

State Water Resources Control Board

September 5, 2018

Kenneth A. Harris Jr., State Oil & Gas Supervisor
Department of Conservation
Division of Oil, Gas & Geothermal Resources
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FINAL CONCURRENCE ON THE PROPOSED AQUIFER EXEMPTION, TULARE FORMATION, NORTH BELTRIDGE OIL FIELD, KERN COUNTY

Dear Mr. Harris:

State Water Resources Control Board (State Water Board) staff, in consultation with Central Valley Regional Water Quality Control Board staff (collectively Water Boards staff), have reviewed the aquifer exemption proposal provided by the Division of Oil, Gas and Geothermal Resources (DOGGR) on November 7, 2016 for the expansion of the aquifer exemption for the Tulare Formation in the North Belridge Oil Field. Water Boards staff assessed whether the proposal meets the criteria set forth in California Public Resources Code (PRC) section (§) 3131 and § 146.4 of Title 40 of the Code of Federal Regulations (CFR).

Public Comment Process

On March 19, 2018, State Water Board staff preliminarily concurred with the proposal to expand the exemption of the Tulare Formation pending the State's public comment process. On May 18, 2018, DOGGR published notice of the exemption proposal and opened a public comment period. DOGGR and State Water Board staff held a joint public hearing to receive comments on the exemption proposal on June 19, 2018. The written comment period closed on June 19, 2018. DOGGR and State Water Board staff have reviewed and responded in writing to the comments received during the comment period and public hearing.

Concurrence with Limitation on Underground Injection Control (UIC) Projects

State Water Board staff concur with the proposal to expand the exemption of the Tulare Formation. In order to ensure that injected fluids remain in the proposed exempted area, the following limitation shall be applied to injection activities in the Tulare Formation:

- The volume of fluid injected in the Tulare Formation, including existing exempted areas, may not exceed the volume of fluid extracted as measured over a rolling five-year period. Operators with injection activities in the Tulare Formation will collectively provide

an annual report to the Water Boards and DOGGR on fluid balance data (comparing injection and extraction volumes) for the preceding five years. If injection or production wells are screened across the Tulare Formation and another formation(s), operators will specify the volume of fluid injected into and extracted from the Tulare Formation and provide the basis (e.g., data, calculations) for this determination.

In conjunction with the evaluation of current and future Class II UIC projects in the proposed exempted area, DOGGR and Water Boards staff will consider incorporating conditions, described below, into UIC project approvals.

State and Federal Exemption Criteria

As required by Public Resources Code (PRC) § 3131(a)(1) and 40 CFR § 146.4(a) the proposed exempted area does not currently serve as a source of drinking water. No water supply wells have been identified in the Tulare Formation within one mile of the proposed exempted area. The closest municipal water supply well is located approximately 9.6 miles to the southeast of the proposed exempted area.

Consistent with 40 CFR § 146.4(b)(1), the proposed exempted area will not in the future serve as a source of drinking water because it is currently hydrocarbon energy producing. In addition, as per PRC § 3131(a)(2), the injected fluids are not expected to affect the quality of water that is, or may reasonably be, used for any beneficial use because (1) the groundwater contained in the proposed exempted area is not expected to be put to beneficial use because it contains petroleum hydrocarbons and also contains constituents such as boron and total dissolved solids at concentrations that limit its suitability for agricultural, domestic, and other beneficial uses, and (2) the injected fluids are expected to remain in the proposed exempted area.

The requirement of PRC § 3131(a)(3) is also satisfied because a technical demonstration has been made that the injected fluids are expected to remain in the proposed exempted area due to a combination of geologic conditions and hydraulic controls. Lateral containment is provided by a production-induced inward pressure gradient. Vertical containment for Tulare Formation is provided by the low-permeability clay layers in the upper Tulare Formation, where present (e.g., eastern portion), operational controls, and the underlying low-permeability Etchegoin and Diatomite Formations.

Conditions on UIC Projects

Approval of Class II UIC projects involves a joint review by DOGGR and Water Boards staff. DOGGR and Water Boards staff will consider incorporating conditions into approvals of Class II injection projects in the proposed exempted area. Potential conditions include, but are not limited to, the following:

1. Monitoring to demonstrate an inward hydraulic gradient in the Tulare Formation; and
2. Groundwater monitoring to demonstrate that injected fluids remain in the exempted area (e.g., sentinel well monitoring). If a monitoring requirement is incorporated in a project approval, the operator must submit a plan to the Central Valley Regional Water Quality Control Board for consideration.

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

cc: Patrick Pulupa
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