Expro Excellence

Expro deploys AEON product suite to support CNOOC in multi-well abandonment campaign

Well Construction | AEON



Objectives and background

- Expro was mobilized by CNOOC to support a multi-well abandonment campaign in the Ettrick 20/02a field of the North Sea. A combination of AEON CX-Tubing Hanger, CX-2 Bridge and CX-SV Cement Retainer products were deployed to support the safe completion of the project, which involved leaving tubing in-hole and conducting squeeze jobs for environmental cement plug placements

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- Across the campaign, the CX-Tubing Hanger, which the client had utilized in previous projects, was deployed alongside the CX-2 Bridge Plug and CX-SV Cement Retainer due to their proprietary benefits
- Following using the completion tubing as a stinger for a deep cement plug, the CX-Tubing Hanger was then used to hang this same sacrificial tubing in the wellbore, removing the requirement for tubing recovery and disposal. Hanging the tubing saved costly disposal and treatment costs, particularly if the tubing is found to be contaminated and/or naturally occurring radioactive materials (NORM) is observed
- As the CX-2 & CX-SV are hydromechanical and do not require a bow spring type mechanical setting tool, cementing can occur immediately through the slick, open ended stinger upon disconnecting from the tool. This eliminated the need for a dedicated run to place cement and minimized the risk of cement disturbance. All tools were set in 9 5/8" 53.5ppf casing
- The CX-2 Bridge plug was selected by the client as a solid and tested base for a cement plug delivering reliability in abandonment operations
- Following the deployment of these tools, the CX-SV Cement Retainer/Squeeze Packer was then set hydromechanically with the integrated setting tool and the cement squeeze job was carried out through the CX-SV Squeeze Packer in the same trip

Value to the client

- Over a four-month period, the equipment was run in hole, set and functioned across five wells. Each well was successfully abandoned by an experienced Expro offshore service engineer, working closely with the client and other offshore service providers
- Improved safety through reduced handling of pipe, both on reduced tubular handling and without running plugs with an MST
- Significant time and cost saved through hanging the remaining tubing below any gas lift mandrels, beneath the CX-Tubing Hanger and not having to pull, handle, backload and dispose of the tubing
  - Overall saving of nearly £1 million
  - Overall time saving 92 hours, time savings based on feedback from drilling engineer
  - Deep set CX-2 saved 1 day over AFE
  - CX-SV Cement retainers and CX-2 BridgePlug each saved 4 hrs / well
- Cost saved through not having to treat the NORM contaminated tubing; +/-£160/joint
- Improved cement job though utilizing slick stinger over bow spring MST

> By utilizing the Expro's CX-Tubing Hanger technology during a multi-well abandonment campaign on our subsea asset, the volume of recovered tubing was reduced by successfully hanging off several thousand feet per well whilst also reducing NORM exposure to personnel both offshore/onshore and NORM decontamination costs on any NORM contaminated wells which were encountered during the abandonment campaign.
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> Expro's CX-2 Bridge Plug and CX-SV Cement Retainer technologies successfully supported environmental barrier placement without the requirement to recover any casing from the 12 subsea wells, removing untold exposure issues arising from potential casing recovery problems, to achieve successful environment barrier placement as per OEUK well abandonment guidelines.

Time saving



Operational efficiency



Cost saving



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