NEW MEXICO
ENVIRONMENT DEPARTMENT

Harold Runnels Building
1190 Saint Francis Drive, PO Box 5469
Santa Fe, NM 87502-5469
Telephone (505) 827-0424 Fax (505) 827-2818

www.env.nm.gov

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lt. Governor

RYAN FLYNN
Secretary

BUTCH TONGATE
Deputy Secretary

Surface Water Quality Bureau:

The New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) was successful in getting baseline data at three water quality stations on the Animas and San Juan rivers (Animas above Estes Arroyo near Aztec, Animas at Farmington, and San Juan at Lion's Park near Kirtland – see Figure 1) prior to the arrival of the Gold King Mine Spill plume. On Friday, August 7, 2015, SWQB also deployed multi-parameter recording devices at each site set to record every 15 minutes for the next two weeks (see Figures 2 – 4). Before the arrival of the plume, the Farmington area received a moderate amount of precipitation which produced increased flow and sediment to the San Juan River. SWQB captured this event which may also be of interest as it can provide additional baseline data regarding tributary inputs following storm events that preceded the arrival of the plume.

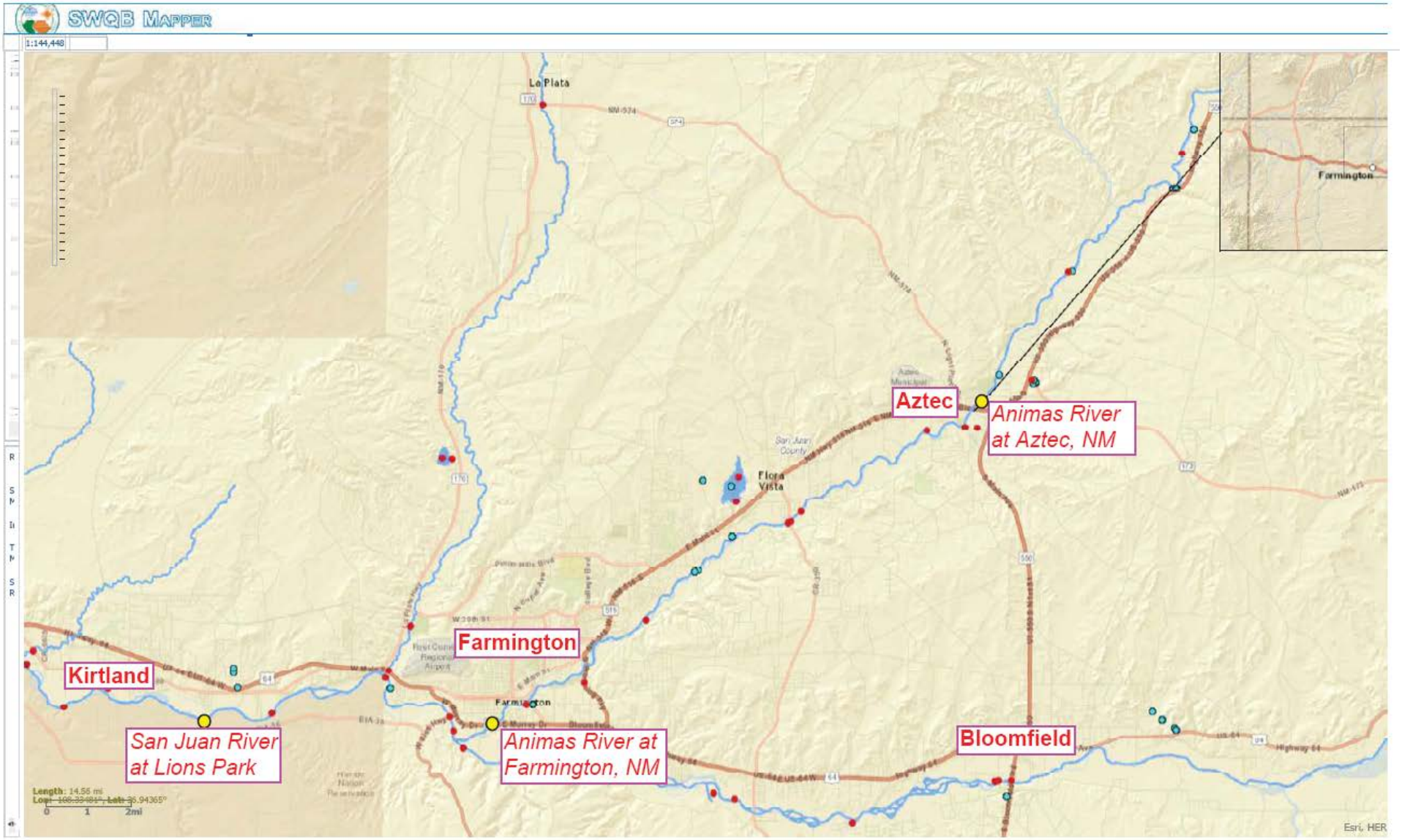
pH prior to plume arrival averaged approximately 8.06 and, after the passage, it ranged from 7.84 - 8.08. Visually, the plume was easily identifiable in the Animas River, but below the confluence with the San Juan River it was far harder to discern much of a change in color. The larger volume of the San Juan River in combination with the recent rains and sediment input and releases from Navajo Reservoir in response to the Gold King Mine Spill largely overwhelmed the colored Animas River inflow.

SWQB observed, as expected, a spike in the turbidity levels in both Animas River sites after the arrival of the plume. This was then followed by a predictable, yet gradual, drop in turbidity. Values the following day were substantially lower and turbidity seemed to be stabilizing in the Animas River approximately 8 hours after the arrival of the plume (Figures 2 – 4). However, storm events the evening of August 7th appear to have increased flow and sediment inputs into the San Juan River causing elevated and variable turbidity prior to the plume and an indistinguishable “turbidity signature” as the plume passed the San Juan River site.

Dissolved oxygen in both rivers is similar to what one would expect in a river system with natural diel fluctuations; however, it appears that the San Juan River had a small drop in DO as the plume initially moved through.

SWQB would like to thank Monica Peterson with the Farmington WWTP for providing us with extra sample bottles to ensure that we could complete the sampling this weekend and also the Albuquerque USGS field staff for providing us with backup nitric acid just in case we ran out. More data and information will be shared as it becomes available.

Figure 1. SWQB Water Quality Monitoring Stations on the Animas and San Juan Rivers



Provisional sonde data 8/7/15 – 8/9/15. These data are provisional and subject to revision.

After final retrieval, these data will be subject to SWQB's Verification and Validation procedures according to relevant SOPs and may have drift adjustments, if acceptable, potential qualification, or complete rejection of the data based on any identified errors in equipment performance.

Figure 2. Animas River above Estes Arroyo (Ruins RV Park) near Aztec, NM

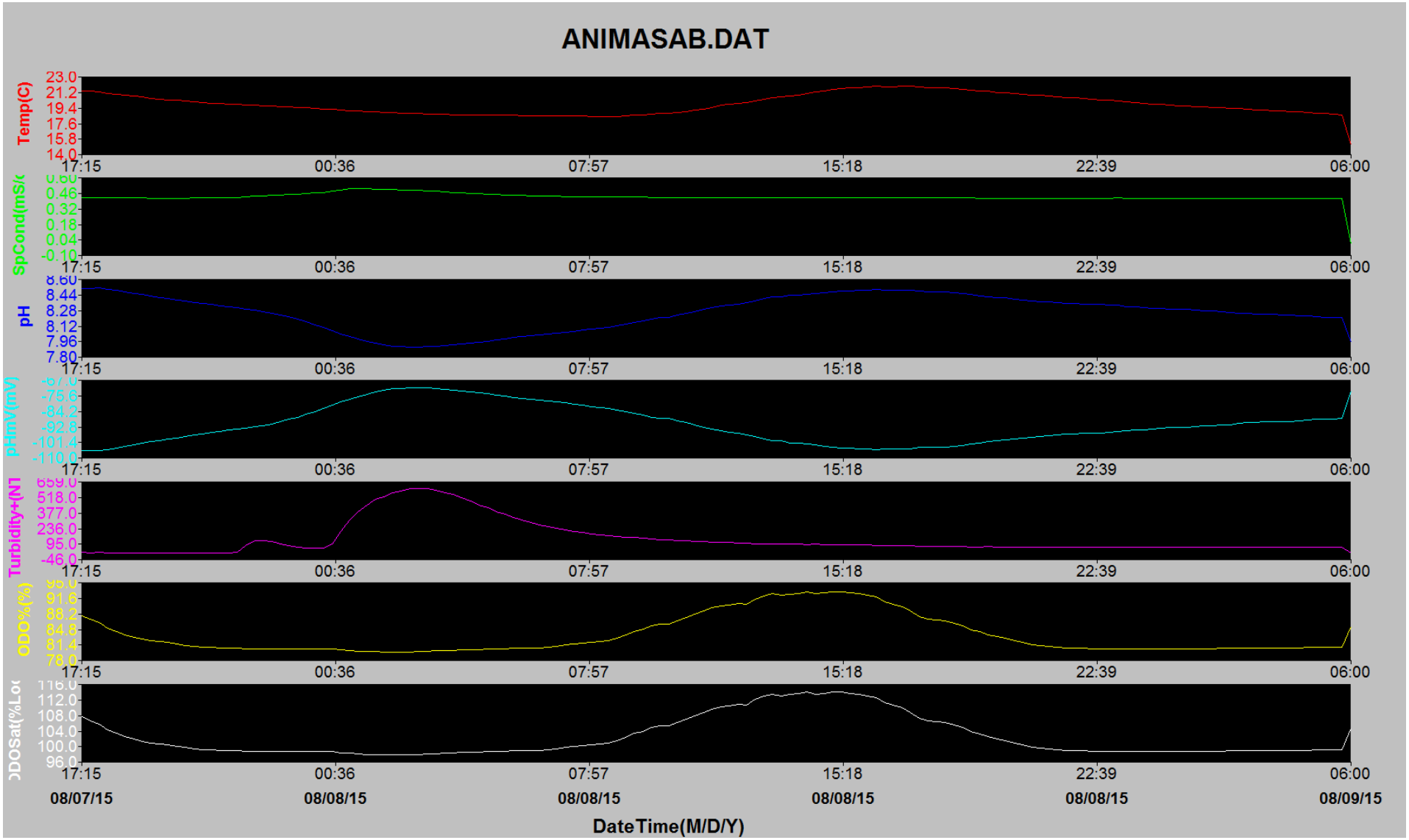


Figure 3. Animas River at Boyd Park in Farmington, NM

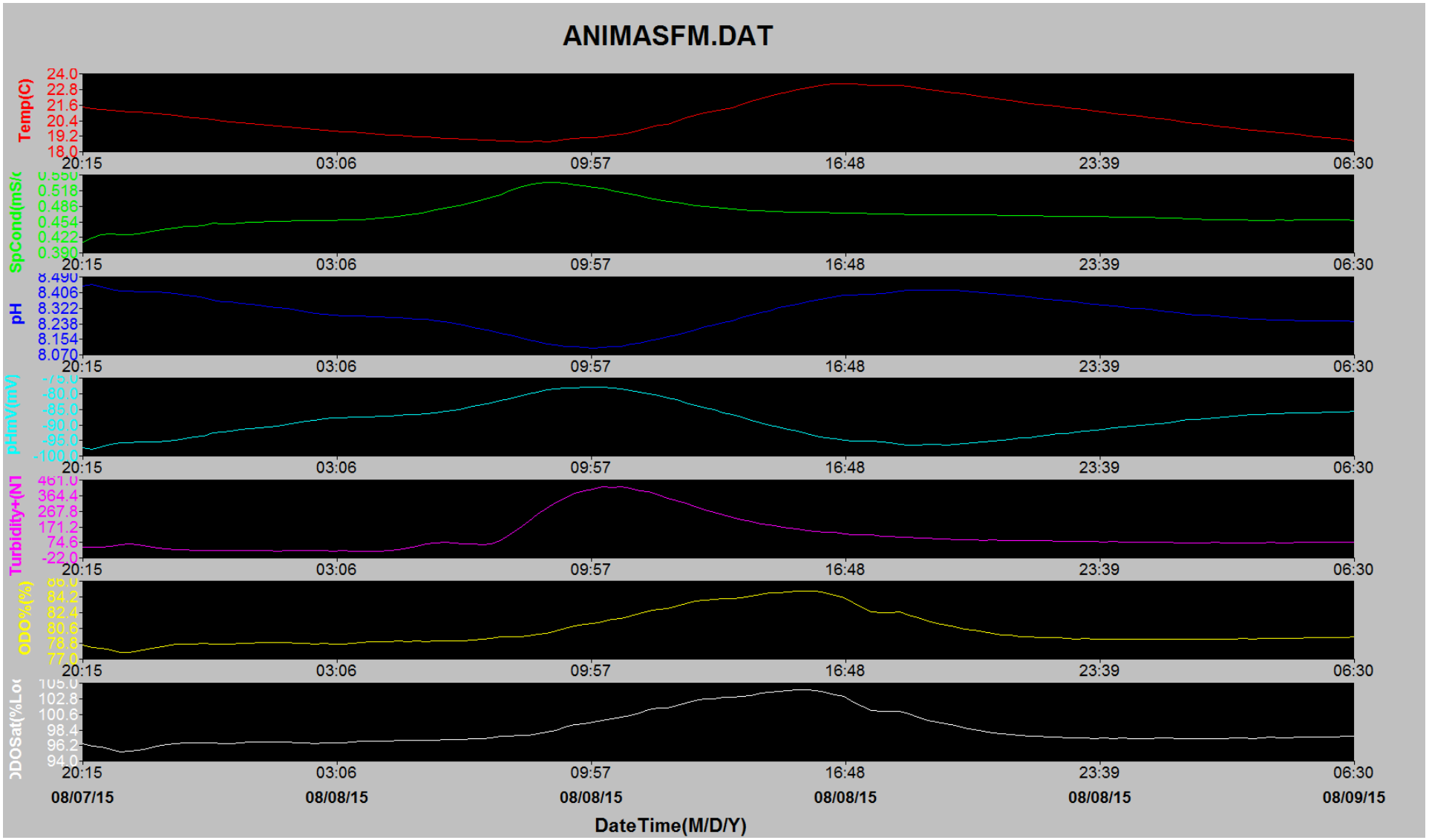
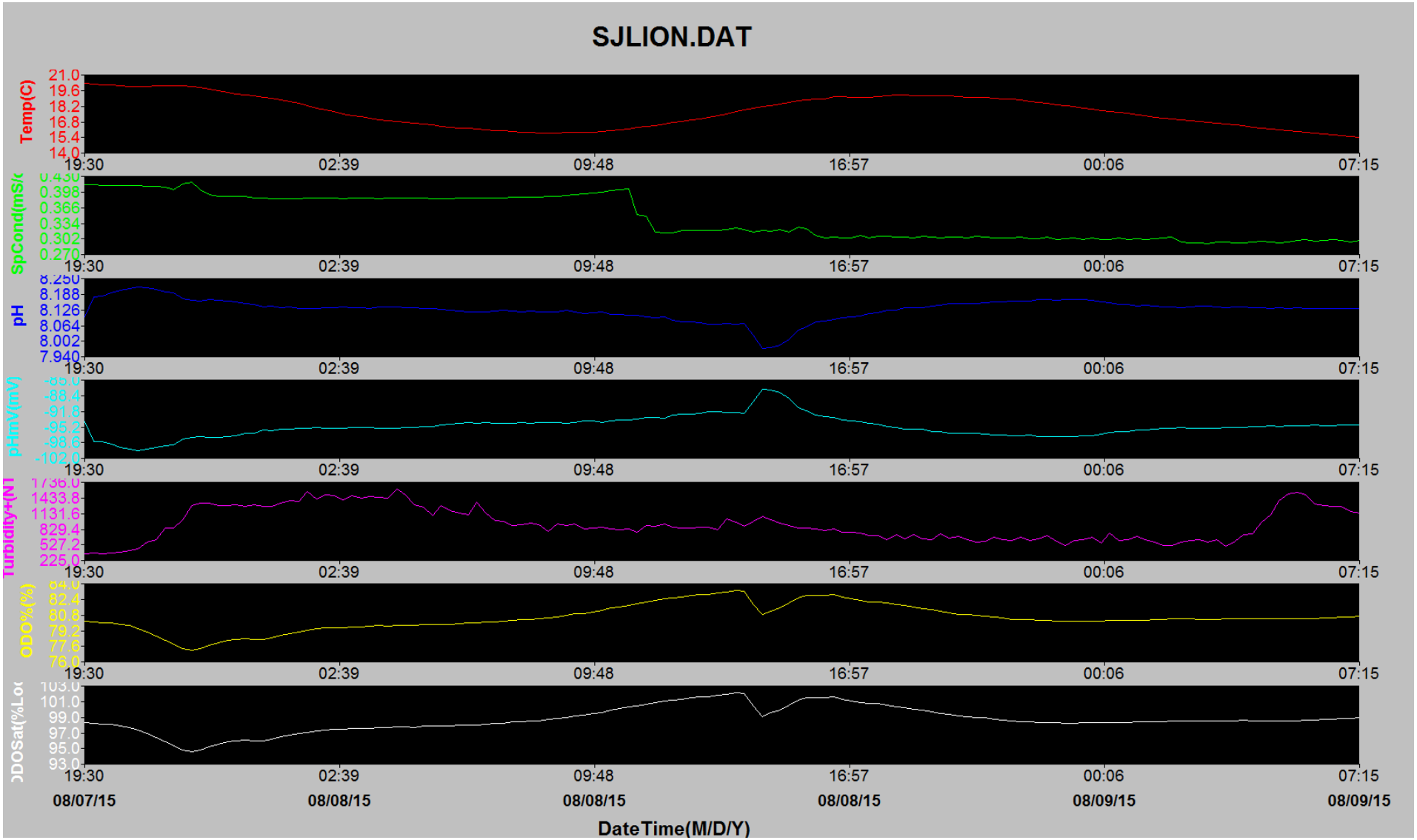



Figure 4. San Juan River at Lions Park near Kirtland, NM