USA Meat Processing Plant

SludgeMiner™
Dual zone Electro-coagulation / electro-oxidation
Reactor technology
Flow 20,000 US gallons/d (75 m³/d)

<table>
<thead>
<tr>
<th>INFLUENT mg/L</th>
<th>Treated Effluent mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD5</td>
<td>5,000-10,000</td>
</tr>
<tr>
<td>TSS</td>
<td>20,000-40,000</td>
</tr>
<tr>
<td>FOG</td>
<td>15,000-20,000</td>
</tr>
</tbody>
</table>

High Removals: FOG>95%, TSS>90%, BOD>80%

An example BOYDEL project in the USA meat processing industry

- Very high contaminant loading
- Strict discharge regulations: (>250 mg/L FOG = plant closure)
- 3 stage plant start-up: 20,000 US gallons/d increasing by 20,000 US gallons/d every six months
- Required to manage inconsistent start-up flows and contaminant variability
- Limited space available for treatment solution

Why SludgeMiner™ provides a Compelling Value Proposition

Conventional treatment options
Bio-chemical and DAF processes
- Larger tankage footprints
- Typically 40% higher OPEX and 30-40% Lower CAPEX
- Lower and unstable removal capabilities

SludgeMiner™: non-biological, dynamic process with <15 min. total residence time.
1. Instant on/off process to deal with bumpy start-up or production flows.
2. Very high and predictable removals confirmed.
3. Equipment for each phase is scalable and modular – buy what you need, when you need it.
4. Modules added every 6-8 months as client ramps production
5. ReactorLink™: Automated, guaranteed cost consumables supply and technical support program.
6. Clean equipment purchase or BOYDEL Fee-For-Service (F4S) model offered.

TECHNOLOGY DEVELOPMENT

The SludgeMiner™ was configured on this wastewater stream with stable and predictable OPEX as follows:
- Fe dosing: 100 mg/L of influent
- Polymer dosing: 0.01 mg/L of influent
- Power consumption: 0.0114 kW / US gallon @ 480v 3ph (3 kW / m³)

Dewatering can be done using simple static tank decanting followed by sludge bag final dewatering and disposal by client.

With success of the first commercial installation of SludgeMiner™ at a US meat processing facility imminent, Boydel will demonstrate an alternative solution to temperamental DAF, biology or bio-chemical processes for the thousands of similar facilities across North America.

SludgeMiner™ is a low cost, fully controllable, stable, low sludge and low odor treatment option for this and other high solids wastewater industries.