ANAEROBIC DIGESTION AND WASTEWATER TREATMENT

REVISIONS TO 314 CMR 12.00
OPERATION & MAINTENANCE STANDARDS FOR WASTEWATER TREATMENT PLANTS

Ann Lowery, Deputy Assistant Commissioner, Bureau of Resource Protection
Connecting wastewater treatment plants and Organics

Wastewater facilities

- Existing streams of unused organic wastes
- Used AD in Massachusetts for decades. Operate known and proven technology. Six facilities currently have active AD units in Mass.
- Economic and efficiency benefits with adding source separated organics (SSO)
Anaerobic Digestion at WWTPs

Benefits for wastewater treatment

- Reduced volume of residuals
- Stabilized end-product (sludge)
- Production of biogas for heat and energy
## WWTPs in MA with AD

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Flow (MGD)</th>
<th>Biogas Use</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWRA Deer Island</td>
<td>360</td>
<td>Heat &amp; Electricity (steam turbine)</td>
<td>~ 20 yrs</td>
</tr>
<tr>
<td>Pittsfield</td>
<td>13</td>
<td>Heat &amp; Electricity (New CHP)</td>
<td>Built in 1963; recent rehab</td>
</tr>
<tr>
<td>Rockland</td>
<td>2.5</td>
<td>Heat. Flare any excess</td>
<td>~ 20 yrs</td>
</tr>
<tr>
<td>GLSD</td>
<td>30</td>
<td>Heat. Flare any excess</td>
<td>Tanks installed 2002</td>
</tr>
<tr>
<td>Clinton</td>
<td>2-4</td>
<td>Heat. Flare any excess</td>
<td>~ 20 yrs</td>
</tr>
<tr>
<td>Fairhaven</td>
<td>2.7</td>
<td>Heat &amp; Electricity</td>
<td>New (2010-11)</td>
</tr>
</tbody>
</table>
Adding Organics to the Mix....
Revisions to 314 CMR 12.00

• Explicitly permit the addition of organic materials to anaerobic digesters located at a wastewater treatment facilities for multiple benefits:
  – Enhance energy production – reduce energy purchases
  – Increase efficiency – effective treatment and sludge management
  – Reduce operating expenses – potential revenue from accepting organics
  – Reduce organic materials directed to landfills
  – Potential for fertilizer production

City of Lincoln, Nebraska WWTP
Revisions to 314 CMR 12.00

- Explicitly allow POTWs to accept organics in AD units at a POTW
- Define, by reference, acceptable organic materials. Now includes animal products (with source specific approval)
- Add new recordkeeping and reporting requirements for additional organics
- Clarify existing requirement for MassDEP approval of O&M Manual
- Added presumptive approval process
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