Bridgeway Acres Slurry Wall Relocation
Pinellas County, FL

Pinellas County Board of County Commissioners

May 2009

Groundwater Cut-Off / Chemical Containment

Bridgeway Acres Slurry Wall Relocation

Project Name:
Bridgeway Acres Slurry Wall Relocation

Location:
Pinellas County, Florida

Owner:
Pinellas County Board of County Commissioners

Contractor:
All American Concrete

Engineer:
SCS Engineers

Date:
May 2009

1. **Background**

   The Pinellas County Bridgeway Acres (BW A) Landfill includes an area of approximately 705 acres. The entire site is enclosed by a subsurface cutoff wall constructed using traditional slurry wall technology. At the BW A Facility a network of piezometer pairs are used to monitor the gradient across the wall on a monthly basis.

2. **Project Scope**

   The County and the Florida Department of Transportation (FDOT) were developing roadway improvements on the northern perimeter of the BWA facility. The existing cutoff wall extended into the right of way of the roadway project. In consultation with the Florida Department of Environmental Protection (FDEP) it was determined that the cutoff wall must be relocated away from the area of roadway construction.

   Due to the geologic conditions in the area and the limited success of the slurry wall, SCS researched other technologies to solve the problem. After extensive geotechnical evaluation of the site, they concluded that slurry was not an option due to potential compressibility, site constraints, and potential of erosion over time.

3. **Performance**

   ShoreGuard 525 Vinyl sheet piles are two feet wide, reducing the number of interlocks. Vinyl sheet piles can be manufactured to any length that is transportable. Each sheet pile interlocks with adjacent sheet piles. During installation, a hydrophilic sealant was installed in the interlock. The sealant expands to several times its volume when coming in contact with water and can result in an effective permeability of the sheet pile wall of less that 5x10-11 cm/sec. The vinyl sheet pile and the sealant are environmentally safe, nontoxic, and designed for use in aggressive chemical environments. At the BW A Facility a network of piezometer pairs are used to monitor the gradient across the wall on a monthly basis.

4. **Construction**

   Vinyl sheet piling was installed using a vibratory hammer and steel mandrel. The mandrel was used at the leading edge of the bottom of the sheet pile to aid in penetration through resistant materials. Each sheet pile was driven in a three foot deep trench. Then the mandrel was removed, leaving the piling in the ground. The trench was later backfilled, covering the entire wall.

5. **Wall Specifications**

   SG525

Depth	35-70 ft	21 m
Length	3,500 ft	1,066 m
Wall Area	150,000 ft²	13935 m²

Reference Documentation:
The Relocation of Subsurface Cutoff Wall For A Major Urban MSW Disposal Facility

Bridgeway Acres Slurry Wall Relocation Project Photos

A steel mandrel was used to aid in penetration through resistant materials

Each sheet pile interlocks with adjacent sheet piles.

”(The sheet pile wall with hydrophilic sealant) results in a permeability of less than $5x10^{-11}$ cm/sec.” - SCS Report

Vinyl sheet piling was installed using a vibratory hammer, not unlike installing steel sheet piling.