

HPHT WELL PLANNING CASE STUDY

Pacific Hunt Energy - PSC C-1
Onshore Chindwin Basin, Myanmar

AWT DISCIPLINES

Drilling Engineering
Drilling Operations
Geoscience
Well Test Engineering



PROJECT BACKGROUND

PSC C-1 has an area of 16,301 km² and contains two old producing shallow oil fields: Indaw and Yenau. Several wells had previously been drilled in this block with numerous oil and gas shows recorded. The block is within pipeline distance (200km) of Mandalay and the export pipeline to China.

The C-1 HP well was planned as a vertical exploration well to test the Indaw sub-thrust closure. Two targets were identified from the offset well prognosis (Indaw YK-1); the primary deeper structure (Middle Eocene Pondaung formation) and secondary shallower structure (Lower Miocene Letkat formation), but the offset well failed to reach the deep target and successfully test the structure.

A single DST was planned for the Upper Pondaung formation.

AWT WORKSCOPE

The well planning team was responsible for:

- Project Execution Plan
- Rig Market Survey report
- Basis of Well Design and Basis of Well Test Design, including
 - Offset well review
 - Detailed well design, including triaxial casing design
 - Outline drilling plan
 - Outline well testing procedures
 - Geological prognosis
 - Formation evaluation plan
 - Well control and MPD requirements
 - Well and casing specifications
 - Rig and drilling contractor requirements
 - Well cost estimates
- Site Survey report

AWT ADDED VALUE

The offset well Indaw YK-1 required 175 days to drill to 9,435 ft due to formation integrity issues and sidetracking. Drilling the C-1 HP well with MPD was expected reduce the drilling time to 130 days (dry hole) to reach a much deeper depth of 14,000 ft (4270m).

The C-1 HP well was a challenging well to design, with a maximum estimated formation pressure of 14,800psi. This required the use of 5k, 10k and 15k BOP and wellhead equipment.

Due to the narrow window between pore pressure and fracture pressure, MPD and wellbore strengthening was recommended to avoid the NPT due to fluid losses observed in the offset well.

The casing design required 8 strings of conductor and casing, plus a contingency liner string, to enable TD to be reliably reached. High strength materials were required for most of these strings.

Mud weights of up to 20.4ppg were calculated to required.

AWT's preliminary well planning work established a firm basis for the detailed planning of the C-1 HP well that enabled Pacific Hunt to confidently procure long lead equipment items, including specialised items required for this HPHT well.

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