



**ESSENTIAL PETROLEUM RESOURCES LIMITED  
QUARTERLY EXPLORATION REPORT  
FOR THE THREE MONTH PERIOD ENDED 30 SEPTEMBER 2003**

In the September quarter the Company carried out no seismic acquisition or drilling operations. During the quarter no commercial hydrocarbons were discovered or acquired by the Company.

In PEP 151 preliminary results of the processing of the Nelson 2D/3D seismic survey indicate good imaging of the subsurface. Interpretation of the 2D data is expected to commence in early November upon completion of the 2D processing.

During the quarter interpretation of the 740 km 2D marine seismic survey, which was acquired in the offshore permit Vic/P46 in November 2002 continued. The initial results are encouraging indicating the existence of several large structures on the shelf area of the permit.

The results of drilling of the Koroit West No 1 well in PEP152 and the results of drilling the Banganna No 1 well in PEP 159 are also being evaluated. Although both wells failed to intersect commercial hydrocarbons the results are being incorporated into further seismic mapping of the permits. The results from the wells suggest that a valid petroleum system exists in the early Tertiary Pebble Point and Pember Formations and in the Paaratte Formation. Seismic mapping will concentrate on these formations as well as the older Waarre Formation play.

In PEL 72 the final analysis of the gravity survey recorded earlier this year, is nearing completion and is being incorporated into interpretation of the existing seismic interpretation.

**PEP 151 - 100% Onshore Otway Basin Victoria**

The processing of the Nelson Seismic Survey acquired earlier this year is well underway with preliminary results of the crooked 2D lines showing good imaging of the subsurface. Interpretation of the 2D data is expected to begin in early November.

Successful data processing parameters learned from the 2D processing will be applied to the 3D dataset. These parameters include those for velocities, static corrections and filters. It is expected that the 3D processing will be completed by early December 2003.

**PEP 150 - 25% Onshore Otway Basin Victoria**

PEP 150 is operated by Origin Energy Resources and is currently undergoing Native Title negotiations. Consequently, no exploration activity will take place until negotiations are complete.

**PEP 152 - 33.9% Onshore Otway Basin Victoria**

The results of drilling of the Koroit West No 1 well are still being evaluated and incorporated into the seismic data. Post-well evaluation suggests that a valid petroleum system exists in the early Tertiary Pebble Point and Pember Formations and in the Sherbrook Group Paaratte Formation. Essential Petroleum is undertaking seismic mapping at these horizons in this permit and the adjacent permit PEP 159 to the north. The Koroit West well and other wells in the area indicated the presence of good quality reservoir rocks and sufficient seal capability at these horizons and further studies will be undertaken along the same trend.

**PEP 159 - 50% Onshore Otway Basin Victoria**

The Operator of the permit, Origin Energy, has undertaken a study of the Findra prospect in the permit. This study, together with seismic mapping of the Findra prospect undertaken by Essential Petroleum will be used to evaluate the potential of this prospect.

**PEL 72 - 50% Onshore Otway Basin South Australia**

The final analysis of the existing data, including the gravity survey recorded earlier this year, is near completion. The information gained from the gravity survey is being integrated into the existing seismic interpretation. This analysis will lead to the confirmation of leads and prospects in the block that will determine the design and acquisition of a seismic survey due in the first quarter of 2004.

**Vic/P46 - 67.5% Offshore Otway Basin**

Following the offshore seismic survey in November 2002 interpretation and mapping of the 740 km seismic survey is continuing. Mapping of several horizons has been completed and maps generated. The work currently in progress has identified a number of prospects and leads in the permit. The accompanying table represents the current status of the identified prospects. Risked potential reserve analysis is currently being undertaken. Re-analysis of the hydrocarbon shows in the Normanby well, drilled in 1986, suggests the structure may contain oil as well as gas. The table shows the mapped area of prospects and leads and the expected hydrocarbon type for each identified prospect or lead.

Prospect/Lead	Area square km	Formation	Expected Hydrocarbon type
Normanby North	13.0	Flaxman and Waarre Fms	Gas
Normanby Updip	24.0	Waarre Fm "A" sand	Gas and oil
Normanby	114.0	Waarre Fm "A,B &C" sands	Gas and oil
Kepler	29.0	Waarre Fm	Gas
Bernoulli	29.0	Waarre Fm	Gas
Kepler/Bernoulli	133.0	Waarre Fm	Gas
Pascal	14.0	Nullawarre Fm	Gas
Descartes	230.0	Oligocene Turbidite	Oil
Henty	85.0	Oligocene Turbidite	Oil

From the above table it can be concluded that both the Normanby and the greater Kepler/Bernoulli prospect are very prospective. The very large area of structural closure in both prospects suggests they could yield possible gas reserves in excess of one TCF in both cases if the structures are full of gas. For the Descartes turbidite prospect the analogy with the Brazil Oligocene turbidites suggest the dominant hydrocarbon will be oil and the very large area of closure suggests reserves could be in the billion-barrel category if the prospect contains oil.

**Vic/P50 - 100% Offshore Otway Basin**

Essential Petroleum has recently entered the second year of exploration in this block and has carried out Geological and Geophysical studies in order to prepare for acquisition of seismic data. A focus of the year 2 seismic survey will be the tilted fault block prospects developed along the shelf break underlying the highly prospective Descartes and Henty turbidite plays of Late Eocene Early Oligocene age.

**PERMIT EXPENDITURE SUMMARY FOR THE QUARTER ENDED 30 SEPTEMBER 2003**

<b>Permit Number</b>	<b>Essential Petroleum Interest</b>	<b>Seismic Survey Expenditure</b>	<b>Geological and Geophysical Studies</b>	<b>Environmental Native Title &amp; Permit Maintenance</b>	<b>Drilling Expenditure</b>	<b>Total</b>
PEP 151	100%	\$321,173.00	\$1,338.00	\$1,300.00	\$0.00	\$321,173.00
PEP 150	25%	\$0.00	\$0.00	\$31,257.00	\$0.00	\$31,257.00
PEP 152	33.9%	\$0.00	\$11,678.00	\$2,424.00	\$14,550.00	\$28,652.00
PEP 159	50%	\$0.00	\$8,592.00	\$2,001.00	\$3,257.00	\$13,850.00
PEL 72	50%	\$0.00	\$27,745.00	\$7,152.00	\$0.00	\$34,897.00
VIC/P46	67.5%	\$0.00	\$54,675.00	\$20,250.00	\$0.00	\$74,925.00
VIC/P50	100%	\$0.00	\$21,520.00	\$3,796.00	\$0.00	\$25,317.00
<b>Total</b>		\$321,173.00	\$125,548.00	\$68,180.00	\$17,807.00	\$532,710.00

*Roger Blake MSc, Exploration Director, Essential Petroleum Resources Limited has prepared this Quarterly Exploration Report.*