

## Tridair<sup>™</sup> Hydraulic IGF

# Tridair<sup>™</sup> Hydraulic induced gas flotation removes up to 98% of insolubles and solids

#### Vessel description & operation

The Tridair™ Hydraulic Induced Gas Flotation Cell typically accomplishes up to 90–98% removal of insoluble oil/organic and suspended solids. Removal efficiency is influenced by physical characteristics of the incoming stream such as pH, total dissolved and suspended solids, temperature, presence of chemicals, mixtures of different streams and Zeta Potential.

#### How it works

The vessel is divided into four flotation compartments, each separated by a series of over and under baffle plates. The arrangement of baffle plates permits flow surges up to 25% without loss of removal efficiency.

As the water leaves the flotation compartment, it enters a smaller clean water chamber. From this clean water compartment, a centrifugal pump recirculates the water through a header to a downcomer in each cell. Located in each downcomer is a single nozzle/eductor system.

Gas is induced through a controlling stainless steel needle valve to the eductors. The unique nozzle/eductor



Tridair™ Hydraulic installation skid mounted

design ensures even dispersion of the finely divided air/gas bubbles throughout the liquid. By controlling the volume and rate of air/gas induced, the development of the proper bubble size for the efficient lifting of oil/organic and suspended solids is achieved. Most of the oil/organic contained in the waste water stream is in the form of a reversed emulsion. Suspended solids are usually oil/organic wet particles, metal oxides, etc. Both oil/organic and suspended solids are of such a density that they will float when they are attached to the minute dissolved bubbles.

Oil/organic and suspended solids accumulate on the surface of the liquid as a froth, where they are continuously removed from the flotation compartment by means of a gravity spill over and adjustable weir.



Issue 2 02.07

### NATCO

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#### **Applications**

- Oilfield produced water, offshore and onshore
- Refining/petrochemical waste water - Recycle/reuse
  - Discharge
- Boiler feed water treatment

#### Features

- Hydraulic gas induction
- High gas to water ratios
- Numerous skimming methods available
- Pressurized operation
- Cylindrical vessels

#### **Benefits**

- Few moving parts
- Oil removal efficiencies to 98%
- Minimize oil skimmings
- Eliminate VOC emissions
- Minimize solids fouling





#### For more information on the NATCO Tridair™ Hydraulic IGF or other NATCO Group products contact:

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Issue 2 02.07