



**EL 23995 'TANABURS SW'
McARTHUR RIVER REGION NT**

**ANNUAL REPORT
ON EXPLORATION ACTIVITIES
YEAR 3 OF TENURE
8 September 2006 – 7 September 2007**

Submitted by

**GRAVITY DIAMONDS LIMITED
(ABN - 72 009 178 689)
Level 7, Exchange Tower
530 Little Collins Street, Melbourne, Victoria, 3000**

EL 23995 Tanaburs SW
Holder: Gravity Diamonds Ltd
Grant Date: 08 Sept 2004
1:250,000 Sheet: **Bauhinia Downs SE 53-03,**
Minerals Sought: Diamonds, Base metals

SUMMARY

EL 23995 “Tanaburs SW” was granted to Gravity Diamonds Ltd (“Gravity”) on 8 September 2004. The EL lies within a general area where Gravity is operating a large diamond exploration program, much of which is under an exploration agreement with Rio Tinto group companies and Diamond Mines Australia (DMA), which is a 100%-owned subsidiary of Gravity.

A substantial amount of historical diamond exploration work has been carried out in the general vicinity of the tenement, the main diamond prospect identified to date being the Tanaburs Prospect (also known as Leila Creek). The prospect was identified by Ashton in the 1990s and is located in adjacent EL22307.

During 2003 and 2004, DMA through an exclusive arrangement with BHP Billiton deployed the Falcon® Airborne Gravity Gradiometer system in diamond exploration in Australia. The Falcon® system has proved an effective diamond exploration tool since its development by BHP Billiton in the late 1990’s. The Falcon® system includes airborne gravity gradient data, high resolution magnetics and accurate elevation data derived from on-board differential GPS and laser scanner devices. The 2003/04 flying program covered seven areas in the Northern Territory, focussing on areas where previous exploration reported unresolved kimberlite indicator mineral sampling results, including the Tanaburs prospect. Falcon® coverage did not extend into EL 23995, which abuts EL 22307.

Field reconnaissance of the area and reviews of previous diamond exploration data within EL 23995 suggested that previous heavy mineral sampling within EL 23995 was adequate, however results from Gravity Diamonds sampling programs elsewhere in the Northern Territory has indicated that several sampling programs carried out by previous explorers suffered from poor site selection and sample collection practices. Additionally advances in heavy mineral processing through micro-DMS plants has increased the recovery and decreased the effective grainsizes of heavy mineral recovered.

During the past year of tenure, ground Indicator Mineral sampling within EL 23995 has been undertaken of the major drainages within the tenement. Although no kimberlitic indicator minerals were recovered, reinterpretation of reprocessed openfile aeromagnetic data being undertaken by Gravity and joint venture partner Sandfire Resources is ongoing.

Expenditure on the tenement during the reporting period totalled **\$13,452**.

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INTRODUCTION

EL 23995 “Tanaburs SW”, which lies approximately 75 kilometres west of Borroloola in the Gulf Region of the Northern Territory, was granted to Gravity Diamonds Ltd (“Gravity”) on 8 September 2004. The EL lies within a general area where Gravity is operating a large diamond exploration program, much of which is under an exploration agreement with Rio Tinto group companies and Diamond Mines Australia (DMA), which is a 100%-owned subsidiary of Gravity.

A substantial amount of historical diamond exploration work has been carried out in the general vicinity of the tenement, the main diamond prospect identified to date being the Tanaburs Prospect (also known as Leila Creek). The prospect was identified by Ashton in the 1990s and is located in adjacent EL 22307.

During 2003 and 2004, DMA through an exclusive arrangement with BHP Billiton deployed the Falcon® airborne gravity gradiometer system in diamond exploration in Australia. The Falcon® system has proved very effective in diamond exploration since its development by BHP Billiton in the late 1990’s.

The 2003/04 flying program covered seven areas in the Northern Territory, focussing on areas where previous exploration reported unresolved kimberlite indicator mineral sampling results, including the Tanaburs prospect. Falcon® coverage did not extend into EL 23995, which abuts EL 22307.

While the principal target in the area is diamonds, some interest is also directed toward base metal deposits.

LOCATION AND ACCESS

EL 23995 is located near old Bauhinia Downs homestead, approximately 90 kilometres west of Borroloola in the Gulf Region of the Northern Territory. The tenement lies within the Billengarra pastoral lease, which is administered by the Northern Territory Land Corporation (Figure 1).

GEOLOGICAL SETTING and ECONOMIC POTENTIAL

EL 23995 lies within the Batten Trough of the Mesoproterozoic McArthur Basin. The N-S trending Tawallah Fault Zone is the largest scale structure in the district and it is regarded as having similar significance to the Emu Fault, which lies 40km east of the tenement and is associated with McArthur River Zn-Pb mine and the Merlin diamond mine, which lies 75km to the south east of the tenement.

The 1800-1400Ma stratigraphy and mineralisation of the Batten Trough, from youngest to oldest, can be summarised as follows:

- Roper Group arenites, shales, iron formations and dolerite sills.
- Nathan Group (or Mt Rigg Group) carbonates that host Zn-Pb mineralisation, eg, the Bulman Zn-Pb deposits.

- McArthur Group fine clastics and carbonates that host strata bound Zn-Pb-Ag and Cu deposits, eg, the HYC (McArthur) Zn-Pb-Ag mine, Batton Zn-Pb and Sly Creek Cu deposits.
- Tawallah Group arenites, black shales and basalts hosting Cu in the Redbank district and U at Westmoreland. There are also a number of Cu occurrences hosted Talwallah Group proximal to the McArthur Project area.

Proterozoic outcrops within the project area are predominantly McArthur Group.

PREVIOUS EXPLORATION

A number of strata-bound and vein-hosted base metal occurrences hosted by Proterozoic sediments are located near the Scrutton Range which lies north of EL 23995. Several base metal prospects lie within the tenement itself.

A substantial amount of historical diamond exploration work has been carried out in the general vicinity of the tenement. The main diamond prospect identified to date is the Tanaburs Prospect (also known as Leila Creek) which was identified by Ashton in the 1990s.

Tanaburs is centred on a 6km by 1.5km outlier (plateau) of Cretaceous sediments overlying Tawallah Group and McArthur Group. Ashton noted that the Cretaceous sediments contain fossilised wood fragments similar to those found on the Merlin plateau. The prospect overlies the major, N-S trending Four Archers Fault Zone.

Stream sediment, loam and bulk sampling for diamonds, geomorphological studies, detailed airborne magnetics and drilling have been completed around the Tanaburs area. Macrodiamonds, microdiamonds and indicator minerals (chromite) have been reported from drainages sourced from the Cretaceous sedimentary plateau.

WORK COMPLETED IN YEAR 1

A review of historic exploration in the region and an appraisal of regional geological, geophysical and geochemical data sets were completed in year 1 of tenure.

This work indicated substantial potential for diamond discovery in the area and lesser, but significant potential for base metal discovery.

A sizeable Falcon® airborne gravity gradiometer survey (270 km²) was flown adjacent to EL 23995 by Gravity Diamonds and the results of this survey were utilised in the assessment of EL 23995. A number of targets were identified in adjacent ELs and field sampling work within EL 23995 was planned on this basis.

WORK COMPLETED IN YEAR 2

During the second year of tenure, exploration within EL 23995 was restricted to field reconnaissance due to heavily flowing streams until very late in the year and re-evaluation of historic exploration datasets.

WORK COMPLETED IN YEAR 3

During the past year of tenure three heavy mineral samples were collected from major stream drainage catchments in the tenement area. In addition active stream sediment samples were collected from each site to ascertain if any anomalous basemetal signature could be discerned within the tenement area. The sampling program was carried out in conjunction with a larger program covering other tenements in the area to alleviate one-off costs on helicopter charter and sampling crew assembly etc.

The samples were despatched to Diatech Laboratories in Perth for processing through a micro DMS plant and recovery of kimberlite indicator minerals from the -1.2mm +0.3mm fraction of the DMS concentrate.

Sample No	WGS 84 East	WGS 84 North	Chromite	Geochem Assay Sample No.
163972	556080	8197232	0	166666
163974	555221	8193137	0	166669
163979	556691	8197777	0	166672

HMS recovery sheets are attached in Appendix 1, with geochemical assay attached in Appendix 2.

In conjunction with regional Joint Venture partner Sandfire Resources all openfile aeromagnetic data covering this tenement area has been reprocessed late in the reporting year. Interpretation and targeting is underway and will be reported during the upcoming year.

ENVIRONMENT AND REHABILITATION

On-ground exploration activities comprised low impact indicator-mineral sampling. Sampling comprised collection of approximately 50 kg of sieved sample at each site. As access to sample sites was achieved via helicopter no vehicle tracks were constructed with a resulting negligible impact on the environment and hence no requirement for rehabilitation.

CONCLUSIONS AND RECOMMENDATIONS

EL 23995 lies within a larger area of anomalous kimberlitic indicator sampling results as well as having defined base metal prospects. Adjacent tenements have been flown with the Falcon® system, and been extensively sampled with several anomalous zones noted.

During the past year of tenure, on ground field exploration has occurred within EL23995 with major drainages sampled as part of a more extensive campaign in the region. Whilst no anomalous Indicator Mineral results were reported from the tenement, several results remain outstanding from neighbouring tenements. Similarly the recovered base metal stream

sediment samples do not indicate a strong anomalous source, however sample results from adjoining tenements remain outstanding. A revised understanding of the structural architecture of this portion of the Batten Trough is being composed in conjunction with JV partner Sandfire Resources and may lead to new targets being developed in the upcoming field season. Further sampling for both basemetals and diamonds is proposed for the upcoming field season.

PROPOSED EXPLORATION BUDGET

Professional Personnel costs	\$ 5,000
Sampling and sample analysis costs	\$ 5,000
Office support/Administration costs	\$ 3,000
TOTAL	\$ 13,000

EXPENDITURE STATEMENT

Legal/Tenement maintenance costs	\$ 440
Assays	\$ 2,542
Professional & personnel costs	\$ 4,950
Data processing / computing costs	\$ 1,206
Helicopter and Vehicle hire	\$ 2,705
Office and Field Consummables	\$ 210
Communications and Safety	\$ 274
Travel and accommodation costs	\$ 705
Administration/overhead	\$ 420
TOTAL	\$ 13,452

Appendix 1
HM Analysis Sheets



Ph 61 8 9361 2596
Fx 61 8 9470 1504

Detailed Heavy Mineral Analysis

Our Job No.: 07096
Disc No.:

Sample No: 163972

Overall Sample Assessment **Negative**

Your Project Code: Tanaburs

Sample Type (as collected): Loam
Sample Type (as received): Loam
Observed Sample Type: DMS Concentrate

Head Weight 42.38 kg
Wet Weight kg

Diamond

Number of particles in each size fraction
mm +2.0 +1.2 +.8 +.4 +.3 +.25 +.20 +.10 Total particles Description of these particles

Key Minerals

Number of particles in each size fraction
mm +2.0 +1.2 +.8 +.4 +.3 +.25 +.20 +.10 Overall Morph. Group Total particles No of particles probed PRIORITY based on Morphology only PRIORITY based on morphology and Probe)

Other Minerals

% Percentage of particles in each size fraction
mm +2.0 +1.2 +.8 +.4 +.3 +.25 +.20 +.10 Wear Colour Angularity Lustre Transparency Form/Shape

Almandine				Tr					MF					
Anatase					Tr				MW					
Corundum				Tr	Tr				MF					
Fe Oxide/Hydroxide			100	90	90				W					
Haematite					Tr				MW					
Kyanite					Tr				MW					
Leucosene				Tr	Tr				W					
Phosphate					Tr				WW					
Rutile				Tr	Tr				W					
Tourmaline			Tr	10	10				WW					
Zircon				Tr	Tr				W					
TOTAL	%	%	100%	100%	100%	%	%	%						

What Has Been Observed?

Final Conc Weight 126.22000 g Size Range -1.2+0.3mm
Weight Observed 126.22000 g

Magnetic Fractions vs Size Fraction

mm	+2.0	+1.2	+.8	+.4	+.3	+.25	+.20	+.10
NM			All	All	All			
M6/7			All	All	All			
M4/5			All	All	All			

Comment about this sample:

Technician: JED

Date Observed: 09-Aug-07

Report Printed: 22/08/2007 2:01:15 PM



Ph 61 8 9361 2596
Fx 61 8 9470 1504

Detailed Heavy Mineral Analysis

Our Job No.: 07096
Disc No.:

Sample No: 163974

Overall Sample Assessment **Negative**

Your Project Code: Tanaburs

Sample Type (as collected):	Loam	Head Weight	51.18 kg
Sample Type (as received):	Loam	Wet Weight	kg
Observed Sample Type:	DMS Concentrate		

Diamond

	Number of particles in each size fraction								Total	Description of these particles
mm	+2.0	+1.2	+0.8	+0.4	+0.3	+0.25	+0.20	+0.10	particles	

Key Minerals

	Number of particles in each size fraction								Wear	Overall Morph. Group	Total particles	No of particles probed	PRIORITY based on Morphology only)	PRIORITY based on morphology and Probe)
mm	+2.0	+1.2	+0.8	+0.4	+0.3	+0.25	+0.20	+0.10						

Other Minerals

	% Percentage of particles in each size fraction								Wear	Colour	Angularity	Lustre	Transparency	Form/Shape
mm	+2.0	+1.2	+0.8	+0.4	+0.3	+0.25	+0.20	+0.10						

Anatase				Tr	Tr					MW					
Corundum					Tr					MF					
Fe Oxide/Hydroxide			100	70	60					W					
Leucoxene				Tr	Tr					W					
Phosphate				Tr	Tr					WW					
Rutile				Tr	Tr					W					
Tourmaline			Tr	30	40					W					
Zircon				Tr	Tr					MW					
TOTAL	%	%	100%	100%	100%	%	%	%							

What Has Been Observed?

Final Conc Weight 59.850001 g Size Range -1.2+0.3mm
Weight Observed 59.850001 g

Magnetic Fractions vs Size Fraction

mm	+2.0	+1.2	+0.8	+0.4	+0.3	+0.25	+0.20	+0.10
NM			All	All	All			
M6/7			All	All	All			
M4/5			All	All	All			

Comment about this sample:

Technician: JED

Date Observed: 08-Aug-07

Report Printed: 22/08/2007 2:01:54 PM



Ph 61 8 9361 2596
Fx 61 8 9470 1504

Detailed Heavy Mineral Analysis

Our Job No.: 07096
Disc No.:

Sample No: 163979

Overall Sample Assessment **Negative**

Your Project Code: Tanaburs

Sample Type (as collected):	Loam	Head Weight	32.88 kg
Sample Type (as received):	Loam	Wet Weight	kg
Observed Sample Type:	DMS Concentrate		

Diamond

	Number of particles in each size fraction								Total particles	Description of these particles
mm	+2.0	+1.2	+0.8	+0.4	+0.3	+0.25	+0.20	+0.10		

Key Minerals

	Number of particles in each size fraction								Overall Morph. Group	Total particles	No of particles probed	PRIORITY based on Morphology only)	PRIORITY based on morphology and Probe)
mm	+2.0	+1.2	+0.8	+0.4	+0.3	+0.25	+0.20	+0.10	Wear				

Other Minerals

	% Percentage of particles in each size fraction								Wear	Colour	Angularity	Lustre	Transparency	Form/Shape
mm	+2.0	+1.2	+0.8	+0.4	+0.3	+0.25	+0.20	+0.10						

Almandine				Tr						MW				
Corundum					Tr					MF				
Fe Oxide/Hydroxide			100	100	100					W				
Haematite				Tr	Tr					MW				
Leucoxene				Tr	Tr					W				
Rutile				Tr	Tr					MW				
Tourmaline			Tr	Tr	Tr					W				
Zircon				Tr	Tr					W				
TOTAL	%	%	100%	100%	100%	%	%	%						

What Has Been Observed?

Final Conc Weight 71.8 g Size Range -1.2+0.3mm
Weight Observed 71.8 g

Magnetic Fractions vs Size Fraction

mm	+2.0	+1.2	+0.8	+0.4	+0.3	+0.25	+0.20	+0.10
NM			All	All	All			
M6/7			All	All	All			
M4/5			All	All	All			

Comment about this sample:

Technician: JED

Date Observed: 10-Aug-07

Report Printed: 22/08/2007 2:03:33 PM

Appendix 2
Geochemical Assays

Sample UNITS	Ba ppm	Ca %	Ce ppm	Co ppm	Cr ppm	Cu ppm	Dy ppm	Er ppm	Fe %	La ppm	Mg %	Mn ppm	Nb ppm	Ni ppm	Rb ppm	Sr ppm	Ti ppm	Y ppm	Zn ppm
166666 -180um	259	0.32	46.1	8	80	18	2.9	1.65	2.14	23.1	0.47	664	4.5	13	86.2	32	1460	15.4	29
166669 -180um	264	0.3	46.8	6	65	33	2.95	1.65	2.15	22.8	0.38	639	4	15	96	33	1420	15.7	21
166672 -180um	348	0.57	45.9	8	45	16	2.95	1.6	2.25	25.4	0.62	749	4.5	18	126	22	1760	15.9	21
166672 -180um Rpt	354	0.58	48.6	8	45	15	3.05	1.7	2.29	24	0.63	736	5	17	128	22	1700	16.5	22

Sample Preparation

The samples have been sorted, dried and split where necessary.

The samples have then been pulverised in a vibrating disc pulveriser.

Analytical Methods

The sample(s) have been pre-oxidised to prevent losses of Sulphur and then digested with a mixture of Acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric Acids.

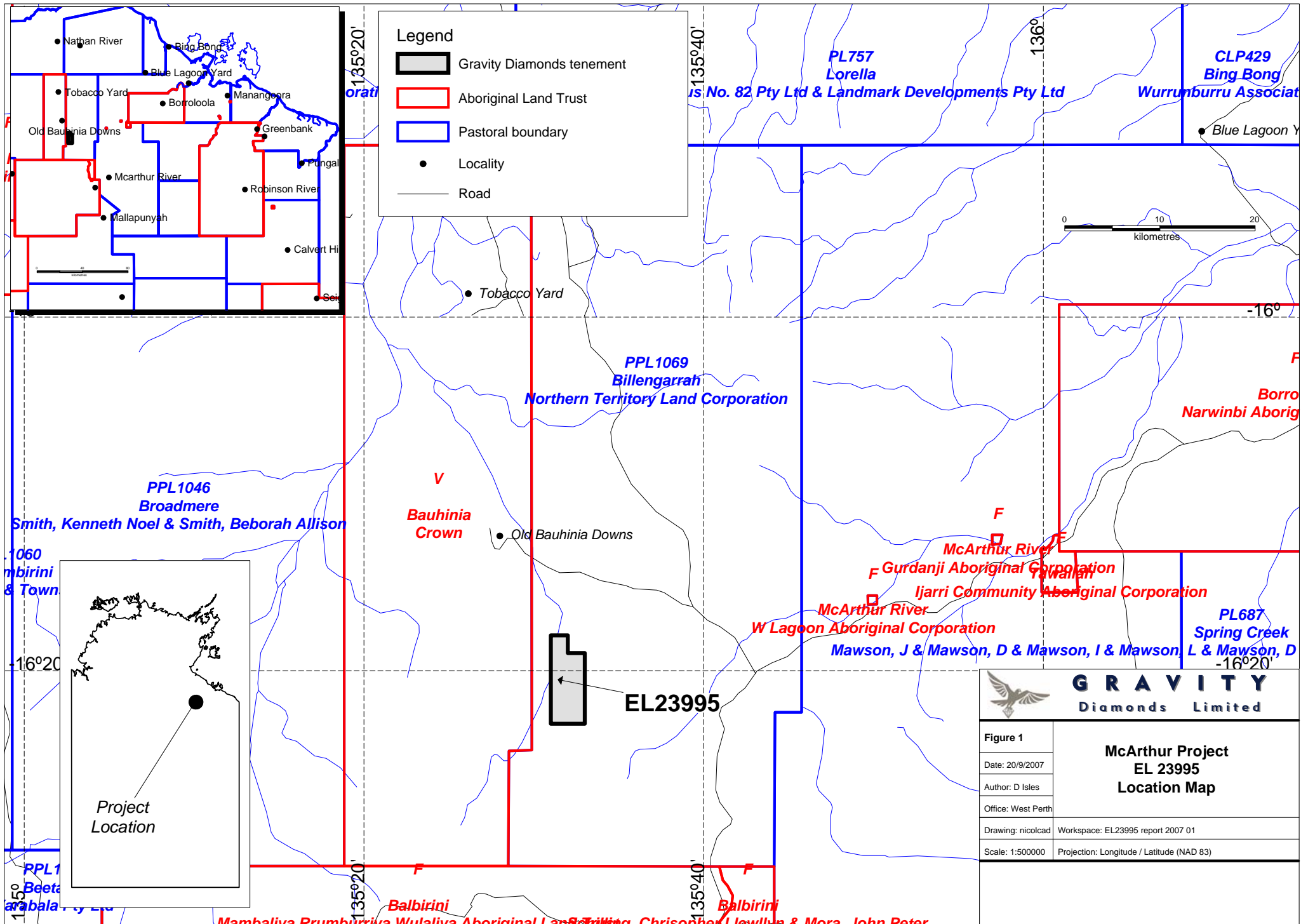
If Barium occurs as the Sulphate mineral, then at high levels (more than 4000 ppm) it may re-precipitate after the digest giving seriously low results.

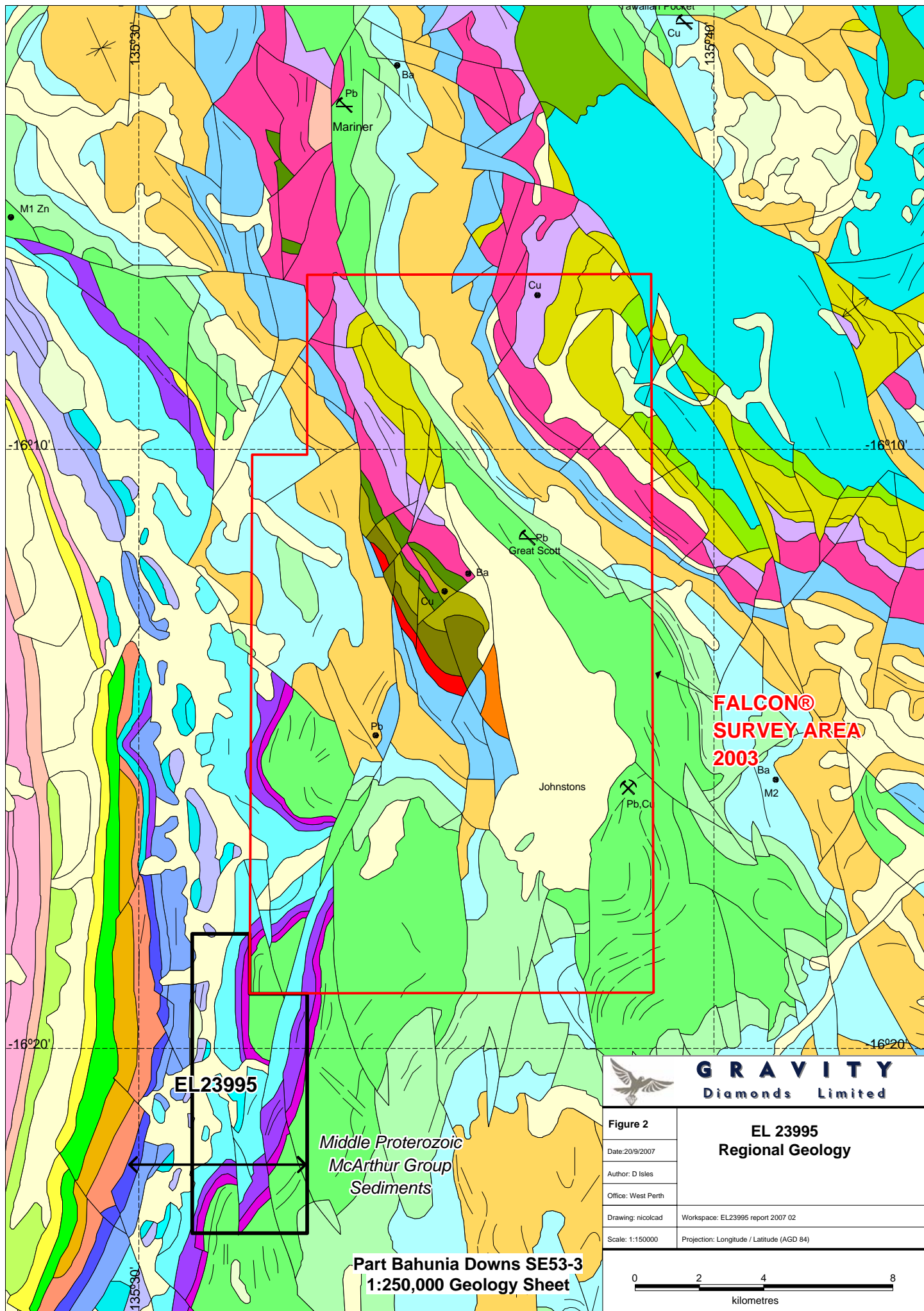
Ba, Ce, Dy, Er, La, Nb, Rb, Sr, Y

have been determined by Inductively Coupled Plasma (ICP) Mass Spectrometry.

Ca, Co, Cr, Cu, Fe, Mg, Mn, Ni, Ti, Zn

have been determined by Inductively Coupled Plasma (ICP) Optical Emission Spectrometry.





**FALCON®
SURVEY AREA
2003**

EL 23995

*Middle Proterozoic
McArthur Group
Sediments*

**Part Bahunia Downs SE53-3
1:250,000 Geology Sheet**



GRAVITY
Diamonds Limited

Figure 2

Date: 20/9/2007

Author: D Isles

Office: West Perth

Drawing: nicolcad

Scale: 1:150000

Workspace: EL23995 report 2007 02

Projection: Longitude / Latitude (AGD 84)

**EL 23995
Regional Geology**

