November 2010 : **Issue 5**

BRENT E-NEWS

Brent Decommissioning Project

Welcome to the fifth in the series of regular communications from the Brent Decommissioning Project team

In this issue:

www.shell.co.uk/brentdecomm

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Significant milestones achieved on the Brent decommissioning journey

The delivery of a number of key activities during the summer months marked a continuing progress in the Project's development.

In this issue we'd like to share with you the challenges of decommissioning the Brent Delta wells. Plugging and abandoning the platform wells is sometimes referred to as a 'routine' operation, supported by wide industry knowledge and understanding. While this may be true, we should not underestimate the challenge, time and effort required to deliver this part of the project. The Brent field has over 150 wells to plug and abandon and the lead article in this issue will explain the process and challenges.

This newsletter will also update you on the award of the first major contract for the engineering-down work on Brent Delta as well as our latest stakeholder dialogue events held in Aberdeen and London.

As always, please contact us if you require any further information about any aspect of the project.

Austin Hand
Project Director

CONTACTUS

For further information on the Project, please visit www.shell.co.uk/brentdecomm or get in touch with the team via the 'Contact Us' link on the website.

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Well prepared for the challenges ahead

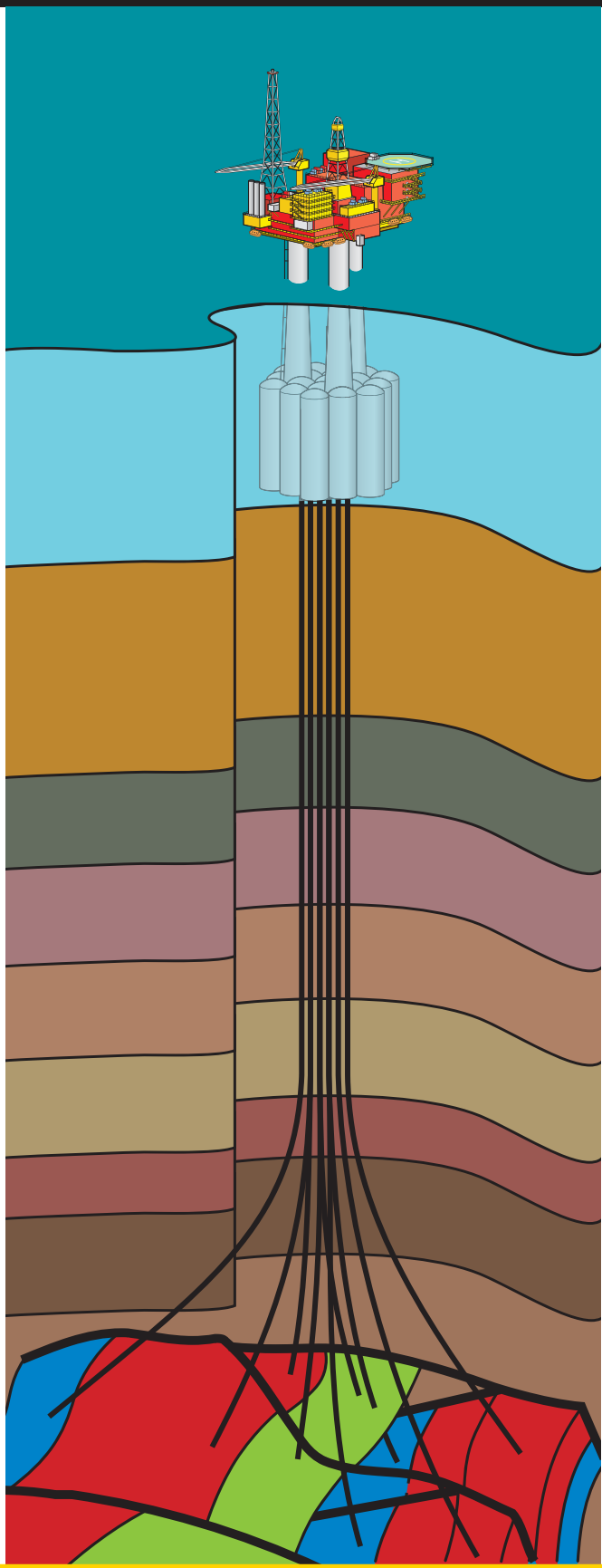
Well abandonment, the crucial first chapter in the Brent decommissioning story, began on Brent Delta in November 2008. Here we discover some of the challenges encountered so far, and how they're being tackled by the Project's Wells teams.

Brent Delta – scheduled as the first Brent platform to be decommissioned – had a grand total of 40 operating wells during its lifetime. Today, with production from the platform in steady decline, only 12 of those wells are still producing. The remaining shut-in wells are part of an ongoing plugging and abandonment programme designed and delivered respectively by the Brent Decommissioning Project's well engineering and well operations teams, led by senior well engineers Iain Scott and Ant Whittle.

"Well abandonment is the first milestone on the critical path for the entire project, as installations cannot be decommissioned until the oil and gas in the reservoir have been isolated," Iain explains.

The programme aims to provide three down hole cement barriers (each several hundred feet in length) for each well to ensure that the risk of a hydrocarbon escape following abandonment is, as required by UK offshore legislation, "as low as reasonably practicable".

Despite Shell's extensive experience of well plugging and abandonment operations around the globe, the process of providing such barriers is far from straightforward in a field as mature as Brent. From the outset, the well engineering teams have encountered a series of challenges – including small quantities of gas in higher formations and numerous well hardware issues – which have required significant changes to the original well plans and work programme.



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The plugging and abandonment process

Each well is planned on a case-by-case basis, in compliance with Shell global standards and UK legislative requirements.

The first part of the Brent Delta well abandonment process is standard practice. The deepest part of the well must be isolated using an abandonment barrier consisting of a cement plug. It takes around 8-10 hours for the cement to set once the plug is positioned. The scale of operation is immense: the target is 10,000 feet beneath the seabed and the plug is some 800ft long. Shown horizontally on a map, the depth at which the concrete plug is set would be equivalent to the distance between Shell's Tullos office, in Aberdeen and the Union Terrace Gardens 2 miles (3km) away or between Shell Centre in London and past Buckingham Palace to Hyde Park.

Abandonment work on the first Delta wells revealed the existence of small quantities of gas in a higher formation. This formation must also be isolated, using an intermediate cement barrier. This solution has been worked by the well engineering team as an addition to the original plan. As the aforementioned formation is present across the entire field, every Brent well will require a similar additional barrier. To achieve the barrier, steel pipes used during the well construction have to be cut and recovered to the surface before the cement plug can be placed – a complex operation which adds to the amount of time required to abandon the well.

Next, returning to standard well abandonment practice, a surface barrier must be set. This serves two purposes: it ensures containment of the higher formations and also serves as an environmental barrier – the final seal which will contain any mud and seawater remaining in the hole. The final step in abandoning a well is to recover the steel pipes between the seabed and the platform.

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Excellent communication

Each well abandonment is a 24-hour operation, lasting approximately 21 days and involving a team of 55-65 people including the Drilling, Maintenance and Well Services teams, and any specialists required.

As Brent Delta is still a producing platform, continuous communication between the operations and the abandonment teams is essential and with around 160 people working and living on the platform, there is an ever-present focus on safe working practices.

The well engineering and operations teams both benefit from a strong legacy of knowledge and understanding of the Brent wells. Iain Scott was a drilling engineer and rig manager in the field for many years and was responsible for drilling some of the wells that will be abandoned. He says: "Many of us are very familiar with Brent, and it's useful to have that insight into operating the equipment and the various issues that can be encountered in these wells. At the same time, we have quite a few younger people who are bringing in fresh ideas and energy, so there's a good balance and rapport within the teams."

Iain adds that there is also excellent communication across the oil and gas industry with regard to technical issues associated with well abandonment: "There's a real willingness to share learnings and best practice, which we can all benefit from."

To date, 17 Brent Delta wells have been abandoned and six have been partially abandoned due to some of the challenges described. However, solutions are being worked and the plan is to complete the abandonment of all of the platform's wells in 2012.

Looking ahead, projects are already under way to upgrade the drilling rigs on Brent Bravo, Charlie and Alpha, which have not been used for many years, to allow plugging and abandonment work in these wells in due course.

Drilling crew

Iain Scott

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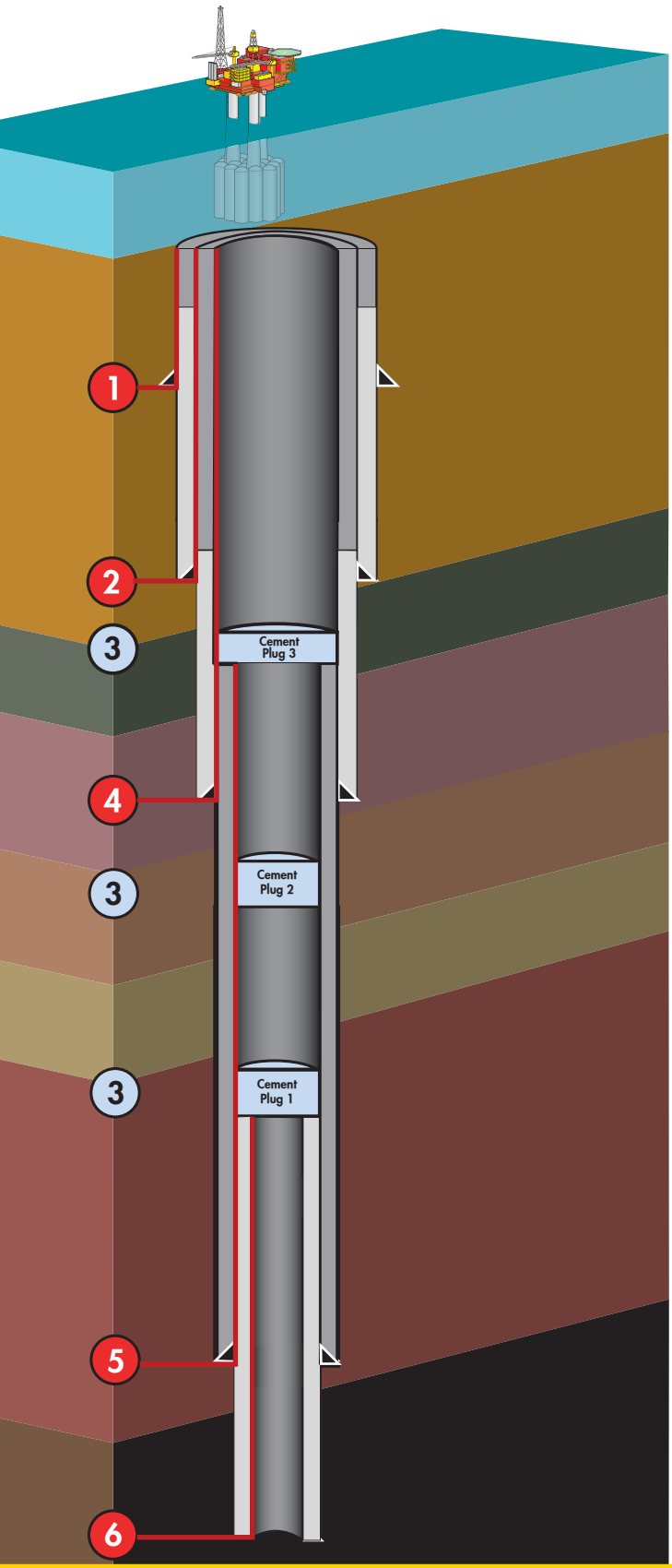

1: Conductor pipe

30 inch diameter pipe from the platform to approximately 200m below the seabed. Its function is to prevent seawater entering the hole during subsequent drilling.

2: Surface casing

20 inch diameter pipe inside the conductor pipe to a depth of approximately 950m. Cement is then forced into the hole and up the outside of the casing to the seabed. The casing prevents the hole collapsing during the next phase of drilling

3: Cement plugs

Cement barriers — each several hundred feet in length — are set across the well to act as a seal to prevent gas from migrating to the surface.

4: Intermediate casing

13 3/8 inch diameter pipe, inside the surface casing to a depth of approximately 1900m. Again cement is forced into the hole until it flows up the outside of the casing to the depth of the first string of casing.

5: Production casing

9 5/8 inch diameter pipe, inside the intermediate casing to a depth of approximately 2800m. The final drilling phase is then completed and penetrates to between 100m and 300m into the reservoir.

6: Liner

Short pipe extending from the bottom of the 9 5/8 inch casing to the bottom of the well. The liner is perforated, allowing reservoir fluids to enter the well and flow to the surface.

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Project's first major contract awarded

Shell has awarded its first major Brent decommissioning contract to Aberdeen-based energy services company PSN.

PSN provides integrated global engineering, construction, operations, maintenance, project management and decommissioning services to clients operating brownfield oil and gas facilities.

The Decommissioning Services Contract (DSC), awarded in July, provides for the support of the topsides decommissioning activities on Brent Delta, with the objective of shutting down and making safe the platform once it has reached Cessation of Production (CoP). The engineering-down activities are expected to begin during late 2011 and will take around two years to complete. A separate contracting process for the tendering of another major contract for the Brent topsides facilities removal is currently under way.

The DSC contract process commenced in September 2008 and an initial market screening exercise was completed the following month, with Letters of Interest requests issued in October 2008. Several companies responded positively to the letter and were issued with a prequalification questionnaire. By end February 2009, scoring of all prequalification questionnaire responses was completed and a tender document was subsequently issued to selected companies. The DSC contract for Brent Delta was awarded to PSN in July 2010.

The DSC scope includes maintenance, modifications and systems decommissioning activities, as well as isolation and segregation of the topsides modules. All connections between modules must be isolated to allow the removals contractor to disengage them properly, and these activities will need to be carefully managed from a safety and environmental perspective.

"The awarding of this major contract signals the start of the countdown towards commencement of decommissioning activities. While actual cessation of production is yet to be confirmed, a decade of intense offshore decommissioning activities will soon be upon us and we look forward to working with our new partner to jointly get the Brent Delta facilities ready for removal."

Derek Allan
Project Manager - Brent Delta

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Stakeholder dialogue sessions

The recent stakeholder engagement sessions, in Aberdeen and London, on 29 June and 1 July, marked an important milestone for the Brent Decommissioning Project.

Following nearly four years of in-depth studies into a variety of options covering all aspects of the Brent Delta decommissioning process, the project team presented their findings and what they consider to be the most likely proposals that will be submitted to the Department of Energy and Climate Change (DECC) for decommissioning the field.

Full details of the material presented on the status of the project as well as the recommended proposals with regard to the Brent Delta topsides, drill cuttings and debris, gravity base structures and storage cell contents, are available on the Brent website: (www.shell.co.uk/brentdecomm)

Dialogue workshops with Brent stakeholders have been ongoing since 2007. This summer's workshops facilitated by The Environment Council was the fifth in the series. Each workshop is designed to give individuals and organisations the opportunity to raise questions and issues directly with the project team as well as for the project team to listen to and understand the range of views.

A new feature this time was the inclusion of an informal 'souk session', which enabled participants to visit individual booths and engage one-to-one with Shell experts on the various elements of the project. Feedback from attendees indicated that this format was well-received and the souk session also generated a large number of comments and queries, which The Environment Council recorded as part of the overall proceedings. As with the previous engagement sessions, the project will respond via email/phone follow ups to address the concerns and requests raised by stakeholders during the sessions.

The souk session was followed by presentations on the recommended proposals by members of the Brent Decommissioning Project team, and an update from the Independent Review Group (IRG) – a team of leading academics tasked with providing independent review of the project's technical studies. Click here to see the IRG's presentation on its activities and conclusions to date.

Following the engagement sessions all the stakeholders, representing more than 150 organisations from across the UK and Europe, were invited to view a new secure website over a three month period. This site, administered by The Environment Council, allowed stakeholders to view video recordings of the presentations made in June/July and provide feedback online.

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