



## Equalizer® 24 Chambers Integral Component of Community Onsite Wastewater Treatment System

Due to its rural location and close proximity to a receiving creek, Stoneridge subdivision needed a non-discharge, environmentally-friendly approach for their community wastewater treatment system.

### Project

Septic tank effluent pump (STEP) system utilizing 7,040 linear feet of Equalizer 24 chambers in pressurized drainfields.

### Installation Date

November 2005

### Designer

Robert Heine, P.E.  
RSH Engineering  
Hillsboro, Missouri

### Contractor/Installer

Bill Peanick  
Professional On-Site Installation  
Hillsboro, Missouri

### Health Officer

Jim Rhodes, P.E.  
MoDNR  
St. Louis, Missouri

### Owner

Bryan Short  
Stoneridge Farms Development, LLC  
Moscow Mills, Missouri

### Design Specifications

Type III silt loam  
Soil Application Rate of 0.35 GPD/SF  
Average Design Flow of 12,000 GPD  
Peak Design Flow of 30,000 GPD

Stoneridge is a 20-home and 36-condo unit subdivision encompassing 38 acres along Bob's Creek in Troy, Missouri. To complete the development, a site-sensitive wastewater treatment system was proposed to safeguard the adjacent creek and meet Missouri Department of Natural Resources (MoDNR) regulations. Connecting to a municipal wastewater treatment plant was not an option due to the higher cost and therefore a non-discharge, more cost-effective solution was needed.

A community onsite wastewater system was selected because of its small footprint and ease of operation. Infiltrator Systems' Equalizer 24 Chambers were specified for the disposal field. The chamber's open bottom provides unobstructed infiltration into the soil, therefore eliminating concerns of fines. Also, since less equipment is needed there would be minimal site disruption and compaction of the sensitive Type III silt loam soils during installation.

To service the home sites a system was designed to utilize a septic tank effluent pump (STEP) configuration, where 1,000 gallon septic tanks with filtered high head pumps were installed at each home site. Since the condos were constructed above the treatment plant site, a gravity sewer system was designed with minimal sewer run lengths and manholes. Collection from the home sites leads to a 3,000 gallon equalization tank, while gravity collection from the condos leads to a 10,000 gallon settling tank. The combined system then flows to a trickling filter (Bioclere unit) with sludge recirculation to the 10,000 settling tank. Gravity flow from the trickling filter is directed to a 4,500 gallon dosing tank with pump. The filtered effluent is then pumped to a pressurized drainfield constructed of 7,040 linear feet of Equalizer 24 chambers from Infiltrator Systems. The chambers were easy to install and were more cost-effective due to savings in materials and labor when compared to other alternatives. The drainfield consists of 16 separate zones each having five lines at 88 feet long. Each zone is time-dosed using flow alternator valves. The system was installed on-time and within budget and is currently maintained by the Homeowners Association via contract with local maintenance providers.



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