GFT Flotation
Secondary Produced Water Deoiling

Key Benefits

Cost Saving
- Combines gravity tank and induced gas flotation processes for lower total costs.
- Easily retrofit existing tanks to make your current investment work harder.
- Lower install costs because there is less equipment and easier tie-in.
- Fewer pumps, valves and chemical requirements lead to lower operating costs.
- High-performance MBF technology reduces chemical treatment costs.
- API tank allows more economic inspection and recertification than IGF vessels.

Better Performance
- Better oil separation through micro-bubble technology and sequential treatment.
- Multi-chamber design provides excellent buffering against variations in flow rate and oil concentration.
- No internal moving parts means higher reliability.
- No rotating seals, thus eliminating fugitive air emissions.
- Guarantee your performance results with our design validation and characterization services.

High Flexibility
- Ability to treat difficult fluids such as heavy oils, emulsions and high viscosities.
- Wide turndown range allows virtually any flow rate.
- Reduce your risk with a turnkey installation, or we can simply provide design and micro-bubble equipment.

OVERVIEW

GFT Flotation gives you high-volume oily water separation in a highly efficient, flexible, capital-saving design. The system utilizes Exterran Micro-Bubble Flotation (MBF®) technology in a multi-chambered API tank to achieve <10 ppm target output at flow rates from 10,000 to 500,000 bwpd in a single package. GFT delivers these results while reducing retention times to one hour versus the 4-6 hours required by typical API skim tanks.

Exterran’s GFT Flotation system makes the most of your water treatment investment. Tie-in is fast and easy, and the small footprint saves precious space as well as the expense of engineering and installing multiple trains. We can also retrofit the system to utilize your current tanks with minimal costs. Going with GFT Flotation allows you to ramp up production and grow into your investment as your field expands.

HOW IT WORKS

GFT Flotation uses fluid hydraulics through multiple chambers coupled with micro-bubble flotation to optimize oil-water separation. Produced water enters the chambers sequentially as micro-bubbles are introduced. Oil is lifted upon the bubble layer and is skimmed off by overflowing an oil weir. The water then flows into the next chamber where more micro-bubbles are introduced and more oil is separated. The process drives itself hydraulically through all chambers, and water exits the system at a target of <10 ppm.

GFT Flotation can handle complex separations at high volumes with no disruptions due to variations in flow rate or oil concentration.

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Standard Features

- Micro-Bubble technology via ONYX® pumps or Gas Liquid Reactor (GLR®)
- API tank
- Instrumentation and controls
- Piping, valves, cabling between micro-bubble package and GFT
- GFT outlet control valve
- Complete process review
- Materials of construction:
  - GFT: internally coated carbon steel
  - Piping: internally coated carbon steel
  - Instruments: 316 SS wetted parts
  - ONYX pump: Duplex SS

Options

- New-build or retrofit to existing tanks
- Single, dual or four-chambered tank solutions
- Water characterization services
- Chemical treatment selection services
- CFD modeling of proposed tank design
- Upgraded materials for pumps, valves, instruments, piping
- Ancillary equipment such as transfer pumps and chemical injection
- Cold-weather protection such as skid enclosure and tank insulation
- Other options as required to meet your specifications

Notes

Typical GFT Flotation Dimensions

<table>
<thead>
<tr>
<th>Capacity (BWPD)</th>
<th>Diameter (feet)</th>
<th>Height (feet)</th>
<th>Retention Time (minutes)</th>
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<tbody>
<tr>
<td>10,000</td>
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<td>15</td>
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</tr>
<tr>
<td>350,000</td>
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<td>36</td>
<td>60</td>
</tr>
</tbody>
</table>

Contact Exterran for other flow capacities and to confirm sizing.

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