



Oil & Gas Systems Limited

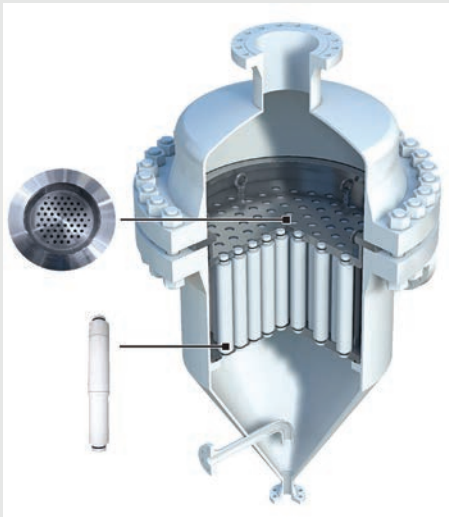
## Produced Water Treatment



In many offshore and onshore installations, large amounts of water can be produced during the hydrocarbon extraction process. Water production quantities tend to increase as the oil and gas fields mature. The water that is produced cannot be disposed of or used for re-injection purposes without being treated as it includes a high level of impurities. There is local government and international legislation that dictates the allowable quality and volume amount of produced water discharges, which need to be taken into consideration.

Oil & Gas Systems Limited (OGS) provides bespoke produced water treatment solutions utilising different types of technology depending upon the requirements of the particular installation. These types of systems provide high levels of accuracy and low levels of oil-in-water, typically less than 5ppm.

## Produced Water Composition



The composition of reservoir formation water varies significantly between different reservoirs. Produced water is essentially a mixture of formation water and injected water but can also contain small quantities of:

- Dissolved organics (including hydrocarbons)
- Traces of heavy metals
- Dissolved minerals
- Suspended oil (non-polar)
- Solids (sand, silt)
- Production chemicals

## Scope of Supply

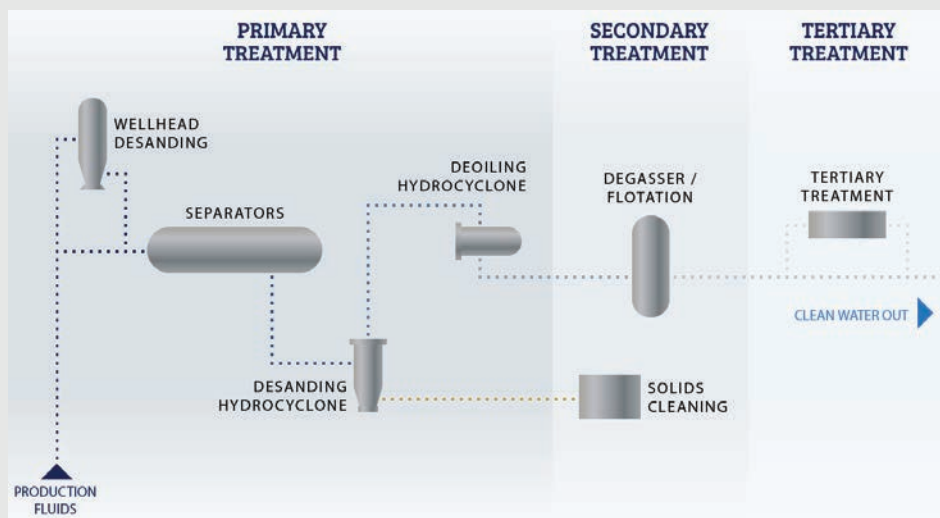
OGS undertakes the detailed design and supply of the above components as skid mounted or packaged equipment and our scope typically covers all stages of project execution including:

- Detailed design and engineering
- Project management
- Manufacture
- Calibration, integrated testing and certification
- Shipping and packing
- Start-up and commissioning supervision
- Training and support



## Complete Solutions

There are a number of produced water treatment technologies available to the oil and gas industry. OGS can provide a wide range of systems which may include a combination of the technologies outlined below:



### Desanding Hydrocyclones

- High solids loading
- Removal of sand particles
- Compact footprint

### Compact Flotation Unit (CFU)

- Removal of oil in water
- Compact footprint

### Corrugated Plate Interceptors

- Energy efficient
- Bulk oil removal

### Multi-Media & Nutshell Filters

- Solids and oil removal
- Filter patented technology for high efficiency, 2 micron solids removal

### Deoiling Hydrocyclones

- Exceptional removal efficiency
- Bulk oil removal
- Discharge levels can be below 10pp
- Compact footprint

### Induced Gas Flotation

- Removal of oil-in-water
- Removal of fine solids
- Unlimited turndown

### Absorption Filters

- Reduces TPH or oil & grease levels – up to 99.99%, or below 1ppm
- Chemical absorption process – guaranteed removal
- Chemically bonded – no release once absorbed

Each application may require a number of the above and further components can be included to achieve the desired water quality.



### Approvals

Since the company was established in 1989, we have continuously developed our approach to design, procurement, project management, assembly, test and supply of packaged equipment.

OGS was one of the first systems integrators to achieve ISO 9001 approval. Now, our approvals include:

- ISO 9001:2008 - Quality Management System Registration
- ISO/TS 29001:2010 - Petroleum, petrochemical and natural gas industries - Sector Specific Quality Management System
- OHSAS 18001:2007 - Health & Safety Management System

We are approved by a wide range of operating companies worldwide which include BP, Shell, Chevron, BG, Saudi Aramco, PDO and ADNOC Group Companies, KOC and KNPC. We are also registered on the FPAL and Achilles databases for the UK (Supply Line) and Norway (JQS) and are a GE Global Source approved supplier.



Revision 07/2018

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