



Oil and Gas Industry

Water Quality Regulations Undergoing Change

Protecting California's Water Quality is Critical

Ensuring a safe, reliable drinking water supply is the highest priority when managing salt and nitrate levels in wastewater discharges in the Central Valley. Existing and on-going nitrate and salt accumulations are impacting drinking water supplies, making them unsafe in some locations. Regulating the quality of all wastewater discharges is critical in protecting public health and environmental quality.

A critical component in the future of wastewater regulations is the CV-SALTS initiative and its January 2017 **Salt & Nitrate Management Plan** (SNMP). The SNMP contains policy change recommendations that, once incorporated into existing Basin Plans, will allow significant improvements in the way oil and gas producers and other dischargers are regulated, primarily allowing for more local collaboration among all dischargers and more flexibility in meeting discharge requirements.

Water Quality Regulation: How it Works Now

California's Central Valley is the home of a thriving agricultural economy as well as a successful oil and gas production industry. Kern County alone produces 75% of California's in-state oil and about 58% of the state's total natural gas. When oil and gas are recovered from wells, there is wastewater, which is referred to as **produced water**. Every barrel of oil recovered results in 11 to 15 barrels of produced water. This water is reused, treated, and or disposed consistent with state regulations.

Produced water is filtered, treated, and blended into **irrigation water** for water districts, who provide it to farmers for irrigation. In Kern County, oil producers provide more than 10 billion gallons of treated wastewater as a beneficial reuse for agriculture. Generally, produced water is not a source of drinking water as it often contains **salt** and other naturally-occurring elements from its contact with petroleum-bearing rocks. The remaining produced water is filtered, treated, and then reused during oil production or disposed in injection wells, evaporation ponds, or percolation ponds.

The Central Valley Water Board currently regulates the discharge of produced water through three Wastewater Discharge Requirements (WDRs) General Orders that were adopted in April 2017 to update and modernize the WDRs General Orders. The fundamental goal of the WDRs general orders is to regulate the discharge of produced water to minimize surface and groundwater quality degradation and protect beneficial uses of waters of the state.

General Order No. 1: requires oil and gas producers to implement wastewater management practices, groundwater monitoring plans, and maintain waste containment features at produced water disposal facilities. These actions are required to minimize groundwater quality degradation from constituents of concern such as salt and boron.

General Order No. 2: sets the requirements for discharging produced water to **ponds** and **land in existing facilities** including production wells, produced water treatment and disposal systems such as evaporation and percolation ponds, and as oil field dust control. High quality produced water may be reused to supplement agricultural water supplies. There are approximately 326 oil and gas facilities with about 700 active ponds.

General Order No. 3: regulates discharging produced water where the first encountered groundwater is of poor quality or there is no first encountered groundwater, and where the discharged produced water does not support specific beneficial uses that include municipal (MUN), agricultural (AGR), industrial (IND), and others. When a discharger's efforts to improve the quality of the land discharge cannot meet Basin Plan maximum salinity limits, the discharger can apply for an **Exception** from water quality objectives related to salinity. To qualify for an Exception, the discharger must participate in the **CV-SALTS** program.



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New, Flexible Regulations with New Solutions

The CV-SALTS January 2017 *Salt and Nitrate Management Plan* (SNMP) includes new, more flexible industry-specific general order discharge compliance and alternate compliance policies. These policies focus first on providing safe drinking water in high-priority areas (Kaweah, Turlock, Chowchilla, Tule, Modesto, and Kings sub-basins and basins). Under the new SNMP regulatory options, all dischargers, including oil and gas producers, agriculture, and publicly owned treatment works, will be asked to collaborate locally to implement necessary solutions to meet **water quality** standards.

Similarly, the 2014 Sustainable Groundwater Management Act (SGMA) provides a framework for **water quantity**, through sustainable, local groundwater management. Going forward, there will be coordination between SGMA-based strategies and CV-SALTS SNMP-based water quality management.

Key Benefits of New Regulatory Process for the Oil and Gas Industry

The oil and gas industry is an important part of the CV-SALTS program. Because salt and boron are associated with produced water, oil and gas producers must be aware of the benefits that the new regulatory structure will offer by providing more local flexibility for dischargers, whether they choose to comply under a traditional permit or participate in a local management zone.

The beneficial reuse of produced water will continue under the new regulations, with greater flexibility. Also, the SNMP includes an example of de-designation of the Tulare Lake Bed; oil and gas producers are interested in the de-designation of specific aquifers from MUN (municipal beneficial use) to AGR (agricultural beneficial use) or IND (industrial beneficial use) as this flexibility would contribute to expanding opportunities for the regulated and proper disposal of produced water. Lastly, the SNMP is expected to be amended to include boron as a constituent of concern with respect to water quality in the Central Valley.

The following highlights several of the new compliance policies that will ultimately shape how the future of the oil and gas industry's produced water discharges will be regulated.

Local Management Zone. The formation of local or regional management zones will save time, money, and resources. Farmers, businesses, and other dischargers who decide to join a management zone can work collectively and in a regulatory compliance unit. Members pool resources to implement water quality protection measures that ensure safe drinking water supplies. While working to provide safe drinking water, members may be authorized for certain discharges and given more time to comply with current WDRs.

Exceptions Policy. When prohibiting a discharge does more harm than good, and allowing the discharge to continue is determined to be better for the public good, an "Exception" can be authorized that provides an oil or gas producer or landowners more time to implement a workable and effective regulatory solution that is site-specific to a local management zone.

Assimilative Capacity. Assimilative capacity is the ability of a natural body of water (e.g., lake, river, or groundwater aquifer) to receive discharged waste without harmful effects. Within a management zone or a groundwater basin/sub-basin, the use of assimilative capacity, coupled with the implementation of localized management measures, will be considered as a factor towards compliance.

Why Get Involved Now?

Without new, flexible, and more localized management strategies for salt and boron and the beneficial reuse of **produced water**, and the possible de-designation of specific aquifers, regulators will very likely continue to develop control measures that will make compliance even more difficult. The voice of oil and gas producers is critical in helping shape the future of the new SNMP regulations and associated Basin Plans. Those who work in any aspect of oil and gas production are encouraged to participate and get involved today. Visit www.cvsalinity.org to learn more about getting involved.