Sludge Dewatering: 
The Rotary Press 
NAWT 6th Waste Treatment Symposium 
Camp Camby, IN 
September 25, 2013

Company Background
• Founded in 1960 
• Located in Quebec, Canada 
• 250 Employees 
• Building the Rotary Press since 1989 
• Full fabrication shop

Rotary Press Installations (as of 8-1-13)

<table>
<thead>
<tr>
<th>Region</th>
<th>USA</th>
<th>Canada</th>
<th>Rest of World</th>
</tr>
</thead>
<tbody>
<tr>
<td>348</td>
<td>83</td>
<td>156</td>
<td></td>
</tr>
</tbody>
</table>

Installations
Rotary Press vs Applications 
August 2013

<table>
<thead>
<tr>
<th>Application</th>
<th>Number of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal</td>
<td>340</td>
</tr>
<tr>
<td>Septic sludge</td>
<td>17</td>
</tr>
<tr>
<td>Pulp and Paper</td>
<td>9</td>
</tr>
<tr>
<td>Animal manure</td>
<td>6</td>
</tr>
<tr>
<td>Industrial</td>
<td>6</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>387</td>
</tr>
</tbody>
</table>

The Rotary Press
• Process Description 
• Anatomy of the Press 
• Performance 
• Maintenance 
• Selected Installations 
• Q&A

Process Flow
3D Animation

Inside the Wheel

- Drainage Zone
- Pressing Zone
- Restriction Zone

Rotary Press Flocculator

- 17 gallon flocculation chamber
- Variable speed agitator
- Inlet feed pressure transmitter
- Bypass valving
- Sludge sightglass

Rotary Press Dewatering Channel

- 36" diameter wheel
- 2" channel bracketed with dewatering screens
- Sludge scrapers
- Air actuated restrictor bar
- FRP covers
- Water spray nozzles

Rotary Press Gear Units

- Solid cast construction – greater rigidity, low noise.
- Case hardened gearing – proven long-term performance for strength and durability.
- High capacity roller bearings.
- Nitrided hollow bore standard on shaft mounted units – resists fretting corrosion.
- Hardened and group pinion shaft – long wearing seal surface.

Expandability
Process Control Parameters

- Sludge inlet pressure: 2 to 7 psi
- Outlet restrictor: 0 to 100 psi
- Press rotating speed: 0.2 to 1.6 rpm
- Flocculator mixing speed: 100 to 450 rpm
- Polymer dosage: 1% to 15%

Typical Performance

Performance Comparison
Performance Comparison

<table>
<thead>
<tr>
<th>Item</th>
<th>Rotary Pressure</th>
<th>Screw Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance</td>
<td>Performed by plant personnel</td>
<td>Major components repaired by manufacturer</td>
</tr>
<tr>
<td>Partial Operation</td>
<td>Continuous operation and maintenance</td>
<td>Maintenance requires tool machine shutdown</td>
</tr>
<tr>
<td>Operate</td>
<td>Feed solids changes compensated automatically</td>
<td>Feed solids changed compensator automatically</td>
</tr>
<tr>
<td>Settler</td>
<td>Long lasting over 10 years</td>
<td>Charged 2-3 years</td>
</tr>
<tr>
<td>Wash Water</td>
<td>5 minutes/day at shutdown</td>
<td>Frequent/Continuous</td>
</tr>
<tr>
<td>Influent Sludge</td>
<td>Rotary press can accept feed solids on line at 50% solids</td>
<td>No thinning required for effective dewatering</td>
</tr>
<tr>
<td>Regulator Plate</td>
<td>200V/50Hz</td>
<td>120V/60Hz</td>
</tr>
<tr>
<td>Motor use</td>
<td>L1800</td>
<td>L1800</td>
</tr>
</tbody>
</table>

Maintenance Schedule

<table>
<thead>
<tr>
<th>Wear Parts</th>
<th>Replacement Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scraper (6 per channel)</td>
<td>Gearbox 100,000 hours</td>
</tr>
<tr>
<td>Deflector (1 per channel)</td>
<td>Gearbox 100,000 hours</td>
</tr>
</tbody>
</table>

Features and Benefits

- Completely enclosed minimal odors
- Few moving/wear parts
- Minimal footprint
- Low energy requirement
- Smooth operation with changing sludge quality, feed rate
- Low speed < 3 RPM
  - quiet
  - safe for unattended automatic operation
  - minimal structural support
  - minimal wear

- Easy start-up and shutdown
- Polymer use comparable to or lower than centrifuge and belt press
- Excellent capture rate and cake dryness on selected sludges
- Low wash water requirement, 5 minutes/day at shutdown only
- Low maintenance vs other technologies
- Complete automation of process
- Easily expandable
Hapchuk Hauling Services, PA
Liquid Assets Disposal Inc, Wheeling West Virginia

• Process: Dewatered sludge from different sources, mostly industrial from soil decontamination process.
• Rotary Press: 1 Unit
  Model: 4(6)-900/6000CV
  Commissioned: 2008
• Performances:
  - Feed concentration: 1-6 % (TS)
  - Throughput: 9,5 dry tons/day (8 hrs)
  - Cake dryness: 34-47 % (TS)
  - Capture rate: 96-98 % (TSS)

Village of Johnstown, OH

• Process: Waste activated sludge
• Rotary Press: 1 Unit
  Model: 2(4)-900/4000CV
  Commissioned: 2012
• Performances:
  - Feed concentration: 1,4 % (TS)
  - Throughput: 1,15 dry t/d (8hrs)
    (2 channels)
  - Cake dryness: 22 % (TS)
  - Capture rate: 95 % (TSS)

Questions?

Thank you!
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