



DEPARTMENT OF CONSERVATION  
*Managing California's Working Lands*  
DIVISION OF OIL, GAS, & GEOTHERMAL RESOURCES



May 15, 2015

Mr. Michael Montgomery  
United States Environmental Protection Agency – Region IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Dear Mr. Montgomery:

As part of the approved plan to resolve compliance issues with California's program to regulate the injection of Class II fluids, the Division of Oil, Gas, and Geothermal Resources (Division) and the State Water Resources Control Board (State Water Board), on behalf of the State of California, have taken the following steps:

**1. Initiated emergency rulemaking to address injection into sub-10,000 milligrams per liter (mg/L) total dissolved solids (TDS), non-hydrocarbon producing zones.**

On April 2, 2015, the Department of Conservation issued public notice of its intent to adopt emergency regulations to codify the compliance deadlines discussed in previous correspondence between the US EPA and the State, and to establish minimum civil penalties for failure to comply with the compliance deadlines. These regulations were approved by California's Office of Administrative Law on April 20, 2015, and are now in effect.

Under the new regulation, injection into non-exempt, non-hydrocarbon aquifers containing less than 3,000 mg/L TDS must cease by October 15, 2015; injection into non-exempt, non-hydrocarbon-bearing aquifers containing 3,000 to 10,000 mg/L TDS must cease by February 15, 2017; and injection into the 11 specified aquifers must cease by December 31, 2016, absent determination by the US EPA that an aquifer meets the criteria for exemption. The Department is on schedule to initiate permanent rulemaking by June 1, 2015 as outlined in the approved plan. A copy of the regulations is enclosed herewith as Attachment A.

**2. Conducted further well evaluations.**

We are pleased to report that the Division and the State Water Board have completed their review of the Category 1 injection wells in accordance with EPA's letter dated March 9, 2015. Category 1 injection wells are those wells that were

permitted to inject Class II fluid for disposal purposes into non-exempt, non-hydrocarbon-bearing aquifers. The Division and the State Water Board also included in Category 1 those injection wells that were permitted to inject Class II fluid for disposal purposes into the 11 aquifers that have been historically treated as exempt.

The Division initially identified for EPA a total of 532 Category 1 injection wells, and are treating them in two groups, depending on the water in the zone of injection. The first group consists of 176 injection wells injecting into aquifers that are below a concentration of 3,000 mg/L TDS. (See table in Attachment B.) The second group consists of 356 injection wells injecting into aquifers that are above a concentration of 3,000 mg/L TDS. (These 356 wells, broken into three groups, are described in the tables at Attachments C, D and E.) All 532 of these injection wells have been further reviewed by the Division, and the Division has determined that 80 of the 532 injection wells do not meet the criteria for Category 1, as explained below.

*Disposition of the Group of 176 Category 1 Wells.* Of the 176 Category 1 injection wells that were initially identified to EPA as permitted to inject into aquifers that are at or below 3,000 mg/L TDS, the Division has determined that 21 did not meet the Category 1 criteria because they (a) were completed in an aquifer that has a TDS concentration above 10,000 mg/L so an exemption was not needed (1 injection well), (b) were never permitted (1 injection well), or (c) were completed in an aquifer that is exempt (19 injection wells).

The State Water Board has evaluated each of the remaining 155 injection wells in this group to determine whether the injection well has the potential to impact water supply wells. (The State Water Board staff considers an injection well that is injecting into an aquifer with a concentration at or below 3,000 mg/L TDS as having the potential to impact water supply wells if the injection zone is less than 1500 feet below ground surface, or the injection zone is within 500 feet vertically and one mile horizontally of the screened portion of any known existing water supply well.) State Water Board staff has determined that 53 of the 155 injection wells are potentially impacting water supply wells. Pursuant to our joint plan of action, the Division has obtained, through order or operator relinquishment, the shut-in of 23 wells. It is awaiting receipt of additional test data before making a determination as to whether to seek shut-in before the October 15, 2015 compliance schedule date. In addition, the applicable regional water quality control boards have ordered the operators of all 155 injection wells to submit information regarding the quality of the injected fluids, the quality of the aquifer, and the location of any nearby water supply wells.

*Disposition of the Group of 356 Category 1 Wells.* Of the 356 Category 1 injection wells that were initially identified to EPA as permitted to inject into aquifers that are above a concentration of 3,000 mg/L TDS, the Division determined that 59 did not

meet the Category 1 criteria because the injection well (a) was completed in an aquifer that has a TDS concentration above 10,000 mg/L, so an exemption was not needed (47 injection wells), (b) was never drilled or permitted for waste disposal (11 injection wells), or (c) was completed in an aquifer that is exempt (1 injection well).

The State Water Board has evaluated each of the remaining 297 injection wells to determine whether the injection zone is less than 1500 feet below ground surface, such that the portion of the aquifer into which the injection well is injecting might reasonably be expected to supply a public water system. State Water Board staff has determined that 207 of the 297 injection wells have injection zones that are less than 1500 feet below ground surface. Pursuant to our joint plan of action, the Division and the State Water Board will undertake a more in depth review to assess if further action is needed to protect potential drinking water sources ahead of the deadline of February 15, 2017. In addition, the applicable regional water quality control boards plan to order the operators of all 297 injection wells to submit information regarding the quality of the injected fluids, the quality of the aquifer, and the location of any nearby water supply wells.

**3. Revised Enclosure B of the State's February 6<sup>th</sup> letter to incorporate cyclic steam wells not associated to an approved project.**

In addition to the review of the Category 1 wells, the state has identified approximately 3,600 cyclic steam wells that had some injection reported in 2014, and that are shown in Division's databases as not being associated to a permitted injection project. These wells are described in the table in Attachment F.

These wells are producing oil wells for which there is steam injection of limited duration and volume, into zones laden with hydrocarbons. Additionally, some of the formations into which steam is injected have little or essentially no permeability and therefore would not qualify as aquifers. Therefore, most of these wells are very unlikely to pose a threat to potential water supply wells. As reflected in your March 9 letter, these wells will be reviewed and analyzed by July 31, 2015. The enclosed map gives an example of a typical layout of these non-associated wells. (See Attachment G.) They tend to be intermingled with wells in an existing project and likely reflect a deficiency in the proper recording of these wells as associated to a properly permitted project.

**4. Shut in wells and issued orders for further information.**

The Division has ordered shut in, or received operator permit relinquishments, on a total of 23 wells. (Attachment H.) The State Water Board has issued orders for additional water quality information ("13267 Orders") for 157 injection wells. (Attachment I.) As the well review process continues and test results are

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evaluated, the State will issue additional orders if a threat to water supply wells is determined.

We are committed to continue meeting the agreed upon schedule to bring the UIC program into compliance with the Safe Drinking Water Act, and we are also committed to revising the UIC program efficiently, with public safety as our first priority. Please let us know if you have any questions regarding the data attached with this letter.

Sincerely,



Steve Bohlen  
State Oil and Gas Supervisor  
Division of Oil, Gas and Geothermal  
Resources

Sincerely,



Jonathan Bishop  
Chief Deputy Director  
State Water Resources Control Board

#### Attachments

cc: Cliff Rechtschaffen, Senior Advisor, Governor's Office  
John Laird, Secretary, California Natural Resources Agency  
Matthew Rodriguez, Secretary, California Environmental Protection Agency