



**PROJECT:**  
**Beecher Landfill**  
**Pilot Testing**

**NEED**

Sexton Companies operates the Beecher Landfill, a closed facility south of Chicago, Illinois. While the landfill is in a post-closure phase, the facility continues to generate leachate, which is transported offsite for disposal. These ongoing transportation costs represent a significant fraction of the total life cycle closure costs. As part of an ongoing review of their landfill site, Sexton requested an evaluation of leachate treatment options for the Beecher Landfill.

**SOLUTION**

Given the complex nature of the leachate, a multi-stage system for leachate treatment was developed and tested:

- Aerated pretreatment for oxidation of iron and manganese
- Settling of precipitated metals
- Aerated wetlands for removal of ammonia and CBOD<sub>5</sub>
- Limestone bed for pH correction and buffering
- Peat filter for nitrogen removal and final polishing for heavy metals

**LOCATION**

Goodenow, Illinois

**PROJECT TYPE**

Landfill Leachate

**COMPLETION DATE**

2008

**DESIGN FLOW**

2.5 gpd

0.01 m<sup>3</sup>/d

**TREATMENT**

Aerated Pretreatment

Settling Basin

Aerated Wetland Cells

Limestone Beds

Peat Filter

**BENEFIT**

Treatment of leachate in the pilot was successful, providing Sexton Companies and the State of Illinois key information on how a full-scale treatment system would perform. The overall treatment process would not require any chemicals, and the only power input would be for aeration. Leachate treated by the proposed process met water quality standards for landscape irrigation, offering the option of irrigating treated effluent on the closed landfill cap to grow poplar trees for biomass production and carbon sequestration.

