



August 23, 2019

VIA EMAIL to USTClosuresComments@waterboards.ca.gov

Mr. Matthew Cohen
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State Water Resources Control Board
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**Comment Letter – Former Mercury Rentals, Inc.
Proposed Underground Storage Tank Case Closure**

Golden State Water Company (GSWC) has received the State Water Resources Control Board (SWRCB) “Notice of Opportunity for Public Comment, Proposed Underground Storage Tank Case Closure – Winton G. Kemmis Trust (Responsible Party), Former Mercury Rentals, Inc., 4664 Lincoln Avenue, Cypress, California” of July 3, 2019. Based on review of publically available documents related to the subject underground storage tank (UST) site (see http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901859) GSWC respectfully offers the following comments:

- GSWC owns and operates one public water-supply well within a one-mile radius of the subject UST site. This well (South Cypress 1) is located approximately 4,500 feet upgradient, or east southeast, of the subject UST site based on Spring 2018 groundwater elevation contours for the principal aquifers in the basin of the Orange County Basin, which were obtained from the Orange County Water District (OCWD).
- The uppermost perforations in this well occur at 526 feet below ground surface (bgs), or approximately 483 feet below mean sea level.
- Based on data obtained from OCWD and the Water Replenishment of Southern California (WRDSC), a downward vertical hydraulic gradient between the shallow unconfined aquifer and deeper drinking water aquifers exists in the area, which increases the threat to drinking water aquifers posed by contaminants at the subject UST site.
- Based on data obtained from OCWD and WRDSC, a few aquitards appear to exist between the shallow unconfined aquifer and deeper drinking water

August 23, 2019

aquifers in the area, which may impede downward migration of contaminants that have been released at the site.

- Regular sampling of GSWC's South Cypress 1 well (DDW Source ID = 3010022-014) wells since 1986 suggests that fuel-related volatile organic compounds (VOCs) have not been detected in groundwater produced by this well.
- Based on the information available via the SWRCB GeoTracker web page for the subject UST site, it is unclear whether non-petroleum products, particularly cleaning solvents, were used at the site. For example, chlorinated VOCs such as tetrachloroethene (maximum of 1.1 ug/L), trichloroethene (maximum of 6.6 ug/L), and cis-1,2-dichloroethylene (maximum of 1.4 ug/L) have been detected in groundwater at the site, not to mention soil vapor samples. In addition, leasing and renovation of construction equipment apparently occurred at the site from 1964 to 1985 and a waste oil tank was removed from the site in 1985. Furthermore, the VOCs detected in groundwater do not appear to have been attributed to an off-site source. Therefore, it is unclear whether General Criterion b of the 1/23/17 Low Threat Closure Policy (LTCP) checklist has been met.
- Methyl tert-butyl ether (MTBE), which is highly mobile compared to other contaminants, has been detected in groundwater at the subject UST site at concentrations exceeding the drinking water standard of 13 ug/L and as high as 350 ug/L. However, it does not appear that groundwater samples have been collected below 20 feet bgs (i.e., the bottom of the screen interval of the deepest monitoring wells at the site), which could be used to preclude the presence of deeper MTBE contamination. This is relevant because the technical justification for groundwater media-specific criteria described in the LTCP (https://www.waterboards.ca.gov/ust/docs/gw_tecjust.pdf) notes that "There are two common ways to demonstrate plume stability. The first common way is to routinely observe non-detect values for groundwater parameters in down-gradient wells. The second common way is to show stable or decreasing concentration levels in down-gradient wells at the distal end of the plume." In GSWC's opinion, contaminant plumes extending downgradient of a release site or point source may occur in both the horizontal and vertical dimensions. Therefore, because the vertical extent of groundwater contamination has not been characterized, it is unclear whether General Criterion e of the LTCP has been satisfied.
- California's 2012 LTCP (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf) states "It has been well-documented in the literature and through experience at individual UST release sites that petroleum fuels naturally attenuate in the environment through adsorption,

August 23, 2019

dispersion, dilution, volatilization, and biological degradation. This natural attenuation slows and limits the migration of dissolved petroleum plumes in groundwater.” The LTCP also states that “A plume that is ‘stable or decreasing’ is a contaminant mass that has expanded to its maximum extent: the distance from the release where attenuation exceeds migration.” The LTCP is silent however on the degree to which other processes, such as rising and falling groundwater levels, for instance at the water table, may influence plume concentrations and stability. However, the technical justification for groundwater media-specific criteria described in the LTCP (https://www.waterboards.ca.gov/ust/docs/gw_tecjust.pdf) notes that “.....concentration levels may exhibit fluctuations due to seasonal variations. These variations may be also attributed to man-made factors, including but not limited to: varying sampling techniques, false positive results, or laboratory inconsistencies.” This implies that attenuation, and conversely an increase, of the contaminant plume at a site caused by processes other than those described in the LTCP, not including remedial actions, must be isolated and removed from the analysis of conformance with groundwater-specific criteria. And, plume stability at a UST site needs to be demonstrated despite non-attenuation processes that may be at play.

- Closure in accordance with the LTCP assumes that contaminants at the subject UST are limited, stable, and decreasing in areal extent. However, this assumption seems to conflict with fluctuations in historical MTBE concentrations in groundwater near wells HMW-7 and HMW-8. For example, the highest concentrations of MTBE in groundwater seem to have occurred during or following above normal rainfall in the area in 2005 and 2011. Unfortunately, the relationship between contaminant concentrations and above-normal rainfall in 2017 and 2019 cannot be discerned due to a lack of groundwater monitoring since late 2016. Further, no analysis is presented to indicate that concentrations won’t increase in the future, for example due to water level fluctuations caused by groundwater recharge associated with above normal rainfall, which caused noticeable increases in groundwater elevations following above-normal rainfall in 2005, and 2011, 2017, and 2019. Thus, in the absence of other factors, the extent of groundwater contamination at the subject UST site may only be stable in so much as, for example, groundwater levels do not fluctuate and/or remain below any residual soil contamination in source areas. As a result, contaminants in certain areas of the subject UST site may not be stable and decreasing in extent, which includes the vertical dimension. Therefore, it is unclear whether the Groundwater-Specific Criterion of the LTCP has been satisfied.
- The 6/6/2019 LTCP Checklist available via the SWRCB GeoTracker web page for the subject UST site indicates that the General and Groundwater-

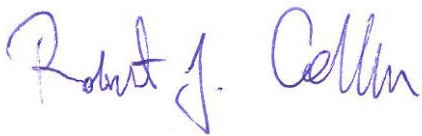
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August 23, 2019

Specific Criteria have not been satisfied, which would seem to preclude closure of the site.

Should you have any questions, please contact me at (714) 535-7711, extension 355.

Sincerely,



Robert J. Collar, PG, CHG
Senior Hydrogeologist

cc:

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