Presented by:
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- 28 years servicing the North America Pulp & Paper Industry
- Developed 12+ markets for pulp and paper mill short paper fiber residuals (Patent #7,971,555 - Use of short paper fiber as manure management product)
- New market for short paper fiber (with lower moisture content) for oil and gas exploration
What is it?

A superior solidification agent manufactured from pulp and paper mill residuals. It consists of short paper fibers and inorganic fillers of calcium carbonate and kaolin clay. This innovative material offers major cost savings to the oil and gas industry.
3 Major Benefits:

➢ Cost Reduction
➢ Performance
➢ Environmental Impact
Cost Reductions

➢ Costs less per ton
   (50%-70% less than current solidification agents)

➢ Less dense than other agents
   (450 lbs.-500 lbs. per cubic yard)

➢ Reduction in transportation costs and lower landfill tipping fees
Comparison to Currently Used Solidification Agents

<table>
<thead>
<tr>
<th>Agent</th>
<th>Cost / Ton</th>
<th>Density (lbs./yd$^3$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fly Ash</td>
<td>$60 to $80.00</td>
<td>2100# to 2300# / yd$^3$</td>
</tr>
<tr>
<td>Ground Wood</td>
<td>$420 to $500</td>
<td>500# to 600# / yd$^3$</td>
</tr>
<tr>
<td>Ground Miscanthus Grass</td>
<td>$300 to $450</td>
<td>300# to 400# / yd$^3$</td>
</tr>
<tr>
<td>Ground Peanut Shells</td>
<td>$450 to $550</td>
<td>700# to 800# / yd$^3$</td>
</tr>
<tr>
<td><strong>FIBER-MAXX</strong></td>
<td>$150 to $200</td>
<td>450# to 500# / yd$^3$</td>
</tr>
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Performance

Fiber-Maxx is the only solidification agent having both pozzolonic and absorption properties.
Pozzolonic properties:
➢ Cementation properties inherent to the calcium carbonate.

Absorption properties:
➢ Exact same fibers used in top brand paper towels, just shorter.
➢ Hydroscopic water absorption surrounding the clay particles.
Environmental Impact

➢ More liquid solidified (pound per pound), due to both pozzolonic and absorption properties, than any other agent;  
➢ More drill cuttings and muds are transported per truck load reducing fuel consumption;  
➢ Less landfill airspace is consumed;  
➢ Reduced green house gases.
Projected Annual Savings from Fairmont, WV Mill

➢ 200 Tons of Fiber-Maxx Produced each day x 350 days per year

➢ $100 - $200 Savings per ton of Fiber-Maxx purchased

➢ $4 - $10 per ton Savings Transportation & Disposal

➢ Projected Savings for Marcellus & Utica Shale Basin rigs $7.28 million - $14.7 million annually
Pulp & Paper Mills

- 1st P&P mill will be Resolute Paper Mill in Fairmont, West Virginia. Production will be 200 tons of per day / 7 days per week.

- Additional P&P Mills:
  - Pennsylvania : 17 P&P Mills
  - Ohio : 11 P&P Mills
Commercialization

- Fairmont, WV Mill can be producing within 6 – 8 months
- Product delivered in 1 ton super sacks
- Cost per ton from $150 - $200 per ton depending on location and quantity