

Westfalia Separator®  
**aquaflow**

## Waste Water Treatment in Refineries with Westfalia Separator **aquaflow**

Treatment and recovery of resources by means of flotation  
and centrifugation in one process



Separation. Solution. Success.

# Westfalia Separator aquaflow – Newly-Developed Microbubble Technology for Greater Efficiency

In combination with decanters and separators, Westfalia Separator aquaflow microbubble technology is the innovative system solution for waste water treatment in refineries.

GEA Westfalia Separator supplies everything from a single source: flotation and centrifugation in one process

GEA Westfalia Separator is the world leader in mechanical separation technology. The company now handles more than 2500 applications in process technology and also supports refineries with innovative solutions. The priority for the Fluids & Water Business Unit are separation technology systems which are able to meet every requirement for high process efficiency and gentle handling of resources in the long term. A current example is waste water treatment. For efficient treatment and recovery of resources, the company combines flotation with tried and tested centrifuge technology in one process line.

The core element of the newly-developed flotation unit is the innovative Westfalia Separator aquaflow microbubble technology.

### Efficient initial cleaning of large volume flows

The first treatment step involves the flotation unit. This is located upstream of the decanter for initial cleaning of large volume flows to relieve pressure on the centrifuge. The water to be treated is passed through a compressed air atmosphere in the Westfalia Separator aquaflow unit.

The compressed air is supplied automatically, without the use of electrical sensors which are susceptible to faults. This means that the system operates on a virtually maintenance-free basis. Newly-developed microbubble technology ensures reliable mixing of air and water and a constant degree of saturation. Disruptive fluctuations in the gas bubble spectrum are eliminated. Energy consumption is significantly reduced compared to conventional systems.

### Dramatically reduced reaction time, fewer chemicals required

Turbulence mixing dramatically reduces reaction time. This means that the quantity of chemicals required for separating the emulsion is also significantly reduced.

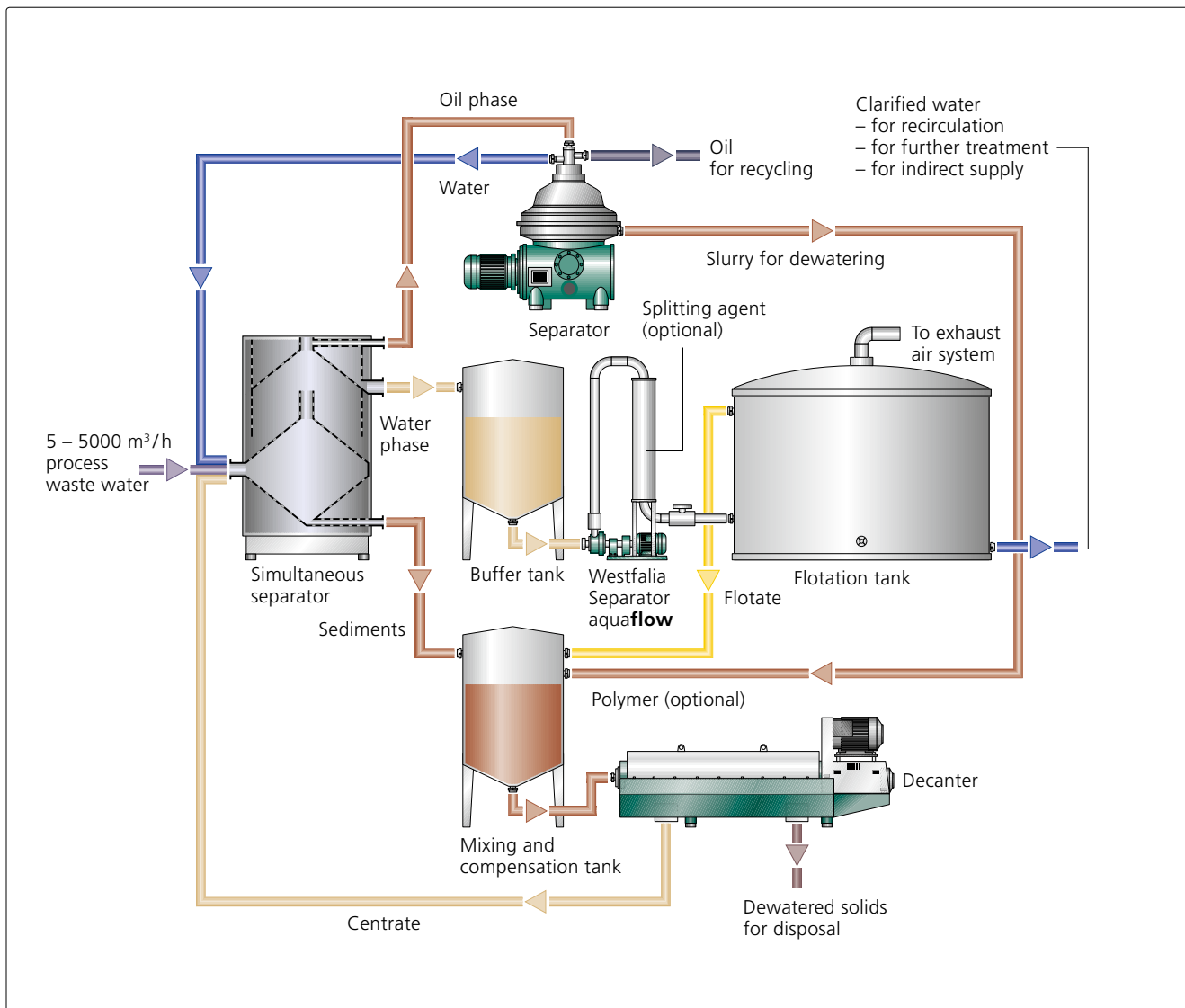
There are various options available for the treated water: it can be recirculated into the process, fed to an indirect supply or treated further – by membrane technology, or by biological or chemical processes, for example.



Decanter UCF 466



Westfalia Separator aquaflow



Waste water treatment in refineries

### Separation accuracy optimizes value creation

The decanter comes in during a further process stage: it separates from the flotata solid particles which can be spun off and dewatered them into a flowing dry consistency. This is a benefit with a positive impact on costs, both for the logistics of disposing of the solids and for minimizing waste disposal expense. Additional integration of a separator from GEA Westfalia Separator increases value creation still further: the oil contained in the waste water is reliably recovered by the separator and can be profitably recycled.

### A summary of system benefits:

- Flotation with innovative microbubble technology
- More effective gas bubble spectrum

- Minimized use of chemicals
- Reduced energy required
- Recovery of oil
- All components from a single source
- Few interfaces
- Virtually maintenance-free operation



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