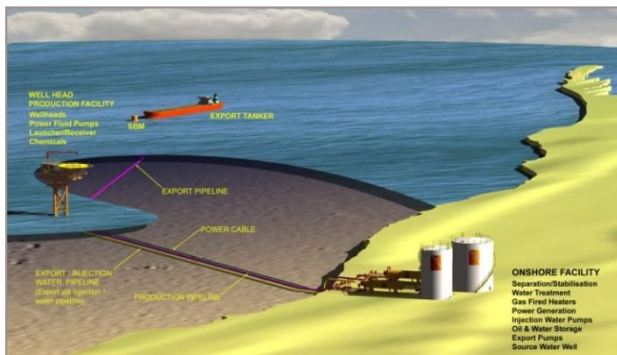


## ROC OIL LTD CLIFF HEAD OILFIELD

Conceptual Engineering, Dongara, Western Australia

ICON Engineering was commissioned in late 2003 by Roc Oil to perform conceptual engineering design and cost estimation for the Cliff Head oil field. These are located off the Western Australian coast, approximately 350km north of Perth. These fields were developed by Roc Oil on behalf of the Cliff Head Joint Venture.

Various options for the development were screened. The more promising development options included an offshore wellhead platform, and an onshore production facility with export to either an offshore SBM, or via rail or trucking to Geraldton or Perth.

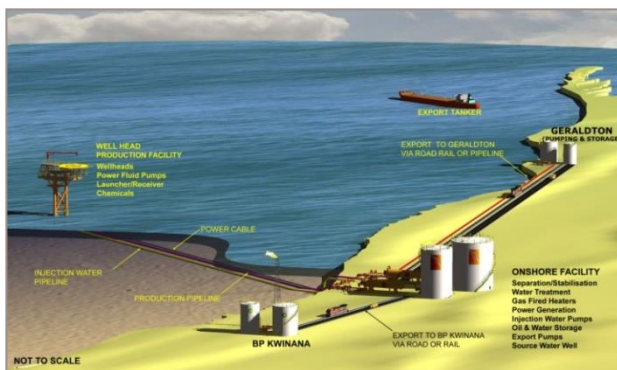


Cliff Head overall Development Option

A key challenge of the project was the high pour point of the crude which required pipeline insulation and injection water heating.

The final proposed concept for project commerciality of the development was:

- Unmanned wellhead platform (9 wells).
- Dongara onshore processing plant
- A 12" subsea insulated production pipeline and 12" subsea insulated injection water pipeline
- Export from Dongara Plant to Port of Geraldton or Perth, via trucking



Final Overall Development Concept of the Field

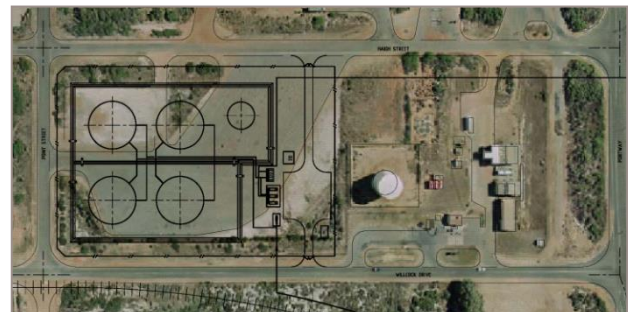
The Cliff Head Wellhead Platform was designed for 25kbfpd and consisted of:

- Wellheads (production and water injection)
- Artificial Lift System (PDP Pumps)
- Power Fluid System
- Production Test Facilities
- Helideck
- Craneage

The onshore Production Facility was designed for 25kbfpd and consisted of:

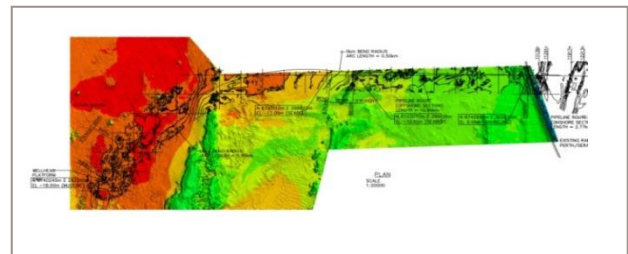
- Production heating
- 3 phase separation
- Produced water handling
- Source water/ injection water system
- Oil & water storage
- Loadout facilities

The Geraldton Facility was designed for storage of 400,000 bbls of oil.



Geraldton Storage Loadout Facility

ICON also engineered the offshore pipeline route which had many challenges due to the inshore reefs. These were modelled using ocean topography information.



Offshore Pipeline Route. Route Designed to Allow Installation by Both Conventional S-lay and Off-bottom Towing

ICON Engineering worked closely with the Roc Oil project team to assist in scheduling, in presentations to partners and government agencies.