most appropriate remedial technology for the site. On October 26, 2005, Blymyer Engineers issued the *Corrective Action Plan For Source Soil Excavation and Dewatering*. On November 2, 2005, the ACDEH issued the letter *Fuel Leak Case No.*

RO0000210, which concurred with the recommended remedial plan, but contained six technical comments for clarification. On November 9, 2005, Blymyer Engineers issued the *Response to November 2, 2005 Letter*, that addressed the technical comments contained in the ACDEH letter. The letter indicated that soil reuse was not planned due to high perched groundwater as shallow as 3 feet bgs, provided documentation (Figure 2 of that letter) of the approximate planned bottom sample soil collection locations based on the iso-concentration figures, stated that ORC would be applied through out the excavation as requested, attached NPK bio-nutrient calculations for the site, stated that a second excavation backfill well would be installed as requested, and stated that a post-remediation quarterly groundwater sampling program was planned for a minimum period of one year.

Remedial excavation began on November 29, 2005, with the initial installation of a slide-rail shoring system in the area for excavation. Between December 1, and December 8, 2005, Marcor Remediation, Inc. (Marcor) excavated and stockpiled 2,370 cubic yards (3,054.65 tons) of impacted soil from an area approximately 50 by 50 feet, by 20 to 21 feet in depth. Concurrent excavation dewatering was attempted, but due to the load of suspended fine particles, could not keep up with groundwater infiltration. Extracted groundwater was plumbed through a bag filter to remove the sediment load, and then through two 2,000-pound granular activated carbon (GAC) vessels into a 20,000-gallon temporary aboveground storage tank. Prior to discharge to the sanitary sewer a groundwater sample was collected under observation of the Dublin-San Ramon Services District personnel. Four authoritative excavation bottom soil samples were collected from locations in close proximity to previously documented worst-case soil concentrations and each returned non-detectable concentrations for all analytes. The excavation was backfilled with imported crushed rock and locally derived recycled asphaltic baserock. ORC was applied in slurry form to the crushed rock as it was placed into the excavation. On December 21 and 22, 2005, twenty-six ORC injection bores were pushed to approximately 21 feet bgs, and an ORC slurry was injected into the bores in areas surrounding the backfilled excavation in order to address residual contamination outside the area of excavation. The soil stockpiles were sampled concurrently with remedial excavation, and the soil was loaded, transported, and disposed at Keller Canyon Landfill in Pittsburg, California, between December 29, 2005, and January 4, 2006.

On February 27, 2006, Blaine Tech Services, Inc. (Blaine) mobilized to the site to develop the two new wells located within the remedial excavation. Development details have been reported under separate cover.

2.0 Groundwater Sample Collection and Analytical Methods

Groundwater samples were collected from all monitoring wells on March 2, 2006. The groundwater samples were collected by Blaine in accordance with Blaine *Standard Operating Procedures* for groundwater gauging, purging, and sampling. A copy is included as Appendix A. Remediation by Natural Attenuation parameters were also collected this quarter. 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 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 from all wells were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline and as diesel by Modified EPA Method 8015; benzene, toluene, ethylbenzene, and total xylenes (BTEX) and MTBE by EPA Method 8021B; Carbon Dioxide by Standard Method 5310B; Sulfate by Standard Method E300.1; Nitrogen by E415.3; Phosphorous by E365.1; Methane by Method RSK 174; Biochemical Oxygen Demand (BOD) by SM 5210B; and Chemical Oxygen Demand (COD) by SM 5220D. Analysis for nitrate was inadvertently not requested. The sample with the highest detected concentration of MTBE by EPA Method 8021B was selected for reanalysis by EPA Method 8260B for all fuel oxygenates. This analytical method includes the fuel oxygenates *tert*-Butyl Alcohol [TBA], Di-isopropyl Ether [DIPE], Ethyl *tert*-Butyl Ether [ETBE], and Methyl *tert*-Amyl Ether [TAME], the lead scavengers 1,2-Dibromoethane (EDB) and 1,2-Dichloroethane (1,2-DCA), as well as ethanol and methanol. 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.

3.0 Petroleum Hydrocarbon Groundwater Sample Analytical Results

Hydrocarbon analysis of groundwater samples from all wells was conducted during the current sampling event. Except for 30 Fg/L of MTBE in well MW-5, perimeter wells MW-3, MW-5, and MW-6 contained no detectable hydrocarbons. Additionally, groundwater from upgradient well MW-1 contained only 62 Fg/L TPH as gasoline, noted by the laboratory as one or more isolated non-target peaks, which is marginally over the limit of detection of 50 Fg/L. Groundwater from deeper water-bearing zone well MW-7 also was nondetectable for all analytes. Groundwater concentrations in wells MW-1, MW-3, MW-5, and MW-6 are generally consistent with the majority of historic groundwater analytical results at these locations. The presence of MTBE in groundwater from well MW-5 was confirmed by analysis by EPA Method 8260, which returned a concentration of 28 Fg/L MTBE. No other fuel oxygenate, lead scavenger, ethanol or methanol was detected by this alternate method.

Previously only wells MW-2 and MW-4 have consistently yielded concentrations of petroleum hydrocarbons. Groundwater from well MW-2 consistently contained the highest concentrations at the site, followed by well MW-4. Well MW-2 was destroyed during the remedial excavation. During the current monitoring event wells MW-4, MW-8, and MW-9, of which the latter two are tank basin wells, yielded concentrations of petroleum hydrocarbons. Well MW-4 contained significant concentrations of TPH as gasoline, as diesel, and each of the BTEX compounds. As was anticipated, contaminant concentrations in groundwater downgradient of the excavation (i.e. in well MW-4) increased, likely due to the process of remedial excavation, wherein contaminants formerly sequestered in soil were mixed and released into groundwater in a one-time process. It is noted that tank basin wells MW-8 and MW-9 contained lower but elevated concentrations of all hydrocarbon compounds, except MTBE. At these three wells TPH as gasoline, TPH as diesel, and benzene exceeded the generic RWQCB ESL goals; however, the concentration of each analyte at each well was significantly less than previously detected in destroyed well MW-2. Additionally, because the wells were purged and sampled using the micropurge technique, these concentrations are considered worst-case concentrations. The micropurge technique is generally accepted as yielding higher analyte concentrations in comparison to standard purge techniques; however, it is the appropriate technique for collecting Remediation by Natural Attenuation (RNA) parameters. Previous comparisons between the standard well purge technique and the micropurge technique at this site have borne this out and indicate that lower concentrations are produced with standard well purging techniques.

A copy of the groundwater petroleum hydrocarbon analytical results can be found in Appendix C, and the results are summarized in Table II and Table III.

Well MW-2 yielded a detectable concentration of 1, 2-DCA (5.4 Fg/L) during the first quarterly groundwater monitoring event of 2005. All other oxygenates and lead scavengers were not detected, sometimes at elevated limits of detection due to the dilutions required because of the elevated hydrocarbon compound concentrations in the sample. However, the lack of MTBE in groundwater collected from well MW-2 at that time, at good limits of detection, is consistent with previous analysis for fuel oxygenates conducted in December 2002. These results suggest that there may have been potentially two separate releases at the site, a non-MTBE-bearing release as detected in well MW-2 (screened between 5 and 20 feet bgs) and a MTBE-bearing release detected in well MW-5 (screened between 3 and 10 feet bgs). Of note is that EDB, 1, 2-DCA, ethanol, and methanol were not detected at good limits of detection in well MW-5. This suggests that portions of the release predate the use of fuel oxygenates as gasoline fuel additives.

The laboratory has previously included a note that the hydrocarbon quantified as TPH as diesel in wells MW-2 and MW-5 was present in the requested quantitation range (diesel), but that it did not resemble the fuel pattern requested. A review of the chromatograms from wells during the September 2002 quarterly event indicated that the hydrocarbon detected in the diesel range in groundwater from well MW-2 is associated with the heavy end of gasoline (carbon range C4 to C12) which overlaps into the typical carbon range occupied by diesel (carbon range C10 to C22). However, the compound previously detected in well MW-5 suggests that it may be an aged diesel product as the smooth curve lay between carbon ranges C10 to C22.

4.0 Intrinsic Bioremediation Groundwater Sample Analytical Results

Intrinsic bioremediation parameters were collected during the current quarter. Tables IV and V present the analytical results of 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; it is the preferred electron acceptor for the biodegradation of hydrocarbons. Both pre-purge and post-purge values were recorded. DO was present in pre-purge groundwater in concentrations ranging from 0.49 milligrams per liter (mg/L) in downgradient well MW-3 to 2.71 mg/L in the groundwater sample from deeper downgradient well MW-7. Post-purge DO results were generally lower in concentration; however, the post-purge concentration decrease was not as marked as previous post-purge decreases. With the exception of upgradient well MW-1 and lateral to downgradient well MW-3, all other previously sampled wells within the vicinity of the remedial excavation, the pre- and post-purge concentrations were higher than all previous pre-remedial excavation and ORC injection DO concentrations. This is the first time well MW-7 was sampled for DO, and the DO concentrations were the highest of all wells, suggesting adequate DO in this deeper water-bearing zone. Excavation wells MW-8 and MW-9 both contained concentrations of DO generally higher than destroyed well MW-2, previously located in the same area. Previously, lack of DO appeared to be one of the RNA limiting factors in the remedial area.

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. Except for wells MW-4 and MW-6, ORP readings have increased significantly in the remedial area, although because there were relatively small changes in DO concentrations in upgradient well MW-1 and lateral to downgradient well MW-3, the significant rise in ORP values in these wells may in part be related to natural rainwater recharge of groundwater, as well as to the remedial excavation and ORC injection activity at the site. Regardless, similar elevated ORP readings in well MW-5, as well as the elevated ORP readings in excavation wells MW-8 and MW-9 indicate an oxygenated subsurface environment in the remedial area. ORP readings in well MW-8 and MW-9 are significantly elevated in comparison to previously observed ORP readings at former well MW-2. ORP values in well MW-4 are lower and indicate a more reducing local environment as a result of the increase in contaminant concentrations detected at this well this quarter.

One of the by-products of microbial hydrocarbon degradation is the conversion of oxygen to carbon dioxide. Reviewing the generated data, upgradient well MW-1 and lateral to downgradient well MW-3 contained relatively similar and modest concentrations of carbon dioxide. These are presumed to be representative of background carbon dioxide concentrations. Groundwater from well MW-4 contained a lower concentration of carbon dioxide, presumed representative of some limited microbial activity; however, wells MW-6 and MW-7, had similar concentrations, but no detectable concentrations of contaminants. Well MW-5 continues to contain the highest concentration of carbon dioxide for an undetermined reason. Excavation wells MW-8 and MW-9 contained trace concentrations of carbon dioxide which suggests minimal microbial activity at these well locations. This may be the result of removal of the majority of any existing microbial colonies in the former plume core, and the need to re-establish colonies at that location.

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. During the present quarter, nitrate was inadvertently not included in the analytical request form. Thus, a comparison between upgradient, downgradient, or plume core wells cannot be made this period.

As dissolved oxygen concentrations continue to decrease, insoluble manganese (Mn^{4+}) is converted to soluble manganese (Mn^{2+}). At the subject site, total manganese in groundwater was analyzed by the analytical laboratory as a proxy for soluble manganese. A scattered correlation between soluble manganese concentrations and more highly contaminated groundwater is present at the site (see for example wells MW-1, MW-3, MW-4, and MW-7).

Following the continuing trend of electron acceptors at the site, ferrous iron concentrations were evaluated at the site. The reduction of iron is inhibited by solid-phase manganese; however, as soluble manganese concentrations increase, soluble ferrous iron concentrations are expected to rise as subsurface Mn – Fe reducing microbes convert solid-phase ferric iron to soluble ferrous iron. Ferrous iron concentrations were non-detectable or at low to very low concentrations in all wells except downgradient well MW-4. Well MW-4 contained 1.2 mg/L ferrous iron. The concentration is similar to previous concentrations in groundwater from this well, and indicates that microbes near this well are continuing to utilize iron to degrade contaminants in this area of the site. This may be a temporary situation as dissolved concentrations from the remedial excavation migrate through the vicinity of this well. Lack of ferrous iron in excavation wells MW-8 and MW-9 suggest that sufficient DO is present in groundwater in these wells to preclude microbial use of the ferric to ferrous iron conversion, or may suggest Mn – Fe microbial colonies have not been re-established at this location.

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 and a commensurate decrease in pH is observed as the resulting hydrogen sulfide is converted to a dilute sulfuric acid. This trend has previously been seen at the site, and it appears to remain to some degree at the site since the remedial work. However, the decrease in sulfate concentrations in groundwater obtained from wells MW-1 (upgradient) and MW-3 (lateral to downgradient), and those wells proximal to the remedial work, including excavation wells MW-8 and MW-9 is minimal. Previously groundwater from plume core well MW-2 contained the lowest concentrations of sulfate, but wells MW-8 and MW-9 contain higher concentrations of sulfate than other excavation proximal wells. This suggests that sulfate is not used extensively to degrade hydrocarbon contaminants at the site. Associated trends in pH values also do not suggest use of this pathway.

As oxygen becomes less prevalent and other pathways are increasingly utilized, the degradation process becomes increasingly anaerobic and methanogenic microbes become more prevalent. To this end, 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. Excluding the unusually high concentration of methane in groundwater from well MW-5, background methane concentrations in groundwater found in wells MW-1 and MW-3 is very low and is presumed to represent the degradation of natural organic matter, while methane concentrations in groundwater from well MW-4 slightly downgradient of the excavation is slightly elevated in comparison to other excavation proximal wells such as MW-6, MW-8, and MW-9. It should be noted that the conversion of carbon dioxide to methane is the least preferred pathway for microbial degradation of hydrocarbons principally because the conversion is the most anaerobic. Excluding the unusual concentrations in groundwater from well MW-5, it appears probable that this method of conversion is not a significant process of hydrocarbon degradation outside of the area downgradient of the excavated plume core at this site.

BOD and COD were also included in the analytical suite for the first time this quarter as suggested by REGENESIS to help evaluate the success of the ORC applications. All wells returned BOD values below the limits of detection; from upgradient, to excavation proximal, to down gradient wells. This appears to suggest somewhat limited biological degradation at the site. COD values were elevated in excavation wells MW-8 and MW-9, were next highest in upgradient well MW-1, and were lower in wells proximal to the excavation (MW-4, MW-5, MW-6, and MW-7). This suggests the chemical oxygen demand is a stronger factor on degradation than biological oxygen demand is at the present time. This is has been suggested by previously reviewed RNA parameters above.

In summary, microbial degradation of the groundwater hydrocarbon plume beneath the site appears to be present. However, indigenous microbes do not appear to have re-established a significant presence within the excavation. This is not unexpected. Where present, microbial degradation of hydrocarbons at the site appears to include aerobes, Mn – Fe reducers, and, at least temporarily, in some limited locations, methanogenic microbes.

5.0 Groundwater Flow Data

Surveyed top-of-casing (TOC) elevations were used to construct a groundwater gradient map (Figure 2). Wells MW-5 and MW-6 were not used to construct the map as the wells are screened at a shallower level (5 to 10 feet bgs). Based on a review of the case file at the ACDEH, groundwater elevations in wells MW-5 and MW-6 historically appear to have been consistently different than wells MW-1 through MW-4 at the site. The water level in well MW-7, presumed to be set in a deeper water-bearing zone (30 to 40 feet bgs), is very similar to the water level in wells set in the middle water-bearing zone (10 to 20 feet bgs; MW-1, MW-3, and MW-4). The similarity of this water level may indicate the well is set in a deeper portion of the same water-bearing zone at the site.

Groundwater depths during this monitoring event ranged between 1.44 to 3.89 feet below the top of the casings. On average, depth to groundwater decreased by approximately 1.47 feet across the site since the September 2005 monitoring and sampling event; however, depth to groundwater in well MW-5 decreased by only 0.33 feet and that in well MW-7 decreased by 3.45 feet. These two wells are outliers to the majority of wells, wherein groundwater depths decreased fairly consistently between 1 and 2 feet. A slight groundwater mound may exist in the region of the remedial excavation, causing the direction of groundwater flow to be generally towards the southwest to west. Historically, groundwater has generally flowed to the south to southwest at the site (see for example the Rose Diagram of historic groundwater flow directions included in the *Additional Site Investigation Data Transmittal*); however, in June 2005 and November

1993, groundwater was documented to have flowed to the east. The average groundwater gradient was calculated to be at approximately 0.019 feet/foot for this monitoring event.

6.0 Conclusions and Recommendations

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

- Well MW-1 contained a trace detectable concentration of one or more compounds quantified as TPH as gasoline; however, the laboratory included a note that the peaks on the chromatograph were non-target peaks.

- Groundwater obtained from wells MW-3, MW-6, and MW-7 yielded nondetectable concentrations of all analytes.

- Except for the detection of MTBE at a concentration of 30 Fg/L in well MW-5, this well again yielded nondetectable concentrations of petroleum hydrocarbons, consistent with the majority of historic groundwater analytical results from this perimeter well. The concentration of MTBE is consistent with previously detected concentrations at this location.

- Excavation wells MW-8 and MW-9, in the general location of destroyed plume core well MW-2, yielded concentrations of all analytes at significantly lower concentrations in comparison to concentrations previous detected in groundwater at well MW-2.

- Groundwater obtained from well MW-4 contained elevated concentrations of all hydrocarbon compounds as a result of the remedial excavation process. These concentrations are below those previously seen in well MW-2, but are higher than previously seen in well MW-4. These concentrations may be transitory in nature, and may have been accentuated by the micro-purge sampling technique, commonly recognized as providing worst-case concentrations, but appropriate for collecting RNA parameter measurements.

- RNA chemical parameters were investigated to help determine the level of biological degradation of the petroleum hydrocarbons at the site. DO, ORP, carbon dioxide, manganese, ferrous iron, sulfate, and methane were analyzed. Microbial use of petroleum hydrocarbons as a food source has historically been principally limited by the concentration of DO in the groundwater; it is the preferred electron acceptor for the biodegradation of hydrocarbons. Nitrate concentrations in groundwater have also historically been a limiting factor at the site.

- With the exception of upgradient well MW-1 and lateral to downgradient well MW-3, the pre- and post-purge concentrations were higher than all previous pre-remedial DO concentrations in all other previously sampled wells within the vicinity of the remedial excavation. This is the first time well MW-7 was sampled for DO, and the DO concentration was the highest of all wells; suggesting adequate DO in this water-bearing zone. Excavation wells MW-8 and MW-9 both contained concentrations of DO generally higher than destroyed well MW-2, previously located in the same area.

- In general, the other RNA parameters indicate some microbial activity in groundwater beneath the site. Biological degradation of the petroleum hydrocarbons appears to proceed to the ferrous iron stage in very limited areas beneath the site, particularly in and around well MW-4. Sulfate reduction does not appear to be a significant microbial pathway and production of methane is also relatively limited to the area in and around well MW-4. These are positive changes produced by the remedial activities.
- All wells returned BOD values below the limits of detection, apparently suggesting limited biological degradation at the site. COD appears to be a stronger factor on degradation than biological demand is at the present time, in particular within the remedial excavation, as is suggested by other current RNA parameters.

- During the current quarter, groundwater flow again appears to be towards the southwest to west and the average groundwater gradient was calculated at 0.019 feet/foot.

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

- Hydrocarbon analysis of groundwater samples from perimeter wells MW-1, MW-3, and MW-6 should be temporarily stopped due to the lack of detectable results during the recent quarterly event. There were no analytical changes as a result of the recent remedial actions near these wells. This is consistent with over 12 to 14 years of analytical results. Analytical testing can be resumed in the future should it be warranted.

- Hydrocarbon analysis of groundwater samples from well MW-5 should also be temporarily stopped due to consistent analytical results that have not varied significantly over the last several years. Additional analytical testing producing similar analytical results will not increase the state of knowledge at this well location. Analytical testing can be resumed in the future as it is warranted.

- As a cost savings measure, analysis for RNA parameters should be scaled back in the next quarter. Field measurements including DO, ORP, and ferrous iron, at wells remaining on the sampling schedule (MW-4, MW-7, MW-8, and MW-9), can be used as proxies for the extent of biological or chemical degradation in groundwater beneath the subject site. Laboratory analysis for carbon dioxide, nitrate, sulfate, methane, manganese, potassium, total phosphorous, BOD, and COD can be temporarily eliminated, based on the current results.

- As previously recommended, collection of all RNA indicator data should be resumed on a semi-annual basis starting with the September 2006 groundwater monitoring event in order to capture any further changes resulting from the remedial activities. The collection of additional data will help in the understanding of post-remedial degradation beneath the site.

- The next quarterly groundwater sampling event is scheduled to occur in June 2006.

- 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

7.0 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 the client.

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

Sincerely,

Blymyer Engineers, Inc.

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

And:______________________________
Michael S. Lewis
Vice President, Technical Services

- As previously recommended, collection of all RNA indicator data should be resumed on a semi-annual basis starting with the September 2006 groundwater monitoring event in order to capture any further changes resulting from the remedial activities. The collection of additional data will help in the understanding of post-remedial degradation beneath the site.

- The next quarterly groundwater sampling event is scheduled to occur in June 2006.

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Sincerely,

Blymyer Engineers, Inc.

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

MARK E. DETTERMAN
No. 1788

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 Additive Analytical Results
Table IV: Summary of Groundwater Intrinsic Bioremediation Field Results
Table V: Summary of Groundwater Intrinsic Bioremediation Analytical Results

Figure 1: Site Location Map
Figure 2: Site Plan and Groundwater Gradient, March 2, 2006

Appendix A: *Standard Operating Procedures*, Blaine Tech Services, Inc.
Appendix B: *Purge Drum Inventory Log*, *Test Equipment Calibration Log*, *Wellhead Inspection Checklist*, *Well Gauging Data*, and *Low Flow Well Monitoring Data Sheets*, Dated March 2, 2006
Appendix C: Analytical Laboratory Report, McCampbell Analytical, Inc., Dated March 13, 2006

Tables

Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-1	11/27/91	326.61	4.82	321.79
	9/30/92		5.34	321.27
	4/7/94		3.38	323.23
	8/12/94		4.23	322.38
	11/29/94		3.44	323.17
	3/21/95		1.00	325.61
	5/22/95		2.20	324.41
	8/24/95		3.45	323.16
	2/12/96		1.95	324.66
	2/5/97		Data	Missing
	8/6/97		3.60	323.01
	6/6/02*		2.89	323.72
	9/23/02		3.48	323.13
	12/13/02		3.18	323.43
	12/14/04		2.76	323.85
	3/23/05		1.14	325.47
	6/22/05	329.41[1]	2.58	326.83
	7/18/05		2.21	327.20
	9/6/05		3.30	326.11
	3/2/06		2.32	327.09

Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-2	11/27/91	326.67	4.92	321.75
	9/30/92		5.42	321.25
	4/7/94		3.48	323.19
	8/12/94		4.18	322.49
	11/29/94		3.76	322.91
	3/21/95		1.25	325.42
	5/22/95		2.20	324.47
	8/24/95		3.57	323.10
	2/12/96		2.60	324.07
	2/5/97		1.72	324.95
	8/6/97		3.72	322.95
	6/6/02*		3.46	323.21
	9/23/02		4.14	322.53
	12/13/02		3.45	323.22
	12/14/04		2.96	323.71
	3/23/05		1.83	324.84
	6/22/05	329.46 [1]	3.82	325.64
	7/18/05		3.55	325.91
	9/6/05		3.70	325.76
	12/7/05		Destroyed	Destroyed

Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-3	11/27/91	326.58	4.96	321.62
	9/30/92		5.46	321.12
	4/7/94		3.66	322.92
	8/12/94		4.37	322.21
	11/29/94		3.60	322.98
	3/21/95		1.62	324.96
	5/22/95		2.73	323.85
	8/24/95		3.76	322.82
	2/12/96		2.45	324.13
	2/5/97		1.99	324.59
	8/6/97		3.83	322.75
	6/6/02*		3.66	322.92
	9/23/02		4.66	321.92
	12/13/02		3.66	322.92
	12/14/04		3.52	323.06
	3/23/05		1.83	324.75
	6/22/05	329.37 [1]	3.99	325.38
	7/18/05		3.60	322.98
	9/6/05		4.42	324.95
	3/2/06		2.50	326.87

Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-4	11/27/91	326.92	5.26	321.66
	9/30/92		5.78	321.14
	4/7/94		4.02	322.90
	8/12/94		4.81	322.11
	11/29/94		4.39	322.53
	3/21/95		1.80	325.12
	5/22/95		3.07	323.85
	8/24/95		4.09	322.83
	2/12/96		2.80	324.12
	2/5/97		2.32	324.60
	8/6/97		4.14	322.78
	6/6/02*		3.76	323.16
	9/23/02		4.14	322.78
	12/13/02		3.90	323.02
	12/14/04		3.68	323.24
	3/23/05		1.93	324.99
	6/22/05	329.70 [1]	3.65	326.05
	7/18/05		3.69	323.23
	9/6/05		3.97	325.73
	3/2/06		2.90	326.80

Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-5	3/21/95	326.50	2.10	324.40
	5/22/95		2.93	323.57
	8/24/95		1.57	324.93
	2/12/96		2.78	323.72
	2/5/97		2.24	324.26
	8/6/97		3.02	323.48
	6/6/02*	**	2.79	NM
	9/23/02		3.07	NM
	12/13/02		3.14	NM
	12/14/04		2.92	NM
	3/23/05		2.39	NM
	6/22/05	329.16 [1]	2.99	326.17
	7/18/05		3.39	325.77
	9/6/05		3.07	326.09
	3/2/06		2.74	326.42

Table I, Summary of Groundwater Elevation Measurements
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-6	3/21/95	327.23	3.24	323.99
	5/22/95		4.70	322.53
	8/24/95		4.95	322.28
	2/12/96		4.50	322.73
	2/5/97		3.68	323.55
	8/6/97		4.79	322.44
	6/6/02*		4.81	322.42
	9/23/02		5.10	322.13
	12/13/02		4.88	322.35
	12/14/04		4.61	322.62
	3/23/05		3.40	323.83
	6/22/05	330.02[1]	4.72	325.30
	7/18/05		2.65	327.37
	9/6/05		4.98	325.04
	3/2/06		3.89	326.13
MW-7	7/18/05	**	6.38	---
	9/6/05		6.78	---
	3/2/06	330.25[2]	3.33	326.92
MW-8	3/2/06	328.93[2]	1.54	327.39
MW-9	3/2/06	328.67[2]	1.54	327.13

Notes: TOC = Top of casing
* = Initial data set collected under direction of Blymyer Engineers, Inc.
** = Surveyed elevation not available
NM = Not measured
[1] = Resurveyed for GeoTracker database on April 13, 2005 by CSS Environmental Services, Inc.
[2] = Surveyed for GeoTracker database on February 7, 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. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Sample ID	Date	Modified EPA Method 8015 (μg/L)		EPA Method 8020 or 8021B (μg/L)				
		TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-1	11/27/91	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/30/92	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	4/7/94	<50	NA	<0.5	<0.5	<0.5	<0.5	NA
	8/12/94	<50	NA	**1**	**1**	<0.3	<2	NA
	11/29/94	<50	NA	<0.5	<0.5	<0.5	<2	NA
	3/21/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	5/22/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	8/24/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	2/12/96	<50	NA	<0.5	<0.5	<0.5	<2	NA
	6/6/02*	NA	NA	NA	NA	NA	NA	NA
	9/23/02	NA	NA	NA	NA	NA	NA	NA
	12/13/02	NA	NA	NA	NA	NA	NA	NA
	12/14/04	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	3/23/05	NA	NA	NA	NA	NA	NA	NA
	6/22/05	NA	NA	NA	NA	NA	NA	NA
	9/6/05	NA	NA	NA	NA	NA	NA	NA
	3/2/06	**62** [k]	<50	<0.5	<0.5	<0.5	<0.5	<5.0

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Sample ID	Date	Modified EPA Method 8015 (μg/L)		EPA Method 8020 or 8021B (μg/L)				
		TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-2	11/27/91	**170,000**	NA	**24,000**	**13,000**	**3,500**	**16,000**	NA
	9/30/92	**120,000**	NA	**24,000**	**15,000**	**3,800**	**17,000**	NA
	4/7/94	**120,000**	NA	**21,000**	**14,000**	**4,300**	**21,000**	NA
	8/12/94	**140,000**	NA	**17,000**	**10,000**	**4,300**	**18,000**	NA
	11/29/94	**90,000**	NA	**17,000**	**7,500**	**3,400**	**15,000**	NA
	3/21/95	**83,000**	NA	**17,000**	**8,000**	**3,800**	**17,000**	NA
	5/22/95	**82,000**	NA	**14,000**	**6,000**	**4,000**	**16,000**	NA
	8/24/95	**86,000**	NA	**13,000**	**8,100**	**3,700**	**16,000**	NA
	2/12/96	**78,000**	NA	**15,000**	**8,100**	**4,200**	**18,000**	NA
	2/5/97	**58,000**	NA	**11,000**	**6,900**	**3,500**	**15,000**	**480**
	8/6/97	**66,000**	NA	**7,000**	**9,200**	**3,500**	**16,000**	<500
	6/6/02*	**25,000** [a]	NA	**2,900**	**50**	**2,700**	**2,200**	<250
	9/23/02	**14,000** [b]	**4,300** [c]	**2,700**	**81**	**2,100**	**1,800**	<250
	12/13/02	**26,900**	**4,000** [c]	**1,120**	**91.0**	**1,480**	**2,370**	**197** [d]
	12/14/04	**21,000** [e]	**7,600** [f, g]	**1,700**	**120**	**1,600**	**2,400**	<60
	3/23/05	**27,000** [e i]	**15,000** [f, g, i]	**1,400**	**170**	**1,700**	**2,500**	<170
	6/22/05	**5,800** [e]	**1,200** [g]	**53**	**46**	**570**	**58**	<50
	9/6/05	**14,000** [e]	**4,900** [f, g, j]	**1,000**	**40**	**1,500**	**680**	<100
	3/2/06	NS	NS	NS	NS	NS	NS	NS

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Sample ID	Date	Modified EPA Method 8015 (μg/L)		EPA Method 8020 or 8021B (μg/L)				
		TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-3	11/27/91	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/30/92	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	4/7/94	<50	NA	**2.5**	**5.5**	**0.9**	**5.1**	NA
	8/12/94	<50	NA	<0.5	<0.5	<0.3	<2	NA
	11/29/94	<50	NA	<0.5	<0.5	<0.5	<2	NA
	3/21/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	5/22/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	8/24/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	2/12/96	<50	NA	<0.5	<0.5	<0.5	<2	NA
	2/5/97	<50	NA	<0.5	<0.5	<0.5	<0.5	<5
	6/6/02*	NA	NA	NA	NA	NA	NA	NA
	9/23/02	NA	NA	NA	NA	NA	NA	NA
	12/13/02	NA	NA	NA	NA	NA	NA	NA
	12/14/04	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	3/23/05	NA	NA	NA	NA	NA	NA	NA
	6/22/05	NA	NA	NA	NA	NA	NA	NA
	9/6/05	NA	NA	NA	NA	NA	NA	NA
	3/2/06	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Sample ID	Date	Modified EPA Method 8015 (µg/L)		EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-4	11/27/91	**11,000**	NA	**100**	**0.7**	**250**	**330**	NA
	9/30/92	**380**	NA	**3.5**	**2.4**	**8.9**	**3.4**	NA
	4/7/94	**1,100**	NA	**61**	**5.5**	**17**	**12**	NA
	8/12/94	**1,000**	NA	**3**	**1**	**8**	**4**	NA
	11/29/94	**1,100**	NA	**2**	**<0.5**	**10**	**6**	NA
	3/21/95	**1,400**	NA	**200**	**5**	**66**	**18**	NA
	5/22/95	**1,200**	NA	**60**	**1**	**12**	**8**	NA
	8/24/95	**400**	NA	**1**	<0.5	**1**	<2	NA
	2/12/96	**1,500**	NA	**130**	<0.5	**120**	**51**	NA
	2/5/97	**1,200**	NA	**250**	**4.9**	**94**	**12**	**16**
	8/6/97	**330**	NA	**1.5**	<0.5	<0.5	<0.5	<5
	6/6/02*	<50	NA	**1.7**	<0.5	<0.5	<0.5	<2.5
	9/23/02	<50	<48	<0.5	**1.3**	<0.5	<0.5	<2.5
	12/13/02	<50	**86** [c]	<0.5	<0.5	<0.5	<1.5	<0.5
	12/14/04	**95** [h]	<50	**2.6**	<0.5	<0.5	<0.5	<5.0
	3/23/05	**120** [h]	<50	<0.5	**5.0**	<0.5	<0.5	<5.0
	6/22/05	**180** [e]	<50	**1.7**	**7.5**	<0.5	<0.5	<5.0
	9/6/05	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	3/2/06	**1,600** [e]	**220** [g]	**47**	**4.1**	**1.6**	**19**	<20

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Sample ID	Date	Modified EPA Method 8015 (μg/L)		EPA Method 8020 or 8021B (μg/L)				
		TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-5	3/21/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	5/22/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	8/24/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	2/12/96	<50	NA	<0.5	<0.5	<0.5	<2	NA
	2/5/97	<50	NA	<0.5	<0.5	<0.5	<0.5	<5
	6/6/02*	NA	NA	NA	NA	NA	NA	NA
	9/23/02	<50	**310**[c]	<0.5	<0.5	<0.5	<0.5	<2.5
	12/13/02	<50	**97**[c]	<0.5	<0.5	<0.5	<1.5	**0.720**[d]
	12/14/04	<50	<50	<0.5	<0.5	<0.5	<0.5	**12**
	3/23/05	<50	<50	<0.5	<0.5	<0.5	<0.5	**23**
	6/22/05	<50	<50	<0.5	<0.5	<0.5	<0.5	**31**
	9/6/05	<50	<50	<0.5	<0.5	<0.5	<0.5	**32**
	3/2/06	<50	<50	<0.5	<0.5	<0.5	<0.5	**30**

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Sample ID	Date	Modified EPA Method 8015 (μg/L)		EPA Method 8020 or 8021B (μg/L)				
		TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-6	3/21/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	5/22/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	8/24/95	<50	NA	<0.5	<0.5	<0.5	<2	NA
	2/12/96	<50	NA	<0.5	<0.5	<0.5	<2	NA
	2/5/97	<50	NA	<0.5	<0.5	<0.5	<0.5	<5
	6/6/02*	NA	NA	NA	NA	NA	NA	NA
	9/23/02	NA	NA	NA	NA	NA	NA	NA
	12/13/02	NA	NA	NA	NA	NA	NA	NA
	12/14/04	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	3/23/05	NA	NA	NA	NA	NA	NA	NA
	6/22/05	NA	NA	NA	NA	NA	NA	NA
	9/6/05	NA	NA	NA	NA	NA	NA	NA
	3/2/06	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-7	7/18/05	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	9/6/05	<50	<50	**0.70**	<0.5	**1.2**	<0.5	<5.0
	3/2/06	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-8	3/2/06	**590**[e]	**550**[fg]	**6.2**	**2.7**	**0.67**	**21**	<5.0
MW-9	3/2/06	**280**[e]	**430**[fg]	**2.6**	**0.96**	**1.0**	**10**	<5.0

Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Sample ID	Date	Modified EPA Method 8015 (µg/L)		EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: *Groundwater Screening Levels* (groundwater IS a current or potential drinking water resource)		100	100	1.0	40	30	20	5.0

Notes: µg/L = Micrograms per liter
TPH = Total Petroleum Hydrocarbons
MTBE = Methyl *tert*-butyl ether
NA = Not analyzed
<x = Less than the analytical detection limit (x)
EPA = Environmental Protection Agency
NV = No value established
* = Initial data set collected under direction of Blymyer Engineers, Inc.
[a] = Laboratory note indicates the result is an unidentified hydrocarbon within the C6 to C10 range.
[b] = Laboratory note indicates the result is gasoline within the C6 to C10 range.
[c] = Laboratory note indicates the result is a hydrocarbon within the diesel range but that it does not represent the pattern of the requested fuel.
[d] = MTBE analysis by EPA Method 8260B yielded a non-detectable concentration at a detection limit of 0.50 µg/L. See Table III.
[e] = Laboratory note indicates that unmodified or weakly modified gasoline is significant.
[f] = Laboratory note indicates that diesel range compounds are significant, with no recognizable pattern.
[g] = Laboratory note indicates that gasoline range compounds are significant.
[h] = Laboratory note indicates that no recognizable pattern is present.
[i] = Laboratory note indicates that a lighter than water immiscible sheen / product is present.
[j] = Laboratory note indicates that oil range compounds are significant.
[k] = Laboratory note indicates one to a few isolated non-target peaks are present.

Bold results indicate detectable analyte concentrations.
Shaded results indicate analyte concentrations above the respective RWQCB Environmental Screening Level (ESL) value.

Table III, Summary of Groundwater Sample Fuel Additive Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

Sample ID	Date	EPA Method 8260B								
		TAME (μg/L)	TBA (μg/L)	EDB (μg/L)	1,2-DCA (μg/L)	DIPE (μg/L)	Ethanol (μg/L)	ETBE (μg/L)	Methanol (μg/L)	MTBE (μg/L)
MW-2	12/13/02	<0.50	<2,000	NA	NA	<0.50	NA	<0.50	NA	<0.50
	3/23/05	<5.0	<50	<5.0	**5.4**	<5.0	<500	<5.0	<5,000	<5.0
MW-5	12/14/04	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<0.5	<500	**12**
MW-5	3/2/06	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<0.5	<500	**28**
RWQCB ESLs; Table F-1a: Groundwater screening Levels (groundwater IS a current or potential drinking water resource)		NV	12	0.05	0.5	NV	50,000	NV	NV	5.0

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
NA = Not analyzed
NV = No value

Bold results indicate detectable analyte concentrations.

Shaded results indicate analyte concentrations above the respective RWQCB Environmental Screening Level (ESL) value.

Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, 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 °C	Field pH pH units
MW-1	12/14/04	0.2 / 2.0	224 / 160	0.1	18.8	6.9
	3/23/05	5.1 / 0.2	105 / 102	0.0	17.3	6.9
	6/22/05	0.51 / 0.28	-208.2/-137.4	0.3	19.57	6.65
	3/2/06	0.53 / 0.38	441.3 / 448.7	0.0	17.41	6.77
MW-2	12/14/04	0.3 / 2.0	-160 / -148	1.4	18.4	6.9
	3/23/05	0.1 / 0.1	-133 / -145	2.0	16.6	7.0
	6/22/05	0.55 / 0.11	-208.5/-229.6	1.0	22.64	6.96
	3/2/06	NS	NS	NS	NS	NS
MW-3	12/14/04	0.3 / 0.6	171 / 165	0.1	19.4	7.2
	3/23/05	0.1 / 0.1	81 / 79	0.0	17.7	7.2
	6/22/05	1.49/1.39	100.7/30.3	0.1	20.83	7.09
	3/2/06	0.49 / 0.17	414.9 / 419.7	0.0	18.71	6.06
MW-4	12/14/04	0.7 / 0.1	-7 / -41	0.8	18.0	6.8
	3/23/05	0.1 / 0.4	-17 / -19	1.2	15.9	6.9
	6/22/05	0.23 / 0.12	-28.6 / -30.9	1.2	20.05	6.70
	3/2/06	0.58 / 0.56	-169.5 / -205.6	1.2	16.2	7.53
MW-5	12/14/04	0.5 / 2.0	5 / 532	0.1	17.9	7.1
	3/23/05	0.1 / 0.9	-17 / 0	0.0	15.1	7.2
	6/22/05	0.52 / 0.27	14.4 / -35.3	0.1	23.75	7.03
	3/2/06	0.84 / 0.59	436.8 / 449.2	0.0	14.62	6.18

Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, 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 °C	Field pH pH units
MW-6	12/14/04	0.3 / 1.2	125 / -25	0.0	15.5	7.2
	3/23/05	0.1 / 0.8	52 / -4	0.0	13.9	7.2
	6/22/05	0.53 / 0.49	-22.3 / -18.0	0.1	22.65	7.03
	3/2/06	1.53 / 0.51	-116.5 / -189.9	0.2	13.47	8.17
MW-7	7/18/05	NS	NS	NS	68.7 / 69.4	7.0 / 7.0
	3/2/06	2.71 / 1.08	214.3 / -176.9	0.4	14.03	8.01
MW-8	3/2/06	1.20 / 0.85	423.8 / 456.9	0.0	14.12	8.41
MW-9	3/2/06	0.52 / 0.20	118.0 / 112.6	0.0	15.20	9.38

Notes:
mV = Millivolt
mg/L = milligrams per liter
°C = degrees Centigrade
2.6 / 2.2 = Initial reading (pre-purge) / Final reading (post-purge)
NS = Not sampled

Table V, Summary of Groundwater Intrinsic Bioremediation Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

ID	Date	Method SM 5310B	Method E300.1		Method RSK 174	Method E200.7		Method E 365.1	Method SM 5210B	Method SM 5220D
		CO_2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD
		mg/L			μg/L			mg/L		
MW-1	12/14/04	580	<20	1,100	2.2	NA	NS	NS	NS	NS
	3/23/05	660	0.41	620	<0.5	NS	NS	NS	NS	NS
	6/22/05	660	<0.1	580	0.91	NS	NS	NS	NS	NS
	3/2/06	850	<0.7[1]	610	0.65	1,700	5,100	0.19	<3.0	43
MW-2	12/14/04	940	<5.0	220	4,700	NS	NS	NS	NS	NS
	3/23/05	1,100	0.34	180	3,700	NS	NS	NS	NS	NS
	6/22/05	990	<0.1	290	1,800	NS	NS	NS	NS	NS
	3/2/06	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	12/14/04	610	<20	780	<0.5	NS	NS	NS	NS	NS
	3/23/05	590	0.20	560	<0.5	NS	NS	NS	NS	NS
	6/22/05	320	1.3	540	<0.5	NS	NS	NS	NS	NS
	3/2/06	730	2.0[1]	630	<0.5	1,800	4,400	0.18	<3.0	<10
MW-4	12/14/04	680	<10	760	170	NS	NS	NS	NS	NS
	3/23/05	700	0.30	430	24	NS	NS	NS	NS	NS
	6/22/05	700	<0.1	480	71	NS	NS	NS	NS	NS
	3/2/06	370	0.88[1]	490	90	5,300	3,900	0.17	<3.0	33

Table V, Summary of Groundwater Intrinsic Bioremediation Analytical Results
BEI Job No. 202016, Dolan Rentals
6393 Scarlett Court, Dublin, California

ID	Date	Method SM 5310B	Method E300.1		Method RSK 174	Method E200.7		Method E 365.1	Method SM 5210B	Method SM 5220D
		CO_2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD
		mg/L			µg/L			mg/L		
MW-5	12/14/04	1,400	<20	1,200	120	NS	NS	NS	NS	NS
	3/23/05	1,400	0.66	640	57	NS	NS	NS	NS	NS
	6/22/05	1,500	<0.1	590	1.5	NS	NS	NS	NS	NS
	3/2/06	1,600	<0.7 [1]	450	490	960	4,000	0.14	<3.0	31
MW-6	12/14/04	790	<10	460	180	NS	NS	NS	NS	NS
	3/23/05	770	0.12	380	60	NS	NS	NS	NS	NS
	6/22/05	770	<0.1	400	36	NS	NS	NS	NS	NS
	3/2/06	470	5.2 [1]	540	12	480	1,600	0.099	<3.0	21
MW-7	7/18/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/2/06	450	<0.7 [1]	260	1.7	5,500	7,300	0.16	<3.0	26
MW-8	3/2/06	8.7	13 [1]	570	17	<20	19,000	0.21	<3.0	71
MW-9	3/2/06	8.1	11 [1]	890	19	<20	20,000	<0.04	<3.0	61

Notes:

SM = Standard Method

µg/L = Micrograms per liter

NS = Not sampled

COD = Chemical Oxygen Demand

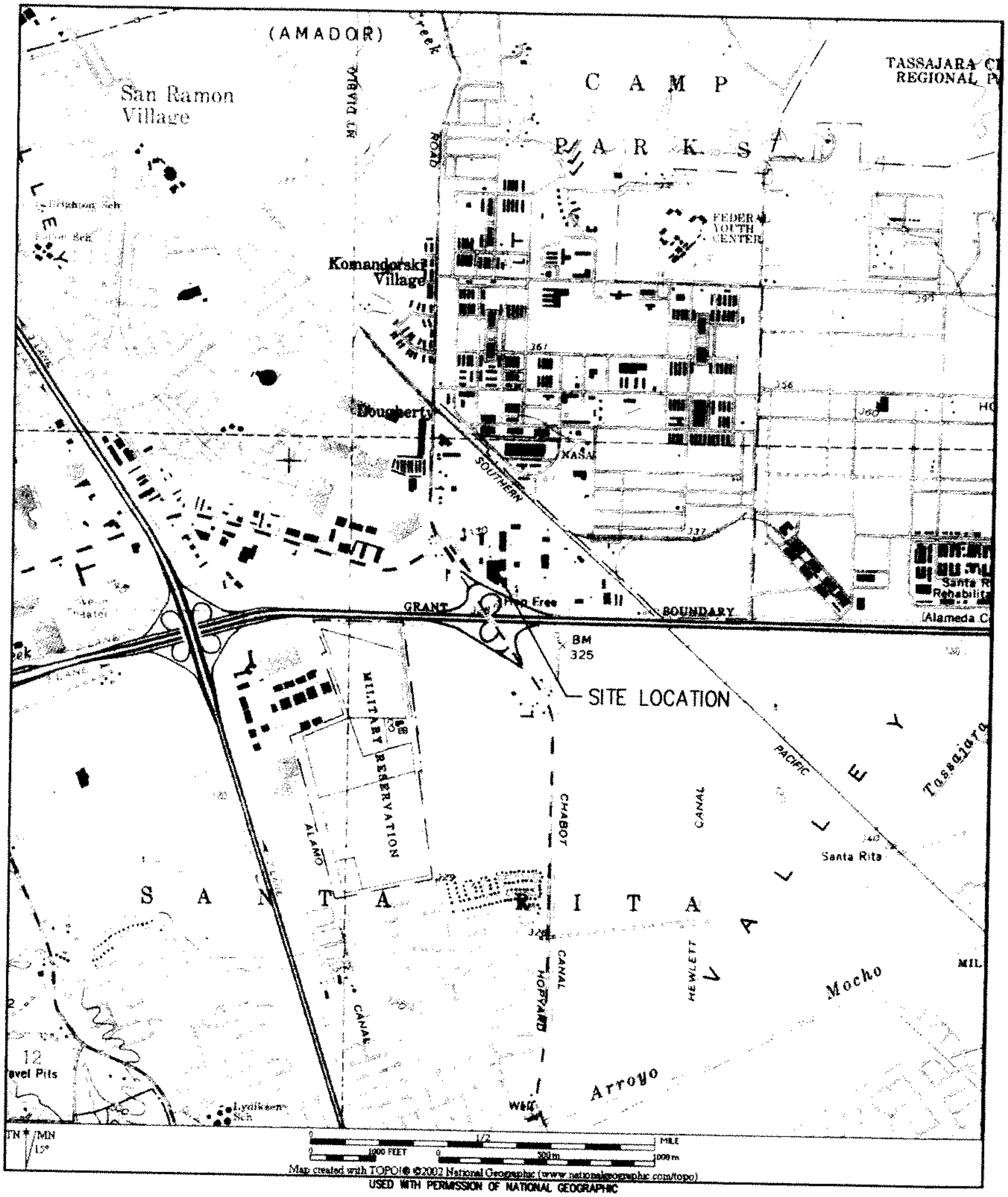
mg/L = Milligrams per liter

CO_2 = Carbon dioxide

BOD = Biological Oxygen Demand

[1] = Total Nitrogen (Nitrate, Nitrite, & Ammonia)

Figures



Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)
USED WITH PERMISSION OF NATIONAL GEOGRAPHIC

BLYMYER ENGINEERS, INC.

BEI JOB NO.	DATE
202016	6-27-02

LEGEND

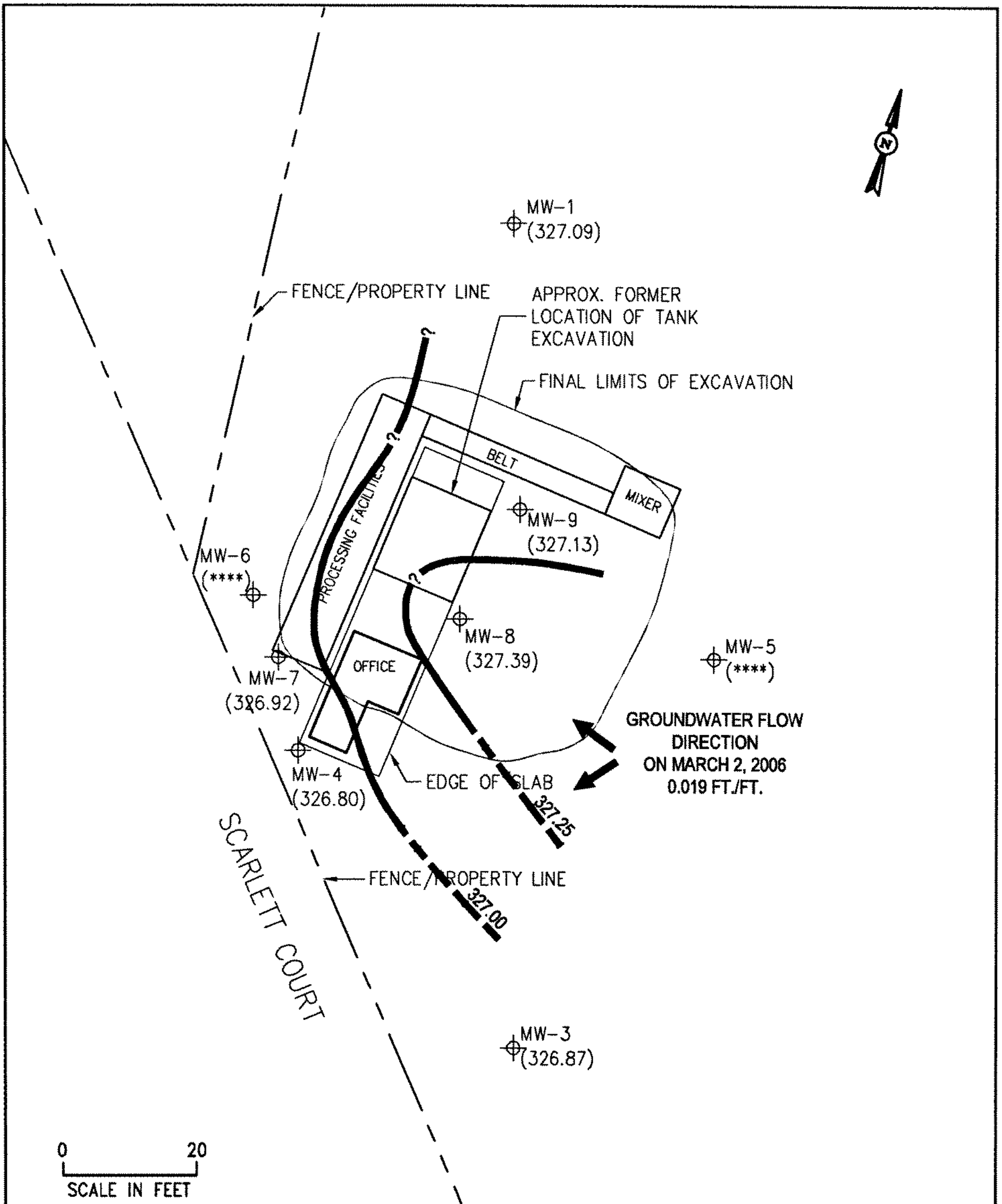
-

SITE LOCATION MAP

FORMER DOLAN RENTAL
PROPERTY
6393 SCARLETT COURT
DUBLIN, CA

FIGURE
1

L:\Acad\2002dwg\202016\202016fig1.dwg 6/27/02 11:44 am



BASED ON SITE PLAN GENERATED BY AQUA SCIENCE ENGINEERS, INC.

BLYMYER
ENGINEERS, INC.

BEI JOB NO.
202016

DATE
3-29-06

LEGEND

⊕	GROUNDWATER MONITORING WELL
(323.72)	GROUND WATER ELEV.
(****)	GROUNDWATER ELEV. (NOT USED FOR CONTOURING)
— —	GROUNDWATER ELEV. CONTOUR
→	GROUNDWATER FLOW DIRECTION

SITE PLAN AND GROUNDWATER GRADIENT ON MARCH 2, 2006

FORMER DOLAN RENTAL PROPERTY
6393 SCARLETT COURT
DUBLIN, CA

FIGURE
2

L:\Acad\2002dwg\202016\8.5 x 11\202016fig 2.dwg April 05, 2006 - 10:54AM lwittstock

Appendix A

Standard Operating Procedures

Blaine Tech Services, Inc.

Blaine Tech Services, Inc.
Standard Operating Procedure

WELL DEVELOPMENT

Use Swab as a plunger to flush out debris from the slots of the screen. Run the Swab up and down through the entire screen interval. The recommended amount of time spent swabbing depends on the length of the screen, usually one minute per foot. If no screened interval is provided, then swab well for 15 minutes.

Using a stainless steel (1.75" diameter) pneumatic pump begin purging at 0.5 – 1.0 GPM. Place the pump near the well bottom and remove the accumulated sediment until the well bottom feels hard and clean. During purging, move pump up and down through the screen interval, continuing to agitate the pump until all the sediment is removed.

Take the required water quality parameter readings at each casing volume removed. At a minimum, water quality measurements include pH, temperature, electrical conductivity (EC), and turbidity (NTU). Measure Depth to Water (DTW) while purging to confirm the height of the water column. If the well begins to de-water, then the pump may have to be slowed or shut off until enough water recharges into the well. Make notes of the recharge rate. Remove the required number of casing volumes. At a minimum, remove at least 10 case volumes of purge-water. After the minimum volume of water has been purged and all the sediment has been removed from the well, take a final Total Depth measurement. If a required turbidity level must be reached, continue purging until the desired reading has been attained.

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 HARMFULL 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 HARMFULL 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:

Casing Volume = (TD – DTW) 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
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

Purge Drum Inventory Log, Test Equipment Calibration Log, Wellhead Inspection Checklist, Well Gauging Data, and Low Flow Well Monitoring Data Sheets

Blaine Tech Services, Inc.

Dated March 2, 2006

BLAINE
TECH SERVICES INC.

PURGE DRUM INVENTORY LOG

CLIENT Blymyer

SITE ADDRESS 6393 Scarlett Ct, Dublin

STATUS OF DRUM(S) UPON ARRIVAL							
Number of drum(s) **empty:**		1	0				
Number of drum(s) **1/4 full:**		2	0				
Number of drum(s) **1/2 full:**		2	0				
Number of drum(s) **3/4 full:**	1	1	0	1			
Number of drum(s) **full:**	14	18	0	3			
Total drum(s) on site:	15	24	0	4			
STATUS OF DRUM(S) AT DEPARTURE							
Number of drum(s) **empty:**		1	0				
Number of drum(s) **1/4 full:**		2	0				
Number of drum(s) **1/2 full:**		1	0				
Number of drum(s) **3/4 full:**		1	1				
Number of drum(s) **full:**	15	19	3	4			
Total drum(s) on site:	15	24	4	4			
LOCATION OF DRUM(S)							
Is/Are drum(s) at wellhead(s)?	Yes ~~No~~	yes		yes			
Describe location if drum(s) is/are located elsewhere:	~~Next to MW-7 & MW-2.~~ Next to MW-7 on Scarlett Ct. side						
Label drum(s) properly:	Yes	yes	Yes	yes			
FINAL STATUS							
Number of **new** BTS drum(s) left on site this event:	0	0	4	0			
Date of inspection:	7/18/05	9-6-05	02/27/06	3-2-06			
Logged by BTS Field Technician:	MJ	DW	JJ	DW			
Office Review by:			2/28	3/3			

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME				PROJECT NUMBER			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI Flowcell	05K1408	3-2-06 0835	pH 4.0 7.0 10.0	3.96 7.16 9.96	3.99 7.00 10.00	12.09 14.42 14.89	DW
"	"	"	Conductivity 3900µs	3978µS	3900µs	14.94	DW
"	"	"	ORP 242mv DO 100%	243.5mv 105.0%	242 mv 99.4%	16.01	DW
Hach 2100P Turbidimeter	14694	"	Turbidity 2 NTU	2 NTU	2 NTU		DW
			53 NTU	53 NTU	53 NTU		DW

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME Blymer	**PROJECT NUMBER** 060302-DW1

EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
YSI 556	05C1520	3/2/06 0630	pH 4 7 10	X	4.01 7.00 10.00	16.8	MD
↓	↓	↓	cond 3900		3900	↓	MD
			ORP 240		240		MD
			D.O 100%		100%		MD
turbidity	01110002451	3/2/06 0640	20 100 800	→21 →102 →787	10%		MD

WELLHEAD INSPECTION CHECKLIST

Page 1 of 1

Date 3-2-06 Client Blymer

Site Address 6393 Scarlett Ct Dublin

Job Number 060302-DW-1 Technician DW/JD

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	X							
mw-3	X							
mw-4	X							
mw-5		X ①						
mw-6	X							
mw-7		no lock						
mw-8		no lock		X (replaced slip cap that didn't cover casing)				
mw-9		X ②						

NOTES: ① Entire area submerged. Took 15 min to bail water

② In middle of small lake. Purged lake for 3 hrs until able to access well.

WELL GAUGING DATA

Project # 060302-DW-1 Date 3-2-06 Client Blymer

Site 6393 Scarlett Ct. Dublin

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					2.32	19.28	↓	
mw-3	2					2.50	18.35		
mw-4	2					2.90	18.70		
mw-5	2					2.74	9.78		
mw-6	2					3.89	9.81		
mw-7	2					3.33	40.01		
mw-8	~~2~~ 4					1.54	20.02		
mw-9	~~2~~ 4					1.44	19.84		

LOW FLOW WELL MONITORING DATA SHEET

Project #: 060302-OW-1	Client: Blymer
Sampler: DW	Start Date: 3-2-06
Well I.D.: MW-1	Well Diameter: [✓ 2] 3 4 6 8 ____
Total Well Depth: 19.28	Depth to Water Pre: 2.32 Post: 2.35
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/m
Pump Depth: 14'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	DTW Observations
1100	16.76	6.78	4295	8	0.53	441.3	900ml	2.31
1103	16.86	6.77	4300	7	0.55	444.9	1800	2.32
1106	17.00	6.77	4300	7	0.77	445.7	2700	2.32
1109	17.25	6.77	4291	6	0.59	446.5	3600	2.32
1112	17.28	6.77	4293	5	0.43	447.0	4500	2.33
1115	17.41	6.77	4286	5	0.38	448.7	5400	2.34
							Fe^{2+} = 0	

Did well dewater? Yes [✓ No]	Amount actually evacuated: 5400 ml
Sampling Time: 1120	Sampling Date: 3-2-06
Sample I.D.: MW-1	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] [✓ BTEX] [✓ MTBE] [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 060302-OW-1	Client: Blymer
Sampler: DW	Start Date: 3-2-06
Well I.D.: mw-3	Well Diameter: [✓ 2] 3 4 6 8 ____
Total Well Depth: 18.33	Depth to Water Pre: 2.50 Post: 2.78
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: 500 ml/m

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])	DTW Observations
1148	18.13	6.36	3414	13	0.49	414.9	900	2.81
1151	18.25	6.90	3377	12	0.57	419.1	1800	2.85
1154	18.44	6.92	3378	13	0.43	420.1	2700	2.88
1157	18.55	6.99	3390	13	0.32	423.2	3600	2.90
1200	18.55	6.86	3382	13	0.26	422.2	4500	2.93
1203	18.70	6.11	3379	12	0.23	421.2	5400	2.97
1206	18.57	5.88	3383	11	0.21	420.5	6300	2.98
1209	18.56	6.07	3376	9	0.20	421.1	7200	3.00
1212	18.69	6.01	3370	8	0.19	419.6	8100	3.02
1215	18.71	6.06	3372	8	0.17	419.7	9000	3.04
							Fe^{2+} = 0	

Did well dewater? Yes [✓ No]	Amount actually evacuated: 9000 ml
Sampling Time: 1217	Sampling Date: 3-2-06
Sample I.D.: mw-3	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] [✓ BTEX] [✓ MTBE] [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 060302-OW-1	Client: Blymer
Sampler: MD	Start Date: 3-2-06
Well I.D.: mw-4	Well Diameter: [✓ 2] 3 4 6 8 ____
Total Well Depth: 18.70	Depth to Water Pre: 2.90 Post: 3.04
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: 150ml/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])	Observations
1016	Began purging							DTW
1019	15.89	7.53	3283	66	0.58	-169.5	450ml	3.02 odor
1022	15.83	7.58	3286	50	0.50	-177.7	900ml	3.03
1025	15.88	7.55	3286	39	0.47	-190.8	1350ml	3.04
1028	15.96	7.55	3292	23	0.43	-197.9	1800ml	3.03
1031	16.15	7.53	3291	26	0.51	-201.8	2250ml	3.04
1034	16.20	7.53	3292	30	0.56	-205.6	2700ml	3.04
					Fe^{2+} =	1.2		

Did well dewater? Yes [✓ No]	Amount actually evacuated: 2700ml
Sampling Time: 1045	Sampling Date: 3-2-06
Sample I.D.: mw-4	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] [✓ BTEX] [✓ MTBE] [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 060302-OW-1	Client: Blymer
Sampler: DW	Start Date: 3-2-06
Well I.D.: mw-5	Well Diameter: [✓ 2] 3 4 6 8 ___
Total Well Depth: 9.78	Depth to Water Pre: 2.74 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: 200 ml/m

Pump Depth: 6'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	DTW Observations
0900	14.09	6.61	4044	13	0.84	436.8	900	3.09 started 300 ml/m
0903	13.99	6.07	4058	8	1.69	438.1	1500	3.19 slowed to 200 ml/m
0906	13.95	5.91	4069	8	1.27	445.8	2100	3.21
0909	13.91	5.88	4067	7	0.85	447.6	2700	3.23
0912	14.23	6.20	4059	6	0.71	446.4	3300	3.25
0915	14.59	6.13	4055	6	0.61	446.7	3900	3.28
0918	14.62	6.18	4062	6	0.59	449.2	4500	3.32
							$Fe^{2+}=0$	

Did well dewater? Yes [✓ No]	Amount actually evacuated: 4500 ml
Sampling Time: 0921	Sampling Date: 3-2-06
Sample I.D.: mw-5	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] [✓ BTEX] [✓ MTBE] [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 060302-OW-1	Client: Blymer
Sampler: MMD	Start Date: 3-2-06
Well I.D.: MW-6	Well Diameter: [✓ 2] 3 4 6 8 ___
Total Well Depth: 9.81	Depth to Water Pre: mw 3.89 Post: 5.55
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: ~150 ml/min Pump Depth: 8'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	Observations
0922	Began purge							DTW
0925	12.69	8.24	3796	4	1.53	-116.5	450ml	4.41
0928	12.78	8.25	3820	2	0.73	-134.6	900ml	4.55
0931	12.88	8.28	3831	2	0.76	-168.2	1350ml	4.86
0934	12.92	8.27	3834	3	0.74	-157.0	1800ml	4.80
0937	13.12	8.19	3833	2	0.60	-170.8	2250ml	5.03
0940	13.19	8.19	3830	2	0.54	-144.4	2700ml	5.11
0943	13.36	8.18	3831	3	0.49	-176.9	3150ml	5.31
0946	13.44	8.18	3834	2	0.48	-188.4	3600ml	5.46
0949	13.47	8.17	3834	3	0.51	-189.9	4050ml	5.31
					Fe^{2+} =	0.2 mg/L		

Did well dewater? Yes [✓ No]	Amount actually evacuated: 4050 ml
Sampling Time: 0955	Sampling Date: 3-2-06
Sample I.D.: MW-6	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] BTEX MTBE [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

pg 1 of 2

Project #: 060302-OW-1	Client: Blymer
Sampler: MD	Start Date: 3-2-06
Well I.D.: mw-7	Well Diameter: [✓ 2] 3 4 6 8 ____
Total Well Depth: 40.01	Depth to Water Pre: 3.33 Post: 3.33
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: ~150ml/min

Pump Depth: 35'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	Observations
0822	Began		purging					DTW
0825	14.57	7.73	3156	29	2.71	2143	450ml	3.33
0828	14.45	7.69	3160	28	2.13	222.4	900ml	3.33
0831	14.18	7.68	3163	29	1.85	207.2	1350ml	3.33
0834	14.29	7.86	3203	34	1.75	-6.0	1800ml	3.33
0837	14.35	7.92	3226	32	1.82	-64.9	2250ml	3.33
0840	13.83	7.97	3236	34	1.80	-104.9	2700ml	3.33
0843	13.75	8.03	3228	27	1.77	-129.7	3150ml	3.33
0846	13.54	8.07	3232	27	1.58	-148.9	3600ml	3.33
0849	13.59	8.06	3241	31	1.38	-162.5	4050ml	3.33
0852	13.78	8.04	3233	28	1.08	-176.9	4500ml	3.33 see pg 2 of 2

Did well dewater? Yes [✓ No]	Amount actually evacuated:
Sampling Time: 0900	Sampling Date: 3-2-06
Sample I.D.: mw-7	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] [✓ BTEX] [✓ MTBE] [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

pg 2 of 2

Project #: 060302-OW-1	Client: Blymer
Sampler: WD	Start Date: 3-2-06
Well I.D.: mw-7	Well Diameter: [✓ 2] 3 4 6 8 ____
Total Well Depth: 40.01	Depth to Water Pre: 3.33 Post: 3.33
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: [✓ PVC] Grade	Flow Cell Type:

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

Sampling Method: Dedicated Tubing [✓ New Tubing] Other____

Flow Rate: ____

Pump Depth: ____

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	Observations
	cont'd		from	~~2~~ pg	1			ptw
0855	13.90	8.03	3230	27	0.95	-183.7	4950ml	3.33
0858	14.03	8.01	3231	28	0.88	-184.1	5400ml	
					Fe2+=	0.4		

Did well dewater? Yes [✓ No]	Amount actually evacuated: 5400ml
Sampling Time: 0900	Sampling Date: 3-2-06
Sample I.D.: mw-7	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] [✓ BTEX] [✓ MTBE] [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 060302-OW-1	Client: Blymer
Sampler: DW	Start Date: 3-2-06
Well I.D.: mw-8	Well Diameter: ~~2~~ 3 [✓ 4] 6 8 ___
Total Well Depth: 20.02	Depth to Water Pre: 1.54 Post: 1.53
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/m

Pump Depth: 15'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	DTW Observations
1009	14.03	7.82	3127	3	1.20	423.8	900	1.53
1012	14.00	7.69	3213	2	1.04	440.9	1800	1.53
1015	14.04	7.92	3243	1	0.93	448.8	2700	1.53
1018	14.05	8.09	3245	1	0.91	451.0	3600	1.53
1021	14.07	8.33	3245	1	0.88	449.2	4500	1.53
1024	14.12	8.41	3246	1	0.85	456.9	5400	1.53
							$Fe^{2+} = 0$	

Did well dewater? Yes [✓ No]	Amount actually evacuated: 5400 ml
Sampling Time: 1029	Sampling Date: 3-2-06
Sample I.D.: mw-8	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] [✓ BTEX] [✓ MTBE] [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 060302-DW-1	Client: Blymer
Sampler: DW	Start Date: 3-2-06
Well I.D.: mw-9	Well Diameter: 2 3 [✓ 4] 6 8 ____
Total Well Depth: 19.84	Depth to Water Pre: 1.44 Post: 1.44
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/m

Pump Depth: 14'

Time	Temp. ([✓ °C] or °F)	pH	Cond. (mS or [✓ µS])	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or [✓ mL])	DTW Observations
1344	15.18	9.56	3160	22	0.52	118.0	900	1.44
1347	15.22	9.50	3203	12	0.39	115.7	1800	1.44
1350	14.90	9.45	3236	9	0.41	115.9	2700	1.44
1353	14.98	9.38	3249	7	0.29	118.7	3600	1.44
1356	15.16	9.36	3251	6	0.23	114.8	4500	1.44
1359	15.20	9.38	3250	5	0.20	112.6	5400	1.44
							$Fe^{2+} = 0$	

Did well dewater? Yes [✓ No]	Amount actually evacuated:
Sampling Time: 1404	Sampling Date: 3-2-06
Sample I.D.: mw-9	Laboratory: McCampbell
Analyzed for: [✓ TPH-G] [✓ BTEX] [✓ MTBE] [✓ TPH-D]	Other: See SOW
Equipment Blank I.D.: @ Time	Duplicate I.D.:

Appendix C

Analytical Laboratory Report
McCampbell Analytical, Inc.
Dated March 13, 2006

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: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06 Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Reported: 03/13/06
	Client P.O.:	Date Completed: 03/13/06

WorkOrder: 0603034

March 13, 2006

Dear Mark:

Enclosed are:

1). the results of **8** analyzed samples from your **Dublin Concrete/Dolan Rentals project,**

2). a QC report for the above samples

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

4). a bill for analytical services.

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

Best regards,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
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Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06 Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/04/06-03/07/06
	Client P.O.:	Date Analyzed: 03/04/06-03/07/06

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

Extraction method: SW5030B
Analytical methods: SW8021B/8015Cm
Work Order: 0603034

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	62,f	ND	ND	ND	ND	ND	1	111
002A	MW-3	W	ND	ND	ND	ND	ND	ND	1	102
003A	MW-4	W	1600,a	ND<20	47	4.1	1.6	19	1	113
004A	MW-5	W	ND	30	ND	ND	ND	ND	1	108
005A	MW-6	W	ND	ND	ND	ND	ND	ND	1	118
006A	MW-7	W	ND	ND	ND	ND	ND	ND	1	110
007A	MW-8	W	590,a	ND	6.2	2.7	0.67	21	1	115
008A	MW-9	W	280,a	ND	2.6	0.96	1.0	10	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

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Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06
		Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/02/06
	Client P.O.:	Date Analyzed: 03/03/06-03/04/06

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

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0603034

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0603034-001B	MW-1	W	ND	1	99
0603034-002B	MW-3	W	ND	1	100
0603034-003B	MW-4	W	220,d	1	93
0603034-004B	MW-5	W	ND	1	87
0603034-005B	MW-6	W	ND	1	98
0603034-006B	MW-7	W	ND	1	96
0603034-007B	MW-8	W	550,d,b	1	93
0603034-008B	MW-9	W	430,d,b	1	93

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

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

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

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

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Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06
		Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/09/06
	Client P.O.:	Date Analyzed: 03/09/06

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0603034

Lab ID	0603034-004I				Reporting Limit for DF =1	
Client ID	MW-5					
Matrix	W					
DF	1				S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND				NA	0.5
t-Butyl alcohol (TBA)	ND				NA	5.0
1,2-Dibromoethane (EDB)	ND				NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND				NA	0.5
Diisopropyl ether (DIPE)	ND				NA	0.5
Ethanol	ND				NA	50
Ethyl tert-butyl ether (ETBE)	ND				NA	0.5
Methanol	ND				NA	500
Methyl-t-butyl ether (MTBE)	28				NA	0.5
Surrogate Recoveries (%)						
%SS1:	104					
Comments						

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

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

\# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06
		Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/07/06
	Client P.O.:	Date Analyzed: 03/07/06

Methane*

Extraction method: RSK174
Analytical methods: RSK174
Work Order: 0603034

Lab ID	Client ID	Matrix	Methane	DF	% SS
001D	MW-1	W	6.5	5	N/A
002D	MW-3	W	ND	1	N/A
003D	MW-4	W	90	50	N/A
004D	MW-5	W	490	250	N/A
005D	MW-6	W	12	10	N/A
006D	MW-7	W	1.7	1	N/A
007D	MW-8	W	17	10	N/A
008D	MW-9	W	19	10	N/A

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

* water samples are reported in μg/L.

DHS Certification No. 1644

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Blymyer Engineers, Inc.

1829 Clement Avenue

Alameda, CA 94501-1395

Client Project ID: Dublin Concrete/Dolan Rentals

Client Contact: Mark Detterman

Client P.O.:

Date Sampled: 03/02/06

Date Received: 03/02/06

Date Extracted: 03/02/06

Date Analyzed: 03/07/06-03/08/06

Metals*

Extraction method E200 7/E200 8

Analytical methods: E200 7

Work Order: 0603034

Lab ID	Client ID	Matrix	Extraction	Manganese	Potassium	DF	% SS
001H	MW-1	W	TTLC	1700	5100	1	120
002H	MW-3	W	TTLC	1800	4400	1	121
003H	MW-4	W	TTLC	5300	3900	1	114
004H	MW-5	W	TTLC	960	4000	1	122
005H	MW-6	W	TTLC	480	1600	1	118
006H	MW-7	W	TTLC	5500	7300	1	118
007H	MW-8	W	TTLC	ND	19,000	1	109
008H	MW-9	W	TTLC	ND	20,000	1	105

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	TTLC	20	500	µg/L
	S	TTLC	NA	NA	NA

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

means surrogate diluted out of range; ND means not detected above the reporting limit; N/A means not applicable to this sample or instrument.

i) aqueous sample containing greater than ~1 vol. % sediment; for DISSOLVED metals, this sample has been preserved prior to filtration; for TTLC metals, a representative sediment-water mixture was digested; j) reporting limit raised due to insufficient sample amount; k) reporting limit raised due to matrix interference; m) estimated value due to low/high surrrogate recovery, caused by matrix interference; n) results are reported on a dry weight basis; p) see attached narrative.

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Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06 Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/02/06-03/07/06
	Client P.O.:	Date Analyzed: 03/08/06

Biochemical Oxygen Demand (BOD)*

Analytical Method: SM5210B

Work Order: 0603034

Lab ID	Client ID	Matrix	BOD	DF
0603034-001E	MW-1	W	ND	1
0603034-002E	MW-3	W	ND	1
0603034-003E	MW-4	W	ND	1
0603034-004E	MW-5	W	ND	1
0603034-005E	MW-6	W	ND	1
0603034-006E	MW-7	W	ND	1
0603034-007E	MW-8	W	ND	1
0603034-008E	MW-9	W	ND	1

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	3.0 mg/L
	S	NA

* water samples are reported in mg/L.

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

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Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06
		Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/02/06
	Client P.O.:	Date Analyzed: 03/02/06

Chemical Oxygen Demand (COD)*

Analytical Method: SM5220D

Work Order: 0603034

Lab ID	Client ID	Matrix	COD	DF
0603034-001F	MW-1	W	43	1
0603034-002F	MW-3	W	ND	1
0603034-003F	MW-4	W	33	1
0603034-004F	MW-5	W	31	1
0603034-005F	MW-6	W	21	1
0603034-006F	MW-7	W	26	1
0603034-007F	MW-8	W	71	1
0603034-008F	MW-9	W	61	1

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	10 mg/L
	S	NA

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

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Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06
		Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/02/06
	Client P.O.:	Date Analyzed: 03/10/06

Inorganic Carbon as Carbon Dioxide*

Analytical Method: SM5310 B

Work Order: 0603034

Lab ID	Client ID	Matrix	IC as CO2	DF
0603034-001C	MW-1	W	850	10
0603034-002C	MW-3	W	730	10
0603034-003C	MW-4	W	370	10
0603034-004C	MW-5	W	1600	10
0603034-005C	MW-6	W	470	10
0603034-006C	MW-7	W	450	10
0603034-007C	MW-8	W	8.7	1
0603034-008C	MW-9	W	8.1	1

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.

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Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06 Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/02/06
	Client P.O.:	Date Analyzed: 03/04/06

Inorganic Anions by IC*

Analytical methods: E300.1

Work Order: 0603034

Lab ID	Client ID	Matrix	Sulfate	DF	% SS
0603034-001G	MW-1	W	610	100	---#
0603034-002G	MW-3	W	630	100	---#
0603034-003G	MW-4	W	490	100	---#
0603034-004G	MW-5	W	450	100	---#
0603034-005G	MW-6	W	540	100	---#
0603034-006G	MW-7	W	260	50	102
0603034-007G	MW-8	W	570	100	98
0603034-008G	MW-9	W	890	100	---#

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

* 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.

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Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06 Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/07/06
	Client P.O.:	Date Analyzed: 03/07/06

Total Nitrogen*

Analytical Method: E415.3

Work Order: 0603034

Lab ID	Client ID	Matrix	Total Nitrogen	DF
0603034-001F	MW-1	W	ND	1
0603034-002F	MW-3	W	2.0	1
0603034-003F	MW-4	W	0.88	1
0603034-004F	MW-5	W	ND	1
0603034-005F	MW-6	W	5.2	1
0603034-006F	MW-7	W	ND	1
0603034-007F	MW-8	W	13	1
0603034-008F	MW-9	W	11	1

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	0.7 mg/L	
	S	NA	

* water samples are reported in mg/L, soil/sludge/solid samples in mg/kg. Settleable solids and floatable matter are excluded from analysis per E415.3.

h) a lighter than water immiscible sheen/product is present - sheen carbon content not included in result; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to matrix interference.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395	Client Project ID: Dublin Concrete/Dolan Rentals	Date Sampled: 03/02/06
		Date Received: 03/02/06
	Client Contact: Mark Detterman	Date Extracted: 03/03/06
	Client P.O.:	Date Analyzed: 03/03/06

Total Phosphorous as P*

Analytical Method: E365.1

Work Order: 0603034

Lab ID	Client ID	Matrix	Total Phosphorous as P	DF
0603034-001F	MW-1	W	0.19	1
0603034-002F	MW-3	W	0.18	1
0603034-003F	MW-4	W	0.17	1
0603034-004F	MW-5	W	0.14	1
0603034-005F	MW-6	W	0.099	1
0603034-006F	MW-7	W	0.16	1
0603034-007F	MW-8	W	0.021	1
0603034-008F	MW-9	W	ND	1

Reporting Limit for DF = 1; ND means not detected at or above the reporting limit	W	0.04 mg/L	
	S	NA	

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

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

DHS Certification No. 1644

Angela Rydelius, Lab Manager

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 20587 Spiked Sample ID: 0603073-001A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	102	111	8.64	105	108	3.17	70 - 130	70 - 130
MTBE	ND	10	116	102	12.9	104	106	1.57	70 - 130	70 - 130
Benzene	ND	10	113	99.8	12.3	92.5	93.4	0.910	70 - 130	70 - 130
Toluene	ND	10	105	90	15.7	93.8	94.6	0.815	70 - 130	70 - 130
Ethylbenzene	ND	10	104	80.6	25.0	94.5	96.9	2.46	70 - 130	70 - 130
Xylenes	ND	30	103	95.7	7.71	95.7	99.7	4.10	70 - 130	70 - 130
%SS:	102	10	111	92	18.0	98	97	1.28	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 20587 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001A	3/02/06 11:20 AM	3/04/06	3/04/06 7:31 AM	0603034-002A	3/02/06 12:17 PM	3/04/06	3/04/06 8:03 AM
0603034-003A	3/02/06 10:45 AM	3/04/06	3/04/06 8:35 AM	0603034-004A	3/02/06 9:21 AM	3/04/06	3/04/06 9:07 AM
0603034-005A	3/02/06 9:55 AM	3/04/06	3/04/06 9:40 AM	0603034-006A	3/02/06 9:00 AM	3/04/06	3/04/06 10:12 AM
0603034-007A	3/02/06 10:29 AM	3/04/06	3/04/06 10:44 AM	0603034-008A	3/02/06 2:04 PM	3/07/06	3/07/06 2:33 AM

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

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

DHS Certification No. 1644

QA/QC Officer

QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: SW8015C **Extraction: SW3510C** **BatchID: 20581** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	100	99.8	0.526	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	101	101	0	N/A	70 - 130

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

NONE

BATCH 20581 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001B	3/02/06 11:20 AM	3/02/06	3/04/06 1:09 PM	0603034-002B	3/02/06 12:17 PM	3/02/06	3/04/06 2:17 PM
0603034-003B	3/02/06 10:45 AM	3/02/06	3/04/06 1:09 PM	0603034-004B	3/02/06 9:21 AM	3/02/06	3/04/06 2:17 PM
0603034-005B	3/02/06 9:55 AM	3/02/06	3/04/06 2:53 AM	0603034-006B	3/02/06 9:00 AM	3/02/06	3/04/06 4:02 AM
0603034-007B	3/02/06 10:29 AM	3/02/06	3/04/06 5:45 AM	0603034-008B	3/02/06 2:04 PM	3/02/06	3/03/06 11:14 PM

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: SW8260B **Extraction: SW5030B** **BatchID: 20629** **Spiked Sample ID: 0603076-006B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	108	110	2.21	107	105	1.37	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	87.9	91.5	4.07	80.1	88.7	10.3	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	94.2	98.2	4.14	91.6	91.3	0.380	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	117	117	0	120	119	0.739	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	120	117	2.13	122	115	5.79	70 - 130	70 - 130
Ethanol	ND	500	92	102	9.82	93	89.6	3.73	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	111	114	3.07	109	107	1.59	70 - 130	70 - 130
Methanol	ND	2500	98.2	98.2	0	95.9	99.3	3.52	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	115	112	2.07	101	102	0.457	70 - 130	70 - 130
%SS1:	98	10	115	117	1.48	112	110	2.19	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 20629 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-004I	3/02/06 9:21 AM	3/09/06	3/09/06 4:06 AM				

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

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

QC SUMMARY REPORT FOR RSK174

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: RSK174 **Extraction: RSK174** **BatchID: 20578** **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	1.76	N/A	N/A	N/A	103	106	2.41	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 20578 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001D	3/02/06 11:20 AM	3/07/06	3/07/06 2:26 PM	0603034-002D	3/02/06 12:17 PM	3/07/06	3/07/06 12:05 PM
0603034-003D	3/02/06 10:45 AM	3/07/06	3/07/06 2:44 PM	0603034-004D	3/02/06 9:21 AM	3/07/06	3/07/06 4:22 PM
0603034-005D	3/02/06 9:55 AM	3/07/06	3/07/06 3:27 PM	0603034-006D	3/02/06 9:00 AM	3/07/06	3/07/06 1:32 PM
0603034-007D	3/02/06 10:29 AM	3/07/06	3/07/06 3:46 PM	0603034-008D	3/02/06 2:04 PM	3/07/06	3/07/06 4:40 PM

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

QC SUMMARY REPORT FOR E200.7

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: E200.7 **Extraction: E200.7/E200.8** **BatchID: 20638** **Spiked Sample ID: 0603034-008H**

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
Manganese	ND	100	106	105	1.13	109	104	5.07	80 - 120	85 - 115
Potassium	20000	1000	NR	NR	NR	95.4	92.3	3.33	80 - 120	85 - 115
%SS:	105	750	121	121	0	118	109	8.14	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 20638 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001H	3/02/06 11:20 AM	3/02/06	3/07/06 3:41 PM	0603034-002H	3/02/06 12:17 PM	3/02/06	3/08/06 10:09 AM
0603034-003H	3/02/06 10:45 AM	3/02/06	3/08/06 10:13 AM	0603034-004H	3/02/06 9:21 AM	3/02/06	3/08/06 10:16 AM
0603034-005H	3/02/06 9:55 AM	3/02/06	3/07/06 3:50 PM	0603034-006H	3/02/06 9:00 AM	3/02/06	3/07/06 3:52 PM
0603034-007H	3/02/06 10:29 AM	3/02/06	3/07/06 3:54 PM	0603034-008H	3/02/06 2:04 PM	3/02/06	3/07/06 3:56 PM

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

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

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

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 E300.1

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: E300.1 **Extraction: E300.1** **BatchID: 20507** **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
Sulfate	N/A	1	N/A	N/A	N/A	107	98.5	7.85	N/A	85 - 115
%SS:	N/A	0.10	N/A	N/A	N/A	105	97	7.15	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 20507 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001G	3/02/06 11:20 AM	3/02/06	3/04/06 1:00 AM	0603034-002G	3/02/06 12:17 PM	3/02/06	3/04/06 1:28 AM
0603034-003G	3/02/06 10:45 AM	3/02/06	3/04/06 1:57 AM	0603034-004G	3/02/06 9:21 AM	3/02/06	3/04/06 2:26 AM
0603034-005G	3/02/06 9:55 AM	3/02/06	3/04/06 2:55 AM	0603034-006G	3/02/06 9:00 AM	3/02/06	3/04/06 3:24 AM
0603034-007G	3/02/06 10:29 AM	3/02/06	3/04/06 4:50 AM	0603034-008G	3/02/06 2:04 PM	3/02/06	3/04/06 5:19 AM

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

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

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

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 SM5210B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: SM5210B **Extraction: SM5210B** **BatchID: 20589** **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
BOD	N/A	198	N/A	N/A	N/A	101	101	0	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 20589 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001E	3/02/06 11:20 AM	3/02/06	3/08/06 7:02 PM	0603034-002E	3/02/06 12:17 PM	3/02/06	3/08/06 7:14 PM
0603034-003E	3/02/06 10:45 AM	3/02/06	3/08/06 7:26 PM	0603034-004E	3/02/06 9:21 AM	3/02/06	3/08/06 7:38 PM
0603034-005E	3/02/06 9:55 AM	3/02/06	3/08/06 7:50 PM	0603034-006E	3/02/06 9:00 AM	3/02/06	3/08/06 8:02 PM
0603034-007E	3/02/06 10:29 AM	3/02/06	3/08/06 8:14 PM	0603034-008E	3/02/06 2:04 PM	3/02/06	3/08/06 8:26 PM

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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

QC SUMMARY REPORT FOR SM5220D

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: SM5220D **Extraction: SM5220D** **BatchID: 20503** **Spiked Sample ID: 0602458-001F**

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
COD	58	400	93.9	95	1.06	106	105	0.548	80 - 120	90 - 110

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

NONE

BATCH 20503 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001F	3/02/06 11:20 AM	3/02/06	3/02/06 4:19 PM	0603034-002F	3/02/06 12:17 PM	3/02/06	3/02/06 4:25 PM
0603034-003F	3/02/06 10:45 AM	3/02/06	3/02/06 4:31 PM	0603034-004F	3/02/06 9:21 AM	3/02/06	3/02/06 4:37 PM
0603034-005F	3/02/06 9:55 AM	3/02/06	3/02/06 4:55 PM	0603034-006F	3/02/06 9:00 AM	3/02/06	3/02/06 5:01 PM
0603034-007F	3/02/06 10:29 AM	3/02/06	3/02/06 5:07 PM				

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

QC SUMMARY REPORT FOR SM5220D

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: SM5220D **Extraction: SM5220D** **BatchID: 20590** **Spiked Sample ID: 0603034-008F**

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
COD	61	400	92.2	91	1.10	102	102	0	80 - 120	90 - 110

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

BATCH 20590 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-008F	3/02/06 2:04 PM	3/02/06	3/02/06 5:13 PM				

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

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

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

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

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

DHS Certification No. 1644

QA/QC Officer

QC SUMMARY REPORT FOR SM5310B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: SM5310 B **Extraction: E415.3** **BatchID: 20588** **Spiked Sample ID: 0603058-001B**

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	470	36.7	NR	NR	NR	105	107	1.60	70 - 130	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 20588 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001C	3/02/06 11:20 AM	3/02/06	3/10/06 3:32 PM	0603034-002C	3/02/06 12:17 PM	3/02/06	3/10/06 3:40 PM
0603034-003C	3/02/06 10:45 AM	3/02/06	3/10/06 3:47 PM	0603034-004C	3/02/06 9:21 AM	3/02/06	3/10/06 3:53 PM
0603034-005C	3/02/06 9:55 AM	3/02/06	3/10/06 4:00 PM	0603034-006C	3/02/06 9:00 AM	3/02/06	3/10/06 4:07 PM
0603034-007C	3/02/06 10:29 AM	3/02/06	3/10/06 4:50 PM	0603034-008C	3/02/06 2:04 PM	3/02/06	3/10/06 4:57 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 E415.3

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: E415.3 **Extraction: E415.3** **BatchID: 20592** **Spiked Sample ID: 0603034-001F**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	Spiked	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/L	mg/L	% Rec.	% Rec.	% RPD	mg/L	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Total Nitrogen	ND	50	104	103	0.792	60	86.6	85.8	0.870	70 - 130	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 20592 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001F	3/02/06 11:20 AM	3/07/06	3/07/06 5:34 PM	0603034-002F	3/02/06 12:17 PM	3/07/06	3/07/06 5:49 PM
0603034-003F	3/02/06 10:45 AM	3/07/06	3/07/06 6:03 PM	0603034-004F	3/02/06 9:21 AM	3/07/06	3/07/06 4:14 PM
0603034-005F	3/02/06 9:55 AM	3/07/06	3/07/06 4:30 PM	0603034-006F	3/02/06 9:00 AM	3/07/06	3/07/06 4:42 PM
0603034-007F	3/02/06 10:29 AM	3/07/06	3/07/06 4:53 PM	0603034-008F	3/02/06 2:04 PM	3/07/06	3/07/06 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.

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 E365.1

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0603034

EPA Method: E365.1 **Extraction: E365.3** **BatchID: 20591** **Spiked Sample ID: 0603034-001F**

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
Total Phosphorous as P	0.19	0.26	84.9	96.3	7.00	98.9	97.1	1.84	80 - 120	90 - 110

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

NONE

BATCH 20591 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603034-001F	3/02/06 11:20 AM	3/03/06	3/03/06 1:52 PM	0603034-002F	3/02/06 12:17 PM	3/03/06	3/03/06 1:53 PM
0603034-003F	3/02/06 10:45 AM	3/03/06	3/03/06 1:54 PM	0603034-004F	3/02/06 9:21 AM	3/03/06	3/03/06 1:55 PM
0603034-005F	3/02/06 9:55 AM	3/03/06	3/03/06 1:56 PM	0603034-006F	3/02/06 9:00 AM	3/03/06	3/03/06 1:57 PM
0603034-007F	3/02/06 10:29 AM	3/03/06	3/03/06 2:00 PM	0603034-008F	3/02/06 2:04 PM	3/03/06	3/03/06 2:01 PM

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

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

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

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

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

DHS Certification No. 1644

_____ QA/QC Officer

BEIG 0603034

BLAINE
TECH SERVICES, INC.

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

CHAIN OF CUSTODY
BTS # 060302-DW-1

CLIENT: Blymyer Engineers, Inc.

SITE: Dublin Concrete/ Dolan Rentals
6393 Scarlett Ct
Dublin, 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
**Rerun highest MTBE detection by 8021 for (5) oxygenates, 1,2-DCA, EDB, Methanol and Ethanol all by EPA 8260.

CONDUCT ANALYSIS TO DETECT

	SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TPH-G (8015M)	BTEX/MtBE (8021B)**	TPH-D (8015M)	Carbon Dioxide, Methane	BOD (short hold times)	COD, Total Phosphorous, Nirtogen	Sulfate	Manganese, Potassium	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
(+)	mw-1	3-2	1120	W	11		X	X	X	X	X	X	X	X				
(+)	mw-3		1217				X	X	X	X	X	X	X	X				
(+)	mw-4		1045				X	X	X	X	X	X	X	X				
(+)	mw-5		0921				X	X	X	X	X	X	X	X	✱ 9oxys added 3/1/06 per [illegible] or CA 5 day			
(+)	mw-6		0955				X	X	X	X	X	X	X	X				
(+)	mw-7		0900				X	X	X	X	X	X	X	X				
(+)	mw-8		1029				X	X	X	X	X	X	X	X				
(+)	mw-9		1404				X	X	X	X	X	X	X	X				

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

PRESERVATION	VOAS	O&G	METALS	OTHER
	✓		✓	✓

SAMPLING COMPLETED: DATE 3-2-06 TIME 1445
SAMPLING PERFORMED BY: Dave Walter, John DeLong
RESULTS NEEDED NO LATER THAN: As contracted

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
David C. Walt	3-2-06			3-2-06	355
	3/2/06	350	Mel Vall	3/2/06	3:30

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

Page 1 of 1

WorkOrder: 0603034 **ClientID: BEIA** **EDF: NO**

Report to:

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

TEL: (510) 521-3773
FAX: (510) 865-2594
ProjectNo: Dublin Concrete/Dolan Rentals
PO:

Bill to:

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

Requested TAT: 5 days

Date Received: 03/02/2006
Date Printed: 03/07/2006

					Requested Tests (See legend below)											
Sample ID	**ClientSampID**	**Matrix**	**Collection Date**	**Hold**	1	2	3	4	5	6	7	8	9	10	11	12
0603034-001	MW-1	Water	3/2/06 11:20:00 AM	☐	G		E	F	A	C	H	D	F	F	B	
0603034-002	MW-3	Water	3/2/06 12:17:00 PM	☐	G		E	F	A	C	H	D	F	F	B	
0603034-003	MW-4	Water	3/2/06 10:45:00 AM	☐	G		E	F	A	C	H	D	F	F	B	
0603034-004	MW-5	Water	3/2/06 9:21:00 AM	☐	G	I	E	F	A	C	H	D	F	F	B	
0603034-005	MW-6	Water	3/2/06 9:55:00 AM	☐	G		E	F	A	C	H	D	F	F	B	
0603034-006	MW-7	Water	3/2/06 9:00:00 AM	☐	G		E	F	A	C	H	D	F	F	B	
0603034-007	MW-8	Water	3/2/06 10:29:00 AM	☐	G		E	F	A	C	H	D	F	F	B	
0603034-008	MW-9	Water	3/2/06 2:04:00 PM	☐	G		E	F	A	C	H	D	F	F	B	

Test Legend:

1	300_1_W	2	9-OXYS_W	3	BOD_W	4	COD_W	5	G-MBTEX_W
6	IC(CO2)_W	7	METALSMS_W	8	RSK174_W	9	TN_W	10	TotalP_W
11	TPH(D)_W	12							

Prepared by: Melissa Valles

Comments: 9-oxys added 3/7/06 on sample 004 per note on coc

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.