MEETING MINUTES
TECHNICAL ADVISORY COMMITTEE
BORREGO SPRINGS WATERMASTER
Meeting Conducted via GoToMeeting
Tuesday, August 7, 2025, 10:00 a.m.

I. Opening Procedures

Andy Malone (Technical Consultant, Borrego Springs Watermaster) called the Technical Advisory Committee (TAC) meeting to order at 10:01 a.m. and confirmed the meeting was being recorded.

Mr. Malone called roll and confirmed that five of six TAC members were present at the start of the meeting (Dr. Detwiler logged on to the meeting thereafter). The following individuals were present at the meeting:

Technical Advisory Committee Members	Bob Wagner, PE (Principal Water Resources Engineer, Wagner & Bonsignore) – *representing AAWARE*
	Tom Watson, PG (Principal Geologist, Aquilogic) – *representing T2 Borrego*
	Trey Driscoll, PG, CHG (Principal Hydrogeologist, INTERA) – *representing Borrego Water District*
	Jim Bennett (County of San Diego and Watermaster Board Member) – *representing County of San Diego*
	John Peterson, PG, CHG (retired) – *representing Roadrunner Golf and Country Club*
	Dr. Russell Detwiler (University of California, Irvine) – *representing the Borrego Springs Community*
Watermaster Staff	Andy Malone, PG (Principal Geologist, West Yost)
	Samantha Adams (Executive Director, West Yost)
	Lauren Salberg, PG (Staff Geologist, West Yost)
Others Present	Leonardo Urrego-Vallowe (Wagner & Bonsignore)
	David Garmon
	Shannon Smith (Watermaster Board member)
	Diane Johnson (Borrego Water District member)
	Dan McCamish (EWG member)
	Travis Huxman

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

II. Public Comments

Public comments included:

- David Garmon recommended that the scope of work for the Groundwater Dependent Ecosystem (GDE) study begin with the TAC performing a literature review of studies on the

mesquite bosque in Borrego Springs instead of the recommended peer review, because this approach is consistent with the scientific process and would save the Watermaster money.

- Diane Johnson agreed with Mr. Garmon's recommendation that the TAC begin the GDE scope with a literature review, citing her experience as an academic research librarian.

III. BVHM Simulation Results: Northward Shift of Future Pumping

West Yost staff presented the methods, results, and recommendations of running additional pumping projections using the Borrego Valley Hydrologic Model (BVHM). The results included time-series charts of predicted future groundwater levels at wells and maps of predicted changes in groundwater levels from 2020-2040. Two model scenarios were run:

- Scenario 1A is a so-called "Baseline Scenario" that represents future pumping as estimated by all major pumpers in the Basin under a repeated historical hydrology. The results of Scenario 1A indicated the potential for continuously declining groundwater levels in the Central Management Area (CMA) and South Management Area (SMA). However, a model discrepancy in the southern portion of the model domain reduces confidence in the model results.
- Scenario 1B explored a theoretical shift in Borrego Water District (BWD) pumping from the CMA to the North Management Area (NMA). The results of Scenario 1B indicated the such a northward shift in pumping could help stabilize groundwater levels in the CMA.

TAC discussion and questions included:

- Questions and concerns if the BWD has the infrastructure to move pumping from the CMA to the North Management Area (NMA) (*e.g.,* Is there existing infrastructure? Have studies been performed?). Trey Driscoll, BWD representative, replied that the modeling effort to explore a northward shift in pumping is currently theoretical and that additional work would need to be performed to determine the feasibility of and costs associated with a northward shift of pumping.
- While the hydrogeology of the Basin is well understood, it may not be accurately captured in the BVHM due to the granularity of the model grid.
- Mr. Driscoll requested to add a footnote to the change in groundwater elevation figures that describes the climate assumptions used in the BVHM projection (*i.e.* identify if it's a wet or dry period).
- Mr. Watson recommended to run an additional model scenario (Scenario 1C) to evaluate future pumping under existing water rights (*i.e.* no assumed future transfers of water rights) to better understand the hydrologic effects of pumping projections that strictly comply with the Judgment.
- Mr. Driscoll recommended that if an additional model scenario is run to simulate pumping under existing water rights, the effort should evaluate the difference in future pumping between scenarios with water rights transfers (Scenarios 1A and 1B) and without (Scenario 1C).

IV. Updating Sustainable Management Criteria – Groundwater Levels and Storage

West Yost staff presented the proposed methodology for updating the Sustainable Management Criteria (SMC) for the Sustainability Indicators of (i) chronic lowering of groundwater levels and (ii) reductions in groundwater storage.

For groundwater levels, the method was based on an assessment of the lowest groundwater levels that would be protective of the beneficial uses of all active pumping wells in the basin (Beneficial-Use Thresholds). Considerations included well use, well location, well construction, estimates of pumping drawdown, and appropriate "safety factors" to ensure the protection of each well's beneficial use. Maps and diagrams were presented to explain the proposed methods.

For reductions in storage, the method was based on: (i) the groundwater mining allowed by the Judgment during the Rampdown of pumping through 2040 and (ii) the predicted groundwater mining based on the projections of pumping in the Basin through 2040.

TAC discussion and questions included:

- Mr. Driscoll recommended a different approach for setting Use Thresholds for BWD wells based on saturation above the well screens, at least 20 feet of pump submergence, and a 20-foot "safety factor," particularly for new BWD wells.
- Mr. Peterson requested review of the DWR comment letter on the Judgment/GMP, which describes the seven Recommended Corrective Actions (RCA). Mr. Malone stated that the letter is available on the Watermaster's website. The location is here.
- Mr. Peterson recommended documenting that if construction information is missing for a well, the well owner can provide the Watermaster with the information for consideration in a future analysis of SMC.
- Mr. Driscoll stated that, according to SGMA legislation, impacts to the beneficial use of one domestic well due to declining groundwater levels, or even a few domestic wells, would not necessarily represent an Undesirable Result, and that a well mitigation program could be used address such impacts. Mr. Peterson agreed. Mr. Driscoll suggested performing an analysis that would quantify the number of shallow domestic wells that could be impaired if groundwater levels declined to the Use Thresholds of the BWD wells. He suggested that connection to the BWD water-distribution system (where feasible) could be a part of a well mitigation program. Mr. Driscoll stated that other GSPs have defined Undesirable Results based on a percentage of shallow domestic wells that could be impacted to define an Undesirable Result. Mr. Bennett agreed with the strategy outlined by Mr. Driscoll and recommended against establishing Minimum Thresholds to protect every shallow domestic well in the Basin.
- Mr. Driscoll and Mr. Urrego-Vallowe agreed with defining an Undesirable Result as a two-year period in which measured groundwater elevations decline below a Minimum Threshold. Mr. Driscoll stated if a Minimum Threshold was exceeded, then a two-year period would allow the BWD enough time to shift pumping and allow for recovery of groundwater levels.
- Mr. Driscoll stated that if the Watermaster is to use a BVHM projection to define Measurable Objectives and Interim Milestones for groundwater levels, there needs to be further discussion on the model scenario to use (e.g., pumping projections, the potential for a northward shift of pumping, future climate assumptions, etc.). He stated that, at this time, the BWD would likely opt for using results from a scenario that did not include a northward shift of pumping.
- Mr. Malone agreed to provide the TAC with a compilation of the domestic well construction information used to prepare the Use Threshold figures.

- The TAC has no comments on the proposed method to define SMC for reductions in storage.

V. Review of the UCI GDE Study Report as "Best Available Science"

West Yost staff presented a list of potential candidates for an independent peer reviewer of the UCI GDE Study Report and a proposed scope of work, deliverable, schedule for the review of the Report. TAC discussion and questions included:

- Mr. Peterson responded to Mr. Garmon's recommendation for the TAC to perform a literature review of mesquite bosque in the Basin, stating that his background is in geology, not biology.
- Mr. Peterson recommended against using the term "unequivocally prove" in one of the questions posed in the peer review deliverable.
- Mr. Malone requested the TAC provide comments on the scope of work, schedule, and deliverable by August 14, 2025 so the comments can be included in the Board agenda package for the August 2025 Board meeting.

VI. Public Comments (begins at 02:04 in the meeting recording)

Mr. Malone asked for final public comments and TAC comments:

- Mr. Garmon:
    - An inquiry if future model scenarios would simulate different climate scenarios.
    - A statement that the Watermaster is doing an excellent job of identifying potential Undesirable Results for human users but should recognize that an environmental user, the mesquite bosque, is a beneficial user of groundwater that is currently experiencing Undesirable Results.
- Shannon Smith:
    - An elaboration on the differences in the pumping projections used in the Initial Scenario vs. Scenario 1A and 1B.
    - An observation that the amount of simulated under-pumping by wells in the South Management Area is relatively small compared to total pumping.
    - A recommendation to perform Scenario 1C because the Scenarios modeled to date allowed Parties to pump above their existing water rights. If water rights transfers cause Undesirable Results, the transfers must be evaluated before approval.
    - A recommendation to review the criteria developed in other Basins for evaluating Undesirable Results related to impacts to shallow domestic wells.
- The Board has not approved a scope of work to update the HCM as part of the redetermination of the 2030 Sustainable Yield.

VII. Future TAC Meetings

The next TAC meeting will be scheduled for late September 2025. The proposed agenda items include:

- Addressing SMCs for Groundwater Quality and Land Subsidence

- Recommend a peer reviewer for the UCI GDE Study Report

VIII. Adjournment

Mr. Malone adjourned the meeting at 12:13 p.m.

Attachment 1. AAWARE Response to Comments

TAC/EWG Members:

The Watermaster Board is requesting your review and comment on a proposed scope of work, deliverable, and schedule for the independent technical peer review of the UCI GDE Study Report (see below).

Please edit/comment this document in Track Changes and return to Andy Malone by email attachment by **July 31, 2025**.

Thank you!

Proposed Scope-of-Work for Independent Peer Review of UCI GDE Study Report

1. TAC/EWG/TC review UCI GDE Study Report and prepare comments
2. Provide peer reviewer with UCI GDE Study Report, ~~and~~ TAC/EWG/TC comments, and relevant GIS data files of the heterogeneous mesquite tree areas.
3. Peer reviewer reviews UCI GDE Study Report, ~~and~~ TAC/EWG/TC comments, the 2019 Dudek GDE study report (Appendix D4 of the GMP) and relevant GIS data files and prepares a draft report. The reviewer should follow the definition of groundwater and soil moisture presented in the glossary of the UCI GDE Study Report, and reviewer should consider all sources of water that is important to the Mesquite Bosque.
4. Peer reviewer meets with TAC/EWG to present report findings
5. TAC/EWG prepare comments on draft report
6. Peer reviewer meets with Board to present report findings and TAC/EWG comments
7. Board submits comments on draft report to the TAC/EWG
8. Peer reviewer prepares final report for Board consideration

Proposed Deliverable

The peer reviewer will prepare a recommendation report to the Board that responds to the following questions based on its independent review of the UCI GDE Study Report, ~~and~~ all comments received from the TAC/EWG/TC, and inspection of relevant GIS data files:

- Does the UCI GDE Study Report ~~unequivocally prove~~ demonstrate to what extent if any that the Mesquite Bosque is ~~currently~~ dependent upon groundwater from the regional aquifer system? ~~If not, what additional information is necessary to make this conclusion?~~
- Does the UCI GDE Study Report ~~sufficiently~~ consider ~~and~~, analyze and quantify other sources of water that could be sustaining the Mesquite Bosque (e.g.,

precipitation, soil moisture, surface-water runoff/run-on, shallow "perched" groundwater, etc.)?

- Based on the available data/information (*e.g.,* Groundwater Management Plan, UCI GDE Study Report, and ~~regionally~~ related desert ecology science), do you agree or disagree with the conclusions and recommendations in the UCI GDE Study Report? Explain.
- In consideration of these questions, what methods and analyses~~data and conclusions~~ in the GMP and the UCI GDE Study Report constitute "best available science" to establish water use by Mesquite in arid environments like Borrego Springs~~that can be relied upon by the Watermaster to take action or make policy decisions~~?
    - How can/should the Watermaster use the data and conclusions in the UCI GDE Study Report that constitute "best available science"? For example, can the report be used to update the BVHM? If so, how?
    - Are there ways that the GDE Study Report *should not* be used by the Watermaster?
    - Should Watermaster use the Mesquite Bosque estimates of ET from the UCI GDE Study Report to update the calculations of sustainable yield?
- The primary requirement for a model to be included in OpenET is not based on science but only that it is used by a state or federal agency in the western US. What other models that you know of besides those in OpenET that would be better to establish water use by Mesquite Bosque in Borrego Springs?
- The UCI GDE Study Report shows a large disparity/variability in the water use estimates from the OpenET models. The main goal of OpenET is the estimation of evapotranspiration for agricultural relatively homogeneous agricultural areas. Is it appropriate to average all OpenET model results in the UCI GDE Study Report if some of the methods are not suitable for the estimation of water use by heterogeneous vegetation in Borrego Springs? For example, (1) SIMS depends on the assumption of an adequate water supply for Mesquite Bosque which is not the case in Borrego Springs; (2) PT-JPL method was developed for global applications without ground measurements under more humid conditions; (3) geeSEBAL aims to estimate evapotranspiration without using ground measurements; and (4) SSEBop is an empirical method not based on the physics of the energy balance. Which other methods are better suited for estimating water use by Mesquite Bosque in Borrego Springs?

- Many isotope samples were taken from mesquite, soil moisture, and groundwater but none of winter and summer precipitation. This means that the assumption is made that the Global Meteoric Water Line is a good representation of the Local Meteoric Water Line. Yet, for a specific arid location in southern California, it is necessary to establish a Local Meteoric Water Line. How will the lack of a Local Meteoric Water Line affect the conclusions of the UCI GDE Study Report that is based on the Global Meteoric Water Line?
- For the measurements of evapotranspiration UCI relies on four LI-COR LI-710 evapotranspiration sensors. How reliable will the ET measurements of these sensors be, given that the mesquite areas consist of complex non-horizontal terrain that are not suitable for this eddy covariance method, considering that no measurements are available of net radiation, soil heat flux, and sensible heat flux for the calculation of the energy balance closure error.
- The UCI GDE Study Report does not consider the possible effects of run-on to the mesquite areas. How would the inclusion of this possible water source affect the conclusions of the report?
- Are all NDVI values used in the UCI GDE Study Report calculated from surface reflectance or are some NDVI images based on digital values? Have atmospheric corrections be applied? Have different sensors been used that may cause biases?

Proposed Schedule

July 2025:

- Email to TAC/EWG requesting:
  - A list of candidates for an independent peer reviewer
  - Review the proposed scope of work and deliverable for the independent peer review
- EWG/TAC provides responses to TC by email on or before July 31

August 2025:

- TAC meeting (August 7):
  - Discuss scope and potential peer-review candidates
  - Assign TAC to review and comment on GDE Study Report
- Board meeting:
  - Review the proposed scope of work and deliverable for peer reviewer
  - Review list of peer review candidates

    - Select candidates to request proposals
- Staff solicits proposals for peer reviewer
- EWG meeting:
    - Update on status
    - Assign EWG to review and comment on GDE Study Report

September 2025:

- Receive proposals and send to TAC/EWG for review
- Joint TAC/EWG meeting to recommend peer reviewer

October 2025:

- TAC/EWG/TC to submit comments on GDE Study Report
- Board meeting:
    - Select peer reviewer
- Send notice to proceed and TAC/EWG/TC comments to peer reviewer

February 2026:

- Joint TAC/EWG meeting to receive draft report and presentation from peer reviewer
- TAC/EWG prepare comments on draft report

March 2026:

- Peer reviewer meets with Board to present report findings and TAC/EWG comments
- Board submits comments on draft report

April 2026:

- Board meeting:
    - Peer reviewer presents final report for Board consideration
    - Board directs staff on recommended actions to scope next steps

May 2026:

- Board meeting:
    - Staff presents scope of work and cost estimate for next steps

June 2026:

- Board meeting:
    - Board approves scope and budget for next steps in WY 2026 and 2027

July 2026 and thereafter:

- Staff proceed with next steps

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WORKING DRAFT TECHNICAL MEMORANDUM

To:

Technical Advisory Committee Members	Bob Wagner, PE (Principal Water Resources Engineer, Wagner & Bonsignore) – *representing AAWARE*
	Tom Watson, PG (Principal Geologist, Aquilogic) – *representing T2 Borrego*
	Jim Bennett (County of San Diego and Watermaster Board Member) – *representing County of San Diego*
	John Peterson, PG, CHG (retired) – *representing Roadrunner Golf and Country Club*
	Dr. Russell Detwiler (University of California, Irvine) – *representing the Borrego Springs Community*
Watermaster Staff	Andy Malone, PG (Principal Geologist, West Yost)
	Samantha Adams (Executive Director, West Yost)
	Lauren Salberg, PG (Staff Geologist, West Yost)

From: Trey Driscoll, PG, CHG, INTERA *(representing Borrego Water District)*

Kipp Vilker, PE, INTERA *(representing Borrego Water District)*

Date: August 15, 2025

Re: Borrego Springs Watermaster 2025.08.07 Technical Advisory Committee Meeting – Borrego Water District Comment Letter

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The following comments summarize remarks verbalized by Trey Driscoll during the Technical Advisory Committee (TAC) meeting on Thursday, August 7, 2025.

1.0 Documentation of Comments From TAC Meeting

- Discussion of hydrologic conceptual model (HCM) and pumping scenarios:
    - Mr. Driscoll stated that if the groundwater levels decline in 2040 and beyond as shown in the hydrographs, the volume of water pumped by the Borrego Water District (BWD) could be inhibited and may need to be reduced and therefore the continuous pumping rate assumed in the model may not be realistic when applying pumping rates out multiple decades. BWD will need to adaptively manage pumping in the future taking into account multiple factors such as well age and the constraints of the existing distribution system. Nevertheless, the Borrego Valley Hydrologic Model (BVHM) Simulation Results are sufficient to suggest that the BWD should plan for locating future

production wells in the northern portion of the Central Management Area (CMA) or North Management Area to optimize groundwater extractions. BWD should also evaluate the location of its Baseline Production Allocation (BPA) acquired from acquisitions as future groundwater extractions may need to be pumped from specific parcels or Management Areas to meet the requirements of the Judgment.

- Mr. Driscoll stated that while we have a decent general understanding of the transition in geology between the CMA and SMA—reduction in thickness of the upper and middle aquifers and increase in thickness of the lower aquifer combined uplift and folding of sediments—the Borrego Valley Hydrologic Model (BVHM) grid structure may be too coarse in portions of the Subbasin to sufficiently represent the granularity of the HCM. The goal and objectives of the BVHM Simulations should be to understand how future pumping may influence groundwater levels and how the distribution of pumping over the Subbasin can achieve stable groundwater levels. Nonetheless, adaptive management will need to be implemented to optimize pumping and stabilize groundwater levels based on measured data regardless of predictive model results.

- Mr. Driscoll emphasized that the BWD moving their pumping location is contingent on several factors including groundwater quality and whether major infrastructure changes would have to be made to the BWD distribution system. Planning and financing of a new well could take 5 years or more.

- Discussion of updating the sustainable management criteria:

  - Mr. Driscoll stated that for the Groundwater-Elevation Use Threshold (GWE-UT) a safety factor of 20 feet would not be sufficient for the BWD for municipal wells because 20 feet is needed for submersion of the pump to prevent cavitation. On new wells Mr. Driscoll recommends an additional safety factor of 20 feet. Older wells will have to be analyzed on a case-by-case basis, but a safety factor of less than 20 feet could be considered.

  - Mr. Driscoll stated that generally the BWD does not want to set pumps in screen intervals and the pump should be set higher than the screen interval or a pumping chamber (i.e., blank casing) should be set between screen intervals.

  - In relation to specific capacities, Mr. Driscoll stated that specific capacities generally get worse over time and wells need to be chemically or mechanically rehabilitated to maintain initial specific capacities. Mr. Driscoll recommends a safety factor be added for specific capacities to account for this.

  - Mr. Driscoll stated that the BWD would not consider one domestic well being impacted a "significant and unreasonable outcome."

    - If impacts to that well can be attributed to BWD pumping, BWD could offer to pay for mitigation of that well or implement other mitigation measures such as consolidating the wells to the BWD system.

- DWR made a comment that sufficient consideration was not given to domestic wells. Mr. Driscoll stated that they are going to have to address that comment, but one well being impacted would not qualify as a significant outcome. In other basins, a percentage of total domestic wells, such as 15%, would have to be impacted before a "significant and unreasonable" outcome was met.
- Mr. Driscoll stated that some domestic wells are old and shallow, and wells in this condition may not need to be protected by minimum thresholds, because these types of wells could be mitigated.
- Mr. Driscoll stated that most basins have documented the range of the screen intervals for domestic wells and then compared that to the Measurable Objective (MO) and Minimum Threshold (MT) and if most of the wells are protected, they typically have said that's OK. If there are a handful of wells that are potentially impacted, those may be flagged as an area that will have to be mitigated in the future.
    - The range of the domestic well screen interval should be documented and compared to the proposed MT and it should then be determined if the impact would be considered "significant and undesirable." Mr. Driscoll requested the well construction data and screen interval range for domestic wells in the Basin that were shown on the map figures in the TAC memorandum be distributed.

2.0 Updating Sustainable Management Criteria – Groundwater Levels and Storage

Comment 1. Page 4, Reasons for Updating the Sustainable Management Criteria. The logic for establishing minimum thresholds is clearly stated in the Groundwater Management Plan (GMP) and was vetted through a public stakeholder process. Section 3.3.1.1 Minimum Threshold Justification states as follows:

> *"The GSP regulations provide that the "minimum threshold for chronic lowering of groundwater levels shall be the groundwater level indicating a depletion of supply at a given location that may lead to undesirable results" (Title 23 CCR Section 354.28(c)(2)).*
>
> *Chronic lowering of groundwater levels in the Subbasin, as discussed in Section 3.2.1, Chronic Lowering of Groundwater Levels – Undesirable Results, cause significant and unreasonable declines if they are sufficient in magnitude to lower the rate of production of pre-existing groundwater wells below that necessary to meet the minimum required to support the overlying beneficial use(s), where alternative means of obtaining sufficient groundwater resources are not technically or financially feasible. In addition, GWEs will be managed under the minimum thresholds to ensure the several aquifers in the Subbasin are not depleted in a manner to cause*

significant and unreasonable impacts to other sustainability indicators. At the same time, the GSA is mindful that groundwater levels are anticipated to fall below 2015 levels before they are stabilized by the end of the GSP implementation period. Thus, the minimum thresholds have been designed with that circumstance in mind.

***Maintaining groundwater levels above saturated screen intervals for pre-existing municipal wells during an anticipated multi-year drought circumstance was selected as the minimum desired threshold for GWEs that would be protective of beneficial uses in the Subbasin**. This minimum threshold in most cases would also be protective of non-potable irrigation beneficial uses.*

Explained as follows, these minimum thresholds are also intended to protect against significant and unreasonable impacts to groundwater storage volumes and water quality. The development of the minimum thresholds for chronic lowering of groundwater levels included review of the hydrogeologic conceptual model, climate, current and historical groundwater conditions including groundwater level trends and groundwater quality, land subsidence data, interconnected surface water and the water budget as discussed in various sections of Chapter 2.

***The minimum thresholds for chronic lowering of groundwater levels are based principally on the documented screen intervals of key municipal water wells** and domestic/de minimis wells located in the Subbasin. Municipal wells are listed in Table 3-4 along with minimum thresholds corresponding to the top screened interval. Key indicator wells are also shown in Figure 3.3-1. Minimum thresholds are not considered applicable for BWD wells that require replacement, or are not relied upon for a significant source of supply. These wells are as follows: (1) Well ID1-10 well is planned for replacement in 2019; (2) the Wilcox well is an emergency back-up well with no power supply (diesel generator only); (3) ID1-16 will continue to be used but is planned to be replaced during the GSP implementation period; (4) ID4-18 is proposed for replacement in the future; and (5) ID1-8 is seldom used by BWD, and is not anticipated to continue to serve BWD customers over the entire SGMA implementation period. Although the aforementioned wells are not key municipal wells and thus do not have an accompanying minimum threshold, they are included in Table 3-4 for informational purposes. Table 3-4 also lists the year drilled, well depth, recent static depth to groundwater, surface elevation, GWE, aquifers screened, and management area for the BWD wells."*

Measurable objectives and interim milestones were established based on forward projections of the BVHM assuming that the historical climate from 1960 through 2010 repeats for the period 2020 through 2070 and a linear reduction in pumping from current levels to a target of 5,700 AFY between 2020 and 2040 was applied in the BVHM to forecast change in Subbasin groundwater storage and groundwater levels. This approach is neither illogical nor unrealistic. The discrepancy between derived minimum threshold values and measurable objectives is due primarily to spatial discrepancy in observed and simulated groundwater levels in parts of the Subbasin that need to be better reconciled. Table 3-5 Minimum Thresholds for Key Indicator Wells in Each Management Area were derived by estimating the decline in groundwater level at each representative monitoring point assuming depletion of groundwater storage at the minimum threshold. The updated version of BVHM and updated pumping projections should be used to verify the MT values and adjustment may be necessary where the fit between observed and simulated groundwater levels is poor. The MT values developed from the BVHM

should be compared to the protective threshold established for each BWD production well to ensure management criteria maintain supply at a given location.

Table 3-4
Borrego Water District Well Screened Intervals and Key Municipal Well Minimum Thresholds

Well	Year Drilled	Well Depth (feet)	Screen Intervals (feet; bgs)	Minimum Threshold / Top of Well Screen (feet; bgs)	Depth to Groundwater (feet; bgs)*	Surface Elevation / Groundwater Elevation (feet MSL)*	Aquifer	Management Area	Existing Minimum Threshold Exceedance
Improvement District (ID) No. 1									
ID1-8	1972	830	72–240 260–830	72	77.76	526.69 / 448.93	Middle/ Lower	SMA	N/A
ID1-10	1972	392	162–372	N/A	204.2	595.14 / 390.94	Middle	CMA	N/A
ID1-12	1984	580	248–568	248	146.14	533.2 / 387.06	Middle/ Lower	CMA	No
ID1-16	1989	550	160–540	N/A	231.77	620.15 / 388.38	Middle/ Lower	CMA	N/A
Wilcox	1981	502	252–502	N/A	309.78	702.13 / 392.35	Lower	CMA	N/A
Improvement District (ID) No. 4									
ID4-4	1979	802	470–500 532–570 586–786	470	290.88	598.11 / 307.23	Middle/ Lower	NMA	No
ID4-11	1995	770	450–750	450	223.2	613.72 / 390.52	Middle/ Lower	NMA/CMA	No
ID4-18	1982	570	240–300 310–385 395–405 425–440 460–475 490–560	N/A	315.31	690.96 / 375.65	Upper/ Middle	NMA	N/A

Table 3-4
Borrego Water District Well Screened Intervals and Key Municipal Well Minimum Thresholds

Well	Year Drilled	Well Depth (feet)	Screen Intervals (feet; bgs)	Minimum Threshold / Top of Well Screen (feet; bgs)	Depth to Groundwater (feet; bgs)*	Surface Elevation / Groundwater Elevation (feet MSL)*	Aquifer	Management Area	Existing Minimum Threshold Exceedance
Improvement District (ID) No. 5									
ID5-5	2000	700	400–700	400	182.1	576.8 / 394.7	Middle/ Lower	CMA	No

Notes: bgs = below ground surface; MSL = above mean sea level; SMA = South Management Area; N/A = not applicable; CMA = Central Management Area; NMA = North Management Area.
*Fall 2018 measured value, except ID4-11 and Wilcox, which are Spring 2018 measurements (due to active pumping or lack of access at time of Fall 2018 visit).

Table 3-5
Minimum Thresholds for Key Indicator Wells in Each Management Area

Management Area	Representative Monitoring Point Well ID	2018 Observed Groundwater Elevation (feet MSL)	Minimum Threshold Maximum allowable decline in groundwater levels as measured at the beginning of GSP Implementation through 2040
NMA	MW-1	377.91	-39
	ID4-3	381.4	-42
	SWID 010S006E09N001S	375.05	-46
	ID4-18	377.94	-44
CMA	ID4-1	393.88	-33
	Airport 2	407.51	-25
	ID1-16	389.75	-33
SMA	MW-5A	409.61	-14
	MW-5B	409.6	
	MW-3	454.38	-12
	Air Ranch	465.47	-9
	RH-1	468.13	-9

Notes: MSL = above mean sea level; GSP = Groundwater Sustainability Plan; NMA = North Management Area; CMA = Central Management Area; SMA = South Management Area.

Since the development of the GMP, the BWD has added two new production wells with the following construction details:

Well	Year Drilled	Well Depth (feet)	Screen Intervals (feet; bgs)	Minimum Threshold / Top of Well Screen (feet; bgs)	Depth to Groundwater (feet; btoc)/Date	Surface Elevation / Groundwater Elevation (feet MS)	Aquifer	Management Area	Existing Minimum Threshold Exceedance
Improvement District (ID) No.4									
ID4-9	2019	847	460-520 550-720 750-800	460-20-30-20 = **390***	216.15 8/19/2019	594.75 / 381.34	Middle/ Lower	NMA	No
Improvement District (ID) No.5									
ID5-15	2021	785	430-775	420-20-30-20 = **350***	211.7 7/12/2021	**	Middle/ Lower	CMA	No

Notes: bgs = below ground surface; btoc = below top pf casing; MSL = above mean sea level; SMA = South Management Area; CMA = Central Management Area; NMA = North Management Area

* Provides additional buffer for pump submergence (20 feet), pumping drawdown (30 feet) and safety factor (20 feet) maintain groundwater level a minimum of 70 feet above top of screen for key BWD production wells.

** Need to verify ground elevation at Well ID5-15 as we could not locate well survey