Semi-Annual Groundwater Monitoring Report

(First Quarter 2010)

Eagle Gas
4301 San Leandro Street
Oakland, California 94601

LOP StID# 2118
Fuel Leak Case No. RO0000096
USTCF Claim No. 014551

Prepared for:

Ms. Farah Naz
Mr. Muhammad Jamil

Prepared by:

Innovative Environmental Remediation, Inc.
Walnut Creek, California

February 2010

Innovative Environmental Remediation, Inc.

February 28, 2010

Mr. Jerry Wickham, Hazardous Materials Specialist
Alameda County Environmental Health Services
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

RE: Semi-Annual Groundwater Monitoring Report (First Quarter 2010)

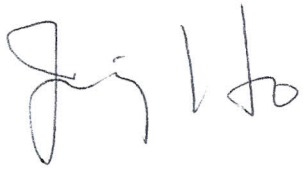
Eagle Gas Station
4301 San Leandro Street
Oakland, California 94601

LOP StID# 2118
ACEH Case No. RO0000096
USTCF Claim No. 014551

Dear Mr. Wickham:

Innovative Environmental Remediation, Inc. (IERI) has prepared this report entitled " Semi-Annual Groundwater Monitoring Report (First Quarter 2010)" for the above referenced site for your review. If you have any questions regarding this report, please do not hesitate to contact the undersigned at (925) 708-8387 or (925) 943-6445.

Sincerely,
IERI



Jim Ho, Ph.D., P.E.
Principal Engineer

Enclosure

Mr. Jerry Wickham
Hazardous Materials Specialist

Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

RE: Eagle Gas Station
4301 San Leandro Street
Oakland, California 94601

LOP StID# 2118
Fuel Leak Case No. RO0000096
USTCF Claim No. 014551

Dear Mr. Wickham,

As the legally authorized representative of the above-referenced project location, I have reviewed the *Semi-Annual Groundwater Monitoring Report (First Quarter 2010)* prepared by my consultant of record, Innovative Environmental Remediation, Inc. (IERI) of Walnut Creek, California. I declare, under penalty of perjury, that the information and/or recommendations contained in this document or report are true and correct to the best of my knowledge.

Sincerely,

Muhammad Jamil
Mr. Muhammad Jamil

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APPENDICES

1. INTRODUCTION

Ms. Farah Naz and Mr. Muhammad Jamil retained Innovative Environmental Remediation, Inc. (IERI) as their new consultant beginning December 1, 2009. On behalf of Ms. Naz and Mr. Jamil, IERI conducted a First Quarter 2010 (1Q10) semi-annual groundwater monitoring in winter 2010 for the site located at 4301 San Leandro Street, Oakland, California, and has prepared this document, the *Semi-Annual Groundwater Monitoring Report (First Quarter 2010)*.

The Alameda County Environmental Health (ACEH) approved a modified approach of using semi-annual groundwater sampling and the low-flow rate purging methods in the letters dated April 24, 2009 and July 24, 2009. The first semi-annual groundwater monitoring/sampling for the subject site started in July 2009 (a summer event). Six on-site wells, MW-4, MW-7, MW-7D, MW-8, MW-11D, and IS-5 and four off-site monitoring wells, MW-9, MW-9D, MW-10, and MW-10D were sampled. These wells were purged and sampled using the Low-Flow Rate Purging (LRP) and Sampling Method (ASTM, 2002; Puls and Barcelona, 1996). The following methods were used to analyze the contaminants of concerned: EPA Method 8015M for the total petroleum hydrocarbons as diesel (TPH-d), EPA Method 8260B for total petroleum hydrocarbons as gasoline (TPH-g), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), and fuel oxygenates including Methyl Tertiary Butyl Ether (MTBE), Tertiary Butyl Alcohol (TBA), Diisopropyl ether (DIPE), Ether-ter-butyl-ether (ETBE), and Tert-amyl methyl ether (TAME). In addition, all of the 25 existing on-site and off-site wells listed in Tables 2 and 3 were also gauged for groundwater depth and checked for the presence of free product according to the proposed modifications.

Following the approach described above, the 1Q10 semi-annual groundwater monitoring and sampling was conducted on January 7 and 8, 2010 (a winter event). However, due to the implementation of an interim remedial action and pilot test conducted from December 10, 2009 through January 10, 2010 for the subject site (IERI, 2010), wells MW-8 and IS-3 were under the dual-phase extraction and were not available for gauging and/or sampling. Thus, only wells MW-4, MW-7, MW-7D, MW-11D, IS-5, MW-9, MW-9D, MW-10, and MW-10D were sampled, and 23 wells were gauged for the 1Q10 event.

1.1. Document Purpose

The purpose of this report is to document the 1Q10 groundwater monitoring/sampling activities and the associated data and results.

1.2. Document Structure

This report includes the following sections:

Section 1 – Introduction

Section 2 – Background Information

Section 3 – Groundwater Monitoring and Sampling Activities

Section 4 – Groundwater Monitoring and Sampling Results

Section 5 – Findings

Section 6 – Recommendation

1.3. Summary of Findings

- Shallow groundwater flow remained in an outward direction from the station building within the northwest/north/northeast sectors. Strong horizontal gradients existed between wells MW-3 and IS-2, near the north end of the plume, and away from the former UST excavation area. The horizontal flow distribution was generally consistent with the orientation of the plume. Thus, the potential of off-site contaminant migration in the shallow zone remained significant.

- Unlike the summer 2009 and 4Q08 monitoring, the groundwater mound near wells MW-1 and IS-1 southwest of the subject site disappeared. This was probably caused by the high vacuum extraction of the DPE wells D8, D10, and D11.

- The average groundwater head in the shallow zone was 6.18 feet higher than the average head of the deep zone. Significant downward hydraulic gradient existed everywhere between the shallow and deep groundwater zones.

- The groundwater in the deep zone was relatively flat. The dominant groundwater flow was in the southeast-east direction.

- The calculated groundwater elevation in deep well MW-7D (15.40 feet above msl) was higher than the groundwater elevation in shallow well MW-7 (11.55 feet above msl). This finding was abnormal. The cause of the reversed gradient was not clear.

- Well IS-5 had 9 feet of sediments accumulated at the bottom of the well. Also, well MW-7D may have either silted up by 15 feet or contain structural problems.

The causes of sedimentation and/or structure problems in wells IS-5 and MW-7D have not been identified.

- Sheen was found only in wells MW-4 and IS-5. The appearance of sheen in wells MW-4 and IS-5 is consistent with the analytical data for TPH-g, benzene, and TPH-d. Also, among all the available wells, the highest groundwater impact was found in wells MW-4 and IS-5.

- Although the highest contamination existed in wells MW-4 and IS-5, significant concentration reduction ranging from 2 to 19 times for TPH-d, TPH-g, benzene, and/or MTBE/TBA was found in wells MW-4, MW-7, MW-9, MW-10, and IS-5 after the 2009 interim remedial action.

- Although shallow groundwater under the subject site remained heavily impacted, deep groundwater was not significantly impacted.

- The detection of elevated concentrations in MW-7D was very likely anomalous. The cause of this situation was not clear.

2. BACKGROUND INFORMATION

2.1. Site Description

The site is located in the southern portion of the City of Oakland, Alameda County, California, at the southern corner of the intersection of San Leandro Street and High Street. The site is located approximately 1,100 feet northeast of Interstate Highway 880 and approximately 500 feet southeast of the 42nd Avenue overpass (Figure 1). The site is located in a mixed industrial/commercial/residential area and is bounded by commercial property to the southeast and southwest, by High Street to the northwest, and by San Leandro Street to the northeast. The elevated Bay Area Rapid Transit (BART) tracks are located northeast of the site (Figure 2). The site is currently operated as a gas station and convenience store,

2.2. Local Lithology and Hydrogeology

The subsurface is heterogeneous. The site lithology consists primarily of interbeded clayey sediments (lean clays to fat clays, and sandy clays) of low permeability, with thin interbeds of relatively more permeable clayey sands and clayey gravels; this is typical of alluvial deposits. The site is underlain predominantly by clays with some clayey/silty gravel and clayey sand at depths to approximately 2 to 7 feet below ground surface (bgs). A relatively continuous clayey gravel layer, having a thickness of approximately 5 to 15 feet, exists in the shallow zone. Below the relatively continuous and more permeable clayey gravel layer is another clayey layer approximately 20 to 30 feet thick. Below this thick clayey layer is another sandy/silt layer. The thickness of this sandy/silty layer has not been determined.

The shallow zone (Zone A) extends from the ground surface to a depth of approximately 25 to 30 feet bgs. It consists primarily of clays with discontinuous layers of clayey gravel. The deep zone (Zone B) extends from approximately 25 to 30 feet bgs to at least 58 feet bgs. The lithology of deep zone is primarily sands (poorly graded sand, well graded sand, and silty sand) with thin interbeds of lean clay. The top of Zone B appears to be a hard clayey layer.

Historically, depths to groundwater in the shallow and deep zones have ranged from approximately 6.0 to 20.3 feet bgs and from 6.1 to 19.2 feet bgs, respectively. However, the mean groundwater depths in the shallow and deep zones are 9.4 and 15.5 feet bgs, respectively. Downward gradient exists between the shallow and deep zones. According to historical observations, local groundwater is normally shallowest during the first or second quarter of the year. Since two leaks were detected in the sewer lateral

near well IS-1 and a groundwater mound was identified in 2006 and 2007, local groundwater flow underneath the site has been influenced by the groundwater mound.

2.3. Site Investigation History

A detailed description of former site investigation is included in Appendix A. Well construction details for all groundwater monitoring, extraction, and bio-remediation wells are presented in Table 1.

2.4. Contaminants of Concern

The results of the 2006 site investigation indicate that the MTBE concentration in the shallow zone is generally greater than 10,000 μg/L. Although the TPH-g concentration in the shallow zone is generally less than the concentrations of MTBE and TBA, a large portion of the shallow zone also had TPH-g concentrations greater than 10,000 μg/L. Overall, the benzene concentration in the shallow zone is greater than 100 μg/L.

The 2007 site investigation indicates that the shallow zone is highly contaminated by MTBE, TBA, and TPH-g on site, as well as off site to the south, southwest, and in the general direction of High Street. The deep zone is relatively less contaminated than the shallow zone, but the deep zone groundwater is contaminated at off-site borings SB-18 (14,000 μg/L MTBE and 33,000 μg/L TBA at 40 feet bgs) and SB-13 (TPH-g 23,000 μg/L at 52 feet bgs).

Based on the 2006 and 2007 site investigation results and the historical groundwater monitoring data, the contaminants of concern (COCs) of the subject site are TPH-g, MTBE, and TBA.

3. GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

The 1Q10 (winter 2010) groundwater monitoring event was conducted on January 7 and 8, 2010. The monitoring event included gauging of groundwater depths, Low-Flow Rate Purging and Sampling, and laboratory analysis of groundwater samples. Following IERI's Standard Operation Procedures (Appendix B), the field staff gauged the groundwater depth and checked the presence of free product in all 23 available wells on January 7, 2010. An electronic water level indicator accurate to within 0.01 foot was used to measure the depths to groundwater from the top of each well casing. Since an interim remedial action and pilot test was performed from December 10, 2009 through January 10, 2010 for the subject site (IERI, 2010), wells MW-8 and IS-3 were under the dual-phase extraction and were not available for gauging and/or sampling.

On January 7 and 8, 2010, near the completion of the interim remediation and pilot test, five on-site wells, MW-4, MW-7, MW-7D, MW-11D, and IS-5 and four off-site wells, MW-9, MW-9D, MW-10, and MW-10D were purged and sampled using the Low-Flow Rate Purging (LRP) and Sampling Method (ASTM, 2002; Puls and Barcelona, 1996). The purge rate was calibrated prior to the first purge to establish the flow-rate. The pump was set to a rate of 0.3 liters per minute (L/min). Depth to water (DTW) and water quality parameters were measured in three-minute intervals. The water quality parameters of pH, temperature, and specific conductance (SC) were measured using an Oakton Meter, which was calibrated prior to use and decontaminated between wells. When parameters stabilized according to the low-flow sampling protocol (ASTM, 2002), samples were collected directly from the dedicated tubing. The groundwater sample handling was performed in accordance with the Standard Operation Procedures presented in Appendix B. The groundwater depth and well purging/water quality data were recorded in the field and are presented in Appendix C.

For the 1Q10 groundwater monitoring, in addition to the decontamination rinsate, approximately 10.7 gallons of purge water was treated by the water treatment unit available on site for the interim remedial action/pilot test. After the low flow rate purging, 200 milliliters of groundwater was collected from each sampling well. Following IERI's Standard Operation Procedures (Appendix B), collected samples were labeled, documented on a chain-of-custody form, and packed on wet ice in a chilled cooler for transport to a State of California certified laboratory, Kiff Analytical, LLC, of Davis, California, under standard chain-of-custody protocols. Kiff Analytical performed analyses for TPH-g, BTEX, MTBE, and TBA using EPA Method 8260B; and analysis for TPH-d using EPA Method 8015M.

4. GROUNDWATER MONITORING AND SAMPLING RESULTS

LRP was used to purge and sample the selected monitoring wells during this monitoring event. The groundwater purging rate for each well was set at 0.3 liter per minute (L/min). Groundwater gauging indicated that local groundwater was higher than the top of the well screen for shallow zone wells MW-1, MW-5, IS-1, IS-2, IS-4, IS-5, IS-6, and EW-2; and below the top of the well screen for shallow wells MW-2 MW-3, MW-4, MW-6, MW-7, MW-9, MW-10, and EW-1. The groundwater in deep zone wells was consistently higher than the top of well screen. Thus, the tubing for purging/sampling of all the shallow wells was placed near to the middle of the well screen interval for the shallow zone wells and from 4 to 11 feet below the top of the water surface in the deep wells.

Unlike the summer 2009 groundwater monitoring, petroleum hydrocarbon odors were only identified in wells MW-4, MW-10, IS-5, and MW-7D during the 1Q10 monitoring. Sheen was found only in wells MW-4 and IS-5. The observation of sheen in wells MW-4 and IS-5 is consistent with the 1Q10 laboratory analytical data for TPH-g and TPH-d. It should be noted that liquid product was also observed in well IS-5 during the 2007 investigation. Based on the 2006 and 2007 investigation results, the deep zone is not significantly contaminated. However, petroleum odors were identified in deep well MW-7D during the 1Q10 and summer 2009 monitoring events. Similar to the summer 2009 findings and the observation of sheen in 1Q10, groundwater in wells MW-4 and IS-5 had light gray color with moderate turbidity. Conversely, groundwater in other shallow wells and all deep zone wells was clear and had low turbidity in 1Q10.

It should be noted that the gauged bottom depths of most wells are close to the well installation depths shown in Table 1 (well construction data) except for wells MW-7D and IS-5. According to Table 1, installed bottom depths of wells MW-7D and IS-5 should be 45 and 25 feet bgs, respectively. The summer 2009 gauging also showed that the bottom depths of these two wells were 43.41 and 15.91 feet bgs. However, the 1Q10 monitoring showed that the bottom depths of these two wells were 29.74 and 16.01 feet bgs. The above data confirms that well IS-5 has 9 feet of sediments accumulated at the bottom of the well, and well MW-7D either may have been silted up by 15 feet or have structure problem. The causes of the above issues have not been identified. As a result, all deep wells recovered quickly after purging, while well MW-7D recovered slowly.

The stabilized water temperature in on-site and off-site wells ranged between 16.4 and 19.8 °C. The stabilized pH values were between 7.4 and 7.9, and the measured specific conductivity was between 154 and 577 μmhos/cm. Based on the temperature, pH, and

specific conductivity values, no distinct difference in those water quality parameters was found in on-site and off-site wells. In addition to the purging rate and the stinger depth mentioned above, the water quality parameters (temperature pH, and specific conductivity) and the time required to reach stabilization of water quality were recorded and included in Appendix C.

4.1. Groundwater Elevation and Flow

The depths to groundwater for the shallow and deep zone wells measured on January 7, 2010, ranged from 6.81 (MW-9) to 12.80 feet bgs (MW-3) and 13.90 (MW-10D) to 16.68 feet bgs (MW-4D), respectively. It should be noted that extremely deep water (lower head) of 16.15 feet bgs was measured in shallow well MW-7. Conversely, very shallow water (higher head) of 12.52 feet bgs was measured in deep well MW-7D. Since wells MW-7 and MW-7D are near Dual Phase Extraction (DPE) wells D8 and D9 installed in the shallow zone (see Fig. 3 of the pilot test report, IERI, 2010), the above response appeared to be caused by the DPE. However, DPE wells D8 and D9 were extracted for only 12 days; and were closed off on December 22, 2009. The stressed groundwater should have recovered. In addition, the abnormal rise of well bottom for well MW-7D described above remains an issue. Thus, the anomalous water depths measured in wells MW-7 and MW-7D were not incorporated to delineate the local groundwater flow direction.

Groundwater elevations were calculated by subtracting the measured depths to groundwater from the top-of-casing elevations included in Tables 2 and 3. Calculated groundwater elevations for the 1Q10 monitoring event are listed in Tables 2 and 3. The calculated groundwater elevations for the shallow and deep zone wells range from 14.44 (MW-3) to 18.58 feet above mean sea level (msl) (IS-2) and 11.32 (MW-4D) to 11.50 feet above msl (MW-1D), respectively. The change of groundwater elevations in the shallow and deep zones are 4.14 and 0.18 feet, respectively. The average groundwater elevations for the shallow and deep zone are 17.58 feet with 1.31 feet Standard Deviation (SD) and 11.40 feet with 0.06 feet (SD), respectively. The above analysis indicates that:

- The average groundwater depths in the shallow and deep zones determined in 1Q10 were 9.52 and 15.16 feet bgs, respectively, very close to the historical means of 9.4 and 15.5 feet bgs. A downward gradient obviously existed.
- The average groundwater head in the shallow zone was 6.18 feet higher than the average head of the deep zone. This observation is similar to the head difference of 7.5 feet obtained from the 2007 investigation.

- Strong horizontal gradients existed between wells MW-3 and IS-2; near the north end of the plume, and away from the former UST excavation area. The identified horizontal gradient distribution was generally consistent with the orientation of the plume along the north-south direction. Thus, potential of off-site contaminant migration in the shallow zone remained significant.

- A significant downward gradient existed everywhere between the shallow and deep groundwater zones. Downward heads occurred in all on-site well pairs: MW-1/MW-1D (7.06 feet), MW-4/MW-4D (6.70 feet), and MW-5/MW-5D (6.46 feet), as well as in all off-site well pairs: MW-9/MW-9D (7.16 feet) and MW-10/MW-10D (6.20 feet).

- The existence of a significant head difference between the shallow and deep groundwater zones suggests that a hard clayey layer likely exists on the top of the Zone B.

The calculated groundwater elevations were contoured. The contoured groundwater elevations in the shallow zone are shown in Figure 3. The shallow zone contours show that:

- Even when a high vacuum was applied in monitoring wells IS-3 and MW-8, as well as in DPE wells D3 and D11, in the north portion of the subject site during the 1Q10 monitoring event, the delineated shallow zone groundwater distribution north of the station building remained similar to the distribution obtained from the summer 2009 monitoring. Overall, shallow zone groundwater under the subject site, especially in the northwest/north/northeast portion of the site, still flowed outward from the station building.

- Since two leaks were detected in the sewer lateral near well IS-1, a groundwater mound was identified in the 2006 and 2007 investigations. Historically, local groundwater flow west of the subject site was influenced by the groundwater mound. Although the general groundwater flow under south and east portion of the subject site remained unchanged in 1Q10, the groundwater mound west of the subject site and the strong horizontal gradients between wells MW-4 and MW-2 found in 4Q08 and summer 2009 disappeared during 1Q10. The above observations suggest that high vacuum has stronger influence on the west and south portion of the subject site.

The calculated groundwater elevations for the deep zone were also contoured and shown in Figure 4. The contoured groundwater distribution in the deep zone indicates that:

- Groundwater in the deep zone was relatively flat, which is similar to the data observed in 4Q08 and summer 2009.
- The dominant groundwater flow was in the southeast-east direction.

Historical data and the 2006/2007 investigations showed that the groundwater heads in the shallow zone were consistently higher than the heads in the deep zone. In 1Q10, the average groundwater head in the shallow zone was 6.18 feet higher than the average head of the deep zone. However, anomalous groundwater depths were measured in wells MW-7 and MW-7D. As a result, the calculated groundwater elevation in deep well MW-7D (15.40 feet above msl) was higher than the groundwater elevation in shallow well MW-7 (11.55 feet above msl).

4.2. Laboratory Analytical Results

Elevated concentrations of TPH-g (29,000 μg/L), benzene (2,200 μg/L), MTBE (34,000), and TBA (290,000 and 140,000 μg/L) were identified in on-site wells MW-4 and IS-5. Wells MW-4 and IS-5 are located within the contaminant plumes in the shallow zone delineated by the 2007 investigation. Conversely, only relatively low concentrations of TPH-g (120 and 5,400 μg/L) and benzene (0.52 and 270 μg/L) were detected in off-site, shallow wells MW-9 and MW-10. The MTBE concentrations of MW-9 and MW-10 were 53 and 440 μg/L, respectively. Their TBA concentrations were ignorable.

Except for the TPH-g concentrations of 110 and 180 μg/L in wells MW-9D and MW-10D, respectively, the on-site and off-site deep wells MW-9D, MW-10D, and MW-11D sampled in this monitoring event do not have the benzene, MTBE, and TBA concentrations above their associated Method Detection Limits, 0.5 or 5.0 μg/L.

It should be noted that elevated TPH-g (4,900 μg/L), benzene (350 μg/L), MTBE (61,000 μg/L), and TBA (200,000 μg/L) concentrations were detected in deep zone well MW-7D. This situation has never been found in the past. As mentioned above, the bottom depth of well MW-7D should be 45 feet bgs. The summer 2009 gauging showed that the bottom depth of well MW-7D was 43.41 feet bgs. However, the 1Q10 monitoring showed that the bottom depth of well MW-7D was only 29.74 feet bgs. The cause of the abnormal well bottom depth and elevated contaminant concentrations in well MW-7D has not been identified.

The 1Q10 analytical data is included in Tables 4 and 5, and the distributions of the TPH-d, TPH-g, benzene, MTBE, and TBA concentrations are shown in Figures 5 and 6. Copies of the laboratory report and the chain-of-custody form for the 1Q10 samples are included in Appendix D.

4.3. Change of Groundwater Impact Resulting from Interim Remedial Action

An interim remedial action was conducted together with a pilot test for the remedial technology of High Vacuum Dual Phase Extraction (HVDPE) between December 10, 2009 and January 10, 2010 (IERI, 2010). To identify the reduction of groundwater impact resulted from the 2009 interim remedial action, the groundwater concentrations of TPH-d, TPH-g, benzene, MTBE, and TBA obtained from the summer 2009 sampling event (prior to the 2009 interim remedial action) and the 1Q10 event (at the end of the 2009 interim remedial action) are listed in Table 6. Based on the sampling data described in Section 4.2 and the data presented in Table 6, the following findings are obtained:

- Due to the 2009 interim remedial action, the TPH-d, TPH-g, benzene, and/or MTBE/TBA concentrations were reduced approximately between 2 to 19 times in wells MW-4, MW-7, MW-9, MW-10, and IS-5. However, the TBA and MTBE concentrations in wells MW-4 and MW-10, respectively, remained unchanged.

- Shallow groundwater under the subject site remained heavily impacted (see Figure 5).

- Deep groundwater, on and off site, was not significantly impacted (see Figure 6).

- The TPH-g concentrations of 110 and 180 μg/L detected in off-site deep wells MW-9D and MW-10D were likely caused by off-site source(s) because significant MTBE concentrations of 53 and 440 μg/L, as well as benzene concentration of 270 μg/L, were found in the shallow zone wells MW-9 and/or MW-10, respectively. The benzene, MTBE, and TBA concentrations in wells MW-9D, MW-10D, and MW-11d were less than their method detection limits.

- The detection of elevated concentrations in MW-7D very likely was anomalous.

The above findings generally are consistent with the historical groundwater monitoring data and the 2006/2007 site investigation results.

5. FINDINGS

1. The shallow zone groundwater distribution determined for the 1Q10 monitoring is similar to the distributions delineated for the summer 2009 and 4Q08 monitoring events. However, the groundwater mound near wells MW-1 and IS-1 southwest of the subject site disappeared. This was probably caused by the high vacuum extraction of the DPE wells D8, D10, and D11. As a result, the groundwater flowed inward from the southwest direction.

2. The high vacuum extraction appeared to have stronger hydraulic influence on the west and south portion of the subject site. Thus, the groundwater mound west of the subject site and the strong horizontal gradients between wells MW-4 and MW-2 identified in 4Q08 and summer 2009 disappeared during 1Q10.

3. The shallow groundwater flow remained in outward direction from the station building within the northwest/north/northeast sectors. Strong horizontal gradients existed between wells MW-3 and IS-2; near the north end of the plume, and away from the former UST excavation area. The horizontal flow distribution was generally consistent with the orientation of the plume along the north-south direction. Thus, the potential for off-site contaminant migration in the shallow zone remained significant.

4. The average groundwater head in the shallow zone was 6.18 feet higher than the average head of the deep zone. A significant downward hydraulic gradient existed everywhere between the shallow and deep groundwater zones.

5. The groundwater in the deep zone was relatively flat. The dominant groundwater flow was in the southeast-east direction.

6. The 1Q10 gauging confirmed that well IS-5 had 9 feet of sediments accumulated at the bottom of the well. Also, well MW-7D either may have silted up by 15 feet or contain structural problems. The causes of sedimentation and/or structural problems in wells IS-5 and MW-7D have not been identified.

7. The calculated groundwater elevation in deep well MW-7D (15.40 feet above msl) was higher than the groundwater elevation in shallow well MW-7 (11.55 feet above msl). This finding was abnormal. The cause of the reversed gradient was not clear.

8. Petroleum hydrocarbon odors were only identified in wells MW-4, MW-10, IS-5, and MW-7D. Sheen was found only in wells MW-4 and IS-5. The appearance of sheen in wells MW-4 and IS-5 is consistent with the laboratory analytical data for TPH-g,

benzene, and TPH-d. It should be noted that liquid product was also observed in well IS-5 during the 2007 investigation.

9. Among all the available wells, the highest groundwater impact was found in wells MW-4 and IS-5.

10. Although highest contamination existed in wells MW-4 and IS-5, significant reductions in concentration ranging from 2 to 19 times for TPH-d, TPH-g, benzene, and/or MTBE/TBA were found in wells MW-4, MW-7, MW-9, MW-10, and IS-5 after the 2009 interim remedial action.

11. Although shallow groundwater under the subject site remained heavily impacted, deep groundwater was not significantly impacted.

12. The detection of elevated concentrations in MW-7D was very likely anomalous. The cause of this situation was not clear.

6. RECOMMENDATION

The on-site groundwater in the shallow zone still remained highly impacted after the 2009 interim remediation. Since the potential of off-site migration of the shallow zone plume is relatively high, it is imperative to continue remediation. HVDPE has been demonstrated to be an effective technology compatible with the site conditions. Thus, two additional 30-day extraction events were recommended in the *High Vacuum Dual Phase Extraction Pilot Test and Interim Remedial Action Report* (IERI, 2010) so that remediation can continue as soon as possible. Meanwhile, since the budget available in the UST Cleanup Fund is limited, a fix-based HVDPE system is being considered to substitute a mobile truck-mounted system, although the fixed-based system likely will take more time to install and startup.

The cause of the abnormal well bottom depth and elevated contaminant concentrations found in well MW-7D in 1Q10 monitoring event has not been identified. Repair or abandonment of well MW-7D will be decided after the confirmation data in 3Q10 is available.

REFERENCES

ASTM, *Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations*, ASTM Designation: D 6671 – 02, 2002, p.6.

Puls, R.W. and Barcelona, M. J., *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedure*, U.S. Environmental Protection Agency, Office of Research and Development, Publication #EPA/540/5-95/504, 1996, pp. 12.

Innovative Environmental Remediation, Inc., *High Vacuum Dual Phase Extraction Pilot Test and Interim Remedial Action Report*, February 2010.

DISTRIBUTION LIST

Mr. Jerry Wickham, Senior Hazardous Materials Specialist (via electronic transmittal)
Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Ms. Farah Naz (via U.S. Mail)
C/o Mr. Muhammad Jamil
40092 Davis Street
Fremont, CA 94538

CERTIFICATION

This report was prepared under the supervision of a State of California Professional Engineer at Innovative Environmental Remediation, Inc. (IERI). All statements, conclusions, and recommendations are based solely upon published results from previous consultants, field observations by IERI, and laboratory analysis performed by a California DHS-certified laboratory related to the work performed by IERI.

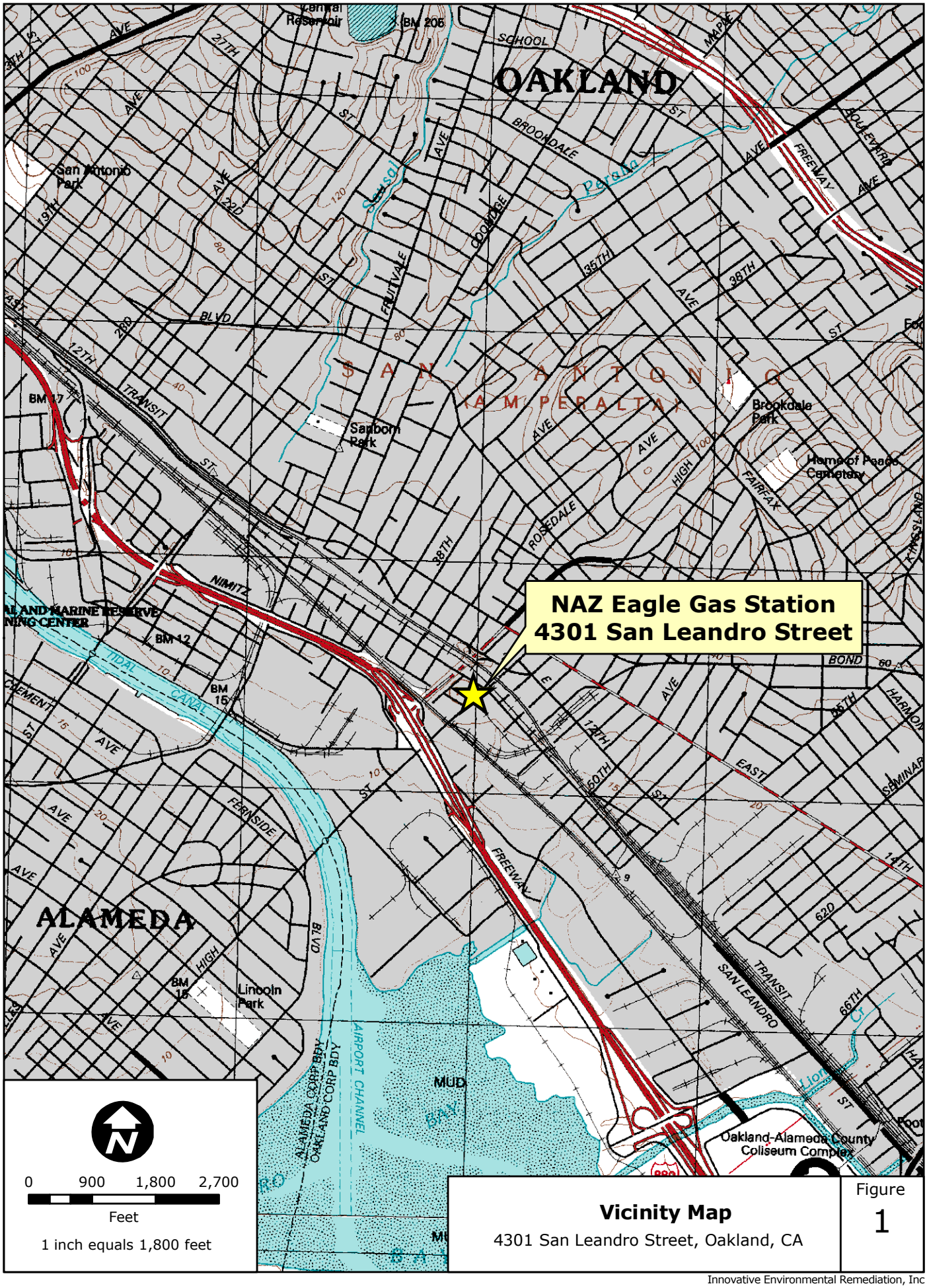
Information and interpretation presented herein are for the sole use of the client and regulating agency. The service performed by IERI has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the property. No other warranty, expressed or implied, is made.

Sincerely,

INNOVATIVE ENVIRONMENTAL REMEDIATION, INC.

Jim Ho, PE #C68639

FIGURES



Vicinity Map

4301 San Leandro Street, Oakland, CA

Figure 1

Innovative Environmental Remediation, Inc

High Street

sidewalk

MW-9D
MW-9

MW-1D
MW-1

Existing USTs

MW-6

Existing Dispenser Island

MW-3

IS-1

MW-11D

IS-2

MW-8

IS-4

IS-3

10K

15K

sidewalk

Eagle Gas Station
Convenience Store/
Concrete Pad

Existing Dispenser Island

IS-6

sewer
cleanout

IS-5

MW-5

MW-5D

Former UST
Excavation Area

MW-7

sidewalk

MW-7D

Creative Iron

fence

Oakland Unified School District

Creative Iron/YH Sheet Metal

San Leandro Street

MW-2

EW-1

MW-4

MW-4D

EW-2

sidewalk

alley

Costko Smog

Vulcan Lofts

fence

MW-10D
MW-10

Legend

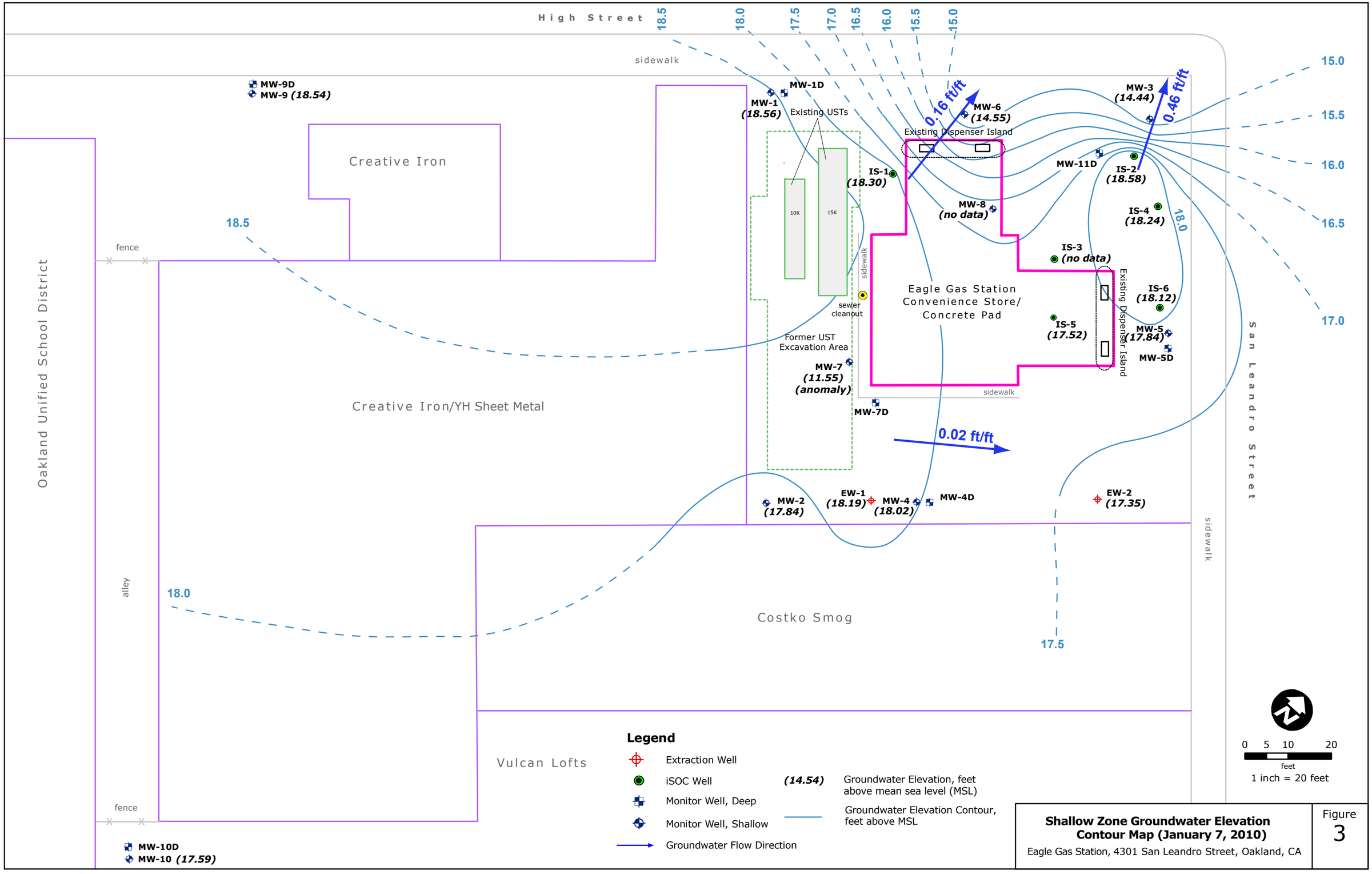
- Extraction Well
- iSOC Well
- Monitor Well, Deep
- Monitor Well, Shallow
- Building Boundary

0 5 10 20
feet
1 inch = 20 feet

Site Plan
Eagle Gas Station, 4301 San Leandro Street, Oakland, CA

Figure
2

Innovative Environmental Remediation, Inc.

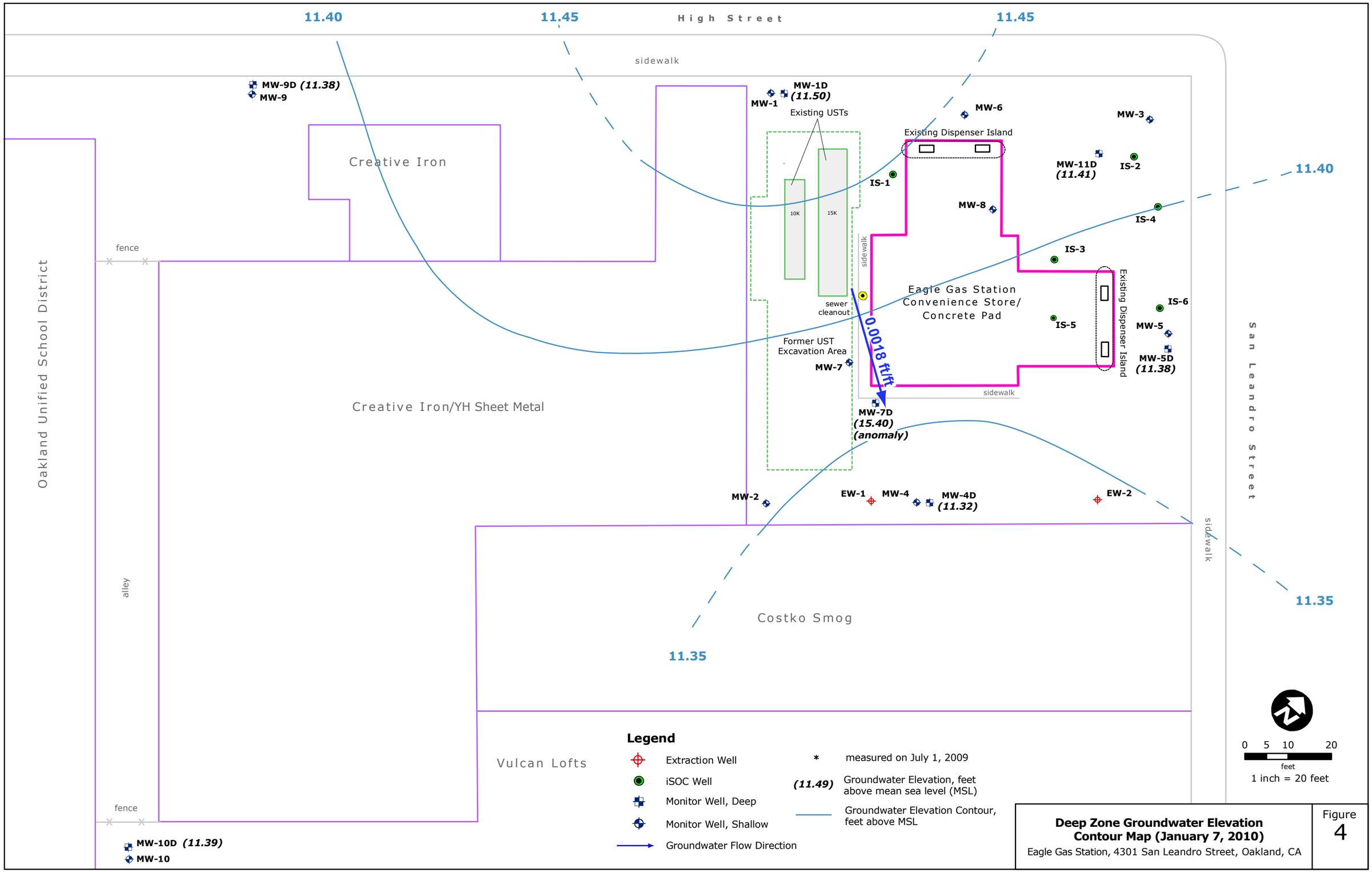


Shallow Zone Groundwater Elevation Contour Map (January 7, 2010)

Eagle Gas Station, 4301 San Leandro Street, Oakland, CA

Figure 3

Innovative Environmental Remediation, Inc.



Deep Zone Groundwater Elevation Contour Map (January 7, 2010)

Eagle Gas Station, 4301 San Leandro Street, Oakland, CA

Figure 4

Innovative Environmental Remediation, Inc.

High Street

sidewalk

MW-9D
MW-9

MTBE:	53
TBA:	< 5.0
Benzene:	0.52
TPHg:	120
TPHd:	< 50

Creative Iron

fence

Oakland Unified School District

Creative Iron/YH Sheet Metal

MW-1D
MW-1

Existing USTs

10K

15K

MW-6

Not available due to DPE

MW-3

Existing Dispenser Island

IS-1

MW-11D

IS-2

MW-8

IS-4

IS-3

sidewalk

Eagle Gas Station
Convenience Store/
Concrete Pad

Existing Dispenser Island

IS-6

sewer
cleanout

IS-5

MW-5

MW-5D

Former UST
Excavation Area

MW-7

MTBE:	3,600
TBA:	9,000
Benzene:	< 4.0
TPHg:	< 400
TPHd:	230

MW-7D

sidewalk

MTBE:	8,000
TBA:	140,000
Benzene:	2,200
TPHg:	29,000
TPHd:	< 4,000

MW-2

EW-1

MW-4

MW-4D

EW-2

MTBE:	34,000
TBA:	290,000
Benzene:	510
TPHg:	< 9,000
TPHd:	3,200

alley

Costko Smog

sidewalk

San Leandro Street

MTBE:	440
TBA:	10J
Benzene:	270
TPHg:	5,400
TPHd:	< 500

fence

MW-10D
MW-10

Vulcan Lofts

Legend

- Extraction Well
- iSOC Well
- Monitor Well, Deep
- Monitor Well, Shallow

Note: Concentrations in units of µg/L

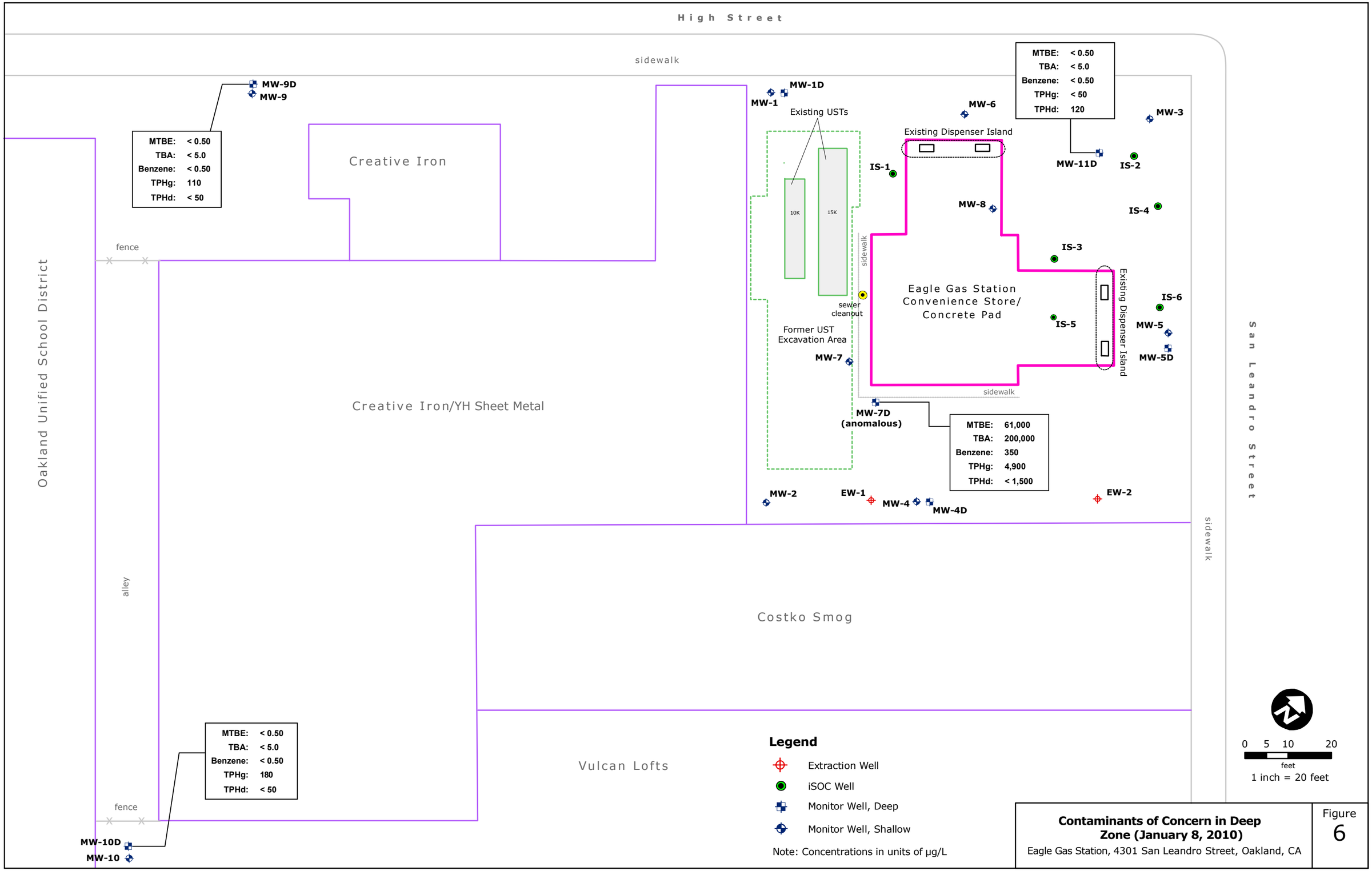
0 5 10 20
feet
1 inch = 20 feet

Contaminants of Concern in Shallow Zone (January 7, 2010)

Eagle Gas Station, 4301 San Leandro Street, Oakland, CA

Figure 5

Innovative Environmental Remediation, Inc.



Contaminants of Concern in Deep Zone (January 8, 2010)

Eagle Gas Station, 4301 San Leandro Street, Oakland, CA

Figure 6

Innovative Environmental Remediation, Inc.

TABLES

Table 1
WELL CONSTRUCTION DATA
Eagle Gas
4301 San Leandro Street
Oakland, California

Well I.D.	Date Intstalled	Installed by	Borehole Diameter (inches)	Casing Diameter (inches)	Depth of Borehole (feet bgs)	Cement (feet bgs)	Bentonite Seal (feet bgs)	Filter Pack (feet bgs)	Filter Pack Material	Screened Interval (feet bgs)	Slot Size (inches)
MW-1	9/26/2000	Western Hazmat	8	2	25	0-5	5-7	7-25	#2/12 sand	10-25	0.01
MW-1D	10/4/2007	Gregg Drilling	8	2	45	0-31	31-33	33-45	#2/12 sand	35-45	0.01
MW-2	9/26/2000	Western Hazmat	8	2	25	0-5	5-7	7-25	2/12 sand	10-25	0.01
MW-3	9/26/2000	Western Hazmat	8	2	25	0-5	5-7	7-25	2/12 sand	10-25	0.01
MW-4	12/19/2005	HEW Drilling	8	2	25	0-5	5-8	8-25	#3 sand	10-25	0.02
MW-4D	12/19/2005	HEW Drilling	8	2	45	0-30	30-33	33-45	#3 sand	35-45	0.02
MW-5	12/15/2005	HEW Drilling	8	2	25	0-5	5-8	8-25	#3 sand	10-25	0.02
MW-5D	12/15/2005	HEW Drilling	8	2	45	0-30	30-33	33-45	#3 sand	35-45	0.02
MW-6	12/20/2005	HEW Drilling	8	2	25	0-5	5-8	8-25	#3 sand	10-25	0.02
MW-7	12/19/2005	HEW Drilling	8	2	25	0-5	5-8	8-25	#3 sand	10-25	0.02
MW-7D	10/4/2007	Greg Drilling	8	2	45	0-31	31-33	33-45	#2/12 sand	35-45	0.01
MW-8	12/21/2005	HEW Drilling	8	2	25	0-5	5-8	8-25	#3 sand	10-25	0.02
MW-9	12/3/2008	HEW Drilling	8	2	15	0-2	2-4	4-15	#2/12 sand	5-15	0.01
MW-9D	12/3/2008	HEW Drilling	8	2	40	0-24	24-26*	28-40	#2/12 sand	30-40	0.01
MW-10	12/2/2008	HEW Drilling	8	2	15	0-2	2-4	4-15	#2/12 sand	5-15	0.01
MW-10D	12/2/2008	HEW Drilling	8	2	52	0-36	36-38*	40-52	#2/12 sand	42-52	0.01
MW-11D	12/1/2008	HEW Drilling	8	2	45	0-30	30-32*	38-45	#2/12 sand	40-45	0.01
IS-1	12/20/2005	HEW Drilling	8	2	25	0-3	3-6	6-25	#3 sand	10-25	0.02
IS-2	12/20/2005	HEW Drilling	8	2	25	0-3	3-6	6-25	#3 sand	10-25	0.02
IS-3	12/21/2005	HEW Drilling	8	2	25	0-3	3-6	6-25	#3 sand	10-25	0.02
IS-4	12/20/2005	HEW Drilling	8	2	25	0-3	3-6	6-25	#3 sand	10-25	0.02
IS-5	12/21/2005	HEW Drilling	8	2	25	0-3	3-6	6-25	#3 sand	10-25	0.02
IS-6	12/20/2005	HEW Drilling	8	2	25	0-3	3-6	6-25	#3 sand	10-25	0.02
EW-1	12/16/2005	HEW Drilling	8	4	25	0-3	3-6	6-25	#3 sand	10-25	0.02
EW-2	12/16/2005	HEW Drilling	8	4	25	0-3	3-6	6-25	#3 sand	10-25	0.02

Note: All depths and Intervals are below ground surface (bgs)
* Borehole partially caved after setting filter pack

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
MW-1	10/3/2000	18.37	8.96	9.41
	10/27/2000	18.37	7.27	11.10
	1/26/2001	18.37	7.60	10.77
	5/8/2001	18.37	7.50	10.87
	8/3/2001	18.37	7.09	11.28
	7/1/2003	18.37	7.59	10.78
	10/1/2003	18.37	8.36	10.01
	2/13/2004	18.37	8.80	9.57
	5/17/2004	18.37	10.92	7.45
	8/6/2004	18.37	7.76	10.61
	11/12/2004	18.37	9.25	9.12
	2/15/2005	18.37	10.12	8.25
	5/9/2005	18.37	9.58	8.79
	8/8/2005**	20.08	10.09	9.99
	11/16/2005	20.08	9.81	10.27
	2/22/2006	20.08	9.58	10.50
	5/16/2006	20.08	6.89	13.19
	8/23/2006	20.08	9.21	10.87
	11/13/2006	20.08	8.55	11.53
	2/13/2007	20.08	7.11	12.97
	5/15/2007	20.08	6.63	13.45
	8/15/2007	20.08	9.61	10.47
	11/13/2007	20.08	13.63	6.45
	2/19/2008	20.08	6.13	13.95
	6/25/2008	20.08	6.72	13.36
	9/17/2008	20.08	8.45	11.63
	12/8/2008	26.64	6.49	20.15
	7/1/2009	26.64	7.14	19.50
	1/7/2010	**26.64**	**8.08**	**18.56**

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
MW-2	10/3/2000	20.28	20.26	0.02
	10/27/2000	20.28	13.88	6.40
	1/26/2001	20.28	12.10	8.18
	5/8/2001	20.28	12.05	8.23
	8/3/2001	20.28	13.30	6.98
	7/1/2003	20.28	14.98	5.30
	10/1/2003	20.28	15.99	4.29
	2/13/2004	20.28	13.88	6.40
	5/17/2004	20.38	14.68	5.70
	8/6/2004	20.38	15.36	5.02
	11/12/2004	20.38	15.49	4.89
	2/15/2005	20.38	14.16	6.22
	5/9/2005	20.38	13.62	6.76
	8/8/2005**	22.05	13.36	8.69
	11/16/2005	22.05	14.51	7.54
	2/22/2006	22.05	12.69	9.36
	5/16/2006	22.05	12.01	10.04
	8/23/2006	21.98	11.33	10.65
	11/13/2006	21.98	13.64	8.34
	2/13/2007	21.98	12.78	9.20
	5/16/2007	21.98	13.17	8.81
	8/16/2007	21.98	13.48	8.50
	11/16/2007	21.98	14.11	7.87
	2/19/2008	21.98	14.02	7.96
	6/25/2008	21.98	14.63	7.35
	9/17/2008	21.98	14.76	7.22
	12/8/2008	28.54	15.90	12.64
	7/1/2009	28.54	14.00	14.54
	1/7/2010	**28.54**	**10.70**	**17.84**
MW-3	10/3/2000	18.98	---	---

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	10/27/2000	18.98	18.75	0.23
	1/26/2001	18.98	13.38	5.60
	5/8/2001	18.98	11.82	7.16
	8/3/2001	18.98	13.44	5.54
	7/1/2003	18.98	12.67	6.31
	10/1/2003	18.98	14.04	4.94
	2/13/2004	18.98	12.20	6.78
	5/17/2004	18.98	11.87	7.11
	8/6/2004	18.98	13.07	5.91
	11/12/2004	18.98	12.83	6.15
	2/15/2005	18.98	11.95	7.03
	5/9/2005	18.98	10.51	8.47
	8/8/2005**	20.73	10.98	9.75
	11/16/2005	20.73	12.89	7.84
	2/22/2006	20.73	10.31	10.42
	5/16/2006	20.73	9.03	11.70
	8/23/2006	20.68	10.81	9.87
	11/13/2006	20.68	12.29	8.39
	2/13/2007	20.68	11.23	9.45
	5/15/2007	20.68	10.39	10.29
	8/15/2007	20.68	11.81	8.87
	11/14/2007	20.68	12.26	8.42
	2/19/2008	20.68	10.72	9.96
	6/25/2008	20.68	11.30	9.38
	9/17/2008	20.68	12.82	7.86
	12/8/2008	27.24	12.91	14.33
	7/1/2009	27.24	11.71	15.53
	1/7/2010	**27.24**	**12.80**	**14.44**
MW-4	2/22/2006	21.63	7.87	13.76
	5/16/2006	21.63	8.04	13.59
	8/23/2006	21.53	9.77	11.76

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	11/13/2006	21.53	8.78	12.75
	2/13/2007	21.53	7.56	13.97
	5/16/2007	21.53	7.97	13.56
	8/16/2007	21.53	9.03	12.50
	11/16/2007	21.53	8.52	13.01
	2/19/2008	21.53	7.51	14.02
	6/25/2008	21.53	8.10	13.43
	9/17/2008	21.53	9.66	11.87
	12/8/2008	28.09	8.90	19.19
	7/1/2009	28.09	8.64	19.45
	1/7/2010	**28.09**	**10.07**	**18.02**
MW-5	2/22/2006	20.48	6.63	13.85
	5/16/2006	20.48	6.62	13.86
	8/23/2006	20.41	7.62	12.79
	11/13/2006	20.41	7.31	13.10
	2/13/2007	20.41	6.54	13.87
	5/16/2007	20.41	6.79	13.62
	8/16/2007	20.41	7.99	12.42
	11/16/2007	20.41	7.51	12.90
	2/19/2008	20.41	8.41	12.00
	6/25/2008	20.41	9.00	11.41
	9/17/2008	20.41	8.35	12.06
	12/8/2008	26.97	7.41	19.56
	7/1/2009	26.97	7.14	19.83
	1/7/2010	**26.97**	**9.13**	**17.84**
MW-6	2/22/2006	20.45	9.88	10.57
	5/16/2006	20.45	9.35	11.10
	8/23/2006	20.47	10.48	9.99
	11/13/2006	20.47	10.86	9.61
	2/13/2007	20.47	10.31	10.16

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	5/15/2007	20.47	10.35	10.12
	8/15/2007	20.47	10.74	9.73
	11/14/2007	20.47	10.91	9.56
	2/19/2008	20.47	9.82	10.65
	6/25/2008	20.47	10.43	10.04
	9/17/2008	20.47	11.76	8.71
	12/8/2008	27.03	11.08	15.95
	7/1/2009	27.03	10.85	16.18
	1/7/2010	**27.03**	**12.48**	**14.55**
MW-7	2/22/2006	21.13	11.72	9.41
	5/16/2006	21.13	8.72	12.41
	8/23/2006	21.14	11.34	9.80
	11/13/2006	21.14	12.53	8.61
	2/13/2007	21.14	11.83	9.31
	5/15/2007	21.14	10.99	10.15
	8/15/2007	21.14	12.41	8.73
	11/14/2007	21.14	13.41	7.73
	2/19/2008	21.14	9.51	11.63
	6/25/2008	21.14	10.03	11.11
	9/17/2008	21.14	13.68	7.46
	12/8/2008	27.70	14.13	13.57
	7/1/2009	27.70	12.00	15.70
	1/7/2010	**27.70**	**16.15**	**11.55**
MW-8	2/22/2006	21.03	7.28	13.75
	5/16/2006	21.03	7.48	13.55
	8/23/2006	20.95	8.19	12.76
	11/13/2006	20.95	8.15	12.80
	2/13/2007	20.95	6.58	14.37
	5/16/2007	20.95	7.24	13.71
	8/16/2007	20.95	8.61	12.34

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	11/16/2007	20.95	8.21	12.74
	2/19/2008	20.95	7.01	13.94
	6/25/2008	20.95	7.59	13.36
	9/17/2008	20.95	9.24	11.71
	12/8/2008	27.51	8.62	18.89
	7/1/2009	27.51	8.42	19.09
	1/7/2010	**27.51**	**Not avilable due to DPE**	
MW-9	12/8/2008	25.35	6.96	18.39
	7/1/2009	25.35	7.40	17.95
	1/7/2010	**25.35**	**6.81**	**18.54**
MW-10	12/8/2008	25.23	8.20	17.03
	7/1/2009	25.23	8.20	17.03
	1/7/2010	**25.23**	**7.64**	**17.59**
IS-1	2/22/2006	20.57	6.91	13.66
	5/16/2006	20.57	7.01	13.56
	8/23/2006	20.58	7.82	12.76
	11/13/2006	20.58	8.21	12.37
	2/13/2007	20.58	6.14	14.44
	5/15/2007	20.58	7.04	13.54
	8/15/2007	20.58	8.06	12.52
	11/13/2007	20.58	7.61	12.97
	2/19/2008	20.58	6.42	14.16
	6/25/2008	20.58	7.04	13.54
	9/17/2008	20.58	8.85	11.73
	12/8/2008	27.14	7.81	19.33
	7/1/2009	27.14	7.62	19.52
	1/7/2010	**27.14**	**8.84**	**18.30**
IS-2	2/22/2006	20.87	6.92	13.95

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	5/16/2006	20.87	6.99	13.88
	8/23/2006	20.78	7.91	12.87
	11/13/2006	20.78	8.23	12.55
	2/13/2007	20.78	6.76	14.02
	5/15/2007	20.78	6.87	13.91
	8/15/2007	20.78	8.08	12.70
	11/14/2007	20.78	7.69	13.09
	2/19/2008	20.78	6.63	14.15
	6/25/2008	20.78	7.21	13.57
	9/17/2008	20.78	8.67	12.11
	12/8/2008	27.34	8.02	19.32
	7/1/2009	27.34	7.85	19.49
	1/7/2010	**27.34**	**8.76**	**18.58**
IS-3	2/22/2006	20.99	7.32	13.67
	5/16/2006	20.99	7.86	13.13
	8/23/2006	20.87	8.19	12.68
	11/13/2006	20.87	8.03	12.84
	2/13/2007	20.87	7.03	13.84
	5/16/2007	20.87	7.17	13.70
	8/15/2007	20.87	8.43	12.44
	11/14/2007	20.87	7.93	12.94
	2/19/2008	20.87	6.01	14.86
	6/25/2008	20.87	6.59	14.28
	9/17/2008	20.87	9.12	11.75
	12/8/2008	27.43	8.64	18.79
	7/1/2009	27.43	8.43	19.00
	7/1/2009	**27.43**	**Not avilable due to DPE**	
IS-4	2/22/2006	20.79	6.95	13.84
	5/16/2006	20.79	7.17	13.62
	8/23/2006	20.68	7.83	12.85

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	11/13/2006	20.68	8.46	12.22
	2/13/2007	20.68	9.02	11.66
	5/15/2007	20.68	6.99	13.69
	8/15/2007	20.68	8.05	12.63
	11/14/2007	20.68	6.38	14.30
	2/19/2008	20.68	6.11	14.57
	6/25/2008	20.68	6.70	13.98
	9/17/2008	20.68	8.59	12.09
	12/8/2008	27.24	7.94	19.30
	7/1/2009	27.24	7.79	19.45
	1/7/2010	**27.24**	**9.00**	**18.24**
IS-5	2/22/2006	21.02	7.17	13.85
	5/16/2006	21.02	6.81	14.21
	8/23/2006	20.91	8.12	12.79
	11/13/2006	20.91	8.41	12.50
	2/13/2007	20.91	6.78	14.13
	5/16/2007	20.91	7.15	13.76
	8/15/2007	20.91	8.32	12.59
	11/16/2007	20.91	7.71	13.20
	2/19/2008	20.91	7.35	13.56
	6/25/2008	20.91	7.93	12.98
	9/17/2008	20.91	8.96	11.95
	12/8/2008	27.47	8.38	19.09
	7/1/2009	27.47	8.05	19.42
	1/7/2010	**27.47**	**9.95**	**17.52**
IS-6	2/22/2006	20.56	6.89	13.67
	5/16/2006	20.56	6.44	14.12
	8/23/2006	20.47	7.69	12.78
	11/13/2006	20.47	7.72	12.75
	2/13/2007	20.47	6.12	14.35

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	5/16/2007	20.47	6.67	13.80
	8/15/2007	20.47	7.91	12.56
	11/14/2007	20.47	7.22	13.25
	2/19/2008	20.47	6.49	13.98
	6/25/2008	20.47	7.07	13.40
	9/17/2008	20.47	8.37	12.10
	12/8/2008	27.03	7.75	19.28
	7/1/2009	**27.03**	**7.55**	**19.48**
	1/7/2010	**27.03**	**8.91**	**18.12**
EW-1	2/22/2006	21.74	8.06	13.68
	5/16/2006	21.74	7.97	13.77
	8/23/2006	21.65	9.61	12.04
	11/13/2006	21.65	8.78	12.87
	2/13/2007	21.65	6.31	15.34
	5/16/2007	21.65	8.13	13.52
	8/16/2007	21.65	8.71	12.94
	11/16/2007	21.65	8.70	12.95
	2/19/2008	21.65	7.71	13.94
	6/25/2008	21.65	8.30	13.35
	9/17/2008	21.65	9.82	11.83
	12/8/2008	28.21	9.09	19.12
	7/1/2009	28.21	8.84	19.37
	1/7/2010	**28.21**	**10.02**	**18.19**
EW-2	2/22/2006	20.46	7.31	13.15
	5/16/2006	20.46	7.25	13.21
	8/23/2006	20.37	8.31	12.06
	11/13/2006	20.37	8.18	12.19
	2/13/2007	20.37	7.15	13.22
	5/16/2007	20.37	7.74	12.63
	8/16/2007	20.37	9.45	10.92

TABLE 2
GROUNDWATER ELEVATIONS (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	11/16/2007	20.37	9.64	10.73
	2/19/2008	20.37	7.91	12.46
	6/25/2008	20.37	8.50	11.87
	9/17/2008	20.37	10.24	10.13
	12/8/2008	26.93	9.15	17.78
	7/1/2009	26.93	9.10	17.83
	1/7/2010	**26.93**	**9.58**	**17.35**

NOTES:

TOC Top of well casing referenced to City of Oakland datum prior to 3Q2005. Wells re-surveyed on March 28, 2005. Wells MW-9D, MW-10D, and MW-11D were surveyed relative to the North American Vertical Datum of 1988 (NAVD 88) on January 12, 2009. All other well TOC elevations were raised 6.56 feet to match January 12, 2009 survey, beginning in December 2008 (Fourth Quarter 2008).

DTW Depth to water

GWE Groundwater elevation

AMSL Above mean sea level

NA Not Available

TABLE 3

GROUNDWATER ELEVATIONS (Deep Zone)

Eagle Gas Station

4301 San Leandro Street

Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
MW-1D	11/13/2007	19.98	15.61	4.37
	11/27/2007	19.98	15.52	4.46
	2/19/2008	19.98	13.81	6.17
	6/25/2008	19.98	14.43	5.55
	9/17/2008	19.98	15.77	4.21
	9/22/2008	19.98	15.68	4.30
	12/8/2008	26.54	15.93	10.61
	7/1/2009	26.54	14.65	11.89
	7/17/2009	26.54	14.93	11.61
	1/7/2010	**26.54**	**15.04**	**11.50**
MW-4D	2/22/2006	21.54	15.58	5.96
	5/16/2006	21.54	13.23	8.31
	8/23/2006	21.44	15.33	6.11
	11/13/2006	21.44	16.23	5.21
	2/13/2007	21.44	15.73	5.71
	5/15/2007	21.44	15.38	6.06
	8/15/2007	21.44	16.42	5.02
	11/13/2007	21.44	17.21	4.23
	11/27/2007	21.44	15.85	5.59
	2/29/2008	21.44	15.41	6.03
	6/25/2008	21.44	16.01	5.43
	9/17/2008	21.44	17.36	4.08
	9/22/2008	21.44	17.23	4.21
	12/8/2008	28.00	17.56	10.44
	7/1/2009	28.00	16.26	11.74
	7/17/2009	28.00	16.53	11.47
	1/7/2010	**28.00**	**16.68**	**11.32**
MW-5D	2/22/2006	20.32	13.68	6.64
	5/16/2006	20.32	12.72	7.60
	8/23/2006	20.22	14.48	5.74
	11/13/2006	20.22	14.98	5.24

TABLE 3
GROUNDWATER ELEVATIONS (Deep Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
	2/13/2007	20.22	14.48	5.74
	5/15/2007	20.22	14.13	6.09
	8/15/2007	20.22	15.21	5.01
	11/13/2007	20.22	15.94	4.28
	11/27/2007	20.22	15.85	4.37
	2/19/2008	20.22	14.17	6.05
	6/25/2008	20.22	14.77	5.45
	9/17/2008	20.22	6.11	14.11
	9/22/2008	20.22	16.00	4.22
	12/8/2008	26.78	16.33	10.45
	7/1/2009	26.78	15.02	11.76
	7/17/2009	26.78	15.27	11.51
	1/7/2010	**26.78**	**15.40**	**11.38**
MW-7D	11/13/2007	21.36	19.21	2.15
	11/27/2007	21.36	17.02	4.34
	2/19/2008	21.36	15.78	5.58
	6/25/2008	21.36	16.36	5.00
	9/17/2008	21.36	17.24	4.12
	9/22/2008	21.36	17.39	3.97
	12/8/2008	27.92	17.41	10.51
	7/1/2009	27.92	16.75	11.17
	7/17/2009	27.92	16.43	11.49
	1/7/2010	**27.92**	**12.52**	**15.40**
MW-9D	12/8/2008	25.49	14.98	10.51
	7/1/2009	25.49	13.71	11.78
	1/7/2010	**25.49**	**14.11**	**11.38**
MW-10D	12/8/2008	25.29	14.81	10.48
	7/1/2009	25.29	13.38	11.91
	1/7/2010	**25.29**	**13.90**	**11.39**

TABLE 3

GROUNDWATER ELEVATIONS (Deep Zone)

Eagle Gas Station

4301 San Leandro Street

Oakland, California

Well ID	Date	TOC (feet AMSL)	DTW (feet AMSL)	GWE (feet AMSL)
MW-11D	12/8/2008	27.23	16.75	10.48
	7/1/2009	**27.23**	15.45	11.78
	7/17/2009	27.23	15.72	11.51
	1/7/2010	**27.23**	**15.82**	**11.41**

NOTES:

TOC Top of well casing referenced to arbitrary datum prior to Third Quarter 2005. Wells re-surveyed on March 28, 2005. Wells MW-9D, MW-10D, and MW-11D were surveyed relative t o the North American Vertical Datum of 1988 (NAVD 88) on January 12, 2009. All other TOC elevations were raised 6.56 feet to match January 12, 2009 survey, beginning in December 2008 (Fourth Quarter 2008)

DTW Depth to water

GWE Groundwater elevation

AMSL Above mean sea level

--- no samples collected, no data available

TABLE 4

GROUNDWATER ANALYTICAL DATA (Shallow Zone)

Eagle Gas Station

4301 San Leandro Street

Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
ESL (□g/L)		**640**	**500**	**46**	**130**	**290**	**100**	**1,800**	--	--	--	**18,000**	--	**50,000**	**200**	**150**
MW-1	10/3/2000	460	93,000	<500	<500	<500	<500	130,000	<10,000	<10,000	<10,000	<2,000	---	---	---	---
	10/27/2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1/26/2001	1,600*	51,000	270	<100	<100	<100	77,000	<5,000	<5,000	<5,000	<20,000	---	---	---	---
	5/8/2001	470*	36,000*	<100	<100	<100	<100	15,000	<5,000	<5,000	<5,000	<20,000	---	---	---	---
	8/3/2001	2,200*	19,000*	<50	59	<50	<50	96,000	<5,000	<5,000	<5,000	<20,000	---	---	---	---
	7/1/2003	3,000	<25,000	<250	<250	<250	<250	170,000	<250	<250	980	8,700	---	---	---	---
	10/1/2003	2,600	<20,000	<200	<200	<200	<200	69,000	<200	<200	270	15,000	---	---	---	---
	2/13/2004	1,800	<10,000	<100	<100	<100	<100	85,000	<100	<100	390	79,000	---	---	---	---
	5/17/2004	5,400	<15,000	<150	<150	<150	<150	60,000	<150	<150	260	160,000	---	---	---	---
	8/6/2004	510	<10,000	<100	<100	<100	<100	26,000	<100	<100	100	250,000	---	---	---	---
	11/12/2004	3,500	<5,000	<50	<50	<50	<50	25,000	<50	<50	150	160,000	---	---	---	---
	2/15/2005	2,900	<5,000	<50	<50	<50	<50	12,000	<50	<50	70	160,000	---	---	---	---
	5/9/2005	1,700	<5,000	<50	<50	<50	<50	11,000	<50	<50	53	200,000	---	---	---	---
	8/8/2005**	2,000	<5,000	<50	<50	<50	<50	8,500	<50	<50	<50	250,000	---	---	---	---
	11/16/2005	3,600	<5,000	<50	<50	<50	<50	3,800	<50	<50	<50	140,000	<5,000	<500	<50	<50
	2/22/2006	2,600	<5,000	<50	<50	<50	<50	5,800	<50	<50	<50	120,000	<5,000	<500	<50	<50
	5/16/2006	4,700	<5,000	<50	<50	<50	<50	3,700	<50	<50	<50	150,000	<5,000	<500	<50	<50
	8/23/2006	2,000	<5,000	<50	<50	<50	<50	3,700	<50	<50	<50	110,000	<5,000	<500	<50	<50
	11/13/2006	NA	<4,000	<40	<40	<40	<40	2,000	<40	<40	<40	79,000	NA	NA	NA	NA
	2/13/2007	900	<2,500	<25	<25	<25	<25	3,700	<25	<25	25	63,000	NA	NA	NA	NA
	5/15/2007	3,000	<2,500	<25	<25	<25	<25	1,100	<25	<25	<25	52,000	NA	NA	NA	NA
	8/15/2007	1,000	<1,000	<10	<10	<10	<10	230	<10	<10	<10	34,000	NA	NA	NA	NA
	11/13/2007	170	<150	<1.5	<1.5	<1.5	<1.5	630	<1.5	<1.5	3.1	200	NA	NA	NA	NA
	2/19/2008	1,800	240	<1.5	<1.5	1.7	18	53	<1.5	<1.5	<1.5	2,500	NA	NA	NA	NA
	6/25/2008	1,300	640	<0.50	<0.50	<0.50	<0.50	77	<0.50	<0.50	0.6	3,800	NA	NA	NA	NA
	9/17/2008	2,300	430	<1.5	<1.5	<1.5	<1.5	86	<1.5	<1.5	<1.5	4,100	NA	NA	NA	NA
	12/8/2008	4,600	360	2.4	<1.5	<1.5	<1.5	540	<1.5	<1.5	4.2	15,000	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														

TABLE 4
GROUNDWATER ANALYTICAL DATA (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
MW-2	10/3/2000	210	250,000	<1,250	<1,250	<1,250	<1,250	400,000	<25,000	<25,000	<25,000	<100,000	---	---	---	---
	10/27/2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1/26/2001	6,000*	740,000	3,800	<500	940	1,600	1,000,000	<50,000	<50,000	<50,000	<200,000	---	---	---	---
	5/8/2001	2,100*	140,000	2,800	<250	780	640	840,000	<50,000	<50,000	<50,000	<200,000	---	---	---	---
	8/3/2001	2,600*	42,000*	1,100	63	230	130	880,000	<25,000	<25,000	<25,000	<100,000	---	---	---	---
	7/1/2003	2,200	<200,000	<2,000	<2,000	<2,000	<2,000	790,000	<2,000	<2,000	3,400	<20,000	---	---	---	---
	10/1/2003	870	<100,000	<1,000	<1,000	<1,000	<1,000	620,000	<1,000	<1,000	2,700	<20,000	---	---	---	---
	2/13/2004	1200	<20,000	860	<200	260	<200	710,000	<200	<200	2,000	<25,000	---	---	---	---
	5/17/2004	2,500	<50000	860	<500	<500	<500	760,000	<500	<500	2,500	13,000J	---	---	---	---
	8/6/2004	420	<50000	590	<500	<500	<500	810,000	<500	<500	3,600	17,000J	---	---	---	---
	11/12/2004	500	<150,000	<1500	<1500	<1500	<1500	700,000	<1500	<1500	2,800	25,000J	---	---	---	---
	2/15/2005	990	<150,000	<1,500	<1,500	<1,500	<1,500	630,000	<1,500	<1,500	2,600	32,000	---	---	---	---
	5/9/2005	1,100	<150,000	<1,500	<1,500	<1,500	<1,500	570,000	<1,500	<1,500	2,300	32,000	---	---	---	---
	8/8/2005**	770	<150,000	<1,500	<1,500	<1,500	<1,500	770,000	<1,500	<1,500	2,200	85,000	---	---	---	---
	11/16/2005	890	<70,000	<700	<700	<700	<700	430,000	<700	<700	2,100	130,000	<100,000	<7,000	<700	<700
	2/22/2006	<1,500	<70,000	800	<700	<700	<700	400,000	<700	<700	1,700	130,000	<70,000	<7,000	<700	<700
	5/16/2006	1,100	<70,000	<700	<700	<700	<700	250,000	<700	<700	940	140,000	<70,000	<7,000	<700	<700
	8/23/2006	660	<40,000	<400	<400	<400	<400	200,000	<400	<400	830	170,000	<40,000	<4,000	<400	<400
	11/13/2006	NA	<40,000	<400	<400	<400	<400	140,000	<400	<400	490	170,000	NA	NA	NA	NA
	2/13/2007	780	<20,000	250	<200	<200	<200	100,000	<200	<200	240	130,000	NA	NA	NA	NA
	5/16/2007	800	<7,000	150	<70	<70	<70	44,000	<70	<70	120	130,000	NA	NA	NA	NA
	8/16/2007	610	<5,000	100	<50	<50	<50	21,000	<50	<50	<80++	100,000	NA	NA	NA	NA
	11/16/2007	480	<4,000	140	<40	<40	<40	10,000	<40	<40	<40	100,000	NA	NA	NA	NA
	2/19/2008	2,600	1,400	88	0.96	4.4	4.4	5,000	<0.50	4.6	14	76,000	NA	NA	NA	NA
	6/25/2008	340	<4,000	<40	<40	<40	<40	1,300	<40	<40	<40	98,000	NA	NA	NA	NA
	9/18/2008	370	410	7.5	<0.50	1.8	2.7	1,200	<0.50	4.9	2.3	120,000	NA	NA	NA	NA
	12/9/2008	<2,000	6,400	940	5.7	390	140	12,000	<0.50	9.7	200	130,000	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
MW-3	10/3/2000	120	83,000	<500	<500	<500	<500	33,000	<2,500	<2,500	<2,500	<10,000	---	---	---	---
	10/27/2000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 4
GROUNDWATER ANALYTICAL DATA (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	1/26/2001	900*	230,000	930	<500	<500	<500	330,000	<25,000	<25,000	<25,000	<100,000	---	---	---	---
	5/8/2001	1,100*	95,000	840	<250	<250	<250	390,000	<12,500	<12,500	<12,500	<50,000	---	---	---	---
	8/3/2001	290*	30,000*	<50	51	<50	<50	270,000	<12,500	<12,500	<12,500	<50,000	---	---	---	---
	7/1/2003	620	<50,000	<500	<500	<500	<500	230,000	<500	<500	1,800	<5,000	---	---	---	---
	10/1/2003	370	<20,000	<200	<200	<200	<200	120,000	<200	<200	1,200	<5,000	---	---	---	---
	2/13/2004	430	<20,000	280	<200	<200	<200	210,000	<200	<200	1,200	<5000	---	---	---	---
	5/17/2004	920	<25,000	<250	<250	<250	<250	150,000	<250	<250	1,100	5,600J	---	---	---	---
	8/6/2004	78	<20,000	<200	<200	<200	<200	110,000	<200	<200	760	<2,500	---	---	---	---
	11/12/2004	120	<20,000	<200	<200	<200	<200	100,000	<200	<200	660	6,000	---	---	---	---
	2/15/2005	130	<25,000	<250	<250	<250	<250	110,000	<250	<250	760	12,000	---	---	---	---
	5/9/2005	320	<15,000	<150	<150	<150	<150	97,000	<150	<150	780	30,000	---	---	---	---
	8/8/2005**	180	<15,000	<150	<150	<150	<150	75,000	<150	<150	500	44,000	---	---	---	---
	11/16/2005	<200	<5,000	<50	<50	<50	<50	37,000	<50	<50	190	38,000	<5,000	<500	<50	<50
	2/22/2006	<600	<5,000	88	<50	<50	<50	57,000	<50	<50	420	65,000	<9,000	<500	<50	<50
	5/16/2006	<600^	<9,000	110	<90	<90	<90	42,000	<90	<90	340	68,000	<9,000	<900	<90	<90
	8/23/2006	<200^	<4,000	<40	<40	<40	<40	18,000	<40	<40	120	60,000	<4,000	<400	<40	<40
	11/13/2006	NA	<2,000	<20	<20	<20	<20	6,100	<20	<20	30	54,000	NA	NA	NA	NA
	2/13/2007	<200^	<4,000	52	<40	<40	<40	13,000	<40	<40	82	65,000	NA	NA	NA	NA
	5/15/2007	<300^	<4,000	67	<40	<40	<40	12,000	<40	<40	77	71,000	NA	NA	NA	NA
	8/15/2007	<200^	<4,000	42	<40	<40	<40	4,500	<40	<40	<40	64,000	NA	NA	NA	NA
	11/14/2007	<100	<2,000	27	<20	<20	<20	3,300	25	<20	<20	49,000	NA	NA	NA	NA
	2/19/2008	<300	<2,000	64	<20	<20	<20	3,500	<20	<20	31	52,000	NA	NA	NA	NA
	6/25/2008	140	<2,000	<20	<20	<20	<20	1,100	<20	<20	<20	54,000	NA	NA	NA	NA
	9/18/2008	110	<900	<9.0	<9.0	<9.0	<9.0	1,000	19	<9.0	<9.0	29,000	NA	NA	NA	NA
	12/8/2008	94	<900	<9.0	<9.0	<9.0	<9.0	640	16	<9.0	<9.0	24,000	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
MW-4	2/22/2006	<8,000	<150,000	3,200	2,000	1,600	3,800	770,000	<1,500	<1,500	3,300	59,000	<150,000	<15,000	<1,500	<1,500
	5/16/2006	3,800	<70,000	2,100	<700	930	1,500	410,000	<700	<700	2,500	110,000	<70,000	<7,000	<700	<700
	8/23/2006	8,400	89,000	4,500	<700	2,100	2,800	870,000	<700	<700	4,000	89,000	<70,000	<7,000	<700	<700
	11/13/2006	NA	<150,000	3,700	<1,500	<1,500	2,400	950,000	<1,500	<1,500	4,000	110,000	NA	NA	NA	NA

TABLE 4
GROUNDWATER ANALYTICAL DATA (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	2/13/2007	2,000	<150,000	2,000	<1,500	<1,500	<1,500	640,000	<1,500	<1,500	2,900	130,000	NA	NA	NA	NA
	5/16/2007	1,900^^	<70,000	3,200	<700	1,000	940	430,000	<700	<700	2,300	160,000	NA	NA	NA	NA
	8/16/2007	4,400	<150,000	2,400	<1,500	<1,500	<1,500	630,000	<1,500	<1,500	4,300	130,000	NA	NA	NA	NA
	11/16/2007	2,200	<70,000	4,900	<700	1,000	<700	620,000	<700	<700	3,600	150,000	NA	NA	NA	NA
	2/19/2008	3,200	<70,000	3,900	<700	1,400	<1,500	350,000	<700	<700	2,100	130,000	<70,000	<7,000	NA	NA
	6/25/2008	13,000	<70,000	4,000	<700	<700	<700	360,000	<700	<700	2,300	330,000	NA	NA	NA	NA
	9/18/2008	7,600	<40,000	3,500	<400	<400	<400	220,000	<400	<400	1,400	490,000	NA	NA	NA	NA
	12/9/2008	14,000	69,000	3,600	1,400	2,400	10,000	360,000	<150	<150	2,000	660,000	NA	NA	NA	NA
	7/1/2009	4,600	<50,000	5,000	<500	2,200	6,600	400,000	<500	<500	3,400	240,000	NA	NA	NA	NA
	1/7/2010	**3,200**	**<9,000**	**510**	**<90**	**330**	**1,100**	**34,000**	**<90**	**<90**	**180**	**290,000**	**NA**	**NA**	**NA**	**NA**
MW-5	2/22/2006	<3,000	<10,000	460	<100	170	<100	480,000	<100	<100	3,000	95,000	<90,000	<1,000	<100	<100
	5/16/2006	1,600	<90,000	<900	<900	<900	<900	480,000	<900	<900	2,300	130,000	<90,000	<9,000	<900	<900
	8/23/2006	1,400	<90,000	<900	<900	<900	<900	510,000	<900	<900	2,400	270,000	<90,000	<9,000	<900	<900
	11/13/2006	NA	<90,000	<900	<900	<900	<900	430,000	<900	<900	2,200	350,000	NA	NA	NA	NA
	2/13/2007	1,000	<50,000	<500	<500	<500	<500	260,000	<500	<500	740	350,000	NA	NA	NA	NA
	5/16/2007	2,200^^	<15,000	650	<150	<150	<150	73,000	<150	<150	610	240,000	NA	NA	NA	NA
	8/16/2007	950	<25,000	<250	<250	<250	<250	130,000	<250	<250	550	620,000	NA	NA	NA	NA
	11/16/2007	800	<15,000	<150	<150	<150	<150	92,000	<150	<150	250	300,000	NA	NA	NA	NA
	2/19/2008	3,400	<15,000	160	<150	<150	<150	38,000	<150	<150	<150	480,000	NA	NA	NA	NA
	6/25/2008	850	<15,000	<150	<150	<150	<150	33,000	<150	<150	<150	520,000	NA	NA	NA	NA
	9/17/2008	900	<15,000	<150	<150	<150	<150	22,000	<150	<150	<150	520,000	NA	NA	NA	NA
	12/9/2008	1,600	<9,000	<90	<90	<90	<90	23,000	<90	<90	<90	500,000	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
MW-6	2/22/2006	2,900	<10,000	620	<100	<100	<100	50,000	<100	<100	210	24,000	<10,000	<1,000	<100	<100
	5/16/2006	3,200	<9,000	1,500	<90	<90	<90	50,000	<90	<90	280	27,000	<10,000	<900	<90	<90
	8/23/2006	3,400	<9,000	1,600	<90	<90	<90	39,000	<90	<90	190	55,000	<9,000[++]	<900	<90	<90
	11/13/2006	NA	<5,000	1,200	<50	<50	<50	17,000	<50	<50	66	71,000	NA	NA	NA	NA
	2/13/2007	2,400	4,900	1,800	<25	<25	<25	14,000	<25	<25	65	55,000	NA	NA	NA	NA
	5/15/2007	2,600	4,900	1,900	21	<20	<20	12,000	<20	<20	55	60,000	NA	NA	NA	NA

TABLE 4
GROUNDWATER ANALYTICAL DATA (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	8/15/2007	2,900	4,000	1,300	<20	<20	<20	7,000	<20	<20	32	69,000	NA	NA	NA	NA
	11/14/2007	2,400	5,400	2,000	<20	<20	<20	3,300	<20	<20	<20	63,000	NA	NA	NA	NA
	2/19/2008	2,300	2,000	660	6.7	<1.5	4.6	280	<1.5	<1.5	2	4,500	NA	NA	NA	NA
	6/25/2008	2,500	2,700	880	<20	<20	<20	1,400	<20	<20	<20	74,000	NA	NA	NA	NA
	9/17/2008	No groundwater samples collected, per ACEH														
	12/8/2008	No groundwater samples collected, per ACEH														
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
MW-7	2/22/2006	400	<10,000	<100	<100	<100	<100	88,000	<100	<100	430	90,000	<10,000	<1,000	<100	<100
	5/16/2006	340	<5,000	<50	<50	<50	<50	28,000	<50	<50	120	47,000	<5,000	<500	<50	<50
	8/23/2006	280	<9,000	<90	<90	<90	<90	62,000	<90	<90	280	160,000	<18,000[++]	<900	<90	<90
	11/13/2006	NA	<9,000	<90	<90	<90	<90	49,000	<90	<90	280	130,000	NA	NA	NA	NA
	2/13/2007	210	<7,000	<70	<70	<70	<70	33,000	<70	<70	170	130,000	NA	NA	NA	NA
	5/15/2007	250	<5,000	<50	<50	<50	<50	36,000	<50	<50	190	140,000	NA	NA	NA	NA
	8/15/2007	390	<9,000	<90	<90	<90	<90	37,000	<90	<90	170	160,000	NA	NA	NA	NA
	11/14/2007	310	<9,000	<90	<90	<90	<90	45,000	<90	<90	220	150,000	NA	NA	NA	NA
	2/19/2008	190	<500	<5	<5	<5	<5	3,000	<5	<5	15	13,000	NA	NA	NA	NA
	6/25/2008	240	<4,000	<40	<40	<40	<40	21,000	<40	<40	99	100,000	NA	NA	NA	NA
	9/17/2008	230	<9,000	<90	<90	<90	<90	34,000	<90	<90	180	70,000	NA	NA	NA	NA
	12/8/2008	180	<15,000	<150	<150	<150	<150	98,000	<150	<150	740	100,000	NA	NA	NA	NA
	7/1/2009	350	<4,000	<40	<40	<40	<40	19,000	<40	<40	100	70,000	NA	NA	NA	NA
	1/7/2010	**230**	**<400**	**<4.0**	**<4.0**	**<4.0**	**<4.0**	**3,600**	**<4.0**	**<4.0**	**7.8**	**9,000**	**NA**	**NA**	**NA**	**NA**
MW-8	2/22/2006	6,800	<10,000	1,200	<100	270	220	400,000	<100	<100	2,100	63,000	<300,000	<1,000	<100	<100
	5/16/2006	3,800	<90,000	1,600	<900	<900	<900	620,000	<900	<900	3,000	46,000	<90,000	<9,000	<900	<900
	8/23/2006	17,000	<90,000	940	<900	<900	<900	340,000	<900	<900	1,200	74,000	<90,000	<9,000	<900	<900
	11/13/2006	NA	<25,000	490	<250	<250	<250	120,000	<250	<250	360	130,000	NA	NA	NA	NA
	2/13/2007	4,100	<90,000	1,700	<900	<900	<900	410,000	<900	<900	1,700	160,000	NA	NA	NA	NA
	5/16/2007	3,300	<50,000	650	<500	<500	<500	190,000	<500	<500	750	170,000	NA	NA	NA	NA
	8/16/2007	4,400	<25,000	420	<250	<250	<250	150,000	<250	<250	460	210,000	NA	NA	NA	NA
	11/16/2007	89,000	<25,000	<250	<250	<250	<250	120,000	<250	<250	<250	250,000	NA	NA	NA	NA

TABLE 4
GROUNDWATER ANALYTICAL DATA (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	2/19/2008	120,000	<10,000	650	<100	<100	160	56,000	<100	<100	210	260,000	NA	NA	NA	NA
	6/25/2008	3,200	<15,000	210	<150	<150	<150	70,000	<150	<150	190	320,000	NA	NA	NA	NA
	9/18/2008	8,300	<25,000	<250	<250	<250	<250	100,000	<250	<250	<250	450,000	NA	NA	NA	NA
	12/9/2008	<2,000,000	1,700,000	2,300	<250	37,000	67,000	91,000	<250	<250	1,500	410,000	NA	NA	NA	NA
	7/1/2009	4,100	<25,000	600	<250	<250	290	220,000	<250	<250	610	350,000	NA	NA	NA	NA
	1/7/2010	**Sample not available due to DPE**														
MW-9	12/9/2008	<800	1,200	4.2	<2.5	13	9.4	1,300	<2.5	<2.5	10	240	<300	<25	<2.5	<2.5
	7/1/2009	360	1,400	7.9	1.4	0.86	5.1	400	<0.50	<0.50	3.6	24	NA	NA	NA	NA
	1/7/2010	**<50**	**120**	**0.52**	**<0.50**	**<0.50**	**<0.50**	**53**	**<0.50**	**<0.50**	**<0.50**	**<5.0**	**NA**	**NA**	**NA**	**NA**
MW-10	12/9/2008	<2,000	8,000	560	41	35	150	500	5.1	<1.0	<1.0	13J	<200	<10	78	<1.0
	7/1/2009	920	7,200	370	41	150	200	410	3.1	<0.90	<0.90	8.4J	NA	NA	NA	NA
	1/7/2010	**<500**	**5,400**	**270**	**21**	**94**	**110**	**440**	**3.0**	**<0.90**	**<0.90**	**10J**	**NA**	**NA**	**NA**	**NA**
IS-1	2/22/2006	4,400	<5,000	160	<50	<50	<50	21,000	<50	<50	64	130,000	<5,000	<500	<50	<50
	5/16/2006	3,800	<5,000	150	<50	<50	<50	24,000	<50	<50	58	130,000	<5,000	<500	<50	<50
	8/23/2006	3,800	<5,000	65	<50	<50	<50	5,800	<50	<50	<50	110,000	<5,000	<500	<50	<50
	11/13/2006	NA	<5,000	<50	<50	<50	<50	1,000	<50	<50	<50	100,000	NA	NA	NA	NA
	2/13/2007	1,800	<4,000	<40	<40	<40	<40	3,600	<40	<40	<40	110,000	NA	NA	NA	NA
	5/15/2007	2,000	<4,000	49	<40	<40	<40	2,800	<40	<40	<40	98,000	NA	NA	NA	NA
	8/15/2007	2,700	<4,000	<40	<40	<40	<40	4,200	<40	<40	<40	90,000	NA	NA	NA	NA
	11/13/2007	1,400	<700	<7.0	<7.0	<7.0	<7.0	470	<7.0	<7.0	<7.0	25,000	NA	NA	NA	NA
	2/19/2008	1,800	410	2.0	<0.5	<0.5	<0.5	1,000	<0.5	1.8	2.7	80,000	NA	NA	NA	NA
	6/25/2008	2,500	<4,000	<40	<40	<40	<40	3,300	<40	<40	<40	94,000	NA	NA	NA	NA
	9/17/2008	No groundwater samples collected, per ACEH														
	12/8/2008	No groundwater samples collected, per ACEH														
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
IS-2	2/22/2006	<4,000	8,600	1,200	<9.0	240	17	190,000	<9.0	9	1,700	29,000	<150,000	<90	<9.0	<9.0
	5/16/2006	<3,000^	<15,000	500	<150	<150	<150	130,000	<150	<150	880	24,000	<15,000	<1,500	<150	<150

TABLE 4
GROUNDWATER ANALYTICAL DATA (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	8/23/2006	2,700	<40,000	490	<400	<400	<400	150,000	<400	<400	1,200	39,000	<40,000[++]	<4,000	<400	<400
	11/23/2006	NA	<40,000	<400	<400	<400	<400	160,000	<400	<400	990	120,000	NA	NA	NA	NA
	2/13/2007	<1,500^	<5,000	230	<50	<50	<50	28,000	<50	<50	250	72,000	NA	NA	NA	NA
	5/15/2007	<3,000^	<7,000	690	<70	120	<70	35,000	<70	<70	370	32,000	NA	NA	NA	NA
	8/15/2007	<3,000^	<7,000	500	<70	<70	<70	20,000	<70	<70	160	160,000	NA	NA	NA	NA
	11/14/2007	<4,000	15,000	1,100	<70	240	<70	29,000	<70	<70	380	25,000	NA	NA	NA	NA
	2/19/2008	<3,000	5,300	550	5	32	7.6	7,400	<0.50	3.2	94	65,000	NA	NA	NA	NA
	6/25/2008	4,300	5,500	440	<40	<40	<40	3,100	<40	<40	<40	110,000	NA	NA	NA	NA
	9/18/2008	No groundwater samples collected, per ACEH														
	12/8/2008	No groundwater samples collected, per ACEH														
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
IS-3	2/22/2006	<4,000	29,000	2,700	820	1,100	2,900	750,000	<100	<100	3,400	40,000	<80,000	<1,000	<100	<100
	5/16/2006	8,000	<20,000	1,110	<200	450	<200	300,000	<200	<200	1,600	65,000	<20,000	<2,000	<200	<200
	8/23/2006	4,800	<50,000	2,900	<500	1,100	660	970,000	<500	<500	3,900	54,000	<50,000	<5,000	<500	<500
	11/13/2006	NA	<200,000	2,800	<2,000	<2,000	<2,000	1,100,000	<2,000	<2,000	4,500	65,000	NA	NA	NA	NA
	2/13/2007	<3,000	<150,000	3,200	<1,500	<1,500	<1,500	600,000	<1,500	<1,500	3,300	49,000	NA	NA	NA	NA
	5/16/2007	<4,000^	<150,000	2,900	<1,500	<1,500	<1,500	630,000	<1,500	<1,500	3,400	88,000	NA	NA	NA	NA
	8/15/2007	<3,000^	<150,000	2,800	<1,500	<1,500	<1,500	960,000	<1,500	<1,500	4,300	98,000	NA	NA	NA	NA
	11/14/2007	1,900	<150,000	2,600	<1,500	<1,500	<1,500	880,000	2,000	<1,500	3,600	130,000	NA	NA	NA	NA
	2/19/2008	1,200	2,700	660	4.8	160	<150	32,000	0.63	1.8	200	3,600	NA	NA	NA	NA
	6/25/2008	3,500	<150,000	3,600	<1,500	<1,500	<1,500	840,000	<1,500	<1,500	4,000	200,000	NA	NA	NA	NA
	9/17/2008	No groundwater samples collected, per ACEH														
	12/8/2008	No groundwater samples collected, per ACEH														
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
IS-4	2/22/2006	3,100	11,000	790	<100	120	<100	280,000	<100	<100	2,400	51,000	<10,000	<1,000	<100	<100
	5/16/2006	5,600	<15,000	610	<150	<150	<150	220,000	<150	<150	1,700	53,000	<15,000	<1,500	<150	<150
	8/23/2006	4,300	6,100	280	<40	<40	<40	270,000	<40	<40	1,600	100,000	<80,000[++]	<400	<40	<40
	11/13/2006	NA	<50,000	<500	<500	<500	<500	230,000	<500	<500	1,100	220,000	NA	NA	NA	NA
	2/13/2007	1,500	<25,000	380	<250	<250	<250	160,000	<250	<250	570	250,000	NA	NA	NA	NA

TABLE 4

GROUNDWATER ANALYTICAL DATA (Shallow Zone)

Eagle Gas Station

4301 San Leandro Street

Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	5/15/2007	1,700	<25,000	<250	<250	<250	<250	150,000	<250	<250	820	260,000	NA	NA	NA	NA
	8/15/2007	1,000	<15,000	<150	<150	<150	<150	85,000	<150	<150	360	280,000	NA	NA	NA	NA
	11/14/2007	760	<9,000	<90	<90	<90	<90	45,000	<90	<90	220	110,000	NA	NA	NA	NA
	2/19/2008	1,100	980	39	0.94	3.1	1.2	870	<0.5	3.4	7.6	42,000	NA	NA	NA	NA
	6/25/2008	4,000	<9,000	<90	<90	<90	<90	6,300	<90	<90	<90	300,000	NA	NA	NA	NA
	9/18/2008	<1,500	2,600	14	0.96	2.6	1.9	3,100	<1.0	9.1	8.4	280,000	NA	NA	NA	NA
	12/9/2008	4,000	20,000	1,100	360	710	3,000	110,000	1.1	20	630	540,000	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
IS-5	2/22/2006	35,000	66,000	4,100	<250	3,100	7,700	420,000	<250	<250	4,600	40,000	<25,000	<2,500	<250	<250
	5/16/2006	11000+	33,000	2,800	<200	1,700	1,900	350,000	<200	<200	3,400	29,000	<20,000	<2,000	<200	<200
	8/23/2006	11,000	71,000	5,200	<500	6,200	4,500	350,000	<500	<500	3,900	32,000	<50,000	<5,000	<500	<500
	11/13/2006	NA	<50,000	930	<500	<500	<500	440,000	<500	<500	2,800	89,000	NA	NA	NA	NA
	2/13/2007	<5,000	<50,000	3,600	<500	2,200	3,800	240,000	<500	<500	3,600	28,000	NA	NA	NA	NA
	5/16/2007	<5,000^	<50,000	4,500	<500	<500	<500	200,000	<500	<500	2,700	24,000	NA	NA	NA	NA
	8/15/2007	<10,000^	<50,000	4,300	<500	2,100	990	310,000	<500	<500	3,400	48,000	NA	NA	NA	NA
	11/16/2007	<5,000	<50,000	2,100	<500	1,900	3,600	260,000	<500	<500	2,600	5,500	NA	NA	NA	NA
	2/19/2008	<18,000	73,000	5,200	67	2,800	5,300	110,000	1.9	8.3	2,500	250,000	NA	NA	NA	NA
	6/25/2008	27,000	<50,000	3,400	<500	740	1,300	180,000	<500	<500	2,600	94,000	NA	NA	NA	NA
	9/18/2008	10,000,000	680,000	2,400	50	18,000	27,000	190,000	<10	13	2,200	240,000	NA	NA	NA	NA
	12/9/2008	140,000	47,000	2,900	44	4,400	7,100	89,000	1.3	14	1,600	230,000	NA	NA	NA	NA
	7/1/2009	7,200	50,000	4,400	<250	2,800	3,200	150,000	<250	<250	2,600	150,000	NA	NA	NA	NA
	1/7/2010	**<4,000**	**29,000**	**2,200**	**<70**	**3,200**	**3,100**	**8,000**	**<70**	**<70**	**210**	**140,000**	**NA**	**NA**	**NA**	**NA**
IS-6	2/22/2006	3,000	11,000	1,000	<100	560	180	130,000	<100	<100	1,400	210,000	<15,000	<1,000	<100	<100
	5/16/2006	3,300	<20,000	1,300	<200	730	<200	96,000	<200	<200	1,300	260,000	<25,000	<2,500	<200	<200
	8/23/2006	2,900	<20,000	580	<200	<200	<200	54,000	<200	<200	500	370,000	<20,000	<2,000	<200	<200
	11/13/2006	NA	<9,000	220	<90	<90	<90	20,000	<90	<90	170	260,000	NA	NA	NA	NA
	2/13/2007	1,600	<9,000	360	<90	<90	<90	28,000	<90	<90	210	310,000	NA	NA	NA	NA
	5/16/2007	1,700	9,100	1,400	<70	300	<70	21,000	<70	<70	240	240,000	NA	NA	NA	NA
	8/15/2007	1,700	<9,000	560	<90	<90	<90	8,000	<90	<90	100	220,000	NA	NA	NA	NA

TABLE 4
GROUNDWATER ANALYTICAL DATA (Shallow Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	11/14/2007	880	<5,000	200	<50	<50	<50	3,700	<50	<50	<50	190,000	NA	NA	NA	NA
	2/19/2008	1,200	3,500	360	2.3	41	1.6	6,100	0.66	8.6	55	220,000	NA	NA	NA	NA
	6/25/2008	1,900	<7,000	200	<70	<70	<70	1,600	<70	<70	<70	250,000	NA	NA	NA	NA
	9/17/2008	No groundwater samples collected, per ACEH														
	12/8/2008	No groundwater samples collected, per ACEH														
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
EW-1	2/22/2006	3,200	<150,000	3,100	<1,500	<1,500	<1,500	700,000	<1,500	<1,500	5,100	59,000	<150,000	<15,000	<1,500	<1,500
	5/16/2006	1,600	<100,000	2,000	<1,000	<1,000	<1,000	630,000	<1,000	<1,000	4,700	57,000	<100,000	<10,000	<1,000	<1,000
	8/23/2006	2,600	<150,000	2,200	<1,500	<1,500	<1,500	1,000,000	<1,500	<1,500	5,200	79,000	<150,000	<15,000	<1,500	<1,500
	11/13/2006	NA	<100,000	<1,000	<1,000	<1,000	<1,000	610,000	<1,000	<1,000	4,000	110,000	NA	NA	NA	NA
	2/13/2007	840	<70,000	1,200	<700	<700	<700	530,000	<700	<700	2,500	100,000	NA	NA	NA	NA
	5/16/2007	1,500	<70,000	1,700	<700	<700	<700	990,000	<700	<700	3,900	150,000	NA	NA	NA	NA
	8/16/2007	1,400	<80,000	1,900	<800	<800	<800	680,000	<800	<800	3,400	210,000	NA	NA	NA	NA
	11/16/2007	860	<70,000	<700	<700	<700	<700	440,000	<700	<700	1,700	280,000	NA	NA	NA	NA
	2/19/2008	800	<25,000	340	1.5	<250	<250	300,000	<5.0	26	1,200	340,000	NA	NA	NA	NA
	6/25/2008	1,200	<40,000	580	<400	<400	<400	260,000	<400	<400	1,100	450,000	NA	NA	NA	NA
	9/17/2008	No groundwater samples collected, per ACEH														
	12/8/2008	No groundwater samples collected, per ACEH														
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
EW-2	2/22/2006	<3,000	10,000	1,800	<100	700	670	120,000	<100	<100	1,200	36,000	<80,000	<1,000	<100	<100
	5/16/2006	<3,000^	<25,000	2,400	<250	1,110	880	180,000	<250	<250	1,400	45,000	<25,000	<2,500	<250	<250
	8/23/2006	<2,000	<25,000	1,600	<250	520	<250	120,000	<250	<250	930	35,000	<25,000	<2,500	<250	<250
	11/13/2006	NA	<10,000	610	<100	170	<100	60,000	<100	<100	380	25,000	NA	NA	NA	NA
	2/13/2007	<2,000	<15,000	1,100	<150	230	<150	81,000	<150	<150	700	49,000	NA	NA	NA	NA
	5/16/2007	<3,000^	9,900	1,700	<50	460	170	96,000	<50	<50	870	65,000	NA	NA	NA	NA
	8/16/2007	<2,000^	<15,000	1,300	<150	250	<150	100,000	<150	<150	700	75,000	NA	NA	NA	NA
	11/16/2007	<1,500	8,100	820	5.5	190	91	30,000	<0.50	4.6	230	47,000	NA	NA	NA	NA
	2/19/2008	<2,000	11,000	1,500	<50	610	300	78,000	<50	<50	590	130,000	NA	NA	NA	NA
	6/25/2008	1,600	<5,000	730	<50	<50	<50	11,000	<50	<50	120	130,000	NA	NA	NA	NA

TABLE 4

GROUNDWATER ANALYTICAL DATA (Shallow Zone)

Eagle Gas Station

4301 San Leandro Street

Oakland, California

Sample ID	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	9/18/2008	1,300	<5,000	310	<50	<50	<50	3,500	<50	<50	<50	160,000	NA	NA	NA	NA
	12/9/2008	<1,500	<5,000	650	<50	210	68	9,600	<50	<50	150	140,000	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														

NOTES:

NA	Not Analyzed
TPH-d	Total petroleum hydrocarbons as diesel by EPA Method 8015 (modified)
TPH-g	Total petroleum hydrocarbons as gasoline by EPA Method 8260B
BTEX	Benzene, toluene, ethylbenzene, total xylenes by EPA Method 8260B
MTBE	Methyl tertiary butyl ether by EPA Method 8260B
DIPE	Di-isopropyl ether by EPA Method 8260B
ETBE	Ethyl tertary butyl ether by EPA Method 8260B
TAME	Tertiary amyl methyl ether by EPA Method 8260B
TBA	Tertiary butyl alcohol by EPA Method 8260B
DCA	1,2-Dichloroethane
EDB	1,2-Dibromoethane
ESL	Environmental Screening Levels for deep soils and groundwater that are not a current or potential source of drinking water, San Francisco Bay Regional Water Quality Control Board, February 2005
(□g/L)	Micrograms per liter
#	See Well Gauging/Purging Calculation Data Sheets for date of depth-to-groundwater measurement
<50	Not detected in concentrations above indicated laboratory reporting limit
J	Estimated quantity because the MTBE-to-TBA ratio is greater than 20 to 1.
---	No samples collected, no data available
--	Not provided
*	Laboratory note:"Results within quantitation range; chromatographic pattern not typical of fuel"
^	The method reporting limit for TPH-d is increased due to interference from gasoline-range hydrocarbons.
^^	Petroleum hydrocarbons reported as TPH-d do not exhibit a typical Diesel chromatogram pattern; they have a lower boiling point than typical Diesel fuel.
++	The method reporting limit has been increased due to the presence of an interfering compound.

TABLE 5
GROUNDWATER ANALYTICAL DATA (Deep Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample Name	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
ESL (□g/L)		**640**	**500**	**46**	**130**	**290**	**100**	**1,800**	**--**	**--**	**--**	**18,000**	**--**	**50,000**	**200**	**150**
MW-1D	11/13/2007	140	71	<0.50	<0.50	<0.50	<0.50	600	<0.50	<0.50	3.4	550	<50	<5.0	<0.50	<0.50
	11/27/2007	No groundwater samples collected														
	2/19/2008	180	<50	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	6/25/2008	<50	<50	<0.50	<0.50	<0.50	<0.50	2.8	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	9/17/2008	<50	<50	<0.50	<0.50	<0.50	<0.50	1.7	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	12/8/2008	<50	<50	<0.50	<0.50	<0.50	<0.50	0.91	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
MW-4D	2/21/2006	<50	<90	<0.90	<0.90	<0.90	<0.90	440	<0.90	<0.90	1.8	<5.0	<90	<9.0	<0.90	<0.90
	5/16/2006	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<50	<5.0	<0.50	<0.50
	8/23/2006	<50	<50	<0.50	<0.50	<0.50	<0.50	1	<0.50	<0.50	<0.50	<5.0	93	8	<0.50	<0.50
	11/13/2006	NA	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	2/13/2007	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	5/15/2007	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	8/15/2007	130^^	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	11/13/2007	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	11/27/2007	No groundwater samples collected														
	2/29/2008	170	<50	<0.50	<0.50	<0.50	<1.0	0.64	<0.50	<0.50	<0.50	<5.0	<50	<5.0	NA	NA
	6/25/2008	<50	<50	<0.50	<0.50	<0.50	<0.50	7.90	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	9/17/2008	72	<50	<0.50	<0.50	<0.50	<0.50	5.7	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	12/8/2008	<50	<50	<0.50	<0.50	<0.50	<0.50	150	<0.50	<0.50	0.98	74	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
MW-5D	2/21/2006	<50	<50	<0.50	<0.50	<0.50	<0.50	8.1	<0.50	<0.50	<0.50	5.5	<50	<5.0	<0.50	<0.50
	5/16/2006	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<50	<5.0	<0.50	<0.50
	8/23/2006	<50	<50	<0.50	<0.50	<0.50	<0.50	56	<0.50	<0.50	<0.50	<5.0	120	6	<0.50	<0.50
	11/13/2006	NA	<50	<0.50	<0.50	<0.50	<0.50	81	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	2/13/2007	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	5/15/2007	<50	<50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	8/15/2007	330^^	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	11/13/2007	3,700	51	<0.50	<0.50	<0.50	<0.50	3.1	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA

TABLE 5
GROUNDWATER ANALYTICAL DATA (Deep Zone)
Eagle Gas Station
4301 San Leandro Street
Oakland, California

Sample Name	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)
	11/27/2007	No groundwater samples collected														
	2/19/2008	12,000	<50	<0.50	<0.50	<0.50	<0.50	190	<0.50	<0.50	0.83	36	NA	NA	NA	NA
	6/25/2008	74	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	9/17/2008	65	<50	<0.50	<0.50	<0.50	<0.50	1.1	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	12/8/2008	<50	<50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	7/1/2009	**No groundwater samples collected, per ACEH April 24, 2009 letter**														
MW-7D	11/13/2007	760	<150	<1.5	<1.5	<1.5	<1.5	760	<1.5	<1.5	5.3	<5.0	<150	31	<1.5	<1.5
	11/27/2008	No groundwater samples collected														
	2/19/2008	280	<150	<1.5	<1.5	<1.5	2.4	1,000	<1.5	<1.5	7.5	17J	NA	NA	NA	NA
	6/25/2008	92	<100	<1.0	<1.0	<1.0	<1.0	690	<1.0	<1.0	5.9	63	NA	NA	NA	NA
	9/17/2008	52	<300	<3.0	<3.0	<3.0	<3.0	1,300	<3.0	<3.0	10	24J	NA	NA	NA	NA
	12/8/2008	<50	<50	<0.50	<0.50	<0.50	<0.50	320	<0.50	<0.50	3.2	*<5.0*	NA	NA	NA	NA
	7/1/2009	<50	<50	<0.50	<0.50	<0.50	<0.50	24	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	1/8/2010	**<1.500**	**4,900**	**350**	**10**	**62**	**420**	**61,000**	**0.71**	**9.2**	**360**	**200,000**	**NA**	**NA**	**NA**	**NA**
MW-9D	12/9/2008	150	420	0.60	<0.50	1.7	3.4	1.7	<0.50	<0.50	<0.50	<5.0	<50	<5.0	0.54	<0.50
	7/1/2009	<50	440	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	1/8/2010	**<50**	**110**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<5.0**	**NA**	**NA**	**NA**	**NA**
MW-10D	12/9/2008	120	120	0.64	<0.50	0.63	1.3	1.5	<0.50	<0.50	<0.50	<5.0	<50	<5.0	0.51	<0.50
	7/1/2009	<50	110	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	1/7/2010	**<50**	**180**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<5.0**	**NA**	**NA**	**NA**	**NA**
MW-11D	12/8/2008	<50	<50	<0.50	<0.50	<0.50	<0.50	3.0	<0.50	<0.50	<0.50	5.0	<50	<50	<0.50	<0.50
	7/1/2009	<50	<50	<0.50	<0.50	<0.50	<0.50	2.0	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA
	1/8/2010	**120**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<5.0**	**NA**	**NA**	**NA**	**NA**

TABLE 5

GROUNDWATER ANALYTICAL DATA (Deep Zone)

Eagle Gas Station

4301 San Leandro Street

Oakland, California

Sample Name	Sample Date	TPH-d (□g/L)	TPH-g (□g/L)	B (□g/L)	T (□g/L)	E (□g/L)	X (□g/L)	MTBE (□g/L)	DIPE (□g/L)	ETBE (□g/L)	TAME (□g/L)	TBA (□g/L)	Methanol (□g/L)	Ethanol (□g/L)	DCA (□g/L)	EDB (□g/L)

NOTES:

NA	Not Analyzed
TPH-d	Total petroleum hydrocarbons as diesel by EPA Method 8015 (modified)
TPH-g	Total petroleum hydrocarbons as gasoline by EPA Method 8260B
BTEX	Benzene, toluene, ethylbenzene, total xylenes by EPA Method 8260B
MTBE	Methyl tertiary butyl ether by EPA Method 8260B
DIPE	Di-isopropyl ether by EPA Method 8260B
ETBE	Ethyl tertary butyl ether by EPA Method 8260B
TAME	Tertiary amyl methyl ether by EPA Method 8260B
TBA	Tertiary butyl alcohol by EPA Method 8260B
DCA	1,2-Dichloroethane
EDB	1,2-Dibromoethane
ESL	Environmental Screening Levels for deep soils and groundwater that are not a current or potential source of drinking water, San Francisco Bay Regional Water Quality Control Board, February 2005
(□g/L)	Micrograms per liter
<50	Not detected in concentrations above laboratory reporting limit
J	Estimated quantity because the MTBE-to-TBA ratio is greater than 20 to 1.
---	Not provided
^^	Petroleum hydrocarbons reported as TPH-d do not exhibit a typical Diesel chromatogram pattern; they have a lower boiling point than typical Diesel fuel
++	The method reporting limit has been increated due to the presence of an interfering compound

Table 6. Comparison of Contaminant of Concern Concentrations in July 2009 and January 2010

Wells	July 10, 2009					January 7, 2010				
	TPH-d (µg/L)	TPH-g (µg/L)	Benzene (µg/L)	MTBE (µg/L)	TBA (µg/L)	TPH-d (µg/L)	TPH-g (µg/L)	Benzene (µg/L)	MTBE (µg/L)	TBA (µg/L)
MW-4	4,600	<50,000	5,000	400,000	240,000	3,200	<9,000	510	34,000	290,000
MW-7	350	<4,000	<40	19,000	70,000	230	<400	<4.0	3,600	9,000
MW-9	360	1,400	7.9	400	24	<50	120	0.52	53	<5.0
MW-10	920	7,200	370	410	8.4J	<500	5,400	270	440	10J
IS-5	7,200	50,000	4,400	150,000	150,000	<4,000	29,000	2,200	8,000	140,000
MW-7D	<50	<50	<0.50	24	<5.0	<1,500	4,900	350	61,000	200,000
MW-9D	<50	440	<0.50	<0.50	<5.0	<50	110	<0.50	<0.50	<5.0
MW-10D	<50	110	<0.50	<0.50	<5.0	<50	180	<0.50	<0.50	<5.0
MW-11D	<50	<50	<0.50	2.0	<5.0	120	<50	<0.50	<0.50	<5.0

APPENDIX A

SITE INVESTIGATION HISTORY

On April 21 and 22, 1999, Clearwater (formerly Artesian Environmental) oversaw the removal of five underground storage tanks (USTs) consisting of two 6,000-gallon gasoline tanks, two 4,000-gallon diesel tanks, and one 300-gallon used-oil tank from the site. Strong petroleum odors were identified at the UST excavation pit. Five soil samples and three groundwater samples were collected from the UST excavation for confirmation. Field observations and laboratory analysis indicated that an unauthorized release of petroleum had occurred. The former UST excavation area is shown in **Figure 2** and was defined by driven steel structural shoring installed to protect on-site and off-site buildings.

In a letter dated May 10, 1999, the Alameda County Environmental Health (ACEH) recommended that soil be remediated by over-excavation and "as much groundwater as possible" be pumped from the excavation site. Approximately 800 tons of petroleum-impacted soil was excavated and disposed of as Class II non-hazardous waste and approximately 1,000 gallons of petroleum-impacted groundwater was pumped and removed from the site. Groundwater did not recharge quickly after the initial pumping due to the steel shoring. Existing on- and off-site structures and associated shoring limited the amount of soil that could be safely excavated. Soil samples collected from the excavation walls and product-piping trenches indicated that residual concentrations of petroleum hydrocarbons and methyl-tert-butyl-ether (MTBE) still existed.

On August 4 and 5, 1999, approximately 100 linear feet of product piping was removed. Vent piping from between the former USTs and the southern corner of the on-site building was also removed. All piping was cut up and disposed of as scrap metal. On August 5, 1999, confirmation soil samples were collected along the piping trench. Six samples were collected from approximately three feet bgs. An additional four samples were collected, one from each of the four former fuel dispensers. Laboratory analysis results indicated that hydrocarbon-related contamination existed along the piping trenches.

On September 26, 2000, West Hazmat of Rancho Cordova, California, used a CME 75 drill rig to advance three borings to approximately 25 feet bgs and collect soil samples. Each of the three borings was converted to a groundwater-monitoring well (see **Figure 2**) using clean, flush-threaded, 2-inch diameter polyvinyl chloride (PVC) for well casing. The construction data for these three wells MW-1, MW-2, and MW-3 are presented in **Table 1**.

On October 3 and 10, 2000, Clearwater surveyed the top of the casing elevation for each of the wells relative to an arbitrary datum, and developed the wells for monitoring purposes. Initial groundwater samples collected from these wells contained 83,000 micrograms per liter (μg/L) to 250,000 μg/L total petroleum hydrocarbon as gasoline (TPH-g) and 33,000 μg/L to 400,000 μg/L MTBE.

On August 3, 2001, Clearwater submitted its *Groundwater Monitoring Report - Second Quarter 2001* and *Sensitive Receptor Survey and Workplan for Continuing Investigation.* It was determined at that time that there were no major ecological receptors, permanent surface waters or domestic-use wells within a 2,000-foot radius of the site. The proposed scope of the work plan included the installation of eight groundwater monitoring wells around the site to delineate the MTBE plume in groundwater. In response to Clearwater's work plan, ACEH staff, in a correspondence dated October 18, 2001, recommended that the installation of additional off-site wells not be performed for the time being. Instead, ACEH staff requested that further characterization of subsurface soils and groundwater on the subject site be completed prior to the installation of any off-site wells.

Quarterly monitoring was suspended after the Third Quarter 2001 event that took place on August 3, 2001. Quarterly monitoring resumed in July 2003 and has continued every quarter since then. The historical groundwater monitoring and sampling results are listed in **Table 2**.

On January 9, 2004, after completing its review of the Third Quarter 2003 groundwater monitoring report, ACEH staff requested a work plan to include additional on-site and off-site subsurface investigations and address the extent of groundwater impact on site. Clearwater submitted an *Interim Remedial Action Plan* (IRAP), as requested by ACEH staff on January 14, 2004.

In order to expedite the implementation of the Interim Remedial Action Plan (IRAP), Clearwater formally requested the Oakland Fire Department to review the IRAP and the *Fourth Quarter 2004 Groundwater Monitoring Report* as well as to oversee the project. The Fire Department verbally agreed to oversee this project. The correspondence is shown in letters to the Fire Department dated December 3 and 15, 2004. The Fire Department turned the project over to ACEH. ACEH provided its review comments for the IRAP and the *First Quarter 2005 Groundwater Monitoring Report* in a letter dated May 26, 2005. Pursuant to ACEH's request described in this letter, Clearwater submitted a *Soil and Groundwater Investigation Workplan* on August 10, 2005. In review letters dated September 21, 2005 and November 1, 2005, ACEH approved the implementation of a modified IRAP proposed in Clearwater's June 13, 2005 letter entitled "*Recommendations for Interim Remedial Actions"* and the August 10, 2005 *Soil and Groundwater Investigation Workplan*. Based on the above documents and correspondences, Clearwater installed 15 additional on-site wells between December 15 and 20, 2005, and conducted Geoprobe® soil and groundwater sampling between December 6 to 9, 2005 and from March 29 to April 2, 2006. In order to monitor the level of groundwater impact and the magnitude of vertical migration of contaminants in deeper groundwater, two deep monitoring wells MW-4D and MW-5D were also installed. These wells were screened between 35 to 45 feet bgs. The construction data for all the new wells is also presented in **Table 1**. All the wells were surveyed by Clearwater using a Global Positioning System (GPS) and a laser level on March 16, 2006.

On the basis of apparent on-site groundwater mounding and unusually step on-site groundwater gradients, ACEH staff requested a check of the groundwater elevation data.

Each well's horizontal position was originally determined using a GPS survey in 2005. Clearwater field-checked the well locations of all the groundwater monitoring wells on August 18, 2006, using a 100 foot-long cloth tape. The horizontal distances between the wells were measured, and the well positions were triangulated from these measurements. Several well locations were adjusted slightly on the base map; the revised base map with the resurveyed well locations is shown in **Figure 2** and has been used throughout reports generated since that time.

The TOC elevations of all the wells were measured again on September 12, 2006, using a survey level and survey staff, accurate to within 0.01 feet. The TOC elevation for well MW-1 (northwester corner of site) was the starting datum, and the TOC elevation for all the other wells was calculated as the relative different from MW-1's TOC elevation. The surveyed TOC elevations were compared with the previously used TOC elevations, which were determined using a laser level. The relative difference in the TOC elevation for each well was determined. The maximum vertical difference was found to be 0.12 foot for well IS-3. **Table 2** presents the original elevation values up to May 9, 2005, followed by the resurveyed TOC elevations after that date. The overall groundwater gradient pattern did not significantly change after completion of the monitoring well resurvey.

Sampling analysis for *Escherichia coli* (*E. coli*), total coliform, and water treatment byproducts as residual chlorine was performed in November 2006 on groundwater samples obtained from wells IS-5, MW-8, and MW-7 in an attempt to identify whether on-site groundwater mounding could be caused by water and/or sewer line leaks; both *E. coli* and total coliform were present in IS-5 and MW-8, and water treatment byproducts were present in IS-5, MW-8, and MW-7. Leak testing was performed; both a crack and an off-set in the sewer line were identified to exist near well IS-1. The sampling results for the *E. coli*, total coliform, and water treatment byproducts were reported in the *Quarterly Groundwater Monitoring Report – Fourth Quarter 2006*, and the sewer line leak test results were reported in the *Quarterly Groundwater Monitoring Report – First Quarter 2007*.

On May 30, 2006, Clearwater submitted its *Soil and Groundwater Investigation Report* to the ACEH, which included an updated Site Conceptual Model for the site. In response to the report, ACEH requested a work plan to present proposed additional on- and off-site investigations. ACEH staff also provided technical comments to be addressed in the work plan. Clearwater's *Response to Comments* was sent to ACEH on July 7, 2006.

ACEH responded with a letter on August 11, 2006, containing revised technical comments to be incorporated into the work plan. Clearwater submitted its *Revised Workplan* to the ACEH on December 19, 2006. ACEH responded with technical comments in a letter dated January 4, 2007; these comments were to be addressed and incorporated during the field investigation. Submission of an additional revised work plan was not requested by ACEH staff.

A *Bioremediation Feasibility Study Report* (Feasibility Report) was submitted July 9, 2007. The feasibility report concluded that the bioremediation parameters suggest an environment that is generally anaerobic and reducing. It appears that the general lack of sufficient oxygen and essential nutrients is limiting the degradation of the petroleum hydrocarbons.

Clearwater submitted its 2007 *Soil and Groundwater Investigation Report* (2007 Report) to the ACEH on December 5, 2007. The scope of work presented in the 2007 report included an inspection of the on-site sanitary sewer lateral, driving and sampling of 15 off-site soil borings, driving of 2 cone-penetrometer test (CPT) borings, installation of additional on-site "deep-zone" groundwater monitoring wells MW-1D and MW-7D, installation and sampling of 6 shallow soil vapor wells, surveying of 8 well and 15 boring locations by GPS, and collection of soil samples for a persulfate bench test.

The 2007 report included a revised Site Conceptual Model (SCM). In the new SCM, the depth of the contact between the clayey gravel layer and the underlying soil has been revised. The site lithology can be conceptually divided into an upper shallow zone and a lower deep zone. The shallow zone is generally richer in clay and the deep zone is generally coarser grained. The separation between the two zones varies from 25 to 30 feet bgs. The groundwater within the shallow zone is highly contaminated, whereas the groundwater within the deep zone is relatively less contaminated. Grab groundwater samples collected from off-site borings indicate that the groundwater contamination within both zones extends off site and that the extent of the off-site contamination has not been defined in either zone.

Clearwater generated the groundwater elevation contours for the 2007 report using the same depth-to-water data used for the Fourth Quarter 2007 Groundwater Monitoring event. With this data set, the groundwater elevation contours for the shallow zone were consistent with previously reported quarterly groundwater elevation contours. The groundwater elevation contours for the deep zone were generated on November 13, 2007, using data from wells MW-1D, MW-4D, MW-5D, and MW-7D. Because the deep zone groundwater elevation contour pattern did not conform to the shallow zone groundwater elevation pattern, the depths to groundwater of deep zone wells were measured a second time on November 27, 2007. Both sets of measurements indicated a partial groundwater depression, with a groundwater flow direction toward the north.

Clearwater submitted its *2008 Soil and Groundwater Investigation Work Plan* (2008 Work Plan) to the ACEH on July 2, 2008. The 2008 Work Plan proposed conducting an off-site passive soil vapor survey, installing additional groundwater monitoring well, determining whether the 42nd Avenue freeway onramp is a groundwater discharge area, and performing a high-vacuum dual phase extraction pilot test. The ACEH approved the 2008 Work Plan in a letter dated September 4, 2008. However, the ACEH did not agree with the proposed passive soil sampling survey.

In January 2009, four groundwater monitoring wells (MW-9, MW-9D, MW-10, and MW-10D) were installed on nearby off-site properties and one additional monitoring well

(MW-11D) was installed on site. The well installations were described in the January 21, 2009 *Groundwater Monitoring Well Installation Report*. The new wells and wells MW-3 and IS-4 were surveyed relative to the North American Vertical Datum of 1988 (NAVD 88). After the survey, the top casing elevations of all the site wells were adjusted to NAVD 88.

The finalized design and location of the on-site High Vacuum Dual Phase Extracting test trench and observation wells were submitted to the ACEH for review in January 2009.

APPENDIX B

GROUNDWATER MONITORING AND SAMPLING - STANDARD OPERATING PROCEDURES (SOP)

1. Purposes

This document focuses on the equipment, field procedures, and level of accuracy and quality control measures required for the groundwater monitoring and sampling program. Development of this SOP is to guide the field staff to perform the groundwater monitoring and sampling jobs properly, to maintain consistency of field procedures, and to facilitate the assurance of the quality and reliability of data obtained from all groundwater monitoring events.

2. Equipment

Groundwater monitoring and sampling need the following equipment and supplies:

- Job description, site maps, chain-of-custody, field data forms and activity logs, indelible ink pen, watch, cell phone
- Hardhead, boots, safety vest/suit, and gloves
- Traffic control cones and tapes
- Water level indicator (sounder)
- Peristaltic pump or bailers if water depth is deeper than 33 feet
- Water quality meter(s)
- Decon water, soap, and Liquinox® solution
- Sampling pump or bailers
- Laboratory-supplied sample bottles/containers
- Ice chest(s) with ice
- Waste storage drums and buckets
- Tools for opening well caps, string, tubing, and duck or Teflon tapes
- Multi-phase sounder, if needed.
- Health & Safety Plan

3. Procedures

Groundwater monitoring and sampling job include the following procedures, and should be performed in the designated order:

1. Job Preparation
2. Equipment Decontamination
3. Gauging of Groundwater Depth
4. Purging of Wells
5. Well Sampling
6. Handling of Groundwater Samples
7. Closing of Monitoring Event

Job Preparation

The following work should be conducted prior to arriving the site:

- Contact project manager
- Review job description, site direction, site maps, list of chemicals to be analyzed, H&SP
- Prepare chain-of-custody and sample labels
- Contact analytical lab for sample pickup
- Contact site manager 24 hours before sampling
- Calibrate water quality instruments daily
- Check equipment, supplies, and vehicle before departure

Equipment Decontamination

After checking in with the site manager, a decontamination area and traffic control cones should be setup prior to well gauging and sampling. Any non-dedicated downhole gauging, purging or sampling equipment should be decontaminated prior to use. Downhole equipment is scrubbed in a Liquinox® solution wash. Wash solution is also pumped through purging pumps and rinsed with potable water. The same equipment should be rinsed again with potable water or de-ionized water if the latter is required.

Gauging of Groundwater Depth

If local groundwater is under confined or semi-confined conditions, caps for all monitoring wells should be opened to allow atmospheric pressure to equalize for about 15 minutes prior to gauging. Depth to bottom for each well should be measured during the first monitoring event at the site. It is typically measured once every year or more frequently, if needed. The static water level is measured to the nearest 0.01 feet with an electronic water indicator. If historical analytical data for monitoring wells are not available, which can be used to establish an order of increasing contamination, the water level indicator should be decontaminated between wells. If floating product or separate-phase hydrocarbons (SPH) are suspected or observed within wells, a clear and open-ended bailer will be used to collect the product or SPH. The thickness is measured to the nearest 0.01 feet in the bailer. SPH may also be measured with an electronic interface probe. Any monitoring well containing a measurable thickness of SPH before or during purging will not be purged and sampled. Unless otherwise determined by the data conditions and specified by the project manager, wells containing hydrocarbon sheen are still sampled. Well conditions, water level and floating product thickness are recoded on appropriate data form.

Low Flow Purging and Sample Technique

Where applicable, a low flow purging technique will be used to purge and sample monitor wells. The sampling method is described in the "Low-Flow (Minimal Drawdown) Ground Water Sampling Procedures" (EPA, 1996). Using a peristaltic pump with dedicated downhole tubing, the intake will be located in the middle of the screen zone. The flow rate will be adjusted to less than 1 L/min. When Dissolved oxygen or oxidation reduction potential is being measured, the pump will be set up with a flow through cell, to minimize aeration of the water. Parameters such

as temperature, pH, and conductivity will be measured a minimum of four times or until stability, as defined above, is reached. Samples will be collected from the downhole tube, not the discharge tube from the flow through cell.

Bailer Purging and Sample Technique When LRP Not Applicable

Selected quality parameters are measured in a discreet sample decanted from the bailer. Parameters are measured at least four times during purging: one before purging, and one each after purging each one casing volume. Purging continues until three well casing volumes of groundwater have been removed or until the well completely dewaters. Wells that dewater or demonstrate a slow recharge rate may still be sampled after less than three casing volumes have been removed. Well purging information is recorded on appropriate data form. Samples are collected from the bottom of the bailer using the sample retrieval device.

Well Sampling

Groundwater samples are collected immediately after purging using a low-rate peristaltic sampling pump. Samples being analyzed for volatile compounds are collected first. During sample collection for volatile organic analysis, the amount of air passing through the sample should be minimized. Sample bottles are filled slowly by running the collected water down the side of the bottle until there is a convex meniscus over the mouth of the bottle. The lid is carefully screwed onto the bottle such that no air bubbles are present within the bottle. If a bubble is present, the cap is removed and additional water is added to the sample container. After resealing the sample container, if bubbles still are present inside the bottle, the sample container should be discarded and the procedure is repeated with a new container.

Handling of Groundwater Samples

Collected samples are placed in appropriate laboratory-supplied containers, labeled, documented on a chain of custody form, and placed on ice in a chilled cooler for transport to a state-certified analytical laboratory. Analytical detection limits should match or surpass standards required by relevant local or regional guidelines.

Closing of Monitoring Event

The following work should be performed prior to leaving the site:

- Decon the equipment
- Cover/lock all wells
- Seal the drums that store purged water, and place them in a secure area
- Remove the cones/tapes and clean the ground
- Checkout with the site manager and call the project manager in the office

4. Quality Assurance (QC) Measures

To prevent contamination of the samples in the field, the following measures should be taken:

- Put on a clean pair of latex gloves prior to sampling each well;
- Gauge, purge and sample wells in the determined order of increasing degree of contamination based on historical analytical results; and
- Based on the site conditions, regulatory requirements, or clients' request, include trip blanks and equipment blanks to QC the sample handling and transportation procedures, and include duplicate samples to QC the lab procedures.

Trip blanks are prepared by the laboratory. They are transported to the site in the same manner along with other laboratory-supplied sample bottles/containers. The trip blank are not opened in the field, and are returned to the laboratory with the collected groundwater samples.

Equipment blanks are obtained in the field to determine if the field sampling equipment has been effectively decontaminated. The sampling equipment used to collect the groundwater samples is rinsed with distilled water, which is then decanted into laboratory-supplied containers. The equipment blanks are transported to the laboratory in the same manner along with other collected groundwater samples, and are analyzed for the same chemical constituents as the groundwater samples collected at the site.

Duplicates are collected at the same time with other groundwater samples. They are analyzed for the same chemical constituents in order to verify the repeatability of laboratory procedures. Number of duplicates is determined based on the number of monitoring wells and the size of the monitoring program. The duplicates are assigned identification numbers that are not associated with the well identification.

References

USEPA, 1996, Puls, Barcelona, *Low-Flow (Minimal Drawdown) Ground Water Sampling Procedures* Ground Water Issue, EPA/540/S-95/504, April 1996.

APPENDIX C

Monitoring Well Gauging and Purging Data Sheet

Date:	Project No.	Site:	Location:	Initials:
1-7-10		EAGLE GAS	4301 SAN LEANDRO ST. OAKLAND	BCh.

Purge Method:	Gauging Time:	Gauging Time:	Purge Starting Time:	Purge Ending Time:	Sampling Method:
LRP	13.33	16.39			LRP

Well ID	Diameter (in)	Depth to Bottom (ft)	Initial Depth to Water from TOC (ft)	Equilibrated Depth to Water from TOC (ft)	Static Water Column (ft)	Casing Volume (gal)	Purged Volume (gal)	Depth to Product (ft)	Note:
MW-10D	2"	52.31	13.91	13.90	38.1	6.20			
MW-10	2"	15.08	7.63	7.64	7.44	1.21			
MW-1	2"	24.74	8.02	8.08	16.66	2.71			
MW-1D	2"	43.13	15.03	15.04	28.1	4.58			
MW-2	2"	24.75	10.68	10.70	14.05	2.29			
MW-3	2"	23.30	12.77	12.80	11.00	1.79			
MW-4	2"	24.80	10.05	10.07	14.73	2.40			
MW-4D	2"	42.55	16.65	16.68	25.87	4.21			
MW-5	2"	25.70	9.17	9.13	15.87	2.58			
MW-5D	2"	42.58	15.38	15.40	26.6	4.33			
MW-6	2"	25.50	12.46	12.48	12.02	1.95			
MW-7	2"	26.13	16.13	16.15	9.98	1.62			

Casing Volume = Static Water Column x Conversion Factor

Conversion Factor: 2-in well = 0.163 gal/ft, 4-in well = 0.653 gal/ft, 6-in well = 1.469 gal/ft

Total purged volume from all wells (gals):

Monitoring Well Gauging and Purging Data Sheet

Date:	Project No.	Site:	Location:	Initials:
1-7-10		EAGLE GAS	4301 SAN LEANDRO ST OAKLAND	DCH

Purge Method:	Gauging Time:	Gauging Time:	Purge Starting Time:	Purge Ending Time:	Sampling Method:
LRP	13:33	16:39			LRP

Well ID	Diameter (in)	Depth to Bottom (ft)	Initial Depth to Water from TOC (ft)	Equilibrated Depth to Water from TOC (ft)	Static Water Column (ft)	Casing Volume (gal)	Purged Volume (gal)	Depth to Product (ft)	Note:
MW-7D	2"	29.74	12.54	12.52	17.22				
MW-9	2"	15.18	6.81	6.81	8.37				
MW-9D	2"	40.00	14.06	14.11	25.89				
MW-11D	2"	44.83	15.82	15.82	29.01				
IS-1	2"	25.13	8.86	8.84	16.29				
IS-2	2"	25.05	8.55	8.76	16.29				
IS-3	2"	— Under DPE —							
IS-4	2"	25.06	9.00	9.00	16.06				
IS-5	2"	16.01	9.95	9.95	6.06				
FS-6	2"	25.55	8.89	8.91	15.06				
EW-1	4"	25.25	10.02	10.02	15.23				
EW-2	4"	25.36	9.59	9.58	15.78				

Casing Volume = Static Water Column x Conversion Factor

Conversion Factor: 2-in well = 0.163 gal/ft, 4-in well = 0.653 gal/ft, 6-in well = 1.469 gal/ft

Total purged volume from all wells (gals):

Monitor Well Data Sheet

Site Name: ~~4301~~ EAGLE GAS	Well/Sample ID: MW-4
Location: 4301 SAN LEANDRO ST	Initial Depth to Water (DTW): 10.05
Client: NAZ	Total Well Depth (TD): 24.80
Sampler: BERNARDO	Well Diameter: 2"
Date: 1-7-10	1 Casing Volume:
Purge Method: Peristaltic Pump ✓	Purge Rate: 0.3 L/M
Sample Method: Low Flow	Sampling Rate: 0.3 L/M
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	DO	Temp	~~DTW~~	Cumulative Volume	~~ORP~~	Notes
hh:mm	SU	µmhos/cm	mg/l	°C	feet	liters	mV	
17:08	8.00	486		17.6	10.26	0		
17:11	7.72	476		18.1	10.31	0.9		
17:14	7.72	466		18.0	10.40	1.8		
17:17	7.75	454		18.0	10.51	2.7		
17:20	7.73	450		18.1	10.58	3.6		
17:23	7.72	452		18.0	10.67	4.5		

Did Well Dewater?	NO	Start Purge Time:	17:00	DTW prior to sample:	10.40
Casing volumes Purged:		Stop Purge Time:	17:23	Start Sample Time:	17:30
Length of Tubing (ft):	14"	Total Liters Purged:	4.5	Total Sample Volume:	
Well Recharge:		Turbidity:	Moderate	Color:	Ligh gray
Odor:	Yes	Sheen: Yes	YES	Product Thinkness (in):	0

Notes:

Monitor Well Data Sheet

Site Name: EAGLE GAS	Well/Sample ID: MW-7
Location: 4301 SAL LEANDRO ST	Initial Depth to Water (DTW): 16.13
Client: NAZ	Total Well Depth (TD): 26.13
Sampler: BERNARDO	Well Diameter: 2"
Date: 1-7-10	1 Casing Volume:
Purge Method: Peristaltic Pump	Purge Rate: 0.3 L/M
Sample Method: Low Flow	Sampling Rate: 0.3 L/M
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	~~DO~~	Temp	DTW	Cumulative Volume	~~ORP~~	Notes
hh:mm	SU	µmhos/cm	mg/l	°C	feet	liters	mV	
17:57	8.02	557		17.2	16.32	0.6		
18:00	7.82	570		18.8	16.64	0.9		
18:03	7.92	573		18.3	16.80	1.8		
18:06	7.79	574		18.6	16.96	2.7		
18:09	7.94	573		18.3	17.19	3.6		
18:12	7.89	577		18.3	17.25	4.5		

Did Well Dewater?	NO	Start Purge Time:	17:57	DTW prior to sample:	17.19
Casing volumes Purged:		Stop Purge Time:	18:12	Start Sample Time:	18:15
Length of Tubing (ft):	20'	Total Liters Purged:	4.5	Total Sample Volume:	
Well Recharge:	SLOW	Turbidity:	Light	Color:	CLEAR
Odor:	NONE	Sheen:	NONE	Product Thinkness (in):	0

Notes:

Monitor Well Data Sheet

Site Name: EAGLE GAS	Well/Sample ID: MW-9
Location: 4301 SAN LEANDRO OAK	Initial Depth to Water (DTW): 6.81
Client: NAZ	Total Well Depth (TD): 15.18
Sampler: BERNARDO CHAVEZ	Well Diameter: 2"
Date: 1-7-10	1 Casing Volume:
Purge Method: Peristaltic Pump	Purge Rate: 0.3 L/M
Sample Method: Low Flow	Sampling Rate: 0.3 L/M
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	~~DO~~	Temp	DTW	Cumulative Volume	~~ORP~~	Notes
hh:mm	SU	µmhos/cm	mg/l	°C	feet	liters	mV	
18:45	8.91	154.7		18.1	6.99	0		
18:48	7.76	155.4		18.7	7.41	0.9		
18:51	7.86	153.1		18.4	7.61	1.8		
18:54	7.41	153.9		18.3	7.90	2.7		
18:57	7.66	155.1		18.2	8.41	3.6		
19:00	7.45	153.7		18.4	8.88	4.5		

Did Well Dewater?	NO	Start Purge Time:	18:45	DTW prior to sample:	8.80
Casing volumes Purged:		Stop Purge Time:	19:00	Start Sample Time:	19:07
Length of Tubing (ft):	10'	Total Liters Purged:	4.5	Total Sample Volume:	
Well Recharge:	OK	Turbidity:	Light	Color:	clear
Odor:	NONE	Sheen:	NONE	Product Thinkness (in):	0

Notes:

Monitor Well Data Sheet

Site Name: EAGLE GAS	Well/Sample ID: MW-10
Location: 4301 SAN LEANDRO OAK	Initial Depth to Water (DTW): 7.63
Client: NAZ	Total Well Depth (TD): 15.08
Sampler: BERNARDO	Well Diameter: 2"
Date: 1-7-10	1 Casing Volume:
Purge Method: Peristaltic Pump ✓	Purge Rate: 0.3 L/M
Sample Method: Low Flow	Sampling Rate: 0.3 L/M
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	~~DO~~	Temp	DTW	Cumulative Volume	~~ORP~~	Notes
hh:mm	SU	µmhos/cm	mg/l	°C	feet	liters	mV	
14:19	7.58	563		17.0	7.86	0		
14:22	7.59	566		17.0	8.02	0.9		
14:25	7.68	570		16.7	8.22	1.8		
14:28	7.68	564		16.8	8.41	2.7		
14:31	7.59	563		17.0	8.61	3.6		
14:34	7.61	565		16.4	8.79	4.5		

Did Well Dewater?	NO	Start Purge Time:	14:19	DTW prior to sample:	8.55
Casing volumes Purged:		Stop Purge Time:	14:34	Start Sample Time:	14:40
Length of Tubing (ft):	10'	Total Liters Purged:	4.5	Total Sample Volume:	
Well Recharge:		Turbidity:	Light	Color:	clear
Odor:	yes	Sheen:	none	Product Thinkness (in):	0

Notes:

Monitor Well Data Sheet

Site Name: EAGLE GAS	Well/Sample ID: IS-5 ~~MW-6~~
Location: 4301 SAN LEANDRO OAKLA	Initial Depth to Water (DTW): 9.95
Client: NAZ	Total Well Depth (TD): 16.01
Sampler: BERNARDO CHAVEZ	Well Diameter: 2"
Date: 1-7-10	1 Casing Volume:
Purge Method: Peristaltic Pump ✓	Purge Rate: 0.3 L/M
Sample Method: Low Flow	Sampling Rate: 0.3 L/M
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	~~DO~~	Temp	DTW	Cumulative Volume	~~ORP~~	Notes
hh:mm	SU	µmhos/cm	mg/l	°C	feet	liters	mV	
19:23	7.48	469		18.3	9:08	0		
19:26	7.37	455		19.0	10:05	0.9		
19:29	7.34	457		19.0	10:30	1.8		
19:32	7.36	460		18.9	10:52	2.7		
19:35	7.35	456		19.1	10.65	3.6		
19:38	7.35	4.59		19.0	10:80	4.5		

Did Well Dewater?	NO	Start Purge Time:	19:23	DTW prior to sample:	10.56
Casing volumes Purged:		Stop Purge Time:	19:38	Start Sample Time:	19.45
Length of Tubing (ft):	14'	Total Liters Purged:	4.5	Total Sample Volume:	
Well Recharge:	OK	Turbidity:	Moderate	Color:	Ligh gray
Odor:	~~Light~~ Yes	Sheen: yes	Yes	Product Thinkness (in):	0

Notes:

Monitor Well Data Sheet

Site Name: EAGLE GAS	Well/Sample ID: MW-7D
Location: 4301 SAN LEANDRO OAK	Initial Depth to Water (DTW): 12.54
Client: NAZ	Total Well Depth (TD): 29.74
Sampler: BERNARDO	Well Diameter: 2"
Date: 1-8-10	1 Casing Volume:
Purge Method: Peristaltic Pump	Purge Rate: 0.3 L/M
Sample Method: Low Flow	Sampling Rate: 0.3 L/M
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	~~DO~~	Temp	DTW	Cumulative Volume	~~ORP~~	Notes
hh:mm	SU	µmhos/cm	mg/l	°F	feet	liters	mV	
8:30	8.65	174.3		14.8	12.64	0		
8:33	8.16	413		16.9	12.72	0.9		
8:36	8.21	180.9		17.3	12.81	1.8		
8:39	7.96	185.4		17.4	12.92	2.7		
8:42	7.95	186.7		17.6	13.02	3.6		
8:45	7.89	189.1		17.6	13.13	4.5		
8:48	7.95	189.5		17.4	13.22	5.4		

Did Well Dewater?	NO	Start Purge Time:	8:30	DTW prior to sample:	13.11
Casing volumes Purged:		Stop Purge Time:	8:48	Start Sample Time:	8:55
Length of Tubing (ft):	20'	Total Liters Purged:	5.4	Total Sample Volume:	
Well Recharge:	slow	Turbidity:	Light	Color:	clear
Odor:	Yes	Sheen: ~~NONE~~	none	Product Thinkness (in):	0

Notes:

Monitor Well Data Sheet

Site Name:	EAGLE GAS	Well/Sample ID:	MW-9D
Location:	4301 SAN LEANDRO OAK	Initial Depth to Water (DTW):	14.06
Client:	NAZ	Total Well Depth (TD):	40.00
Sampler:	BERNARDO CHAVEZ	Well Diameter:	2"
Date:	1-8-10	1 Casing Volume:	
Purge Method:	Peristaltic Pump	Purge Rate:	0.3 L/M
Sample Method:	Low Flow	Sampling Rate:	0.3 L/M
2" well x 1 foot = 0.6 liters		4" well x 1 foot = 2.4L	

Time	pH	SC	~~DO~~	Temp	DTW	Cumulative Volume	~~ORP~~	Notes
hh:mm	SU	µmhos/cm	mg/l	°C	feet	liters	mV	
10:12	7.65	424		18.7	14.20	0		
10:15	7.64	428		19.5	14:20	0.9		
10:18	7.64	430		19.6	14.20	1.8		
10:21	7.59	434		19.4	14.20	2.7		
10:24	7.63	433		19.7	14.20	3.6		

Did Well Dewater?	NO	Start Purge Time:	10:12	DTW prior to sample:	14.18
Casing volumes Purged:		Stop Purge Time:	10:24	Start Sample Time:	10:30
Length of Tubing (ft):	20'	Total Liters Purged:	3.6	Total Sample Volume:	
Well Recharge:	FAST	Turbidity:	Light	Color:	CLEAR
Odor:	NONE	Sheen:	NONE	Product Thinkness (in):	0

Notes:

Monitor Well Data Sheet

Site Name: EAGLE GAS	Well/Sample ID: MW-10 D
Location: 4301 SAN LEANDRO OAKL.	Initial Depth to Water (DTW): 13.91
Client: NAZ	Total Well Depth (TD): 52.31
Sampler: BERNARDO CHAVEZ	Well Diameter: 2"
Date: 1-7-10	1 Casing Volume:
Purge Method: Peristaltic Pump ✓	Purge Rate: 0.3 L/M
Sample Method: Low Flow	Sampling Rate: 0.3 L/M
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	DO	Temp	DTW	Cumulative Volume	ORP	Notes
hh:mm	SU	µmhos/cm	mg/l	°C	feet	liters	mV	
13:45	8.30	459		17.0	13.92	0		
13:48	8.14	460		17.2	13.94	0.9		
13:51	7.86	467		17.3	13.95	1.8		
13:54	7.84	467		17.2	13.95	2.7		
13:57	7.76	470		17.3	13.95	3.6		
14:00	7.77	467		17.4	13.95	4.5		

Did Well Dewater?	NO	Start Purge Time:	13:45	DTW prior to sample:	13.90
Casing volumes Purged:		Stop Purge Time:	14:00	Start Sample Time:	14:06
Length of Tubing (ft):	25'	Total Liters Purged:	4.5	Total Sample Volume:	
Well Recharge:	good	Turbidity:	Light	Color:	clear
Odor:	NONE	Sheen:	NONE	Product Thinkness (in):	0

Notes:

Monitor Well Data Sheet

Site Name: EAGLE GAS	Well/Sample ID: MW-11D
Location: 4303 SAN LEANDRO OAK	Initial Depth to Water (DTW): 15.82
Client: NAZ	Total Well Depth (TD): 44.83
Sampler: BERNARDO	Well Diameter: 2"
Date: 1-8-10	1 Casing Volume:
Purge Method: Peristaltic Pump	Purge Rate: 0.3 L/M
Sample Method: Low Flow	Sampling Rate: 0.3 L/M
2" well x 1 foot = 0.6 liters	4" well x 1 foot = 2.4L

Time	pH	SC	~~DO~~	Temp	DTW	Cumulative Volume	~~ORP~~	Notes
hh:mm	SU	µmhos/cm	mg/l	°F	feet	liters	mV	
9:25	8.87	370		19.5	15.88	[illegible]		
9:28	8.72	194.9		19.9	15.90	0.9		
9:31	8.62	380		19.6	15.91	1.8		
9:34	8.54	379		19.8	15.92	2.9		
9:37	8.45	381		19.8	15.92	3.6		
9:40	8.41	380		19.8	15.92	4.5		

Did Well Dewater?	No	Start Purge Time:	9:25	DTW prior to sample:	15.88
Casing volumes Purged:		Stop Purge Time:	9:40	Start Sample Time:	9:45
Length of Tubing (ft):	20'	Total Liters Purged:	4.5	Total Sample Volume:	
Well Recharge:	FAST	Turbidity:	Light	Color:	clear
Odor:		Sheen:	NONE	Product Thinkness (in):	0

Notes:

APPENDIX D

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Laboratory Results

Jim Ho
Innovative Environmental Remediation, Inc.
1022 Wiget Lane
Walnut Creek, CA 94598

Subject : 9 Water Samples
Project Name : Eagle Gas
Project Number :

Dear Dr. Ho,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC standard. All soil samples are reported on a total weight (wet weight) basis unless noted otherwise in the case narrative. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the National Environmental Laboratory Accreditation Program (NELAP), lab # 08263CA. If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Subject : 9 Water Samples
Project Name : Eagle Gas
Project Number :

Case Narrative

Tert-Butanol results for sample MW-10 may be biased slightly high and are flagged with a 'J'. A fraction of MtBE (typically less than 1%) converts to Tert-Butanol during the analysis of water samples. We consider this conversion effect to be mathematically significant in samples that contain MtBE/Tert-Butanol in ratios of over 20:1.

Matrix Spike/Matrix Spike Duplicate results associated with samples MW-4, MW-7, and IS-5 for the analyte Benzene were affected by the analyte concentrations already present in the un-spiked sample.

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **MW-4** Matrix : Water Lab Number : 71532-01
Sample Date :01/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**510**	90	ug/L	EPA 8260B	01/11/2010
Toluene	**< 90**	90	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	**330**	90	ug/L	EPA 8260B	01/11/2010
Total Xylenes	**1100**	90	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	**34000**	90	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	**< 90**	90	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	**< 90**	90	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	**180**	90	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	**290000**	500	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	**< 9000**	9000	ug/L	EPA 8260B	01/11/2010
1,2-Dichloroethane-d4 (Surr)	98.5		% Recovery	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	01/11/2010
TPH as Diesel	**3200**	50	ug/L	M EPA 8015	01/11/2010
Octacosane (Diesel Surrogate)	86.2		% Recovery	M EPA 8015	01/11/2010

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **MW-7** Matrix : Water Lab Number : 71532-02
Sample Date :01/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 4.0**	4.0	ug/L	EPA 8260B	01/11/2010
Toluene	**< 4.0**	4.0	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	**< 4.0**	4.0	ug/L	EPA 8260B	01/11/2010
Total Xylenes	**< 4.0**	4.0	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	**3600**	400	ug/L	EPA 8260B	01/09/2010
Diisopropyl ether (DIPE)	**< 4.0**	4.0	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	**< 4.0**	4.0	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	**7.8**	4.0	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	**9000**	20	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	**< 400**	400	ug/L	EPA 8260B	01/11/2010
1,2-Dichloroethane-d4 (Surr)	97.5		% Recovery	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	01/11/2010
TPH as Diesel	**230**	50	ug/L	M EPA 8015	01/13/2010
Octacosane (Diesel Surrogate)	86.6		% Recovery	M EPA 8015	01/13/2010

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **MW-7D** Matrix : Water Lab Number : 71532-03
Sample Date :01/08/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**350**	0.50	ug/L	EPA 8260B	01/11/2010
Toluene	**10**	0.50	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	**62**	0.50	ug/L	EPA 8260B	01/11/2010
Total Xylenes	**420**	0.50	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	**61000**	150	ug/L	EPA 8260B	01/12/2010
Diisopropyl ether (DIPE)	**0.71**	0.50	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	**9.2**	0.50	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	**360**	0.50	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	**200000**	700	ug/L	EPA 8260B	01/12/2010
TPH as Gasoline	**4900**	50	ug/L	EPA 8260B	01/11/2010
(Note: Gasoline, but an unusually large proportion of alkyl benzenes.)					
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	98.0		% Recovery	EPA 8260B	01/11/2010
TPH as Diesel	**< 1500**	1500	ug/L	M EPA 8015	01/11/2010
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Surrogate)	86.8		% Recovery	M EPA 8015	01/11/2010

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **MW-9** Matrix : Water Lab Number : 71532-04
Sample Date :01/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.52**	0.50	ug/L	EPA 8260B	01/12/2010
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	01/12/2010
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/12/2010
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	01/12/2010
Methyl-t-butyl ether (MTBE)	**53**	0.50	ug/L	EPA 8260B	01/12/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/12/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/12/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	01/12/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	01/12/2010
TPH as Gasoline	**120**	50	ug/L	EPA 8260B	01/12/2010
(Note: Gasoline, but an unusually large proportion of aliphatics.)					
1,2-Dichloroethane-d4 (Surr)	99.7		% Recovery	EPA 8260B	01/12/2010
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	01/12/2010
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	01/12/2010
Octacosane (Diesel Surrogate)	92.3		% Recovery	M EPA 8015	01/12/2010

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **MW-9D** Matrix : Water Lab Number : 71532-05
Sample Date :01/08/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	**110**	50	ug/L	EPA 8260B	01/11/2010
(Note: Primarily due to Cis-1,2-Dichloroethene and Trichloroethene.)					
1,2-Dichloroethane-d4 (Surr)	98.1		% Recovery	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	01/11/2010
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	01/12/2010
Octacosane (Diesel Surrogate)	88.5		% Recovery	M EPA 8015	01/12/2010

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **MW-10** Matrix : Water Lab Number : 71532-06
Sample Date :01/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**270**	0.90	ug/L	EPA 8260B	01/11/2010
Toluene	**21**	0.90	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	**94**	0.90	ug/L	EPA 8260B	01/11/2010
Total Xylenes	**110**	0.90	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	**440**	0.90	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	**3.0**	0.90	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	**< 0.90**	0.90	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	**< 0.90**	0.90	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	**10 J**	5.0	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	**5400**	90	ug/L	EPA 8260B	01/11/2010
(Note: Gasoline, but an unusually large proportion of aliphatics.)					
1,2-Dichloroethane-d4 (Surr)	91.0		% Recovery	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	96.5		% Recovery	EPA 8260B	01/11/2010
TPH as Diesel	**< 500**	500	ug/L	M EPA 8015	01/11/2010
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Surrogate)	85.4		% Recovery	M EPA 8015	01/11/2010

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **MW-10D** Matrix : Water Lab Number : 71532-07
Sample Date :01/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	**180**	50	ug/L	EPA 8260B	01/11/2010
(Note: Primarily due to Trichloroethene and 1,1 Dichloroethene.)					
1,2-Dichloroethane-d4 (Surr)	99.6		% Recovery	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	01/11/2010
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	01/12/2010
Octacosane (Diesel Surrogate)	99.8		% Recovery	M EPA 8015	01/12/2010

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **MW-11D** Matrix : Water Lab Number : 71532-08
Sample Date :01/08/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	01/11/2010
1,2-Dichloroethane-d4 (Surr)	99.2		% Recovery	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	104		% Recovery	EPA 8260B	01/11/2010
TPH as Diesel	**120**	50	ug/L	M EPA 8015	01/11/2010
(Note: Discrete peaks in Diesel range, atypical for Diesel Fuel.)					
Octacosane (Diesel Surrogate)	88.7		% Recovery	M EPA 8015	01/11/2010

KIFF Analytical LLC

Report Number : 71532
Date : 01/15/2010

Project Name : **Eagle Gas**
Project Number :

Sample : **IS-5** Matrix : Water Lab Number : 71532-09
Sample Date :01/07/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2200**	70	ug/L	EPA 8260B	01/11/2010
Toluene	**< 70**	70	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	**3200**	70	ug/L	EPA 8260B	01/11/2010
Total Xylenes	**3100**	70	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	**8000**	70	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	**< 70**	70	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	**< 70**	70	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	**210**	70	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	**140000**	400	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	**29000**	7000	ug/L	EPA 8260B	01/11/2010
(Note: Gasoline, but an unusually large proportion of alkyl benzenes.)					
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	01/11/2010
TPH as Diesel	**< 4000**	4000	ug/L	M EPA 8015	01/11/2010
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Surrogate)	89.2		% Recovery	M EPA 8015	01/11/2010

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QC Report : Method Blank Data

Project Name : **Eagle Gas**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	< 50	50	ug/L	M EPA 8015	01/11/2010
Octacosane (Diesel Surrogate)	96.5		%	M EPA 8015	01/11/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	01/08/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	01/11/2010
1,2-Dichloroethane-d4 (Surr)	98.3		%	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	99.1		%	EPA 8260B	01/11/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	01/11/2010
1,2-Dichloroethane-d4 (Surr)	103		%	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	98.6		%	EPA 8260B	01/11/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	01/11/2010
1,2-Dichloroethane-d4 (Surr)	98.3		%	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	104		%	EPA 8260B	01/11/2010
Benzene	< 0.50	0.50	ug/L	EPA 8260B	01/12/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	01/12/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	01/12/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	01/12/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	01/12/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	01/12/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	01/12/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	01/12/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	01/12/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	01/12/2010
1,2-Dichloroethane-d4 (Surr)	98.9		%	EPA 8260B	01/12/2010
Toluene - d8 (Surr)	105		%	EPA 8260B	01/12/2010

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QC Report : Method Blank Data

Date : 01/15/2010

Project Name : **Eagle Gas**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Toluene	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	01/11/2010
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	01/11/2010
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	01/11/2010
1,2-Dichloroethane-d4 (Surr)	98.4		%	EPA 8260B	01/11/2010
Toluene - d8 (Surr)	99.8		%	EPA 8260B	01/11/2010

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 71532

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 01/15/2010

Project Name : **Eagle Gas**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH as Diesel														
	BLANK	<50	1000	1000	1020	1040	ug/L	M EPA 8015	1/11/10	102	104	2.34	70-130	25
Methyl-t-butyl ether														
	71509-01	110	40.3	40.2	149	147	ug/L	EPA 8260B	1/8/10	86.3	79.7	7.94	69.7-121	25
Benzene														
	71529-02	230	40.5	40.5	251	247	ug/L	EPA 8260B	1/11/10	53.4	43.7	19.9	80-120	25
Diisopropyl ether														
	71529-02	<0.50	39.8	39.8	35.8	34.9	ug/L	EPA 8260B	1/11/10	90.0	87.7	2.62	80-120	25
Ethyl-tert-butyl ether														
	71529-02	<0.50	40.2	40.2	35.7	35.0	ug/L	EPA 8260B	1/11/10	88.7	87.0	1.99	76.5-120	25
Ethylbenzene														
	71529-02	14	40.2	40.2	52.1	51.4	ug/L	EPA 8260B	1/11/10	95.0	93.2	1.93	80-120	25
Methyl-t-butyl ether														
	71529-02	<0.50	40.6	40.6	35.2	35.5	ug/L	EPA 8260B	1/11/10	86.8	87.6	0.945	69.7-121	25
O-Xylene														
	71529-02	1.4	40.3	40.3	40.7	40.6	ug/L	EPA 8260B	1/11/10	97.4	97.3	0.147	79.7-120	25
P + M Xylene														
	71529-02	0.89	39.2	39.2	39.4	38.8	ug/L	EPA 8260B	1/11/10	98.4	96.7	1.68	76.8-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 01/15/2010

Project Name : **Eagle Gas**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-Butanol														
	71529-02	88	201	201	296	285	ug/L	EPA 8260B	1/11/10	103	97.6	5.70	80-120	25
Tert-amyl-methyl ether														
	71529-02	<0.50	40.2	40.2	34.5	34.4	ug/L	EPA 8260B	1/11/10	85.8	85.6	0.256	78.9-120	25
Toluene														
	71529-02	7.5	40.2	40.2	44.3	43.1	ug/L	EPA 8260B	1/11/10	91.4	88.5	3.22	80-120	25
Benzene														
	71527-01	<0.50	40.6	40.6	39.6	39.2	ug/L	EPA 8260B	1/11/10	97.7	96.6	1.12	80-120	25
Diisopropyl ether														
	71527-01	<0.50	39.9	39.9	39.6	40.0	ug/L	EPA 8260B	1/11/10	99.4	100	0.895	80-120	25
Ethyl-tert-butyl ether														
	71527-01	<0.50	40.3	40.3	41.1	40.6	ug/L	EPA 8260B	1/11/10	102	101	1.16	76.5-120	25
Ethylbenzene														
	71527-01	<0.50	40.3	40.3	41.3	41.6	ug/L	EPA 8260B	1/11/10	102	103	0.760	80-120	25
Methyl-t-butyl ether														
	71527-01	12	40.6	40.6	52.0	51.8	ug/L	EPA 8260B	1/11/10	99.6	99.1	0.498	69.7-121	25
P + M Xylene														
	71527-01	<0.50	39.2	39.2	40.9	41.7	ug/L	EPA 8260B	1/11/10	104	106	2.06	76.8-120	25

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QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 01/15/2010

Project Name : **Eagle Gas**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-amyl-methyl ether														
	71527-01	<0.50	40.3	40.3	40.0	39.9	ug/L	EPA 8260B	1/11/10	99.4	99.1	0.306	78.9-120	25
Toluene														
	71527-01	<0.50	40.3	40.3	40.5	40.6	ug/L	EPA 8260B	1/11/10	100	101	0.339	80-120	25
Benzene														
	71527-02	<0.50	40.6	40.6	39.6	39.2	ug/L	EPA 8260B	1/11/10	97.7	96.6	1.14	80-120	25
Diisopropyl ether														
	71527-02	<0.50	39.9	39.9	40.1	40.2	ug/L	EPA 8260B	1/11/10	100	101	0.317	80-120	25
Ethyl-tert-butyl ether														
	71527-02	<0.50	40.3	40.3	39.0	38.8	ug/L	EPA 8260B	1/11/10	96.7	96.3	0.423	76.5-120	25
Ethylbenzene														
	71527-02	<0.50	40.3	40.3	41.8	41.5	ug/L	EPA 8260B	1/11/10	104	103	0.679	80-120	25
Methyl-t-butyl ether														
	71527-02	0.52	40.6	40.6	37.5	37.6	ug/L	EPA 8260B	1/11/10	91.0	91.3	0.327	69.7-121	25
O-Xylene														
	71527-02	<0.50	40.4	40.4	41.4	41.5	ug/L	EPA 8260B	1/11/10	102	103	0.286	79.7-120	25
P + M Xylene														
	71527-02	<0.50	39.2	39.2	40.3	40.1	ug/L	EPA 8260B	1/11/10	103	102	0.439	76.8-120	25

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2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 01/15/2010

Project Name : **Eagle Gas**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Tert-Butanol														
	71527-02	<5.0	202	202	198	196	ug/L	EPA 8260B	1/11/10	98.3	97.2	1.12	80-120	25
Tert-amyl-methyl ether														
	71527-02	<0.50	40.3	40.3	38.9	38.6	ug/L	EPA 8260B	1/11/10	96.6	95.7	0.865	78.9-120	25
Toluene														
	71527-02	<0.50	40.3	40.3	43.0	42.2	ug/L	EPA 8260B	1/11/10	107	105	1.92	80-120	25
Benzene														
	71521-01	4.4	40.6	40.6	43.6	43.6	ug/L	EPA 8260B	1/12/10	96.6	96.6	0.0253	80-120	25
Diisopropyl ether														
	71521-01	1.4	39.9	39.9	40.9	40.2	ug/L	EPA 8260B	1/12/10	98.8	97.2	1.64	80-120	25
Ethyl-tert-butyl ether														
	71521-01	<0.50	40.3	40.3	39.8	38.0	ug/L	EPA 8260B	1/12/10	98.9	94.2	4.82	76.5-120	25
Ethylbenzene														
	71521-01	0.62	40.3	40.3	41.0	40.0	ug/L	EPA 8260B	1/12/10	100	97.7	2.62	80-120	25
Methyl-t-butyl ether														
	71521-01	32	40.6	40.6	71.7	69.1	ug/L	EPA 8260B	1/12/10	98.2	91.6	6.90	69.7-121	25
O-Xylene														
	71521-01	<0.50	40.4	40.4	40.8	40.4	ug/L	EPA 8260B	1/12/10	101	100	1.04	79.7-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 71532

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 01/15/2010

Project Name : **Eagle Gas**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
P + M Xylene														
	71521-01	<0.50	39.2	39.2	38.8	38.4	ug/L	EPA 8260B	1/12/10	99.0	97.9	1.16	76.8-120	25
Tert-Butanol														
	71521-01	39	202	202	227	230	ug/L	EPA 8260B	1/12/10	93.0	94.2	1.31	80-120	25
Tert-amyl-methyl ether														
	71521-01	<0.50	40.3	40.3	40.1	38.0	ug/L	EPA 8260B	1/12/10	99.6	94.3	5.39	78.9-120	25
Toluene														
	71521-01	<0.50	40.3	40.3	42.0	40.2	ug/L	EPA 8260B	1/12/10	104	99.7	4.27	80-120	25
Benzene														
	71527-03	1.6	40.6	40.6	39.9	39.3	ug/L	EPA 8260B	1/11/10	94.5	93.1	1.54	80-120	25
Diisopropyl ether														
	71527-03	<0.50	39.9	39.9	40.0	39.9	ug/L	EPA 8260B	1/11/10	100	100	0.320	80-120	25
Ethyl-tert-butyl ether														
	71527-03	<0.50	40.3	40.3	40.7	40.4	ug/L	EPA 8260B	1/11/10	101	100	0.844	76.5-120	25
Ethylbenzene														
	71527-03	2.0	40.3	40.3	40.8	40.4	ug/L	EPA 8260B	1/11/10	96.2	95.3	0.941	80-120	25
Methyl-t-butyl ether														
	71527-03	43	40.6	40.6	86.9	86.3	ug/L	EPA 8260B	1/11/10	107	105	1.55	69.7-121	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 01/15/2010

Project Name : **Eagle Gas**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
O-Xylene														
	71527-03	<0.50	40.4	40.4	40.0	39.8	ug/L	EPA 8260B	1/11/10	99.0	98.4	0.655	79.7-120	25
P + M Xylene														
	71527-03	<0.50	39.2	39.2	41.2	41.0	ug/L	EPA 8260B	1/11/10	105	104	0.418	76.8-120	25
Tert-Butanol														
	71527-03	31	202	202	236	236	ug/L	EPA 8260B	1/11/10	102	102	0.173	80-120	25
Tert-amyl-methyl ether														
	71527-03	<0.50	40.3	40.3	38.6	38.5	ug/L	EPA 8260B	1/11/10	96.0	95.5	0.505	78.9-120	25
Toluene														
	71527-03	<0.50	40.3	40.3	39.1	38.6	ug/L	EPA 8260B	1/11/10	97.0	95.8	1.27	80-120	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Date : 01/15/2010

Project Name : **Eagle Gas**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Methyl-t-butyl ether	40.6	ug/L	EPA 8260B	1/8/10	90.4	69.7-121
Benzene	40.6	ug/L	EPA 8260B	1/11/10	91.0	80-120
Diisopropyl ether	39.9	ug/L	EPA 8260B	1/11/10	92.2	80-120
Ethyl-tert-butyl ether	40.3	ug/L	EPA 8260B	1/11/10	92.2	76.5-120
Ethylbenzene	40.3	ug/L	EPA 8260B	1/11/10	95.2	80-120
Methyl-t-butyl ether	40.6	ug/L	EPA 8260B	1/11/10	90.4	69.7-121
O-Xylene	40.4	ug/L	EPA 8260B	1/11/10	95.4	79.7-120
P + M Xylene	39.2	ug/L	EPA 8260B	1/11/10	97.2	76.8-120
Tert-Butanol	202	ug/L	EPA 8260B	1/11/10	96.1	80-120
Tert-amyl-methyl ether	40.3	ug/L	EPA 8260B	1/11/10	86.2	78.9-120
Toluene	40.3	ug/L	EPA 8260B	1/11/10	94.0	80-120
Benzene	39.9	ug/L	EPA 8260B	1/11/10	104	80-120
Diisopropyl ether	39.8	ug/L	EPA 8260B	1/11/10	106	80-120
Ethyl-tert-butyl ether	40.2	ug/L	EPA 8260B	1/11/10	108	76.5-120
Ethylbenzene	39.9	ug/L	EPA 8260B	1/11/10	106	80-120
P + M Xylene	39.9	ug/L	EPA 8260B	1/11/10	106	76.8-120
TPH as Gasoline	511	ug/L	EPA 8260B	1/11/10	108	80-120
Tert-amyl-methyl ether	40.2	ug/L	EPA 8260B	1/11/10	106	78.9-120
Toluene	39.9	ug/L	EPA 8260B	1/11/10	105	80-120

QC Report : Laboratory Control Sample (LCS)

Project Name : **Eagle Gas**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.2	ug/L	EPA 8260B	1/11/10	101	80-120
Diisopropyl ether	40.1	ug/L	EPA 8260B	1/11/10	103	80-120
Ethyl-tert-butyl ether	40.5	ug/L	EPA 8260B	1/11/10	98.0	76.5-120
Ethylbenzene	40.2	ug/L	EPA 8260B	1/11/10	104	80-120
Methyl-t-butyl ether	40.8	ug/L	EPA 8260B	1/11/10	94.4	69.7-121
P + M Xylene	40.2	ug/L	EPA 8260B	1/11/10	99.7	76.8-120
TPH as Gasoline	512	ug/L	EPA 8260B	1/11/10	104	80-120
Tert-Butanol	203	ug/L	EPA 8260B	1/11/10	97.8	80-120
Tert-amyl-methyl ether	40.5	ug/L	EPA 8260B	1/11/10	102	78.9-120
Toluene	40.2	ug/L	EPA 8260B	1/11/10	107	80-120
Benzene	39.7	ug/L	EPA 8260B	1/12/10	99.2	80-120
Diisopropyl ether	39.6	ug/L	EPA 8260B	1/12/10	99.6	80-120
Ethyl-tert-butyl ether	40.0	ug/L	EPA 8260B	1/12/10	94.6	76.5-120
Ethylbenzene	39.7	ug/L	EPA 8260B	1/12/10	102	80-120
Methyl-t-butyl ether	40.4	ug/L	EPA 8260B	1/12/10	90.4	69.7-121
P + M Xylene	39.7	ug/L	EPA 8260B	1/12/10	97.1	76.8-120
TPH as Gasoline	512	ug/L	EPA 8260B	1/12/10	106	80-120
Tert-Butanol	200	ug/L	EPA 8260B	1/12/10	96.8	80-120
Tert-amyl-methyl ether	40.0	ug/L	EPA 8260B	1/12/10	97.1	78.9-120
Toluene	39.7	ug/L	EPA 8260B	1/12/10	104	80-120
Benzene	40.1	ug/L	EPA 8260B	1/11/10	98.5	80-120

QC Report : Laboratory Control Sample (LCS)

Project Name : **Eagle Gas**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Diisopropyl ether	40.0	ug/L	EPA 8260B	1/11/10	104	80-120
Ethyl-tert-butyl ether	40.4	ug/L	EPA 8260B	1/11/10	105	76.5-120
Ethylbenzene	40.1	ug/L	EPA 8260B	1/11/10	98.5	80-120
Methyl-t-butyl ether	40.7	ug/L	EPA 8260B	1/11/10	100	69.7-121
P + M Xylene	40.1	ug/L	EPA 8260B	1/11/10	104	76.8-120
TPH as Gasoline	512	ug/L	EPA 8260B	1/11/10	105	80-120
Tert-Butanol	202	ug/L	EPA 8260B	1/11/10	102	80-120
Tert-amyl-methyl ether	40.4	ug/L	EPA 8260B	1/11/10	102	78.9-120
Toluene	40.1	ug/L	EPA 8260B	1/11/10	99.1	80-120

KIFF ANALYTICAL, LLC
2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

2795 2nd Street Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 71532

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Dr. Jim Ho	California EDF Report? ☑ Yes ☐ No
Company / Address: Innovative Environmental Remediation 1022 Wiget Lane, Walnut Creek, CA 94598	Sampling Company Log Code: pending
Phone #: (925) 943-6445 / Fax #:	Global ID: T0600143649
Project #: / P.O. #:	PDF/EDF Deliverable To (Email Address): Jimho.IER@gmail.com
Project Name: Eagle Gas	Sampler Signature:
Project Address: 4301 San Leandro Street, Oakland, CA	

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Preservative: HCl	Preservative: HNO_3	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Air	Analysis Request: TPH as Gas (EPA 8260B)	Analysis Request: BTEX (EPA 8260B)	Analysis Request: 5 Oxygenates (MTBE, ETBE, DIPE, TAME, TBA) by EPA 8260B	Analysis Request: HOLD	TAT	For Lab Use Only
~~MW-1~~			3					X			X			X	X	X		1 wk	
~~MW-1D~~			3					X			X			X	X	X		1 wk	
~~MW-2~~			3					X			X			X	X	X		1 wk	
~~MW-3~~			3					X			X			X	X	X		1 wk	
MW-4	1-7-10	17:30	6					X			X			X	X	X		1 wk	01
~~MW-4D~~			3					X			X			X	X	X		1 wk	
~~MW-5~~			3					X			X			X	X	X		1 wk	
~~MW-5D~~			3					X			X			X	X	X		1 wk	
~~MW-6~~			3					X			X			X	X	X		1 wk	
MW-7	1-7-10	18:15	6					X			X			X	X	X		1 wk	02

Relinquished by:	Date	Time	Received by:
Bernardo Chavez	1-8-10	14:16	

Remarks: TPH-diesel / EPA-8015

Bill to:

Relinquished by:	Date	Time	Received by Laboratory:
	010810	1416	Kiff Analytical

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Copy - Originator
Rev: 051805

KIFF Analytical LLC

2795 2nd Street Suite 300
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SRG # / Lab No. 71532

Chain-of-Custody Record and Analysis Request

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Phone #: (925) 943-6445 / Fax #:	Global ID: T0600143649
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MW-7D	1-8-10	8:55	6	BC				X			X			X	X	X		1 wk	03
~~MW-8~~			~~3~~					X			X			X	X	X		1 wk	
MW-9	1-7-10	19:07	6	BC				X			X			X	X	X		1 wk	04
MW-9D	1-8-10	10:30	6	BC				X			X			X	X	X		1 wk	05
MW-10	1-7-10	14:40	6	BC				X			X			X	X	X		1 wk	06
MW-10D	1-7-10	13:90	6	BC				X			X			X	X	X		1 wk	07
MW-11 D	1-8-10	9:45	6	BC				X			X			X	X	X		1 wk	08
~~IS-1~~			3					X			X			X	X	X		1 wk	
~~IS-2~~			3					X			X			X	X	X		1 wk	
~~IS-3~~			3					X			X			X	X	X		1 wk	

Relinquished by:	Date	Time	Received by:
Bernardo Chavez	1-8-10	14:16	
	010810	1416	Received by Laboratory: Kiff Analytical

Remarks: TPH-diesel / EPA-8015

Bill to:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Copy - Originator
Rev: 051805

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Company / Address: Innovative Environmental Remediation 1022 Wiget Lane, Walnut Creek, CA 94598	Sampling Company Log Code: pending
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~~IS-4~~			3						X					X				X	X	X		1 wk	
IS-5	1-7-10	19:45	6						X					X				X	X	X		1 wk	09
~~IS-6~~			3						X					X				X	X	X		1 wk	
~~EW-1~~			3						X					X				X	X	X		1 wk	
~~EW-2~~			3						X					X				X	X	X		1 wk	

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72 hr ☑ 1 wk

Relinquished by:	Date	Time	Received by:
Bernardo Chavez	1-8-10	14:16	
	010810	1416	Received by Laboratory: Kiff Analytical

Remarks: TPH-diesel / EPA-8015

Bill to:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Copy - Originator
Rev: 051805

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

RECEIVER LJR Initials

SRG#: 71532 Date: 010810

Project ID: Eagle Gas

Method of Receipt: ☒ Courier ☐ Over-the-counter ☐ Shipper

COC Inspection

Is COC present?	☒ Yes	☐ No		
Custody seals on shipping container?	☐ Intact	☐ Broken	☐ Not present	☒ N/A
Is COC Signed by Relinquisher? ☒ Yes ☐ No	Dated? ☒ Yes	☐ No		
Is sampler name legibly indicated on COC?	☒ Yes	☐ No		
Is analysis or hold requested for all samples	☒ Yes	☐ No		
Is the turnaround time indicated on COC?	☒ Yes	☐ No		
Is COC free of whiteout and uninitialed cross-outs?	☐ Yes	☐ No, Whiteout	☒ No, Cross-outs	

Sample Inspection

Coolant Present: ☒ Yes ☐ No (includes water)

Temperature °C 6.0 Therm. ID# IR-5 Initial LJR Date/Time 010810/1636 ☐ N/A

Are there custody seals on sample containers?	☐ Intact	☐ Broken	☒ Not present	
Do containers match COC? ☒ Yes ☐ No	☐ No, COC lists absent sample(s)	☐ No, Extra sample(s) present		
Are there samples matrices other than soil, water, air or carbon?	☐ Yes	☒ No		
Are any sample containers broken, leaking or damaged?	☐ Yes	☒ No		
Are preservatives indicated? ☐ Yes, on sample containers	☒ Yes, on COC	☐ Not indicated	☐ N/A	
Are preservatives correct for analyses requested?	☒ Yes	☐ No	☐ N/A	
Are samples within holding time for analyses requested?	☒ Yes	☐ No		
Are the correct sample containers used for the analyses requested?	☒ Yes	☐ No		
Is there sufficient sample to perform testing?	☒ Yes	☐ No		
Does any sample contain product, have strong odor or are otherwise suspected to be hot?	☐ Yes	☒ No		

Receipt Details

Matrix WA	Container type VOA	# of containers received 54
Matrix	Container type	# of containers received
Matrix	Container type	# of containers received

Date and Time Sample Put into Temp Storage Date: 010810 Time: 1640

Quicklog

Are the Sample ID's indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If Sample ID's are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Is the Project ID indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If project ID is listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection dates indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection dates are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	
Are the sample collection times indicated:	☐ On COC	☐ On sample container(s)	☒ On Both	☐ Not indicated
If collection times are listed on both COC and containers, do they all match?	☒ Yes	☐ No	☐ N/A	

COMMENTS: