Liquid Systems and Monitoring
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Topics

• Leachate recirculation systems
  – Surface Systems vs Subsurface Systems
  – Retrofit vs As-built
• Moisture distribution issues
• Monitoring
Surface Methods: Pre-Cap

- Spray Irrigation
- Drip Irrigation
- Tanker Truck Application
- Infiltration Ponds
Surface Methods: Post-Cap

- Leach Field
- Trenches
- Drip Irrigation
Subsurface Methods

- Vertical Injection Wells
- Horizontal Trenches
- Buried Infiltration Galleries
As-Built vs Retrofit

As-Built
• Surface application methods as waste is filled up. Focus on working face.
• *Horizontal trenches* buried in the landfill as waste is deposited.
• Surface systems when complete.

Retrofit
• Surface systems on completed waste fill.
• *Vertical wells.*
• Shallow subsurface horizontal trenches.
Focus on Two Subsurface Methods

• Horizontal Trenches
  – Shallow systems
  – Deep systems

• Vertical Injection Wells
  – Large diameter systems
  – Small diameter systems
1. Existing Landfill at Grade

Shallow Horizontal Trenches

- MSW
- 50+ ft
- Liner and Leachate Collection System
Shallow Horizontal Trenches

2. Excavate Trench and Install Bedding and Pipe
Shallow Horizontal Trenches

3. Backfill

MSW

Liner and Leachate Collection System
4. Additional Trenches

Shallow Horizontal Trenches

MSW

Liner and Leachate Collection System

50 – 200 ft
Shallow Horizontal Trenches

5. Recirculate

MSW

Liner and Leachate Collection System