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Strengthening Marginal and Mature Field Ecosystems: Technology, Innovation, and Collaboration

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**Strengthening Marginal and Mature Field Ecosystems:
Technology, Innovation, and Collaboration**



Turning Challenges into Opportunities, Innovative Solution Amidst Shut Down

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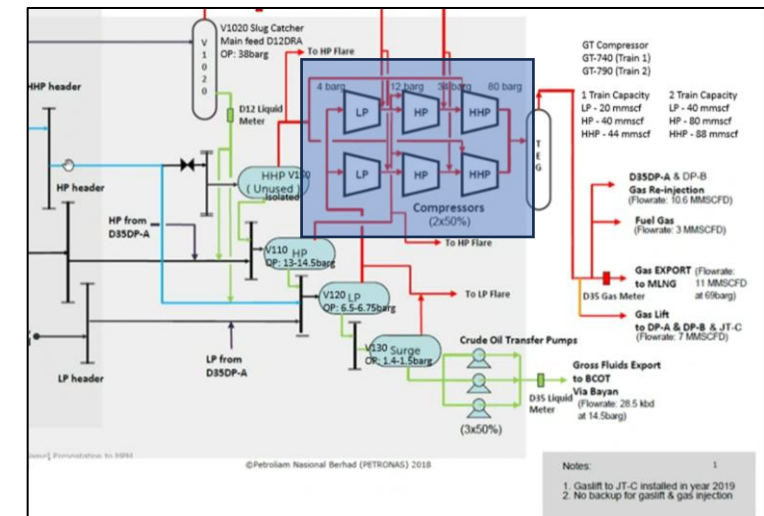
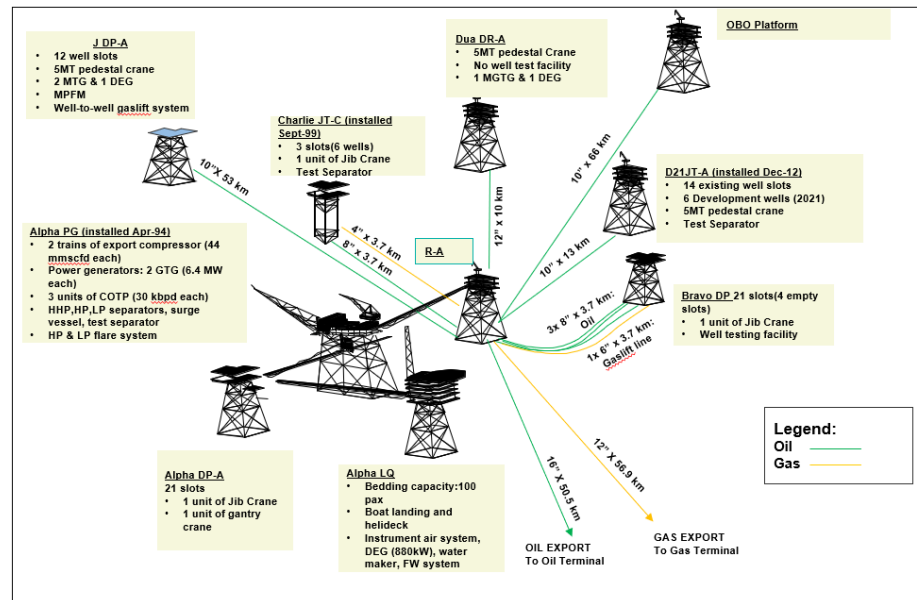
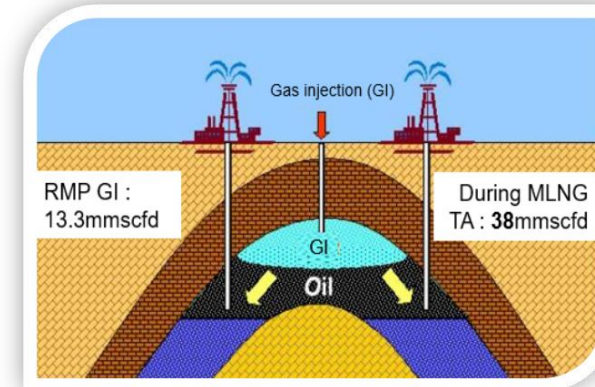


Background

- The planned annual MLNG Turn-Around (TA) of 2 weeks has had measurable impact on actual oil production
- During planning, when terminal undergoes scheduled TA, the respective fields supplying Hydrocarbon (HC) are required to be shut down
- TA philosophy : “No Gas No Oil”
- Innovative solution : **Produce Oil via reinjection of produced gas (Associated Gas, AG) into the reservoir.**

Strategy

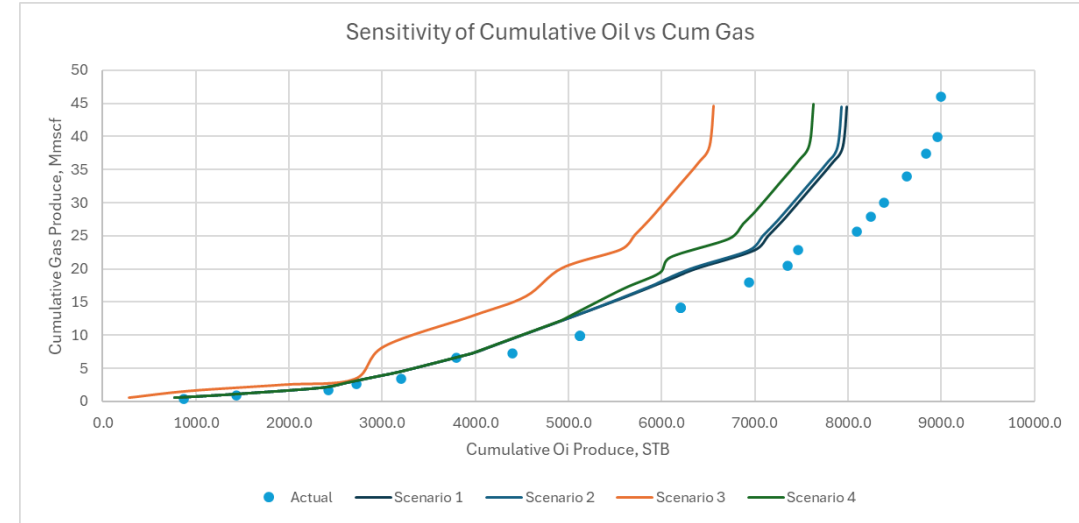
- Keep the wells online through **reinjection of produced gas into the reservoir** via gas injector
- Utilising 1 out of 2 compressors to **reinject 44mmscfd** into the reservoir





Efforts

- **Identify suitable gas injector candidates and evaluate maximum gas injection capacity**
- Guiding principles for keeping oil wells online:
 - a) High Oil Rates
 - b) Low Gas-Oil Ratio (GOR) Producer
 - c) Natural-flowing wells with High Water Cut
 - d) Strings with kick off issues to remain online

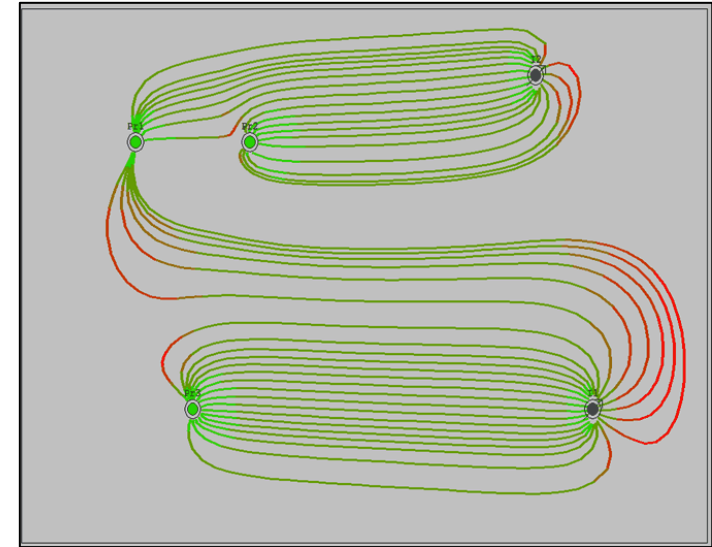


Key Challenges

- Uncertainties of maximum Injectivity Capacity
- Premature gas breakthrough
- Resources availability and logistic

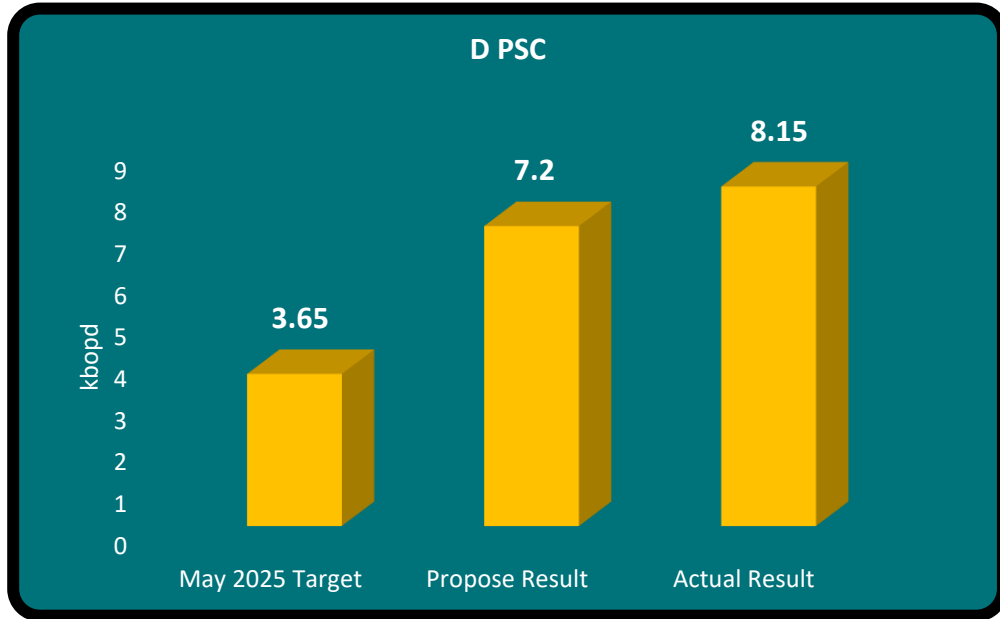
Mitigation

- Conduct field trial to maximise Gas Injection (GI) rates and prioritise the Gas Lift Valve Change (GLVC) on idle wells for additional gas lift injection
- Shut-in sensitive gas injection-benefiter wells
- Run simulation to assess the impact of short-term gas injection
- Conduct Risk Assessment on do-ability surface gas handling
- Conduct regular follow-up meetings between subsurface and operations

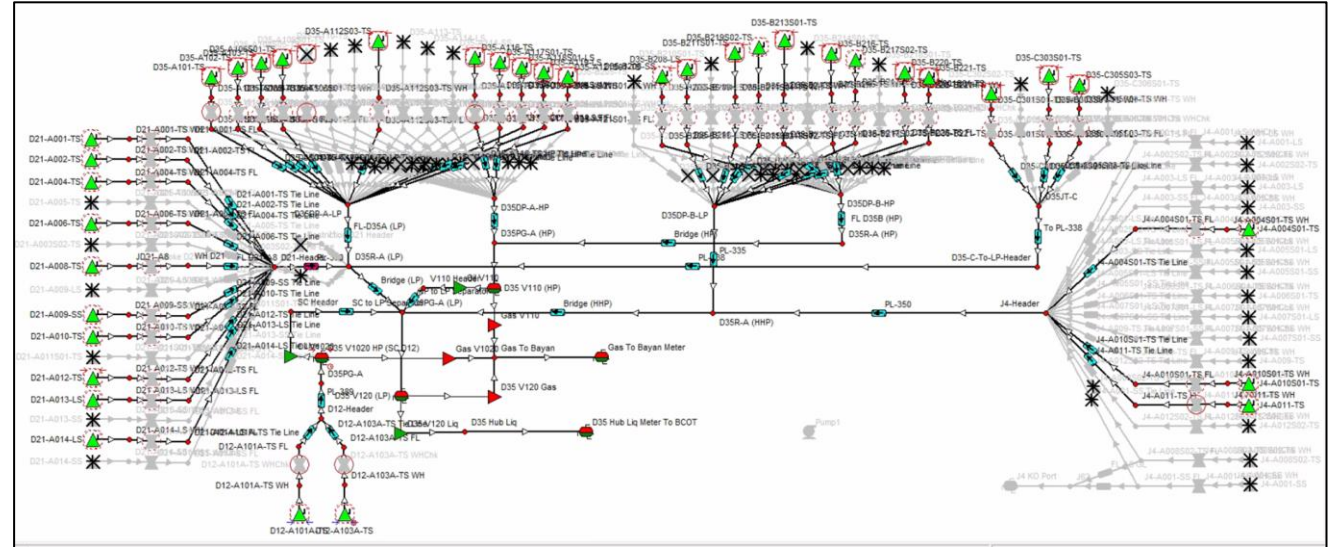


Streamlines calculation in MBAL

Results



1. *A maximum 9kbopd was achieved, compared to zero production in the base plan*
2. A key bottleneck was identified at one of the field X facilities and is under further assessment for a debottlenecking project





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Recap/Conclusion

- **Challenged the conventional operating philosophy** by re-evaluating production and injection practices during terminal turnaround periods
- **Achieved production continuity and sustainability during TA for the first time**, demonstrating operational flexibility beyond the traditional shut-in approach
- **Established a scalable and repeatable approach** with potential application across other fields



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Thank You/ Questions