

**OUR MISSION IS CLEAR**  
**A CLEAN SEA!**



*By marine engineers - for marine engineers*

# BILGE WATER

## BILGE WATER SEPARATOR

The Marinfloc CD is a fully automatic, emulsion breaking bilge water cleaning system based on flocculation. It was the first system approved to IMO Res. MEPC. 107(49) and it is certified by US Coast Guard and all major classification societies.

The CD system is also type approved in accordance with DNV type approval programme (TAP No. 771.60) which is required for the environmental notation DNV CLEAN DESIGN.

### Main treatment principles



Typical inlet



Flocculation



Floatation



Outlet < 5 ppm

## PRETREATMENT

The pretreatment units breaks the oil in water emulsions by means of flocculation and feeds the vessel existing oily water separator with clean water, enabling it to discharge below 15 PPM without frequent filter changes.



CD- Continuous discharge unit



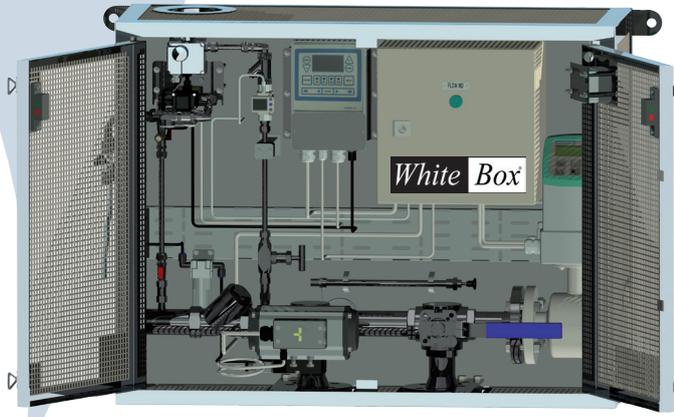
TD- Batch unit

### Flocculation facts:

Flocculation is chemical emulsion breaking by means of the harmless chemical polyaluminium chloride, a proven technology used worldwide in most waste water treatment systems onshore. The technology is well known and we have adapted the technology to marine conditions.

## WHITEBOX®- THE ORIGINAL

The Whitebox® ensures that no accidental or deliberate discharge of treated bilge water above 15 PPM by the bilge water separator is possible. All vital equipment for monitoring and controlling the overboard bilge water discharge is locked inside a cabinet and all signals are logged in a tamper-proof recorder. The Whitebox® provides the crew with the evidence to prove vessels compliance as all vital information is recorded such as oil content, GPS-position, time, overboard valve position, flow through the oil content meter etc.



## ENVIROPILOT

Navigating the environmental legislation can be complicated so we simplified it by connecting the vessels GPS to a regulatory database giving the operator a live update of the applicable regulation in the vessels position. We started with the Marpol regulations and ECA areas but have now added the EU directive 2005 (33) and also US regulations, down to state level, for the discharge of bilge water, sewage, grey water, garbage, food waste, incineration, ODME discharge, fuel quality and ballast management. We are continuously updating the system with national and regional legislation. The Enviropilot has relay outputs for light indications by the incinerator, sewage treatment plant or garbage room and can be integrated with a Whitebox® automatically closing the overboard valve if the vessel enters an area where discharge is prohibited.

## REGULATIONS MADE EASY!



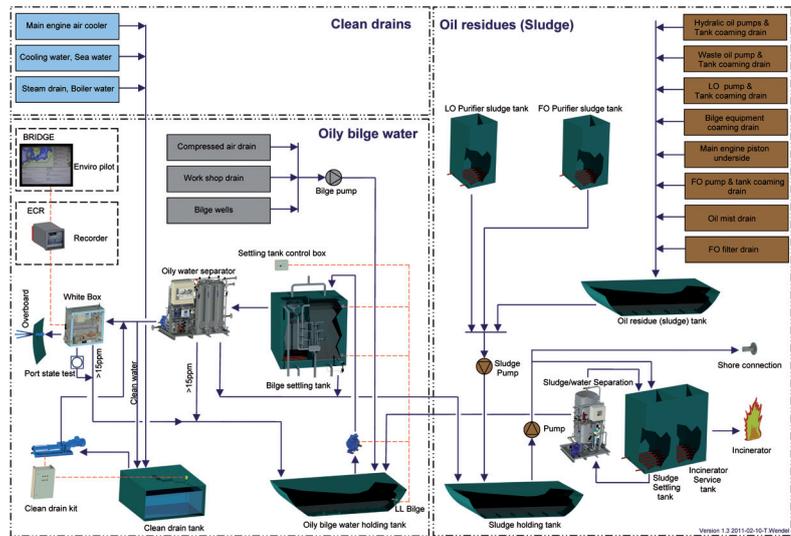
# ADVANCED INTEGRATED BILGE WATER TREATMENT SYSTEM (IBTS)

We have used our experience and improved the IMO guidelines (MEPC.1/Circ.642) for systems for handling oily wastes in machinery spaces (IBTS).

With our improvements the effectiveness of the installed equipment is maximized and the operational costs minimized.

Please come and talk with us about how your system can be improved.

MARINFLOC ADVANCED IBTS (Integrated Bilge Treatment System)



## SETTLING TANKS

Bilge water settling tank(s) is a requirement in the DNV environmental notation clean design and is a cost effective way of heating the bilge water without cooling from the sea. The settling tanks remove sediments and oil prior to further treatment by the bilge water separator. We deliver complete tanks with automation for filling and heating we can also supply drawings for hull integrated tanks.



## SLUDGE DEWATERING UNIT

Sludge disposal can be very costly if the water content in the sludge is high. The sludge dewatering unit reduces the water content and minimizes the amount of sludge to be landed or incinerated.



# BLACK AND GREY WATER

Our new sewage treatment plant was recently type approved in accordance with IMO Res. MEPC. 159(55) onboard an Swedish icebreaker in full operation during the toughest ice breaking conditions. Our system is a marriage between onshore technology and marine expertise and produces an effluent well below the set requirements. It is based on flocculation, mechanical separation, aeration and denitrification in an anoxic and oxidizing stage.



## STS & ASTS

The STS model (sewage treatment system) has a very small foot print and can be upgraded to an ASTS model (advanced sewage treatment system) for operation in more sensitive areas.



STS



Upgrading module  
to ASTS

# OFFSHORE

## DRILLSLOP TREATMENT

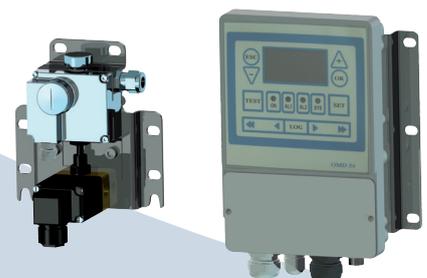
Treating drill slops on drilling vessels has been a challenge for many years. We have proven that the flocculation technology is well suited also for this heavily contaminated waste water. We have engineered our CD model to the more demanding conditions and properties of drill slop treatment, and developed the DD model (Deck Drain). By partnering with a decanter centrifuge specialist we have developed a concept that is highly effective both when it comes to treatment efficiency and cost.



## SERVICE

Providing excellent service and fast support is something we know is important in the marine and offshore industry. Our customers have not just bought products but also a devoted and highly skilled service organization.

As an approved Deckma service center we perform calibrations and oil content meter service. We keep track of when your meter is due and will advise the vessel well in advance that a calibration is required. We keep replacement cells in an exchange system and can offer quick support at competitive pricing.



# MARINFLOC ACADEMY

We have to date educated more than 1500 engineers in waste water treatment in our training centers around the world. Our training courses include regulations, water chemistry, hands on equipment training, oil record book entries, oil content meter calibrations and more. We also give lectures at various conferences and we can tailor a seminar to suit your needs.



## THE MARINFLOC BUS

We conduct demonstrations and waste water seminars in our bus where a CD unit, Whitebox® and Enviropilot are installed in the aft section and a conference area in the stern. The bus is fully self-sufficient and all equipment can be operated full scale treating dirty bilge water to less than 5PPM. We do not only demonstrate how waste water is treated but bring all aspects to light regarding waste water treatment from why magic pipes are used, to how waste water management should be fully integrated in the ISO 14001.

**LET YOUR OFFICE BE OUR NEXT STOP!**



## **BY MARINE ENGINEERS - FOR MARINE ENGINEERS**

Marinfloc is the leader in innovative systems for treatment of waste water on ships and offshore units. Our treatment equipments include bilge water, drill slop, sewage and oily sludge. The success of Marinfloc is found in our knowledge and long experience in marine engineering. We take pride in the fact that all Marinfloc technology is thoroughly developed onboard ships.



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