

# Drainage of miniature dry dock with Heidra hydraulic submersible pumps

Ingleside, TX

## Issue

Gulf Marine Fabricators started a pump-down operation. A Min-Dock structure--a miniature dry dock utilized to work on the underside of a ship--failed during Phase One. The floor of the dock lifted up and broke apart. This resulted in catastrophic damage to large construction equipment including pumps located within the structure.

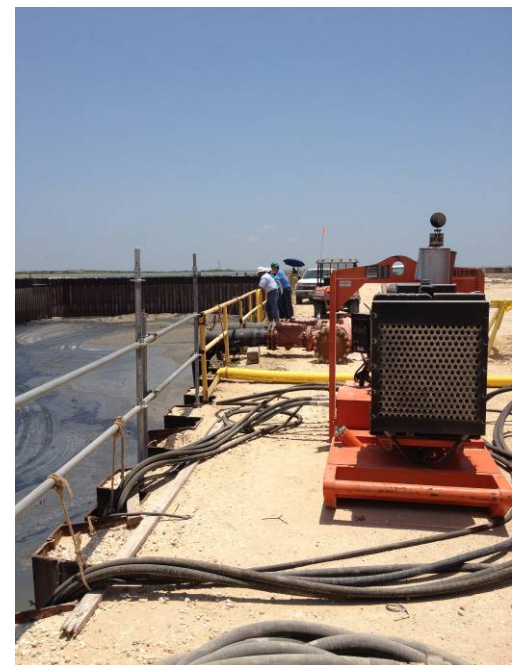
Because of the damage, water pressure from the bay is pressing against the damaged floor and threatening to lift it, which would further increase the damage. Rocks and other large debris were used to temporarily keep water out of the Min-Dock, but the water needed to drain to begin repairs.

## Solution

"Silt-free water can be discharged back into the bay. Water containing any silt is discharged into a retention pond to eliminate the potential for contamination."

Godwin Heidra hydraulic submersible pumps with diesel power packs were chosen to evacuate the water. Two HS300s were selected for the application. The pumps are located in the sump area of the Min-Dock, approximately 50 feet below the top of the dry dock. Twelve sections of 1 ¼-inch hydraulic hose are used for each pump. 3,700 feet of SDR 32.5 18" HDPE discharge pipe was fused; sections within the dry dock are flanged at 50-foot lengths. Divers installed the pump setup.

The HDPE discharge pipe includes tees to divert the flow, depending on the amount of silt in the water discharged. Silt-free water can be discharged back into the bay. Water containing any silt is discharged into a retention pond to eliminate the potential for contamination.



**CUSTOMER:** Gulf Marine Fabricators

**ORDER DATE:** May 3, 2012

**COMPLETION:** Ongoing

**XYLEM'S ROLE:** Drain dry-dock to allow repairs

**XYLEM'S SCOPE:**

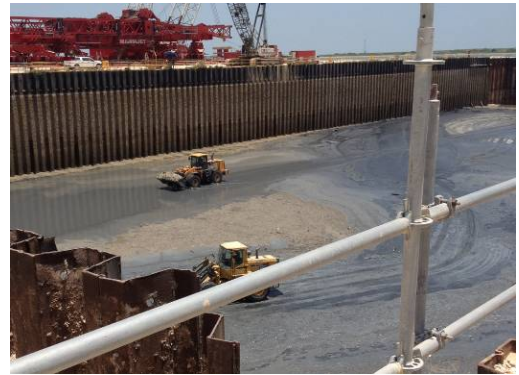
- 2 HS300 pumpsets with diesel power packs
- 24 sections of 1 ¼-inch hydraulic hose
- 3700 feet of SDR 32.5 18" HDPE pipe

## Result

"The customer expressed extreme satisfaction with the hydraulic submersible pumps. They exceeded their expectations."

The two HS300 pumps have pumped approximately 46 million gallons of water over 2.5 weeks to expose the floor of the Min-Dock. Additional repairs were made to the cracks in the floor that caused the flooding during Phase One. The HS300s are running at various speeds to keep up with ground water infiltration. The water level is lowered a few feet at a time to retain hydrostatic pressure of the water and prevent damage.

The pumps are placed on floats after completion of the cleanup efforts within the Min-Dock and during the dry dock structure repair. The Xylem representative on the project said "the customer expressed extreme satisfaction with the hydraulic submersible pumps. They exceeded their expectations."



Silt and other contaminants are being moved toward sump area for removal and disposal.



Customer is pushing silt from bottom of the structure to the sump area. Pumps will remove excess water and silt to retention pond for disposal.



Tee to divert silt-free water back to bay or water containing silt to the retention pond.