Ms. Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 9502-6577

Subject: Former Val Strough Chevrolet Site
327 34th Street, Oakland, CA
Site ID #3035, RO#0000134

Dear Ms. Jakub:

This enclosed report has been prepared by LRM Consulting, Inc. on behalf of the Strough Family Trust. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

If you have any questions, please contact Mr. Mehrdad Javaherian of LRM Consulting, Inc. at 650-343-4633.

Sincerely,

Linda L. Strough, Trustee

cc: Mehrdad Javaherian, LRM Consulting, Inc.
534 Plaza Lane, #145, Burlingame, CA 94010

Greggory Brandt, Wendel Rosen Black & Dean
1111 Broadway, 24th Floor, Oakland, CA 94607

LRM consulting inc.

July 10, 2013

Ms. Barbara Jakub, P.G.
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA

RE: Proposed Modifications to Ongoing Dual Phase Extraction and Monitoring Activities
Former Val Strough Chevrolet,
327 34th Street, Oakland, CA
RO0134

Dear Ms. Jakub:

LRM Consulting, Inc., (LRM) has prepared this letter on behalf of the Strough Family Trust of 1983, summarizing proposed modifications to the ongoing high-vacuum dual phase extraction (DPE) and groundwater monitoring activities at the above-referenced site. This letter follows LRM's telephone conversation with the Alameda County Health Care Services Agency (County) on June 27, 2013, and provides a basis for minor changes to the DPE operations and associated monitoring. The purpose of these proposed changes is to address the sole remaining elevated hydrocarbon-impacted well at the site and to establish a basis for low-threat case closure (State Water Resources Control Board [SWRCB] Resolution No. 2012-0016) following implementation of the proposed changes to the DPE and monitoring activities. These proposed changes and rationale for closure are consistent with the benefits achieved in the form of significantly reduced hydrocarbon concentrations over the past year of DPE operation, and with the fact that the State Underground Storage Tank (UST) Fund has not allocated the necessary funding for the past and current remediation activities at the site.

Background

As documented in the quarterly groundwater monitoring reports submitted to the County over the past 12 months, the DPE operations have targeted onsite wells MW2 and MW3 (see Figure 1), resulting in significant reductions in hydrocarbon concentrations in each well. Specifically, at well MW2, total petroleum hydrocarbon (TPH) as gasoline (TPH-g) concentrations have been reduced from over 50,000 ug/L to 24,000 ug/L, while benzene levels remain below 150 ug/L. At MW3, the presence of SPHs has been eliminated through DPE operations over the past year, while TPH-g concentrations have been reduced from over 75,000 ug/L to 2,100 ug/L, and benzene concentrations were reduced from 3,400 ug/L to 12 ug/L. Correspondingly, an estimated 2,825 pounds of hydrocarbons have been removed via DPE operations during the past year (June 2012 through June 2013), and hydrocarbon mass removal rates remain high at an estimated 25 pounds per day as of June 2013.

While other wells (i.e, wells MW9B and O-1) in the immediate vicinity of the two DPE wells referenced above (i.e, MW2 and MW3) have also shown declines in hydrocarbon concentrations to levels well below those at MW2 and MW3, one well (MW9A) has remained impacted with hydrocarbons at elevated levels (TPH-g as high as 130,000 ug/L and benzene as high as 3,800 ug/L). Per the County's approval, well MW9A was temporarily (for a period of one month) and intermittently (two days/week over weekends)

connected to the DPE system at the site during March 2013. This limited extraction resulted in reductions in TPH-g (from 130,000 ug/L to 66,000 ug/L) and benzene (from 3,800 ug/L to 1,300 ug/L).

Despite the aforementioned reduction in hydrocarbon concentrations in monitoring well MW9A resulting from the temporary and intermittent connection of this well to the DPE system, this well remains the only well across the entire site with elevated concentrations relative to the SWRCB's low-threat case closure guidelines. In addition, the current mass removal rate from the DPE system remains elevated at 24 pounds per day, suggesting a likely potential for rebounding concentrations following termination of DPE activities at this time.

Proposed Changes to DPE Operations and Groundwater Monitoring Activities

Based on the above-referenced rationale, the following changes to the DPE operations and groundwater monitoring activities are recommended, with the attached flowchart summarizing the proposed timeline for these activities:

1) A new DPE extraction well (herein referred to as DPE-1- see Figure 1) will be advanced within five feet of monitoring well MW9A and connected to the DPE system through the existing subsurface trench and associated piping.

2) Construction details of well DPE-1 will include a 4-inch PVC well screened from 5 to 25 feet below ground surface (bgs), allowing for adequate lowering of the water table and exposed unsaturated/partially saturated formation across both the vadose zone and beneath the static water table. No separate workplan will be prepared for installation of this well, as well installation procedures and practices will follow those previously presented to the County during past well installation activities at the site.

3) DPE-1 will be developed and sampled, providing a pre-DPE hookup baseline concentration for this well.

4) DPE operations will focused on DPE-1 and existing well MW2 (where hydrocarbon levels include 24,000 ug/L of TPH-g), with MW3 added on an as-needed basis based on weekly observations of system performance during routine operation and maintenance (O&M) activities.

5) <u>Remediation Scenario A</u>: The DPE system will continue operating per the above connection for 3 months. If after 3 months of operation, a drop in mass removal rate (from the current 24 pounds per day) is observed, the system will be terminated and a monitoring event to include only residual source area wells MW2, MW3, MW9A, and DPE-1 will be performed. Should the hydrocarbon concentrations in these wells confirm a significant reduction in hydrocarbon concentrations relative to the SWRCB's low-threat closure guidelines, then the DPE system will remain off and a twelve-month, semi-annual post-remediation monitoring program will be implemented in support of low-threat site closure. The proposed post-remediation monitoring program is discussed in more detail in Item 7 below.

6) <u>Remediation Scenario B:</u> If after the first 3 months of DPE system operation, the mass removal rate does not significantly decline relative to the current 24-pounds-per-day rate, then the system operations will be continued for 6 months without any system termination or monitoring after the first 3 months. Under this scenario, after the 6 months of operation, then a monitoring event will be performed (on only the residual source area wells MW2, MW3, MW9A, and DPE-1), with procedures implemented per those outlined in Item 5.

7) Regardless of whether the newly proposed DPE system operations occur for 3 months (Remediation Scenario A under Item 5) or for 6 months (Remediation Scenario B under Items 6), the following post-remediation monitoring program is proposed for implementation after termination of the DPE system.

   a. Two semi-annual monitoring events will be implemented, covering a period of 12 months after termination of the DPE system;
   b. The first semi-annual monitoring event will occur 6 months after termination of the DPE system and will include only residual source area wells MW2, MW3, MW9A, and DPE-1; and
   c. The second semi-annual monitoring event will take place 12 months after termination of the DPE system and include all 11 existing monitoring wells at the site and DPE-1.

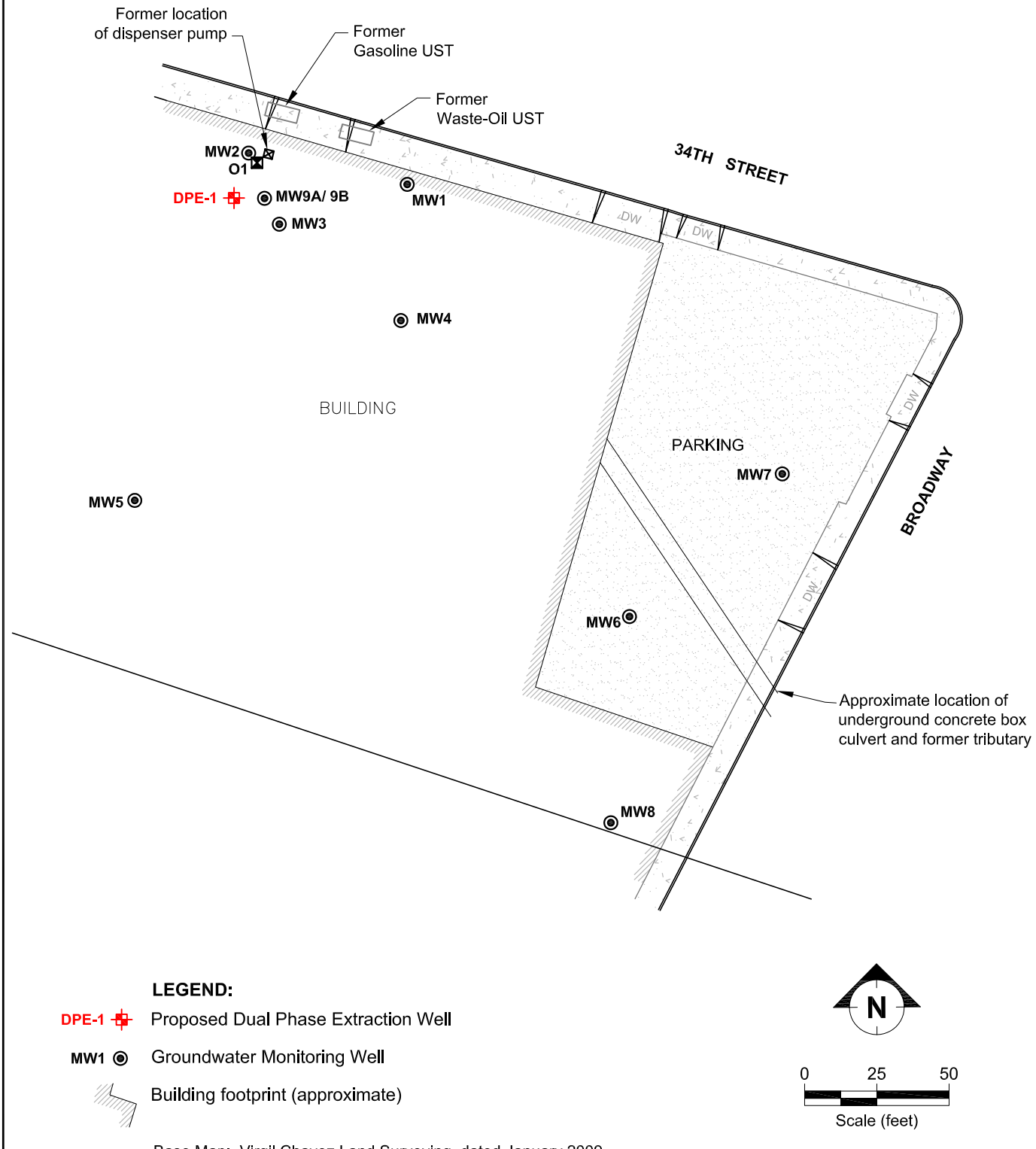
   A single annual monitoring report will be prepared, summarizing the results and findings of the two semi-annual post-remediation monitoring events. As relevant, the report will also include a formal request for site closure, including relevant assessments relative to the SWRCB's low-threat closure guidelines and a site closure summary form.

CLOSING

LRM appreciates the County's recognition of the significant efforts and costs expended at this site (much of which remains unreimbursed by the UST Fund), including some 20 years of monitoring and multiple remediation efforts by various contractors. Through these efforts, including the past year of DPE efforts by LRM, hydrocarbon concentrations have significantly declined. The proposed revisions to the DPE operations and reduced monitoring are presented herein as the final step toward achieving site closure in a cost-effective manner relative to the SWRCB's low-threat closure guidelines. Your efforts toward timely review and approval of this letter are greatly appreciated, so that the well installation, DPE, and post-remediation monitoring efforts may be initiated in accordance to the attached flowchart. If you have any questions, please contact Mehrdad Javaherian at 415-706-8935 or at mehrdad@lrm-consulting.com.

Mehrdad Javaherian, Ph.D., MPH, PE, LEED®GA
LRM Consulting, Inc.

Cc: Jonathan Redding, Wendel Rosen Black & Dean, LLP
Bruce Bercovich, Kay & Merkle, LLP



Base Map: Virgil Chavez Land Surveying, dated January 2009.

LRM consulting inc.

EXISTING AND PROPOSED WELLS
FORMER VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA
JULY 2013

FIGURE: **1**

Flowchart of Remediation Scenarios

Former Val Strough Chevrolet Site

Oakland, CA

	2013					2014											
Remediation Scenario	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Scenario A: Well installation/connection, 3 months of DPE followed by 1 year of semi-annual post-remediation monitoring, site closure.																	
Well installation and connection to DPE system																	
DPE system operation																	
Focused groundwater sampling (MW2, MW3, DPE-1) to evaluate/confirm system shutdown																	
First post-remediation semi-annual monitoring event																	
Second post-remediation semi-annual monitoring event, annual monitoring report and request for site closure																	

	2013					2014												2015					
Remediation Scenario	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Scennario B: Well installation/connection, 6 months of DPE followed by 1 year of semi-annual post-remediation monitoring, site closure.																							
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