CABS 2018, Winnipeg

Liquid Biowaste Management – Heat Treatment
Why do we need to treat liquid biowaste?

- Mandatory – biosafety regulations
- Legal reasons
- Image – environmentally friendly
- Confidentiality – patents protection
How do you treat liquid biowaste?

- Chemical decontamination – chemicals/time treatment
  Limited application

- Thermal decontamination – time/temperature treatment
  Broad range of application
What does a biokill system looks like?

- Small
- Batch

- Medium

- Large
- Continuous
How do they work?

Batch System

Steam inlet
Biowaste inlet
Storage tank
Vent line
Kill tank
Cooling section
Biowaste outlet
Contaminated biowaste
Decontaminated biowaste

Mains water
CIP Solutions

Acid
Caustic
How do they work?

Continuous System
Which one is best?

Batch vs Continuous
...should not be the first question coming to mind.

What is my effluent like?
Knowing your effluent

The cornerstone of your project

- Flowrate: daily, weekly, regularity, peak flows...
- Nature: water like, sticky, solids, reactions...
### Knowing your effluent

<table>
<thead>
<tr>
<th>Flowrate</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batch (Cont.)</td>
<td>Batch Cont.</td>
<td>Batch Cont.</td>
<td>(Batch) Cont.</td>
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<table>
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<th>Solids</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
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</thead>
<tbody>
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</table>
What to look for?

Continuous System

Key features:

✓ Recovery section
✓ Exchanger technology
✓ Safety
✓ CIP
✓ Storage tank sizing + flowrate
What to look for?

Batch System

Key features:

- ✓ Treatment
- ✓ Vent filter(s)
- ✓ Noise
- ✓ Lifetime
- ✓ Heating/Cooling cycles
- ✓ Utilities consumption
Other criteria to take into consideration

Batch & Continuous systems

✓ Space
✓ Automation
✓ Maintenance
✓ Budget
Extra process to integrate

Batch & Continuous systems

✓ Neutralization – pH control/adjustment
Thank you for your time