

**GBS Gold Australia Pty Ltd** 

# ANNUAL EXPLORATION REPORT IRON BLOW GROUP

## MLN 214, MLN 341, MLN 343 and MLN 349 YEAR ENDING 31<sup>ST</sup> DECEMBER 2006

Pine Creek 1:100 000 PINE CREEK 1:250 000

Distribution: DPIFM Darwin NT Burnside Operations P/L Brocks Creek NT GBS Gold Australia P/L Perth WA Union Reefs Mine Pine Creek NT

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#### SUMMARY

The Iron Blow base metal-gold deposit represents the largest of the available base metal deposits in the Pine Creek Orogen. Together with the nearby Mt Bonnie deposit, they represent a substantial start towards achieving a critical mass of tonnage to support a base metals mining operation in the Pine Creek Area. The key lease MLN 214 was originally granted to EA Witte and K Jessop as ML 650B on the 6/1/1972 for a period of 21 years. The ownership of this principal tenement has changed many times. Now GBS Gold Australia P/L are the sole owner of the project.

The Iron Blow mineralisation and related tenements underlie a stratigraphic sequence in the lower Mount Bonnie Formation (South Alligator Group). These include interbedded siltstone, pyritic and carbonaceous shales, greywacke, chert, hornfels, carbonate and minor conglomerate. Carbonaceous slates are the most common rock type exposed in the open cut, with silicified siltstone, hornfels and greywacke units exposed to the west.

The Iron Blow deposit comprises two steeply dipping (75° east) conformable, polymetallic sulphide-silicate lodes. The eastern or upper lode has strike length of about 80 m, a maximum thickness of 10 m and extends down dip to 100 m below surface. The western or lower lode lies about 50 m to the west of upper lode. Striking over 150 m with a maximum thickness of 30 m, it extends over 200 meters below surface. This load contains two sulphide lenses which contain much of the known ore reserve. In the previous exploration programs, a non-JORC compliant resource of 92,000t @ 8.1% Zn, 0.4% Cu, 1.8% Pb, 186g/t Ag, 1.5g/t Au for the Eastern Lode and 850,000t @ 6.7% Zn, 0.4% Cu, 0.7% Pb, 87.3g/t Ag, 1.9g/t Au for the Western Lode, has been established.

A technical review of the previous data were undertaken in order to evaluate the resource potential of the project and devise a program of exploration to test the mineral potential of the Iron Blow mineralisation.

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### **1.0 INTRODUCTION**

This report covers exploration work carried out during the year ended 31<sup>st</sup> December 2006.

The Iron Blow area has been the subject of considerable historic and recent exploration and mining activity, since base metal mineralisation was discovered there in 1872.

#### 2.0 TENEMENT DETAILS

The Iron Blow Mine is located primarily within the Mineral leases MLN 214 and 341. MLN 343 and MLN 349 are for infrastructure. The key lease MLN 214 was originally granted as ML 650B on the 6/1/1972 for a period of 21 years to EA Witte and K Jessop in equal shares. The ownership of this principal tenement has changed many times. Now these tenements are held jointly by Territory Goldfields N.L. and Buffalo Creek Mines P/L in equal shares. They are managed under the terms of the Burnside JV by Burnside Operations P/L. Details of the titles are given below in Table 1. In September 2005 Harmony Gold elected to sell its 50% interest in the JV (Buffalo Creek Mines P/L) to Northern Gold NL (that owns Territory Goldfields NL). In turn, Northern Gold NL has been taken over by GBS Gold Australia P/L, and as a result is the sole project owner now.

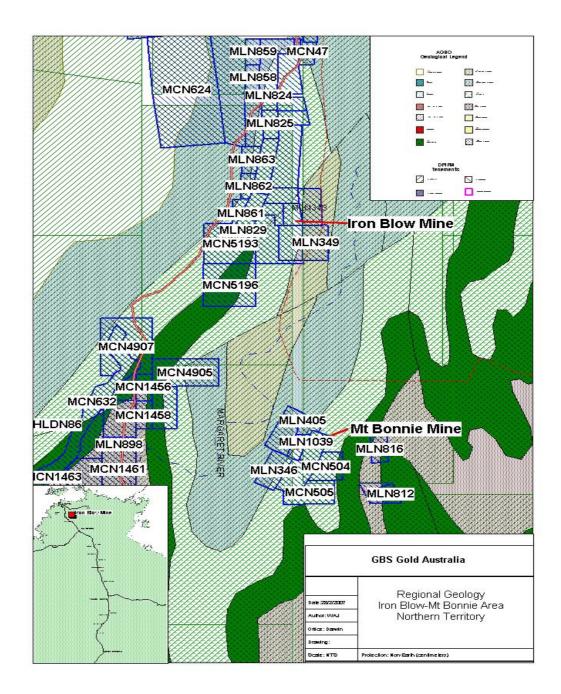
Title	Granted	Expiry	Area
			(ha)
MLN 214	06/01/1972	31/12/2029	6.27
MLN 341	04/12/2009	14/05/2009	16.18
MLN 343	29/01/88	31/12/2016	12
MLN 349	26/11/1976	31/12/2016	15

 Table 1:
 Tenement details of the Iron Blow Project

## 3.0 LOCATION AND ACCESS

The Iron Blow Mine and related tenements are located at about 131° 55' 04"E, 13° 51' 51"S in the Hayes Creek region of the Northern Territory (Figure 1).

Figure 1: Location and Tenement Map of the Project area



Access to the mine from Darwin is south via the Stuart Highway to the Grove Hill Rd Turn Off (165km), then via the Grove Hill Rd (13km) to the Princess Louise Deposit. From the Princess Louise it is 800m along the Iron Blow Access Road to the mine.

## 4.0 GEOLOGICAL SETTING

## 4.1 Regional Geology

Project geology has been described by several workers and following account is based on Ahmad et al (1994), Stuart-Smith et al (1986, 1987) and Jettner (2006).

The Iron Blow group of tenements is located within the Pine Creek Orogen, a tightly folded sequence of Palaeoproterozoic rocks, 10 - 14km in thickness, laid down on a rifted granitic Archaean basement during the interval ~2.2-1.87Ga. The sequence is dominated by pelitic and psammitic (continental shelf shallow marine) sediments with locally significant inter-layered tuff units. Pre-orogenic mafic sills of the Zamu Dolerite event (~1.87Ga) intruded the lower formations of the South Alligator Group.

During the Top End Orogeny (Nimbuwah Event ~1.87-1.85Ga) the sequence was tightly folded, faulted and pervasively altered with metamorphic grade averaging greenschist facies.

Intrusion of the Cullen Batholith introduced a suite of fractionated calc-alkaline granitic batholiths into the sequence in the period ~1.84-1.80Ga. These high temperature I-type intrusives produced strong contact metamorphic aureoles up to (garnet) amphibolite facies, and created regionally extensive biotite and andalusite hornfels facies.

Mesoproterozoic platform cover (clastic rocks and volcanics) has an unconformable relationship to the older sequences. Flat lying Palaeozoic and Mesozoic strata along with Cainozoic sediments and proto-laterite cementation overlie parts of the Pine Creek Orogen lithologies. Recent semi cemented scree deposits occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

Strata-bound polymetallic mineralisation occurs within interbedded pyritic shales, dolomitic siltstone and tuff of the Mount Bonnie Formation. It generally contains lead, zinc, copper and silver. An important feature is the presence of gold in this type of mineralisation in the Pine Creek Orogen. Zinc is the dominant element, followed by gold.

Iron Blow and Mount Bonnie are the representative base metals deposits of this type in the area.

## 4.2 Local Geology and Mineralisation

The Iron Blow mineralisation and related tenements cover a stratigraphic sequence in the lower Mount Bonnie Formation (South Alligator Group). These include interbedded siltstone, pyritic and carbonaceous shales, greywacke, chert, hornfels, carbonate and minor conglomerate. Carbonaceous slates are the most common rock type exposed in the open cut, with silicified siltstone, hornfels and greywacke units exposed to the west. Most of the clastic rocks show either a slaty or phyllitic cleavage related to low grade metamorphism or a spoty appearance produced by contact metamorphism.

Bedding in the mine area generally strikes 350-010° and dips 60-80° to the east (Ahmad et al 1993). The steep dips may be attributed to the close proximity of the Hays Creek fault. Minor cross-folding (F4), characterised by a near-vertical east-west striking axial plane is evident.

The Iron Blow deposit comprises two steeply dipping (75° east) conformable, polymetallic sulphide-silicate lodes. The upper load has strike length of about 80 m, a maximum thickness of 10 m and extends down dip to 100 m below surface. This load contains a northern lens which at the base of the open cut 52 m long and 8 m wide, separated by 18 m of barren slate from the southern lens which is 27meters long and 8 m wide. Both these lenses have been previously exploited to the 60 meters depth. The western lode (or lower) lies about 50 m to the west of upper lode. Striking over 150 m with a maximum thickness of 30 m, it extends over 200 meters below surface. This load contains two sulphide lenses which contain much of the known ore reserve.

The primary ore is typically massive and medium to coarse-grained with a distinct weak bedding-parallel foliation. Rare laminations of sphalerite in carbonaceous slates have been observed in drill core (DDH S/9, 139.45 m). Goulevitch (1980) used this as a strong evidence for a syngenetic origin for this type of deposits.

### 5.0 PREVIOUS EXPLORATION

#### 5.1 Historic Exploration

The Iron Blow Base Metal deposit was first found during the 1870s as part of the 1872-73 gold rush. The outcropping gossan attracted little attention while prospecting was devoted to searching for gold-bearing quartz reefs. The outcropping gossan was revisited as a result of the discovery of the Broken Hill Line of Lode and the renewed interest in gossans that this boom created.

Between 1898 and 1906 Northern Territory Goldfields of Australia Ltd (a Bottomley Company) produced 13,700t of oxide and sulphide ore that was supposedly treated at the Yam Creek Smelter.

A drilling program conducted by Geopeko/BP Minerals in 1976 resulted in a resource (non-JORC compliant) of 92,000t @ 8.1% Zn, 0.4% Cu, 1.8% Pb, 186g/t Ag, 1.5g/t Au for the Eastern Lode and 850,000t @ 6.7% Zn, 0.4% Cu, 0.7% Pb, 87.3g/t Ag, 1.9g/t Au for the Western Lode. It is this target that the current drilling proposal is aiming to expand on or at the very least firm up to a JORC-compliant Resource.

#### 5.2 Previous Drilling

There was a diamond drill hole (Bore 1) drilled in 1906 which apparently did not penetrate the lode, (suspect they drilled under the lode).

In 1912 there was another diamond drill hole (Bore 2) drilled under Government sponsorship which intersected a 23.5m interval of 4.94% Zn, 2.72g/t Au and 20g/t Ag. This intersection was in the Western Lode.

In 1963 the NTA Mines Branch under agreement with United Uranium NL drilled 6 holes into the deposit, (DDHs 1 to 6). Of these 6 holes, 3 intersected ore; DDH 1 hit the Eastern Lode with an interval of 6m @ 7.6%Zn, 1g/t Au and 30.8g/t Ag, DDH 2 hit the Western Lode with an interval of 12.4m @ 3.16% Zn, 1.06g/t Au and 24.8 g/t Ag, and DDH 5 hit the Western Lode; grades were very low and the other 3 did not intersect the lodes. DDHs 3 and 4 were sighted on geophysical anomalies and did not intersect anything and DDH 6 was drilled under the Eastern Lode. This was the first indications of the true nature of the Western Lode.

In 1976, Geopeko drilled 12 diamond drill holes, (Q53-S/9 to Q53-S/19). The mineralised systems were intersected in 7 of the 12 holes.

In 1984 Mt Bonnie Mines drilled 5 diamond and 3 RC holes into Iron Blow. Four of the diamond hole intersected the ore zones, and 1 missed completely. There are no details for the 3 RC holes although PH 3 is mentioned as having ended in the Western Lode, (6m at unknown grade). Since then there have been another 7 holes drilled into the deposit, probably by Zapopan NL in the early 1990s, (all from the west to the east targeting the Eastern Lode), there are no records of these holes.

#### 6.0 MINING AND ORE TREATMENT

The Iron Blow deposit was first mined in 1896 to supply copper ore to the Yam Creek Smelter. The ore was too low grade to be treated on its own and was blended with ore from Mt Ellison (20km to the north of the smelter). Tramways extended north to Mt Ellison and south to Iron Blow from the smelter. Evidence of these tramways can still be found today. The Yam Creek smelter ran from 1898 to 1906 and was located 2km to the north of the Iron Blow Mine. The current Grove Hill road runs across the smelter floor and old slag may be seen by the roadside. Various authors have given production statistics ranging from 13700t (Jensen, 1916) to 20,000t+ (various unpublished company reports).

The majority of this ore was probably removed from the 50m long open cut to the west of the main shaft. Underground ore was taken from above the 100ft level.

The only recent work done on the underground was the dewatering and surveying of the 100ft level in 1984 by Murray Millwood, who reestablished the Main shaft collar and cleaned out the shaft to 41m, (pers. com.). The 100ft south drive was surveyed and agrees with level plans in the authors possession.

Subsequent to this investigation the Mt Bonnie Gold Unit Trust (MBGUT) and its many and varied corporate identities conducted 2 mining campaigns with ore being treated for gold and silver recovery at the nearby Mt Bonnie Mill, which was then operating as a Merrill-Crowe plant.

Approximately 10,000t of gossan oxide ore grading 8g/t Au and 250g/t Ag was treated in 1985 and another campaign of 5,000t at similar grades was undertaken in 1986.

Mining consisted of 5 shafts, the deepest to 215ft, dug in the later part of the 19<sup>th</sup> and early 20<sup>th</sup> centuries (Figure 2). An open cut operation some 40m long resulted in the removal of the ironstone outcrop that gave the mine its name. The Eastern Lode is exposed in a shaft (No.2 South) 21m to the south of this original open cut. The No.1 North Shaft was sunk on this lode to the north. The No 1 North Prospecting shaft was sunk on the dip of the Lode and to an unknown depth below the water level.

These operations gave plans of the workings on the 100ft level (84mRL) and the 200ft level (53mRL). Broad grades have been quoted for the ore that was mined from here, these are included in Table 2.

Geopeko Ltd with BP Minerals, as part of the Margaret Joint Venture, carried out a detailed appraisal of the base metal deposits and potential of the Grove Hill/ Margaret Syncline area. They drilled some 11 holes into the Iron Blow deposit, outlining a resource of 980,000t of ore grading 6.8% Zn, 0.9% Pb 117g/t Ag and 2.1g/t Au. This resource is of an unstated provenance and so is non-JORC compliant and must be treated with caution.

Zn %	Pb %	Cu %	Au g/t	Ag g/t
6.0	5.0	0.5	7.8	373
NA	NA	1.2	7.5	684
14.3	4.5	0.24	9.3	476
8.1	1.8	0.4	1.5	186
6.7	0.7	0.4	1.9	87.3
NA	NA	NA	8.0	250
	6.0 NA 14.3 8.1 6.7	6.0       5.0         NA       NA         14.3       4.5         8.1       1.8         6.7       0.7	6.0       5.0       0.5         NA       NA       1.2         14.3       4.5       0.24         8.1       1.8       0.4         6.7       0.7       0.4	6.0         5.0         0.5         7.8           NA         NA         1.2         7.5           14.3         4.5         0.24         9.3           8.1         1.8         0.4         1.5           6.7         0.7         0.4         1.9

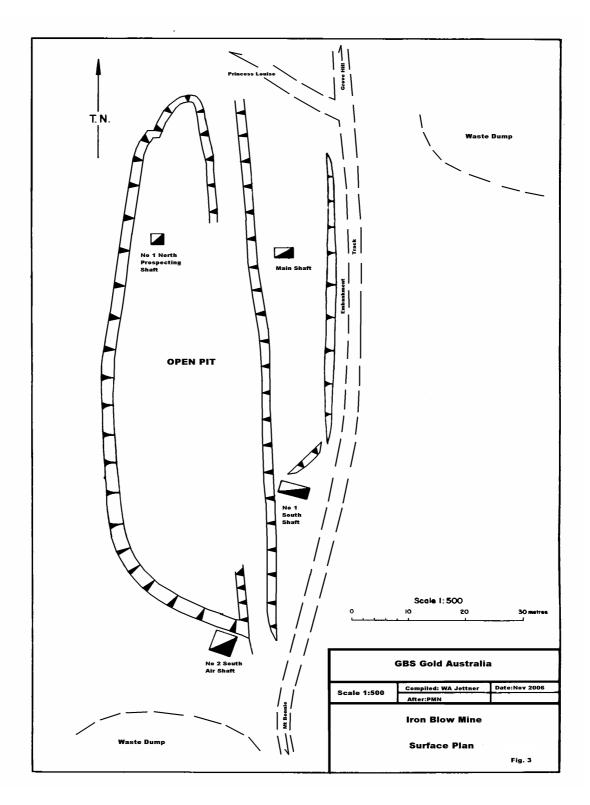
Table 2: Approximate grades from ore mined

In 1984 Harlock Pty Ltd (owned by the principals of the Mt Bonnie Gold Unit Trust) secured the rights to mine the deposit to 40m depth from the owners. They drilled 5 diamond holes and 3 RC holes into the deposit. The results are available for the diamond holes but no details of the RC holes are to be found other than anecdotal comments.

They also commissioned Murray Millwood to re-establish and re-open the Main Shaft. This was achieved to 41m where operations were suspended due to increasing costs, (it cost \$100,000 to get to 41m). The 100ft level was surveyed and presumably mapped and sampled but little to no data survives to this day.

The deposit then went through a series of ownership changes finally culminating in the current ownership by GBS Gold Australia. During this period there were 7 RC drill holes drilled into the Eastern Lode from the west, presumably by Zapopan NL. There is no data available for these holes.

#### Figure 2: Shafts at Iron Blow Deposit



## 7.0 CURRENT EXPLORATION

During the reporting period, a through technical review of the project was undertaken with a view to prove JORC-compliant resource of the Iron Blow project. This review identified the significance of gold-bearing base metal mineralisation. With further drilling, resources optimisation together discovery of new resource is highly probable. Current resources from Iron Blow along with Mount Bonny and other prospect can lead to a viable base metal mining project. Cost of the report preparation and technical review has been \$26,014.04.

Table 3: Expenditure for the Iron Blow Project year ending 31 December 2006

Title	Expenditure (\$)			
	31 December 2006			
MLN 214	14698.66			
MLN 341	7915.00			
MLN 343	1702.69			
MLN 349	1697.69			
TOTAL	26014.04			

## 8.0 PROPOSED EXPLORATION

Technical review recommended that further infill drilling be carried out to establish JORC-compliant resource and identify new zones of mineralisation which can further increase the tonnage. On this exercise a minimum budget of \$30000.00 has been proposed for year 2007.

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