

MINUTES
TECHNICAL ADVISORY COMMITTEE
BORREGO SPRINGS WATERMASTER
Meeting Conducted via GoToMeeting
Tuesday, April 27, 2021, 1:00 p.m.

I. Opening Procedures

Andy Malone (Lead Technical Consultant, Borrego Springs Watermaster) called the meeting to order at 1:00 p.m.

Mr. Malone called roll and confirmed that all five Technical Advisory Committee (TAC) Members were present at the start of the meeting. The following individuals were present at the meeting:

Technical Advisory Committee Members	Bob Wagner, PE (Principal Water Resources Engineer, Wagner & Bonsignore)
	Tom Watson, PG (Principal Geologist, Aquilogic)
	Trey Driscoll, PG, CHG (Principal Hydrogeologist, Dudek)
	Jim Bennett (County of San Diego and Watermaster Board Member)
	Andy Malone, PG (Principal Geologist, West Yost)
Watermaster Staff	Samantha Adams, Executive Director (West Yost)
	Lauren Sather, Staff Scientist (West Yost)
Others Present	John Peterson
	Leanne Crow
	Leonardo Urrego-Vallowe
	Michele Staples
	Shannon Smith (Vice Chairman of the Board)
	Robert Wells
	Trevor Jones (Dudek)
	Diane Johnson
	Jim Dax

TAC Meeting Guidelines. Mr. Malone covered the guidelines for Committee meetings, which specify that TAC meetings are open to the public and individuals from the public are allowed three minutes each for comments during the public comment periods at the beginning and end of each TAC meeting.

II. Public Comments

John Peterson addressed the TAC to express concerns about the declining groundwater levels at production wells in the South Management Zone as described in the recent annual report to the DWR.

Jim Dax addressed expressed his support John Peterson’s concern.

III. Recommended Scope-of-Work and Budget to Redetermine Sustainable Yield

Mr. Malone stated that the objective of the TAC meetings in April and May is to develop a recommended technical scope of work and budget for water year (WY) 2022 and 2023. The focus of this meeting will be on the portion of the technical scope to redetermine the Sustainable Yield of the Borrego Springs Subbasin.

Mr. Malone provided an overview of Section III.F of the Judgement that describes a process and schedule for re-determining Sustainable Yield and adjusting the Rampdown through 2040:

- The first re-determination of the Sustainable Yield is due by January 1, 2025.
- The redetermination of the Sustainable Yield is to include collecting additional data, refining the Borrego Valley Hydrologic Model (BVHM), and using model runs to update the Sustainable Yield.
- The TAC is to recommend a technical scope-of-work and budget for water year (WY) 2022 and WY 2023 by June 2021, which will include the efforts to redetermine the Sustainable Yield. The recommended scope/budget is due to the Board by June 1, 2021.
- The choice to perform specific tasks in the recommended scope will be based on the value of the work to attain improved understanding of the factors contributing to Sustainable Yield and the cost to perform the work.

Mr. Malone explained it is likely that WYs 2022 and 2023 will be dedicated to collecting data and refining the BVHM, and that WY 2024 will be dedicated to using the BVHM to redetermine the Sustainable Yield.

Trevor Jones from Dudek then gave a PowerPoint presentation on the use of the BVHM in developing the current estimate of the Sustainable Yield. His presentation is available on the [website](#). The presentation covered:

- The development of the original BVHM by the USGS, its model input files, and other supporting tools, such as the Basin Characterization Model (BCM) and the Farm Process (FMP).
- The update of the BVHM by Dudek and the use of the model to characterize the water budget and determine the initial Sustainable Yield of 5,700 acre-feet per year.
- Model sensitivity and the main areas of model uncertainty, which include: private pumping, aquifer properties, and streambed and mountain block recharge.
- Recommendations for collecting new data and information that can be used to reduce model uncertainty and improve model accuracy.

A discussion ensued on potential topics to address and efforts to pursue the data necessary to redetermine the Sustainable Yield by 2025. The following summarizes the discussion and opinions of one or more TAC members:

- **Groundwater Pumping.** Efforts should be made to collect metered pumping data from as many wells as possible. At least two years of metered data would be needed to evaluate and potentially revise the assumptions and tools used to estimate unmetered pumping.
- **Farm Process (FMP).** The FMP is used in the BVHM to estimate agricultural/recreational pumping and the return flows associated with irrigation. It may make sense to perform a comparative analysis at specific farms of metered pumping vs. FMP estimates of pumping.

To perform this analysis, the model will need to be extended through the years with new metered pumping data. Some TAC members felt there is a need to review the appropriateness of the Crop Coefficients used in the FMP.

- **Refinement of model grid cell size.** The model grid cell size is 2,000 ft x 2,000 ft, or approximately 92 acres. This relatively large cell size may cause inaccurate estimates of agricultural/recreational pumping and return flows by the FMP. The need for refining the model grid, and the associated level of effort and cost to do so, should be evaluated.
- **Hydrogeology and Aquifer Properties:** The model results indicated that there are areas of the basin, such as the Southern Management Area, where improved understanding of the hydrogeology and/or aquifer properties may be helpful. Aquifer-system testing could improve understanding in these areas. Dudek informed the TAC that Borrego Water District (BWD) has performed aquifer-system testing at its wells and can share those results with the Watermaster if requested.
- **Groundwater-Level Data.** Efforts should be made to obtain the groundwater-level data that has been collected by the DWR over the last decade at private wells. These data could support model re-calibration to improve the estimates of aquifer properties and model accuracy. Well owner approval will likely be required to access this historic data.
- **Recharge Estimates**
 - **Mountain Block Recharge.** Subsurface recharge from the surrounding mountain fronts was estimated by the BCM. Inputs were essentially default data, and recharge was assumed to be constant for the duration of the model calibration period and planning horizon. The TAC needs to better understand how the USGS scaled the BCM output to estimate this recharge term.

This source of recharge is impossible to measure directly and difficult to estimate. Tom Watson noted that remote-sensing studies of vertical ground motion (InSAR) has been used in the Central Valley to identify areas of recharge, and the subsequent flow of the recharge water in the subsurface, and suggested that InSAR might be applied here. He asked the Andy Malone to forward those studies to the TAC for their consideration.

- **Stream Flow and Streambed Recharge.** Stream discharge from the surrounding mountain fronts into the model domain was estimated by the BCM and was used as input for the BVHM. Streambed recharge is an important component of the Sustainable Yield but is highly variable with precipitation. The TAC needs to better understand the uncertainty in the BCM-generated estimates of stream discharge.

Measurements of stream discharge can be useful in verifying or scaling the model-generated estimates of stream discharge. However, measurements of stream discharge are difficult to obtain in desert environments because discharge typically occurs as flood flows in natural, braided streambeds. While not impossible, measurement of stream discharge is challenging, requires continual maintenance, and is therefore expensive. Trey Driscoll indicated that the DWR and USGS have recently declined to conduct new stream discharge monitoring in the valley because of these challenges and maintenance requirements. The TAC should investigate alternative methods for measuring stream discharge, particularly during flood stage events.

- **Water Losses from the Distribution Systems.** Perhaps the potential losses from water conveyance pipes are another source of recharge that should be characterized and included in future model simulations.
- **Modeling Methods and Tools.** Dudek indicated that there are technical challenges with using the current modeling tools (BVHM, BCM and FMP), including model versioning and the timeliness of updates, and lack of documentation and support. Alternative tools and methods to redetermine the Sustainable Yield should be considered by the TAC.

Mr. Malone thanked the TAC for their opinions and suggestions, and committed to:

- Preparing and circulating TAC meeting minutes to receive feedback and suggested revisions.
- Preparing and sending a draft scope and budget to the TAC in about two weeks to solicit feedback before the next TAC meeting.

IV. Future TAC Meetings

The next TAC meeting is scheduled for May 25th at 1pm. The meeting objective is to finalize the TAC recommendation for a technical scope-of-work and budget for WYs 2022 and 2023.

V. Public Comments (time permitting)

Mr. Malone asked for public comments. No public comments were made.

VI. Adjournment

Mr. Malone adjourned the meeting at 3:05 p.m.