**OPERATION**

Smaller, or lower powered, systems, either for the processing of raw sewage or for treatment of plant effluents, are a practical method of thickening virtually all types of sludges. The SLUDGE THICKENING DEVICE™ is unique because it thickens sludge by removing the excess fluid, rather than by increasing the solids concentration of the waste. This occurs by means of gravity, or by using chemical coagulants or inorganic additives prior to dewatering or liquid hauling. So, Merit Filter Corporation Static Screen works right in the sludge thickening tank by placing a Static Screen directly over the sludge to be thickened. The screenings drop off the face of the screen. The screenings are then discharged from the bottom of the tank and a clean liquid supernatant is left. The screenings may be disposed of to a landfill, screenings press, incinerator, or for off-site composting.

**A Practical Solution for Sludge Thickening and Removal of Excess Liquid**

The Merit Filter Corporation Static Screen TM works in the following manner. The Merit Filter Corporation Static Screen is ideal for use in the following types of applications:

- **Industrial Sludge Thickening**
- **Stabilization ponds**
- **Screening and dewatering**
- **Screening and thickening**
- **Screening, digestion, and thickening**
- **Screening, digestion, and thickening of sludge**

**TYPICAL PERFORMANCE AND CAPACITIES**

**MUNICIPAL APPLICATIONS**

<table>
<thead>
<tr>
<th>Application</th>
<th>Screen Size (Opening)</th>
<th>Capacity (Gallons Per Min.)</th>
<th>Capacity (Gallons Per Day)</th>
<th>MGD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sludge Thickening</td>
<td>S1/8</td>
<td>250</td>
<td>10 MGD</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>S1/4</td>
<td>220</td>
<td>1 MGD</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**PRODUCT SPECIFICATIONS**

- **Static Screen TM**
- **Merit Filter Corporation SLUDGE THICKENING DEVICE™**
- **Headworks**
- **TYPICAL APPLICATIONS**
- **Industrial Sludge Thickening**
- **Stabilization ponds**
- **Screening and dewatering**
- **Screening and thickening**
- **Screening, digestion, and thickening**
- **Screening, digestion, and thickening of sludge**

**TYPICAL PERFORMANCE**

<table>
<thead>
<tr>
<th>Sludge Type</th>
<th>Initial Volumetric</th>
<th>Final Volumetric</th>
<th>Average Volumetric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Primary</td>
<td>5 - 10%</td>
<td>3 - 8%</td>
<td>7%</td>
</tr>
<tr>
<td>Primary</td>
<td>8 - 15%</td>
<td>4 - 9%</td>
<td>14%</td>
</tr>
<tr>
<td>Activated Sludge</td>
<td>6 - 10%</td>
<td>3 - 6%</td>
<td>7%</td>
</tr>
<tr>
<td>Anaerobically Digested</td>
<td>8 - 12%</td>
<td>4 - 8%</td>
<td>8%</td>
</tr>
<tr>
<td>Aerobically Digested</td>
<td>8 - 12%</td>
<td>4 - 8%</td>
<td>3%</td>
</tr>
</tbody>
</table>

**THE FUTURE OF Dewatering**

**MERIT FILTER CORPORATION STATIC SCREEN™**

**MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE™**

**MERIT FILTER CORPORATION®**

**TYPICAL APPLICATIONS**

- **Thickens all types of sludge, cons or on sludge digestion, or digester effluent.**
- **Kills digester capacity by thickening sludge prior to digestion, reducing the number of digestion vessels required.**
- **Kills waste treatment plant sludges from any operation, according to the capacity of the SLUDGE THICKENING DEVICE™ right at the digester or thickener.**
- **Screening and thickening of sludge, where the process produces sludge for disposal.**

**INDUSTRIAL APPLICATIONS**

- **Uses on anaerobic digester to raise it as a digestion vessel to a MSW incinerator.**

**PRODUCTS**

- **MERIT FILTER CORPORATION®**
- **SLUDGE THICKENING DEVICE™**
THE MERIT FILTER MEDIA™ SLUDGE DEWATERING SYSTEM

LOW OPERATING COST
What could be more efficient than Merit Filter Media™? There are no moving parts to breakdown, minimal maintenance requirements and there is no expensive source needed other than the force of gravity. Also, there's no costly sand drying beds and the new Merit Filter Media™ can retrofit any size bed with installation being a snap.

LOW START-UP COST
Given that the new Merit Filter Media™ has its own built-in underdrain system and requires no technically complicated installation, the total savings over sand drying beds are innumerable. The Merit Filter Media™ requires only 1/6 to 1/10 of the space of outmoded, inefficient sand drying beds and Merit Filter Media™ can retrofit any size bed with installation being a snap. 

TRIANGULAR OPENINGS
The Merit Filter Media™ has an inverted triangular-designed open area. The large open area means speedy dewatering of polymer treated sludge and the innovative triangular opening design defies clogging.

MODULAR DESIGN
The ingenious interlocking sections of the Merit Filter Media™ make formation of any size sludge bed for either new construction or for retrofitting existing obsolete sand drying beds, a snap. Interlocking sections feature eliminate the need for special tools or training. With no moving parts, there are no break downs. If a section of media ever needs replacing, the job is simple and immediate.

QUICK AND EFFORTLESS OPERATION
With its own built-in underdrain system, sludge is dried in a mere 48 to 72 hours as air circulates above and below the media, while gravity does all the work. The sludge is then easily removed with a small front-end loader, and a quick wash-down readies the system for the next cycle.

INNOVATIVE MATERIAL
Practically indestructible

LOW OPERATING COST
No power or skilled labor required to operate

LOW START-UP COST
Huge cost savings over other dewatering systems

THE MERIT FILTER MEDIA™ ADVANTAGES

Many years of developing and testing various dewatering devices for efficiency and reliability end right here. The Merit Filter Media™ sludge dewatering system now offers the best financial alternative to both costly mechanical dewatering and obsolete, inefficient sand drying beds. Best of all, the new Merit Filter Media™ can be retrofitted to any existing sand drying bed simply and inexpensively. The new Merit Filter Media™ is the improved dewatering system.

Because each sludge has it’s own variation in concentration, drying times may vary in accordance with the individual nature of a particular sludge. Contact Merit Filter Corporation for specific design data. Merit Filter Corporation accepts no responsibility for any operational or design data not submitted in writing directly from Merit Filter Corporation.

THE MERIT FILTER CORPORATION

The Merit Filter Media™ sludge dewatering system is virtually indestructible and maintenance free. Constructed of high-density polyurethane, the Merit Filter Media™ can stand up to harsh chemicals and intense UV light. Only 2” thick, this remarkable material can easily support the weight of a small front-end loader.
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Merit Filter Corporation has complete AutoCAD capabilities and can provide complete bid and approval drawings at your request.

LOW START-UP COST
Given that the new Merit Filter Media™ has its own built-in underdrain system and requires no technically complicated installation, the initial savings over other dewatering systems is huge. Merit Filter Media™ is easy to install and cost effective.

LOW OPERATING COST
With its own built-in underdrain system, sludge is dried in a mere 48 to 72 hours as air circulates above and below the media, while gravity dries all the work. The sludge is then easily removed with a small front-end loader, and a quick wash-down readies the system for the next cycle.

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LOW OPERATING COST

What could be more efficient than Merit Filter Media™? There are no mechanical parts to break down, minimal maintenance requirements and there is no higher source needed other than the force of gravity. Also, Merit Filter Media™ can retrofit any existing sand bed with installation being a snap.

TRIANGULAR OPENINGS

The Merit Filter Media™ has an inverted triangular-designed open area. The large open area means speedy dewatering of polymer treated sludge and the innovative triangular opening design defies clogging.

LOW START-UP COST

Given that the new Merit Filter Media™ has its own built-in underdrain system and requires no technically complicated installation, the initial savings over old mechanical systems are huge. The Merit Filter Media™ requires only 1/6 to 1/10 of the space of outmoded, inefficient sand drying beds and Merit Filter Media™ can retrofit any size bed with installation being a snap.

MODULAR DESIGN

The ingenious interlocking sections of this system allows for formation of any size sludge bed for either new construction or for retrofitting existing obsolete sand drying beds. The snap-and-lock feature eliminates the need for special tools or training. With no moving parts, down time is minimal. If a section of media ever needs replacing, the job is simple and immediate.

QUICK AND EFFORTLESS OPERATION

With its own built-in underdrain system, sludge is dried in a mere 48 to 72 hours as air circulates above and below the media, while gravity dries all the work. The sludge is then easily removed with a small front-end loader, and a quick wash-down readies the system for the next cycle.

LOW OPERATING COST

No power or skilled labor required to operate.

THE MERIT FILTER MEDIA™ SLUDGE DEWATERING SYSTEM

LOW OPERATING COST

Innovative material

Practically indestructible

Modular design

Eliminates media clogging

Low start-up cost

Huge cost savings over other dewatering systems

Low operating cost

No power or skilled labor required to operate

THE MERIT FILTER CORPORATION

Merit Filter Corporation has complete AutoCAD capabilities and can provide complete bid and approval drawings at your request.

INNOVATIVE MATERIAL

The Merit Filter Media™ sludge dewatering system is virtually indestructible and maintenance free. Constructed of high-density polyurethane, the Merit Filter Media™ can withstand up to harsh chemicals and intense UV light. Only 2” thick, this remarkable material can easily support the weight of a small front-end loader.
### TYPICAL PERFORMANCE AND CAPACITIES

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<thead>
<tr>
<th>Operation</th>
<th>Screen Size (mph)</th>
<th>Capacity (MGD)</th>
<th>Capacity (GPM)</th>
<th>Capacity (PSM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary Sewage (Municipal)</td>
<td>3.5</td>
<td>850</td>
<td>3,500</td>
<td>201</td>
</tr>
<tr>
<td>Sewerage Treatment</td>
<td>3.5</td>
<td>110</td>
<td>440</td>
<td>26</td>
</tr>
<tr>
<td>Gravity Screen</td>
<td>3.5</td>
<td>30</td>
<td>1,200</td>
<td>72</td>
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A Practical Solution for Sludge Thickening and Removal of Excess Liquid

**MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE**

By using biological or industrial sludges and specific gravity, the components to separate, floatable and settleable, the solids will settle in a relatively short time. This settling will result in complete removal of the solids, by gravity, from the supernatant. The clarified supernatant will result in the heavier solids. The clarified supernatant will result in the heavier solids being removed from the supernatant. The supernatant can be treated and returned to the wastewater system. The solids will be removed by gravity and sludge thickening.

**MERIT FILTER CORPORATION SLUDGE THICKENING DEVICE** can be used for municipal or industrial sludge thickening applications. The device is based on the principle of gravity sedimentation and thickening. The device consists of a static screen that provides an area of reduced head loss in the channel and a screen to remove the solids from the wastewater.

### TYPICAL PERFORMANCE AND CAPACITIES

#### Municipal Applications

<table>
<thead>
<tr>
<th>Application</th>
<th>Screen Size</th>
<th>Q (MGD)</th>
<th>TPH</th>
<th>TSS</th>
<th>VSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sludge Thickening</td>
<td>8&quot;</td>
<td>0.5 - 4</td>
<td>0.25</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>Industrial Treatment</td>
<td>8&quot;</td>
<td>4 - 20</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

#### Industrial Applications

- **TYPICAL APPLICATIONS**
  - Thiocyanates of sludge sludge, with or without mechanical thickening prior to dewatering, land application or liquid recycling.
  - Thiocyanates of digester by thickening prior to digestion, sludge thickening prior to dewatering.
  - Thiocyanates of sludge treatment plant sludges that may require screening or thickening, sludge thickening prior to dewatering, and sludge thickening prior to land application.

**MERIT FILTER CORPORATION STATIC SCREEN** can be used for the removal of suspended solids, settleable solids and non-biodegradable floatables. The Static Screen is most commonly used for the separation of waste sludge and supernatant. The device consists of a static screen that provides an area of reduced head loss in the channel and a screen to remove the solids from the wastewater.

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**THE FUTURE OF Dewatering**

**The Merit Filter Corporation Static Screen**

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- Thiocyanates of digester by thickening prior to digestion, sludge thickening prior to dewatering.
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**The Merit Filter Corporation Static Screen**

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