



# St Barbara LIMITED

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## June 2010 Ore and Mineral Resources Reserves Statements

### Ore Reserves highlights – significant increase in Gwalia ore reserves

1. Overall thirteen percent increase in total Ore Reserves net of production for fiscal year 2010.

Total Company Ore Reserves as at 30 June 2010 have increased significantly year on year by 332,000 ounces of contained gold net of production, to 15 million tonnes at 5.8 grams per tonne of gold (g/t Au) for 2.9 million ounces of contained gold.

2. Increase in Gwalia Probable Ore Reserves of 195,000 ounces.

Gwalia Mine's Probable Ore Reserves have increased by 195,000 ounces of contained gold, (net of production), down to 1600 metres below surface, as a consequence of improvements in mining extraction factors, a reduction in cut-off grade from 4.5 grams per tonne of gold (g/t Au) to 4.2 g/t Au and improved mining stope designs.

3. Eighteen percent increase in King of the Hills ore reserves.

King of the Hills Probable Ore Reserves have increased by 35,000 ounces to 230,000 ounces of contained gold, as a consequence of refinements to geotechnical design and increases in Indicated Mineral Resources.

4. Details of total ore Reserves as at 30 June 2010, together with a summary of changes from 30 June 2009 are attached as Schedule 1.

### Mineral Resources highlights – reduction in quantum, increase in quality.

1. Overall Mineral Resources grade of 5.0 g/t Au.

Total company Mineral Resources as at 30 June 2010, including Measured, Indicated and Inferred categories, totaled 47 million tonnes of gold at 5.0 g/t Au for 7.7 million ounces of contained gold.

2. Gwalia Mine Mineral Resources have increased.

Successful drilling at Gwalia during the year has increased Gwalia Mineral Resources by 99,000 ounces of contained gold, net of production.

3. Tarmoola previous open pit Mineral Resources removed.

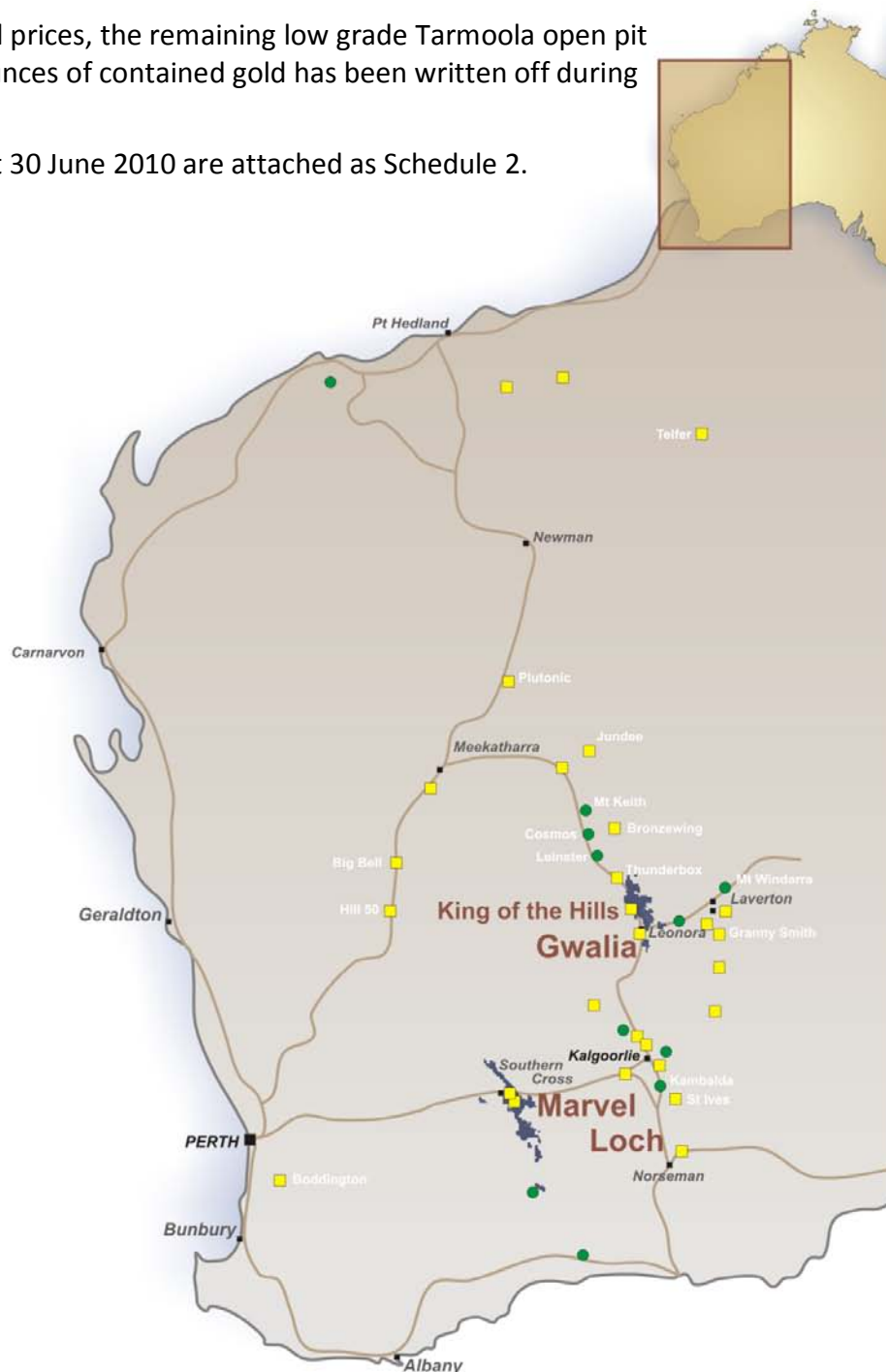
The main change to Mineral Resources during the year was the recognition of the higher grade underground Mineral Resource at the King of the Hills deposit at Leonora in Western Australia. The deposit is partly contained within, and extends from, the former Tarmoola open pit mineral resources.

As a consequence, at current gold prices, the remaining low grade Tarmoola open pit mineral resource of 1.1 million ounces of contained gold has been written off during the year.

Details of Mineral Resources as at 30 June 2010 are attached as Schedule 2.



**Tim Lehany**  
Managing Director and CEO  
24 August, 2010



## **Schedule 1**

### **Ore Reserves Statement as at 30 June 2010**

St Barbara Limited's total Ore Reserves as at 30 June 2010 totalled 15 million tonnes at 5.8 grams per tonne of gold (g/t Au) for 2.9 million contained ounces of gold (2009: 13 million tonnes @ 5.8 g/t Au for 2.6 million contained ounces of gold).

The gold price assumed in 2010 Ore Reserve calculations was A\$1,000 per ounce (2009: A\$1,075 per ounce FY 2009 production and A\$850 per ounce thereafter).

The 2010 Ore Reserve estimates are based on:

- the Life of Mine design and schedules for Gwalia and Marvel Loch Underground mines,
- the Feasibility Study for King of the Hills Underground deposit, and
- no changes to the project design work completed in 2009 for Tower Hill Underground at Leonora and the Nevoria district at Southern Cross. The Nevoria district includes Nevoria Underground and Nevoria West Open Pit. Studies are continuing on all these deposits.

The increase of 332,000 in contained ounces from the total 2009 Ore Reserve estimates is attributable to:

- 230,000 contained ounces from the inclusion of the King of the Hills Probable Ore Reserve estimate. This increased from the previously announced<sup>1</sup> Ore Reserve estimate containing 195,000 ounces in March 2010.
- 309,000 contained ounces increase at Gwalia resulting from changes in the mining extraction factors, cut-off grade and stope designs,
- (-5,000) contained ounces reduction at Marvel Loch Underground resulting from changes in geology and mine design, and
- (-202,000) contained ounces reduction from mining production depletion, (-114,000 contained ounces at Gwalia, -74,000 contained ounces at Marvel Loch Underground and -12,000 contained ounces in stockpile movements)

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<sup>1</sup> King of the Hills ASX announcement March 2010

**Table 1 Summary of Proved and Probable Ore Reserves as at 30 June 2010**

Region	Category	Proved			Probable			Total		
	Project	Tonnes (kt)	Gold grade (Au g/t)	Gold (k oz)	Tonnes (kt)	Gold grade (Au g/t)	Gold (koz)	Tonnes (kt)	Gold grade (Au g/t)	Gold (koz)
<b>Southern Cross</b>	Marvel Loch	328	2.7	29	1,463	3.6	169	1,790	3.4	198
	Nevoria West	0	0.0	0	500	3.0	48	500	3.0	48
	Nevoria Underground	0	0.0	0	1,790	3.7	210	1,790	3.6	210
	Other	1,376	1.0	44	0	0.0	0	1,376	1.0	44
<b>Total Southern Cross</b>		<b>1,703</b>	<b>1.3</b>	<b>73</b>	<b>3,753</b>	<b>3.5</b>	<b>427</b>	<b>5,456</b>	<b>2.8</b>	<b>500</b>
<b>Leonora</b>	Gwalia Deeps	0	0.0	0	6,326	9.0	1,838	6,326	9.0	1,838
	Tower Hill	0	0.0	0	2,240	4.7	338	2,240	4.7	338
	King of the Hills	0	0.0	0	1,670	4.3	230	1,670	4.3	230
<b>Total Leonora</b>		<b>0</b>	<b>0.0</b>	<b>0</b>	<b>10,236</b>	<b>7.3</b>	<b>2,406</b>	<b>10,236</b>	<b>7.3</b>	<b>2,406</b>
<b>Total All Regions</b>		<b>1,703</b>	<b>1.3</b>	<b>73</b>	<b>13,988</b>	<b>6.3</b>	<b>2,833</b>	<b>15,692</b>	<b>5.8</b>	<b>2,906</b>

**Notes**

- 1) The Ore Reserve estimates used a gold price of A\$1000/oz.
- 2) All data is rounded to two significant figures. Differences in summations will occur due to rounding.
- 3) The ore reserves estimates have been estimated and compiled under the direction of Mr Peter Fairfield and Mr Kous Kirsten.
- 4) Mr Fairfield and Mr Kirsten who are Members of The Australasian Institute of Mining and Metallurgy are full time employees of St Barbara Limited.
- 5) Mr Fairfield and Mr Kirsten have sufficient experience relevant to the style of mineralisation, type of deposits under consideration and for the activity being undertaken to qualify as Competent Persons as defined by the 2004 edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves'.
- 6) Mr Fairfield and Mr Kirsten consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.
- 7) "Other" relates to surface stockpiles valued at \$1075/oz.
- 8) Gwalia and Marvel Loch are operating underground mines.
- 9) Gwalia cut-off grade applied of 4.2 g/t Au.
- 10) A variable cut-off grade has been applied to each lode to deliver an average (annualised) grade greater than 3.1 g/t to achieve the optimal business case.

**Table 2: Ore Reserve Changes in contained gold ounces from June 2009 to June 2010**

	2009 Au (koz)	Depletion Au (koz)	Addition Au (koz)	2010 Au (koz)	Variance Au (koz)	Comment
<b>Southern Cross</b>						
Marvel Loch	277	-125	46	198	-79	Mining depletion was partially offset by 51koz added to Ore Reserve and mined during the year. There was also a 5koz reduction in ounces contained within the designed Ore Reserve. A variable cut-off grade has been applied to each lode to deliver an average (annualised) grade greater than 3.1 g/t to achieve the optimal business case.
		-51	51		0	51 koz added to Ore Reserve and mined during the year.
Nevoria West	48	0	0	48	0	No change – 2009 estimate carried forward. Design cut-off grade of 0.8 g/t was used for the Ore Reserve calculations.
Nevoria Underground	210	0	0	210	0	No change – 2009 estimate carried forward. Design cut-off grade of 3.0 g/t was used for the ore reserve calculations.
Other	56	-12	0	44	-12	Marvel Loch Open Pit surface stockpile.
<b>Total Southern Cross</b>	<b>591</b>	<b>-137</b>	<b>46</b>	<b>500</b>	<b>-91</b>	
<b>Leonora</b>						
Gwalia Deeps	1,643	-114	309 Of which: 14 10 285	1,838	195	Mining Depletion was offset by ounces added to the Reserve during the year and modified stope designs to allow for a 42 degree footwall to accommodate drilling. Reduction in planned dilution percentage. Increase in planned dilution grade. Increase in mining extraction factors and resource increases in upper SWB Design cut-off grade of 4.2 g/t was used for the Ore Reserve calculations.
Tower Hill	338	0	0	338	0	No change – 2009 estimate carried forward; studies are continuing. Design cut-off grade of 3.0 g/t was used for the ore Reserve calculations.
King of the Hills	0	0	230	230	230	Increase of 35 koz from the March Pre-feasibility Study published Ore Reserve estimate of 195 koz. Ounces have been included as a result of refinement of the geotechnical design guidelines and improvements to the Mineral Resource model. Design cut-off grade of 2.8 g/t for Open Stopping and 3.0 g/t for Cut and Fill were used for the Ore Reserve calculations.
Other	2	-2	0	0	-2	Gwalia surface stockpile depletion.
<b>Total Leonora</b>	<b>1,980</b>	<b>-116</b>	<b>539</b>	<b>2,406</b>	<b>423</b>	
<b>Total All Regions</b>	<b>2,574</b>	<b>-253</b>	<b>585</b>	<b>2,906</b>	<b>332</b>	

## **Schedule 2**

### **Mineral Resource Statement as at 30 June 2010**

As at 30 June 2010, total Mineral Resources including Measured, Indicated and Inferred categories, comprised 47,580,000 tonnes at 5.0 grams per tonne of gold (g/t Au) for 7,651,000 ounces of contained gold.

Gwalia Mineral Resources increased by 99,000 ounces of contained gold, net of depletion, primarily as a result of the successful drilling for upper extensions to South West Branch lode.

The identification of the higher grade underground Mineral Resources at the King of The Hills gold deposit at Leonora has had a significant impact on the previously published (2009) Tarmoola Mineral Resource, which had been estimated as a potential open pit resource. The King of the Hills underground resource is partly contained within and extends from, the former Tarmoola open pit resource.

The delineation of the higher grade King of the Hills underground resource separately has consequently resulted in the remaining Tarmoola open pit resource not being viable at current gold prices. Consequently, the Company has made the decision to remove the remaining low grade Tarmoola Mineral Resource from the Company's Mineral Resource Inventory, resulting in a reduction in Mineral Resources of 1.7 million ounces of contained gold.

A review of the Kailis gold deposit was also completed over the course of the year. The findings of the review have resulted in the removal of Kailis from the Mineral Resource Inventory, resulting in a reduction of 450,000 tonnes at 3.6g/t Au for 52,000 ounces of contained gold.

As a consequence of these changes, the total Mineral Resources Inventory has reduced to 7.7 million ounces of contained gold (2009: 9.5 million ounces of contained gold), but at a significantly higher grade of 5.0 g/t Au (2009: 2.9 g/t Au).

Details are attached as Table 3.

**Table 3 Mineral Resources Summary June 2010**

Region	Category:	Measured			Indicated			Inferred			Total		
	Project	Tonnes (kt)	Gold grade g/t	Contained Gold (k oz)	Tonnes (kt)	Gold grade g/t	Contained Gold (k oz)	Tonnes (kt)	Gold grade g/t	Contained Gold (k oz)	Tonnes (kt)	Gold grade g/t	Contained Gold (k oz)
Southern Cross	Marvel Loch	360	3.9	45	4,420	3.2	456	270	5.2	45	5,050	3.4	546
	Nevoria	0	0.0	0	3,520	3.8	426	560	4.1	74	4,080	3.8	500
	Transvaal	0	0.0	0	1,630	4.8	249	1,800	4.9	286	3,430	4.9	535
	Jaccoletti	0	0.0	0	0	0.0	0	720	5.4	126	720	5.4	126
	Axehandle	0	0.0	0	0	0.0	0	2,080	2.0	131	2,080	2.0	131
	Cornishman	0	0.0	0	120	4.4	17	0	0.0	0	120	4.4	17
	Edwards Find, EFN & Tamarin	0	0.0	0	20	1.6	1	420	3.8	51	440	3.7	52
	Yilgarn Star	0	0.0	0	390	6.5	82	0	0.0	0	390	6.5	82
	Other (7)	40	8.6	11	2,940	1.8	173	630	4.1	84	3,610	2.3	268
<b>Total Southern Cross</b>		<b>400</b>	<b>4.4</b>	<b>56</b>	<b>13,040</b>	<b>3.3</b>	<b>1,404</b>	<b>6,480</b>	<b>3.8</b>	<b>797</b>	<b>19,920</b>	<b>3.5</b>	<b>2,257</b>
Leonora	Gwalia Deeps	0	0.0	0	10,830	8.2	2,844	2,120	11.0	747	12,950	8.6	3,591
	Gwalia Int & West Lode	0	0.0	0	10	6.2	2	1,260	6.0	244	1,270	6.0	246
	King of The Hills	0	0.0	0	1,990	5.4	347	470	4.7	71	2,460	5.3	418
	Tower Hill	0	0.0	0	4,750	4.7	716	330	4.3	46	5,080	4.7	762
	Harbour Lights	0	0.0	0	0	0.0	0	2,580	3.3	274	2,580	3.3	274
	Other (6)	990	1.0	33	2,280	0.9	69	50	0.6	1	3,320	1.0	103
<b>Total Leonora</b>		<b>990</b>	<b>1.0</b>	<b>33</b>	<b>19,860</b>	<b>6.2</b>	<b>3,978</b>	<b>6,810</b>	<b>6.3</b>	<b>1,383</b>	<b>27,660</b>	<b>6.1</b>	<b>5,394</b>
<b>Total All Regions</b>		<b>1,390</b>	<b>2.0</b>	<b>89</b>	<b>32,900</b>	<b>5.1</b>	<b>5,382</b>	<b>13,290</b>	<b>5.1</b>	<b>2,180</b>	<b>47,580</b>	<b>5.0</b>	<b>7,651</b>

Notes

- 1) Identified Mineral Resources have been estimated under the direction of Mr Ben Bartlett (MAusIMM, 990986, MAIG) who qualifies as the Competent Person.
- 2) Mr Bartlett has sufficient experience relevant to the style of mineralisation and type of deposits under consideration and to the activities which were undertaken to qualify as Competent Persons as defined in the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Ben has consented to the inclusion in the report of the matters based on their information in the form and context in which they appear.
- 3) Mineral Resources updated during the '09/'10 Financial Year have been estimated using economic cut-off grades and mining optimisations based on an AU\$1,500/oz gold price.
- 4) The King of the Hills resource estimate is calculated using a 3.0g/t cut-off below the Tarmoola Open Pit and constrained within mineralisation domains.
- 5) Identification of KotH's Mineral Resource (418 Koz contained gold) within the formerly quoted Tarmoola open pit Mineral Resource has resulted in the remaining low grade open pit resource being unviable at forecast gold prices. The Company has decided to remove the remaining Tarmoola open pit resource from the Company's Mineral Resource Inventory, (-2.1 Moz contained gold)
- 6) The Tower Hill resource estimate is calculated using a 0.8g/t cut-off within an optimised \$1,200 pit shell, and a 3.2g/t cut-off below the optimised pit shell.
- 7) The Transvaal mineral resource estimate is calculated using a graduated cut off grade of 0.5 to 0.9g/t in oxide and 0.7 to 1.0g/t in fresh within an optimised \$1,200 pit shell and a 2.6g/t cut-off below the optimised pit shell.
- 8) Mineral Resource variances compared to the June '09 Mineral Resource Statement are primarily attributed to mining depletion, cut-off grade changes, write down of low grade open pit resources and some re-interpretation of the resources. Notable variances to the 2009 Mineral Resource Estimate are Southern Cross: Marvel Loch (-125,000 oz) and at Leonora: Tarmoola (-2.1 Moz); Kailis: (-52,000oz), King of The Hills (+418,000oz) and Gwalia (+100,000oz).
- 9) Mineral Resources carried over unchanged from June'09 include Southern Cross District; Nevoria (500,000oz); Axehandle (130,000 oz); Jaccoletti (130,000oz); Edwards Find, Edwards Find North and Tamarin (52,000oz); Transvaal (530,000oz); Ruapehu (55,000oz); New Zealand Gully (24,000oz); Cornishman (17,000oz); GVG - South Burbidge (13,000oz); GVG Lode 1 (98,000oz); Red wing (34,000oz) and Yilgarn Star (82,000 oz). Leonora District: Gwalia Intermediates (238,000 oz); Rainbow (37,000oz); Royal Arthur Bore (12,000oz); Tarmoola Stockpile (30,000oz); McGraths (21,000); Tower Hill (760,000oz) and Harbour Lights (270,000 oz). Resource reviews for all of these resources along with Nevoria, Transvaal and Edwards Find are planned during the current 2010 financial year. Combined these resources total 3.1 Moz or 40% of the Company's Mineral Resource Inventory.
- 10) All numbers have been rounded to tonnes (10,000) and ounces (1,000) and this may result in some rounding discrepancies.
- 11) Southern Cross Other comprises 7 resources including: Frasers South, GVG Lode 1, New Zealand Gully, Ruapehu, GVG South Bronco, Various Stockpiles (Measured), and Redwing.
- 12) Leonora Other comprises 6 resources including: McGraths, Tarmoola s/pile, Royal Arthur Bore, Rainbow (Measured), Gwalia and Tower Hill ROM s/piles
- 13) Mineral Resource updates completed by St Barbara Ltd during the 09/10 financial year include: Gwalia Deeps (Above 1320 mbs), King of The Hills and Marvel Loch UG, All the remaining Mineral Resources remain unchanged to the June 2009 estimates.

**Competent Persons Statement:**

References to Mineral Resources contained in this report have been compiled under the supervision of Mr Ben Bartlett. Mr Bartlett is a Member of The Australasian Institute of Mining and Metallurgy and is a full time employee of the Company. Mr Bartlett has sufficient experience relevant to the style of mineralisation, type of deposit under consideration and to the activity being undertaken to qualify as Competent Person as defined in the 2004 edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves' (JORC Code). Mr Bartlett consents to the inclusion in the report of the matters based on their information in the form and context in which they appear.

Members of the Company's team, including external consultants, preparing Mineral Resource Estimates under Mr Bartlett's supervision all qualify as Competent Persons.

References to Ore Reserves presented in this document have been produced in accordance with the Australasian Code for Reporting of Mineral Resources and Ore Reserves, 2004 edition (JORC Code) under the direction of Mr. Peter Fairfield and Mr. Kous Kirsten. Mr. Fairfield and Mr. Kous Kirsten are Members of The Australasian Institute of Mining and Metallurgy and are full time employees of St Barbara. Mr. Fairfield and Mr. Kirsten have sufficient experience relevant to the style of mineralization, type of deposit under consideration and to the activity being undertaken to qualify as a Competent Persons as defined in the JORC Code. Mr. Fairfield and Mr. Kirsten consent to the inclusion in this document of the matters based on their information in the form and context in which it appears.

Members of the Company's team preparing Ore Reserves Estimates under Mr. Fairfield's and Mr. Kirsten's supervision all qualify as Competent Persons.