



San Mateo County Health System

May 19, 2014

SMCo Site #440050 / RO1575

APN: 025-150-160

Andrew Cooper
State Water Resources Control Board
1001 I Street, 16th Floor
Sacramento, CA 95814

**SUBJECT: COMMENT LETTER - RED CARPET CAR WASH CASE CLOSURE
SUMMARY**

Dear Mr. Cooper:

The comments below are based on San Mateo County Groundwater Protection Program (GPP) staff review of the November 2013 UST Case Closure Review Summary Report (RSR) prepared for the subject site. In our opinion, the following impediments do not satisfy the State Water Resources Control Board Low-Threat UST Case Closure Policy (LTCP). Multiple lines of evidence indicate a slug of free product, defined as secondary source in the LTCP, currently exists and has been migrating through the vadose zone which would not have been monitored by the historical groundwater samples as suggested in the RSR. Secondly, the consultant's report, that the RSR references in regards to vapor intrusion, doesn't actually conclude the adjacent residence has no significant risk of adversely affecting human health. That conclusion is limited to the locations of vapor wells V-1 and V-2 at the release site. The report actually recommends installing a sub-slab vapor probe on the adjacent property to evaluate the vapor intrusion concern evidenced by the elevated contaminants in the indoor air sample of the adjacent residence.

General and Groundwater-Specific Criteria

We do not concur that free product is not present as stated on Pages 3, 6, and 13 of the RSR. TPH-gas concentrations between 6,700 and 64,000 mg/kg were reported in unsaturated zone soil samples beneath the former fuel UST from approximately 19 to 30 feet below grade (fbg) in Boring B-8 in 2007 (Figure 1) – concentrations many researchers consider indicative of non-aqueous phase liquid (NAPL). Page 3 of the RSR speculates these results may represent fatty acids from chemical oxidation associated with the injected Regenox compound. However, fatty acids only significantly affect the TPH results obtained from solvent extraction methods used for TPH-diesel analysis, not the purge and trap method used for the TPH-gas analysis at this site. We also would not expect the Regenox solids within unsaturated zone soils beneath a paved site to significantly degrade surrounding hydrocarbons only 5 months after injection.

Environmental Health

2000 Alameda de las Pulgas, Suite 100, San Mateo, CA 94403

Phone (650) 372-6200 • Fax (650) 627-8244 • CA Relay 711 • Website www.smchealth.org

Health System Chief • Jean S. Fraser

Board of Supervisors • Don Horsley • Dave Pine • Carole Groom • Warren Slocum • Adrienne Tissier

Pages 2 and 7 of the RSR conclude the hydrocarbons are stable (no mobile constituents). While this appears to be the case for the groundwater plume, it may not be for the unsaturated zone. Minimal hydrocarbon concentrations were reported in the numerous soil samples collected between 15 and 45 feet bgs immediately before the USTs were removed (B-1 through B-3). After UST removal, the maximum concentration, 3,600 mg/kg, of TPH-gas was reported in a soil sample collected from MW-1 at 15 fbg (760 mg/kg TPH-gas also detected in sample at 30 feet bgs). Nine years later a soil sample collected from approximately the same area (Boring B-8) contained 64,000 mg/kg TPH-gas at approximately 24 fbg suggesting potential vertical migration of hydrocarbons (B-8 also had 6,700 and 6,800 mg/kg TPH-gas at 30 and 19 feet bgs, respectively). GPP staff are concerned the relatively benign dissolved-phase hydrocarbon concentrations reported in the historical groundwater samples may represent impact from an earlier unreported fuel release while the UST was in operation. The potential vertically migrating slug through the vadose zone may have occurred much closer to, if not at, the time of UST removal and therefore had not reached groundwater during the monitoring timeframe. At a minimum, these data warrant further investigation. Perhaps simply gauging and sampling MW-1 may evaluate our potential mobile constituent concern given the migration rates suggested by the data and the time since MW-1 was last sampled (2012).

We do not concur free product and secondary source have been removed to the extent practical as concluded on Pages 6 and 7 of the RSR. The NAPL identified in Boring B-8 between approximately 19 and 30 fbg is immediately below the UST cavity (source area) and minimal, if any, remediation of unsaturated zone soil has occurred at the subject site (the previous soil vapor extraction testing occurred for only approximately 30 hours and was fraught with problems). The NAPL in B-8 qualifies as secondary source under the LTCP. In addition, it is <30 fbg and may explain why the benzene concentrations in the indoor air samples collected from the residence adjacent to the former USTs (Figure 2) exceeded the ambient air Environmental Screening Level (ESL) established by the Regional Water Quality Control Board (RWQCB) - data suggesting this secondary source may pose a potential risk to human health.

Media-Specific Criteria – Vapor Intrusion

The Consulting Engineers Corporation (CEC) report dated November 1, 2012, was not a site-specific risk assessment as cited on Pages 2, 5, 8, and 13 of the RSR. Therefore, petroleum vapor intrusion Criterion 2a on the bottom of Page 7 of the RSR is applicable and has not been satisfied. More importantly, the CEC report cited in the RSR only concluded no significant vapor intrusion risk exists to the occupants of the subject site. It did not conclude this for the occupants of the adjacent residence (our concern). The report stated the benzene concentrations in the indoor air samples from the offsite residence (Figure 2) exceeded the relevant (ambient air) ESL and those in the outdoor air control samples, and concluded the source of this benzene was unknown and “may represent vapor intrusion”. This is presumably why CEC concluded in

Comment Letter - Red Carpet Car Wash, Menlo Park, CA (SMCo # 440050 / RO1575)

May 19, 2014

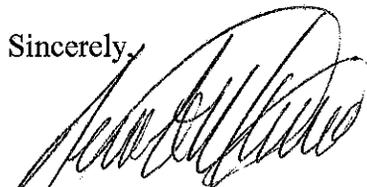
Page 3

Section 5.3 of the report that the installation and sampling of a sub-slab vapor probe within the adjacent residence may be warranted. We considered this recommendation reasonable because the residence is <10 feet from the former UST cavity, soil east of the UST cavity had not been sampled to determine if a portion of the fuel release migrated under the residence, NAPL remained below the former UST at <30 fbg (did not satisfy Appendix 2 of the LTCP), and the benzene concentration in groundwater exceeded 1,000 ug/l (did not satisfy Appendix 3 of the LTCP).

Although not discussed in the RSR, we do not consider it valid to use the laboratory vapor sampling results from the vapor samples collected from wells V-1A and V-2A as a surrogate for evaluating the potential vapor inhalation risk to the occupants of the adjacent residential dwelling. This is because these samples were collected within the permeable soil that was used to backfill the upper portion of the former UST cavity, whereas the soil under the adjacent residence was not excavated and sampled.

Please contact me at (650) 372-6292 or at dmilano@smcgov.org if you have any questions.

Sincerely,

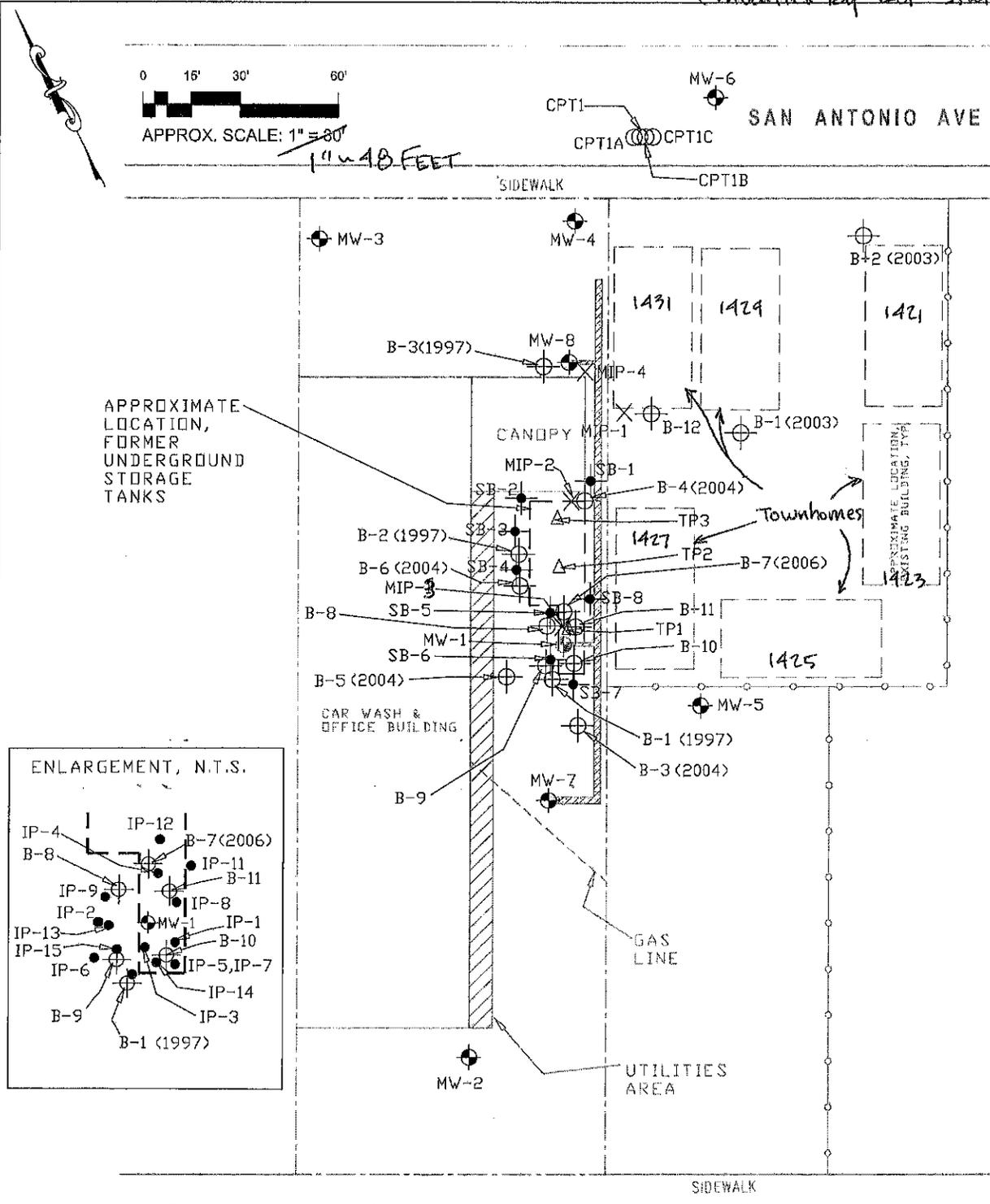


Deno G. Milano, PG
Hazardous Materials Specialist
Groundwater Protection Program



Charles Ice, PG
Program Coordinator
Groundwater Protection Program

From DEC 2010 SCM
(modified by LOP staff)



- LEGEND:**
- ⊕ MONITORING WELL LOCATION
 - ⊙ BORING LOCATION
 - CPT BORING (9-8-10)
 - △ TANK PIT (TP) BORING (9-8-10)
 - INJECTION LOCATION, 1ST (IP-1 THROUGH IP-4), 2ND (IP-5 THROUGH IP-11), 3RD (IP-12 THROUGH IP-15) (SEE ENLARGEMENT, N.T.S.)
 - ⊗ MIP BORING
 - ⊙ BORING (BERNABE & BRINKER, 6-4-97)

LOCATIONS OF ALL FEATURES ARE APPROXIMATE

SITE PLAN - SHOWING FORMER UST EXCAVATION, HISTORICAL BORINGS, & WELLS

ENVIRONMENTAL/ENGINEERING CONSULTANTS
 3016 SCOTT BOULEVARD
 SANTA CLARA, CALIFORNIA 95054
 TEL: 408.327.5700 FAX: 408.327.5707

SOIL & GW INVESTIGATION & SCM REPORT
 FORMER RED CARPET CAR WASH
 1436 EL CAMINO REAL
 MENLO PARK, CALIFORNIA

FILENAME:	2181SC01
DATE:	OCTOBER 2010
CHECKED BY:	BB
DRAWN:	MSR

FIGURE:
 8/1

