

# GBS GOLD Australia Pty Ltd

## ANNUAL EXPLORATION REPORT

**ERL130** 

### **ESMERALDA**

(UNION REEFS PROJECT)

### YEAR ENDING NOVEMBER 16<sup>th</sup> 2006

Pine Creek 1:250,000 SD5208 Pine Creek 1:100,000 5270

Report Number: PC/BJV/06/40

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#### SUMMARY

The Esmeralda tenement (ERL130) is situated 170km SE of Darwin, NT, and 8km north east of Pine Creek.

GBS Gold P/L acquired the lease in April 2006 as part of a take over and acquisition of the companies that ran the Burnside Joint Venture.

The project assets had been previously owned by Acacia Resources and later AngloGold (Ashanti) Ltd, who carried out mining and milling operations at Union Reefs prior to closure in July 2003.

At Esmeralda previous exploration by Cyprus Gold Corporation and Acacia Resources had outlined two significant adjacent and sub parallel gold resources (A and B) some 4km south of the Union Reefs mill. The Zone A deposit is the better of the two and AngloGold estimated that subject to ore continuity, yet to be defined by grade control density drilling and the cost of relocating the adjacent Darwin gas pipeline, 18,000oz gold may be economically mined. They estimated that the two deposits, at 0.7g/t cut off, contain a combined inferred resource of 1.26Mt @ 1.62g/t Au. (50,000oz)

During the 2004-2005 report period the Burnside Joint Venture conducted an in-depth mining/geological review of the two deposits. In September 2005 an agreement was set in motion that would see Northern Gold NL acquire 100% of the Burnside JV assets. In turn, Northern Gold was subject to a friendly takeover by GBS Gold.

During 2006, expenditure focused on developing sufficient gold ores from first rank deposits at Pine Creek. During 2007 the economics and feasibility of exploring and/or mining Target A, adjacent to the Darwin gas pipeline will be addressed. In the event of a favourable outcome, a programme of infill drill evaluation and trenching has been recommended.

No field work was completed on ERL130 during the report period. With reporting and administration expenditure for ERL130 year ending 16<sup>th</sup> November 2006 totalled \$425.64.

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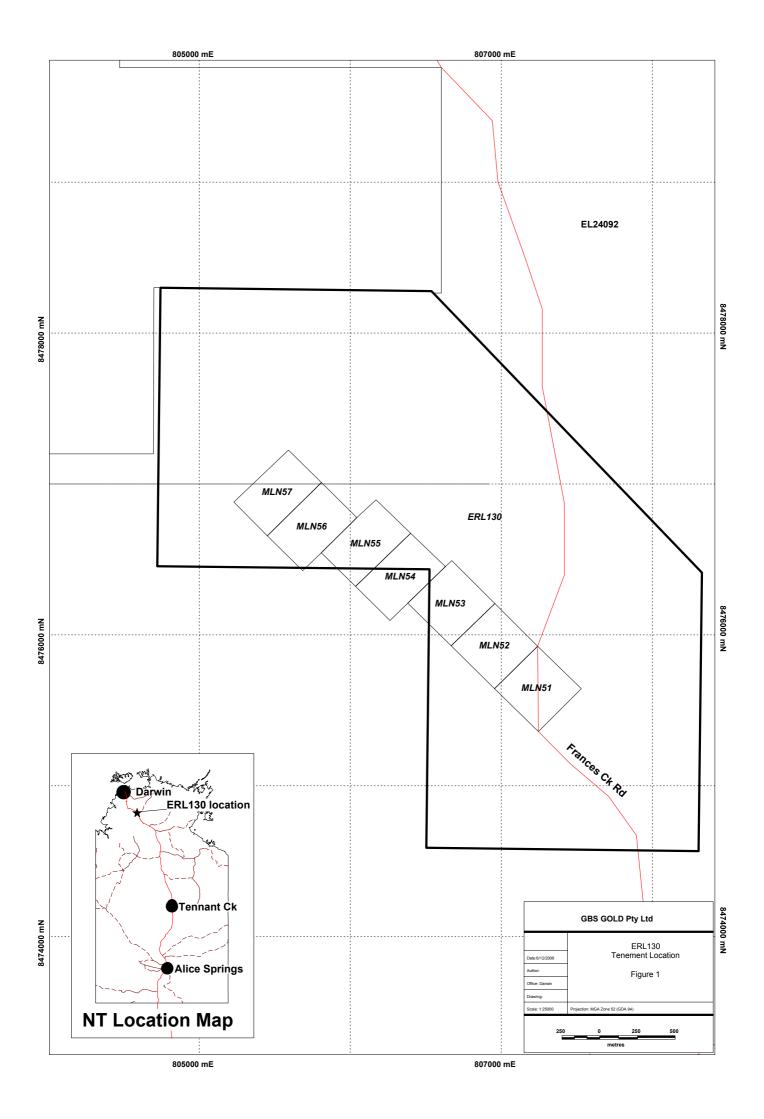
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#### 1.0 INTRODUCTION

The licence is centred approximately 8km north of the Pine Creek township and 4km southeast of the Union Reefs Gold Mine. Exploration work at Union Reefs ceased following the closure of the mill in 2003, and pending conclusion of the sale of assets by AngloGold. Burnside Operations P/L acquired the ERL130 in August 2004 as part of the purchase of the Union Reefs project assets from AngloGold (Ashanti) Ltd. During 2005-2006, GBS Gold Pty Ltd successfully made a takeover of Northern Gold NL and has purchased Harmony Golds (through subsidiary Buffalo Creek Mines) 50% share of the Burnside Project as of 1<sup>st</sup> of April 2006.

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#### 2.0 TENEMENT DETAILS

ERL 130 comprises 834 hectares and was granted to Sovereign Gold NL (a wholly owned subsidiary of Astron Resources NL) and Solomon Pacific Resources NL on 17<sup>th</sup> November 1993 for a period of 5 years. Acacia Resources, a party to the Esmeralda Joint Venture, subsequently acquired 100% of the JV tenements and in turn was taken over by AngloGold (Ashanti) Limited in 1999.

The first renewal application was granted on 9th September 1998 for the period ending 16th November 2000. A second renewal was granted on the 22nd Aug 2000 ending 16th Nov 2002. A covenant of \$260, 000 was set by the NTDME for expenditure during the term of the renewal period from 17th November 2000 to 16th November 2002. A third renewal was granted on 14th October 2002 ending 16th Nov 2004. A covenant of \$181,000 was set by the NTDME for the two year extension period. A fourth renewal application, this time on behalf of the Burnside Joint Venture, was lodged on 26th July 2004. The annual covenant for 2005 was set at \$1,600.00.

The tenement is on Mary River West Station owned by Equest Pty Ltd.

During 2005-2006, GBS Gold Pty Ltd successfully made a takeover of Northern Gold NL and has purchased Harmony Golds (through subsidiary Buffalo Creek Mines) 50% share of the Burnside Project as of 1<sup>st</sup> of April 2006.

Table 1. Tenement Details ERL130 Esmeralda

		Effective			
Ten. ID	Grant date	Date	Date Expiry	Status	Area ha
ERL130	17/11/1993	17/11/2004	16/11/2009	Renew retained	834

#### 3.0 LOCATION AND ACCESS

The centre of ERL 130 is located approximately 4km north of the township of Pine Creek in the Northern Territory. The licence area can be accessed via the Frances Creek Road, turning north off the Kakadu Highway approximately 3km east of Pine Creek. Further access for light vehicles is gained via a dirt track turning north-west adjacent to the Darwin - Amadeus Basin Gas Pipeline.

The climate is hot with periodic monsoonal rains between November and May. For the remainder of the year it is warm to hot and largely dry.

#### 4.0 GEOLOGICAL SETTING

#### **Regional Geology**

The Esmeralda tenements are centrally located in the Pine Creek Geosyncline which has been a major basinal repository for Lower Proterozoic sedimentation. The sedimentary pile comprises a sequence up to 14km thick that was tightly folded and metamorphosed to greenschist facies during the Pine Creek Orogeny (1890 to 1870 Ma). The sequence has been regionally metamorphosed and intruded by the granitic suites of the Cullen Batholith that range from syn to post orogenic. Less deformed Middle Proterozoic sedimentary and volcanic sequences unconformably overlie the Lower Proterozoic. Cambo-Ordovician lavas and sediments, as well as Cretaceous strata, onlap the older sequences. Cainozoic sediments, proto-laterite and Recent alluvium may obscure parts of the Pine Creek Geosyncline lithologies, but exposure of the Precambrian rocks is generally good.

#### **Local Geology**

The Union Reefs gold mining centre, including the Esmeralda and Caroline tenements lie on the east margin of a north west trending corridor that has been the focus of intense strain deformation. This strike-extensive feature is termed the Pine Creek Shear Zone which in this area has been developed in rocks of the South Alligator Group and Finniss River Group. Clastic rocks of the Mt Bonnie Formation that is the uppermost formation of the South Alligator Group, and the Burrell Creek Formation which is the lowest unit of the Finniss River Group, dominate the stratigraphy of the Union Reef field. The tectonic corridor is confined to the east (Allamber Springs Granite) and west by lobes of the Cullen Batholith and rocks within this zone have been tightly folded and in high strain areas, subjected to fold limb failure. Axial planes and bedding tend to dip steep westerly. The area of the Esmeralda and Caroline leases is dominated by Mt Bonnie Formation, a marine platform sequence consisting of interbedded cream to purple iron-stained mudstone and siltstone and subordinate greywacke. The unit is punctuated by horizons of chert and tuffite as well as thin distinctive banded iron formation facies. Thin tourmalinites have been recorded in the area.

ERL130 and the Caroline leases have been intruded by a major sub vertical intermediate dyke that sub parallels the stratigraphy. The dyke is deeply weathered and strikes 310°. It has been traced along much of the Pine Creek Tectonic corridor

and appears to post date mineralisation. This dyke event also passes through the Woolwonga deposit some 50 kilometers to the north west.

Within ERL 130 the Allamber Springs Granite of the Cullen Suite contacts the Mt Bonnie Formation and has hornfelsed and silicified the unit to slate and amphibolitic hornfels within 200m of the contact. Gold mineralisation has been focused within 'Deposit A' and 'Deposit B' in the sheared axial zones of two adjacent faulted antiforms that strike 310 magnetic. The deposits occupy ridges up to 40m high. The north eastern deposit (A) is within 300m of the contact and lies within the outer metamorphic aureole of the granite. It dips steeply SW, is heavily impregnated with tourmaline and silica and has been significantly silicified and brecciated during several events. Chert facies rocks are reported to coincide with the mineralised zones which locally contain visible gold. Hewson in his analysis (1997), described deposit A as being situated on the east limb of a regional antiform with the bedding dips being 40-90 degrees to the east. The deposit dips 60 degrees to the west and steepens at depth. It is loosely related to antiform geometry as a reverse fault oblique to the axial plane. Hewson described zone B as being within an antiformal closure with a long steep west limb and a short sub vertical to overturned east limb. There is a variable plunge towards the north. Mineralisation is in both bedding parallel and foliation planar sites. There is dip slip movement with east block up. Mineralisation is associated with silica-pyrite-arsenopyrite veins with K-feldspar, tourmaline and sericite. Rather then one continuous lens the zone A deposit was interpreted by Acacia-Billiton to comprise several lenses offset en echelon (perhaps under the influence of the 290 degree oblique cross faulting interpreted from SPOT imagery by Shaw 2004). Extreme hardness due to hornfelsing has been mentioned in some diamond drilling reports starting from 30m-50m downhole.

There are extensive soil covered areas on the flats littered with quartz and silicified cobbles. These may suggest underlying quartz veining or merely more resistant transported gravels. Tertiary lateritic duricrust is commonly preserved on ridge flanks, but has been eroded away in the gullies and stripped from the ridges.

#### 5.0 PREVIOUS EXPLORATION ACTIVITY SUMMARY

#### **Cyprus Gold Australia Corporation 1991-1993**

In 1990-1991 zones "A" and "B" were defined by Cyprus within EL6880 by a soil geochemical survey. Zone A was judged to be very interesting with 1000m of strike within the 50ppb contour and 850m within the 100ppb contour. A further 500m was anomalous. The maximum arsenic value was 360ppm. The Amadeus Basin-Darwin gas pipeline crosses the eastern flank of the anomaly.

At zone B the gold anomaly was 700m in length but of lower order. Arsenic values were higher, peaking at 1600ppm. Rock chips at zone B were up to 11.0g/t gold, and arsenic up to 1.3%. On a tenement wide basis the Zone B mineralisation as well as the Caroline prospects lie within an arsenic in soil halo of plus 200ppm. This halo measures 5km by 1km. Zone A falls outside this envelope. Rock chip sampling followed on from the soil work. A total of 985m of costeans were dug on zone A over a strike of 750m. These were mapped and sampled. The better intervals included

12m @ 2.11g/t Au, and 15m @ 1.32g/t Au.

The multiclient airborne magnetics acquired by Cyprus showed a weak high (<100nT) coinciding with zone B, with a weaker signal coinciding with the strongest gold values.

Gold was described as being associated with a smoky grey quartz-limonite, pyritetourmaline veining and kaolin-pyrite alteration of an argillite-tourmalinitic chert sequence. At zone B the association was similar, though tourmaline was not as abundant and arsenopyrite was more important. At zone A it was speculated that tourmaline could be both syngenetic and remobilised as well as hydrothermal.

In 1991-1992 Cyprus Gold drilled 25 RC drill holes into the prospect (ERC0001-ERC0025). The holes were allocated to zone A (ERC0001-ERC0010) and to zone B (ERC0011-16). This drilling program was completed in two phases: a 16 hole/1110m phase followed by a 9 hole/740m phase. The initial phase was targeted on soil and rock anomalies, the second phase providing selective down dip testing of phase 1 intersections. Phase two drilling was allocated to zone B (ERC0017-ERC0019) and to zone A (ERC0020-ERC0025). The best result from zone A was 12m @ 3.03g/t from 22m in ERC0002. The best result from zone B was 13m @ 2.33g/t from 37m in ERC0023. Based on their drilling data Cyprus reported an "in-situ, undiluted geological resource of 638,000 tonnes grading 1.84 g/t (38,000 oz)" for combined zones. (Miller, 1993).

Zone "A" contained an estimated 325,154 tonnes @ 2.12 g/t, based on six 50m spaced sections, 8300N - 8500N and 8950N. Zone "B" was estimated to contain 313,546 tonnes @ 1.55 g/t based on three sections, 9350N, 9450N & 9500N. It was noted that the Darwin gas pipeline was locally within 100m of the zone A resource.

In the period **1992-1993** mapping and sampling was carried out in the northern sector of zone A where very high grades had been met with in rock chips and erratic values in drilling. An induced polarisation survey was carried out by Scintrex over zone A in 1992 and 1993. The deposit was found to respond well to chargeability due to sulphides or graphite. The data showed the deposit was offset to the west at the south end and did not pass under the gas pipeline. Rehabilitation by tree planting and seeding was undertaken. Cyprus withdrew from the JV following an increase in corporate minimum target size objectives.

#### Billiton/Acacia 1994-1999

In **1994** Billiton Australia reviewed the Cyprus data and drilled 15 RC holes (EAP0001-0015) into Zone "A" for a total of 938m and a diamond tail of 21m on EAP0015 (renamed EAD0015).

In **1995** Acacia drilled 40 RC holes (ERC0041-0080) into Zone "A" and "B", for a total of 2,573m. In August 1995, a manual resource calculation was completed with the available data. Bulk densities of 2.52, weathered, and 2.74, fresh were used. This uncut geological resource estimate using an 0.7g/t cut off gave a combined inferred resource of 879,000 tonnes @ 2.0g/t Au.

In 1996 Acacia completed 27 RC holes for an advance of 1,794.5m and 4 cored holes

for 155.5m. Twenty three of the holes were drilled on zone A.

Nine costeans were dug for 480m on the highest gold in soil sites.

Gradient array IP was carried out by Zonge Engineering to complement the Cyprus surveys. A total of 9.6line/km of survey was carried out.

Metallurgical test work was commissioned with Metcon Laboratories P/L to determine preliminary gravity/leach amenability on ore grade intercepts in 6 holes. Gold extraction exceeded 90% from all samples, averaging 94.1% with each sample containing free gold up to 250microns. Initial leach was fast then slowed, many requiring the full 48 hours. Better recoveries were noted at grinds to 53microns and beyond. Lime consumptions averaged 5.4kg/t while cyanide consumption was moderate.

In 1997 fifty RC holes and one re entry were completed for 4,495m. All holes were surveyed with Eastman single shot. At zone A the deposit was tested to 100m VD. A new lens 100m west of zone A was discovered on four sections. Further drilling to extend the southern limits was unsuccessful. In addition:

A structural analysis of the deposits was commissioned. (Terrasearch, S.Hewson) Eight costeans were dug for 514m.

An airborne radiometric/magnetic survey was completed using UTS. (50m line spacing, 60 degree orientation, 20m terrain clearance, 127sq km total.)

Aerial photography and digital terrain modelling were undertaken.

A resource estimate was completed using all data. M&RT consultancy defined an inferred resource of 1.26Mt @ 1.62g/t Au.

In **1998** Acacia Exploration Darwin completed a rock chip sampling program over potassium altered targets between Zone A and B. (10 samples). No significant values were met with. Acacia wrote a complete quality control and SG data report to back up the resource estimates. The Mining and Resource Technology resource estimates for deposits A and B, using an 0.7g/t Au cut off comprised an oxide resource of 550,000t @ 1.58g/t Au. A transition resource of 120,000t @ 1.52g/t Au, and a fresh resource of 590,000t @ 1.67g/t Au. All resources were in the inferred category. The data used included 157 RC holes, 2 diamond holes and 3 diamond tails.

A gravity survey was conducted across Acacia's Pine Creek tenements including the Esmeralda lease. Station spacing was about 500m using a Worden gravity meter. Ten stations fell within the Esmeralda lease. It was concluded that the western side of the corridor was of higher density than the eastern.

In **1999** channel chip sampling was carried out over a thinly tested area of quartztourmaline veining. Thirty samples were collected and twelve returned gold values of 100ppb or better. The best result was 970ppb. The results were considered not to be worthy of follow up.

Ten –5mm talus samples from base of slope were collected at regular intervals. Seven of the samples returned 5ppb or better. The best was 51ppb Au.

A review of previous data was undertaken. The low gold price militated against a drilling allocation in the budget.

In **2000-2001** AngloGold was manager of the tenement following takeover of Acacia in late 1999. No field work was undertaken in the period.

In **2002** a program of rehabilitation was completed. All steel pegs were removed and holes capped below surface with concrete plugs. In addition LG pit optimisations were run on zone A and B. The optimizations suggested that some 18,000oz could potentially be mined from zone A at a profit. The relocation of part of the gas pipeline would be a pre requisite to optimising zone A.

In July 2003 AngloGold closed the mining operation at Union Reefs and put the project up for sale.

During 2004, in the four months following the purchase of the Union Reefs project by the Burnside JV, work comprised a brief data review and a structural interpretation using SPOT imagery.

During the **2005** period, Bill Makar, previously an AngloGold geologist who worked on the Union Reefs project, was commissioned to conduct a technical geological and mining review of the Esmeralda gold resources, Zone A and Zone B. An extract from the report is presented.

#### RESOURCES AND RESERVES (CURRENTLY REPORTED)

The estimated total Inferred Resource (Global) at Esmeralda is 1.26 million tonnes at a grade of 1.62 g/t (66,000 ounces). Work was carried out by MRT (now Golders) using MIK interpolation. The mineral resources are summarised below.

#### Total Esmeralda Deposit - Mineral Resources at 31 December 2002 Category Tonnes (000) Gold Grade (g/t) Gold Ounces (000)

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Lens A Inferred	842	1.77	48
Lens B Inferred	413	1.4	18

 Lens B Inferred
 413
 1.4
 18

 Total Inferred
 1260
 1.62
 66

Notes: 0.7g/t cut-off grade using MIK interpolation,

No reserves have been estimated but initial optimisation studies were carried out by consultants Golder Associates in September 2000 were based on the 1998 resource models.

#### 6.0 EXPLORATION YEAR ENDING 16<sup>th</sup> NOVEMBER 2006.

During the year ending 16<sup>th</sup> November 2006 work within ERL130 focused on

- Report preparation.
- Administrative Duties
- Planning for upcoming field season

Since acquiring the mill at Union Reefs the joint venture has focused its activity on proving up sufficient ore feedstock within the overall JV holdings to re-commence treatment. Work is already at an advanced stage at the Zapopan underground operation at Brocks Creek, while elsewhere at GBS previous RC drill programs have outlined potential ore feed at Fountain Head, North Point, Pine Creek, Cosmo Howley, Mottrams and Chinese South Extension. It is expected that work will

continue on the development of these resources during 2006-2007.

Work in the region has been deferred because resources have concentrated on the recommencement of mining in the district by GBS Gold. "As of September 2006 GBS Gold has commenced commissioning of the dual-mill 2.5Mtpa Union Reefs CIL gold plant in the Northern Territory. Ore from nearby tailings sands and stockpiles are now being fed into the crushing and milling circuits. Mining of the two initial open pit ore sources at the Fountain Head and Rising Tide deposits will commence shortly with first open pit ore anticipated to be delivered to the Plant in mid September. High Grade ore will be mined at the Brocks Creek Underground Mine (Zapopan) and will be delivered to the Plant in late September. Gold production is targeted to increase steadily over the next nine months to an annual rate of approximately 150,000 ounces in mid 2007 and to further increase with the mining and treatment of refractory gold ores to an annual rate of approximately 250,000 ounces in 2008."

# 7.0 EXPLORATION EXPENDITURE REPORT ENDING 16<sup>th</sup> November 2006

**TABLE 2**: Expenditures for Esmeralda ERL130 year ending 16<sup>th</sup> November 2006.

	Rents (DME)	TOTAL
EXPENDITURE ERL130	(non-	admissible
17/11/05 - 16/11/06	admissible)	Expenditure
Rents(DOIR)	8,340.00	
Computing		
Database management		
Geologist		
Geophysicist		
Option Cost		
Land Access & Native Title		
Drilling		
Assay		
Accom		
Airfares		
Senior Geologist		
Hire Equipment		
Tenement Administration	53.74	53.74
Consultants	371.90	371.90
MV Expenses		
Communications		
Surveying		
Aeromagnetics		
Sundry		
TOTAL	8,765.64	425.64

### 8.0 FORWARD PROGRAMME year ending 16<sup>th</sup> November 2007

Future work within the leases would include

- Reassessment of the resources in the light of the increased gold price and the reopening of a gold mill in the district
- Further ground truthing of the previous structural interpretation
- If budgeting permits planning and infill programmes to cover targets previously identified to help build them to a resource status
- ERL130 will be subjected to further data acquisition, technical review and ranking.

The proposed expenditure will amount to some \$2000.00 if field work is postponed for regions of higher priority.

As part of last years report Makar recommended the following activities be undertaken to advance the status of the property:

- 1. Infill drilling and costeaning to up-grade the Resources to an Indicated / Measured Status to enable to convert to a Mining Reserve. Close the section spacing to 25m from the current 50m.
- 2. Survey pick up the gas pipeline to see what impact it has on Zone A.
- 3. Confirm the surface DTM, adjust the drillhole collars to suit.
- 4. Test the low level gold geochemical anomaly which occurs between Zone A and Zone B

Reverse circulation drilling (3,052m) and costeaning (1,535m) recommendations were made.

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