

WATER QUALITY IN TAOS COUNTY

An Amigos Bravos & Sierra Club Project
Sampling Northern New Mexico Rivers

TAOS COUNTY WATER QUALITY SAMPLING SITES

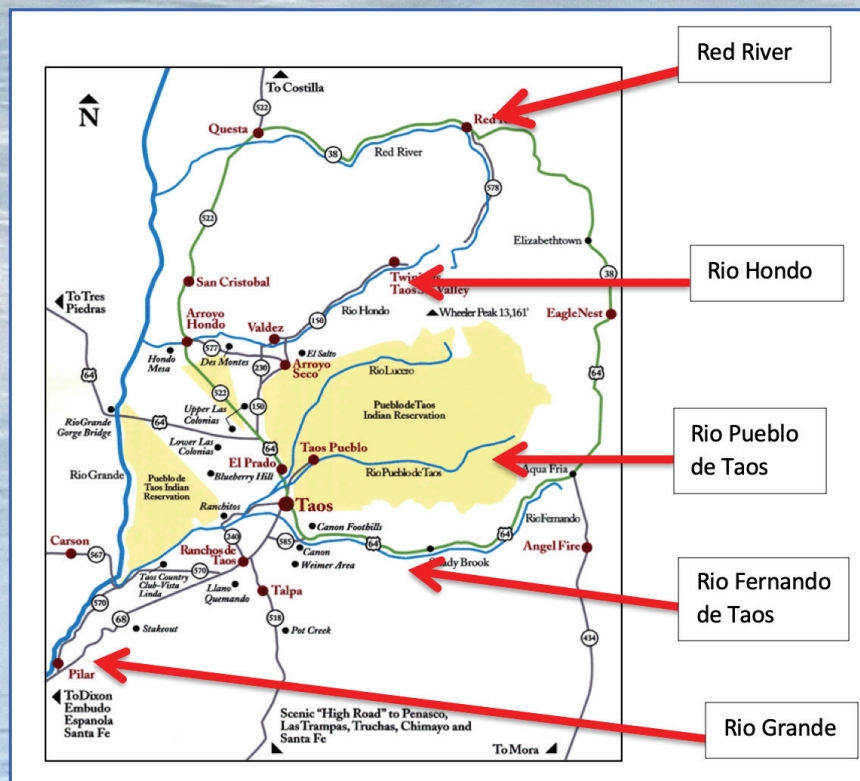


Figure 1.1. (left) The red arrows indicate rivers sampled for water quality within Taos County.

The Rio Fernando de Taos, Rio Pueblo de Taos, the Red River, and the Rio Hondo were analyzed with in-stream water meters and by an EPA-approved lab from 2007-2019.

Water quality parameters were sampled in 4-5 sites in each river, three times per year.

All data was collected by the Water Sentinels Rios de Taos under approved Quality Assurance Plans. This document is a selection of the most intriguing water quality findings. The full summary of all of

the averaged data can be found at, **www.amigosbravos.org/water-quality-monitoring**. At this link you can also find the most current Water Sentinels Results from 2019 onward.

To join the project and sample water in your community, email: **sromeling@amigosbravos.org** or call **575-758-3874**

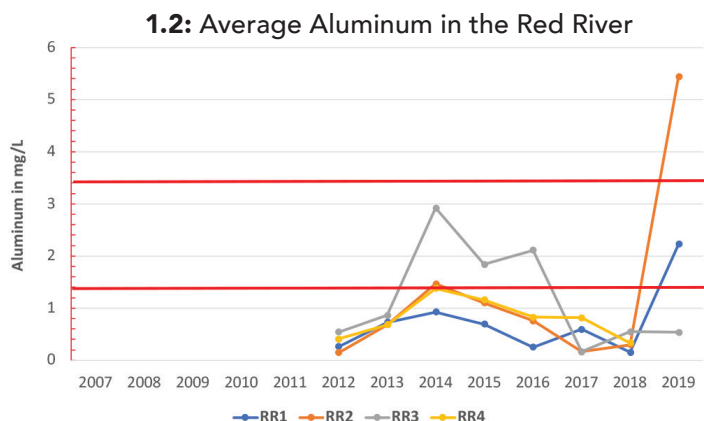


Figure 1.2. The Red River (RR) sites are numbered RR1 to RR4 with the furthest upstream site; RR1, located at the Junebug Campground, across from the Chevron Molybdenum Mine, RR2 at the Goat Hill Campground, RR3 at the Highway 522 Bridge and RR4 at the Fish Hatchery south of the mine.

The current State of New Mexico Water Quality Standards (WQS) provides a table for maximum aluminum values (pg 46 of Title 20 Chapter 6, Part 4: Environmental Protection Water Quality Standards for Interstate and Intrastate Surface Waters). These values are dependent on hardness. The table provides values for both *acute* and *chronic* criteria for a hardness of 100mg/L, a common value presented here. The standards are: 3.421 mg/L acute (red line); 1.370 mg/L chronic (red line). For a hardness of 200mg/L, the standards are: 8.838 mg/L acute; 3.541mg/L chronic. To see the full aluminum standard table, visit the full summary document at: www.amigosbravos.org/water-quality-monitoring.

The EPA has disapproved the hardness-based equation for total recoverable aluminum in waters where the pH is less than 6.5 in the receiving stream for federal purposes of the Clean Water Act. Water Sentinels collected pH concurrently with the Aluminum samples, documenting that it was always above 6.5. The lowest value was a pH 7.32 in 2012.

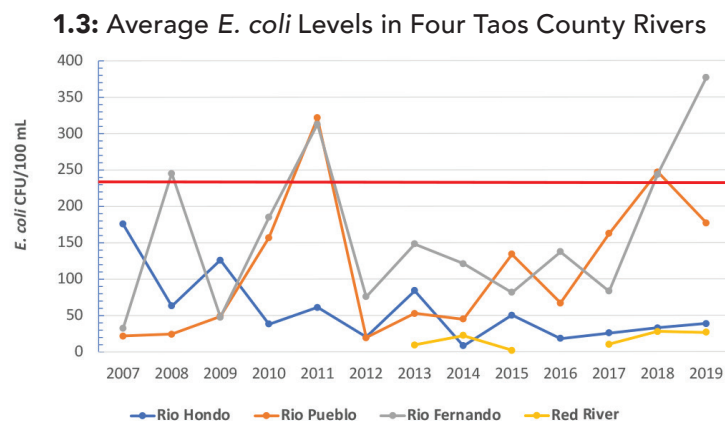


Figure 1.3. Average *E. coli* bacteria values in the Rio Fernando exceeded the WQS of 235 CFU/100ml (red line) in 2008, 2011, 2018, and 2019. In 2011 and 2018, the average *E. coli* values in the Rio Pueblo also exceeded the WQS.

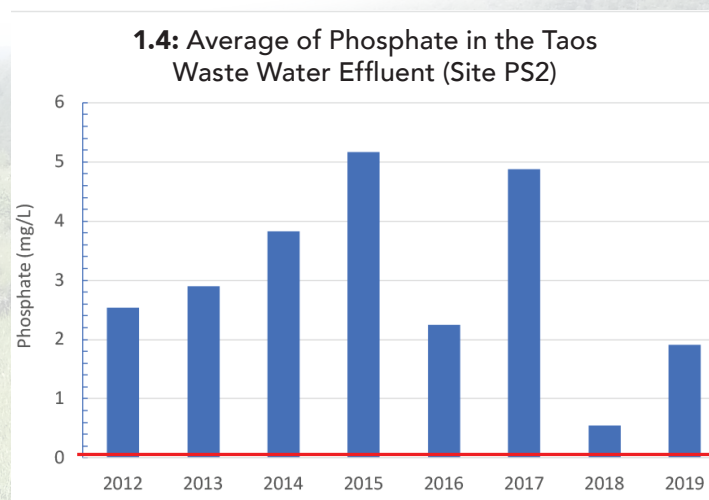


Figure 1.4. The WQS for Phosphate is <0.01mg/L. While the Rio Pueblo showed the lowest level of phosphate in 2018, it was still above the WQS for phosphate. Although the State of New Mexico's water quality standards do not apply to this site, it is important to note that the average levels never reach the standard.

1.5: Average Ammonia Levels Below the Taos Waste Water Treatment Plant

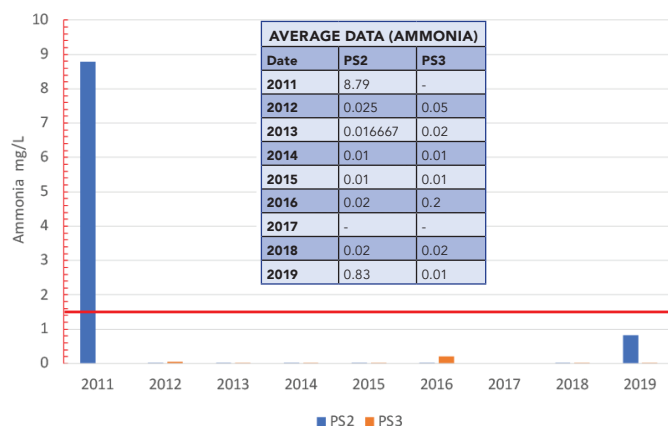
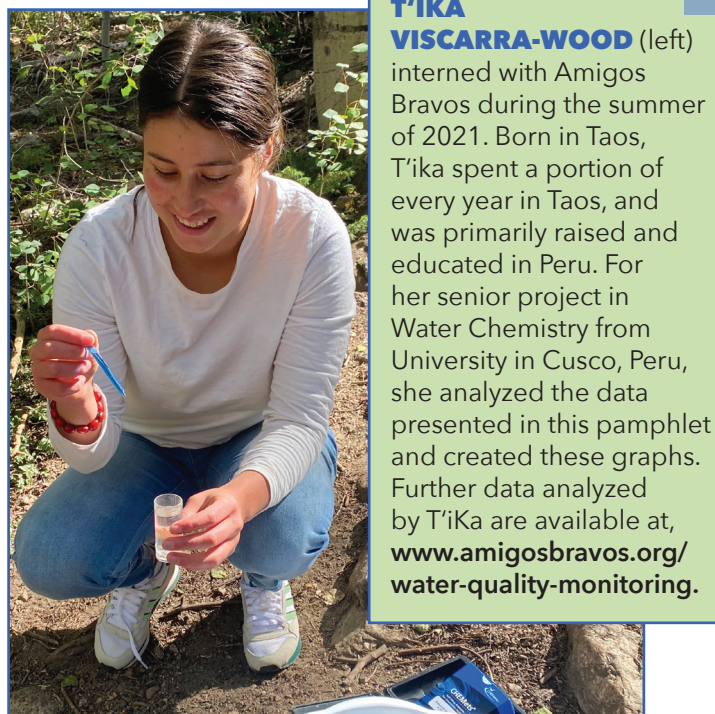


Figure 1.5. The World Health Organization's threshold for ammonia odor concentration is approximately 1.5mg/L (red line). The results show that average levels of ammonia at PS2 (small tributary to the Rio Pueblo into which the Town of Taos Wastewater Treatment Plant discharges) are below the odor threshold level for all years except 2011, when the threshold was substantially exceeded. Average levels of ammonia at PS3 (the mainstream of the Rio Pueblo below the confluence of the wastewater tributary) were below the threshold.



T'ika VISCARRA-WOOD (left) interned with Amigos Bravos during the summer of 2021. Born in Taos, T'ika spent a portion of every year in Taos, and was primarily raised and educated in Peru. For her senior project in Water Chemistry from University in Cusco, Peru, she analyzed the data presented in this pamphlet and created these graphs. Further data analyzed by T'ika are available at, www.amigosbravos.org/water-quality-monitoring.

1.6: Average Dissolved Oxygen in Four Taos County Rivers

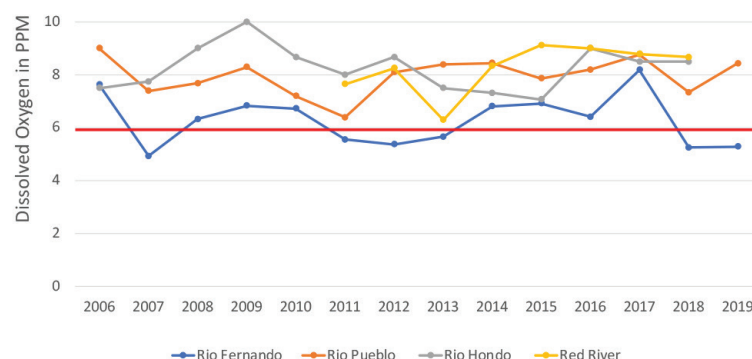
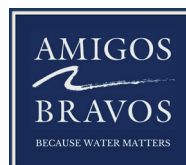


Figure 1.6. The water quality standard for dissolved oxygen (DO) is equal to or above 6ppm (red line). High levels of dissolved oxygen are vital for the survival of fish and other aquatic organisms. Average DO in the Rio Fernando tested below WQS in 2007, 2011-2013, 2018, and 2019.



*Dissolved Oxygen can vary widely throughout a 24 hour period. Our sampling is only a specific snapshot in time from one point during the day, usually in the

early morning hours when temperatures are typically lower and therefore DO levels would be expected to be higher. To fully determine if the DO standard is being met in these streams or to fully document the extent of exceedances, devices that gather continuous monitoring results would need to be deployed.



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Please email us at membership@amigosbravos.org, or feel free to stop by our offices if you have questions about our work and would like to learn about ways you can help support it.