

Case Study: Oil & Gas

PROJECT DETAILS

EPC Lining Contract – 12”
Steel Subsea Water Injection
Pipeline

LOCATION

Ekofisk Field, North Sea

FIELD OPERATOR

Conoco Phillips

COMPLETION DATE

October 2012

Challenge

- Design and install a polymer lining solution for a 16,405lf 12” high pressure water injection pipeline with a design life of 15 years and the capacity to accommodate the reel lay installation process from Subsea 7’s reel-lay vessel Seven Navica.
- Fabrication of the Polymer lined pre-constructed steel pipeline at one of the longest spool base facilities of its type in the world - runs approx. 6,684 feet from seaward end of stalks to a purpose-built deepwater quay.
- Deliver scope quickly and cost effectively- essential in subsea environments where spread costs can be significant and the rate of progress is central to completion costs.
- Confirm connection system as suitable for use at a higher operating pressure.

Solution

- Swagelining Limited used a bespoke software package to create design parameters which considered and accommodated a broad range of factors, ensuring any potential challenges such as a significant temperature change, which could have an effect on the lined pipe, are met.
- Project specific design parameters were confirmed via practical testing during front end engineering to ensure that the liner design system would respond to a range of pipeline service demands.
- Terminations and jointing were completed using the flangeless WeldLink® connector fitting - part of Swagelining Limited’s Integrated Lining System - which allowed the pipeline to be spooled onto the reel vessel for subsequent installation on the sea bed.

Impact

- Internal corrosion protection from end-to-end ensuring the pipeline remains 100% operational for its full service life.
- The combination of WeldLink® connectors with Swagelining® technology confirmed that an Integrated Lining System, where materials, technology and proprietary components are combined under expert leadership, provides a solid basis for polymer lining of deep water pipelines and risers.
- Successful independent hydrotest and destructive testing carried out at 6,903 psi, taking the WeldLink® to a new pressure ceiling.



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