
State Water Resources Control Board

February 4, 2019

Kenneth A. Harris Jr., State Oil & Gas Supervisor
Department of Conservation
Division of Oil, Gas & Geothermal Resources
801 K Street, MS 18-05
Sacramento, CA 95814-3530
ken.harris@conservation.ca.gov

FINAL CONCURRENCE ON THE PROPOSED AQUIFER EXEMPTION, TULARE FORMATION, SOUTH BELRIDGE 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 August 24, 2016 for the expansion of the aquifer exemption for the Tulare Formation in the South 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) and considered comments received during the public comment process.

Public Comment Process

On June 5, 2018, State Water Board staff preliminarily concurred with the portions of the exemption proposal pending the State's public comment process. On November 19, 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 December 19, 2018. The comment period closed on December 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 northwestern, southwestern, and southeastern oil bearing portions of the proposed exempted area (concurrence area, see attached map), with the limitation described below. At this time, State Water Board staff make no decision regarding

the northeastern, non-oil bearing portion of the proposed exempted area, labeled "Disposal Area" and "Buffer Zone."

In order to ensure that injected fluids remain in the concurrence 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 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 concurrence 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 concurrence area does not currently serve as a source of drinking water. Only oilfield-related water source wells have been identified within the concurrence area, which historically were used for oil production. No water supply wells have been identified in the Tulare Formation within one mile of the proposed exempted area boundary.

Consistent with 40 CFR § 146.4(b)(1), the concurrence area will not in the future serve as a source of drinking water because it is hydrocarbon 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 concurrence 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 concurrence 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 concurrence area due to a combination of geologic conditions and operational controls. Lateral containment is provided by a production-induced inward hydraulic gradient. Vertical containment is provided by the low-permeability Corcoran Clay Equivalent, which overlies the concurrence area, and the upper shale unit of the San Joaquin Formation, which underlies the concurrence area.

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. 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,

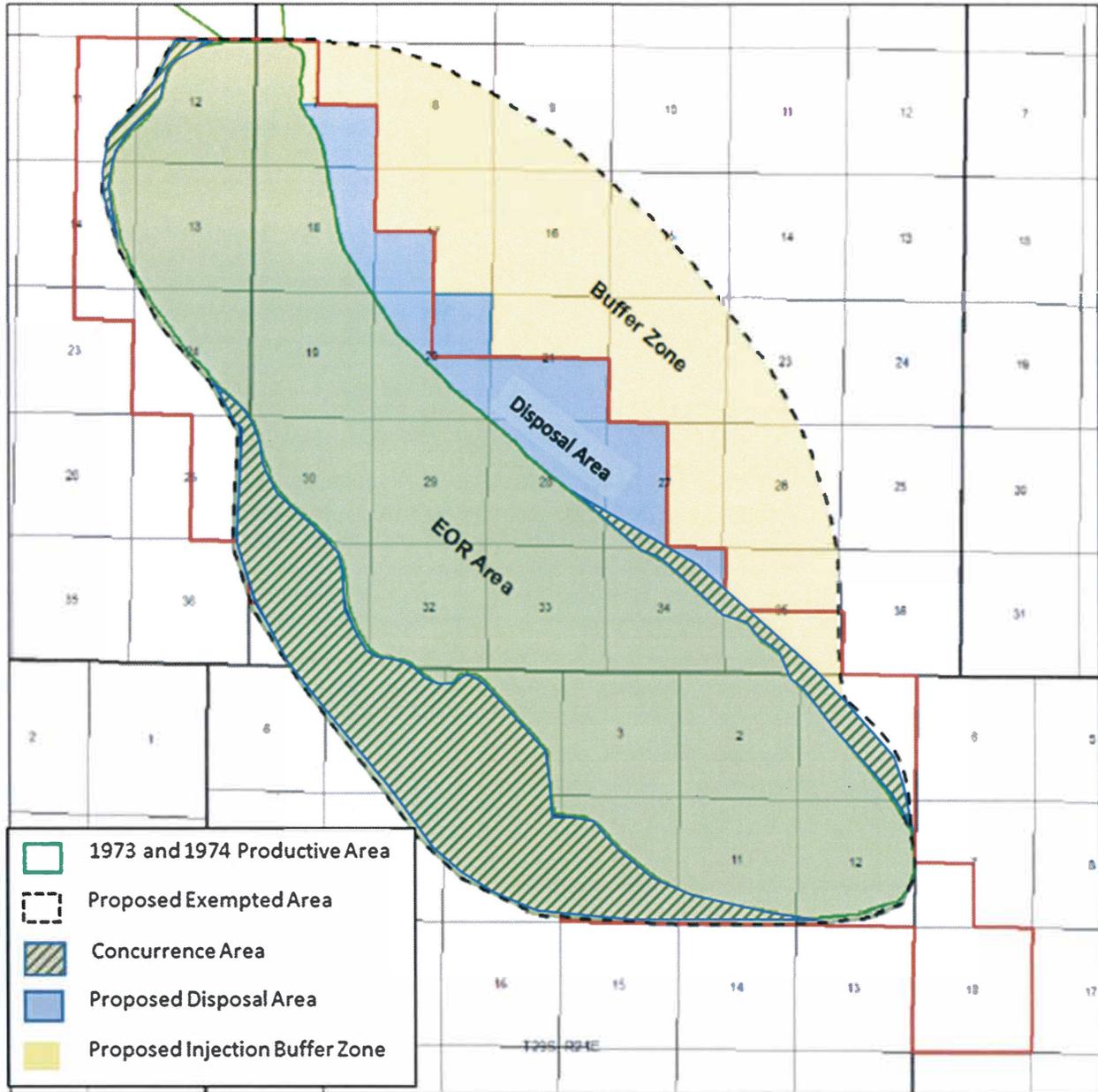


Jonathan Bishop
Chief Deputy Director

cc: Patrick Pulupa
Executive Officer
Central Valley Regional Water Quality Control Board
patrick.pulupa@waterboards.ca.gov

Cameron Campbell
Deputy, Inland District
Department of Conservation
Division of Oil, Gas & Geothermal Resources
cameron.campbell@conservation.ca.gov

Concurrence Area



Source: Concurrence Area map based upon Figure 4, *South Belridge Oil Field, Addendum to Tulare Formation Aquifer Exemption Application*, March 16, 2018