



June 10, 2019

Michael McHatten, Chair
Salinas Valley Basin Groundwater Sustainability Agency
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Via email peterseng@svbgsa.org, camela@svbgsa.org

RE: Chapter 7: 180/400-Foot Aquifer Subbasin Groundwater Sustainability Plan

Dear Chair McHatten and Members of the Board of Directors:

Thank you for the opportunity to review Chapter 7: 180/400-Foot Aquifer Subbasin Groundwater Sustainability Plan. Implementation of an adequate Groundwater Sustainability Plan is essential to protect existing groundwater users, predominately farmers, and to ensure that the Salinas Valley remains a productive economic engine for the county and the state. Attaining sustainability may include fair share costs of capital projects and/or pumping reductions. The fair allocation of these potential expenses requires that groundwater pumping be reported accurately, both historically and in the future.

The evidence in the record does not support continued reliance on the Monterey County Water Resource Agency's (MCWRA) enforcement of the County's existing pumping reporting ordinance. Therefore, LandWatch strongly recommends that the Salinas Valley Groundwater Basin Groundwater Sustainability Agency adopt an ordinance that requires

- 1) Independently calibrated and monitored flowmeters on agricultural pumps throughout the Salinas Valley Groundwater Basin; and
- 2) Annual pumping reports that are independently validated for accuracy.

The ordinance should also include strict enforcement provisions that help assure full compliance. LandWatch's comments support these recommendations.

We reject the proposed use of the existing monitoring program, as described in Chapter 7, to monitor annual groundwater pumping because it will generate inaccurate results and potentially lead to unfair cost allocations.

Monterey County Ordinance No. 3717 (1993) Requires Flowmeters

Section 1.01.14 of Monterey County Ordinance No. 3717, adopted in 1993, requires installation of flowmeters meeting MCWRA specifications for all groundwater extraction facilities after February 15, 1994. As Monterey County Counsel summarizes:

Ordinance No. 3717 applies to all groundwater extraction facilities located within Zones 2, 2A and 2B with a discharge pipe having an inside diameter of at least 3 inches. The ordinance requires that the owner or operator of such facilities make annual reports to the Monterey County Water Resources Agency concerning quantities of water pumped from the facilities, as well as additional information concerning the distribution and use of the water. The ordinance requires that flowmeters be installed on all groundwater extraction facilities on or before November 1, 1993, in subareas P-1, P-2, and E-1, and on or before February 15, 1994, in the remaining areas of Zones 2, 2A and 2B, and limits the purposes for which monetary exactions may be imposed based upon water use measured by the meters. The ordinance provides a variance procedure and also establishes penalties for violations of the ordinance.

Section 1.01.18(C) requires that a MCWRA-recognized tester test and calibrate each flowmeter annually to ensure compliance with MCWRA specifications. The tester is required to submit its test report to MCWRA, including the flowmeter reading on the date of testing:

The owner of each water flowmeter shall have each such meter tested and calibrated annually by an Agency-recognized tester to ensure compliance with the applicable Agency specifications. Upon completion of the annual test, the tester will submit to the Agency a report of testing which will include the water flowmeter reading on the date of testing.

Section 1.01.24(B) provides that violation of the ordinance is a public nuisance, an implicit recognition that accurate reporting is critical to fair and effective groundwater management.

Ordinance No. 3717 Has Not Been Enforced

There is evidence in the record that MCWRA has not enforced some requirement of Ordinance 3717, specifically requirements for flowmeters. Moreover, there is no evidence that MCWRA has enforced other requirements. Consequently, previously collected groundwater pumping data are almost certainly inaccurate. Future data are likely to be inaccurate, too, as long as the County does not enforce the requirement for independently tested and calibrated flowmeters.

The 2015 MCWRA Groundwater Summary Extraction Report, an annual report of groundwater pumping, acknowledges that the data it presents are not in fact based on use of the required flowmeters:

The Groundwater Reporting Program provides well operators with a choice of three different reporting methods: Water Flowmeter, Electrical Meter, or Hour Meter(timer). The summary of groundwater extractions presented in this report is compiled from data generated by all three reporting methods. Ordinance 3717

requires annual pump efficiency tests and/or meter calibration of each well to ensure the accuracy of the data reported.¹

The 2015 MCWRA Groundwater Summary Extraction Report states that only 71% of reporting methods were based on flowmeters; that 28% of methods were based on electrical meters; and that 1% of methods were based on hour meters. The 2014 reporting methods were similar. Previous annual reports do not indicate the percentage of reporting based on each method, but they do acknowledge that reporting was based on electrical meters and hour meters as well as flowmeters.

There is no evidence in the record that MCWRA has enforced the Ordinance 3717 requirement for annual independent testing and calibration of flowmeters and for the reporting of annual flowmeter readings by approved third-party testing organizations. The 2015 MCWRA Groundwater Summary Extraction Report includes the following disclaimer:

While the Agency has made every effort to ensure the accuracy of the data presented in this report, it should be noted that the data are submitted by individual reporting parties. In addition, since so many factors can affect the extraction calibration, it is understood that no reporting method is 100 percent accurate. The Agency maintains strict quality assurance in the compilation, standardization, and entry of the data received. Changes to historical data may occur due to additional submittals after the due date or database upgrades. The Agency received Groundwater Extraction Reports from ninety-eight percent (98%) of the 1,901 wells in the Salinas Valley for the 2015 reporting year. Agricultural and Urban Water Conservation Plan submittals for 2016 were ninety percent (90%) and one hundred percent (100%), respectively.

The disclaimer references the MCWRA quality assurance in the “compilation, standardization, and entry of the data received,” but it does not assert that MCWRA has required compliance with the Ordinance 3717 section 1.01.18(C) requirement that each facility provide the results of the mandatory annual independent testing and calibration of flowmeters, including the flowmeter reading. If there were verified compliance with this requirement, MCWRA would not have to rely only on data “submitted by individual reporting parties.” MCWRA would be able to rely on data submitted by owners of pumping facilities and on the data submitted by its approved independent flowmeter testing agencies. Chapter 7 does not discuss the challenge of independent monitoring and verification of annual flowmeter calibration.

Not all of the owners of pumping facilities actually submit the reports required by Ordinance 3717. MCWRA reports annual percentage compliance in each of its annual Groundwater Summary Extraction Reports. Approximately 5% of known pumping facilities have not complied with reporting requirements for the 21 years from 1995

¹ Available at <https://www.co.monterey.ca.us/government/government-links/water-resources-agency/programs/groundwater-extractions-gems#wra>.

through 2015.² Chapter 7 does not discuss means of ensuring 100% compliance with reporting mandates.

It is not clear that MCWRA actually has an accurate record of the wells for which monitoring is required under Ordinance 3717. Chapter 7 acknowledges that an “accurate count of the number of municipal, agricultural, and domestic wells in the GSP area” is needed, but it proposes to defer the finalization of a database of existing and active wells until implementation of the plan. (p. 13.)

The proposed monitoring system for groundwater pumping in Chapter 7 effectively acknowledges that that Ordinance No. 3717 is not adequately enforced by characterizing the “accuracy and reliability of reported pumping rates” as a data gap. (p. 13.) Instead, of proposing means to enforce the existing reporting mandate in Ordinance 3717, Chapter 7 assumes that the mandate will not be enforced. Thus, Chapter 7 proposes to permit the use of crop data and crop duty multipliers for estimating unreported pumping. (p. 14.) This method should be employed only as a means of validating the flowmeter data that is reported, e.g., as required by ordinance 3717, not as a substitute for that reporting.³

Finally, according to MCWRA, due to staffing constraints at the agency, the 2016, 2017 and 2018 summary reports are pending and will be posted on the website once they are presented to the Board of Supervisors.

Proposed Monitoring in Chapter 7 for Groundwater Agricultural Pumping

Chapter 7 does not propose to require enforcement of the requirement for flowmeters. Rather, the Plan proposes that data on agricultural pumping of groundwater be collected in one of two ways:

Most agricultural pumpers comply with the existing Monterey County Ordinance 3717 that requires groundwater users to report total pumping rates annually to the MCWRA. Groundwater pumping wells with a discharge pipe less than 3 inches in diameter are exempt from this requirement. These lower production wells will be accounted for separately. SVBGSA will work with MCWRA to obtain these data through a coordinated reporting program such that wells owners can provide a single annual reporting to fulfill the requirements of the GSP and the existing County ordinance 3717. [excerpt from Chapter 7]

For agricultural users that do not report their pumping annually, pumping will be estimated using Monterey County crop data and crop duty estimates, times a multiplier. The crop duty and multipliers are a data gap as described in Section 7.3.1. [excerpt from Chapter 7]

² Data compiled from annual reports available at <https://www.co.monterey.ca.us/government/government-links/water-resources-agency/documents/groundwater-extraction-summaries#wra>.

³ It is inconsistent to require domestic water users, who constitute a small portion of total demand, to meter water use while not requiring all other users to do the same.

Clearly there are significant problems with both proposals. In the first instance, pumping data are self-reported and not independently verified. In the second, pumping data are estimated using a proxy and a multiplier, neither of which has been statistically determined or independently verified.

Electricity Consumption Inaccurately Estimates Water Volumes Pumped

Using electricity consumption to estimate pumping volumes is unreliable, although MCWRA has relied on this method historically to collect groundwater water volume data. A report prepared in May 2017 by the Irrigation Training and Research Center, California Polytechnic State University, addresses use of electricity as a method for estimating groundwater pumping.⁴ The paper includes the following findings:

1. Average assumptions of pump efficiency are very inaccurate when applied to individual wells.
2. Many well pumps use about the same energy use (kWh) per rate of volume pumped (gallons per minute or GPM) over a wide range of flows. Therefore, they do not have a good relationship between kWh and acre-feet pumped.
3. Well pump conditions change over time due to:
 - a. wear
 - b. changes in groundwater levels due to aquifer changes
 - c. changes in flow rate as the discharge flow rate demand changes
 - d. changes in flow rate as the discharge pressure requirements change

The SVBGSA should investigate whether use of this method materially affected the reliability of previously reported data. If so, it should restate historic and projected water budget data in Chapter 6 as appropriate. The SVBGSA should not rely on such data in the future.

Data Gap

Based on the foregoing information, there is uncertainty and a potentially serious data gap regarding groundwater pumping in the 180- and 400-foot aquifer subbasin. Chapter 7 ignores the following problems or potential problems with historic and future data collection:

- Failure to enforce the requirement to submit flowmeter-based pumping data and the use of less reliable means to estimate pumping
- Apparent failure to require that flowmeter data be independently calibrated and reported by approved testing organizations on an annual basis
- Failure of 5% of known wells to report at all
- Potential uncertainty as to the number and location of other wells
- Potential confusion if action plans are predicated on a water balance and hydrological model using inaccurate historic data while subsequent compliance benchmarks and fair share contributions are based on more accurate future water use data.

⁴ Available at <http://www.itre.org/papers/wellrecords.htm> [ITRC Paper No. P 17-001].

Non-compliance with reporting requirements may result in underreporting. If the cost of future water projects is allocated in proportion to reported pumping, underreporting by some users could impose a greater share of the costs on water users that accurately report their water use. Similarly, the burden of any future pumping reductions that might be required should be allocated on the basis of accurate historic pumping data.

Need to Update Chapter 7

To assure that pumping data are complete and verifiably accurate, Chapter 7 should be updated to address the following questions:

1. When will pumping data for the years 2016, 2017 and 2018 be made available? Will it be used to inform the Chapter 6 water balance data and the hydrologic model?
2. Has historic pumping data been systematically or materially misreported? If so, what action should be taken to correct the data and, if necessary, to re-assess the water balance data and hydrologic model?
3. How are current wells mapped? If they are not reliably mapped, how will unmapped wells be identified and pumping reported?
4. How will new wells be tracked?
5. How will the requirement to install flowmeters to and report pumping based on flowmeters be enforced?
6. How will flowmeters be tested and verified for accuracy?
7. How will the requirement for independent reporting of flowmeter readings be enforced?

Chapter 7 should acknowledge that SVBGSA does not need to rely on Ordinance 3717 and MCWRA's limited budget for enforcement. The SVBGSA has the independent statutory authority to mandate reporting and data collection methods and to use its fees to collect essential data.

Indeed, to fulfill its mandate under the Sustainable Groundwater Management Act, SVBGSA must exercise independent authority to require calibrated and monitored flowmeters on agricultural pumps throughout the Salinas Valley Groundwater Basin along with annual pumping reports that are independently validated for accuracy.

Sincerely,



Michael DeLapa
Executive Director