



central
PETROLEUM
LIMITED
ABN 72 083 254 308

Phone: 08 9474 1444
Fax: 08 9474 1555

Street Address:
Suite 3, Level 4
Southshore Centre
85 South Perth Esplanade
South Perth
Western Australia 6151

Postal Address:
PO Box 197
South Perth
Western Australia 6951

info@centralpetroleum.com.au

Wholly owned
subsidiaries:

merlin
ENERGY
PTY LTD
ABN 95 081 592 734

merlin
COAL
PTY LTD
ABN 81 134 469 471

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PTY LTD
ABN 57 140 628 155

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TO: The Manager, Company Announcements ASX Limited

CONTACT: John Heugh +61 8 9474 1444

SOUTHERN GEORGINA BASIN CONVENTIONAL PLAYS AND DRILLING UPDATE

Central Petroleum Limited (ASX:CTP) ("Central" or the "Company") has pleasure in releasing a Technical Note by Dr Jacque Sayers and Greg Ambrose "Conventional Hydrocarbon Plays in the Southeastern Georgina Basin" (CTP Technical Note 11.08.17).

The report concludes, inter alia, that :

- Both conventional and unconventional plays are important in the southern Georgina Basin. The latter have been widely discussed in the context of Canadian initiatives in the Southern Georgina and the Officer Basins. (Petro Frontier and Rodinia respectively)
- Conventional plays could be of comparable importance with exploration targets in the range of hundreds of millions of barrels of oil UOIIIP.
- The technical note for the first time describes high energy clastic channel facies in Central's acreage which are important stratigraphic targets in the basin.
- The dominant lithologies in the section comprise low porosity/permeability rocks including important source rocks, but "pockets" and "stringers" of porous clastics are highly rated targets.
- The newly recognised channel facies will high grade areas of perceived prospectivity. This is important in quiescent tectonic regimes (such as the Bradley Shelf) which often harbour large undisturbed stratigraphic plays in many basins around the world (eg the giant Messla field in Libya – 12 Bn. barrels OIP).
- The incision and submarine channels noted suggest deeper water turbidite fans and splays so distributary channels will form part of the sedimentary architecture In a basinward direction – these facies are massive producers in many basins around the world (eg offshore Kalimantan).
- This study is basically the first step in addressing conventional plays in this area and will be later assisted by seismic structure mapping with an emphasis on seismic stratigraphy and sedimentary facies mapping. Data gained via unconventional programmes will assist in this and vice versa.

Drilling update

The Company is progressing its drilling programme for the year with ADS Rig 6 anticipated to become available in mid to late September. Final details of the drilling contract are expected to be completed and the contract executed in the next week to ten days.

The campaign is planned to include the re-entry and testing of Surprise-1 for oil potential ("best" or P50 UOIIIP 10 MMbbls) in both conventional and unconventional horizons, drilling of the Mt Kitty prospect, a sub-salt 2 TCFG UGIIP ("best" or P50) gas/condensate/helium prospect and the drilling of Madigan-1, the first well on a giant structure in the Pedirka Basin with UOIIIP ("best" or P50) potential of over 4 billion barrels based on preliminary mapping of new seismic acquired in 2010.



Core taken at Surprise-1 December 2010 Depth 2051-2052m RKB

Seismic acquisition and future drilling plans over a number of play types are also being evaluated inclusive of the Surprise-Johnstone area in EP115 for conventional and unconventional oil exploration or development, the Madigan and Pellinor Devonian reefal carbonate plays in the Pedirka and, subject to grant, unconventional and conventional oil and gas potential within the Central's Southern Georgina Basin Arthur Creek Shale and Thornton Limestone plays. The Company's Queensland ATPs 909, 911 and 912 immediately adjacent to PetroFrontier's Southern Georgina Basin, are anticipated to be granted during the second half of 2011 and may receive early attention from the Company. EPA 132 in the Northern Territory also has considerable unconventional potential but its granting date is difficult to forecast.

Central's Lander Trough permits, EPAs 92, 129 and 160 cover 11 million acres of ground entirely within the early oil to very early gas window of maturation and have demonstrated chronostratigraphic equivalent formations to the Southern Georgina Arthur Creek Shale and Thornton Limestone unconventional plays.



ADS Rig 6

John Heugh

Managing Director
Central Petroleum Limited

For further information contact:

John Heugh Tel: +61 8 9474 1444 or

Ray Beatty Corporate Writers Tel: +613 9224 5272, M: +61 409 174 565

NOTICE: The participating interests of the relevant parties in the respective permits and permit applications which may be applicable to this announcement are:

- *EP-82 (excluding the Central subsidiary Helium Australia Pty Ltd ("HEA") and Oil & Gas Exploration Limited ("OGE") (previously He Nuclear Ltd) Magee Prospect Block) - HEA 100%*
- *Magee Prospect Block, portion of EP 82 – HEA 84.66% and OGE 15.34%.*
- *EP-93, EP-105, EP-106, EP-107, EPA-92, EPA-129, EPA 130, EPA-131, EPA-132, EPA-133, EPA-137, EPA-147, EPA-149, EPA-152, EPA-160, ATP-909, ATP-911, ATP-912 and PELA-77 - Central subsidiary Merlin Energy Pty Ltd 100% ("MEE").*
- *The Simpson, Bejah, Dune and Pellinor Prospect Block portions within EP-97 – MEE 80% and Rawson Resources Ltd 20%.*
- *EP-125 (excluding the Central subsidiary Ordiv Petroleum Pty Ltd ("ORP") and OGE Mt Kitty Prospect Block) and EPA-124 – ORP 100%.*
- *Mt Kitty Prospect Block, portion of EP 125 - ORP 75.41% and OGE 24.59%.*
- *EP-112, EP-115, EP-118, EPA-111 and EPA-120 - Central subsidiary Frontier Oil & Gas Pty Ltd 100%.*
- *PEPA 18/08-9, PEPA 17/08-9 and PEPA 16/08-9 - Central subsidiary Merlin West Pty Ltd 100%.*

General Disclaimer and explanation of terms:

Potential volumetrics of gas or oil may be categorised as Undiscovered Gas or Oil Initially In Place (UGIIP or UOIIP) or Prospective Recoverable Oil or Gas in accordance with AAPG/SPE guidelines. Since oil via Gas to Liquids Processes (GTL) volumetrics may be derived from gas estimates the corresponding categorisation applies. Unless otherwise annotated any potential oil, gas or helium UGIIP or UOIIP figures are at "high" estimate in accordance with the guidelines of the Society of Petroleum Engineers (SPE) as preferred by the ASX Limited but the ASX Limited takes no responsibility for such quoted figures.

As new information comes to hand from data processing and new drilling and seismic information, preliminary results may be modified. Resources estimates, assessments of exploration results and other opinions expressed by CTP in this announcement or report have not been reviewed by relevant Joint Venture partners. Therefore those resource estimates, assessments of exploration results and opinions represent the views of Central only. Exploration programmes which may be referred to in this announcement or report have not been necessarily approved by relevant Joint Venture partners and accordingly constitute a proposal only unless and until approved. All exploration is subject to contingent factors including but not limited to weather, availability of crews and equipment, funding, access rights and joint venture relationships.

Conventional Hydrocarbon Plays in the Southeastern Georgina Basin.

(CTP Technical Note 11.08.18)

Executive Summary

- The Southern Georgina Basin has recently become the focus of interest in unconventional oil and gas plays related to acreage held by Central Petroleum Limited (“Central”) and Petro Frontier Limited (“PFC”). However there is considerable potential for the discovery and exploitation of conventional oil and gas systems.
- The recent recognition within Central’s Southern Georgina acreage that high energy environments of deposition have given rise to a number of different conventional play types inclusive of channel sands (incision channels and submarine channels) has added considerable prospectivity to the land package. Individual lead potential may range up to several hundreds of millions of barrels UOIP.
- Within the Southern Georgina Basin there have been some 23 wells drilled of which only one, Ethabuka-1, was a valid structural trap defined by seismic. The well flowed gas but was not logged nor production flow tested.
- Three petroleum systems are recognised in the southeastern Georgina Basin with oils generated from each recording distinctive geochemical signatures. Mainly oil prone Type II/Type III Algael/bacterial source material dominates the Thornton Limestone, Lower Arthur Creek Formation and Hagen Member petroleum systems, the first two of which are by far the most important volumetrically.
- The most prospective conventional reservoir/seal couplets associated with these petroleum systems are:
 - a) Thornton Petroleum System
The dominant reservoir-seal couplet is the Thornton Limestone/basal Arthur Creek Formation “hot” shale. This is a regional play but reservoir quality may be affected in some areas by hydrothermal alteration along Thornton fairways.
 - b) Lower Arthur Creek Petroleum System
The main targets are intraformational reservoir-seal couplets within the Middle – Upper Arthur Creek Formation. Potential reservoirs include tempestites, debris flows, middle ramp submarine channels, oolitic shoals, near shoreline quartz sandstones and incision channels (valley fill).
 - c) Hagen Member Petroleum System
Basal grainstones are sealed by anhydrite on the western basin margin where there is some evidence of source potential but further exploration is required to test this play on the southeastern margin.
- Analysis of a wide selection of oil stains from the above source rocks show that the three oil populations display a strong correlation with their reservoir unit across the basin. This suggests juxtaposition of source and reservoir within the same stratigraphic units and hints that vertical migration through the sediment pile was restricted by the relatively tight nature of the rocks, except in the case where significant fracturing occurs in the sequence.

- The Ordovician Kelly Creek Formation–Coolibah Formation/Nora Formation reservoir/seal couplet is a relatively young target which flowed 200 mcf/d from the Kelly Creek in Ethabuka-1. The overlying Ordovician Carlos Sandstone/Mithaka Formation couplet is the youngest target in the basin and should be prospective for gas in structural plays present in the deeper parts of the Toko Syncline. These two targets, together with the Thornton Limestone–“hot” shale play, probably have the best top-seal integrity capable of surviving folding/faulting, while the latter could provide migration conduits from Middle Cambrian source rocks.
- Most oil shows in the Middle-Late Cambrian (Arthur Creek Fm) are associated with fractures. The most competent shale seals occur in the basal Arthur Creek, Nora and Mithaka Formations. Anhydrite seal may be present on the basin margins but are yet to be penetrated by the drill bit.
- The most effective source rocks occur in the Lower Arthur Creek Formation where these can charge intraformational shale/siltstone reservoir–seal couplets. However, oil migration via vertical conduits/faults is possible although tectonically stable areas such as the Bradley Shelf will have a better chance of retaining trap integrity in structural/stratigraphic plays related to the Middle Cambrian facies mosaic.
- Newly recognised Mid-Cambrian ‘incision’ and mid-ramp submarine channels occur in and adjacent to Central Petroleum Ltd’s Queensland acreage. These facies are important as they add to the southeast Georgina Basin play portfolio.
- Regional palaeontological studies have confirmed that oil mature stratigraphic equivalents of Middle Cambrian source rocks from the Georgina Basin probably occur in the Lander Trough of the Wiso Basin which is largely covered by CTP application areas. Thus, there is a possible extension of exploration concepts for both unconventional and conventional hydrocarbons (in the Georgina Basin) to similar plays in the Wiso Basin.



Oil shows in the Hagen Member, Chabelowe Formation

Middle Cambrian Incision Channels – SW Georgina Basin, Northern Territory

A seismic example of an incision channel occurs to the northwest in the Northern Territory portion of the basin at SP 870-930 on seismic line 89-205 (Figure 2). The interpretation of channel fill in the latter is based on seismic signature, its large thickness (170 m) and alignment with other known sedimentary facies on the ramp. The seismic image and facies mosaic are depicted in Figures 2 and 3.

Figure 2 shows the erosional outline of the channel as defined by seismic; it has all the hallmarks of a mixed erosional/depositional “incision” feature although these are only very sparsely described in the literature. It is interpreted the lower channel fill includes both lateral accretion (? suggesting some sinuosity) and thalweg elements of what is believed to be fluvial clastic fill. The channel shows a suite of erosional architectural elements such as scours and cut downs and also major levees. Erosion to the level of the Middle - Lower Arthur Creek Formation source rocks provides a potential hydrocarbon migration pathway. A major levee bank is preserved on the southern side of the channel which is about 1.5 km across. The basal erosion surface has probably undergone silicification/dolomitisation and the basal channel fill is probably a coarse lag deposit which could be up to 20 m thick. The overlying fluvial fill is about 80 m thick and displays large lateral accretion surfaces probably deposited as large prograding bars. Top-most, flat lying reflectors are about 70 m thick and probably record fine-grained silstones/shales /carbonate muds related to channel abandonment or depositional fill deposited during a transgressive phase, which seems most likely. This “incision” channel model has all the ingredients (reservoir, source and seal) for a potentially important oil play over wide areas of the southern Georgina Basin at depths of less than a kilometre. This play has now been recognized in the Queensland portion of the basin.

Middle Cambrian Incision and Submarine Channels – SE Georgina Basin, Queensland

The unusual channel facies described above have now been recognized in the southeastern Georgina Basin where CTP holds 3 application areas. The importance of recognising this facies is four fold:

- 1) CTP now has a new target reservoir and playtype in this part of the basin.
- 2) The target hydrocarbons would be oil in many parts of the basin, especially on the Bradley shelf, and this is a key commercial consideration.
- 3) The fact that relatively large volumes of clastics fed into the basin, importantly gives credibility to the notion that more distal deltaic mouthbar and contiguous turbidite fan plays exist basinward of the incision channels. These could occur in the Toko Syncline proper where they are most likely to be gas charged.
- 4) The interpretation adds veracity to the idea that a regional unconformity, denoted by erosion and peneplanation, marks the top of the Arthur Creek Formation.

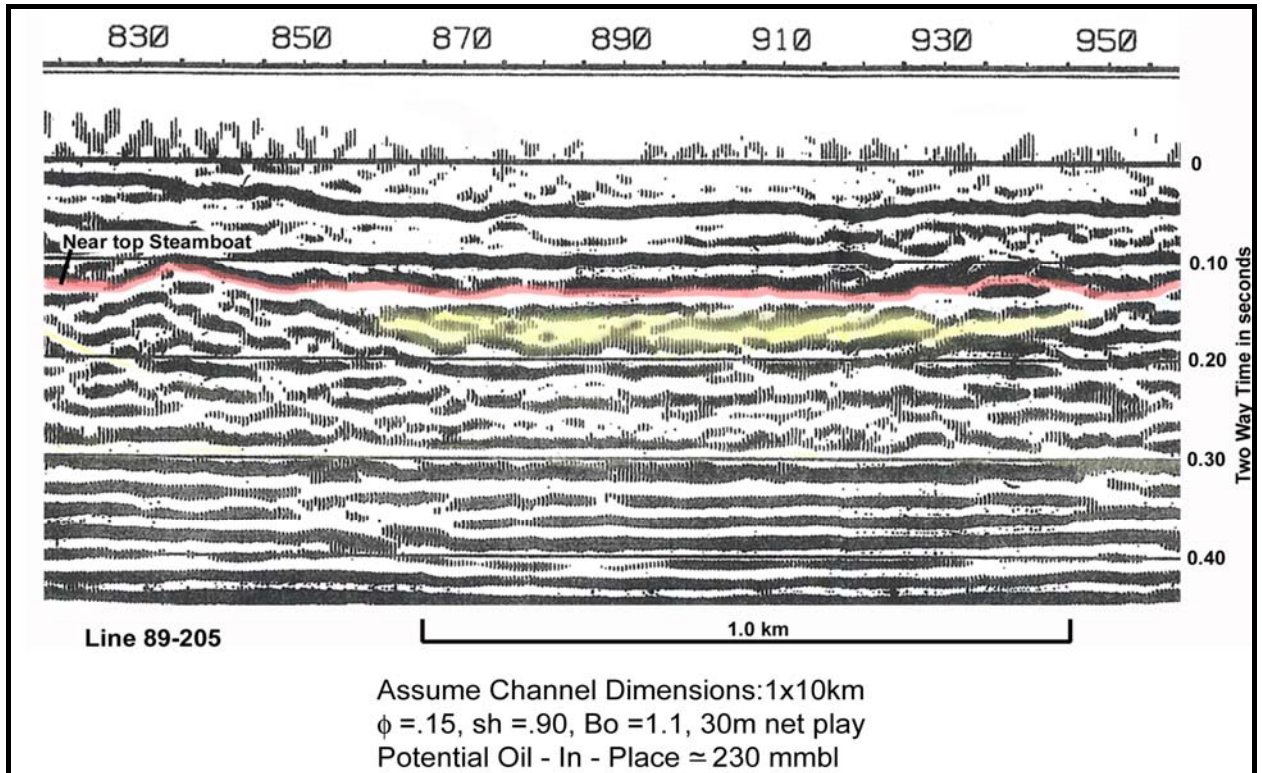


Figure 2 Incision Channel in the Southwestern Amadeus Basin (erodes top Steamboat Sandstone)

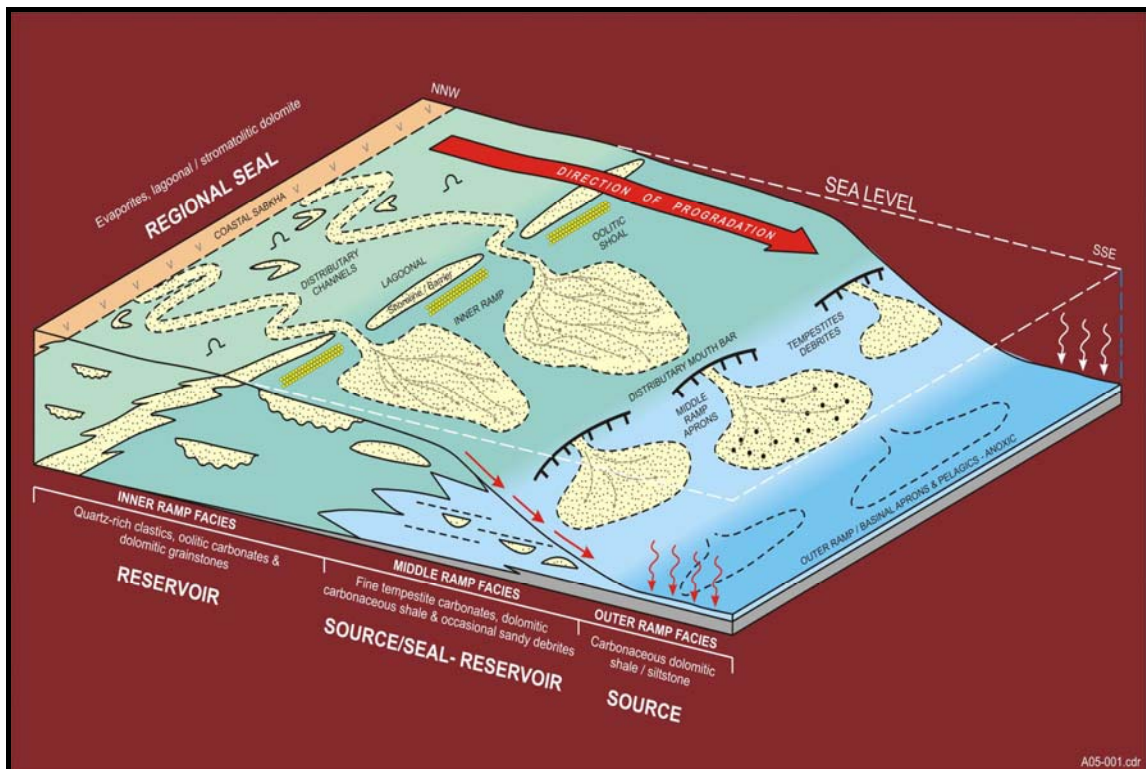


Figure 3 Middle Cambrian Depositional Facies in the Southern Georgina Basin

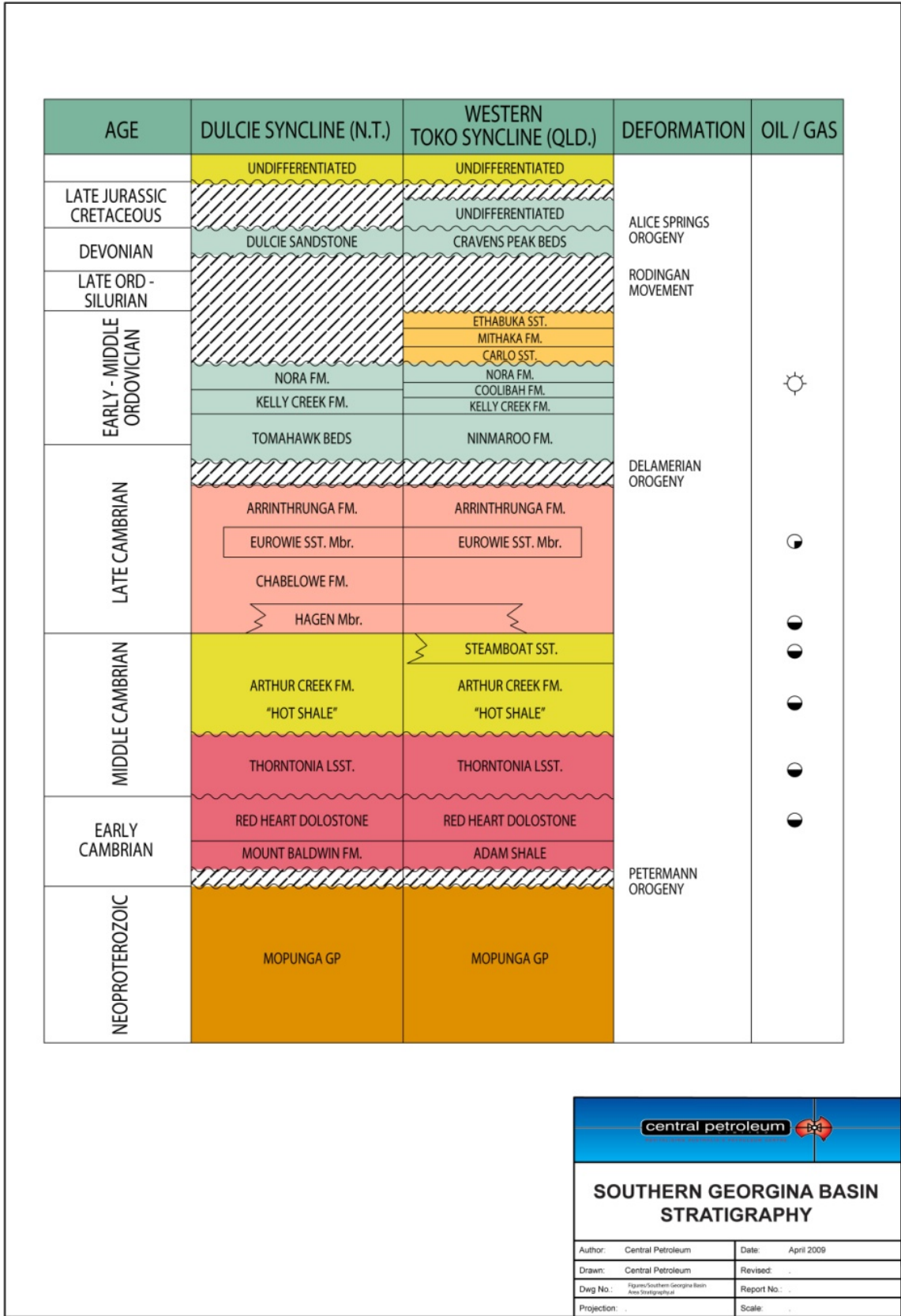



Figure 4 Southern Georgina Basin Stratigraphic Column



SOUTHERN GEORGINA BASIN STRATIGRAPHY

Author: Central Petroleum	Date: April 2008
Drawn: Central Petroleum	Revised: .
Dwg No.: Figure/Southern Georgina Basin Area Stratigraphy	Report No.: .
Projection: .	Scale: .

1) **Incision Channels SE Georgina Basin:** A deep erosive channel facies (up to 230 m thick) is observed on seismic incising the Arthur Creek Formation/ Steamboat Sandstone in the region of the northern Toko Syncline in the SE Georgina Basin. CTP believes the channel(s) result from incision of a near shoreline facies (Steamboat Sandstone) developed at the top of an upward shallowing middle Cambrian carbonate ramp sequence (Arthur Creek Formation); the channel(s) are believed to have formed during a major fall in sea level.

The identification of major incision on an “emergent” surface denoting a regional unconformity at the top of the Arthur Creek Formation/Steamboat Sandstone is consistent with observations from the western portion of the basin. In CTP’s area the channel cuts down about 230 m into the Arthur Creek Formation. The associated valley fill is interpreted to comprise initial coarse clastics transgressed by fine-grained marine sediments. This large deep scour appears to have formed by fluvial erosion rather than tidal ravinement, based on the large thickness of channel fill.

The Arthur Creek Formation / Steamboat Sandstone, typically comprises an upward coarsening carbonate ramp sequence capped by inner ramp/shoreline sandstones and oolitic sediments. The incision channel in question post dates and erodes into this near shoreline section and the depositional model is described in Figure 2. The channel facies are genetically related to near-shoreline facies of the Steamboat Sandstone, which interfinger with the top Arthur Creek Formation, and probably trap clastics brought to the shoreline by fluvial systems.

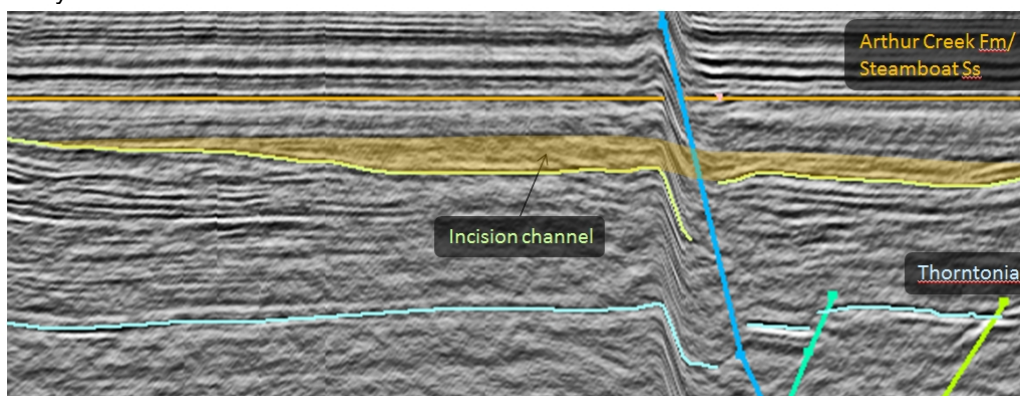


Figure 5 Incision Channel SE Georgina Basin; Seismic Line Hung on the Top Steamboat Sandstone

2) Middle Ramp Submarine Channels SE Georgina Basin

The middle ramp facies of the Arthur Creek Formation comprises mainly tempestite carbonates, dolomitic carbonaceous shales/siltstones and occasional sandy debrites. In addition seismic data indicates major submarine channel facies developed on the middle ramp are up to 100 m thick and several km across. These channels would have delivered quartz and carbonate clastics to the middle/outer ramp and to a much lesser degree the distal basin. The seismic gives an insight into what may be an attractive reservoir in the basin embedded in tight silty carbonates which likely offer encompassing seal. It is well documented that tight carbonaceous siltstones dominate the outer ramp/basinal facies and provide the main hydrocarbon source for the basin; these shales extend upward into the middle ramp facies. The lowermost organic rich shales show regional development and are believed to have expelled 40 billion tonnes (320 billion barrels) of oil (Sibgeo, 1991,1992); this is a very encouraging scenario for submarine channel plays on the middle ramp which compliment incision channel plays developed on the inner ramp and behind the Steamboat shoreline.

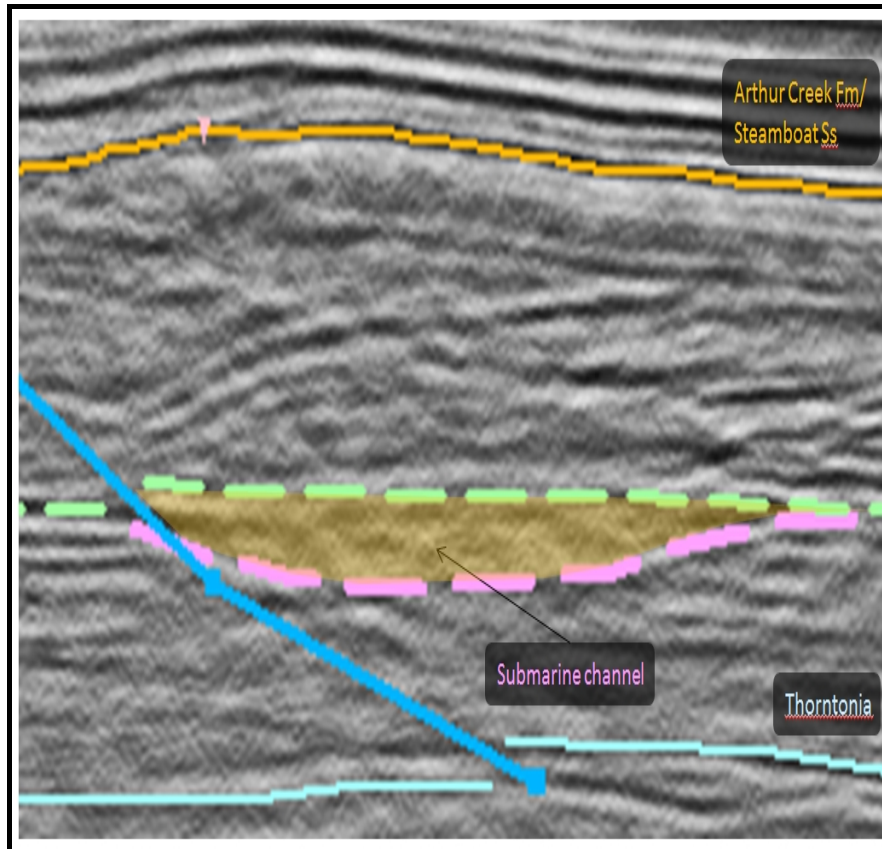


Figure 6 Intra - Arthur Creek Fm Submarine Channel

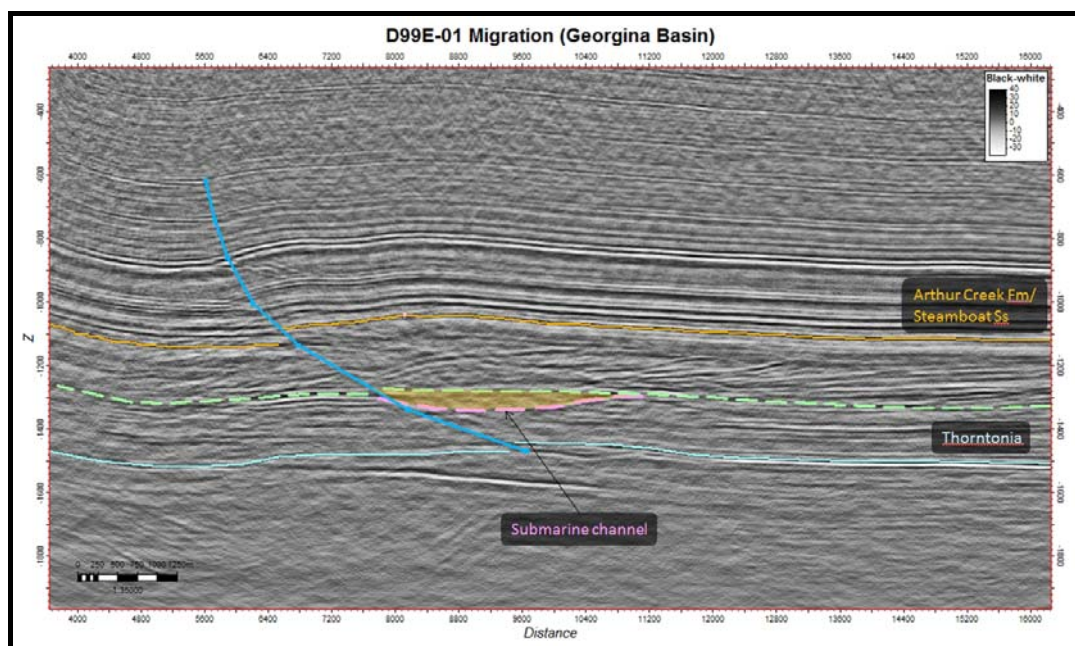


Figure 7 Intra – Arthur Creek Sub-marine Channel, SE Georgina Basin, Queensland

Charge and Entrapment – Middle Cambrian Sequence SE Georgina Basin

Much of the southern Georgina Basin has been unroofed and this is easily demonstrated by the occurrence of oil mature source rocks at very shallow depths. The current landscape is ancient in its origins as is the case over much of central-western Australia. Erosion of Georgina Basin sequences probably commenced in the Late Triassic when a regional easterly tilt was imposed; this is seen to the south in the Pedirka Basin area where there was also extensive epeirogenic Miocene uplift and erosion which removed huge thicknesses of Cretaceous sediments in that area. A major consideration in the Georgina Basin, is that part of the Ordovician – Carboniferous loading sequence, effectively responsible for oil generation (in places pre – Alice Springs Orogeny), has been eroded over much of the basin. This idea of “early” generation suggests “older” stratigraphic/structural traps are attractive targets. (e.g. the incision and submarine channels). However, the temporal and spatial distribution of oil charge is complex (e.g. Ambrose and Putnam 2007, Volk et al-2007, Boreham and Ambrose-2007) and multiple source rocks and pulses of oil generation have been proposed. Hence relatively “late” phases of oil generation (post or late Alice Springs Orogeny time) could also have charged ASO structural targets.

SE Georgina Basin Petroleum Systems and Seals

There are three active Middle Cambrian petroleum systems in the southern Georgina Basin, namely the Thornton Limestone, The lower Arthur Creek Formation and the Hagen Member (Ambrose et al, 2001, Boreham and Ambrose, 2007). Each of these petroleum systems has distinctive geochemical signatures based on biomarker, bulk carbon isotopes of aromatic hydrocarbons and n-alkane-specific carbon isotopes. Analysis of a wide selection of oil stains from these source rocks show that these oil populations display a strong correlation with their reservoir unit across the basin. This suggests juxtaposition of source and reservoir within the same stratigraphic units and hints that vertical migration through the sediment pile was restricted by the relatively tight nature of the rocks, except in the case of significant fracturing in the sequence. This is supported by fluid injection studies carried out on a number of stratigraphic units.

On a regional scale in the SW part of the basin (Northern Territory), the Chabelowe Formation appears to form a semi-regional seal to Hagen Member oil stained grainstones charged from underlying shales in the Arthur Creek Formation and in some cases intra-Hagen Member shales, although these have not been recognised in the SE portion of the basin. A possible facies variant of the Chabelowe Formation may be present in Mirrica -1, Todd-1, Netting Fence-1 and Owen-2 where there is a distinctive change in the density and GR logs, but no definitive evidence of a pervasive seal.

Stratigraphically higher in the section, the Ordovician Kelly Creek Fm-Coolibah Fm / Nora Fm reservoir/seal couplet is a relatively young target which flowed 200 mcf/d from the Kelly Creek Fm in Ethabuka-1. The overlying Ordovician Carlos Sandstone / Mithaka Formation couplet is the youngest target in the basin and should be prospective for gas in structural plays in the deeper parts of the Toko Syncline. These two targets probably have the best top-seal integrity capable of surviving folding/faulting, which could provide migration conduits from more deeply buried Middle Cambrian source rocks.

The potential target reservoir /seal couplets in undisturbed Middle to Late Cambrian sequences in the southeastern Georgina Basin are discussed below in the context of the three main petroleum systems.

1) Hagen Mbr (Chabelowe Fm) Petroleum System

This source rock is responsible for oil stains within the Chabelowe Fm in Hacking-1, MacIntyre-1 and Randall-1 in the southwestern Georgina Basin, and in Todd-1 in the

southeastern Amadeus Basin; in the case of MacIntyre-1 the generated oil has undergone minimal primary migration. Generally the Hagen Petroleum System (oil) is characterised by elevated gammacerane content relative to C 30 hopane which is consistent with the evaporitic environment of deposition (Boreham and Ambrose, 2007). However, on the western margin of the basin, Hagen Mbr oil stains at Elkedra-2 and Elkedra-7A have an Arthur Creek Fm source. This is consistent with the fact that Arthur Creek shales immediately underlie the Hagen Mbr (oil stains) and supports the notion of limited vertical oil migration up through the sedimentary pile in tectonically quiescent areas.

Drill hole data is very sparse in Queensland but to date the thick anhydrite seals developed within the Hagen Member in the NT have not been encountered in CTP's Queensland permits nor are the red bed/evaporite seals in the upper Chabelowe Formation. The most likely seal scenario, especially where tectonism (faulting, folding) is minimal, relies on intraformational seals in what is basically a very tight sequence.

2) Lower Arthur Creek Formation Petroleum System.

The organic rich shales of the lower Arthur Creek Formation (and to a lesser extent organic shale in the Thornton Limestone) are widespread in the Queensland tenements and the most attractive seal scenario leverages intraformational seals, as most lithologies in the Arthur Creek Formation are tight. Within the Arthur Creek Formation facies mosaic there a number of target conventional reservoir facies eg coarse-grained tempestites, debris flows, submarine channels, oolitic shoals and near shoreline sands; all of these have potential to be sealed by intraformational shales/siltstones which can be up to 10 m thick.

Well data from the Queensland portion of the basin doesn't generally reveal a seal to the top Steamboat Sandstone which usually appears to be in reservoir communication with the Hagen Member cemented grainstones. However, seismic images of incision channel fill being transgressed by topset tidal / marine shales (possible top seal) favour this play but it's veracity can only be confirmed by drilling.

3) Thornton Limestone Petroleum System

The sealing and source capacity of the basal Arthur Creek Formation shales are well established but the target conventional reservoir, the underlying Thornton Limestone, was a conduit not only for oil migration but also for hydrothermal fluids generated during the Alice Springs Orogeny; as a result it's reservoir capacity is compromised in many exploration wells although hydrocarbon shows are quite common. Intra-Thornton organic rich shales are well developed on the western margin of the basin (Ammaroo 1) and are also present in Owen-2 and Bradley-1 but not in Mirrica-1, Todd-1, Netting Fence -1 or Mt Whelan-1. Regional oil migration along the Thornton conduit is evidenced in Bradley-1 where oil extracted from Thornton core had a thermal maturity of VR0 = 0.8, compared with VR0 ~ 0.5 in adjacent organic shales.

Regional Depositional Model for the Middle Cambrian

Regional depositional facies for the Middle Cambrian are described in Figures 3 and 8. Figure 3 denotes incision channels behind the Steamboat shoreline while submarine channels are shown feeding deeper turbidite fans/aprons. The facies in Figure 10 differs slightly in that the channels behind the shoreline are shown to be tide dominated and are transgressed by dolomites of the lower Arrinhrunga Formation. None of the clastic facies described here have been penetrated by the drill but they can be interpreted on seismic data, and this note defines the first examples from the area of the Toko Syncline.

The lenticular sand prone facies as described herein are in the first instance attractive exploration targets considering the bulk of enclosing sediments should provide encompassing seal in some areas, and the underlying lower Arthur Creek shales provide excellent source rocks. These models will hopefully provide a guide for future exploration in this area.

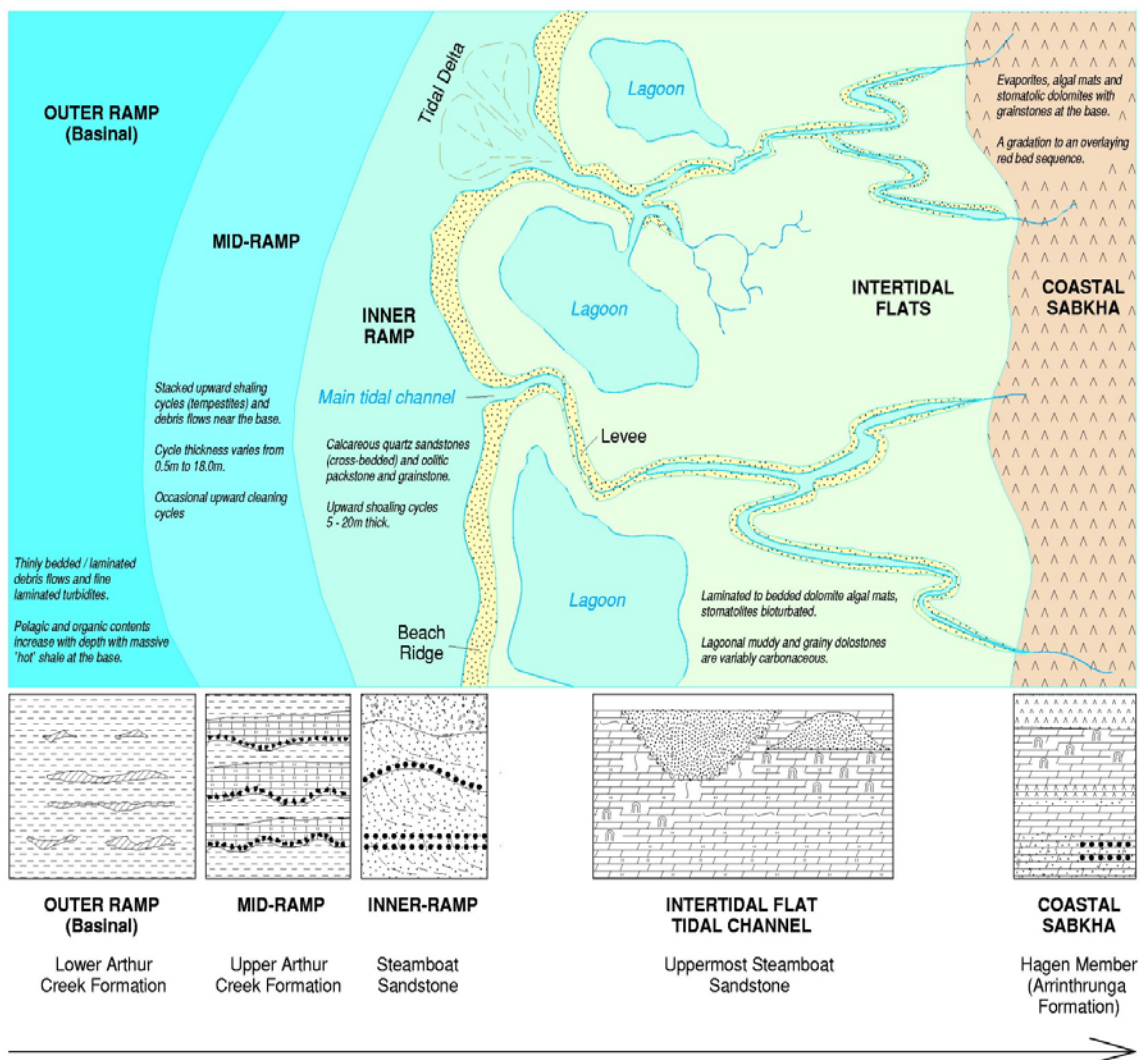


Figure 8 Plan View of Middle Cambrian Facies in the Southern Georgina Basin

Conclusions

- Intraformational sealing lithologies are widespread in the Middle Cambrian of the SE Georgina Basin but can be breached by brittle fracture during phases of folding/faulting. However, away from the main bounding faults the sequence does not appear to be heavily tectonised and in these areas the Arthur Creek facies mosaic lends itself to unbreached structural/stratigraphic plays. This concept is supported by the recent recognition of incision and submarine channels within the middle/upper Arthur Creek Formation.
- The highest integrity top seals are shales within the basal Arthur Creek Formation and thick shales/siltstones within the Ordovician Nora and Mithika Formations. These should provide valid top seal even in moderately tectonised zones.
- Intraformational Arthur Creek Fm seals have not been proven but the sequence is mainly tight as a result of complex diagenesis on a carbonate ramp. However the unit can be quite brittle and as a result prone to fracturing but there is good potential for valid top seal via interbeds of argillaceous, dolomitic siltstone/shale which can reach up to 5–10 m in thickness.

- Higher intensity tectonic regimes are more likely to encourage fracturing and vertical leakage to stratigraphically higher top seals (Ordovician) in the Nora and Mithaka Formations which are widespread in the SE Georgina Basin. There is evidence of a breached? Middle Cambrian sourced oil column, sealed by Nora Fm shales in Ethabuka-1.
- The SE Georgina Basin exhibits regional source rock development in the Lower Arthur Creek Formation but the sequence is likely to show complex seal capability as a result of variable tectonic intensity and marked facies variations in the Middle-Upper Arthur Creek Formation in particular.



Thinly Bedded Turbidites and pelagics in the lower Arthur Creek Formation

Greg Ambrose
Manager Geology

Dr Jacque Sayers
Senior Geophysicist

Central Petroleum Limited August 2011

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