



Type of work:
Onshore Well Plug & Abandonment
Client:
Brunei Shell Petroleum S/B
Location:
Brunei
Materials:
NaX® Q110
Project date:
Feb 2019

**DARAT WELL S-485
PLUGGING, BRUNEI**

DISCIPLINES:

- Well Integrity Services
- UHPC Onshore Well Grouting
- Plug & Abandonment

Well inspections carried out by Brunei Shell Petroleum (BSP) revealed that a number of wells were suffering from corrosion, on some occasions leading to local bulking failure of outer casings, a serious threat to the integrity of the wells.

BSP initiated a mitigation scheme and contracted NAUTEC to carry out corrosion protection of the wells.

Part of the scheme was to arrest corrosion in the annulus between outer casing and conductor pipe and to strengthen the well structure by UHPC grouting.

SCOPE

- Conduct Site Survey on selected wells prior to operation start
- Mobilisation of cleaning and grouting equipment and materials to working vessel
- Conductor annulus cleaning of selected wells
- Setting up plug
- Grouting of conductor annulus
- Rig down grouting equipment and ready to move to next location

CHALLENGES

- Well corrosion; local bulking failure of outer casings; Well integrity threats.





UHPC, or Ultra High Performance Concrete and Composites are our business. We develop and produce UHPC products and we offer UHPC based solutions for multiple industries including the Renewable, Civil Construction, Ports, Offshore and Energy Industries.

We have documented the technical performance of our UHPC products through a large test program at MPA (Germany) which included creep and fatigue testing and we have carried out large-scale trials at low (European conditions) and high temperatures (Tropical conditions) to demonstrate the performance of our materials under severe weather conditions.

Our NaX® Premix Grouts are a portfolio of ultra high performance concrete and composites with strength and durability 10 times better than that of ordinary cement products.

CHALLENGES (continued)

- Cleaning and grouting the narrow annulus between 10 ¾" x 7" casings of the well conductor.
- The team was able to access the 2" annulus gap with the correct tools and methodology in order to clean and sufficiently grout fill the narrow annulus gap.

SERVICES

- Well integrity services including site survey and inspection of wells; cleaning of annulus, providing all materials, equipment and personnel required for the well plugging grouting operation using NaX® Q110 high strength UHPC grout materials.

CLIENT BENEFITS

- NaX® Q110 is designed for annulus grouting with excellent flowability to penetrate and achieve strong bonding within in-situ structures that are difficult to reach.
- A rapid strength development ensures very high early-age strength, which could reach more than 60% of its long term strength in 24 hours.
- All deliverables were achieved on this job with high quality and customer acceptance.

