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September 30, 2015

State Water Resources Control Board

1001 I Street, 16th Floor
Sacramento, CA95814
Attention: Mr. Andrew Cooper:

Job No. 006.12

Subject: COMMENT LETTER-DAN'S SERVICE CENTER UST CASE CLOSURE SUMMARY (APPEAL TO CONTINUE SITE EVALUATION AND GROUNDWATER MONITORING AT THE DAN'S SERVICE CENTER SITE LOCATED AT: 1120 Whitley Avenue in Corcoran, California.

Dear: Mr. Cooper:

Environmental & Geological Solutions (EGS) is pleased to submit this appeal to continue to evaluate the service station location: **1120 Whitley Avenue in Corcoran, California.**

It is the opinion of *EGS* that the creation of the Low-Threat Underground Storage Tank Case Closure Policy (LTCP) has been a very sound tool for use in closing underground fuel storage tank (UST) sites that are no longer considered a threat to human health or the environment. *EGS* has always been supportive of the decisions made by the Tank Fund's technical staff regarding the LTCP. However, we strongly disagree with the Staff's current decision to close the Dan's Service Center site. According to the UST Case Closure Review Summary Report dated July 6, 2015, Fund Staff has determined that the case meets all of the required criteria of the LTCP. We disagree for the following reasons:

1. This site had been out of compliance for 16 years (no groundwater monitoring had been performed between June 1998 and March 2014).

Prior to 1998, the site's wells were sampled once a year for the first two years, then for five consecutive sampling events (June 1997 to June 1998). These wells were not monitored frequently enough. MW-1 through MW-3 were sampled a total of seven times, yet in the first two quarters of 1998 there were no depth to water recordings; why? Did this mean the wells were dry at the time, and if so, how is it that there were analytical results for those events?

Wells MW-4 and MW-5 were sampled twice in 1998; the first sampling of these wells occurred on different days (April 1 and 2, 1998). Also, on the second sampling event (06/29/98) there were no water level measurements taken for any of the wells. Therefore, no groundwater gradient maps could be prepared.

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The above data does not give us enough consistency to be site specific regarding the historical direction of groundwater flow through the site, nor does it give us an accurate view of the historical concentration distribution throughout the site.

2. Quarterly groundwater monitoring of this site only began in March of 2014, of which only three sampling events have taken place since this site was targeted for closure. During the three events there has never been a time when all six on-site groundwater monitoring wells have contained water within them. Usually one or two have been dry. The closest we came was during the last sampling event which occurred in December of 2014 (only well MW-5 was dry).

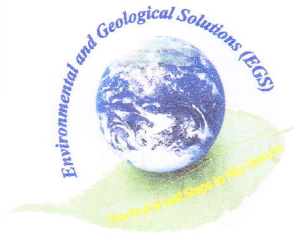
EGS has observed that since taking over as the consultant for this site that the direction of groundwater flow through the site has been very sporadic, and that there is a large data gap of valuable information missing from the western half of the property, specifically along the west, north, and south sides from a depth of 25 to 60 feet bgs. It is the opinion of *EGS* that the previous consultants did not go deep enough to define the soil or groundwater plumes.

In the Comments section of the April 2, 2015 letter to the site owners, the Central Valley Regional Water Quality Control Board, Region 5 Fresno (RWQCB5F) staff wrote that *“Previous work at the Site between January 1995 and June 1998 has indicated that the groundwater flow was most often easterly, with an average gradient of 0.007. Historical work at two other cases within 200 feet of this Site has also indicated an easterly groundwater flow with very flat gradients (0.003 to 0.002). The recent groundwater elevation data collected for this case does not agree with the other information, in that it indicates a very steep gradient (more than 3 feet difference between the highest and the lowest monitoring wells) with flow direction bifurcated beneath the Site (i.e., the “mound” around MW-4). Due to this unusual finding, Central Valley Water Board staff recommends that at least two more quarterly groundwater monitoring events be conducted before deciding the need for any additional monitoring wells.”*

In addition the RWQCB5F wrote “All potential receptors within 1,000 feet of the Site need to be located and identified. This includes all commercial, agricultural, municipal, and domestic wells and all surface water bodies (man-made and natural).” This is a request for a Sensitive Receptor Survey (SRS). Most if not all sites these days require that a SRS be conducted prior to site closure.

Based on the above comments alone, this site should not be closed. On Page 2, third paragraph down of the LTCP, under **Criteria for Low-Threat Case Closure** it clearly states that not all sites fall under the criteria dictated by the LTCP in fact, it states that some sites may possess unique attributes that would make closure under the LTCP inappropriate. Furthermore, this section states that it relies on the regulatory agency’s (CVRWQCB5F) use of the Conceptual Site Model to identify the special attributes that would require specific attention prior to the application of the LTCP criteria. In addition, it is the regulatory agency’s (CVRWQCB5F) responsibility to identify the conditions that make closure under the policy inappropriate.

Therefore under **the General Criteria** section of the LTCP parts E and F do not meet the general criteria for site closure under the LTCP.



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Part E of the **General Criteria** section of the LTCP states that ***a conceptual site model that assesses the nature, extent, and mobility of the release has been developed.***

As stated ***the CSM is a fundamental element of a comprehensive site investigation.*** The paragraph goes on to state that ***the CSM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes the geology, hydrogeology, and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures, and their inhabitants). The CSM is relied upon by practitioners as a guide for investigative design and data collection. As a result, contaminant fate and transport and mechanisms by which receptors may be impacted by contaminants vary greatly from location to location. Therefore, the CSM is unique to each individual release site. All relevant site characteristics identified by the CSM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy.***

EGS was in the process of performing a SRS as part of the CSM. However, we were requested by CVRWQCB5F Staff to postpone any further work pending the SWRCB's final decision regarding case closure.

At this time **EGS** presents the CSM as it stands presently:

SITE CONCEPTUAL MODEL

Soil Model

The site soils consist of various hues of medium dense to dense, brown to greyish brown, silty sand to sand layers to a depth of approximately 30 feet bgs. However, during the drilling of new groundwater monitoring well NMW-2, a series of five-foot thick lenses consisting of clayey silty sand to sand were encountered to an approximate depth of 38 feet bgs. From a depth of approximately 38 feet to the bottom of the boring (60 feet bgs), a sequence of silty sand/sandy clay/clayey sand layers were encountered.

The soil has been impacted commencing at an approximate depth of 22 feet bgs by petroleum fuel hydrocarbons in the form of TPH-d, TPH-g, naphthalene, and various types of BTEX's. The bottom of the soil plume was detected at a depth of approximately 30 feet bgs beneath NMW-2. However, the bottom of the plume was not detected beneath the other borings as they were not drilled passed a depth of 25 feet bgs (EGS-2) and 20 feet bgs (EGS-1). The lateral extent of the soil plume still needs to be defined north and south of NMW-2, and east of EGS-2. With the exception of NMW-2, the vertical extent of the underlying soil plume has not been defined.

The analytical results from both the four borings (upper ten feet of soil) and the two soil gas survey probes (upper five feet of soil) were free of impacted soil and suggest that the site does not pose a threat to human health or the environment from the release of petroleum fuel fugitive gases. The highest petroleum fuel hydrocarbon concentrations detected during the evaluation were detected in exploratory soil boring Egs-2 at a depth of 24 feet bgs, (TPH-g @ 110 ppm, TPH-d @ 190 ppm and naphthalene, @ 13,000 ug/kg.

The center of the soil plume was not detected during this evaluation.

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Based on our only site evaluation, we know this to be true. It was suggested by the CVRWQCBF office staff that collecting soil data from the three proposed soil borings within the upper ten feet would be sufficient for the November 2014 evaluation. However, after installing NMW-2 to a depth of 60 feet bgs, **EGS** detected impacted soil at a depth of approximately 19 feet bgs. Based on the fact that impacted soil was detected in the deeper NMW-2 boring, and the allotted time left to drill the other borings, we drilled below the suggested ten feet and detected impacted soil at depths of 14 feet bgs for EGS-1, and at approximately 19 feet bgs beneath EGS-2. We had one P.I.D reading of 18.5 ppm at a depth of approximately 25 feet bgs within EGS-3 (the laboratory results did not confirm the P.I.D. reading and reported non-detect). However, **EGS** concluded that more data was required below a depth of 20 feet within the areas mentioned above. This means that additional borings and/or groundwater monitoring wells to a minimum depth of approximately 60 feet bgs are needed.

Groundwater Model

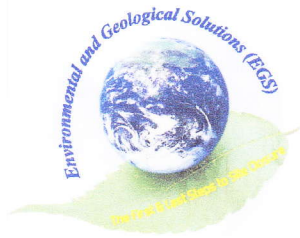
The average depth to groundwater is approximately 46 ½ feet. However, groundwater was detected during drilling at a depth of approximately 47 feet bgs. The groundwater has been impacted by petroleum fuel hydrocarbons in the form of TPH-d, MTBE, and TBA. The site currently contains six groundwater monitoring wells: three to 60 feet bgs (MW-1, MW-2, and NMW-2) one well to 61 feet bgs (MW-3), and two to 50 feet bgs (MW-4 and MW-5). The highest current concentrations (December 30, 2014) detected in the groundwater are located beneath well MW-3 (TPH-d @ 770 ppb and MTBE @ 1.8 ppb), and NMW-2 (TBA @ 57 ppb). The site groundwater monitoring wells were re-surveyed on **December 20, 2014**. The survey was performed by Virgil Chavez Land Surveying. All three wells (MW-1 through MW-3) revealed up to a 7.70 foot difference in elevation from the original survey. In addition, wells MW-4 and MW-5 had never been surveyed prior to the Chavez survey. Additional data to the south of NMW-2 and between EGS-2 and MW-3, and between MW-4 and MW-3 is needed. With the exception of NMW-2, wells MW-1 through MW-5 need to be re-developed so that the full screen length is exposed. At this time, each of the mentioned wells are likely plugged up and contain between approximately 10 and 15 feet of sediment or are likely damaged below a depth of 49 ½ feet bgs. This may be the reason for the groundwater contour anomalies. Further evaluation is needed.

EGS suggests a minimum of two additional wells be drilled and monitored: one to be located east between wells MW-3 and MW-5 (possible hidden pathway) and southeast of well MW-3 (the last event, which occurred on December 30, 2014, revealed a diesel concentration of 770 ppb). This suggests that the plume has not yet been defined to the south to southeast.

It is our opinion that there is enough justification to keep the site open just within part **E** of the **General Criteria** section of the **LTCP**. However, it is also our opinion that the site does not fulfill part **F** of the **General Criteria** section of the **LTCP**.

Part **F** states that **Secondary Source has been removed to the extent practicable**. How can this statement be justified when to our knowledge of the site or to any staff members knowledge at the CVRWQCB5F or USTF have any proof or data to support the idea that an effort was made to remove any impacted soil from beneath or to the sides of the former UST tank pit. Section F clearly states **“petroleum-release sites are required to undergo secondary source removal to the extent practicable as described herein remove. To the extent practicable means implementing a cost-effective corrective action which removes or destroys-in-place the most readily recoverable fraction of source-area mass.”**

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EGS could not find data suggesting that the impacted soil was removed from beneath and to the sides of the former tank pit. In their five year review dated May 6, 2010, USTCF staff indicated that no excavation or in-situ soil remediation was performed at this site. Therefore, how can the present staff at the SWRCB infer or justify this in their **UST Case Closure Review Summary Report** (the report is not dated. However, it was signed on July 6, 2015 by the Fund manager) that part **F** has been fulfilled?

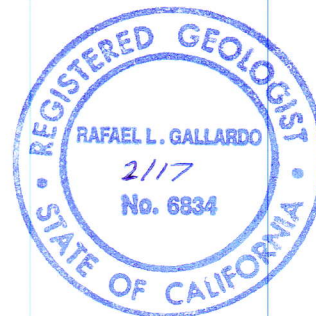
In closing, **EGS** would like to thank all of the members affiliated with the SWRCB for their efforts to rein in unnecessary or excessive work performed at an impacted site. However, based on the evidence that we have presented, we impress upon you to reconsider your decision to close this site.

We look forward to your response to our rebuttal. If you have any questions regarding this letter, please contact us at (916) 358-3719.

Respectfully,

Environmental & Geological Solutions

Rafael Gallardo
Rafael Gallardo
President/Professional Geologist



References cited:

Notice of Opportunity For Public Comment, (not dated, but signed on July 17, 2015), by SWRCB.

UST Case Closure Review Summary Report (no date, however signed on page 2, July 6, 2015), by SWRCB.

SWRCB Geotracker LTCP Checklist as of May 13, 2015.

Report Review-Underground Storage Tank Release, Former Dan's Service Center, 1120 Whitely Avenue, Corcoran, Kings County, RB Case 5T16000112, dated April 2, 2015, by Central Valley Regional Water Quality Control Board 5 Fresno

Low-Threat Underground Tank Case Closure Policy by SWRCB