

Enhanced Gas Flotation Tank (EGFT®)

Primary Produced Water Deoiling

The Enhanced Gas Flotation Tank (EGFT®) is designed to handle marginal wells, with proven performance at inlet concentrations exceeding 350,000 ppm oil-in-water (OIW). Capacities range from 50,000 BWPD to 1,000,000 BWPD with achieved OIW outlets as low as <20 ppm using Microbubble Flotation (MBF®). The high-loading nature of this tank is unique in its capability to replace multiple pieces of primary and secondary treatment equipment within a single tank while achieving secondary treatment results. Combining these processes allows for reduced footprint and costs (CAPEX and OPEX). The EGFT can be designed with an integrated skimmings tank in which oil can be removed with low BS+W versus the high water cuts typically seen in flotation skimmings.

How It Works

The EGFT is divided vertically into multiple water process chambers and one skim oil chamber. Produced water enters the chambers sequentially as microbubbles 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 microbubbles are introduced, and more oil is separated. The process drives itself hydraulically through all chambers, and water exits the system at a target as low as <20 ppm. The internal skim oil chamber collects skimmed oil via a v-notch skimming weir from each water process chamber and provides residence time for further oil and water separation. The recovered water from the internal skimmed oil chamber is pumped through the microbubble source and recycled to the EGFT feed stream header while the oil stream with reduced BS+W is pumped to the outlet.

Key Benefits

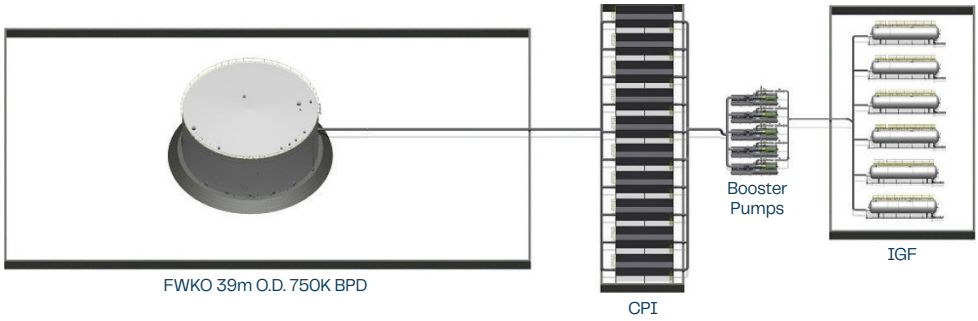
Cost Saving

- Integrated skim oil tank eliminates the need for another tank, reducing cost and footprint
- Significant CAPEX reduction by eliminating the need for FWKO, CPI's, and IGF's
- Reduced footprint
- Less equipment and easier tie-in results in lower install costs
- Fewer pumps, valves, and chemical requirements lead to lower operating costs and high performance MBF technology reduces chemical treatment costs

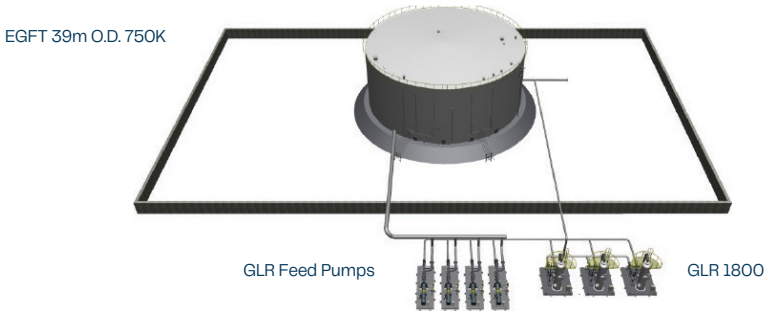
Better Performance

- Better oil separation through MBF technology and sequential treatment
- Integrated skim tank reduces BS+W in the oil stream and overall skimmings
- 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
- Guaranteed performance results with our design validation and water characterization services

Traditional Layout



Enerflex Solution



Flexibility

- Ability to treat difficult fluids such as heavy oils, emulsions, high viscosities, and polymer applications
- Wide turndown range allows virtually any flow rate
- Commercial models include equipment sale, licensing, and operating contracts
- Wide operating range handling variations in inlet water qualities
- System can be standardized for duplicated facility design across your company's locations
- Reduce your risk with a turnkey installation, or we can provide the tank design and microbubble generation equipment

Standard Features

- MBF technology via Gas Liquid Reactor (GLR®)
- API or EN tank design code
- Full automation with various control philosophy options
- Hydraulic skimmings tank
- Hydraulic skimming

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Materials of Construction

- EGFT: internally coated carbon steel
- Piping: internally coated carbon steel
- GLR vessel: internally coated carbon steel

Standard Options

- New-build or retrofit to existing tanks
- Water characterization services
- Chemical treatment selection services
- CFD modeling of proposed tank design
- Upgraded materials for pumps, valves, instruments, and 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 specifications



Enerflex

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