SHOALING PREVENTION: AN ALTERNATIVE TO DREDGING

AAPA DREDGING FOCUS GROUP
Ponce, Puerto Rico
December 4, 2008

South Carolina State Ports Authority
SedCon Technologies, Inc.
About SedCon Technologies Inc.

- Leading provider of shoaling prevention systems
- Based in California with regional service centers
- Sole source for patented SedCon® Turbo System
Shoaling Prevention Concept

Suspended Sediment

Tidal Currents

Jet Discharge

Mud Bottom

Turbo Unit

South Carolina State Ports Authority
SedCon Technologies, Inc.
Synchronized with Tide

Ebb Tidal Current

Flood Tidal Current

Turbo Units (4 Total)

Dock

Pump/Control House

Shoreline
Benefits

- Full depth at all times
- Increased availability of berth
- Significant cost savings
- Dredging problems/risks eliminated
Typical System Layout

- Turbo Units (4 total)
- Piping Loop
- Pump/Control House
Turbo Unit Features

- Hydraulic motor & actuator
- Low maintenance design
- Zinc anode protection
- Anti-fouling coating
Dock Deployment

- Angled guide pile
- Mobile crane for raising & lowering
- Recessed valve boxes
Hydraulic Power Source

- Electric motor-driven pump
- Inline cooler & heater
- Biodegradable hydraulic fluid
Computer Controls

- PC controller
- I/O interface
- Solenoid-actuated valves
- Multiple sensors
Installation Sites

- CITGO Petroleum Corp.
- INVISTA
- SC State Ports Authority (2)
- Georgia Ports Authority (2)
- NuStar Asphalt Refinery
- U.S. Navy
- South Carolina State Ports Authority
- SedCon Technologies, Inc.
Typical Costs

- Construction costs run about $2,000 per foot
- O&M costs run about $50 per foot per year
Regulatory Concerns

- Agitation dredging
- Water quality impacts
- Adjacent shoaling impacts
- Marine organism impacts

*Independent monitoring studies show no significant adverse impacts*
Dual 125 hp Power Sources

South Carolina State Ports Authority
SedCon Technologies, Inc.
Ten 36-Inch Turbo Units

Guide shoe on H pile flange

South Carolina State Ports Authority
SedCon Technologies, Inc.
Turbo Unit Detail
## Estimated/Actual Cost

<table>
<thead>
<tr>
<th>Item</th>
<th>Estimated</th>
<th>Actual</th>
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<tbody>
<tr>
<td>Engineering</td>
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<tr>
<td>System Equipment</td>
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<td><strong>Total</strong></td>
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<td><strong>$4,436,201</strong></td>
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Maintenance Costs

$108,000 in 2007
$147,000 in 2008

Includes $100,000 in 2007 and $114,000 in 2008 for maintenance service contract
Federal Permitting

- Will increase Federal Channel Maintenance
- Will follow lead of State permit
State Permitting

- Ultimate disposition of material
- Potential for scouring
- Impacts to water quality (DO, turbidity, TSS)
- Impacts to marine life
Monitoring Program

Sample points upstream 300’, downstream 300’ and midpoint, 125’ off face of dock