City of Baraboo Reduces Water Resource Recovery Facility Project Cost by Self-Performing Work
Presentation Overview

Introduction
1. Facility Overview
2. Biosolids Process

Planning
1. Conferences
2. Pilot Testing
3. Facility Tours / Interview Operators
4. Final Decision

Implementation
1. Design and Construction
2. Self-Performed Work

Results
1. Saving Money
2. So What?
Alkaline Stabilization

- **CaO + H₂O = Heat + Ca(OH)₂**
- **Class A**
  - pH 12+ for 72 hr
  - 52 °C (125.6°F) for 12 hr
  - 50% Solids
- **Class B (pH 12+ for 24 hours)**
- **N-Viro Process**
Need for Upgrade

• Aged Equipment
• Desire for higher percent solids
Planning Stage

- Phase 1 – Conferences and Discussions
- Phase 2 – Pilot Studies / Preliminary Decision Making
- Phase 3 – Facility Tours
- Phase 4 – Engaging the Engineer
Conferences and Discussions
Pilot Studies – 2012 through 2017

Dewatering Equipment

Polymer Feed System

Sludge Stabilization System

×3
Facility Tours

Symbols

Dewatering Equipment –
Sludge Stabilization Equipment –
Polymer Feed System –
Sludge Pump –

Dane-Iowa WWTF

Fond du Lac

Plover Wisconsin

Richland Center

City of Monroe

Welcome to Janesville
Wisconsin’s Park Place

Dane-Iowa WWTF

Centrisys®
Centrifuge Systems
More Information – Phone Calls
Preliminary Decision Making & Why

1st Pilot Test – Centrysis Centrifuge, 2012
PolyBlend – Piloted in 2017
Engaging the Engineer

For the Owner

- Plant Tours
- Discussions
- Pilot Testing
- Conferences

For the Engineer

START

FINISH
Self-Performing Work

- Temporary Biosolids Processing
- Tank pumping and cleaning
- Sludge Pumps & Polymer Skid – Purchase and Installation
- Contract Work
  - Yard pipe excavation
  - Curing bin work
- Assisting the Contractor
  - Demolition
  - Water heater mounting
  - Stair nosing welding
Set-up Temporary Biosolids Processing System
Operating Temporary Biosolids Processing System
Construction Work Completed by the City
Additional Cost Savings
Contract Price: $2,399,000
Net Change Orders: $19,500 ($35,900 for electrical CO)
Final Project Cost: $2,418,500
### Cost Savings!

<table>
<thead>
<tr>
<th>Item</th>
<th>Actual Cost</th>
<th>Potential Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$466,000</strong></td>
<td></td>
<td>$510,000</td>
</tr>
<tr>
<td>Sludge Pumps</td>
<td>$22,105</td>
<td>$40,000</td>
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<tr>
<td>Polymer Skid</td>
<td>$19,500</td>
<td>$23,400</td>
</tr>
<tr>
<td>Aerated Storage Tank Pumping and Cleaning</td>
<td>$4,800</td>
<td>$27,800</td>
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<tr>
<td>Sold Belt Filter Press</td>
<td>-$10,000</td>
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<tr>
<td>Sold CemenTech Unit</td>
<td>-$10,000</td>
<td></td>
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<tr>
<td>Sold Misc. Equip. &amp; Scrap Metal</td>
<td>-$14,000</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$56,255</td>
<td>$601,200</td>
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</tbody>
</table>

**Yard Piping Excavation and Backfilling** $ (14,800)

**Assisting with Demolition (using City equipment)** $ (1,400)
QUESTIONS?