Minerals Exploration

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COMBINED FINAL REPORT:
FOR THE PERIOD 17 JUNE 2005 TO 16 June 2006

Burdekin JV

BHP BILLITON MINERALS PTY LTD; JV Partner: METALLICA MINERALS LIMITED

EPM 14608, 14609, 14610, and 14965

ATHERTON SE 5505, 1:250,000
EINASLEIGH, SE 5509, 1:250,000
INGHAM, SE 5510, 1:250,000

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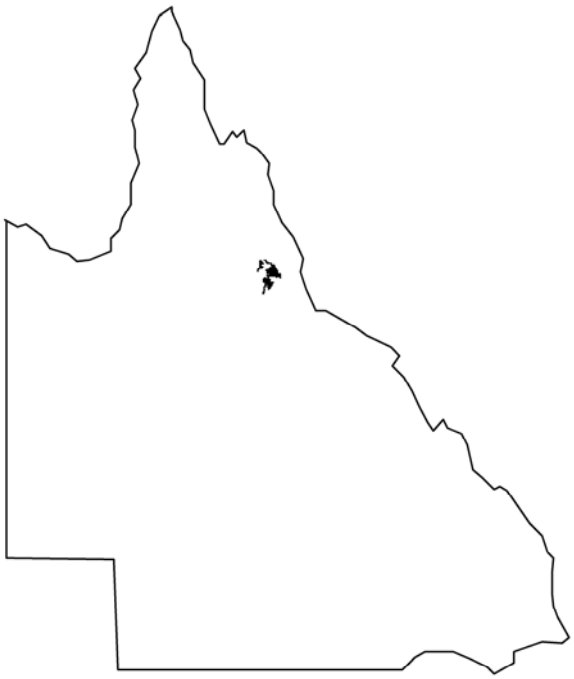
Appendix 1	Coordinates of Survey Boundary Areas

Project Name	:	Burdekin Project
Tenements	:	EPM 14608, 14609, 14610 and 14965
Location	:	ATHERTON SE 5505, 1:250,000 EINASLEIGH, SE 5509, 1:250,000 INGHAM, SE 5510, 1:250,000
Mineral District	:	Mareeba and Charters Towers
Project Area	:	582 Sub blocks
Commodities	:	NICKEL, COPPER, COBALT, PGE's, GOLD
Period	:	17 JUNE 2005 TO 10 APRIL 2006



1. SUMMARY OF ACTIVITIES

1.1 EPM 14608, 14609, 14610 and 14965

A total of 5262.5 kilometres of Geotem airborne electromagnetic / magnetic survey was flown over the Burdekin JV tenements in northern Queensland (a JV between BHP Billiton and Metallica). The survey was carried out by FUGRO Airborne Systems during August and September 2005.

2. INTRODUCTION

2.1. Preamble

The Burdekin JV project has a strategic location as it lies within 200 km of the BHP Billiton owned Yabulu nickel refinery. A major Ni sulphide deposit is sought with any smaller satellite sulphide or oxide resources encountered also able to be viably processed. It also lies within a favourable and prospective tectonic setting with lateritic Ni-Co resources developed over some of the ultramafic intrusions. Five areas were selected for the AEM and magnetic survey based on tectonic setting, aeromagnetic interpretation on existing survey data, published geology and gravity data (Figure1). There are no known electromagnetic surveys on the public domain and this style of mineralisation has not been previously targeted by the industry.

2.2. Tenure

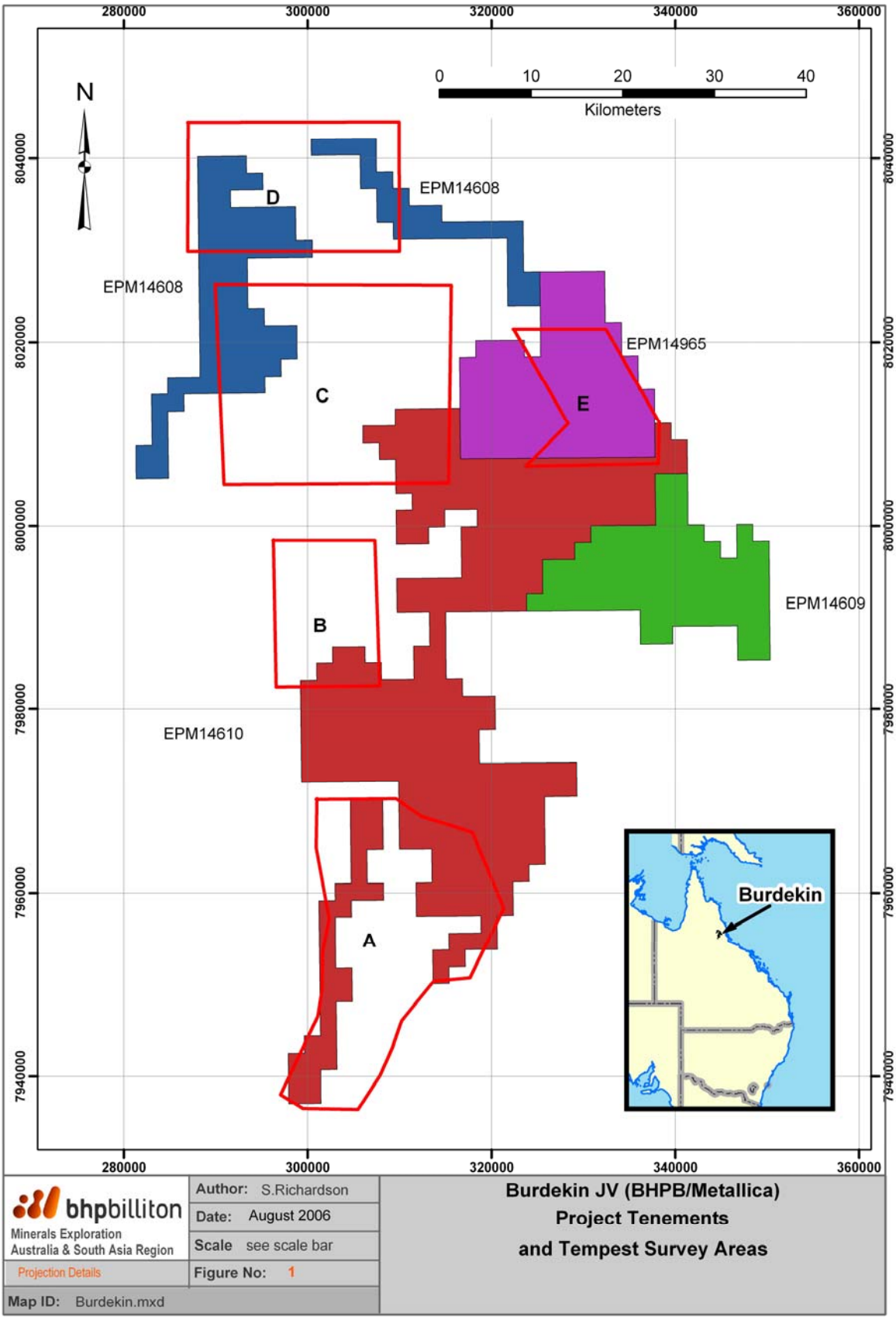
Tenure details are shown in the Table 1. This report covers the four EPM's that are part of the Burdekin JV.

Table 1: Tenement Information

Tenement	Area (Blocks)	Grant Date	Expiry Date
EPM14608	99	17/06/2005	16/06/2010
EPM14609	82	17/06/2005	10/04/2006
EPM14610	306	17/06/2005	10/04/2006
EPM14965	95	01/12/2005	10/04/2006

2.3. Location and Access

The Burdekin Project Leases are located on the following published topographic sheets :ATHERTON SE 5505, 1:250,000, EINASLEIGH, SE 5509, 1:250,000 INGHAM, SE 5510, 1:250,000. Their location is illustrated in Figure 1. The Burdekin AEM survey was executed over 5 blocks between Mt. Garnet and Greenvale, along the eastern margin of the Precambrian Georgetown block. Ground access can be made from the major regional centres of either Cairns or Townsville.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EPM14608
D
EPM14608
EPM14965
C
E
B
EPM14609
EPM14610
A
Burdekin
bhpbilliton
Minerals Exploration
Australia & South Asia Region
Projection Details
Author: S.Richardson
Date: August 2006
Scale see scale bar
Figure No: 1
Map ID: Burdekin.mxd
Burdekin JV (BHPB/Metallica)
Project Tenements
and Tempest Survey Areas

3. REGIONAL GEOLOGY

The survey was conducted over 5 selected areas which lie over the eastern margin of the Precambrian Georgetown Block (Figure 2).

Figure 3 is a geological element map of North-Eastern Queensland incorporating the Hodgkinson and Broken River provinces and indicating major faults and location of goldfields and ore deposits. The inset indicates the extent of the Tasman Fold Belt System (TFBS) in eastern Australia, with the area covered by this map specified.
Approximate area of Burdekin Project shown in red outline

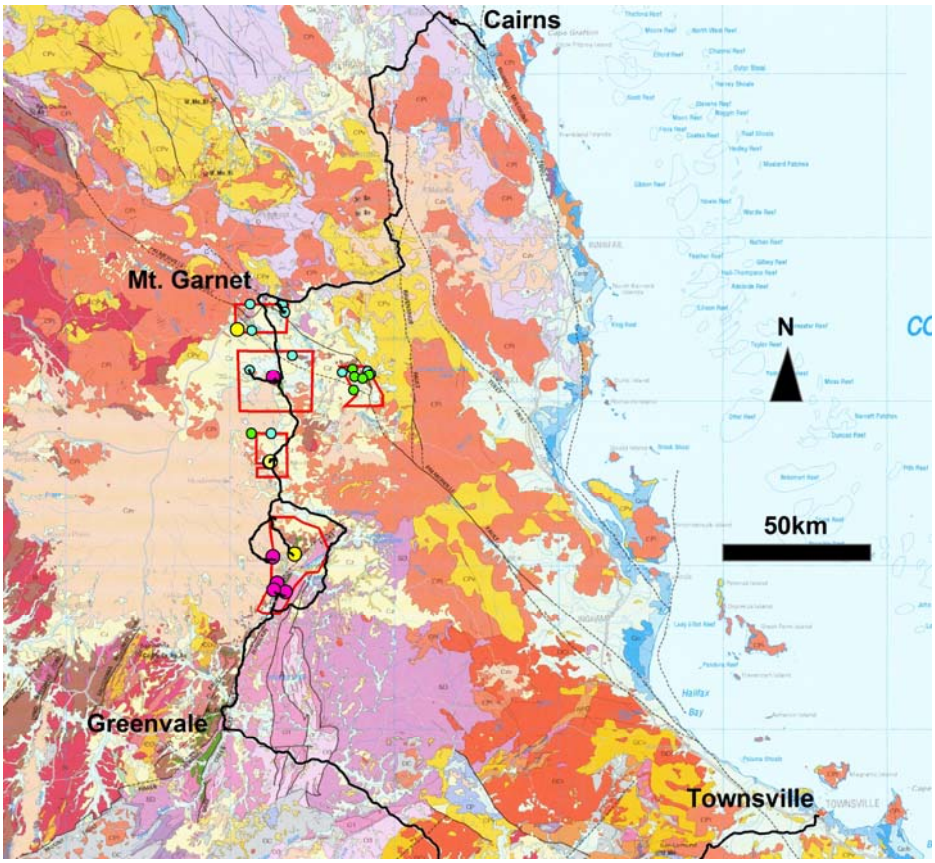

Figure 2. Regional Geological Map of the Burdekin area showing the five blocks covered by the AEM survey with the coloured dots representing targets (purple=high, yellow=med, blue/green=low).

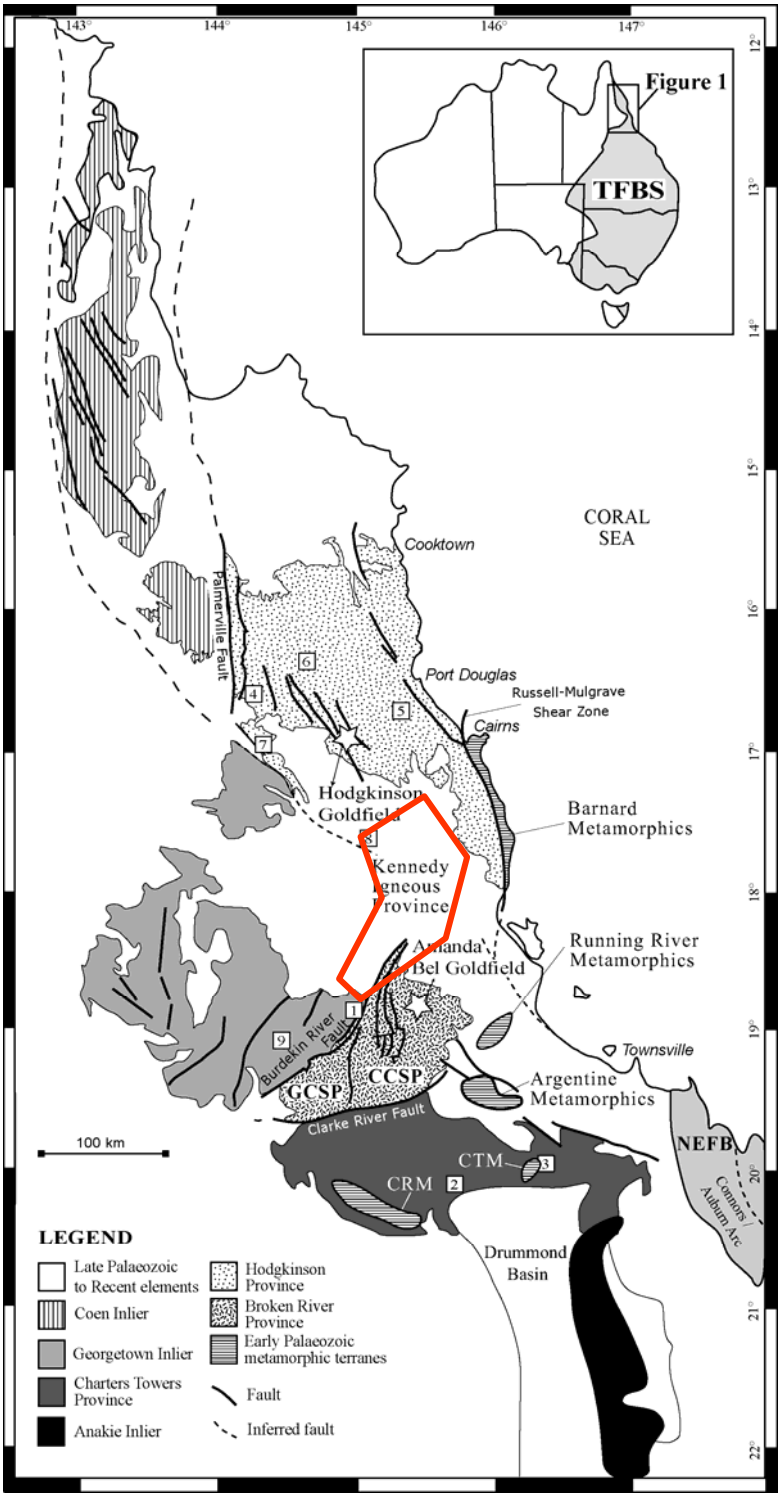

Figure 3. Regional Element map of North Eastern Queensland

GCSP = Graveyard Creek Subprovince; CCSP = Camel Creek Subprovince; NEFB = New England Fold Belt; CRM = Cape River Metamorphics; CTM = Charters Towers Metamorphics
Volcanogenic massive sulphide deposits: Balcooma, Dry River, Surveyor (1), Thalanga (2), OK (4), Mt. Molloy (5), Dianne (6) **Gold deposits**: Charters Towers (3), Kidston (9)
Skarn deposits: Red Dome (7), Mt.Garnet (8)

4. AIRBORNE EM SURVEY-" GEOTEM$_{DEEP}$®"

4.1. Introduction

A **GEOTEM$_{DEEP}$**® airborne electromagnetic / magnetic survey was flown by Fugro Airborne Surveys Pty Limited for BHP Billiton Minerals Exploration during August and September 2005.

The survey employed the **GEOTEM$_{DEEP}$**® electromagnetic system, operating at a base frequency of 25Hz. Ancillary equipment consisted of a magnetometer, radar altimeter, video camera, analogue and digital recorders and an electronic navigation system. The instrumentation was installed in a CASA C212-200 Turbo Prop survey aircraft registration VH-TEM. The aircraft was flown at an average speed of 235 km/h with an EM bird receiver height of 70 m.

4.2. Survey Parameters

Area Name	Traverse Line Spacing	Traverse Line Direction	Tie Line Spacing	Tie Line Direction	Line Kilometres
Burdekin A	300 m	000 – 180	6000 m	090 – 270	1633 km
Burdekin B	300 m	000 – 180	6000 m	090 – 270	576 km
Burdekin C	300 m	090 – 270	6000 m	000 – 180	1887.5 km
Burdekin D	300 m	090 – 270	5500 m	000 – 180	618 km
Burdekin E	300 m	090 – 270	5500 m	000 – 180	548 km

Table 2 Survey Parameters

The EM sensor is an orthogonal set of coils mounted in the "bird", towed behind the aircraft on a cable. The cable is demagnetised to reduce noise levels. Three coil orientations are available. The X component has a horizontal axis in the direction of flight. The Y component has a lateral horizontal component. The Z component has a vertical axis, which is coplanar with the transmitter coil.

In areas where lithological strike is near horizontal, the Z component response provides greater signal-to-noise due to greater coupling. In comparison, the X coils couple best with vertical structures striking perpendicular to the flight direction. In a laterally symmetric environment, the symmetry implies that the Y component will be zero; hence a non-zero y-component indicates lateral inhomogeneity.

The coordinates of the bounding areas of the survey are given in Appendix 1.

5. RESULTS OF SURVEY

The highest ranked targets were from the southern most block, Block A. Here The Burdekin fault zone corridor extends from immediately east of the AEM survey limit to the western edge of the Tertiary basalt, and includes the Kokomo ultramafic ± gabbro trend.

The three highest ranked anomalies were targeted for ground follow-up which was carried out in November 2005. The results of this survey indicted that two anomalies were associated with the western extent of the Burdekin fault zone and the other was associated with breccia, spilitized pillow basalt, jasper, and keratophyre, sporadically cut by quartz-limonite veins. No further work was recommended on this block.
The AEM conductors associated with the Minnamoolka and Bell Creek Serpentinites in Blocks B and C may reflect thrust imbrications of the Broken River Province back-arc/marginal basin succession along the Balcooma Mylonite Zone. Alternatively, since they are hosted by the Proterozoic Etheridge Group, they may represent earlier ultramafic intrusions, and hence may merit follow-up.

6. CONCLUSIONS

The best AEM targets were checked by ground follow-up and were found to be related to the Burdekin Fault Zone. Targets identified in Blocks B and C although more interesting, did not exhibit any trace of sulphides in the field in areas of good exposure and in the opinion of BHP Billiton they did not represent a potential target size that is required. Therefore the recommendation is that BHP Billiton do no further work on the tenements.

Appendix 1

Burdekin A (Zone 55)

Easting	Northing
301072.00	7964957.00
300959.00	7970285.00
309588.00	7970274.00
312482.00	7968406.00
317921.00	7966495.00
321376.00	7958332.00
317754.00	7950769.00
313836.00	7950368.00
310343.00	7946048.00
309209.00	7943308.00
307905.00	7940197.00
305510.00	7936478.00
299560.00	7936479.00
296940.00	7938014.00
301098.00	7946497.00
301562.00	7949101.00
301661.00	7953524.00
301965.00	7954946.00
302336.00	7957080.00

Burdekin B (Zone 55)

Easting	Northing
307340.00	7998422.00
307768.00	7982700.00
296565.00	7982528.00
296219.00	7998421.00

Burdekin C (Zone 55)

Easting	Northing
289956.00	8026356.00
315515.00	8026517.00
315351.00	8004670.00
290934.00	8004508.00

Burdekin D (Zone 55)

Easting	Northing
287000.00	8030000.00
310000.00	8030000.00
310000.00	8044000.00
287000.00	8044000.00

Burdekin E (Zone 55)

Easting	Northing
338274.00	8011259.00
338204.00	8006727.00
323725.00	8006523.00
328341.00	8011140.00
322432.00	8021449.00
332399.00	8021449.00