



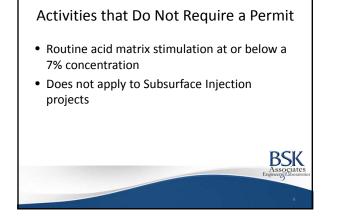
Well Stimulation Treatment is...

- "Any treatment of a well designed to enhance oil and gas production or recovery by increasing the permeability of the formation."
- SB 4 applies to all well stimulation activities, including hydraulic fracturing and acid matrix stimulation.

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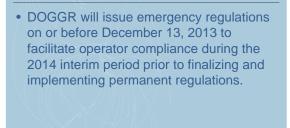
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Activities that Do Not Require a Permit • Routine Operations • Routine well cleanout • Well maintenance • Removal of formation damage from drilling • Bottom hole pressure surveys • Treatment that does not go more than 36 inches into the formation





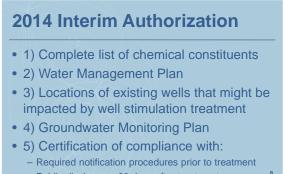




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- Public disclosures 60 days after treatment

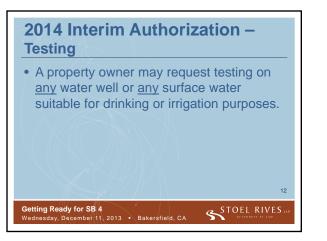
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2014 Interim Authorization – Notifying DOGGR

- SB 4 requires operators to provide DOGGR with 72 hours of notice prior to well stimulation activities
- Not called out as a requirement for compliance in 2014 or in the Interim Authorization
 - Is the operator required to comply with this provision in 2014?

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2014 Interim Period – Website Disclosures DOGGR is required to create its own independent website for well stimulation disclosures (due no later than Jan 1, 2016). Until such time, operators will post on FracFocus.org: Water quality data Disclosures required under § 3160(b), per § 3161(b) Tetting Ready for SB 4 Wednesday, December 11, 2013 • Batersfield, CA

2015

- On November 15, 2013, DOGGR issued its Draft Permanent Regulations to take effect January 1, 2015.
- Rulemaking process will unfold during 2014.

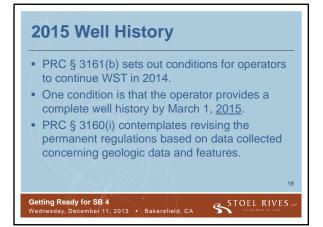
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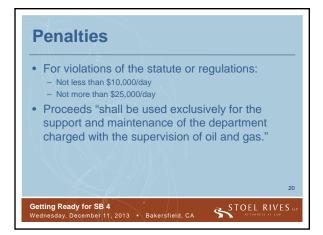
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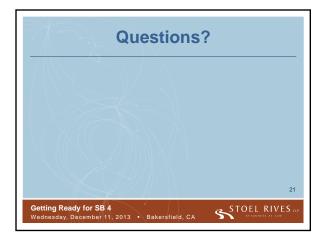
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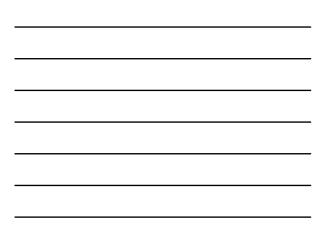


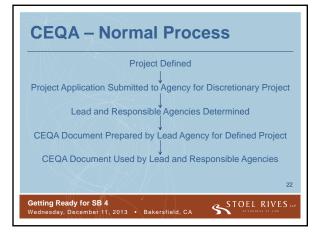






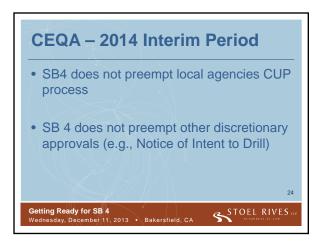


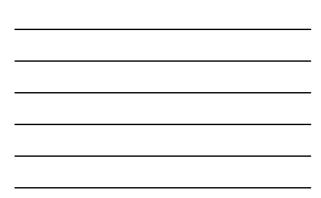




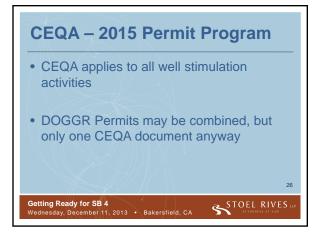






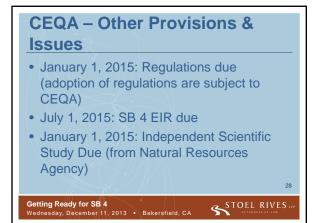


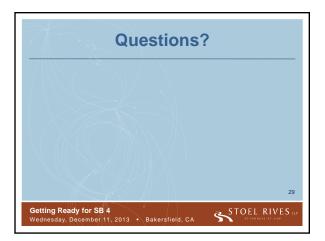


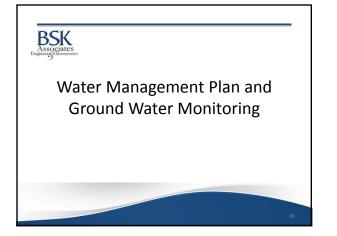












Water Management Plan

- Estimate of the amount of water to be used
- Source of water
- Disposal method for recovered water



- one of the three types of plans:
 - Existing oil-or-gas field specific or regional plan (State-developed)
 - Existing oil or gas field-specific or regional (Operatordeveloped & State Approved)
 - A <u>well-specific</u> monitoring plan (Operator-developed & Submitted to State)

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Section 10783

- By July 1, 2015, State Board shall develop model groundwater modeling criteria to be implemented either on a case by case basis for a well subject to well stimulation treatment, or on a regional scale
- Prioritize monitoring of groundwater that is or has the potential to be a source of drinking water, but shall protect all waters designated for any beneficial use

Section 10783

- Scope and nature of the model groundwater monitoring criteria:
 - Assessment of areas to conduct monitoring and appropriate boundaries
 - List of constituents to measure and assess groundwater quality
 - Location, depth and number of monitoring wells
 - Frequency and duration of monitoring

Section 10783

- Threshold criteria to transition from well-by-well to regional monitoring program
- Data collection and reporting requirements
- Public access to data

Factors to Consider

- Existing quality and existing and potential use of groundwater
- Groundwater that is not a source of drinking water consistent with US EPA definition of containing less than 10,000 milligrams per liter total dissolved solids
- Proximity to human population, public water service wells, and private groundwater use

Factors to Consider

- Presence of existing oil and gas production fields
- Events that have the potential to contaminate groundwater

Factors to Consider

- By January 1, 2016, the state board or appropriate regional board shall begin implementation of regional groundwater monitoring programs
- In the absence of state program, a well owner or operator may develop and implement areaspecific groundwater monitoring programs

Factors to Consider

• All groundwater quality data collected shall be submitted to the state board compatible with GeoTracker

Additional Requirements

- Depth of base of fresh water
- Results of evaluation and modeling
 - Cement in the well
 - Potential conduits for the fluids to escape
 - Geologic and Hydrologic isolation

Implementation

• How do we expect the SWRCB and RWQCBs to implement SB-4?

Water Management Plan

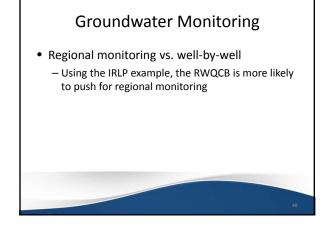
- Document
- Document
- Document
- Most of the requirements are already being done by industry, just be sure to document

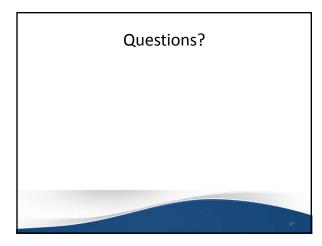
Groundwater Monitoring

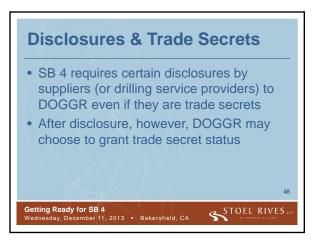
- Will the RWQCB need to "approve" the groundwater monitoring plan?
 - SB-4 states that the RWQCB prepare criteria but doe s not explicitly require approval

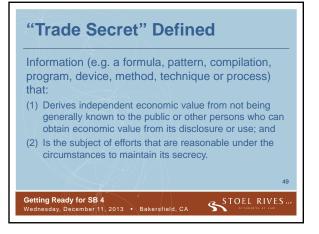
Groundwater Monitoring

- Will groundwater monitoring wells need to be installed?
 - Likely to be listed in the criteria as an option
 - Possible for regional evaluation









Exemptions from SB 4's Trade Secret Protection

- Chemical constituency of additives, including CAS numbers
- Concentrations of additives in well stimulation fluids
- Air or other pollution monitoring data
- Health and safety data associated with fluids

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• Chemical composition of flowback fluid

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Options if DOGGR rejects trade secret designation DOGGR will notify the supplier by mail and will make the information public in 60 days unless supplier goes to Court and obtains: - A declaratory judgment that the information is subject to protection; or - A preliminary injunction prohibiting disclosure of the information.

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Implement best practices to protect your trade secrets

- Develop a plan, including identifying the person responsible for overseeing trade secret issues;
- Conduct a trade secrets audit;

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- Implement appropriate policies and procedures;
- Review document retention and record keeping policies;
- Make sure access to trade secrets is limited to those who have a need to know.





