ALJAWARRA PROJECT

EXPLORATION LICENCE 22995 SECOND ANNUAL & SURRENDER REPORT DECEMBER 2004

# DE BEERS

PROJECT:	Aljawarra Project		
TITLE:	Exploration Licence 22995		
	Second Annual & Surrender Report		
	December 2004		
		EDITED:	SJG
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				Sandover River (SF53-08), Avon Downs (SF53-04)						
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ABSTRACT:

Exploration during the life of EL22995 included the following: the NTGS Eromanga aeromagnetic survey was infilled from 400 m to 200 m line spacing within the tenement boundary; data from the NTGS Georgina Survey were interpreted; two priority magnetic anomalies chosen from the infill data were followed up with loam samples and drill tested; and 10 stream samples consisting of 50 litres of hand excavated stream gravels were collected from heavy mineral trap sites.

Results were disappointing. Drill holes intersected no kimberlitic material, loam samples were negative save one which contained a single non-kimberlitic chromite grain, and stream samples contained only non-kimberlitic chromite grains of uncertain origin, possibly fluvio-glacially transported. Exploration licence 22995 was surrendered on the 8<sup>th</sup> October 2004.

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# DE BEERS AUSTRALIA EXPLORATION LIMITED

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#### SUMMARY

Exploration Licence:	22995
Application Date:	31 <sup>st</sup> January 2001
Date Granted:	13 <sup>h</sup> February 2003
Surrender Date:	8 <sup>th</sup> October 2004
Total Area:	499 Blocks (1,566 km <sup>2</sup> )
Managing and Registered Co.:	De Beers Australia Exploration Limited
Commodities Sought:	Diamonds
Commitment:	\$61,000

#### **Exploration:**

Exploration during the life of EL22995 included the following: the NTGS Eromanga aeromagnetic survey was infilled from 400 m to 200 m line spacing within the tenement boundary; data from the NTGS Georgina Survey were interpreted; two priority magnetic anomalies chosen from the infill data were followed up with loam samples and drill tested; and 10 stream samples consisting of 50 litres of hand excavated stream gravels were collected from heavy mineral trap sites.

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Map 3 Sample Location Map

#### **1.0** INTRODUCTION

Exploration licence 22995 lies within the Aljawarra project in the Northern Territory. The licence is located on the Sandover River and Avon Downs 1:250K map sheets, within the Georgina Basin. Access to EL22995 is via the Sandover Highway.

In May 2002 the NTGS Eromanga aeromagnetic survey was infilled within tenement boundaries from 400 m to 200 m line spacing in a north south direction. A total of 26,173 line kms were flown within the Aljawarra project, including 2,896 line kms flown within EL22995 (covering 67% of the tenement). When interpreted, these data yielded 2 priority anomalies, and 13 non-priority magnetic anomalies recommended for no further work. Data from the NTGS Georgina Survey, released in 2003, were also interpreted. Part of this survey covers the remaining 33% of EL22995. No magnetic anomalies were chosen from these data.

The two priority magnetic anomalies chosen from the infill data were followed up with loam samples, and both anomalies were drill tested in July 2003. No kimberlitic material was recovered from the drill holes, and the anomalies were explained by magnetic material within alluvial sediments. Loam samples were all negative save one (BV7011) which contained one non-kimberlitic chromite grain.

In April 2004, 10 stream samples were taken within EL22995. These samples were taken as part of a larger sampling programme, covering also EL22506 and EL23415. Stream samples consisted of 50 litres of hand excavated stream gravels taken from heavy mineral trap sites and screened to -2 mm. Results for these samples are available, and although seven samples contained chromite grains, these grains are believed to be non-kimberlitic. Exploration licence 22995 was surrendered on the 8<sup>th</sup> October 2004.

#### 2.0 TENURE AND ABORIGINAL LIAISON

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

Tene-	Application	Grant	Expiry	Surrender	Area		
ment	Date	Date	Date	Date	(Km²)	Blocks	Commit't
EL22505	18-04-00	03-07-03	02-07-09	08-10-2004	1150.0	360	\$40,500
EL22506	18-04-00	23-05-02	22-05-08	08-10-2004	1562.5	488	\$57,000
EL22995	31-01-01	13-02-03	12-02-09	08-10-2004	1566.0	499	\$61,000
EL23415	10-10-01	19-12-02	18-12-08	08-10-2004	1381.3	432	\$60,000
EL23416	10-10-01	19-12-02	18-12-08	08-10-2004	1151.1	360	\$54,000
EL22509	18-04-00	02-04-02	01-04-08	08-10-2004	1424.0	455	\$52,770

#### 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.

## 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

In May 2002 the NTGS Eromanga aeromagnetic survey was infilled within tenement boundaries from 400 m to 200 m line spacing in a north south direction. A total of 26,173 line kms were flown within the Aljawarra project, including 2,896 line kms flown within EL22995 (covering 67% of the tenement). When interpreted, these data yielded 2 priority anomalies, and 13 non-priority magnetic anomalies recommended for no further work. The location of the priority anomalies is given in Table 2 below. Data from the NTGS Georgina Survey, released in 2003, were also interpreted. Part of this survey covers the remaining 33% of EL22995. No magnetic anomalies within EL2295 were chosen from these data.

Data from the infill survey, and anomaly locations, have been previously submitted to the Mines Department.

Anomaly	Longitude	Latitude	Datum	Geophysical Priority
ALF006	137.821557	-21.304926	GDA94	P3
ALF008	137.791249	-21.333361	GDA94	P3

#### Table 2: Magnetic Anomaly locations

# 4.2 Sampling

The two priority magnetic anomalies chosen from the infill data were followed up with loam samples early 2003. Sample results were negative, save one (sample number BV7011) which contained one non-kimberlitic chromite grain. These sample locations and results were submitted as part of the annual report for EL22995 detailing activities between 13<sup>th</sup> February 2003 and the 12<sup>th</sup> February 2004.

In April 2004, 10 stream samples were taken within EL22995. These samples were taken as part of a larger sampling programme, covering also EL22506 and EL23415, based on historical sampling data. Stream samples consisted of 50 litres of hand excavated stream gravels taken from heavy mineral trap sites and screened to -2 mm.

All samples were freighted to DBAE's Perth primary treatment facility for sizing and concentration. Acidised concentrates were forwarded to De Beers Melbourne Laboratory for secondary sizing and concentration prior to being examined. Table 2 contains sample locations along with results. Note that all results refer to the +0.3/-0.5 mm size fraction.

# 4.3 Drilling

Both anomalies selected from infill data were drill tested in July 2003. No kimberlitic material was recovered from the drill holes, and the anomalies were explained by magnetic material within alluvial sediments. Drill logs were submitted as part of the annual report for EL22995 detailing activities between 13<sup>th</sup> February 2003 and the 12<sup>th</sup> February 2004. The locations of the drill holes are given in Table 3 below. Drill holes and pads were rehabilitated and details of this process were submitted to the Mines Department in April 2004 in the form of an Annual Report for the Small Mining Operations Mine Management Plan over EL22505, EL22509, EL23416 and EL22995.

# Table 3: Drill hole locations

Drill hole	Easting	Northing	Datum and	Depth
			Projection	
ALF006_01	792754	7641479	GDA94 MGA53	93 m
ALB008_01	789524	7638285	GDA94 MGA53	40 m

## 5.0 RESULTS

Table 4 contains 2004 sample results. Only chromite grains were recovered, all of which are non-kimberlitic. All chromites are possibly derived from sources outside the area transported by fluvio-glacial processes in the Permian, and therefore of unknown origin. Note that all results refer to the +0.3/-0.5 mm size fraction.

SAMPLE	LONGITUDE	LATITUDE	MAPSHEET	SAMPLE	SAMPLE	RESULT
	GDA94	GDA94		TYPE	DATE	
BV9309	137.991368000	-21.250589000	F5308	STREAM	19/04/2004	1 Chromite
BV9310	137.988943000	-21.247333000	F5308	STREAM	19/04/2004	1 Chromite
BV9311	137.987496000	-21.243058000	F5308	STREAM	19/04/2004	6 Chromite
BV9312	137.985762000	-21.240050000	F5308	STREAM	19/04/2004	4 Chromite
BV9313	137.977332000	-21.239194000	F5308	STREAM	19/04/2004	1 Chromite
BV9314	137.967131000	-21.233937000	F5308	STREAM	19/04/2004	negative
BV9315	137.954569000	-21.235723000	F5308	STREAM	19/04/2004	negative
BV9316	137.941553000	-21.232244000	F5308	STREAM	19/04/2004	3 Chromite
BV9208	137.951229000	-21.456311000	F5308	STREAM	17/04/2004	3 Chromite
BV9209	137.952255000	-21.457212000	F5308	BARRAGE	17/04/2004	negative

#### Table 4: Sample Results over EL22995

## 6.0 CONCLUSION

Exploration during the life of EL22995 included the following: the NTGS Eromanga aeromagnetic survey was infilled from 400 m to 200 m line spacing within the tenement boundary; data from the NTGS Georgina Survey were interpreted; two priority magnetic anomalies chosen from the infill data were followed up with loam samples and drill tested; and 10 stream samples consisting of 50 litres of hand excavated stream gravels was taken from heavy mineral trap sites.

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### 7.0 EXPENDITURE

Expenditure from De Beers Australia Exploration Limited for the second year of tenure of EL22995 is shown in Table 5 below.

ITEM	2003/4 ACTUAL EXPENDITURE
Aboriginal Liaison	\$71
Aboriginal Compensation	\$2,642
Field expenses	\$178
Tenement management	\$148
Perth treatment plant	\$1,610
Melbourne treatment laboratory	\$4,655
Transport and travel	\$234
Salaries & wages	\$2,471
Geophysics	\$533
Specialist Services	\$501
Tenement Rent	\$5,489
Administration (15%)	\$2,780
TOTAL	\$21,313

## Table 5: Expenditure Details

# 8.0 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.

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