EXECUTIVE SUMMARY

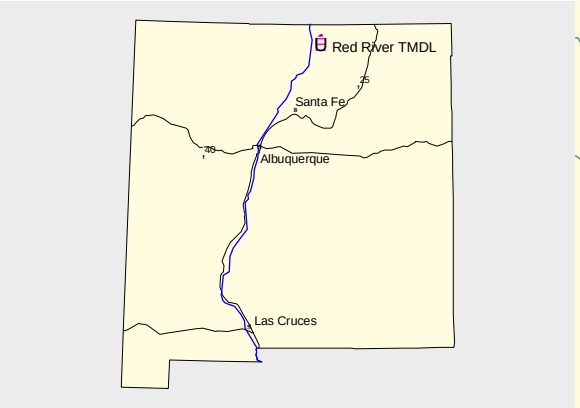
Section 303(d) of the Federal Clean Water Act requires states to develop Total Maximum Daily Load (TMDL) management plans for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a water body can assimilate without violating a state's water quality standards. It also allocates that load capacity to known point sources and nonpoint sources at a given flow. Total maximum daily loads are defined in 40 Code of Federal Regulations Part 130 as the sum of the individual Waste Load Allocations (WLAs) for point sources and Load Allocations (LAs) for nonpoint sources and background conditions, and includes a Margin of Safety (MOS).

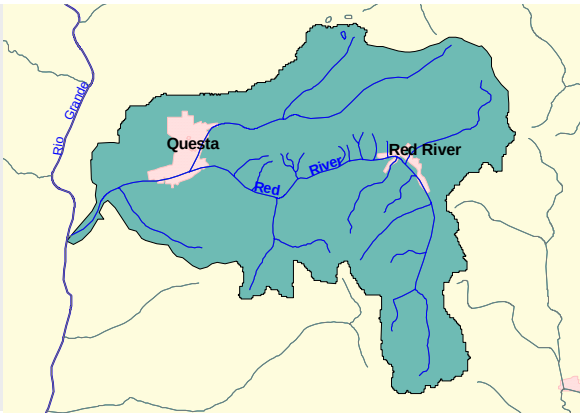
The Red River (from its confluence with the Rio Grande), together with its tributaries and headwaters (upstream from the confluence of the main and west forks of the Red River), define the Red River Watershed of northern New Mexico. The Surface Water Quality Bureau (SWQB) conducted an intensive surface water quality survey of the Red River watershed in 1999. Sampling stations were established along the course of the river to evaluate the impact of tributary streams and to establish background conditions. As a result of assessing data generated during this monitoring effort, combined with data from outside sources that met SWQB quality assurance requirements, impairment determinations of New Mexico water quality standards for metals (aluminum) were documented in the Red River (Rio Grande to Placer Creek), Bitter Creek, and Placer Creek. Pioneer Creek was found to be impaired with respect to turbidity and Bitter Creek is impaired with respect to sedimentation/siltation (i.e. stream bottom deposits). This TMDL document addresses the above noted impairments, except for chronic aluminum, as summarized in the tables below. Draft TMDLs for the Red River Watershed were previously prepared in 2002 by Daniel B. Stephens & Associates, Inc. for the SWQB. Those TMDLs were not finalized and are replaced by the TMDLs contained in this document.

Chronic aluminum TMDLs for the main stem Red River, Bitter Creek, and Placer Creek are not included in this document due to potential changes in the *New Mexico Standards for Interstate and Intrastate Surface Waters* for chronic aluminum in the Red River Watershed. Naturally occurring aluminum levels in the Red River Watershed are typically high and often exceed the chronic aluminum standard of 0.087 milligrams per liter (mg/L). The future development of chronic aluminum TMDLs for the Red River will be dependent on the development of appropriate segment specific chronic aluminum standards.

Additional water quality data will be collected by New Mexico Environment Department during the standard rotational period for intensive stream surveys. As a result, targets will be re-examined and potentially revised as this document is considered to be an evolving management plan. In the event that new data indicate that the targets used in this analysis are not appropriate and/or if new standards are adopted, the load capacity will be adjusted accordingly. When water quality standards have been achieved, the reach will be moved to the appropriate attainment category on the Clean Water Act Integrated §303(d)/§305(b) list of waters (NMED/SWQB 2004a).

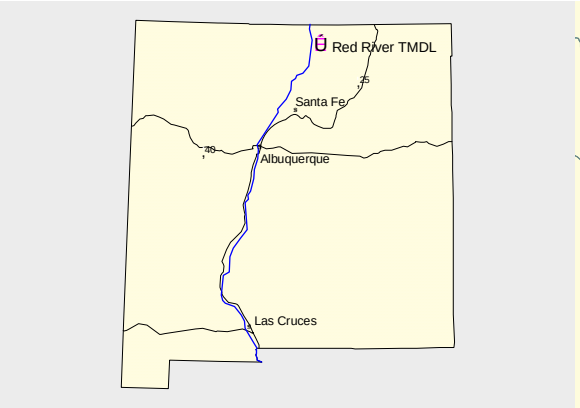
TOTAL MAXIMUM DAILY LOAD FOR ALUMINUM
RED RIVER (RIO GRANDE TO PLACER CREEK)

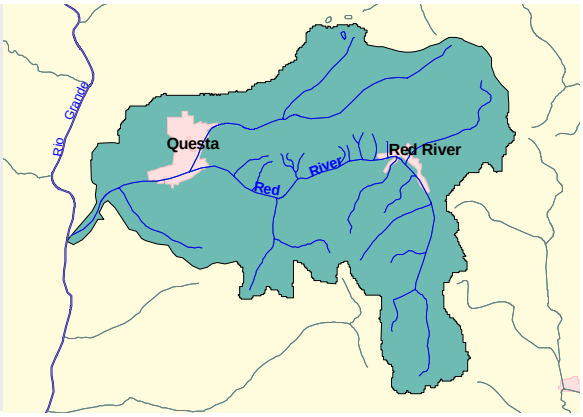




New Mexico Standards Segment	Rio Grande Basin 20.6.4.122
Assessment Unit Identifier	Red River (Rio Grande to Placer Creek), NM-2119_10 (formerly NM-URG1-20400)
Assessment Unit Length	20.2 miles
Parameters of Concern	Acute Aluminum
Designated Uses Affected	Coldwater Fishery
Geographic Location	Upper Rio Grande USGS Hydrologic Unit Code 13020101
Scope/size of Watershed	147 mi^2
Land Type	Southern Rockies Ecoregion (21)
Land Use/Cover	Forest (78%), Grassland (10%), Shrubland (8%), Mining (2.5%), Agriculture (0.5%), Built-up (0.4%), Barren (0.3%), Water (0.05%)
Identified Sources	Highway/Road/Bridge Runoff (Non-construction related), Impacts from Abandoned Mine Lands (Inactive), Mill Tailings, Mine Tailings, Natural Sources
Land Management	U.S. Forest Service (83%), Private (12.8%), BLM (4%), State (0.1%), Tribal (<0.1%)
Priority Ranking	High
TMDL for: Acute Aluminum	**WLA (3.90) + LA (578) + MOS (194) = 776**

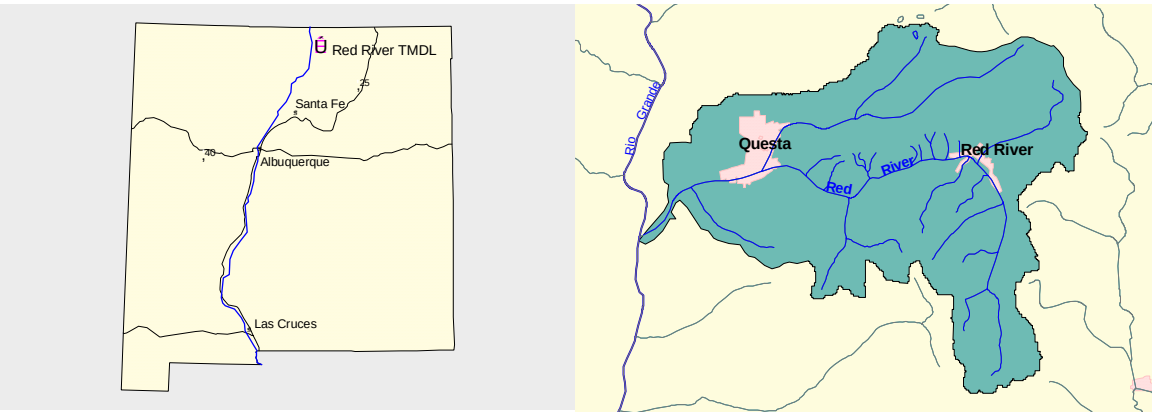
TOTAL MAXIMUM DAILY LOAD FOR ACUTE ALUMINUM AND SEDIMENTATION/SILTATION
BITTER CREEK (RED RIVER TO THE HEADWATERS)





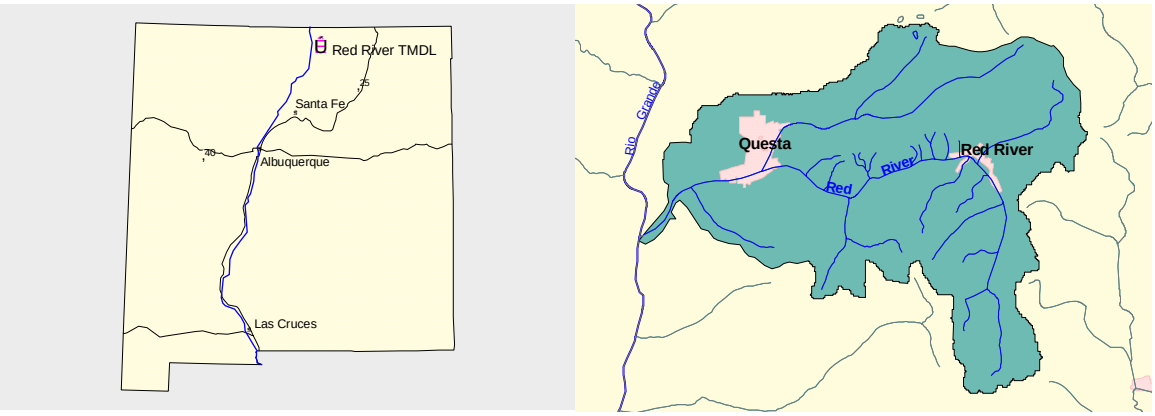
New Mexico Standards Segment	Rio Grande Basin 20.6.4.123
Assessment Unit Identifier	Bitter Creek (Red River to the headwaters), NM-2120.A_705 (formerly NM-URG1-20450)
Assessment Unit Length	7.1 miles
Parameters of Concern	Acute Aluminum, Sedimentation/Siltation
Designated Uses Affected	High Quality Coldwater Fishery
Geographic Location	Upper Rio Grande USGS Hydrologic Unit Code 13020101
Scope/size of Watershed	10 mi^2
Land Type	Southern Rockies Ecoregion (21)
Land Use/Cover	Forest (84%), Shrubland (9%), Grassland (7%), Commercial (<1%), Residential (<1%), Water (<1%)
Identified Sources	Acid Mine Drainage, Highway/Road/Bridge Runoff (Non-construction related), Natural Sources, Other Recreational Pollution Sources, Surface Mining
Land Management	U.S. Forest Service (97%), Private (3%)
Priority Ranking	High
TMDL for: Acute Aluminum Sedimentation/Siltation	 **WLA (0) + LA (31.4) + MOS (10.5) = 41.9** **WLA (0) + LA (16) + MOS (4.0) = 20**

TOTAL MAXIMUM DAILY LOAD FOR TURBIDITY
PIONEER CREEK (RED RIVER TO THE HEADWATERS)



New Mexico Standards Segment	Rio Grande Basin 20.6.4.123
Assessment Unit Identifier	Pioneer Creek (Red River to the headwaters), NM-2120.A_703 (formerly NM-URG1-20430)
Assessment Unit Length	4.3 miles
Parameters of Concern	Turbidity
Designated Uses Affected	High Quality Coldwater Fishery
Geographic Location	Upper Rio Grande USGS Hydrologic Unit Code 13020101
Scope/size of Watershed	5.3 mi^2
Land Type	Southern Rockies Ecoregion (21)
Land Use/Cover	Forest (90%), Grassland (5.3%), Shrubland (4.8%), Commercial (<1%), Residential (<1%)
Identified Sources	Resource Extraction, Recreation, Loss of Riparian Habitat, Streambank Modification/Destabilization
Land Management	U.S. Forest Service (92%), Private (8%)
Priority Ranking	High
TMDL for: Turbidity	**WLA (0) + LA (517) + MOS (129) = 646**

TOTAL MAXIMUM DAILY LOAD FOR ACUTE ALUMINUM PLACER CREEK (RED RIVER TO THE HEADWATERS)



New Mexico Standards Segment	Rio Grande Basin 20.6.4.123
Assessment Unit Identifier	Placer Creek (Red River to the headwaters), NM-2120.A_706 (formerly NM-URG1-20510)
Assessment Unit Length	1.3 miles
Parameters of Concern	Acute Aluminum
Designated Uses Affected	High Quality Coldwater Fishery
Geographic Location	Upper Rio Grande USGS Hydrologic Unit Code 13020101
Scope/size of Watershed	2.4 mi^2
Land Type	Southern Rockies Ecoregion (21)
Land Use/Cover	Forest (93%), Shrubland (4.5%), Grassland (2.5%)
Identified Sources	Habitat Modification (other than Hydromodification), Loss of Riparian Habitat, Natural Sources, Placer Mining
Land Management	U.S. Forest Service (92%), Private (8%)
Priority Ranking	High
TMDL for: Acute Aluminum	**WLA (0) + LA (7.50) + MOS (2.50) = 10.0**