ALKALINITY ADDITION

Tyson Fresh Meats, Inc.
Logansport, IN
Scope

- Provide supplemental source of Alkalinity to ensure 100 mg/l residual in Plant Effluent to the POTW, limit potential inhibition to Nitrification, and maintain a good working relationship with the municipality.
What are our options?

**Utility**
- New Limits
- Increased Costs – up to $2,500/day
- Increased Tensions

**Partnership**
- Find acceptable alternative
- Iron out the details
Logic & Risk

What would we do in one of our own treatment systems
- Utility typically supplemented with Caustic
- Magnesium Hydroxide
  - More bang for the buck – Alk Eq ~ 12.9 lb/gal vs. 7.6 lb/gal
  - Safety – for both operators and your bugs

<table>
<thead>
<tr>
<th>Potential Alkalinity Recovery Cost by the Wastewater Pollution Control Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to $2,500 per day = $912,000 per year</td>
</tr>
<tr>
<td>Cost to build/complete project infrastructure</td>
</tr>
<tr>
<td>$156,000</td>
</tr>
<tr>
<td>Yearly Cost to Maintain Chemical</td>
</tr>
<tr>
<td>$214,890</td>
</tr>
<tr>
<td>First year savings</td>
</tr>
<tr>
<td>$541,000</td>
</tr>
</tbody>
</table>
Decision Time

- Implement Bulk Feed System
  - Double Walled, Insulated & Heat Traced Tank
  - Mixer, Access Ladder, Platform, Safety Cage/Platform
  - Redundant Feed Pumps
  - Redundant Feed Lines
Results

- **Originality/Innovation**
  - *While not a new process, the partnership with the Utility and working together for a successful resolution to benefit both parties is somewhat unique.*

- **Technical Value/Transferability**
  - *Easily applied to most facilities*
  - *Develop & Maintain good working relationships with Municipality*

- **Challenges/Social Significance**
  - *Approval of all steps between involved parties – Design, Construction, Logistics, Operation & Maintenance, & Finances*
  - *Improved Operations & Treatment, Lower Operating Costs for the Municipality*