

## February 2014

Tetra Tech sampled the Purgatoire River and tributaries on February 12 and 13, 2014. The following information provides a “snapshot” of water quality information from these two days of water quality monitoring. Figure 1 depicts stream flow, electrical conductivity (EC), and calculated Sodium Adsorption Ratio (SAR) at various points along the Purgatoire River from upstream (PR37.1 at Stonewall) to downstream (PR 2.8 below Trinidad Lake).

Sampling was conducted for all stations where flow was present and ice free conditions existed. February stream flow (Figure 1, blue line on graph) in the Purgatoire River increased with around 18 cfs flowing below Sarcillo Canyon (Station PR 16.9). Figure 2 (USGS provisional stream flow data) depicts estimated stream flow at the USGS Madrid gaging station (PR-8.8, upstream of Trinidad Lake) fluctuating between 17 cfs and 30 cfs during the sampling period. The EC that is protective of alfalfa crops in the Purgatoire valley is 1,300- $\mu\text{S}/\text{cm}$ . The maximum EC measurement in February was 705  $\mu\text{S}/\text{cm}$ ; below the threshold protective of alfalfa. The SAR measurements, a function of sodium, magnesium and calcium concentrations, were well below the threshold value protective of soil infiltration rates, measuring 3.29 at Station PR-8.8 (upstream of Trinidad Lake at Madrid, CO).

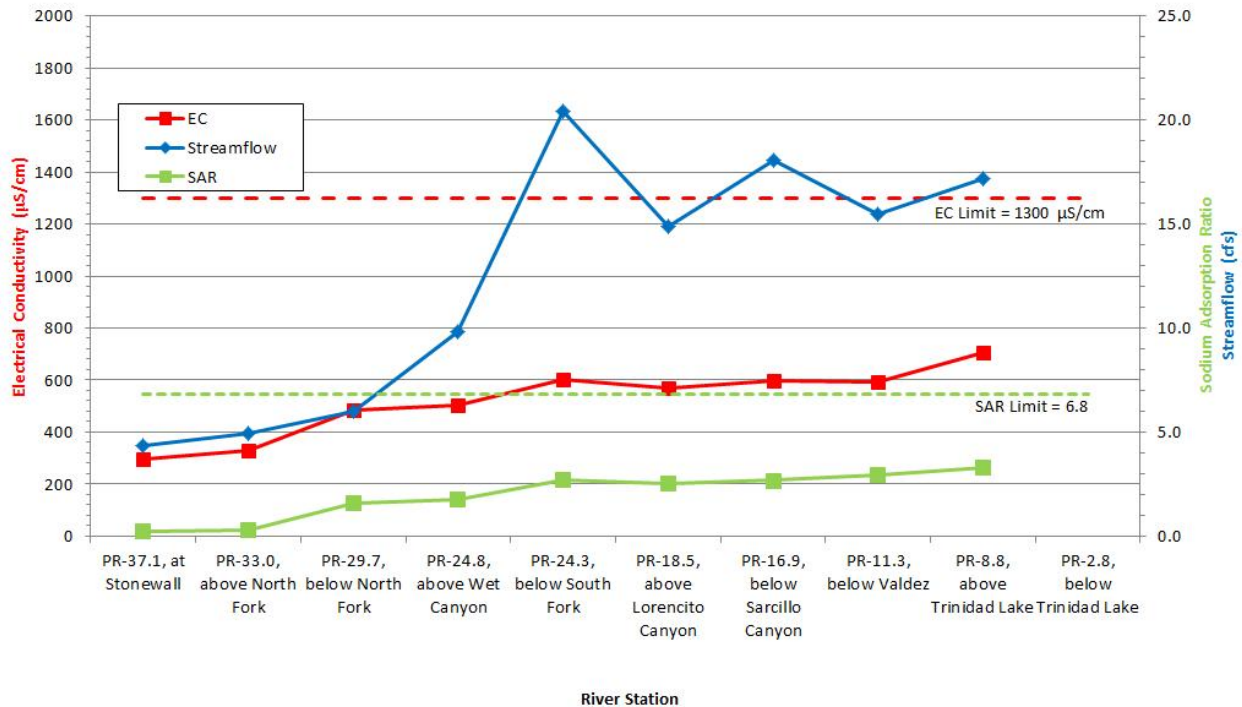


Figure 1 – February Streamflow, Electrical Conductivity and Sodium Adsorption Ratio

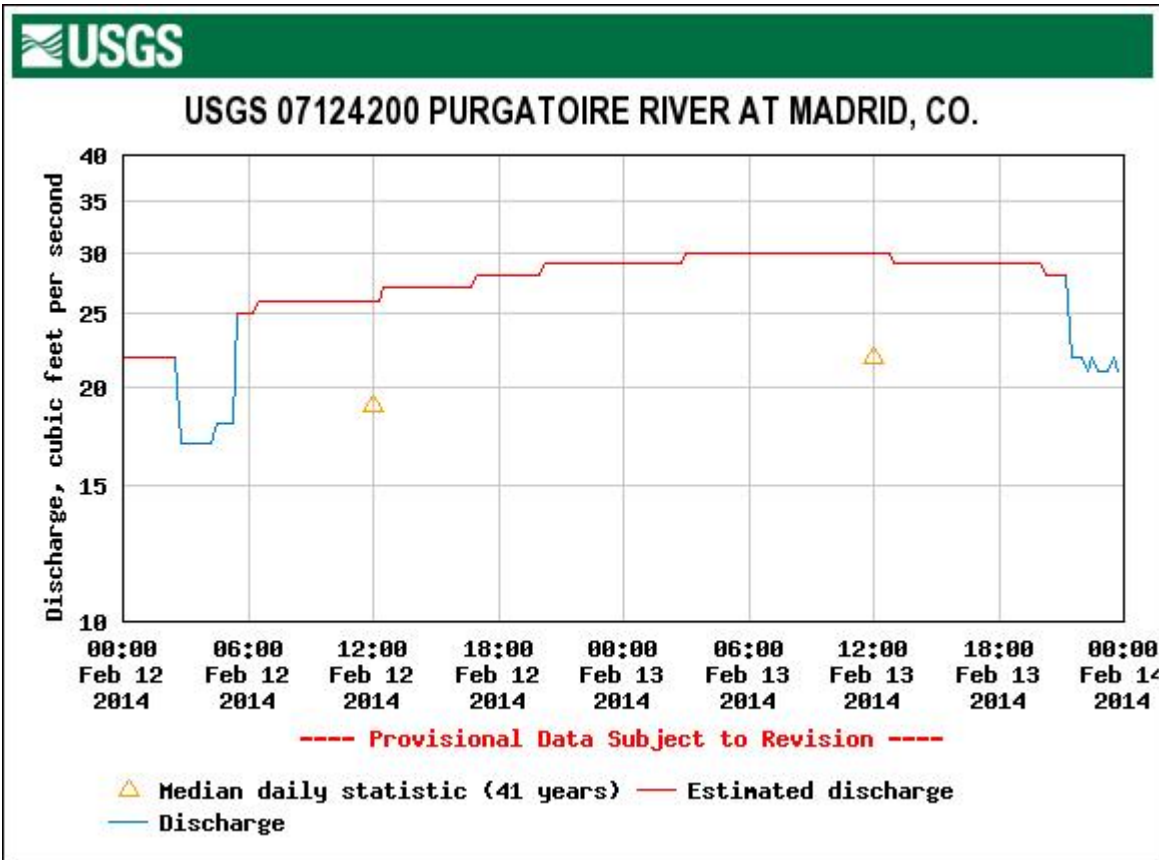


Figure 2 - USGS Provisional Flow Data, February - Upstream of Trinidad Lake at Madrid, CO

Total recoverable iron concentrations continue to demonstrate a high correlation with the sediment (TSS) load carried by the Purgatoire River (Figure 3). In February 2014, all iron data measurements were below the 1mg/L chronic standard protective of aquatic life.

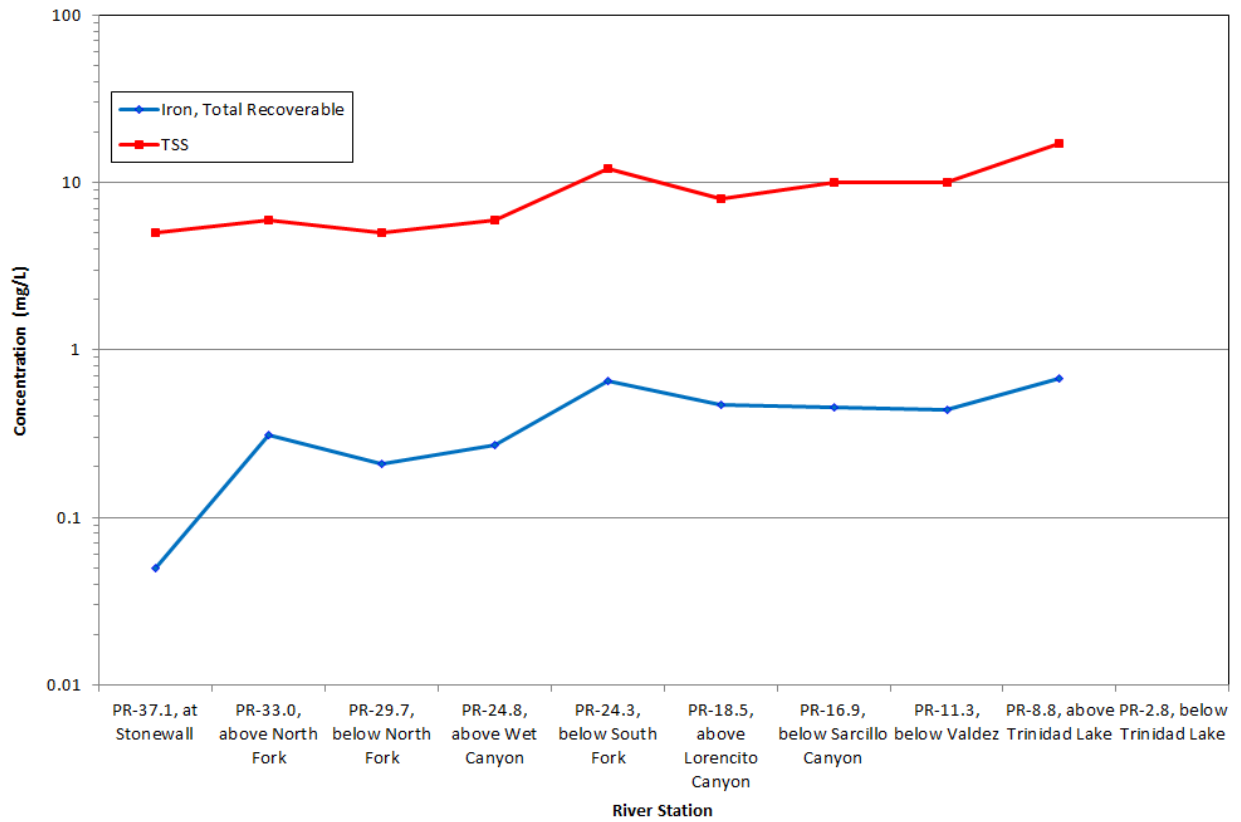


Figure 3 – Correlation between TSS and Total Recoverable Iron in the Purgatoire – February