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ORANGE COUNTY WATER DISTRICT
ORANGE COUNTY'S GROUNDWATER AUTHORITY

December 27, 2013

Vivian Gomez-Latino
State Water Resources Control Board
1001 I Street, P.O. Box 2231
Sacramento, California 95812

Subject: State Water Resources Control Board – Closure Notice
Case No 11UT001
G&M Oil No. 140
8032 Garden Grove Boulevard
Garden Grove, California

The District concurs with the OCHCA concerning their request and recommendation to refrain from issuing a site closure notice for G&M #140 at 8032 Garden Grove Boulevard in Garden Grove, California. The District supports the OCHCA's request because the soil and groundwater beneath the site and off site are impacted by petroleum-based contaminants that are emanating and/or have emanated from G&M #140, environmental investigation of the contamination is incomplete, and no remediation has been initiated on site or off site to capture or contain the contamination.

As stated in OCHCA's December 20, 2013, letter to the State Water Resources Control Board (SWRCB) (attached), the G&M #140 site does not meet the general criteria presented in the State Water Resources Control Board (SWRCB) low-threat closure policy (LTCP). Assessment of groundwater contaminated by petroleum releases from G&M #140 has not been completed because groundwater contamination from G&M #140 has not been delineated vertically or laterally. There is insufficient data and information to determine whether groundwater contamination is stable; and, therefore, there is no technical basis to show that the contamination does not pose a risk to human health or the environment.

G&M #140 has been shown to be a source of petroleum hydrocarbon releases and impacts to soil and groundwater since at least as early as September 24, 2001 (Wayne Perry, Groundwater Monitoring and Status Report – Third Quarter 2013, Former Shell Service Station, 12950 Beach Blvd, Stanton; 10/16/13). TPH-G and gasoline oxygenates MTBE and TBA have been detected at concentrations in the 10,000s parts per billions in soil and groundwater based on reports published by Shell's environmental consultant, Wayne Perry, in the State Water Resources Control Board's (SWRCB) GeoTracker database beginning in 2005. Almost all the reports and data that identify and discuss soil and groundwater contamination at the G&M #140 site are published in the directory for the Shell Station at 12950 Beach Boulevard in Stanton. The Shell site is north, across the street from G&M #140.

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Analytical results from multiple sample locations on the G&M #140 site (e.g.: wells MW-1, MW-2, MW-4 and MW-5; and cone penetration tests CPT-8, CPT-9, CPT-11 and CPT-12), and off site (e.g.: B-13, B-15, B-16, OSW-1, OSW-2, OSW-4, OSW-5, OSW-6, GWE-1, GWE-2, GWE-4 and GWE-5) indicate that the extent of groundwater contamination has not been delineated vertically or laterally. Groundwater beneath the G&M #140 site flows north to northwest. Elevated contaminant compounds were detected in the most downgradient sample locations at the G&M #140 site as follows from west to northwest to north:

- **CPT-11** (completed September 2007) on site on the west site margin:
  - MTBE was detected in soil at up to 460 ug/kg at 5 ft bgs.
  - TBA was detected in soil at up to 1,900 ug/kg at 15 ft bgs.
  - TBA was detected in groundwater at up to 1,300 ug/L, which was in the deepest groundwater sample at 30 ft bgs.

- **CPT-17** (completed March 2009) off site in Beach Boulevard, west of the site:
  - TBA was detected in soil at up to 920 ug/kg at 20 ft bgs
  - TBA was detected in groundwater at 4,400 ug/L in the deepest groundwater sample at 23 ft bgs.

- **CPT-8** (completed September 2007) on site at the northwest margin:
  - MTBE was detected in groundwater at up to 140 ug/L at 15 ft bgs.
  - TBA was detected in soil at up to 5,400 ug/kg at 10 ft bgs.
  - TBA was detected in groundwater at up to 19,000 ug/L at 15 ft bgs and in the deepest groundwater sample at 8,000 ug/L at 30 ft bgs.

- **HP-1, GWE-4 and B-15** on Garden Grove Boulevard, at the northwest site margin:
  - **HP-1** (completed June 2003)**:**
    - TBA was detected in soil at 4,500 ug/kg in the deepest soil sample at 22 ft bgs.
  - **GWE-4** (screened 10 to 30 ft bgs)**:**
    - TBA was detected in groundwater at 60,000 ug/L the first time the well was tested in June 2005.
  - **B-15** (screened 3 to 23 ft bgs)**:**
    - TBA was detected in groundwater at 31,000 ug/L in September 2005.

- **HP-4, CPT-2, and OSW-1** on Garden Grove Boulevard, north of the site:
  - **HP-4** (completed June 2003)**:**
    - TBA was detected in soil at 4,200 ug/kg in the deepest soil sample at 22 ft bgs.
  - **CPT-2** (completed May 2004)**:**
    - MTBE was detected in soil at 380 ug/kg at 15 ft bgs.
  - **CPT-2** (completed May 2004)**:**
    - TBA was detected in soil at up to 4,700 ug/kg at 20 ft bgs.
  - **OSW-1** (screened 189 to 20 ft bgs)**:**
    - TBA was detected at 48,000 ug/L in December 2005.

- **B-13, GWE-1, and OSW-2** on Garden Grove Boulevard, north of the site:
  - **B-13 (screened 5 to 25 ft bgs):**
    - MTBE was detected at 49,000 ug/L in September 2001.
    - TBA was detected at 120,000 ug/L in May 2002.

- **GWE-1 (screened 10 to 30 ft bgs):**
  - TBA was detected at 80,000 ug/L in June 2005.
- **OSW-2 (screened 18 to 20 ft bgs):**
  - TBA was detected at 37,000 ug/L in December 2005.

- **GWE-2 (screened 10 to 30 ft bgs):** on Garden Grove Boulevard, north of the site:
  - TBA was detected at up to 30,000 ug/L in September 2005.

In additional to insufficient lateral delineation of the contamination from G&M #140, the vertical extent of the contamination has not been delineated either. Vertically, no borings, wells, or CPTs were completed deeper than 30 ft bgs on site or off site. Oxygenates were detected at more than 1,000 ug/L in every well near and downgradient of the USTs on G&M #140, with concentrations up to 100,000 ug/L (TBA in MW-2, April 2008). These results indicated that the bottom of the contaminant plume has not been delineated.

Contaminant concentrations in groundwater wells appear to have declined over time. However, the decline in contaminant concentrations may be attributed to a spreading contaminant plume. Groundwater contamination has moved deeper and/or migrated past the downgradient wells and other sample locations. Based on these data, additional investigation is needed at a minimum west and northwest of the G&M #140 site and vertically below 30 ft bgs, both on site and off site.

Until the contaminant plume is delineated, one cannot conclude that the contamination is stable or decreasing in areal extent. And because the extent of contamination is not known, G&M #140 does not meet any of the five site classes. Therefore, G&M #140 fails to meet the necessary requirements for site closure when applying the SWRCB's low threat closure policy (LTCP).

David Bolin, PG, CHg

Orange County Water District

Attachment: OCHCA December 20, 2013 Comment Letter