Dual-Use Compressible Media Filtration

Communities must find a reliable and effective way to prevent weather-related combined sewer overflow (CSO) and sanitary sewer overflow (SSO) from spilling directly into nearby waterways. While a separate treatment system for CSO/SSO concerns is viable for some plants, others do not have the footprint or funding for a single-use system.

The WWETCO FlexFilter™ system meets both of these concerns with a simple, gravity-fed process that uses compressible fiber media in a unique system that plants can use for both daily primary or tertiary treatment and unpredictable wet-weather treatment to remove total suspended solids (TSS).
CSO/SSO Treatment

With automated operation that requires minimal operator attention, the FlexFilter readily functions even as an unmanned satellite system, making it ideal for plants that need or want to implement a standalone CSO/SSO system outside of their current treatment trains. It has no internal moving parts and does not lose media in its treatment process, so system maintenance is minimal.

Primary or Tertiary Treatment Plus CSO

The FlexFilter can easily take the place of a traditional primary clarifier. This creates a dual-use system, providing the additional capacity to handle wet-weather conditions while increasing primary-treatment capacity in dry weather.

Likewise, plants that require tertiary treatment can either choose the FlexFilter as their tertiary system or implement FlexFilter as a dual-use system. The FlexFilter can achieve low-level phosphorous removal, helping plants meet increasingly strict phosphorous-removal requirements for reuse-quality effluent.
Pilot Program and Mobile/Rental Equipment

We offer multiple pilot and mobile/rental equipment options.

**WWETCO FlexFilter Applications**
- Treatment for CSOs/SSOs, including unmanned satellite CSO/SSO facilities
- Stormwater runoff
- Primary and enhanced primary filtration for carbon diversion
- Tertiary treatment
- Phosphorus removal
- Dual-use primary or tertiary treatment and CSO/SSO
- Lagoon effluent
- Industrial water pretreatment

**WWETCO FlexFilter Advantages**
- Simple to operate, unmanned operation for CSO/SSO systems
- No chemical use required for CSO/SSO treatment
- Rapid startup with no conditioning of the filter required
- No internal moving parts
- Ability to sit clean and dry between wet-weather events
- Ability to handle high influent solids loading greater than 500 mg/L
- 80-90 percent TSS removal for CSO and primary treatment
- Effluent suitable for UV or chemical disinfection
- High loading levels for primary and tertiary treatment due to the unique storage capacity of the fiber media
- <2 mg/L effluent TSS for tertiary treatment
- Compact, customizable design supports unique footprints
- Concrete structure, stainless steel tank, and retrofit options
- No media loss
- Air and low-flow water backwash system

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**World’s Largest Compressible Media Filter**

**Springfield Ohio WWTP 100 MGD WWETCO FlexFilter**

The FlexFilter contains nearly 20,000 cubic feet (566 cubic meters) of compressible media and is used 50 to 60 times a year as part of a high-rate treatment (HRT) facility to treat CSO events. This process extends the performance capability of the Springfield Wastewater Treatment Plant so that CSO flows do not have to be directed to bypass the facility, enhancing the environmental health of the nearby Mad River.

**Operating Data**

<table>
<thead>
<tr>
<th>Pollutant Mass, lbs</th>
<th>CSO Load</th>
<th>Treated Discharge</th>
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</thead>
<tbody>
<tr>
<td>TSS</td>
<td>21,231</td>
<td>3,233</td>
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<tr>
<td>CBOD₅</td>
<td>37,177</td>
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<table>
<thead>
<tr>
<th>Pollutant Concentration, mg/L</th>
<th>CSO Load</th>
<th>Treated Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBOD₅</td>
<td>91</td>
<td>52</td>
</tr>
<tr>
<td>TSS</td>
<td>17</td>
<td>18</td>
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</table>