

State Water Resources Control Board

September 13, 2017

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 AQUIFER EXEMPTION FOR THE SAN ARDO AND MCCOOL RANCH OIL FIELDS, MONTEREY COUNTY

Dear Mr. Harris:

State Water Resources Control Board (State Water Board) staff, in consultation with Central Coast Regional Water Quality Control Board staff (collectively Water Boards staff), have reviewed the proposal provided by the Division of Oil, Gas and Geothermal Resources (DOGGR) on August 15, 2016 for the expansion of the aquifer exemptions of the Lombardi and Aurignac Sands of the Monterey Formation to the geologic limits of each unit in and surrounding the San Ardo and McCool Ranch Oil Fields. 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. Based on this review, State Water Board staff concur with the exemption proposal. In conjunction with the evaluation of current and future Class II underground injection control (UIC) projects in the proposed exempted areas, DOGGR and Water Boards staff will consider incorporating conditions, described below, into UIC project approvals.

Public Comment Process

On December 5, 2016, State Water Board staff preliminarily concurred with the exemption proposal pending the State's public comment process. On January 11, 2017, 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 February 9, 2017. The comment period closed on March 3, 2017. DOGGR and State Water Board staff have reviewed and responded in writing to the comments received during the comment period and public hearing.

State and Federal Exemption Criteria

As required by PRC § 3131(a)(1) and 40 CFR §146.4(a), the aquifers at issue do not currently serve as sources of drinking water. No water supply wells have been identified as completed in either the Lombardi or Aurignac Sands within one mile of the surface projections of the proposed exempted areas. All water supply wells identified in proximity to the proposed exempted areas were completed in shallower zones (within 650 feet of ground surface), in either the alluvium or the Paso Robles Formation. At minimum, approximately 800 feet of mudstone, silt, and clay separate the overlying drinking water aquifer from the top of the Lombardi Sands (the shallower aquifer proposed for exemption). There are approximately 1,600 feet of vertical separation between the bottom of the deepest identified water supply well and the top of the Lombardi Sands.

Consistent with 40 CFR §146.4(c), the proposed exempted areas contain groundwater with concentrations of total dissolved solids (TDS) between 3,000 and 10,000 milligrams per liter (mg/L), and are not reasonably expected to supply a public water system due to the presence of petroleum hydrocarbons and the availability of high quality groundwater in shallower geologic zones. 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 areas is not expected to be put to beneficial use (for the reasons described above) and (2) the injected fluids are expected to remain in the proposed exempted areas.

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 areas due to a combination of geologic features and operational controls.¹ The geologic features that provide lateral containment are (1) the granitic basement rock to the north and east of the field, and (2) the lithologic changes from higher permeable Lombardi and Aurignac Sands to lower permeable silt to the south and west. The geologic features that provide vertical containment are the less permeable Lombardi and Aurignac silts, as well as the Pancho Rico mudstone, that overly the Lombardi and Aurignac Sands in and surrounding the San Ardo and McCool Ranch Oil Fields. In addition, oil field operations have created a hydraulic gradient toward the center of the San Ardo Oil field, contributing to the containment of injected fluids in the proposed exempted areas of that field.

Conditions on UIC Projects

Approval of UIC projects involves a joint review by DOGGR and Water Boards staff. DOGGR and Water Boards staff will consider incorporating conditions into approvals of injection projects to verify that injected fluids remain in the proposed exempted areas. Potential conditions include, but are not limited to, requiring the implementation of a water quality and/or pressure monitoring program in and/or in proximity to the proposed exempted areas.

¹ The boundaries of the proposed aquifer exemption in the Lombardi and Aurignac Sands only approximate the lateral and vertical confining features. As a result, the proposed aquifer exemption boundaries shown on the map do not represent the precise location of the containment features. While the precise location of the containment features is not known, the proposed exempted areas are limited to the Lombardi and Aurignac Sands in and surrounding the San Ardo and McCool Ranch Oil Fields.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Jon Bishop", is written over the typed name and title.

Jonathan Bishop
Chief Deputy Director

cc: John M. Robertson
Executive Officer
Central Coast Regional Water Quality Control Board
john.robertson@waterboards.ca.gov

Pat Abel
District Deputy, Coastal District
Department of Conservation
Division of Oil, Gas & Geothermal Resources
pat.abel@conservation.ca.gov