Nitrate and Salt Permitting Improvements Coming for the Central Valley

The Problem

Nitrates and Salts are threatening the long-term health of the people and economy in the Central Valley.
There is a Nitrate Problem in the Central Valley

Nitrate Contamination in Groundwater
- Many small communities rely on groundwater for drinking water.
- Some of these communities can’t safely use groundwater for drinking water because nitrate levels present a potential for human health impacts.

There is a Salt Problem in the Central Valley

Salt Accumulations in the Central Valley
- 250,000 acres taken out of production
- 1.5 million acres have been declared salinity impaired
- Potential direct annual costs up to $1.5 billion by 2030
- Current management activities address 15% of the annual salt load
- Long-term solutions are needed to address the remaining 85%
Existing Regulations for Nitrates and Salts Fall Short

- Central Valley Regional Water Quality Control Board regulates Nitrate and Salt discharges
- Compliance with current regulations is difficult and, in some areas, even impossible.
- New, updated, flexible regulations are needed
  - Address natural diversities (climatic, hydrologic, geologic)
  - Protect water quality
  - Maintain economic activities

CV-SALTS
A Valley-wide effort to address salts and nitrate
What is CV-SALTS?

Central Valley Salinity Alternatives for Long-Term Sustainability

- Collective effort begun in 2006
  - Agriculture, city, and industry dischargers
  - Community and environmental interests
  - Regulators
- To support a strong Central Valley economy while ensuring safe drinking water supplies
  - Existing regulations were, for many, not effective or impossible to comply with
  - Develop new regulatory approaches for nitrate and salt
- Central Valley Salinity Coalition (CVSC) formed to fund technical and scientific studies.

CV-SALTS Goals

1. Provide Safe Drinking Water Supplies
   - Develop short-term and long-term solutions

2. Reduce Nitrate and Salt Impacts to Water Supplies
   - Develop short-term and long-term solutions

3. Restore Groundwater Quality
   - Where reasonable and feasible
The CV-SALTS Process

2006 to 2017
- Scientific and technical studies undertaken
- New regulatory approaches developed for Nitrates & Salts

2017 and 2018
- Salt and Nitrate Management Plan (SNMP) proposes new regulatory approaches
- Basin Plan Amendment developed to include new regulatory approaches
- Central Valley Regional Water Control Board adopts Basin Plan Amendment with new Nitrate Control Program and new Salt Control Program

State Water Board Adoption Anticipated in 2019

2019
- Basin Plan Amendment to be adopted by the State Water Resources Control Board, estimated June
- Office of Administrative Law to approve the Basin Plan Amendment, estimated September
  - Begin implementing new groundwater actions for nitrate and salt
- U.S. Environmental Protection Agency (EPA) to approve surface water provisions of Basin Plan Amendment, estimated November
  - Full implementation of Nitrate Control Plan and Salt Control Plan
Nitrates in the Groundwater

Nitrate problems result from 150 years of prosperous human activity in the Central Valley.

These activities and sources include:
- Agriculture – irrigation, fertilizer use, manure
- Industry – manufacturing and processing facility wastewater
- Municipalities – wastewater treatment effluent, fertilizer use
- Rural Residents – leaking septic tanks, fertilizer use, and landfills
Nitrates in the Groundwater

High levels of nitrates in groundwater can result in negative health effects for people who drink the water.

Where will Implementation of New Nitrate Control Plan Begin?

- **Priority 1 Area (Red)**
  - Notice to Comply within one year of Basin Plan amendments becoming effective

- **Priority 2 Area (Orange)**
  - Notice to Comply within 2-4 years of Basin Plan amendments becoming effective

- **Remaining Areas (Green)**
  - Implementation to be phased in at a later date
Start with Priority 1 Basins

Priority 1 Groundwater Basins

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Priority 1 Examples: Modesto & Turlock Groundwater Basins

Red areas are >10.0 mg/L as nitrogen

Safe water standard is <10mg/L as nitrogen
Goal 1: Provide safe drinking water supplies in small, often disadvantaged communities

New Nitrate Control Program

- More Flexible
- Locally Focused
- Two Options for Compliance
  1. Form a Management Zone with other dischargers
  2. Use existing traditional permitting with additional requirements to provide safe drinking water
Can we say something more descriptive than "existing traditional permitting" like "site-specific" or "single-permittee"?

Charles Gardiner, 4/16/2019
New Management Zone Approach

- Temporary exception from discharge standards
- Must assure safe drinking water first
- Shared responsibility for implementation

Management Zone Overview

- Locally led, Regional Board approved
  - Cooperative effort among dischargers, local government, and communities
  - Contractual agreement among dischargers
  - Regulated as a single entity by the Regional Board
- Specified deliverables & timeline from Notice to Comply
  - Management Zone Proposal and Early Action Plan (9 months)
    - Regional Board and public review
  - Final Management Zone Proposal (6 months)
    - Regional Board and public review
  - Management Zone Implementation Plan (6 months)
What is a Management Zone?

- **Defined area** – a discrete regulatory compliance unit for nitrates into groundwater
- **Collective implementation** – for ensuring nitrate impacted users of groundwater have safe water
- **Discharger cooperative** – for management plan to control nitrates into groundwater
  - Shorter term: best practicable treatment/control
  - Longer term: achieve balance and restore groundwater, where feasible

Management Zone Authorities

- Regulatory alternative for dischargers that elect this option
- Serves as alternative compliance for nitrate water quality objective
- Contractual agreement among dischargers
- May be a local agency, but not necessary
- Regional Board ensures implementation through waste discharge requirements (WDRs)
Management Zone Formation

Locally Led – Regional Board Approved

- Permitted dischargers work cooperatively to prepare proposal for a Management Zone
  - Identify specific geographic area/boundaries
  - Identify other permitted dischargers within geographic area
- Submit Preliminary and Final Proposals to Regional Board
  - Minimum 30-days for public comment

Management Zone Regulatory Timeline

- Notice to Comply: Within 1 year of effective date (expected within 6 months, Spring 2020)
- Preliminary Management Zone Proposal & Early Action Plan: 270 days
- Begin implementation within 60 days
- Board Review & Public Comment
- Final Management Zone Proposal: 180 days
- Board Review & Public Comment
- Management Zone Implementation Plan: 180 days
Approximate Expected Timeline

Notice to Comply
Within 1 year of effective date (expected within 6 months, Spring 2020)

Preliminary Management Zone Proposal & Early Action Plan
270 days

Begin implementation within 60 days

2020

Board Review & Public Comment

2021

Final Management Zone Proposal
180 days

Board Review & Public Comment

2022

Management Zone Implementation Plan
180 days

Dischargers

Regional Board

Management Zone Implementation Plan Content Requirements

- Drinking water needs
- Time to achieve balance and restoration
- Community collaboration
- Funding and cost share agreements
- Nitrate management activities

- Water quality characterization
- Projects
  - Short term (<20 years)
  - Long term (>20 years)
- Milestones and implementation schedule
- Participant responsibilities
- Surveillance and monitoring
### Who Should Join a Management Zone?

- Permitted Dischargers (agriculture, municipal, industrial, and others) that cannot comply with current nitrate limitations to protect groundwater
- Permitted Dischargers that value collaborating for
  - Prioritizing nitrate control strategies
  - Cost efficiencies
- Local governments representing communities with drinking water needs (cities and counties)
- Local water agencies and other agencies managing groundwater (GSAs)

### Benefits & Results of Joining Management Zone

- Providing safe drinking water supplies to your community, where needed.
- Share the cost of nitrate management
- Locally manage area nitrate problems
- Apply local knowledge of soils, groundwater, and pumping to implement nitrate reduction actions
- Support a vision that manages nitrates for a viable local economy and community
Two Pilot Management Zone Formations Underway Now

- Turlock Groundwater Sub-basin
  - Stanislaus and Merced Counties
- Alta Irrigation District and Kings River East GSA
  - Fresno and Tulare Counties
- Both developing draft Management Zone Proposals
  - Management Zone boundaries and initial participants
  - Initial mapping of nitrate levels
  - Identification of water supplies exceeding nitrate objective
  - Early Action Plan

What’s Next

- If you are in Priority 1 Areas
  - Identify and convene potential leaders
  - Discuss possible Management Zone boundaries
  - Review template materials developed by the pilots (August)
  - Reach out to local government and disadvantaged community support organizations
- If you are in Priority 2 Areas
  - Extra 2 to 4 years to comply
- If you don’t want to participate in a Management Zone....
Option 1: Traditional Nitrate Permitting

- Nitrate discharges must be < 10 mg/L
- Below root zone, or before reaching the groundwater basin
- Attain or continue Best Practicable Treatment or Control (BPTC) and any permit conditions or compliance with general order or waiver requirements
- Not be contributing to an increase in nitrate in groundwater above background

What are the additional requirements? Need to add

Salinity Management Strategy

Improved strategies for managing salts across the Valley
Salts Accumulation

Salt problems result from 150 years of prosperous human activity in the Central Valley

These activities and sources include:
- Agriculture – irrigation, fertilizer use, manure
- Industry – manufacturing and processing facility wastewater
- Municipalities – wastewater treatment effluent, water softeners
- Rural Residents – leaking septic tanks, fertilizer use and landfills

Impacts of Salt Accumulation

High levels of salts in streams, soils and groundwater can:
- Pollute the soil so that it can no longer grow crops
- Make water supplies unusable for certain uses
- Cause taste problems in drinking water
- Increase corrosion and damage equipment
- Change aquatic habitats
Salt Control Program

Goals and Strategies

- Control rate of degradation through a “managed degradation” program
- Achieve long-term sustainability and prevent continued impacts to salt sensitive areas
  - Implement salinity management activities
- Protect beneficial uses
  - Maintain water quality that meets applicable water quality objectives
  - Pursue long-term managed restoration where reasonable, feasible and practicable
  - Apply appropriate antidegradation requirements for high quality water

Regulators are considering and adopting proposed Salt Control Program

- Regional Board, State Board, and U.S. EPA
- Approvals expected in 2019

Program includes long-term and short-term strategies

- Priority & Optimization Study (P&O Study)
- Interim Permitting Approach

After approvals, Notices to Comply will be issued by the Regional Board (expected in 2020)
Long-Term Salinity Management

- **Priority & Optimization Study (P&O Study)**
  - Identify salt management projects and actions to achieve salt sustainability in the Central Valley
  - Build on prior salinity studies
  - Analyze existing conditions, policies, and engineering alternatives
  - Consider a phased approach and funding options
  - Approximately 10 years and $10 to $15 million

Short-Term Salinity Management

- **Interim Permitting Approach** includes actions such as:
  - Continued implementation of existing pollution prevention, watershed, and salt reduction plans
  - Continued maintenance of current salinity discharge levels
  - Enforced compliance with Interim Permit Limits
  - Implementation of new salinity management practices and source control activities
  - Monitoring of salinity discharge activities, where required
  - Requiring either participation in the Prioritization & Optimization Study (P&O Study) or compliance with stringent water quality limitations
Interim Permitting Approach

Permitted dischargers must comply by selecting one of two compliance pathways:

- **Alternative Pathway:** Fund and participate in P&O Study
  - Continue existing monitoring and control activities
  - Allowed to defer more stringent and costly permitting requirements associated with Conservative Pathway until P&O Study is completed

- **Conservative:** Demonstrate compliance with stringent permitting requirements in Salt Control Program
  - Likely more costly than Alternative pathway

P&O Study is more likely to long-term sustainability than individual efforts through Conservative pathway

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Costs

Add P&O Study Costs per discharger when available
For More Information

CV-SALTS
- www.cvsalinity.org
- info@cvsalinity.org

Pilot Management Zones
- Turlock – Parry Klassen, klassenparry@gmail.com
- AID/Kings River East – Charlotte Gallock, cgallock@krcd.org

Regional Water Quality Control Board
- CONTACT?