Aquifer Exemptions

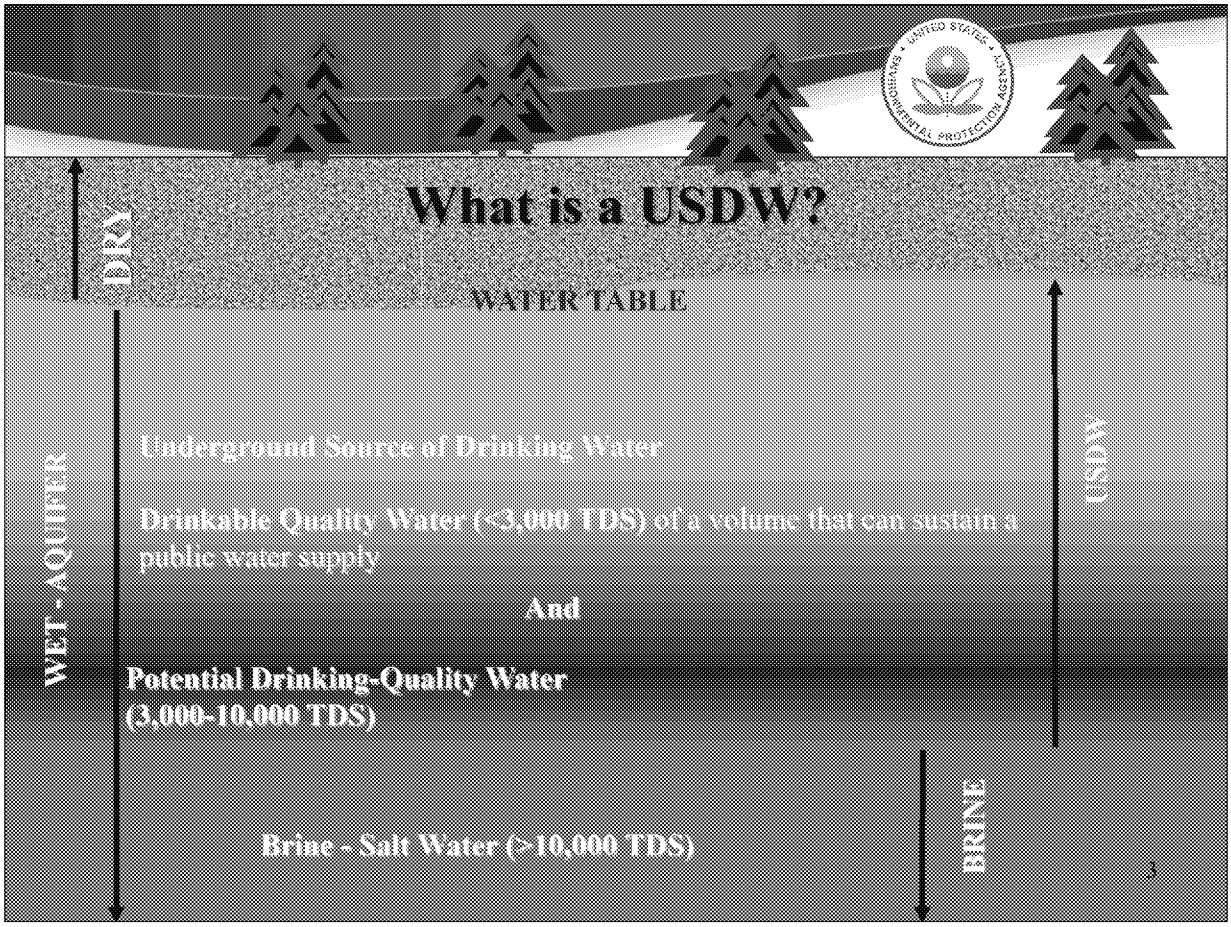
David Albright
Drinking Water Protection Section
US EPA Region 9
August 23, 2018

Outline

- Background on the Safe Drinking Water Act (SDWA) and the Underground Injection Control (UIC) Program
  - Definition of Underground Source of Drinking Water (USDW)
  - UIC Class II Wells
- Background on Aquifer Exemptions
- Aquifer Exemption Process in California
- Aquifer Exemption Requests in Congressman Carbajal's District
- Arroyo Grande Aquifer Exemption Request
- Next Steps

SDWA & UIC Program

- The Safe Drinking Water Act (SDWA, 1974) is the main federal law that ensures the quality of Americans' drinking water.
- The Underground Injection Control (UIC) Program is responsible for regulating the construction, operation, permitting and closure of injection wells that place fluids underground for storage or disposal.
- The SDWA and UIC Program are designed to prevent endangerment of underground drinking water sources (USDWs).

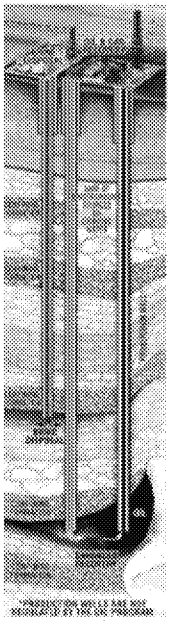


ClassVIntro 2011.ppt

Class II Wells

- Class II wells inject fluids associated with oil & natural gas production. Most of the injected fluid is salt water (brine), which is brought to the surface in the process of extracting oil & gas. In addition, brine & other fluids are injected to improve oil & gas production.
- There are three types of Class II Wells: enhanced oil recovery (EOR) wells, disposal wells, and hydrocarbon storage wells.
- Class II wells protect drinking water resources by injecting the brine deep underground.
- Class II are permitted by the Division of Oil, Gas, and Geothermal Resources (DOGGR) in CA because the State has primacy for the UIC program.

Class II Wells



Aquifer Exemptions

- An aquifer exemption (AE) is an action by EPA to remove an aquifer or a portion of an aquifer from protection as an USDW under the SDWA.
- Federal UIC regulations authorize EPA to exempt aquifers that do not currently serve as a source of drinking water and will not serve as a source of drinking water in the future.
- AEs have been primarily used to allow mineral, hydrocarbon or geothermal energy production.

Criteria for Exemptions (40 CFR 146.4)

(a) It does not currently serve as a source of drinking water; and

(b) *It cannot now and will not in the future serve as a source of drinking water* because:

(1) It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible;

(2) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

(3) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

(4) It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or

(c) *The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.*

Aquifer Exemption Process in CA

- UIC permit applicants that seek an AE in order to conduct injection activities delineate the proposed exempted area and submit an application, including supporting data, to the State of California.

- The State reviews the application and, if the information submitted supports a determination that the proposed exemption meets federal and state regulatory criteria, proposes to exempt the aquifer, provides for public participation, and submits a request for approval of the exemption to EPA.

Aquifer Exemption Process in CA (cont'd)

- DOGGR's public process includes: a 30-day public comment period, a public meeting with an overview of the proposed exemption, comments taken from the public via court reporter, and development of a Response to Comments document.
- Upon receipt of an AE request from the State, EPA compiles and reviews the information used to support the AE request and may seek additional information from the State and/or other sources.
- EPA documents its final determination to approve or deny the AE request in a Record of Decision that explains the factual, technical, and legal bases for the determination.

Aquifer Exemption Criteria do not include evaluation of the request and:

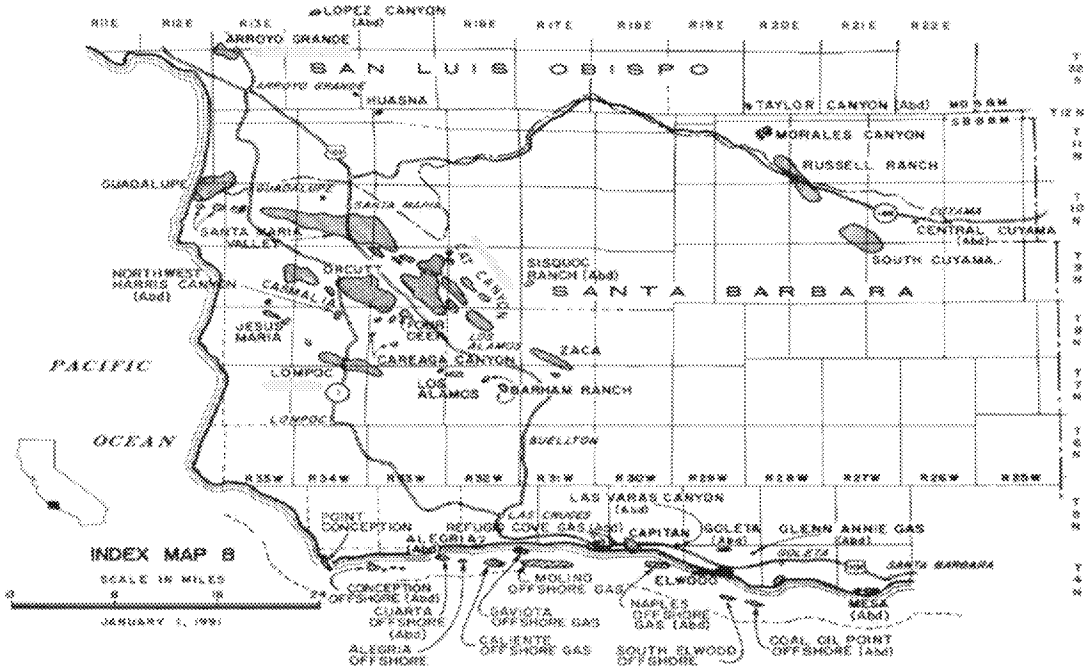
- **Climate change considerations**
- **Drought**
- **Seismic activity**
- **Impacts of expanded production activities – dust, noise, etc.**
- **Agricultural uses**

Anticipated Aquifer Exemption Requests in Congressman Carbajal's District

- Arroyo Grande Oil Field AE Request: EPA received the revised request on June 8, 2018.
- Cat Canyon Oil Field AE Request: The State is reviewing the request.
- Lompoc Oil Field AE Request: The State is reviewing the request.

[The locations of the 3 oil fields are shown on the next slide.]

Location Map for Arroyo Grande, Cat Canyon, and Lompoc Oil Fields



12

2/7/2023

Arroyo Grande Aquifer Exemption Request

- DOGGR conducted public comment process in late 2015; received ~100 comments.
- DOGGR submitted the AE request to EPA in February 2016; we identified concerns to DOGGR by letter in April 2016.
- DOGGR's revised request/supplemental data released for public comment in December 2017; received ~50 comments.
- DOGGR submitted revised AE request to EPA on June 8, 2018.
- EPA is reviewing the revised AE request and a substantial number of individual comments submitted directly to EPA.
- After considering the state's submittal and all input, EPA will make a determination to approve or deny the AE request.

Next Steps