FES Service Portfolio

**Containment**
- Skips
- Conveyors
- Vac Units
- VD Pods
- Blowers
- Pumps
- Pit Cleaning

**Solids Control**
- Centrifuges
- Shakers
- Shaker Screens
- Floc Units
- Dryers

**CRI**
- Slurry Units
- Tanks
- HP Pumps
- Centrifugal Pumps
- Chemical dosing
- Geo-Modelling

**Filtration**
- Filter Presses
- Cartridge Units
- Filters
- Surfactants

**Drilling Waste**
- Cuttings
- Slops
- Skip rental
- Online Tracking
- R&D
- Tank Cleaning
What is an Eco-Centre?

"This facility will be a facility which specialises in technologies that reduce, re-use and recycle Drilling Waste Streams. The Eco-Centre is therefore designed with a focus on the industry with the ability to join together with local and National legislative organisations. The facility will deliver the services and technologies that you need. The Eco-Centre has been designed with input from Operators within the industry with the ability to progress our research and development for the environmental needs of tomorrow.© 2009 Baker Hughes Incorporated. All Rights Reserved."
Project Overview

• The Peterhead Eco-Centre is the first licensed waste processing facility operated by a drilling fluids company in the UK.

• It is the only purpose built facility designed to meet current PPC licensing, as such the Eco-Centre becomes the benchmark for the Industry.

• It is a purpose built facility which houses the Global R&D centre for Drilling Waste Process Engineering.

• State of the art audit trail (Eco-Link) Analysing, Measuring and Monitoring system (AMM) raises the industry standard to an elevated level, eliminating the risk and long term liability for the Operator.
Eco-Standards

An Eco-Standard translates legislation into good working practice and migrates learning throughout an organisation. This working ethic knows no country boundaries, it applies on a global basis and demonstrates commitment to a global corporate responsibility.

Establishes uniform engineering or technical criteria, methods, processes and practices.
Eco-Centre concept

• The Eco-Centre will deliver:
  – The ability to accept a wide variety of wastes
  – The capability to treat and dispose of close to 100% of accepted wastes locally
  – The recycling and re-use of processed wastes
  – A target of zero environmental impact
3500M
Clean yard
Truck Turning
SUDS

2300M
Full & Empty Skip Storage
Surface water sewer

500M
Loading / Unloading

450M
Tank Farm

1500M
Warehouse
Soak-away

540M
Parking
SUDS

Underground Interceptor System

Rainwater collection / spill collection

Areas and Surface Water
400M³ Slops
200M³ water
100M³ Recovered Oil
100M³ for recovered base oil from TCC
100M³ for rainwater
100M³ recovered water from TCC
65M³ diesel tank
17M³ skimmer tank

3000Mt storage Capacity
**Selective Catalytic Reduction**

- NOx: 0.4 g/bkw-hr
- CO: 0.09 g/bkw-hr
- HC: 0.42 g/bkw-hr
- PM: 0.16 g/bkw-hr

Stack Height – 15M

90% emissions reduction utilising SCR technology

Recovered water used to rehydrate recovered solids / wash cuttings skips

Recovered oil used as a fuel for the TCC Mill. Alternative use as base oil.

Recovered solids to landfill

Cuttings Processing
Current End Uses of waste from TCC processing:
• Recovered water is used to re-hydrate the processed solids, excess is treated and disposed of via foul sewer on site
• Recovered oil is used as a fuel for the TCC Mill or base oil for mud systems
• Recovered solids are used in place of quarried aggregates capping a local landfill site

Personnel:
All Eco-Centre personnel will be WAMITAB certified.
WAMITAB is a statutory scheme for demonstrating technical competence in the waste management industry
Stage 1 Slops Treatment

Measurement of fluids:
Coriolis Meter
Measures volume and SG

Stage 2:
Complete Solution
Will treat slop fluids to a dischargeable level on site
Odour Control
Ownership of land

Baker Hughes are not tenants

- No risk of lease expiring
- Ability to expand into a further 4 acres
- Stable cost base
Research and Development

The Eco-Centre is designed to accommodate the Global Drilling Waste Management Research and Development department.

- Expertise currently UK based with training for Global roll out
- Quick to act and progress development
- Geographic decision making (UK)
What value will the Eco-Centre bring to you?

**Cuttings**
- Tracking of skips
- Large storage capacity
- Quick turnaround
- Re-use of waste streams

**Slops**
- Carried out at the same facility
- Re-use of recovered fluids
- Quayside slops and LMP facility
- Tank cleaning

**Software and Systems**
- Online system
- Customer able to access data on a Near Real Time basis
- Fully Auditable
- Integrates with SAP

**Environment**
- Lowering of carbon footprint
- Built to current legislation – not modified to suit
- Ability to track wastes accurately
- Improved use of energy
- Use of natural resources

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Eco-Link

- State of the art software system
- Accessible by *you* from *your* office
- Built upon massive IT infrastructure
- Provides
  - Simple auditing process
  - Synchronised data sets
  - Remote access & interrogation
  - Bespoke customer reporting
Thank You

Questions?