

# **Open File Envelope**

## **No. 9766**

**EL 2504**

**QUINYAMBIE HOMESTEAD AREA**

**PARTIAL RELINQUISHMENT REPORT  
FOR THE PERIOD 30/3/98 TO 29/3/2001**

Submitted by

Paladin Resources Ltd  
2001

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## EXPLORATION LICENCE 2504

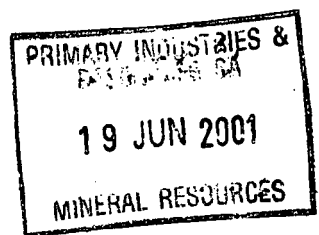
BINGELLY JOINT VENTURE

SOUTH AUSTRALIA

## PARTIAL SURRENDER REPORT

30 March 1998 to 29 March 2001

Volume 1 of 1



Tenement Holder:	Vivanet Ltd
Operator:	Paladin Resources Ltd

*Compiled By P J Hogarth*

*May 2001*

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## SUMMARY

Exploration Licence 2504 has been explored for sedimentary uranium by the Paladin Brightstar Joint Venture (PBJV), with Paladin Resources Ltd as manager of the joint venture.

Work carried out on the area surrendered on 29 March 2001 included:

- Research and compilation of previous drilling data including gamma logs, lithology logs and redox maps. 30 historical drill holes were recorded on the surrendered area.
- Compilation of isopach and structural contour maps.
- Compilation and interpretation of open-file gravity data.

No surveys or on-ground exploration activities were undertaken in the area surrendered in March 2001. For this reason an exploration index map has not been included in this report.

## KEYWORDS

Mapsheet	Frome SH54-10, 1:250,000
Location	Lake Frome, Quinyambie Station, Lake Carnato
Tenements	EL 2504
Commodity	Uranium
Geological province	Curnamona Province
Geological units	Eyre Formation, Namba Formation
Geological age	Eocene, Miocene
Geological structures	Frome Embayment, Benagerie Ridge, Palaeochannels

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As no field work was undertaken on the ground surrendered from EL 2504 in March 2001 an Exploration Index Map has not been included in this report.

## 1.0 INTRODUCTION, HISTORY AND RATIONALE

Exploration Licence 2504 of 721 square kilometres was granted to Spencer Exploration NL in March 1998. Under the terms of an agreement between Spencer and Fortuna NL, Fortuna immediately acquired beneficial ownership of the licence. At about the same time the Bingelly Joint Venture was formed between Fortuna and the parties to the Paladin Brightstar Joint Venture ("PBJV"). Under the terms of the Bingelly Joint Venture the PBJV parties could earn 80% equity in EL 2504 through exploration expenditure of \$150,000 within five years.

Parties to the PBJV, formed in June 1997, were Paladin Energy Minerals NL, a wholly owned subsidiary of Paladin Resources Ltd, and Brightstar Power Corporation Pty Ltd, a wholly owned subsidiary of Black Range Minerals NL (formerly Uranium Australia NL). The two companies contributed equally to exploration expenditure. In June 2000 Brightstar announced its withdrawal from the PBJV effectively ending the joint venture. Paladin has continued as operator and sole earn-in party to the Bingelly Joint Venture, although there has been minimal exploration activity or expenditure since the dissolution of the PBJV.

In June 2000 Fortuna changed its name to Vivanet Ltd and divested itself of most of its exploration interests. In March 2001 Spencer's interest in EL 2504 was transferred to Vivanet. The company remains as the 100% holder of EL 2504 while Paladin is the operator and manages exploration activities. Paladin has not yet met the \$150,000 expenditure required to earn an 80% interest in the licence.

The primary exploration targets sought by the PBJV were sedimentary uranium deposits in palaeochannels amenable to extraction by in-situ leaching (ISL) rather than conventional open-pit mining operations. A number of such palaeochannels have been interpreted in that part of the Frome Embayment.

In February 2001 application was made for renewal of EL 2504 for a further twelve-month term from its third anniversary on 30 March 2001. The licence was subject to a mandatory 25% reduction in area and renewal was applied for and has been granted

over a reduced area of 294 square kilometres. This report describes all work carried out on the 427square kilometres surrendered on 29 March 2001.

## 2.0 LOCATION AND ACCESS

EL 2504 lies about 400 kilometres north of Adelaide, South Australia on the *Frome SH54-10* 1:250,000 map sheet.. Before reduction in area the licence extended from a point about 45 kilometres east of the eastern shore of Lake Frome to the New South Wales Border. Approximate dimensions were 55 kilometres east-west and 10-20 kilometres north-south (*Figure 1*).

Access is gained over graded gravel roads, from Cockburn on the Barrier Highway via Mulyungarie and Quinyambie Stations. The area is traversed by numerous station tracks.

## 3.0 NATIVE TITLE

When granted EL 2504 was subject to one Native Title claim and Paladin, on behalf of the PBJV was successful in securing a Mining Native Title Agreement with the claimant party. This allowed drilling and other investigations to proceed in 1998. Subsequent amalgamation of claims, changes to claim boundaries and failure of the re-registration test by the relevant claim has placed the validity of the registered agreement in doubt. Clarification of native title issues is required before further exploration is undertaken on the ground.

## 4.0 GEOLOGY

Exploration Licence 2504 is situated off the eastern edge of the Benagerie Ridge within the central-east portion of the Frome Embayment. The exploration targets sought by Paladin are sedimentary uranium deposits within Tertiary sediments lying above Cretaceous and Proterozoic basement. Uranium mineralisation commonly

occurs at depths of 50-120 metres in palaeochannel sands of the Eocene Eyre Formation and Miocene Namba Formation. The source of the uranium mineralisation is the Late Proterozoic rock formations surrounding the Frome Embayment to the east, south and west.

Rollfront type uranium mineralisation occurs in favourable fluvial systems adjacent to basement highs that provide a source for the uranium. Uranium leached from these source areas is transported in oxidised groundwater predominantly flowing within palaeochannels. Deposition of uranium occurs where the transporting water meets reduced sediments. Favourable palaeochannels have been identified in EL 2504 entering the tenement from the south.

## 5.0 INVESTIGATIONS, 1998-2001

Paladin undertook methodical analysis of open-file data as described below. This was used to identify prospective areas and palaeochannels within the licence that could host sedimentary uranium deposits amenable to ISL extraction. Continuing refinement of the geological model has identified ground unlikely to host economic uranium mineralisation and an area of 427 square kilometres was surrendered on renewal of the licence in March 2001.

The exploration technique applied to EL 2504 as part of a compilation and assessment of available open-file drill hole data for the entire Frome Embayment used the MESA Curnamona Dataset as an initial base. Extensive and painstaking research added to this and resulted in:

- Identification of recorded drill holes (Frome Embayment > 4,000, EL 2504 – 107, surrendered area – 30).
- Calculation of accurate collar co-ordinates based on the best available base maps using best-fit techniques, computer digitisation and control by digital GPS location of holes located in the field.

- Calculation of collar RL's using available elevation data and AGSO DEM data contoured in-house.
- Compilation of base geological parameters such as depth to base for principal geological units.
- Use of the above data to identify potential channels and/or sand systems.
- Compilation of redox indicators such as the presence of pyrite and carbonaceous material and appearance of sandstone.
- Evaluation of electric logs to identify unrecorded sand layers.
- Evaluation of gamma logs to identify anomalies and compile maximum and times background (xbg) values.
- Compilation of regional AGSO 5km spaced gravity data.

## 6.0 RESULTS

The ground covered by EL 2504 has previously been explored by a number of companies.

30 drill holes have been recorded in the area surrendered in March 2001. One hole was drilled by Tricentral in 1973, 17 were drilled by Southern Ventures in 1975, 10 were drilled by Marathon in 1979 and two, Yalkalpo One and Two, were drilled by the then Department of Mines and Energy SA. Statistical details of drill holes are tabulated in *Table 1* and their locations are shown in *Figure 2*. The table also shows details of the tenure at the time of drilling, the operator and PIRSA's envelope number for the microfiche record.



## **7.0 ENVIRONMENT**

As previously noted there was no field work or drilling in the areas surrendered from EL 2504 in March 2001. As a consequence there was no requirement to undertake any rehabilitation activities.

## **8.0 CONCLUSIONS**

The areas of EL 2504 selected for partial surrender in March 2001 were selected following examination of previous drilling results. These indicated that in the western and eastern parts of the licence the target host rocks are not present or are very thin.

## **9.0 REFERENCES**

1. Hogarth P, 1999; First Annual Report, Exploration Licence 2504, Bingelly Joint Venture, South Australia; Paladin Resources Ltd unpublished company report.

Because there was no drilling or reportable field activities during the respective periods annual reports were not prepared in 2000 and 2001.

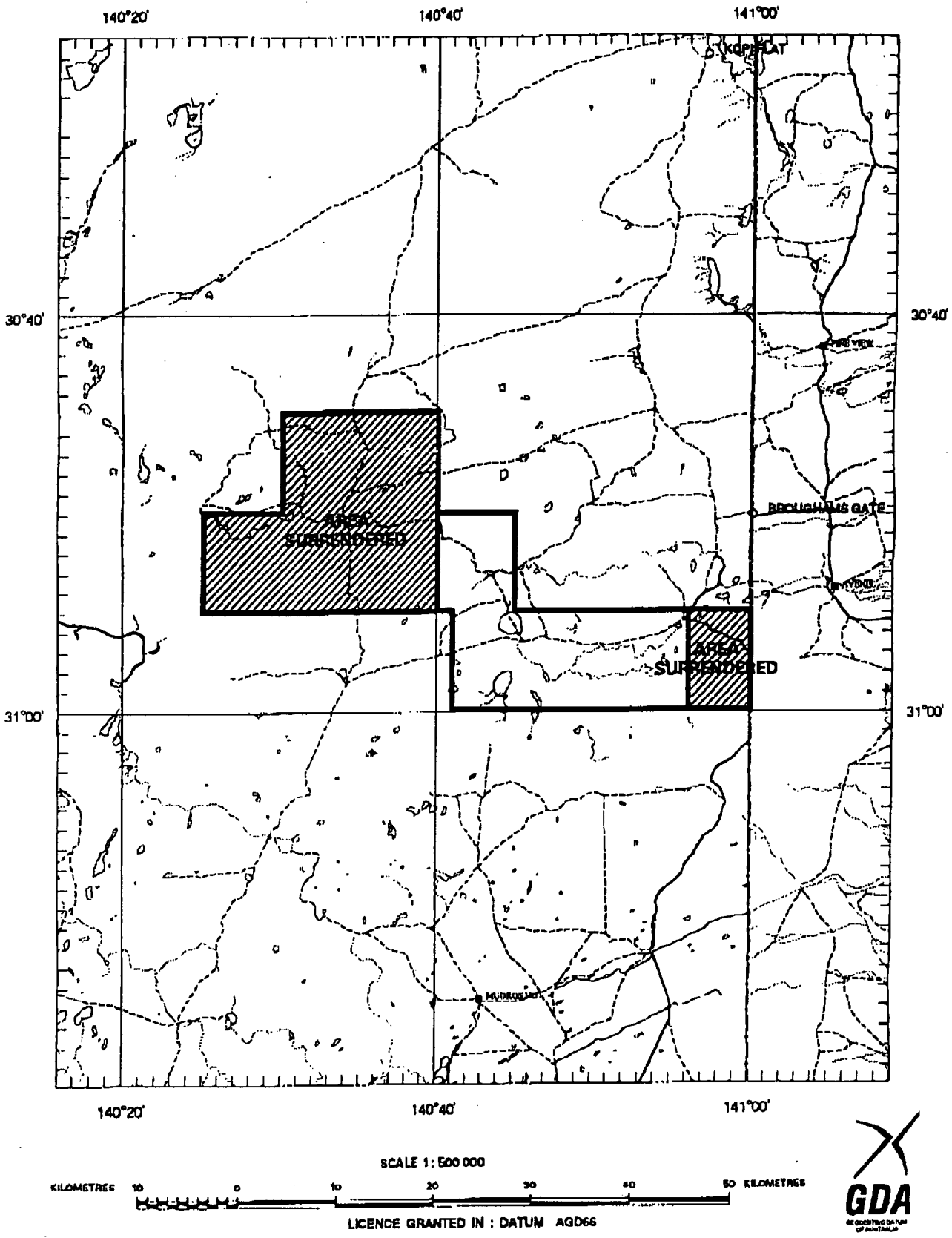
**TABLE 1**  
*(Attached)*

**LAKE FROME EMBAYMENT**

**EI 2504, DRILL HOLE LOCATIONS AND DETAILS FROM OPEN-FILE REPORTS**

*(PORTION OF EL 2504 SURRENDERED MARCH 2001)*

	HOLE	EL	N-AMG	E-AMG	AHD	XBC	MAX CPS	T.DEPH	DATE YR-M	OLD LEASE	COMPANY	ENV NO
1	FE 13	EL2504	6587909.50	464640.69	58.5	5	100	92.0	1975	EL178	S VENT	ENV 2584
2	FE 14	EL2504	6574267.91	497582.65	72.0	0			1975	EL178	S VENT	ENV 2584
3	FE 15	EL2504	6571999.72	495642.58	70.0	0			1975	EL178	S VENT	ENV 2584
4	FE 17	EL2504	6576344.91	499368.29	73.0	0			1975	EL178	S VENT	ENV 2584
5	FE 20	EL2504	6582823.11	467107.46	65.0	4	40	112.00	1975	EL178	S VENT	ENV 2584
6	FE 35	EL2504	6588009	466760	58.5	5	50	101.50	1975	EL178	S VENT	ENV 2584
7	FE 36	EL2504	6592413	465915	60.0	3	25	97.00	1975	EL178	S VENT	ENV 2584
8	FE 37	EL2504	6592479	467989	69.0	4	40	143.00	1975	EL178	S VENT	ENV 2584
9	FE 40	EL2504	6585658.85	463839.54	61.5	8	80	97.50	1975	EL178	S VENT	ENV 2584
10	FE 41	EL2504	6584893.62	462442.24	60.0	3	30	111.00	1975	EL178	S VENT	ENV 2584
11	FE 42	EL2504	6584055.14	465475.83	67.5	7	70	120.00	1975	EL178	S VENT	ENV 2584
12	FE 43	EL2504	6584665.59	466717.37	61.5	6	65	95.50	1975	EL178	S VENT	ENV 2584
13	FE 44	EL2504	6585051.97	467706.64	59.5	60	600	120.00	1975	EL178	S VENT	ENV 2584
14	FE 45	EL2504	6584992.54	467514.69	59.5	1	20	51.00	1975	EL178	S VENT	ENV 2584
15	FE 46	EL2504	6585096.24	467854.02	59.5	1	22	51.00	1975	EL178	S VENT	ENV 2584
16	FE 47	EL2504	6585259.03	467645.39	59.5	5	70	51.00	1975	EL178	S VENT	ENV 2584
17	FE 48	EL2504	6584916.90	467954.86	59.5	1	16	47.00	1975	EL178	S VENT	ENV 2584
18	LC 14	EL2504	6585035	467660	50.3	3	64	116.00	1979	EL802	MARATHN	ENV 3421
19	LC 15	EL2504	6585069	467754	49.5	3	60	49.00	1979	EL802	MARATHN	ENV 3421
20	LC 16	EL2504	6585005	467724	50.3	2	20	49.00	1979	EL802	MARATHN	ENV 3421
21	LC 17	EL2504	6585056	467718	49.8	5	56	49.00	1979	EL802	MARATHN	ENV 3421
22	LC 18	EL2504	6585048	467696	50.0	20	220	49.00	1979	EL802	MARATHN	ENV 3421
23	LC 19	EL2504	6585013	467747	50.2	1	16	48.40	1979	EL802	MARATHN	ENV 3421
24	LC 20	EL2504	6585099	467691	50.7	8	80	48.40	1979	EL802	MARATHN	ENV 3421
25	LC 21	EL2504	6584997	467701	50.5	3	30	47.40	1979	EL802	MARATHN	ENV 3421
26	LC 22	EL2504	6585103	467699	50.5	3	32	49.00	1979	EL802	MARATHN	ENV 3421
27	LC 23	EL2504	6584888	467229	50.4	2	24	115.60	1979	EL802	MARATHN	ENV 3421
28	LE 64	EL2504	6588700.00	448200.00	40.5	0		95.00	1973	EL34	TRICENT	ENV 2392
29	YALKALPO 1	EL2504	6582312.00	453590.00	41.5	0		219.76			DMESA	RB 72/160
30	YALKALPO 2	EL2504	6586972.00	464726.00	48.8	0		781.20	1976		DMESA	RB 77/066



**EXPLORATION LICENCE 2504**  
**BINGELLY JOINT VENTURE**  
**LAKE FROME REGION, SOUTH AUSTRALIA**  
**AREAS RETAINED AND SURRENDERED**  
**MARCH 2001**

Figure 1

