CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

July 22, 2016

Kenneth A. Harris Jr., State Oil & Gas Supervisor
Department of Conservation
Division of Oil, Gas & Geothermal Resources
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PRELIMINARY CONCURRENCE ON THE EXPANSION OF THE EXISTING AQUIFER EXEMPTION, TRANSITION ZONE, WESTERN AREA TEJON OIL FIELD, KERN COUNTY

Dear Mr. Harris:

State Water Resources Control Board staff, in consultation with Central Valley Regional Water Quality Control Board staff (collectively Water Boards staff) has reviewed the aquifer exemption proposal provided by the Division of Oil, Gas and Geothermal Resources (DOGGR) on March 28, 2016 for the expansion of the aquifer exemption for the Transition Zone in the Western Area Tejon Oil Field. Pending the public comment process, State Water Board staff preliminarily concurs with the exemption proposal as long as the conditions described below are satisfied for current and future underground injection control (UIC) projects in the portion of the aquifer at issue.

As required by US Environmental Protection Agency (US EPA) regulations (40 CFR §146.4) and State law (Public Resources Code (PRC) section 3131(a)(1)), the portion of the Transition Zone proposed for exemption does not currently serve as a source of drinking water. Consistent with 40 CFR §146.4(b), the portion of the aquifer at issue is hydrocarbon producing and is not reasonably expected to supply a public water system.

State law, pursuant to PRC section 3131(a) imposes requirements in addition to US EPA regulations. As per PRC section 3131(a)(2), the injected fluid is not expected to affect the quality of water that is, or may reasonably be, used for any beneficial use, as long as the conditions described below are satisfied for current and future UIC projects in the portion of the aquifer at issue.

As required by PRC section 3131(a)(3), and based on the information provided in the proposal, the injected fluid is expected to remain in the portion of the aquifer that would be exempted. The proposed lateral boundaries are determined by the presence of geologic features that either (1) have historically prevented the migration of fluids based on oil-saturated lithology separated from non-saturated lithology across faults, and (2) are unlikely to allow fluid migration beyond the flanks of the dome-shaped structure (i.e., oil traps). In addition, oil production operations have resulted in an inwardly-directed pressure gradient (i.e. engineered hydraulic pressure

control). The geologic features that represent the lateral containment boundaries include unnamed faults along the western and eastern boundaries, and the northern and southern flanks of the domed structure to a depth of 1690 feet below mean sea level. The geologic feature that overlies the portion of the aquifer considered for exemption (Transition Zone) and provides vertical containment is a laterally continuous fine-grained unit (i.e. cap rock) known as the 'Lower Chanac' that averages 235 feet thick.

No water supply wells were identified within the proposed area as being completed within the Transition Zone aquifer. Water supply wells identified within the proposed area were all completed within the upper 1,520 feet of the primary drinking water aquifer system. The Lower Chanac unit separates the overlying drinking water aquifer and the Transition Zone. An approximate 1,150 feet of vertical separation exists between the bottom of the deepest identified water supply well and the top of the Transition Zone within the proposed area.

Approval of future Class II UIC projects will involve a joint review by DOGGR and Water Boards staff. Water Boards staff will consider incorporating conditions into Class II injection project concurrence letters to provide assurances that the requirements of PRC section 3131(a) are met (i.e. that the injected fluid does not affect the quality of water of current or potential beneficial use and that the injected fluid remains in the portion aquifer proposed for exemption). Conditions include, but are not limited to, the following:

1) Collection of baseline groundwater sample(s) from wells completed in the injection reservoir prior to UIC project approval;
2) Requirement that injectate be of equal or better water quality than the baseline groundwater quality sample(s); and
3) Requirement to monitor the project area to confirm the presence of an inwardly-directed pressure gradient and that the injected fluid is not migrating out of the area of the proposed aquifer exemption prior to and during the project.

If you have any questions regarding this matter, please contact Mr. John Borkovich at (916) 341-5779 or John.Borkovich@waterboards.ca.gov.

Sincerely,

Jonathan Bishop
Chief Deputy Director

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