

BRITANNIA PLATFORM

The Britannia platform, like all offshore platforms, has suffered badly from corrosion in bolted systems. Aware that remedial action needed to be taken, the rig operators contacted Enviropeel in 2000 with a view to a trial application. Despite considerable work by Enviropeel engineers, with the assistance of DNV, it took more than two years to win the approval of the rig operators for use of the Zone 2 equipment on the platform.

Britannia policy has been that, when any flange has been broken for any reason, the replacement bolts are "Zinga" coated, with all bolting monitored for corrosion on an annual basis. Despite these efforts, further deterioration has been evident, particularly

on smaller flanges. To protect these areas from any further corrosion, Enviropeel encapsulation of flanges throughout the platform was implemented in 2003. A full Enviropeel-based flange maintenance programme commenced in 2006.



THE BRITANNIA PLATFORM

The Britannia natural gas condensate field development is one of the largest in the UK. Under a unique agreement, Chevron UK Ltd and Conoco (UK) Ltd established a separate company, Britannia Operator Ltd, to act as operator.

Location: 131 miles NE of Aberdeen

Water depth: 490 ft

Reservoir: 70 miles²

Peak production capacity: 740 million standard cubic feet of sales gas and in excess of 50,000 barrels condensate per day.

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Above: It is easy to see why these flanges needed an application of Enviropeel.
Below: A similar area following Enviropeel application.



APPLICATION

The first Enviropeel application teams were sent to Britannia in November 2003 and flown out to the platform where, despite the lateness of the season, they were to encapsulate as many flanges and valves as possible in the areas designated by the operators, using wind breaks and waterproof barriers where required. Movement of the equipment around the platform was accomplished without difficulty and good spray access to the bolted systems, although not always easy, was achieved in all cases. The Zone-2 equipment performed exceptionally well, with a virtual 24-hr continuous operational cycle.

Progress was hampered to a certain extent by poor weather conditions but the trip was a great success and further trips were organised to complete the protection of all the target flanges. Since the first trip, encapsulation rates have more than doubled, with more than 2300 flanges completed by August 2005.



Following discussions with DNV in 2004, a full data collection regime has been implemented in order to parallel the long-term bolting tests being undertaken jointly by DNV, BP, Nexans, Conoco Philips and Enviropeel.

Every individual application is tagged with an identifying number and the operator. Data on time, date and ambient conditions is logged for each tag as well as a comprehensive photographic record of each area. Each new visit includes a review of previous applications in order to allow a full review of all Enviropeel applications. Data collected so far indicates optimum performance in all conditions.

Left: These two flanges clearly show the individual tagging system. On the left the tag face with number and details, on the back, initialled by the operator.

APPLICATION OVERVIEW

Surface preparation uses hand scrapers and wire brushes to remove loose and flaking material with a final wipe to remove residual particles.

VCI foam (right) is inserted into voids, then gaps are taped with a heat-resistant matrix to support the Enviropeel material but still allow entry of corrosion inhibitors.

Encapsulation always starts from below. The tray catches stray material which can be immediately re-used in the Enviropeel unit.





Much has been learned in the course of the applications on the Britannia. As the most comprehensive application Enviropel has undertaken, it has allowed the development of new techniques and procedures. It has also proved that Enviropel will stop corrosion in the worst conditions and it will keep on protecting for years to come.

Above left: An application from 2003 shows evidence of spills and other surface contamination but is in perfect condition, despite the conditions.

Left: An operator refills the Enviropel unit.

Above right and bottom left: Tagged and protected, these flanges are secure from corrosion for many years.

Below: The Britannia

