



Lawrence Berkeley National Laboratory



Preston Jordan, PG, CEG, CHG  
Energy Geosciences Division  
Lawrence Berkeley National Laboratory  
1 Cyclotron Road MS 74R316C  
Berkeley, CA 94720  
510-418-9660  
pdjordan@lbl.gov

June 25, 2018

Jeanine Townsend, Clerk to the Board  
State Water Resources Control Board  
1001 I Street, 24<sup>th</sup> Floor  
Sacramento, CA 95814

Re: Comment Letter — 2018 Draft MOA Between State Water Board and DOGGR

To the Division of Oil, Gas and Geothermal Resources and the water boards-

The panel created pursuant to Senate Bill 83 of 2017 for the purpose of reviewing California's Class II underground injection control program has reviewed the draft Memorandum of Agreement (MOA) regarding this program between the Division of Oil, Gas, and Geothermal Resources ("the Division") and the water boards, which includes the State Water Resources Control Board and the regional water quality control boards. The panel appreciates that the Division and water boards are seeking to update this MOA.

The panel offers the comments below on the draft MOA. The panel trusts that consideration of these comments will lead to adjustments that improve the MOA. Thank you.

A handwritten signature in black ink, appearing to read "Preston Jordan".

Preston Jordan  
On behalf of the SB 83 panel

\*\*\*

### Written DOGGR comment response

The MOA does not appear to specify the nature and form of the Division's responses to water board comments. The panel requests that responses be captured in written form to provide a complete record of the engagement between the Division and the water boards on the topics covered under the MOA.

### Aquifer exemption modification and rescission process

Lawrence Berkeley National Laboratory

Section IV.A.6 states that the Division and the Water Boards “may consult with the other regarding potential modification or rescission of the [aquifer] exemption.” The panel requests the MOA provide additional explanation of the processes regarding and legal authorities supporting modification or rescission of an aquifer exemption.

### **Ready public access to aquifer exemption and UIC permit application and review tracking and documents**

Section IV.B.4 states “a centralized system for tracking progress on review of UIC project applications and UIC project reviews. The system shall be accessible to and duly maintained by the Division, the State Water Board, and the regional water boards.” The panel suggests providing the public access to this system so that it can be apprised of the UIC project permit applications and their processing. The panel further suggests that access to documents generated by both agencies in the course of processing such applications be provided through this system.

A similar system should also be specified for aquifer exemption applications. It appears all these applications and documents regarding their processing are posted on DOGGR’s site as a matter of practice. Consequently meeting this suggestion by the panel may be only a matter of recognizing current practice in the MOA.

Access to the tracking system and documents should be provided through the Division’s UIC web page.

### **GSA notification**

The groundwater sustainability agency (GSA) or agencies covering the area where an aquifer exemption or UIC project are proposed, or a UIC project review is being conducted, should be notified of those occurrences as GSAs have substantial responsibility for groundwater and will develop substantial expertise on each of their areas.

### **Delete “Class II fluid”**

The draft MOA uses the term “Class II fluid” in several locations. The panel is not aware this term is defined in statute or regulation and consequently recommends deleting all instances of this term.

In particular, the title of Section V is “Responsibilities and requirements regarding discharges of Class II fluids to land.” A variety of fluids can be injected via a Class II well. If these are taken as defining “Class II fluids,” it is likely discharge to land could be permitted for only a subset of such fluids. Consequently at a minimum, the panel recommends not using the term “Class II fluid” in reference to fluids discharged to land.

### **Clarify whether or not ROWDs are required for Class II injection**

It is not clear from the context of the MOA whether a report of waste discharge (ROWD) is required for Class II injection or only for surface disposal. Because the MOA is a public document it would be helpful if it explicitly stated what activities involved in oil and gas production activities discussed in this MOA do or do not require a ROWD.

### **Project type**

Attachment 2 provides a free field for filling in the UIC project type. The panel suggests instead providing a multiple choice list in order to constrain the vocabulary used to define project type. The last option of the list should be “other” with a free field to allow applicants to write in a project type other than the standard types included in the list.

## **Injectate characterization**

Attachment 2 requires a characterization of injectate fluid quality. For instance IP(8) requires “source and analysis of the injection fluid.” The use of the singular indicates that one analysis of injectate could be considered sufficient. Injectate for a project usually comes from multiple sources, such as multiple producing wells in the case of disposal. Water quality from these sources varies. The proportions of water from the various sources can change, such as when a source well is shut in for a variety of reasons and durations. Consequently characterization of the range of reasonably possible injectate quality for the proposed duration of the injection project should be provided rather than single concentration values per constituent. For instance, the mean and standard deviation or the median and 95% confidence interval for each constituent concentration required to be characterized, or at a minimum each constituent that is most representative of a constituent class.

## **USDW identification on type log**

Note 3 of Attachment 2 should require identification of the base of underground sources of drinking water (USDW) on the type log. This identification should be based on presentation in the project application of the method and data used to determine the base of USDW.

Perhaps the intention is to update Note 3 with a requirement to identify the base of USDW if this requirement is promulgated via adoption of the proposed UIC rules. Whether or not this is the case, the panel suggests including a requirement to identify the base of USDW in Note 3 of Attachment 2 now. In this regard, other new data requirements included in the draft UIC rules should be considered for inclusion in Attachment 2 now.

## **Water well construction**

Note 8 of Attachment 2 requires “top screen, and bottom screen” of water wells included in the survey. The data regarding the top screen and bottom screen to be included in the survey is not specified. The context suggests the depths. Changing this requirement to “depths of all screens” would be clearer in terms of the type of data required, and appropriately more comprehensive. Appropriately because the position and length of all screens in a water well is germane to the risk of water quality change resulting from advection of injectate or formation fluids resulting from injection.

The panel also suggests requiring the applicant to provide the depth of annular seals in water wells included in the survey. The position of these seals is also germane to the risk of water quality change due to an injection project.