
State Water Resources Control Board

September 15, 2014

Jared Blumenfeld
Regional Administrator
United States Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 95105-3901

RE: Underground Injection Control Drinking Water Source Evaluation

Dear Regional Administrator Blumenfeld:

In your July 17, 2014 letter to California Natural Resources Agency Secretary Laird and California Environmental Protection Agency Secretary Rodriguez, you requested, inter alia, an initial assessment within 60 days of whether any existing and potential sources of drinking water are at risk of contamination from improper Class II injection. Specifically, you requested:

- 1) The location of private and public water system wells that may be at risk due to permitted Class II injection activities,
- 2) A plan to ensure protection of public health from actual or potential exposure to drinking water affected by any injection wells, and
- 3) In coordination with the State Water Resources Control Board, Regional Water Quality Control Boards and California Department of Public Health, a plan to communicate this information to the public and to address subsequent questions and concerns.

The State Water Resources Control Board (State Water Board) and the regional water quality control boards (collectively, the Water Boards), are assisting the Department of Conservation, Division of Oil, Gas and Geothermal Resources, (DOGGR) with this assessment. This letter responds to the portion of your July 17, 2014 letter regarding the assessment.

State Water Board Assessment Procedure

DOGGR is in the process of reviewing its existing permitted Underground Injection Control (UIC) wells. As DOGGR forwards information regarding injection wells to the State Water Board, State Water Board staff is evaluating both the information regarding those injection wells provided by DOGGR, plus readily-available information regarding water supply wells in the vicinity of the injection wells, in order to conduct an initial assessment of potential risks to water supplies. The focus to date has been on waste water / gas disposal (WD) injection wells into aquifers that are at or below 3,000 parts per million (ppm) total dissolved solids (TDS) because these aquifers are most likely to be used for water supply. As

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explained by DOGGR, this is a relatively small portion of the injection wells injecting into non-exempt aquifers.

Specifically, State Water Board staff is locating water supply wells within a one-mile radius of the WD wells through information obtained from the GeoTracker GAMA information system, Department of Water Resources (DWR) well completion reports. Due to limitations inherent in these datasets, an “on the ground” survey and further evaluation of DWR well logs are necessary to fully understand field conditions. The Water Boards have limited resources for this work. State Water Board staff also coordinates with the State Water Board’s new Division of Drinking Water staff (formerly of the California Department of Public Health) to obtain any additional information related to public water systems in the vicinity of the injection wells. The WD wells and the associated water supply wells within one mile that are of concern are prioritized by State Water Board staff using the following criteria:

- First Priority: The top of the WD well injection zone is within 500 vertical feet of the depth of the water supply well.
- Second Priority: The WD well injection zone is shallower than 1,500 feet below ground surface and the water supply well is of unknown depth.
- Third Priority: The WD well injection zone is shallower than 1,500 feet below ground surface and the vertical distance between the injection zone and the total depth of the water supply well is greater than 500 vertical feet.

Where the assessment shows that there may be water supply wells at risk, the regional water quality control board issues an order under California Water Code section 13267 requiring the injection well operator to sample the groundwater in the vicinity of the injection well, submit all existing data regarding groundwater quality, and conduct a survey and map all water supply wells within one mile of the injection well (13267 Order). The 13267 Orders are in addition to orders issued by DOGGR to injection well operators to cease injecting.

Current Assessment Status and Locations of Water Supply Wells

To date, DOGGR has provided the State Water Board with information regarding WD injection wells that fall into two categories:

- Category 1: WD wells injecting into any non-exempt aquifers, including aquifers whose exemption status is uncertain, and
- Category 2: WD wells that are not specifically identified as part of a UIC “project.” These are not specifically identified as enhanced oil recovery (EOR) wells, are not part of a “project” and the native water quality in the formation into which injection occurs is not readily known and could be less than 3,000 ppm TDS.

Category 1 WD Injection Wells

DOGGR has provided the State Water Board with information for WD wells fitting the Category 1 description that are located in the east side of Kern County, within the Central Valley Regional Water Quality Control Board's (Central Valley Water Board's) jurisdiction. To date, no additional Category 1 WD wells located in other areas of the State have been provided to State Water Board staff. Initially, information for eleven WD wells injecting into clearly non-exempt aquifers was forwarded to State Water Board staff (referred to in the attached table as Category 1A). Staff identified 108 water supply wells located within a one-mile radius of seven of the injection wells. Water supply wells were not identified within a one-mile radius of four of the injection wells. The Central Valley Water Board issued 13267 Orders to the well operators for all eleven of these injection wells, but withdrew the 13267 Orders as to two of those injection wells once it was determined by DOGGR that they were injecting into exempt aquifers. The Central Valley Water Board also conducted sampling of eight water supply wells in the vicinity of some of these Category 1 injection wells. Nitrate, arsenic, and thallium exceeded the Maximum Contaminant Level (MCL) in four of the water samples. The Central Valley Water Board provided the results of these samples to the owners of the supply wells and notified the Kern County Environmental Health Department. TDS exceeded the secondary MCL (SMCL) in 3 samples collected, with maximum concentrations detected at 1,800 ppm.

Information for an additional 88 Category 1 WD wells injecting into aquifers with uncertain exemption status was subsequently forwarded by DOGGR to State Water Board staff (referred to in the attached table as Category 1B). Using the criteria above, State Water Board staff identified 19 injection wells of concern, and 37 water supply wells of potential concern located within one-mile from at least one of the 19 identified WD wells. The Central Valley Water Board issued 13267 Orders to the well operators for all 19 injection wells. The Central Valley Water Board also collected one sample from a water supply well. Laboratory results are still under review, however, initial review indicates that the MCL was not exceeded for any analyte, and TDS was detected at concentrations below its SMCL.

Category 2 WD Injection Wells

DOGGR provided the State Water Board with information for 125 WD wells fitting the Category 2 description. To date, no additional Category 2 WD wells have been forwarded to State Water Board staff. Of the 125 WD wells, 17 were identified by DOGGR as having either zone water TDS concentrations less than 3,000 ppm, or unknown zone water TDS concentrations. Nine of these WD injection wells are located in the Central Valley Water Board's jurisdiction, seven are located in the Central Coast Water Board's jurisdiction, and one is located in the Los Angeles Water Board's jurisdiction. State Water Board staff located 157 potential water supply wells located within one mile of 13 of the WD injection wells, but none of those water supply wells were identified as being within 500 feet vertically of the top of the injection zones for the WD injection wells. No water supply wells were identified within one mile of four of the WD injection wells. The Central Valley Water Board issued a 13267 Order for one WD injection well in Category 2, the "Hathaway" well. 13267 Orders are under consideration for the operators of five additional WD injection wells in Category 2, based on the criteria listed above.

The locations of the Category 1 and Category 2 WD injection wells described above are identified in the attached tables. The corresponding water supply wells within a one-mile radius of these injection wells are also identified in the attached tables.

Plan to Ensure Protection of Public Health

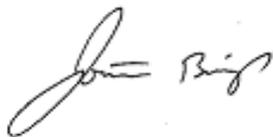
The State Water Board plans to continue with the above-described assessment procedures in coordination with DOGGR and the regional water quality control boards. If any additional water supply wells are identified as exceeding MCLs, the Water Boards will notify both the water supply well owners and the appropriate county health department. The Water Boards will also continue to collect and assess the information that is required to be submitted by injection well operators. In addition, the DOGGR will continue to issue orders to injection well operators to cease injections, where warranted.

Communications Plan

DOGGR is currently taking the lead on statewide communications related to the Underground Injection Control Program. DOGGR issued a press release on July 18, 2014, that provided information about DOGGR's orders to cease injecting for eleven category 1 WD injection wells, and also notified the public that it is undertaking a UIC Program Review. The Water Boards will continue to notify water supply well owners and county health departments if MCLs are exceeded. If new information suggests that there may be a substantial public health risk, the Water Boards, including the Division of Drinking Water, will advise the public and local public health officials about appropriate steps to take.

We look forward to continuing to work with your staff as we address these issues.

Sincerely,



Jonathan Bishop

Chief Deputy Director

Attachments (3)

cc:

John Laird, Secretary, California Natural Resources Agency

Matthew Rodriguez, Secretary, California Environmental Protection Agency

Mark Nechodom, Director, California Department of Conservation

Jason Marshall, Deputy Director, California Department of Conservation

Bruce Reeves, Chief Counsel, California Department of Conservation

Steven Bohlen, Oil and Gas Supervisor, Division of Oil, Gas, and Geothermal Resources

Pamela Creedon, Executive Officer, Central Valley Regional Water Quality Control Board

Clay Rodgers, Assistant Executive Officer, Central Valley Regional Water Quality Control Board

Mark Starr, Deputy Director, California Department of Public Health