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decisions with confidence

Acquisition Due Diligence: Is it as good as it seems?

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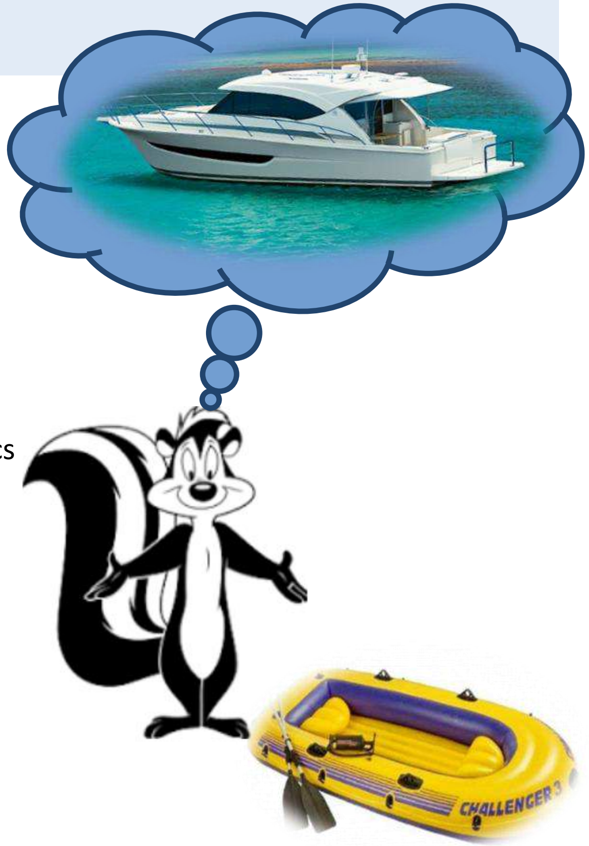
How to get the most from the process: Frame it

Ensure the opportunity is of interest and decide what you need to know



Carefully frame the assignment

If it doesn't fit your strategy why evaluate it

- Does the opportunity meet your corporate strategy / targets ?
  - Production, remaining costs, cash flow profile, corporate image, risk profile
  - Sovereign reliability and risk?
  - Operatorship or non-operator?

If it won't effect your bid why review it?

- What will effect your decision to bid and amount apart from economics
  - Operator and JV capability, reputation, synergies?
  - Reputation: gas flaring, discharge at sea, HSE record and management processes, greenhouse gas emissions?
  - Phased payment with milestones?

However, you may not be able to go back to get additional deliverables

- What deliverables do you require from due diligence ?
  - Annual, monthly, well-by-well forecasts?
  - Low, base and high case forecasts? By field or portfolio?

A low case outcome on every field is highly unlikely and cannot be the basis of a competitive bid. Will a low case on key field(s) suffice?

- Who is delivering what ?
  - Often separate technical, legal, accounting, finance teams
  - Who is doing economics?
  - Who is looking at potential legal or contractual liabilities / claims?
  - Who is looking at contracts?

How to get the most from the process: Prepare

Prepare and optimise the process

Optimise the process

Full DD is expensive. Can we break it down into phases with exit points?

- Can due diligence be broken into phases with go / no-go decision points
  - Initial red flag review (from VDR or Public Domain data)
  - Physical data room visit. Second visit if required
  - Site visit, Legal DD
- Which parts /characteristics of the acquisition are most important?
  - Hydrocarbon production?
  - Facility integrity and risk?
  - Operator reputation, HSE record and management processes?
  - Exploration upside?
  - The low case, mid case or potential high case outcome?
- Ensure the DD team know what the deliverables are

The required deliverables are unlikely if they are not defined

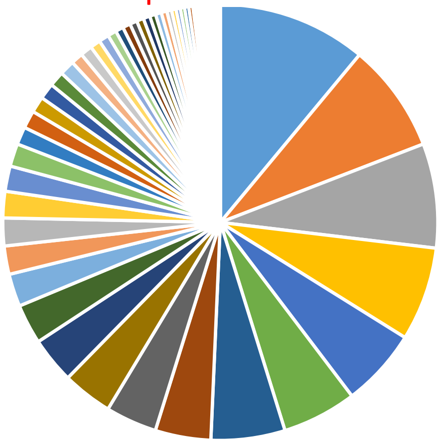
Focus on the more important aspect

A good review of key assets is better than a cursory review of all

- Typically 20% of the assets provide 80% of the value.
  - Do you need to look at the remaining 80%?
  - Analyse the sellers Information Memorandum forecasts to identify and rank focus areas. Identify what does not need review.
- Get information before you start
  - Review company and JV annual reports, press releases, investor presentations
  - Have reserves been reviewed or certified
  - Are papers or presentations on the asset available?

Time is limited, maximise knowledge before you start

Cooper Basin 2P Oil



Cooper basin Oil Portfolio:
- 2P Reserves in 60 fields
- 27% in 3 fields, 50% in 7 fields

How to get the most from the process: methodology

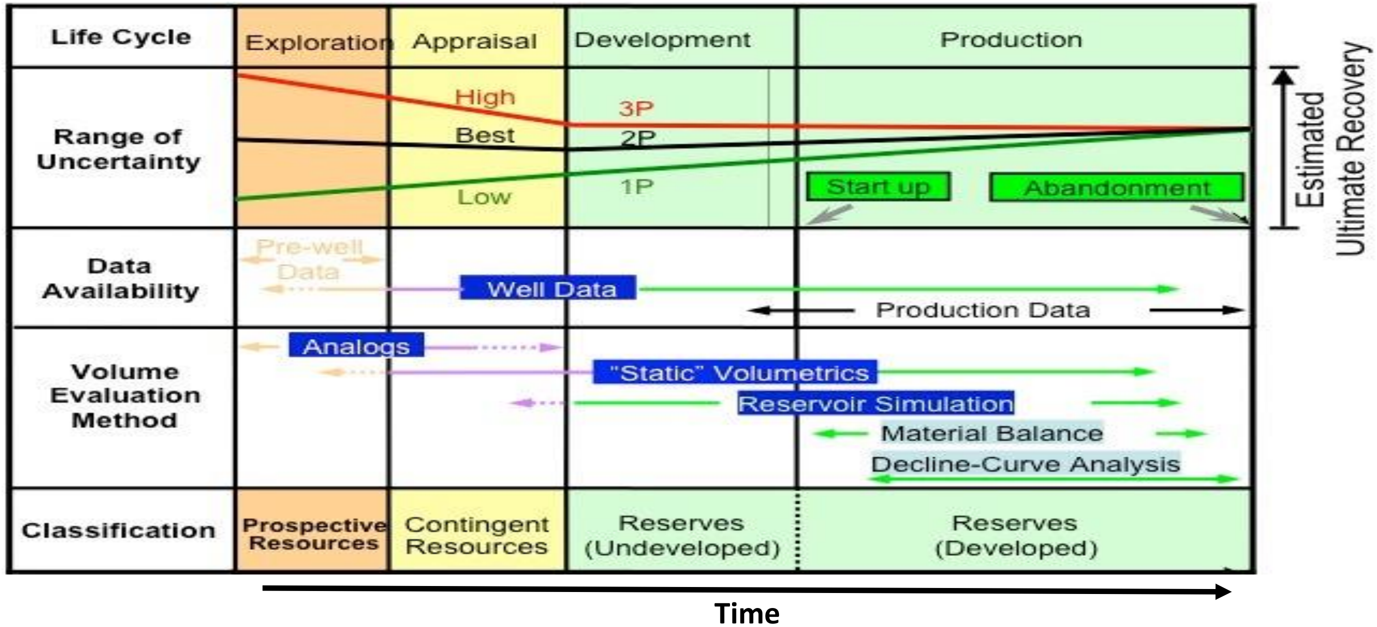
The most effective evaluation method depends upon the life-cycle stage of the development

Exploration opportunities will have limited data, no well, productivity or hydrocarbon composition data:

- Regional analogues are the best source of information
- Resource uncertainty will be wide

Discovered but unappraised resources will have limited data:

- Regional analogues remain important
- Logs, welltest, wireline pressure and fluid sample data important
- Resources based on static volume (G&G) and RF estimates



Appraised opportunities under development will have detailed analysis but no supporting production, cost history:

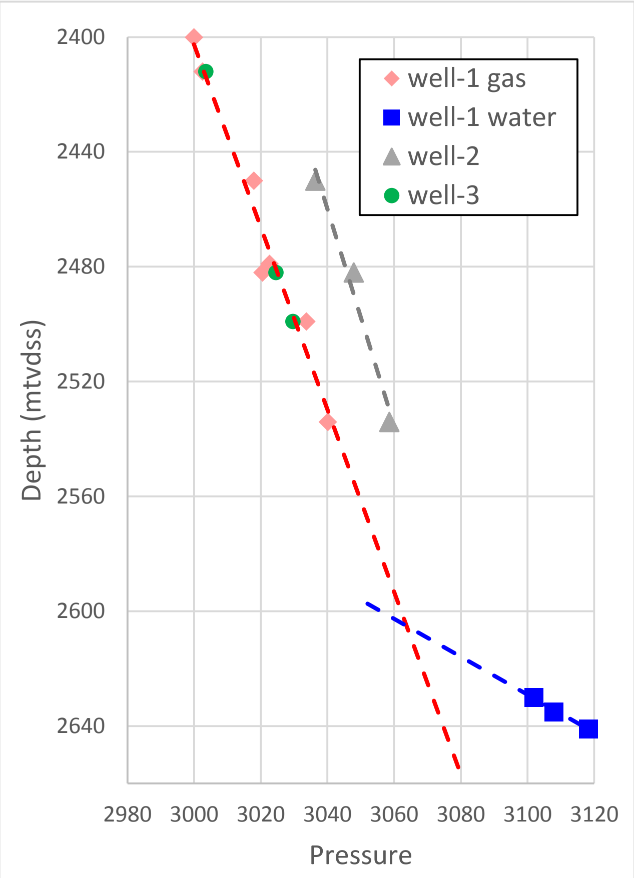
- Static volumes supported by detailed evaluation
- Resource volumes supported by detailed dynamic modelling

Beware: DETAIL ≠ ACCURACY

Producing assets are supported by production history, historic costs, forecast history:

- Most effectively evaluated by Decline Curve and Material Balance analysis
- Review of historic and forecast profiles for production, costs, resources

How to get the most from the process: Wireline pressure data



Wireline pressure data is often used to estimate the hydrocarbon-water contact. However, it can show a number of key reservoir characteristics:

- Multi-well pressure data showing a good straight line indicates reasonable productivity reservoir and initial hydraulic equilibrium both vertically and laterally between wells.
- Discontinuities, within a vertical well show limited vertical connectivity
- Discontinuities between wells show limited lateral connectivity / compartmentalisation
- A significant gap between hydrocarbon points and water points may indicate the water points are from a different reservoir interval which is not in communication with the hydrocarbon interval
- **Equilibration over geological time does not guarantee connectivity over production time!**

Key factor in estimation in-place volumes

Low productivity reservoirs often give scattered supercharged points

Ensure the water line is valid

Learnings:

- Where important get into the detail
- Check the pressure gradients against the expected fluid gradient from lab fluid compositions
- Compare water line with regional analogues
- Review all available data, rank-it and understand discrepancies
  - It's human nature to discard data that doesn't fit
  - **Don't ignore inconsistent data, understand it !**
- Don't underestimate uncertainty

Don't ignore data because it doesn't fit your model

The model is probably wrong

How to get the most from the process: Static Volume Evaluation

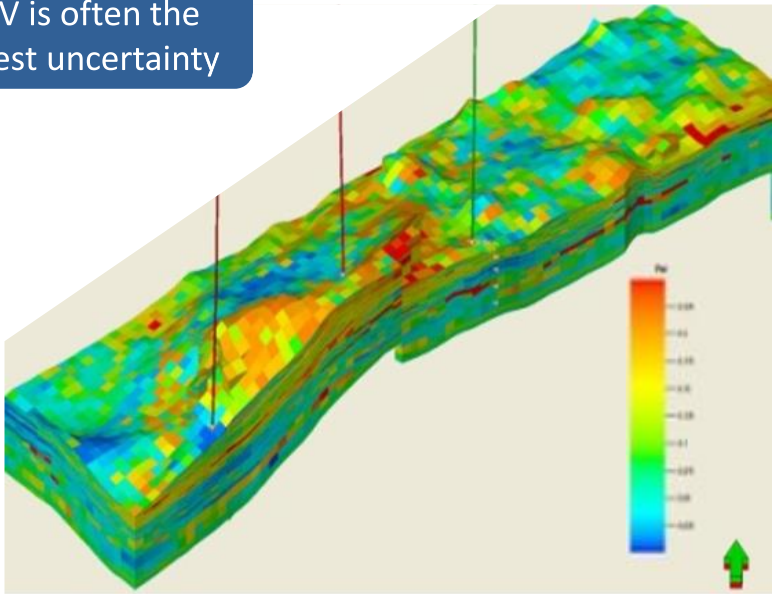
Static volume evaluation and reservoir connectivity are critical in undeveloped fields with no supporting production history

- Doubles due diligence effort and cost

Structural Interpretation:

- Have all the key uncertainties been incorporated?
  - Fluid contact uncertainty, pick uncertainty, velocity model uncertainty
- Is the GRV uncertainty range consistent with project maturity, analogue fields?

GRV is often the largest uncertainty



Reservoir properties:

- Does the model match the wells?
- Are the model averages consistent with the well averages? Or is there a legitimate reason why not?
- Could a different geological model fit the data?
- Conduct an independent check of in-place volumes

- Has potential compartmentalization been captured?
  - Consistent with wireline pressure data?
  - Consistent with wellltest and production data?
  - Consistent with analogues

Parameter ranges and hence resource uncertainty are consistently under-estimated THINK OUTSIDE THE BOX

The one thing you know about a single model is it's WRONG.

Work with uncertainty ranges

Prepare the right team:

- Do you need specialists in structural interpretation, fractured reservoirs, specialist petrophysics?
- What are the key risks and opportunities?

RISC's grey hair and extensive hands-on experience will help

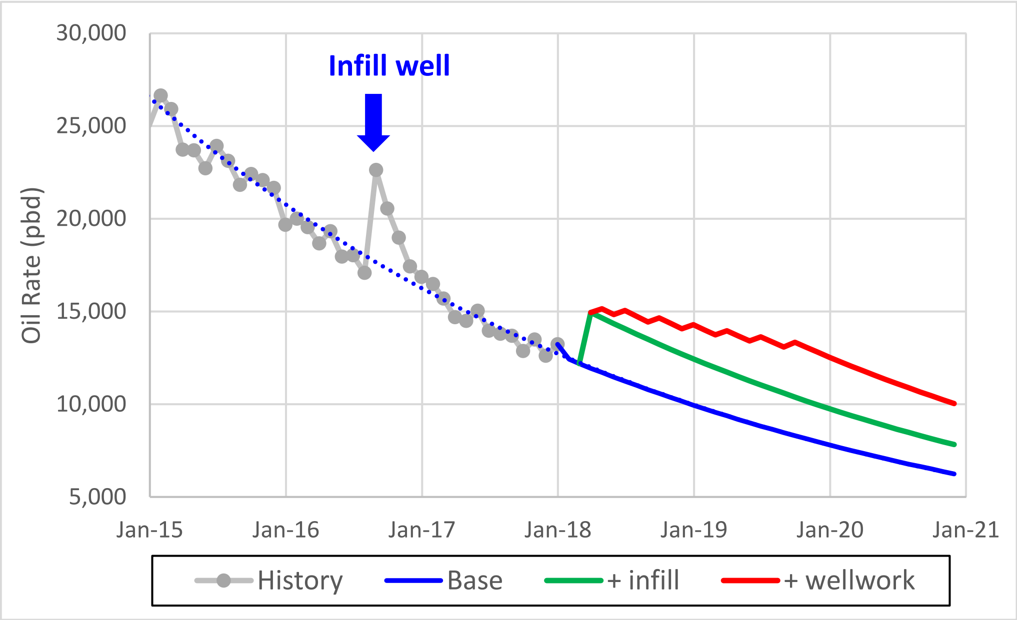
How to get the most from the process: Dynamic Evaluation

For mature assets the Operator is likely to present a complex, sophisticated model that has considered numerous uncertainties and options; millions of grid blocks, automated history matching, experimental design

Beware: DETAIL $\neq$ ACCURACY

- The supporting audit trail is often inadequate and a full review not possible due to data or time limits
- However, in mature fields basic analysis can be used effectively to audit the production forecasts:
  - Production Decline Curve Analysis will support the range of developed oil reserve estimates
  - Flowing or static (P/Z) material balance plots will support the range of GIIP estimates
  - Creaming curves will show the (diminishing) value of infill drilling
- Decline curve example:

If the next well planned is forecast to be the best well in the field don't believe it

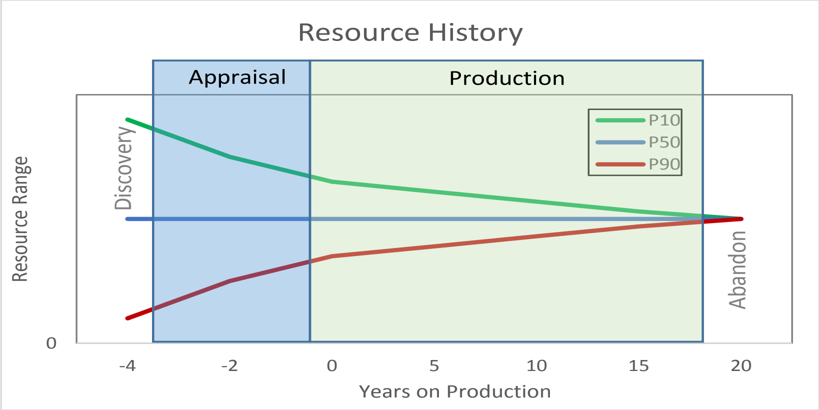


- Base production is supported by DCA
- The forecast production from a planned infill wells looks optimistic compared to the last infill?
  - Or can better performance be supported?
- Various wellwork (stimulation, re-perforating) is forecast to provide incremental production
  - Has wellwork not being conducted in the past 3 years?
    - If so it's benefit is included in the DCA
    - If not why not?

How to get the most from the process: Reserves and Resource History

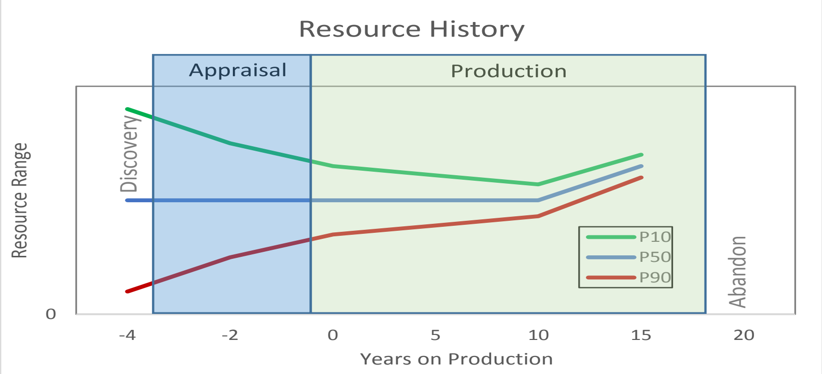
What does the resource history show

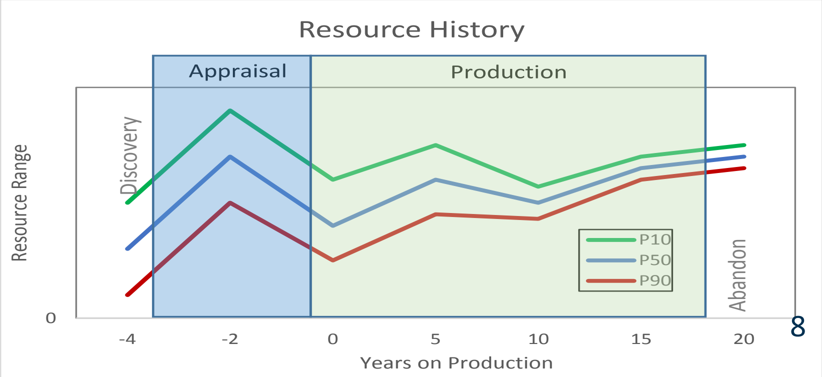
- We expect a wide resource range initially, narrowing as additional data and production becomes available
- A recent increase in resources may indicate a selling perspective
- Understand the reason behind historic changes
  - Phase-2 development added?
  - Move to sale mode?



Are difference sources of resource estimates the same?

- Annual reserves statement vs IM?
- Operator vs Seller?
- Government submissions?
  - Some authorities thoroughly review and challenge development plans and resource estimates
- Any independent resource certification?





How to get the most from the process: Conclusions

- Frame the opportunity:
  - Does it fit your corporate objectives?
  - What will affect your decision to bid and bid price?
- Be prepared:
  - Review the IM economics and value drivers
  - Where to focus, what can be left unaudited?
  - Review public domain data
  - Confirm required deliverables and who does what
- Select the best evaluation methodology:
  - Basin review for undrilled exploration
  - Key basic data for immature discoveries
  - Thorough G&G review for undeveloped fields
  - Historic production/cost review for mature assets
- Challenge the key results
  - Dig into the key parameters and interpretation
    - Seismic interpretation?
    - Independently verify in-place volumes and RF
    - Production/cost history
  - Are sophisticated forecasts consistent with basic analysis? (of all data)
  - What are the key risks/opportunities and have they been adequately captured?
  - What confidence do you assign? Seller bias, independent confirmation?
  - Examine the reserve/resource history; understand changes?
  - Is the seller overselling it?

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