

## Multiclient Subsea Wells Removal

### Summary

NCA participated in our second wellhead abandonment campaign of the 2008 season with TS Marine and Island Offshore, performing successful abrasive cutting operations on 4 suspended subsea and mudline well systems in both the Central and Southern UK sectors of the North Sea.

The cutting was performed using NCA's innovative Abrasive Waterjet Cutting Tool systems, the patented HP *IMCT* and *ICT* systems [internal multistring cutting tool and internal cutting tool].

Slings and rigging work by TS Marine allowed the wellhead to be cut and pulled in one operation. The operation was done from a construction/intervention vessel utilizing the heave compensated crane for deployment and retrieval operations with ROV for guiding and surveillance. The NCA scope of work calls for no divers on this project.

### Project Facts

Locations: UK Southern North Sea - Block **50/26b-6**  
 UK Southern North Sea - Block **50/26b-8**  
 UK Southern North Sea - Block **49/24-21z**  
 UK Central North Sea - Block **16/23-7**

Timing: September 2008

NCA Client: TS Marine

End clients: Tullow ~ Perenco ~ BP

### Scope of Work

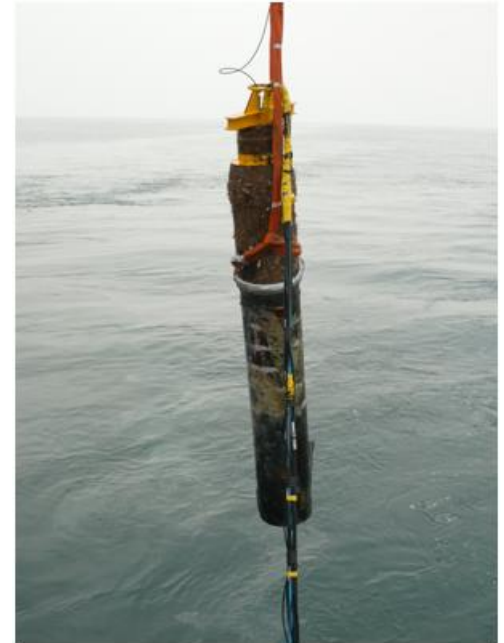
The scope of work included mobilisation of an AWJC equipment spread, design and manufacture of some unique equipment, server BML and retrieve 4 x Category 1 suspended wellheads located on the seabed in between 30 and 120 meters' of water back to vessel in one trip, recover debris, perform as-left survey and demobilise the equipment package.

The severance cuts Below Mud Line (BML) were to be made in accordance with UKOOA/Oil&GasUK guidelines. NCA provided the following services:

- ✓ Drift service – well bore access
- ✓ AWJC Cold cutting severance service BML

### Well configuration

Well	Casing program	Wellhead type
50/26b-6	30" (Mudline suspension)	NA
50/26b-8	30" (Mudline suspension)	NA
49/24-21z	3 string; 30", 13 3/8", 9 5/8"	Vetco SG1
16/23-7	3 string; 36", 20", 13 3/8"	Cameron



NCA use Abrasive Water Jet Cutting (AWJC) with the Internal Multistring Cutting Tool (IMCT) for severance of the wellheads. All the conductor casings were cut from inside out in one operation. This is proven technology with a track record of more than 120 conductors cut, ranging from conductors on 30metres water depth to 5 string conductors on 300metres water depth.

As part of the in-depth project management, all 4 wells were thoroughly researched and using the information supplied by the drilling companies and the different wellhead vendors, several new challenges were identified in respect to the previous campaigns undertaken by NCA. For the first time, non-subsea exploration wells were tackled, these being Mudline type wellhead systems as drilled by Jack-up rigs.

The operation was done from the Island Offshore subsea construction/intervention support vessel Island Constructor, utilising the heave compensated crane and ROV guidance and surveillance.

Once cut, the recovery method selected by TS Marine was the slinging option designed to integrate with the NCA land-off mechanism, which is a manufactured 'T' Bar system and designed around the requirement to suspend the AWJC at the correct cutting depth. The 'T' Bar was also required to integrate with the TS Marine slinging arrangements on the conductor and not foul recovery operations.

Flotation aids in the form of standard air weighted buoys were also installed onto the umbilical directly above the 'T' Bar system enabling safe hook up and operational ability from the umbilical and thus reduce the potential for any hose or cable kink whilst undergoing cutting operations in the challenging conditions of the Southern North Sea where tide and visibility were major factors during this operation.

## Achievements

- ✓ All 4 wellheads were successfully cut, safely retrieved and landed safely onboard the vessel in the NCA special built Subsea Wells Lay Down Frame.
- ✓ NCA has received very favourable reviews from BP, Tullow and Perenco.

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