



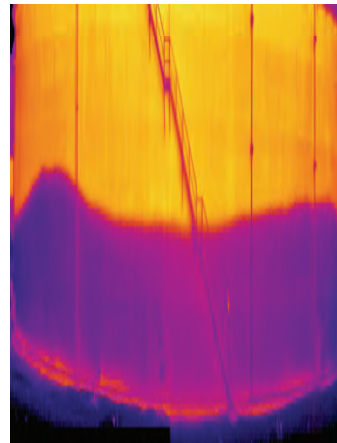
Problem

- Production of Significant Quantities of Coking Fines
- Coking Fines Deposit in the Maze, the Sump, and the Jetting Water Tank
- Coking Fines Pumped Through Sump and Jetting Water Pump(s) and associated valves
- Resulting in Erosion, Wear and High Maintenance Costs

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Handling System - Goals

- Minimize Coking Fines in the Maze, Sump and Jetting Water Tank
- Minimize Coking Fines Pumped Through Sump Pump(s), Jetting Water Pump(s) and Valves
- Increase Residence Time in the Maze and the Jetting Water Tank
- Minimize Operator Time to Manage Coking Fines



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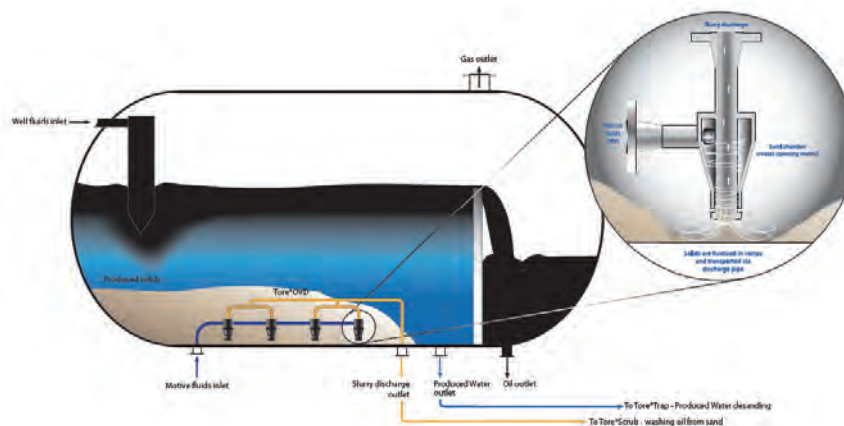
Economic Benefits

- System Maintenance Reduced - Pumps/Valves/ Piping/Control and Measurement Equipment
- Existing Coking Fines Removal Processes



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The Solution - Merpro Tore[®] Online Vessel Desanders (OVD)



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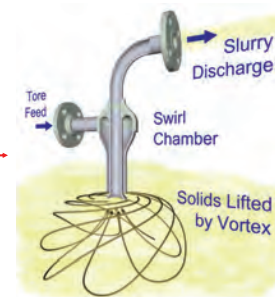
Development of Sand Removal Technologies



SHOVEL AND BUCKET



SAND JETTING

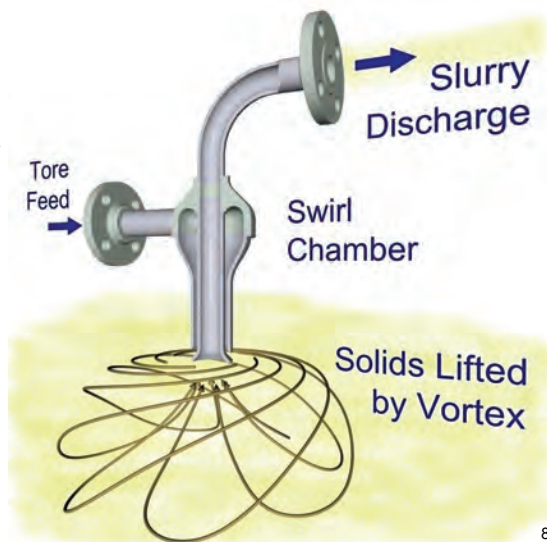


TORE® OVD

TORE®

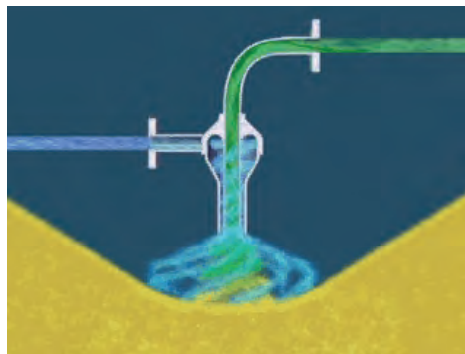
Fluidizes and Transports Solids

- Localized area of influence
- Low energy
- High efficiency



TORE® Demonstration

Tangential feed to
swirl chamber
≈ 18 gpm @ 20 psi
over vessel pressure



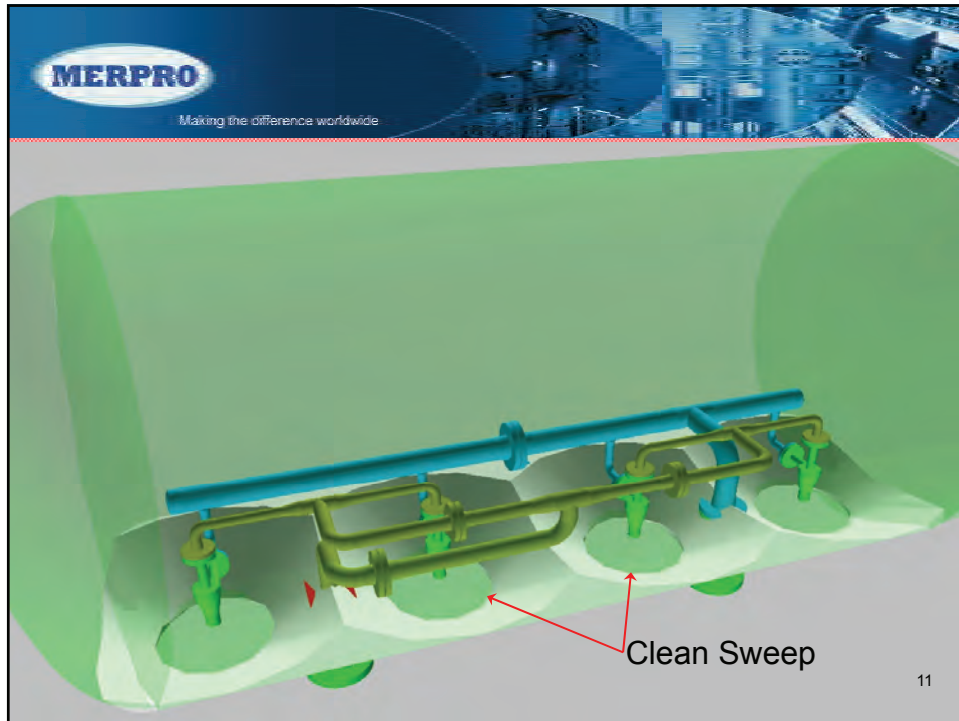
Vortex lifts & fluidizes solids
1" Tore – 80 -100 ft³ / hr

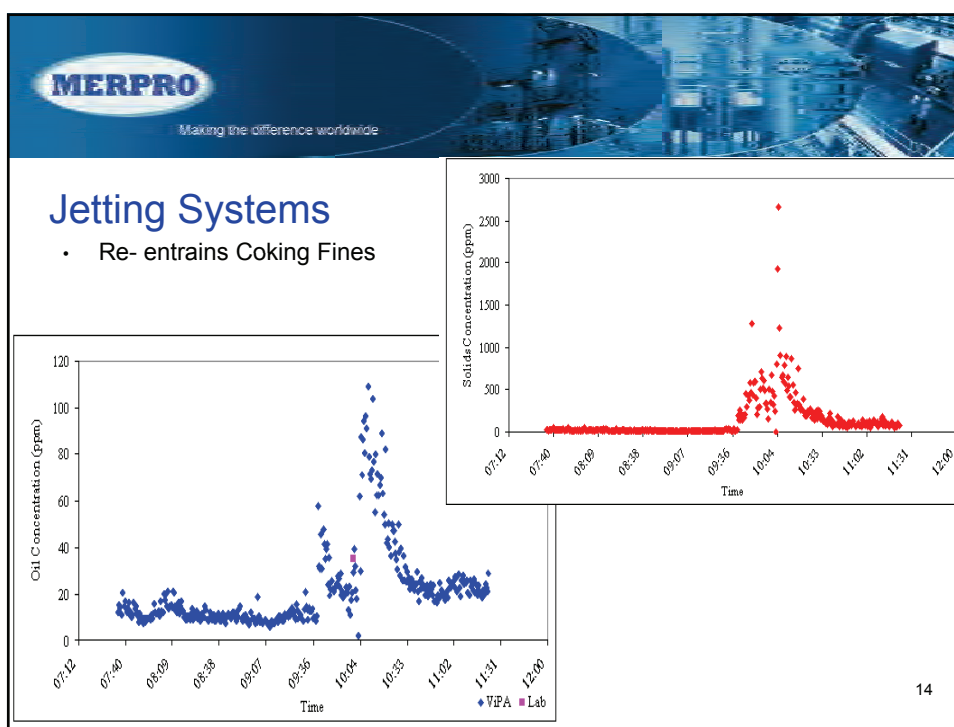
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Feed Water Header

Slurry Discharge Piping

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TORE® vs. Jetting



Liquid Surface Observed
While Jetting



Liquid Surface While Operating
Merpro's Tore®OVD

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TORE®OVD

- No Disturbance of Maze or Jetting Water Tank
- Tank Liquid Level Not Affected
- Tore® may be Fully Submerged in Solids
- Efficient and Cost Effective Handling System

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TORE® OVD

Maintenance / Reliability

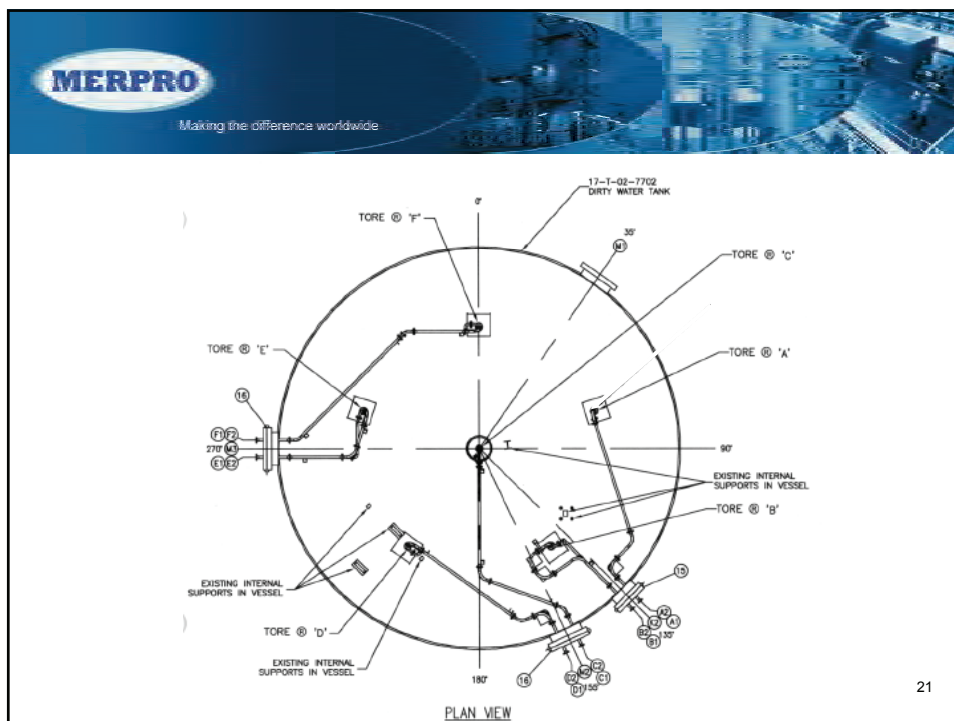
- ✓ Effectively Removes Coking Fines
- ✓ Robust and Easy to Operate
- ✓ Proven Technology



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MERPRO
Making the difference worldwide

Best Available Technology -

Incorporated into FMC's Tordis Subsea Processing Module

The left image is a cutaway view of a subsea processing module, showing internal components and a large cylindrical tank. The right image is a 3D model of a subsea structure, likely a processing module, mounted on a platform.

FMC Technologies

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Making the difference worldwide

Questions???

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