The following is a case history of how a particular small community should be able to save $1-million by avoiding the use of excessive preapplication treatment prior to an overland flow land treatment system. Overland flow is a site-specific land treatment process, suitable principally for sites which contain low permeability soils. Site development consists of re-shaping the site into a network of terraces and drainage channels, and establishing a water tolerant grass cover crop. Most, if not all, overland flow systems are dedicated land treatment sites with controlled public access. These features make the process very suitable for application of minimum treated wastewater.

A fair number of research, pilot-scale, and full-scale projects have demonstrated the ability of overland flow systems to produce a very high quality of effluent with only minimal levels of preapplication treatment. Nevertheless, many state land treatment guidelines insist on relatively high levels of preapplication treatment prior to overland flow. It is not unusual to find secondary treatment required and it is very common to encounter requirements for reducing the BOD and suspended solids concentrations to levels of at least 60 to 70 mg/L prior to overland flow application.

Thus, while many regulators take a very conservative stance on preapplication treatment requirements, they often unjustifiably raise the cost of a project. In some cases, the cost increases can be quite substantial, thereby converting an economical treatment process (land treatment) into an alternative which is economically less competitive than other alternatives.

**Performance Capabilities**

The overland flow process is capable of producing a treated effluent quality which is equivalent to many advanced wastewater treatment processes. EPA's Process Design Manual for Land Treatment of Municipal Wastewater (EPA, 1981) lists the effluent quality which can be expected from an overland flow system being used to treat municipal wastewater. This quality is shown on Table 1.