PROBLEMS WITH 2026 ANNUAL REPORT AND WATER-LEVEL MEASUREMENTS

Lynette Brooks, May 29, 2026 Los Osos Basin Management Committee Meeting

I have some suggestions to improve the annual report and future monitoring. I ask you to please read this document because it contains more detail than I can provide in the limited speaking time.

1. Be honest in the Executive Summary. Many people are never going to read beyond this.
    a. Seawater Intrusion Front: Don't make this sound as innocuous as it does currently. Copy some of the discussion from p. 61–64 up to here.
        i. "Seawater intrusion into Zone E is a significant threat to Basin sustainability and has been for decades."
        ii. "Chloride concentrations at LA15 have increased by 47% percent over the past five years."
        iii. "In Zone E, seawater intrusion is interpreted to be laterally pervasive in the Western Area, based on the elevated chloride concentrations in LA40 (Lupine Avenue), LA42 (Skyline Drive), historical data at LA15 (Palisades Avenue), and LA11 (Pasadena Drive). Although the intrusion front appeared to have stalled at LA11 in 2024, chloride concentrations increased in 2025. This overall trend indicates a worsening condition over time."
    b. Basin Yield Metric: Cleath-Harris and this board have known for years that the model-calculated sustainable yield from the steady-state model was wrong. Even though the report technically has to use the SY decided for 2025, it needs to put very strong caveats on this within the Executive Summary. Use phrases such as: "the transient model shows that pumping at 1,830 acre-ft/yr is not sustainable". If you discuss the new 2,020 acre-ft/yr "sustainable yield", stress that pumping would have to be optimized and is not currently set up that way.
    c. Chloride Metric: Make it clear that the metric is heavily influenced by one well (LA10) that has erratic chloride concentrations.
        i. Specify that the chloride metric is calculated in the spring and fall, but in 2025, water levels at several wells were lowest in July. The chloride metric at that time is not known, but could have been much higher.
    d. Water-Level Metric: Make it clear that July water levels were 2 to 6 feet lower than spring levels in several wells. Something different was happening in the aquifer than in previous years, even though 2025 precipitation was above average.
        i. Discuss if tidal corrections have been applied to the water levels that are influenced by the tide.
        ii. Change the method to not include well LA16. Keeping the well with the highest water level at an assumed level violates scientific standards. If the average was re-calculated without LA16, the metric would be 0.9 feet lower than in 2024, not 0.7 feet.
    e. Upper Aquifer Water-Level Profile: Discuss if tidal corrections have been made.

2. Tidal corrections must be made for all water levels used for the Water-Level Metric and the Upper Aquifer Water-Level Profile. The contour maps, especially for the Lower Aquifer, could also be misleading without tidal corrections.

a. Changes to water levels can range from more than 70 percent of the tide range in wells located a few hundred feet from a tidally-influenced water body to less than 5 percent in wells a mile or more from a tidally-influenced surface-water body (Czwartacki, 2017, p. 1).

b. During the days of water-level data collection in April 2025, tide at Port San Luis varied from a high of 5.9 ft to a low of -0.8 ft (https://tidesandcurrents.noaa.gov/noaatidepredictions.html?id=9412110&units=standard&bdate=20250401&edate=20250430&timezone=LST/LDT&clock=12hour&datum=MLLW&interval=hilo&action=dailychart). Water levels near the bay could change as much as 4.7 ft during this time. Similar tidal fluctuations existed in October 2025 and affected the fall water-level measurements.

c. A comparison of year-to-year changes and determining if the profile is above the "safety level" is completely meaningless unless tidal corrections are made. All previous data needs to be corrected so that year-to-year comparisons can be made.

3. Broderson Leach Field: The annual report has never been clear about what is happening here.

   a. Page 72 states: "Further assumptions for the Basin Yield Metric in 2025 are that the Broderson mound is at 50 percent development." Does that mean the steady-state model applied only 224 acre-ft/year?

   b. How much water does the transient model apply? The model report never specifies that.

   c. Explain how if 448 acre-ft/year are being sent to the leach field, where is 50% of the water going?

   d. Add explanation about what was expected, what has happened, why the two are different, and what this means for the Broderson leach field's ability to reduce saltwater intrusion.

   e. Add explanation that the Broderson leach field is currently recharging only 224 acre-ft/yr, and that septic tanks used to recharge about 1,300 acre-ft/yr. The Broderson leach field did not increase recharge as is implied.

   f. Add explanation that the original USGS model that indicated recharge at the Broderson site could minimize salt-water intrusion simulated 2,380 acre-ft of recharge at Broderson, almost 10x the amount simulated in the steady-state model.

4. Monitoring should be expanded to include continuous recording of either specific conductance or chloride concentration in several wells.

   a. This would show what the chloride concentration is during the months with more pumping and less rainfall. It is possible that the 250 mg/L line is moving inward during that time and violating the threshold limit for intrusion.

   b. This would provide data to determine preferential flowpaths for intrusion.

   c. This would provide more data for model refinement, especially when using it as a pumping optimization tool.

5. Water-level data should be presented like chloride data, with tables showing all the measurements. Right now, if the public wants to know what historic water levels are, they must dig the information out of every annual report. An Excel file on the LOBMC web page would be another option.

6. Present change maps, showing contours of water-level changes, preferably for different time periods, such as 1 year, 5 years, and 10 years. These present a much better description of changes than do contour maps of water levels every year, which are almost impossible to compare for changes. These would require tidal corrections for many of the wells.

7. Contours on water-level maps or change maps should not extrapolate where data are not available. Just because kriging will give you a number does mean it is real. This is apparent on figures 10 and 13 of last year's report along the north part of South Bay Boulevard and across Morro Bay Estuary. Also on figures 11 and 14 with contours across Morro Bay Estuary. You have no idea what water levels are like under the estuary.

8. Some of the graphs showing historic trends have very large vertical scales. This masks the annual changes in the data.

REFERENCES

Czwartacki, Brooke, 2017, Determining Tidal Corrections for Upper Floridan Aquifer Wells, Beaufort County, South Carolina: South Carolina Department of Natural Resources, Hydrology Section, 25 p.

Development Metric, while the latter method involves the Water Level Metric, The Chloride Metric, and the Nitrate Metric.

7.5.1 Basin Sustainable Yield

One of the components used to calculate the Basin Yield Metric is the Sustainable Yield. On October 13, 2025, the BMC considered and adopted a revised methodology for estimating Sustainable Yield, along with a Sustainable Yield for Year 2026. This was the second revision to the Sustainable Yield methodology since 2015. The Sustainable Yield for 2021 and prior years was estimated (using the steady-state Basin model) as the maximum amount of water that may be extracted from the Basin with no further inland advance of the front (i.e. a stationary front under steady-state conditions) and with none of the active wells producing water with chloride concentration in excess of 250 mg/L (ISJ Group, 2015). In 2021 the BMC added the condition that no further inland advance is allowed from threshold lines drawn parallel to the coast that represent the 2021 position of the seawater intrusion front in the Lower Aquifer. Finally, in October 2025, the BMC adopted a 50-year planning horizon over which the threshold lines condition would apply. This planning horizon was selected to align with SGMA's planning and implementation horizon, and was needed in order to use the Transient Model, which was completed in 2025 and replaces the steady-state Basin Model for informing and supporting Basin management actions.

In accordance with the Stipulated Judgement Section 4.2, the BMC used the updated methodology to adopt a Sustainable Yield value for 2026. Based on developed purveyor infrastructure capacity for year-end 2025, along with the updated methodology, a Sustainable Yield of 2,000 acre-feet was approved for Year 2026 by the BMC. For Year 2025 Basin Metric calculations, however, the Sustainable Yield remains unchanged from 2024 at 2,380 acre-feet.

Comments

New 11 items

@mention or reply

Nate Page

Suggest adding citation for the **Sustainable Yield 2026 Baseline Scenario Results for the Los Osos Basin**

Somewhere in this section.

May 29, 2026 at 11:21 AM

Nate Page

Actually, now I see that this and other useful references are included in Sec 10.2 **WRFP Study/Transient Groundwater Model.** Perhaps add clear reference to Sec 10.2 here explaining that the Transient Model development and its use to estimate the updated Basin Sustainable Yield are covered in more detail in that section.

May 29, 2026 at 12:00 PM

@mention or reply

From: Sherrill Gardner <gardnersherrill@gmail.com>
Sent: Sunday, May 31, 2026 4:44:00 PM
To: Daniel Heimel <danheimel@confluencees.com>
Subject: Comments on Draft 2025 AMR for Los Osos Basin

My comments are the following:
1. Executive Summary - need to bring more content forward from the main body of the report. A comment was made at the meeting on the 29th that some will only read the ES; whether due to time constraints or lack of specific technical expertise to be able to understand the details. Overall trends should be discussed for each of the parameters; not just the change from 2024 to 2025. This gives a false sense of accomplishment in most cases. Consider bringing some graphs forward into the ES. A picture is worth a 1000 words as they say. An ES should be able to stand on its own if written properly.
2. The fact that most parameters are either trending in the wrong direction or trending in a good direction but only over a short time period when the OVERALL trend is still off is lost in the weeds. Hard to see the forest for the trees. While this is good engineering work; management of the basin requires the writer and reader to understand the BIGGER picture and long-term trends.

3. I hope all comments are captured and responded to in a spreadsheet for public consumption. We need to feel like we are being heard and what the response is and WHY. Most environmental documents use this method. It promotes transparency which is sorely needed in this town.

Thank you for the opportunity to respond,
Sherrill Gardner
Los Osos resident for 7 years
Retired Water Resources Engineer
Retired PE; Civil, State of CA