



**EPM 18324
“LUCKNOW BORE”
SOUTHERN DOMAIN PROJECT
NORTHWEST QUEENSLAND**

**PARTIAL RELINQUISHMENT REPORT
FOR THE PERIOD ENDED
7 MAY 2014**

*Data presented in
GDA94 Datum*

Prepared by:

Danny Huisman
Geoscientist
Cannington Exploration

Submitted by:

Kalem Wright
Superintendent Exploration
Cannington Exploration

**BHP Billiton Minerals Pty Ltd
ACN 93 008 694 782**

DISTRIBUTION:

Department of Natural Resources, Mines and Energy (DNRM)
BHPB Cannington Mine

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SUMMARY

This Partial Relinquishment Report describes all exploration work carried out by BHP Billiton Minerals Pty Ltd (BHPB) on the portion of EPM 18324 - "Lucknow Bore" relinquished on 7 May 2014. The EPM was granted 21 April 2011 and forms part of the Eastern Succession Southern Domain Project, located in Northwest Queensland.

EPM 18324 is located approximately 80km's South of the Cannington Mine in Northwest Queensland. The principal exploration target in this area is Proterozoic Broken Hill type Pb – Zn – Ag (BHt) mineralization, e.g. Broken Hill, Cannington and Maronan.

Exploration work carried out by BHPB during the reporting period 21st April 2011 to 7th May 2014 on the relinquished sub blocks consisted of the acquisition of gravity data at 10 ground gravity stations and a desktop review involving an interpretation of the recently acquired and historical geophysical data sets for target generation purposes.

BHPB geologists spent significant time reviewing and interpreting ground gravity and historical aeromagnetic data to construct a solid interpretation of the subsurface geology for target generation purposes. Following this work several targets have been selected for follow up work and a variation to reduce the relinquishment required in 2014 to 20% was requested. The areas proposed for relinquishment do not contain any targets with BHt characteristics and as a result the decision was made to surrender the 9 sub-blocks within EPM18324 as detailed in this report.

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1. INTRODUCTION

This Partial Relinquishment Report describes all exploration work carried out by BHP Billiton Minerals Pty Ltd (BHPB) for the period ended 7 May 2014 on the relinquished portion of EPM 18324 – Lucknow Bore. The EPM forms part of the Eastern Succession Southern Domain Project, located in Northwest Queensland.

The EPM is located approximately 80km's South of the Cannington Mine in Northwest Queensland (**Figure 1**). Access to the EPM is via a network of graded station tracks leading off the sealed Kennedy Developmental Road and the unsealed Toolebuc Road. Topographically, the majority of the EPM is flat to gently undulating with the exception of sparsely distributed mesa escarpments and plateaus, with scattered timber and large areas of grassland. Thicker stands of trees occur along major water courses draining the region. These water courses flow towards the South.

The principle exploration target within this EPM is Proterozoic - age, Broken Hill type (BHt) Pb - Zn - Ag mineralization, e.g. Broken Hill, Cannington and Maronan.

2. TENURE

Exploration Permit for Minerals 18324 was granted to BHP Billiton Minerals Pty Ltd on 21st April 2011 for a period of 5 years and is included in the Cannington Exploration Team's Southern Domain Project.

As part of relinquishment requirements for EPM 18324, 9 sub-blocks have been relinquished from a total of 45 sub-blocks (**Figure 1**). The sub-blocks surrendered are listed below.

BIM	BLOCK	SUB-BLOCKS
CLON	2196	N, O, P, S
CLON	2268	E, K, P, U, Z

Tenement details for the remaining portion of EPM 18324 (Lucknow Bore) are included in **Table 1**.

Table 1: EPM Details

EPM	EPM Name	Holder	Sub-Blocks	Grant Date	Expiry
18324	Lucknow Bore	BHP Billiton Minerals Pty Ltd	36	21 April 2011	20 April 2016

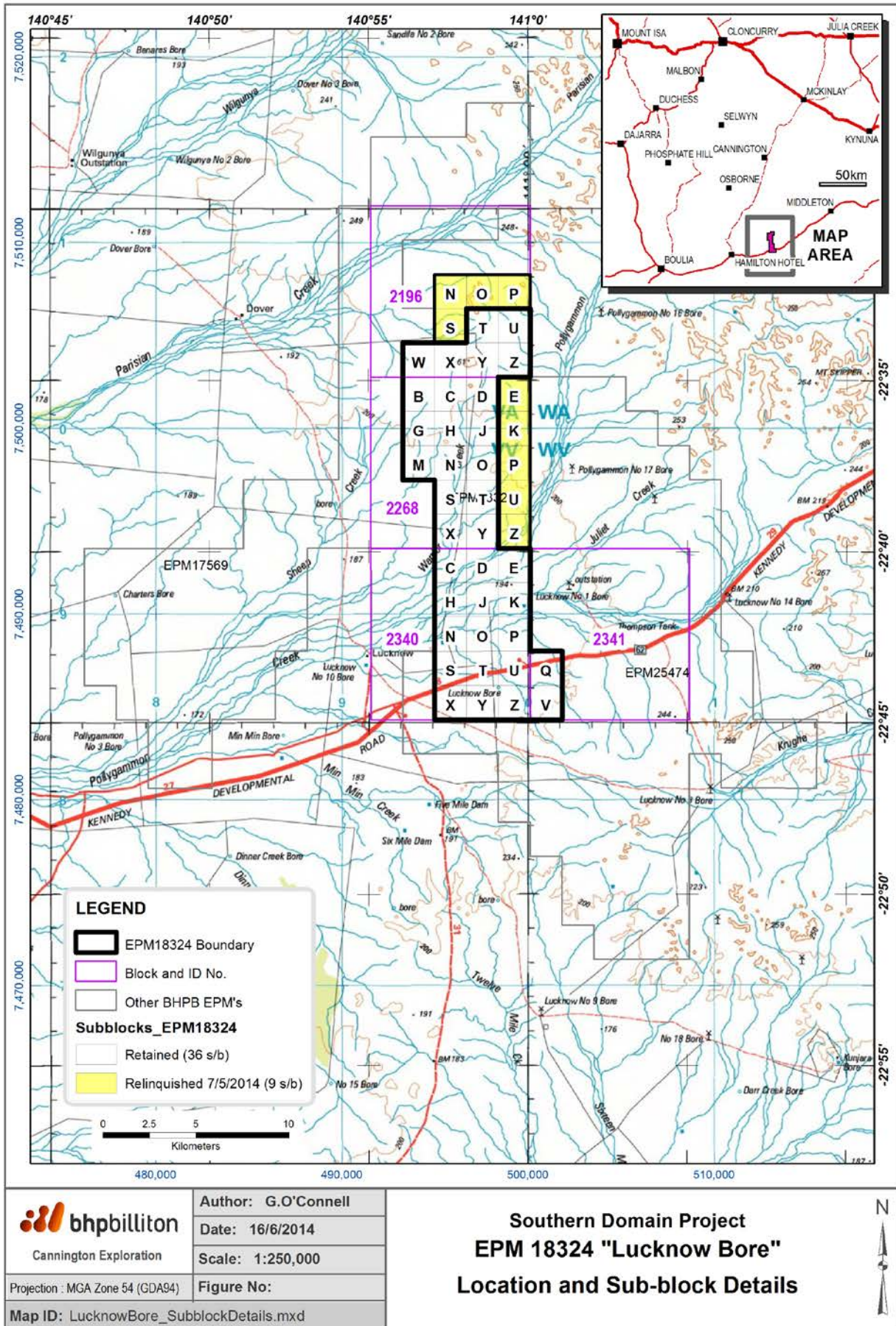


Figure 1 – Tenement Location Map

3. GEOLOGY

Cover Sequence

The Mesozoic sediments assigned to the Eromanga Basin which overlie the Proterozoic basement rocks in the tenement area consists of black, carbonaceous shales as well as some sandstone and conglomerate (Wilgunya Shale). These lie on top of the 50m – 100m thick Longsight Sandstone, which contains minor conglomerate units at its base and is the main aquifer in the area. The thickness of the cover sequence in the tenement area varies from 300m – 400m thick and has forced most of the previous and current exploration companies in the area to rely on the use of geophysical surveys as the main exploration tool.

BHPB in the past has completed a number of aeromagnetic, regional aerial and ground gravity, and GEOTEM surveys in the Southern Soldiers Cap and Cannington regions, including past and current tenements held by BHP Billiton to the south of Cannington, building up an extremely valuable geophysical database.

Basement Geology

Our current geological understanding suggests that the Proterozoic stratigraphy in the project area comprises part of the Eastern Succession of the Mt Isa Block. Beardsmore et al. (1988) proposed an informal stratigraphic scheme for the Eastern Succession, including the basal units of the Soldiers Cap Group (Llewellyn Creek Formation, Mt Norna Quartzite and Toole Creek Volcanics), as well as the underlying and / or coeval higher metamorphic grade Fullarton River Group gneisses and schists comprising the Gandry Dam Gneiss and Glen Idol Schist (Table 2).

Higher-grade metamorphics south of Cloncurry and including the region around and south of Cannington, were assigned to the Fullarton River Group, overlain by components of the previously defined Soldiers Cap Group further north, with the two groups included in a newly defined Maronan Supergroup. However, type sections, critical age relationships and contacts have not been formally defined. Host lithologies evident in drilling from the Cannington and Southern Domain Project area's (gneisses and migmatites) are comparable with units of the proposed Fullarton River Group in this informal terminology. Based on broad litho-stratigraphic and geophysical similarities between the Soldiers Cap Group and the Fullarton River Group, the authors believe they are directly correlatable sequences, with the apparent differences between them due to the increasing metamorphic grade (upper amphibolite facies with some partial melting of felsic lithologies) towards the south and east.

The dominant lithologies in the Soldiers Cap Group / Fullarton River Group are meta-siliciclastics which include planar bedded pelitic schists with graded bedding; thin units of cross-bedded immature quartzo-feldspathic meta-arenites and orthoquartzites; and intervals of more abundant interbedded basic volcanics and basic sills with minor carbonaceous schists, calc-silicates and quartzites. At Cannington and to the south, including rocks likely to be encountered in the tenement area, lithologies have been metamorphosed and multiply deformed to the point that the original textures and mineralogy have been obliterated and only the gross lithologies can be described, as the rocks are now gneissic, schistose, and migmatitic / pegmatitic in nature. Overall there is a distinctive absence of significant carbonate sequences or acid volcanics, and a dominance of immature (feldspathic) clastics. Thin horizons of banded iron formation and garnet-rich units associated with small base-metal showings or anomalous drill hole geochemistry occur at restricted stratigraphic levels, generally within the Mt Norna Quartzite or its metamorphosed equivalent.

Table 2: Lithostratigraphic and geophysical comparison between the Soldiers Cap Group and Fullarton River Group

Soldiers Cap Group			Fullarton River Group	
Stratigraphic Unit	Lithology	Geophysical Expression	Lithology	Geophysical Expression
Toole Creek Volcanics	Mafic volcanics, mafic sills interbedded with carbonaceous slates/phyllites. Minor BIFs at base	Non-weakly magnetic. Dense packages due to mafics. Regionally extensive formational conductors	Amphibolite intercalated with graphitic schist-gneiss	Non-weakly magnetic, although amphibolite commonly contain post-tectonic albite-magnetite-amphibole alteration. Dense packages due to mafics. Regionally extensive formational conductors
Mt Norna Quartzite	Well bedded. Graded bedding of feldspathic quartzite and wackes with subordinate pelitic mudstones/siltstone. Contains minor-moderate basic sills and thin BIFs	Non magnetic package with short-strike length magnetic units (basic sills and BIFs). Low-moderate density. Non-conductive	Intercalated pelites and psammites. Moderate amphibolite with minor BIFs	Non magnetic package with short-strike length magnetic units (basic sills and BIFs). Low-moderate density. Non-conductive
Llewellyn Creek Formation	Bedded quartz-mica psammite and pelite with graded turbiditic cycles	Non-magnetic. Density is low-moderate. Non-conductive	Pelitic and psammitic gneiss grading into migmatitic quartzo-feldspathic gneiss. Minor amphibolite	Non-magnetic. Density is low-moderate. Non-conductive

4. EXPLORATION WORK COMPLETED DURING THE PERIOD

Exploration work conducted over the relinquished portion of EPM18324 during the reporting period consisted of the acquisition of gravity data at 10 ground gravity stations and a desktop review involving an interpretation of the recently acquired and historical geophysical data sets for target generation purposes.

4.1 GROUND GRAVITY

Daishsat Geodetic Surveyors carried out precision ground gravity over a portion of the EPM 18324 area selected for relinquishment. The survey point locations are highlighted in Figure 2 and the data from these lines is presented as Appendix 1.

All gravity stations were surveyed using Daishsat foot borne and Daishsat All Terrain Vehicles (DATV) at the following station and line spacing's:

Lucknow Bore Survey:

- 10 stations @ 100m station spacing and 400m East – West Line spacing.

The gravity data was acquired using a Scintrex CG-5 gravity meter. Position and level data were obtained using Leica GX1200 geodetic grade GPS systems to produce precise Real-Time Kinematic (RTK) locations.

Gravity data was reduced using standard reductions on the ISOGAL84 gravity network. GPS data were reduced to MGA coordinates with levels expressed as metres above the Australian Height Datum (AHD).

4.2 DESKTOP REVIEW

A desktop review consisting of the examination and interpretation of the recently acquired ground gravity data and existing historical aeromagnetic datasets for target generation purposes was completed during the 2013/ 2014 wet season. No highly ranked targets within the relinquished area were generated as a result of the technical desktop review.

5. CONCLUSIONS

BHPB geologists spent significant time reviewing and interpreting ground gravity and historical aeromagnetic data to construct a solid interpretation of the subsurface geology for target generation purposes. Following this work several targets have been selected for follow up ground work and a variation to reduce the relinquishment required in 2014 to 20% was requested. The areas proposed for relinquishment did not contain any targets with BHT characteristics and as a result the decision was made to surrender the 9 sub-blocks within EPM18324 as detailed in this report.

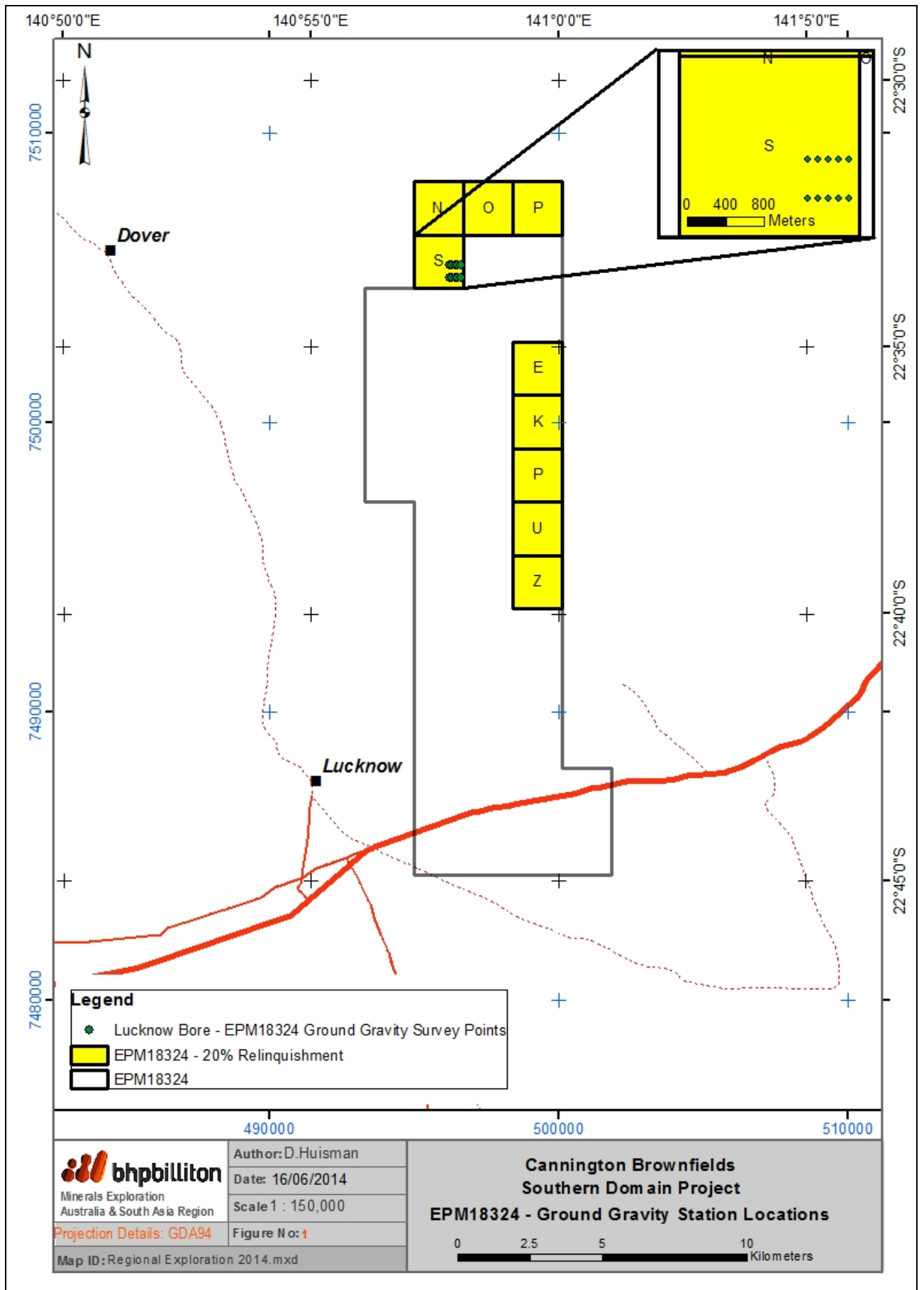


Figure 2 – Ground Gravity Station Locations

APPENDIX 1 – GROUND GRAVITY DATA