

CV-SALTS Drought and Water Conservation Policy

The CV-SALTS Salt and Nitrate Management Plan (SNMP) *Drought and Water Conservation Policy* (Policy) recommends that the Central Valley Water Quality Control Plans (Basin Plans) be amended to specifically address salinity-related concerns that may arise in discharge permits as a result of the impacts of drought or increased implementation of water conservation practices.

Purpose and Need for the Policy

The effects of drought and implementing encouraged or mandated water conservation practices can significantly affect effluent quality in discharges to surface water or groundwater. Historically, Waste Discharge Requirements and Conditional Waivers (WDRs/Waivers) rarely have included any special provision or consideration for (a) variations in effluent quality, directly or indirectly related to recurrent below normal precipitation conditions (i.e., “droughts”) that are beyond the control of the discharger; or (b) for ongoing, expanding, and sometimes mandated conservation practices. Extended periods of drought as well as extensive conservation practices can create compliance issues for some dischargers because of increased total dissolved solids/electrical conductivity (TDS/EC) and other salinity-related constituents in influent and effluent. This problem is caused by the following conditions associated with periods of drought:

- When less high quality (low TDS/EC) surface water is available, water agencies may increase reliance on lower quality (higher TDS/EC) ground or surface water to augment their water supplies. Most wastewater treatment systems are not designed to remove TDS/EC; thus, higher salinity in the water supply can result in higher salinity in the effluent.
- Mandatory conservation measures during prolonged drought may significantly alter the behavior of water users. The cumulative effect is reduced water use, which previously helped dilute average TDS/EC concentrations in raw sewage and treated wastewater.
- Drought-related changes in water quality may temporarily affect the more permanent long-term trend towards increased TDS/EC in a wastewater facility influent caused by adoption of high efficiency, low-flow fixtures and appliances, and greater use of in-home water softeners.
- Even where wastewater facilities can handle a long-term trend of rising TDS/EC in the influent, drought-related conditions may temporarily eliminate the small but critical buffer needed to assure consistent compliance with salinity-based permit discharge requirements applicable to the effluent.
- Drought conditions cause similar concerns for agricultural operators and industrial users. Reduced availability of high quality (low TDS/EC) surface water forces increased reliance on lower quality (high TDS/EC) water sources (e.g., groundwater and/or reuse of irrigation return flows), resulting in temporarily higher TDS/EC concentrations recharging to groundwater below the root zone. The inability to assure consistent permit compliance for salinity discourages the use of recycled water for landscape or crop irrigation and may create disincentives to greater implementation of more efficient (drip-style) irrigation systems.

- Once water conservation practices are implemented, they are likely to continue, especially if implementation included a significant capital investment (i.e. redirection for landscape irrigation, low flush toilets, drip irrigation, etc.).
- Finally, permit effluent requirements for TDS/EC are typically evaluated using relatively short-term averaging periods (e.g., daily, weekly, monthly averages or means). Since droughts typically persist for several years, even permit limits expressed as an annual average may be impractical to meet.

Given the above concerns, the SNMP recommends amendments to the Basin Plan that specifically address salinity-related concerns associated with the impacts of drought or increased implementation of water conservation practices.

Policy Recommendations

- For discharges to groundwater, calculate compliance with the applicable narrative or numeric salinity objectives using a long-term (10+ year) flow-weighted average while also taking into consideration the expected recharge and potential dilution from natural precipitation and streambed percolation to the same basin or subbasin.
- Authorize the use of offset projects, particularly increased stormwater capture and recharge, to demonstrate compliance with WDRs/Waivers governing salinity discharges (see Offsets Policy). Allow offset credits to be established and banked by constructing and operating such projects or by discharging well below the WDRs/Waivers threshold or effluent limit in non-drought years. Recognize that the credits needed to achieve compliance during periods of drought normally must be generated at times of above normal precipitation (especially El Niño winters) and, as such, must remain valid over a sufficiently long planning horizon, i.e., at least 20 years, to be useful.
- Consider amending the Basin Plans to establish a temporary variance/exception from salinity-related standards during certain drought conditions. The variance/exception would be automatically activated when recommended triggers were reached or events occurred.
- Consider amending the Basin Plans to establish a temporary variance/exception from salinity-related standards where the TDS/EC concentration in the permitted discharge is better (lower) than the TDS/EC concentration in the receiving water and would improve receiving water quality (even when the receiving water quality is higher than the applicable water quality objective by promoting maximum use/reuse of available water supplies. Potential impacts to downstream/downgradient water quality must also be evaluated as part of this demonstration.
- In lieu of authorizing a temporary variance/exception, consider pre-authorizing an automatic allocation of assimilative capacity (where it exists, or can be provided by the discharger, e.g., via an offset project) to accommodate higher TDS concentrations in the discharge/recharge during drought conditions.

More information on this policy and other SNMP recommendations may be found at:

www.cvsalinity.org