ConocoPhillips
76 Broadway
Sacramento, California 95818

February 20, 2009

Barbara Jakub
Alameda County Health Agency
1131 Harbor Bay parkway, Suite250
Alameda, California 94502-577

Re: ***Annual Summary Report—Second Quarter 2008-Fourth Quarter 2008***
76 Service Station # 5484 RO # 0352
18950 Lake Chabot Road
Castro Valley, CA

Dear Ms. Jakub:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call me at (916) 558-7666.

Sincerely,

Terry L. Grayson
Site Manager
Risk Management & Remediation

February 19, 2009

Ms. Barbara Jakub
Alameda County Health Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RE: **Annual Summary Report –**
Second Quarter 2008 through Fourth Quarter 2008

DELTA

Dear Ms. Jakub:

On behalf of ConocoPhillips Company (COP), Delta Consultants (Delta) is submitting the second quarter 2008 through fourth quarter 2008 Annual Summary Report for the following location:

Service Station	**Location**
76 Service Station No. 5484	18950 Lake Chabot Road Castro Valley, California

Sincerely,
DELTA CONSULTANTS

James B. Barnard, P.G.
Senior Project Manager
California Registered Professional Geologist No. 7478

REGISTERED PROFESSIONAL GEOLOGIST
JAMES B. BARNARD
No. 7478
Expires: 9/10
GEOLOGY
STATE OF CALIFORNIA

Enclosure

cc: Mr. William Borgh - ConocoPhillips (1 via electronic upload only)

ANNUAL SUMMARY REPORT
Second Quarter 2008 through Fourth Quarter 2008

76 Service Station No. 5484
18950 Lake Chabot Road
Castro Valley, California

City: Castro Valley

County: Alameda

SITE BACKGROUND AND PREVIOUS ENVIRONMENTAL WORK

The site is located on the southeast corner of the intersection of Lake Chabot Road and Quail Avenue, and is an active 76 service station and automotive service facility. Current site facilities consist of two gasoline underground storage tanks (USTs), a waste oil UST, two dispenser islands, and a station building.

In June 1988, a leak was detected in the unleaded product system during an annual tank precision test. Three monitoring wells (MW-1 through MW-3) were subsequently installed on-site in July 1988 by Applied GeoSystems (AGS) to evaluate subsurface conditions. Soil samples collected from the well borings contained total petroleum hydrocarbons (TPH) up to 79 milligrams per kilogram (mg/kg) and benzene, toluene, ethyl-benzene, and total xylenes (BTEX) (up to 26 mg/kg). Groundwater samples collected from the monitoring wells contained TPH up to 7,800 micrograms per liter (µg/L) and benzene up to 640 ug/L. Approximately 1 foot of free product was observed in monitoring well MW-3 in October 1988.

In May and June 1989, two off-site monitoring wells (MW-4 and MW-5) and an additional on-site monitoring well (MW-6) were installed. Soil samples collected from the well borings generally did not contain TPH as gasoline (TPHg) or BTEX with the exception of TPHg at 2.4 mg/kg in the sample collected at 13.5 feet below ground surface (bgs) from well boring MW-5.

In June 1989, two 10,000-gallon gasoline USTs and one 280-gallon waste oil UST located to the southeast of the station building were removed from the site. During the removal, monitoring wells MW-1 and MW-3 were destroyed. Five soil samples collected at 6 feet bgs from the sidewalls of the gasoline UST excavation contained TPHg ranging from 1,400 mg/kg to 4,300 mg/kg. As a result, impacted soil was over-excavated in the area of the former gasoline USTs and dispensers. An area measuring approximately 60 feet by 70 feet was excavated to depths of 10 feet to 15 feet bgs. Soil samples collected from the sidewalls and bottom of the excavation contained TPHg (up to 8.9 mg/kg) and BTEX (up to 0.88 mg/kg). Soil samples collected beneath the former waste oil UST at 7 feet bgs contained TPHg up to 650 mg/kg and total oil and grease (TOG) up to 19,000 mg/kg. Therefore, impacted soil was also over-excavated in this area to approximately 10 to 11 feet bgs. Approximately 1,900 cubic yards of impacted soil was excavated and disposed off-site between June and August 1989. Two 12,000-gallon fiberglass, double-wall USTs and a 520-gallon waste oil UST (north of the station building) were installed.

In November 1989, five additional borings (B-7 through B-11) were advanced to further evaluate to the extent of impacted soil. Soil samples collected from the borings contained TPHg up to 220 mg/kg and BTEX up to 160 mg/kg.

In May 1991, an additional boring (EB1) was advanced and an additional monitoring well (MW-7) was installed in the southern portion of the site. Soil samples collected from the borings contained TPHg up to 130 mg/kg and low levels of BTEX (up to 3.6 mg/kg). A groundwater sample collected from monitoring well MW-7 contained TPHg at 3,000 ug/L, TPH as diesel (TPHd) at 540 µg/L, and benzene at 160 µg/L.

SENSITIVE RECEPTORS

A well search was performed by AGS in 1988 within a ½-mile radius of the site; two wells were identified within the search radius. One well was a test well located approximately ½ mile south of the site, and the other well was a domestic well located approximately ½ mile south/southeast of the site. Based on groundwater flow calculations, the wells appeared to be down-gradient of the site.

A well search was conducted by Gettler-Ryan Inc. (GR) in September 1998 and consisted of a review of Department of Water Resources (DWR) files. A number of wells were identified within ¼ to ½ mile of the site, and one well was identified within ¼ mile of the site.

A sensitive receptor survey (SRS) was performed by Delta in 2006; the results of the survey were presented in our *Sensitive Receptor Report*, dated August 22, 2006. The survey consisted of a review of DWR files to evaluate the presence of wells within a ½-mile radius of the site, and a questionnaire regarding the presence of wells, sumps, or basements was mailed to property owners within 1,000 feet of the site. A total of 214 questionnaires were mailed in April 2006; only 38 responses were received. Based on the responses received, wells were located on eight of the properties, sumps used for irrigation purposes were located on three of the properties, and basements were present at 16 of the properties. Four additional property owners were mailed questionnaires based on the DWR files; however, no responses were received. Delta also conducted a site visit to evaluate the presence of schools, day care centers, and hospitals within 1,000 feet of the site. Chabot Elementary School was located approximately 470 feet southeast (cross-gradient) of the site.

Based on the U.S. Geological Survey Topographic Map (USGS) for the site vicinity (Hayward Rosa quadrangle), the nearest surface water body is an unnamed drainage located approximately 2,000 feet north of the site. The drainage originates from a reservoir located about 1 mile to the northeast.

MONITORING AND SAMPLING

Site wells were not sampled this quarter as sampling of the five onsite and offsite monitoring wells is currently performed on an annual schedule (first quarter). The site has been monitored since 1988. On January 21, 2008, during the most recent event (first quarter, 2008), monitoring wells MW-2, MW-5, MW-6, and MW-7 were gauged and sampled. Monitoring well MW-4 is buried.

SECOND QUARTER 2008 THROUGH FOURTH QUARTER 2008 MONITORING AND SAMPLING RESULTS

The 2008 annual monitoring and sampling event was performed on January 21, 2008 by TRC. As mentioned above, monitoring well MW-4 was not located. The groundwater elevation decreased an average of 0.50 feet from the February 2007 event. Depth to groundwater in site wells ranged from 4.47 feet (MW-6) to 7.43 feet (MW-5) below top of casing (TOC). The groundwater flow direction and gradient was interpreted to be 0.15 foot per foot (ft/ft) to the southwest, compared with 0.1 ft/ft to the southwest during the February 2007 event. A rose diagram presenting historic groundwater flow directions is presented as Attachment A.

Contaminants of Concern:

- **TPHg:** TPHg was above the laboratory's indicated reporting limit in monitoring well MW-7 (1,300 µg/L).

- **Benzene:** Benzene was above the laboratory's indicated reporting limit in monitoring in well MW-7 (11 µg/L).

- **MTBE:** MTBE was reported above the laboratory's indicated reporting limit in monitoring wells MW-5 and MW-7 by EPA Test Method 8260B at 1.3 µg/L and 240 µg/L, respectively. MTBE was reported in monitoring well MW-7 at 250 µg/L by EPA Method 8021B.

In addition, samples taken from monitoring well MW-7 contained ethyl-benzene at a concentration of 45 µg/L by EPA Method 8260B. Samples from MW-7 also contained 1,2-Dichloroethane (0.77 µg/L), 2-Methylnaphthalene (19 µg/L), and Naphthalene (40 µg/L) by EPA Method 8270.

REMEDIATION STATUS

As mentioned above, approximately 1,900 cubic yards of impacted soil were removed during the 1989 UST removal and replacement activities. No other remedial activities have occurred at the site.

CHARACTERIZATION STATUS

Based on historical soil sampling analytical results, impacted soil may remain in the areas of the former fuel USTs, waste oil UST, and dispensers where over-excavation was not performed. However, only low levels of petroleum hydrocarbons were reported above the laboratory's indicated reporting limits. Additionally, soil samples have not been collected at the site since 1991; therefore, the concentrations likely have been reduced over time by natural biodegradation.

Based on the analytical results, impacted groundwater remains beneath the southern portion of the site in the area of the former waste oil UST. Impacted groundwater may also be present beneath Lake Chabot Road. TPHg, BTEX, and MTBE generally have been below the laboratory's indicated reporting limit in monitoring well MW-5 to the south of the site. Based on the general groundwater flow direction (southwest),

monitoring well MW-4 is located down-gradient of the site. TPHg, BTEX, and MTBE were generally below the laboratory's indicated reporting limit in monitoring well MW-4. However, monitoring well MW-4 has not been located since 2002. In March 2002, the last time monitoring well MW-4 was sampled, TPHg and MTBE were above the laboratory's indicated reporting limits at 270 µg/L and 1,200 µg/L, respectively. Therefore, impacted groundwater may have migrated down-gradient of the site.

RECOMMENDATION

Delta will attempt to locate monitoring well MW-4. If Delta cannot locate MW-4, Delta will replace the monitoring well.

Delta recommends that the additional VOCs by EPA Method 8260B and SVOCs by EPA Method 8270 be eliminated with the exception of naphthalene by EPA Method 8270. This constituent is consistently found in the samples collected and submitted from monitoring well MW-7.

RECENT CORRESPONDENCE

The report titled *Monitoring Well MW-4 – Work Plan* was submitted to ACEH on June 26, 2008. ACEH responded with approval of the work plan in a letter dated July 8, 2008.

SECOND QUARTER 2008 THROUGH FOURTH QUARTER 2008 ACTIVITIES

1. There were no activities during this reporting period.

FIRST QUARTER 2009 ACTIVITIES

1. Delta attempted to locate monitoring well MW-4 without success.
2. Delta installed a replacement monitoring well cluster, MW-4A and MW-4B in the vicinity of MW-4.

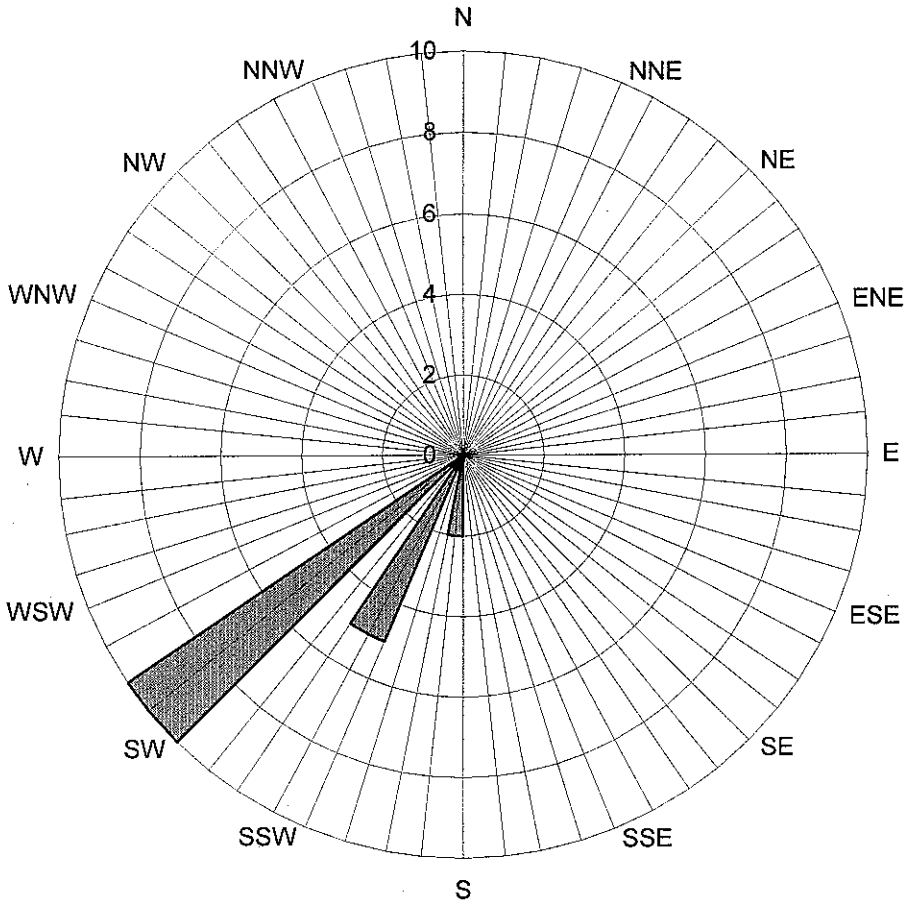
CONSULTANT: Delta Consultants

Attachment A – Historic Groundwater Flow Directions

Attachment A

Historic Groundwater Flow Directions

Historic Groundwater Flow Directions
ConocoPhillips Site No. 5484
18950 Lake Chabot Road
Castro Valley, California



Groundwater Flow Direction

Legend
Concentric circles represent quarterly montoring events
Fourth Quarter 1990 through First Quarter 2008
17 data points shown

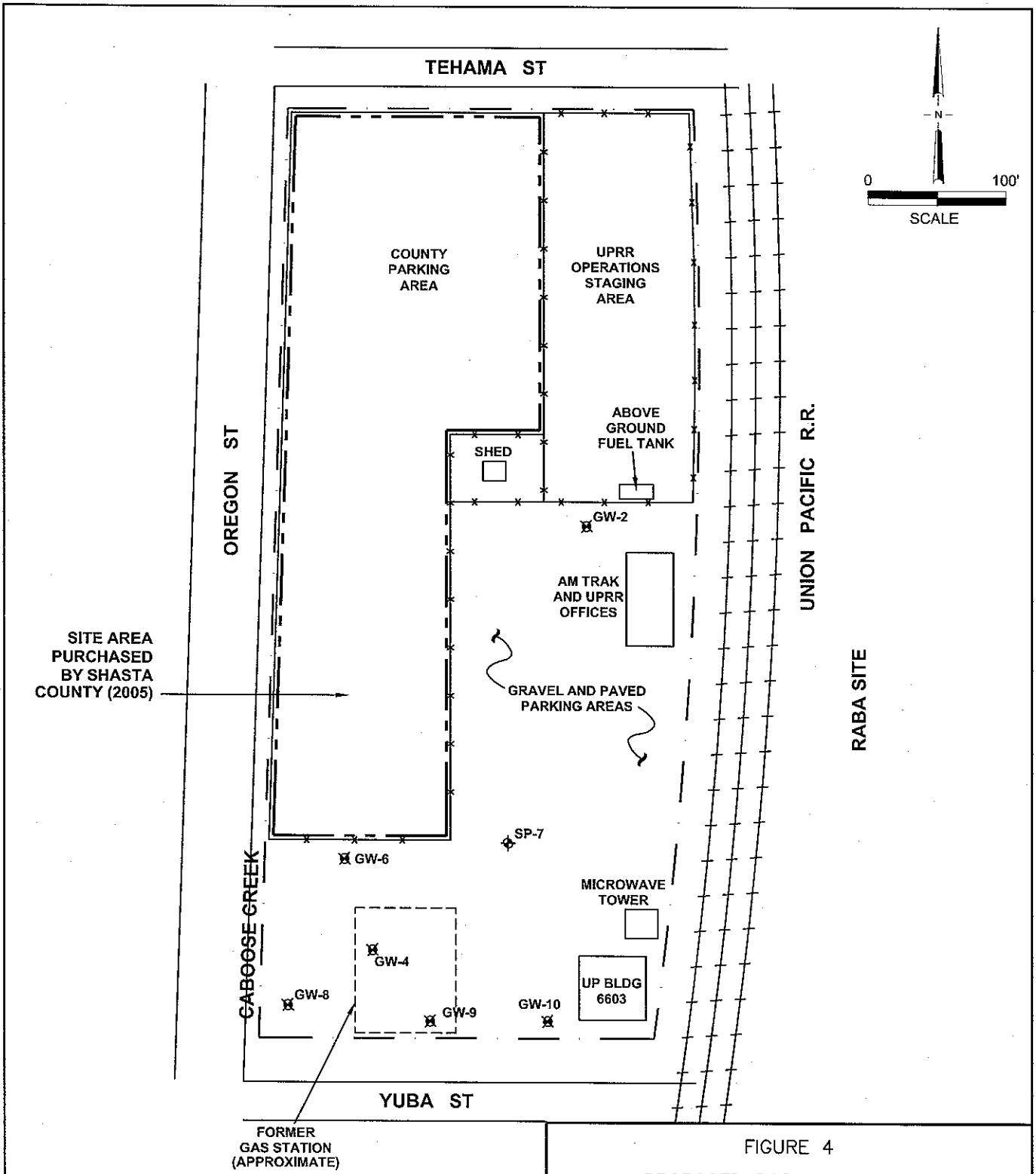


FIGURE 4

PROPOSED BORING LOCATIONS
UPRR
OREGON AND YUBA STREETS
REDDING, CA.

PROJECT NO. UPR-8117		DRAWN BY C. MELDRUM	
FILE NO. 8117-03C		PREPARED BY M. HURT	
DATE 11/11/08	REV. 0	REVIEWED BY D. SOWLE	

DELTA