

# OTS Introduction

- OTS is a privately owned company, established in Stavanger, Norway in 2002, which has progressively built-up knowledge through experience in the rental and service area for the oil and gas industry.
- OTS provides safe, effective and environmentally friendly tailor-made solutions for waste-treatment, cuttings & fluids handling, high-pressure pumping equipment for well intervention, rig/pit cleaning etc.
- OTS are developing new ways of treating water contamination onshore, including micro plastic, phosphor extraction, etc.
- Our head office is in Stavanger, offices in Australia and UK. We have working partnerships in US, Argentina, Denmark, Saudi Arabia and Oman
- OTS is member of a larger privately owned group of companies, including but not limited to: Steel fabrication, Offshore Rig maintenance facilities, Well service tools, and more.

# What we do

## OTS offers cradle to grave solutions

- Engineering from idea to solution
- Fabrication and assembly
- Installation
- Experienced, highly qualified and certified personnel for operation
- Reporting
- Rental of equipment, complete system solutions

- OTT Offices
- Projects



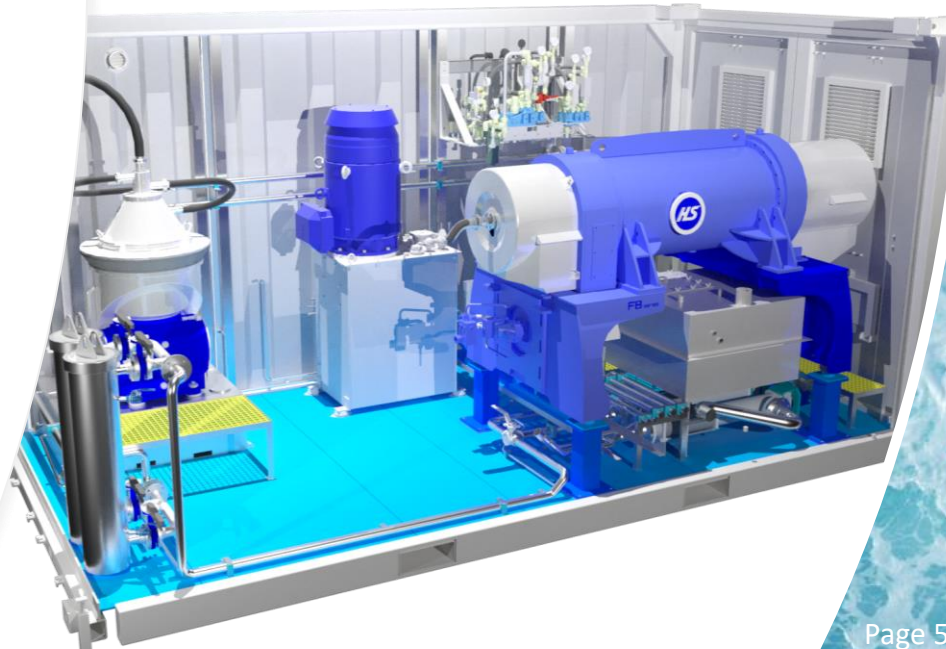
# RENTAL EQUIPMENT



- Well-service pumps
- Drill-cuttings treatment and handling systems
- Vacuum systems
- Swarf-removal systems
- Water filtration
- Drill cutting skips, DNV & vacuum rated
- Slop water treatment
- Pumps
- Mud coolers
- Cuttings dryer

# Wastewater Treatment unit

- The Wastewater Treatment unit can process OBM, slop water, oil-contaminated brines, surface-generated water and crude oil
- The mechanical separation system generates three distinct waste streams: solids, oil, and water.
- The oil can be collected to tank or lead into the process
- The cleaned water can be discharged to sea and the solid will be send onshore for final treatment if required.



te Treatment Services

# Wastewater Treatment unit

- Some of the benefits are:
- Reducing logistic operations
- Reducing over all cost
- Capacity up to 20 m<sup>3</sup> / h, with up to 15 % solid in fluid
- Oil in discharge water below 5 ppm
- No chemicals are used in the treatment process
- Small footprint, 20 foots container



## Treatment of crude oil sludge with the Wastewater Treatment unit

The crude oil is recovered by separating the solid from the crude oil sludge



## CRI – Triplex Injection pump

OTS offers triplex injection/well service pumps in various sizes from 600 to 1400 bhp to meet individual customer requirements.

Example:

- 600 BHP
- 4" plungers (options)
- Electrical remote control
- Logging system
- 8000 PSI
- 10,7 BPM@1900PSI
- NORSOK, 79 dBA, Z-015, DNV
- CSC, CE,
- ATEX Zone 2 areas





OTS – Your partner for safe and cost-effective handling solutions

## Cuttings Transport with the Cuttings Discharge Pump (CDP)

- Remotely operated
- Reduced labor requirement
- Reduced crane demand
- Fills skips up to a radius of 5.8 meters
- Reaches up to 25 skips
- No personnel in contact with waste material



# Cuttings Blower

The cuttings blower unit is used for the bulk transport of drill cuttings and other materials. The cuttings blower is a pressure vessel, It can convey cuttings at rates of up to 25 tones per hour.

- Cuttings transport to rig/ISO tanks
- High capacity
- Small footprint
- Zone 1 rated
- Fully automatic or manual operation



## Vacuum Systems

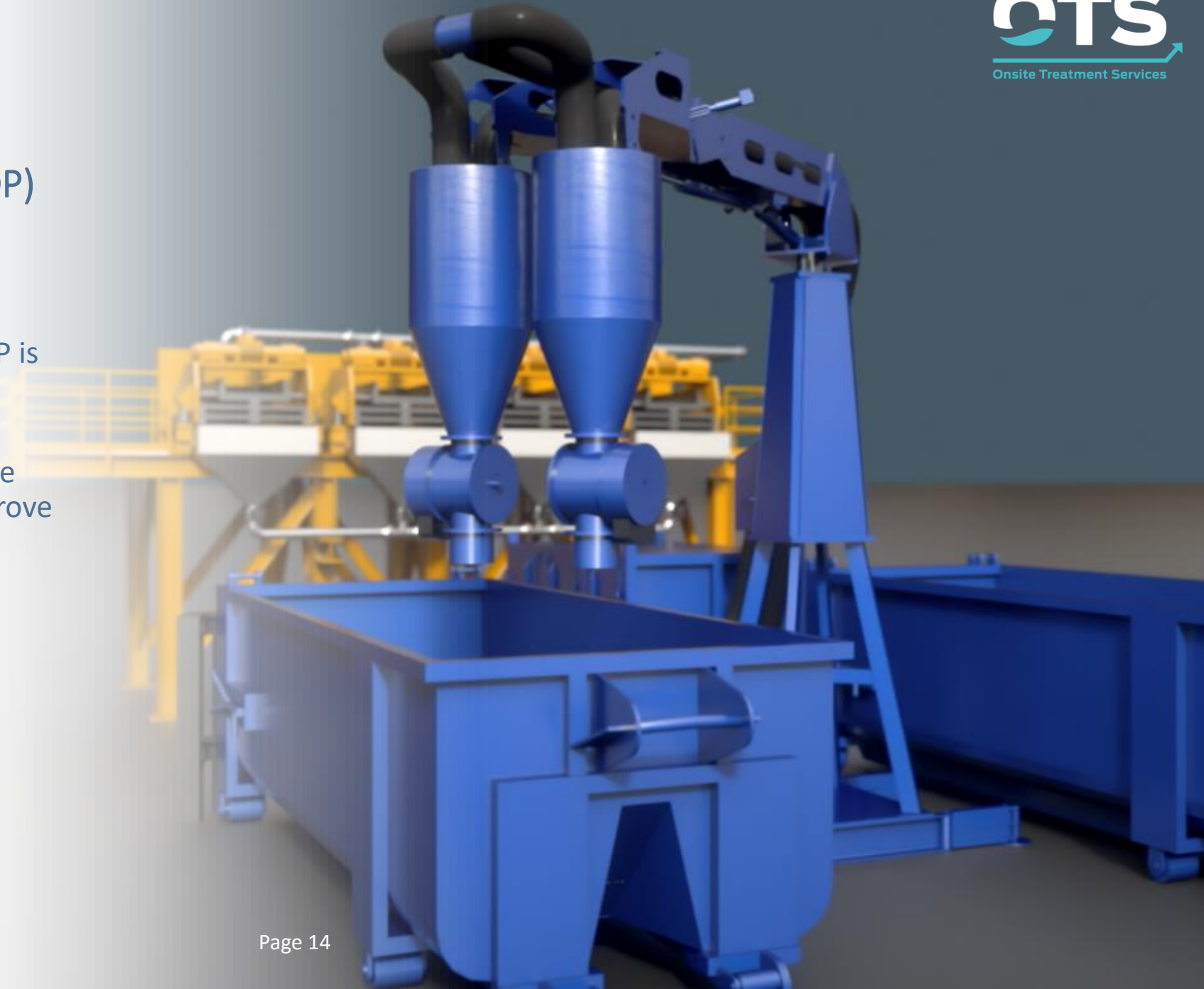
Different solutions for drill cuttings transport, pit-tank cleaning, and general rig cleaning

It can convey cuttings at rates of up to 30 tones per hour.



## Cuttings Transport with the Cuttings Discharge Pump (CDP)

- The second generation of the CDP is focusing on on-shore drilling operations
- It will be fully automatic to reduce manpower requirement and improve HMS.



## Swarf-Removal Systems (SRS)

The Swarf Removal System (SRS) is designed to remove metal swarf, large pieces of cement, and other debris from the circulating fluid during casing-milling operations:

- Zone 1 rated, ATEX approved.
- Capacity in excess of 1200 US gallons (4,5m<sup>3</sup>) per minute and 5 tones of swarf per hour.
- Can be custom-built to suit customers' specifications.
- Fully automated (level control, flow control, gas-detection system).



## Magnet Swarf- Removal Systems

The Magnet Swarf Removal System is designed to remove metal swarf from the circulating fluid during casing-milling operations when milling short length, typical under 60 meters

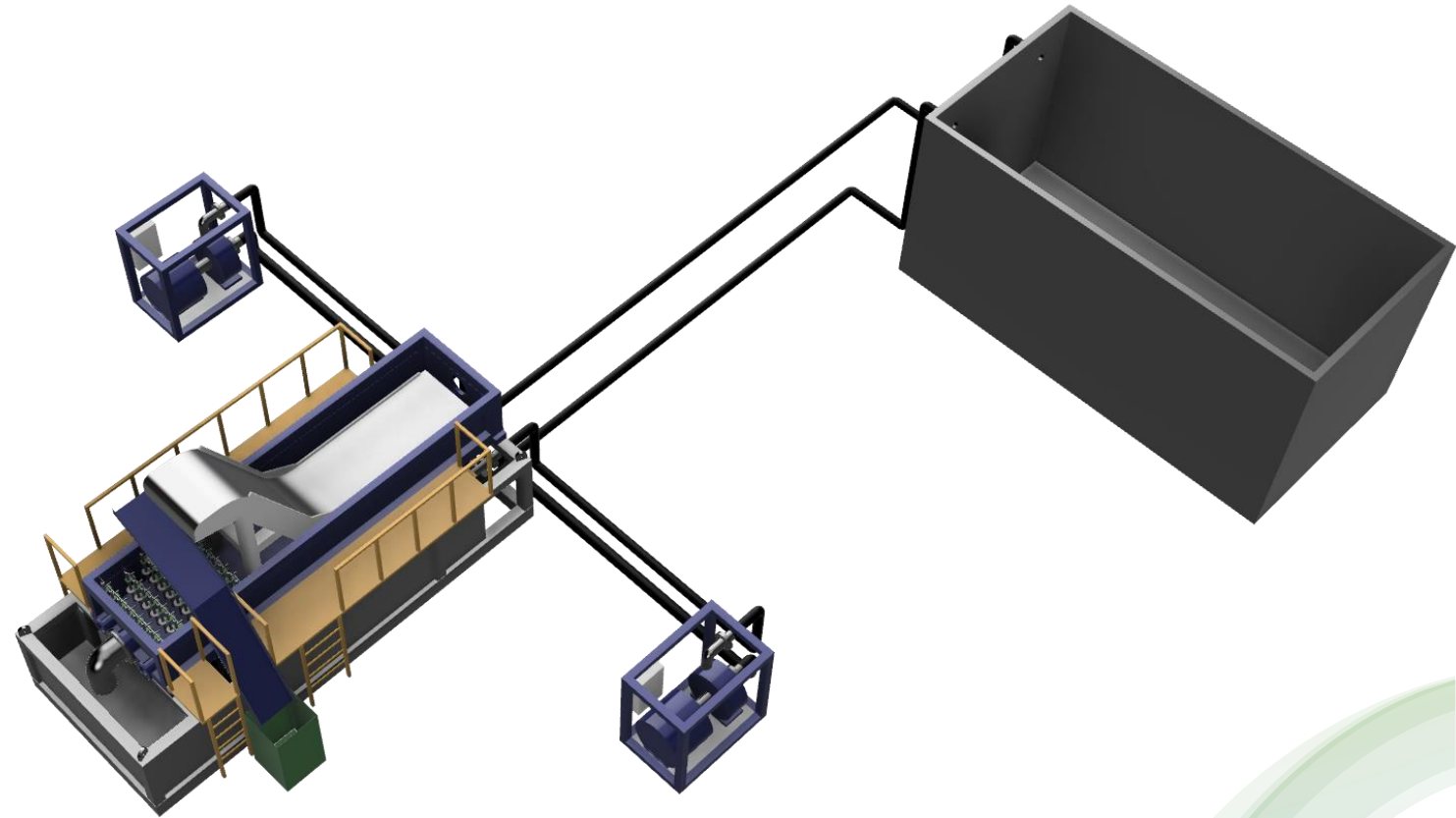


## New generation of Magnet Swarf-Removal Systems

The Belt Magnet Swarf Removal System is designed to remove metal swarf from the circulating fluid during casing-milling. It is a combination of magnet belt and magnet rods.

Some of the benefits are:

- More effective separation of swarf, lesser fine swarf in the fluid
- More robust operation
- More operate friendly



## Filter units and filter

OTS has a wide range of rental filter units. The units are manufactured from stainless steel and can be used during slop treatment and filtration of slop or other contaminated fluids.

OTS is one of the largest supply sources for all types of cartridges in Norway, both particle and oil in water treatment. Most cartridges are in stock and available for immediate dispatch.



## Filter units and filter

The OTS filter units was used to cleaning up a huge oil spill in Siberia, over 20 000m<sup>3</sup> oil contaminated water was treaded

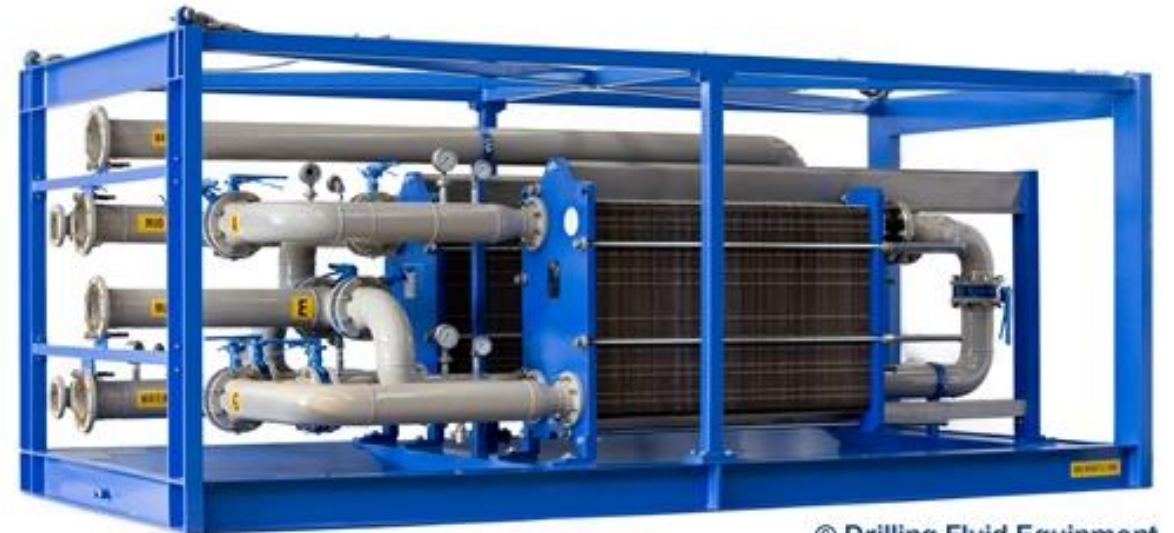


# Offshore Mud Cooler

The plate heat exchanger can be equipped with a range of plate materials: Hastelloy®, titanium, and various types of stainless steel.

This mud cooler offers the following advantages:

- Suitable for mud cooling during high pressure/ high temperature (HP/HT) drilling
- Improved working condition by easy access to the units' components



© Drilling Fluid Equipment

## Diaphragm pumps

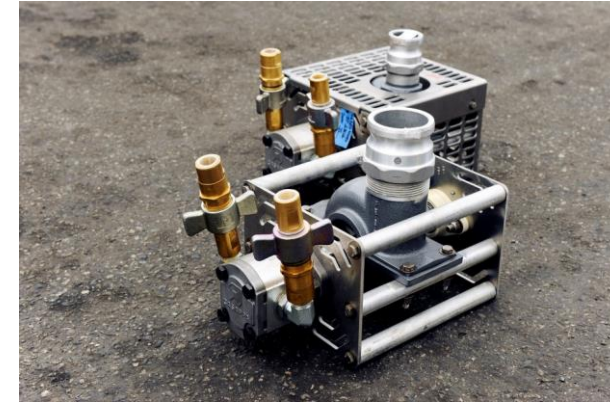


OTS offers a wide range of diaphragm pumps, various sizes and configurations.

- Single & triple skids on stock
- Perfect for tank cleaning
- High volume flow rates
- Portable and straight forward setup
- Various types and sizes
- Corrosion free materials



## Electrical Centrifugal and mono Pump Skid



- Submersible Pumps
  - Perfect for tank cleaning
  - High-volume flow rates
  - Portable and submersible
  - Various types and sizes
  - Corrosion-free aluminum
- Zone 1 and Zone 2 rated
- Multi voltage flexibility
- Various types and sizes



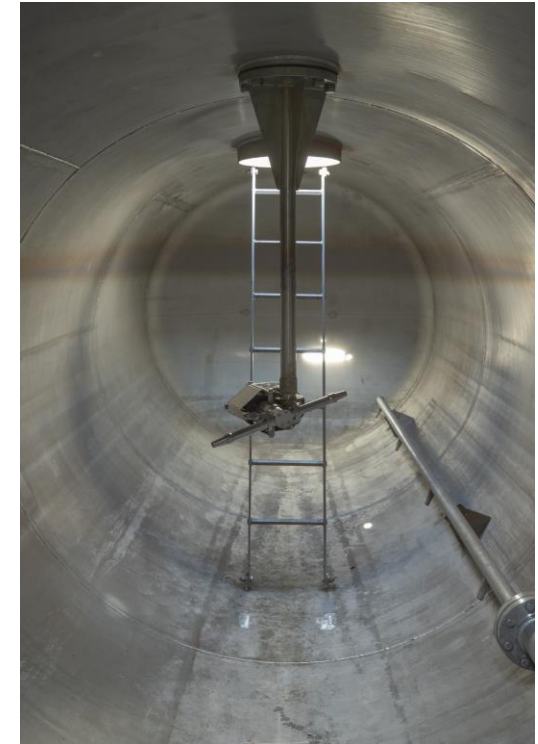
## HPU Hydraulic Power Packs

- Zone 1 equipment, DNV, ATEX
- Small footprint
- High volume flow rates
- Variable settings
- Various types and sizes
- Corrosion free materials



# Storage tanks

- Standard Weco connections
- DNV 2.7-1
- 28 m<sup>3</sup>
- Internal flushing system

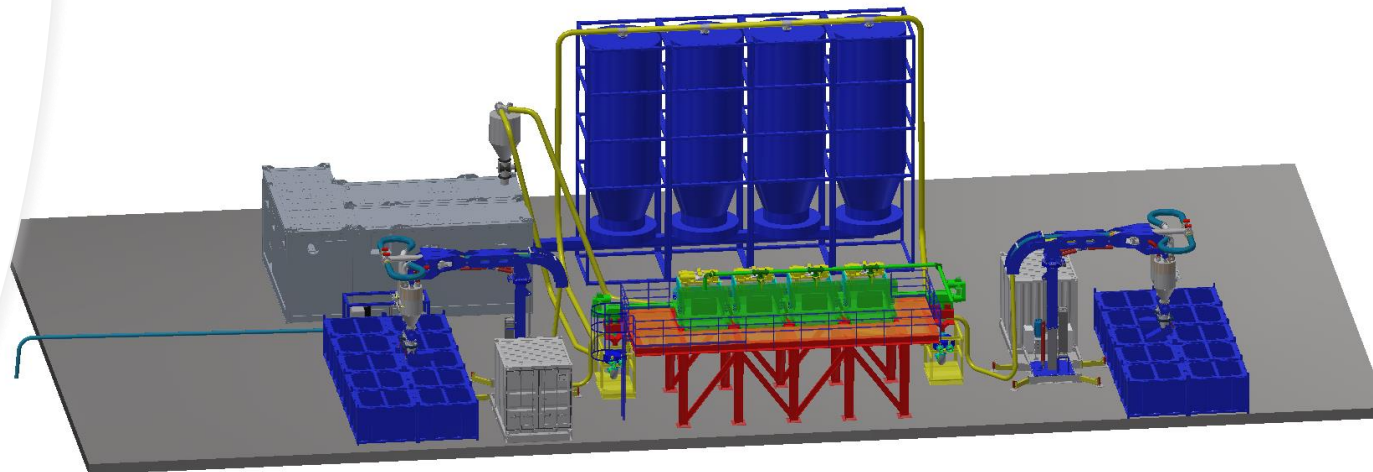
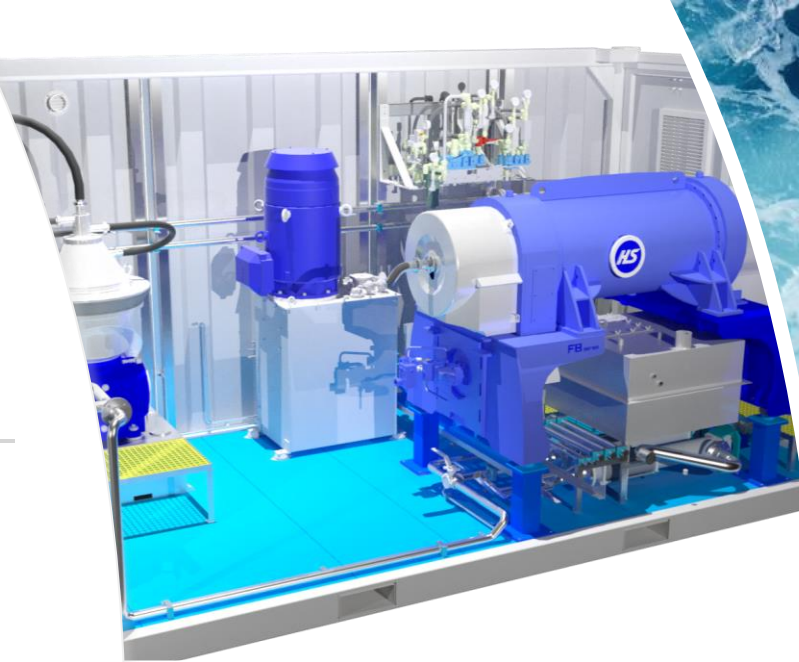


## OTS Cuttings handling and treatment system offshore

The system can be combined with the OTS wastewater treatment system, which will give a total solution for the handling and treatment of all drilling waste on the rig

The system includes:

- Cutting blower which convey the cutting from the shaker to the storage tanks or directly to the TCC
- Storage tanks for cuttings
- TCC for treatment of cuttings
- Slurrification unit for treated cutting before discharge to sea
- CDP Back up system for cutting transportation from shaker to drill cutting skip
- Wastewater treatment system



## Treatment of drill cuttings by the use of the TCC



### Treatment of OBM drill cuttings with Zero Discharge

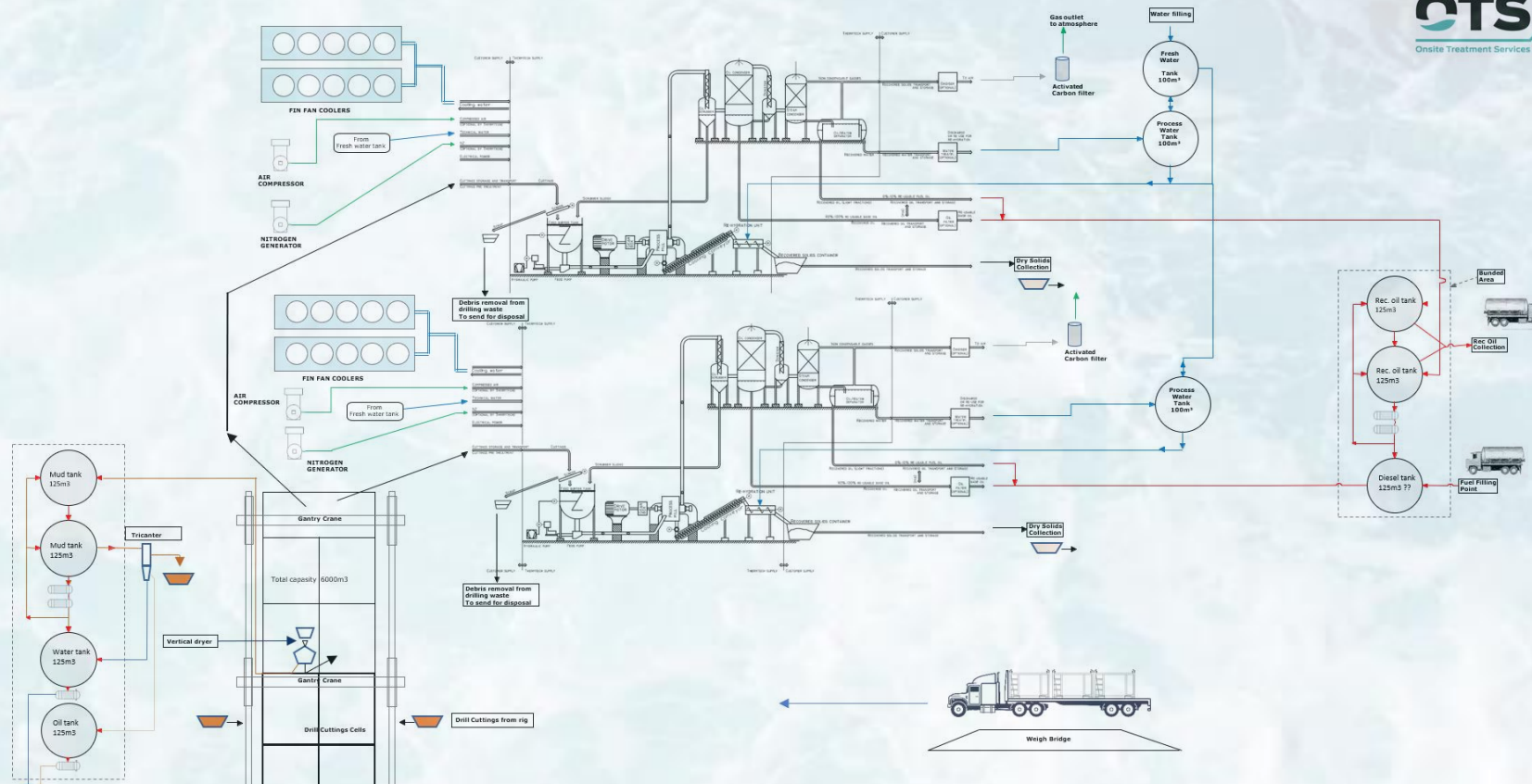
TCC technology can provide treatment of OBM drill cutting with Zero Discharge of hazardous waste.

- The solid from the treated cuttings will contain less than 0,5% oil. Average between 0,2 to 0,3% oil on solid.
- Recovered oil can be used to build new OBM or use as fuel to generate power at the treatment site or other oil consumers.
- Recovered water from the drill cutting will be fed back to the treated cuttings to reduce dust in the dry solid.
- A very small amount of non condensable gasses from process will be filtered by a coal fillet before letting it out to air.

# Drill cuttings treatment

OTS has the experience and know-how to build complete onshore drill cutting treatment facilities with the use of the TCC technology

**OTS DRILL CUTTING PLANT PROCESS FLOW**



## Some of our customers

