



Knight Piésold
CONSULTING

Knight Piésold, CLI, and Custom Linings Alternative Liner Systems

Alternative Liner System

- Design Concerns
 - Geomembrane performance
 - System Hydraulic performance
 - Shear strength
 - Interfaces within the system
 - Interfaces against soils
 - Application in a wet environment
 - Down-drag from leach ore/tailings compression
 - Laboratory testing vs field testing
 - Permitting
 - \$\$ COST \$\$

Current Laboratory Testing

- Current Laboratory Testing Program
 - Manufacturer data comparison
 - Liner integrity testing
 - Puncture resistance vs conventional liner
 - Aging effects
 - Shear strength of products
 - Unconfined and confined
 - Hydraulic conductivity of products
 - Under confining pressures
 - Interface shear strength
 - Between products
 - Between geomembrane and subbase materials
 - Smooth and textured applications

- Costs may vary dependent upon:
 - Substrate conditions
 - Access
 - Application environmental issues
 - Etc.
- Cost Considerations
 - Reduced need for regrading steep slopes or other earthworks solutions
 - Subbase material requirements
 - Staging of liner deployment
 - Combined with conventional liner potential
 - ‘Fatally flawed’ sites may become viable
 - Etc.

Questions/Comments