ALJAWARRA PROJECT

EXPLORATION LICENCE 22506 ANNUAL REPORT FOR THE PERIOD ENDING 22 MAY 04

# DEBERSEERS

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KEYWORDS: NT, Georgina Basin, Sampling

ABSTRACT:

Exploration within the current year of tenure (23 May 2003 to 22 May 2004) involved a second pass interpretation of magnetic data. One magnetic anomaly within EL22506 was highlighted for further follow up. Universal Tracking Systems were contracted to acquire 50 m line spaced data at 25 m terrain clearance over this anomaly, and also three anomalies selected on second pass interpretation within EL23415. A total of 119 line km were flown over the four anomalies on the 5<sup>th</sup> May 2004 of which 35 line km were over EL22506. A small ground magnetic survey was also undertaken on EL22506 over a feature of possible interest selected from 200 m line spaced data. A total of 18 line km of data were acquired at 25 m line spacing. Based on the resultant data, this feature is believed to be of little interest and warrants no further work.

An Aboriginal site clearance programme was conducted prior to a sampling programme being undertaken in April and early May 2004 and mainly over tenements EL23415 and EL22506. The sampling programme, on EL22506, involved the collection of 32 stream samples and 21 loam samples.

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## DE BEERS AUSTRALIA EXPLORATION LIMITED

15 HANWELL WAY BASSENDEAN WESTERN AUSTRALIA 6054 AUSTRALIA

### SUMMARY

Exploration Licence:	22506
Application Date:	18 <sup>th</sup> April 2000
Date Granted:	23 <sup>rd</sup> May 2002
Expiry Date:	22 <sup>nd</sup> May 2008
Total Area:	488 Blocks (1,562 km <sup>2</sup> )
Managing and Registered Co.:	De Beers Australia Exploration Limited
Commodities Sought:	Diamonds
Commitment:	\$33,768

#### **Exploration:**

Exploration within the current year of tenure (23 May 2003 to 22 May 2004) involved a second pass interpretation of magnetic data. One magnetic anomaly within EL22506 was highlighted for further follow up. Universal Tracking Systems were contracted to acquire 50 m line spaced data at 25 m terrain clearance over this anomaly, and also three anomalies selected on second pass interpretation within EL23415. Some 119 line km were flown over the four anomalies on the 5<sup>th</sup> May 2004 of which 35 line km were over EL22506. A small ground magnetic survey was also undertaken on EL22506 over a feature of possible interest selected from 200 m line spaced data. A total of 18 line km of data were acquired at 25 m line spacing. Based on the resultant data, this feature is believed to be of little interest and warrants no further work.

An Aboriginal site clearance programme was conducted prior to a sampling programme being undertaken in April and early May 2004 and mainly over tenements EL23415 and EL22506. The sampling programme, on EL22506, involved the collection of 32 stream samples and 21 loam samples.

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### **1.0** INTRODUCTION

Exploration Licence 22506 lies within the Aljawarra project in the Northern Territory. The licence is located on the Sandover River 1:250K mapsheets, within the Georgina Basin.

Diamond exploration conducted by De Beers over the Aljawarra Project within the first year of tenure (23<sup>rd</sup> May 2002 – 22<sup>nd</sup> May 2003) was entirely geophysical. The NTGS Elkedra and Eromanga aeromagnetic surveys were infilled from 400 m to 200 m line spacing within tenement boundaries, and these data were interpreted with the aim of identifying intrusive type magnetic signatures typical of kimberlites: 26,173 line km were flown over the entire project area, and 4,494 of these line km were within EL22506. Unfortunately no priority anomalies were selected within EL22506 from either the 400 m line spaced government data or the 200 m line spaced infill survey.

Exploration within the current year of tenure (23 May 2003 to 22 May 2004) involved a second pass interpretation of magnetic data. One magnetic anomaly within EL22506 was highlighted for further follow up. Universal Tracking Systems were contracted to acquire 50 m line spaced data at 25 m terrain clearance over this anomaly, and also three anomalies selected on second pass interpretation within EL23415. A total of 119 line km were flown over the four anomalies on the 5<sup>th</sup> May 2004 of which 35 line km were over EL22506. A small ground magnetic survey was also undertaken in EL22506 over a feature of possible interest selected from 200 m line spaced data. Some 18 line km of data were acquired at 25 m line spacing. Based on the resultant data, this feature is believed to be of little interest and warrants no further work.

A sampling programme was conducted, mainly over tenements EL22506 and EL223415, in April and early May 2004. On EL22506 a total of 32 stream samples and 21 loam samples were collected.

#### 2.0 TENURE AND ABORIGINAL LIAISON

Tenure details for the Aljawarra Project are outlined in Table 1. De Beers Australia Exploration Limited is the sole managing and registered company for the exploration licences.

Status	Application Date	Grant Date	Expiry Date	Area (Km <sup>2</sup> )	Blocks	Commit't
GRANTED	18-04-00	03-07-03	02-07-09	1150.0	360	\$50,000
GRANTED	18-04-00	23-05-02	22-05-08	1562.5	488	\$33,768
GRANTED	18-04-00	23-05-02	22-05-08	77.0	24	\$20,000
GRANTED	31-01-01	13-02-03	12-02-09	1566.0	499	\$60,000
GRANTED	10-10-01	19-12-02	18-12-08	1381.3	432	\$60,000
GRANTED	10-10-01	19-12-02	18-12-08	1151.1	360	\$45,000
GRANTED	18-04-00	02-04-02	01-04-08	1424.0	455	\$50,000
	Status GRANTED GRANTED GRANTED GRANTED GRANTED GRANTED	Application   Status Date   GRANTED 18-04-00   GRANTED 18-04-00   GRANTED 18-04-00   GRANTED 31-01-01   GRANTED 10-10-01   GRANTED 10-10-01   GRANTED 10-10-01   GRANTED 18-04-00	Application Date Grant Date   GRANTED 18-04-00 03-07-03   GRANTED 18-04-00 23-05-02   GRANTED 18-04-00 23-05-02   GRANTED 18-04-00 23-05-02   GRANTED 13-01-01 13-02-03   GRANTED 10-10-01 19-12-02   GRANTED 10-10-01 19-12-02   GRANTED 18-04-00 02-04-02	Application StatusApplication DateGrant DateExpiry DateGRANTED18-04-0003-07-0302-07-09GRANTED18-04-0023-05-0222-05-08GRANTED18-04-0023-05-0222-05-08GRANTED31-01-0113-02-0312-02-09GRANTED10-10-0119-12-0218-12-08GRANTED10-10-0119-12-0218-12-08GRANTED18-04-0002-04-0201-04-08	Application StatusApplication DateGrant DateExpiry DateArea (Km²)GRANTED18-04-0003-07-0302-07-091150.0GRANTED18-04-0023-05-0222-05-081562.5GRANTED18-04-0023-05-0222-05-0877.0GRANTED31-01-0113-02-0312-02-091566.0GRANTED10-10-0119-12-0218-12-081381.3GRANTED10-10-0119-12-0218-12-081151.1GRANTED18-04-0002-04-0201-04-081424.0	Application StatusApplication DateGrant DateExpiry DateArea (Km²)BlocksGRANTED18-04-0003-07-0302-07-091150.0360GRANTED18-04-0023-05-0222-05-081562.5488GRANTED18-04-0023-05-0222-05-0877.024GRANTED31-01-0113-02-0312-02-091566.0499GRANTED10-10-0119-12-0218-12-081381.3432GRANTED10-10-0119-20218-12-081151.1360GRANTED18-04-0002-04-0201-04-081424.0455

#### Table 1: Tenure Details

The Aljawarra Project is located within the jurisdiction of the Central Land Council (CLC). A search was conducted and maps obtained from the Aboriginal Areas Protection Authority (AAPA) showing locations of recorded and registered sites in the vicinity of the project area. An exploration deed was signed with the CLC on the 21<sup>st</sup> of May 2003, allowing ground access from then on subject to clearance surveys.

A clearance survey was carried out over the proposed work areas by a CLC anthropologist (Olaf Geerken) in April 2004. All sample areas were cleared, and drillholes proposed over four magnetic anomalies (only one on EL22506) were approved.

## 3.0 DESCRIPTION OF PROJECT AREA

## 3.1 Infrastructure

The Aljawarra Project covers an area of 8,310 km<sup>2</sup> and is situated approximately 420 km north-east of Alice Springs and 250 km west-southwest of Mt Isa in the Northern Territory. Vehicle access is restricted to the main Sandover Highway and local station tracks. Stations covered by the project area include Lake Nash, Argadargada, Ooratippra, Annitowa and Derry Downs.

## 3.2 Physiography

The area consists of hill country and red semidesert in the west and south, and grey soil plains in the north and east. An east-west striking divide separates the area into two drainage basins. The northern river system drains most of the area, and consists of the Sandover and Woodroffe Rivers and their tributaries, which lead north-east and east into the Georgina River. The southern river system consists of the Imbordjudu and Bloodwood Creeks. The creeks and smaller streams are parallel; some flow south-eastwards and others flood out to level sandy country.

## 3.3 Geology

(After P.D.Kruse, L.C.Mohammed, J.N.Dunster and M.L.Duffett 2002)

The Aljawarra Block forms part of the North Australian Craton, with an assumed basement age, based on tectonic models and zircon inheritance, to be +3 Ga (Archaean). The project area encompasses a portion of the Southern Georgina Basin which is described as an unmetamorphosed and essentially undeformed Late Cambrian to Early Ordovician and Cainozoic sedimentary rocks. Drilling has revealed in the subsurface metavolcanic schist and Middle to Upper Cambrian sedimentary units, one deep drill hole intersected a Palaeoproterozoic meta-andesite or metabasic rock at 1000 m. Skippy seismic data suggests an anomalously thick lithosphere – some 200 km. The basement is also characterised by relatively low heat flow and low crustal temperatures consistent with the presence of thick cratonic style lithosphere. In the Middle Cambrian the Thorntonia Limestone was deposited in a marine platform setting during a widespread marine transgression. This unit predominately consists of dolostone with locally derived basal terrigenous sediments with interfingering pyritic-carbonaceous black shale interbeds. The Arthur Creek Formation, pyritic carbonaceous black shale and the Steamboat Sandstone, quartz dolostone and quartz sandstone, overlie and complete the Middle Cambrian sequences.

The Late Cambrian is marked by peritidal sequences the Arrinthrunga Formation and its basal equivalent the evaporitic Chabalowe Formation found in the western areas. The dominant units are the calcimudstone, microbial laminate, peloid/intraclast and ooid grainstone, stromatolitic boundstone, quartzic limestone and dolomitic equivalents, and minor quartz sandstone.

During the Cambro-Ordovician, deposition consisted of two main depofacies, the peritidal influenced, marine platform carbonate rocks of the Ninmaroo Formation in the eastern project area and the interfingering terrigenous quartz-glauconite sandstone of the Tomahawk Formation in the western project area. Possible Permian fluvioglacial deposits reside in the east on the Glenormiston mapsheet, however none are mapped in the Northern Territory.

In the Cainozoic terrestrial environment pedogenic and lacustrine (Austral Downs Limestone) conditions prevailed.

## 4.0 DIAMOND EXPLORATION ACTIVITIES

## 4.1 Geophysics

A second pass interpretation of 200 m line spaced data over EL22506 resulted in one anomaly (ALA017), and one low interest feature, being chosen for further work. An additional 3 anomalies were chosen for follow up in tenement EL23415, and UTS were commissioned to undertake a 50 m line spaced aeromagnetic survey at 25 m terrain clearance over all four anomalies. A total of 119 line km were flown over the four anomalies; 35 line km were within EL22506.

The low interest magnetic feature was surveyed using a Geometrics 858 ground magnetometer. 18 line km of data were acquired at 25 m line spacing. The original plan was, in fact, to extend this grid east to cover ALB017, thereby having two datasets over this anomaly to compare and contrast. Problems with the magnetometer cut short the planned survey, however.

Table 2 below contains the location of the magnetic anomaly and the feature covered by the ground survey. Map 3 shows the position of the magnetic anomaly and the sampling over the anomaly. All data are supplied on the compact disk at the back of this report. Images of both datasets are supplied as Maps 4 and 5.

Anomaly	Easting	Northing	Datum & Projection	Priority
ALA017	737053	7648750	GDA94 MGA53	Low Priority
Mag Feature	736205	7648640	GDA94 MGA53	No work

## Table 2: Magnetic Anomalies within EL22506

## 4.2 Sampling

A total of 32 heavy mineral stream sediment samples, consisting of 50 litres of hand excavated stream gravels taken from heavy mineral trap sites and screened to -2 mm, were collected over EL22506. An additional 21 deflation loam samples consisting of 50 litres of swept surface material screened to -2 mm were also collected. Five of the loam samples cover magnetic anomaly ALB017 (BV9416 to BV9420). All samples were collected by vehicle. Table 3 contains the location of all samples taken and Map 3 displays sample positions.

All samples were freighted to DBAE's Perth primary treatment facility for sizing and concentration. Acidised concentrates will be forwarded to De Beers Melbourne Laboratory for secondary sizing and concentration prior to being examined.

## 4.3 Remote Sensing

Aster imagery was purchased from Geoimage covering almost the entire project area. Scenes covering EL22506 are named Scarr, Burramurra, Austral and Georgina. Drainages, tracks and fences were digitised from Aster images to aid the sampling programme, and anomalous circular features, possibly indicative of intrusive pipes, were investigated. One such feature was identified on EL22506; sample BV9769 was taken over this feature. The location of this sample is given in Table 3 (Latitude / Longitude GDA94: 137.225981, -21.148338) and is also displayed on Map 3.

	LONGITUDE		MADOUEET		JAINIFLE
SAMPLE	GDA94	GDA94			
BV9223	137.327297	-21.210542	F5308	STREAM	21/04/2004
BV9224	137.322249	-21.208605	F5308	STREAM	21/04/2004
BV9225	137.317189	-21.211535	F5308	STREAM	21/04/2004
BV9226	137.310089	-21.212655	F5308	STREAM	21/04/2004
BV9255	137.238560	-21.246315	F5308	STREAM	24/04/2004
BV9421	137.244060	-21.228525	F5308	STREAM	24/04/2004
BV9427	137.236360	-21.237616	F5308	STREAM	24/04/2004
BV9428	137.245043	-21.236594	F5308	STREAM	24/04/2004
BV9429	137.254885	-21.236406	F5308	LOAM	24/04/2004
BV9227	137.304909	-21.216595	F5308	STREAM	21/04/2004
BV9228	137.299379	-21.210265	F5308	STREAM	21/04/2004
BV9229	137.294787	-21.212617	F5308	STREAM	21/04/2004
BV9230	137.288842	-21.212965	F5308	STREAM	21/04/2004
BV9231	137.285424	-21.212985	F5308	STREAM	21/04/2004
BV9232	137.277399	-21.214647	F5308	STREAM	21/04/2004
BV9325	137.239419	-21.215800	F5308	STREAM	21/04/2004
BV9326	137.233894	-21.213760	F5308	STREAM	21/04/2004
BV9327	137.230661	-21.214151	F5308	STREAM	21/04/2004
BV9328	137.217620	-21.211726	F5308	STREAM	21/04/2004
BV9329	137.204534	-21.220626	F5308	STREAM	21/04/2004
BV9330	137.185147	-21.229017	F5308	STREAM	21/04/2004
BV9416	137.285097	-21.246309	F5308	LOAM	21/04/2004
BV9417	137.286009	-21.246282	F5308	LOAM	21/04/2004
BV9418	137.285167	-21.247172	F5308	LOAM	21/04/2004
BV9419	137.284083	-21.246373	F5308	LOAM	21/04/2004
BV9420	137.285070	-21.245392	F5308	LOAM	21/04/2004
BV9444	137.184661	-21.244612	F5308	STREAM	26/04/2004
BV9445	137.187296	-21.245853	F5308	STREAM	26/04/2004
BV9446	137.198436	-21.247225	F5308	LOAM	26/04/2004
BV9447	137.206600	-21.246148	F5308	LOAM	26/04/2004
BV9448	137.216358	-21.246164	F5308	LOAM	26/04/2004
BV9449	137.225944	-21.246025	F5308	LOAM	26/04/2004
BV9331	137.290767	-21.234558	F5308	STREAM	22/04/2004
BV9332	137.289930	-21.237076	F5308	STREAM	22/04/2004
BV9333	137.291389	-21.240890	F5308	STREAM	22/04/2004
BV9334	137.288774	-21.246785	F5308	STREAM	22/04/2004
BV9430	137.264246	-21.236411	F5308	LOAM	24/04/2004
BV9431	137.272951	-21.236332	F5308	STREAM	24/04/2004
BV9432	137.283423	-21.236041	F5308	LOAM	24/04/2004
BV9249	137.322305	-21.244748	F5308	LOAM	24/04/2004
BV9250	137.315498	-21.245822	F5308	STREAM	24/04/2004
BV9251	137.302620	-21.245156	F5308	STREAM	24/04/2004
BV9252	137.264450	-21.245483	F5308	LOAM	24/04/2004
BV9253	137.254842	-21.245617	F5308	LOAM	24/04/2004
BV9254	137.245191	-21.245778	F5308	LOAM	24/04/2004
BV9422	137.235203	-21.227850	F5308	LOAM	24/04/2004
BV9423	137.226223	-21,228054	F5308	STREAM	24/04/2004
BV9424	137,216003	-21,228091	F5308	LOAM	24/04/2004
BV9425	137.215879	-21,237252	F5308	STREAM	24/04/2004
BV9426	137.225826	-21,236878	F5308	LOAM	24/04/2004
BV9256	137.302499	-21.235864	F5308	LOAM	26/04/2004
BV9769	137.225981	-21.148338	F5308	LOAM	8/05/2004
BV9770	137.327297	-21.210542	F5308	STREAM	8/05/2004

Table 3: Samples taken over EL22506 within the current reporting period

### 5.0 RESULTS

Images of magnetic data resulting from both the airborne geophysical survey, and from the ground magnetic survey, are given as Maps 4 and 5. Data are included in the compact disc at the back of this report. The magnetic feature covered by ground magnetic data is not recommended for further work, while anomaly ALB017 covered by airborne data has been assigned as a low priority follow up target.

All samples were freighted to DBAE's Perth primary treatment facility for sizing and concentrating. Acidised concentrates will be forwarded to De Beers Melbourne Laboratory for concentration and preparation prior to being examined. Examination results are expected in the third quarter of 2004.

#### 6.0 CONCLUSION

Exploration over EL22506 during the current year of tenure involved a second pass interpretation of 200 m line spaced aeromagnetics, two small detailed magnetic surveys (one ground and one airborne), the acquisition and interpretation of Aster imagery, and a sampling programme consisting of 32 heavy mineral stream samples and 21 deflation loam samples. One magnetic anomaly (ALB017) has been awarded a low priority for follow up. Results of the sampling programme are until the third quarter of 2004.

#### 7.0 PROPOSED FORWARD WORK PROGRAMME

The forward work programme will depend upon sample results, but it anticipated that a vehicle assisted detailed deflation loam grid sampling programme will be undertaken, to follow up positive results. Deflation loam samples at regular close intervals, the parameters of which will be determined by the sample results. Also further stream samples may be collected in areas outside the detail loam grid targets. Stream samples will be collected from heavy mineral trapsites, consisting of 50 lt of gravels hand sieved to -2mm. If coherent heavy mineral targets are generated then a drilling programme may be undertaken to locate the source(s) of such indicators. Samples will be freighted back to DBAE's Perth primary treatment facility for sizing and concentrating. Acidised concentrates will be forwarded to the De Beers Melbourne Laboratory for secondary concentration and examination.

Magnetic anomaly ALB017 is planned for drill testing. Small Mine Management Plans (SMMPs) have been submitted to the NTDME, and the site of the drill hole has been cleared by the CLC.

See Table 5 for proposed expenditures for the third year of tenure.

#### 8.0 EXPENDITURE

Expenditure from De Beers Australia Exploration Limited for the second year of tenure of EL22506 is shown in Table 5 below. Covenants were met for this licence.

ITEM	2003/4 ACTUAL EXPENDITURE	2004/5 PROPOSED EXPENDITURE
CLC anthropological survey and compensation	\$6,077	\$5,000
Aboriginal Compensation	\$2,301	\$2,000
Field expenses	\$2,160	\$2,000
Tenement management	\$331	\$1,000
Perth treatment plant	\$504	\$5,000
Melbourne treatment laboratory	\$12,947	\$10,000
Transport and travel	\$1,364	\$5,000
Salaries & wages	\$9,477	\$10,000
Geophysical contractors (Universal Tracking Systems)	\$2,353	
Drilling	NA	\$5,000
Aster Data	\$400	
Specialist Services	\$3,248	\$2,000
Tenement Rent	\$5,368	\$10,000
TOTAL	\$46,530	\$57,000

#### Table 4: Expenditure Details

## 9.0 References

Kruse P.D, Mohammed L.C., Dunster J.N. and Duffett M.L., (2002) Sandover River, N.T. 1:250 000 Geological Map Series Explanatory Notes, Second Edition.

Karen Pittard Staff Geologist









