



## FLOTATION FAT RECOVERY SYSTEM

CREATING VALUE OUT  
OF YOUR WASTEWATER



### Flotation Fat Recovery System - FFRS

It is well-known within the poultry-industry that cleaning your wastewater stream from a poultry processing plant undeniably confronts you with fat-solids mixtures being separated from the wastewater.

The wastewater itself can be purified to different standards: suitable for discharge to local sewage systems, agricultural irrigation purposes, discharge to surface waters like rivers and lakes or even suitable for re-use in parts of the process and/or related parts of the integrated system.

Nijhuis Water Technology has proven this with a number of successful projects for more than 300 customers worldwide in the poultry industry. However, the capabilities of the technologies and solutions provided by Nijhuis extend even further.

The flotation-sludge generated during the cleaning process usually confronts customers with high disposal-costs. Nijhuis has several solutions available to reduce your disposal costs or even create revenue out of your flotation-sludge. One of the solutions is separating the valuable fat from the sludge.

### What is flotation-sludge?

Prior to entering a secondary treatment-step such as a biological treatment, wastewater requires primary treatment consisting of filter and flotation techniques to reduce the excess solids and fat content in the water. Course solids can be filtered from the water by using the Nijhuis NTF rotating filter. Fats passing through the filter together with the water can be separated by the unique and reliable Nijhuis flotation-systems which will generate flotation-sludge. Flotation-sludge is a mixture of water, fine solid-proteins and animal fat.



### **How to separate flotation-sludge?**

Heating the mixture allows the three phases of materials to separate from each other. Separation of the three phases can be done by gravity separation, however, this does not provide a thorough separation of solids and fats.

More advanced mechanical separation techniques are required to guarantee a thorough separation of all three phases and substantially increase the yield of fat.

### **Usage of recovered fat**

The separated fat obtained can be used for various technical purposes such as fuel for steam boilers or biofuel, however, the fat is also a trade-commodity with high value. In general every m<sup>3</sup> of flotation-sludge will yield approximately 50 kg of valuable fat.

### **How to use the water and separated solids?**

The separated water can be sent back to your wastewater treatment plant, whereas the separated solids-proteins can be utilised as material to feed a digester, utilising the solids for composting and/or ingredients for fertilisers.

Nijhuis solutions do not only provide customers with a solution for their wastewater but also eliminate negative consequences and turn them into a valuable end-product, creating value out of wastewater.

