Nitrate and Salt Permitting Improvements Coming for the Central Valley

Prepared by the Central Valley Salinity Coalition

Workshop Purpose and Goals
- Provide orientation for consultants to assist permitted dischargers complying with new nitrate control permit requirements
  - Describe new requirements and timelines
  - Identify potential service needs
  - Answer questions

Workshop Agenda
- Nitrate Control Program Overview
- Nitrate Control Pathways
- Management Zone Formation & Compliance

What is CV-SALTS?
Central Valley Salinity Alternatives for Long-Term Sustainability
Collective effort to address water quality
Central Valley Salinity Coalition formed to fund studies
CV-SALTS Goals

1. Provide Safe Drinking Water Supplies
   - Short-term and long-term solutions
2. Reduce Nitrate and Salt Impacts to Water Supplies
   - 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
- New regulatory approaches developed for nitrates & salts
2017 to 2019
- Salt and Nitrate Management Plan (SNMP) proposes new regulatory approaches
- Basin Plan Amendment developed to include new regulatory approaches
- Central Valley Regional Water Quality Control Board and State Water Resources Control Board adopt Basin Plan Amendment with new Salt and Nitrate Control Program

There is a Nitrate Problem in the Central Valley

Nitrate Contamination in Groundwater
- Many small communities rely on groundwater for drinking water.
- Some communities can’t safely use groundwater for drinking water as 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 are salinity impaired
- Potential direct annual costs up to $1.5 billion by 2030

New Regulations for Nitrates and Salts Address Challenges

- Central Valley Regional Water Quality Control Board regulates Nitrate and Salt discharges
- Compliance with previous regulations was difficult and, in some areas, even impossible
- Past policies didn’t address immediate need for safe drinking water in some communities
- New, updated, flexible regulations are now in place
State Water Board Adoption
October 2019

- 2019 Basin Plan Amendment adopted by the State Water Resources Control Board, October 2019
- Office of Administrative Law approved the Basin Plan Amendment, January 2020
- Mailing of Notices to Comply, Late May 2020
- U.S. Environmental Protection Agency (EPA) to approve surface water provisions of Basin Plan Amendment, estimated April 2020
- Full implementation of CV-SALTS Program, July 2020

Salt Control Program

- State Board, Office of Administrative Law and U.S. EPA consider adoption of Salt Control Program
- Approvals expected in 2019/2020
- Long-term strategy = Priority & Optimization Study (P&O Study)
- Short-term strategy = Interim Permitting Approach
- Notices to Comply will be issued by Regional Water Board (late May 2020)

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

P&O Study Cost Allocation

- Total Cost Estimated at $10-$15 Million
- Participating communities and industries have allocated costs to be affordable to permittees by size, volume, or acreage.
- Communities (POTW/Stormwater), Irrigated Agriculture and Dairies will participate through their industry groups
- Food Processors, Wine, Oil & Gas have set fees
- Other Permittees $250 minimum

Questions & Discussion

Program Goals and History
Salinity Compliance
Nitrate Control Program
New approaches to provide safe drinking water and manage nitrates

Nitrates in the Groundwater
150 years of prosperous human activity in the Central Valley
- 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

Priority 1 Area (Red)
- Notice to Comply in May 2020
Priority 2 Area (Orange)
- Notice to Comply within 2-4 years of Basin Plan Amendment
Remaining Areas (Green)
- Implementation to be phased in at a later date

Nitrate Control Implementation

Start with Priority 1 Basins

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Pilot Management Zones are underway now in two basins: Turlock and Kings

Priority 1 Example:
Turlock Groundwater Basin

Red areas: >10.0 mg/L as nitrogen
Safe water standard: <10.0 mg/L as nitrogen
Goal 1: Provide safe drinking water in small, often disadvantaged, communities

New Nitrate Control Program
- More flexible & locally focused
- Provide safe drinking water
- Reduce nitrate impacts to water supplies
- Restore groundwater quality

Two options for compliance — both include providing safe drinking water
- Pathway A — Individual permit action
- Pathway B — Form a Management Zone with other dischargers

Pathway A: Individual Nitrate Permitting Requirements
- Compliance options may be difficult and expensive
  - If there are drinking water wells near your facility that are high in nitrate
  - If your discharge is high in nitrate
  - If local shallow groundwater exceeds 75% of the nitrate drinking water standard
- If any of these conditions are true, some or all the following may be required:
  - Significant upgrades to facilities
  - Extensive monitoring of discharge and local groundwater
  - Provision of replacement drinking water to local residents
  - Rigorous technical hydrogeologic justification of what groundwater will look like in your area in 20 years

Within 11 months of Notice to Comply, submit Notice of Intent
- Initial nitrate assessment of ability to meet the nitrate water quality objective over 20-year horizon
- Early Action Plan to provide safe drinking water
  - If your discharge is causing any well used for drinking water in your area to exceed the nitrate water quality objective
  - Alternative Compliance Project
  - If required for your nitrate category
- OR, switch to Pathway B and join Management Zone in your area

Pathway B: New Management Zone Approach For Nitrates
- Exception from nitrate standard
- Must assure safe drinking water first
- Shared responsibility for implementation

Management Zone Overview
- Locally led, Regional Water Board approved
- Cooperative effort among dischargers, local government, and communities
- Regional Water Board review at each deliverable
- Enforced through discharge permit provisions
- Timeline/Deliverables following Notice to Comply
  - Preliminary Management Zone Proposal and Early Action Plan (9 months)
  - Final Management Zone Proposal (6 months)
  - Management Zone Implementation Plan (6 months)
Priority 1 Basins: Now is the Time to Start Management Zone Formation

- Identify and convene potential leaders
- Discuss MZ boundaries
- Review materials developed by pilot MZs (available at cvsalts.info)
- Reach out to local government and disadvantaged community support organizations

Overview of Support Needs

- Technical Services
  - Hydrogeology and groundwater quality characterization
  - Drinking water program development and management
  - Nitrate source identification and management
  - Compliance mapping, data management, and reporting

- Management and Communications
  - Management planning and proposal development and documentation
  - Outreach, facilitation, and collaboration with permit holders
  - Governance agreements and contracts
  - Administrative, fund management, and program management
  - Outreach and engagement with stakeholders and communities
  - Cost estimating, cost allocation, and funding

What is a Management Zone?

- Defined area – for nitrate compliance
- Collective implementation – for safe drinking water
- Discharger cooperative – to control nitrates

Near-term: best practicable treatment or control
Long-term: achieve balance and restore groundwater, where feasible

Management Zone Authority

- Regulatory alternative for dischargers that choose this option
- 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 Water Board Approved

- Permitted dischargers work cooperatively to prepare proposal for a Management Zone
- Submit preliminary and final proposals to Regional Water Board for approval

Pilot Management Zones

- Two Pilot Management Zones in Turlock and Fresno/Tulare
- Turlock Groundwater Subbasin
  - Stanislaus and Merced Counties
- Alta Irrigation District and Kings River East GSA
  - Fresno and Tulare Counties
- Both developed Management Zone proposals
  - Management Zone boundaries and initial participants
  - Initial mapping of nitrate levels
  - Identification of water supplies exceeding nitrate objective
  - Early Action Plan to provide safe drinking water

Preliminary Management Zone Proposal

- Proposed preliminary boundaries
- Participants and dischargers
- Initial assessment of groundwater conditions
- Current treatment and control efforts
- Initial identification of public water supplies or domestic wells with nitrate concentrations exceeding water quality objective
- Early Action Plan that addresses immediate drinking water needs

Management Zone Regulatory Timeline

- Priority 1 Areas
  - Notice to Comply: Within 1 year of effective date
  - Staff Review & Public Comment: Begin implementation within 60 days
- Final Management Zone Proposal: 180 days (6 months)
- Management Zone Implementation Plan: 180 days (6 months)
- Preliminary Management Zone Proposal: 270 days (9 months)

Early Action Plan Components

- Process to identify affected residents
  - Outreach to ensure residents are informed of and have opportunity to participate in Early Action Plan development
- Process for coordinating with others that are not dischargers to address drinking water issues
  - Meaningful consultation with affected residents, affected water systems, environmental justice organizations, and other stakeholders, including Central Valley Water Board and State Water Board staffs
- Specific actions and implementation schedule
  - Address the immediate drinking water needs of those within the Management Zone impacted by groundwater that exceeds nitrate standards
- Funding mechanism for implementing the EAP
Management Zone Implementation Plan Content Requirements

- Drinking water needs
- Plan for emergency, interim, and permanent drinking water supplies
- Characterization of nitrate conditions
- Plan to achieve balanced nitrate loadings and aquifer restoration
- Monitoring and adjustment
- Nitrate management measures and priorities
  - Short-term projects (<20 years)
  - Long-term projects (>20 years)
- Milestones and implementation schedule
- Community collaboration
- Participant responsibilities
- Funding and cost share agreements

Who Should Join a Management Zone?

- Permitted dischargers that cannot comply with current nitrate limitations to protect groundwater
- Permitted dischargers that value collaborating for prioritizing nitrate control strategies and costs
- Local city and county governments representing communities with drinking water needs due to nitrate
- Local water agencies and other agencies managing groundwater such as IRWM regions and GSAs

Benefits & Results of Joining Management Zone

- Ensures safe drinking water supplies to your community, where needed
- Shares costs of nitrate management
- Locally manages nitrate problems
- Applies local knowledge to implement nitrate reduction actions
- Supports a vision that manages nitrate for a viable local economy and community

Management Zone Support Needs

Technical Services

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- Drinking water program development and management
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- Compliance mapping, data management, and reporting

Management and Communications

- Management planning and proposal development and documentation
- Outreach, facilitation, and collaboration with permit holders
- Governance agreements and contracts
- Administration, fund management, and program management
- Outreach and engagement with stakeholders and communities
- Cost estimating, cost allocation, and funding

Subbasin Contacts – Northern Area

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Subbasin Contacts – Southern Area

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For More Information

**CV-SALTS**
- Website: cvsalts.info
- Sign-up for email updates: cvsalts.info
- Email: info@cvsalinity.org

**Regional Water Quality Control Board**
- Anne Littlejohn – anne.littlejohn@waterboards.ca.gov