

February 20, 2020

Matthew H. Litchfield, P.E.  
General Manager  
**Three Valleys Municipal Water District**  
1021 E. Miramar Avenue  
Claremont, CA 91711-2052

sent via email to:  
[mlitchfield@tvmwd.com](mailto:mlitchfield@tvmwd.com)

**Re.: Proposal to Conduct a Study Program to Evaluate the Hydrologic Connection Between Bonanza Spring and the Alluvial Aquifer in Fenner Valley**

Dear Mr. Litchfield:

**Aquilologic** is pleased to provide this proposal to Three Valleys Municipal Water District (Three Valleys) to conduct a study program to evaluate the hydrologic connection between Bonanza Spring and the Alluvial Aquifer in Fenner Valley (the Bonanza Spring Study).

On June 11, 2019, **aquilologic** submitted a proposal to implement certain recommendations contained within the Report of the Independent Peer Review Panel for the Groundwater Management, Monitoring, and Mitigation Plan (GMMMP) for the Cadiz Project. The June 2019 proposal provided a preliminary scope and budget for the entire Bonanza Spring Study. However, the proposal recommended that the Board of Three Valleys only approve the cooperative development of a Scoping Plan for the Bonanza Spring Study. A scope and budget for Scoping Plan preparation was provided in the June 2019 proposal and, on July 19, 2019, Three Valley authorized **aquilologic** to develop the Scoping Plan. Scoping Plan development has included the following:

- Building a team to prepare the Scoping Plan and implement the Bonanza Spring Study
- Holding a technical workshop with project stakeholders to develop the scope
- Convening an expert peer review panel to review the study program results
- Identifying permit requirements with the US Department of Interior, Bureau of Land Management (BLM) and County of San Bernardino
- Preparing the Scoping Plan document

These steps have been completed, and an initial draft Scoping Plan was provided to Three Valleys staff on January 7, 2020. We did receive some comments from several members of the Study Program Team and expert peer review panel. These have been addressed in an updated draft of the Scoping Plan (accompanying this proposal).

At this time, we are requesting that the Board of Three Valleys approve either: (1) the Bonanza Spring Study field program (Phase II), or (2) the field program (Phase II) and the data analyses and reporting (Phase III). An overall schedule and budget for the Bonanza Spring Study is provided in this proposal. However, the field program will be implemented in the following steps:

1. Geophysical (Task II.1) and hydrological (Task II.2) investigation
2. Hydrogeological (Task II.3) and ecological (Task II.4) investigation
3. Aquifer testing (Task II.3) and geochemical i(Task II.5) investigation

The scope of the field program (Phase II) is included in the updated draft Scoping Plan. However, it is recognized that some minor adjustments in scope for each step will be refined based on findings from prior steps. These adjustments can be accommodated within the contingency amount for each phase.

### Phases II and III Bonanza Spring Study

As noted, the updated draft Scoping Plan provides the scope and schedule for the overall Bonanza Spring Study. The preliminary budget for the overall study provided in the June 2019 proposal has been updated below:

#	Phase/Task	Start	End	Budget	Remaining
<b>I</b>	<b>Phase I: Study Plan Preparation</b>	Jul-19	Jan-20	<b>\$197,628</b>	\$90,733
<b>II</b>	<b>Phase II: Field Program</b>				
II.1	Geophysical Investigation	Mar-20	Apr-20	\$140,000	
II.2	Hydrological Investigation	Mar-20	Apr-20		
	Spring Monitoring	Mar-20	Mar-20	\$35,000	
	Weather Station	Apr-20	Apr-20	\$10,000	
II.3	Hydrogeological Investigation	Jun-20	Oct-20		
	Well Installation	Jun-20	Jul-20	\$120,000	
	Aquifer Testing	Sep-20	Oct-20	\$60,000	
II.4	Ecological Investigation	Jun-20	Dec-20	\$45,000	
II.5	Geochemical Investigation	Sep-20	Dec-20		
	Surface Water Sampling	Sep-20	Dec-20	\$20,000	
	Groundwater Sampling	Sep-20	Dec-20	\$35,000	
	<b>Phase II Sub-Total</b>			<b>\$465,000</b>	
	15% contingency			\$69,750	
	<b>Phase II Total</b>			<b>\$534,750</b>	
<b>III</b>	<b>Phase III: Data Analyses and Reporting</b>				
III.1	Updated Groundwater Flow Modeling	Jul-20	Jan-21	\$70,000	
III.2	Data Analyses	Jul-20	Dec-20	\$55,000	
III.3	Final Report	Dec-20	Feb-21	\$40,000	
III.4	Board Presentation/Workshop	Feb-21	Mar-21	\$40,000	

III.5	Alternative Mitigation Actions	Jan-21	Mar-21	\$30,000
	<b>Phase III Sub-Total</b>			<b>\$235,000</b>
	15% Contingency			\$35,250
	<b>Phase III Total</b>			<b>\$270,250</b>
	<b>TOTAL (Phase II and III)</b>			<b>\$805,000</b>
	<b>TOTAL (All Phases)</b>			<b>\$1,002,625</b>

All work will be billed on a time and materials basis according to the attached fee schedule, up to the total amount specified. It is understood that work on a particular task can exceed the budgeted amount. However, should supplemental budget be required to complete the entire scope, a change order will be provided for your approval. No such supplemental or additional work will be performed without prior authorization to proceed from the Client. Should you request that additional or supplemental work be performed, we will invoice you for this work on a time and materials basis. However, we will confirm your request via email prior to starting on such work.

### Closing

We appreciate the opportunity to submit this proposal to Three Valleys. Should you have any questions, please do not hesitate to contact me at (949) 939-7160.

Sincerely,  
**aquilogic, Inc.**



Anthony Brown  
 CEO and Principal Hydrologist

Encl. Fee Schedule  
 Updated Draft Scoping Plan