

## September 2014

Tetra Tech sampled the Purgatoire River and tributaries on September 17 and 18, 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. September stream flow (Figure 1, blue line on graph) in the Purgatoire River increased with around 36.6 cfs flowing below South Fork (Station PR 24.3), and then increased slightly to 37.54 cfs at PR 8.8, above Trinidad Lake. Figure 2 (USGS approved stream flow data) depicts estimated stream flow at the USGS Madrid gaging station (PR-8.8, upstream of Trinidad Lake) in September 2014. During sampling on September 17 and 18, the flows fluctuated between 28-cfs and 34-cfs during the sampling event. The EC threshold that is protective of alfalfa crops in the Purgatoire valley is 1,300- $\mu\text{S}/\text{cm}$ . The maximum EC measurement in September was 425  $\mu\text{S}/\text{cm}$ ; 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 1.70 at Station PR-8.8 (upstream of Trinidad Lake at Madrid, CO).

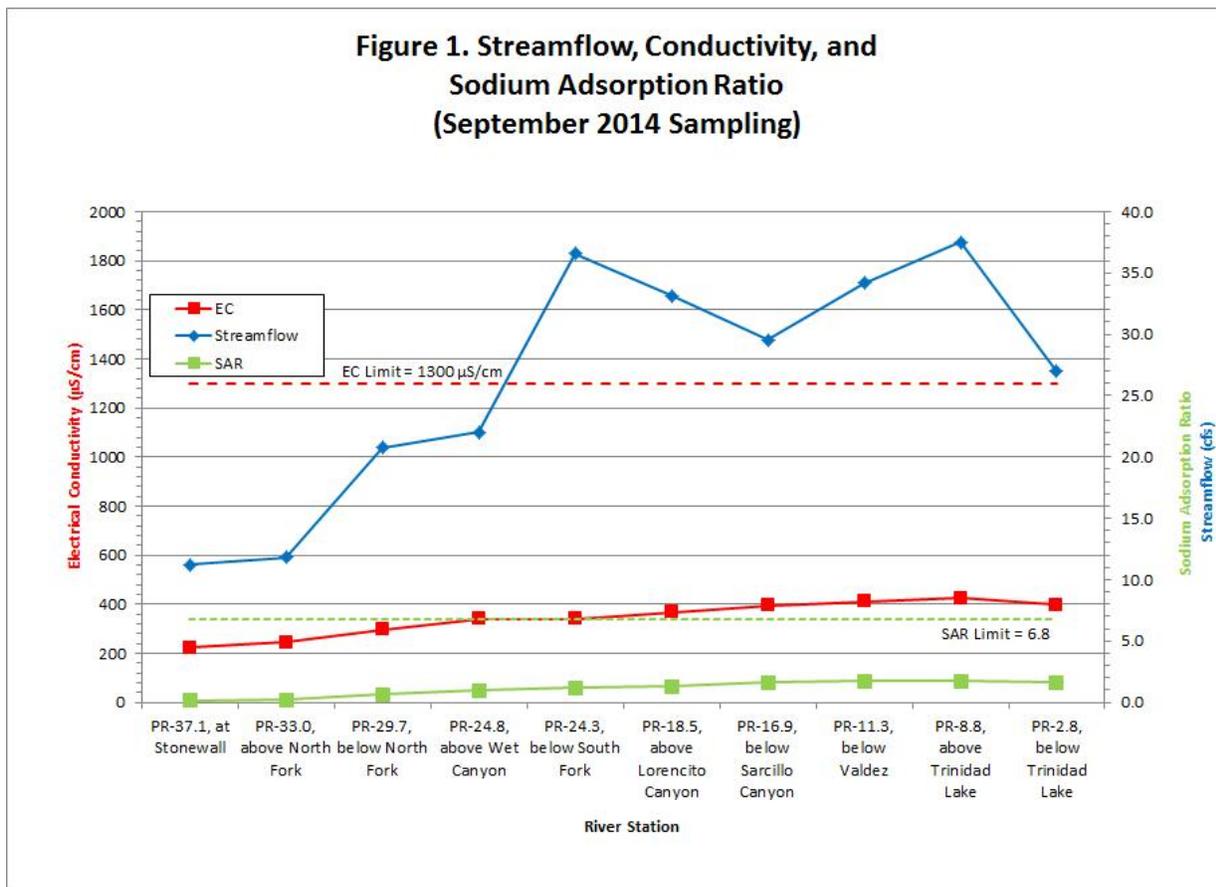


Figure 1 – September 2014 Streamflow, Electrical Conductivity and Sodium Adsorption Ratio

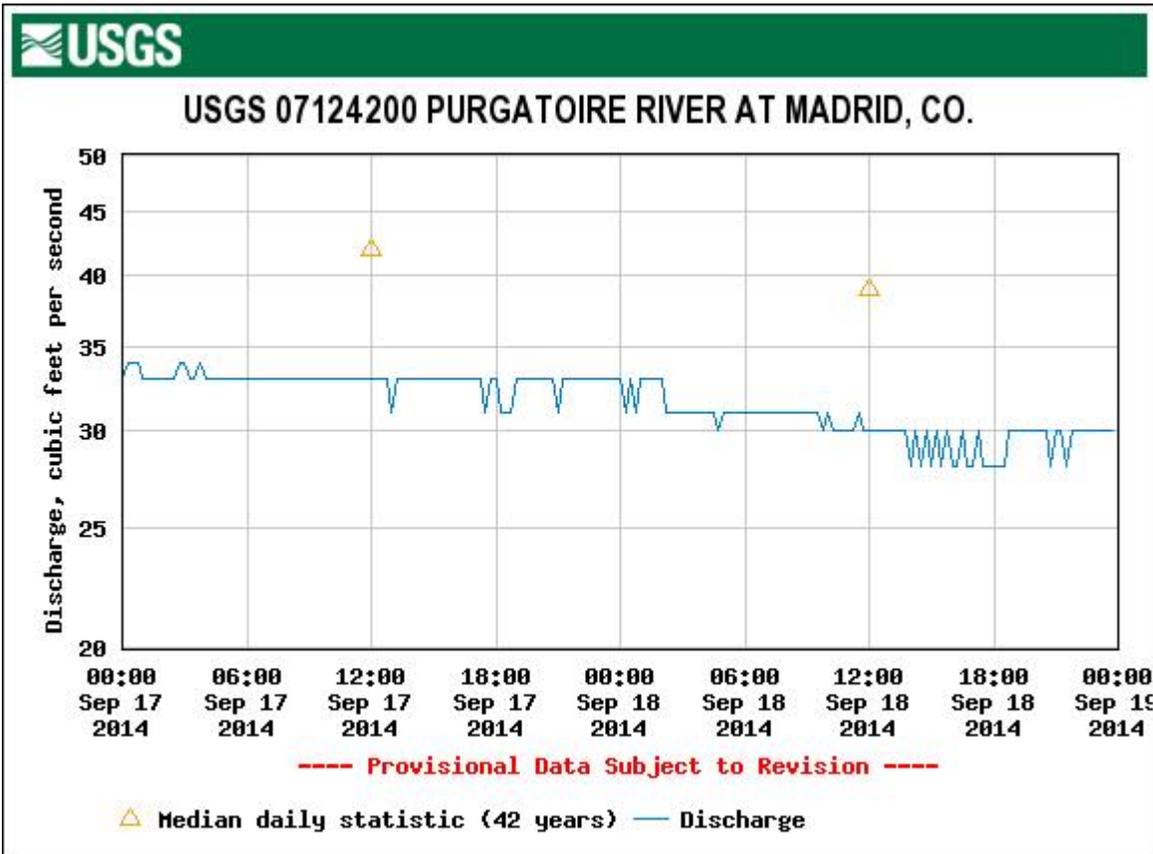


Figure 2 - USGS Provisional Flow Data, September 2014 - Upstream of Trinidad Lake at Madrid, CO

Total recoverable iron concentrations demonstrated a decrease in correlation with the sediment (TSS) load carried by the Purgatoire River (Figure 3) as the seasonal flows decrease. All ten iron data measurements were below the 1mg/L chronic standard protective of aquatic life.

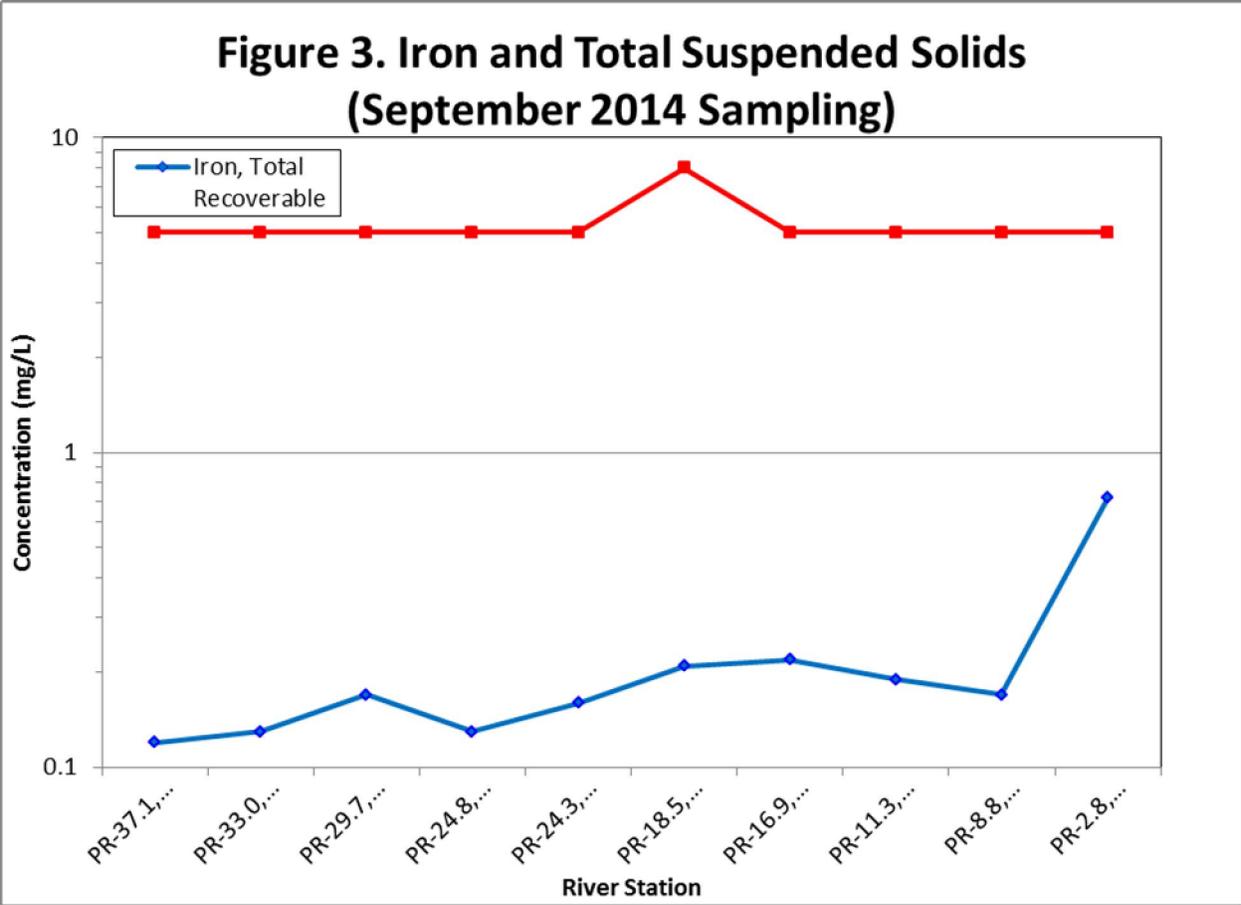


Figure 3 – Correlation Between TSS and Total Recoverable Iron in the Purgatoire – September 2014