

November 2, 2022

Via email

Members of the Board of Directors
Salinas Valley Basin Groundwater Sustainability Agency
P.O. Box 1350
Carmel Valley, CA 93924

Re: Well verification under Executive Order N-7-22 and Deep Aquifer wells

Dear Members of the Board:

I write on behalf of LandWatch Monterey County to urge the Board to (1) adopt a protocol for compliance with Executive Order N-7-22 that includes the required determination whether a well would “decrease the likelihood of achieving a sustainability goal” and (2) decline to certify additional Deep Aquifer Wells.

The GSA’s current proposal merely to determine whether an additional well “would not be inconsistent with any sustainable groundwater management program” is not sufficient. This approach ignores the separate Executive Order N-7-22 obligation to determine the well’s effect on achieving a sustainability goal.

Preventing any further decline in Deep Aquifer groundwater levels below the 2015 level is an adopted sustainability goal for the 180/400-Foot Aquifer Subbasin Groundwater Sustainability Plan.

The consistent evidence of the 2017, 2020, and 2022 technical reports by County and GSA hydrologists is that permitting additional wells in the Deep Aquifer is in fact causing groundwater level declines and that this practice is “unsustainable.” These reports’ consistent recommendation is not to permit additional Deep Aquifer wells.

Accordingly, the GSA cannot justify the finding required by Executive Order N-7-22 that permitting a Deep Aquifer well “would not decrease the likelihood of achieving a sustainability goal.” The GSA should not certify additional Deep Aquifer wells.

A. Executive Order N-7-22 requires the GSA to separately verify that an additional well “would not decrease the likelihood of achieving a sustainability goal.”

Paragraph 9(a) of Executive Order N-7-22 provides the County shall not

Approve a permit for a new groundwater well or for alteration of an existing well in a basin subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed to be located that groundwater extraction by the proposed well would not be inconsistent with any sustainable groundwater management program established in any applicable Groundwater Sustainability Plan adopted by that Groundwater Sustainability Agency **and** would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan. . .¹

The Executive Order applies to all wells other than small capacity wells and wells for public water systems. The Executive Order applies both to “new” wells and to “alteration of an existing well.” Nothing in the Order exempts so-called “replacement” wells.

The GSA'S proposed approach to its verification obligation under the Executive Order would only evaluate whether the proposed well

“will not be inconsistent” or “will be inconsistent” with the sustainability program in the GSP . . .²

This approach ignores the second, independent test in the Executive Order, i.e., whether the well would “decrease the likelihood of achieving a sustainability goal.”

There are circumstances in which an additional well may not be inconsistent with a "program." e.g., where there is no management program yet in place, but it may nonetheless "decrease the likelihood of achieving a sustainability goal." First, the GSA has apparently decided that no individual well would necessarily be inconsistent with any "sustainable groundwater management program" because such programs are likely to apply to many wells, not just to individual wells. Second, for some aquifers, e.g., the Deep Aquifers, the only "sustainable groundwater management program" in place is to investigate rather than to manage the aquifer. Nonetheless, the GSA may have established “sustainability goals” for those aquifers in the form of Sustainable Management Criteria, e.g., minimum groundwater levels.

Accordingly, the GSA must separately determine whether proposed wells decrease the likelihood of achieving the GSA’s sustainability goals. It is not sufficient that the GSA

¹ Executive Order N-7-22, available at <https://www.gov.ca.gov/wp-content/uploads/2022/03/March-2022-Drought-EO.pdf>.

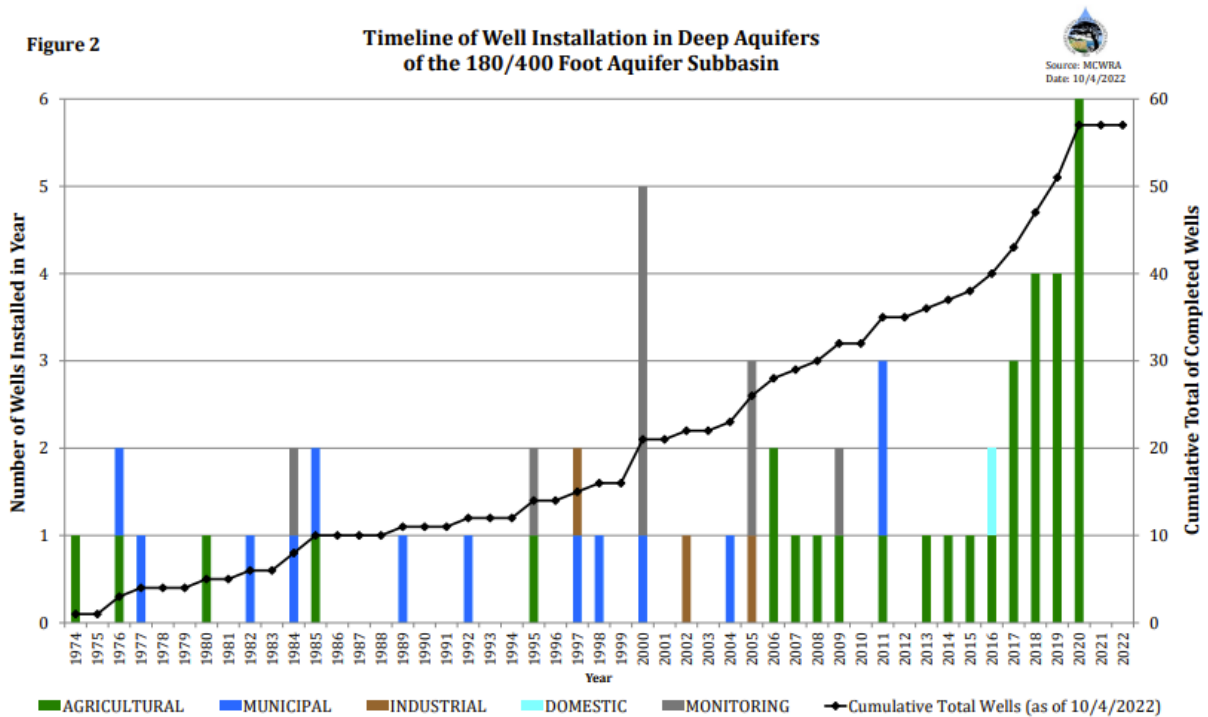
² SVBGSA Compliance with Governor’s Executive Order N-7-22, page 6, available at https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/1631121/EO_N-7-22.pdf

merely verify that an additional well “would not be inconsistent with any sustainable groundwater management program.”

B. Additional wells in the Deep Aquifers would decrease the likelihood of achieving a sustainability goal.

For the Deep Aquifers, any additional high capacity wells will in fact "decrease the likelihood of achieving a sustainability goal." Sustainability goals for the Deep Aquifer include maintaining groundwater levels at 1 foot above 2015 levels.³

Beginning in 2006, farmers resumed drilling Deep Aquifer wells in coastal areas, and did so at an accelerating pace. The number of wells doubled from 2006 to 2020. Now there are 57 wells.⁴



Deep Aquifers Groundwater Extraction History Since 1993*

| 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 2,094 | 1,992 | 2,086 | 2,137 | 2,170 | 1,906 | 2,056 | 2,302 | 2,355 | 2,399 | 2,366 | 2,442 | 2,858 | 2,005 | 1,738 | 2,084 | 2,102 | 1,903 | 1,803 | 2,044 | 1,989 | 3,784 | 3,746 | 3,788 | 4,116 | 4,605 | 4,620 | 4,264 | 4,236 |
| 1,507 | 2,620 | 2,302 | 1,990 | 2,536 | 1,648 | 96 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 384 | 696 | 982 | 927 | 1,397 | 1,097 | 2,031 | 2,010 | 4,194 | 4,834 | 4,749 | 5,331 | 6,996 | 8,820 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 17 | 379 | 305 | 943 | 336 | 399 | 371 | 348 | 333 | 370 | 380 | 523 | 620 | 617 | 569 | 567 | 291 | 136 | 64 | 42 |
| 3,561 | 4,612 | 4,388 | 4,127 | 4,725 | 3,554 | 2,151 | 2,307 | 2,368 | 2,416 | 2,745 | 2,747 | 2,701 | 2,341 | 2,189 | 2,759 | 3,146 | 3,218 | 3,100 | 3,821 | 3,608 | 6,436 | 6,373 | 8,551 | 9,516 | 9,645 | 10,347 | 11,344 | 13,103 |

* Notes: Table includes all reported extraction data for the forty-five (45) Deep Aquifer production wells that have reported extractions since inception of the Agency's GEMS program in 1993. Data are reported in acre-feet. Colors denote water use category (Municipal, Agricultural, Industrial).

³ 180/400 GSP, pp. 8-8, 8-11.

⁴ MCWRA, Well Permit Application Activities Update, Oct 4, 2022, available at <https://monterey.legistar.com/View.ashx?M=F&ID=11286415&GUID=0319145F-8762-45BA-9EBB-DB67F8719514>.

Based on this trend, in October 2017 the Monterey County Water Resource Agency (MCWRA) recommended a two-year moratorium on Deep Aquifer wells. MCWRA's technical report explained:

The recommendation to prohibit construction of new wells in the Area of Impact and, following the enhancement and expansion of CSIP, to cease groundwater pumping within the Pressure 400-Foot Aquifer in the Area of Impact, has the potential to result in increased pumping in the Deep Aquifers. History has shown that once well construction and/or pumping is prohibited in a given area, people are very likely to drill wells to the next deepest water-bearing zone which, in this case, would be the Deep Aquifers. The construction and pumping of more wells in the Deep Aquifers will induce further leakage from the impaired overlying aquifers (Pressure 180-Foot and Pressure 400-Foot Aquifers), potentially degrading the water quality of the Deep Aquifers.⁵

In May 2018, the County enacted a two-year moratorium on new Deep Aquifer wells, exempting municipal supply wells. However, despite MCWRA's recommendation to the contrary,⁶ the County exempted "replacement" wells in the Deep Aquifer, so it continued to permit additional high production agricultural wells.

MCWRA concluded in 2020 that the replacement well exception from the moratorium had actually encouraged additional Deep Aquifer wells:

The exemption for replacement wells has brought about an increase in the number of wells installed in the Deep Aquifers on an annual basis. Prior to approval of Ordinance No. 5302, typically one or two wells were installed in the Deep Aquifers in a given year. Prior to 2006, many years had no new Deep Aquifers wells being drilled. In comparison, four new wells were installed in the Deep Aquifers in 2018: two replacement wells and two wells that were permitted prior to approval of Ordinance No. 5302. In 2019, four replacement wells were drilled in the Deep Aquifers (Figure 14) and so far in 2020, one replacement well has been drilled in the Deep Aquifers.⁷

Thus, between 2018 and 2020, fourteen more high capacity agricultural replacement wells were installed in the Deep Aquifer. Agricultural pumping reported by MCWRA doubled after MCWRA's 2017 report: from 4,834 AFY in 2017 to 8,820 AFY in 2020.

⁵ MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin, Oct. 2017, p. 54,
<https://www.co.monterey.ca.us/home/showdocument?id=57396>.

⁶ Id., p. 60

⁷ MCWRA, Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin: 2020 Update, May 2020, p. 29,
<https://www.co.monterey.ca.us/home/showdocument?id=90578>.

In May 2020, MCWRA urged the County to extend the moratorium when it was set to expire, but this time to prohibit “replacement” wells. MCWRA’s 2020 report projected that total pumping from the Deep Aquifers would reach 12,747 AFY when the outstanding permits are acted on.⁸ In fact, 2021 pumping was even greater, 13,079 AFY.⁹ For comparison, the 2003 WRIME study found that Deep Aquifer pumping in excess of 4,000 AFY would induce seawater intrusion in the upper aquifers and risk contamination of the Deep Aquifer itself.¹⁰

MCWRA found in 2020 that **the additional Deep Aquifer wells are in fact causing a decrease in Deep Aquifer groundwater levels** and that they may also be contaminating the Deep Aquifer by inducing vertical migration of seawater-intruded groundwater from upper aquifers from wells that are screened in multiple aquifers:

Beginning around 2014, groundwater levels in the Deep Aquifers began declining and are presently at a deeper elevation than groundwater levels in the overlying 400-Foot Aquifer based on comparisons of multiple well sets at selected locations, meaning that there is a downward hydraulic gradient between the impaired 400-Foot Aquifer and the Deep Aquifers (Figure 16 and Figure 17). **This decrease in groundwater levels coincides with a noticeable increase in groundwater extractions from the Deep Aquifers** (Figure 16 and Figure 17). The potential for inducing additional leakage from overlying impaired aquifers is a legitimate concern documented by previous studies and is something that would be facilitated by the downward hydraulic gradient that has been observed between the 400-Foot Aquifer and Deep Aquifers. Seawater intrusion has not been observed in the Deep Aquifers. However, the Agency has documented the case of one well, screened in the Deep Aquifers, that is enabling vertical migration of impaired groundwater into the Deep Aquifers.¹¹

Despite the fact that additional Deep Aquifer wells are causing groundwater level declines and despite MCWRA’s 2020 recommendations to extend the moratorium on additional wells with no exemption for replacement wells, the County and the GSA allowed the moratorium on Deep Aquifer wells to lapse.

In August 2022, as part of the Deep Aquifer Study, GSA’s hydrologists, Montgomery & Associates, issued an interim report **finding that “current groundwater levels declines**

⁸ MCWRA 2020, p. 34.

⁹ MCWRA 2022.

¹⁰ WRIME, Deep Aquifer Investigative Study, May 2003, pp. 4-7, 4-11 to 4-12.

¹¹ MCWRA 2020, p. 31.

are unsustainable.”¹² The report finds that groundwater levels continue to decline in all regions of the Deep Aquifers.¹³

The 2022 Montgomery report provides “Interim Guidance Based on Scientific Data” that calls for reducing existing extractions and limiting new extractions.¹⁴ The express basis of these recommendations is the conclusion that “current extraction is unsustainable:”

The interim guidance for management stems from the analysis of existing data that shows current extraction is unsustainable. While the amount or location of pumping reductions recommended may be adjusted with new data during this Study, existing data shows pumping reductions and/or limitations for additional extraction based on location are needed to prevent further harm to the Deep Aquifers while the Study is underway.¹⁵

The GSA has taken no action to implement these interim recommendations. An obvious action would be to decline to certify additional high capacity agricultural wells in the Deep Aquifers because they would decrease the likelihood of achieving the sustainability goal for groundwater level declines.

C. Conclusion

In sum,

1. The GSA must evaluate **both** independent criteria from Executive Order N-7-22, i.e., consistency with adopted sustainability programs **and** whether a new well would decrease the likelihood of achieving a sustainability goal.
2. Preventing any further decline in groundwater levels below the 2015 level is an adopted sustainability goal for the 180/400-Foot Aquifer Subbasin.
3. The consistent evidence of the 2017, 2020, and 2022 technical reports by County and GSA hydrologists is that permitting additional wells in the Deep Aquifer is in fact causing groundwater level declines and that this practice is “unsustainable.”

¹² Montgomery & Associates, Preliminary Findings and Interim Guidance Based on Scientific Data, August 5, 2022, p. 18, https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/1502287/Preliminary_Investigation_Memo_2022-08-05.pdf.

¹³ Id., pp. 12-13.

¹⁴ Id., pp. 17-18.

¹⁵ Id., p. 17.

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Accordingly, the GSA cannot justify a finding as required by Executive Order N-7-22 that permitting an additional Deep Aquifer well “would not decrease the likelihood of achieving a sustainability goal.” The GSA should decline to certify Deep Aquifer wells.

Yours sincerely,

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John Farrow

JHF:hs

Attachment

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