Gallery Gold Limited Botswana

# TECHNICAL REPORT ON THE MUPANE GOLD PROJECT

PREPARED FOR IAMGold Corporation

NI 43-101 Report

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# 3 SUMMARY

The Mupane Gold Mine is located in eastern Botswana close to the border with Zimbabwe in southern Africa. The Mupane Mining License covers an area of 1165.5833 Ha and is located on two adjoining farms, designated Farm 75 NQ and Farm 18/77 NQ, in the North Eastern Administrative District, Botswana, southern Africa The license area is located between Latitudes 21°21'21" and 21°23'44" South and Longitudes 27°41'11" and 27°44'02" East (Figure 6.1).

Gallery Gold Limited purchased the Operating Monarch Mine (now closed) in the Archean Tati Greenstone Belt (TGB) in 1999. The company then conducted small scale mining operations at Monarch and in the Golden Eagle area until mid-1998. In 1996 following an regional analysis of the Zimbabwe Craton the company acquired prospecting rights over the bulk of the TGB. The TGB is well exposed and soil cover is both generally thin and in place indicating that standard soil sampling techniques should work well across the belt. By 2000 the entire belt was covered with sampling, generally on a 200 by 40m grid although sample spacing is higher in areas of anomalism, over 40,000 samples were collected across the entire TGB. During this exercise and all were sent to Genalysis Laboratories in Perth for low level analysis for Au and As.

Several significant anomalies were discovered in areas of old workings throughout the belt. One of these anomalies was a coincident Au-As in soil anomaly in the region of the Mupanipani Hills some 30 kilometres southeast of Francistown. Follow up trenching and led to the discovery of Au mineralization associated with strongly silicified iron rich sedimentary horizons. Subsequent reverse circulation drilling in 1999 in several areas led to the discovery of what is now the operating Mupane Gold Mine.

Mineralization at the Mupane Gold Mine comprises three separate orebodies (Tau, Tholo and Kwena). These orebodies consists of zones of intense grey quartz veining and more pervasive silicification developed within a suite of variably carbonaceous metapelites, semi pelites, and meta-carbonates (now largely amphibolitic and biotitic schists). The main host rock to the gold mineralization itself is a banded, variably carbonaceous, and carbonate bearing, cherty metapelite in which early formed (diagenetic?) carbonate and chert have reacted under static metamorphism to produce grunerite amphibole. Mineralization appears to have been localized in areas of strong disharmonic folding, décollement and open space development. Tectonoclasts of hydrothermal iron carbonate within later grey to white quartz have been replaced by pyrrhotite, pyrite, and arsenopyrite with associated gold mineralization.

Ammtec Limited in Perth conducted metallurgical test work. This work showed that even though the gold is associated with arsenopyrite, the ore was not refractory. Recoveries were predicted at 97% in oxide and 94% in sulfide ore.

Pre-feasibility study for proposed Mupane mine development was completed in mid-March and results positive. Using a US\$300/oz gold price and a discount rate of 8%, the NPV and IRR for a 1.0 million tonne per annum plant were A\$35 million and 35% respectively.

Gallery Gold Limited (GGL) completed a Bankable Feasibility Study (BFS) on the project in May 2003. Construction of the processing plant commenced in 2003 with commissioning completed October 2004

Open pit mining commenced at Tau in May 2004. Open pit mining is undertaken utilising an open pit mining contractor, Basil Reed, based out of South Africa.

Processing commenced and the first gold poured occurred in November 2004. Full gold production was achieved in January 2005, and the project had its official opening in February 2005.

The estimated depleted resource for the project as at June 30, 2005 is shown in Table 3\_1 below.

|              | MEASURED         |                        |                        | INDICATED        |                        |                        | MEASURED & INDICATED |                        |                        |
|--------------|------------------|------------------------|------------------------|------------------|------------------------|------------------------|----------------------|------------------------|------------------------|
|              | TONNES<br>(,000) | GOLD<br>GRADE<br>(g/t) | contained<br>oz (,000) | TONNES<br>(,000) | GOLD<br>GRADE<br>(g/t) | CONTAINED<br>oz (,000) | TONNES<br>(,000)     | GOLD<br>GRADE<br>(g/t) | CONTAINED<br>oz (,000) |
| Tau          | 5,428            | 3.3                    | 572                    | 494              | 2.8                    | 45                     | 5,922                | 3.2                    | 617                    |
| Tolo         | 940              | 2.4                    | 72                     | 296              | 2.1                    | 20                     | 1,236                | 2.3                    | 92                     |
| Kwena        | 1,137            | 1.7                    | 61                     | 197              | 1.6                    | 10                     | 1,334                | 1.7                    | 71                     |
| Golden Eagle | 559              | 2.4                    | 43                     | 406              | 2.1                    | 27                     | 965                  | 2.3                    | 70                     |
| SHA          | 1,218            | 2.0                    | 79                     | 313              | 2.2                    | 22                     | 1,531                | 2.1                    | 101                    |
| SHF          | 166              | 3.1                    | 17                     | 33               | 2.9                    | 3                      | 199                  | 3.1                    | 20                     |
| TOTAL        | 9,448            | 2.8                    | 844                    | 1,739            | 2.3                    | 127                    | 11,187               | 2.7                    | 971                    |

|              | INFERRED         |                        |                        |  |  |  |
|--------------|------------------|------------------------|------------------------|--|--|--|
|              | TONNES<br>(,000) | GOLD<br>GRADE<br>(g/t) | contained<br>oz (,000) |  |  |  |
| Tau          | 379              | 2.8                    | 35                     |  |  |  |
| Tolo         | 360              | 2.4                    | 28                     |  |  |  |
| Kwena        | 230              | 1.5                    | 11                     |  |  |  |
| Golden Eagle | 339              | 2.0                    | 22                     |  |  |  |
| SHA          | 317              | 2.0                    | 21                     |  |  |  |
| SHF          | 49               | 2.8                    | 4                      |  |  |  |
| TOTAL        | 1,673            | 2.2                    | 121                    |  |  |  |

Table 3.\_1 Mineral resource estimate at 30 June 2005

Current reserves for the project, as at 30 June 2005, are shown in Table 3\_2 below.

|              | PROVEN           |                |              | PROBABLE         |                |              | TOTAL            |                |              |
|--------------|------------------|----------------|--------------|------------------|----------------|--------------|------------------|----------------|--------------|
|              | TONNES<br>(,000) | GRADE<br>(g/t) | CONTAINED oz | TONNES<br>(,000) | GRADE<br>(g/t) | CONTAINED oz | TONNES<br>(,000) | GRADE<br>(g/t) | CONTAINED oz |
| Tau          | 3,823            | 3.60           | 443,000      | 25               | 2.88           | 2,000        | 3,848            | 3.60           | 445,000      |
| Tholo        | 682              | 2.51           | 55,000       | 2                | 2.01           | 0            | 683              | 2.51           | 55,000       |
| Kwena        | 279              | 1.84           | 17,000       | 3                | 1.84           | 0            | 282              | 1.84           | 17,000       |
| Signal Hill  | 633              | 2.44           | 50,000       | 115              | 2.46           | 9,000        | 748              | 2.44           | 59,000       |
| Golden Eagle | 342              | 2.59           | 28,000       | 108              | 2.25           | 8,000        | 450              | 2.51           | 36,000       |
| TOTAL        | 5,759            | 3.20           | 593,000      | 253              | 2.40           | 19,000       | 6,012            | 3.17           | 612,000      |

Table 3.\_2 Mineral reserve estimate at 30 June 2005

The operation currently has a 5 ½ year mine life based on current reserves.

A summary of the current Life of Mine Plan (LOM) is shown in Table 3\_3 below with annual numbers based on 12 month fiscal year periods ending June 30.

#### Mupane Gold Mining (Pty) Limited

Pre-tax Cash Flow Summary

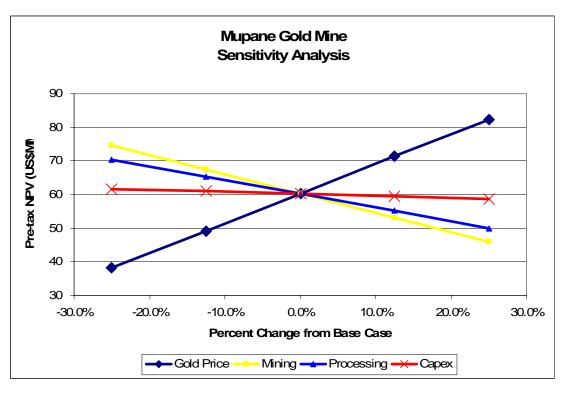
|                                 |            | 2005/06      | 2006/07      | 2007/08 | 2008/09      | 2009/10      | 2010/11    | 2011/12 | TOTAL         |
|---------------------------------|------------|--------------|--------------|---------|--------------|--------------|------------|---------|---------------|
| Metal Prices                    |            |              |              |         |              |              |            |         |               |
| Spot Gold Price                 |            | \$400        | \$400        | \$400   | \$400        | \$400        | \$400      | \$400   |               |
| Price received for forward sale | es         | \$402        | \$402        | \$402   | \$402        |              |            |         |               |
| Mining                          |            |              |              |         |              |              |            |         |               |
| <u>Ore</u>                      |            |              |              |         |              |              |            |         |               |
| Tonnes mined                    | 000 tonnes | 1,314        | 1,047        | 1,155   | 1,188        | 864          | -          | -       | 5,568         |
| Grade                           | g/t        | 3.01         | 3.70         | 3.20    | 3.19         | 3.41         | -          | -       | 3.28          |
| <u>Waste</u>                    |            |              |              |         |              |              |            |         |               |
| Waste (incl. subgrade)          | 000 tonnes | 8,416        | 9,786        | 4,896   | 3,855        | 1,536        | -          | -       | 28,487        |
| Strip ratio                     | t:t        | 6.40         | 9.35         | 4.24    | 3.25         | 1.78         |            | -       | 5.12          |
| Processing                      |            |              |              |         |              |              |            |         |               |
| Mill Feed                       | 000 tonnes | 1,258        | 1,131        | 1,160   | 1,166        | 1,146        | 152        | -       | 6,012         |
| Grade                           | g/t        | 3.18         | 3.18         | 3.18    | 3.16         | 3.22         | 3.16       | -       | 3.18          |
| Recovery                        | %          | 89.2%        | 91.3%        | 90.7%   | 89.1%        | 89.1%        | 90.0%      | 0.0%    | 89.9%         |
| Ounces Produced                 | ounces     | 114,753      | 105,601      | 107,715 | 105,467      | 105,609      | 13,888     | -       | 553,032       |
| Revenue                         |            |              |              |         |              |              |            |         |               |
| Forward Sales                   | ounces     | 77,776       | 77,776       | 77,776  | 40,675       | -            | -          | -       |               |
| Spot Sales                      |            | 36,977       | 27,825       | 29,939  | 64,792       | 105,609      | 13,888     | -       |               |
| Revenue                         | US\$000's  | 46,057       | 42,396       | 43,241  | 42,268       | 42,243       | 5,555      | -       | 221,761       |
| Costs                           | US\$000's  |              |              |         |              |              |            |         |               |
| Mining                          |            | 15,707       | 17,162       | 12,921  | 11,633       | 7,369        | -          | -       | 64,792        |
| Processing                      |            | 10,067       | 9,887        | 8,738   | 8,700        | 8,834        | 1,020      | 29      | 47,275        |
| G&A                             |            | 3,676        | 3,625        | 3,528   | 3,504        | 3,501        | 351        | 50      | 18,234        |
| Government Royalty              | 5.0%       | <u>2,303</u> | <u>2,120</u> | 2,162   | <u>2,113</u> | <u>2,112</u> | <u>278</u> |         | <u>11,088</u> |
| Total Operating Costs           |            | 31,752       | 32,793       | 27,350  | 25,950       | 21,816       | 1,648      | 79      | 141,388       |
| Capital and Rehabilitation      | US\$000's  |              |              |         |              |              |            |         |               |
| Capital Costs                   |            | 4,415        | 835          | 835     | 118          | 35           | 4          | -       | 6,243         |
| Rehabilitation                  |            |              |              |         |              |              |            | 3,250   | 3,250         |
| Pre-tax Cash Flow               | US\$000's  | 9,890        | 8,767        | 15,057  | 16,200       | 20,392       | 3,903      | (3,329) | 70,880        |

Table 3\_3 Mupane LOM Pre-tax Cashflow Summary

Sensitivity studies have been undertaken on the financial model for the following scenarios:-

Gold Price ± 12.5%, ± 25%
 Mining Costs ± 12.5%, ± 25%
 Processing Costs ± 12.5%, ± 25%
 Capital Costs ± 12.5%, ± 25%

The effect of these scenarios on the net present value (NPV) are presented in Graph 3\_1 below.



Graph 3\_1 Mupane LOM Sensitivity Analysis

# 4 INTRODUCTION AND TERMS OF REFERENCE

The authors of this report have been requested by IAMGold Corporation to prepare a Technical Report compliant with NI43-101 on the Mupane Gold Project in support of the proposed transaction between IAMGold Corporation and Gallery Gold Limited.

This report documents all the definition, resource development, project development and mining carried out at the Mupane Gold Mine up to 1 November 2005. In addition there is a discussion of exploration in the mine lease area and in the immediate vicinity.

The authors of this report are both "qualified persons" as defined by NI43-101 and are executives of Gallery Gold Limited both authors are fully acquainted with all aspects of the Mupane Project including exploration history, geology, metallurgy, resource/reserve estimations and project development

The report complies with Canadian National Instrument 43-101, for the 'Standards of Disclosure for Mineral Projects' of February 2001 (the Instrument) and the resource and reserve classifications adopted by CIM Council in August 2000. The report is also consistent with the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves' of September 1999 (the Code) as prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia (JORC).

All monetary amounts expressed in this report are in United States of America dollars (US\$) unless otherwise stated.

# 5 DISCLAIMER

This report is based on information provided Gallery Gold Limited and various consultants, which reflect various technical and economic conditions prevailing at the time of compilation of the report. These conditions can change significantly over relatively short periods of time and as such the information and opinions contained in this report may be subject to change.

The revised resource estimates included in this report were prepared by independent consulting firm, Hellman & Schofield Pty Ltd. The authors of this report are not in a position to take responsibility for the Mupane Mineral Resource estimates stated in Section 19 of this report. Hellman and Schofield has provided a separate certificate of responsibility in relation to Section 19 of this report.

The achievability of Life of Mine plan, budgets and forecasts are neither warranted nor guaranteed by the authors. The forecasts have been proposed by Mupane's management and cannot be assured; they are necessarily based on economic assumptions, some of which are beyond the control of Mupane or Gallery Gold. Future cash flows and profits derived from such forecasts are inherently uncertain and actual results may be significantly more or less favourable.

This report includes technical information, which requires subsequent calculations to derive subtotals, totals and weighted averages. Such calculations may involve a degree of rounding and consequently introduce an error. Where such errors occur, the authors do not consider them to be material.

The authors of this report do not undertake or accept any responsibility or liability in any way whatsoever to any person or entity in respect of these parts of this document, or any errors in or omissions from it, whether arising from negligence or any other basis in law whatsoever.

# 6 PROPERTY DESCRIPTION AND LOCATION

The Mupane Mining License covers an area of 1165.5833 Ha and is located on two adjoining farms, designated Farm 75 NQ and Farm 18/77 NQ, in the North Eastern Administrative District, Botswana, southern Africa The license area is located between Latitudes 21°21'21" and 21°23'44" South and Longitudes 27°41'11" and 27°44'02" East (Figure 6.1).

The Mupane Mining License is registered as Mining License No. 2003/26L, issued on 5 September 2003. It covers a single contiguous area.

The Mining License No. 2003/26L grants permission to the holder to mine for gold in the mining license area for a period of ten years commencing on 5 September, 2003 and ending on 4 September 2013. To retain this license, the holder must pay an annual license fee to the office of the Director of Mines; must carry out mining operations strictly within the license area and in accordance with the approved programme of mining; and must pay a royalty to the Government monthly. In addition, the mining license area is subject to Notarial Mineral Leases with each of the two farm owners which grant sole and exclusive access within the mining lease areas to search for, mine, win and recover gold in all forms in, on and under the mining lease areas, plus further rights set out fully within the lease documents. To retain these lease arrangements, the holder must pay monthly rental fees, escalated annually. The Mineral Leases endure for a period of 10 years from the date of issue of the Mining License, and shall be automatically renewed upon renewal of the Mining License for a further period of 10 years. The license area has been legally surveyed by Land Surveyor P C Drysdale.

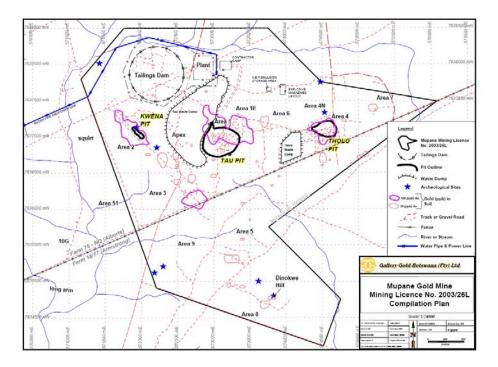


Figure 6.1 Showing all relevant geographical and topographical features of the Mupane Project

Gold production in Botswana is subject to a national government royalty of 5% net smelter return paid monthly. In addition, there is an annual fee payable to the Department of Mines for the Mining License. Currently this annual fee is set at BWP 100 per km² or part thereof, which equates to Botswana Pula (BWP) 1200 per annum. The mining license area is also subject to Notarial Mineral Leases with each of the two farm owners which requires payments initially set at BWP 20,000 each, per month. This amount is subject to an annual compounded escalation of 10% on each anniversary of commencement.

An Environmental Management Plan and Closure Plan have been prepared for the Mupane operation by consultants URS Australia Pty Ltd, and future closure costs have been estimated at USD 3.25 million.

To the extent known, the only permits required to conduct the proposed work on the property are the Mining License, the Mineral Leases, and servitudes for power and water. All of these permits have been obtained.

# 7 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Mupane Gold Project is located in generally flat terrain with sparse vegetation, permitting relatively easy access for exploration. Dominant land use is cattle farming with individual land holdings tending to be relatively large and consisting of unimproved pasture rather than cultivated land. Consequently, the Company's exploration program has had little impact on landowners. The Mupanipani chert ridges form a prominent "V" shaped positive topographic feature in the area. The "V" has its long axis orientated NW-SE and the limbs of the chert unit on either side of the "V" are termed the Vermaaks trend (east-west) and the Dinokwe trend (southeast-northwest) The highest point occurs on the Vermaaks trend marked by trig Beacon BPS 90 with a gazetted elevation of 1,069 meters ASL. The ridges are covered by abundant Mupane trees and Syringa trees with minor Acacia, Combretum and Kirkia. The flat lying areas support a mixed Mupane and Acacia tree savannah.

The Mupane Prospect is located about 30 kilometres south east of the town of Francistown, population 300 000. Transport to Mupane is by private vehicles or staff buses (Figure 7.1).

Best access is via the tarred Francistown-Matsiloje road. Alternative access is possible on the all weather old Francistown-Matsiloje gravel road. Road distance is about 50 kilometres. A private airfield is located on farm which comprises the south east portion of the Mupane mining lease.

Situated close to the subtropical high pressure belt of the southern hemisphere, Botswana has a dry, semi-arid climate. Rainfall is erratic and sporadic, with the mean annual rainfall of 450 millimetres ranging from 250 millimetres in the south-west to over 650 millimetres in the north-east. The main rainy season occurs in the summer months between November and April, with significant variations from year to year and periods of severe drought. Average daily maximum temperatures range from 22°C in July to 33°C in January, while average daily minimum temperatures in the same months range from 5 to 19°C. Overall, the temperature range is considerable, with the southern Kgalagadi experiencing extremes of less than -5°C at night up to 43°C during the day. Periods of bright sunshine can last between 8 and 10 hours daily, with generally clear skies and low relative humidity. The eastern area has a somewhat less harsh climate.

The mine is connected to the Botswana national power grid and obtains its water from the Shashe Dam located west of Francistown.

Gallery Gold Limited Botswana



Figure 7.1 – Location of the Mupane Project in Botswana

# 8 HISTORY

Gallery Gold Limited purchased the then operating Monarch Mine (now closed) in the Tati Greenstone Belt (TGB) in 1994. The company then conducted small scale mining operations at Monarch and in the Golden Eagle area until mid-1998. In 1996 following an regional analysis of the Zimbabwe Craton the company acquired prospecting rights over the bulk of the TGB. The TGB is well exposed and soil cover is generally thin and *in situ* indicating that standard soil sampling techniques should work well. By 2000 the entire belt was covered with sampling on a 200 by 40m grid although sample spacing is closer in areas of anomalism, Over 40,000 samples were collected across the entire TGB during this exercise and all were sent to Genalysis Laboratories in Perth for low level analysis for Au and As'

Several significant anomalies were discovered in areas of old workings throughout the belt. One of these anomalies was a coincident Au-As in soil anomaly in the region of the Mupanipani Hills some 30 kilometres southeast of Francistown. Follow up trenching and led to the discovery of Au mineralization associated with strongly silicified iron rich cherty sedimentary horizons. Subsequent reverse circulation drilling in 1999 in several areas led to the discovery of what is now the operating Mupane Gold Mine.

Independent consultants Resource Service Group (RSG) conducted a field audit of exploration procedures and an initial inferred resource estimate for Areas 1 & 2 in March 2001. Area 1 yielded 3.74 million tonnes at 3.6 g/t gold for 438,000 contained ounces. This inferred resource was to a variable vertical depth of 100 to 200 meters dictated by depth of drilling. Area 2 yielded 1.33 million tonnes at 1.8 g/t gold for 76,000 ounces. This inferred resource was to a vertical depth of 90 meters.

Ammtec Limited in Perth conducted metallurgical test work. This work showed that even though the gold is associated with arsenopyrite, the ore was not refractory. Recoveries were predicted at 97% in oxide and 94% in sulfide for Area 1 ore.

The Bankable Feasibility Study (BFS) for a 1.0 million tonne per annum gold operation at the Mupane Gold Project in Botswana was completed in May 2003.

The Project comprised the construction of a gold process plant and related infrastructure to process ore from open pit mining operations in the Mupane and Signal Hill areas.

Following Board approval of the BFS, an application for a Mining licence over the Mupane area was lodged in Botswana with the Department of Mines on 25 June 2003 and approved at the end of September 2003 (M.L No 2003/26L) valid for a period of 10 Years.

Construction of the processing plant commenced in 2003 with commissioning completed October 2004

Open pit mining commenced at Tau in May 2004. Open pit mining is undertaken utilising an open pit mining contractor, Basil Reed, based out of South Africa.

Processing commenced and the first gold poured occurred in November 2004. Full gold production was achieved in January 2005, and the project had its official opening in February 2005.

To date the project has produced in excess of 91,000 ounces of gold.

# 9 GEOLOGICAL SETTING

The Mupane Mine is hosted by metasediments within the Tati Greenstone Belt (TGB). The TGB is an isolated remnant of Archean volcanics and sediments located on the far western edge of the Zimbabwe Craton. The Zimbabwe Craton is host to numerous other greenstone belts many with significant gold mines within them (Figure 9.1).

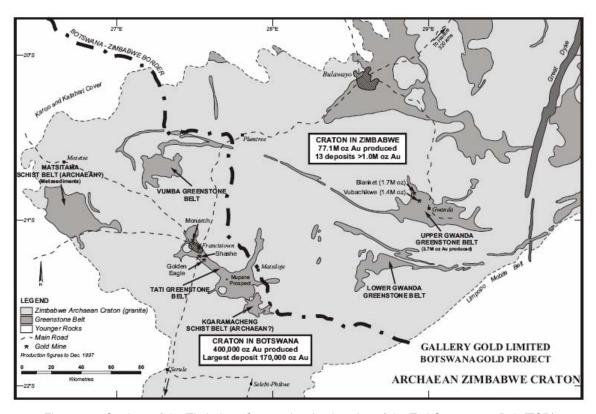


Figure 9.1 Geology of the Zimbabwe Craton showing location of the Tati Greenstone Belt (TGB) on the western side of the craton

The TGB consists of a sequence of mafic to felsic volcanics and intercalated sediments forming a NW-SE trending belt striking for 55km and approximately 10km in width. The belt is surrounded by a series of granites and granite gneisses and includes a number of diapir like granitic to tonalitic bodies intruding the belt itself.

The belt has undergone polymetamorphism and deformation. It is characterized by a series of NW-SE striking tectonostratigraphic units (termed "formations") separated by major structural and/or stratigraphic breaks. The belt is almost totally covered by a thin veneer of transported regolith and outcrop of the supracrustal rocks is less than 5% of the total area of the belt. Detailed geological mapping has not been undertaken but the thin nature of the cover means that radiometric surveys and satellite imagery have allowed large scale maps to be produced.

The exact nature of the breaks between the tectonostratigraphic packages has not been determined due to lack of outcrop but in places unconformable, disconformable, and structural juxtapositions have been recorded.

The Mupane Mine itself lies close to the base of a late stage sedimentary basin developed on top of earlier formed and deformed volcanics and sediments (Last Hope Formation – Figure 9.2).

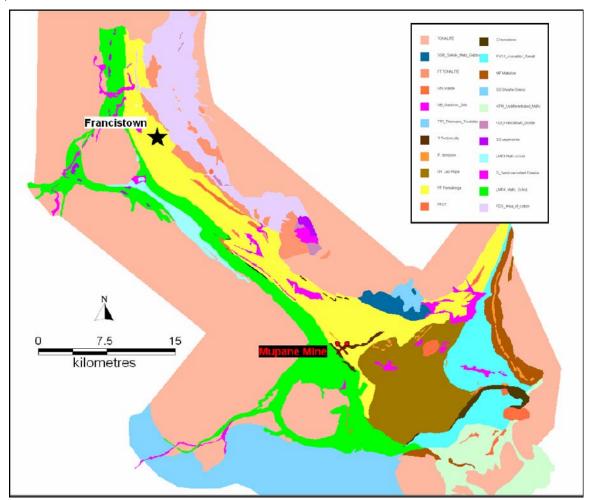


Figure 9.2 General geology of the TGB

The Last Hope formation is dominated by arenaceous units towards the centre of the basin and the top of the sequence but becomes generally finer grained and more pelitic with intercalated carbonate bearing rocks towards the base. A series of "iron formations" forming prominent outcrops characterize the lower parts of the sequence. In general these "iron formations" consist of cherty and sometimes carbonaceous pelitic units with variably developed Fe and Mn carbonate rich portions. Parts of the more pelitic units that have escaped the chert alteration and contain up to 10% fine grained pyrite.

In drill core the ferruginous, carbonaceous pelite-chert units demonstrate a clear early (diagenetic) phase of fine grained chert replacement of pelite followed by less widespread (but probably also diagenetic) replacement by Fe rich carbonates. The low range of hills within which the Mupane Mine lies are supported by several units of ferruginous chert-pelite and this is the main host rock to the mineralization.

Deformation in the TGB has been complex and interpretations of the structural history is hampered by lack of outcrop and the poor quality of aeromagnetic data related to the major Proterozoic dolerite dyke swarm which cuts the entire belt. Nearly all the rocks display at least one pervasive fabric which in places shows refolding by east-west trending open to isoclinal

folds with later associated cleavage development. The ferruginous chert units within the belt display highly complex, locally disharmonic folding related to at least two periods of deformation post dating the main cleavage.

# 10 DEPOSIT TYPES

The TGB hosts numerous small scale nickel and gold deposits.

The nickel deposits consist almost entirely of disseminated to semi massive sulfide bodies hosted by a series of late stage troctolitic intrusive bodies on the NE edge of the greenstone belt.

The belt has been extensively prospected in the past due to the abundance of numerous small scale narrow quartz vein hosted gold deposits. These deposits are all clearly related to late stage, high level brittle shear zones developed within the volcanics and sediments of the belt. The deposits were generally refractory in the fresh sulfides and contained significant amounts of arsenopyrite and some stibnite although the gold is principally hosted within pyrite and to a lesser extent pyrrhotite (ie Map-Nora Lodes). The alteration associated with the mineralization varies depending on the host rocks but typically consists of biotite, muscovite, chlorite, carbonate and ubiquitous quartz either as veins or silicification. Very few of these deposits appear to have developed significant magnitude to be worthwhile propositions for modern gold mining.

In style the gold mineralization conforms to the Archean Lode Gold or Orogenic Gold style of mineralization. They all appear to have formed late in the history of the belt and closely resemble mineralization seen in the Archean greenstone belts of Canada, South America and Australia.

# 11 PROPERTY GEOLOGY AND MINERALIZATION

The gold mineralization at Mupane is hosted almost exclusively within a series of disconnected bands and lenses of ferruginous chert-pelite. These units of so-called "iron formation" are hosted by a sequence of metasediments including coarse grained carbonate bearing conglomerates, para-amphibolites, marbles, metapelites, and minor orthoamphibolites (Figure 11.1). The host rocks are all variably schistose depending on the abundance of micaceous components.

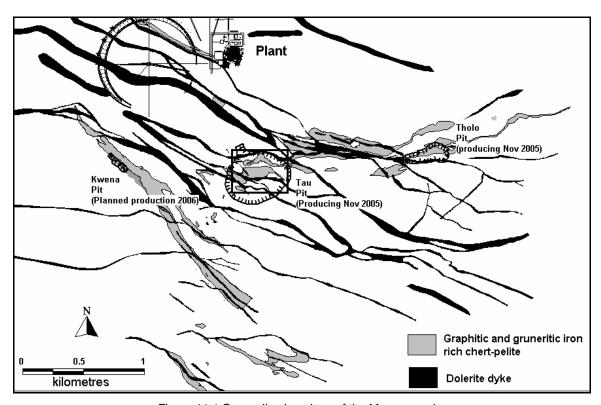


Figure 11.1 Generalized geology of the Mupane region

The ferruginous chert-pelite units hosting the mineralization show a clear alteration history. The protolith for most of the material appears to have been a variably carbonaceous pelite/semi pelite unit. During diagenesis this unit underwent several major transformations the most important of which involved large scale replacement by fine grained cherty silica. A slightly later stage of fine grained Fe carbonate replacement was followed by a period of static thermal metamorphism. During this metamorphism reaction between the carbonate and the surrounding chert resulted in the growth of gruneritic amphibole. Following this phase of metamorphism the cherty units were subject to further deformation, brittle ductile shearing, and the development of open spaces which became filled with coarse grained late stage Fe rich carbonate. Continued brecciation and a further phase of silica flooding with associated precipitation of gold, pyrite, arsenopyrite, pyrrhotite and minor sphalerite and galena, resulted in the mineralization currently being exploited.

The deformation appears to have been localized along less chertified units of pelite. Differential movement between chert and pelite bands during disharmonic folding led to the localization of mineralization in complex fold hinges and associated with décollement zones. The best developed of these zones form the basis of mining at Mupane in the Tau, Tholo, and Kwena Pits (Figure 11.1).

Below the zone of oxidation, mineralization at Mupane is semi refractory with the gold forming fine isolated grains mainly associated with pyrite (<a href="note">note</a> the gold is not locked within the sulfide lattice). This gold can be liberated by fine grinding prior to normal CIL processing. In the oxidation zone the grunerite within the chert units at Mupane has weathered to an unusual expanding layer clay known as nontronite and the gold is non- refractory. The mineralization at Mupane occurs in three zones (Tau, Tholo, and Kwena - Figure 11.1) within separate cherty-pelite lenses. By far the largest proportion of resources and reserves is to be mined from the Tau orebody. This mineralization forms a steep to moderately south dipping body striking for over 1000m (Figure 11.2 A) and dipping for at least 300m (open at depth) with indications of a very steep west plunging shoot-like geometry (Figure 11.2 B and C). At the Tholo Pit less well developed mineralization forms a relatively moderately south dipping lens striking for over 300m and extending down dip for at least 200m, whilst at the much smaller Kwena Pit mineralization forms a short strike length (200m) steep to moderate west plunging orebody which extends down dip for at least 100m.

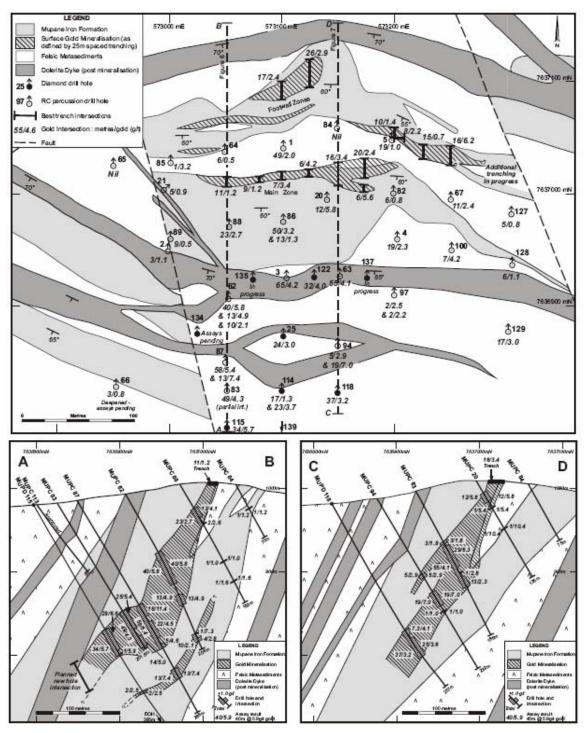


Figure 11.2 A. Geological plan of the Tau orebody at surface and projected, B and C geological x-sections through the Tau orebody (section lines shown on figure 11.2 A)

# 12 EXPLORATION

# **History**

In 1994 Gallery Gold Limited purchased the then operating Monarch Gold Mine in the TGB on the outskirts of the north eastern Botswana city of Francistown. The Company conducted small scale mining operations at Monarch and then at the nearby Golden Eagle deposit until mid 1998.

In 1996, following an analysis of gold endowment of other greenstone belts in the Zimbabwe Craton the company recognized that the TGB was grossly underrepresented in historical gold production and current gold resources. Further, despite numerous known historical gold workings, it was apparent that the district had seen little modern gold exploration and the company was able to secure a valuable land position over 90% of the belt.

Gallery Gold completed a high resolution, 19,900 line-kilometre aeromagnetic and radiometric program in late 1996. A structural analysis based on this geophysical data and consideration of known geologic data suggested a large number of attractive targets and this encouraged the company to proceed with regional exploration for gold.

The bulk of the TGB is covered by shallow *in situ* soils and orientation studies indicated that soil geochemistry was an ideal exploration medium. Reconnaissance soil sampling on a handheld GPS controlled 400 x 40 metre pattern commenced in mid 1997 and by late 2000 coverage was complete over the entire greenstone sequence within the company's tenements. This involved the collection of some 38,880 samples which were sent to Genalysis laboratories in Perth for gold, arsenic, and base metal assay.

Gold-in-soil anomalies resulting from this first pass sampling were followed up with  $100 \times 25$  metre spaced infill sampling on grids controlled by Differential Geographical Positioning System (DGPS). These samples were collected and analyzed with the same methodology as the reconnaissance sampling. The infill sample grids are the basis of subsequent geologic mapping, prospecting, ground geophysics, and drilling activities.

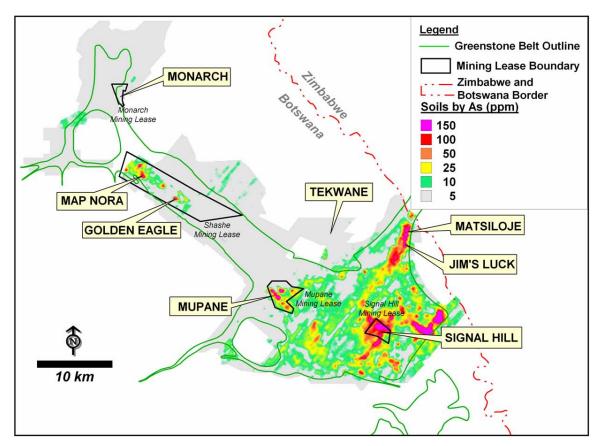


Figure 12.1 showing location of major gold-in-soil anomalism defined by Gallery Gold soil sampling programmes

The reconnaissance soil geochemical work quickly defined several new and prominent anomalies together with a large number of anomalies associated with old workings (Figure 12.1).

One of these new anomalies was a 4 x 5 kilometre gold-arsenic-copper-zinc anomaly in the Mupanipani Hills (Figures 12.2-12.8). Follow up trenching in 1998 led to the discovery of high-grade, bedrock hosted gold mineralization over approximately 6.5 kilometres of strike. Initial reverse circulation percussion drilling in mid 1999 intersected ore grade gold mineralization in several sub-areas and it became apparent the prospect had the potential to host a major gold resource (Figure 12.9)

Following the initial work Gallery Gold completed four phases of drilling totalling 20,170 metres in 155 holes and excavated some 8,480 metres in 48 trenches prior to decision to mine (Figure 12.8).

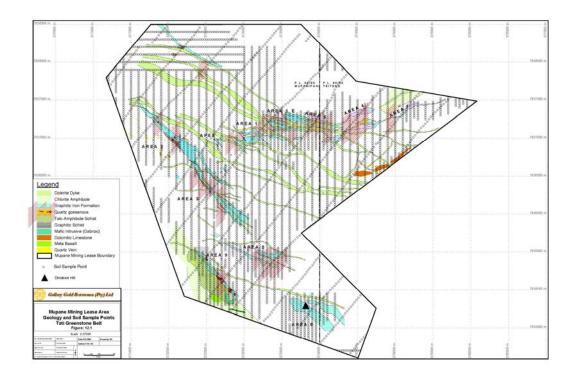


Figure 12.2 showing location of soil sampling points and geology of the Mupani Gold Mine

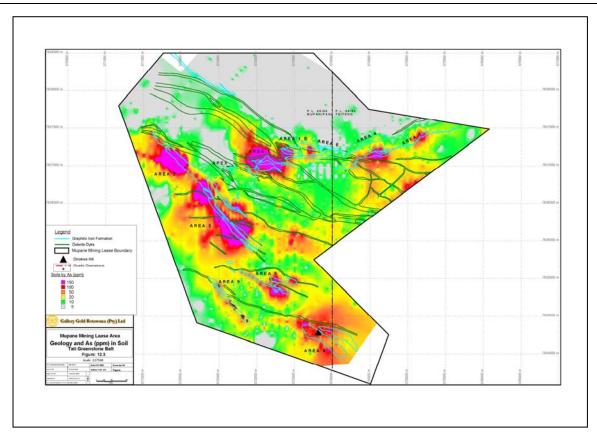


Figure 12.3 Showing location of major gold-in-soil anomalism defined by Gallery Gold soil sampling on the Mupani Mining Leases

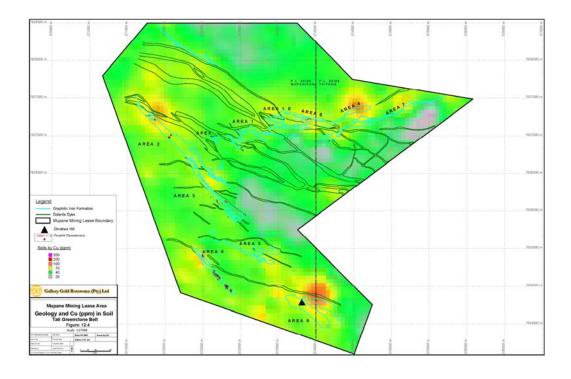


Figure 12.4 Showing location of copper anomalism defined by Gallery Gold soil sampling on the Mupani Mining Leases

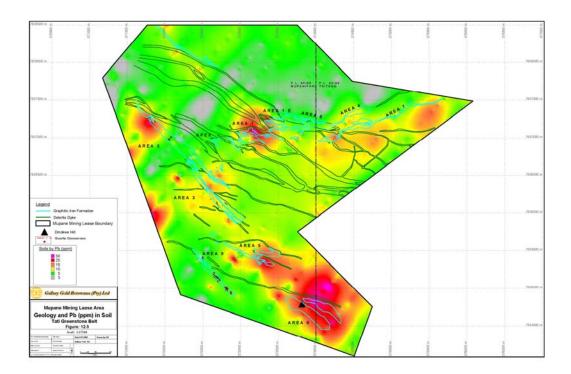


Figure 12.5 Showing location of lead anomalism defined by Gallery Gold soil sampling on the Mupani Mining Leases

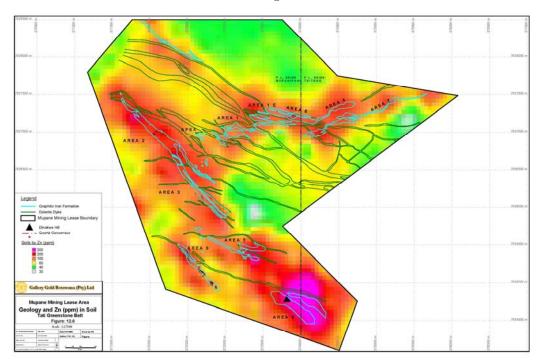


Figure 12.6 Showing location of zinc anomalism defined by Gallery Gold soil sampling on the Mupani Mining Leases

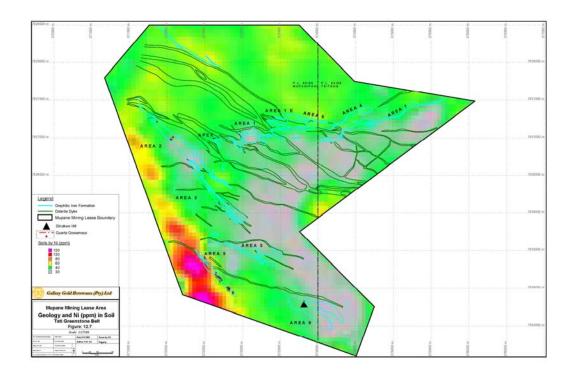


Figure 12.7 Showing location of nickel anomalism defined by Gallery Gold soil sampling on the Mupani Mining Leases

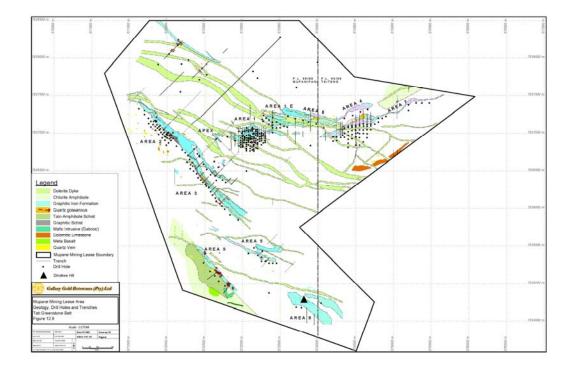


Figure 12.8 Showing location of initial resource drilling on the Mupani Mine

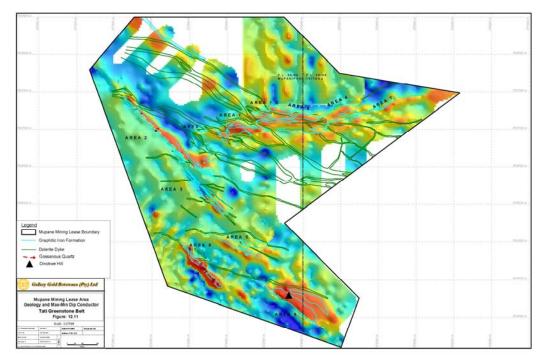


Figure 12.9 Mupani Mine lease area geology superimposed on Max-Min Dip Conductor data

# **Survey Control**

Topographic survey control over Mupane was completed in 1999 by a subsidiary of GEODASS South Africa. A grid was emplaced on a 100 x 50m pattern using a Real Time DGPS. A local base station was established on Area 1 close to trench MPT4A. Permanent markers where placed on a 100 x 100m pattern. Accuracy was sub 10cm in x, y & z. The above was termed the "Red Grid" and involved the surveying of 2724 points.

As part of the program, the surveying team picked up a further 991 points. These points were the regional soil samples, which discovered Mupane. The lines are on a 400  $\times$  40m pattern orientated 040 True North.

All data was collected on a UTM System:

UTM Zone 35S (35K), Clark 1880 Ellipsoid, ARC 1950 Map Datum.

A digital terrain model was created from these original survey points using Micromine. The survey points picked up by the 2001 borehole collar survey (sub 10cm in xyz) were added to the surface topographic data and a revised DTM generated. In addition, four 50m intermediate Area 1 section lines (572950E, 573050E, 573150E & 573250E) were topographically surveyed at 10m spacing.

The results from the October 2002 borehole collar survey ( $\pm 0.02$ m in xyz) were added to the surface topography and a final DTM generated.

The Area 2 grid is based on a local grid system emplaced for the feasibility drilling. Section lines (North) are orientated west to east. Grid North is equivalent to 315° True North.

The following conversion coordinates are used:

|         | Point 1   | Point 2   |
|---------|-----------|-----------|
| UTM mE  | 571411.1  | 574306.7  |
| UTM mN  | 7637188.9 | 7634993.3 |
| Local E | 5000      | 5495      |
| Local N | 10550     | 6950      |

Subsequent phases of infill sampling at 50m x 25m followed to bring the total to 5270 samples during the period under review. The regional samples were assayed for Au, As, Pb, Cu, Ni and Zn, while the detailed samples were assayed mainly for Au and As.

# **Trenching**

Trenching was carried out in five phases from 1998 to 2001. 111 trenches were completed totalling 17286 meters. The aim of the trenching was to provide surface control of the geology and mineralization. Most of the trenching was done by back excavator, but sometimes by hand where the terrain did not permit the excavator to be used. The trenching proved to be very successful in defining the geology under the extensive screen cover on the slopes and also provided surface control that allowed better targeted drilling. (Figure 12.8)

# **Drilling**

A summary of drilling activity undertaken at the Mupane Project is shown in Section 13.

# Other Exploration Methods

In November 1999, the Company contracted Poseidon Geophysics of South Africa to fly Colour Photography over the TGB. The photographs were taken at 1:20 000 with a ground resolution of 0.5 meters.

In September 2001 FotoGramensura of South Africa was commissioned to create a set of orthophotos from the photographs produced by Poseidon. These ortho-photos covered the Mupane and Signal Hill prospects.

During the same period geophysical consultant Graham Elliott was commissioned to supervise a ground Induced Polarisation survey at Mupane (Figure 12.9). 69 line kilometres were surveyed on 100 metre-spaced north-south and 70-140 metre northeast-southwest spaced lines.

The Induced Polarisation survey defined several anomalies associated with the chert unit and others in non-chert outcropping areas. A review of the drilling showed that most of the Induced Polarisation anomalies associated with the chert had already been drill tested and were highly conductive graphitic schists. Non outcropping areas were trenched and the anomalies turned out to be associated with dolerite dykes.

# 13 DRILLING

A total of 44,293 meters of drilling in 361 holes were completed in five phases from July 1999 to June 2003 (Figure 12.8). The program involved 131 reverse circulation percussion holes and 24 diamond drill holes. The program was designed to establish whether the Mupane Prospect had the potential to host a major open-pitable gold deposit (+500,000 oz.).

| Hole Type | Description                     | Number | Totals (m) |
|-----------|---------------------------------|--------|------------|
| DDH       | Diamond Drill Hole              | 15     | 1,640      |
| DDH-WED   | Diamond Drill Hole Wedge        | 4      | 174        |
| ОН        | Open Hole Percussion            | 7      | 518        |
| PC-DDH    | Pre-Collared Diamond Drill Hole | 26     | 5,852      |
| RC        | Reverse Circulation Drill Hole  | 309    | 36,108     |

True widths for the down-hole intersections are estimated to be 80 - 85% of the reported lengths. All RC samples were 1m in length while DDH samples were a nominal 1m length with lithological control. The average width of the orebody is 25m.

# **Collar Survey**

Drill holes were surveyed using a Racal Mark IV Landstar DGPS system owned by Gallery. This has an accuracy of sub 1m in x and y and  $\pm 4m$  in z. The system was configured and set up by GEODASS South Africa to operate on ARC 1950 Map Datum. A Real Time DGPS base station (sub 10cm xyz) was set up in the grounds of the Gallery Gold exploration office where the DGPS is checked before any surveying commences. The DGPS is used to obtain x and y coordinates for the drill holes. RL is determined from the topographic DTM.

With regard to trenches, a DGPS reading is taken at the start and end of the trench and if there is a significant azimuth change, additional readings are taken down the trench. As before, z is determined from the topographic DTM. An azimuth is generated from the position of the start, end and any intermediate survey positions.

In August 2001 a campaign survey was conducted at Mupane to survey all borehole collars in Area 1 and Area 2. Surveying was carried out using a Leica RTK dual frequency GPS with an accuracy of sub 10cm in xyz. All data collected in UTM, referenced to ARC 1950 map datum. All collar files have been updated with the results from this survey.

In October 2002 a campaign survey was carried out to survey all Phase 5 borehole collars in Area 1, 2 and 4 using a Trimble 4800 differential GPS with an accuracy of  $\pm 0.02$ m in xyz. All data was collected in UTM, referenced to ARC 1950 map datum.

All Trenches are treated as "horizontal" drill holes.

# **Downhole Surveys**

#### Phase 1 to 4

Downhole surveying was undertaken using an Ez-shot camera inside the drill rods. Only declinations were obtained due to the magnetic nature of the BIF. One reading was taken at the collar, one at the bottom and one in the middle of the hole if there was a significant discrepancy between the two initial readings.

Contractors carried out a Maxibore campaign survey in September 2001. The following holes were surveyed at 1.5m intervals in Area 1 and Area 2.

| Area 1 (Phase 3) | Area 1 (Phase 4) | Area 2 (Phase 4) |
|------------------|------------------|------------------|
| MUPC 062         | MUPD 145         | MUPC 123         |
| MUPC 063         | MUPD 146         | MUPC 124         |
| MUPC 087         | MUPC 147         |                  |
| MUPC 094         | MUPD 148         |                  |
| MUPC 097         | MUPD 149         |                  |
| MUPC 127         |                  |                  |
| MUPC 128         |                  |                  |
| MUPC 129         |                  |                  |

#### Phase 5

Downhole surveying was carried out using Gallery's Reflex Ez-Shot single shot surveying tool. Readings were taken inside drill rods at an initial depth of 10m and then at 50m intervals, during drilling, to the end of hole. Holes drilled before the acquisition of the tool were surveyed in open hole at an approximate depth of 10m. Only declinations could be obtained due to the magnetic nature of the ironstone formation and due to surveying inside the drill rods.

# **Logging Procedures**

Laptops utilizing Field Marshal data entry software or Excel spreadsheet templates were used during drilling and for trenching. Geological codes are entered for lithology, alteration, presence of sulfides, oxidation etc using built in look up tables.

For RC drilling, the following additional information is logged.

- Sample Weights (kg)
- Wet or Dry Samples
- End of Rod Position (Phases 4 and 5 only)

Core recoveries, detailed geotechnical information and structural logging is obtained from the diamond core (whole) before splitting and assaying.

# Oxidation State Logging

The oxidation state of RC and diamond samples is logged on site and agreed by 2 geologists. A numeric system as outlined below is used:

- 3 = Oxide
- 2 = Transitional
- 1 = Sulfide

Profiles of the base of the oxidation surface and top of the sulfide zone were generated for each drill section through Area 1, Area 2 & Area 4 based on the oxidation logging. A DTM was created from these strings and visually checked for completeness.

A complete re-evaluation of the oxidation surfaces has recently been undertaken (November 2005). Prior oxidation logging (Phases 1 to 3) was completed some months or years in some cases after the holes had been drilled; so it was decided that logging from Phase 5 and Phase 4 should have a higher confidence factor than earlier Phases. It is also apparent that oxidation is far deeper in the ironstone than in the surrounding schists and intruding dolerite dykes. As well as a detailed interpretation, a simplified version has been generated, though still honoring the interpretation in the vicinity of the orebody; it has been smoothed to remove the vertical and overturned portions. Thus outside the orebody oxidation surfaces do not match the logging codes.

# **Geological Interpretation**

A series of 1:500 plans and sections have been generated for Area 1, 2 and 4 at a drill spacing of 25m and RL spacing of 50m incorporating all available datasets. For Area 2 drill sections have been generated on the local grid system.

Geological Interpretations are hand drawn onto the 1:500 drill sections and digitized into Micromine. The Rock Type column has been used for generation of geological wireframes. Completed drill sections with interpretations were exported to Corel Draw for presentation purposes by Gallery Gold Ltd, Perth

### 14 SAMPLING METHOD AND APPROACH

This section deals with issues of sampling and assaying protocols and quality controls for historic ("archive") data which form a significant proportion of the available sampling at Signal A and F Zones as well as sampling and assaying protocols pertaining to the work of Gallery Gold. Since drilling and trenching programs were normally conducted concurrently at the various prospects, this section utilizes data on a program-by-program basis. The approximate proportion of each resource that relies upon sample data from each phase of evaluation can be gauged from the proportion of mineralized (+0.2g/t Au) samples resulting from each program (Figure 14.1).

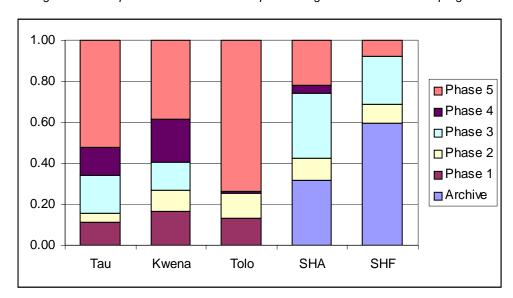


Figure 14.1: Proportion of mineralized samples arising from each evaluation program

#### **Field Procedures**

Trenches were mainly dug using a JCB backhoe or similar. They were geologically mapped and generally marked in one metre sample intervals. Sampling was by way of horizontal channelling, taking approximately 3kg per sample. Sample start points were marked by length along the trench and sample number using metal permatags.

RC drill samples were collected at one metre down-hole intervals, weighed and then split to approximately 2kg using multiple passes through single-tier Jones riffle splitters. A sample ticket book system was used to provide cross checks between sample numbers and hole number and depth.

Diamond drill core was logged as whole core and marked for sampling in one metre intervals or to significant geological/mineralization contacts. Core to be assayed was half-sawn using a diamond saw. For RC drilling, a ticket book system was used to reliably track samples.

At the conclusion of each drill program, drill hole collars were cemented and permanently marked with hole numbers.

# Tau

RC hole diameters, sample weights, logged oxidation state and gold grades were merged to a single data file of one metre down-hole composited intervals for investigation. Theoretical 100 per cent sample mass for each composited interval was calculated using the recorded hole diameter and bulk densities. The data were filtered to exclude sample from depths of less than 6 metres down-hole. Since the bulk of potentially economic mineralization lies in the Tau deposit, the data from Tau were explored in more detail than those for the other deposits.

Figures 14.2-14.11 show histograms of RC sample recoveries for each phase of Gallery's drilling at Tau, firstly for all sample intervals and secondly for intervals reporting gold grades of 0.2g/t or greater. Sample recoveries in Phase 1 drilling averaged about 60 per cent, in Phase 2, 77 per cent, in Phase 3, 70 per cent, in Phase 4, 56 per cent and in Phase 5, 75 per cent. Note that Phase 4 RC drilling was mainly as pre-collars to diamond drill holes — only 59 samples reported gold grades greater than 0.2g/t. In Hellman and Schofields experience RC drill sample recoveries of around 65 per cent represent industry average; sample recoveries of 85 per cent or more represent best practice. Gallery's RC sample recoveries in programs 2, 3 and 5 thus represent better than industry average sampling.

There is no evidence of preferential sample recoveries in mineralized or barren rock: sample recoveries in mineralized intervals are nearly identical to those for all intervals for all programs except Phase 4.

Figure 14.12 shows a scatter plot comparing Tau RC sample recoveries to gold grades in one metre composited intervals. There appears to be no relationship between sample recovery and gold grade. It is unlikely that sample recovery is influencing sample grade.

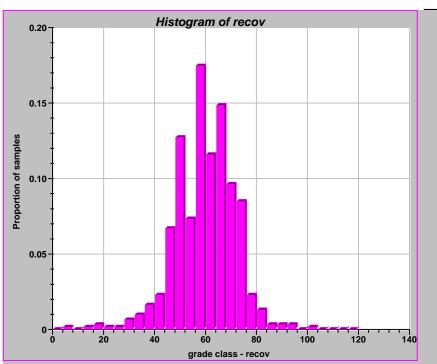


Figure 14.2: Tau RC sample recoveries, 1m composites, Phase 1 drilling

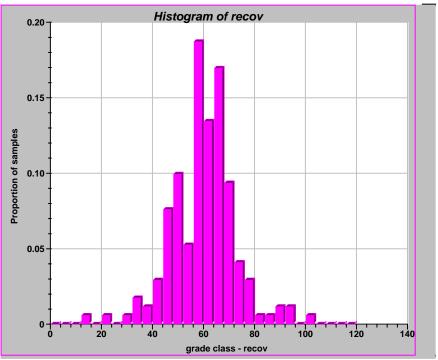


Figure 14.3: Tau RC sample recoveries, mineralized 1m composites, Phase 1 drilling

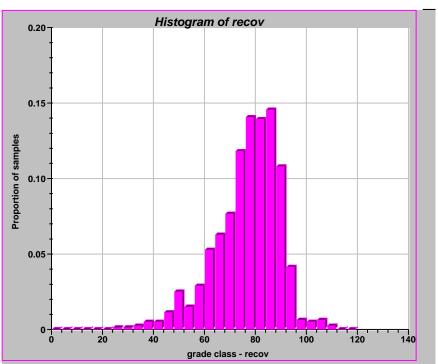


Figure 14.4: Tau RC sample recoveries, 1m composites, Phase 2 drilling

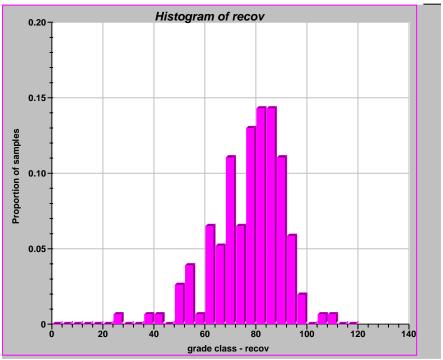


Figure 14.5: Tau RC sample recoveries, mineralized 1m composites, Phase 2 drilling

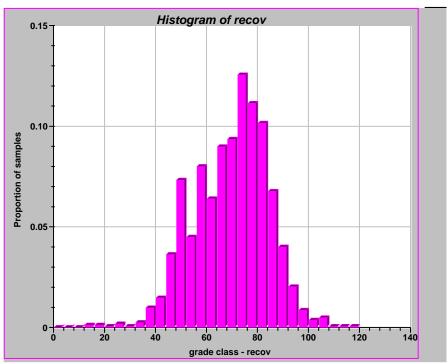


Figure 14.6: Tau RC sample recoveries, 1m composites, Phase 3 drilling

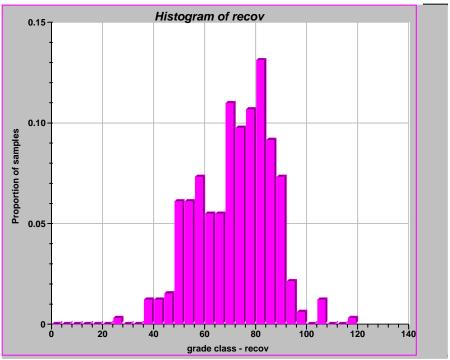


Figure 14.7: Tau RC sample recoveries, mineralized 1m composites, Phase 3 drilling

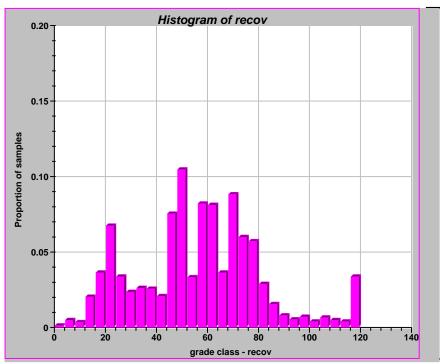


Figure 14.8: Tau RC sample recoveries, 1m composites, Phase 4 drilling

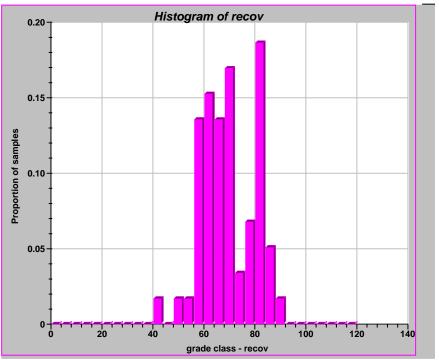


Figure 14.9: Tau RC sample recoveries, mineralized 1m composites, Phase 4 drilling

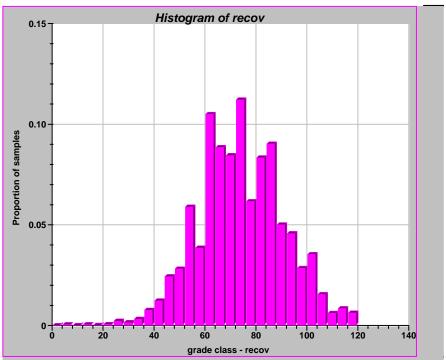


Figure 14.10: Tau RC sample recoveries, 1m composites, Phase 5 drilling

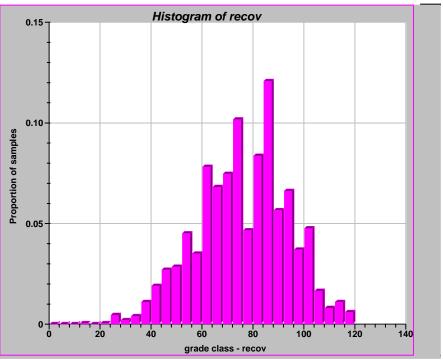


Figure 14.11: Tau RC sample recoveries, mineralized 1m composites, Phase 5 drilling

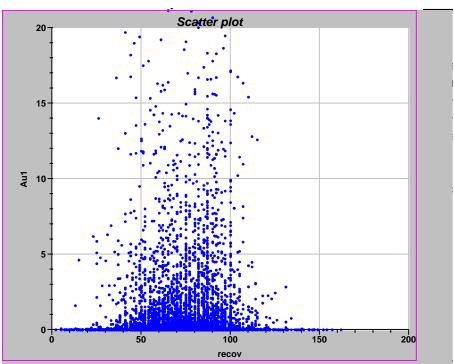


Figure 14.12: Tau RC sample recovery versus gold grade in 1m composites

#### **Kwena**

Figures 14.13 and 14.14 show histograms of sample recoveries in all Kwena RC drill samples and in sample intervals reporting gold grades of 0.2g/t or greater, respectively. At around 70 per cent, sample recoveries are good and recoveries in mineralization are not significantly different to those in barren rock. Figure 14.15 shows a scatter plot comparing RC sample recovery to gold grade; there is no discernible relationship between the two.

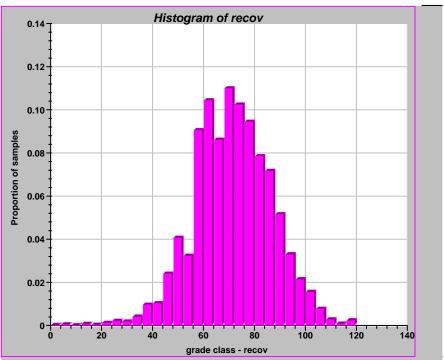


Figure 14.13: Kwena RC sample recoveries in 1m composites

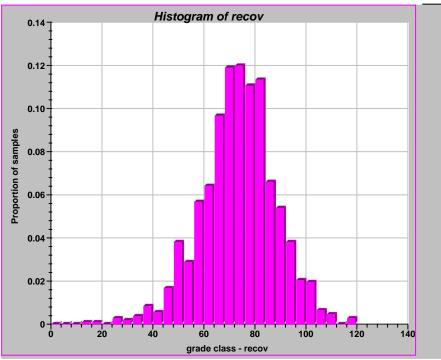


Figure 14.14: Kwena RC sample recoveries in mineralized 1m composites

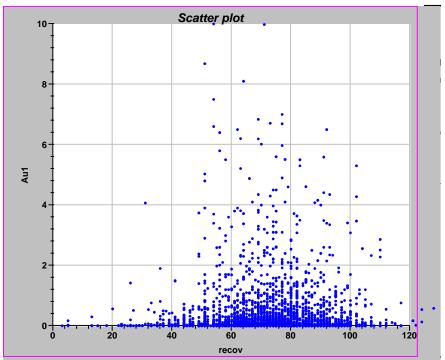


Figure 14.15: Kwena RC sample recovery versus gold grade in 1m composites

#### **Tholo**

Figures 14.16 and 14.17 show histograms of sample recoveries in all Tholo RC drill samples and in sample intervals reporting gold grades of 0.2g/t or greater. Average sample recoveries of about 72 per cent in both waste and mineralization represent good industry practice. Figure 11.18 shows a scatter plot comparing RC sample recovery to gold grade; there is no indication that sample grade is influenced by recovery.

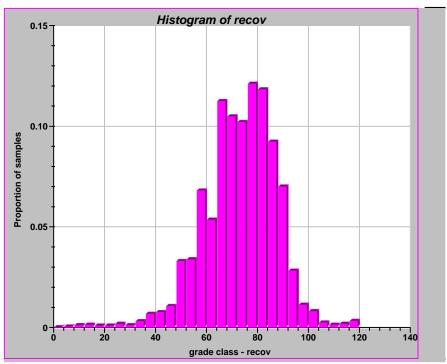


Figure 14.16: Tholo RC sample recoveries in 1m composites

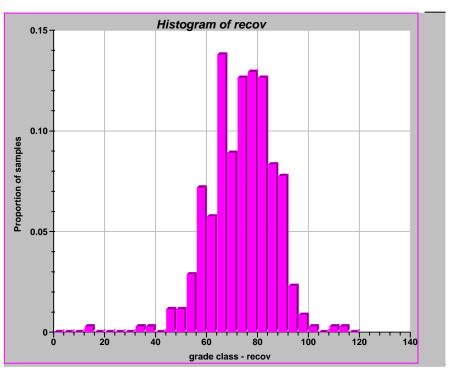


Figure 14.17: Tholo RC sample recoveries in mineralized 1m composites

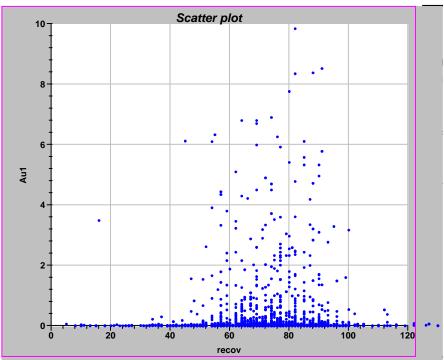


Figure 14.18: Tholo RC sample recovery versus gold grade in 1m composites

#### **Core Recoveries**

Recovered core length was measured by geologists for each drill run and the ratio of recovered length to run length expressed as a percentage core recovery. For this investigation, those percentages were weight-averaged into one metre down-hole intervals.

Figures 14.19 - 14.21 show histograms of core recoveries in oxide, transition and fresh rock samples, respectively, for all diamond holes drilled at Tau, Kwena and Tholo prospects. At around 98 per cent core recoveries in transition and fresh rock materials is very high and is certainly not going to have any influence on sample grades, as the scatter plot in Figure 14.23 indicates. Core recovery in oxide material averages 83 per cent but very few samples report significant gold grades (Figure 14.22) and sample grade does not appear to be influenced by core recovery.

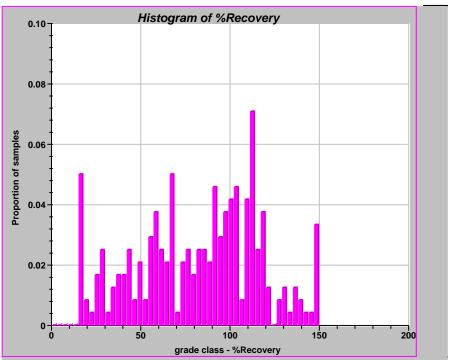


Figure 14.19: Core recoveries in Tau, Kwena and Tholo 1m sample composites, oxide

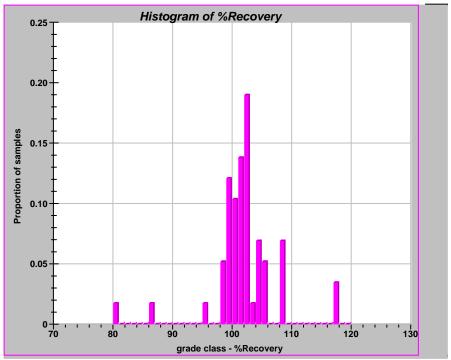


Figure 14.20: Core recoveries in Tau, Kwena and Tholo 1m sample composites, transition zone

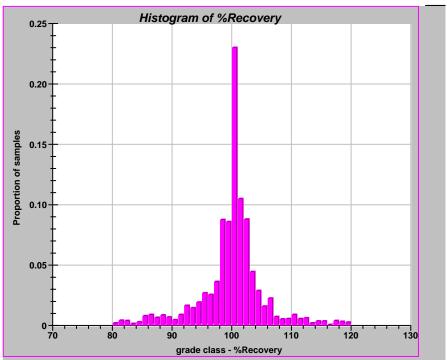


Figure 14.21: Core recoveries in Tau, Kwena and Tholo 1m sample composites, fresh rock

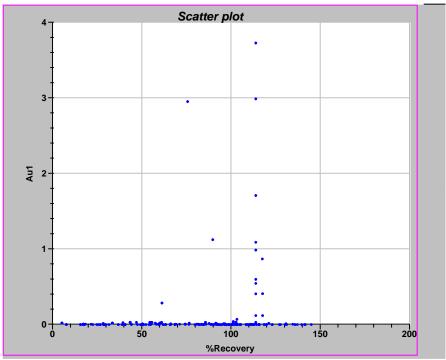


Figure 14.22: Core recovery versus gold grade, oxide core samples

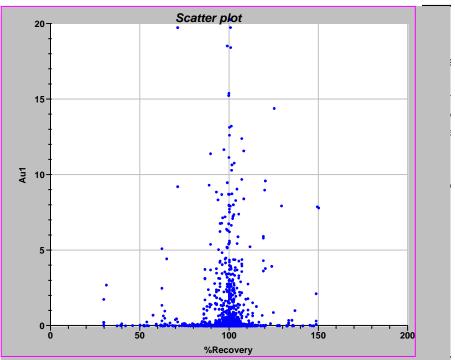


Figure 14.23: Core recovery versus gold grade, transition and fresh rock core samples

## **Sampling and Assaying Protocols**

Descriptions of sampling and assaying protocols for each of Gallery's trenching and drilling programs, along with notes concerning specific check sampling campaigns, are given below:

# Trenching phase I, Oct 1998 – Feb 1999, Drilling phase I, Jul – Aug 1999

B&B Laboratories, Republic of South Africa (RSA)

Tau trenches MPT4A, MPT4AX, MPT4B, MPT6, MPT7, MPT8, MPT9

Tau drill holes MUPC001-005, MUPC020, 021

Kwena trenches MPT1, MPT2

Kwena drill holes MUPC010-014

Tholo trenches MPT05, MPT05B

Tholo drill holes MUPC017-019

Nominal 2kg riffle split field sample submitted

Dried, jaw crushed to 5mm, riffle split to 500g

500g disc milled to 90% passing -75um

50g dipped from pulp for fire assay with Atomic Absorbtion Spectrometry (AAS) finish with a lower limit of detection (LLD) of 0.01ppm Au

Arsenic and base metals by X-ray fluorescence (XRF) on compressed powder

No quality control (QC) monitoring by Gallery, no QC data provided by laboratory

Complete re-sample of mineralized intercept in trench MPT4A. Original assays by B&B Laboratories, check analyses by Genalysis.

Field duplicate re-splits of mineralized intercept in MUPC001. Original assays by B&B Laboratories, check assays Genalysis.

Field duplicate re-splits of RC samples from mineralized intercept in MUPC003. Original assays by B&B Laboratories, check analyses by SGS and Genalysis.

Pulp duplicates of mineralized intercept in MUPC003. Original assays by SGS, check assays by Genalysis.

### Drilling phase II, Apr - Jun 2000

SGS Laboratories, RSA

Tau trenches nil

Tau drill holes MUPC054, 057, MUPC061-067, MUPD025

Kwena trenches nil

Kwena drill holes MUPC026-035, MUPD023

Tholo trenches nil

Tholo drill holes MUPC068-080, MUPD024

Nominal 2kg riffle split field sample submitted

Entire sample dried and crushed to -6mm

Entire sample pulverized using Labtechnics LM5 to nominal 90% passing -75um

Barren quartz flush between samples

50g lead collection fire assay with AAS finish, LLD 0.01ppm Au

Arsenic assays by XRF on compressed powder

Laboratory specifies 15% checks and repeats and 10% blanks and reference standards but no laboratory QC monitoring data were provided to Gallery

Pulp duplicates of mineralized intercept in MUPC034. Original assays by SGS, check assays by Genalysis.

Field duplicate re-splits of mineralized intercept in MUPC062. Original assays by SGS, check assays by Genalysis.

Pulp repeats of mineralized intercept in MUPD025. Original assays by SGS, repeat assays by Genalysis.

# Trenching phase III, Jul – Sep 2000, Drilling phase III Oct – Dec 2000

Set Point Laboratories, RSA

Tau trenches MPT22-35, MPT37, MPT39, MPT41-43

Tau drill holes MUPC082-089, MUPC094, MUPC097, MUPC100

Kwena trenches MPT38

Kwena drill holes MUPC090-093, MUPC095-096, MUPC101, MUPC103

Tholo trenches nil

Tholo drill holes MUPC110

Nominal 2kg field sample submitted

Sample dried and crushed to -5mm, riffle split to 1kg

1kg ring milled to nominal 90% passing 75um

50g fire assay with AAS finish, LLD 0.01ppm Au

Arsenic assays by XRF on compressed powder

Initially no reporting of laboratory QC data, subsequently reported

Field duplicate re-splits of selected samples from MUPC062, 086 and 087. Original assays by Set Point, check assays by Genalysis. These checks indicated a problem with Set Point's assays from MUPC086. This initiated further checks that demonstrated that the original Set Point assays were erroneous, probably due to a sample mix-up in the fire assay process. Arsenic assays corresponded well with logged alteration and arsenopyrite mineralization. A check of Phase IV drill holes (MUPC082-112) ensued, looking at occurrences of elevated arsenic and gold grades. No other significant inconsistencies arose.

Field duplicate re-splits of mineralized intercept in MUPC086. Original assays by Set Point, check assays by Genalysis.

Pulp repeats of entire MUPC086. Original assays by Set Point, pulps retrieved and check assayed by Genalysis.

Field duplicate re-splits of "unmineralized" intercept in MUPC086. Primary assays by Set Point, check assays by Genalysis.

Field duplicate re-splits of mineralized intercept in MUPC087. Original assays by Set Point, check assays by Genalysis.

Pulp repeats of mineralized intercept in MUPC087. Original assays by Set Point, check assays by Genalysis.

# Trenching phase IVa, Jun – Oct 2001, Drilling phase IVa, Feb – Sep 2001

Set Point Laboratories, RSA

Tau trenches nil

Tau drill holes MUPD113-115

Kwena trenches nil

Kwena drill holes MUPC116-117, MUPC119-121

Tholo trenches nil

Tholo drill holes nil

Protocol as for phase III drilling, internal laboratory QC data reported

Pulp repeats of mineralized intercept in MUPD114. Original assays by Set Point, check assays by Genalysis.

# Trenching phase IVb, Jun – Oct 2001, Drilling phase IVb, Feb – Sep 2001

Sample prep by Gallery Gold, assays by Genalysis Laboratory Services, WA

Tau trenches MPT49-56

Tau drill holes MUPC127-129, MUPC136, MUPC141, MUPC143, MUPC147, MUPD118, MUPD122, MUPD133-135, MUPD137, MUPD139-140, MUPD142, MUPD144-146, MUPD148-149

Kwena trenches MPT40, MPT45

Kwena drill holes MUPC123-125, MUPC130-132, MUPC138, MUPD126

Tholo trenches MPT47

Tholo drill holes nil

Signal Hill trenches STAG021, STAG039

Signal Hill drill holes SPG001-004

Sample preparation:

Nominal 4kg sample submitted

Jaw crush to -5mm, riffle split to 1kg. Crusher and splitter cleaned with compressed air between samples.

1kg oven dried (typically 12 hours)

Grind 1kg for 4-6 minutes to nominal 90% passing -75um using Labtechnics LM2. 500g barren granite wash is ground for 2 minutes between each sample, and grinding bowls cleaned with compressed air.

Scoop 2 x 150g pulps, one for analysis one for archival duplicate

Gallery QC samples submitted: 1 x blank, 1 x duplicate pulp, 1 x reference standard for each 50 metres of mineralization drilled

#### Analysis:

50g lead collection fire assay with AAS finish by Genalysis Laboratory Services. Internal laboratory QC documented in report by Genalysis (Hayward, 2001).

#### Drilling phase V

Tau trenches MPT61

Tau drill holes MUPC154-170, MUPC173, MUPC178-181, MUPC186, MUPC188, MUPC190, MUPC192, MUPC195, MUPC197-198, MUPC211, MUPC214, MUPC216, MUPC221-229, MUPC237-246, MUPC248-256, MUPC259-260, MUPC271-274, MUPC278-280, MUPC284-286, MUPC301-304

Kwena trenches MPT66

Kwena drill holes MUPC182-185, MUPC187, MUPC189, MUPC191, MUPC193-194, MUPC196, MUPC199, MUPC212-213, MUPC215, MUPC217, MUPC275-277 Tholo trenches MPT63, MPT65, MPT74-75, MPT79-80, MPT89-94

Tholo drill holes MUPC201-210, MUPC218-220, MUPC230-236, MUPC257-258, MUPC262, MUPC307-315

Signal Hill drill holes SPG005-068

Sample preparation by Gallery as for phase IV drilling. Gallery QC samples submitted: 1 x blank, 1 x field resplit, 1 x duplicate pulp and 1 x reference standard for each 20 metres of mineralization drilled (i.e., generally one set per drill hole).

Analysis by Genalysis as for phase IV drilling.

### Sampling and Assaying Accuracy – Blank Control Samples

Drill and trench samples from exploration Phases IV and V were interleaved with barren samples at a frequency of 1:50 (Phase IV) and 1:20 (Phase V) prior to processing through Gallery's sample preparation facility in Francistown. The purpose of these control samples is to check for sample-to-sample contamination in the sample preparation process.

Figures 14.24 and 14.25 show assays of blank samples against time for Phases IV and V, respectively. Other than for sample X21024 submitted as part of batch GG319 on 30/4/2002, 95 per cent of samples returned assays of less than 0.05g/t Au and no samples returned grades of greater than 0.1g/t Au. Sample X21024 almost certainly represents a reference standard wrongly labelled in the database. The four samples preceding X21024 in the sample number sequence returned assays of 0.62, 0.77, 0.66 and 0.42g/t Au. It is unlikely that any significant contamination would derive from samples of such grades.

Hellman and Schofield concluded that there was no evidence of significant sample-to-sample contamination occurring in the Gallery Gold sample preparation laboratory.

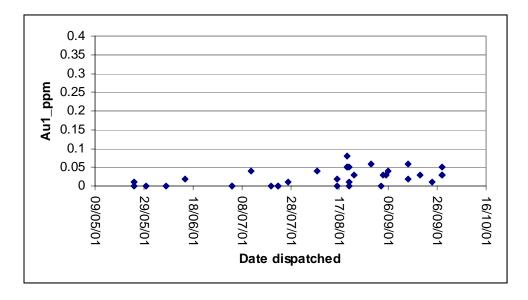


Figure 14.24: Assays of blank controls inserted in Phase IV samples

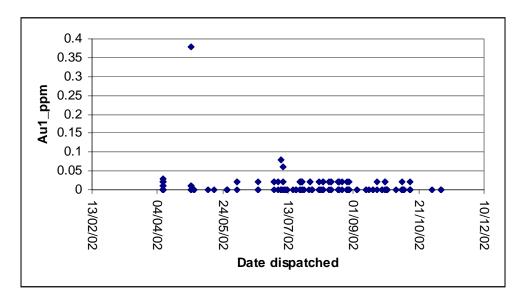


Figure 14.25: Assays of blank controls inserted in Phase V samples

# Sampling and Assaying Accuracy – Reference Standards

Samples of certified reference material ("standards") were inserted in batches of samples from Phase IV and Phase V programs at frequencies of 1:50 and 1:20, respectively. Reference materials derive from Rocklabs Ltd of Auckland, New Zealand. Materials used and recommended gold grades are listed in Table 14.1.

Figures 14.26 and 14.27 show run charts plotting assays of standards against time for samples from exploration Phases IV and V. All assays show high correlation with recommended gold grades..

| Reference     | Recommended | ± at 95%   |
|---------------|-------------|------------|
| material name | gold grade  | confidence |
| OX11          | 2.94        | 0.03       |
| OX14          | 1.220       | 0.024      |
| S3            | 0.939       | 0.021      |
| S5            | 4.997       | 0.057      |
| S8            | 1.887       | 0.023      |

Table 14.1: Recommended grades of certified reference materials

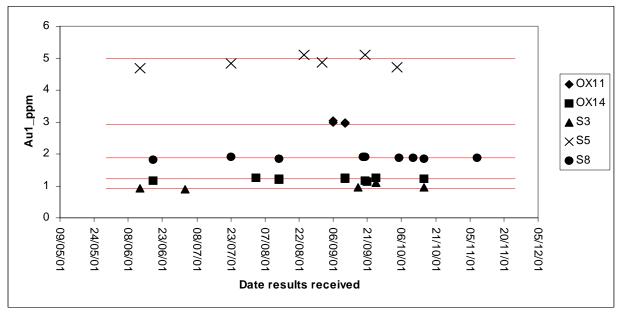


Figure 14.26: Assays of reference standards inserted in Phase IV samples

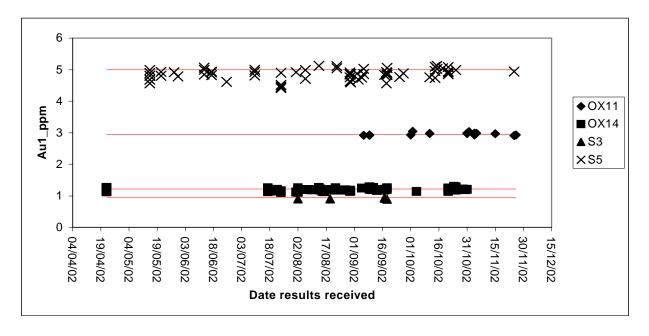


Figure 14.27: Assays of reference standards inserted in Phase V samples

## Sampling and Assaying Precision – RC Field Re-split Samples

Submitting second splits of RC drill samples provides a means of measuring the relative error arising out of the entire sampling and assaying process. Poor sampling precision almost inevitably leads to sample bias. During Phases IV and V drilling a total of 287 RC field re-split samples were submitted for assay: 180 from Tau, Kwena and Tholo prospects.

Figures 14.28 and 14.29 show scatter and quantile-quantile plots for paired samples from the Mupane prospects. There is good correlation between the grade of first and second splits and no consistent bias to higher grade in either split. For pairs in which both samples returned grades of greater than 0.05g/t Au, calculated precision is  $\pm$  14% at 56% confidence. Precisions of  $\pm$  35% or more are not uncommon in lode gold deposits so the precision achieved by Gallery's sampling represents good practice, almost certainly aided by the predominance of very fine-grained gold in the Mupane mineralization.

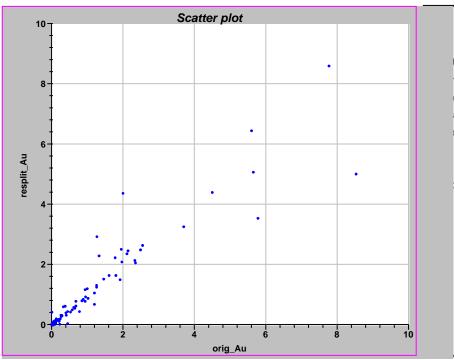


Figure 14.28: Tau, Kwena and Tholo RC field re-split pairs

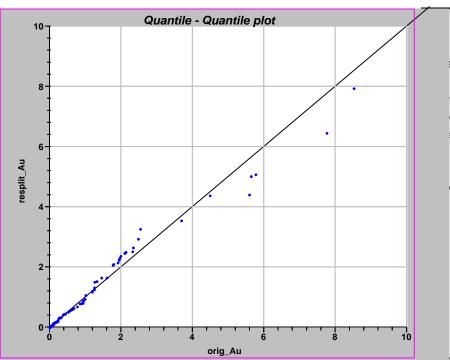


Figure 14.29: Tau, Kwena and Tholo field re-split pairs

# **Sampling and Assaying Precision – Pulp Duplicate Samples**

Assaying a second portion of sample pulp, created as a duplicate split after the sample preparation process, allows the sum of errors arising at that sub-sampling point and all subsequent sub-sampling and assaying stages to be quantified. Since error variances are additive it also allows, in the case of RC drilling, partitioning out of the error arising at the field split stage.

Figure 14.30 shows a scatter plot for pairs of pulp duplicates taken from diamond drill core samples in Phase IV drilling at Tau. There are only 15 pairs available but assays show good correlation and no obvious bias.

Figures 14.31 and 14.32 show scatter and quantile-quantile plots for pulp duplicates of RC drill samples from Phase IV (N=11) and Phase 5 (N=113) drilling at the three Mupane prospects. The assays from each split are highly correlated and there is no significant bias to either split.

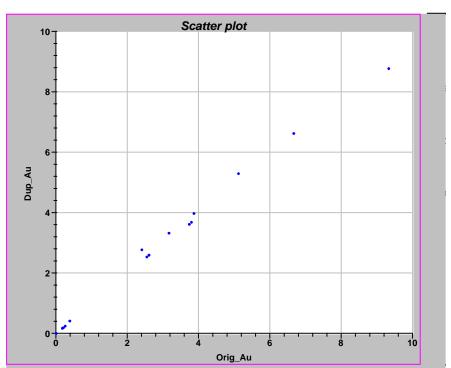


Figure 14.30: Tau Phase IV diamond core pulp duplicates

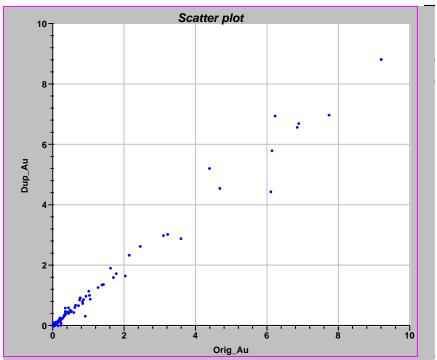


Figure 14.31: Tau, Kwena and Tholo RC pulp duplicates

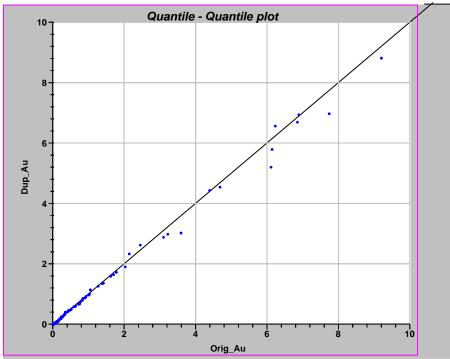


Figure 14.32: Tau, Kwena and Tholo RC pulp duplicates

### Sampling and Assaying Precision – Laboratory Replicates

Replicate assays, performed routinely by laboratories on a second aliquot of sample pulp, provide a means of quantifying the error arising at the pulp sub-sampling stage (usually dipping 50g out of, say, 200g received) and the sum of errors arising in the digest and assaying processes.

Laboratory replicate assays have been compared for the Mupane prospects and Signal Hill prospects on a laboratory-by-laboratory basis. Phase I samples were assayed by B&B Laboratories, phase II by SGS, phase III by Set Point Laboratories and phases IV and V by Genalysis.

Figure 14.33 shows a scatter plot comparing replicate assays for Phase I sampling at Tau, Kwena and Tholo. There are only 30 pairs but they are sufficient to show a poor correlation between replicates. There is, however, no obvious bias to higher grades in either set.

Figure 14.34 shows pairs from Phase II sampling of the Mupane prospects. Correlation between pairs is better than for Phase I samples but still not good considering the nature of the material being sub-sampled. Again, there is no obvious bias to higher grades in either sample set.

Only fourteen replicate assays are available for samples from Phase III, too few to make any useful comparison. Figures 14.35 and 14.36 show a scatter plot and quantile-quantile plot for pairs of replicate assays by Genalysis on samples from phases IV and V exploration. The two sample sets are highly correlated and there is no bias present.

It may be concluded that the Genalysis assays, upon which the bulk of Tau, Kwena and Tholo resource estimates rely, show high precision, implying good sample preparation at the Gallery sample preparation lab and minimisation of errors by Genalysis in the assaying process. The poor precision in assays by B&B Laboratories and by SGS may be arising out of poor sample preparation (i.e. failure to adequately grind) or accumulated errors arising at steps in the analytical procedure.

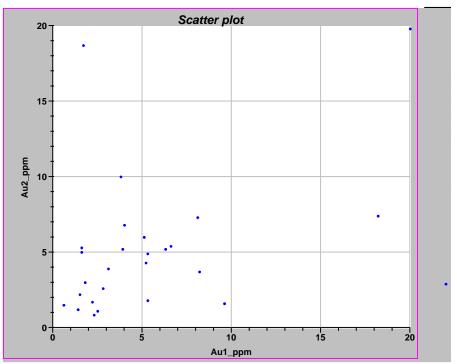


Figure 14.33: Laboratory replicate assays, Tau, Kwena and Tholo phase I sampling

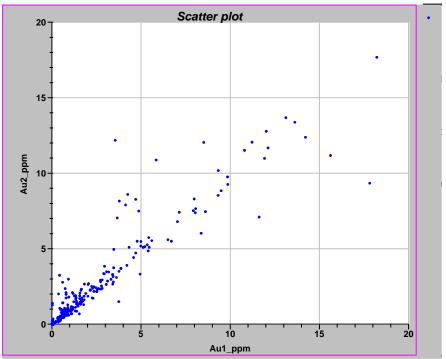


Figure 14.34: Laboratory replicate assays, Tau, Kwena and Tholo Phase II sampling

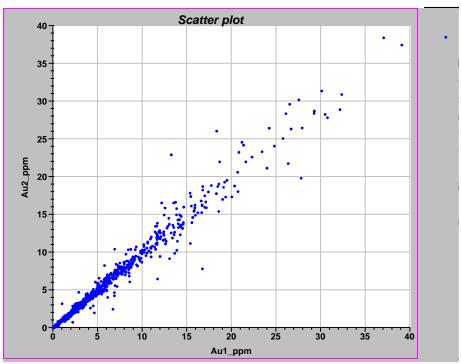


Figure 14.35: Laboratory replicate assays, Tau, Kwena and Tholo phases IV and V sampling

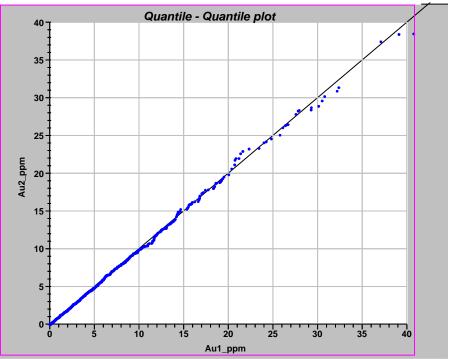


Figure 14.36: Laboratory replicate assays, Tau, Kwena and Tholo phases IV and V sampling

Gallery have not drilled diamond core holes specifically to twin RC drill holes at any of the Mupane prospects. The number of diamond core holes at Tau does, however, furnish an opportunity to compare the tenor of RC drill samples against diamond core samples. A file of samples composited to one metre down-hole intervals was interrogated for RC samples and diamond core samples in fresh, mineralized GIF, yielding 2021 RC samples and 589 core samples. The percentiles of each of the sample sets were then calculated and plotted (Figure 14.37).

The comparison shows slight bias to higher gold grades in RC samples grading more than about 3g/t Au but the effect is probably largely due to the difference in the sample volumes. H&S concluded that there was no significant bias in the Tau RC drill samples compared to diamond core samples.

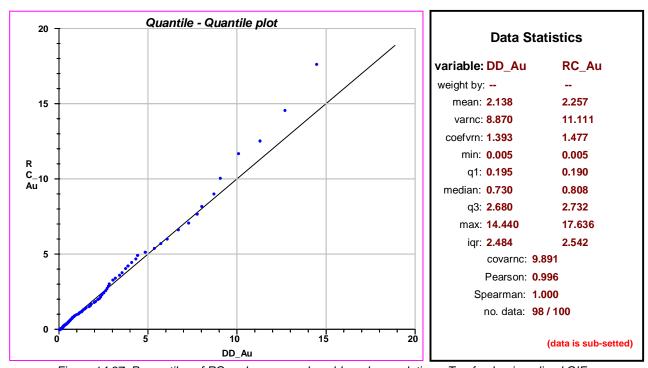


Figure 14.37: Percentiles of RC and core sample gold grade populations, Tau fresh mineralized GIF

## 15 SAMPLE PREPARATION, ANALYSES AND SECURITY

## **Sample Preparation**

A Sample preparation unit arrived from Perth, Australia, during the first half of 2001. It is a self-contained unit with drying oven, ring mills and a jaw crusher. The Laboratory was set up by Gallery but commissioned by Lee Gough, Sample Prep Manager, Genalysis, over a period of 2 weeks. Samples started to be submitted through the unit from May 2001 onwards.

A second identical unit arrived in mid 2002 and was commissioned by Gallery Gold. This unit commenced operations in mid July 2002. The procedure on site was as follows:

- A sample batch arrives and is sorted into numerical order. The position of blanks and standards and pulp duplicates is noted by the presence of different colour cards.
- ➤ Each sample is crushed in the jaw crusher to sub 5mm. The jaw crusher is cleaned after each sample with the compressed air gun.
- ➤ Each crushed sample is riffle split down to a 1 kg sample. The 3 kg excess is returned to the original sample bag. The riffle is cleaned, as are trays and hoods with the air gun after each sample.
- ➤ Each 1 kg sample is dried in an aluminum tray for typically 12 hours overnight.
- After drying, each sample is ground in the LM2 ring mill for typically 4 to 6 minutes to >90% -75 microns.
- ➤ Each sample is removed and 2 x 150g pulps are scooped out. One 150g is sent for analysis, the other becomes an archival pulp duplicate stored on site. The remaining ±600g is placed in a new bag and stored with the 3 kg coarse residue.
- The grinding bowl is cleaned with the air gun as is the machinery.
- ➤ 500g of blank is ground for 2 minutes in the ring mill and discarded.
- Grinding bowl and equipment is air blasted.
- At the start and end of the day a blank is run through each grinding bowl. A 150g sample is extracted and stored.
- A final flow sheet for the sample prep procedure is attached. Fig 15.1

Gallery Gold Limited Botswana

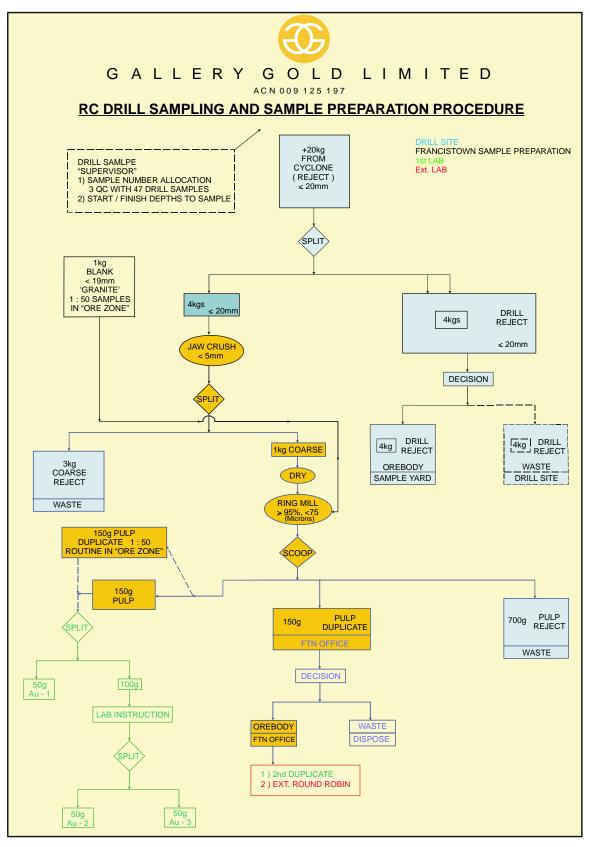


Figure 15.1 Flow sheet for sample preparation at Gallery Gold Botswana

## **Assays**

#### **Laboratories Used**

During the life of the project, four laboratories have been used for drilling and trenching samples.

B & B Labs was the primary lab for Phase 1. After concerns expressed about the quality of the analytical results (the presence of a random error as noted by Genalysis), the principal laboratory for Phase 2 drilling, was SGS in South Africa. SGS had far superior sample preparation facilities than B & B. Due to a turnaround time which typically exceeded 4 weeks for SGS, Set Point Labs was chosen for Phase 3 drilling.

Part of Phase 4 was completed by Set Point; before Gallery's in house sample prep lab was fully commissioned when all drill and trench samples passed through the prep lab before being dispatched to Genalysis.

Genalysis has been used throughout the program for the task of check assaying.

#### **Drilling:**

| Phase   | Hole # Lab |  |
|---------|------------|--|
| Phase 1 | 001 to 022 | B & B Labs, South Africa                               |
| Phase 2 | 023 to 081 | SGS Labs, South Africa                                 |
| Phase 3 | 082 to 112 | Set Point Labs, South Africa                           |
| Phase 4 | 113 to 152 | Set Point Labs, South Africa and Genalysis Labs, Perth |
| Phase 5 | 153 to 319 | Genalysis Labs, Perth                                  |

#### Trenching:

| Phase   | Trench # Lab |   |
|---------|--------------|---|
| Phase 1 | 01 to 09     | B & B Labs, South Africa                      |
| Phase 2 | 10 to 21     | Set Point Labs, South Africa                  |
| Phase 3 | 22 to 43     | Set Point Labs, South Africa                  |
| Phase 4 | 44 to 49     | Prep by Gallery, Analysis by Genalysis, Perth |
| Phase 5 | 50 to 94     | Genalysis Labs, Perth                         |

### **Sample Preparation**

Detailed information is provided in Tables 15.1 and Table 15.2 for both drilling and trenching for the 5 exploration phases.

| 5<br>02/02<br>FULL-FEAS   | 4<br>05/01-09/01<br>PRE-FEAS   | 4<br>02/01-05/01<br>PRE-FEAS   | 3<br>10/00-12-00  | 2<br>02/00-06/00  | 1<br>07/99-08/99   | PHASE      |
|---|--|--|---|---|--|------------|
| Genalysis Labs<br>&<br>GGL Prep Lab   | Genalysis Labs<br>&<br>GGL Prep Lab  | Set Point Labs   | Set Point Labs  | SGS Labs  | B & B Labs   | LABORATORY |
| Perth, Australia<br>&<br>Botswana   | Perth, Australia<br>&<br>Botswana  | South Africa   | South Africa  | South Africa  | South Africa   | ADDRESS    |
| MUPC<br>153-319   | MUPC<br>122-152<br>MUPD<br>118-149   | MUPC<br>116, 117, 119,<br>120, 121<br>MUPD<br>113-115                        | MUPC<br>082-112   | MUPD<br>023-025<br>MUPC<br>026-081  | MUPC<br>001-022  | HOLES      |
| 4 Kg  | 4 Kg   | 2 Kg   | 2 Kg  | 2 Kg  | 2 kg   | Weight     |
| Sample dried, jaw crush (5mm) & split 1 Kg ring milled (LM2) to 90% -75 microns | Sample dried, jaw crush<br>(5mm) & split<br>1 Kg ring milled (LM2) to<br>90% -75 microns | Sample crushed & split (5mm) 1 Kg extracted & ring milled to 90% -75 microns | Sample crushed & split (5mm) 1 Kg extracted & ring milled to 90% - 75 microns | Sample dried, crushed and pulverised to nominal 90% - 75 microns.  Samples pulverized in LM5 with QTZ flush between samples.  If Reqd. crushing to -6mm using crusher rinsed with QTZ aggregate | Sample crushed & split (5mm) 500g extracted & disc milled to 90% -75 microns | Procedure  |
| 50 g FA/AAS Finish<br>As by aqua regia digest,<br>Flame AAS                     | 50 g FA/AAS Finish<br>As by aqua regia digest,<br>Flame AAS                              | 50g FA/AAS Finish<br>As & metals by XRF<br>pellet                            | 50g FA/AAS Finish<br>As & metals by XRF<br>pellet                             | 50g FA/AAS Finish<br>As & metals by XRF<br>pellet   | 50g FA/AAS Finish<br>As & metals by XRF<br>pellet                            | Technique  |
| 0.01ppm   | 0.01ppm  | 0.01ppm  | 0.01ppm   | 0.01ppm   | 0.01ppm  | EF         |
| Blanks<br>CRM's<br>Pulp Duplicates<br>Field Duplicates                          | Blanks<br>CRM's<br>Pulp Duplicates   | No samples<br>submitted  | No samples submitted  | No samples<br>submitted   | No samples<br>submitted  | GGL QC     |
| CRM Internal Standards Random Repeats Blanks                                    | CRM Internal Standards Random Repeats Blanks   | Blanks, Internal<br>Standards &<br>Random<br>Repeats                         | Blanks, Internal<br>Standards &<br>Random<br>Repeats                          | Statement of<br>15% checks,<br>10% blanks &<br>CRM's<br>No data<br>provided   | No data<br>provided  | LAB<br>QC  |

Table 15.1 Drilling sample procedures and laboratories

|   | 5<br>2002   | 2001  | 3<br>2000   | 3<br>2000   | 2<br>1999   | 1<br>1998  | PHASE      |
|---|---|---|---|---|---|--|------------|
|   | Genalysis Labs<br>&<br>GGL Prep Lab   | Genalysis Labs<br>&<br>GGL Prep Lab   | Set Point Labs  | Set Point Labs  | Set Point Labs  | B & B Labs   | LABORATORY |
|   | Perth, Australia<br>&<br>Botswana   | Perth, Australia<br>&<br>Botswana   | South Africa  | South Africa  | South Africa  | South Africa   | ADDRESS    |
| 1 | MPT<br>61-94  | MPT<br>44-59<br>+ Extensions  | MPT<br>30-43  | MPT<br>22-29  | MPT<br>10-21  | MPT<br>01-09   | HOLES      |
|   |   |   |   |   |   |  | Weight     |
|   | Sample dried, jaw crush (5mm) & split 1 Kg ring milled (LM2) to 90% -75 microns | Sample dried, jaw crush (5mm) & split 1 Kg ring milled (LM2) to 90% -75 microns | Sample crushed & split (5mm)  1 Kg extracted & ring milled to 90% -75 microns | Sample crushed & split (5mm) 500 g extracted & ring milled to 90% -75 microns | Sample crushed & split (5mm) 500 g extracted & ring milled to 90% -75 microns | Sample crushed & split (5mm) 500g extracted & disc milled to 90% -75 microns | Procedure  |
|   | 50 g FA/AAS Finish<br>As by aqua regia digest,<br>Flame AAS                     | 50 g FA/AAS Finish<br>As by aqua regia digest,<br>Flame AAS                     | 50g FA/AAS Finish<br>As & metals by XRF<br>pellet                             | 50g FA/AAS Finish<br>As & metals by XRF<br>pellet                             | 50g FA/AAS Finish<br>As & metals by XRF<br>pellet                             | 50g FA/AAS Finish<br>As & metals by XRF<br>pellet                            | Technique  |
|   | 0.01ppm   | 0.01ppm   | 0.01ppm   | 0.01ppm   | 0.01ppm   | 0.01ppm  | LLD        |
|   | Blanks<br>CRM's<br>Pulp Duplicates<br>Field Duplicates                          | Blanks<br>CRM's<br>Pulp Duplicates  | No samples<br>submitted   | No samples<br>submitted   | No samples<br>submitted   | No samples<br>submitted  | GGL QC     |
|   | CRM Internal Standards Random Repeats Blanks                                    | CRM Internal Standards Random Repeats Blanks                                    | Blanks, Internal<br>Standards &<br>Random<br>Repeats                          | Blanks, Internal<br>Standards &<br>Random<br>Repeats                          | No data<br>provided   | No data<br>provided  | LAB<br>QC  |

Table 15.2 Trench sample procedures and laboratories

#### **Quality Control**

Prior to Phase 4, no quality control regime was implemented, i.e. no blanks, standards, field duplicates were included with analytical submissions.

During Phase 1 through to Phase 3, the laboratories involved, with the exception of Genalysis, provided no results of internal QC monitoring, e.g. screen analysis, random repeats, internal blanks and standards.

After a visit by Colin Jones, Senior Consulting Geologist, RSG, a request was made to Set Point Labs for the results of the above internal QC monitoring. This was supplied and they continued to provide data during their involvement with Phase 4.

Data collected during Phase 3 by Set Point (Random Repeats, Blanks & Internal Standards) was submitted to RSG and a brief report summarized the results of statistical analysis (Dated 26/03/01)

Broadly the conclusions drawn were that the Random Repeats were well correlated and accurate but with poor precision levels, a result of poor sample preparation facilities. It was noted that the highest Set Point internal standard was 2.5 g/t Au and that a 5.0 g/t Au standard should be used. Gallery asked this for, but Set Point did not implement.

Gallery Gold implemented the insertion of QC material from May 2001; which includes the bulk of Phase 4 drilling and trenching and Phase 5 in its entirety.

#### **Insertion of QC Material Phase 4**

An Independent Technical Audit and Resource Estimate compiled by RSG states that Gallery should implement the following on the Mupane Project:

- Submission of RC Field Duplicates at a frequency of 5%
- Submission of Certified Reference Material (CRM) at a frequency of 5%
- Check analyses in duplicate
- Through a series of meetings the following procedure has been implemented with respect to the submission of quality control samples.

Prior to drilling, the geologist predicts the anticipated zone of mineralization and for each 50m drilled width of mineralization, inserts positions for a CRM, internal blank and a pulp duplicate. This is noted on the sample sheet and at the rig site; the Sampling Team Leader inserts a coloured card into the sample bag with the sample number at the correct position.

Documentation with the sample batch submission informs the lab of which CRM to use and which sample is the pulp duplicate.

The Internal Blank is obtained from a local quarry and has been checked that is zero grade.

Pulp Duplicate. A third 150g scoop is obtained from the 1 Kg milled portion and sent for analysis with a different sample number.

CRM's. Labotech Certified Reference Material has been obtained and 150g insertions are made.

### **Insertion of QC Material Phase 4**

As per above, the predicted zone of mineralization (based on the final RSG 0.2 g/t ore envelopes) is noted and a minimum of 4 QC samples are submitted within this zone. This equates to an internal blank, CRM and a pulp duplicate as documented above and also a field duplicate.

Grades available were:

| C-S3   | 0.939 g/t Au | Sulfide |
|--------|--------------|---------|
| C-OX14 | 1.220 g/t Au | Oxide   |
| C-S8   | 1.887 g/t Au | Sulfide |
| C-OX11 | 2.930 g/t Au | Oxide   |
| C-S5   | 4.997 g/t Au | Sulfide |

# **16 DATA VERIFICATION**

All procedures in data verification are outlined in Section 14 **SAMPLING METHOD AND APPROACH** and Section 15 **SAMPLE PREPARATION ANALYSES AND SECURITY**.

#### 17 ADJACENT PROPERTIES

The bulk of the TGB is covered by shallow *in situ* soils and orientation studies indicated that soil geochemistry was an ideal exploration medium. Reconnaissance soil sampling on a handheld GPS controlled 400 x 40 metre pattern across the entire belt commenced in mid 1997 and by late 2000 coverage was complete within the company's tenements. This involved the collection of some 38,880 samples which were sent to Genalysis laboratories in Perth for gold, arsenic, and base metal assay.

Gold-in-soil anomalies resulting from this first pass sampling were followed up with  $100 \times 25$  metre spaced infill sampling on DGPS controlled grids. These samples were collected and analyzed with the same methodology as the reconnaissance sampling. The infill sample grids are the basis of subsequent geologic mapping, prospecting, ground geophysics, and drilling activities.

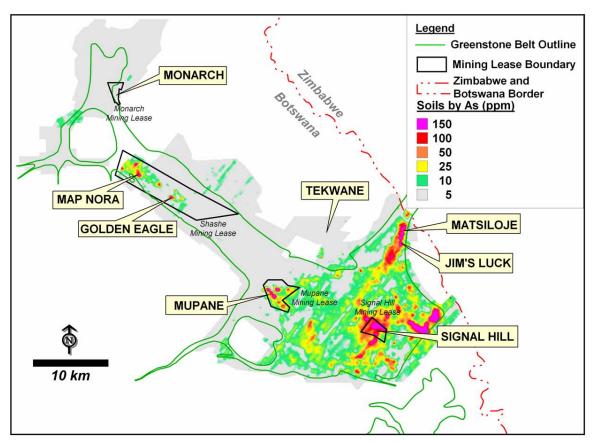


Figure 19.1 Showing location of major gold-in-soil anomalism defined by Gallery Gold soil sampling programmes

As well as the prominent anomaly defining the Mupani mineralization a large number of other gold and arsenic anomalies were detected within the TGB (Figure 19.1). Of these follow up work identified gold mineralization at Map Nora, Golden Eagle, Signal Hill, and Jims Luck (19.1). Map Nora and Golden Eagle, as well as Jims Luck were all sites of previous mining activity on a variety of scales.

Other than those properties detailed in this report, there are no adjacent properties as defined by NI43-101 within the TGB.

## 18 MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical testing was conducted on the various Mupane ores types, pre mine development. The metallurgical testing incorporating, comminution, gravity concentration, flotation, cyanide leaching, carbon kinetics, arsenic precipitation, cyanide destruction, thickening and slurry viscosity measurements as part of the Mupane Project Bankable Feasibility Study, completed by Metallurgical Design and Management (Australia) Pty Limited.

## Metallurgical Testwork Summary

Metallurgical testwork for the BFS programme included:

- Testwork associated with refining the process plant design.
- Variability testing of samples from the Mupane ore bodies, Tau, Tholo, Kwena and Signal Hill.

Table 18.1 summarizes the metallurgical testwork that has been performed on the Mupane ore with a brief description of the scope of work for each testwork report.

| Lab.   | Report<br>No. | Issue Date       | Title  | Testwork Summary  |
|--------|---------------|------------------|--|---|
| AMMTEC | A7962         | October<br>2001  | Metallurgical Testing of Samples<br>from the Mupane Project for<br>Gallery Gold Botswana (Pty) Ltd       | UCS Bond abrasion index Bond rod mill index Bond ball mill index Head analysis Gravity/elach testwork Gravity/elL testwork Diagnostic analysis Settling tests Mineralogy  |
| AMMTEC | A8103         | November<br>2001 | Gravity - CIL Leach Tests on a<br>Mupane, Area 1 (Tau), Primary<br>Composite for Gallery Gold<br>Limited | <ul> <li>Gravity/Regrind/CIL leach testwork</li> </ul>  |
| AMMTEC | A8476         | November<br>2002 | Flotation and Leach Tests on<br>Mupane Area 1 (Tau) Primary<br>Composite for Gallery Gold<br>Limited     | Bulk flotation tests     Flotation concentrate regrind / cyanide leach tests     Flotation tails cyanide leach tests  |
| АММТЕС | A8495         | May 2003         | Metallurgical Test Work Program<br>on Mupane Samples For Gallery<br>Gold Limited                         | UCS Bond crushing index Bond abrasion index Bond ball mill index Bond ball mill index JKMRC testwork Head analysis Gravity/leach testwork Gravity/leach testwork Diagnostic analysis Settling tests Mineralogy Flotation optimisation testing Flotation/leach testwork Thickening testwork Thickening testwork Thickening testwork Arsenic/cyanide precipitation testwork Carbon kinetic testwork Viscosity measurement Vendor slurry agitation testwork Ore variability leach testwork |

Table 18.1 Metallurgical testwork and scope of work

## **Mineralogy**

Composite samples of oxide and primary ores from the Tau ore body were examined. For the oxide ore, the sample was dominated by goethite, magnetite and manganese oxides. There was a small amount of sulfide minerals in the sample, however, as confirmed by sulfur analyses these are minor. The sulfides in the primary ore sample are dominated by iron sulfides (predominantly pyrrhotite) and arsenopyrite. Graphitic minerals have been noted in the samples although there does not appear to be significant, if any preg robbing effect.

It is notable that of the twelve occurrences of gold detected, only two of these were greater than 12 micron. These were a 40 micron ( $\mu$ m) gold particle in the oxide Master Composite and a 20 micron gold particle in the primary Master Composite. The majority of the gold particles detected were in the sub 10 micron size range.

Although only two composites were examined as part of the BFS, a large number of individual samples were examined as part of the pre-feasibility study. During this work a total of some 140 occurrences of gold were noted using optical methods. Of these only 12 were noted as being greater than 20 micron and two occurrences being greater than 100 micron (both approximately 400 micron). The Mupane ores appear to be dominated by relatively fine grained gold occurrences.

#### Comminution

Comminution testing indicates the Mupane ores to be relatively soft for the oxide ores but medium to hard for the primary ore. For the Tau oxide ore, Bond rod mill indices were approximately 15 kWh/t and Bond ball mill indices, 12 kWh/t. For the Tau primary ore, Bond rod mill indices were approximately 21 kWh/t and Bond ball mill indices, 16 kWh/t. Signal Hill oxide recorded figures of 11.4 and 11.4 for rod and ball mill indices respectively. Abrasion index for the Tau primary ore was high with values up to 0.794. JKMRC parameters for the primary ore indicate that a SAG/ball mill circuit is the preferred grinding option.

## **Pre-Concentration (Flotation/Gravity)**

Initial testwork was carried out using pre-concentration of gold using gravity techniques. As testwork data was generated it became obvious that there was little coarse gold in the either the oxide or primary ores and that concentration of gold was being achieved through the association of gold with the significant proportion of heavy minerals in both ore types.

Flotation testing of the primary ores indicated that high recoveries of gold (90-95%), sulfur (85-90%) and arsenic (+95%) could be achieved with a very simple flotation scheme. Flotation of primary ore allowed the regrind of a large proportion of the sulfides, thereby maximizing gold recovery in subsequent cyanide leaching. Flotation at a primary grind size of 80% passing ( $P_{80}$ ) 106  $\mu$ m and regrind of concentrate to nominally 80 % passing 30  $\mu$ m provided the optimum performance.

The comminution circuit installed power was designed on the basis of the harder primary ore, however the oxide primary grind product size was calculated to between 75 and 80  $\mu$ m for the same power. At this size it was deemed unnecessary to provide gravity concentration considering the recycle of heavies to cyclone underflow.

## **Cyanide Leaching**

Oxide and primary composite samples were tested to establish optimum leach conditions. For primary ore it was determined that leaching of reground flotation concentrate followed by combined leaching of the resultant residue and flotation tailing for 24 hours, generally provided gold extractions in excess of 90 %. Although concentrate leaching is relatively rapid, a single

pre-leach tank with approximately 37 hours capacity provided additional leach capacity whilst treating oxide ore. Total oxide ore leach time calculates as approximately 29 hours.

For the primary ore cyanide and lime consumption is moderate to high with a relatively high oxygen demand. For the oxide ore cyanide and lime consumption is generally moderate, although the Kwena oxide ore exhibited a very high lime consumption, averaging 7 kg/t.

## **Variability Testing**

A large number of samples were tested to determine the overall recovery for each of the Mupane ore bodies. Results were variable with some primary ore samples indicating a degree of refractory gold in samples. These ores generally fell outside the pit shell, at depth, or results were shown to be in error on subsequent diagnostic leaching. Results were weighted on the basis of metres of drilling represented. The overall predicted gold recovery for each of the ores is shown in Table 18.2.

| Ore Source           | Residue<br>Grade<br>g/t Au | Solution Loss<br>g/t Au | Total Tail<br>Grade<br>g/t Au | Plant Feed<br>Grade<br>g/t Au | Calculated<br>Recovery<br>% Au |
|----------------------|----------------------------|-------------------------|-------------------------------|-------------------------------|--------------------------------|
| Tau Primary          | 0.32                       | 0.015                   | 0.335                         | 4.00                          | 91.6                           |
| Tau Oxide            | 0.26                       | 0.015                   | 0.275                         | 2.80                          | 90.2                           |
| Kwena Oxide          | 0.15                       | 0.015                   | 0.165                         | 1.82                          | 90.9                           |
| Signal Hill<br>Oxide | 0.46                       | 0.015                   | 0.475                         | 2.69                          | 82.4                           |
| Tolo Oxide           | 0.30                       | 0.015                   | 0.315                         | 2.49                          | 87.4                           |
| Total                | 0.313                      | 0.015                   | 0.328                         | 3.42                          | 90.4                           |

Table 18.2 Summary of Predicted Plant Recovery by Ore Type

## **Thickening Testwork**

Thickening testwork did not indicate any particular difficulties with satisfactory underflow densities at low to moderate flocculant consumption for both ore types.

## **Tailings Detoxification Circuit**

The selected process route for cyanide destruction and arsenic precipitation is ferric sulfate addition. For both ore types, moderate additions of ferric sulfate resulted in arsenic levels lower than 1.0 mg/L and cyanide concentration less than 5 mg/L.

## **Mineral Processing**

The Mupane gold plant is based on well understood and proven technology. The flowsheet consists of:

- Crushing.
- Grinding.
- Flotation (for primary ore).
- Cyanide leach/carbon adsorption.
- Carbon desorption.
- Gold recovery.
- Cyanide detoxification and arsenic precipitation.
- Tailings disposal.

The plant has been designed at a nominal throughput of 1.2 Mtpa of oxide ores and 1.0 Mtpa of primary ores. The process plant block flow diagram (Figure 18.1) is shown below:

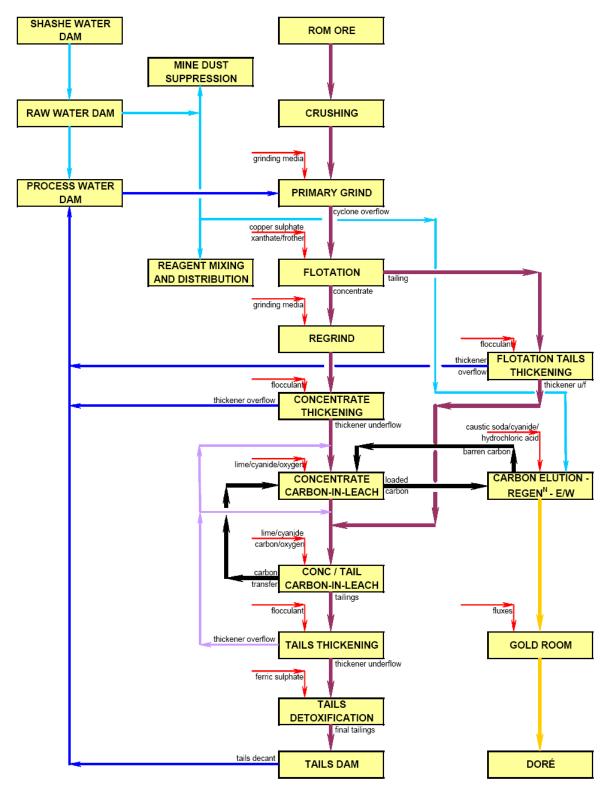


Figure 18.1 Mupane Processing Plant Block Flow Diagram

As seen in Figure 18.1 above, the process flow sheet for Mupane comprises a comminution circuit consisting of a primary jaw crusher followed by 2 stage milling via a SAG mill and a ball mill. The resultant slurry is then thickened and fed into a conventional CIL circuit comprising 6 tanks. Gold is extracted from the carbon via a 3.8t Zadra elution system.

As the BFS testwork indicated that the ore becomes more refractory with depth, a flotation circuit has been installed to float off the sulphides in the ore as a concentrate. This concentrate will then be milled to  $P_{80}$  30 $\mu$  prior to cyanide leaching. The concentrate tails will also be leached. For all oxide ore, the whole ore is cyanide leached without prior flotation. The flotation plant at Mupane is currently being commissioned.

The ore treatment production rate is currently slightly behind target due to some electrical and mechanical issues which are being resolved.

Metallurgical recoveries for oxide material are higher than anticipated.

In August 2005 mill throughput was adversely affected when the SAG mill motor failed. The motor has been replaced and an additional spare motor sourced and purchased.

In September 2005, the first transitional ore from Tau was processed. Unexpected viscosity problems in the leach circuit due to the presence of hydrous clays in the ore reduced recoveries to 80-85%. An improvement in system controls and work to improve the performance of the oxygen plant has resulted in recoveries steadily increasing to approximately 90% in a blend of oxide and transitional ores.

The production statistics for December 2004 to September 2005 are shown in Table 18.3 below.

|                    | Actual  | Budget    | Variance |
|--------------------|---------|-----------|----------|
| Milled Tonnes (t)  | 862,544 | 1,000,893 | -138,349 |
| Gold Produced (oz) | 78,598  | 91,111    | -12,513  |
| Gold Sold (oz)     | 74,772  | 91,111    | -16,339  |
| Head Grade (g/t)   | 3.05    | 2.96      | 0.09     |
| Recovery (%)       | 91.1    | 91.3      | -0.20    |

## 19 MINERAL RESOURCES

#### 19.1 General

Hellman & Schofield Pty Ltd (H&S) was retained by GGL to estimate recoverable gold resources for input into the open pit optimisation and mining planning for the Mupane Project.

H&S's first involvement with GGL's Botswana gold prospects was in January 2002 when H&S was requested to undertake an audit of resource estimates for the Tau Kwena and Signal Hill A and F Zone gold prospects. That work included an independent estimate of resources by H&S (Brabham, 2002). GGL subsequently elected to utilise the H&S resource estimates as the basis for a pre-feasibility study. In August 2002 H&S was retained by GGL to progressively update the resource estimates and to work towards final estimates to be input into the BFS.

In August 2002, a H&S geologist spent nine days on site examining GGL's geological database, verifying drill hole and geological data and examining on-site sample preparation facilities and procedures.

An updated estimate was completed for the Tau by H&S in June 2004, which included an additional five drillholes in the drill database.

## 19.2 Features of the Geology Relevant to Resource Estimation

The geology of the Mupane gold deposit is described in some detail in Sections 9, 10 and 11 of this report.

## 19.3 Hellman and Schofield Resource Studies

The material that follows in Section 19.4 to Section 19.12 is derived from the following reports provided by H&S:

- "Hellman & Schofield, Feb 2002, Mupane Resource Estimation"
- "Hellman & Schofield, Jan 2003, Mupane Resource Estimation"
- "Hellman & Schofield, Feb 2002, Signal Hill Resource Estimation"
- "Hellman & Schofield, Jan 2003, Signal Hill Resource Estimation"
- "Hellman & Schofield, Updated Tau, June04"

#### 19.4 Data Collection and Verification

Data collection issues relevant to resource estimation are discussed in Section 13, Section 14, Section 15 and Section 16 of this report. Sample preparation issues are discussed in Section 15, while data verification issues are discussed in Section 16.

## 19.5 Wireframe Modelling for Resource Estimation

At each of the Mupane deposits, mineralisation limits were interpreted on drill sections at approximately 0.2g/t Au limits, paying due regard to the limits of host GIF units (at Mupane) and post-mineralisation dolerite dykes. Cross-sectional outlines were wire-framed into 3D envelopes that were treated as mineralised domains and to produce relatively simple volumes suitable for block modelling and to ensure that all minable mineralisation would be captured.

The wireframed surfaces included the mineralised envelopes, major rock type boundaries, weathering and oxidation surfaces and the land surface.

## 19.6 Statistical Analysis

H&S investigated the univariate statistics of gold grades within mineralised domains at Mupane.

H&S noted that at, in general, samples in the mineralised domains at Mupane show strong positive skewness, typical of sample grades in many gold deposits. Coefficients of variation from 1.8 to 2.2 were moderate compared to other structurally controlled hydrothermal gold deposits, indicating that selective mining at reasonable cut-off grades would successfully delineate ore and waste. However H&S did note that the skewness of the sample grade populations indicates that estimation of recoverable resources is relatively difficult as a significant portion of the sample composites representing mineralization are below 0.8g/t Au. Estimation of economic resources relies upon these relatively few sample data.

## 19.7 Variography

The spatial continuity of gold grades is important in resource estimation. H&S studied this aspect in considerable detail using variography based on directional correlograms. In general the variography shows that the dominant control on the mineralisation is lithology, which is in general moderately to steeply south dipping.

## 19.8 Multi Indicator Kriging Resource Model Estimation

H&S considered that Multiple Indicator Kriging (MIK) represented the most appropriate approach in estimating the Mupane deposits, quantifying the tonnage and grade of economic material within large blocks (panels). MIK of gold grades used indicator variography based on the resource sample grades, with continuity of gold grades characterised by indicator variograms. The panel dimensions were 25m along strike, 20m across strike and 5m vertical.

The size of the resource model panels reflects the philosophy that accurate estimation of the grade of small blocks from assays in wide spaced drillholes is impossible, and that large panels will lead to more robust resource estimates, which will more closely resemble the resources achieved during mining. The application of a block support correction (Section 19.9) to the MIK estimates is used to enable the estimation of the proportions of each panel above a series of cutoff grades.

## 19.9 Block Support Adjustment

The H&S resource results are intended to reflect the tonnes and grade that can actually be recovered from each panel during mining. A block support correction (or variance adjustment) was used to achieve this. It is assumed that each panel will be mined as a number of smaller blocks called selective mining units (SMUs), representing the smallest volume of rock that can be mined separately as either ore or waste, given excavators and trucks of a particular size.

Block support corrections were derived from the gold variograms for each domain and applied on a panel-by-panel basis using a normal/log-normal method that incorporates both variance adjustment and symmetrization of the histograms of estimated grades to derive estimates of recoverable resources for SMUs. Assumed mining block dimensions were 6m along strike x 4m across strike x 2.5m vertical for Tau, Kwena and Tholo deposits. At Signal Hill an SMU of 8m along strike x 4 metres across strike x 2.5m vertical was assumed. In H&S's opinion, these dimensions approximated the selectivity that could be expected with the scale of mining contemplated by GGL and application of dilution or ore loss factors was not warranted.

#### 19.10 Resource Classification

The resource is divided into measured, indicated and inferred categories. This classification reflects a degree of confidence assigned to each panel based on how many samples were available to estimate the panel grade and proportions, and the spread of these samples in space around the panel.

For measured and indicated categories, at least 16 samples were found in the search volume. In the inferred category, at least eight were required. The space around the centre of each panel was divided into eight octants. For measured and indicated categories, at least four octants contained samples. In the inferred category, at least two octants contained samples.

Search distances were also used in the classification. The search distances for each deposit were estimated by H&S based on the statistical analysis of the data provided.

Finally, irrespective of the above criteria, all mineralisation that lay outside the main mineralised envelopes was classed as inferred on the assumption that this material may be patchy, may not be subject to grade control drilling, and may therefore not be mined.

#### 19.11 Global Resource Estimates

In January 2003 H&S estimated the global measured and indicated resource at a 1g/tAu COG for the Mupane Project to be 9.7 million tonnes at an average grade of 2.8 g/tAu. This estimate included 7.7 million tonnes at 3.0 g/tAu classified as Measured and 2.0 million tonnes at 2.3 g/tAu classified as Indicated. In addition, a further 1.4 million tonnes at 2.3 g/tAu of resource was classified as Inferred.

In June 2004 H&S updated the Tau resource estimate based sample and assay information from five drill holes obtained since the completion of the BFS. In addition, prior to constructing the updated Tau resource model, H&S undertook a review of the resource wireframes. The wireframes of the gold mineralization zones and dolerite dykes are an integral part of the Tau resource model. The interpreted positions of the mineralization and dykes were modified by H&S to reflect the information obtained from the latter, deeper drilling.

The estimation and classification of the resources by H&S are consistent with the Australian Code for "the Reporting of Identified Mineral Resources and Ore Reserves" of September 1999 (the Code) as prepared by the Joint Ore Reserves Committee of the Australian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia (JORC).

Furthermore, the resource classification is also consistent with Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects of February 2001 (the Instrument) and the classifications adopted by CIM Council in August 2000.

The H&S resource estimate was undertaken by Nic Johnson, who is a member of the Australian Institute of Geoscientists, and has more than five years experience in the use of geostatistics for

estimation of recoverable resources in gold deposits. Nic is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code and CIM Standards respectively. Nic Johnson collaborated with a fellow H&S geologist, who visited the Mupane Project in August 2002.

In June 2005 GGL utilised the H&S Resource Estimate to determine the depleted Resources for inclusion in their 2005 Annual Report documentation for submission to the ASX. The H&S resource models were depleted by material removed by mining activities as from commencement of mining operations. The estimation and classification of the depleted resources by GGL are compliant with JORC.

The GGL resource estimate was undertaken by Linton Putland (Mining Engineer), who is a member of the Australian Institute of Mining and Metallurgy (AusIMM) and is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code, and Dr Marcus Tomkinson (Geologist), who is a fellow of the Australian Institute of Mining and Metallurgy, a fellow of the Society of Economic Geologists, a member of the Geological Society of Australia and is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code.

The GGL June 2005 Mupane Project resource estimates are shown in Table 19.11\_1 below.

|              |                  | MEASURED               | ED                  |                  | INDICATED              | D                   | SVBIM            | MEASURED & INDICAT     | DICATED             |                  | INFERRED               | ט                   |
|--------------|------------------|------------------------|---------------------|------------------|------------------------|---------------------|------------------|------------------------|---------------------|------------------|------------------------|---------------------|
|              | TONNES<br>(,000) | GOLD<br>GRADE<br>(g/t) | CONTAINED oz (,000) |
| Tau          | 5,428            | 3.3                    | 572                 | 494              | 2.8                    | 45                  | 5,922            | 3.2                    | 617                 | 379              | 2.8                    | 35                  |
| Tolo         | 940              | 2.4                    | 72                  | 296              | 2.1                    | 20                  | 1,236            | 2.3                    | 92                  | 360              | 2.4                    | 28                  |
| Kwena        | 1,137            | 1.7                    | 61                  | 197              | 1.6                    | 10                  | 1,334            | 1.7                    | 71                  | 230              | 1.5                    | 1                   |
| Golden Eagle | 559              | 2.4                    | 43                  | 406              | 2.1                    | 27                  | 965              | 2.3                    | 70                  | 339              | 2.0                    | 22                  |
| SHA          | 1,218            | 2.0                    | 79                  | 313              | 2.2                    | 22                  | 1,531            | 2.1                    | 101                 | 317              | 2.0                    | 21                  |
| SHF          | 166              | 3.1                    | 17                  | 33               | 2.9                    | З                   | 199              | 3.1                    | 20                  | 49               | 2.8                    | 4                   |
| TOTAL        | 9,448            | 2.8                    | 844                 | 1,739            | 2.3                    | 127                 | 11,187           | 2.7                    | 971                 | 1,673            | 2.2                    | 121                 |

Table 19.11\_1 Mupane June 2005 depleted resources

## 19.12 Mining and Mineral Reserve Estimates

The Mupane mining operation is scheduled to provide 1.2Mtpa of oxide ore or 1.0Mtpa of sulphide ore to the Mupane processing plant.

Mining activity is conventional open pit mining utilising 100 tonne diesel hydraulic excavators and Caterpillar 777 open pit dump trucks. The majority of material mined from the Mupane pits requires drilling and blasting.

Mining benches are nominally 7.5 metres in height, with flitches mined at 2.5 metre intervals.

Mining activities at Mupane are undertaken utilising an open pit mining contractor. Following the completion of the Mupane BFS the open pit mining works were tendered and won by Basil Read, a South African based mining contract group. Basil Reed has been the incumbent mining contractor since commencement of mining and has performed well. The mining contract is a schedule of rates contract.

In addition to the mining contract, Stanley Mining Services holds the contract for RC grade control within the pit. A number of issues relating to drill availability have been addressed and grade control drilling is progressing to schedule.

Geotechnical advice for the project is provided by George Orr and Associates, an Australian based Geotechnical Consultancy group. George Orr and Associates have extensive geotechnical experience in open pits throughout the world. Initial investigations in the BFS and subsequent reviews post commencement of mining have indicated that no significant or unusual geotechnical issues are expected during the mining of the Mupane pits.

Investigations completed during the BFS indicated that groundwater ingress to the Mupane pit is expected to be minimal. To date, little or no ground water has been encountered in the pit boundaries.

Grade control is carried out utilising inclined RC drilling at a drill spacing of 8m by 6m and a sample interval of 1.25m, equating to 2 samples per 2.5m flitch. Grade control holes are inclined at -70° and drilled to a depth of 16.75m. Data collected from the drilling and assaying is processed using H&S MP3 conditional simulation software, after adjustment for heave and throw due to blasting.

All grade control and production data is correlated and used to reconcile grade control data to original or updated resource estimates.

A grade control and reconciliation review was recently completed on the Tau pit. The review showed that grade control to resource model showed an increase in grade control tonnes, a decrease in grade control grade and a marginal increase in the grade control contained ounces over the resource model estimates. Further reconciliation work is ongoing at Mupane.

Mining costs at Mupane have been as anticipated, despite recent increases in fuel and consumables costs. Total mining costs forecast for the LOM for Mupane are US\$10.78 per tonne of ore mined or US\$1.90 per tonne of total material mined.

In May 2003, the Mupane BFS total mineral reserve was estimated at 5.4 million tones at an average grade of 3.4 g/tAu. This consisted of 5.0 million tonnes at 3.5 g/tAu of Proved reserve and 0.4 million tonnes at 2.4 g/tAu of Probable reserve. The estimate was based on a gold price of US\$320 per ounce and operating costs and parameters estimated in the Mupane BFS, using the January 2003 H&S resource model.

The 30 June 2005 ore reserve estimate for the Mupane Project was updated for inclusion in the Gallery Gold Annual Report. The Reserve updates were based on revised cut-off grades based on operational performance and depletion of the resources due to mining and processing activities and the H&S June 2004 resource model.

Using these input factors the following cut-off grades (COG's) were calculated for the ore reserve estimates using the following formula.

## Cut-off Grade = <u>Total Throughput cost (S/t)</u> Metallurgical Recovery (%) x Gold Price (\$/gm)

The COG parameters and estimated COG's are shown in Table 19.12\_1 below.

| ORE TYPE                             | OXIDE      | TRANS      | FRESH      |
|--------------------------------------|------------|------------|------------|
| THROUGHPUT RATE                      | 1.2 Mtpa   | 1.2 Mtpa   | 1.0 Mtpa   |
| ORE RELATED COSTS - US\$/t PROCESSED |            |            |            |
| Processing Costs                     | 6.92       | 6.92       | 8.53       |
| Administration Costs                 | 2.56       | 2.56       | 2.56       |
| Mining Overheads                     | 0.56       | 0.56       | 0.56       |
| Grade Control                        | 0.71       | 0.71       | 0.71       |
| Rehabilitation Provision             | 0.12       | 0.12       | 0.12       |
| TOTAL ORE RELATED COSTS - US\$/t     | 10.87      | 10.87      | 12.48      |
| MILL RECOVERY                        | 92%        | 90%        | 90%        |
| GOLD PRICE                           | US\$402/oz | US\$402/oz | US\$402/oz |
| ESTIMATED COG                        | 0.91g/t Au | 0.93g/t Au | 1.07g/t Au |

Table 19.12\_1 Revised Parameters and COG's for the Mupane June 2005 Annual Report Reserve Estimate

These COG's were applied to the June 2004 H&S resource models and, using the appropriate pit designs for each deposit, depleted mining reserves were estimated and are shown in Table 19.12\_2.

|              | PROVEN        |                |              | PROBABLE         |                |              |                  | TOTAL          |              |  |  |
|--------------|---------------|----------------|--------------|------------------|----------------|--------------|------------------|----------------|--------------|--|--|
|              | TONNES (,000) | GRADE<br>(g/t) | CONTAINED oz | TONNES<br>(,000) | GRADE<br>(g/t) | CONTAINED oz | TONNES<br>(,000) | GRADE<br>(g/t) | CONTAINED oz |  |  |
| Tau          | 3,823         | 3.60           | 443,000      | 25               | 2.88           | 2,000        | 3,848            | 3.60           | 445,000      |  |  |
| Tholo        | 682           | 2.51           | 55,000       | 2                | 2.01           | 0            | 683              | 2.51           | 55,000       |  |  |
| Kwena        | 279           | 1.84           | 17,000       | 3                | 1.84           | 0            | 282              | 1.84           | 17,000       |  |  |
| Signal Hill  | 633           | 2.44           | 50,000       | 115              | 2.46           | 9,000        | 748              | 2.44           | 59,000       |  |  |
| Golden Eagle | 342           | 2.59           | 28,000       | 108              | 2.25           | 8,000        | 450              | 2.51           | 36,000       |  |  |
| TOTAL        | 5,759         | 3.20           | 593,000      | 253              | 2.40           | 19,000       | 6,012            | 3.17           | 612,000      |  |  |

Table 19.12 2 Mineral reserve estimate at 30 June 2005

No additional mining dilution or ore recovery factors were applied to the reported reserves as the mining model assumes that the recoverable resource estimates already incorporate dilution for the appropriate SMU size for open pit mining.

These reserves have been estimated and reported in accordance with the Australian Code for Reporting of Mineral Resources and Ore Reserves of September 1999 (the JORC Code) as prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia.

In addition, the reserve classification is also consistent with Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects of February 2001 (the Instrument) and the classifications adopted by CIM Council in August 2000.

The estimation of the GGL June 2005 reserves for the Mupane Project was undertaken by Linton Putland (Mining Engineer), who is a member of the Australian Institute of Mining and Metallurgy (AusIMM) and is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code, and Dr Marcus Tomkinson (Geologist), who is a fellow of the Australian Institute of Mining and Metallurgy, a fellow of the Society of Economic Geologists, a member of the Geological Society of Australia and is both a "Competent Person" and a "Qualified Person" with respect to the JORC Code.

All reserves mentioned are completely included within the quoted measured and indicated resources as detailed in Table 19.11\_1.

## 20 OTHER RELEVANT DATA AND INFORMATION

#### **Environmental**

In December 2005 GGL commissioned URS Australia Pty Ltd to prepare a summary of the environmental considerations associated with the Mupane Gold Project. The summary was to be based on URS' knowledge of the environmental issues associated with the Project obtained through the environmental risk assessment, environmental audits and mine closure planning completed for the Project by URS in 2004-05.

The material that follows in Section 20 is derived from the "Environmental Considerations Mupane Gold Project Input to Form 43-101" report provided to GGL by URS in January 2006.

## **Environmental Permitting at the Mupane Project**

An Environmental Impact Assessment (EIA) was conducted for the Mupane Gold Project as part of the BFS. The EIA study was conducted in 2002-03 and comprised of:

- Scoping Study
- Impact Assessment. The findings of this assessment are documented in an Environmental Impact Statement (EIS), which was prepared by Geoflux Pty Ltd (2003a).
- Environmental Management Plan (EMP). Following completion of the impact assessment phase, an EMP was developed (Geoflux Pty Ltd, 2003b) to facilitate implementation of the environmental mitigation measures proposed in the EIS.

Subsequently, an EIS was prepared for the proposed development of the Mupane access road, water supply and power supply (Geoflux Pty Ltd, 2003b).

Construction of the Project commenced in 2004, and the Project was officially opened in February 2005. The Project operates under the provisions of a range of legislation including:

- Mines and Minerals Act (as amended 1999).
- Mines, Quarries, Works and Machinery Act (1978).
- Tribal Land Act (1968).
- Waste Management Act (1998).
- Water Act (1968).
- Fauna Conservation Act (1961).
- Monuments and Relics Act (as amended 2001).
- Air Pollution (Prevention) Act (1971).
- Public Health Act.

In addition, the following are applicable to site operations:

- Botswana's Strategy for Waste Management (1998).
- Guidelines for the Disposal of Waste by Landfill (1997).
- Water Utilities Corporation Policy on Water.

## **Environmental Management System (EMS)**

GGL is in the process of developing and implementing an Environmental Management System (EMS) to manage the environmental aspects, and legal and other obligations, relating to its activities. The aspects addressed include those that GGL can directly control through its own operations, and also those related to the activities of its contractors and suppliers that it can influence.

The objectives of the EMS are to facilitate compliance with GGL's legal obligations and other standards and agreements to which it has agreed to comply, and to drive the continual improvement in the environmental performance of its operations. The EMS is being developed and maintained based on the framework of ISO 14001:2004.

A draft EMS Manual has been developed that summarises how the various elements of GGL's EMS will be managed (URS, 2005b).

GGL intends that the EMS Manual will be updated over time to ensure that, at any time, it reflects the company's current practices and procedures.

## **Environmental Risk Register**

A preliminary Environmental Risk Register was prepared by URS for Mupane in 2004 and revised in 2005.

URS has recommended that GGL undertake a review of the risk assessment matrices and select the most appropriate matrix. The selected matrix should be used during the next full review of Environmental Risk Register.

The current Environmental Risk Register prepared by URS lists a total of 285 environmental risks, the distribution of which is summarised in Table 20.1.

| Risk Rating | Risk Type     | Number of Risks |
|-------------|---------------|-----------------|
| 1-8         | Extreme Risk  | 0               |
| 9-18        | High Risk     | 72              |
| 17-20       | Moderate Risk | 43              |
| 21-25       | Low Risk      | 170             |

Table 20.1 Distribution of identified environmental risks across the Gallery Gold risk categories

#### **Environmental Action Plans**

During 2004 URS were commissioned to conducted a gap analysis of the Mupane operations against local and Australian mining environmental standards and environmental management systems standards, and a risk assessment of environmental aspects. Based on this work, URS developed a series of EAPs which describe actions to further develop practices in the following areas of the Mupane operations:

- 1. Environmental Management System.
- 2. Contractor Management.
- 3. Acid Drainage.
- 4. Air Quality.
- 5. Vertebrate Fauna.

- 6. Flora and Vegetation.
- 7. Heritage Sites.
- 8. Hydrocarbon Management.
- 9. Noise, Vibration and Airblast.
- 10. Reagents and Hazardous Materials.
- 11. Water Management.
- 12. Stakeholder Consultation and Management.
- 13. Tailings Management and Disposal.
- 14. Waste Rock Management and Disposal.
- 15. Rehabilitation and Closure Planning.

GGL also commissioned URS to conducted an audit of all actions due for completion by the end of June (Q2) 2005. A further audit of the environmental action items due to be completed by Q4 2005 is scheduled for February 2006.

## **Environmental Management of Operations**

URS has identified the key environmental issues associated with the Mupane Project, which are summarised below.

#### Acid Drainage

An acid drainage assessment conducted in 2003 found that there was little or no likelihood of Acid Rock Drainage (ARD) occurring at Tholo, Kwena and Signal Hill, though it could occur at Tau. Limited testing was conducted during this study. A comprehensive waste rock characterisation programme is being developed. The risk of ARD from tailings is also being investigated.

#### Air Quality

GGL is in the process of developing an air quality monitoring programme and will implement strategies for preventing and managing air emissions.

#### Flora and Fauna

Mupane was developed on land used for grazing of stock and native fauna. The Environmental Risk Register identifies that the main environmental aspects relating to flora and fauna include loss of native vegetation and disturbance of fauna from clearing of vegetation and topsoil removal. Other significant environmental issues include reduced grazing resources for wildlife and stock from vegetation clearing.

There is also a risk that fauna may become trapped in the TSF, but regular inspections of the facility minimise this risk.

#### Heritage Sites

A heritage survey has been completed for sites at Mupane and is proposed for Signal Hill.

The Kwena heritage survey report has been completed but, at the time of the 2005 EAP audit, no decision had been made about whether salvage and mitigation of heritage material at Kwena were required.

The Tholo pit area has been surveyed for heritage sites and a mitigation programme was completed in June 2005. Gallery Gold has received approval to mine the Tholo pit as a heritage site near the pit will not be destroyed.

Discussion by URS with the consultant archaeologist during the 2005 EAP audit indicated that monitoring of historical fences and walls near Mupane has stopped as no impact on these due to mining has been observed.

#### Hydrocarbon Management

A number of gaps or issues have been identified by URS in the EAP for hydrocarbon management (EAP No. 8). Actions due for completion by the end of 2005 will be audited during the next EAP audit, scheduled for February 2006.

#### Noise, Vibration and Airblast

URS noted that the Environmental Risk Register has identified that the significant environmental issues associated with Mupane include the potential for noise generated by the construction of access and haulage roads and ramps, earthworks, and the crushing and screening of ore, to impact on local communities.

GGL is developing an inventory of noise, vibration and airblast sources, and preparing a management plan in consultation with stakeholders.

#### Reagents and Hazardous Materials

Significant environmental aspects listed in the Environmental Risk Register completed by URS include the potential for:

- A large spill of cyanide during transport resulting in:
  - o water contamination; or
  - o harm to community members.
- Smaller spills of a reagent, including cyanide, resulting in localised soil or water contamination, or harm to the community from the following sources:
  - o Tanks or pumps:
  - o Pipelines; and
  - During transport.

A cyanide management system has been developed for Mupane but does not currently meet all of the requirements of the International Cyanide Management Code. This has been identified by URS as an action item in the EAP for Reagents and Hazardous Materials (EAP No. 10).

An audit of the cyanide management system was conducted by Orica in December 2005. The audit was focussed on health and safety aspects however it was also identified where these had environmental implications. GGL is currently reviewing these issues to determine what actions may be required.

#### Water Management

URS noted significant environmental issues related to water management include the following:

 Localised contamination of groundwater by waste-water produced through the septic and sullage system. A waste-water treatment plant is planned for the site. The Risk Register will be reviewed when additional controls, such as the treatment plant, are implemented. • Erosion, sedimentation and localised water contamination from ongoing maintenance of stormwater infrastructure after closure.

GGL is currently developing a mine water management plan which considers water supply, transfer, storage, treatment and disposal.

#### Tailings Management and Disposal

The Environmental Risk Register completed by URS identifies that the potential of seepage or leakage from the TSF resulting in soil and groundwater contamination is a significant environmental issue. The TSF at Mupane has been designed to minimise this risk, but the lack of groundwater monitoring data at the time that the register was prepared meant that the risk could not be quantified further. Groundwater monitoring has subsequently been initiated. The Risk Register is being reviewed in light of the monitoring data or controls implemented.

Other environmental risks relating to the Mupane TSF include:

- Failure of the TSF resulting in:
  - Loss of property;
  - Soil contamination;
  - Water contamination; or
  - o Fauna deaths.
- Long term stability of the precipitated arsenic in tails, which has not been confirmed. Instability could result in soil and groundwater contamination.

An evaluation of the physical, chemical and mineralological characteristics of the tailings, and the development of an updated management and monitoring plan is currently in progress and will be assessed February 2006.

#### Waste Rock Management and Disposal

The significant environmental issues identified by URS in the Environmental Risk Register in relation to waste rock management include the following:

- Erosion, sedimentation and visual impact from the presence of waste rock dumps.
- Water contamination and loss of native vegetation from waste rock dumps.
- Visual impact of waste rock dumps after closure.

URS noted that these issues are primarily being addressed through the progressive rehabilitation of the Tau waste dump. Recent rains have initiated germination of seed in the topsoil respread over those areas of the waste dump that have been battered and landscaped.

ARD risks for the waste dumps have also been identified as discussed previously in this section.

## Mine Closure Planning

GGL recognises the importance of mine closure planning at the early stages of the project. It also understands that mine closure is a continuous series of activities as defined in the Strategic Framework for Mine Closure guidelines developed in 2000 by the Australian and New Zealand Minerals and Energy Council (ANZMEC) and Minerals Council of Australia (MCA).

The Botswana Mines and Minerals Act (1999) requires mining companies to develop mine closure and rehabilitation plans to make the site safe and rehabilitate the environment to as

close as possible to its natural state. These plans need to be submitted to the Director of the Department of Mines for consideration and approval.

GGL has commissioned URS to prepare a conceptual closure plan for Mupane, which is underway.

#### Closure Objectives

The principle objective for closure at Mupane defined by GGL is to rehabilitate the mine-affected areas to a level where long-term impacts to the environment are minimised. The post-mining land use is sustainable, productive grazing.

URS noted that the following additional objectives have been defined for the Mupane Gold Mine:

- Achieve closure in an efficient and cost-effective manner and with minimal socioeconomic disturbance.
- Minimise adverse long-term environmental impacts by creating final landforms that are safe, stable and compatible with the surrounding landforms.
- Leave the site in a condition where the risk of adverse effects to people, fauna, and the environment in general, has been reduced to a level acceptable to key stakeholders.
- Ensure that contaminants levels are below recognised criteria and minimise offsite pollution.

#### **Completion Criteria**

Completion criteria are an agreed set of environmental indicators which, upon being met, would demonstrate successful rehabilitation of a site. Completion criteria are specific to the operation and reflect the environmental, social and economic circumstances of the mine site, whilst also being flexible enough to adapt to changing circumstances without compromising the ultimate agreement.

URS noted that the completion criteria have not been fully defined as yet for Mupane. The also noted however that some objectives have been outlined in the Closure and Rehabilitation Process section of the Mupane EMP (Geoflux Pty Ltd, 2003b). The objectives that are seen by URS as most relevant to the development of completion criteria are:

- All process infrastructure should be demolished, dismantled and disposed of for use elsewhere, sold off as scrap or be buried on site.
- Ensure that the pit high-wall has been made safe, particularly in relation to geotechnical stability, and erect appropriate signage.
- Ensure that uncontrolled access to the ramp leading into the pit is prevented.
- All foundation work should be broken down to a depth of 0.5 m below the soil surface, or covered with an equal depth of material so that it can be revegetated.
- Ensure that reclamation sites are integrated into the local landscape.
- Restore functionality to soils from which mining infrastructure has been removed.
- Spread topsoil on the slopes of waste dumps.
- Establish a self-sustaining vegetation community on areas disturbed by mining activities and sites from which mining infrastructure has been or will be removed.

 Maintain all rehabilitated areas in a manner that will facilitate the end agricultural use of the rehabilitated land surface.

#### Legal Obligations

The legislation relevant to the closure of the Mupane Project include:

- Mines and Minerals Act (1999).
- Mines, Quarries, Works and Machinery Act (1978).
- Tribal Land Act (1968).
- Monuments and Relics Act (2001).

In addition, there are two Notarial Mineral Leases relevant to Mupane. These are:

- Notarial Mineral Lease: Ngangane Ranches (Proprietary) Limited; and
- Notarial Mineral Lease: Louis Jeremiah Cornelius Alberts

These leases contain conditions that relate to mine closure.

#### Preliminary Mine Closure Cost Estimate

In 2005, URS was commissioned by Gallery Gold to provide an estimate of closure costs so that adequate financial provisioning can be made for the decommissioning, final rehabilitation and closure of the Mupane Gold Mine. In this study, the definitions used in the ANZMEC and MCA mine closure guidelines for decommissioning, remediation and rehabilitation were adopted. These definitions are outlined below.

- **Decommissioning**: the process that begins near, or at, the cessation of mineral production and ends with removal of all unwanted infrastructure and services.
- **Remediation**: to clean-up or mitigate contaminated soil or water.
- **Rehabilitation**: the return of disturbed land to a stable, productive and self-sustaining condition, after taking into account beneficial uses of the site and the surrounding land.

URS commenced the development of the cost estimate with the identification of the facilities and other components of the Mupane site that would remain at closure, and those that are expected to have been decommissioned, remediated, rehabilitated and closed out during operations. A closure inventory was compiled by URS as a basis of the preliminary closure cost estimate, which identified the main work areas and infrastructure. The cost estimate was prepared using earthmoving and other rates provided by GGL, laboratory analyses rates and rates from previous studies.

The cost estimate completed by URS for the closure of the Mupane operation indicates a total cost of 20.1 million Botswana Pula or US\$3.2 million. URS have noted that this cost estimate includes the following

- Costs for biannual water monitoring, biannual geotechnical monitoring and technical studies (surface water, groundwater and the final void water studies) for all pits,
- Costs for the dismantling of infrastructure for the office and amenities, stores and crib
  room, laboratory, cyanide storage area, geology container, sewage farm and potable
  water plant, as deconstruction activities are usually done under a job lot contract.

 Costs for rehabilitation monitoring for five years, with an annual cost of BWP 219,739 (excluding expenses), which will commence after the majority of the rehabilitation has been completed

## **Human and Community Relations**

GGL and the Mupane Project have a strong commitment to developing and sustaining a relationship with national Botswana's and the local communities.

Mupane has recently received accreditation and certification as a trainer in Botswana.

In addition, Mupane is currently in the process of completing and submitting a workforce nationalisation plan.

## 21 INTERPRETATION AND CONCLUSIONS

The mineralization at the Mupane Gold Mine can be classified as an Orogenic Gold Deposit. It is hosted by a cherty pelitic sediment and the mineralization is localized in extensional zones associated with disharmonic folding of the host sequence. The deposit is characterized in fresh rock by replacement of Fe carbonates by pyrite, pyrhhotite and arsenopyrite associated with grey silicification and quart veining.

The mine has been in production since early 2005 and the orebodies are well constrained and reserves at the mine conform to the JORC code. Reconciliations between resource models and grade control are as expected.

Mineralization below the current Tau pit is currently being tested to determine potential for extensions of the orebody at depth. In the immediate vicinity of the existing resources several geophysical and geochemical targets are being tested by RC and diamond drilling

There appears to be some possibility of adding incremental ounces to the existing reserve base at Mupane however the potential for discovery of a large, standalone orebody in the Tati belt is considered limited.

Mining costs are as expected, however there is the possibility that costs may rise in time with increasing fuel and consumable costs.

Despite recent challenges, the processing plant is performing above expectations whilst processing oxide ore types. Challenges relating to the processing of transitional ore are being addressed and the flotation plant is being commissioned in preparation for the processing of fresh ore.

All necessary approvals and certifications are in place at Mupane and regular environmental audits and reviews are being conducted.

## 22 REFERENCES

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Hellman and Schofield Pty Ltd, Feb 2002. Mupane Resource Estimation, unpub.

URS Pty Limited, January 2006, Environmental Considerations Mupane Gold Project Input to Form 43-101

## 23 DATE & SIGNATURE

# 24 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES

This section includes discussion and comment on technical and economic aspects of the Life of Mine plan ("LOM") of the Mupane Gold Project.

The project plant is designed to treat 1.0 Mtpa to 1.2 Mtpa of ore, giving an annual production of approximately 100,000 gold ounces per annum.

Unless otherwise stated, further reference in this section to the LOM plan is in relation to the mine life period commencing from 1 July 2005 to the cessation of operations.

The LOM plan is dependent on assumptions of long-term gold prices and the impact that this has on cut-off grades, potential increases and/or reductions in the project's mineral resources and reserves and the return on project capital expenditure.

Production, recovery and revenue forecasts detailed in the LOM plan are based on the depleted reserve estimates relating to the open-pit designs for the Tau, Tholo, Kwena, Signal Hill and Golden Eagle deposits. Achievement of the forecast is dependent on achievement of planned mining activity and plant throughput levels.

Forward projections of the operating costs are based on the detailed cost estimates prepared for the bankable feasibility study and derived from historical performance to date of the Mupane Gold Project; modified for expectations of future cost impacts related to factors such productivity changes and cost control initiatives

Provision is made in the LOM plan for ongoing sustaining capital expenditures. The principal areas of this expenditure occur in relation to the tailings dam uplifts and replacement of mine vehicles and equipment. No significant long-term capital projects have been approved or are included in the LOM plan forecast period.

The LOM plan is based on technically and economically achievable mining and production parameters, which are taken into account in determining the project Mineral Reserve statement. It is likely that the input parameters for mining costs, operating costs, plant throughput, processing recovery and capital costs will vary from those actually achieved.

The impact of the combination of variances may result in actual results being achieved that differ materially from the forward projections in the LOM plan. Sensitivity ranges accounting for variants in metal prices, grade, capital and operating costs are included. However these are simplistic, and should be considered as indicative only.

The Mupane Gold Project is subject to inherent risks including:

- Commodity price
- Inflation Rate
- Country risk
- Exchange rate
- Environmental
- Mining risk

- Uninsured
- Opportunity
- Combination risks

Gold is a globally traded commodity. It differs from other precious metals in that it is traded freely both as a commodity and as a monetary asset in a number of markets, and there is no requirement to enter into agency relationships or offtake agreements to realize value for production. Trading of the metal occurs as spot sales, forward sales and in a range of derivative financial instruments such as options.

The following contracts have been entered into at Mupane pursuant to a formal tender process arrangement, on normal commercial terms. Detailed documentation of all contracts is available.

- Basil Reed Mining Contract
- Stanley Drilling Grade Control Drilling Contract
- Refining Contract Project Finance Facility. Construction of the Mupane Gold Project was funded mainly through a US\$26.5 million amortising cash advance facility arranged with Macquarie Bank Limited and Investec Bank (Mauritius) Limited, with set quarterly repayment periods which commenced on 31 March 2005 concludes at maturity on 310 June 2008.
- Hedging and Forward Sales Contract.
- Botswana Power Corporation Power Supply Contract
- Water Utilities Corporation Water Supply Contract

The revenues, profits and project expenditures of the Mupane Gold Project are subject to the laws of Botswana relating to:

- Gold Royalty
- Income Tax
- VAT
- Royalties of 5% of gross gold sales paid in terms of the Botswana Mines and Minerals Act.

The Mupane Gold Project is operated under a mining licence owned 100% through Mupane Gold Mining (Pty) Limited ("MGM"), which is a Botswanan registered mining company and is taxed in accordance with the Twelfth Schedule of the Botswana Income Tax Act. Mining profits are taxed according to the following formula:-

Annual Tax Rate = 
$$70 - (1500)$$

where **X** is the profitability ratio calculated as taxable income as a percentage of gross income, provided that the minimum rate applicable is the company flat rate of 25% of annual taxable income. Royalties paid are deductible in the year of payment. To the extent that MGM's debt to equity ratio exceeds 3:1, the corresponding proportion of the interest paid will be disallowed as a deduction, and taxed as a dividend.

Mining capital expenditure is deductible in full in the year in which the expenditure was incurred. Sales of plant and equipment at the end of the project will be taxed at 25%.

VAT is zero rated in respect of gold exports, and VAT incurred on production inputs is refundable.

Cash flow forecasts for the Mupane Gold Project are estimated based on the proven and probable mineral reserves only as shown in Table 25\_1.

|              | PROVEN           |                |              |                  | PROBABLE       |              |                  | TOTAL          | -            |
|--------------|------------------|----------------|--------------|------------------|----------------|--------------|------------------|----------------|--------------|
|              | TONNES<br>(,000) | GRADE<br>(g/t) | CONTAINED oz | TONNES<br>(,000) | GRADE<br>(g/t) | CONTAINED oz | TONNES<br>(,000) | GRADE<br>(g/t) | CONTAINED oz |
| Tau          | 3,823            | 3.60           | 443,000      | 25               | 2.88           | 2,000        | 3,848            | 3.60           | 445,000      |
| Tholo        | 682              | 2.51           | 55,000       | 2                | 2.01           | 0            | 683              | 2.51           | 55,000       |
| Kwena        | 279              | 1.84           | 17,000       | 3                | 1.84           | 0            | 282              | 1.84           | 17,000       |
| Signal Hill  | 633              | 2.44           | 50,000       | 115              | 2.46           | 9,000        | 748              | 2.44           | 59,000       |
| Golden Eagle | 342              | 2.59           | 28,000       | 108              | 2.25           | 8,000        | 450              | 2.51           | 36,000       |
| TOTAL        | 5,759            | 3.20           | 593,000      | 253              | 2.40           | 19,000       | 6,012            | 3.17           | 612,000      |

Table 25\_1 Mineral reserve estimate at 30 June 2005

A summary of the current Life of Mine Plan (LOM) is shown in Table 25\_2 below with annual numbers based on 12 month fiscal year periods ending June 30.

#### Mupane Gold Mining (Pty) Limited

Pre-tax Cash Flow Summary

|                                |             | 2005/06          | 2006/07       | 2007/08          | 2008/09       | 2009/10       | 2010/11       | 2011/12 | TOTAL         |
|--------------------------------|-------------|------------------|---------------|------------------|---------------|---------------|---------------|---------|---------------|
| Metal Prices                   |             |                  |               |                  |               |               |               |         |               |
| Spot Gold Price                |             | \$400            | \$400         | \$400            | \$400         | \$400         | \$400         | \$400   |               |
| Price received for forward sal | es          | \$402            | \$402         | \$402            | \$402         |               |               |         |               |
| Mining                         |             |                  |               |                  |               |               |               |         |               |
| <u>Ore</u>                     |             |                  |               |                  |               |               |               |         |               |
| Tonnes mined                   | 000 tonnes  | 1,314            | 1,047         | 1,155            | 1,188         | 864           | -             | -       | 5,568         |
| Grade                          | g/t         | 3.01             | 3.70          | 3.20             | 3.19          | 3.41          | -             | -       | 3.28          |
| Waste                          |             |                  |               |                  |               |               |               |         |               |
| Waste (incl. subgrade)         | 000 tonnes  | 8,416            | 9,786         | 4,896            | 3,855         | 1,536         | -             | -       | 28,487        |
| Strip ratio                    | t:t         | 6.40             | 9.35          | 4.24             | 3.25          | 1.78          |               | -       | 5.12          |
|                                |             |                  |               |                  |               |               |               |         |               |
| Processing                     | 000 +       | 4.050            | 4.404         | 4.400            | 4.400         | 4.440         | 450           |         | 0.040         |
| Mill Feed                      | 000 tonnes  | 1,258            | 1,131         | 1,160            | 1,166         | 1,146<br>3.22 | 152           | -       | 6,012         |
| Grade                          | g/t<br>%    | 3.18<br>89.2%    | 3.18<br>91.3% | 3.18<br>90.7%    | 3.16<br>89.1% | 3.22<br>89.1% | 3.16<br>90.0% | 0.0%    | 3.18<br>89.9% |
| Recovery Ounces Produced       | %<br>ounces | 89.2%<br>114,753 | 105,601       | 90.7%<br>107,715 | 105,467       | 105,609       | 13,888        | 0.0%    | 553,032       |
| Ounces i Toduced               | ounces      | 114,733          | 103,001       | 107,713          | 103,407       | 103,003       | 13,000        |         | 333,032       |
| Revenue                        |             |                  |               |                  |               |               |               |         |               |
| Forward Sales                  | ounces      | 77,776           | 77,776        | 77,776           | 40,675        | -             | -             | -       |               |
| Spot Sales                     |             | 36,977           | 27,825        | 29,939           | 64,792        | 105,609       | 13,888        | -       |               |
| Revenue                        | US\$000's   | 46,057           | 42,396        | 43,241           | 42,268        | 42,243        | 5,555         | -       | 221,761       |
| Costs                          | US\$000's   |                  |               |                  |               |               |               |         |               |
| Mining                         |             | 15,707           | 17,162        | 12,921           | 11,633        | 7,369         | -             | -       | 64,792        |
| Processing                     |             | 10,067           | 9,887         | 8,738            | 8,700         | 8,834         | 1,020         | 29      | 47,275        |
| G&A                            |             | 3,676            | 3,625         | 3,528            | 3,504         | 3,501         | 351           | 50      | 18,234        |
| Government Royalty             | 5.0%        | 2,303            | 2,120         | 2,162            | <u>2,113</u>  | <u>2,112</u>  | <u>278</u>    |         | <u>11,088</u> |
| Total Operating Costs          |             | 31,752           | 32,793        | 27,350           | 25,950        | 21,816        | 1,648         | 79      | 141,388       |
| Capital and Rehabilitation     | US\$000's   |                  |               |                  |               |               |               |         |               |
| Capital Costs                  |             | 4,415            | 835           | 835              | 118           | 35            | 4             | -       | 6,243         |
| Rehabilitation                 |             |                  |               |                  |               |               |               | 3,250   | 3,250         |
| Pre-tax Cash Flow              | US\$000's   | 9,890            | 8,767         | 15,057           | 16,200        | 20,392        | 3,903         | (3,329) | 70,880        |

Table 3\_3 Mupane LOM Pre-tax Cashflow Summary

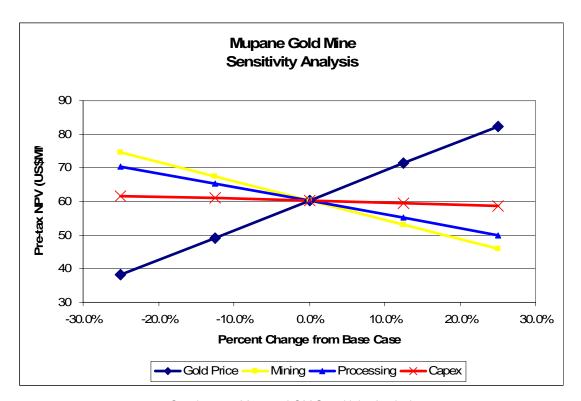
The cash flow forecasts are the basis for generating the post-tax pre-finance cash flows which are used to derive a Net Present Value ("NPV") for the Mupane Gold Project using discounted cash flow ("DCF") valuation techniques.

Figure 23\_1 presents the impact of changes in the project economic parameters in summary form.

Sensitivity studies have been undertaken on the financial model for the following scenarios:-

Gold Price ± 12.5%, ± 25%
 Mining Costs ± 12.5%, ± 25%
 Processing Costs ± 12.5%, ± 25%
 Capital Costs ± 12.5%, ± 25%

The effect of these scenarios on the net present value (NPV) are presented in Graph 3\_1 below.



Graph 23\_1 Mupane LOM Sensitivity Analysis

The project is most sensitive to changes in the gold price. Sensitivity to variance in the gold price is synonymous with the effect of variance in the process gold recovery rate and/or the gold grade.

On the basis of forecast cash flows, including costs of capital, the project is forecast to achieve its payback in the guarter ending 31 December 2008.

The Mupane Gold Project LOM plan projects a mine life of 5 ½ years to 2011.

The LOM plan is based on Proven and Probable reserves only and does not include inferred resources defined at Tau, Tholo, Kwena and Signal Hill, since as they have not yet been

converted to mineral reserves. These inferred resources associated with the deposits aggregate to 121,000oz. There is a reasonable expectation that these resources may ultimately be converted to economic reserves, based on a elevated gold prices of experienced in recent times.

## 25 CERTIFICATES OF QUALIFICATIONS

#### **MARCUS J TOMKINSON**

I Marcus J Tomkinson, do hereby certify that:

- 1) I am an employee of Gallery Gold Limited, 9 Havelock Street, West Perth, Australia
- 2) I am a graduate of Keel University, Staffordshire, UK (BSc Geology/Education) and Southampton University, Hampshire, UK (PhD Geology)
- 3) I am a fellow of the Australian Institute of Mining and Metallurgy
- 4) I have worked as a geologist for 22 years as a geologist since graduation. My relevant experience for the purpose of this technical report is:
  - 1) Experience at all levels of exploration from geologists to country exploration manager and GM Exploration in over 20 countries with 6 companies
  - 2) Experience of mine geology and reserve/resource estimations from South Africa, Australia, South America, and Thailand
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined by NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI43-101
- 6) I contributed to writing all sections of the technical report
- 7) I have visited the site at Mupane on numerous occasions in 2005
- 8) I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the technical report, the omission of which to disclose which makes the technical report misleading
- 9) I have read the National Instrument 43-101F1, and the technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1
- 10) I consent to the filing of this technical report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of this technical report.

Dated January 18, 2006

#### (Signed)

Marcus J Tomkinson, BSc., PhD., F AusIMM.

#### **LINTON J PUTLAND**

I Linton J Putland, do hereby certify that:

- 1) I am an employee of Gallery Gold Limited, 9 Havelock Street, West Perth, Australia.
- 2) I am a graduate of the Western Australian School of Mines, Kalgoorlie, Western Australia (BEng Mining).
- 3) I am a member of the Australian Institute of Mining and Metallurgy.
- 4) I have worked as a Mining Engineer for 18 years since graduation. My relevant experience for the purpose of this technical report is:
  - 1) Experience at all levels of mining engineering from operations, management and technical services.
  - 2) Experience in conducting and managing Feasibility Studies and project evaluations.
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association (as defined by NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI43-101.
- 6) I contributed to writing all sections of the technical report.
- 7) I have visited the site at Mupane on numerous occasions in 2005.
- 8) I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the technical report, the omission of which to disclose which makes the technical report misleading.
- 9) I have read the National Instrument 43-101F1, and the technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.
- 10) I consent to the filing of this technical report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of this technical report.

Dated January 18, 2006

#### (Signed)

Linton J Putland, BEng (Mining), AusIMM.

#### **Nicolas James Johnson**

As a contributing author of the reports entitled "Hellman & Schofield, Jan 2003, Mupane Resource Estimation", "Hellman & Schofield, Feb 2002, Signal Hill Resource Estimation", "Hellman & Schofield, Jan 2003, Signal Hill Resource Estimation" and "Hellman and Schofield, Updated Tau, June04", I hereby state:-

- 1. My name is Nicolas James Johnson and I am a full time employee with the firm of Hellman & Schofield Pty. Ltd. of Suite 6, 3 Trelawney Street, Eastwood, NSW. My residential address is 38 Holland Way, Kingsley, Western Australia.
- 2. I am a practising geologist. I am a member of the Australian Institute of Geoscientists.
- 3. I am a graduate of La Trobe University and hold a Bachelor of Science (Honours) degree (1988).
- 4. I have practiced my profession continuously since 1988.
- 5. I am a "qualified person" as that term is defined in National Instrument 43-101 (Standards of Disclosure for Mineral Projects) (the "Instrument").
- 6. I have personally visited the Mupane Project on several occasions, the last being April, 2005.
- 7. I participated in the resource estimation studies, which are summarised in Section 17 (but not the reserves listed in section 17.13).
- 8. I am not aware of any material fact or material change with respect to the subject matter of the Study, which is not reflected in the Study, the omission of which would make the Study misleading.
- 9. I am independent of Gallery Gold Limited pursuant to section 1.5 of the Instrument.
- 10. I have read the National Instrument and Form 43-101F1 (the "Form") and the Study has been prepared in compliance with the Instrument and the Form.
- 11. I do not have nor do I expect to receive a direct or indirect interest in the Gallery Gold Limited, and I do not beneficially own, directly or indirectly, any securities of Gallery Gold Limited or any associate or affiliate of such company.

Dated at Perth, Western Australia, on 18th January, 2006,

#### (Signed)

Nicolas James Johnson Consultant Geologist Hellman and Schofield Pty Ltd