Queensland Resources Council
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Gas / Condensate Investment Opportunity

Surat-Bowen Basin
Queensland, Australia

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ATP-840P Summary

High potential value in a major unconventional resource supplying east coast domestic and export gas markets

- **Low risk resource:** Condensate rich gas tests in wells adjacent acreage, good reservoir quality, and extensive contiguous resource
- **High Reward:** Best independently estimated contingent/prospective resources:
  - 11.8 Tcf recoverable Gas
  - 700 mmbbls condensate/NGL
- **Early Production:** adjacent to infrastructure/processing and storage for rapid entry into domestic and export markets
- **High Value:** Pilot production in 36 months; net cashflow on full production of US$ 546 million pa (after tax) NPV>30%

Gas Market driven opportunity for an early entry into a very high reward gas/liquids project with very low overall risk
Close to Infrastructure for early Development

**Phase 1**
- Pilot production to Silver Spring gas storage facility via Waggamba (75km, with 30km new pipeline)
- Annual production from ATP 840P of 60bmmscf/d through Silver Springs gas processing and storage facility

**Phase 2**
- Development drilling with clustered wells and multiple laterals
- Approx 20 pads, 45 wells + laterals
- Production to Wallumbilla via proprietary pipeline >200mmscf/d
- Transport to Gladstone for sale into LNG Facility, or into Eastern Australian Domestic Market.

Additional information:
- Oil Pipeline for condensate export passes through ATP 840P
- QGC gas pipeline
- LNG facilities
- Alternate for Phase 2
Clark Oil & Gas

• Founded 2006, headquartered in Brisbane

• Highly experienced Australian technical and management team
  – David Clark, Managing Director
  – Peter Nicholls, Exploration Director (BHP Billiton, BP)
  – Rod Bresnehan, Chief Operating Officer (Santos, Origin Energy)

• Operator and controlling interest in ATP 840P in Surat/Bowen Basin, Queensland
  – Huge gas / condensate resource in stacked deep unconventional gas / condensate targets
  – Additional shallow potential in established Walloon coal seam gas play

• Seeking a financial partner to take a significant equity stake, funding initial exploration / development program and infrastructure construction
ATP 840P - PCA 120, PCA 121

Tenure Status

– ATP840P is fully compliant
– Sole commitment to drill one well before 2019
– The 2017 COG negotiated outcome was granting of 8 year PCA’s from 31\textsuperscript{st} May 2017 for both PCA’s 120 and 121.
ATP 840P - COG Plans

Exploration Appraisal and development plans

• Drill up to 6-well exploration and appraisal program beginning 2018
  – A drilling rig is available to spud the first exploratory well
  – Cost reductions 30% real.

• Drill up to 15-wells on the exploration success case in the 8 year following the 6 well programme

• Petroleum Lease applications and granting within 5 years.

• Pipeline licence granted and connected to spot market within the first 5 year PCA tranche

• Begin the process of re-categorising contingent and potential resources from through contingent to proved and probable for firm gas contracts

• Early delivery of firm gas to contracts during increasing demand
Bowen Basin Setting

- >100 conventional oil and gas discoveries lie on the basin flanks
  - Proven petroleum province

- Clark ATP 840P property is in the central Taroom Trough

- Deep, thick stratigraphic section – ideal conditions for unconventional, basin-centred “Deep Basin” gas and liquids
  - Comparable to established North American plays and emerging Cooper Basin plays
Gas shows throughout the southern Taroom Trough

- Overston Field (producing) • Showgrounds, Tinowon, Rewan
- Waggamba Field (producing) • Kianga, Lwr Rewan, Showgrounds
- Palmerston-1 (2004) • Tinowon
- Kinkabilla / Inglestone • Kianga, Lwr Rewan, Showgrounds • Back Creek
- Tinowon - Kinkabilla / Inglestone • Kianga, Lwr Rewan, Showgrounds
- Back Creek - Cabawin • Kianga, Lwr Rewan • Back Creek
- Daydream-1 (2012) • Showgrounds, Lower Rewan, Permian
- Ungabilla-1 (2006) • Lwr Rewan, Permian
- Fantome-1 (2012) • Lower Rewan, Permian
- Tasmania 1 (2012) • Showgrounds, Lower Rewan, Permian
- Moonee Oil field (22 mmbbls) Largest oil field in the Surat Basin, sourced from the Taroom Trough

Conclusive evidence of active regional petroleum systems
Regional Mapping

- ATP 840P lies along Taroom Trough axis, near southern end and entirely within the hydrocarbon reservoir area.
- Seismic tied to well control on basin flanks, and to QGC basin-centre wells (to north), enabling mapping of reservoirs:
  - Top Showgrounds, Intra-Rewan, Permian, and Back Creek markers mapped.
- Interval isopachs mapped to support gross rock volume calculations.
Prospective Section

- Highly favourable Depositional Environment for reservoir quality
- Thick (>4000m) Permian – Triassic succession fills the Taroom Trough
- Stacked fluvial / shoreline / marine sandstones and siltstones are prospective reservoirs
  - Low porosity / permeability characteristics within mid range recoverability - typical of regional “tight gas” fairways
- Abundant rich source rocks, ranging from marine shales to coals, have generated gas and condensate across the entire area
Petroleum Systems / Source Rock

- Basin analysis shows two active Source Intervals
  - Blackwater (Permian)
  - Snake Creek (Triassic)

- Maturity index shows source rocks are generating gas and condensate along the basin axis

- Regional overpressures indicated at >2500m

Back Creek Group
Vitrinite Reflectance (%Ro)

Al Arouri et al., 1998
Overpressure

Ideal Reservoir Tight Gas conditions

- Comparison of Bondurant 1, Green River Basin, Wyoming (from Law and Spencer 2014), with Tasmania 1 in the Surat/Bown Basin. Note the relationship between mudlog gas concentration and overpressure in each case.
Surrounding wells delivered significant gas flows with high liquids content

**BG Deep wells**
Recent encouraging tight sand gas wells at depth immediately north of ATP 840P
“2.3 tcf exploration potential”
Production test Dunk-1 17 mmscf over 30 day flow/shutin

*Kinkabilla 1 Test*
Gas and liquids flowed from two zones. Condensate rate of 124 bbls/mmcf

*Cabawin 1 Test*
Gas and liquids to surface on test. Condensate rate of 128 bbls/mmcf

Play fairway map for the Southern Taroom Trough
Play Fairway map by Petrel Robinson Consulting Limited (Calgary, Canada)
Gas pay in numerous wells adjacent to ATP840P

- Petrophysical Evaluation of adjacent wells indicates thick gas charged intervals
  - 6 wells analyzed
    - Daydream-1, Fantome-1, Overston-1, Inglestone-1, Ungabilla-1, Palmerston-1
  - All showed elevated gas while drilling
  - No water tests, no wet zones identified on logs
  - Reservoir Studies of cored intervals indicate multiple clean sands with porosity
**Resource Volumes – High Reward**

- Resource estimates for the Unconventional Basin centred gas play within ATP 840P

<table>
<thead>
<tr>
<th>Gas</th>
<th>Low (Bscf)</th>
<th>Mid (Bscf)</th>
<th>High (Bscf)</th>
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<tbody>
<tr>
<td>Showgrounds</td>
<td>282</td>
<td>957</td>
<td>3,298</td>
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<tr>
<td>Intra Rewan</td>
<td>854</td>
<td>2,768</td>
<td>8,389</td>
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<tr>
<td>Permian</td>
<td>2,164</td>
<td>8,104</td>
<td>28,485</td>
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<tr>
<td><strong>Total (Arith Sum)</strong></td>
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<td><strong>11,829</strong></td>
<td><strong>40,172</strong></td>
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<table>
<thead>
<tr>
<th>Condensate</th>
<th>Low (MMstb)</th>
<th>Mid (MMstb)</th>
<th>High (MMstb)</th>
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<tbody>
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<td>Showgrounds</td>
<td>5</td>
<td>21</td>
<td>83</td>
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<tr>
<td>Intra Rewan</td>
<td>46</td>
<td>175</td>
<td>586</td>
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<tr>
<td>Permian</td>
<td>117</td>
<td>503</td>
<td>1,974</td>
</tr>
<tr>
<td><strong>Total (Arith Sum)</strong></td>
<td><strong>168</strong></td>
<td><strong>699</strong></td>
<td><strong>2,643</strong></td>
</tr>
</tbody>
</table>

Low Technical Risk

1. Gas has been discovered by 12 wells over an area within the demonstrably continuous Sagittarius Sandstone and Permian sands within the southern Taroom Trough.

2. This includes the areas covered by ATP 840P. The area of resource discovery extends beyond the boundaries of the ATP.

3. Good unstimulated rates of gas and condensate have been produced from the Sagittarius Sandstone and Permian Tinowan Sandstone within the Taroom Trough. Modern completion methods will most likely result in commercially viable production rates for delivering a commercial resource.

4. A 30 day flow-buildup test conducted on the recent basin centred BG well Dunk.-1 unstimulated flowed from the Permian section a total 17 mmscf (details not provided by the operator)

5. Sustained flows of over 1.2 mmcf/d and 130bblc/d from the target reservoir section with 300m laterals has been achieved in an adjacent field

6. Source, Reservoir and Trap have been proven

7. First phase drilling program (3 wells) is aimed at converting Contingent Resources to 2P Reserves
Basin Analogue – Piceance Basin

- **The Piceance Basin** in Colorado has been explored for a considerable time, and is well documented
  - Over 1 Tcf produced to 2008
  - **Recoverable Resource est. 19.5 TCF**
- **Similarities to the Surat Basin**
  - Coaly source rock >1.1 %Vr
  - Fluvial sand reservoir system
- **ATP840P is ideally placed** to test the basin centred gas play in the Surat Basin
  - Access to mature source rock
  - The Rewan Formation target interval is relatively shallow in ATP 840P

Piceance Basin estimates from USGS 2003
ATP 840P Investment Opportunity

• Clark Oil & Gas is seeking up to $100 million investment to appraise and initiate production, and to fund initial pipeline link
  – Significant equity stake in the Permit
  – Minimum of three initial wells required

• Fund applied to Drilling up to 6-well exploration and appraisal program beginning 2019
  – Experienced management and operations team have government and environmental approvals, and are securing landholder access and agreements
  – A purpose built drilling rig is available to spud the first exploratory well

• Increasing demand and supply shortfall for short- and long-term gas and condensate marketing options available through existing and permitted pipelines to both Australian domestic and LNG export markets

• Highly favourable full-cycle economics
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