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Alameda County  
Environmental Health

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February 20, 2009

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: Request for Modifying the Quarterly Groundwater Monitoring Program**  
Eagle Gas Station  
4301 San Leandro Street  
Oakland, California 94601

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

Dear Mr. Wickham:

Ms. Farah Naz and Mr. Muhammad Jamil, claimants of the UST Cleanup Fund #014551, have retained Environmental Risk Specialties Corporation (ERS) as their new consultant. They mailed a letter to your office on January 30, 2009 to introduce our relationship.

ERS has reviewed the *Quarterly Groundwater Monitoring Report – Fourth Quarter 2008* and all the previous groundwater monitoring reports submitted by Clearwater Group following October 31, 2000 (third quarter 2000). Available monitoring reports indicate that Clearwater Group has performed extensive groundwater sampling and monitoring for the subject site since October 2000. Based on the updated Site Conceptual Model developed for the subject site and all the groundwater sampling data, both the concentration level of the contaminants of concern and their lateral/vertical distribution under the subject site have been fully characterized. Although the site lithology is heterogeneous, groundwater in the shallow groundwater zone (ranging from the ground surface to a maximum depth of approximately 25 feet below ground surface) is heavily impacted by MTBE, TBA, TPH-g, and benzene. The deep groundwater zone is not significantly impacted.

Based on the delineated contaminant plumes, level of groundwater impact, and the associated concentration trends, ERS recommends modifying the existing groundwater monitoring program by including the following changes:

- Number of sampling wells
- Frequency of sampling
- Groundwater sampling method

**Number of Sampling Wells**

ERS recommends to only sample the following 10 wells:

Wells	Rationale
MW-4	<ul style="list-style-type: none"> <li>• Highly impacted</li> <li>• Near an identified "hot spot"</li> <li>• Stable concentration trend</li> </ul>
MW-7	<ul style="list-style-type: none"> <li>• Highly impacted</li> <li>• Near the mass center of the plume</li> <li>• Stable concentration trend</li> </ul>
MW-7D	<ul style="list-style-type: none"> <li>• Deep zone well underneath/near the plume center</li> <li>• Slightly impacted by MTBE</li> </ul>
MW-8	<ul style="list-style-type: none"> <li>• Highly impacted</li> <li>• Near the mass center of the plume</li> <li>• Near the northwestern dispenser</li> <li>• Stable concentration trend</li> </ul>
MW-9	<ul style="list-style-type: none"> <li>• Off-site well recently installed in December 2008</li> </ul>
MW-9D	<ul style="list-style-type: none"> <li>• Off-site well recently installed in December 2008</li> </ul>
MW-10	<ul style="list-style-type: none"> <li>• Off-site well recently installed in December 2008</li> </ul>
MW-10D	<ul style="list-style-type: none"> <li>• Off-site well recently installed in December 2008</li> </ul>
MW-11D	<ul style="list-style-type: none"> <li>• Off-site well recently installed in December 2008</li> </ul>
IS-5	<ul style="list-style-type: none"> <li>• Highly impacted</li> <li>• Near the mass center of the plume</li> <li>• Near the northeastern dispenser</li> </ul>

During future sampling events, all 25 existing on-site/off-site wells shown in Figure 2 and Table 3 of the 2008 Fourth Quarter monitoring report (Clearwater, 2008) will be gauged for groundwater depth and also checked for the presence of free product.

### Frequency of Sampling

ERS recommends sampling the 10 wells as described above on a semi-annual basis in January (winter) and July (summer). All the existing 25 on-site/off-site wells will only be sampled annually in October, including the 10 wells to be sampled on a semi-annual basis.

### Groundwater Sampling Method

Since MTBE and TBA are highly soluble in water and are the major contaminants of concern at the subject site, these two compounds tend to be uniformly distributed in the water column as opposed to the light petroleum hydrocarbons. Thus, ERS recommends the use of Low-Flow Rate Purging and Sampling following the ASTM protocol (ASTM, 2002) to replace the three-casing volume purging method currently used for the quarterly groundwater sampling of the subject site. Depending on the depths of the groundwater and the screen interval of the monitoring well, the target sampling depth will be either 2 feet below the water table (if top of the well screen is above the water table) or be 2 feet below the top of the well screen (if the top of the screen is below the water table).

If you have questions, please feel free to call the undersigned at (925) 938-1600 ext. 108. Your concurrence on the proposed changes is much appreciated.

Sincerely,  
ERS



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



cc: Ms. Farah Naz and Mr. Muhammad Jamil

## 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.

Clearwater Group, *Quarterly Groundwater Monitoring Report – Fourth Quarter 2008*, February 2009.