

Rationale for Removal of the Chronic Aluminum Total Maximum Daily Load for the Cimarron River (Canadian River to Turkey Creek)

Assessment Units

Cimarron River (Canadian River to Cimarron) and Cimarron River (Cimarron to Turkey Creek), previously listed as Cimarron River (Canadian River to Turkey Creek)

NM-2305.1.A_10 and NM-2306.A_040, formerly NM-CR2-10000



**Cimarron River below the WWTP
(Photo taken June 28, 2002)**

New Mexico Water Quality Standards

Water quality standards for the Cimarron River (Canadian River to Cimarron) and Cimarron River (Cimarron to Turkey Creek) are set forth in sections 20.6.4.306 and 20.6.4.309, respectively of the *New Mexico Standards for Interstate and Intrastate Surface Waters* (NMAC 20.6.4).

Segment 20.6.4.306 Description

The Cimarron river downstream from state highway 21 in Cimarron to the Canadian river and all perennial reaches of tributaries to the Cimarron river downstream from state highway 21 in Cimarron.

Designated Uses

Irrigation, warmwater fishery, livestock watering, wildlife habitat, and secondary contact.

Standards

According to the New Mexico water quality standards (20.6.4.900.M NMAC), the dissolved aluminum chronic criterion is 87 µg/L and the dissolved aluminum acute criterion is 750 µg/L for aquatic life uses.

Segment 20.6.4.309 Description

The Mora river and its tributaries upstream from the state highway 434 bridge in Mora, all tributaries to the Mora river upstream from the USGS gaging station at La Cueva, perennial reaches of Coyote creek and its tributaries, the Cimarron river and its perennial tributaries above state highway 21 in Cimarron, perennial reaches of Rayado creek and its tributaries above Miami lake diversion, Ocate creek and perennial reaches of its tributaries upstream of Ocate, and all other perennial reaches of tributaries to the Canadian river northwest and north of U.S. highway 64 in Colfax county unless included in other segments.

Designated Uses

Domestic water supply, irrigation, high quality coldwater fishery, livestock watering, wildlife habitat, municipal and industrial water supply, and secondary contact.

Standards

According to the New Mexico water quality standards (20.6.4.900.M NMAC), the dissolved aluminum chronic criterion is 87 µg/L and the dissolved aluminum acute criterion is 750 µg/L for aquatic life uses.

Background

A chronic aluminum Total Maximum Daily Load (TMDL) for the Cimarron River was prepared by the Surface Water Quality Bureau (SWQB) in 2000 based on the 1998 data and approved by both the NM Water Quality Control Commission (WQCC) on December 12, 2000 and by the EPA on February 16, 2001. This TMDL can be found in the document "*Total Maximum Daily Load for Stream Bottom Deposits in Rayado Creek and Metals (Chronic Aluminum) in the Cimarron River*" (NMED/SWQB 2001). The original assessment unit, Cimarron River (Canadian River to Turkey Creek) was split during the preparation of the 2004-2006 Clean Water Act (CWA) Integrated §303(d)/§305(b) list because it spanned two water quality standard segments (NMAC 20.6.4). The 1998 survey data used to determine the aluminum impairment was reassessed as a result of the assessment unit split. It was determined that the original aluminum assessment from 1998 was done incorrectly for both the upper and lower portions of the Cimarron River. Therefore, there is no documented aluminum impairment, so the aluminum TMDL should be removed from the State's Water Quality Management Plan (WQMP). The stream bottom deposit TMDL for Rayado Creek will not be affected by the removal of the aluminum TMDL for the Cimarron River.

Methods

Water quality sampling methods in 1998 for the Cimarron River were in accordance with the EPA-approved Quality Assurance Project Plan (QAPP) for Water Quality Management Programs (NMED 1998).

Water Quality Assessments

For the Cimarron River (Canadian River to Cimarron) assessment unit, aluminum was sampled in 1998 at the USGS gage in Springer, NM. The assessment protocol used to assess Aquatic Life use support states, “The chronic criterion shall be applied to the arithmetic mean of the analytical results of consecutive-day samples” (NMED/SWQB 2004). Since the May 1998 data was collected over four consecutive days, the arithmetic mean was calculated as 45 µg/L. Therefore, there were no exceedences of the chronic criteria in this assessment unit using the appropriate assessment protocol. There were no other exceedences of the aluminum criteria in this assessment unit during the 1998 sampling survey.

The Cimarron River (Cimarron to Turkey Creek) assessment unit was sampled for aluminum in 1998 at the USGS gage near Cimarron, NM. The May 1998 data at this station was also collected over four consecutive days and the arithmetic mean was calculated as 162.5 µg/L. Therefore, there was one exceedence of the chronic criteria in this assessment unit using the appropriate assessment protocol (NMED/SWQB 2004), which should have lead to a conclusion of Fully Supporting Impacts Observed (FSIO). There were no other exceedences of the aluminum criteria in this assessment unit during the 1998 sampling survey.

Based on this reassessment both assessment units were reclassified on the 2004-2006 Integrated §303(d)/§305(b) list as fully supporting and a recommendation was made that the TMDL be removed from the State’s WQMP.

Final Determination

The SWQB has already removed the aluminum exceedences for both the Cimarron River (Canadian River to Cimarron) and Cimarron River (Cimarron to Turkey Creek) from New Mexico’s 2004-2006 Integrated 303(d)/305(b) list. This recommendation is based on the reassessment of the 1998 data. Waters removed from the 303(d) list do not require development of a TMDL and therefore the TMDL prepared in 2000 should be removed from the WQMP.

Information supporting the recommendation for this delisting is located in the SWQB file, which is open to public inspection upon appointment.

References

New Mexico Environment Department/Surface Water Quality Bureau (NMED/SWQB). 1998. *Quality Assurance Project Plan for Water Quality Management Programs*. Surface Water Quality Bureau. Santa Fe, NM.

———. 2001. *Total Maximum Daily Load for Stream Bottom Deposits in Rayado Creek and Metals (Chronic Aluminum) in the Cimarron River*. February. Available online at <http://www.nmenv.state.nm.us/swqb/index.html>.

———. 2004. *State of New Mexico Procedures for Assessing Standards Attainment for the Integrated §303(d)/§305(b) Water Quality Monitoring and Assessment Report*. January. Available online at <http://www.nmenv.state.nm.us/swqb/index.html>.