

Date of Hearing: April 27, 2015

ASSEMBLY COMMITTEE ON NATURAL RESOURCES

Das Williams, Chair

AB 356 (Williams) – As Amended March 17, 2015

SUBJECT: Oil and gas: groundwater monitoring

SUMMARY: Requires, prior to submitting a proposal to exempt an aquifer to the U.S. Environmental Protection Agency (U.S. EPA), that the Division of Oil, Gas and Geothermal Resources (DOGGR) hold a public hearing and gain concurrence from the State Water Resources Control Board (SWRCB) on the proposal. Requires groundwater monitoring plans for underground injection projects (projects) as part of an application for approval of the project or for the annual review of the project.

EXISTING LAW:

- 1) Pursuant to the Federal Safe Drinking Water Act (SDWA):
 - a) Prohibits certain well activities that affect underground sources of drinking water unless those sources are located in an exempt aquifer.
 - b) Declares that the Underground Injection Control (UIC) program for class II wells in the State of California, except those on Indian lands, is administered by the DOGGR approved by U.S. EPA pursuant to SDWA section 1425.
 - c) Allows DOGGR to propose and the regional administrator of U.S. EPA to approve an exemption of an aquifer or its portion that meets the criteria in the definition of “underground source of drinking water” after considering its current and potential future use as drinking water.
- 2) Requires the state’s Oil and Gas Supervisor (Supervisor) to supervise the drilling, operation, maintenance, and abandonment of wells and the operation, maintenance, and removal or abandonment of tanks and facilities attendant to oil and gas production.
- 3) Authorizes the Supervisor to implement a monitoring program, designed to detect releases to the soil and water for aboveground oil production tanks and facilities.
- 4) Requires groundwater monitoring in the vicinity of a well subject to a well stimulation treatment.

THIS BILL:

- 1) Defines several terms related to the UIC program including “class II well,” “exempt aquifer,” and “UIC program.”
- 2) Authorizes the Supervisor of DOGGR to require a well operator to implement a monitoring program for underground oil production tanks and facilities and disposal and injection wells.
- 3) Requires, prior to submitting a proposal to exempt an aquifer to U.S. EPA, that DOGGR hold a public hearing and gain concurrence from the SWRCB on the proposal.
- 4) Authorizes SWRCB to concur with the proposal if the following conditions are met:
 - a) The proposed aquifer cannot now, or will not in the future, serve as a source of drinking water or for other beneficial uses.
 - b) Injection into the proposed aquifer will stay in the proposed area and will not impact the ability of nearby nonexempt aquifers to be a source of drinking water or for other beneficial uses.

- 5) Requires DOGGR to review annually all projects for compliance with applicable law.
- 6) Requires the operator of a project to submit to SWRCB or appropriate regional water quality control board (RWQCB) for review and concurrence a groundwater monitoring plan that provides the following information:
 - a) Information demonstrating that the aquifer into which the injection occurs or the proposed injection will occur is an exempt aquifer.
 - b) Information regarding the current water quality of the groundwater basin through which the well passes sufficient to characterize the quality of the aquifer.
 - c) Information regarding the current water quality of the injection zone sufficient to demonstrate that the injection zone is not suitable to be used as a source of drinking or irrigation water based on treatment technologies existing at the time of submission of the plan.
 - d) The identification of both public supply and domestic water wells located within one mile of the boundaries of the injection zone or evidence showing that there are no public supply or domestic water wells located within the one mile zone.
 - e) A demonstration that the proposed injection well is located in an area that is geologically suitable, including an appropriate confining and injection zone.
 - f) Chemical and physical analyses of, and data regarding, identities and concentrations of all constituents present in the injected fluid or gas.
 - g) Sites for monitoring wells that will allow for the detection of contamination or degradation associated with projects during and after the period of its active use.
 - h) Sites for monitoring wells that demonstrate that the injection fluid is confined to the intended injection zone or zones of injection.
 - i) A schedule for monitoring and reporting data that provides, at a minimum, groundwater quality data on a quarterly basis during the active life of the well and at least annually after the well has been closed and abandoned.
 - j) An emergency plan that will be implemented in the case of a well failure or other event that has the potential to degrade groundwater.
- 7) Exempts wells from the monitoring for degradation requirement if SWRCB or the appropriate RWQCB determines the well does not inject into, or pass through, an aquifer with a beneficial use and there are no public supply or domestic water wells located within one mile of the injection zone.
- 8) Authorizes SRWCB or appropriate RWQCB to revise monitoring plans to avoid duplication and assist with regional monitoring plans associated with oil and gas activities.
- 9) Authorizes SRWCB or appropriate RWQCB to authorize a well operator to rely on a regional monitoring plan instead of their own monitoring sites.
- 10) Authorizes, subject to appropriation by the Legislature, DOGGR's fee authority to be used to fund a public entity's costs associated with implementing this article.

FISCAL EFFECT: Unknown

COMMENTS:

- 1) **UIC Program.** In 1974, the Safe Drinking Water Act gave the U.S. EPA the authority and responsibility to control underground injection to protect underground drinking water sources. In 1982, a primacy agreement was signed that allowed DOGGR to implement the U.S. EPA's UIC program for oil and gas wells in California. It has recently been discovered that there were two versions of this agreement, one allowing exemptions for 11 aquifers with high water quality and another denying those exemptions and requiring all existing injection

wells into those aquifers be phased out over 18 months. The aquifers were non-hydrocarbon-producing and all had a total dissolved solids (TDS) concentration below 3,000 mg/l. The SDWA is supposed to protect underground sources of water with TDS concentrations below 10,000 mg/l. DOGGR's UIC permitting decisions have been based on the assumption that these exemptions were granted for the 11 aquifers in question.

A 2011 U.S. EPA audit of DOGGR's UIC program implementation concluded that DOGGR was misclassifying underground sources of drinking water and doing an insufficient job monitoring the UIC program. In June 2014, it was discovered that DOGGR was approving injection wells in nonexempt aquifers. This included injections into the 11 aquifers that were not properly exempted, but also included injections into aquifers that were never exempt. California Environmental Protection Agency's (CALEPA) review found that DOGGR's district offices were approving projects without review from DOGGR and were making errors identifying the injectable zone of exempt aquifers. This included misidentifying the borders and depth of the aquifer and allowing expansion of productive limits over time beyond boundaries established in the Primacy Application. Initially there were 2,553 injection wells operating in non-exempt aquifers; after a review, 76 wells were removed from that list. The wells represented both disposal wells and enhanced oil recovery wells. To date, the state has shut down 23 injection wells, because they were injecting into aquifers that could be suitable for drinking water. In addition, these wells could potentially have had an impact on nearby water supply wells. While no contamination of water supply wells has been found yet, it is clear that aquifers that could have been a source of underground drinking water have been contaminated with injection fluid.

- 2) **Aquifer exemptions.** Any aquifer less than 10,000 mg/l TDS must be exempted by U.S. EPA to be injected into. The state can decide which aquifers to propose to U.S. EPA. In response to U.S. EPA's audit and concerns over aquifers that were not properly exempted, DOGGR will now require SWRCB concurrence on any aquifer exemption proposal. In addition, the operator will be required to demonstrate that the aquifer cannot now, and will not in the future, serve as a source of drinking water or for other beneficial uses. AB 356 codifies this new procedure to ensure that aquifer exemptions will be thoroughly vetted by DOGGR and SWRCB with public input. As California deals with the fourth year of drought conditions, protecting groundwater has become more important than ever. Past actions by DOGGR harmed aquifers that could have been used for a beneficial use. Thorough vetting of aquifers will help prevent that from happening again.
- 3) **Annual reviews.** One of the U.S. EPA's audit's criticisms of California's UIC program was the lack of annual reviews to ensure compliance with laws and permit requirements. DOGGR had not been conducting annual reviews, but in 2012 committed to the U.S. EPA that it would conduct annual reviews for all injection projects. In spite of this commitment, most injection projects have not yet had an annual review. AB 356 would require annual reviews to address U.S. EPA concerns.
- 4) **Groundwater monitoring.** California's 515 alluvial (loose) groundwater basins and sub-basins provide close to 40% of the state's water supply in an average year. In dry or drought years, groundwater accounts for as much as 60% of the state's water supply. Many disadvantaged communities rely on groundwater for 100% of their water supply. There are approximately 42,000 oil and gas injection wells in California; however, those wells are grouped together as injection projects. According to DOGGR, there are 897 active injection

projects and 2,146 total projects in DOGGR's database. DOGGR estimates that these projects inject into 350 aquifers, but does not definitively know the number of aquifers being injected into. Injection projects can also be into sand or rock that are not aquifers. When wastewater and other fluids associated with the extraction of oil or gas are injected into an aquifer, they can change the chemistry of and contaminate that aquifer. In addition, there is concern that injection fluids may not stay in the aquifer they are injected into. Zonal isolation is important to protect other nearby aquifers. SB 4 (Pavley), Chapter 313, Statutes of 2013, requires groundwater monitoring for wells that have been stimulated. SWRCB is currently working on Draft Model Criteria to govern the groundwater monitoring plans required by SB 4. In the meantime, DOGGR interim well stimulation regulations require well operators to submit a groundwater monitoring plan as part of their well stimulation treatment notices. A well operator may alternatively request an exclusion from the requirement to submit a groundwater monitoring plan if the absence of protected water can be demonstrated. If protected water is shown to be absent, SWRCB or a RWQCB will issue a letter of written concurrence to the well operator. The written concurrence letter is to be submitted by the well operator in their well stimulation treatment notice. AB 356 will require injection projects to also have groundwater monitoring plans. Operators whose injection projects will inject into or pass through an aquifer with a beneficial use will be required to monitor for contamination, degradation, and confinement into the intended injection zone. Operators whose injection projects do not, and could not, inject or pass through an aquifer with a beneficial use will only be required to monitor for confinement into the intended injection zone. *The author and the committee may wish to consider amending the bill to clarify these provisions by focusing the groundwater monitoring plans to provide the most relevant information that is consistent with SB 4, create an end date for the monitoring requirement, reduce the number of monitoring wells needed, and allow operators to submit one plan with adjacent operators if they are injecting into the same aquifer.*

- 5) **Suggested amendments.** In addition to the amendments above, *the author and committee may wish to amend the bill to:*
- a) Replace the current definition of "exempt aquifer" with the definition used in title 40 Section 144.3 of the code of federal regulations.
 - b) Define "beneficial use" as having the same meaning as subdivision f of Section 13050 of the Water Code.
 - c) Require DOGGR to provide the information necessary for SWRCB to make the determinations required to concur with an aquifer exemption proposal.

6) **Previous and related legislation.**

AB 982 (Williams, 2013) required RWQCBs to approve a proposed groundwater monitoring plan prior to noticing the intent to begin any oil or gas drilling. The bill requires the notice to include the source of water used during any hydraulic fracturing operations. The bill was held in Assembly Appropriations committee.

SB 4 (Pavley), Chapter 313, Statutes of 2013, establishes a comprehensive regulatory program for oil and gas well stimulation treatments, which includes among other things, a study, the development of regulations, a permitting process, and public notification and disclosure.

SB 454 (Allen) prohibits DOGGR from submitting a proposal for an aquifer exemption to the U.S. EPA unless DOGGR and SWRCB concur in writing that the aquifer meets specified conditions. This bill is awaiting a hearing in the Senate Natural Resources and Water Committee on April 28.

SB 545 (Jackson, 2015) revises and updates DOGGR's authority and permitting practices and reforms the handling of confidential wells. This bill is awaiting a hearing in the Senate Natural Resources and Water Committee on April 28.

SB 248 (Pavley) requires DOGGR to review and update its regulations, data management practices, and enhance required reporting. This bill is awaiting a hearing in the Senate Appropriations Committee.

AB 1490 (Rendon) prohibits well stimulation, and in some cases, wastewater disposal in areas that are seismically active or have recently had an earthquake. This bill will also be heard by this committee on April 27.

AB 1501 (Rendon) requires air districts to establish an emission standard for methane from well stimulation treatment and other petroleum extraction facilities. This bill requires emission standards to include a permit requirement and consideration of the effect production facilities have on adjacent vulnerable populations. This bill requires the Air Resources Board or a local air district to install monitoring stations near any approved well stimulation site and other petroleum extraction facilities to monitor for 12 different chemicals. This bill will also be heard by this committee on April 27.

REGISTERED SUPPORT / OPPOSITION:

Support

Alliance of Nurses for Healthy Environments
 Association of California Water Agencies
 California Environmental Justice Alliance
 California League of Conservation Voters
 Center on Race, Poverty, and the Environment
 Citizens Coalition for a Safe Community
 Citizens for Responsible Oil and Gas
 Clean Water Action
 Coastal Environmental Rights Foundation
 Community Health Councils
 Earthworks
 East Bay Municipal Utility District
 Environmental Defense Center
 Environmental Justice Coalition for Water
 Environmental Working Group
 Foothill Conservancy
 Goleta Water District
 League of Women Voters of California
 Los Angeles Waterkeeper
 Los Padres Forest Watch

Natural Resource Defense Council
Physicians for Social Responsibility, San Francisco Bay Area Chapter
SanDiego350
Save the Sespe
Sierra Club
Southern Monterey County Rural Coalition
Ventura County Board of Supervisors
Wholly H20

Opposition

CalChamber
California Independent Petroleum Association
Independent Oil Producers Agency
Western States Petroleum Association

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