
EPA-APPROVED

**TOTAL MAXIMUM DAILY LOAD (TMDL)
FOR THE
RIO RUIDOSO**



DECEMBER 13, 2016

EXHIBIT 4

Discharge Monitoring Reports (DMRs) from the Village of Ruidoso/City of Ruidoso Downs WWTP for the 2012-2016 period are included in **Appendix C**.

Nutrient removal is a pressing challenge facing wastewater treatment facilities. Nutrients can be removed from wastewater via biological, chemical, or combined biological and chemical processes. There are limits of removal that can be achieved with different removal mechanisms. The limit of technology, based on annual averages, is generally considered to be 0.1 mg/L for TP and 3 mg/L for TN (Jeyanayagam 2005). More recent studies by USEPA show that the limit of technology for TP is less than 0.01 mg/L. According to USEPA (2007), chemical addition to wastewater with aluminum, or iron-based coagulants followed by tertiary filtration, can reduce TP concentrations in the final effluent to very low levels. Land application of tertiary effluent through soil has been shown to meet a TP effluent concentration of 0.01 mg/L at all times (USEPA 2008). In addition, the cost of applying tertiary treatment for phosphorus removal is affordable, with monthly residential sewer rates charged to maintain and operate the entire treatment facility ranging from as low as \$18 to as high as \$46 (USEPA 2007).

TP concentrations in treated effluent typically range from 0.1 to 1.0 mg/L, whereas TN concentrations typically range from 3.0 to 10.0 mg/L, depending on the removal process and site-specific conditions. Some facilities may be able to achieve lower concentrations by using a combination of biological and chemical treatments, however biological treatment is highly temperature dependent therefore seasonal limits may need to be considered in some cases. The choice of technology to be used as well as the option and use of seasonal limits depend on the site-specific conditions, such as temperature, dissolved oxygen levels, and pH in combination with the economic feasibility.

The Ruidoso Downs Racetrack is located within the Rio Ruidoso (Hwy 70 bridge to Carrizo Creek) assessment unit. The racetrack does not currently have a NPDES individual permit; however, the racetrack submitted a Notice of Intent (NOI) to obtain coverage under the Concentrated Animal Feeding Operation (CAFO) general permit but the NOI was not approved. The current general CAFO permit states that "*there shall be no discharge of manure, litter, or process wastewater pollutants into waters of the United States from the production area*" except in extreme precipitation events described in the permit. The new general CAFO permit is expected to be issued in 2016. As no discharge is expected from this CAFO unless it exceeds the 25 year – 24 hour event, no WLA is assigned to the facility at this time.

There are no Municipal Separate Storm Sewer System (MS4) permits in these AUs. However, excess nutrient loading may be a component of some storm water discharges covered under general NPDES permits. There may be storm water discharges from construction activities covered under the NPDES Construction General Permit (CGP). Permitted sites require preparation of a SWPPP that includes identification and control of all pollutants associated with the construction activities to minimize impacts to water quality. The current CGP also includes state-specific requirements to implement site-specific interim and permanent stabilization, managerial, and structural solids, erosion, and sediment control Best Management Practices (BMPs) and/or other controls. BMPs are designed to prevent to the maximum extent practicable an increase in sediment load to the water body or an increase in a sediment-related parameter, such as total suspended solids, turbidity, siltation, stream bottom deposits, etc. BMPs also include measures to reduce flow velocity during and after construction compared to pre-construction conditions to assure that WLAs or applicable water quality standards, including the