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EL 4379

LAKE FROME

ANNUAL REPORTS AND FINAL REPORT TO LICENCE SURRENDER, FOR THE PERIOD 12/11/2009 TO 11/5/2013

Submitted by
Core Exploration Ltd
2013

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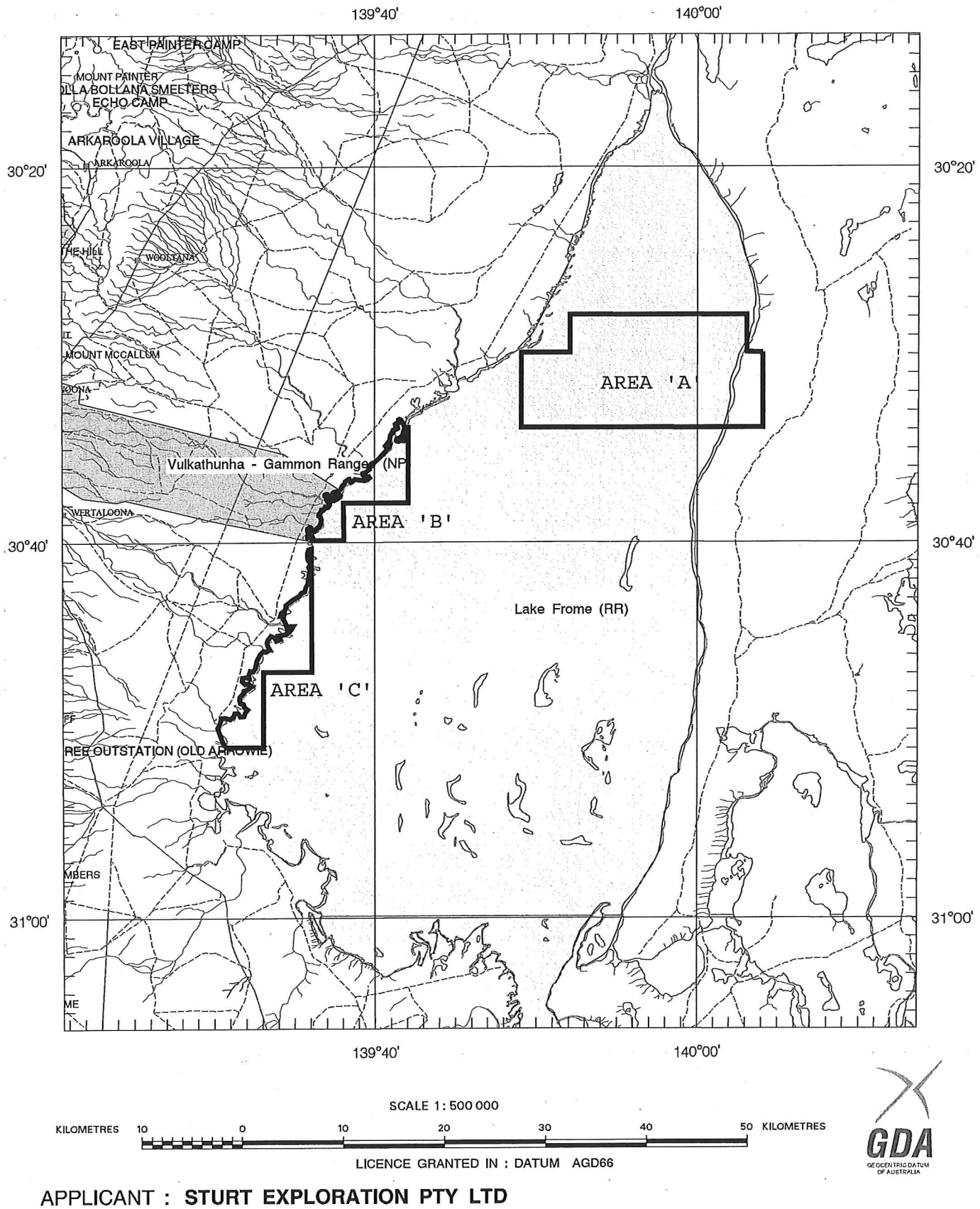
Government of South Australia
Department for Manufacturing, Innovation, Trade, Resources and Energy

SCHEDULE A



SCALE 1 : 500 000

KILOMETRES 10 0 10 20 30 40 50 KILOMETRES

LICENCE GRANTED IN : DATUM AGD66

GDA
GEOCENTRIC DATUM OF AUSTRALIA

APPLICANT : **STURT EXPLORATION PTY LTD**

FILE REF : **168/07** TYPE : **MINERAL ONLY** AREA : **331** km² (approx.)

1:250000 MAPSHEETS : **FROME**

LOCALITY : **LAKE FROME AREA - Approximately 120 km of Leigh Creek**

DATE GRANTED : **12-Nov-2009** DATE EXPIRED : **11-Nov-2009** EL NO : **4379**

Annual Technical Report

EL 4379 Lake Frome

For the period 12 November 2009 - 11 November 2010

Tenure holder | Core Exploration Ltd
Author | Michael Schwarz

Tenement operator | Core Exploration Ltd
Report date | 18th April 2011

Distribution: Primary Industries & Resources South Australia (digital copy)
Core Exploration Ltd (digital + hard copy)

Summary

This first annual report details the work undertaken by Core Exploration Ltd on Exploration Licence 4379 (Lake Frome) in the Frome Embayment area during the period 12 November 2009 - 11 November 2010. The Frome Project consists of one EL which covers 331 km^2 of Lake Frome, a salt lake with a surface dominated by halite that stands about 12m above sea level. The area is within the region defined by the Beverley, Four Mile, Honeymoon, Gould's Dam and Oban roll front uranium mines and projects and is situated in a similar geological setting.

The topography of the Curnamona Province can be categorised broadly into low relief Quaternary plains that include longitudinal dune-fields, expansive clay-pan areas and evaporitic playas which are dominated by Lakes Frome and Callabonna in the northwest. The plains are bordered by low ranges to the east and south, and low to high ranges to the west. The terrain generally has less than 100m relief.

The project area is located on the Lake Frome Salt Lake to the east of the Beverley and Four Mile uranium mines. Access is via the roads that service those mines and then by bush track and by driving across flat desert country to the shore of lake Frome.

Most of the area of the Lake Frome exploration licences is covered by flat lying alluvium of varying depth with potential for covered Tertiary aged palaeochannels to be present.

During the reporting period, Core Exploration undertook a review of previous exploration work to identify the potential for palaeochannel hosted roll-front uranium mineralisation.

Keywords

EL 4379, Lake Frome, Frome Embayment, Uranium

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EL4379_2010_A_01_ReportBody.pdf	**222kb**
EL4379_2010_Figure1_Tenement_location.png	**136kb**

1. Introduction

This first annual report details the work undertaken by Core Exploration Ltd on Exploration Licence 4379 (Lake Frome) in the Frome Embayment area during the period 12 November 2009 - 11 November 2010. The Frome Project consists of one EL which covers 331 km^2 of Lake Frome, a salt lake with a surface dominated by halite that stands about 12m above sea level. The area is within the region defined by the Beverley, Four Mile, Honeymoon, Gould's Dam and Oban roll front uranium mines and projects and is situated in a similar geological setting.

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2. Tenure

Tenement details for EL 4379 are detailed below in **Table 1**

EL	Name	Tenure holder	Tenement operator	Area (km^2)	Grant Date	Expiry Date
4379	Lake Frome	Sturt Exploration Pty Ltd	Core Exploration Ltd	331	12 Nov 2009	11 Nov 2010

3. Geology

In the Lake Frome area and extending from the Mount Painter Inlier in the northwest to the Olary Domain in the southeast, flat-lying, undeformed Cambrian sediments overly Palaeo to Mesoproterozoic, deformed and possibly mineralised basement rocks and together form the Curnamona Province. The Cambrian sediments make up the Arrowie Basin which consists of the Moorowie and Yalkalpo Sub-basins which are separated by the Benagerie Ridge. Neoproterozoic to Early Cambrian marine sediments, dominated by meta-siltstone, sandstone and meta-glaciogene sediments (referred to as 'Adelaidean rocks') – exceed 2,000m in thickness in parts of the Moorowie Sub-basin which underlies Lake Frome. To the east Adelaidean sediments form a thin veneer over parts of the Benagerie Ridge and there is quite a lot of variation in the depth to basement. Broadly spaced seismic coverage completed to assess the area's petroleum potential can be used to map this old land surface. Deformation and low to moderate grade metamorphism during the Delamerian Orogeny has imparted a fabric of variable intensity on both Adelaidean and Cambrian rocks in the south, but does not affect equivalent units in the central Curnamona Province.

A marine incursion in the Early Cretaceous resulted in sediment deposition extending over the Province's central and northern portion of the Eromanga Basin. Widespread deposition of terrigenous sediments across much of the Curnamona Province followed in the Palaeogene

to form the Lake Eyre Basin. Together with Neogene alluvial and aeolian sediments, these form a sediment blanket ranging in thickness from less than a few metres close to the ranges to over 250m in the northwest.

The Namba and Eyre Formations are interpreted to extend throughout the area under shallow depths of recent cover and salt lake mud. The Namba Formation is typically between 50-100m thick and the Eyre Formation is 20-40 m thick. The depth to basement rocks is variable and needs to be more precisely defined using seismic data but is probably more than 600m.

4. Exploration Rationale

Roll-front uranium deposits are located to the northwest and southeast of the Frome licences and it is likely that palaeochannels, or even multiple palaochannels on different sedimentary horizons cross the licence area. There is the potential to locate roll-front type uranium deposits in these channels. Potentially mineralised basement rocks under various aged cover sediments underlie the area but at depth. Targets within basement highs may be at drillable depths but further interpretation of seismic data is required. On current information it is likely that the basement is too deep under Core's Frome EL but further evaluation will be of value as there is quite a lot of relief in the underlying basement.

5. Previous Exploration

Modern exploration in the area commenced in the 1970s with companies targeting roll-front uranium, buried Olympic Dam style IOCG-U; $NaCO_3$ rich brines forming fossil crystalline trona bed style Tertiary deposits; heavy minerals sands and strontium-bearing sulphate mineral celestite within lacustrine chemical sediments.

Petroleum companies have assessed the potential of the Arrowie Basin through geological compilations, broadly-spaced seismic traverses, including across Lake Frome and a few wells. Well Moorowie 1 drilled in 1984 by Delhi Petroleum Pty Ltd to a total depth of 720m is located near the south-western edge of Lake Frome approximately 18km from the edge of the southernmost sub-block of EL4379. It recorded 99m of Namba Formation from 104-137m and 11m Eyre Formation from 137-148m. The Cretaceous extends to 237m with underlying Cambrian rocks to 2,228m and flat lying Pre-Cambrian rocks continuing to the end of hole at 3,246 m, interpreted to be just above crystalline basement rocks which are likely to be equivalent to those that elsewhere host the Mesoproterozoic Hiltaba Granite Suite and its equivalents.

Well Bumbarlow 1 was drilled in 1977 to a total depth of 720m by the Department of Mines and Energy, Geological Survey Fossil Fuels Division and aimed to test the lithology and petroleum potential of the Cambrian section in the central part of the eastern Arrowie Basin. It was located just to the east of Lake Frome and near 2km from the northern sub-block of EL4379. Tertiary and Recent sediments are 192m thick and overlie 209m of Mesozoic which in turn overlies a flat lying, conformable sequence of sediments and lavas encountered at 401m depth that are interpreted as Proterozoic in age and dated at 1360 +- 140 Ma. These rocks are younger than the Olympic Dam hematite breccia ages of 1590–1550 Ma but older than Mount Painter breccias. The Cambrian rocks have been removed by erosion due to basement uplift similar to at the Benagerie Ridge, while Hiltaba Suite hosting Mesoproterozoic rocks will potentially exist below the end of hole.

Recently geothermal energy explorer Deep Energy Ltd has drilled holes to the west of the lake but has not released details of cover sediment or basement depths.

Heathgate Resources Ltd operates the Beverley insitu leach uranium mine to the northeast of Lake Frome and explores the area between the mine and Lake Frome in joint venture with Giralia Resources NL. Marmota Energy Ltd holds the licences around the northern sub-block of EL4379, including on the lake, while Cauldron Energy holds licences to the east of the lake and the southern EL4379 sub-block and have recently announced a joint venture with Uranium Equities to explore the area. South East Energy Ltd holds the ground to the east, including on Lake Frome, which they are exploring for lithium hosted in salt lake brines and sediments and will initially focus on targets where lithium of up to 250ppm was identified in the earlier Comalco (Commonwealth Aluminium Corp. Ltd) trona exploration with sandstone-hosted uranium in palaeochannels and sedimentary basins as a secondary target.

6. Exploration Conducted

During the reporting period, Core Exploration undertook a review of previous exploration work to identify the potential for palaeochannel hosted roll-front uranium mineralisation. Core Exploration concluded that uranium mineralisation is also present in the younger sedimentary cover occurring as 'roll front', redox controlled deposits within the region. Multiple palaeochannel horizons at various ages and depths occur. Proven Tertiary aged endowed horizons are the Eocene Eyre Formation and the Miocene Namba Formation alluvial sediments. World-class deposits and prospects include the Beverley, Honeymoon, Gould's Dam, Four Mile and Oban deposits. Mobilised uranium weathered from uranium-rich, peripheral basement has circulated in groundwater through porous strata and precipitated when it reached a reducing environment, such as carbonaceous sandstone.

Currently Core is awaiting the results of Geoscience Australia Frome Embayment Airborne Electromagnetic Project, due in March 2011, prior to planning any further exploration.

7. Expenditure

Expenditure for the period 12 November 2009 - 11 November 2010 is detailed in **Table 2**

Table 2 Expenditure for EL 4379 – Lake Frome

EL4379 Lake Frome

Minimum annual expenditure 100,000

Detailed annual expenditure for the period 12/11/9 - 11/11/10

Operations	Total
Personnel (Geologists/Geophysycists)	32,500
Food, travel, accommodation	3,400
Vehicle	4,000
Geophysics	17,500
Tenement maintenance	3,000
Admin/overheads (12%)	7,248
Total expenditure for the period	$67,648
+ previous expenditure	0
Total cumulative expenditure for the licence	$67,648

8. Conclusions

Core Exploration concluded that uranium mineralisation is also present in the younger sedimentary cover occurring as 'roll front', redox controlled deposits within the region. Multiple palaeochannel horizons at various ages and depths occur. Proven Tertiary aged endowed horizons are the Eocene Eyre Formation and the Miocene Namba Formation alluvial sediments. World-class deposits and prospects include the Beverley, Honeymoon, Gould's Dam, Four Mile and Oban deposits. Mobilised uranium weathered from uranium-rich, peripheral basement has circulated in groundwater through porous strata and precipitated when it reached a reducing environment, such as carbonaceous sandstone.

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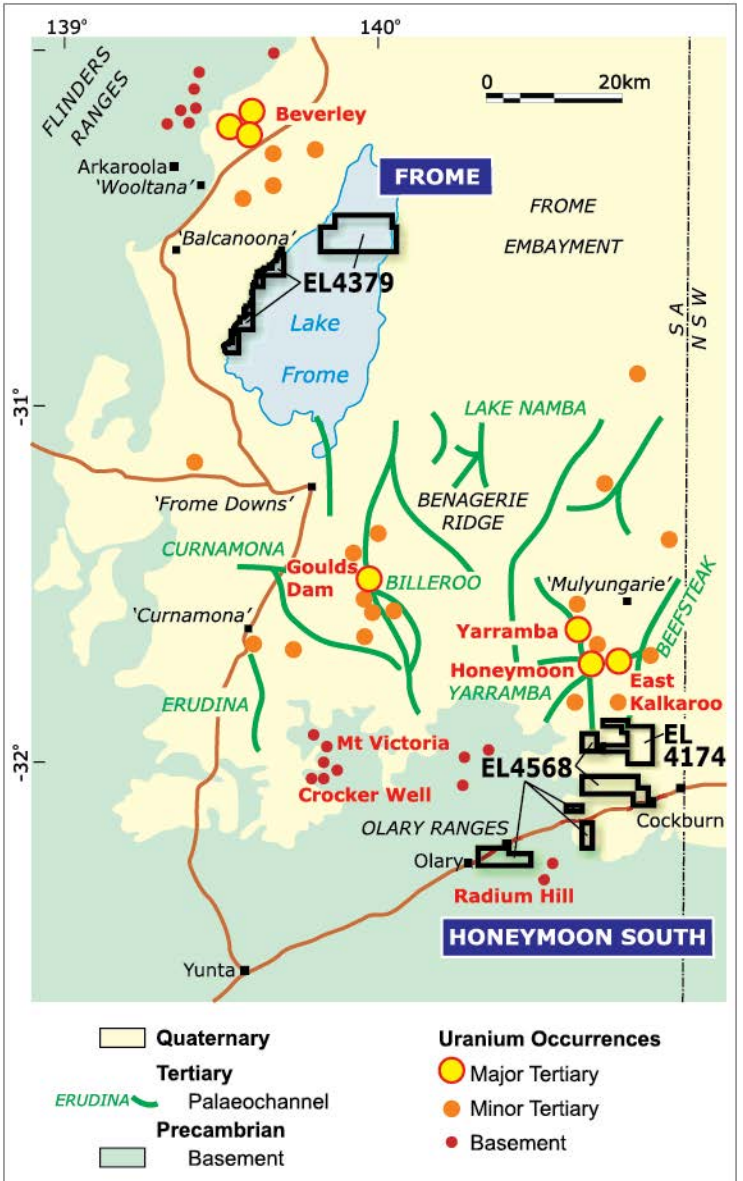
9. References

Core Exploration Prospectus, 2010

Figures


139°
140°
-31°
-32°
FLINDERS RANGES
0
20km
Beverley
Arkaroola
'Wooltana'
FROME
'Balcanoona'
FROME EMBAYMENT
EL4379
Lake Frome
S A
N S W
LAKE NAMBA
BENAGERIE RIDGE
'Frome Downs'
CURNAMONA
Goulds Dam
BILLEROO
'Mulyungarie'
BEEFSTEAK
'Curnamona'
Yarramba
Honeymoon
East Kalkaroo
YARRAMBA
ERUDINA
Mt Victoria
EL 4174
EL4568
Crocker Well
OLARY RANGES
Cockburn
Olary
Radium Hill
HONEYMOON SOUTH
Yunta
Quaternary
Tertiary
ERUDINA
Palaeochannel
Precambrian
Basement
Uranium Occurrences
Major Tertiary
Minor Tertiary
Basement

Core Exploration Ltd

Annual Technical Report for EL 4379

12 November 2009 - 11 November 2010

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Mckenzie, Todd (DMITRE)

From: Briony Avenell [briony@atmc.com.au]
Sent: Monday, 23 April 2012 11:45 AM
To: DMITRE:MRGrecordsofficer
Cc: mschwarz@coreexploration.com.au
Subject: Att: EL Reporting Officer

Dear EL Reporting Officer,

During the Annual Reporting Period for EL4379 (12/11/2010 – 11/11/2011) no technical work was undertaken. Core Exploration Ltd are currently in negotiations with the Native Title Holders to continue ground based exploration during the next reporting period.

Regards,
Briony Avenell
On behalf of Core Exploration Ltd

Briony Avenell (BSc.)
Managing Director

Australian Tenement
Management & Consulting

Mobile | 0427 691 177
Email | briony@atmc.com.au
Web | www.atmc.com.au

PO Box 42, Belair, 5052 SA

Final Technical Report

EL 4379 Lake Frome

For the period 12 November 2009 - 11 May 2013

Tenure holder | Core Exploration Ltd
Author | Michael Schwarz

Tenement operator | Core Exploration Ltd
Report date | 3rd April 2013

Distribution: Primary Industries & Resources South Australia (digital copy)
Core Exploration Ltd (digital + hard copy)

Summary

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Due to a change in focus for the company Core has decided to relinquish the exploration licence.

7. Expenditure

Expenditure for the period 12 November 2012 - 11 May 2013 is detailed in **Table 2**

Table 2 Expenditure for EL 4379 – Lake Frome

EL 4379 Lake Frome

Minimum annual expenditure [*$240,000 over life of tenement*]	$60,000.00

Detailed annual expenditure for the period 12 November 2012 - 11 May 2013

Operations:	**Total**
Personnel (Geologists, Contractors)	$1,911.00
Food, travel, accommodation	$39.00
Tenement Maintenance (Rent, Fees)	$6,451.00
Admin/overheads(12%)	$1,008.00
Total:	**$9,409.00**
Total cumulative from previous expenditure	*$123,012.14*
Total expenditure	**$132,421.14**

8. Conclusions

Core Exploration concluded that uranium mineralisation is also present in the younger sedimentary cover occurring as 'roll front', redox controlled deposits within the region. Multiple palaeochannel horizons at various ages and depths occur. Proven Tertiary aged endowed horizons are the Eocene Eyre Formation and the Miocene Namba Formation alluvial sediments. World-class deposits and prospects include the Beverley, Honeymoon, Gould's Dam, Four Mile and Oban deposits. Mobilised uranium weathered from uranium-rich, peripheral basement has circulated in groundwater through porous strata and precipitated when it reached a reducing environment, such as carbonaceous sandstone.

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9. References

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Figures

Core Exploration Ltd

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