Jurek, Anne, Env. Health

From: Jurek, Anne, Env. Health
Sent: Thursday, August 25, 2016 3:45 PM
To: 'deborah.pryor@shell.com'
Cc: Cool, Aubrey; Roe, Dilan, Env. Health
Subject: Request for meeting regarding denial of Closure Request, Fuel Leak Case No. RO2744 and GeoTracker Global ID T0600159797, Shell #13-5244, 8999 San Ramon Road, Dublin, CA

Dear Ms. Pryor:

This correspondence is a follow up to Alameda County Department of Environmental Health's (ACDEH) letter dated August 9, 2016, regarding ACDEH's denial of the Closure Request prepared by GHD dated June 10, 2016. As you know, the previous caseworker, Jerry Wickham, retired in January 2016. Therefore, ACDEH would like to schedule a meeting with you and your consultants to discuss the site data to help facilitate our understanding of the site, the rationale presented in the closure request, and the identification of data gaps in order to advance the case to closure.

Specifically, ACDEH would like to discuss the following topics:

(1) the distribution of chemicals of concern in soil;
(2) groundwater flow directions in the shallow, intermediate, and deep groundwater bearing zones; and
(3) the delineation of the methyl tert-butyl ether (MTBE) and tert-butyl alcohol (TBA) plume

A summary of pertinent items to be discussed is presented below.

Distribution of Chemicals of Concern (COCs) in Soil.

a. The distribution of MTBE and TBA in soil does not correlate with the distribution of other petroleum COCs, including Total Petroleum Hydrocarbons as diesel (TPH-d), TPH-gas, Toluene, Ethylbenzene, and Xylenes;

b. The lack of Benzene detections in samples with Toluene, Ethylbenzene, and Xylenes;

c. The vertical distribution of MTBE and TBA in GP borings (5 to 25 feet) relative to the groundwater bearing zones (shallow, intermediate ,and deep);

d. The depth of excavation under piping and dispensers relative to soil samples and the identification of those samples that have been over excavated and those that represent confirmation samples.

Groundwater Monitoring Well Network and Historic Groundwater Data.

a. The shallow, intermediate and deep monitoring well network, including screen intervals and depth to water in wells.

b. Age of the release and degradation of the MTBE plume, including the relative concentrations of MTBE and TBA in shallow, intermediate, and deep wells.

   Historic data indicate that the shallow wells have low concentrations of MTBE and higher concentrations of TBA, suggesting that degradation is occurring. The shallow well data also suggest that significant degradation of MTBE had already been occurring by the time the first groundwater samples were collected (i.e., MW-1 had concentrations of 1,400 micrograms per liter (µg/L) MTBE and 57,000 µg/L of TBA in 2005). In contrast, TBA is generally not detected in samples collected from the intermediate and deep water bearing zones, indicating that

degradation is not occurring. The lower concentrations of TBA compared to MTBE suggests that MTBE has not been degrading as it has been moving downgradient and into the intermediate and deeper water-bearing zones.

MTBE and TBA Plume Length

a. The MTBE transport model used to predict potential downgradient MTBE migration, including assumptions and input parameters.

   The maximum concentration of MTBE measured in January 17, 2013 of 140 µg/L in the deep monitoring wells was used as the source concentration, and this concentration was kept constant "from the approximate location of the dispenser islands to MW-13C" for a simulation period of 100 years. It is important to note that the concentration in the deeper wells continues to fluctuate between 140 µg/L and 240 µg/L, and this fluctuation sometimes appears to correlate with changing water levels.

b. A sensitivity analysis that used a source contamination value of 280 µg/L and a duration of 100 years showed simulated MTBE concentrations to "extend at levels above 5 µg/L over a distance approximately 765 feet from the approximate source location." Given this estimated plume length, the distance between the plume boundary and the nearest water supply well would be approximately 1335 feet. Based on the apparent degradation and age of the MTBE plume as discussed above, the sensitivity analysis should include values representative of MTBE concentrations that may have migrated beyond the monitoring well network either as an attached or detached plume prior to installation of the wells. The scope of the sensitivity analysis in the groundwater transport model should also be expanded to determine the concentration of MTBE that would elicit a plume that has a boundary that is 1,000 feet from the nearest water supply well.

c. Based on plume studies presented in the LTCP Technical Justification for Groundwater Media-Specific Criteria, the maximum MTBE plume length measured from the source area to the edge of a plume with a concentration limit of 5 µg/L is approximately 1,065 feet. ACDEH compared the plume studies to the threat from the MTBE and TBA plumes at the subject site to downgradient water supply wells that was estimated in the model. Based on the plume studies, the distance between the plume boundary and the nearest downgradient well is 935 feet.

d. Potential MTBE and TBA migration from the site to downgradient water-producing wells screened within the same geological unit as the impacted groundwater at the site.

   According to the "Creek and Watershed Map of the Pleasanton and Dublin Area" published by Oakland Museum of California, a historic creek existed between 400 and 600 feet downgradient from the downgradient monitoring wells at the site. Granular material deposited by the historic creek could serve as a potential conduit for plume migration and should be taken into account when using the plume studies and the modeling.

As mentioned in previous correspondence from us, ACDEH days and times available for a meeting:

Thursday, September 8, 2016, at 11 am

Friday, September 9, 2016, at 11 am

Tuesday, September 13, 2016, at 11 am

We request that you let us know by August 31, 2016 if any of the above dates work for you or if you need a date scheduled further out.

Please let me know if you have any questions on concerns.

Sincerely,

Anne Jurek, M.S.
Professional Technical Specialist II (Geology)
Alameda County Department of Environmental Health (ACDEH)
1131 Harbor Bay Pkwy
Alameda, CA 94502
(510) 567-6721; Ext. 36721
anne.jurek@acgov.org