

STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING SESSION – DIVISION OF WATER QUALITY  
SEPTEMBER 18, 2007

**ITEM 4**

**SUBJECT**

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE LAHONTAN REGION (BASIN PLAN) TO REVISE SODIUM-RELATED WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE CARSON AND WALKER RIVER WATERSHEDS

**DISCUSSION**

The Lahontan Regional Water Quality Control Board (Lahontan Water Board) adopted amendments to Chapter 3 of the Basin Plan to revise water quality standards for “Percent Sodium” for surface waters of the Carson and Walker River watersheds ([Resolution R6T-2006-0047](#)). These watersheds are located in Alpine and Mono Counties, respectively, and are the headwaters of larger, internally drained watersheds in Nevada. The Percent Sodium standards would be replaced with new standards expressed as “Sodium Adsorption Ratio.” Sodium Adsorption Ratios (SAR) are more widely used, specifically in Nevada where the majority of both the Carson and Walker River watersheds and most of the irrigated lands are located. In addition, Percent Sodium is no longer widely used as a criterion for irrigation water. For example, it is not mentioned in the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) National Irrigation Handbook’s discussion of irrigation water quality (USDA, 1997). SAR has become the updated basis for sodium standards. The current Percent Sodium objectives for the Carson and Walker River watersheds apply upstream of the stations with numeric objectives that are based on historic data and do not account for improvements in water quality over time due to the implementation of point and nonpoint source controls. The proposed SAR objectives will apply to entire water bodies and their tributaries upstream from the state line and are based on scientific literature rather than the limited historical data. Percent sodium and SAR are both criteria for protection of crops and soils against the impacts of excess sodium in irrigation water. The Basin Plan protects irrigation water quality as part of the agricultural supply beneficial use. Both Percent Sodium and SAR are ratios of the concentration of sodium in relation to concentrations of other constituents, and they do not set limits on the concentration of sodium itself.

Historical water quality and the proposed new SAR objectives are below the literature thresholds for adverse salinity effects and sodium toxicity to even the most sensitive crops. The agricultural limit for most species of plants is a SAR value of three. All the values associated with this amendment have been set at annual values of one or two, and are consistent with Nevada’s SAR standards. In addition, historical values for the watershed are consistently below one or two.

Where ambient water quality is better than the new SAR standards, it will be protected under the State Antidegradation Policy. The SAR standards are independent of the Total Dissolved Solids (TDS) objectives outlined in the Basin Plan. Because sodium is included in TDS calculations, significant increases in ambient sodium concentration will continue to be prevented assuming the other mineral constituents remain stable and similar to past concentrations.

SAR and Percent Sodium are criteria developed specifically for the protection of irrigation water, and the proposed Basin Plan amendment will not directly affect any other beneficial uses or the water quality objectives that protect those uses. By maintaining water quality at or near historic levels in terms of sodium and other constituents of SAR, the new objectives will protect those uses. In terms of sodium and other constituents of SAR, the new objectives will protect water quality for other beneficial uses (e.g., municipal supply, aquatic life, and wildlife habitat uses) that could be affected by significant increases in sodium concentrations.

The proposed natural sources exclusion language in the narrative SAR standards is necessary because natural sources are not controllable. Lack of this language could result in the need for Section 303(d) listing and Total Maximum Daily Load (TMDL) development for water bodies where standards are violated only because of natural sources. Both processes would consume limited Lahontan Water Board resources without benefit to water quality or beneficial uses. The U.S. Environmental Protection Agency (U.S. EPA) allows states to include natural sources exclusion language in their water quality standards, and a number of states, including Nevada, have adopted such language. The proposed Basin Plan amendment would eliminate the need to develop TMDLs for two reaches of the West Fork Carson River that are in violation of the current Percent Sodium objectives, by providing alternative objectives with natural source exclusions due to geothermal activity. The areas where Percent Sodium levels were exceeded are known to be natural geothermal hot springs which are uncontrollable and therefore inappropriate for Section 303(d) listing. The Lahontan Water Board already has authority under State and federal laws to control point and nonpoint source discharges of sodium in the Carson and Walker River watersheds. No new implementation measures are proposed as part of this Basin Plan amendment.

## **POLICY ISSUE**

Should the State Water Resources Control Board (State Water Board) approve the amendment to the Basin Plan to revise sodium-related water quality standards for surface waters of the Carson and Walker River watersheds, as adopted under the Lahontan Water Board Resolution [R6T-2006-0047](#)?

## **FISCAL IMPACT**

Lahontan Water Board and State Water Board staff work associated with or resulting from this action will be addressed with existing and future budgeted resources.

## **REGIONAL WATER BOARD IMPACT**

Yes, approval of this resolution will amend the Lahontan Water Board Basin Plan.

## **STAFF RECOMMENDATION**

That the State Water Board:

1. Approves the amendment to the Basin Plan as adopted under the Lahontan Water Board [Resolution R6T-2006-0047](#).
2. Authorizes the Executive Director or designee to submit the amendment adopted under the Lahontan Water Board [Resolution R6T-2006-0047](#) to the Office of Administrative Law for approval of the regulatory provisions and to the U.S. EPA for approval of the amendment.

# DRAFT

## STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2007-

### APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE LAHONTAN REGION (BASIN PLAN) TO REVISE SODIUM-RELATED WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE CARSON AND WALKER RIVER WATERSHEDS

#### WHEREAS:

1. The Lahontan Regional Water Quality Control Board (Lahontan Water Board) adopted a revised Basin Plan that went into effect on March 31, 1995.
2. On October 12, 2006, the Lahontan Water Board adopted [Resolution R6T-2006-0047](#) (Attachment) amending the Basin Plan to revise sodium-related water quality standards for surface waters of the Carson and Walker River watersheds.
3. The Lahontan Water Board found that the analysis contained in the staff report, California Environmental Quality Act (CEQA) checklist, supporting documentation, and response to comments comply with the requirements of the State Water Resources Control Board's (State Water Board) certified regulatory CEQA process, as set forth in the California Code of Regulations, Title 23, section 3775 et seq.
4. The Lahontan Water Board found that adoption of the amendment would have no significant effect on the environment, consistent with the substitute environmental documents required by CEQA.
5. The Lahontan Water Board found that the Basin Plan amendment will ensure the reasonable protection of the beneficial uses of surface waters within the Region and is consistent with the State Antidegradation Policy ([State Water Board Resolution No. 68-16](#)) and federal antidegradation requirements.
6. The State Water Board finds that the Basin Plan amendment is in conformance with Water Code section 13240, which specifies that Regional Water Quality Control Boards may revise Basin Plans, and section 13241, which requires adoption of objectives to reasonably protect the past, present, and probable future beneficial uses.
7. The proposed amendment was reviewed by an external scientific peer reviewer pursuant to Health and Safety Code Section 57004. The technical staff report for the proposed amendment was changed as a result of the scientific review process, and the proposed amendment met the necessity standard of the Administrative Procedures Act (Government Code Section 11353 (b)).
8. On October 12, 2006, the Lahontan Water Board held a public hearing to consider the Basin Plan amendment. Notice of the public hearing was given to all interested persons and published in accordance with Water Code Section 13244.

# DRAFT

9. A Basin Plan amendment does not become effective until approved by the State Water Board and until the regulatory provisions are approved by the Office of Administrative Law (OAL). The amendment must also be approved by the U.S. Environmental Protection Agency (U.S. EPA).

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Basin Plan as adopted under the Lahontan Water Board [Resolution R6T-2006-0047](#).
2. Authorizes the Executive Director or designee to submit the amendment adopted under the Lahontan Water Board [Resolution R6T-2006-0047](#) to OAL for approval of the regulatory provisions and to U.S. EPA for the approval of the amendment.

## CERTIFICATION

The undersigned Acting Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 18, 2007.

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Jeanine Townsend  
Acting Clerk to the Board