



SIKA AT WORK

WELL INTEGRITY CAMPAIGN –
PHASE II OUTER CASING
CORROSION PROTECTION,
CLEANING & GROUTING
SERVICES, DOHA, QATAR

OFFSHORE & MARINE CONSTRUCTION
CONVENTIONAL ENERGY

BUILDING TRUST



WELL INTEGRITY CAMPAIGN – PHASE II, DOHA, QATAR



PROJECT DESCRIPTION

Following the successful completion of the Phase I inspection campaign, Sika was contracted by Dolphin Energy Ltd. in April 2015 to carry out preventative well integrity services on a selection of conductors located in the North Field, Ras Laffan, offshore Qatar.

The project formed Phase II of the broader well integrity program and focused on restoring structural integrity, protecting against corrosion, and extending the service life of the wells without disrupting production. The work was performed on wells with water depths reaching 45 meters.

Project name: Well Integrity Campaign Phase II – Outer Casing Corrosion Protection, Cleaning & Grouting Services
Client: Dolphin Energy Ltd.
Location: North Field, Ras Laffan, Offshore Qatar
Year: 2015
Application: Well integrity
Product: SikaGrout®-9110

PROJECT REQUIREMENTS

Visual and annular inspections conducted during Phase I had revealed corrosion-related deterioration between the structural casing and the conductor casing. The client required a long-term solution to clean and seal the annulus, restore load transfer between casing elements and prevent further corrosion. The solution needed to be technically robust, suitable for high-temperature offshore conditions, and compatible with the site's operational and environmental constraints.

Any product name or reference reflects the Sika product name at the time of creation of this document and may differ from the product name or reference during past events.

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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SIKA SOLUTIONS

Sika used ultra-high pressure water jetting to clean the annulus between the 18 5/8 inch structural casing and the 26 inch conductor casing. The jet washer featured a dual-directional spray nozzle capable of cleaning both upward and downward simultaneously. As the nozzle was lowered and moved throughout the annular space, seawater was pumped in to flush out dislodged steel flakes, debris and marine growth. Jet washing continued until an impenetrable surface and sufficient depth was reached and clean water returned at the surface, ensuring optimal conditions for bonding and grout integrity.

Once cleaning was complete, a downhole camera inspection was performed to verify the condition of the casing surfaces, identify any holes that could affect grout return, and assess annulus geometry to determine appropriate hose sizing and material volume. The inspection also checked for obstructive centralizers and confirmed the height of existing cement. Camera monitoring continued during grouting to observe the rate of grout return to surface.

Sika then injected SikaGrout®-9110, an ultra-high strength cementitious grout, into the cleaned annulus to seal cracks, arrest corrosion, and re-establish structural load paths between the conductor and casing. The grout was pumped through 2-3 inch flexible hoses and carefully monitored, with volumes recorded in quality control documentation. Cube samples were cast for each well and tested by Setsco Services Pte. Ltd., a third-party SINGLAS-accredited lab to verify compressive strength performance.

The UHPC material and advanced binder technology selected for this campaign resulted in high packing density, enhanced bond adhesion, and long-term durability even in elevated annular temperatures reaching 70°C and ambient conditions exceeding 40°C.

CUSTOMER BENEFITS

Sika's UHPC injection method proved to be a cost-effective and technically superior solution for well integrity restoration. The process required minimal offshore time and delivered a substantial increase in the load-bearing capacity of the well strings. The high compressive strength and non-shrink characteristics of SikaGrout®-9110 enabled reliable load transfer from the casing to the conductor, reducing stress concentrations at weak points and significantly improving the structural performance of the wells.

The low permeability of the UHPC grout provided ongoing corrosion protection, and even a 15-20 mm layer was sufficient to arrest existing corrosion and shield the steel from further degradation. This approach offered long-term performance and extended the design life of the wells, making it an ideal solution for operators seeking sustainable integrity management strategies.