GRM **GIANTS REEF MINING LIMITED**
A.B.N 71 058 436 794

1/26 IRVINE STREET
TENNANT CREEK NT 0860
Postal Address: PO BOX 1244
TENNANT CREEK NT 0861

Telephone: 08 8962 1330
Facsimile: 08 8962 2900

Email: email@giantsreef.com.au
Website: www.giantsreef.com.au

EXPLORATION LICENCE 22488

QUARTPOT

FIRST ANNUAL REPORT

3 December 2001 - 2 December 2002

LICENSEE:
GIANTS REEF EXPLORATION PTY LTD
A.B.N. 009 200 346

AUTHORS:
S.C. RUSSELL
J.L. CAHILL

February 2003

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Giants Reef Exploration Pty Ltd ☐
Giants Reef Mining Limited ☐

SF53-11
ELKEDRA 1:250 000
SF53-07
HUCKITTA 1:250 000
6153
Lucy 1:100 000
6154
Ooratippra 1:100 000

SUMMARY

Exploration Licence 22488 *Quartpot*, was acquired by Giants Reef Exploration Pty Ltd (Giants Reef) to explore for ironstone-related gold-copper deposits as well as large base metal deposits.

This report summarises the exploration work carried out on EL 22488 during its first year of tenure from 3rd December 2001 to 2nd December 2002.

Work completed during the first year on Exploration Licence 22488 essentially consisted of detailed geological and geophysical research and data compilation aimed at developing a better understanding of the Licence area geology and the development of models for mineralisation.

The Exploration Licence is surrounded by competitors (Elkedra Diamonds NL, De Beers and Rio Tinto) who are actively exploring for indicator minerals and/or diamond. The Licence area appears to be in a significant structural position and geophysical appraisal suggests that many magnetic responses within the EL could represent diamond bearing rock types. To progress these target areas further detailed in-house ground magnetic surveys and interpretation over selected anomalies is recommended.

High-grade manganese mineralisation was discovered in 2002 in Elkedra Diamonds NL Exploration Licence 22533 (Lucy Creek). This is considered significant because lies west of EL 22488.

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Exploration Licence 22488 *Quartpot*, was acquired by Giants Reef Exploration Pty Ltd (Giants Reef) to explore for ironstone-related gold-copper deposits as well as large base metal deposits.

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2. LOCATION

Exploration Licence 22488 is situated approximately 350km south-east of Tennant Creek. The Licence area spans the boundary between the Elkedra and Huckitta 1:250,000 scale map sheets and is located on the Lucy (6153) and the Ooratippra (6154) 1:100 000 scale map sheets.

Access to the Licence area from Tennant Creek is south via the Stuart Highway and then east onto the Ali Curung Aboriginal Community road. This leads to the Sandover Highway which is then followed approximately 80km east to the north-west portion of the Licence area. Most of EL 22488 has little relief and vegetation, and is quite accessible via good station tracks servicing the water bores in the area.

Alternatively, the Licence area may be accessed via the Sandover Highway from Mount Isa or from Alice Springs, and from the south using the Lucy Creek pastoral station roads.

Figure 1 shows the location of the Exploration Licence area.

3. TENURE

Exploration Licence 22488 covering 388 blocks (1236 km^2) was granted to Giants Reef Exploration Pty Ltd on the 3rd December 2001 for a period of six years.

The Exploration Licence lies within NT Portion 2891, being Ooratippra Perpetual Pastoral Lease 921.

Figures 2 shows the Exploration Licence area held in the first year.

4. GEOLOGY

4.1 Regional Geology

The reader is referred to AusIMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861, to gain a good introduction to the regional geology and styles of gold-copper mineralisation of the area.

4.2 Local Geology

The Sandover River flows east through the Exploration Licence with extensive flood out areas and tributaries flowing into the EL. North of the Sandover River there is little outcrop and much of the area is covered by alluvial outwash cover.

South of the Sandover River, southerly flowing drainage channels have been diverted by areas of Cambrian outcrop. The outcropping Cambrian Arrinthrunga Formation sediments of the Georgina Basin Sequence are generally flat lying throughout the central to southern parts of the Licence Area. The Ooratippra fault strikes north west - south east through the central portion of the Licence area.

5. WORK DONE DURING THE YEAR

5.1 Targets and Concepts

The Exploration Licence was originally applied for to cover a major regional gravity high, lying along a north-west trend that links it with the Bluebush and Kurinelli gravity anomalies. The Bluebush gravity anomaly is viewed by Giants Reef as an important geophysical signature that may represent buried iron oxide copper gold systems. Tenements covering the Bluebush gravity anomaly form part of a larger BHP Billiton Alliance signed in 1999 between Billiton Exploration Australia and Giants Reef Mining Limited. The similarity between the two geophysical signatures was enough encouragement to obtain the Licence. There are also several magnetic anomalies within the Licence area specifically the Ooratippra magnetic anomaly that was previously drilled in the 1960's by the Bureau of Mineral Resources (BMR).

5.2 Open File Review

A detailed search of the Northern Territory Department of Business, Industry, Resources and Development (DBIRD) open-file library by Darwin-based consultant geologist Ms Belinda Smith (Rocksearch Australia) was initiated. Several reports were sourced, photocopied and sent to Tennant Creek. Several research papers were supplied by DBIRD geologists from the Alice Springs office.

This data was reviewed, tabulated and collated by Giants Reef's exploration manager resulting in a large paper database.

5.3 Previous Exploration

The Licence area has been explored by several companies.

- Dampier Mining Company (EL 1117) explored the area from 1974-1976. The object of the exploration was to locate lead and zinc mineralisation, possibly of Mississippi Valley Type. Reconnaissance mapping, rock chip sampling and diamond drilling were completed. Results of two diamond drill holes were disappointing with the only encouraging assay returning 3m @ 2.26% lead from 19m.

  A deep stratigarphic diamond drill hole (Sandover/BMR 13) drilled into the Ooratippra magnetic anomaly by the BMR in the 1960's was also re-assayed for Cu-Pb-Zn mineralisation, however no significant results were returned.

- Plenty River Mining Company N.L. (EL 4216) explored part of the area contained in EL 22488 during 1984-1986. Brief field work was undertaken during this time typically involving mapping and rock chip sampling. No significant results were returned. The large regional gravity anomaly was suggested by Plenty River Mining to be a result of a basement high. They also suggested that the area contained highly variable levels of basement topography (-1000 to 5000m). Plenty River Mining also modelled the Ooratippra magnetic anomaly which they interpreted to have a depth to top at between 2200-2700m.

- Dragon Resources Ltd (EL 6253) explored part of the area contained in EL 22488 during 1988-1990. They completed a literature review, however no field work was done. They surrendered the Licence in 1990, due to lack of exploration funds to continue exploration.

5.4 Exploration for Diamonds

Exploration for Kimberlite indicator minerals was carried out by Stockdale Prospecting Limited and Amoko Minerals Australia Company in 1984 and CRA Exploration Pty Limited in 1985. No anomalous results were returned from the various reconnaissance surveys.

In January 2002 Elkedra Diamonds N.L listed on the Australian Stock Exchange and began active diamond exploration on numerous Exploration Licences within the Altjawarra Craton. Giants Reef's Quartpot Exploration Licence is surrounded by Elkedra's Licences, and appears highly attractive in the search for indicator minerals and/or diamond. Other companies exploring for diamonds in the area include De Beers and Rio Tinto.

5.5 Geophysical Review

Consultant Geophysicist Frank Lindeman of Lindeman Geophysics, Melbourne, was contracted to investigate whether possible discrete kimberlitic-type responses can be detected in the Licence area using the recent Northern Territory Geological Society (NTGS) semi detailed geophysical data.

Lindeman concluded that a number of anomalies over the Licence area appear to have the potential to represent kimberlite or lamprophyre signatures and identified several of these on various in-house maps. He recommended the next step to advance this project would be to nominate approximately five of the best and most representative anomalies and subject them to detailed ground magnetic follow-up and interpretation.

Lindeman's in-house report is included as Appendix 1.

5.6 Prospectivity Review

An internal review of the Giants Reefs tenement portfolio and a classification of exploration opportunities in September 2002 ranked Exploration Licence 22488 as an area of extreme interest due to the diamond indicator minerals reported to have been discovered on nearby competitors tenements. There has also been reports of high-grade manganese mineralisation discovered close by.

6. REHABILITATION

None of the work done on EL 22488 in the first year of tenure by Giants Reef has required any rehabilitation measures.

7. CONCLUSIONS

Work completed during the first year on Exploration Licence 22488 essentially consisted of detailed geological and geophysical research and data compilation aimed at developing a better understanding of the Licence area geology and the development of models for mineralisation.

The Exploration Licence is surrounded by competitors (Elkedra Diamonds NL, De Beers and Rio Tinto) who are actively exploring for indicator minerals and/or diamond. The Licence area appears to be in a significant structural position and geophysical appraisal suggests that many magnetic responses within the EL could represent diamond bearing rock types. To progress these target areas further detailed in-house ground magnetic surveys and interpretation over selected anomalies is recommended.

High-grade manganese mineralisation was discovered in 2002 in Elkedra Diamonds NL Exploration Licence 22533 (Lucy Creek). This is considered significant because lies west of EL 22488.

8. YEAR 1 EXPENDITURE

The proposed expenditure for the first year of tenure was $40,000. Actual expenditure was as follows:

		$
1.	Geology	4,463
2.	Geophysics	4,025
3.	Geochemistry	0
4.	Surveying	0
5.	Data integration	111
6.	Analytical	0
7.	Drilling	0
8.	Tenure maintenance	4,656
9.	Administration and Overheads	106
10.	Rehabilitation	0
	TOTAL	$13,360

Total expenditure amounted to $13,360. As the expenditure covenant was not met for EL 22488, an application for variation of the minimum expenditure accompanies this report.

9. PROPOSED PROGRAM AND EXPENDITURE FOR YEAR 2

		$
1.	Geology	7,000
2.	Geophysics	9,000
3.	Geochemistry	2,000
4.	Surveying	500
5.	Data integration	500
6.	Analytical	1,000
7.	Drilling	0
8.	Tenure maintenance	3,000
9.	Administration and Overheads	500
10.	Rehabilitation	0
	TOTAL	$23,500

Exploration programs can be affected by results, and while these are the proposed programs and expenditure, specific activities may vary according to the results achieved.

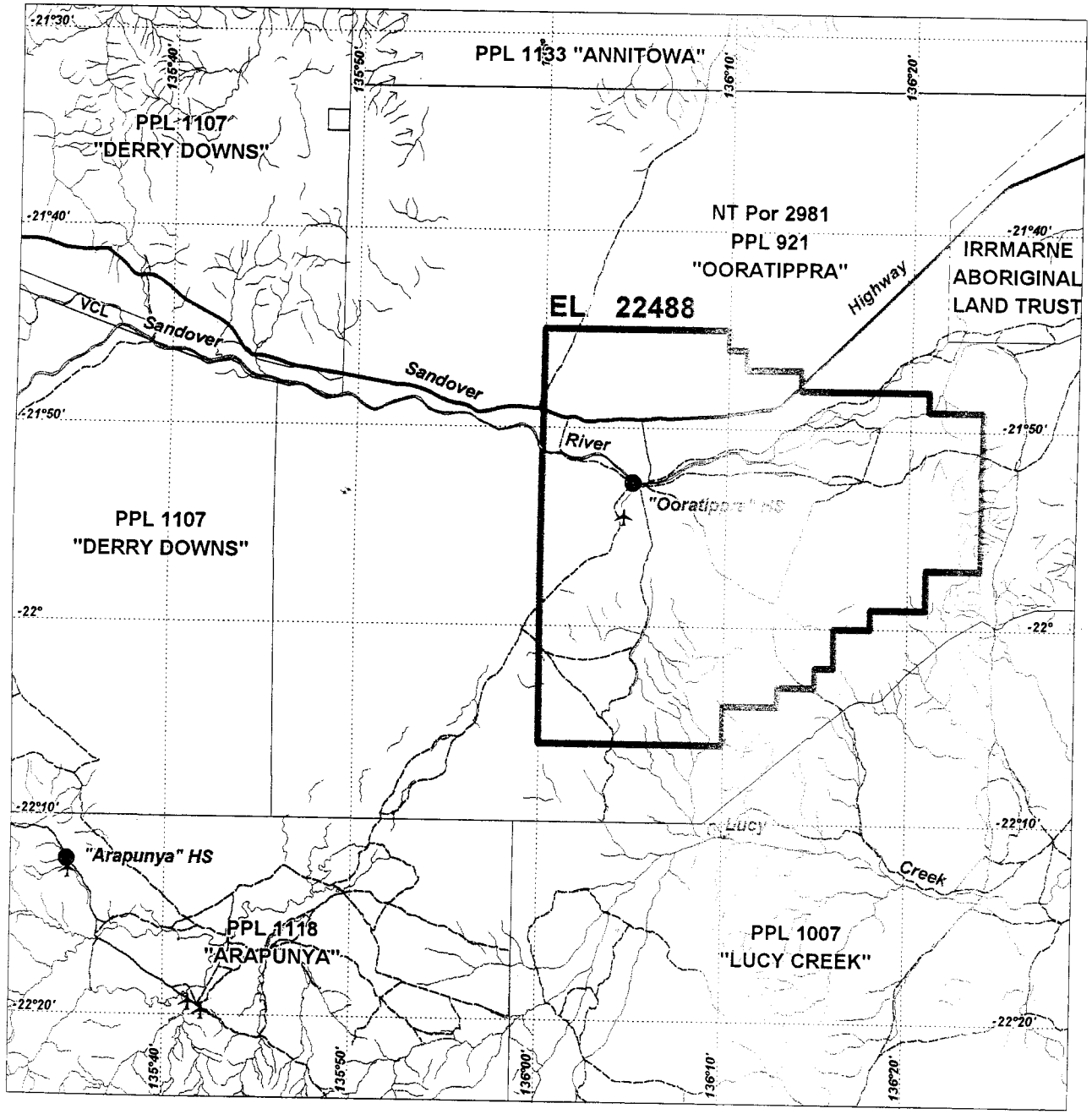
STEVE RUSSELL
SENIOR EXPLORATION GEOLOGIST

JUSTINE CAHILL
EXPLORATION GEOLOGIST

GIANTS REEF MINING LIMITED

HARD COPY REPORT META DATA FORM

REPORT NAME:	EL 22488 *Quartpot*, FIRST ANNUAL REPORT 3RD DECEMBER 2001 – 2ND DECEMBER 2002
PROSPECT NAMES(s):	QUARTPOT
GROUP PROSPECT NAME:	
TENEMENT NUMBERS(s):	EL 22488
ANNIVERSARY DATE:	3 DECEMBER 2002
OWNER/JV PARTNERS:	GIANTS REEF EXPLORATION PTY LTD
AUTHOR(s):	S.C. RUSSELL J.L. CAHILL
COMMODITIES:	GOLD, COPPER, DIAMOND, MANGANESE
MAPS 1:250 000:	ELKEDRA SF53-11 HUCKITTA SF53-07
MAPS 1:100 000:	LUCY 6153 OORATIPPRA 6154
MAPS 1:25 000	
TECTONIC UNIT(s):	GEORINA BASIN
STRATIGRAPHIC NAME(s)	ARRINTHRUNGA FORMATION
AMF GENERAL TERMS:	
AMF TARGET MINERALS:	GOLD, COPPER, LEAD, ZINC, DIAMOND
AMF GEOPHYSICAL:	
AMF GEOCHEMICAL:	
AMF DRILL SAMPLING:	
HISTORIC MINES:	
DEPOSITS:	
PROSPECTS:	
KEYWORDS:	QUARTPOT, EL 22488



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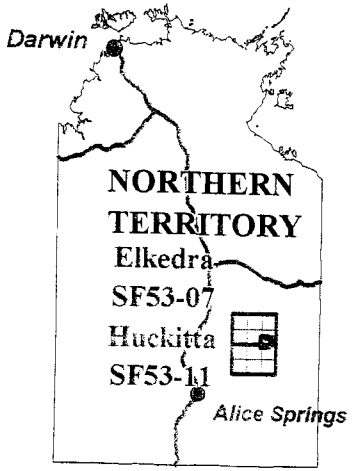
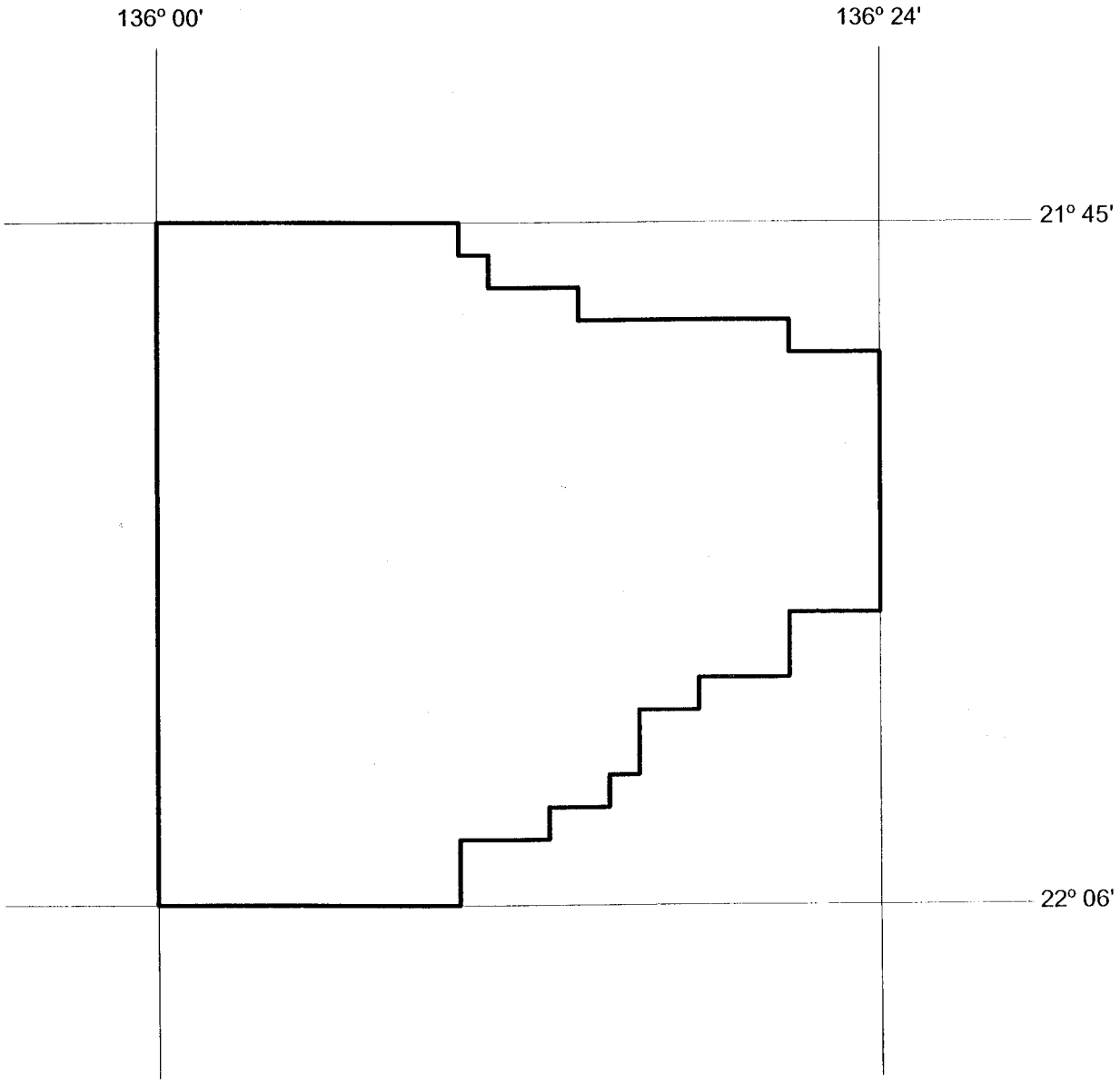
LEGEND

- ELA 22488 Boundary
- Aboriginal Freehold Land
- Vacant Crown Land
- Perpetual Pastoral Lease
- NT Freehold
- Homestead or Community
- Airstrip
- Drainage
- Road / Track



GIANTS REEF MINING LIMITED TENNANT CREEK NORTHERN TERRITORY			
AREA	EL 22488 *Quartpot*		
MAP REF.	6153 LUCY 1:100 000 6154 OORATIPPRA 1:100 000		
SUBJECT	LOCATION MAP		
DATE	AUTHOR	SCALE	
MAR 2000		1:600 000	FIGURE 1



EL 22488
388 BLOCKS
1236 sq kms

GIANTS REEF MINING LIMITED TENNANT CREEK NORTHERN TERRITORY			
AREA	**EL 22488 *Quartpot***		
MAP REF.	6153 LUCY 1:100 000 6154 OORATIPPRA 1:100 000		
SUBJECT	EL 22488 Year 1 Licence Area Extract *DME THIRD SCHEDULE*		
DATE	AUTHOR	SCALE	
DEC 2001	DBIRD		**FIGURE 2**

APPENDIX 1

QUARTPOT
EL 22488

AEROMAGNETIC INTERPRETATION FOR POSSIBLE KIMBERLITE RESPONSES

By Frank Linderman

April, 2002

LINDEMAN GEOPHYSICS PTY LTD
ABN 69 086 037 087
8/3 CHRISTINE CRES.,
RICHMOND Victoria 3121
Tel: 03 9421 1895
email: flindeman@beyondtech.net

Date: 23rd April, 2002

Memo to: Mr Peter Simpson
Giants Reef Mining Ltd
From: Frank Lindeman

Subject: Aeromagnetic Interpretation for Possible Kimberlite Responses
EL 22488 "Quartpot"

Introduction:

EL 22488 is located just to the south east of the termination of the Davenport province within the general Georgina Basin area and straddling the boundary between the Elkedra and Huckitta 1:250K sheets. Although this EL was initially not claimed for its apparent kimberlite/diamond potential, the general area in which this Giants Reef Mining EL is located has become the scene recently for reasonably intense diamond exploration. It is understood that at least one company, Elkedra Diamonds NL, has expressed some interest in this EL.
The question to address is whether possible discrete kimberlitic-type responses can be detected in recent NTGS semi detailed geophysical data.

Aeromagnetic Data:

The area has been subjected to quite recent aeromagnetic coverage by the NTGS in its general initiative of providing good quality data for the minerals industry. The data here were collected on 400m spaced north south lines using a flying height of 60m. This data has been acquired by Giants Reef Mining, initially as 100m grids but more recently as located line data. Various processing techniques have been used on this data in attempts to isolate responses, which could define kimberlites.

General Background on "Magnetics and Kimberlites":

Information worth remembering includes
a) not all kimberlites express a magnetic signature
b) kimberlites usually appear as clusters within districts
c) magnetic kimberlites often only constitute 20-25% of kimberlites in any one cluster or "field"

d) other than by its magnetite content, the magnetic response of a kimberlite can be affected by its depth of burial, depth of weathering, the pipe diameter, depth extent, the magnetite content of surrounding and host geology
e) kimberlites can display normal and remanent magnetization.
f) given the usual size of kimberlites, the optimum line spacing for detectability using aeromagnetics is 100 to 200 metres.
g) the discovery of kimberlite-type responses using magnetics is often only achieved using the laborious method of profile examination.
h) there are several recent examples of very successful kimberlite exploration using airborne EM and gravity gradiometer (eg BHP Falcon) methods.

Interpretation:

By way of introduction here is a recent quote to me from Duncan Cowan, a consultant geophysicist who has published on the interpretation of aeromagnetic data for kimberlites and who consults for Elkedra Diamonds NL:

"The Georgina Basin is quite a challenge for diamond exploration! The main advice on using the NTGS 400 m line spacing data is to focus on profile analysis. Anomalies of interest will usually be on a single flight line and grid based techniques are very limited. Anomaly screening involves trying to find anomalies, which have significant depth extent and we use a combination of 2D Euler deconvolution to calculate the structural index and inversion of anomalies of interest. We also have a high frequency deconvolution method, which operates on the located data and extracts the near-surface magnetic signal with minimal contamination from deeper sources. This helps to map palaeodrainage, which produces anomalies with similar bandwidth to possible pipes".

It has been expressed above that while the quality of the NTGS magnetic data collected at 60m flying height along the lines is very good, the actual line spacing of 400m is not ideal for the detection of kimberlites. In this scenario, one could expect that most kimberlitic pipe responses would appear on only one flight line, possibly two at the most, although it is recognised that some magnetic response might be recorded on lines adjacent to but not actually traversing magnetic pipes. Lamproite diatremes, such as exist at Argyle and Ellendale, could however appear as larger responses. Under normal conditions, gridding of the magnetic data in this situation would be completed in conjunction with several filtering techniques and detailed profile analysis. My brief for EL 22488 was to demonstrate, if possible, using simple grid-based techniques that discrete kimberlitic-type magnetic responses could exist on the property. Although the located magnetic data over the "quartpot" EL was acquired from the NTGS, its only use to date has been to trace out the actual flight line positions, so that the size-significance of individual magnetic responses can be quickly ascertained.
Processing of the aeromagnetic data has included the production of various the shaded images plus the analytic signal, which necessitates the calculation of the three gradients, the vertical (1vd) and the two horizontal gradients.
Various maps at 1:100,000 scale have been produced on which to perform the interpretation, this particular scale allowing for a single convenient map sheet for each product. Covering the area of

the geophysical data for the EL has the NTGS 1:250K geology from the Huckitta and Elkedra sheets been photo enlarged to 1:100K scale.

Please note the discrepancy between the EL outline as marked on the geological plans and the outline on the geophysical maps. This latter outline was prepared by taking the lat/long co-ordinates provided at 1:250K by PGS in a fax and converting them to AMG co-ordinates. I am not sure which one is correct.

The combination of the analytic signal and the first vertical derivative appears to give the best idea of possible kimberlite responses. Ultimately however, it is the analytic signal which is effectively a high pass filter (ie highlights the more shallow features) and which positions the magnetic response directly above the magnetic sources, irrespective of magnetic latitude, which defines the anomalies of interest.

Magnetic anomalies of possible interest for kimberlites have been highlighted with a samll black arrow on the analytic signal plan. These same responses have also marked with a tick on the 1st vertical derivative map. In addition several isolated responses on the TMI plan which were not selected from the other plans were highlighted. No consideration has been given to using the geology to prioritize these magnetic anomalies, as it is difficult to see anywhere within the EL where the magnetics and geology actually can be correlated.

Under normal circumstances, follow-up to these possible kimberlite responses could involve some or all of the following:

a) geochemical sampling and field examination
b) detailed profile analysis of the 400m aeromagnetic data
c) more detailed processing and interpretation using more sophisticated filtering procedures.
d) ground magnetic follow-up of selected anomalies
e) detailed aeromagnetics using ~100m line spacing

In this case however, the work just completed might just be the basis on which possible JV discussions with other diamond explorers in the area can proceed, given that there is some interest for diamonds in this EL from third parties.

Conclusions:

The NTGS 400m line spaced aeromagnetic data over the Giants Reef Mining EL 22488 “quartpot” has been briefly examined for possible discrete kimberlite-type signatures. A number of anomalies which appear to have the potential to represent these type of features have been defined after perusal of shaded TMI, analytic signal and derivative products at a map scale of 1:100,000. These anomalies have been highlighted with small black arrows on the analytic signal map. A suggestion for a next step in forwarding this project would be to nominate say 5 of the best and most representative anomalies and subject them to detailed ground magnetic follow-up and interpretation, something that be completed quite cheaply in-house.

Frank Lindeman

References

Buckle, J., 1993, Detection of kimberlite pipes in the Lac de Gras area with helicopter-borne electromagnetics and magnetics: unpublished internal Dighem Surveys and Processing report.

Cowan, D.R., Tompkins, L.A. and Cowan, S., 2000, Screening kimberlite magnetic anomalies in magnetically active areas: Expl. Geophys., 31,066-072

Dentith. M., Cowan, D.R. and Tompkins, L.A., Enhancemant of subtle features in aeromagnetic data: Expl. Geophys., 31, 104-108

Drew, G.J. and Cowan, D.R., 1994, Geophysical signature of the Argyle Lamproite pipe, Western Australia: in “Geophysical Signatures of Western Australian Mineral Deposits”, Geology and Geophysics Dept & UWA extension, The UWA, Publication #26, 393-402.

Jenke, G. and Cowan. D.R., 1994, Geophysical Signature of the Ellendale Lamproite pipes, Western Australia: in “Geophysical Signatures of Western Australian Mineral Deposits”, Geology and Geophysics Dept & UWA extension, The UWA, Publication #26, 403-414.