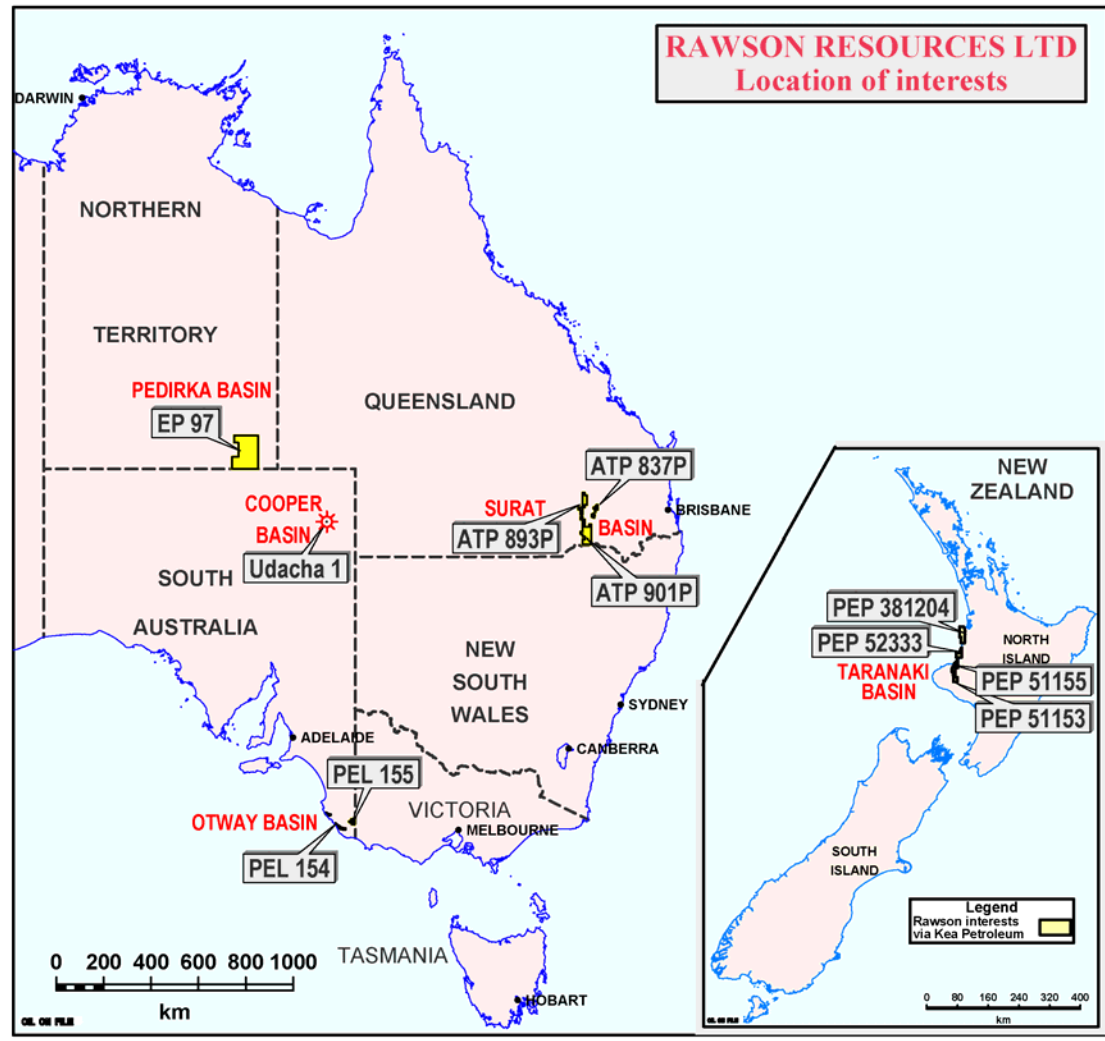


# Review of Rawson Assets

David Bennett  
19 November 2012



## EP97 Pedirka Basin (Rawson 100% & Operator)

EP97 covers a very large area of order 11,000 sq km of the Simpson Desert, immediately north of the South Australia border. The area is generally flat with sand dune ridges, with access roads to existing wells. Further access roads for seismic, drilling or pipeline lay operations can readily be made.

Only two wells have been drilled within the permit, with both providing encouragement

for hydrocarbon generation. The vintage Colson-1 well may have pay in the Jurassic section, while the recent Simpson-1 well may have shallow pay in the Cretaceous.

The seismic coverage is at reconnaissance level over most of the area, with only first order 2D seismic coverage of selected identified structures. In the event of discovery here, there is extensive further exploration potential in the block.

The Pedirka Basin has multi level play potential. The deeper section has an exploration geology similar to that of the Amadeus Basin, immediately to the west (which hosts the large producing Mereenie oil field, the giant Palm Valley gas field and the recent Surprise oil discovery, which is presently in production and under evaluation for long term development).

The shallower section has very similar play potential to that in the Cooper Basin to the east, which is Australia's prime onshore oil and gas province.

The block is large and very under explored, but has good evidence for oil and gas generation, and an impressive inventory of large and medium sized leads and prospects to explore.

The EP97 permit is presently in Year 2 of its first (5 year) renewal term, with the recent seismic and surface geochemistry surveys ensuring that it is in good standing to end of Year 2 (May 2013). Subject to an expected rollback of the 'drill by' date, a well to a minimum of 2000 m is required to hold the permit to May 2014.

A deal with Central Petroleum provides Central with the opportunities to earn 80% of the rights within three subareas of EP97, namely the Simpson, Pellinor and Bejah blocks, which amount to approximately 1/3 of the total area of the permit.

To this date, Central has earned 80% of the Simpson sub area only, by drilling the Simpson-1 well (2008), which encountered extensive wet gas shows over a 40m interval of sandstones within the Cretaceous Toolebuc Formation near 750m depth, together with wet gas shows in sands of the Permian aged Purni Formation, near 1900m depth. Unfortunately, there is no electric log coverage of the Toolebuc sandstones, which could have established these can flow hydrocarbons or not.

A recent (September 2012) farm-in deal by Santos on Central Petroleum includes these three subareas of EP97. The Santos- Central Petroleum deal has been reported as covering up to \$150 million in exploration over the coming years.

Recent discussions between the author and Central have identified that Santos has yet to complete a detailed review of EP97 post farm-in , although it is perceived to be a key part of the Pedirka acreage, hence highly likely to be drilled in the coming year, with the well(s) earning an 80% share (jointly between Santos and Central) in either or both Pellinor and Bejah subareas. Major undrilled prospects still remain in the Simpson sub-block, most notably the Simpson East structure and a significant part of the Madigan structure. Madigan is regarded by Central themselves as being, together with Pellinor, the best undrilled prospects in their entire portfolio.

The recent seismic over the Pellinor block is regarded by Central as confirming the deep Devonian Pellinor reef play, which they perceive as having billion barrel oil potential. This seismic has only recently been received by the author, and is yet to be incorporated by him into a comprehensive workstation review; although it is clear from individual lines that a very large deep structure is present.

The recent surface geochemistry survey confirmed elevated levels of surface hydrocarbons over several of the identified structures within the permit, including Pellinor, Simpson East, Bejah, Dune and Colson. All of these are undrilled targets, other than Colson, where Colson-1 (1969) encountered a 70m interval of the Jurassic aged Poolowanna Sands with oil shows.

A log interpretation of these shows made at the time, indicates the presence of moveable hydrocarbons; although the well was P&A without flow testing, reportedly due to general operational fatigue, and much to the annoyance of some of the parties. These electric logs are presently being reinterpreted to clarify as to whether these sands would have flowed hydrocarbons.

Oil production from the Poolowanna-1 well, some 100km SE of Colson-1, together with oil shows in the Erabena-1 and Thomas-1 wells, both east of Colson-1, indicate this oil could have been sourced within the Permian sequence which is the source of much of the oil in the Cooper Basin, some 300km to the east. However, it could also have been sourced from Triassic source rocks, which are developed to the south of Colson-1, or even from pre Carboniferous source rocks, as in the Amadeus Basin, which are present beneath EP 97 in the Madigan Trough although pinching out to west of Colson-1.

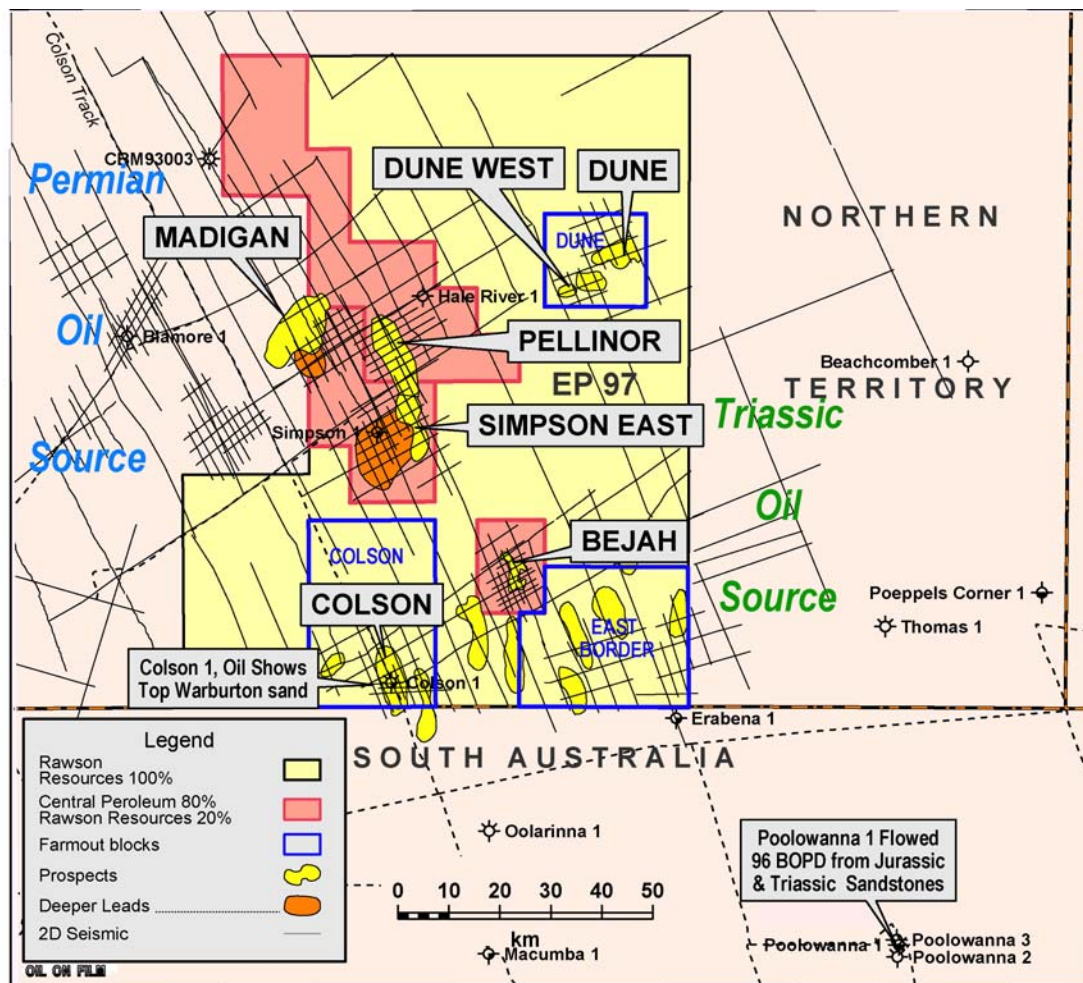
The Colson structure remains an attractive drilling target, due to the potential to drill up dip of Colson-1 together with the evidence for the presence of oil and its potential to be sourced from any of east, south and west directions.

The Dune prospect in the NE of the permit also lies outside the Central deal. Dune is mapped as having potential resource of up to 100 million barrels of oil, with Dune West having potential of up to 30 million barrels.

Rawson Resources intends to rank these prospects for drilling, with the intention that one or more be drilled in 2013, most probably back-to-back with the Pellinor well, which is likely to be drilled by Santos during the year, with Rawson retaining a 20% interest in the Pellinor sub-area, carried through that well

Further seismic is planned which will meet the Year 4 obligations, and could detail to drillable status the various seismic leads identified in the area east of Colson and south of Dune and Bejah.

Shale gas potential is also identified in the permit, in the Cretaceous Toolebuc Formation at shallow depth, and the deep Devonian section. The Toolebuc has been the target of an ongoing drilling campaign in the Galilee Basin to the north, which has reported some positive results. No analysis of shale gas potential has yet been made in EP 97. Such work should be initiated.



## Conclusions and Recommendations

- 1) EP97 is a strategic asset for Rawson, with major upside potential. A good discovery here would transform as a company.
- 2) The permit has both oil and gas potential. A good gas discovery here need not be considered a stranded resource. Santos themselves have stated that they see gas in their Central Petroleum farmin areas (of which EP97 is probably the prime acreage) as being 'close to infrastructure', which can be taken to mean capable of tie-in to the Cooper Basin facilities to the east.
- 3) Rawson is in the good position of being virtually guaranteed a carry through one major well during 2013, and is free to pursue farm out to get a further well drilled during that time.
- 4) The presence of Santos in the sub areas means they must be rated as a prime candidate for farmin for further drilling, in Dune or Colson, and with a proper focus on farmout, Rawson should be confident that farmout for a well to be drilled back-back with Pellinor-1 could be achieved.
- 5) Well plans for Dune-1 and Colson-2 need to be drawn up and budgeted, and close

liaison maintained with Santos/ Central regarding their drilling schedule, as this provides a good springboard into funding of either or both Dune and Colson.

6) A workstation based remapping of the entire data base needs to be completed as an integral component of permit presentation and securing of funding for drilling.

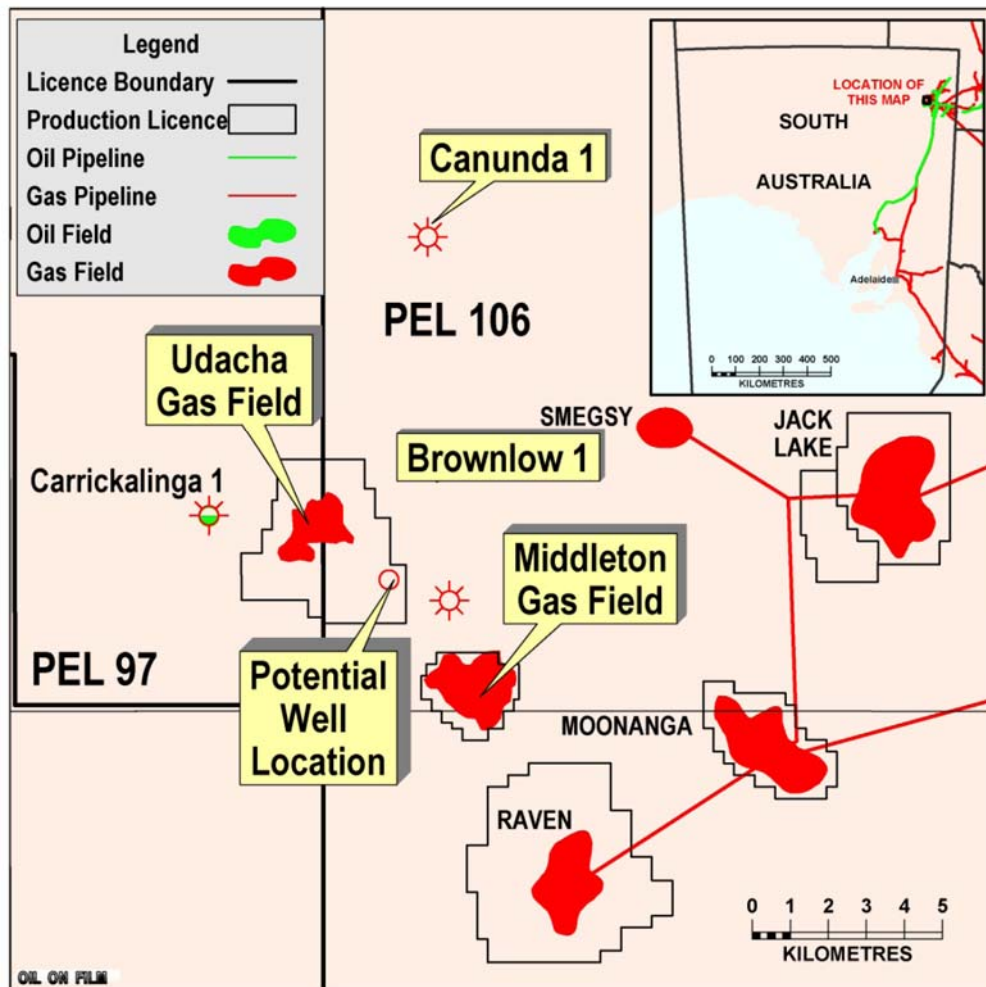
### **Udacha gas field ( Rawson 10% non-operator)**

Udacha-1 was drilled in 2006 and was flow tested as a gas-condensate discovery, sustaining flow at 440,000cfd with a condensate/gas ratio of 13 bbl/. The production test indicated a small 2P reserve of order 5 bcf.

Both the reserves base and the flow rates are very modest (although a planned wellbore stimulation may improve production rates), and consequently Udacha has languished within a Retention License Application (PRLA26) ever since; being too small to justify tie-in to gas pipeline facilities 10-20 km to the east.

Drillsearch took over the operatorship in 2010, with the intention of accumulating Udacha and other small discoveries in the western Cooper Basin into their planned Western Cooper Gas & Liquids Project.

As part of this plan, a 3D seismic survey including Udacha area has been recently acquired (Rawson share \$30,000), and an appraisal well is being considered for drilling during 2013 (Rawson share \$300,000) and a stimulation operation is planned on Udacha-1 (Rawson share \$100,000).



## Conclusions & Recommendations

This is not a strategic holding for Rawson. However, given the drive to secure gas from any source for the Queensland LNG projects, and the Drillsearch strategic plan to set up a gas gathering infrastructure, it is worth Rawson continuing through the planned well drilling and stimulation operations, and reviewing the situation on an ongoing basis with a view to selling the asset at some optimal time.

### ATP837P Surat Basin ( Rawson 50%, non-operator)

The permit is in Year 6 of the first 7 year term, and a well was required by 30 June 2012. Title is, therefore, uncertain at this time.

Two previous coal seam gas wells in the northern part of the permit fulfilled the drilling obligation to end Year 3, and the Hoadleys-1 well, drilled and cased to 2146 m, satisfied the drilling commitment to end Year 4 (June 2011).

Hoadleys-1 drilled on a 3D defined target, which was the best situated for charge of

three Precipice Sandstone targets identified on the 3D seismic. (The Precipice Sands are the producer level at the 20MMB Moonie oil field, 20 km along trend to the south).

There were no shows at the Precipice objective level in Hoadleys-1, and the failure of this well condemns the other two Precipice targets for the moment. (There is a possibility that Hoadleys was not a valid structure, as the well intersected the Precipice essentially flat to the Forke's Creek well, 1200m to the NE, whereas the mapping prognosed that it would clearly be up dip).

Assuming title can be retained by further drilling, this could be met by drilling a relatively shallow CSG well in the north of the permit. Reportedly, TruEnergy, who hold 70% of the CSG rights, are not averse to this, which would be a cost-effective means of meeting the drilling commitment. Rawson could readily meet its 15% share of such well.

More interesting and with greater potential is the deeper Owens play beneath the TD of Hoadleys-1. Sandstones of the Permian age Kianga Formation below 3000m are readily mappable on the 3D, and a more prominent and clearer closure is definable than the subtle Precipice closure tested by Hoadleys-1.

Approximately 35m of vertical closure and a prospect area of at least 12 sq km leads to resource potential in Owens of up to 100BCF gas/1+ MMB condensate.

The reservoir, although predominantly tuffaceous, has been shown to be able to produce via the extended flow testing of the Kianga Formation at a similar depth in Cabawin-1, 20km north along trend. There, after a 22 day production test, the well was averaging 534 mcf of gas with an associated 62 barrels per day of 49 API gravity oil (condensate), with a top hole flowing pressure of 300 psi.

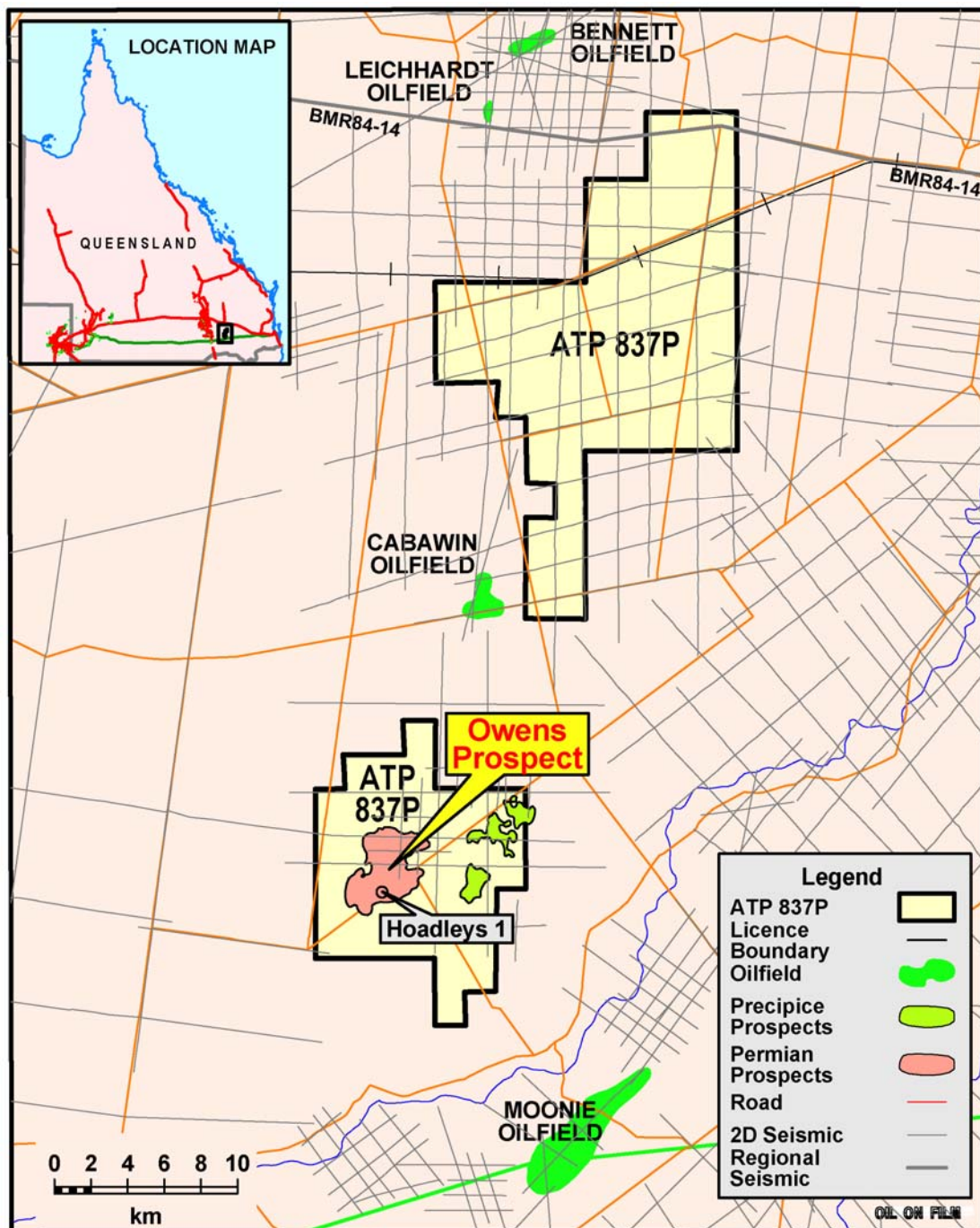
It should be noted that the Southwood-1 well, some 12 km south of Owens, also has extensive shows in the Kianga Sands, although these were not tested as the hole was lost. Thus there is clear evidence of gas/condensate along trend both to south and north of Owens.

This evidence de-risks Owens Prospect, and justifies the case for deepening the Hoadleys-1 well to test for gas/condensate.

Hoadleys-1 can be re-entered, the cement plug at the base of the 7" casing drilled out, and the additional 1000 m to the Kianga drilled relatively cheaply.

Wellbore stimulation may improve flow rates over those achieved in Cabawin-1, as well as help to improve connectivity in what is clearly, from the Cabawin-2 well, erratic and streaky poroperm.





## Conclusions & Recommendations

- 1) Rawson's 50% ownership of ATP837P is a valuable asset with good upside and exploration potential.
- 2) Title needs to be verified and secured by the drilling of either a shallow CSG well or by deepening the Hoadleys-1 well to test the Kianga Sands in the Owens Prospect.



3) A review of the 3D mapping in light of the results of Hoadleys should be completed with a view to verifying whether Hoadleys-1 was a valid test, and if not then whether the other 3D defined Precipice targets, particularly Gregorys, have merit for drilling.

4) Farmout of Owens should be pursued irrespective of whether a CSG well is drilled or not.

### **PEL's 154 & 155 Otway Basin (Rawson 37.5% via Otway Energy Ltd)**

The joint venture acquired 3D seismic surveys in both these permits in 2009. The results of mapping these were somewhat frustrating.

In PEL 154 a clearly defined and sizable structure at a depth of only 2100m at Warre Sandstone objective called the Benara Prospect, is mappable up dip from the Burrungule-1 well; which lies, however, just within the mapped closure and has no shows. The prospect was, therefore, considered risky for drilling because of an absence of obvious charge, and a location not obviously adjacent to mature source section, with migration from mature Eumeralla a good way to the south being required.

By way of contrast, in PEL 155, a fault bounded target called the Nangwarry Prospect, was mapped on the 3D. The prospect is excellently placed for charge, being located within the generative Penola Trough, close to the producing Katnook and Ladbrooke Grove gas fields and their associated gas handling infrastructure. A deep well to 3200m is required to test this.

Nangwarry is somewhat ambiguous of interpretation at the Pretty Hills objective. A positive fault interpretation makes it a good size for drilling, with an upside resource potential of order 60bcf, but an alternate interpretation makes it much smaller. It remains, however, a good risk on gas-condensate discovery.

For these different reasons, and given the low state of conventional exploration in the Australian over the last few years, and the lack of acceptable rig options, neither prospect could previously be justified for drilling.

Both Benara and Nangwarry remain as ready-to-drill prospects, both with good proximity to pipeline infrastructure. With the anticipated upturn in interest in the onshore Otway, both may well be funded for drilling in the near future.

A partial farmin by Kea Petroleum in 2011, to drill Nangwarry was terminated for lack of funding. This actually had the beneficial longer term effect of allowing Otway Energy to renegotiate the work obligations of both permits, such that both were continued for a further five year term, albeit with reduced areas; with no drilling required until the end of Year 5 i.e. by 31 December 2016. Only G&G studies are required in the previous four years' work programme.

These work programmes provide Otway Energy with the tremendous advantage of being able to pursue funding for the drilling of wells free from any work obligation pressure, thus allowing Otway to take advantage of the best timing for funding and drill spread options.

The South Australian Energy Resources Division has now gazetted open acreage for application by April 2013. These lands include a large area abutting PEL 155 to the south, and all acreage abutting the two parts of PEL 154, both to north and south.

In its invitation to bid, the SA ERD goes to some detail to outline the shale gas and shale oil potential of the Basin. From their report it is clear that PEL 155, which is situated over the south flank of the mature and generative Penola Trough, is optimally placed for exploration of the Casterton Formation shale gas play, as well as the overlying Sawpit Shale play.

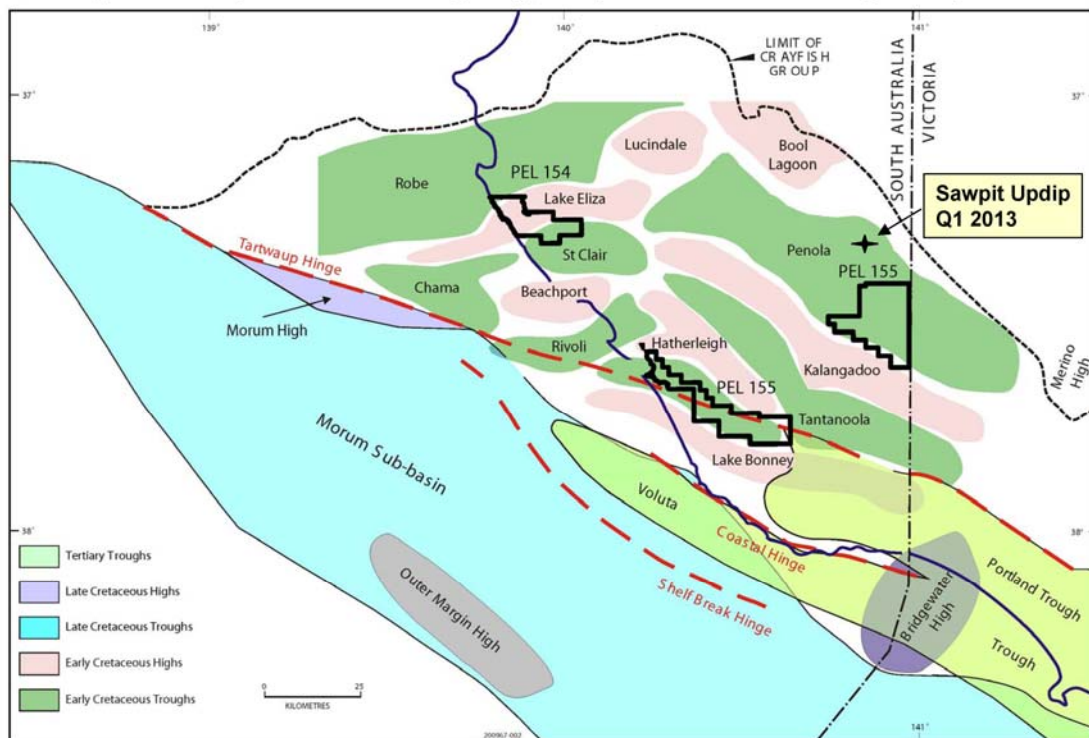
Cooper Energy has identified potential for up to 25 Tcf gas in place in the shale play in their acreage adjacent to PEL 155. This shale gas potential is going to be tested in First Quarter 2013 by the Sawpit-2 well, only 15km north of PEL 155, which will drill through the Sawpit Sandstone and the underlying Casterton Formation to basement.

In the 1992 Sawpit-1 well, there were extensive shows throughout the Casterton, and oil was recovered from fractured basement. Given that Sawpit-2 will be drilled in an updip location, and has both conventional and shale gas objectives, it is very probable that some positive results will emerge from the drilling of this well, which will very much serve to the advantage of PEL 155, and to the funding of drilling. It should be noted that as at Sawpit, it would be possible to drill a deep shale gas test at Nangwarry which also intersects the shallower Top Laira and Pretty Hills conventional objectives.

A critical requirement for development of shale gas potential is proximity to gas infrastructure. In this respect PEL 155 is extremely well placed, being within 10-20km of underutilized gas infrastructure at Katnook, with a pipeline link from there to the SEAGAS line supplying the large and growing regional gas market.

Northern PEL 154 is also well placed for developing a shale gas play in the underlying St Clair Trough. Although no well there has yet penetrated to basement, it is clear that there is a thick sedimentary section within the trough. However, it is less well placed with respect to gas pipeline infrastructure.

Crayfish Group shales in Troughs (green) are focus of shale gas exploration



## Conclusion & Recommendations

- 1) The onshore Otway is set for an increase in activity due to the increasing focus on shale gas; with acreage award and drilling activity both working to Rawson's benefit.
- 2) The light work obligations on the Otway Energy ( = Rawson) permits provide pressure-free time in which Rawson can plan and initiate drilling.
- 3) Well plans now need to be drawn up and budgeted for all of Benara, Nangwarry and Nangwarry Deep (a shale-gas test). These are essential inputs to funding wells.
- 4) Further review of both 3D seismic sets needs to be completed, to address the perceived main risks on both Nangwarry and Benara. In the case of Benara, impedance inversion or other special attribute studies could address the question of gas charge. In the case of Nangwarry, thought needs to be given to improved clarity of seismic imaging of structure.

### **ATP's 893P & 901P (Rawson 25% & operator)**

These two large blocks are situated in the axis of the Taroom Trough of the Surat Basin.

They have coal seam gas potential, albeit somewhat deeper than is presently being drilled and developed immediately to the north.

They also have the potential for large shale gas resources in the deep Permo-Triassic section, which has yet to be tested by drilling.

Title of the blocks is very uncertain at the present time, and they may shortly formally lapse.

They are potentially valuable blocks, and every effort to secure ongoing title must be made.

In the absence of clear title, these are not further discussed here.

### **Holding in Kea Petroleum Plc (Rawson 4.3%)**

Rawson holds more than 27 million shares in AIM listed Kea Petroleum, which have a present market value of order £2.4M (~A\$3.7M).

Kea is shortly to drill an appraisal well on its onshore Taranaki Puka-2 oil discovery, which is likely to be successful and to produce at several hundred barrels per day of high value light sweet crude.

Kea is also to drill a high potential Taranaki well, Mauku-1, early in 2013. It is effectively fully carried through this well.

Both these events could lift the Kea share price significantly.

Trade in the stock is consistently reasonably liquid.

Therefore, this holding can be realized by Rawson over a period of time, at the time of its choosing.

Thus the value of the Kea stock can be added to the existing Rawson cash reserves of ~\$2m as a source of liquid funds.

### **Comment on Rawson**

Rawson has no debt, less than 100m shares on issue, and cash to hand to meet all present obligations other than drilling costs.

It is excellently positioned at this time to generate drilling activity in its permits in the coming year, and should work with that objective in mind.

### **About the Author**

Dr David Bennett is founding Director of Kea Petroleum plc listed on the AIM in London. David Bennett is the former Exploration Manager of NZOG (New Zealand Oil and Gas Ltd), a company listed on the New Zealand Stock Exchange and the Australian Stock Exchange, and former Chief Executive of Austral-Pacific Energy Ltd, and a past director of Rift Oil plc. Since 1982 David has been involved in oil and gas exploration in New Zealand, Australia and elsewhere around the Pacific Rim. David has played a prominent role in a number of successful oil and gas discoveries in New Zealand and Papua New Guinea. David is an Independent Consultant engaged by Rawson to investigate and assess its acreage.

David Bennett has given his approval for this report to be released on the ASX.