R0395

BONKOWSKI & ASSOCIATES, INC.
GEOTECHNICAL SERVICES AND HAZARDOUS MATERIALS MANAGEMENT

April 24, 2009
E27297-3

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

**RE: Soil Gas Survey and Soil Sampling Report**
**421 23rd Avenue, Oakland, California**

Dear Mr. Wickham,

Please consider this letter a response to yours dated April 14, 2009 regarding the results of a recent soil gas survey conducted at the subject Site. Briefly, your letter requested that Bonkowski & Associates, Inc (B&A): 1) review the site history and present an evaluation of the detection of PCE in SG-8, you particularly wanted to know if any groundwater samples previously collected from the Site have been analyzed for chlorinated solvents, and 2) that (B&A) expand discussion of the soil vapor sampling results to support the conclusion that there is a low risk from vapor intrusion. Our responses are briefly provided below.

With respect to the issue of PCE, B&A discovered that one groundwater sample collected on November 2, 1998 from a collection trench in tank cavity backfill was tested for a full VOC scan using EPA Method 8260. The sample was tested by Sequoia Analytical. PCE was not detected. These results are summarized in the Site Assessment and Correction Action Workplan (B&A, November 16, 1998). We found no reports which would indicate PCE was placed in any UST at the Site, or that it was ever used by Golden Gate Petroleum. Sample SG-8 (the only sample which contained PCE) was collected near the property line, this suggests an off-site source.

With respect to the soil vapor, you recall that all soil gas samples analyzed from this Site were ND to the MDL. B&A evaluated the risk associated with vapor intrusion at this Site following guidance in the Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (SF BAY RWQCB, May 2008). The RWQCB defers to the City of Oakland "Oakland Urban Land Redevelopment (ULR) Program: Guidance Document" (January 2000). Essentially, the Water Board "agreed that the Oakland look-up tables are appropriate for use at Oakland sites." Using the ULR Program software available at the Oakland Public Works website, B&A calculated Carcinogenic Hazard for Commercial/ Industrial site specific Risk Based Screening Levels (RBSLs) for benzene in sandy silts and clayey silts.

Using the Site specific parameters provided below:

| | |
|---|---|
| Foundation Thickness | 30 cm |
| Lower Depth of Surficial Zone | 300.0 cm |
| Depth to Subsurface Soil Source | 250 cm |
| Depth to Groundwater | 431 cm |
| Width of Source Area Parallel to Width or Groundwater Flow Direction | 300 cm |

The calculated RBSLs are:

| | | | | | |
|---|---|---|---|---|---|
| Soil Gas in Subsurface Soil | Vapor Intrusion to Buildings (µg/l) | Commercial/ Industrial | Sandy Silt | Carcinogenic Hazard | 7.5E+3<br>4.6E+4 |
| | | | Clayey Silt | Carcinogenic Hazard | 9.5E+3<br>5.8E+4 |

The RBSLs all exceed the laboratory MDL. On this basis, we conclude that there is little risk associated with vapor intrusion to buildings at the Site. We reiterate our recommendation that the Site is a candidate for regulatory underground storage tank closure.

Please feel free to contact either of the undersigned below at (510) 450-0770 if you have any questions or need any additional information.

Sincerely,
**BONKOWSKI & ASSOCIATES, INC**

Michael S. Bonkowski, PG CEG 1329
Senior Managing Principal
Environmental and Engineering Services

Cynthia A. Dittmar, PG 7213
Project Geologist

REGISTERED GEOLOGIST
CYNTHIA A. DITTMAR
No. 7213
Exp. 9/1/10
STATE OF CALIFORNIA

Enclosure
cc: Mr. Mitch Carter, Golden Gate Petroleum
Mr. David Charter, Underground Storage Tank Cleanup Fund

**REFERENCES**

Bonkowski & Associates, Inc., "Soil Gas Survey and Soil Sampling Report, 421 23rd Avenue, Oakland, California," February 10, 2009.

Bonkowski & Associates, Inc., "Site Closure Report, Golden Gate Petroleum, Oakland Cardlock," January 14, 2008.

Bonkowski & Associates, Inc., "Site Assessment and Correction Action Workplan, Golden Gate Petroleum, 421 23rd Avenue, Oakland, California," November 16, 1998.