

Aquifer Exemption Review in California

In California, like many other oil producing regions, the vast majority of the fluid that comes out of production wells is brackish water comingled with oil and gas. Typical volumes have 97% water and only 3% oil and natural gas. The oil and natural gas are removed and sold and the produced water is reinjected back into the ground, usually back into the very formation from where it was produced, but cleaner than when it came out since the oil and gas have been removed.

In 2010, USEPA Region 9 directed the California Division of Oil, Gas and Geothermal Resources (DOGGR) to update the boundaries for underground aquifers used for the re-injection of produced water in more than 50 oil fields throughout California. The federal Safe Drinking Water Act requires any aquifer with less than 10,000 Total Dissolved Solids (TDS) water to be formally exempted by the USEPA in order for injection to be allowed, even in oil bearing aquifers. The original boundaries were adopted in the early 1980s and much more is now known about the geological boundaries of the underground aquifers. DOGGR had permitted injection wells outside of the original boundaries since the fluid was going into already exempted aquifers. USEPA told the state that they should have applied for expanded boundaries before permitting the wells.

All Aquifer Exemption (AE) applications are being completed using criteria established by the EPA, and, for several years now, the industry has been working with DOGGR, the State Water Board and the EPA to complete Aquifer Exemption applications for several oil fields/formations in California. At last count, there are over 40 applications now in the hands of these state agencies for review. State regulations adopted to complete these updates require each application go through a thorough review and approval by both DOGGR and the State Water Board before being forwarded to the EPA for final sign off. Specifically, each application must reach concurrence between DOGGR and State Water Board on confinement on the injected fluid, proper control of fluids, and each must show no impacts to potential sources of drinking water. This process also includes extensive public comment and hearings held in the area where the field is located. Individual operators have spent countless hours and significant resources in preparing each application.

To date, of the 37 applications submitted by the industry to the state, only 5 have been forwarded by the state to the USEPA and USEPA has approved 3 of them. The remaining AEs are expected to be forwarded to the USEPA in the next couple of months. The state adopted in state statute a February 15th, 2017 deadline which requires an Aquifer Exemption application have sign off by EPA in order to continue operating past February. Obviously, that deadline has passed. The state has said they will not enforce the deadline for most AE applications. However, that is likely to be challenged by environmental NGOs. This poses a huge problem for the industry and for California production. Production losses in the state would be over 105,000 barrels of oil per day if this injection is not allowed, all because of an artificial paperwork problem. These barrels would have to be tankered into California's refineries, increasing both gasoline prices and dependence on foreign oil.

Action item needed: To date, the USEPA has worked diligently to review the AE applications. While there is one application that is now over a year old, the others are either recent or have been approved. A review of Region 9's staff resources dedicated to this important process should be conducted and direction given regarding the importance of timely review of

applications. Also, the appointment of a Region 9 administrator (currently vacant) would provide oversight on this issue.