Project Name: Standard Process WWTP
Location: Palmyra, Wisconsin
Type of Plant: Industrial - Food Processing
Supplier: Environmental Health and Safety Products (EHS)
Technology Used: IFAS
Biomedia Used: BWT-X®
Operational Since: 2009

Achievements
By choosing the IFAS process with the BWT-X® media Standard Process removed 90% of their COD in 10% of the basin volume!

The Challenge
The Standard Process company is a vitamin and food supplement manufacturer in business since 1929 located in an environmentally sensitive area called the Kettle Moraine basin. The basin is an area containing rare species with diverse habitats. The Standard Process company realizes this and has helped preserve this area with their organic farming techniques, waste reduction methods and now with their wastewater treatment system.

In 2006 Standard Process produced over 8.5 million bottles of product. The wastewater characteristics consist of proteins, carbohydrates and fats. Fluctuations in products and seasonal changes in source materials change the percentages of these characteristics animal/vegetable sources: Spring/Fall - 50/50%, Winter - 80/20% and Summer -20/80%. These changes definitely presented a challenge when designing a treatment system for this location.

The Design
Many factors affected the design. As mentioned, load fluctuations as well as the cold weather were considered in the design. Environmental Health and Safety Products (EHS), who supplied the technology package looked at different technologies and in the end the IFAS (Integrated Fixed-Film Activated Sludge) process was chosen because of it’s small footprint and reliability.
Design Load

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Design Flow</th>
<th>COD</th>
<th>TSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Flow</td>
<td>0.2 MGD</td>
<td>5,004 lbs/d</td>
<td>2,669 lbs/d</td>
</tr>
<tr>
<td>COD</td>
<td>3,000 mg/l</td>
<td></td>
<td>1,600 mg/L</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>50-68°F</td>
<td>10-20°C</td>
<td></td>
</tr>
</tbody>
</table>

COD Profile

90% COD removal in 10% of the basin volume!!