



CASE STUDY : BRENT SPAR



Photograph courtesy of Shell E&P UK

Background

Brent Spar was an oil storage buoy used in the North Sea by Shell UK that became redundant in 1991. As a result of a Best Practicable Environmental Option study, Shell applied for a Food and Environment Protection Act 1985 (FEPA) licence to dump the buoy in the Atlantic Ocean. The criteria for the selection of the site were:

- The site should be in UK waters.
- The water should be deep enough to prevent the buoy from causing problems for other sea users.

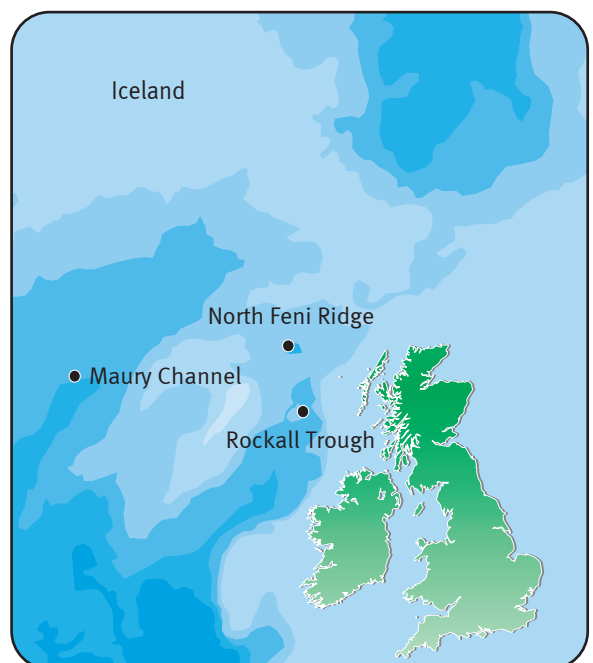
Role of FRS

Shell and Fisheries Research Services (FRS) conducted joint surveys to find a suitable site. Three potential disposal areas were identified; each defined as a 20 km square:

- North Feni Ridge
- Rockall Trough
- Maury Channel

Investigation Carried Out

- Seabed visualisation surveys were carried out to confirm the topography in each area.
- Surface sediment samples were collected using a box core sampler and analysed for heavy metals, polychlorinated biphenyls (PCBs), oil-related hydrocarbons and radionuclides.
- Analyses were undertaken to determine the particle size distribution, and total organic carbon levels of the sediment.
- Box core samples were taken to count the numbers of animals living in the sediment of the seabed (infauna).
- Beam trawl samples were collected to determine the different animals living on the seabed (epifauna).





Results

The Sites

- North Feni Ridge was found to include a narrow channel (moat) to the south-west of Rosemary Bank.
- Rockall Trough was found to be a gently sloping basin between the Anton Dohn Seamount and the Barra Fan.
- Maury Channel was found to be a gently sloping area.

Infaunal Communities

- Communities were found to be high in diversity (different species) and low in numbers (abundance) which is characteristic of unimpacted sediments.
- Communities were thought to have a limited food supply, which is usual in deep water.

Epifaunal Communities

- Abundance and diversity were greater than expected.
- Greater diversity was apparent in the North Feni Ridge.
- Limited sampling precluded detailed analysis of data.



Photograph courtesy of Shell E&P UK



Decision

On the basis of the data reported there was little to choose between the three potential disposal areas. Analytical data for the North Feni Ridge moat area may indicate that this area might be accumulative, but this would not preclude sea disposal operations.

The disposal operation was cleared through the Oslo and Paris Commissions (OSPAR) to secure international agreement.

The North Feni Ridge option was opposed by the conservation organisation Greenpeace, and the Brent Spar was towed to a Norwegian fjord. An alternative, and more expensive, land disposal operation was completed in 1999.

Comment

Re-examination of the likely environmental impact of the dumping of the Brent Spar by a group of independent experts confirmed FRS findings, that the environmental impact of the disposal of the Brent Spar in the deep Atlantic Ocean would have been negligible.

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