



Table Rock Lake Shell Knob Restaurant - South

Presented as part of an extensive study and works project undertaken from 2001 to 2005 by Table Rock Lake Water Quality

PROJECT OVERVIEW

Table Rock Lake is located in the Upper White River Basin watershed, in the heart of the Ozarks.

The second largest of five reservoirs in the Upper White River, covering over 43,000 acres, the reservoir's drainage basin covers over 5,000 square miles in both Missouri and Arkansas. The lake, which is widely considered to have the best water quality of any in Missouri, is quite clear and supports a variety of fish species including bass, crappie and sunfish.

Table Rock's excellent water quality has led to a booming recreation and tourism business, with many resorts catering to fishing, boating and swimming activities, principally during the summer months. The U.S. Army Corps of Engineers estimates that the recreational use at Table Rock Lake ranges between 30 and 40 million visitor hours annually. Along with the Branson tourism industry, Table Rock Lake and other reservoirs on the White River are responsible for the hundreds of millions of dollars annually pumped into the local economy. This growth has benefited the local economy, but has not come without costs. The large numbers of visitors, an increase in confined animal production in the basin, and population growth present the greatest challenges to the water quality in Table Rock Lake.

To learn more about the Table Rock Water Quality Onsite Wastewater Demonstration Project, please visit <http://www.trlwq.org/onsiteDemoproj.html>

ISSUES FACED

The Missouri Department of Natural Resources identified three probable sources of excessive nutrient loading in the lake: municipal sewage discharge from wastewater treatment plants, residential on-site wastewater treatment systems associated with increasing populations, and livestock and poultry wastes.

SHELL KNOB RESTAURANT STATS

LOCATION

Table Rock Lake, Upper White River Basin
Missouri

PROPERTY TYPE

Restaurant

SITE BACKGROUND

The Shell Knob Restaurant's kitchen wastewater flows to a 1,500 gallon grease trap and septic tank before flowing into a commercial treatment unit. The bathroom waste flows into a 1,500 gallon septic tank before going into the treatment unit.

The new system proved that advanced treatment and drip dispersal in imported soil could effectively treat high strength restaurant waste

ISSUES TO ADDRESSED

- Existing system was failing, flowing to an undersized lateral field in poor soil
- Surfacing of effluent was occurring

SITE CONDITIONS

- Restaurant with high grease loads
- Poor and limited soils

TYPE OF TREATMENT SYSTEM

- BioMicrobics FAST system with Netafim Bioline in imported soil

DESIGN FLOW (GPD)

2,000

RESULTS

- Cost effective installation and reduced maintenance



In order to establish an adequate soil base for the field, over 18" of fill was brought in. Notice the use of flex PVC to transition from the supply and return headers up to the dripperline laterals. This helps to protect the dripperline from damage in poor soils as well as preventing drippers from being placed outside the boundary of the drip field.



Fresh water was used to purge any construction debris from the Bioline before attaching it to headers. This also provided an excellent visual confirmation that there were no damaged laterals before cover soil was added.



Before bringing soil in to cover the dripperline, a crew member ensures that the rows are equally spaced and held in place with soil staples.



The flexibility of Netafim Bioline is an important feature. It allows the designer to match the dripperline to the shape of the dispersal areas with ease.



Once the dripperline is covered with soil, grass seed or other cover is broadcast and the field is covered with straw.



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