



North  
Australian  
Diamonds  
Limited  
ABN 86 009 153 119

## **Annual Report – Year 7**

### **Exploration Licence 10189**

23<sup>rd</sup> July 2008 to 22<sup>nd</sup> July 2009  
Northern Territory, Australia

***Holder:*** Merlin Diamonds Pty Ltd  
***Operator:*** North Australian Diamonds Limited  
***Reporting Period:*** 23<sup>rd</sup> July 2008 to 22<sup>nd</sup> July 2009  
***Sheet Reference:*** Bauhinia Downs 1:250,000 (SE53-03)  
Walhallow 1:250,000 (SE53-07)  
Calvert Hills 1: 250,000 (SE53-08)  
***Due Date:*** 22<sup>th</sup> August 2009

Author: Tom Reddicliffe  
Date: August 2009  
Report No: 09-029  
Copies To: Dept. Primary Industries, Fisheries and Mines - NT  
NADL

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**SUMMARY**

*This annual report outlines exploration activities undertaken by North Australian Diamonds Limited on Exploration Licence 10189 between the 23<sup>rd</sup> July 2008 and the 22<sup>nd</sup> July 2009. This period represents year six of the licence.*

*Exploration Licence 10189 is situated on the Bauhinia Downs (SE53-03), Walhallow (SE53-07) and Calvert Hills (SE53-08) 1:250,000 mapsheets, and the Glyde, Lancewood and Surprise 1:100,000 topographic mapsheets in the Batten Region of the Northern Territory. It is located around 100 kilometres south of Borroloola and is accessed via existing unsealed tracks leading east from the Merlin Mine or north from Kiana Station.*

*Diamond exploration during the current reporting period included soil geochemical sampling, loam sampling, ground magnetic and ground electromagnetic surveying. The MAG03T anomaly was downgraded following the electromagnetic survey, however remains of interest due to the associated magnetic anomaly and diamonds recovered in loam samples and the kimberlitic chromites recovered in drainages emanating from the plateau that hosts the MAG03T anomaly.*

*On 18<sup>th</sup> September 2007 NADL granted Top End Uranium Limited (TEUL) the right of access to the land covered by the licence for the purpose of exploring for, mining and processing minerals other than diamonds. A desktop study completed by Jigsaw Geoscience in April 2008 identified four priority targets for potential uranium mineralization. The four targets identified by Jigsaw Geoscience as prospective for potential uranium mineralisation were field inspected by TEUL consulting geologist. The field activities were helicopter supported from Merlin Diamond Mine. A report from the consulting geologist on the findings of the investigation has not yet been received.*

*An Application for Exploration Licence Renewal was submitted to DPIFM. The licence renewal for a two year period was subsequently granted to Merlin Diamonds Pty Ltd on 31<sup>st</sup> July 2008.*

*A total of \$128,020 was expended against a covenant of \$220,000.*

## 1.0 INTRODUCTION

This annual report outlines exploration activities undertaken by North Australian Diamonds Limited (NADL) on Exploration Licence 10189 between the 23<sup>rd</sup> July 2008 and the 22<sup>nd</sup> July 2009. This period represents year six of the licence.

## 2.0 LOCATION AND ACCESS

Exploration Licence 10189 is situated on the Bauhinia Downs (SE53-03), Walhallow (SE53-07) and Calvert Hills (SE53-08) 1:250,000 mapsheets, and the Glyde, Lancewood and Surprise 1:100,000 topographic mapsheets in the Batten Region of the Northern Territory. It is located around 100 kilometres south of Borroloola and is accessed via existing unsealed tracks leading east from the Merlin Mine or north from Kiana Station. A tenement location map is provided as Figure 1.

## 3.0 TENURE

EL 10189 consists of 231 blocks, and was granted to Ashton Mining Limited (now a wholly owned subsidiary of Rio Tinto Limited) on 23<sup>rd</sup> July 2002 for six years. North Australian Diamonds Limited acquired a 100% interest in EL 10189 and has transferred the tenure to wholly owned subsidiary company 'Bulgurri Diamonds Pty Ltd'. Bulgurri Diamonds subsequently changed name in February 2006 to Merlin Diamonds Pty Ltd. Licence details for EL 10189 are outlined in Table 1 below.

*Table 1: Licence details for EL10189.*

Name	Status	Effective Date	Grant Date	Expiry Date	Blocks	Holder	Percentage
EL10189	Grant	23/07/02	23/07/02	22/07/08	231	Merlin Diamonds Pty Ltd	100

## 4.0 GEOLOGY

EL10189 is located over the northeast margin of the Neoproterozoic Georgina Basin overlying the south east of the Mesoproterozoic McArthur Basin. It lies not far to the north east of the Cretaceous Dunmarra Basin. Neoproterozoic Bukalara Sandstone of the Georgina Basin outcrops over most of the EL. A narrow horst block of Mesoproterozoic Tawallah Group and Roper Group traverses the northeast margin of the EL. Cenozoic sands overlie Neoproterozoic sediments in the south. The Merlin kimberlite field is

located immediately to the north of the EL.

The NNW-SSE trending Emu Fault Zone is a broad, major fault zone that passes through the west of the EL 10189. Georgina Basin sediments preserved from erosion extends northwards as a broad belt around the fault zone. Numerous faults that parallel to sub parallel the Emu Fault Zone traverse the central and eastern portions of the EL. These faults define the margins of the horst block along the northeast margin of the EL.

The NW-SE trending Calvert Fault, which intersects the Emu Fault Zone proximal to the Merlin kimberlite field, passes just to the north of the EL 10189. A number of major and minor faults paralleling to the Calvert Fault pass through EL. One can be interpreted to extend out towards the Abner Range kimberlitic sandstone breccia pipes.

Some of the major rivers in the region have strong NE-SW trending linear course suggestive of an underlying structural control. A set of regional gravity lineaments in the region also trend NE-SW.

At the regional scale, the geology of EL 10189 is essentially the same as the area to the north that hosts the Merlin kimberlite field. Structures that traverse the Merlin kimberlite field traverse the EL. Within EL 10189, there is excellent potential for repetitions of the regional and local structural configurations that control the location of the Merlin kimberlites.

Regional gravity data shows that the Merlin kimberlite field and the Abner Range kimberlitic breccia pipes are located along either margin (gradient) of a regional north-south trending gravity ridge. The Merlin field is also located over a major NE-SW trending gravity lineament (gradient) that intersects the north-south trending gravity ridge. The regional gravity patterns associated with the Merlin kimberlite field are applicable to EL 10189 as well given the scale of the data. The gravity data is mainly mapping deep-seated Proterozoic basement domains and structure, however, the geological processes that influenced the gravity patterns also influenced the surface geology and geomorphology. It is noticeable that prominent NW-SE trending gravity lineaments broadly parallel the major fault-controlled drainage patterns in the region.

Regional magnetics data shows the Merlin kimberlite field to be located along the eastern

margin of the vast deep-seated magnetic high. The eastern margin of the magnetic high is terminated along the NNW-SSE trending Emu Fault Zone. A magnetic lineament associated with the Calvert Fault that intersects the Emu Fault Zone near the Merlin kimberlite field is also evident in the regional data. Traversing EL 10189 are a number of NNW-SSE trending magnetic lineaments that parallel the Emu Fault Zone. The patterns suggest potential for repetitions of the regional structural configuration evident for the Merlin kimberlite field.

Kimberlitic intrusions and diatremes in the McArthur Basin region are commonly located proximal to major geophysical domain contacts probably mapping major, deep-seated structures. EL 10189 contains much the same regional gravity and magnetic patterns and lineament trends that potentially represent favourable tectono-structural settings that control the locations of kimberlitic intrusions and diatreme breccia pipes in the McArthur Basin.

## **5.0 PREVIOUS EXPLORATION**

### **5.1 Pre 2002**

- In 2000, Ashton Mining collected a 50 ton bulk gravel sample that recovered 75 macrodiamonds and 142 chromites.
- In 2000, Ashton Mining completed an airborne magnetic/radiometric survey at 100m line spacing.
- In December 2000, Rio Tinto take-over of Ashton Mining.
- In 2001, RTE collected six 500kg gravel samples to follow up the 75 macrodiamond sample. No diamonds were recovered. 20 chromites at 75 macrodiamond sample and low numbers recovered elsewhere.
- RTE completed a Hummingbird electromagnetic survey, totaling 6,200 line kilometres at 100m line spacing and also reviewed year 2000 Ashton airborne magnetic data. Numerous anomalies including high priority target HUM07 were identified and followed up with loam and soil geochemical samples, and ground geophysics.

**5.2 Year One – 2002 to 2003**

- Licence granted to Ashton Mining on 23<sup>rd</sup> July 2002.
- Rio Tinto decide to close Merlin Diamond Mine and commencement negotiations to divest surrounding exploration licences.
- No field work completed by RTE due to divestment of licence.

**5.3 Year Two – 2003 to 2004**

- Signing of 'Letter of Intent' with Rio Tinto Limited subsidiary Ashton Mining.
- Licence transferred to North Australian Diamonds Limited subsidiary Bulgurri Diamonds.
- Heritage clearance undertaken and Mine Management Plan approved.

**5.4 Year Three – 2004 to 2005**

- Four RC drill holes (TND-001 to TND-004) and two diamond drill holes (TND-005 and TND-006) were completed for a total of 628 metres to test geophysical anomaly HUM07. No kimberlite was intersected and the anomaly was interpreted to be a sinkhole infilled with Cretaceous sediments.
- Seven drill spoil samples (04-038-001 to 04-038-007) were collected for mineralogical analysis and seven samples (04-038-008 to 04-038-014) were collected for geochemical analysis.
- A morphological assessment of the alluvial diamonds recovered by Ashton Mining in 2000 was undertaken to determine whether the diamonds may be shedding from a primary or secondary source. The report concluded that 62% of the alluvial diamonds are considered to be from a primary source of which 43% have not undergone significant travel.
- Nineteen samples were collected that returned 4 chromites (05-018-002), 4 microdiamonds (05-018-016), 1 microdiamond (05-018-020), and 1 microdiamond (05-018-024).

- The four microdiamond sample (05-018-016) was collected over an airborne magnetic anomaly MAG03T (also referred to as GTINHEM06) that RTE had previously recovered 1 chromite in a loam sample.
- Eighty-four soil geochemical samples were collected and analysed that returned no high priority anomalies.

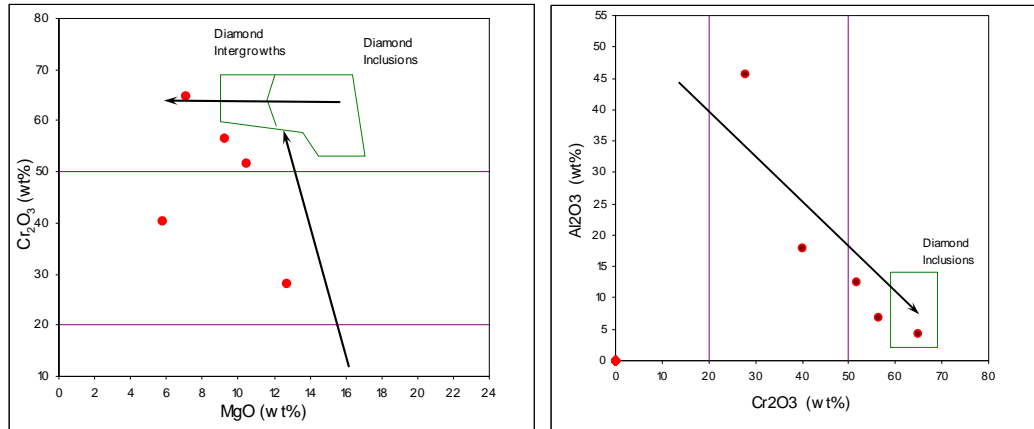
### **5.5 Year Four – 2005 to 2006**

- Four sampling programs were undertaken.
- Four stream samples (05-040-001 to 05-040-004) collected that returned one chromite (05-040-003) and a nb-rutile (05-040-001).
- Three additional stream samples (05-050-001 to 05-050-003) collected that returned a total of five chromites.
- Seven loam samples (05-051-001 to 05-051-007) that returned three microdiamonds (05-051-001) from a check sample at historic sample 05-018-016 that returned four microdiamonds.
- Fifteen stream gravel samples (06-002-001 to 096-002 -015) were collected in tributaries draining a plateau that recovered one chromite (06-002-008) and one microdiamond (06-002-014).

### **5.6 Year Five – 2006 to 2007**

- Mineral chemistry was obtained from recovered chromites that drain the plateau that is host to MAG03T. The figure below shows the mineral chemistry of one chromite collected in the Rio Tinto loam sample (6160780) over airborne magnetic anomaly MAG03T and of four chromites recovered in adjacent drainage samples (05050-002 and 05050-003). Two loam samples collected over this anomaly have also recovered a total of seven microdiamonds. The plot shows a mantle trend that could be indicative of a primary kimberlite source.





### 5.7 Year Six – 2007 to 2008

- Soil geochemical traverse comprising eleven samples (07-005-001 to 07-005-011) and one fracture sample (07-005-012) was completed over anomaly MAG03T that identified anomalous geochemical response. Soil geochemical data and interpretation are included in Appendix 1.
- Ground magnetic survey completed over MAG03T that identified magnetic anomaly. Raw data and a survey image are included in Appendix 2.
- Ground electro-magnetic (EM34) survey completed over MAG03T that identified a small conductive anomaly associated with surficial sand cover. Raw data and a survey image are included in Appendix 3.
- Three loam samples (07-009-001 to 07-009-003) collected at MAG03T. Samples were processed and did not recover chromites or diamonds. Sample details are included in Appendix 4.
- Potential for uranium mineralization was assessed by internal staff and external consultants.
- On 18<sup>th</sup> September 2007 NADL granted Top End Uranium Limited (TEUL) the right of access to the land covered by the licence for the purpose of exploring for, mining and processing minerals other than diamonds.
- Desktop study completed by Jigsaw Geoscience in April 2008 identified four

priority targets for potential uranium mineralization. These targets occur within outcropping McArthur Basin sediments and are suitable for initial surface exploration methods. Target summary and location plan are included in Appendix 5.

- The four targets identified by Jigsaw Geoscience as prospective for potential uranium mineralisation were field inspected by TEUL consulting geologist. The field activities were helicopter supported from Merlin Diamond Mine. A report from the consulting geologist on the findings of the investigation has not yet been received.
- An Application for Exploration Licence Renewal was submitted to DPIFM on 30<sup>th</sup> April 2008. The licence renewal for a two year period was subsequently granted to Merlin Diamonds Pty Ltd on 31<sup>st</sup> July 2008.

## **6.0 EXPLORATION COMPLETED DURING REPORTING PERIOD**

### **6.1 Year Seven – 2008 to 2009**

## **7.0 EXPENDITURE STATEMENT**

The exploration expenditure attributed to EL10189 during the current reporting period is summarised below and included in attached expenditure statement.

A total of \$128,020 was expended against a covenant of \$220,000.

## **8.0 PROPOSED WORK PROGRAM**

The proposed work program for the next reporting period is outlined below. Proposed exploration will focus on diamonds and uranium.

Activities for diamond exploration include drilling of geophysical anomaly MAG03T, bulk sampling of major drainages to narrow the source area for the diamonds recovered in previous bulk samples, and loam and stream sampling to define target areas for subsequent drill testing in Year 2.

Activities for uranium exploration may include additional field geological mapping, rock chip sampling and spectrometer surveying along traverse lines over target areas identified by Jigsaw Geoscience and the TEUL consulting geologist. Drilling of any identified uranium anomalies would occur in Year 2 in conjunction with drilling of any identified diamond anomalies.

Rehabilitation of drill sites would occur in Year 2 prior to expiration of licence.

to

## **9.0 REFERENCES**

Jigsaw Geoscience (2008). Targeting Review. McArthur South project, Northern Territory. Prepared by John Beeson. NADL Report Number 08-021.

Kammermann M.S. (2008). Application for Exploration Licence Renewal. Exploration Licence 10189. NADL Report Number 08-017. April 2008.

Kammermann M.S. (2007). Annual Report – Year 5. Exploration Licence 10189. 23<sup>rd</sup> July 2006 to 22<sup>nd</sup> July 2007. NADL Report Number 07-037. August 2007.

## **APPENDIX 1**

### **Soil Geochemical Results**

## **APPENDIX 2**

### **Ground Magnetic Survey Results**

## **APPENDIX 3**

### **Ground Electromagnetic Survey Results**

## **APPENDIX 4**

### **Loam Sampling Results**

## **APPENDIX 5**

### **Jigsaw Geoscience Target Areas**

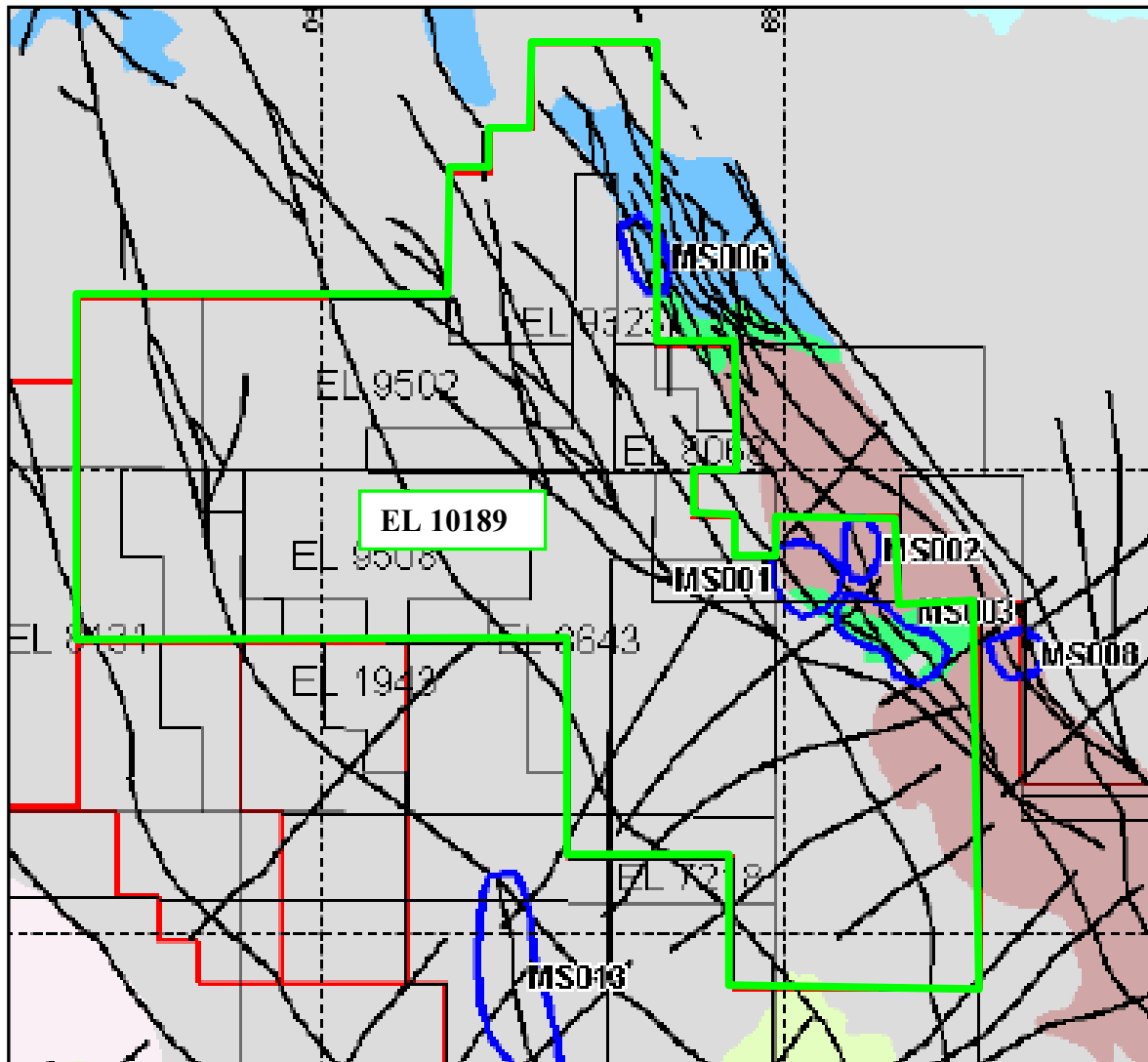


Target areas on EL10189 include MS001, MS002, MS003 and MS006

**Table 1. Target areas defined on the McArthur South project tenements.**

Target	AMGE	AMGN	Structural Complexity	K illite Alt	Th AP Min	U anom	Host Sequence	Unconformity	Priority	Comments
MS001	660,800	8,115,700	Fault Intersections	Yes	Yes	No	KRG, Tawallah Group	Yes	One	
MS002	663,200	8,116,200	Fault Duplex	Yes	Yes	No	KRG, Tawallah Group	Yes	Two	
MS003	664,200	8,112,600	Fault Intersections	Yes	Yes	No	Mafic Volcanics (McArthur Group)	Yes	One	
MS004	682,400	8,092,300	Fault Intersections	No	Yes	No	Bukalara Sandstone	No	Three	Deep cover
MS005	682,900	8,089,200	Radiometric Anomaly	No	Yes	No	Bukalara Sandstone	No	Three	Deep cover
MS006	653,800	8,129,200	Thrust fault	Unknown	Unknown	Unknown	Masterton Sandstone	Yes	Two	Upper sequences
MS007	677,400	8,105,300	Fault Duplex	No	Yes	No	Bukalara Sandstone	Yes	Three	
MS008	670,000	8,112,200	Fault Intersections	No	Yes	No	KRG, Tawallah Group	Yes	Two	
MS009	709,000	8,080,000	Fault Intersections	No	No	Yes	Lower Tawallah Gp	Yes	Two	Neoprot cover
MS010	693,000	8,078,000	Fault Intersections	No	No	Yes	Lower Tawallah Gp	Yes	Two	Mesozoic cover
MS011	683,000	8,076,000	Fault Intersections	Yes	No	No	Lower Tawallah Gp	Yes	One	Mesozoic cover
MS012	665,000	8,083,000	Fault Intersections	No	No	No	Lower Tawallah Gp	Yes	One	Mesozoic cover
MS013	648,000	8,101,000	Fault Intersections	No	No	Yes	Lower Tawallah Gp	Yes	One	Neoprot cover
MS014	657,000	8,083,000	Fault Intersections	No	Yes	Yes	Lower Tawallah Gp	Yes	Two	Mesozoic cover

Source : Jigsaw Geoscience (2008). Jigsaw Geoscience Pty Ltd - Targeting Review: McArthur South project, Northern Territory. Confidential report to Top End Uranium Limited. April 2008.

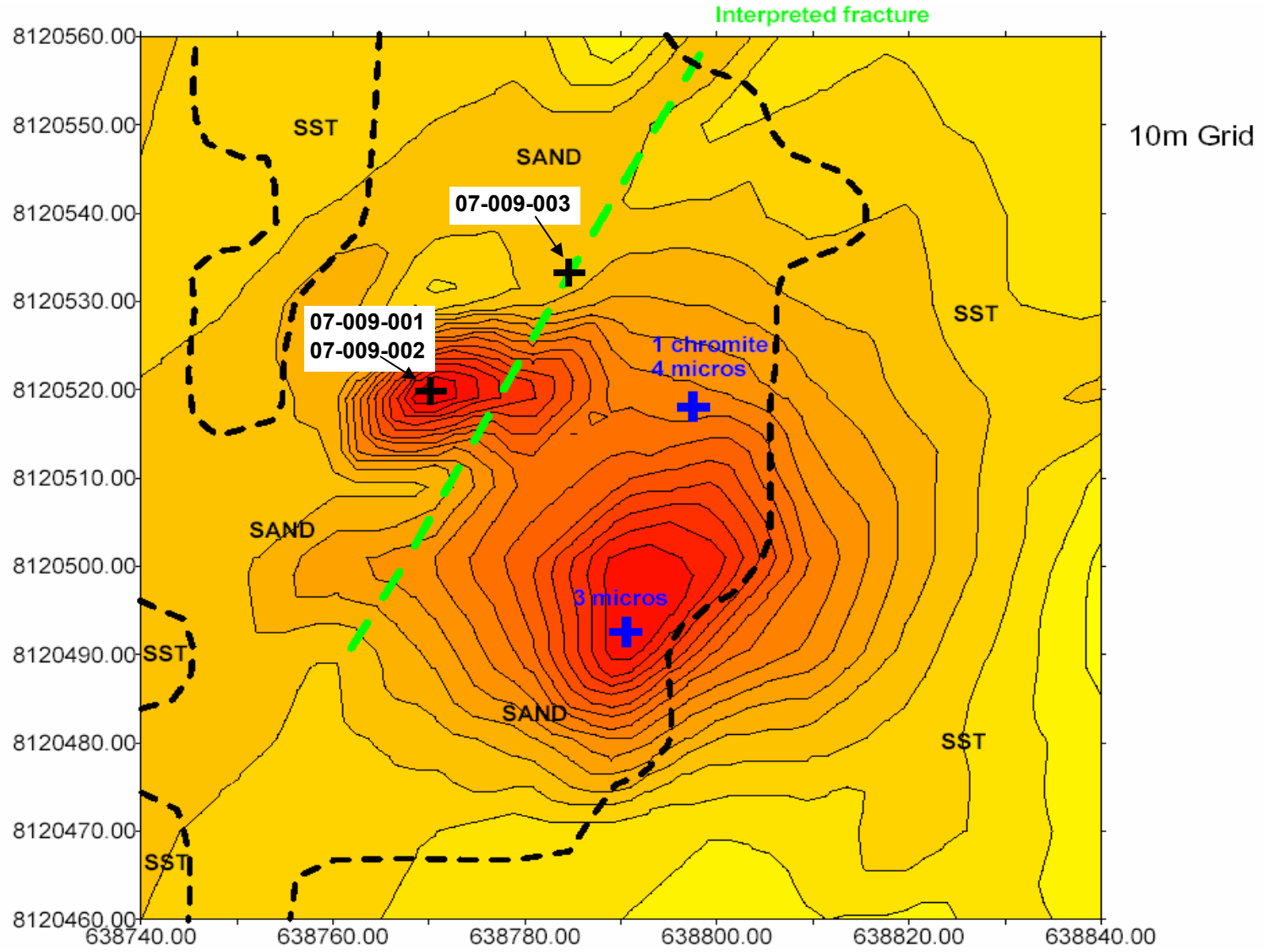


**Potential U Targets**

- MS001
- MS002
- MS003
- MS006

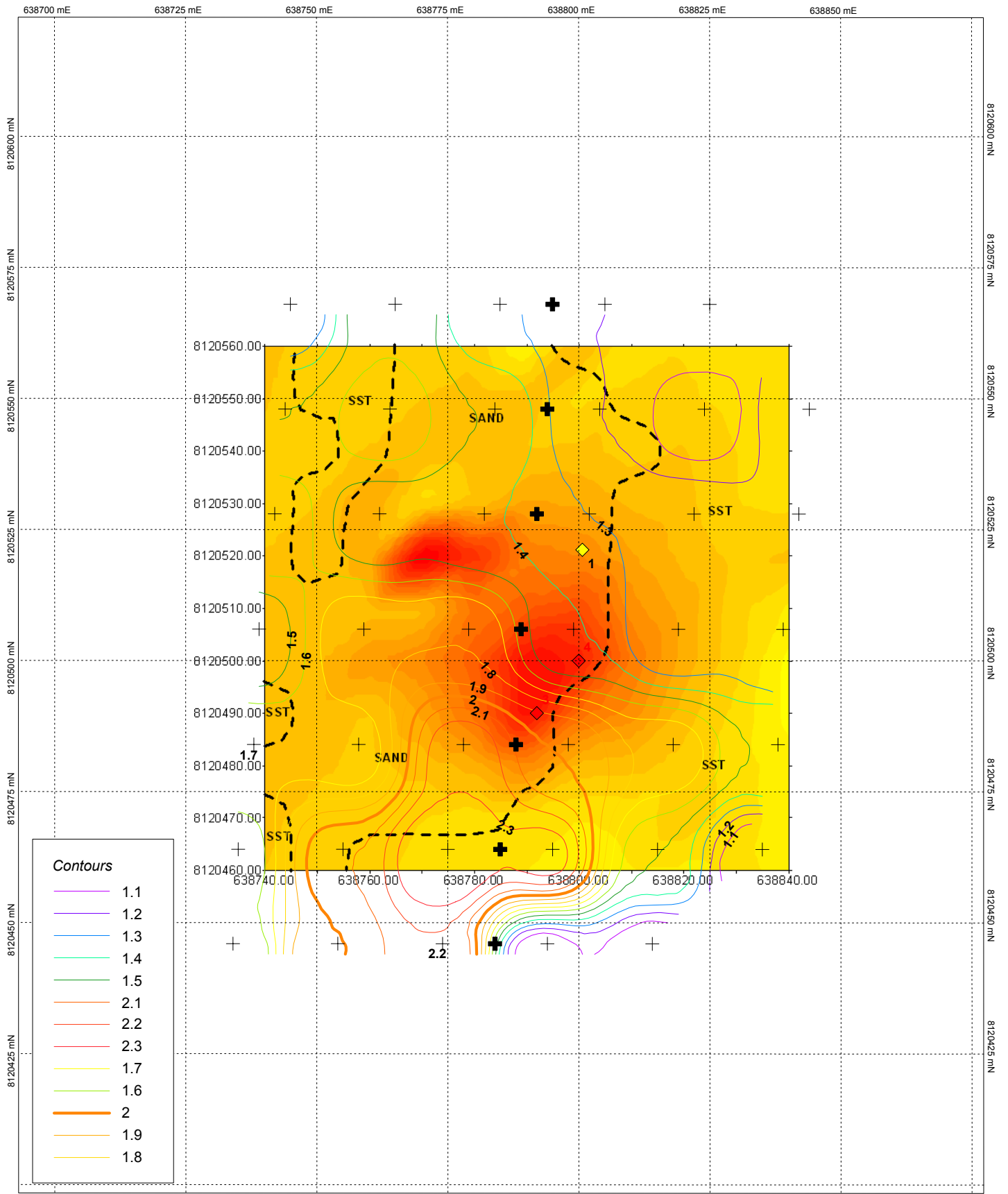
**Source:**  
Jigsaw Geoscience  
(2008)

# Year 6 Loam Sampling over MAG03T



<b>Sample Number</b>	<b>Northing AGD66, 53K</b>	<b>Easting AGD66, 53K</b>	<b>Sample Type</b>	<b>Sieved</b>	<b>Sample Size</b>	<b>Diamond</b>	<b>Chromite</b>
07-009-001	8120520	638770	Loam	1.0mm	4 bags	Negative	Negative
07-009-002	8120532	638785	Loam	1.0mm	1 bag	Negative	Negative
07-009-003	8120520	638770	Loam	1.0mm	1 bag	Negative	Negative

Line	Row	Easting	Northing	Reading
1	1	638745	8120568	1.2
1	2	638765	8120568	1.6
1	3	638785	8120568	1.3
1	4	638805	8120568	1.2
1	5	638825	8120568	1.2
2	1	638744	8120548	1.5
2	2	638764	8120548	1.7
2	3	638784	8120548	1.5
2	4	638804	8120548	1.2
2	5	638824	8120548	1.0
2	6	638844	8120548	1.3
3	1	638742	8120528	1.7
3	2	638762	8120528	1.4
3	3	638782	8120528	1.4
3	4	638802	8120528	1.3
3	5	638822	8120528	1.3
3	6	638842	8120528	1.2
4	1	638739	8120506	1.4
4	2	638759	8120506	1.8
4	3	638779	8120506	1.8
4	4	638799	8120506	1.4
4	5	638819	8120506	1.2
4	6	638839	8120506	1.2
5	1	638738	8120484	1.7
5	2	638758	8120484	1.6
5	3	638778	8120484	2.3
5	4	638798	8120484	2.0
5	5	638818	8120484	1.8
5	6	638838	8120484	1.5
6	1	638735	8120464	1.5
6	2	638755	8120464	2.1
6	3	638775	8120464	2.5
6	4	638795	8120464	2.4
6	5	638815	8120464	1.5
6	6	638835	8120464	1.0
7	1	638734	8120446	1.5
7	2	638754	8120446	2.0
7	3	638774	8120446	2.2
7	4	638794	8120446	1.0
7	5	638814	8120446	1.0



**Legend**

- ⊕ Base line
- ◆ Diamond Positive Sample
- ◇ Chromite Positive Sample

North Australian Diamonds Ltd	
Date: 8/1/2007	Tintagel Anomaly GTINHEM06
Author:	EM Survey October 2007
Office:	
Drawing:	
Scale: 1:1000	Projection: AMG Zone 53 (AGD 86)

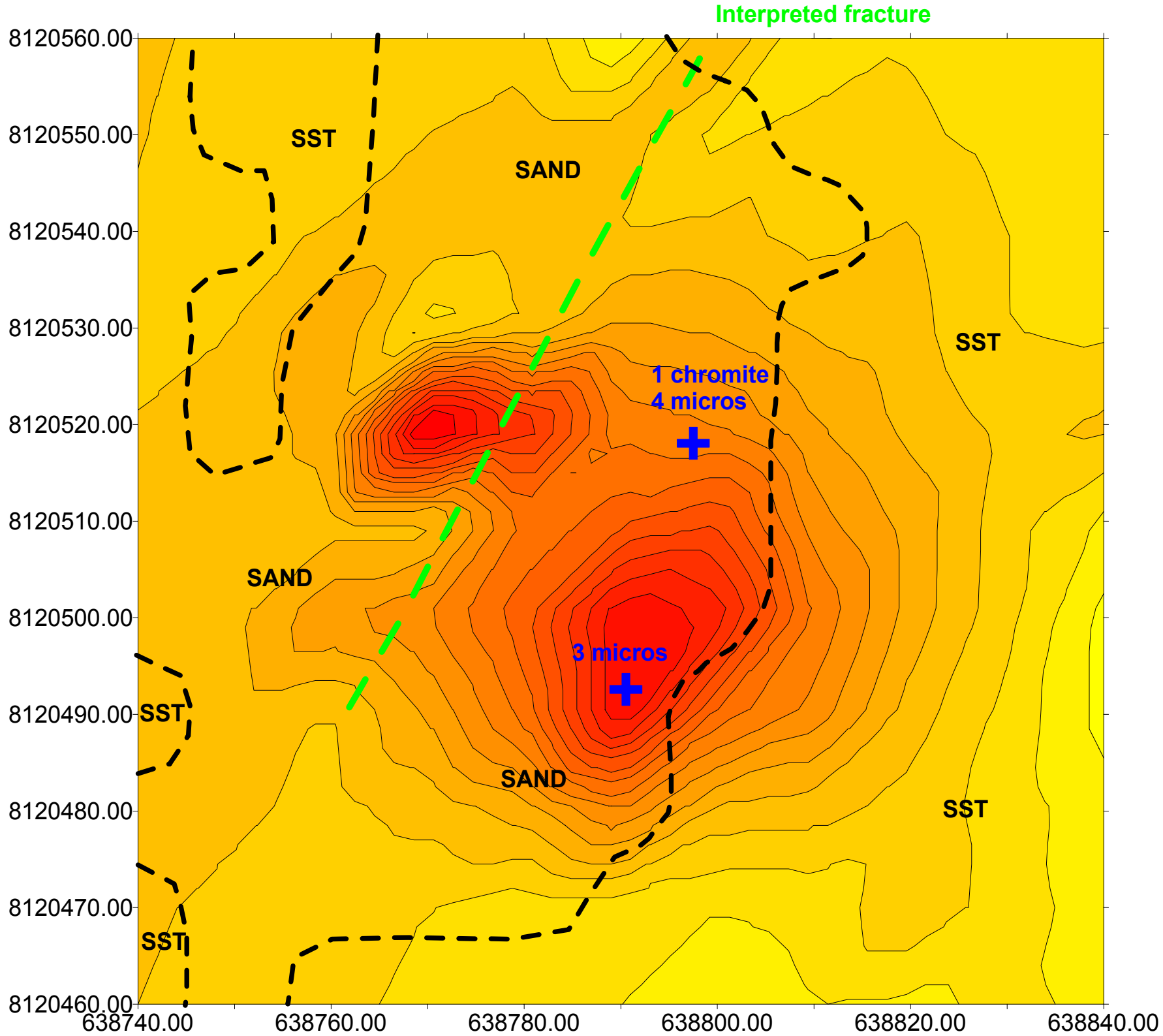
Mag03T/Tin06 Ground Magnetic Survey 10m Grid

Location	Easting	Northing	Magnetic	Geology	Line
1	638740	8120560	48737	Sand	1
2	638740	8120550	48736.2	Sand	
3	638740	8120540	48735.6	Sand	
4	638740	8120530	48734.8	Sand	
5	638740	8120520	48736.2	Sand	
6	638740	8120510	48737.2	Sand	
7	638740	8120500	48736.8	Sand	
8	638740	8120490	48737.8	SST	
9	638740	8120480	48736.2	Sand	
10	638740	8120470	48736.4	SST	
11	638740	8120460	48736	SST	
12	638750	8120460	48735.6	Sand	2
13	638750	8120470	48735.4	Sand	
14	638750	8120480	48736.4	Sand	
15	638750	8120490	48737	Sand	
16	638750	8120500	48737.6	Sand	
17	638750	8120510	48736.8	Sand	
18	638750	8120520	48736.8	SST	
19	638750	8120530	48736	SST	
20	638750	8120540	48735.4	Sand	
21	638750	8120550	48734.4	SST	
22	638750	8120560	48734.4	SST	
23	638760	8120560	48734.6	SST	3
24	638760	8120550	48734.2	SST	
25	638760	8120540	48736.2	SST	
26	638760	8120530	48740	Sand	
27	638760	8120520	48738.8	Sand	
28	638760	8120510	48737	Sand	
29	638760	8120500	48741.8	Sand	
30	638760	8120490	48735.8	Sand	
31	638760	8120480	48735.4	Sand	
32	638760	8120470	48734.8	Sand	
33	638760	8120460	48734.2	SST	
34	638770	8120460	48733.8	SST	4
35	638770	8120470	48734	Sand	
36	638770	8120480	48736.6	Sand	
37	638770	8120490	48740.2	Sand	
38	638770	8120500	48744	Sand	
39	638770	8120510	48737	Sand	
40	638770	8120520	48764.8	Sand	
41	638770	8120530	48733	Sand	
42	638770	8120540	48737.2	Sand	
43	638770	8120550	48736	Sand	
44	638770	8120560	48735	Sand	
45	638780	8120560	48735.2	Sand	5
46	638780	8120550	48737	Sand	
47	638780	8120540	48736.8	Sand	
48	638780	8120530	48736.2	Sand	
49	638780	8120520	48756	Sand	
50	638780	8120510	48746.2	Sand	
51	638780	8120500	48749.4	Sand	
52	638780	8120490	48746.6	Sand	
53	638780	8120480	48738.8	Sand	

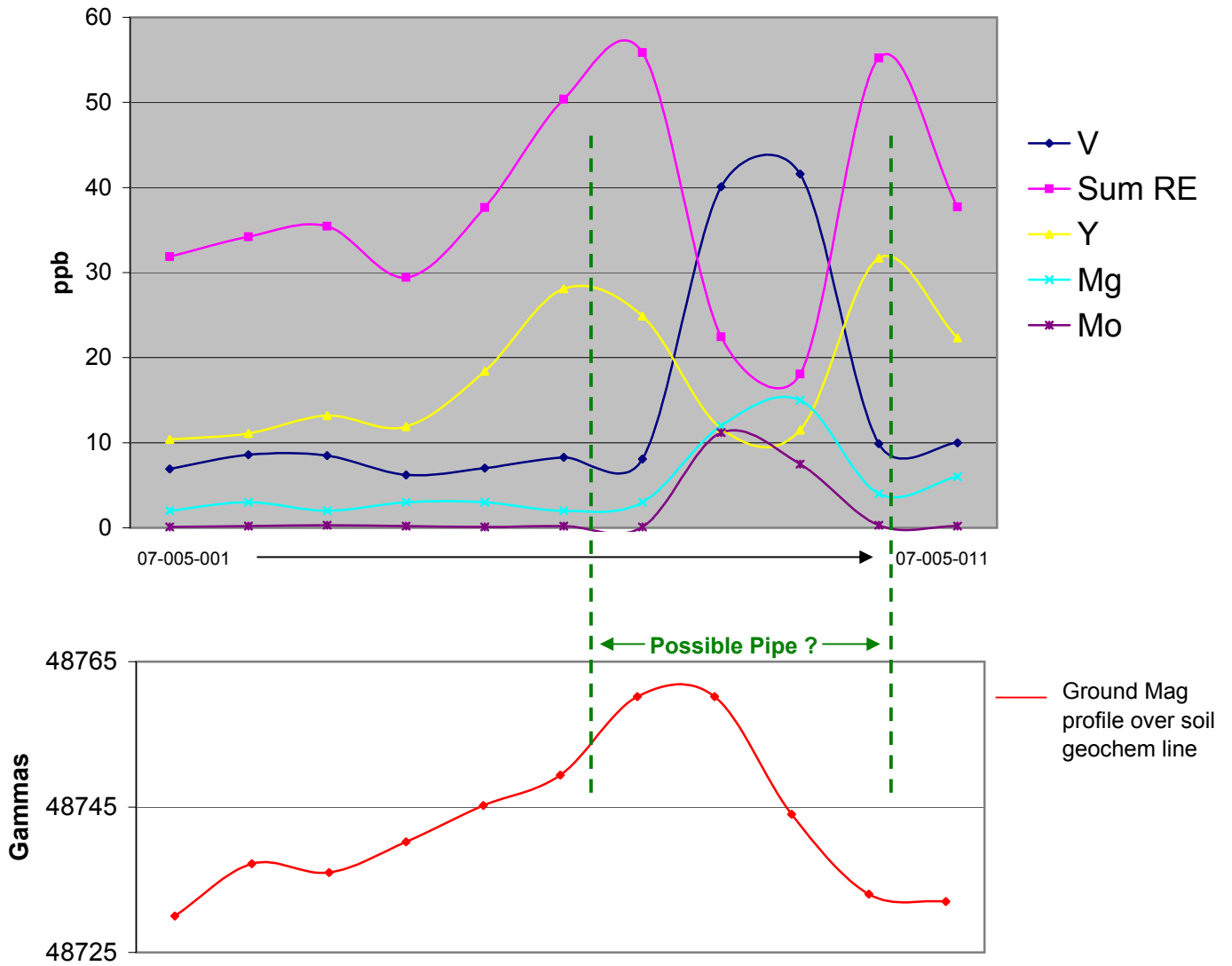
54	638780	8120470	48732.6 Sand	
55	638780	8120460	48733.2 SST	
56	638790	8120460	48732 SST	6
57	638790	8120470	48733 SST	
58	638790	8120480	48744 Sand	
59	638790	8120490	48760.2 Sand	
60	638790	8120500	48760.2 Sand	
61	638790	8120510	48749.4 Sand	
62	638790	8120520	48745.2 Sand	
63	638790	8120530	48740.2 Sand	
64	638790	8120540	48736 Sand	
65	638790	8120550	48737.2 Sand	
66	638790	8120560	48730 Sand	
67	638800	8120560	48738.4 SST	7
68	638800	8120550	48733.4 Sand	
69	638800	8120540	48736.6 Sand	
70	638800	8120530	48739.6 Sand	
71	638800	8120520	48744 Sand	
72	638800	8120510	48751.8 Sand	
73	638800	8120500	48757.4 Sand	
74	638800	8120490	48747.2 SST	
75	638800	8120480	48737.4 SST	
76	638800	8120470	48732 SST	
77	638800	8120460	48731.2 SST	
78	638810	8120460	48732 SST	8
79	638810	8120470	48732.4 SST	
80	638810	8120480	48736.8 SST	
81	638810	8120490	48743.2 SST	
82	638810	8120500	48745.8 SST	
83	638810	8120510	48742.8 SST	
84	638810	8120520	48740.2 SST	
85	638810	8120530	48737.6 SST	
86	638810	8120540	48735.2 Sand	
87	638810	8120550	48735.2 SST	
88	638810	8120560	48731.6 SST	
89	638820	8120560	48733.8 SST	9
90	638820	8120550	48734.4 SST	
91	638820	8120540	48736.2 SST	
92	638820	8120530	48736.6 SST	
93	638820	8120520	48737.4 SST	
94	638820	8120510	48739.2 SST	
95	638820	8120500	48739.2 SST	
96	638820	8120490	48737 Sand	
97	638820	8120480	48735.2 SST	
98	638820	8120470	48735.8 SST	
99	638820	8120460	48731.6 SST	
100	638830	8120460	48732.4 SST	10
101	638830	8120470	48732.8 SST	
102	638830	8120480	48733 SST	
103	638830	8120490	48733.4 SST	
104	638830	8120500	48734.6 SST	
105	638830	8120510	48734.8 SST	
106	638830	8120520	48735.5 SST	
107	638830	8120530	48734 SST	
108	638830	8120540	48734 SST	



109	638830	8120550	48733.2 SST
110	638830	8120560	48732.8 SST
111	638840	8120560	48733.8 SST
112	638840	8120550	48732.6 SST
113	638840	8120540	48733 SST
114	638840	8120530	48733.6 SST
115	638840	8120520	48736.4 SST
116	638840	8120510	48731.6 SST
117	638840	8120500	48729.4 SST
118	638840	8120490	48729.4 SST
119	638840	8120480	48730.8 SST
120	638840	8120470	48731.2 SST
121	638840	8120460	48731.6 SST



## Year Six soil geochemical traverse over anomaly MAG03T



## Report on followup of Jigsaw Targets

### 1. McArthur South field inspection.

A field inspection was done in the period 23-28 June 2008.

Purpose of the inspection was to assess the anomalous zones evidenced in the McArthur South/Puzzle Creek project area with particular regard to the uranium potential, as well as for base and precious metals of McArthur lead-zinc-silver Sedex deposit (HYC) type.

A helicopter was used as a mean of rapid transport due to the rugged topography, and a spectrometer, Gamma Surveyor, allowed a radiometric survey of the anomalous zones. The Merlin camp site was the base for the operation, kindly supplied by North Australian Diamonds, with the assistance of the field personnel, whose help is gratefully acknowledged.

The preliminary results are as follows:

- **Uranium.**

Most of the zones were flown at low level altitude and a number of landings were made to measure the radioactivity on the ground. However, no anomalies were detected, with values ranging in the order of 3 ppm eU, 10 ppm eTH and 4-10% K. This could be explained by the fact that the main target possibly trending into TEU's tenements, Seigel Volcanics and Westmoreland Conglomerate, is covered by several metres of sediments of Cretaceous age.

Two uranium prospects, White Horse located immediately to the south of EL 26181, and Anomaly 1 located about 35 km south, were inspected on the ground. These prospects were worked in the past for their potential of Westmoreland U-mineralization type. A drilling site was located and the chips still present on the ground were measured but no radioactivity was detected.

- **Base metals.**

Secondary copper mineralisation as malachite was observed in rock grab samples collected in dolostone of the McArthur Group. These rocks crop out in the north-eastern portion of EL 10189, to continue in EL 24737. Three samples were taken and will be submitted for chemical assaying of lead, zinc, silver and associated elements indicators of sedex type mineralisation. A fourth sample was collected about 4 km east of the northern boundary of EL 10189 in quartz sandstone carrying fragmental malachite. The sandstone overlies the dolostone, both formations belonging to the McArthur Group and trending in TEU's tenement. The presence of mineralized fragments in the sandstone indicate that the source could be primary mineralization located in dolomite of the McArthur Group.

In conclusion, and pending results from chemical assays, it can be said that the potential for McArthur base metals type of mineralization is encouraging and further work should be planned for this target.

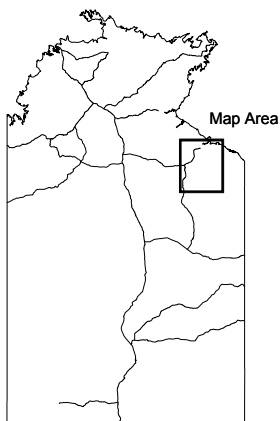
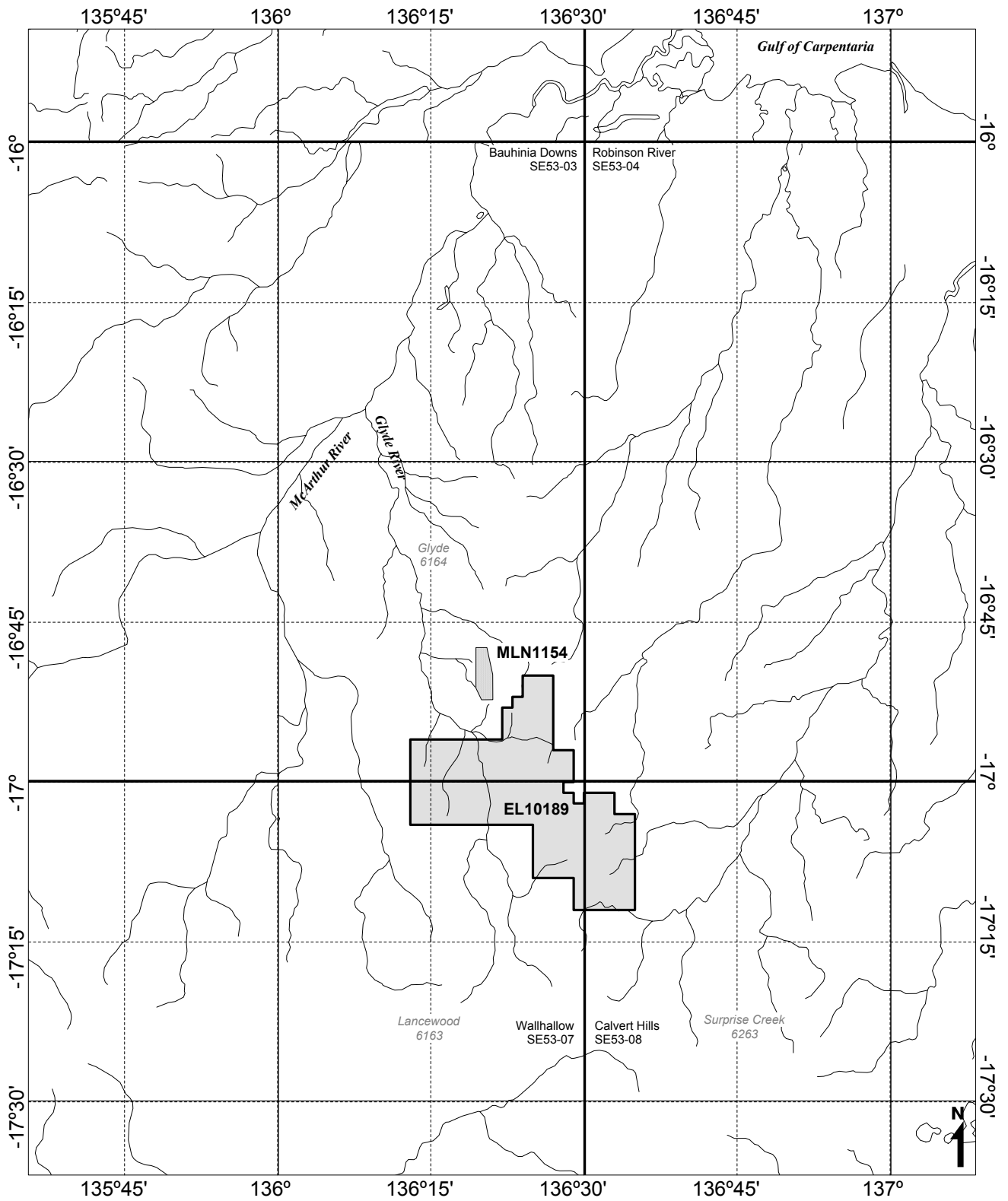
With regards to uranium, the potential for this area, particularly for Westmoreland type, requires more detailed field work aimed at delineating the structural continuation of the Seigel

Volcanics and Westmoreland Conglomerate (U host formation), which unconformably overlie the Cliffdale Volcanics and the Murphy Metamorphics, into TEU's tenement holdings.





Marcello de Angelis

Perth, 30 June 2008

A handwritten signature in black ink, appearing to read 'M. de Angelis', written in a cursive style.



**Legend**

-  Merlin Ming Lease - MLN1154
-  100k MapSheet
-  250k Mapsheet
-  EL10189

North Australian Diamonds	
	<b>EL10189</b>
Date: 22/8/2006	<b>Figure One</b>
Author:	
Office:	
Drawing:	
Scale: 1:1000000	Projection: Longitude / Latitude (Australia GDA94)
