

# OIL FIELD REGULATORY ACTIVITIES MARCH 2016 UPDATE

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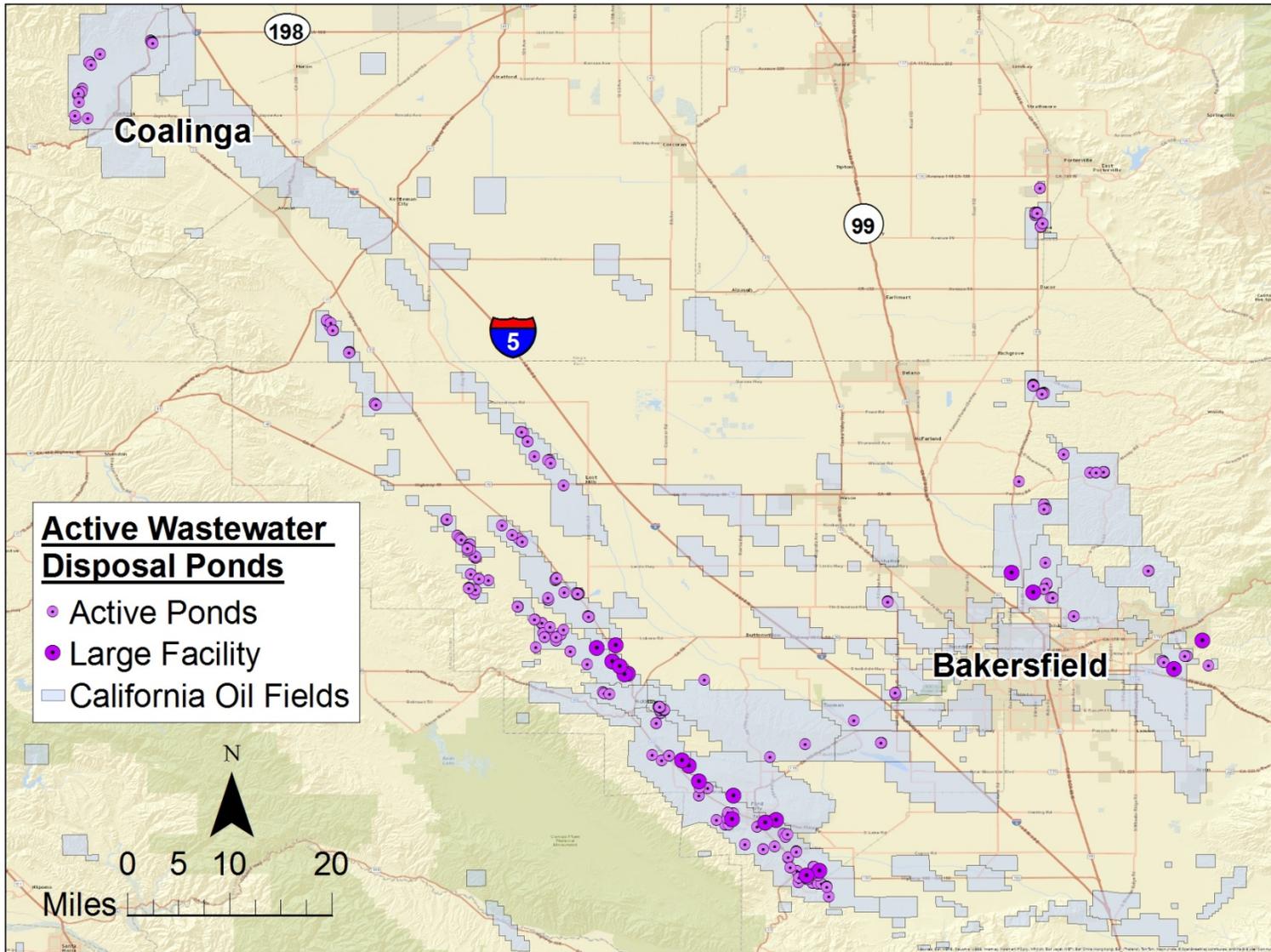


# Presentation Overview

- Disposal Ponds
- Proposed General Orders
- Food Safety Panel
- Well Stimulation (SB-4)
- Underground Injection Control

# Disposal Ponds

- Review of aerial photographs and inspections 2014-2015
- 326 facilities
- 1,100 ponds
- 685 active
  - ◆ 155 without WDRs
  - ◆ 298 with outdated WDRs (1999 & older)
  - ◆ 232 with current WDRs (post 1999)



# Disposal Ponds

## 13267 Orders

- 80 Information Orders issued to operators of active ponds
  - ◆ Waste characterization
    - General minerals
    - Metals
    - Organic compounds
    - Radionuclides

# Disposal Ponds

## Cleanup & Abatement Orders (CAOs)

- 49 Issued to operators of active ponds:
  - ◆ Hydrogeological investigation
  - ◆ Waste characterization
  - ◆ Monitoring program

# CAO Monitoring and Reporting Programs

- Groundwater Monitoring
- Wastewater Monitoring
- Facility Monitoring
- Reporting

# General Orders Coverage

- Existing facilities
- New or expanded facilities
  - ◆ Satisfy CEQA

# General Orders (GOs)

- Three orders proposed
  - ◆ GO-1 - Good quality wastewater over good quality groundwater
  - ◆ GO-2 - Marginal quality wastewater over good quality groundwater
  - ◆ GO-3 - Poor quality wastewater over poor quality groundwater

# General Order 1

- Wastewater meets Basin Plan limits
  - ◆ EC = 1,000 umohs/cm, or less
  - ◆ Chloride = 200 mg/L, or less
  - ◆ Boron = 1 mg/L, or less

## General Order 2

- Moderate quality discharge over moderate to good quality groundwater:
  - ◆ Wastewater exceeds Basin Plan limits
  - ◆ Site conditions protect beneficial uses

# General Order 3

- Natural groundwater quality does not support beneficial uses
  - ◆ Wastewater exceeds Basin Plan limits for EC, chloride, and boron
  - ◆ No adverse impacts to beneficial uses
  - ◆ 5 years to obtain a Basin Plan Amendment

# GO Application Process

- Notice of Intent (application)
  - ◆ Form 200
  - ◆ Technical Report
    - Waste Characterization Data
    - Hydrogeologic Characterization
    - Facility Management Plan(s)
  - ◆ Application Fee
- Notice of Applicability by EO

# GOs Prohibitions

We are proposing prohibition of:

- Discharges to surface waters or drainages
- Discharge of anything other than produced water without EO approval
- Discharge of hazardous wastes
- Pond overflows
- Creation of pollution or nuisance

# GOs Discharge Specifications

We are proposing the following Discharge Specifications:

- Flow limits based on system design
- Salinity limits
- Limits for select organics such as petroleum compounds
- Exclusion of the public through fences or acceptable alternatives
- Ponds be free of oil or effectively netted to preclude the entry of wildlife

# GOs Discharge Specifications (continued)

- Minimum freeboard requirements
- Discharges of produced wastewater for dust control or construction activities be consistent with a management plan
- Discharge of produced wastewater for dust control and construction activities shall not cause ponding or runoff

# GOs Solids Specifications

We are proposing the following Solids Specifications:

- Solids shall be removed from facility units to ensure optimal operation and adequate capacity
- Solids shall not be stored or handled in ways that result in violations of groundwater limitations
- Solids shall be managed consistent with a plan that demonstrates practices are protective of water quality and is approved by the Executive Officer

# GOs Provisions

Staff is proposing Provisions that require dischargers to:

- Monitor flows
- Submit a dust control management plan
- Submit a solids management plan
- Implement a groundwater monitoring network or obtain an exclusion from groundwater monitoring

# GOs Monitoring Chemical Use

- Names of all chemicals added
- Volumes of all chemicals added

# GOs Monitoring Effluent

## Parameters:

- Flow
- General Minerals, including salts
- Metals
- Total Petroleum Hydrocarbon Fractions
- Volatile & Semi-Volatile Organic Compounds  
(with PAHs)
- Radionuclides
- Oil Field Chemicals

# GOs Monitoring Ponds

- Freeboard
- Pond conditions
  - ◆ Weeds
  - ◆ Irregularities
  - ◆ Debris
  - ◆ Burrows
  - ◆ Netting/condition

# Groundwater Monitoring

System sufficient to:

- Determine groundwater elevation and direction of flow.
- Collect samples for:
  - ◆ Field parameters – pH, EC, temperature
  - ◆ Laboratory Analyses (Same as Effluent)
- Quarterly

Exclusions – Demonstration of no potential impact

EO approval to change frequency or constituents

# Solids Disposal Monitoring

- Production total (tons and cubic yards)
- Reuse - Road mix/berms (non-hazardous)
  - ◆ Map of showing specific locations
  - ◆ Volumes applied
- Disposal
  - ◆ Name of recipient
  - ◆ Location
  - ◆ Order number for disposal site

# Reporting

- Quarterly Reports
- Hardcopy to Board Fresno
- Electronically to GeoTracker
- After submittal of appropriate data, EO can modify monitoring requirements.

# GOs Groundwater Limits

## GO-1

### Numeric:

The discharge of produced water shall not cause groundwater to contain waste constituents in concentrations greater than the following:

Constituent	Units	Limitation	For White Wolf Subarea Limitation
Electrical Conductivity	µmhos/cm	1,000	1,000
Chloride	mg/L	200	175
Boron	mg/L	1.0	1.0
Arsenic	µg/L	10	10

# GOs Groundwater Limits

## GO-1, GO-2, GO-3

### Narrative:

The discharge of produced wastewater shall not cause groundwater to contain constituents in concentrations that adversely affect beneficial uses.

# Food Safety Panel Irrigation Information

Water District	Acres Irrigated with Blended Water	Produced Water (AF)	Non-Produced Water (AF)	Total (AF)
Cawelo	34,000	32,089	27,929	≈60,000
North-Kern	55,000	21,200	124,441	145,641

- Cawelo information from 2014 data. North-Kern information based on quarterly reports.
- The Water Boards are in the process of collecting data regarding the Jasmin Mutual Water District

Source: redwoodbarn.com



## Food Safety Panel Expert Panel

- Public concern about use of produced water
- CVWB assembled Food Safety Panel
- Panel members are experts from a variety of backgrounds

# Food Safety Panel Board Role

- Find appropriate experts
- Facilitate data gathering for the panel
- Facilitate meetings
- Create a white paper

# Food Safety Panel Goals

- Identify whether there are data gaps and how to address them
- Involve sister agencies
- Get input from the experts
- Ensure that the water is safe for irrigation

# Food Safety Panel Update

- First public meeting 12 January 2016
- Technical information provided to the Panel
- Listserv
- In the process of acquiring a technical facilitator
- In the process of preparing a fact sheet

# Food Safety Panel Update

- The CVWB has received a number of emails urging the Board to stop the use of frack fluid wastewater for irrigation
- More meetings will be set for the future: public notices on our website and go out on the listserv



Source: [splendidtable.com](http://splendidtable.com)

# Food Safety Email List

- [http://www.waterboards.ca.gov/  
resources/email\\_subscriptions/  
wrcb\\_subscribe.shtml](http://www.waterboards.ca.gov/resources/email_subscriptions/wrcb_subscribe.shtml)
- Look for Food Safety/ Oil Field Wastewater Reuse under the Water Quality section

# Well Stimulation (SB-4)

- Governor Signed SB-4 in 2013
- Made changes to Public Resources Code and Water Code
- Division of Oil Gas and Geothermal Resources (DOGGR) – Regulations/permits
- State Board - Model criteria for groundwater monitoring

# Well Stimulation (SB-4)

- Staff is working with State Board to evaluate groundwater monitoring plans:
  - ◆ Characterize baseline water quality conditions.
  - ◆ Detect potential impacts to protected water from well stimulation treatments.
    - Protected water – Total dissolved solids  
< 10,000 mg/L

# Underground Injection Control (UIC)

- Much of the Central Valley's oil field wastewater is disposed of through injection into underground aquifers
- Oversight of UIC is by USEPA under Safe Drinking Water Act (SDWA)
- Wastes can only be injected into aquifers exempted from SDWA protections
- DOGGR received program primacy in 1983

# Underground Injection Control (UIC)

- USEPA reviewed the State program 2011-2013
- DOGGR determined wells injected into aquifers not exempted from SDWA
- State Board and Regional Boards increased role
- There are about 27,000 injection wells
- About 5,500 wells that may be discharging into non-exempt aquifers
- About 427 waste disposal wells that may have discharged into non-exempt aquifers

# UIC 13267 Orders

- DOGGR issued shut-in Orders
- Board has issued 50 13267 Orders:
  - ◆ Sample injection zones
  - ◆ Provide injection well hydrogeologic information
  - ◆ One mile well survey
- Following-up
- Continuing to issue Orders where necessary

# UIC Aquifer Exemptions

Operators applying to get aquifer exemptions:

- Application submitted to DOGGR
- DOGGR reviews for completeness
- DOGGR forwards to State Board
- State Board consults with Regional Board
- DOGGR and State Board forward to USEPA

# UIC Aquifer Exemptions

- Aquifer exemption applications (36)
- Approved by USEPA –  
15 February 2017
- Two applications under review

# UIC Aquifer Exemptions

- CRITERIA
  - ◆ Will not affect the quality of water that is, or may reasonably, used for any beneficial use; AND
  - ◆ Injected fluid will remain in the aquifer or portion of the aquifer that would be exempted (CONTAINMENT).

# UIC Projects

- Project by Project Reviews
  - ◆ New injection well(s) or a series of injection wells.
- DOGGR approves each project
- DOGGR provides Draft Project Approval Letter to Water Boards
- Review criteria are same as for Aquifer Exemptions

# Questions ?

