

MEATWORKS



Recovery from waste water in Meat Industry

Rendering waste water

Abattoir waste water



WyunaSep Hydrocyclone use centrifugal force to Physically separate fats or solids from water or water based solutions regardless of the flow rate.

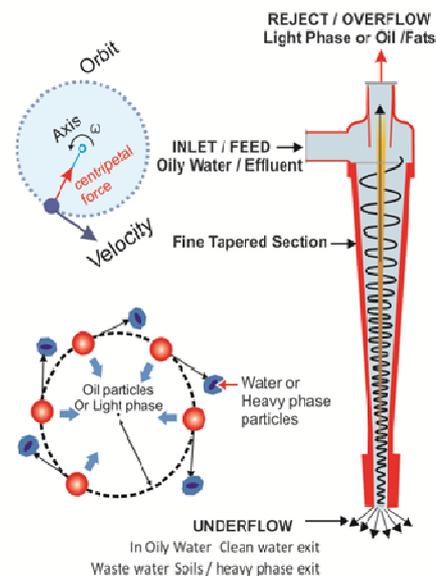
Fluids containing fats are fed tangentially into the hydrocyclone. As the mixture flows through the unit, it accelerates sending the lighter phase (fats) to the centre for removal through the overflow. Cleaned water reports to the underflow.

Our solid separators are equally efficient, sending unwanted solids directly to the underflow stream. Clean water flows through the overflow. Simple !!

You can use it separately or together, WyunaSep offers a single, cost effective system for your process plant.

You retain valuable product while unwanted waste is removed in an efficient operation.

Yield is improved End product quality and process performance are greatly enhanced. And downstream equipment, such as ultra-filtration, are protected.



Summary

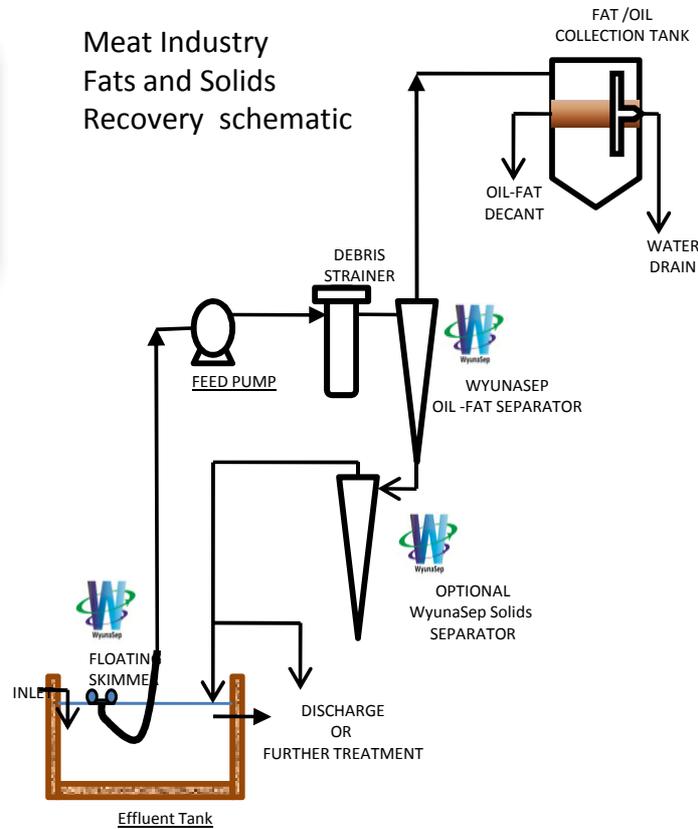
The potential high fat content of effluent from meat processing plants can lead to treatment issues in primary and secondary treatment processes, such as extended Digestion times, scum formation and inhibition of methane production. In most cases, keeping the fat out of the water and processing it in the existing on-site rendering plant with the help of efficient WyunaSep Hydrocyclones system provides the meat processor with the best return



Hydrocyclones use centrifugal force to separate solids and fat from water. Originally designed for the oil and mining industries, hydrocyclones have a small foot print and retention time and no moving parts (MLA2007). Hydrocyclones remove 40-90% of oil and grease and are a capital cost-effective method compare with other technologies(GHD2003)

^{***} Reference : AMPC – Publication by Neil McPhail – March 2015
 “Review of removal of Fats, Oil and Greases from Effluents from Meat Processing Plants”

Meat Industry Fats and Solids Recovery schematic



Typical abattoir effluent

Parameter	Range (mg/L)
Total COD	9,600 – 12,900
Soluble COD	890 – 1,970
Total solids	4,300 – 8,400
Oil & grease	790 – 3,350
N	230 – 260
P	30 – 50

^{***} Reference : 1. Dissolved Air Flotation for Abattoir Wastewater; D Lovett and S.M. Travers CSIRO .
 2. Treatments of Fatty Effluents; P Grant PhD Unilever

System Performance	Hydrocyclone 	Tank (e.g. "Saveall") *	DAF (no chemicals) *	DAF (24 hr operators and full chemical treatment) *
Oil and Grease % reduction	75 to 95	50 to 60	60 to 80	Up to 95
Suspended Solids % reduction	65 to 75	50 to 60	50 to 65	Up to 70

1. WyunaSep Fatty and Oily Water treatment system
2. Tallow recovery system from effluent
3. WyunaSep Abattoir ETP – Fats and Heavy solids removal

APPLICATIONS

Benefits of using WyunaSep hydrocyclones system:

- ❖ High degree of contaminant removal, particularly suspended solids and fats, oil and grease;
- ❖ hydrocyclones have a small foot print and retention time and no moving parts (MLA2007).
- ❖ Hydrocyclones remove 40-90% of oil and grease and are a capital cost-effective method compare with other technologies(GHD2003)
- ❖ Very short residence time (Separation takes place in seconds) and consequently very small footprint
- ❖ No chemicals required;
- ❖ High quality fat-rich stream (i.e. low FFA concentration due to short residence time), which may have a recoverable economic benefit as a high grade tallow;
- ❖ Minimal operating and maintenance costs –self cleaning effect and no consumables required
- ❖ Very capital cost effective, particularly in specific terms of \$ per tonne of suspended solids and oil and grease removed.*

*Reference: Assessment of Hydrocyclones for Fat Removal from Meat Processing Wastewater Streams, GHD Pty Ltd