



## Case: West Tellus, drillship

### Client

Seadrill; Santos Basin, Brazil operating for Petrobras.

### Challenge

Large volumes of deck drains which is contaminated with drilling waste residuals had to be shipped to shore for treatment/ disposal. Herewith the customer faced high associated costs and a big environmental impact for the treatment of their drilling and drain waste.

### Solution

Nature mobilizes equipment and personnel two to three times per year and treats the accumulated slops. Each hitch lasts for about 3 weeks including hook-up and rig down. The STU has primarily been used to handle the bottom sludge of the tanks, but it also dewateres the CTU sludge to a minimum. During each hitch approximately 1700M3 will be treated.

The operation is run by one foreign operator and one local operator working together on the same shift for onsite training. All treated slops is discharged through the on-board OiW Marpol cell.

**Equipment** : Compact Treatment Unit (CTU) and Long Beach Decanter Centrifuge (STU)

### Result

#### Statistics 2015

STU	CTU	Sludge to shore	To sea	Average OiW	Total chemicals
128.00 m3	11556.00 m3	2.3 %	1521 m3	1 ppm	<1.0 liter/m3



## Dedicated to excellence

Nature Group is a leading maritime, Oil & Gas waste collection and treatment company, with more than 30 years of experience worldwide. We have first-class port reception facilities to treat maritime waste, and offer sophisticated services to reduce on and offshore Oil & Gas waste streams. Nature Group's best-in-class aspirations and tailor-made solutions are reflected in everything we do. Our goal is to set the global standard for sustainable and innovative solutions that ensure cleaner seas and improve efficiency for our customers.

### On-site treatment, major savings

Nature Group's Oil & Gas Division provides a proven slop treatment process that can handle everything produced on a rig from drilling slop to brine/seawater and wastewater.

Our in-house technology treats slop water at source, whether that be a jackup rig, a semi-submersible, a drillship, FPSO or an onshore production facility. Our customers reduce their carbon footprint, save on expensive logistics, see significant reduction in risk and liabilities, and benefit from improvements in process transparency.

### Types of offshore drilling waste

Drilling and production result in several types of liquid waste. Most of this waste cannot be processed on the platform itself because its components are too complex to treat with standardised equipment that uses pre-programmed treatment methods, especially when waste streams are mixed together or stored for longer periods of time. This waste is therefore normally transported to an onshore treatment plant.

**There are different ways of treating liquid waste. Nature Group has defined four categories, each of which represents a specific treatment:**



#### Category I: Oil-contaminated water

**Source:**  
Deck drains and rainwater

**Volume:**  
High volume >4000 m<sup>3</sup> per annum

**Characteristics:**  
Mainly water, brine, less than 5% oil and solids

**Avg waste reduction:**  
95%

**Solution:**  
CTU

An STU can be added to further dewater sludge coming out of the CTU, whereby the reduction capacity potentially increases to 99%.



#### Category II: Water lightly polluted by OBM

**Source:**  
Category I + displacements, pit washings

**Volume:**  
2000-3000 m<sup>3</sup> per annum

**Characteristics:**  
Sludge + Water, less than 20% Oil and Solids

**Avg waste reduction:**  
80%-90%

**Solution:**  
CTU + STU



#### Category III: Water heavily polluted by OBM

**Source:**  
Category I and II + push pills, soap pills, other chemicals

**Volume:**  
1000-3000 m<sup>3</sup> per annum

**Characteristics:**  
Mainly sludge, more than 20% oil and solids or highly polluted with chemicals

**Avg waste reduction:**  
60-85%

**Solution:**  
CTU + STU



#### Category IV: Produced water

**Source:**  
Water from oil or gas production

**Volume:**  
High Volume >10,000 m<sup>3</sup> per annum

**Characteristics:**  
Mainly water and oil, few or no solids

**Avg waste reduction:**  
>90%

**Provided solution:**  
CTU