



June 30, 2015

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Sent via email to commentletters@waterboards.ca.gov

Re: Comment Letter –Model Criteria for Groundwater Monitoring

Dear Ms. Townsend:

The Groundwater Resources Association of California (GRA) has reviewed the June 23, 2015 revision to the Draft Model Criteria for Groundwater Monitoring in Areas of Oil and Gas Well Stimulation (Document). We applaud the State for making significant and appropriate revisions, including incorporating several recommendations made by GRA in our May 29, 2015 comment letter to the original April 29, 2015 draft Document. The revision is well organized and well written to spell out the requirements for Area-Specific and Regional Groundwater Monitoring and Designated Contractor Sampling and Testing. We believe the groundwater monitoring intent of SB4 has generally been met with this revised Document.

Although this revised Document is much improved over the earlier draft, GRA wants to make a few additional comments for the State's consideration before adoption by the Board on July 7, 2015:

- We recommend incorporating the other comments in our May 29th letter that were not included in the revised Document.
- Section 2.1 - The definition of "Protected Water" is for water with less than 10,000 mg/L TDS and outside an exempt aquifer. This is not necessarily consistent with some beneficial use designations made by the State Water Resources Control Board and Regional Water Quality Control Boards in some areas of the State. For example, the Central Coast Regional Water Quality Control Board designated all groundwater throughout the Central Coastal Basin, except the Soda Lake Sub-basin, as suitable for agricultural water supply, municipal

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and domestic water supply, and industrial use, including water with greater than 10,000 mg/L TDS. Also, as a practical matter, water with greater than 10,000 mg/L TDS can be, and in places is, desalinated to produce drinking water.

- We note that the protection of water supply is a key component of the groundwater monitoring, and sentry wells will be required between the stimulated well and any downgradient drinking water supply well within 1 mile of the stimulated zone. It will be critical, therefore, to know the construction details of any drinking water supply wells within the mile radius to properly design the sentry wells and any other monitoring wells.

However, in Section 2.1.2 on Groundwater Monitoring Plan Requirements, we do not see any requirements to provide subsurface information on the drinking water supply wells. We only see that their locations need to be provided on a plan-view map (Paragraphs 1f, 2d, and 3d) but there is no specific requirement for them on the cross-sections (Paragraphs 4 and 5). We recommend putting this requirement in these two sections, and also in the text of the plan (i.e. as part of Paragraphs 11 and 12).

- Section 2.1.2, Paragraph 1, should add the underlined: “A map of the oil field with a 0.5 mile buffer surrounding the oil field and any active, inactive, idle, or abandoned, oil and gas wells located inside and outside of the oil field boundary, that shows, at a minimum, the following:”
- Section 2.1.2, Paragraph 1e) and Paragraph 2c) should add the underlined: “Active, inactive, idle, or abandoned produced water ponds
- Section 2.1.2, Paragraph 1f) and Paragraph 3d) should add the underlined to be consistent with Paragraph 2d): “Active, inactive, idle, or abandoned water supply wells (public, private domestic, irrigation, and industrial)
- Section 2.1.2 Paragraphs 4 and 5 – For the cross-sections, the borehole data and well construction diagrams for all wells within 1,000 feet of the cross-section lines (not just the ones directly on the lines). This includes active, inactive, and abandoned water wells, monitoring wells, oil and gas wells, and UIC wells.
- Section 2.1.2, Paragraph 5h) and 5o) are identical. One should be deleted.
- Section 2.1.2 Paragraph 9b) and Page 15 Paragraph 2b) and Section 2.1.4 Paragraph 7b) should include mention of cement bond logs.
- Section 2.1.2 Paragraph 13 should also require information on the type of proppant to be used (sand or other material type and source) and the fluid (water or other including type, source, and chemical composition) in addition to chemical additives and tracers anticipated to be used in the well stimulation. In addition, the stimulation injection parameters such as pressures, volumes, durations,

etc. should be provided in the Groundwater Monitoring Plan to better describe the activities of the stimulation process to fully evaluate risk to groundwater.

- Section 3.1, Paragraph 1 should include a “governmental agency” to clarify that an independent third-party sampler could be an employee of a governmental or regulatory agency, such as federal, state, local, special district, Groundwater Sustainability Agency, etc.

GRA trusts that the information in this letter is useful to the State Water Board to finalize the draft Document before adoption by the Board on July 7. We look forward to the successful implementation of the new regulations, and are glad to offer any technical assistance or reviews from our experienced and professional GRA membership.

If you have any questions on this submittal, please feel free to contact me at (562) 275-4240.

Sincerely,

A handwritten signature in blue ink that reads "Ted Johnson". The signature is fluid and cursive, with the first name "Ted" and last name "Johnson" clearly legible.

Ted Johnson, PG, CHG
President
Groundwater Resources Association of California

Cc: GRA Board of Directors