

SB4 Groundwater Monitoring Draft Model Criteria

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Goals of SB 4 GW Monitoring

- Increase transparency.
- Science.
- Develop groundwater monitoring that can measure impacts of oil and gas activities.
- As protective as possible:
 - All possible pathways, including disposal
 - Protect current and potential beneficial uses
 - Understand impacts on exempt aquifers



Draft Model Criteria

- Clean Water Action supports the draft model criteria
 - Science based.
 - Good process.
 - Flexibility
- SB 4 Criteria is a good start. Holes still need to be filled.
 - Good coverage of impacts from well stimulation treatments (but not the whole lifecycle).
 - Need more protective plan to deal with other impacts, such as UIC wells, pits, enhanced oil recovery (EOR).

Well by Well Criteria

- Strengths
 - Upgradient, downgradient monitoring.
 - Monitoring to protect ALL protected aquifers that are present.
 - Sentry well concept.
 - Fills in gaps prior to implementation of regional plans.
- Weaknesses
 - No monitoring in exempt aquifers.
 - Does not cover pathways such as open pits or UIC wells, which could be conduits for wastewater.
 - Needs process for split samples to go to Board to assist the regional plans and ensure accountability.

Regional Monitoring Plans

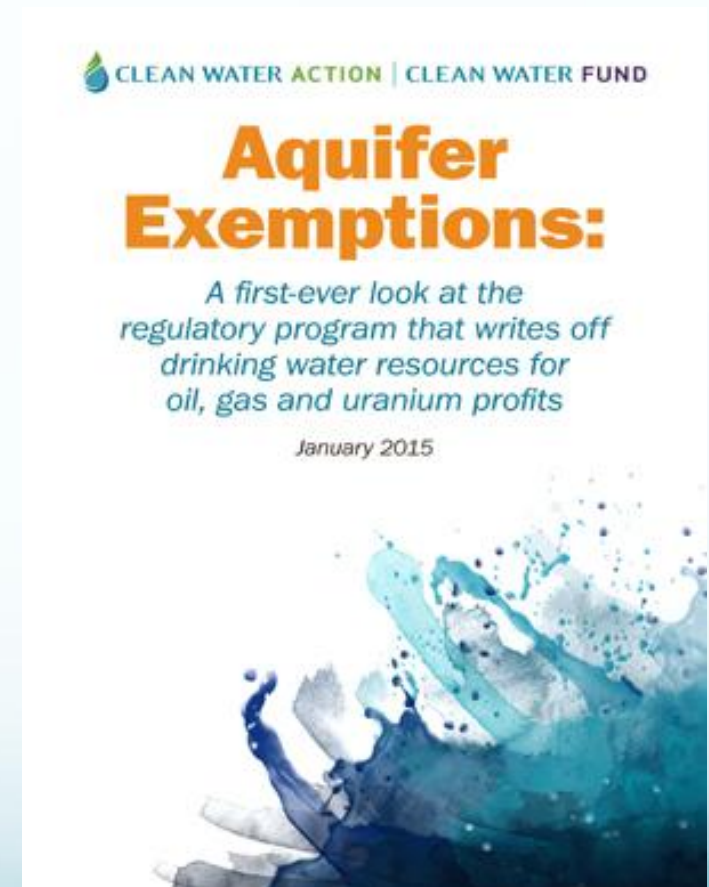
- Strongly support in concept.
 - Multiple pathways considered:
 - Stimulated Wells
 - Pits
 - UIC wells
- Need to expand and fund program to cover all oil fields.



Kern River Field: Little if any well stimulation. Lots of injection and water with beneficial uses. Needs monitoring.

Why Monitor in Exempt Aquifers?

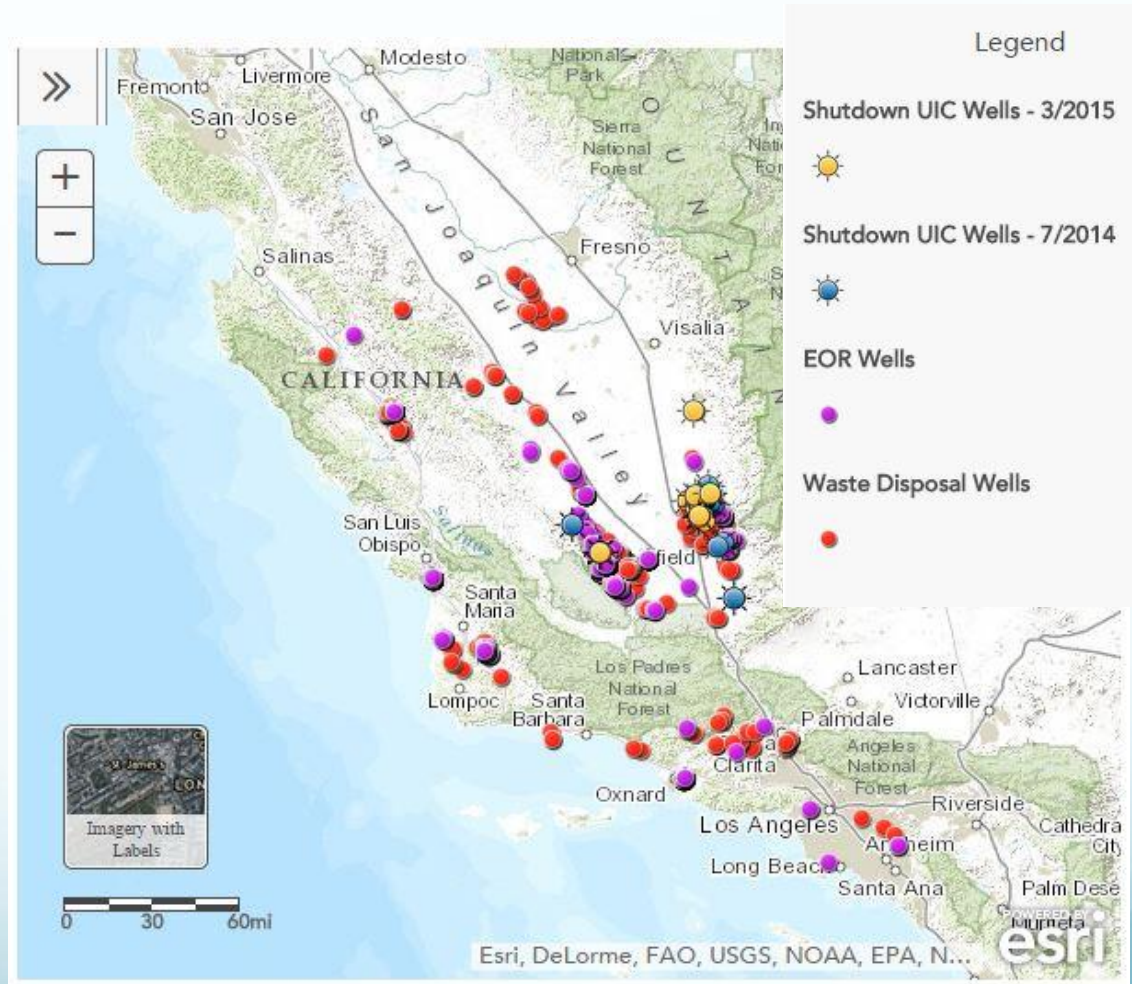
- Criteria for exemptions is out of date and not reflective of current water crisis. USGS recommendation of accounting for current desal/treatment technologies.
- Water Board was not involved in past exemptions.
 - Were they properly vetted?
 - What is the state of these aquifers now?
 - Is it too late to save them?



www.cleanwateraction.org/publication/aquifer-exemption-program

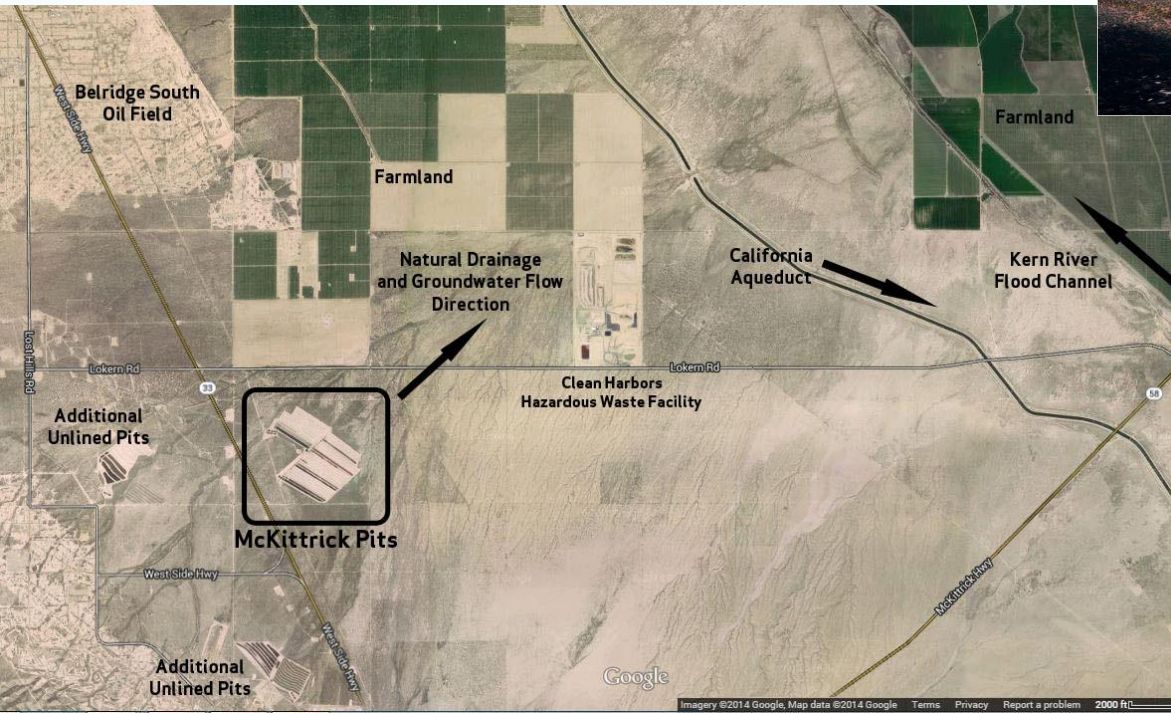
Why UIC Monitoring?

- Injection into potential drinking water sources has occurred (see map)→
- A robust UIC monitoring scheme is needed to understand impacts.
- DOGGR's compliance plan does not include aquifer assessments to determine impacts of illegal injection.



Open, Unlined Pits/Sumps

- Problems identified.
- Protective policy would prohibit this disposal method.
- Statewide ban on open pits is appropriate



Filling the Holes: Next Steps

- AB 356 (Williams) would require UIC monitoring, and help move toward a comprehensive monitoring scheme.
- Assessment of exempt aquifers.
- Assess aquifers that may be impacted by illegal UIC injection (and shut down the illegal wells!!)
- Prohibit unlined pits: Low hanging preventative measure.

Thank You!

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