



March 3, 2025

Mr. Dan Sidle
LSA Associates, Inc.
157 Park Place
Point Richmond, California 94801

sent via email to dan.sidle@lsa.net

Subject: Proposal for an Ecological Risk Evaluation of Proposed Sediment Reuse – Refugio Valley Pond, City of Hercules, CA.

Dear Mr. Sidle:

Terraphase Engineering Inc. (Terraphase) is pleased to submit this proposal to LSA Associates, Inc. (LSA) for a limited ecological risk evaluation on the potential reuse of sediment from Refugio Valley Pond, City of Hercules, CA. It is our understanding that one of the disposal options the City of Hercules (City) is contemplating is to place the sediment in a designated open space owned by the City.

Investigative sampling conducted by Terraphase indicates that a subset of samples exhibits concentrations of cadmium, copper, and vanadium above the Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) for terrestrial habitat. Therefore, this evaluation is recommended to provide a written record demonstrating potential hazards have been evaluated and help guide the City's decision on the open space placement of the sediment.

Scope of Work

Terraphase proposes the following tasks to complete the scope of work.

Task 1: Literature Review

This task will include a review of the basis for the terrestrial ESLs. Because these values are used for screening level purposes, they may be based on receptors that are not anticipated to inhabit a particular site or are calculated using overly-conservative exposure assumptions. Based on the outcome of Task 1, we will evaluate the applicability of using alternative input values to develop site-specific risk-based levels, as described further in Task 2.

Because it is not practical to achieve a risk-based level below background levels, this task will also include a search for readily available information on local and/or regional background concentrations of cadmium, copper, and vanadium in soil. Where a background concentration is higher than the calculated risk-based value, the background concentration will be selected as the target level.

Task 2: Risk Estimation and Calculation of Risk-Based Cleanup Levels

This task will use simple food chain models for a representative bird and mammal to estimate the potential for ecological risk. The risk estimates will generally be conducted in accordance with USEPA and DTSC guidance for ecological risk assessment. Because birds and mammals search for food over a specified area (typically referred to as the receptor's home range), the risk estimates will be based on

average concentrations rather than a single point concentration such as the maximum. Potential exposure will be evaluated by calculating a total dietary intake (TDI) from the ingestion of food and the incidental ingestion of sediment (as soil) while foraging or hunting.

If the estimates indicate the potential for risk, the food chain models can be used to back calculate risk-based levels that are considered protective. If needed, this evaluation will also take into consideration any plans the City has to ameliorate the sediment by blending it with other materials (we will simply “dilute” the concentrations).

Task 3: Technical Memorandum

Terraphase will prepare a draft technical memorandum summarizing the outcome of Tasks 1 and 2 for review by the City. For budgeting purposes, Terraphase has assumed this will involve one round of review by City and preparation of a final draft to serve as a written record demonstrating that potential hazards were adequately considered by the City prior to reuse of the material. This scope does not include efforts for submittal of the final report to, or addressing comments from, the Waterboard.

Schedule

Terraphase is ready to commence with the tasks presented in this proposal immediately following written approval from LSA. We estimate providing the City with a draft technical memorandum approximately 4 to 6 weeks following approval.

Cost Estimate and Terms and Conditions

Based on our current understanding of the scope of work, our proposed cost estimate to complete Tasks 1 through 3 including Terraphase 2025 standard labor rates with a 10% discount is \$11,800.

A summary of the costs, by task, is presented in the following table.

Task	Estimated Cost
Task 1 – Literature Review	\$1,800
Task 2 – Risk Estimates	\$5,300
Task 3 – Technical Memorandum	\$4,700
Total	\$11,800

Terraphase will perform the services described in this proposal on a time-and-materials basis in accordance with the terms and conditions of the Subconsultant Agreement between LSA and Terraphase dated December 5, 2024.

Any modifications to the scope, schedule, and budget presented herein that might arise through discussions with the City or the Waterboard will be addressed through change orders. Please sign and return this proposal to Terraphase as our authorization to proceed with the scope of work described herein.

Closing

Terraphase is grateful for the opportunity to continue supporting LSA and the City. If you have any questions or comments regarding this submittal, please contact Chris Jones at chris.jones@terrphase.com.

Sincerely,

for Terraphase Engineering Inc.



Chris Jones, PE (C89316)
Senior Associate Engineer

cc: Jeff Brown, City of Hercules
David Caneer, SNG Associates

Acceptance of Proposal

The cost, specifications, and conditions outlined herein are satisfactory and are hereby accepted. Terraphase is authorized to proceed with the work, as specified.

This proposal is hereby accepted by a duly authorized representative of the Client to whom it is addressed:

Signature: _____ Date: _____

Printed Name: _____

Title: _____



Table 1 - Time and Materials Cost Estimate

LSA Associates

Refugio Valley Pond Sediment Risk Evaluation

Category	Units	Standard 2025 Rate	Discount	Rate	Task 1: Literature Review		Task 2: Risk Estimates		Task 3: Technical Memorandum		TOTALS	
					Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
					Labor							
Senior Principal	Hour	\$ 320.00	10%	\$ 288.00		\$ -		\$ -	1	\$ 288	1	\$ 288
Principal	Hour	\$ 301.00	10%	\$ 270.90	1	\$ 271	2	\$ 542	2	\$ 542	5	\$ 1,355
Senior Associate	Hour	\$ 282.00	10%	\$ 253.80	4	\$ 1,015	4	\$ 1,015	4	\$ 1,015	12	\$ 3,046
Associate	Hour	\$ 264.00	10%	\$ 237.60		\$ -		\$ -		\$ -	0	\$ -
Senior Project	Hour	\$ 247.00	10%	\$ 222.30		\$ -	4	\$ 889	4	\$ 889	8	\$ 1,778
Project	Hour	\$ 230.00	10%	\$ 207.00		\$ -		\$ -		\$ -	0	\$ -
Senior Staff 2	Hour	\$ 213.00	10%	\$ 191.70		\$ -		\$ -		\$ -	0	\$ -
Senior Staff 1	Hour	\$ 193.00	10%	\$ 173.70		\$ -	10	\$ 1,737	8	\$ 1,390	18	\$ 3,127
Staff 2	Hour	\$ 171.00	10%	\$ 153.90		\$ -		\$ -		\$ -	0	\$ -
Staff 1	Hour	\$ 149.00	10%	\$ 134.10	4	\$ 536	8	\$ 1,073	4	\$ 536	16	\$ 2,146
Senior Technician	Hour	\$ 156.00	10%	\$ 140.40		\$ -		\$ -		\$ -	0	\$ -
Technician 3	Hour	\$ 136.00	10%	\$ 122.40		\$ -		\$ -		\$ -	0	\$ -
Technician 2	Hour	\$ 114.00	10%	\$ 102.60		\$ -		\$ -		\$ -	0	\$ -
Technician 1	Hour	\$ 96.00	10%	\$ 86.40		\$ -		\$ -		\$ -	0	\$ -
Senior Editor/ Senior Project Coordinator	Hour	\$ 166.00	10%	\$ 149.40		\$ -		\$ -		\$ -	0	\$ -
Editor 2/Project Coordinator	Hour	\$ 147.00	10%	\$ 132.30		\$ -		\$ -		\$ -	0	\$ -
2/Accountant 2 Editor 1/Project Coordinator	Hour	\$ 122.00	10%	\$ 109.80		\$ -		\$ -	1	\$ 110	1	\$ 110
1/Accountant 1 Administrator/Project Assistant/Billing Specialist	Hour	\$ 103.00	10%	\$ 92.70		\$ -		\$ -		\$ -	0	\$ -
+ al Terraphase Labor						\$ 1,823		\$ 5,256		\$ 4,770		\$ 11,849
Total Estimated Project Unit Costs						\$ 1,823		\$ 5,256		\$ 4,770		\$ 11,849