

# Baraka Petroleum Limited

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## BARAKA SIGNS FARMIN AGREEMENTS OVER GEORGINA BASIN PROJECTS

### Highlights

- *New strategic direction for Baraka*
- *Agreements signed to earn 75% of EP 127 and EP 128 in Georgina Basin, onshore Australia*
- *Relinquishment of Taoudeni Basin tenements Ta-11 and Ta-12*

Baraka Petroleum Limited (ASX: BKP; "Baraka" or the "Company") is pleased to announce that it has signed agreements with Northern Territory Oil Limited ("NT Oil") to earn 75% of EP 127 and EP 128 in the Georgina Basin in the Northern Territory.

The Georgina Basin is an underexplored region. Previous test wells drilled in the Georgina Basin have demonstrated oil shows and good quality source rocks, seals and reservoirs.

EP 127 and EP 128 cover approximately 7.4 million acres in the south-central part of the Northern Territory, to the south-east of Tennant Creek and the north-east of Alice Springs.

Under the terms of the farmin agreements, Baraka will be the operator of the joint venture over each of EP 127 and EP 128 and may earn 75% of the permits by funding all costs of exploration on the permits in accordance with the terms of grant up to completion of an exploration well.

Further information about the permits the subject of the farmin agreement is attached.

The Board of Baraka has also decided to relinquish the Company's interests in blocks Ta-11 and Ta-12 in the Taoudeni Basin for financial reasons. Baraka has advised the Minister in Mauritania of this decision.

Shareholders approved a recapitalisation of Baraka at a meeting on 18 May 2009 and Baraka expects to lodge a prospectus to raise up to \$2 million shortly.

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## Georgina Basin

The Georgina Basin, a sparsely explored green field area, is part of the Centralian Superbasin, comprising the Amadeus, Georgina and Wiso sub-basins. During the Cambrian era, the Central Australian plate was on the subtropical waters on the fringes of the Rodina supercontinent.

In this period, the organic-rich Arthur Creek black marine shales were deposited, particularly in the Dulcie and Toko troughs. Similar Cambrian marine shales are the source rocks in the extremely productive fields of East Siberia, Oman and the Tarim Basin in China. Above the Arthur Creek shales are the Thornton and Hagen Formations, both of which have been shown by previous drilling to show good reservoir properties and anhydrite seals.

The Georgina Basin therefore has all the attributes of a productive hydrocarbon province. This prospectivity has been enhanced by oil shows in a number of wells, and gas flows to surface in the Ethabuka-1 and the Discovery Creek water bore.

Over the last forty years, minimal seismic and intermittent drilling by the Northern Territory Government and various private operators has been undertaken in the basin. The major issue in exploring the area is the large size of the permits coupled with the sparsity of seismic and the lack of well control in the basin.

### Location

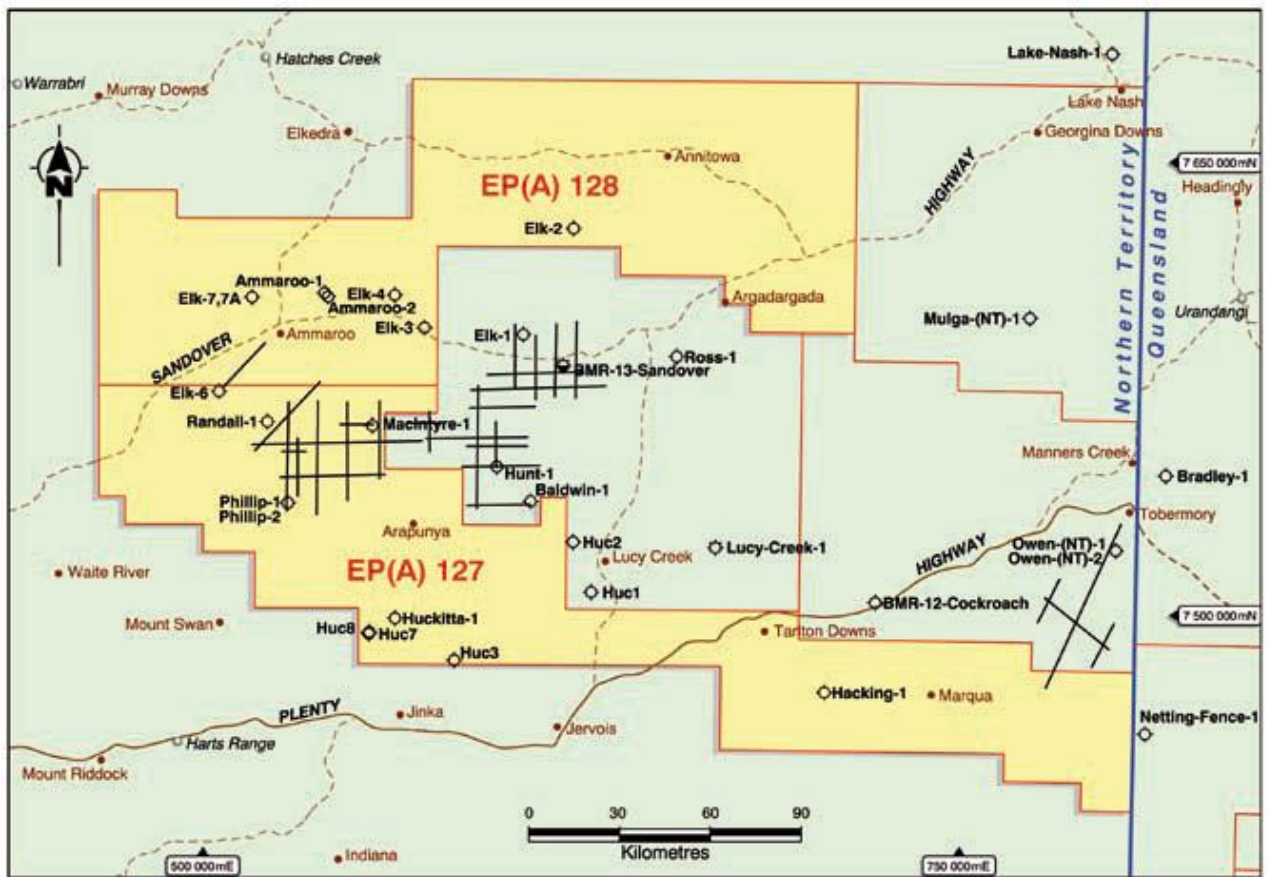
EP 127 and EP 128 comprise two granted exploration permits covering approximately 7.4 million acres. The permits are located in the south-central part of the Northern Territory, to the south-east of Tennant Creek and the north-east of Alice Springs.

EP 127 covers the south and south-west parts of the Southern Georgina Basin, north of the Arunta Inlier. The permit is approximately 50 kilometres north of the Plenty Highway.

EP 128 covers the north-west part of the Southern Georgina basin, south of the Tennant Creek Inlier. The permit broadly follows the path of the Sandover Highway, an all-weather road.

NT Oil has already successfully negotiated an agreement with the relevant native title holders who have consented to the doing of future acts on the permits, including all exploration carried out in accordance with the permits.

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Location of EP 127 and EP 128 and Previous Exploration Wells

## Exploration History

Early exploration in the Georgina Basin consisted of stratigraphic holes or wells whose location was based on surface geological mapping. This included a number of wells drilled in the 1950's and 1960's, culminating in the Ethabuka-1 well in Queensland which recovered gas at 6,000 m<sup>3</sup> per day (240,000 cfd) on test.

Subsequent drilling in the early 1980's was restricted to the stratigraphic drilling program undertaken by the Northern Territory Geological Survey ("NTGS"). In the late 1980's to early 1990's, Pacific Oil and Gas explored areas in the Dulcie and Toko Synclines with the first serious attempt to acquire a regional seismic grid and drill wells based on its results. Some 750 kilometres of seismic data were collected and 10 wells were drilled. The seismic lines were 5 to 30 kilometres apart, however most wells recorded poor to moderate oil shows.

There are a number of seismic lines acquired in the EP 127 and EP 128 permit areas, and there is evidence on those seismic lines of faulting and other structuring, leading to the conclusion that there are likely to be structural traps within the permits. A significant effort in seismic acquisition will be required to successfully map such potential traps.

## Source and Maturation

The main source rock interval in the Georgina Basin is the "hot" shale at the base of the Arthur Creek Formation, of Middle Cambrian age. This interval can be mapped throughout the southern Georgina Basin (Ambrose et al 2001). The richest section of this shale is up to 25 metres thick, and has been described as "finely laminated to massive anoxic, carbonaceous, partly dolomitic shale" (Ambrose, 2006). Total organic carbon levels measured in the shale commonly range from 0.5% to 10% and up to 16% (Ambrose et al 2001).

The Hagan Member of the Arrinthrunga Formation recorded good oil shows in a number of wells which are believed to have been sourced from intraformational shales (Randall-1, Phillip-2, Elkedra-7 and Todd-1) (Ambrose 2001). Total organic carbon levels have been measured at up to 4% in Macintyre-1 and Baldwin-1 and up to 7.9% in Elkedra-1.

There are a number of seals in the sequence, some regional in nature and others semi-regional or local.

The best regional seal is the basal portion of the Arthur Creek Formation. Much of the lower part of the same formation also has good sealing qualities.

There are a number of semi-regional seals within the upper section of the Arthur Creek Formation as demonstrated on the log of the MacIntyre-1 well. They appear to represent a number of upward shoaling sequences with the seal at the base, followed by gradually coarser grained sequences, culminating in fair to good reservoir facies at the top of the sequence. There are also a number of anhydrite sequences both within the Arthur Creek Formation and the overlying Hagen Member of the Arrinthrunga Formation. These would represent excellent seals, although their lateral extent is not well known.

## **Reservoir**

The main reservoir target recognised to date is the Thornton Limestone of Middle Cambrian age. This unit flowed 500 barrels of water per day (BWPD) from a test in Ross-1 and a drill stem test (DST) in MacIntyre-1 produced 338 metres of water in the pipe. There is not enough information from wells to enable reservoir trends to be established, however, it appears that improved permeabilities occur in areas where the Thornton limestone is fractured and vuggy and this probably relates at least in part to effects of karstification (Ambrose et al, 2001).

The upper portion of the Arthur Creek Formation is dominated by a number of shoaling sequences with reservoir quality rock at the top. In MacIntyre-1, the top of one of these sequences had measured permeabilities of 1.2 Darcies. Dolomitic sandstone seen in Owen-2 exhibited core porosities of 10-15% and permeabilities of 15-95 mD.

The Hagen Member of the Arrinthrunga Formation contains dolostones which exhibit vuggy dissolution porosity in some wells. A flow of 300 BWPD was achieved from Randall-1 at this level. There are also reservoirs in the Kelly Creek Formation of Early Ordovician age. This formation flowed gas at about 240,000 cfd from Ethabuka-1. In this well, a thick dolostone had a measured porosity of 11% and average permeability of 234 mD.

Porosity is largely thought to be of secondary origin and related to dissolution, fracturing and dolomitisation. Jointed and faulted zones could be expected to contain enhanced porosities and permeabilities, but much further work on this aspect is required before reservoir trends could be confidently predicted.

## **Prospectivity**

Currently there is no hydrocarbon production from the Georgina Basin, however analogous production occurs in the Amadeus Basin to the west and in other, similar, settings found elsewhere in the world.

There is reason to believe that the permits are prospective for the following reasons:

- oil shows in the Randall, Macintyre, Elkedra-7 and other wells in the basin;

- flows of gas in the Ethabuka-1 and Discovery Bore wells in the basin, showing hydrocarbon migration;
- excellent high organic content Arthur Creek source rocks;
- good quality reservoir rocks; and
- evidence from micropaleontology and petrology of similarities between the Tarim, East Siberian and Georgina rock formations.

## **Planned Exploration Program**

NT Oil has now digitally reprocessed the existing seismic over EP 127 and EP 128 shot by a previous operator. Baraka now proposes to conduct an initial acquisition of geochemical and gravity data for each of EP 127 and EP 128 during the first year.

This data will then be used to better locate new seismic acquisition in the second year of the joint venture with a target of an exploration well on each block in the third year of exploration.

## **Farmin and Assignment Agreement Terms**

NT Oil currently holds an undivided 100% interest in both EP 127 and EP 128.

The terms of the farmin agreements covering both EP 127 and EP 128 are the same. Under the agreements, Baraka must pay a signature bonus of \$5,000 for each permit and can then earn a 75% interest in each permit by funding all costs of exploration on the permit in accordance with the terms of grant up to completion of a well. Funding thereafter will be in accordance with each party's respective interests in each permit.

The joint venture is conditional on Baraka being reinstated to official quotation on ASX within three months of the date of signing of the agreements.

Either party may withdraw from the joint venture at any time by notice in writing to the other.

Baraka will be the operator of the joint venture over each of EP 127 and EP 128, subject to the consent of the Minister.

## **Taoudeni Basin Ta-11 and Ta-12**

The Board of Baraka has decided to relinquish the Company's interests in blocks Ta-11 and Ta-12 in the Taoudeni Basin. The Board has reached this decision after considering the significant capital requirements for the projects in light of the Company's current financial circumstances.

Whilst the Board is of the view that the projects have significant merit, particularly given the planned exploration drilling in the Taoudeni Basin, ultimately Baraka was unsuccessful in finding a suitable funding partner for the blocks in the current difficult economic environment.

Baraka has advised the Minister in Mauritania of this decision to withdraw.

The carrying value of the blocks in the accounts of Baraka at 31 December 2008 was nil.