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## J2225

# NI 43-101 Technical Report on the Blanket Gold Mine, Zimbabwe

Prepared by The MSA Group on behalf of:

Caledonia Mining Corporation



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# Caledonia Mining Corporation

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This document has been prepared for the exclusive use of Blanket Mine (1983) (Private) Limited for and on behalf of its parent company Caledonia Mining Corporation (Caledonia) on the basis of instructions, information and data supplied by them.



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#### 1 SUMMARY

#### Overview

The Blanket Gold Mine is an operating gold mining venture owned by Caledonia Mining Corporation and is situated approximately 130 km to the south of Bulawayo, in south-western Zimbabwe.

The mine has been in operation since 1906 and has produced 1 073 000 ounces of gold since that time. The Blanket Mine property comprises 225 blocks of claims covering an area of 2 540 ha, and operates under a Special Licence (No. 5030) which was issued under the Mines and Minerals Act of 1961 (Chapter 21:05).

The Blanket Mine is situated on the north-western limb of the Gwanda Greenstone Belt, along strike from several other gold deposits and is one of the few remaining producing gold mines out of the approximately 268 mines once worked in the Gwanda belt.

The geological setting is dominated by a basal Felsic Unit comprising quartz schists and quartz-sericite schists, overlain by the Mafic Unit comprising a lower zone of ultramafic rocks and banded iron formations and an upper zone of massive to pillowed lavas with intercalated sediments. A low-angle transgressive shear zone up to 50 m wide cuts through the Mafic Unit and is the locus of the gold ore bodies. The Blanket Mine comprises a series of deposits along a strike length of about 3 km, ranging from Jethro in the south, through Blanket Section, Feudal, AR South, AR Main, Sheet, Eroica and Lima.

Mineralisation occurs in near-vertical shoots along an approximate north-south axis. Two main types of mineralisation are recognised, namely disseminated sulphide replacement (DSR) type mineralisation forming the bulk of the orebodies, and gold-bearing quartz-filled shear zones.

#### **Mineral Resources and Mineral Reserves**

The Mineral Resources as at 31 December 2010 were as follows:

#### **Summary of Mineral Resources**

Property: Blanket Mine
Date: 31-Dec-10
Gold Price: US\$1100/oz

Silver Price:

#### Reserve Summary for US\$1100/oz

Classification	tonnes (x 1,000)	grade (Au g/t)	Au ounces (x 1,000)	grade (Ag g/t)	Ag ounces (x 1,000)
Measured	=	-	-	-	-
Indicated	510.0	3.79	62.1	-	-
TOTAL	510.0	3.79	62.1	-	-
Inferred	2,408.2	5.27	408.0	-	-
TOTAL	2,918.2	5.01	470.2	-	-

Notes:

Resources to be reported exclusive of reserves



The Mineral Reserves as at 31 December 2010 were as follows:

#### **Summary of Mineral Reserves**

Property: Blanket Mine
Date: 31-Dec-10
Gold Price: US\$1100/oz

Silver Price:

#### Reserve Summary for US\$1100/oz

Classification	tonnes	grade	Au ounces	grade	Ag ounces
	(x 1,000)	(Au g/t)	(x 1,000)	(Ag g/t)	(x 1,000)
Proven	1,326.1	4.02	171.4	-	-
Stockpiles	-	-	-	-	-
Subtotal	1,326.1	4.02	171.4	-	-
Probable	2,513.7	3.66	295.8	-	-
TOTAL	3,839.8	3.78	467.2	-	

Please note that as per SRK recommendations of 2002, pillars at 50% discount are included in proven.

#### **Project Risks**

The definition of Mineral Resources using manual interpretation of the sampling data and the geologists" orebody knowledge is considered reasonable. However, the lack of 3D visualisation in structurally complex orebodies such as those at Blanket does raise some concerns around geotechnical stability of the stopes and associated development as well as the volumes of the Mineral Resources as the assay footprint is projected 7.5m above and below the levels. Arguably 3D models have a similar degree of extrapolation and since the operation is generally functioning well using this method, there is no immediate point of concern with the volume definition.

The use of length weighted grade calculations for resource estimation is not ideal as it can result in severe conditional bias; it ignores the spatial relationship of the data, and is affected by clustering of values in high grade domains. While this method is not ideal, it may be used to declare global *in situ* Mineral Resources; however local estimation at a level-by-level basis should be avoided. However, the fact that the mine is achieving good reconciliation factors (Mine Call) using this estimation method speaks to the reasonability of the methodology within the context of this mine.

The use of sludge holes to generate assay data for use in resource estimation could result in the possibility of fines loss during sample capture and resultant under-reporting of grade. Further, the mixing of different sample sizes in resource estimation results in sample support induced errors. Improvements in the sampling methodology are suggested. The lack of a best practise quality assurance and quality control (QAQC) program at Blanket potentially undermines confidence in the assay database. Improvements in QAQC are recommended, within the restrictions imposed by the Zimbabwean legislation, such as a ban on the export of samples.



#### **Project Opportunities**

The increase in the gold price remains an important opportunity for the Blanket Mine property. The increased revenue will provide necessary funds for exploration on site from underground platforms to increase the resource base. The Zimbabwean economy has been dollarized such that the hyper inflationary regiment that was previously in effect has eased off. The marketing of gold in Zimbabwe has been relaxed with direct export now permitted. Blanket Nine now receives proceeds from sell at spot gold price in USD and can retain 100% in hard currency to pay for operations. Most inputs for the mine operations are imported from South Africa. The problem with this for the mine is the strengthening of the rand against the dollar.

The already established infrastructure at the property positions it to direct resources towards increasing production rather than baseline capital investment since most of the equipment is in place. The commissioning of the Number 4 shaft and the standby power generator set positions the mine to increase production. This coupled with a loyal, long serving and experienced staff works in the operation's favour as necessary skills are retained.

The property has robust orebodies whose down dip extensions below the current deepest level on the mine are yet to be fully explored. The adjacent property, the Vubachikwe Gold Mine has payshoots extending below 1 km depth. Potential to find new orebodies and increase the resource base exists particularly from platforms afforded by haulage development.

There is an enormous capacity at the plant since Blanket Mine stopped processing old slimes. This capacity provides opportunity to increase production considerably without the need for massive investment in the process plant.



#### 2 INTRODUCTION

This technical report is prepared on behalf of Blanket Mine (1983) (Private) Limited (Blanket) for its parent company Caledonia Mining Corporation (Caledonia), a Canadian registered company which is listed on the Toronto Stock Exchange (TSX – CAL) and on the AIM Market of the London Stock Exchange (LSE–CMCL) and also traded on the NASDAQ–OTCBB (CALVF). Caledonia's website can be accessed on <a href="https://www.caledoniamining.com">www.caledoniamining.com</a>. Blanket Mine (1983) Private Limited is incorporated in Zimbabwe and is the owner and operator of the Blanket Mine and a wholly owned subsidiary of Caledonia.

Caledonia's Canadian representational address is:

Suite 1201 67 Yonge Street Toronto Ontario Canada M5E 1J8

#### 2.1 Scope of Work

The MSA Group (MSA) has been commissioned by Blanket on behalf of Caledonia to provide an Independent Technical Report on its Blanket gold mining and exploration property located in the Gwanda area of Zimbabwe, in which Blanket holds a 100% interest

This Technical Report has been prepared to comply with disclosure and reporting requirements set forth in the Toronto Stock Exchange (TSX) Corporate Finance Manual, Canadian National Instrument 43-101, Companion Policy 43-101CP, Form 43-101F1, the "Standards of Disclosure for Mineral Projects" of December 2005 (the Instrument) and the Mineral Resource and Reserve classifications adopted by CIM Council in November 2010.

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

#### 2.2 Principal Sources of Information

MSA has based its review of the property on information provided by Blanket and Caledonia, along with technical reports by Government agencies and previous tenements holders, and other relevant published and unpublished data. A listing of the principal sources of information is included at the end of this Technical Report. A site visit was made during the period 5 to 7 June 2011 to the Blanket property in Zimbabwe We have endeavoured, by making all reasonable enquiries, to confirm the authenticity and completeness of the technical data upon which the Independent Technical Report



is based. A final draft of the report was also provided to Caledonia, along with a written request to identify any material errors or omissions prior to lodgement.

The Technical Report has been prepared on information available up to and including 28 June 2011. The Mineral Resources and Mineral Reserves reflected in this report are based on the Blanket Gold Mine Mineral Reserve Reports prepared by Blanket and dated 31 December 2009 and 31 December 2010. MSA has produced its own financial model based on these mineral reserves to derive a discounted cash flow model, undertake a sensitivity analysis and determine a net present value for the mine.

#### 2.3 Qualifications, Experience and Independence

MSA is an exploration and resource consulting and contracting firm which has been providing services and advice to the international mineral industry and financial institutions since 1983. This Technical Report has been compiled by Bruno Bvirakare, Justin Glanvill, Joel Mungoshi, Vaughn Duke and John Sexton. Peer review has been undertaken by Robert Croll and Mike Robertson.

Mr Bruno Bvirakare is a professional geologist with 15 years" experience in exploration and mining of Archaean gold deposits and other commodities. He has worked on producing gold mines in Zimbabwe and a number of projects on various commodities elsewhere on the Africa continent. He is a registered professional scientist with the South African Council for Natural Scientific Professions (SACNASP), and a Member of the Geological Society of South Africa (MGSSA). Mr Bvirakare has the appropriate relevant qualifications, experience, competence and independence to act as a "Qualified Person" (QP) as that term is defined in NI 43-101. Mr Bvirakare serves as the overall QP for this Technical Report. Mr Bvirakare's certificate as a QP is attached in Appendix 2 of this Technical Report.

Mr Justin Glanvill is a professional geologist with 13 years" industry experience with a number of multinational mining and exploration companies and in a variety of commodities. He has worked on gold projects in South Africa and elsewhere. He is an Associate Consulting Geologist with MSA, a registered professional scientist with South African Council for Natural Scientific Professions (SACNASP), a Member of the Geological Society of South Africa (MGSSA) and the Geostatistical Association of South Africa. Mr Glanvill has the appropriate relevant qualifications, experience, competence and independence to act as a QP as that term is defined in NI 43-101.

Mr Joel Mungoshi is a metallurgical engineer with 23 years" industry experience with a number of multinational mining and exploration companies and in a variety of commodities. He has worked on gold projects in South Africa and elsewhere. He is a Member of the Southern African Institute of Mining and Metallurgy. Mr Mungoshi has the appropriate relevant qualifications, experience, competence and independence to act as a QP as that term is defined in NI 43-101.

Mr Mike Robertson is a professional geologist with 22 years" experience, the majority of which has involved the exploration and evaluation of gold and base metal properties



in Southern, Central and East Africa, the Middle East, Australia, Canada, Mexico, Russia and the CIS states. Mr Robertson is Principal Consultant – Gold and Base Metals with The MSA Group, a Member of the South African Institute of Mining and Metallurgy (SAIMM) and a Professional Natural Scientist (PrSciNat) registered with the South African Council for Natural Scientific Professions.

Mr Robert Croll, who is a professional mining engineer and a Qualified Valuator as that term is defined by the Special Committee Of The Canadian Institute Of Mining, Metallurgy and Petroleum on Valuation of Mineral Properties (CIMVAL), with over 35 years" experience in mining and valuation of mineral projects within Africa and elsewhere internationally. Mr Croll is a Fellow of the South African Institute of Mining and Metallurgy.

Neither MSA, nor the authors of this Technical Report, have or have had previously, any material interest in Caledonia or the mineral properties in which Caledonia has an interest. Our relationship with Caledonia is solely one of professional association between client and independent consultant. This Technical Report is prepared in return for professional fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this Technical Report.

#### 2.4 Current Personal Inspection

A site visit was made during the period 5 to 7 June 2011 to Blanket Gold Mine by Mr Bruno Bvirakare BSc., PrSciNat, and a QP as that term is defined in NI 43-101. A visit was made to the mine, the treatment plant, the waste dumps, and the sample assay laboratory and data management section.

#### 2.5 Purpose of the Technical Report

The purpose of the work done by MSA was to re-establish regular public reporting of the Blanket Mine mineral reserves and mineral resources on an annual basis. The purpose was not to review the exploration work being done, or proposed to be done, on the Blanket Mine, nor to make recommendations as to further exploration that should be done. Hence there is no material discussion in this Technical Report, or in the summary above, of the exploration work done, or which could be done, on the Blanket Mine property.



#### 3 RELIANCE ON OTHER EXPERTS

MSA assumed that all of the information and technical documents reviewed and listed in the "References" section of this report are accurate and complete in all material aspects. While MSA carefully reviewed all of this information, MSA has not concluded any extensive independent investigation to verify their accuracy and completeness. The information and conclusions contained herein are based on information available to MSA at the time of preparation of this report.

MSA has viewed details regarding the claims that collectively comprise the Blanket Gold Mine, and other properties held by Blanket within the Gwanda Greenstone Belt.

MSA has not independently verified, nor is it qualified to verify, the legal status of these concessions. The present status of tenements listed in this report is based on information and copies of documents provided by Caledonia, and the report has been prepared on the assumption that the tenements will prove lawfully accessible for evaluation.

Similarly, neither MSA nor the authors of this report are qualified to provide comment on environmental issues associated with the Caledonia Projects.

Caledonia has reviewed draft copies of this report for factual errors. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence the statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this report.

MSA reserves the right to, but will not be obligated to, revise this report and conclusions thereto if additional information becomes known to MSA subsequent to the date of this report.



#### 4 PROPERTY DESCRIPTION AND LOCATION

Blanket Mine is situated about 130 km to the south of Bulawayo, Zimbabwe's second largest city, and 15 km northwest of the town of Gwanda, the provincial capital of Matabeleland South, in south-western Zimbabwe (Figure 4-1). It lies 196 km northwest of the Beit Bridge Border post between Zimbabwe and South Africa. The mine and mill complex is shown in the photograph in Figure 4-2.

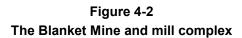
The general geographic coordinates of Blanket Mine are Latitude 20°52' S, Longitude 28°54' E. Coordinates for 347 individual claims are presented in Appendix 4. The area is covered by topographic sheet number 2028D4.

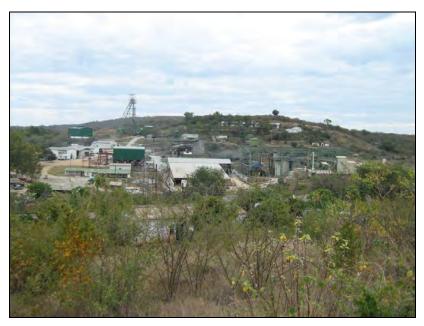
ANGOLA ZAMBIA NAMIBIA SOUTH AFRICA MOZAMBIQUE MASHONALAND MASHONALANE Chithogwiza MATABELECAND NORTH **BOTSWANA** BLANKET MINE Zimbabwe MOZAMBIQUE Province boundary **BOTSWANA** National capital Railroad SOUTH AFRICA

Figure 4-1

Map showing the location of the Blanket Mine in south-western Zimbabwe







Blanket Mine covers the claims of Jethro, Blanket Section, Feudal, AR, Sheet, Eroica and Lima, comprising a total area of approximately 2 540 ha, as documented by Applied Geology Services (AGS) in their NI 43-101 Technical Report dated July 2006. This is the same as quoted by SRK in 2002, at which time the company was reported to be converting part of these clams into a Mining Lease (Figure 4-3), which offers more protection to the tile holder and confers on him surface as well as mineral rights.

Claims not covered by the Mining Lease application were reported not to form part of the then current production area (SRK, 2002; AGS, 2006). However, the initial documentation was lost in transit between the offices of the relevant authorities before processing. Blanket Mine was requested to resubmit the application and to deliver it physically to Harare. This was done but to date there has been no response. There was then a Presidential directive to refrain from the issuing of any Mining Lease (or Exclusive Prospective Orders) indefinitely. There is uncertainty on whether this will happen in the near future.

The location, including coordinates, of 347 claims belonging to Blanket Mine were supplied to MSA by Caledonia and are listed in Appendix 4 of this report. Some of these claims are producing claims, whereas others are exploration claims.



Blanket 28°54'E 28°57'E

Figure 4-3
Map showing the area covered by Blanket Mine's Mining Lease application (2006)

In Caledonia"s (2011c) Annual Management Discussion dated 30 March 2011, it is reported that Blanket"s current exploration title holdings in the form of registered mining claims in the Gwanda Greenstone Belt total 78 claims, including a small number under option, covering an area of about 2 500 hectares. Of these claims, 47 are registered as precious metal (gold) blocks covering 415 ha and 31 claims were pegged and are registered as base metal (Cu, Ni, As) blocks, covering an area of 2 085 ha. Gold or precious metal claims measure 10 x 1 ha (10 ha), whereas basemetal claims are larger.



Blanket Mine provided two separate lists of producing claims at Blanket Mine and satellite exploration claims, both dated May 2011. The names of each claim as well as registration and certificate numbers were provided to MSA. These lists are reproduced in Appendix 4.

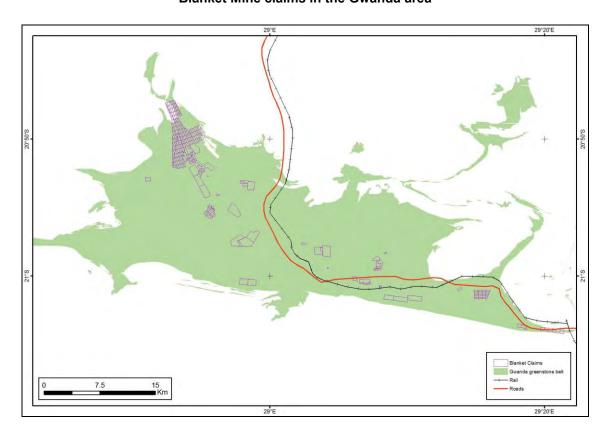


Figure 4-4
Blanket Mine claims in the Gwanda area

Appendix 4 includes all the claims on the Blanket mine complex itself and also satellite claims around the mine. Acquisition and expiry dates, registration and certificate numbers are provided for each claim. The satellite claims are protected by payment of an annual fee to the government. There are no other obligations.

The surface rights appear still to be privately held. Had Blanket Mine successfully converted part of its claims to a Mining Lease, the surface rights as well as the mineral rights would belong to the title holder (AGS, 2006).

A legal due diligence was completed by Roodt and Associates Inc. prior to the acquisition of Blanket Mine by Caledonia. This study confirmed the legal tenure of the mine properties and that there was, at that time, no litigation which materially affected the mine property (AGS, 2006). SRK (2002) reported that the historical tenure situation had not changed for over 20 years and that they were "confident that the mineral rights of the Blanket Mine [were] secure".



In 2008 the Zimbabwean Parliament passed the Indigenisation and Economic Empowerment Act, 2007 which stipulated that 51% ownership of all companies had to reside in the hands of Indigenous Zimbabwean citizens. In February 2010, Statutory Instrument 21 of 2010 dealt with regulations for implementation of the Act. In terms of the regulations Blanket Mine had to submit an implementation plan outlining how Blanket proposes to comply with the requirements of the Act within a 5-year period.

On 25 March 2011 the Zimbabwe Government issued a General Notice via the Government Gazette which announced the following indigenisation regulations applicable to the mining sector (Caledonia Mining Corporation, 2011c) (Annual Management Discussion, 30 March 2011):

- All non-indigenous mining companies would have to transfer a 51% ownership stake
- Only designated entities, as defined, could be considered as indigenous partners
- The valuation of the business must be agreed by the Minister and the Company
- The value of sovereign ownership of mineral resources of exploited and unexploited minerals is to be taken into account in determining the valuation
- All non-indigenous mining companies have to file an implementation plan by 9 May 2011
- The plan must be implemented within six months of March 25, 2011 and after the approval of the implementation plan.

Blanket Mine submitted its Indigenisation Implementation Plan to the Zimbabwean Government on 9 May 2011 and awaits a response. Caledonia is monitoring the situation and is consulting widely on the issue (Caledonia Mining Corporation, 2011a) Notes to the Condensed Consolidated Financial Statements For the three month period ended March 31, 2011 and 2010 Unaudited).

It was not a requirement at the time the title-holdings were granted for corner beacons to be erected. A number of old beacons are observed around the property (Figure 4-5). Subsequently, it has been made a legal requirement to erect corner beacons, but only for newly acquired properties.

The location of known mineralised zones, mineral resources, mineral reserves and mine workings, tailing ponds (Figure 4-6), waste deposits and important natural features and improvements are shown on the general surface layout (Figure 4-7).



Figure 4-5
Old claims beacon at the Blanket Mine

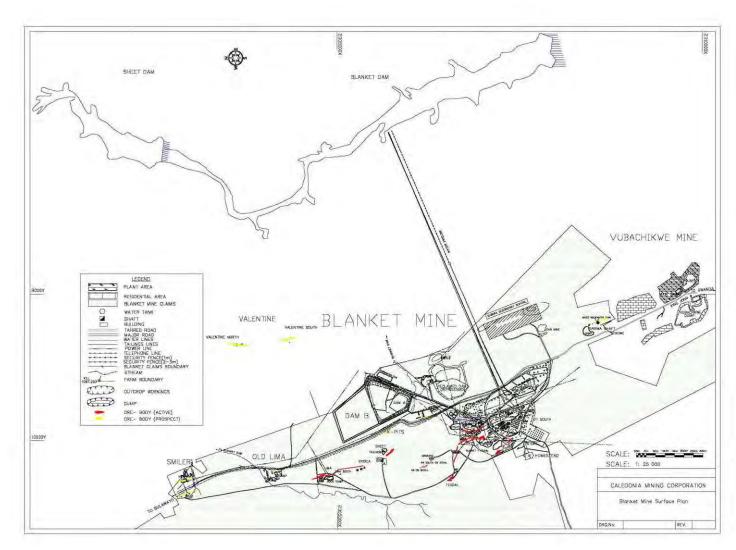


Figure 4-6 Penstock Tailings Dam





Figure 4-7
General surface layout of the Blanket Mine (Source: Blanket Mine)





The property does not appear to be subject to any royalties (other than the legislated royalty of 4.5% of sales value currently being paid to the Government), back-in rights, payments or other agreements and encumbrances. Ore mined from underground carries no third-party royalties. These are covered by payment of the annual claims protection fees to the Ministry of Mines (AGS, 2006).

At the time of writing, there were no known environmental liabilities that the mine is subject to. The mine has complied with all regulatory requirements issued by the authorities.

The Blanket Mine operates under a Special Licence (No. 5030) which was issued under the Mines and Minerals Act of 1961 (Chapter 21:05). The mine's claims are protected under this Act.



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

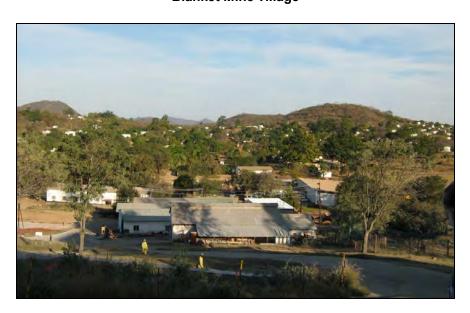
#### 5.1 Physiography and Vegetation

The area around Blanket Mine is hilly and lies at an altitude of about 1 000 m to 1 300 m above sea level (Figure 5-1 and Figure 5-2). Drainage is to the northeast, into the Mchabezi River on which the Sheet dam and the Blanket Dam are located some 5 km to the east of the mine.

Figure 5-1
Blanket Mine setting showing shaft infrastructure (Source: www.caledoniamining.com)



Figure 5-2
Blanket Mine village





The indigenous vegetation is dominated by savannah with Marula (*Sclerocarya birrea*), a variety of *Combretum* species, *Terminalia sericea*, Mopane groves and patches of grassland. Around the mine and local settlements this has been cut down and invaded by secondary thorny scrub dominated by *Dichrostachys cinerea*.

Agriculture is limited to subsistence farming of maize and vegetables (AGS, 2006).

#### 5.2 Access

Access to Blanket Mine is by an all-weather single lane tarred road from Gwanda. Gwanda is linked by national highways to Bulawayo, Harare and the Beit Bridge Border post. Formerly, Zimbabwe had good road infrastructure. However, lack of investment over the past ten to fifteen years has resulted in its deterioration and substantial investment is required country-wide.

The railway line connecting the Zimbabwean national network to South Africa passes through Gwanda.

An airstrip for light aircraft is located 5 km to the northwest of the town (AGS, 2006).

#### 5.3 Climate

The Blanket area has a tropical climate with hot and humid summers and mild winters. The rain season lasts approximately five months, from late October to mid-March. Annual rainfall ranges from 400 mm to 500 mm.

The mine is able to operate year-round (SRK, 2002).

#### 5.4 Local Resources and Infrastructure

The town of Gwanda has a population of approximately 30 000 people and is the regional centre for many scattered settlements. Labourers for the mine are accommodated with their families in a mine village about 1 km from the mine (AGS, 2006).

Mine infrastructure comprises underground workings with head gear and hoist facilities, a process plant, workshops and tailings dam. The general surface layout is shown in Figure 4-7. Stores, workshops and offices, as well as an assay laboratory, lie adjacent to the mine shafts. There is adequate surface area for further expansion.

The two-compartment tailings dam which lies to the east of the mine is operated by Frazer Alexander Zimbabwe. According to SRK (2002) it had a design life of ten years, taking into account the then current life of mine plan. Based on the throughput rate at that time (3 800 tpd), the tailings dam had a remaining capacity of 9.5 Mt. Since then the mine has slimed 6.0 Mt leaving a remaining capacity as at January 2011 of 3.5 Mt. Since the mine no longer treats old slimes, the planned daily throughput has fallen to 1 000 tpd which equates to a life of approximately 14 years. At a production rate



of 1000 tpd the rate of rise (RoR) is 0.54 m per year based on the final design area of 28 ha, which is well below the legal maximum of 2 m per year.

Makeup process water and water for the mine village are derived from the Blanket Dam which has a capacity of 15 Mm<sup>3</sup>. In addition, the mine has several boreholes to provide water during periods of drought (AGS, 2006). The Zimbabwe Water Authority holds all water rights in Zimbabwe. Blanket purchases process and domestic water from ZINWA. It supplements this with underground water and borehole water. No problems have been recorded with water supply.

Two power lines of 11 kVA and 33 kVA connect the mine to the national grid operated by the Zimbabwe Electricity Supply Authority (ZESA). Owing to frequent interruptions to the power supply Blanket Mine has installed its own 10 MVA generator installation consisting of 4 diesel units. The mine can now be self-sufficient and is able to continue its mining and processing operations during disruptions to the grid supply (Caledonia Mining Corporation, 2011g) (30 May 2011).



#### 6 HISTORY

The Blanket Mine is part of the Sabiwa group of mines within the Gwanda Greenstone Belt from which gold was first extracted in the 19<sup>th</sup> century. The "Blanket Mine" is in fact a cluster of mines extending some 3 km from Jethro in the south through Blanket itself, Feudal, AR South, AR Main, Sheet, Eroica to Lima in the north. Blanket Mine has during its lifetime produced over a million ounces of gold (Caledonia Mining Corporation, 2011c, Annual Management Discussion, 30 March 2011).

Following sporadic artisanal working, the Blanket Mine was acquired in 1904 by the Matabele Reefs and Estate Company. Mining and metallurgical operations commenced in 1906 and between then and 1911, 128 000 t were mined. From 1912 to 1916 mining was conducted by the Forbes Rhodesia Syndicate who achieved 23 000 t. During the period 1917–1941 there are no reliable records of mining and it is possible that operations were adversely affected by political instability during World Wars 1 and 2. In 1941 F.D.A. Payne produced some 214 000 t before selling the property to Falconbridge in 1964 (Blanket Mine, 2009).

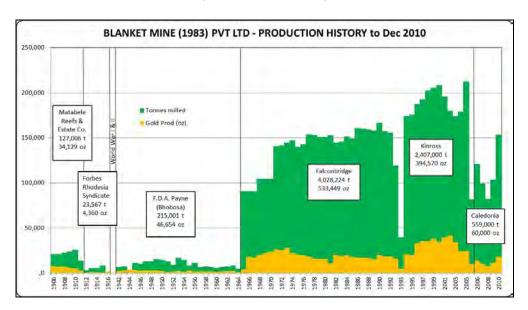
Under Falconbridge, production increased to 45 kg per month and the property yielded some 4 Mt of ore up until September 1993. Kinross Gold Corporation (Kinross) then took over the property and constructed a larger carbon-in-leach (CIL) plant with a capacity of 3 800 t per day (tpd). This was designed to treat both run-of-mine ore and an old tailings dump.

Blanket Mine is currently wholly owned and operated by Caledonia Mining Corporation who completed purchase of the mine from Kinross on 1 April 2006 (www.caledoniamining.com).

Historical production up to December 2010 is tabulated in Appendix 5 and summarised graphically in Figure 6-1. From a production rate of 45 kg per month under Falconbridge gold production reached a level of 110 kg per month between 1995 and 2007, during the period when the tailings were treated (<a href="www.caledoniamining.com">www.caledoniamining.com</a>, 2011).



Figure 6-1
Summary of production at Blanket Mine to December 2010
(Blanket Mine, 2011)



During 2008 all gold mines in Zimbabwe, including the Blanket Mine, were forced to close due to the failure of the Reserve Bank of Zimbabwe (RBZ) to pay for gold sold to the Reserve Bank. At that time gold producers were obliged to sell all gold to the RBZ. Most mines resumed operations in 2009 following liberalisation of export regulations, enabling producers to export gold directly and to retain 100% of the proceeds in foreign currency. Blanket Mine was closed from October 2008 and resumed operations in April 2009 (www.caledoniamining.com, 2011).

Since 2009, Blanket Mine has made capital investments in both underground, surface and township facilities. This included the commissioning of the Number 4 Shaft Expansion Project in September 2010 which increased underground production capacity from 500 tpd to 1 000 tpd, thus increasing gold production capacity from 24 000 ounces per year to just under 40 000 ounces per year (<a href="www.caledoniamining.com">www.caledoniamining.com</a>, 2011). Mining is predominantly by long-hole open stoping methods since at present the bulk of production comes from the AR Main and AR South bodies which are massive ore bodies. The other (tabular) bodies are mined using underhand stoping and at times, shrinkage stoping with jackhammers.



Figure 6-2 Number 4 shaft at Blanket Mine



Figure 6-3
Number 4 shaft hoist room at Blanket Mine



In the first quarter of 2011 gold production increased by 17% to  $7\,322$  ounces compared to  $6\,235$  ounces in the fourth quarter of 2010 and  $3\,129$  ounces in the first quarter of 2010. Gold production in April 2011 was  $2\,737$  ounces. The average



achieved price per ounce of gold was US\$ 1 397 compared with US\$ 1 107 in the first quarter of 2010 (Caledonia Mining Corporation, 2011h) (First Quarter 2011 Results, 18 May 2011). Target production for the third quarter of 2011 and thereafter is 10 000 ounces per quarter. The commissioning of a complete standby generating system commenced on 16 May 2011 and was expected to be completed by the end of the month, after which Blanket should be able to maintain full operations during any interruption to the normal power supply. Ore handling limitations at the 18 and 22 levels have been addressed by raise boring a 120 m long ore pass connecting 18 Level to the 22 Level. The facility was commissioned in May 2011 (Caledonia Mining Corporation, 2011h) (First Quarter 2011 Results, 18 May 2011).

Figure 6-4
Genset and Genset shed at Blanket Mine





Blanket continues to export its gold production to Rand Refineries in South Africa and receives 100% of the sale proceeds in US dollars (Annual Management Discussion, 30 March 2011.

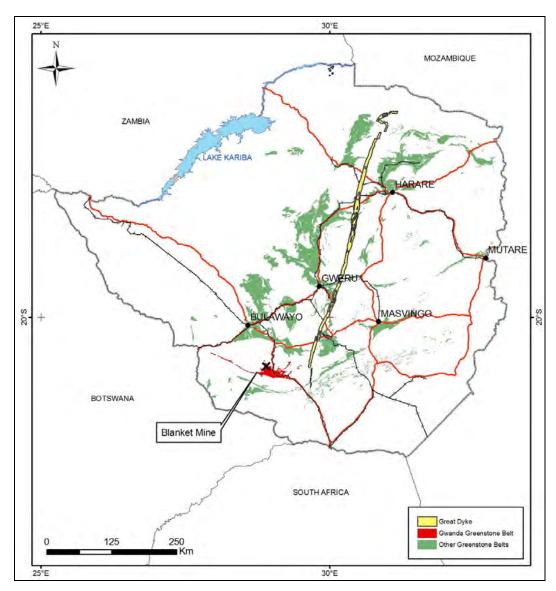


#### 7 GEOLOGICAL SETTING

#### 7.1 Regional Geology

The Archaean Zimbabwe Craton comprises almost 60% of Zimbabwe's land surface in the eastern and central parts of the country (Figure 7-1). Almost all of Zimbabwe's known gold mineralisation occurs in host rocks of the Zimbabwe Craton. The geology of the Craton is characterised by strongly deformed and metamorphosed rocks including high-grade metamorphic rocks, gneisses, older granitoids, greenstone belts, intrusive complexes, younger granites and the Great Dyke (Petters, 1991).

Figure 7-1
Simplified Geological Map of Zimbabwe showing the location of the Blanket Mine



The oldest rocks are a variety of gneisses and tonalities of varying ages, including the Chingezi gneiss, the Mashaba tonalite and the Shabani gneiss (Petters, 1991). Three major sequences of slightly younger supracrustal rocks (gold-bearing greenstone belts) have been recognised (Petters, 1991; Foster, 1989):



- The Sebakwian Group (older greenstones), mostly metamorphosed to amphibolite facies, comprising komatiitic and basaltic volcanic rocks, banded iron formation and minor clastic sediments
- The Lower Bulawayan Group (Belingwean greenstones), comprising basalts, high-Mg basalts, felsic volcanics and mixed chemical and clastic sediments
- The Upper Bulawayan (upper greenstones) and Shamvaian groups, comprising a succession of sedimentary and komatiitic to tholeiitic to calc-alkaline rocks.

Mafic and granitoid intrusives were emplaced during a renewed phase of magmatism between 2.7 Ga and 2.5 Ga. These include the south-southwest-north-northeast trending ultramafic/mafic Great Dyke, which cuts across the pre-existing granite-greenstone terranes; the Mashaba Ultramafic Suite; and two late Archaean granitoid events (Sesombi Suite, c. 2.7 – 2.6 Ga and the Chilimanzi Suite, c. 2.6 Ga) (Petters, 1991).

Three metamorphic belts surround the Zimbabwe Craton:

- The east-northeast trending Archaean Limpopo Mobile Belt separates the Zimbabwe Craton from the Kaapvaal Craton to the south and is characterised by high-grade metamorphic and igneous rocks including amphibolites, gneisses and granulites (Petters, 1991)
- The Magondi Mobile Belt on the northwestern margin of the Craton, formed as a result of deformation and metamorphism of the Palaeoproterozoic Magondi Supergroup. The Magondi Supergroup comprises the Dewaras Group (volcanosedimentary deposits), the Lomagundi Group (sedimentary deposits) and the Piriwiri Group (sedimentary deposits) (Master et al., 2010
- The Neoproterozoic to Cambrian Zambezi Mobile Belt to the north and northeast of the Zimbabwe Craton, consisting of high grade and intensely deformed metasediments with intercalated basement gneisses (Petters, 1991).

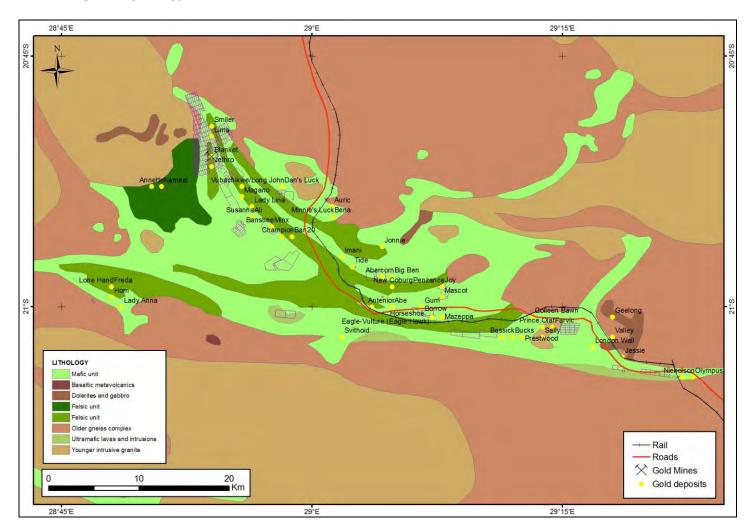
In the north, west, south and southeast of Zimbabwe, the Craton is overlain by Karoo Supergroup sediments and volcanic rocks of Permian-Triassic-Jurassic age, Cretaceous post-Karoo sediments, and Tertiary to Recent Kalahari sands.

#### 7.2 Local Geology

The Blanket Mine is situated on the north-western limb of the Archaean Gwanda Greenstone Belt, along strike from several other gold deposits (Figures 7-1 and 7-2). It is one of the few remaining producing gold mines out of the approximately 268 mines once worked in this greenstone belt (Tyndale-Biscoe, 1940).



Figure 7-2
Regional geology of the Gwanda Greenstone Belt and location of the Blanket Mine Claims





The Gwanda Greenstone Belt is located in south-western Zimbabwe and measures some 70 km in length from east to west and approximately 15 km in width from north to south. The belt in its entirety is typical of greenstone belts of the Zimbabwe Craton and comprises mafic to felsic volcanics with intercalated sedimentary units, including banded iron formations.

In the vicinity of Blanket Mine, the Gwanda Greenstone Belt lithologies comprise felsic schists of either sedimentary or igneous origin, overlain by mafic to ultramafic rocks containing layers of banded iron formation, in turn overlain by a thick sequence of mafic rocks (AGS, 2006). The entire sequence, from Vubachikwe, through Blanket, to the Smiler deposit, approximately 3 km to the north of Blanket, is cut by a regional dolerite sill (AGS, 2006). Mineralisation at Vubachikwe, to the south-southeast of Blanket Mine, is hosted in the band iron formation unit, whereas that at Blanket Mine is located in the overlying mafic unit (AGS, 2006; Saager et al., 1987).

All the lithologies have been subjected to repeated strong deformation. A major periclinal synform, plunging approximately 60° to the northwest in the western half of the belt, dominates the structure of the Gwanda Belt. It is flanked on both sides by two major deformation zones: the North West Gwanda Deformation Zone (NWGDZ) on the northwestern limb and the South Gwanda Deformation Zone (SGDZ) along the southern limb. The latter forms part of a regional structure bounding the southern margin of the belt. In the convergence zone of the NWGDZ and the SGDZ, the Colleen Bawn Deformation Zone (CBDZ) splays off the SGDZ eastwards, following the northeastern arm of the belt (Campbell and Pitfield, 1994).

The approximately 2 km wide by 18 km long NWGDZ trends northwest to northnorthwest, from the town of Gwanda to the northwestern extremity of the belt (Campbell and Pitfield, 1994). Four phases of deformation have been defined by Fuchter (1990). Repetition of lithological units, particularly in the northwestern arm of the greenstone belt, is interpreted as evidence of  $D_1$  thrusting. Wide zones of intense schistose deformation, considered to be associated with the gold mineralisation, are the product of the  $D_2$  event. The  $D_1$  thrust phase has a coincident trend and may be an early part of the  $D_2$  event.

The large fold structures of the  $D_3$  deformation event dominate the eastern and western ends of the greenstone belt and are easily identified on geological maps and in aerial imagery. The mineralisation at Blanket and Vubachikwe lies on the northern limb of the large western fold (the North West Mineralised Camp). The final  $D_4$  deformation event produced major lineaments which dominate the southern margin of the greenstone belt (Fuchter, 1990).

The grade of metamorphism at Gwanda, which reaches upper greenschist to amphibolite facies, is higher than in the typical Zimbabwean greenstone belts, possibly due to the close proximity of the Gwanda belt to the Limpopo Mobile Belt (AGS, 2006).

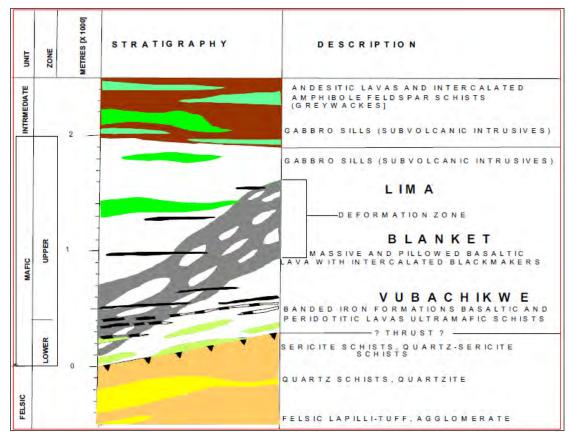


#### 7.3 Property Geology

In the vicinity of Blanket Mine, the rock units strike north-south and young in a westerly direction. The local geology comprises three main units (Figure 7-33). The basal Felsic Unit, which occurs in the east, comprises quartz schists and quartz-sericite schists (Blanket Mine, 2009). The tailings disposal sites are located on this lithological unit, which appears not to be mineralised (AGS, 2006).

The Felsic Unit is overlain by the Mafic Unit, which is subdivided into a lower zone and upper zone. The lower zone comprises ultramafic rocks and banded iron formations (BIFs); the latter hosting the mineralisation at Vubachikwe Mine. The upper zone comprises massive to pillowed lavas with intercalations of interflow sediments (cherty argillites). The latter are referred to locally as "Black Markers" (Blanket Mine, 2009). The rock is a fine-grained massive amphibolite with localised shear planes (AGS, 2006). A low-angle transgressive shear zone, up to 50 m wide and characterised by a well-developed fabric and the presence of biotite, cuts through the Mafic Unit and is the locus of the gold ore bodies (AGS, 2006).

Figure 7-3
Stratigraphic sequence in the vicinity of Blanket Mine (Source: AGS, 2006)





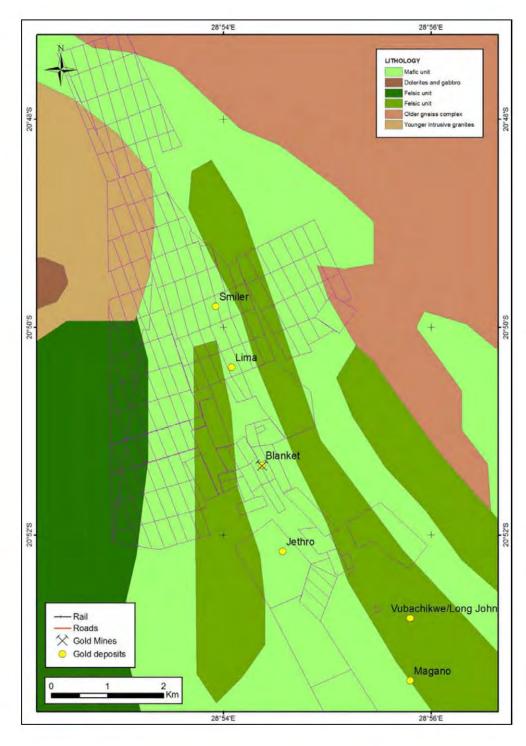
A younger, barren olivine-gabbro sheet intrudes the package, and the entire sequence is capped by the Intermediate Unit comprising andesitic lavas with amphibolite feldspar schists (AGS, 2006; Blanket Mine, 2009).

The entire sequence is cut by a regional dolerite sill, extending from Vubachikwe, through Blanket, to Smiler in the north. The sill truncates all the ore shoots but does not cause significant displacement, and there is continuity of mineralisation above and below the sill (AGS, 2006).

Tyndale-Biscoe (1940) referred to the Blanket ore bodies, together with those of the Vubachikwe area, as the Sabiwa Group of mines. Fuchter (1990) referred to the same group as the North Western Mining Camp. Currently, Blanket Mine includes a cluster of mines extending northwards from Jethro in the south, through Blanket Section, Feudal (now defunct), AR South, AR Main, Sheet and Eroica to Lima in the north (Figure 7-4). Dormant old workings on the property are hosted in banded iron formation, forming the northern continuation of the Vubachikwe zone. They include (from south to north) Sabiwa, Jean, Provost, Redwick, Old Lima and Smiler (AGS, 2006).



Figure 7-4
Locality plan of workings in the Blanket Mine production area
(AGS, 2006)





#### 8 DEPOSIT TYPES

# 8.1 Characteristics of the Blanket Mine Deposits

The Blanket ore bodies are found hosted in the northwestern limb of the Archaean Gwanda Greenstone Belt. The ore bodies are of hydrothermal origin and lie within a structurally induced regime in metamorphosed basalts in the upper zone of the Mafic Unit (see Section 7 above).

At Blanket Mine the deformation is characterised by areas of high strain around relatively undeformed remnants of basaltic flows, referred to as "lozenges". These vary in size from 10s to 100s of metres. The ore bodies are developed in the areas of very high strain and are often enveloped by pervasive biotite, chlorite and carbonate alteration. The widest ore bodies lie within the more ductile tensional high strain areas (Blanket Mine, 2009). Two main types of gold mineralisation are recognised (see Section 9 below): disseminated sulphide replacement reefs, which are massive or pipe-like bodies, and quartz reefs and shears which are tabular or lensoid (Blanket Mine, 2009). Silver occurs together with the gold and usually makes up about 10% of the Dore bar, which is normal for greenstone gold deposits.

At Vubachikwe Mine, which lies to the south of Blanket Mine, gold mineralisation is hosted within the lower zone of the Mafic Unit, which comprises ultramafic rocks and banded iron formations (BIFs). Gold-bearing sulphide minerals here occur as a replacement of iron-rich minerals in fold hinge zones (AGS, 2006). Ore bodies comprise both breccia stockworks and stratabound sulphide replacement bodies (Campbell and Pitfield, 1994). The Blanket and Vubchikwe ore bodies, with Sabiwa, located to the north of Vubachikwe, are part of the Sabiwa group of mines.

The Blanket Mine comprises a series of deposits along a strike length of about 3 km. The deposits range from Jethro in the south, through Blanket Section, Feudal, AR South, AR Main, Sheet, Eroica and Lima (Figure 8-1). Mineralisation occurs in near-vertical shoots along an approximate north-south axis. The strikes of each deposit vary and they are not all in the same plane (Figure 8-2) (Blanket Mine, 2009).



Figure 8-1
Sketch map showing the relative location of the series of deposits comprising the Blanket Mine (Source: Blanket Mine, 2009)

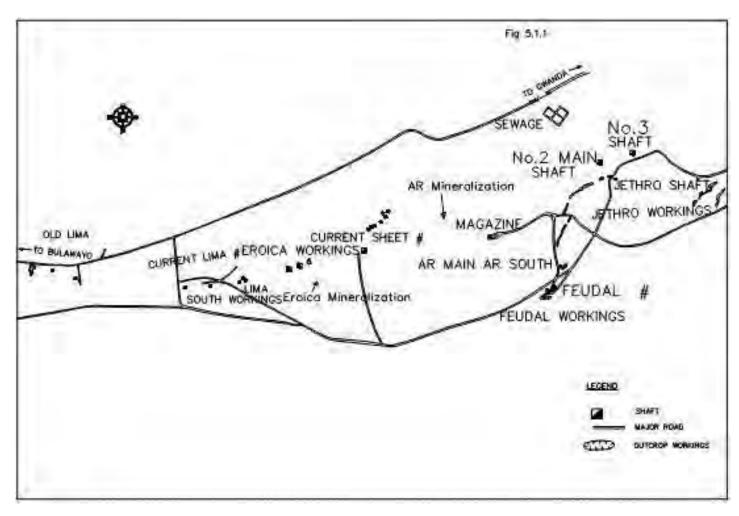
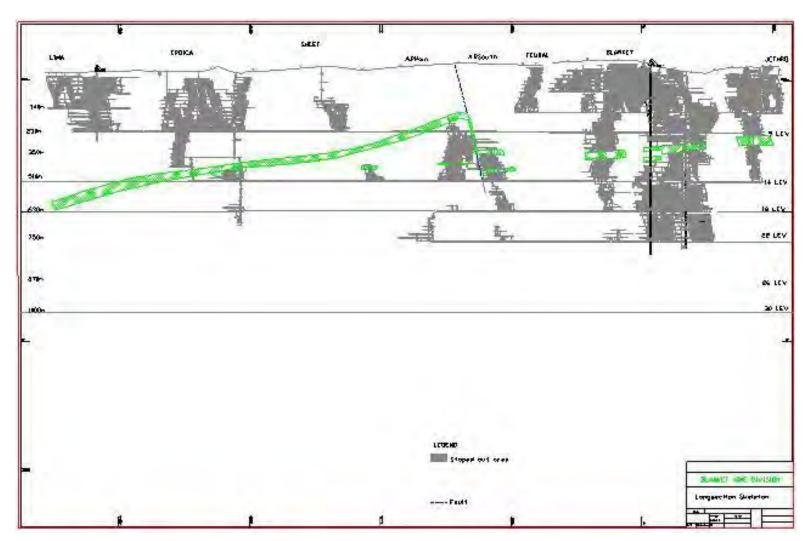




Figure 8-2
A north-south section showing the relative location of the series of deposits comprising the Blanket Mine (Source: Blanket Mine, 2009)





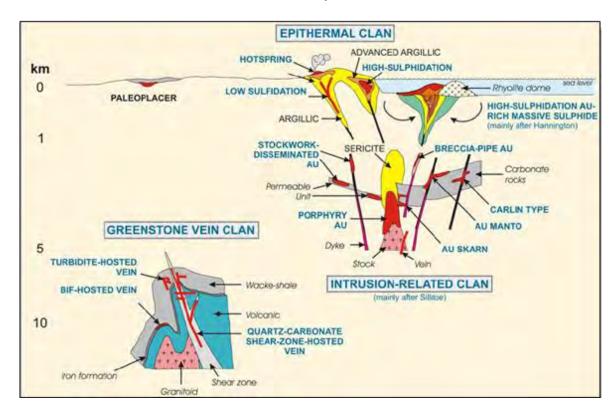
## 8.2 Orogenic Gold Deposits

The basic exploration model for structurally controlled orogenic gold deposits applies to the area hosting Blanket Mine, and is described below.

Roberts (1996) recognised two broad groups of deposits based on precious metal composition: silver (Ag) rich deposits, in which the concentration of silver exceeds that of gold, and gold (Au) rich deposits, in which the concentration of gold exceeds that of silver (gold and silver concentrations of both types being at the ppm level). The latter, gold-rich group of deposits may be subdivided into two styles of mineralisation: quartz-carbonate vein-hosted and disseminated sulphide replacement type mineralisation. At Blanket Mine silver has been reported up to 10% of precious metals (AGS, 2006), so that the gold-rich model may be applied.

Orogenic gold deposits (also referred to as mesothermal, greenstone, shear zone related or lode gold deposits) are characterised by gold-bearing quartz veins and veinlets with minor sulphides (< 3–5% sulphide minerals) developed within a wide variety of host rocks, and largely localised along high-order dilational structures related to major regional faults within a predominantly compressional to transpressional environment (Figure 8-3). An exception is noted in banded iron formation and iron-rich mafic host rocks, where sulphidisation can be extreme.

Figure 8-3
Schematic representation of mesothermal, intrusion-related and epithermal gold deposits showing the inferred crustal level of gold deposition (Dubé and Gosselin, 2005)





Wall rock alteration typically comprises silica-pyrite-muscovite within a broader carbonate alteration halo. Quartz-carbonate altered rock forms the most commonly recognised alteration assemblage. Gold is deposited at crustal levels within and near the brittle-ductile transition zone at depths between 6 km and 12 km, pressures between 1 and 3 kilobars, and temperatures from 200° C to 400° C. Deposits may have a vertical extent of up to 2 km, demonstrate extensive down-plunge continuity, and lack pronounced zoning.

Orogenic gold deposits are commonly associated with late syntectonic intermediate to felsic magmatism. The vein systems tend to occur as a system of *en echelon* veins on all scales. Tabular veins occur within less competent lithologies while veinlets and stringers forming stockworks occur in more competent lithologies. Vein systems are often spatially associated with contacts between lithologies displaying competency contrasts. Lower-grade bulk tonnage styles of mineralisation may develop in areas marginal to veins with gold associated with disseminated sulphides in the host rock.

The ore mineralogy is dominated by gold, pyrite and arsenopyrite with subordinate galena, chalcopyrite, pyrrhotite, sphalerite, tellurides, scheelite, bismuth and stibnite. Sulphide mineralogy commonly reflects the litho-geochemistry of the host rock with arsenopyrite the most common sulphide mineral in metasedimentary host rocks and pyrite or pyrrhotite more typical in metamorphosed igneous hosts. The gangue and alteration mineralogy is dominated by quartz and carbonate (ferroan dolomite, ankerite, siderite, calcite) with subordinate albite, fuchsite, sericite, muscovite, chlorite and tourmaline.

A plot illustrating the tonnage, grade and contained gold for Canadian and world-class global deposits is shown in Figure 8-4. The average size and grade of world-class orogenic gold deposits is 40 Mt and 7.6 g/t Au respectively (Dubé and Gosselin, 2005).

Orogenic gold deposits may be classified as follows in terms of contained gold:

■ Small < 250 000 oz (7 t)

Medium 250 000 oz – 1 Moz (7–28 t)

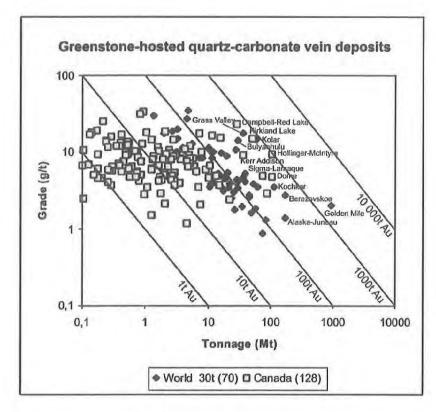
■ Large 1-3 Moz (28–85 t)

Super large > 3 Moz (> 85 t).

The presence of placer/alluvial gold is an excellent regional and property-scale indicator of gold-quartz veins. Useful exploration tools include structural analysis to recognise dilational sites spatially associated with large-scale regional faults, as well as the recognition of alteration zones.



Figure 8-4
Grade-tonnage plot for Canadian and global world class orogenic gold deposits
(Dubé and Gosselin, 2005)





### 9 MINERALISATION

# 9.1 Development and Style of Mineralisation

Mineralisation at Blanket Mine is hosted in metamorphosed massive and pillowed basalts, altered to upper greenschist or amphibolite facies (AGS, 2006). The metabasalt forms the upper zone of the Mafic Unit. The lower zone of this unit comprises ultramafic rocks and banded iron formations, as observed on Vubachikwe Mine to the south of Blanket Mine. The Mafic Unit is underlain by the Felsic Unit which comprises mainly quartz and quartz sericite schists. Overlying the Mafic Unit are andesitic lavas with intercalated amphibole feldspar schists (greywackes) (see Section 7 above).

The area has undergone four phases of deformation (Fuchter, 1990). The second event,  $D_2$ , was considered by Fuchter (1990) to be associated with gold deposition. The Blanket Mine lies on the northern limb of the Tuli synclinorium, one of the large fold structures attributed by Fuchter to  $D_3$  deformation. Mineralisation is hosted in a transgressive shear zone which cuts through the Mafic Unit. Fuchter (1990) records obliquity of foliation and subparallel mineralised veinlets in a 0.5 m zone along the footwall contact of the ore bodies. The foliation appears to strike clockwise relative to the north-northeast trending zones and anticlockwise relative to the northwest trending zones, which may be interpreted as a series of complementary shears symmetrically disposed to the main flattening fabric along  $D_2$  which typically dips to the west-southwest (Campbell and Pitfield, 1994).

### 9.1.1 Disseminated Sulphide Replacement Type Mineralisation

The majority of the ore shoots at Blanket Mine comprise disseminated sulphide replacement (DSR) type mineralisation. These mineralised bodies occur in two main orientations, striking either northwest or north-northwest, or north-northeast. The former group includes Blanket ore bodies 2, 3 and 5, which dip at 70° to the southwest. The Blanket Quartz Reef (see below) follows a similar orientation, but is more shallowly dipping at 55° west-southwest. Ore bodies striking north-northeast include numbers1 and 4, which dip at 70° to the west. Similar trends are observed at a smaller scale within the individual ore bodies. The ore bodies are in virtual continuity, with the exception of the pipe-like number 3 ore body (Campbell and Pitfield, 1994).

The ore shoots displaying disseminated sulphide replacement type mineralisation have a silicified core with remnant biotite and chlorite schist, with arsenopyrite swarms on the periphery. These fine sprays of disseminated arsenopyrite host the best gold grades. Adjacent to the silicified core on the hanging walls of replacement bodies a zone of brown carbonate, sometimes interwoven with biotite alteration, hosts lower grade mineralisation. The outermost zone, comprising chlorite carbonate schist, shows a further reduction in grade. Altered basalt is the adjacent country rock. Project geologists report a linear relationship between grade of mineralisation and the amount of finely disseminated arsenopyrite. From this it would appear that the texture of the arsenopyrite is more significant than its mere presence. Pyrite is also auriferous, but



pyrrhotite is subordinate, though it is ubiquitous in the country rock (Blanket Mine, 2009).

Disseminated sulphide replacement ore bodies range in width up to 50 m in the case of the AR ore bodies which are lensoid in cross section and have a strike to width ratio of about 1.5 to 1. The remaining DSR bodies have widths up the 10 m with a strike length of between 60 m and 90 m. Grade in the disseminated sulphide replacement bodies was cited by Campbell and Pitfield (1994) as 6g/t. Free-milling gold constitutes up to 50% of the total metal content with the remainder occluded within arsenopyrite (SRK, 2002). The ore is not refractory and plant recoveries of 90% are typically achieved.

#### 9.1.2 Quartz Reef Mineralisation

Two quartz-filled shear zones are mined at Blanket Mine: the Blanket Quartz Reef and the Eroica Reef. These reefs have long strikes but are not uniformly mineralised although continuous pay shoots of over 100 m on strike are not uncommon.

The Quartz Reef at Blanket has a surface strike of some 500 m and width up to 5 m, diminishing with depth, with an average dip of 55° to the west. It displaces the replacement type ore bodies with an apparent reverse movement of up to 250 m. The texture of the reef varies from typical quartz reef at depth through sheeted and boudinaged veinlets to ankeritic carbonate in schist and a sulphide replacement ore zone. This is interpreted as a transition from brittle ductile to a more ductile regime with depth Fuchter, 1990, in Campbell and Pitfield, 1994). A "Z"-shaped inflection towards the north of the reef outcrop forms the thickest part of the reef, up to 5 m, compared to less than 1 m on the limbs. Similar inflections are found elsewhere in the Northwest Gwanda Shear Zone. Subsequent to mineralisation the reef was displaced by the north-striking vertical Wenlock Fault which has a dextral strike-slip component of about 60 m.

The Blanket Quartz Reef is not uniformly mineralised and economic mineralisation is restricted to three 90 m pay shoots which were defined on surface by early workers (Blanket Mine, 2009). Mineralisation comprises native gold with galena, which can be used as a pathfinder mineral. Arsenopyrite is more dominant down dip (Blanket Mine, 2009). It has been hypothesised that the Blanket Quartz Reef is locally composed of fault-filling gouge (Blanket Mine, 2009).

Campbell and Pitfield (1994) report a grade of 16 g/t gold within the quartz reefs. Grade fluctuations are more extreme in the quartz reefs than in the disseminated sulphide type reefs but on average these quartz shears have higher grades and are used as a sweetener of ore to the mill (SRK, 2002).

The characteristics of mineralisation in each of the ore bodies forming the Blanket Mine property is described below, from south to north.



#### 9.1.3 Jethro

The Jethro ore body has a north-south strike and a near vertical westerly dip. Locally the ore body has a tendency to roll over.

### 9.1.4 Blanket Section

Blanket lies some 400 m to the north of the Jethro ore body. Blanket ore bodies 1 and 4 are parallel and occupy north-south trending shear segments whereas ore bodies 2 and 5, which are also parallel, strike northwest-southeast. Ore body 3 is cylindrical and lies in a shear segment parallel to the 2 and 5 ore bodies. The mean dip of the ore bodies is 80° southwest. On surface the Blanket Quartz Reef lies in the footwall of the disseminated sulphide replacement type ore bodies. The reef has a shallower dip than the disseminated sulphide replacement bodies but plunges in the same direction so that it progressively advances towards them with depth, displacing ore bodies 2, 3, 1, 4 and 5 in that order, at elevations indicated in Table 9-1.

Table 9-1
Displacement levels of disseminated sulphide replacement type ore bodies by the Blanket Quartz Reef (data source: Blanket Mine, 2009)

Ore body	Displacement depth (m)		
2	200 mL		
3	320 mL		
1	360 mL		
4	Just below 630 mL		
5	Just below 630 mL		

At a depth of 470 mL ore body 2 reappears on the footwall of the Blanket Quartz Reef and is established on the 630 mL through to the 730 mL (Figure 9-1 and Figure 9-2).



Figure 9-1
Plan view showing displacement of ore body 2 by the Blanket Quartz Reef
(Source: Blanket Mine, 2009)

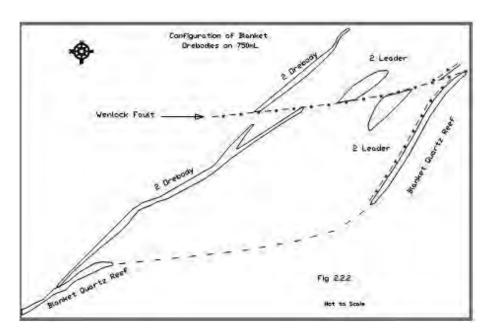
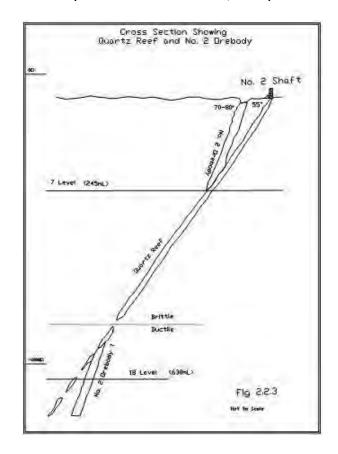


Figure 9-2
Profile view showing displacement of ore body 2 by the Blanket Quartz Reef
(Source: Blanket Mine, 2009)





#### 9.1.5 AR Orebodies

AR lies approximately 500 m to the north of the Blanket ore bodies. AR is a "Z"-shaped mineralised zone, comprising two separate orebodies, generally up to 30 m wide as a result of tectonic thickening due to episodes of faulting and folding.

The AR ore bodies were first discovered in the late 1980s by exploration drilling from the 9 Level haulage. Lateral diamond drill holes 250 m long were drilled either side of the haulage every 50 metres. The body has no known surface expression and appears to form a peak under the regional dolerite sill just above 9 Level some 500 metres north of the Blanket ore bodies. From this point the body splits into two ore shoots, the AR Main and the AR South, plunging west at 55 degrees and south-west at 58 degrees respectively.

### **AR Main**

The AR Main is a DSR type ore body occurring within a broad shear envelope in pillowed metabasalts. The envelope is generally irregular in plan but bounded by pronounce shears which assist in defining the limits of the mineralization. In the vertical dimension the shoot changes shape continuously but remains unbroken. At the lowest level of development on 750 m Level a shear disrupts the bodies causing the plunge to flatten to the west. The ore body strike is generally between 40 and 60 metres while a width of 30 metres is common at the centre of the envelope.

The ore is essentially a silicified amphibolite consisting predominantly of quartz with minor carbonate and chlorite minerals. Gold mineralization is associated with the sulphide mineral arsenopyrite and to a much lesser extent with pyrrhotite and pyrite. Finely disseminated needles of arsenopyrite occur as clouds within the ore body which form the high grade areas. Sulphide minerals seldom amount to greater than 5% of the rock by volume. In view of its massive form the body is exploited using the long-hole open stoping method and currently contributes 30% of the Blanket mine production.

### **AR South**

The AR South ore body plunges south-west trending towards the Blanket No 2 ore body at depth. AR South is also developed within a broad shear zone and differs from the Main body in that the body is more pipe-like with a maximum width of 50 metres being obtained. High grade sections of this body are defined by siliceous arsenopyrite clouds which have no spacial relationship to the geometry of the shoot, possibly on account of post mineralization deformation.

Production stoping operations are taking place on both 18 and 22 Levels and this body also contributes about 30% of the Blanket mine production, making the total production from the AR section 60% of Blanket"s milled throughput.



Figure 9-3 AR Main ore



Figure 9-4
AR South ore at Blanket Mine



# 9.1.6 Eroica

The main Blanket underground workings are connected to Lima by a 2 km long haulage which follows the strike of the main fabric. It thus offered an opportunity to



probe for lateral ore bodies on either side which led to the discovery of the Eroica shoot.

The Eroica ore body is some 1 300 m to the north of the main Blanket ore bodies. It has a northerly strike length of 300 m and dips at 65° to the west. The Eroica ore body is hosted in a high strain area where the shear is up to 15 m wide. The shear is characterised by brown carbonate alteration in strong association with biotite development. Swarms of thin silicified stringers locally develop into swells of up to 5 m in width and define the ore body. The silicification shows pinch and swell both on strike and down dip, resulting in a series of dismembered silicified pods developed within a particular shear. The biotite and carbonate alteration, together with the silicified stringers, form marker links between the dismembered pods. Finely disseminated arsenopyrite, pyrite and pyrrhotite are associated with gold mineralisation, but the shoot is also renowned for its native gold content which has been an ore "sweetener" since its discovery.



Figure 9-5
Eroica ore at Blanket Mine

## 9.1.7 Lima

Lima mine is situated 2 km north of the Blanket ore bodies. The two mines are linked by an underground haulage. Like the Blanket ore bodies the Lima ore bodies developed in very high strain areas. The main shoots are the Hangingwall and Interlimb. In the Hangingwall limb mineralisation exists in the form of pyrite with subordinate arsenopyrite in cleavage planes within the pervasive biotite/chlorite alteration. The Interlimb is characterised by a centrally silicified core with pyrite and arsenopyrite constituting the main sulphides. The mine was initially established as a



standalone operation after an exploration programme followed up on an intensive soil sampling exercise which indicated the presence of a major gold anomaly.

Figure 9-6
Lima ore at Blanket Mine





## 10 **EXPLORATION**

Underground exploration has been based around the main haulage routes linking the individual ore bodies. Boreholes were drilled at 50 m or 100 m intervals either side of the haulage drift, perpendicular to strike.

Blanket has to date not undertaken any surface exploration away from the actual workings. Exploration in the region is being planned and should be considered a work in progress.



#### 11 DRILLING

All exploration drilling from surface and from underground was completed during the stewardship of Kinross. This has been reported in the SRK (2002) and AGS (2006) reports. No exploration drilling has been undertaken since that time.

Information for this section has been largely extracted from AGS (2006) and from information gathered during the site inspection.

# 11.1 On-Mine Drilling

Diamond drilling is the primary method of exploration used by the mine to replenish its reserve base and probe for extensions to existing ore bodies as well as to explore for further ore bodies within the immediate vicinity of the current mine workings.

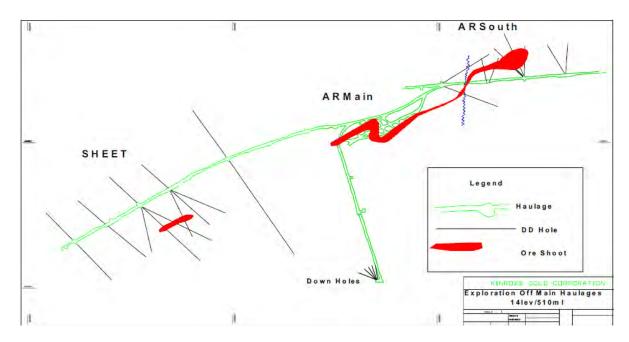
Underground haulages linking the Blanket and Lima ore shoots have provided platforms for horizontal core drilling at 100 m or 50 m centres to depths of 250 m either side of the haulage (Fig 13.1). This drilling led to the discovery of the two AR mineralized zones, the Sheet and Eroica deposits, all of which now form part of the mine's mineral resource inventory.

In addition to this practise of drilling both east and west of the main haulage, crosscuts into the hanging wall of the ore have been mined in order to establish drilling platforms from which to probe the down-dip extensions of the known ore shoots to allow for the estimation of resources.

More closely spaced horizontal drilling through the DSR ore bodies follows this primary exploration as the next step in generating the Measured Mineral Resources. These holes are drilled at 7.5 metre intervals from cubbies off a drive located in the centre and along strike of, the mineralized zone. If the mineralized zone is not expected to be more than several metres wider than the development drift, then evaluation of the sidewalls is carried out using percussion drill sludge sampling. The narrow quartz reefs rely on channel sampling alone for resource estimation since these zones are fully exposed by the development.



Figure 11-1
Plans Showing Typical Exploration Drilling from the Main Haulage (Source: AGS, 2006)





#### 12 SAMPLING METHOD AND APPROACH

Information for this section extracted from 2006 NI43-101 report (AGS, 2006) and data provided by Caledonia. The sampling discussed here is confined to the within mine resource definition and not greenfields exploration.

All Mineral Resource blocks have been generated from data obtained from underground core, channel (chip) sampling and/or percussion drill sludge sampling, with some deep diamond-cored holes drilled from surface or from underground platforms.

Closely spaced horizontal drilling in the disseminated sulphide replacement (DSR) type ore bodies is used to define the mineral reserves. These holes are drilled from cubbies in the sidewalls of the drives located within the centre and along strike of the mineralised zone. A drillhole spacing of not more than 7.5 m is required for the definition of Measured Mineral Resources. In the case of the DSR ore bodies in which the mineralised zone is not expected to be more than several metres wider than the development drift (drive), percussion holes are drilled every 2 m and the sludge is sampled as an extension of the channel sampling pattern. The narrow quartz reefs rely on channel sampling alone for resource estimation.

The definition of the Measured Resource is detailed in the Resource classification section as all measured blocks are automatically aggregated into Proven Reserves.

## 12.1 Channel and Percussion Drill Sludge Samples

In addition to core drilling, the roof (back) of all primary development within mineralised zones is chip sampled along channels at 2 m intervals along strike (Figure 12-1). Where there are discrepancies between assay results and the visual grade estimation, a channel is cut across the mineralised zone with a diamond saw in order to improve the geometry of the sample groove.

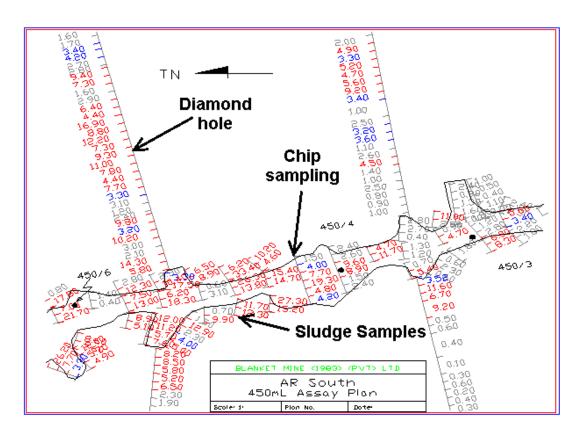
In wider ore bodies where not all the mineralisation is exposed by the primary development, sidewall sludge holes are drilled to a length of 1.2 m (Figure 12-1). Both chip and sludge samples are taken so as to give a complete section across the strike at standard 0.6 m intervals. In all of the mineralised zones, except the very wide AR Main and AR South bodies, only 4.2 m is sampled across the strike, and any mineralisation beyond these limits is not included in resource. The un-sampled payable sections are nevertheless mined but reported as coming from not-in-reserve (NIR) blocks.

An exception to the standard 0.6 m channel sample interval occurs in the quartz shear deposits where lithology determines the sampled width when the vein is less than, or not a multiple of, 0.6 m.

Crosscuts through very wide ore bodies are treated in the same way as evaluation core drilling and the sidewalls are sampled at 0.60 m intervals.



Figure 12-1
Location of diamond core, chip and sludge sampling at Blanket Mine (Source:
Blanket Mine)



# 12.2 Diamond Drill Core Sampling

All cores are logged for rock type, structure, and alteration characteristics and ore minerals. For the long (250 m) horizontal and deep exploration holes, zones of mineralisation including arsenopyrite, pyrite, galena or pyrrhotite, are sampled at standard 0.6 m intervals, split with a diamond saw and sampled to ensure full coverage of the potential gold-bearing zones. The split core is then quartered, with one quarter being sent to the mine laboratory and one to an independent laboratory. Where there are significant discrepancies between the results further assays are requested on the sample pulps.

Mineralised core from the measured resource drilling is not split and the whole core is sampled at 0.6 m intervals (Figure 12-1). In the quartz shears lithological control supersedes the standard 0.6 m interval although a minimum of 1.2 m is sampled at each traverse or intersection.

# 12.3 Sample Handling and Monitoring

With the inherent problems of silicate loss with the fines upgrading the sample, and loss of particulate gold downgrading the sample, the accuracy of sludge sampling is



questionable. The sludge samples are more than likely biased on the low side due to a loss of heavy minerals outweighing loss of silicates in the sampling process. While sludge sampling is relatively quick and cheap, the results need to be treated with caution. AGS (2006) was of the opinion that if the samples are used for boundary definition alone (when panning of sludge samples underground may be sufficient) then the practice could be continued. MSA agrees that caution should be exercised when using the sludge sampling, and prefers that sludge samples should not be used in resource calculations. However, a materiality test should be applied to establish whether the mine has valuation problems which would be indicated by unaccountable gold losses. Based on whether such problems exist or not, the mine could consider the merits of alternative forms of sampling and associated costs such as diamond core drilling every 2 m.

Various measures are taken to ensure the validity and integrity of samples taken.

Three types of sample bags are used as follows:

- Cloth sample bags are used in sludge sampling to allow for effective decanting of water while retaining the sample. Since more than one sample is taken from the sludge hole, the hole is flushed thoroughly with water before drilling and collecting the next sample.
- Plastic sample bags are used in continuous chip and grab sampling whereas paper bags are used for sampling on-site core. The above bags are used once and discarded to minimise contamination.

A ticket tagging system is used with sketches drawn at the face showing the ticket numbers corresponding to the samples taken. On receipt from the laboratory, results are plotted on the assay plan against the corresponding ticket numbers. Based on these sketches, the sample data are digitised into the main database for ore body evaluation and modelling.

Blanket Mine ore bodies are visually distinguishable from the host lithologies and the degree of mineralisation can be visually estimated on a reef-by-reef basis with reasonable success. Mapping of development headings and stope benches are compared with the relevant assay data, and any suspect results or poor matches with the visual assessment are sent for check assay. Similarly, borehole core assay results are scrutinised with the logs in order to ensure that no obvious discrepancies occur.



# 13 SAMPLE PREPARATION, ANALYSES AND SECURITY

# 13.1 Sample Preparation, Analyses and Security

Gold assays for Blanket Mine are undertaken by an in-house laboratory on site and quality control procedures for checking the accuracy of assays are implemented. They include in-house standards for ore and milled samples including dump material. Five different laboratories in Zimbabwe have assayed these standards to establish their suitability and each batch of 32 samples contains one standard and one limestone blank. Assays are mostly by Fire Assay with gravimetric finish while a few, specifically mill samples, use an Atomic Absorption (AA) finish.

An audit by AARL in 2000, while the Blanket Mine was owned by Kinross Gold, concluded that the laboratory lacked strict quality control measures and made a number of recommendations to improve accuracy and accountability. Most of the AARL technical recommendations were implemented. An audit was done by J. Oleson of Fairbanks Gold Mining, Inc. in 2002. Comments on the outstanding issues mainly referred to documentation of quality assurance and quality control (QA/QC) procedures.

# 13.2 Statement of Opinion on the Sample Preparation, Security and Analysis

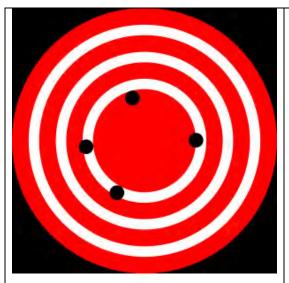
The on-site laboratory is not certified for mineral analysis but seems in reasonable repair with a good degree of cleanliness. Sample marking and tagging throughout the process would appear to be adequate. Manual transcription of all values is however a serious point of concern as this opens the data to corruption. A laboratory information management system (LIMS) with direct links to mass balances and other systems would dramatically reduce the possibility of transcription errors.

Concern around the lack of proper referee laboratory duplicate analysis and the apparent lack of round-robin participation raises a flag on the precision and accuracy of the laboratory results. Without external verification, i.e. verification out of the control of the laboratory under question, there can be no declaration as to the precision of the laboratory (Figure 13-1). Internal checks will be more than adequate for accuracy measurements but there is no way to highlight possible fundamental errors in sample preparation or analysis that would not necessarily be detected during those internal checks.

With regards the lack of a recognisable QAQC program it must be noted that the mine has consistently adhered to their protocols and have been successfully mining for a number of years using the data produced by the laboratory with excellent reconciliation between planned grades and gold produced.



Figure 13-1
Explanation of accuracy versus precision



Good precision but relatively low accuracy (not reproducible but on average on target)



High precision, but low accuracy (repeatable but off target)

That being said, MSA suggests the following points provided that the suggestions can be feasibly implemented within the financial and practical limitations of the Blanket Mine:

- That the laboratory process be reviewed on a regular basis to ensure continued internal compliance,
- That all protocols, where possible, be revised to or maintained at industry best practice,
- The inclusion of more detailed international standards at a range of grade values. It is not expected that this will be too difficult to implement unless there are legal limitations on foreign exchange or the importing of the standards.
- the participation in international round-robins
- The use of a certified external laboratory for duplicate sample analysis. Research has indicated that the Antech laboratory in KweKwe has been re-certified by SANAS in 2009 (http://www.antechlaboratories.com).



#### 14 DATA VERIFICATION

During the course of the site visit to Blanket Mine, the QP was able to review the methodology of calculation and records of the data used in the resource estimate with a view to independently verify the data quality.

The method of calculation has remained the essentially the same since last Technical Report of 2006. Retention of staff for long periods has had the effect of maintaining consistency. Data records are well maintained and secure. Although all the data is currently manually generated and stored in hardcopy paper worksheets, digital conversion and creation of an off-site back-up database is on-going. The fact that all data are manually generated and all documentation is in hard paper copy meant that very little of the data could be verified, considering time constraints. However, an adequate sample of randomly selected source data and calculations were checked and reviewed in order to verify reliability. There is no reason to consider the data inappropriate for use in the estimation.

Adequate controls, security and chain of custody of samples are in place at Blanket. Samples are documented from source to receiving bay at the assay laboratory. Samples for resource estimation are analysed by fire assay with gravimetric finish.

The QAQC protocols and procedures for quality control need to be documented, revised accordingly and rigorously implemented. At the time of the visit, no clear QAQC policy was in place. Duplicate pulp samples of suspected high grade are infrequently submitted to a referee lab (not certified or accredited). The trigger for the duplicate pulp submission to an external laboratory is suspected under-reporting of results by the local lab. The result of this selective approach is very low volumes of check samples (small data set) to adequately assess and monitor the laboratory performance. Only a limited number of duplicate sample results over a narrow time period were made available for assessment at the time of the site visit. Further, these infrequent QAQC sample submissions and results are not being analysed statistically. The data are only visually assessed (not graphically assessed) and it is not clear how problems are identified and resolved. Further, the process of manual data capture and transcribing of data is prone to introducing errors. No certified/standard reference material or in-house/internal standards are being used to monitor analytical accuracy at the assay laboratory.

Controls are in place to monitor achieved grades and production data against initial budgeted grades and planned production figures. The figures compare very well as reflected in block and mine call factors. Despite shortcomings of the QAQC systems, MSA considers independent sampling unwarranted in view of the fact that a substantial population of data would have to be generated first to be useful due to local variability in grade and the size of the Blanket Mine operation.

In conclusion, MSA was able to review source data and the methodology of calculating the resource estimate which is acceptable for the type of deposit under consideration.



The MSA QP considers the data to present a reasonable reflection of the actual performance of the mine.



### 15 ADJACENT PROPERTIES

Blanket Mine is one of only four surviving major gold producers from about 268 mines once worked in this greenstone belt. The other three are the nearby Vubachikwe, Freda at the belt's western end and Jessie at the south-eastern end of the belt near West Nicholson (Figure 15-1) (Blanket Mine, 2009).

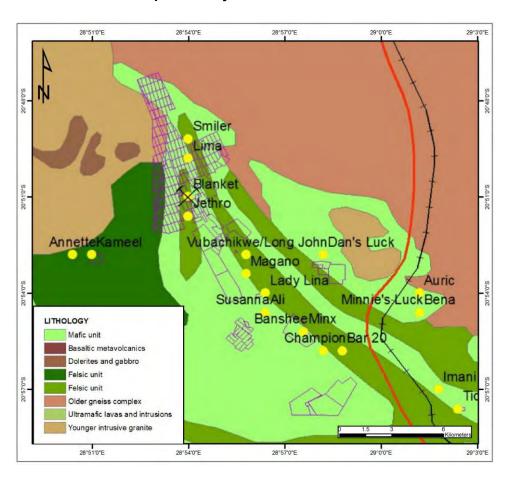


Figure 15-1
Properties adjacent to Blanket Mine

## 15.1 Vubachikwe

Information about the property is derived from Campbell and Pitfield (1994). The mine is located about 10 km northwest of Gwanda and is hosted in mafic and ultramafic greenstones and BIF. Nearby are three prominent southwest-dipping BIF units in which tight "Z"-shaped inflections occur frequently. It is possible that two of the BIF units, the Black Jack and Cheque (Error! Reference source not found.), are the limbs of an isoclinal synform. The most persistent unit is the central unit on which the Black Jack Mine was sited. The footwall unit includes the Long Jack Mine. The hanging-wall unit is laterally discontinuous but mines along its strike include Sabiwa, Lady Lina and Cheque (Campbell and Pitfield, 1994).



Most of the gold at Vubachikwe is hosted in BIF. The BIF units vary in thickness from less than 5 m to 35 m. Numerous ore bodies have been worked and these comprise sulphide (arsenopyrite and pyrrhotite) and carbonate replacement bodies in the BIF. Most of the ore bodies strike north—south, plunging to the northwest at about 68 ° and are associated with the "Z"-shaped inflections. Although Blanket and Vubachikwe work different ore bodies there would appear to be a structural relationship between them. Vubachikwe mine workings extend to depths of over 1 000 m below surface, compared with about 750 m at Blanket (AGS, 2006).

Up until the end of 1991 the Vubachikwe Mine produced almost 21 744 kg of gold at an average of 7 g/t. Between 2000 and 2005 Blanket Mine bought and treated the dumps at Vubachikwe in its metallurgical plant.



## 16 MINERAL PROCESSING AND METALLURGICAL TESTING

# 16.1 Metallurgical Processing

The Blanket crushing and milling circuit has recently been expanded from 600 t per day to approximately 1 800 t per day capacity (Caledonia Mining Corporation, 2011c) (Annual Management Discussion 30 March 2011). This is more than sufficient to handle the planned increases in mine production from the No. 4 Shaft Expansion Project, and, in future, from any ore mined from the satellite exploration properties currently being developed.

All run of mine (ROM) ore is crushed underground to minus 80 mm, hoisted to surface and crushed to minus 12 mm in the surface 2-stage crushing circuit. This material is then fed into two 1.8 m by 3.6 m rod mills where it is milled down to approximately 70% passing 75 microns, after which the milled slurry is pumped through two 30 inch Knelson Gravity Concentrators where approximately 45% to 50% of total mill gold production is recovered as "gravity" gold. Concentrate from the Knelson Concentrators is stored and re-concentrated on a Gemini table every 24 hours with the tailings rejoining the circuit. Gemini table concentrates go for direct smelting whilst the tailings are pumped to the classifying hydro cyclone. The Knelson Concentrator tails are pumped through cyclones whose underflow reports to the open-circuit regrind ball mill.

The product from the Knelson tails cyclone overflow and the regrind mill discharge are pumped into a carbon-in-leach (CIL) plant consisting of eight, 600 m³ leach tanks where alkaline-cyanide leaching and simultaneous absorption of dissolved gold onto granular activated carbon takes place. Elution of the gold from the loaded carbon and subsequent electro-winning is done on site. During electro winning the gold is deposited on wire wool cathodes, the loaded cathodes are acid-digested and the resultant gold solids from acid digestion and the re-dressed gold concentrate from Knelson Concentrators are smelted into bars. The granular activated carbon is kiln regenerated before it is recirculated back to the CIL section.

The gold bullion, in the form of Dore bars is delivered, as required by Zimbabwean gold-mining law, to the Government-operated Fidelity for sampling and onward delivery to the Rand Refineries in South Africa. Rand Refineries undertakes the final refining and sells the resultant gold with 100% of the proceeds being credited to Blanket's Zimbabwean bank account in US dollars within 5 days of sale.

The CIL plant has an overall design capacity of 3 800 t of milled ore per day, from its previous use for reclaimed tailings processing. The plant tailings from CIL are reduced in cyanide content and deposited on two licensed tailing impoundment areas sited close to the plant. The maximum amount of tailings water is pumped back to the metallurgical plant for re-use. Daily management and operation of the tailing deposition area is contracted out to the Zimbabwean subsidiary of specialized South African company "Fraser Alexander Tailings". Tailings from the CIL circuit are passed through a cyanide destruction system before being pumped to the tailings dam with the effluent being recycled to the plant. The plant flow sheet is presented in Figure 16.1.



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Figure 16-1
Process Plant Flow Sheet

## 16.2 Metallurgical Testing

Blanket Mine has a long and well established track record in as far as metallurgical treatment of the various ores is concerned. Historically, Blanket Mine has achieved recoveries of between 88% and 92% of gold delivered to the plant. This is a good metallurgical recovery for a greenstone mine and hence metallurgical testing has been restricted to refinements in milling, reagent usage and reaction times.

Metallurgical improvements during 2010 included the following:

 Rebuilding of the No. 6 Regrind mill sump and re-commissioning of the mill as is currently operating in the main milling circuit.



- Overhauling and re-commissioning of both Knelson concentrators. Metallurgical optimisation test work carried out on plant samples showed that there is little additional gold that can be recovered in the existing Gravity Gold recovery section where about 50% of the produced gold is recovered.
- Additional test work was carried out on samples taken from the Gemini Table tails, the cyclone overflow and under flows and the CIL tails to determine the particle size and location of gold that escapes the gravity section.
- The CIL circuit was completely equipped with most recent design of Agitator Gearboxes and impellor mechanisms, and the first leach tank converted to a preconditioning tank.
- During the 1st quarter of 2011 the Activated Carbon regeneration kiln was refurbished.



#### 17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

Information for this section has been extracted from the NI 43-101 report prepared by AGS (2006) and a Blanket Mine report entitled "Ore Reserves Comments 31.122010".

The Financial Year for Blanket Mine ends in December and includes an annual review and update of the Mineral Reserves and Mineral Resources. The estimation was completed by mine personnel following the methodology discussed in detail below (see Table 17-1).

The Resources and Reserves have been classified according to the requirements and standards as detailed in the "CIM Standards on Mineral Resources and Mineral Reserves: Definitions and Guidelines" (CIM, 2010).

### 17.1 Grade Data

All grade data are plotted manually on 1:100 scale development assay plans with development and stoping outlines. There is currently no extant electronic database of co-ordinated assay data available – this is still under development with data capture and digitising ongoing.

## 17.2 Grade analysis

There is no recent construction of a geostatistically based resource model. All "modelling" is done using 2D interpretation of the 1:100 grade plots. An outline is constructed around the mineralised domain conforming to the Geologists mapping and understanding of the local orebody geometry and grade data (Figure 17-1). The Ore bodies are clearly distinguishable on their macroscopic properties and therefore the outlined mineralised domain coincides in almost all cases with the shape of the mapped shear envelope.

The area is then measured using a planimeter and length weighted averages of the enclosed grade values are used to calculate the average grade of a block of ground defined as 7.5m above or below the current sample level (mining drifts or sub levels are 15m apart on level).

The orebodies are clearly distinguishable on their macroscopic properties and therefore the outlined mineralised domain coincides in almost all cases with the shape of the mapped shear envelope.



Figure 17-1
Assay plot with development showing the manually constructed outline of a mineralised domain

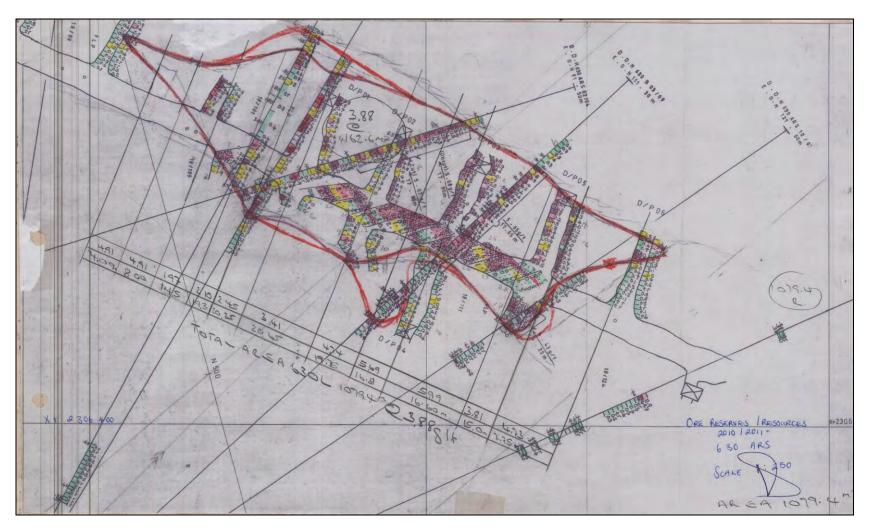




Figure 17-2
Example of the manual calculation output for the mineralised domain shown in Figure 17-1

	AS AT 31/0	RESOURCE CALC	CULATION (2010)	(2011)	
	Ore Body A.R. South		630 / 660		Level 630'
	Section	Sample width (cm)	Sample value (g/t)	(m *cm)	(g/t *m *cm)
	7.5	400	4.91	3000.0	
	7.5	800	4.91	6000.0	29460.0
	7.5	1450	1.97	10875.0	21423.8
	7.5	1930	2.10	14475.0	30397.5
	7.5	2025	2.45	15187.5	37209.4
	7.5	2065	3.41	15487.5	52812.4
	7.5	1975	4.74	14812.5	70211.3
	7.5	1680	5.69	12600.0	71694.0
	7.5	1660	5.99	12450.0	74575.5
	7.5	1500	3.81	11250.0	42862.5
	7.5	775	4.73	5812.5	27493.1
	00 =	4470	0.00		
		14.78	3.88	121950.0	472869.4
SUMMAR Orebody Block Category Level	RY : : : Section	A. R SOUTH 630 /660 Probable Sample width	Sample value	( m *cm ) 121950.0	(g/t *m*cm) 472869.4
Tot / Ave SUMMAR Orebody Block Category Level 630' Tot / Av	: : : Section (m) 82.5	A. R SOUTH 630 /660 Probable Sample width (cm) 14.78	Sample value (g/t) 3.88	( m *cm )	(g/t *m*cm)
SUMMAR Orebody Block Category Level 530' Tot / Av	: : : Section (m) 82.5	A. R SOUTH 630 /660 Probable Sample width (cm) 14.78	Sample value (g/t) 3.88	( m *cm ) 121950.0 121950.0	(g/t *m*cm) 472869.4
SUMMAR Orebody Block Category Level 530' Fot / Av Block Ave	Section (m) 82.5 82.5 erage grade erage width	A. R SOUTH 630 /660 Probable Sample width (cm) 14.78	Sample value (g/t) 3.88 3.88 3.88 14.78	( m *cm ) 121950.0 121950.0	(g/t *m*cm) 472869.4
SUMMAR Orebody Block Category Level 630' Fot / Av Block Ave 630m' Lev	Section (m) 82.5 82.5 erage grade erage width	A. R SOUTH 630 /660 Probable Sample width (cm) 14.78	Sample value (g/t) 3.88 3.88 3.88 14.78 1079.4	( m *cm ) 121950.0 121950.0	(g/t *m*cm) 472869.4
SUMMAR Orebody Block Category Level 630' Fot / Av Block Ave 630m' Lev Mean Area	Section (m) 82.5 82.5 erage grade erage width	A. R SOUTH 630 /660 Probable Sample width (cm) 14.78	Sample value (g/t) 3.88 3.88 3.88 14.78	( m *cm ) 121950.0 121950.0	(g/t *m*cm) 472869.4
SUMMAR Orebody Block Category Level 630' Fot / Av Block Ave 630m' Lev Mean Area	Section (m) 82.5 82.5 erage grade erage width	A. R SOUTH 630 /660 Probable Sample width (cm) 14.78	Sample value (g/t) 3.88 3.88 3.88 14.78 1079.4	( m *cm ) 121950.0 121950.0 g/t	(g/t *m*cm) 472869.4
SUMMAR Orebody Block Category Level 630' Fot / Av Block Ave 630m' Lev Mean Area	Section (m) 82.5 82.5 erage grade erage width	A. R SOUTH 630 /660 Probable Sample width (cm) 14.78	Sample value (g/t) 3.88 3.88 3.88 14.78 1079.4 1079.4	( m *cm ) 121950.0 121950.0 g/t	(g/t *m*cm) 472869.4
SUMMAR Orebody Block Category Level 530' Fot / Av	Section (m) 82.5 82.5 erage grade erage width	A. R SOUTH 630 /660 Probable Sample width (cm) 14.78	Sample value (g/t) 3.88 3.88 3.88 14.78 1079.4 1079.4 30	( m *cm ) 121950.0 121950.0 g/t	(g/t *m*cm) 472869.4

## 17.3 Density data and Analysis

The specific gravity of ore has been determined to be 2.86. This was the average of 174 samples measured during a study undertaken by the University of Zimbabwe in 1994. The mine average bulk density measurements applied to all mineralized zones should be investigated further to refine the density differences between the different ore types. In 2002, SRK recommended that over a period of time all assayed sections of core be measured for density to ascertain the variation and to determine if there is any correlation between grade and density. In 2006 AGS concurred with these comments and recommended that densities should be determined for the different



ores exploited by Blanket Mine, and the adopted values be reviewed regularly by routine density measurements of evaluation samples. MSA cannot confirm if this recommendation has been implemented.

According to Blanket Mine, AR bodies are equivalent to DSR ores therefore despite the differences in terminology; all ore bodies have on average a very similar mineralogy. As sulphide minerals have the greatest effect on SG and because they vary greatly in concentration but have a nominal maximum of 5% in all of the ore types. Therefore if the possible effect of a consistent difference in SG were to be calculated it is unlikely to exceed 2.5% and is therefore not significant. However, SG differences within the ore bodies can have a much greater variation. These are cancelled out in the averaging process during the resource calculation.

## 17.4 Recovery and Modifying Factors

# 17.4.1 Mining Dilution

Reserve tonnages are expressed inclusive of internal waste and diluting materials. Dilution is determined from the reconciliation of previously mined blocks which gives an average of 7.5% for most of the ore bodies on the mine (See table 17.2).

For the purpose of Reserve grade estimation, the applied dilution is assigned a zero grade. This could have the effect of overcompensating in cases where mineralised zones have a gradational grade profile as the margin is approached. The massive AR ore bodies which supply the bulk of the ore for Blanket mine do not exhibit a marginal declining grade profile.

Conservatism in this area is likely to be offset by possible grade overestimates due to the tendency to concentrate sampling in development along the higher grade zones of mineralised shears. However, the effect is considered negligible since the narrow ore bodies are exposed completely for reserve definition while the massive AR ore bodies do not have selectively high grade zones that can be followed by development.

### 17.4.2 Recovery

Blanket Mine has a long and well established track record insofar as metallurgical treatment of the various ores is concerned. On average, approximately 50% of the gold is recovered as free gold, the remaining portion being contained within the sulphide minerals, pyrite, pyrrhotite and arsenopyrite. The quartz ore bodies are characterised by even higher proportions of free gold whereas the disseminated sulphide replacement ores have only small amounts of free gold.

Over the period of operation of the current metallurgical plant, Blanket Mine has achieved recoveries of between 88% and 92% of gold delivered to the plant. This is a good metallurgical recovery for a greenstone mine and reflects the effects of high-grade metamorphism of the ores. Typically higher grades of metamorphism of greenstone ore bodies results in aggregation of minute particles of gold into particles that can be liberated by milling (Pearton, pers comm). In addition, gold micro-particles



within the sulphide grains also appear to coalesce and are more readily liberated or dissolved following the milling process. The factors work in Blanket Mine's favour and allows for the application of a low pay limit for all the ore bodies at Blanket Mine.

A mill recovery factor of 90% has been used for the reserves declared on the 31 December 2010.

## 17.4.3 Summary of Cut-offs and Recovery Factors

The cut-off grades used for the December 2010 Mineral Reserves and Mineral Resources update are given in Table 17-1.

Table 17-1
Cut-off grades used for the December 2010 Mineral Reserves and Mineral Resources
Update

Au price in US\$/oz	Cut-off grade	
1100	2.05 for Mineral Reserves	
1100	2.05 for Mineral Resources	

Upper cut-offs were determined from cumulative frequency diagrams for various ore bodies and the 90 percentile were used. The upper cut-offs (grades above this value are set to this maximum values, also known as grade capping) together with the dilution factors used in the 2010 Mineral Reserves and Mineral Resources statement are as listed below in Table 17-2.

Table 17-2
Upper cut-off grades and dilution factors used for the December 2010 Mineral Reserves and Mineral Resources Update

Ore body	Upper Cut-Off	Dilution Factor Applied
BF	9.20g/t	7.5%
1 O/B	13.50g/t	7.5%
2 O/B	11.00g/t	7.5%
2 Leader	8.50g/t	7.0%
4 O/B	10.40g/t	7.0%
Quartz Reef	14.00g/t	7.5%
Jethro	8.40g/t	7.5%
AR Main	9.20g/t	3.0%
AR South	12.50g/t	7.0%
Sheet	9.00g/t	7.5%
Eroica	9.00g/t	9.0%
Lima	9.50g/t	7.5%
Eastern Lima	14.5g/t	7.5%



#### 17.5 Resource Classification

#### 17.5.1 Inferred Mineral Resources

Inferred Resource block boundaries are taken to the following limits where no point within the block is greater than the specified distance from a sample point:

- 60 m on strike
- 120 m on dip

Down-dip continuity at two times strike is taken from the known limits of pay shoots on other ore bodies (Jethro and Blanket No.1) which have tapered outlines with depths three to four times maximum strike.

The following exceptions limit the distance of a resource block boundary from a sample point:

- Where the 60 m limit exceeds the strike confines of the pay shoot defined by existing up-dip mining limits.
- Where peripheral intersections suggest a significant thinning of the mineralised zone.
- Where un-mineralised holes indicate termination of the mineralised zone. In this instance the boundary is taken half way between the mineralised and non-mineralised intercepts, with the restrictions of pay shoot boundary taking precedence.
- Where projected geological features (e.g. dykes and faults) are likely to affect the mineralised zone.

## 17.5.2 Indicated Mineral Resources

Indicated Mineral Resources are generated from core drillholes, mainly from underground drifts, and in some instances from channel sampling of mine development. The latter are essentially extension blocks from Measured Mineral Resources and proven reserves. Indicated Mineral Resource block boundaries are taken to the following limits where no point within the block is greater than the specified distance from a sample point, with exceptions listed below:

- 30 m on strike
- 60 m on dip.

The 30 m strike distance of a resource block from a borehole intersection is reduced in the following situations:

Where the 30 m limit exceeds the strike confines of the ore shoot defined by the up-dip mining limits.



- Where peripheral intersections suggest a significant thinning of the mineralised zone.
- Where un-mineralised holes indicate termination of the mineralised zone. In this instance the boundary is taken half way between the mineralised and non-mineralised intercepts, with the restrictions of pay shoot boundary taking precedence.
- Where projected geological features (e.g. dykes and faults) are likely to affect the mineralised zone.

#### 17.5.3 Measured Mineral Resources

In practice, Measured Mineral Resources are not normally reported as these are directly converted upon completion of development and sampling to Proven Mineral Reserves due to the high confidence associated with them. Measured Mineral Resource blocks are taken to the following limits, where no point within the block is greater than the specified distance from a sample point, with exceptions listed below:

- 7.5 m on strike
- 7.5 m on dip.

Down-dip continuity is determined by the mining method of 15 m lifts on the DSR type ore bodies and the quartz reefs, e.g. the Blanket Quartz Reef, Eroica and Eastern Lima.

### 17.6 Mineral Resource Statement

MSA has not been able to confirm these mineral resources due to the lack of time to fully evaluate all the manual estimations and determinations of the small additional mineral resource (8%) added since 2006. The mineral resources prior to this were validated and approved by Kinross, SRK (2002) and AGS (2006) prior to the mines temporary closure in 2008 and have not changed since then (Pearton, pers. comm).

Figure 17-3 illustrates the location of the resources on a long section of Blanket Mine.

### 17.6.1 2009 Mineral Resources

Indicated and Inferred Mineral Resources as at 31 December 2009 are detailed in Table 17-3 and Table 17-4 and summarised in Table 17-5.



# Table 17-3 Indicated Mineral Resources for Blanket Mine as at 31 December 2009

MINERAL RESERVES AS AT 30.09.09			For Au-	900		
INDICATED RESOUR	CES					
OREBODY And Block	TONNES	AVERAGE WIDTH	INSITU GRADE (SAMPLED)	TONNES HEAD GRADE	AU CONT	REC
			g/t	g/t	kg	kg
AR MAIN	04000	40.05	2.00			
320/335FW 380/395FW	21690	12.35 13.06	3.08 2.45			
560/595FW 600/630 FW2	14199 57674	7.58	2.45 3.15			
630/660 FW2	57674 57674	7.58	3.15			
510AR 34.46.48	40656	12.58	2.76			
510AR 35.47	31429	5.40	4.15			
510AR 36	8324	3.31	3.30			
510AR 49	4274	1.71	4.44			
510AR 66	16149	4.91	2.82			
510AR 57.59.70	13483	8.75	3.25			
510AR 60	48769	3.48	3.77			
510AR 62.69	25621	7.79	3.44			
510AR 63	26401	6.34	4.87			
510AR 64.71	12868	1.85	3.55			
ARM TOTAL	379211	7.39	3.40			
QUARTZ REEF						
QTZNS1	6338	2.02	4.41			
QTZNS2	23069	2.30	7.23			
QTZNS3	6006	1.37	2.40			
QTZ TOTAL	35413	2.09	5.91			
EROICA						
EROICA TOTAL	0	0.00	0.00			
EROICA TOTAL	U	0.00	0.00			
LIMA						
88/59	23900	2.83	4.65			
E17	13528	4.00	3.36			
E18	16019	2.21	4.17			
E19	31390	2.55	5.41			
20L/02/04	866	6.60	5.77			
20L/03/07	7839	2.60	4.99			
80L/03/01	3811	2.50	12.94 5.78			
110/140 HW S3 140/170 HW S3	2091 2091	1.22 1.22	5.78 5.78			
170/200 HW S2	4612	2.34	2.62			
200/230 HW S2	4612	2.34	2.62			
LIMA TOTAL	101535	2.95	5.27			
AR SOUTH						
TOTAL	0	0.00	0.00			
	E404E0	C 4 E	3.94			
TOTAL INDICATED	516159	6.15	3.34			



# Table 17-4 Inferred Mineral Resources for Blanket Mine as at 31 December 2009

MINERAL RESERVE	ES AS AT 30.0	9.09	For Au-900				
NFERRED RESOU	RCES						
OREBODY	TONNES	AVEDACE	NSITU GRADE	DUUTED	ECT MILL	AU	EST
AND BLOCK	TONNES	WIDTH	(SAMPLED)		AD GRAD		REC
			g/t		g/t	kg	kg
NO 1 OREBODY							
NO1/1	75544	3.74	6.91				
NO1/2 NO1 OREBODY	248648 324192	10.87 9.21	6.70 6.75				
NOT OKEBODT	024102	3.21	0.70				
NO 2 OREBODY							
NO 2/3	65900	2.55	3.25				
NO 2/4	166024	4.21	3.44				
NO 2/5	133350	4.92	3.87				
N0 2/6 NO 2 0/B TOTAL	87763 453037	3.77 4.09	3.11				
NO 2 U/B TOTAL	453037	4.09	3.40				
BF							
BF TOTAL	0	0.00	0.00				
ARS							
ARS TOTAL	0	0.00	0.00				
QUARTZ REEF							
QTZ4	67649	3.73	12.96				
QTZ5	11818	2.00	3.34				
QTZ6	6374	2.50	9.71				
QTZ7	98456	5.00	8.87				
QTZ TOTAL	184297	4.25	10.05				
LIMA							
E16	37890	1.86	4.50				
L37	25353	1.25	3.15				
L43	8460	2.55	5.67				
L44	50714	5.07	3.53				
LIMA TOTAL	122417	3.11	3.90				
IETUDO							
JETHRO J6FW	10742	1.74	3.50				
J7HW	2110	1.20	4.24				
J7CZ	8009	6.22	3.37				
J7FW	14994	2.43	4.61				
J8FW	10539	2.19	4.00				
J9CZ	5743	3.15	4.22				
J15CZ	5431	2.05	4.95				
JETHRO TOTAL	57568	2.78	4.10				
EROICA							
E27/E36H/W	26008	2.91	6.33				
E33 H/W	32371	1.44	5.75				
E39 H/W	431429	10.84	3.19				
E41	17642	1.69	3.71				
E42	14397	1.20	3.21				
E43	31990	8.79	7.98				
E44	122042	13.44	4.16				
E47 E48	51503 59266	2.71 6.01	4.21 3.33				
E50	17368	1.08	3.33 4.71				
E52	1330	1.08	2.87				
WRS 01	207121	2.84	9.03				
WRS 03	312920	4.17	5.44				
EROICA TOTAL	1325387	6.92	5.04				



# Table 17-5 Summary of Mineral Resources as at 31 December 2009 (Source: Blanket Mine, 2011)

### **Summary of Mineral Resources**

Property: Blanket Mine
Date: 31-Dec-09
Gold Price: US\$900/oz

Silver Price:

#### **Resource Summary**

Classification	tonnes (x 1,000)	grade (Au g/t)	Au ounces (x 1,000)	grade (Ag g/t)	Ag ounces (x 1,000)
Measured	-	-	-	-	-
Indicated	516.2	3.94	65.4	-	-
TOTAL	516.2	3.94	65.4	•	-
Inferred	2,466.9	5.27	418.0	-	-
TOTAL	2,983.1	5.04	483.4	١	-

Notes:

Resources to be reported exclusive of reserves

#### 17.6.2 2010 Mineral Resources

Indicated and Inferred Mineral Resources as at 31 December 2010 are detailed in Table 17-6 and Table 17-7 and summarised in Table 17-8.



## Table 17-6 Indicated Mineral Resources for Blanket Mine as at 31 December 2010

NDICATED RESOURCES				US\$1100/ounce	For Au Price		MINERAL RESERVES AS AT 31.12.2010
ARR MAIN 320/335FW 21690 12.35 3.08 380/395FW 14199 12.60 2.48 380/395FW 14199 12.60 2.48 380/395FW 3140 12.55 3.15 30/680 FW2 57674 7.58 3.15 30/680 FW2 57674 7.58 3.15 30/680 FW2 57674 7.58 3.15 510AR 34.6.48 40656 12.58 2.76 510AR 35.47 31429 5.40 4.15 510AR 36 8324 3.31 3.30 510AR 36 8324 3.31 3.30 510AR 49 2654 1.71 4.44 510AR 66 16149 4.91 2.82 510AR 66 16149 4.91 2.82 510AR 60 48769 3.48 3.77 510AR 60 48769 3.48 3.77 510AR 63 26401 6.34 4.87 510AR 63 26401 6.34 4.87 510AR 64.71 12868 1.85 3.55 ARM TOTAL 377591 7.39 3.40  QUARTZ REEF QIZNS1 638 2.02 4.41 QUARTZ REEF QIZNS1 6006 1.37 2.40 QUARTZ REEF QIZNS3 6006 1.37 3.40 QUARTZ REEF QIZNS3 7.							INDICATED RESOURCES
ARR MAIN 320/335FW 21690 12.35 3.08 380/395FW 14199 12.60 2.48 880/630 FW2 57674 7.58 3.15 830/606 FW2 57674 7.58 3.15 810AR 34.6.48 40656 12.58 2.76 810AR 35.47 31429 5.40 4.15 810AR 36 810AR 36 8124 3.31 3.30 810AR 36 81324 3.31 3.30 810AR 49 2654 1.71 4.44 810AR 66 16149 4.91 2.82 810AR 62.69 1510AR 63 14343 8.75 8.15 810AR 62.69 25621 7.79 3.44 810AR 63 810AR 63 26401 6.34 4.87 810AR 63 810AR 64.71 12868 1.85 3.55 ARRM TOTAL 377591 7.39 3.40  QUARTZ REEF QTZNS1 6338 2.02 4.41 QUARTZ REEF QTZNS1 6006 1.37 2.40 QUARTZ REEF QTZNS2 23069 2.30 7.23 QUARTZ 826 QUARTZ 83 6006 1.37 2.40 QUARTZ 84 EROICA  EROICA  EROICA  EROICA  AR 80  23900 2.83 4.65 817 13528 4.00 3.36 8169 2.21 4.17 817 817 81876 818876 818876 818876 818876 818876 818876 818876	EST	AU	DILUTED EST MILL	INSITU GRADE	AVERAGE	TONNES	OREBODY
AR MAIN 320/335FW		CONT	TONNES HEAD GRADE	(SAMPLED)			
12.35   3.08	Ng	- Kg	g,t	g/t			
12.35   3.08							AR MAIN
380/395FW 14199 12.60 2.48 600/630 FW2 57674 7.58 3.15 630/660 FW2 57674 7.58 3.15 610AR 34.46.48 40656 12.58 2.76 510AR 35.47 31429 5.40 4.15 510AR 35.67 3.30 510AR 49 2654 1.71 4.44 510AR 49 2654 1.71 4.44 510AR 66 16149 4.91 2.82 510AR 60 48769 3.48 3.77 510AR 60 48769 3.48 3.77 510AR 63 26401 6.34 4.87 510AR 63 26401 6.34 4.87 510AR 64.71 12668 1.85 3.55 ARM TOTAL 377591 7.39 3.40  QUARTZ REEF QTZNS1 6338 2.02 4.41 QTZNS2 23069 2.30 7.23 QTZNS2 23069 2.30 7.23 QTZNS2 23069 2.30 5.91  EROICA  EROICA  EROICA TOTAL 35413 2.09 5.91  EROICA TOTAL 35413 2.09 5.91  LIMA 88/59 23900 2.83 4.65 E17 13528 4.00 3.36 E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH				3.08	12.35	21690	
500/630 FW2 57674 7.58 3.15 530/660 FW2 57674 7.58 3.15 530/680 FW2 5.40 4.15 530/680 8324 3.31 3.30 530/680 8324 3.31 3.30 530/680 FW2 580/680 FW2 580/680 FW2 580/680 530/680 FW2 580/680 FW2 580/680 FW2 580/680 FW2 580/680 530/680 FW2 580/680 FW2 58							
\$30/660 FW2							
### ### ##############################							
510AR 35.47  31429  5.40  4.15  510AR 36  8324  3.31  3.30  510AR 49  2654  1.71  4.44  510AR 66  16149  4.91  2.82  510AR 67.59.70  13483  8.75  3.25  510AR 60  48769  3.48  3.77  510AR 63  26621  7.79  3.44  510AR 63  26401  6.34  4.87  510AR 63  26401  377591  7.39  3.40   QUARTZ REEF  QTZNS1  QTZNS1  6338  2.02  4.41  QTZNS2  23069  230  7.23  QTZNS3  6006  1.37  2.40  QTZNS3  6006  6.137  2.40  QTZNS3  6006  1.37  2.40  QTZNS3  6006  1.37  2.40  QTZ TOTAL  35413  2.09  5.91   EROICA  EROICA TOTAL  0  0.00  0.00  1.00							
STOAR 36							
STOAR 49							
STOAR 66							
STOAR 57.59.70							
### STOAR 60							
25621   7.79   3.44							
### STOCK ### ST							
### STOCK							
QUARTZ REEF QTZNS1 6338 2.02 4.41 QTZNS2 23069 2.30 7.23 QTZNS3 6006 1.37 2.40 QTZ TOTAL 35413 2.09 5.91  EROICA  EROICA  EROICA  EROICA 13528 4.00 3.36 E17 13528 4.00 3.36 E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA 100 100 100 100 100 100 100 100 100 10							
QUARTZ REEF QTZNS1 6338 2.02 4.41 QTZNS2 23069 2.30 7.23 QTZNS3 6006 1.37 2.40 QTZ TOTAL 35413 2.09 5.91  EROICA  EROICA  EROICA  LIMA 88/59 23900 2.83 4.65 E17 13528 4.00 3.36 E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA 100 18876  AR SOUTH							
EROICA  EROICA TOTAL  0 0.00 0.00  LIMA 88/59 23900 2.83 4.65 E17 13528 4.00 3.36 E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86  LIMA TOTAL  AR SOUTH				7.23	2.30	23069	QTZNS1 QTZNS2
EROICA TOTAL 0 0.00 0.00  LIMA 88/59 23900 2.83 4.65 E17 13528 4.00 3.36 E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH							
LIMA 88/59 23900 2.83 4.65 E17 13528 4.00 3.36 E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH				0.00	0.00	0	
88/59 23900 2.83 4.65 E17 13528 4.00 3.36 E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH				0.00	0.00		EROICA TOTAL
E17 13528 4.00 3.36 E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH							
E18 16019 2.21 4.17 E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH							
E19 31390 2.55 5.41 20Lima East 02/04,03/07 12119 6.27 3.86 LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH							
20Lima East 02/04,03/07 12/19 6.27 3.86 LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH							
LIMA TOTAL 96956 3.23 4.54 18876  AR SOUTH							
AR SOUTH							•
			18876	4.54	3.23	96956	LIMA TOTAL
TOTAL 0 0.00 0.00							AR SOUTH
				0.00	0.00	0	ГОТАL
TOTAL INDICATED 509960 6.23 3.79				3 70	6 23	509960	TOTAL INDICATED



# Table 17-7 Inferred Mineral Resources for Blanket Mine as at 31 December 2010

MINERAL RESERVES AS AT 31.12.2010			For Au Price US\$1100/ounce					
INFERRED RESOU	RCES							
OREBODY	TONNES	AVERAGE	INSITU GRADE	DILUTED	EST MILL	AU	EST	
AND BLOCK		WIDTH	(SAMPLED)	TONNES	AD GRAD	CONT	REC	
			g/t		g/t	kg	kg	
NO 1 OREBODY								
NO1/1	75544	3.74	6.91					
NO1/2	248648	10.87	6.70					
NO1 OREBODY	324192	9.21	6.75					
NO 2 OREBODY								
NO 2/3	65900	2.55	3.25					
NO 2/4	166024	4.21	3.44					
NO 2/5	133350	4.92	3.87					
NO 2/6	87763	3.77	3.11					
NO 2 0/B TOTAL	453037	4.09	3.48					
BF								
BF TOTAL	0	0.00	0.00					
ARS								
ARS TOTAL	0	0.00	0.00					
QUARTZ REEF	67640	2.72	40.00					
QTZ4	67649	3.73	12.96					
QTZ5	11818	2.00	3.34					
QTZ6 QTZ7	6374 98456	2.50 5.00	9.71 8.87					
QTZ TOTAL	184297	4.25	10.05					
QIE TOTAL	104237	4.20	10.00					
LIMA								
E16	37890	1.86	4.50					
L37	25353	1.25	3.15					
L43	8460	2.55	5.67					
L44	50714	5.07	3.53					
LIMA TOTAL	122417	3.11	3.90					
JETHRO								
J6FW	10742	1.74	3.50					
J7HW	2110	1.20	4.24					
J7CZ	8009	6.22	3.37					
J7FW	14994	2.43	4.61					
J8FW	10539	2.19	4.00					
J9CZ	5743	3.15	4.22					
J15CZ	5431	2.05	4.95					
JETHRO TOTAL	57568	2.78	4.10					
EROICA								
E27/E36H/W	26008	2.91	6.33					
E33 H/W	32371	1.44	5.75					
E39 H/W	431429	1.44	5.75 3.19					
E41	14207	1.69	3.71					
E42	11215	1.20	3.21					
E43	11904	8.79	7.98					
E44	91115	13.44	4.16					
E47	51503	2.71	4.21					
E48	59266	6.01	3.33					
E50	16343	1.08	4.71					
E52	1330	1.93	2.87					
WRS 01	207121	2.84	9.03					
WRS 03	312920	4.17	5.44					
EROICA TOTAL	1266732	6.77	5.02					



Table 17-8
Summary of Mineral Resources as at 31 December 2010 (Source: Blanket Mine, 2011)

### **Summary of Mineral Resources**

Property: Blanket Mine
Date: 31-Dec-10
Gold Price: US\$1100/oz

Silver Price:

Reserve Summary for US\$1100/oz

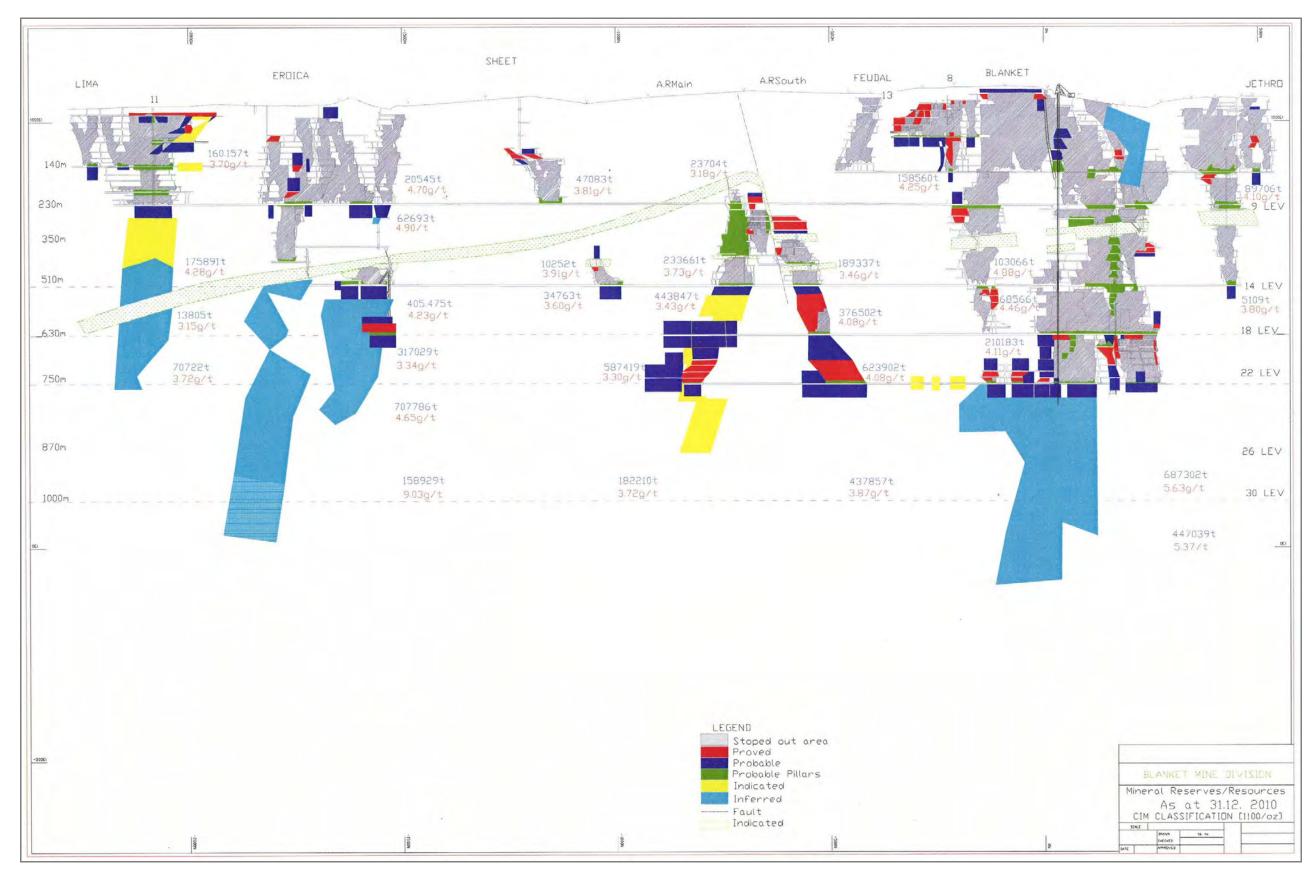
Classification	tonnes (x 1,000)	grade (Au g/t)	Au ounces (x 1,000)	grade (Ag g/t)	Ag ounces (x 1,000)
Measured	7	- 1		7 7 7	-
Indicated	510.0	3.79	62.1	4 4 - 1	_
TOTAL	510.0	3.79	62.1		_
Inferred	2,408.2	5.27	408.0	-	_
TOTAL	2,918.2	5.01	470.2		-

Notes:

Resources to be reported exclusive of reserves



Figure 17-3
Long section of Blanket Mine showing the December 2010 Mineral Resources and Mineral Reserves





#### 17.7 Mineral Reserve Estimate

MSA has not been able to confirm these mineral resources due to the lack of time to fully evaluate all the manual estimations and determinations of the small additional mineral resource (8%) added since 2006. The mineral resources prior to this were validated and approved by Kinross, SRK (2002) and AGS (2006) prior to the mines temporary closure in 2008 and have not changed since then (Pearton, pers. comm).

#### 17.7.1 2009 Mineral Reserves

Proven and Probable Mineral Reserves as at 31 December 2009 are detailed in Table 17-9 and Table 17-10.



Table 17-9
Mineral Reserves as at 31 December 2009

MINERAL RESERVE	S AS AT 3	1.12.09	Fo	or Au-900			
MINERAL RESERVES T	OTALS						
OREBODY	INSITU	AVERAGE	INSITU GRADE	DILUTED	EST MILL	AU	EST
AND BLOCK	TONNES	WIDTH	(SAMPLED)	TONNES	HEAD GRADE	CONT	REC
			g/t		g/t	kg	kg
PROVED							
1 OREBODY	9219	1.94	5.40	9910	5.02		
2 OREBODY	20882	2.83	4.38	22448	4.07		
BF	17926.42	1.54	3.45	19271	3.21		
QUARTZ	36260	2.24	5.35	38980	4.98		
2 LEADER	30789	3.56	3.70	32944	3.45		
4-OREBODY	22191	4.97	4.55	23744	4.25		
AR	159145	9.29	3.64	163919	3.54		
ARS	487873	21.06	4.26	522024	3.98		
JETHRO	6099	2.66	4.23	6556	3.94		
EROICA	51497.94	6.52	4.59	56133	4.21		
LIMA	15203	2.04	4.08	16343	3.79		
SHEET	15890	4.64	4.53	17082	4.21		
Total Proved	872975	14.45	4.20	929355	3.95	3667	3263
PROBABLE							
1 OREBODY	6006	3.30	3.25	6456	3.02		
2 OREBODY	46707	2.76	4.31	50210	4.01		
BF	60461	2.15	4.06	64996	3.78		
QUARTZ	98940	2.54	4.40	106361	4.09		
4 OREBODY	45645	4.16	3.98	48840	3.72		
2 LEADER	33032	5.23	3.16	35344	2.95		
JETHRO	10436	2.53	4.23	11219	3.93		
AR	729635	9.81	3.47	751524	3.37		
ARS	1018652	23.93	4.16	1089958	3.89		
EROICA	183831	5.30	4.95	200376	4.54		
LIMA	115266	3.22	3.77	123911	3.51		
SHEET	51184	6.47	4.00	55023	3.72		
Total Probable	2399795	14.22	3.98	2544217	3.76	9555	8504
							2004
PROBABLE PILLARS							
NO1	12862	5.47	6.72	13827	6.25		
NO2	14664	2.62	6.72 4.42	15764	6.25 4.12		
NO2 BF	12807	2.02	4.42 4.13	13768	4.12 3.84		
NO4	85849	3.12	4.13 5.30	91858	3.84 4.95		
2 LEADER	14265	4.17	3.53	15264	3.30		
QZ REEF	47142	2.63	4.58	50678	4.26		
JETHRO AD	18114	2.79	4.54	19473	4.23		
AR	160030	13.06	4.12	164831	4.00		
ARS	88822	21.74	4.29	95040	4.01		
SHEET	18203	12.53	3.68	19568	3.42		
EROICA	21651	4.91	5.55	23600	5.09		
LIMA	46477	6.79	4.41	49963	4.10		
Total Probable Pillar	540886	9.81	4.51	573631	4.26	2441	2172
INDICATED							
NO1							
NO2							
BF							
JETHRO							
QTZ							
BQR EXT.	35413	2.09	5.91				
AR	379211	7.39	3.40				
ARS	0	0.00	0.00				
EROICA	0	0.00	0.00				
LIMA	101535	2.95	5.27	0	0.00		
Total Indicated	516159	6.15	3.94				
INFERRED							
NO1	324192	9.21	6.75				
NO2	453037	4.09	3.48				
BF	0	0.00	0.00				
JETHRO	57568	2.78	4.10				
QTZ	184297	4.25	4.10 10.05				
AR ABC	0	0.00	0.00				
ARS	0	0.00	0.00				
EROICA	1325387	6.92	5.04				
		3.11	3.90				
LIMA	122417						_
LIMA Total Inferred	2466898	6.22	5.27				



Table 17-10
Mineral Inventory as at 31 December 2009

	COM	

### MINERAL INVENTORY CIM SUMMARIES

(as @ 30.12.09)

For Au-900 (Reserves)

Au-900 (Resoruces)

			Au-900 (	ivesoluces)		
CATEGORY	ESTIMATED	EST MILL	%	Au price	Pay Limit	
	TONNES	HEAD GRADE		US\$/oz	g/t	
	t	g/t				
Proved *	929,355	3.95	13.22	900	2.30	117,883
Total Available	929,355	3.95	13.22	900	2.30	117,883
Probable*	2,544,217	3.76	36.19	900	2.30	307,199
Probable Pillars*	573,631	4.26	8.16	900	2.30	78,479
Total Reserves*	4,047,203	3.87	57.57	900	2.30	503,562
Indicated Resources**	516,159	3.94	7.34	900	2.30	65,387
Inferred Resources**	2,466,898	5.27	35.09	900	2.30	417,991
Total Resources**	2,983,057	5.04	42.43	900	2.30	483,378
Total Mineral Inventories	7,030,260	4.37	100.00			986,940

<sup>\*</sup> Reserves tonnages are fully diluted

#### 17.7.2 2010 Reserves

Proven and Probable Mineral Reserves as at 31 December 2010 are detailed in Table 17-11 and Table 17-12.

<sup>\*</sup> Reserves tonnages are fully diluted
\*\*Resources tonnages are in-situ l.e no modifying factors have been applied



## Table 17-11 Mineral Reserves as at 31 December 2010

BLANKET MINE (1983) (PRIVATE) (LIMITED)

MINERAL RESERVES AS AT 31.12.2010

For Au-US\$1100/ounce(Reserves)
For Au-US\$1100/ounce(Resources)

SUMMARY								
OREBODY		TONNES	AVERAGE	INSITU GRADE	DILUTED	EST MILL	AU	EST
AND BLOCK			WIDTH	(SAMPLED)	TONNES	HEAD GRADE	CONT	REC
				g/t		g/t	kg	kg
PROVED		968090	12.42	4.24	1031089	3.98	4107	365
PROBABLE		2369479	12.99	3.88	2513717	3.66	9191	818
PROBABLE PILLA	RS	556258	12.99	4.43	590094	4.18	2467	
INDICATED		509960	6.23	3.79				
INFERRED		2408243	6.12	5.27				
TOTAL MINE		6812030	9.97	4.46	4134900	3.81	15765	14031
OREBODY	% DISTRIBI	ITION OF AVA	MI ARI E MINE	RAL RESERVES				
1 OREBODY	0.96	9212	1.94	5.40	9903	5.02		
2 OREBODY	2.18	20882	2.83	4.38	22448	4.07		
BF	1.87	17974.42	1.54	3.43	19323	3.19		
QUARTZ	4.14	39689	2.35	5.16	42666	4.80		
2 LEADER	3.27	31514	3.65	3.68	33720	3.44		
4-OREBODY	2.56	24643	5.04	4.45	26368	4.15		
AR	17.33	173491	9.11	3.60	178696	3.49		
ARS	54.92	529205	17.73	4.51	566249	4.21		
JETHRO	0.64	6099	2.66	4.23	6556	3.94		
EROICA	7.94	75073	6.52	3.61	81830	3.31		
LIMA	2.53	24251	1.96	3.91	26070	3.63		
	1.67	16057	4.60	4.52	17261	4.20		
SHEET	100.00	968090	12.42	4.52	1031089	3.98	4107	3655
LOCATION OF AV Above 9 Level Above 14 Level	AILABLE RES % 8.75 17.34	ERVES 84683 167824	2.77 9.84	4.10 3.72	90857 177527	3.82 3.52		
Above 18 Level	31.04	300457	15.98	4.09	322703	3.81		
Above 22 Level	42.88	415126	12.86	4.59	440002	4.33		
GRAND TOTAL	100.00	968090	12.42	4.24	1031089	3.98	4107	3655
GRADING OF AVA 2.10-2.99g/t 3.00-3.99g/t 4.00-4.99g/t 5.00-5.99g/t	% 1.44 50.32 29.93 11.71	13951 487128 289725 113330	4.14 10.21 15.26 13.02	2.68 3.59 4.61 5.13	14698 516263 310219 121431	2.54 3.39 4.30 4.79		
6.00-6.99g/t	6.49	62838	17.44	6.30	67277	5.88		
7.00g/t-over	0.12	1118	1.52	7.87	1202	7.32	44	
TOTAL	100.00	968090	12.42	4.24	1031089	3.98	4107	3655



#### **Table 17-12** Mineral Inventory as at 31 December 2010

#### **BLANKET COMPLEX**

#### MINERAL INVENTORY **CIM SUMMARIES**

(as @ 31.12.2010) For Au Price US\$1100/ounce (Reserves)

Au-Price US\$1100/ounce (Resources)

CATEGORY	ESTIMATED	EST MILL	%	Au price	Pay Limit	
	TONNES	HEAD GRADE		US\$/oz	g/t	
	t	g/t				
Proved *	1,031,089	3.98	14.62	1,100	2.05	132,050
Total Available	1,031,089	3.98	14.62	1,100	2.05	132,050
Probable*	2,513,717	3.66	35.64	1,100	2.05	295,496
Probable Pillars*	590,094	4.18	8.37	1,100	2.05	79,309
Total Reserves*	4,134,900	3.81	58.63	1,100	2.05	506,855
Indicated Resources**	509,960	3.79	7.23	1,100	2.05	62,115
Inferred Resources**	2,408,243	5.27	34.14	1,100	2.05	407,808
Total Resources**	2,918,203	5.01	41.37	1,100	2.05	469,924
Total Mineral Inventories	7,053,103	4.31	100.00			976,779

<sup>\*</sup> Reserves tonnages are fully diluted \*\*Resources tonnages are in-situ l.e no modifying factors have been applied



#### 18 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is deemed necessary to make this technical report understandable and not misleading.



#### 19 INTERPRETATION AND CONCLUSIONS

#### 19.1 Project Risks

#### 19.1.1 Sampling

The use of sludge holes in the calculation of the resource is not recommended due to the possibility of fines loss during sample capture. The mixing of different sample sizes in the resource calculation results in sample support induced errors. Either the resource estimate has to be all chip or all drill sample. Failing which, the sludge samples should be discarded in favour of chip samples and chips samples in favour of drilling data. To be fair, the mine has been operating using the combined data for some time and it would appear to be adequate, however some improvements could be made.

It has been indicated to MSA that the sludge holes are not used for resource estimation, only resource delineation and therefore the volume variance issue and confidence in the quality of the sludge data is not necessarily a concern with regards the resource estimation.

#### 19.1.2 Assay

The only QAQC being done is the occasional/infrequent submission of duplicate pulp samples from the on-site laboratory to uncertified Duration Laboratory (owned by Duration Gold Limited which operates the adjacent Vubachikwe Gold Mine) in Bulawayo. This is done mainly to check the on-site results if there is cause. Internal duplicates for all sample types shows good correlation and agreement. Limestone blanks are also inserted at some unknown interval in the sample batches, to monitor contamination. There are no certified reference materials (CRMs) inserted.

This comprehensive lack of control on the assay data is a point of concern and does not conform to industry best practice.

It is understood that exporting of samples to external laboratories can be complicated. Now that there is a certified laboratory in KweKwe (Antech Laboratory), it becomes feasible to implement a full QAQC program. Insertion of CRMs (independent of an external referee lab) would be extremely desirable.

The manual transcription of data both in the laboratory and in the capturing of the data onto the 1:100 assay plans and then into the reserve calculation sheets is an area that needs improvement to prevent cumulative transcription errors.

#### 19.1.3 Mineral Resources

The definition of the Mineral Resources using manual interpretation of the sampling data and the geologists" orebody knowledge is reasonable. The lack of 3D visualisation in a complex orebody such as this does raise some concerns around geotechnical stability of the stopes and associated development as well as the volumes of the Mineral Resources as the assay footprint is projected 7.5m above and below the level.



Arguably 3D models have a similar degree of extrapolation and since the operation is and has been functioning well for many years using this method, there is no immediate point of concern with the volume definition.

The use of length weighted grade calculations for resource estimation is not ideal as it can result in severe conditional bias; it ignores the spatial relationship of the data, and is affected by clustering of values in high grade domains. While this method is not ideal, it may be used to declare global *in situ* Mineral Resources, however local estimation at a level-by-level basis should be avoided (Vann, 2008).

Again, the fact that the mine is achieving good reconciliation factors (Mine Call) using this estimation method speaks to the reasonability of the methodology within the context of this mine.

#### 19.2 Project Opportunities

The increase in the gold price remains an important opportunity for the Blanket Mine property. The increased revenue will provide necessary funds for exploration on site from underground platforms to increase the resource base. The Zimbabwean economy has been dollarized such that the hyper inflationary regiment that was previously in effect has eased off. The marketing of gold in Zimbabwe has been relaxed with direct export now permitted. Blanket Nine now receives proceeds from sell at spot gold price in USD and can retain 100% in hard currency to pay for operations. Most inputs for the mine operations are imported from South Africa. The problem with this for the mine is the strengthening of the rand against the dollar.

The already established infrastructure at the property positions it to direct resources towards increasing production rather than baseline capital investment since most of the equipment is in place. The commissioning of the Number 4 shaft and the standby power generator set positions the mine to increase production. This coupled with a loyal, long serving and experienced staff works in the operation's favour as necessary skills are retained.

The property has robust orebodies whose down dip extensions below the current deepest level on the mine are yet to be fully explored. The adjacent property, the Vubachikwe Gold Mine has payshoots extending below 1 km depth. Potential to find new orebodies and increase the resource base exists particularly from platforms afforded by haulage development.

There is an enormous capacity at the plant since Blanket Mine stopped processing old slimes. This capacity provides opportunity to increase production considerably without the need for massive investment in the process plant.



#### 20 **RECOMMENDATIONS**

#### 20.1 Sampling and Resource

Sludge sampling is viewed with caution in the international mining industry and while is it considered to have its place and that it can be somewhat better than poorly conducted chip sampling it is still considered sub-optimal for resource definition. Instead of sludge sampling, short AQ or BQ core holes could be drilled and sampled. This would result in a larger sample, more geological detail and therefore validate the increase in drilling cost. If the sludge holes are definitely not used for resource estimation then this suggestion may fall away.

It is suggested that the capturing of the existing and new data into a robust database system be accelerated. The less manual handling of data the better, failing which, the use of a rigorous double entry and 10% (minimum) checking system for data in the laboratory and the plotting on the plans be implemented (if it hasn't already been done). A LIMS system for the laboratory would also be appropriate and ideal.

The use of Certified Reference Materials (CRMs) is desirable and necessary to get convergence between Blanket mines practices and International standards for assays. The availability of a certified laboratory in Zimbabwe (Antech Laboratory, recertified by SANAS in 2009 – Appendix 5) makes the possibility for an external referee laboratory a distinct possibility.

Modelling of the resource in 3D using the electronic sampling database is also a strong recommendation as this will aid in the accurate definition of mineable envelopes as well as reduce the subject bias of which samples contribute to the resource grade. It is understood that the cost of implementing such a system may be too high and therefore impractical. The manual definition of the resource envelope need not be abandoned as this effectively uses the geologist skills in interpreting the orebody.



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#### 22 DATE AND SIGNATURE PAGE

The undersigned, Bruno Bvirakare, contributed to sections 1 to 15 inclusive and sections 17 to 21 inclusive of this Technical Report, titled "NI 43-101 Technical Report on the Blanket Gold Mine, Zimbabwe", with an effective date of 28 June 2011, in support of the public disclosure of technical aspects of the Blanket Gold Mine Property. The format and content of this report are intended to conform to Form 43-101F1 of National Instrument 43-101 of the Canadian Securities Administrators.

Signed,

.....

Name: Bruno Bvirakare BSc, PrSciNat

Date: 28 June 2011

The undersigned, Justin Glanvill, contributed to sections 11 to 13 inclusive and sections 17, 19 and 20 inclusive of this Technical Report, titled "NI 43-101 Technical Report on the Blanket Gold Mine, Zimbabwe", with an effective date of 28 June 2011, in support of the public disclosure of technical aspects of the Blanket Gold Mine Property. The format and content of this report are intended to conform to Form 43-101F1 of National Instrument 43-101 of the Canadian Securities Administrators.

Signed,

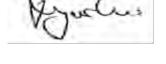
.....

Name: Justin Glanvill BSc (Hons), GDE, MGSSA, PrSciNat



The undersigned, Joel Mungoshi, contributed to sections 16 and 23 of this Technical Report, titled "NI 43-101 Technical Report on the Blanket Gold Mine, Zimbabwe", with an effective date of 28 June 2011, in support of the public disclosure of technical aspects of the Blanket Gold Mine Property. The format and content of this report are intended to conform to Form 43-101F1 of National Instrument 43-101 of the Canadian Securities Administrators.

Signed,



Name: Joel Mungoshi HND, BSc (Hons) Met Eng, MDP, MBL, MSAIMM

Date: 28 June 2011

The undersigned, John Sexton, contributed to section 23 of this Technical Report, titled "NI 43-101 Technical Report on the Blanket Gold Mine, Zimbabwe", with an effective date of 28 June 2011, in support of the public disclosure of technical aspects of the Blanket Gold Mine Property. The format and content of this report are intended to conform to Form 43-101F1 of National Instrument 43-101 of the Canadian Securities Administrators.

Signed,

.....

Name: John Sexton BSc, BCom, MBL



The undersigned, Vaughn Duke, contributed to section 23 of this Technical Report, titled "NI 43-101 Technical Report on the Blanket Gold Mine, Zimbabwe", with an effective date of 28 June 2011, in support of the public disclosure of technical aspects of the Blanket Gold Mine Property. The format and content of this report are intended to conform to Form 43-101F1 of National Instrument 43-101 of the Canadian Securities Administrators.

Signed,



.....

Name: Vaughn Duke PrEng, PMP, BSc Min Eng (Hons), MBA, FSAIMM, MECSA, MPMI, MMASA

Date: 28 June 2011

The undersigned, Robert Charles Croll, undertook peer review of the entire Technical Report, titled "NI 43-101 Technical Report on the Blanket Gold Mine, Zimbabwe", with an effective date of 28 June 2011, in support of the public disclosure of technical aspects of the Blanket Gold Mine Property. The format and content of this report are intended to conform to Form 43-101F1 of National Instrument 43-101 of the Canadian Securities Administrators.

Signed,

Name:

Robert Charles Croll



The undersigned, Mike Robertson, undertook peer review of the entire Technical Report, titled "NI 43-101 Technical Report on the Blanket Gold Mine, Zimbabwe", with an effective date of 28 June 2011, in support of the public disclosure of technical aspects of the Blanket Gold Mine Property. The format and content of this report are intended to conform to Form 43-101F1 of National Instrument 43-101 of the Canadian Securities Administrators.

Signed,

.....

Name: Mike Robertson



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

#### 23.1 Mining Operations

The Blanket Mine is located on the northwest limb of the Gwanda Greenstone belt. The two main types of mineralisation are a disseminated sulphide replacement type, which comprises the bulk of the ore shoots, and quartz veins that tend to have long strikes but are not uniformly mineralised. Mining is from a mix of ore bodies (Figure 8-1), which comprise the Jethro deposits in the south, through Blanket itself to the Feudal, AR South, AR Main, Sheet, Eroica and Lima deposits in the north.

Blanket is considered to be the primary orebody with Jethro situated some 400 m to the south and AR some 500 m to the north. Eroicas is about 1.3 km further north and Lima an additional 1.2 km north of the Blanket proper. It is understood that current mining and development is in the Blanket, the AR Main, Eroica and AR South orebodies. The mine reportedly produced around 12 ktpm at a head grade of about 3.90 g/t Au (Table 23-1) which is generally consistent with production observed from similar Greenstone Belt operations (i.e. the generally larger and longer life mines).

Table 23-1 Annual Production Results								
	2008	2009	2010					
Ore mined (kt)	81.6	94.7	149.3					
Capital Development (m)	-	165	365					
ROM Development (m)	472	1,267	2,455					
Ore milled (kt)	81.6	103.4	153.5					
Head grade (g/t)	3.33	3.75	3.90					
Production cost (USD per ounce)	663	744	751					

#### 23.1.1 Mining Process

Blanket Mine uses mining methods that are commonly employed and well understood by Greenstone Belt miners who generally have to deal with steep tabular to massive ore bodies. Since the nature of the ore bodies vary, the exact mining practices are tailored to suit the specific attributes of each particular orebody. The mining methods employed represent experience gained from many years of mining.



The different rock types at the Blanket Mine are generally very competent and support such as rock bolts are only installed on rare occasions where weak rock conditions are encountered. There are zones with unstable sidewalls such as the Quartz Reef and Feudal at Blanket, but this is addressed by the application of a shrinkage methodology. The types of stopes do not contribute a relatively high tonnage and is insignificant to the overall dilution incurred.

Crosscuts from a series of shafts to access the underground workings are cut every 30 m wherefrom diamond drilling is used to locate ore shoots for development planning. Most of the development is within mineralised zones except when developing transfer levels between ore bodies. Such development is handled as waste.

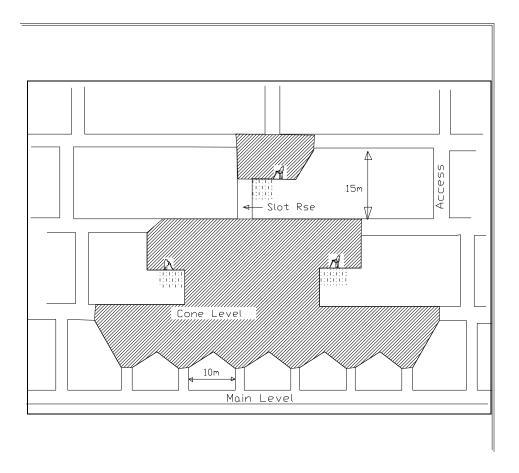
A recently completed No 4 shaft at Blanket will be linked to Lima shaft via a 750 m haulage on 22 Level. A 230 m ventilation raise will also be bored for improved ventilation in this area to facilitate double-shift blasting. It will be equipped with a suitable single winder engine and a double-deck conveyance for personnel transportation between the 14 Level and 22 Level.

Stoping preparations in narrow ore bodies (<3.0 m) begin by mining box raises sited at 10 m intervals from the footwall of the ore body. In wider ore bodies (>3.0 m), air loader operated draw points are mined instead of boxes to facilitate longhole open stoping which generates large rocks. Three types of mining methods are used at the Blanket Mine:

- 1. Underhand stoping in the narrow ore bodies.
- 2. Shrinkage stoping where blocky sidewalls are evident.
- 3. Longhole stoping in the wider ore bodies.

The underhand bench stoping is usually applied in the narrow orebodies and allows for control of the stoping width (+/-2 m) and dilution. Figure 23-1 presents a schematic section of a typical underhand stoping method.





Shrinkage stoping is practiced when sidewalls, if left unsupported tend to be unstable. A shrinkage pile offers passive support and prevents slabs of waste rock from diluting the ore. The minimum mining width is 1.2 m. Figure 23-2 presents a cross section of a typical shrinkage stoping method.

Blanket Mine
Shrink Stope Layout

Crown Pillar

TRAMMING LEVEL

TOWN

TRAMMING LEVEL

TOWN

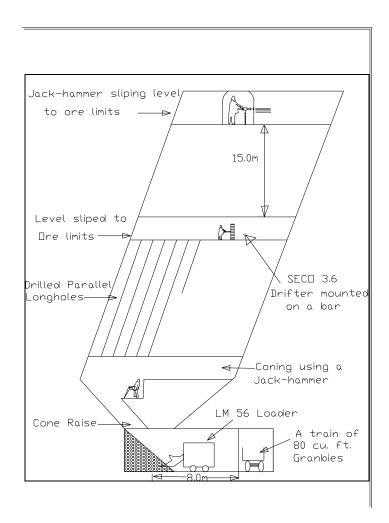
TRAMMING LEVEL

Town

Figure 23-2



Longhole stoping is the mining method most used at the Blanket Mine. Figure 23-3 is a schematic section of a typical longhole stoping layout in wider orebodies.



Detailed descriptions in the information provided to the writer of the various methods has been reviewed and found to be consistent with common practice on these types of mines. It is understood that reduced unit costs and increase safety is expected with a phasing out of the underhand bench stoping method in favour of shrinkage and long hole stoping methods.

#### 23.1.2 Mining Infrastructure and Equipment

Blanket Mine requires certain infrastructure and various equipment to produce at the required 40 koz gold per annum level. This includes hoisting, compressors, drilling, tramming, ventilation and power.

Eleven hoists are installed at the mine. Three have been ore handling hoists, namely Main Incline Shaft, Sub-vertical Shaft, and 6 Winze Shaft. All ore is transported to the Blanket area for hoisting to surface. This is generally done on three main levels (i.e. 7, 14, and 22). Until completion of the No. 4 Shaft Expansion Project, there was a necessity to double and triple handle mined ore and waste from below the 14 Level (510m) mid-shaft loading system via the No 5 and No 6 sub-shafts (winzes). This



limited ore production to 500 tpd or less. Ore from below 14 Level is still double-handled but an ore pass (i.e.115 m) which is currently being raised-bored from 18 Level (630 m) to 22 Level will resolve this problem. A sustained 1.1 ktpd will be possible once this ore pass and its 18 Level tipping station are complete.

Underground drilling and lashing is facilitated by jackhammers, drifters and loaders and 10 400 cfm of compressed air capacity is installed on the mine:

- Two 4 400 cfm ER8 Atlas Copco Compressors at Blanket
- Two 2 000 cfm GA160 Atlas Copco Rotary Screw Compressor at Blanket
- One 1 000 cfm GA160 Atlas Copco Rotary Screw Compressor at Lima
- Two 3 000 cfm GA250 Atlas Copco Rotary Screw Compressor at Lima

The underground drilling equipment comprises seventy Seco 23, Seco 25, Seco 215 jackhammers and Seco 36 (Konkola) drifters. The jackhammers are mainly used for development and the drifters for production (i.e. long hole drilling).

The tramming is by LM56 / 57 air loaders, grandby cars, cocopans and battery operated locomotives.

A less congested 14 Level will be equipped with personnel carriages for faster access to improve efficiencies from the mining employees

Ventilation downcasts via the Main shaft, Jethro surface, 5 Winze and N° 4 shaft with Lima, Sheet, Jethro Winze and other old shafts up casting. Varoius axial flow fans have been installed on the mine to enhance the ventilating volume.

The Zimbabwe Electricity Supply Authority (ZESA) supplies power to the Blanket Mine from its main substation in Gwanda via 33kV and 11kV overhead lines.Blanket is installing additional diesel generators with suitable switchgear, transformers, and controls to ensure that the entire surface and underground operations will be able to continue to fully operate irrespective of ZESA power outages.

#### 23.1.3 Planning

A mine life of 11 years was last forecast in 2006. However, mineral resource estimates in the inferred category are generally conservative with ongoing exploration usually adding to existing ore shoots. The mine is reportedly worked out above 18 level. Long crosscuts on the 22 Level haulage will provide drilling platforms to explore for deeper ore bodies.

The latest base case forecast predicts constant revenue over a period of four years starting in 2012, with a two year build up starting in 2010. Yet there is an increase in operating expenses over the period (i.e labour, consumables, diesel, maintenance and power). This reduces operating profit margins from 2011 to 2015.



In contrast the forecast based on expansions and indigenisation reflects increasing revenue over a period of six years, 2010 to 2016. The operating expenses increased over the same period, and while the expenses for consumables and diesel increased, other expenses like labour, power and administrative costs did not increase which seems in contrast to what one would expect.

A discrepancy between the total recovered gold in kilograms and the total recovered gold in ounces, was noted.

#### 23.1.4 Modifying Factors

Measured and Indicated Mineral Resources are converted to Proven and Probable Mineral Reserves, respectively, by applying appropriate modifying factors including dilution and mine call factors based on ore recovery from the mine. These factors are based on metal reconciliation between the predicted and actual gold recovered.

Run of mine ore includes internal waste and dilution from the sides of the respective orebodies. The actual amount of dilution is determined from historical records and while an average figure of 7.5% is reportedly representative for the whole mine, the actual dilution varies as a percentage from one ore shoot to another. Sound Mining believes that 7.5% may be optimistic given dilution levels witnessed at similar operations.

While orebody specific cut-off grades are applied to determine the areas to be included in planning, an average specific gravity figure of 2.86 is applied when in fact the specific gravity will vary between the different ores.

#### 23.1.5 General comments

Blanket mine plans to:

- Achieve a 40 koz production level,
- Accelerate the 22 Level Haulage Development Project, and
- The exploration of the up and down dip extension of the known ore bodies.

MSA has reviewed the expansion logic and after consideration using insight from similar operations and from the MSA database, believes the expectations to be fair and reasonable. While the production and development schedules have not been examined in detail the mine can expect continued risk to it forecasts from:

- Power interruptions.
- Increased labour costs.
- Cashflow shortages.
- Zimbabwe politics.



A shortage of skills.

In the opinion of MSA, the limited amount of operational data available for review is insufficient to justify reconciliation against financial projections. The achievability of the planning at Blanket Mine is neither warranted nor guaranteed by MSA.

#### 23.2 Recoverability

Recoveries over the past three years have been within the historical range of between 88% and 92% of gold delivered to the plant as shown in Table 23-2 below. Also, historically, an average of approximately 45% to 50% of the gold is recovered as free gold, the remaining portion being contained within the sulphide minerals pyrite, pyrrhotite and arsenopyrite. The quartz ore bodies are characterised by even higher proportions of free gold while the disseminated sulphide replacement ores have only small amounts of free gold. Assuming that the gold recovery from the quartz—rich ores is higher than from the sulphide ores, it follows that lower recoveries (between 85% and 90%) are likely for the sulphide ores.

<b>Table 23-2</b>								
Gold recoveries since 2008								

Production Results		2008*	2009**	2010	2011 Jan	2011 Feb
Ore Milled	tonnes	81 688	103 444	153 500	17 125	20 361
Head Grade	g/t	3.33	3.75	3.9	4.1	3.97
Recovery	%	87.89	90.96	92.00	92.49	91.76
Gold Produced	ounces	7 687	11 295	17 707	2 086	2 386

<sup>\*</sup>Production suspended from October 2008 until April 2009

#### 23.3 Markets

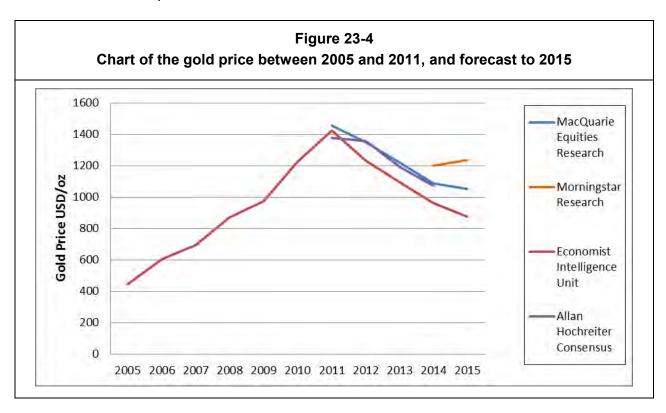
Gold prices rose for most of 2010 and early 2011 and stands at over USD 1 500 per oz in June 2011. Jewellery consumption recovered in 2010 to grow by an estimated 7.8%, which, together with strong investor demand and a tight physical market, fuelled the rise in prices. Investor demand, both physical and speculative, is expected to continue to support record gold prices in 2011 as investors seek a "safe haven" in an environment of low interest rates and high inflationary pressures.

<sup>\*\*</sup> Production recommenced for 9 months from April to December 2009



Forecasts beyond the middle of 2011 mostly suggest that the gold price will peak in 2011 and fall from 2012 to at least 2015. According to the Economist Intelligence Unit (EIU) the forecast tightening of monetary policy in 2012 will restrain economic growth and investment in gold, as will the forecast strengthening of the US dollar in 2011-12, which has historically moved inversely to the price of gold. As a result of these conflicting trends, the EIU forecasts that the gold price will peak during 2011, before the price starts to weaken markedly from the final quarter of the year. Given the dramatic increase in the level of investment in gold over the past two-and-a-half years, there is a risk of a sharp fall in gold prices in 2013, should investors judge that prices have peaked and that better returns are available elsewhere.

Figure 23-4 shows the rise in the gold price since 2005, and a collection of forecasts of the future fold price to 2015.



#### 23.4 Contracts

A standard refining and sales agreement is currently in effect between Blanket Gold Mine and Rand Refinery Ltd (RRL), a South Africa registered company. Gold Doré is transferred to RRL by a security company. RRL is contracted to refine the gold Doré and to sell on the instruction of Blanket Mine.

In MSA's view, contracts in place on the mine are standard contracts which are normal for a mine of this kind and present no additional risk to the project.



#### 23.5 Environmental Considerations

Information regarding environmental consideration is taken largely from AGS (2006) and from Fraser Alexander Zimbabwe (Pty) Ltd (March 2010) and Blanket Mine (November 2009).

In 1995 a full Environmental Impact Assessment was completed by SRK to identify the major detrimental aspects of the mining operation and recommend remedial measures. Apart from the potential to pollute groundwater from the tailings dam, no significant detrimental environmental impacts were identified by this study.

Kinross Gold Corporation, the owners of the mine up until June, 2006, issued an Environmental Policy and Framework document in 2001 based on ISO 14001, which serves as the guideline for all environmental issues at Blanket Mine.

The Government of Zimbabwe has enacted regulations covering water and effluent disposal, through the all-encompassing Environmental and Natural Resources Act. Under the Water Act and the Waste Disposal Regulations a mine is required to obtain permits for all effluent disposal and two permits have been issued to the Blanket Mine by the Zimbabwe National Water Authority covering the sewage effluent and mill tailings disposals.

The Blanket Mine tailings operation is a gold tailings operation, comprising two dams/compartments abutting and adjacent to one another. Dam A and Dam B are operated as a paddock ("day wall") operation. Decanting of the two dams occurs through separate penstocks, with Dam A having an elevated penstock installed in 2005/2006. Dam A is the initial tailings dam with Dam B having been constructed subsequently and abutting, adjacently to Dam A. Dam A is in the order of 3 m lower in elevation to Dam B (height difference is an estimate as no current updated survey information is available). The tailings dams are operated by Frazer Alexander Zimbabwe.

In February 2002 SRK conducted a Technical Risk Assessment of the Tailings Dam Complex that included all environmental and safety aspects of the tailings deposition and in particular a stability analysis.

In addition there are a number of water boreholes down-slope of the dams that are routinely sampled and the water analyzed for a number of metals, pH, total dissolved solids and conductivity. The analyses indicate that all holes are in the red category as defined by the Waste Disposal Regulations. The reason for this is that the dam was not lined prior to deposition and that seepage has taken place through the floor of the dam. The rate of seepage will decline as the slime level rises. A mitigating factor is the fact that the seepage waters are not acidic. As a result, a number of de-watering holes are planned to lower this pollution to acceptable levels.

Similar monitoring of the sewage disposal area shows that all holes are in the acceptable green category.



In October, 2009, Epoch Resources (Pty) Ltd (Epoch) were appointed by Fraser Alexander Tailings (Pty) Ltd to undertake an audit review of the tailings operation at Blanket Mine. The audit review identified no significant operational or design risks associated with the dam. However, two key findings of the audit were that:

- A number of the findings and recommendations identified in the 2007 audit report have not been addressed; and
- The level of reporting and documentation of the operational data pertaining to the tailings dam has declined significantly since the last audit.

An updated survey of the tailings dam facility was not available at the time of the audit as was the case during the 2007 audit. In addition, no monthly depositional tonnages were made available and the rate of rise for the tailings dam could not be determined. However at a production rate of 1000 tpd the rate of rise (RoR) is 0.54 m per year based on the final design area of 28 ha, which is well below the legal maximum of 2 m per year.

#### Epoch recommended that

- An updated comprehensive survey be carried out of the entire tailings dam facility, including the dam basins, position of drains, penstock outlets, piezometers etc.
- Appropriate monitoring data sheets and report templates be implemented for the collection, documentation and report of the various monitoring aspects pertaining to the tailings dam.
- A minimum vertical freeboard of 1.5m for Dam A and B be maintained at all times
- Piezometers be checked, by carrying out Upset Tests to confirm that they are fully operational;
- Drains be rodded and flushed to confirm that they are not blocked and fully operational.
- A comprehensive slope .stability assessment be undertaken.
- The height discrepancy between Dam A and B be gradually phased out.

#### 23.5.1 Closure Plan

In March 2001 the Blanket Mine contracted Knight Piesold to estimate the costs of decommissioning and closure of the mine. This study included all aspects of the mining operation including open workings, waste dumps and infrastructure. An updated decommissioning and reclamation cost estimate was undertaken by Blanket Mine and reported in November 2009.

There are a number of Government of Zimbabwe regulations and guidelines including the Mining General Regulations, the Environmental and Natural Resources Act, the



Water Act and the Waste Disposal Regulations which cover a mine's closure obligations. These are all addressed and costed in the Knight Piesold report and in the updated report by Blanket Mine dated November 2009. The cost of closure was estimated by Blanket Mine in 2009 to be US\$1.8 million. The mine is not required to post a bond for this amount, but has reached an agreement with government the break-up value of the plant and mine infrastructure be pledged as a guarantee for the closure cost.

#### 23.6 Zimbabwe Taxes

The prevailing taxation regime for mining companies in Zimbabwe includes the following provisions:

- Corporate income tax at 25%
- Exploration, development and capital costs can be expensed against profit in the year incurred or carried forward to be expensed against the first year of production
- Royalty at 4.5% of turnover with effect from 1 January 2011
- Exemptions on customs duty and import taxes on capital items during exploration and development phases
- 15% withholding tax on dividend payments to non-Zimbabweans and on services provided by foreign suppliers

#### 23.7 Capital and Operating Cost Estimates (Real Terms)

The capital cost estimates are shown in Table 23-3 over the LOM. It is assumed that the estimated closure cost of US\$1.9 million<sup>1</sup> will be provided for by the salvage value of the mine once it closes.

Table 23-3 Capital Cost Estimates (Real)						
Cost Area	US\$ '000S					
Base Capex	4 516					
Sustaining Capex	26 399					
Total Capex	30 915					

<sup>1</sup> Decommissioning and Reclamation Cost Estimate, Blanket Mine, November 2009



The operating cost estimates are shown in Table 23-4 over the LOM

Table 23-4 Operating Cost Estimates (Real)									
Cost Area	US\$ '000s	US\$		US\$					
Labour	81 273	19.76	/t mined	176.33	/oz				
Consumables	157 221	38.02	/t mined	339.23	/oz				
Power	75 471	18.25	/t mined	162.84	/oz				
Other admin costs	15 557	3.76	/t mined	33.57	/oz				
TOTAL:	329 552	79.80	/t mined	711.98	/oz				

In addition to these costs, a transport, insurance, security fee and a refining charge of US\$8.00/oz is also applied.

#### 23.8 Economic Analysis

Reserves as at 31 December 2010 are shown in Table 23-5 below.



**Table 23-5** Mineral Reserves as at 31 December 2010 **BLANKET MINE (1983) (PRIVATE) (LIMITED) MINERAL RESERVES AS AT 31.12.2010** For Au-US\$1100/ounce(Reserves) For Au-US\$1100/ounce(Resources) SUMMARY OREBODY **TONNES** AVERAGE INSITU GRADE DILUTED **EST MILL** ΑU EST CONT REC AND BLOCK WIDTH (SAMPLED) **TONNES HEAD GRADE** g/t g/t kg PROVED 968090 12.42 4.24 1031089 3.98 4107 3655 PROBABLE 2369479 12.99 3.88 2513717 3.66 9191 8180 PROBABLE PILLARS 556258 12.99 4.43 590094 4.18 2467 2195 INDICATED 509960 6.23 3.79 **INFERRED** 2408243 6.12 5.27 TOTAL MINE 6812030 9.97 4.46 4134900 3.81 15765 14031 % DISTRIBUTION OF AVAILABLE MINERAL RESERVES OREBODY 1 OREBODY 9903 5.02 0.96 9212 1.94 5.40 2 OREBODY 2.18 20882 2.83 4.38 22448 4.07 19323 BF 1.87 17974.42 1.54 3.43 3.19 QUARTZ 42666 39689 2.35 4.14 5.16 4.80 2 LEADER 33720 3.27 31514 3.65 3.68 3.44 4-OREBODY 2.56 24643 5.04 4.45 26368 4.15 178696 173491 9.11 3.60 17.33 3.49 ARS 529205 4.51 566249 54.92 17.73 4.21 **JETHRO** 6099 2.66 4.23 6556 0.64 3.94 **EROICA** 7.94 75073 6.52 3.61 81830 3.31 LIMA 2.53 24251 1.96 3.91 26070 3.63 SHEET 16057 4.60 17261 1.67 4.52 4.20 4107 3655 100.00 968090 12.42 4.24 1031089 3.98 LOCATION OF AVAILABLE RESERVES 8.75 84683 90857 Above 9 Level 2.77 4.10 3.82 Above 14 Level 17.34 167824 9.84 3.72 177527 3.52 15.98 322703 Above 18 Level 31.04 300457 4.09 3.81 415126 Above 22 Level 42.88 12.86 4.59 440002 4.33 4107 3655 **GRAND TOTAL** 100.00 968090 12.42 4.24 1031089 3.98 **GRADING OF AVAILABLE RESERVES ON GOLD CONTENT** 2.10-2.99g/t 1.44 13951 4.14 2.68 14698 2.54 3.00-3.99g/t 50.32 487128 10.21 3.59 516263 3.39 4.00-4.99g/t 29.93 289725 15.26 4.61 310219 4.30 5.00-5.99g/t 11.71 113330 13.02 5.13 121431 4.79 6.00-6.99g/t 6.49 62838 17.44 6.30 67277 5.88

The diluted tonnage of 4.135mt for the proved, probable and probable pillars has been used in the development of a financial model for Blanket.

7.87

4.24

1202

1031089

7.32

3.98

4107

3655

Following the successful commissioning of the No. 4 Shaft Expansion Project in September 2010, the underground workings were progressively increased to a production rate of 1 000 tonnes of ore per day using both long-hole open stoping and underhand stoping methods. The entire underground operations of the Blanket section of the mine, including the surface compressors and the No 4 Shaft Winder can at this stage be operated by the 2 500 kVA standby diesel powered generating set which was installed and commissioned in June 2010. This generating set ensures that all

0.12

100.00

1118

968090

1.52

12.42

7.00g/t-over

TOTAL



underground operations and hoisting can continue notwithstanding any interruptions to the electrical power supply from the grid.

A further three identical generating sets have been installed which will provide Blanket with 10 MVA of standby generating capacity and enable it to run all its operations. The price of electricity supplied under the terms of a new supply agreement with the Zimbabwean government is more expensive than under the previous agreement, but it is still considerably less expensive than the cost of electricity generated by the mine's standby generators. The standby generating system will allow Blanket to maintain full operations during any interruptions to the normal electricity supply arising from load-shedding, line faults and other supply problems.

For the purposes of the valuation model, it has been assumed that the gensets are not used.

The financial evaluation has been performed using the escalate/de-escalate methodology, whereby all cash inflows and outflows are escalated by an appropriate index, then subsequently de-escalated at the inflation rate to determine NPV and IRR. This allows for adjustments to the unescalated model to reflect the appropriate timing and quantum of tax which must be applied against escalated profits. The financial valuation has been undertaken on an after-tax, leveraged, real rate of return basis.

The base date for escalation, NPV, and IRR calculations for the financial model is 1 July 2011. All production, costs, and revenues are based on calendar fiscal years and all cash inflows and outflows assumed to occur in the middle of each year, i.e. June of each year.

The project is economically viable and provides a real net present value (NPV) at 10% of US\$123.6 million in 1 July 2011 money terms. There is no IRR as all cashflow are positive.

The project is most sensitive to the gold price, less sensitive to operating costs and capital expenditure.

Table 23-6 is a summary of selected financial inputs and the corresponding results. All costs are quoted in real July 2011 United States Dollars.



## Table 23-6 Financial Inputs and Results

All monetary values in Real t	erms	Total Production 2011 to 2023
Total Underground Production	t	4,134,900
Grade	g/t	3.81
ROM tonnes per day	tpd	1,000
Mill Recovery	%	91.5%
LOM	years	12
Total Recovered - Au	kao	14,415
	kgs	· · · · · · · · · · · · · · · · · · ·
Total Recovered - Au	OZS	463,459
Gold Price (long term, real)	US\$/oz	1,500
Gross Revenue	US\$	736,909,545
Royalty	US\$	33,160,930
Refining & Transport	US\$	3,707,673
Net Revenue	US\$	700,040,942
Manking Coats	1100	244 444 020
Working Costs	US\$	314,414,830
Working Costs	US\$/t	76
Working Costs	US\$/oz	678
Services and Admin US\$	US\$	15,557,077
Total Operating Costs	US\$	220 074 009
Total Operating Costs  Total Operating Costs	US\$/t	<b>329,971,908</b> 80
Total Operating Costs US\$	US\$/oz	712
Total Operating Costs 03\$	03\$/02	712
Operating Profit/Loss	US\$	281,106,173
Capital Expenditures	US\$	30,914,807
Earnings Subject to Tax	US\$	277,240,111
Taxes @ 25%	US\$	66,596,666
Earnings After Tax	US\$	210,643,445
NPV @ 10%	US\$	123,573,559
NPV @ 15%	US\$	99,881,791
NPV @ 20%	US\$	82,964,210



### 25.4.1 Profitability of the Project

In terms of the underlying economic assumptions provided to MSA the results of the valuation of the project are as shown in Table 23-7.

Table 23-7 NPV's of Project									
	Disc Rate	US\$ '000s							
	0.0%	209,641							
	5.0%	157,917							
	8.0%	135,739							
	10.0%	123,574							
	12.0%	113,082							
	15.0% 99,882								
	20.0%	82,964							

### 25.4.2 Sensitivity

The sensitivity chart, Figure 23-5 below, shows the NPV variation due to changes in revenue, capital and operating costs, holding all other inputs constant. The project is most sensitive to the gold price and fairly sensitive to opex.

Figure 23-5
Figure description

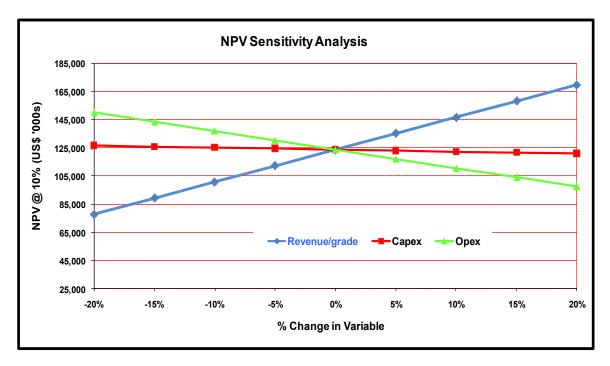
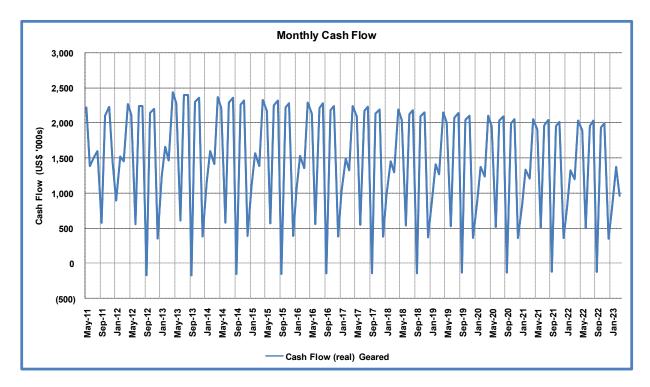


Figure 23-6 shows the real monthly project cash flows used in the evaluation.



Figure 23-6 Monthly Cash Flow (Real)



The negative cash flows that appear regularly are the result of quarterly tax payments.

Table 23-8 is a matrix of gold price variation vs. discount rate.

	S	ensitivity		le 23-8 o Changes	s in Gold F	Price		
NPV sensitivity to I	ong term go	ld price and	d discount r	ate			US\$ '000s	
Discount rate	1,200	1,300	Long term g	/oz 1,600	1,700 1,800			
0.0%	124,561	152,921	181,281	1,500 209,641	238,001	266,361	294,722	1,900 323,082
5.0%	94,130	115,392	136,655	157,917	179,180	200,442	221,704	242,967
8.0%	81,019	99,259	117,499	135,739	153,979	172,220	190,460	208,700
10.0%	73,806	90,395	106,984	123,574	140,163	156,752	173,341	189,930
12.0%	67,573	82,743	97,912	113,082	128,251	143,421	158,590	173,760
15.0%	59,712	73,102	86,492	99,882	113,272	126,662	140,052	153,442
20.0%	49,601	60,722	71,843	82,964	94,085	105,207	116,328	127,449

### 23.9 Mine Life

The mine has an estimated operating life of about 12 years, based on the current Mineral Reserve estimate.



The property has robust orebodies whose down dip extensions below the current deepest level on the mine are yet to be fully explored. The adjacent property, the Vubachikwe Gold Mine has payshoots extending below 1 km depth. Potential to find new orebodies and increase the resource base exists particularly from platforms afforded by haulage development.



# **APPENDIX 1:**

**Glossary of Technical Terms** 



#### **Glossary of Technical Terms**

Ag Chemical symbol for silver

airborne magnetic surveys Surveys flown by helicopter or fixed wing aircraft to

measure the magnetic susceptibility of rocks at or near the

earth's surface.

alteration Changes in the mineralogical composition of a rock as a

result of physical or chemical processes such as weathering or penetration by hydrothermal fluids

amphibolite A dark-coloured metamorphic rock, comprising mainly

hornblende with feldspar.

andesite An extrusive igneous, volcanic rock, of intermediate

composition, with aphanitic to porphyritic texture. The mineral assemblage is typically dominated by plagioclase

plus pyroxene and/or hornblende.

ankerite A calcium iron magnesium carbonate mineral (Ca,Fe, Mg)(

 $CO_3)_2$ .

AGS Applied Geology Services cc

Archaean The oldest rocks of the Precambrian era, older than about

2,500 million years.

arsenopyrite A silvery-white mineral commonly occurring in lead and

silver veins (FeAsS).

Au Chemical symbol for gold

basalt A dark, fine-grained volcanic rock of low silica (<55%) and

high iron and magnesium composition, composed primarily

of plagioclase and pyroxene.

basement The igneous and metamorphic crust of the earth,

underlying sedimentary deposits.

breccia A rock composed of angular rock fragments cemented

within a fine-grained matrix

brecciated Condition applied to an intensely fractured body of rock.

carbonate A rock, usually of sedimentary origin, composed primarily

of calcium, magnesium or iron and CO<sub>3</sub>. Essential

component of limestones and marbles.

Carbon in leach (CIL) A method of recovering gold from mined ore in which the

crushed ore is fed into tanks containing cyanide solution. The gold is dissolved in the cyanide, after which the solution is transferred to a series of tanks where carbon is added. The gold is adsorbed onto the surface of the carbon which is then removed by screening and

introduced into a heated sodium hydrioxide-cyanide-water solution where the gold is dissolved. This solution is passed through electrowinning cells where the gold plates

onto stainless steel cathodes. It is then washed from the cathodes with high-pressure sprays, dried and melted and

poured into moulds for gold ingots.

CIM Canadian Institute of Mining, Metallurgy and Petroleum.



craton \*Large, and usually ancient, stable mass of the earth's

crust comprised of various crustal blocks amalgamated by tectonic processes. A cratonic nucleus is an older, core

region embedded within a larger craton.

diamond drilling Method of obtaining cylindrical core of rock by drilling with

a diamond set or diamond impregnated bit.

dip The steepest angle of descent of a tilted bed, between 0°

and 90°, perpendicular to the strike of the bed.

disseminated Widely dispersed

dyke A tabular body of intrusive igneous rock, crosscutting the

host strata at an oblique angle.

facies (metamorphic)

A group of mineral compositions in metamorphic rocks

which are typical of a particular temperature and pressure.

fault A fracture or fracture zone, along which displacement of

opposing sides has occurred.

felsic Light coloured rocks containing an abundance of feldspars

and quartz.

fire assay Lead collection fire assay using carefully selected fluxes

specially formulated for the mineralogy of each sample type. Samples submitted for ppb detection of gold are fused in a dedicated low level furnace, the resultant prill digested and gold content determined typically by AAS.

fold A planar sequence of rocks or a feature bent about an

axis.

gangue Uneconomic material that surrounds, or is closely mixed

with ore

gneiss A coarse grained, banded, high grade metamorphic rock.

granitoid A generic term for coarse grained felsic igneous rocks,

including granite.

greenschist A metamorphic rock comprising green minerals such as

chlorite, epidote and actinolite in parallel orientation

greenstone belt An elongate zone of metamorphosed mafic or ultramafic

rocks and sedimentary sequences which occur within Archaean and Proterozoic cratons. The rock is a green

colour due to the green hues of several of the

metamorphic minerals in these rocks.

*g/t* Grams per metric tonne.

hornblende A suite of minerals containing iron, magnesium, calcium,

aluminium and silica in varying proportions.

imaging Computer processing of data to enhance particular

features.

Indicated Resource An "Indicated Mineral Resource" is that part of a Mineral

Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to



support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

Inferred Resource An "Inferred Mineral Resource" is that part of a Mineral

Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops,

trenches, pits, workings and drill holes.

intrusive An igneous rock that formed from magma that cooled and

solidified within the Earth's crust.

*lineament* A significant linear feature of the earth's crust.

lithologyMaMillion years.

mafic Descriptive of rocks composed dominantly of magnesium

and iron rock-forming silicates.

magnetic survey Geophysical survey measuring the magnetic field intensity

of rocks at various stations

Measured Resource A "Measured Mineral Resource" is that part of a Mineral

Resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and

economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade

continuity.

mesothermal Formed at depth at a moderately-high temperature in the

range 200-300°C.

metamorphism Alteration of rock and changes in mineral composition,

most generally due to increase in pressure and/or

temperature.

metabasalt A basalt that shows evidence of having been subjected to

metamorphism.

metasediment A sedimentary rock that shows evidence of having been

subjected to metamorphism

metavolcanic A volcanic rock that shows evidence of having been



subjected to metamorphism.

Mineral Resource A Mineral Resource is a concentration or occurrence of

diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.

mineralisation The process by which minerals are introduced into a rock

resulting in the formation a mineral deposit

mobile belt/zone An elongate belt in the earth's crust, usually occurring at the

collision zone between two crustal blocks, within which major deformation, igneous activity and metamorphism has

occurred.

ore shoot A colloquial term in mining and geology used to describe a

higher grade zone of mineral or metal bearing rock that

can be profitable to extract.

orogenic Relating to the formation of structures such as folds and

thrusts during a period of mountain-building.

Precambrian Pertaining to all rocks formed before Cambrian time (older

than 545 million years).

Proterozoic An era of geological time spanning the period from 2,500 to

545 million years before present.

pyrite A bronze- or yellow-coloured iron sulphide mineral (FeS<sub>2</sub>)

which commonly forms cubes.

pyrrhotiite An bronze-coloured iron sulphide mineral with variable iron

content ((Fe<sub>1-x</sub>)S) which is slightly magnetic.

QAQC Quality assurance and quality control

Qualified Person (QP) An individual who is an engineer or geoscientist with at

least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these; has experience relevant to the subject matter of the mineral project and the technical report; and is a member or licensee in good standing of a

professional association.

RC drilling (Reverse Circulation) A percussion drilling method in which

the fragmented sample is brought to the surface inside the

drill rods, thereby reducing contamination.

reef A colloquial mining term referring to gold mineralization

typically associated with quartz veining.

replacement Referring to the replacement of one assemblage of mineral

by another group as a result of chemical processes which

dissolve and alter the rock.

schist A crystalline metamorphic rock having a foliated or parallel



structure due to the recrystallisation of the constituent

minerals.

stockwork A three-dimensional network of closely-spaced planar to

irregular veins and veinlets, commonly forming a mineral

deposit.

strike Horizontal direction or trend of a geological structure.

sulphide A mineral containing sulphur with a metal or semi-metal,

e.g. pyrite.

tectonic Pertaining to the forces involved in, or the resulting

structures of, movement in the earth's crust.

*ultramafic* Igneous rocks consisting essentially of ferromagnesian

minerals with trace quartz and feldspar.



# **APPENDIX 2:**

**Certificate of Qualified Person** 



#### CERTIFICATE of AUTHOR

I, BRUNO BVIRAKARE, Pr. Sci. Nat, MGSSA, do hereby certify that:

1. I am Senior Project Geologist of:

The MSA Group t/a MSA Geoservices (Pty) Limited 20b Rothesay Avenue, Craighall Park Johannesburg, Gauteng, South Africa, 2196.

- I graduated with a degree in Geology from the University of Zimbabwe, Harare, in 1995.
- I am a member of the Geological Society of South Africa (MGSSA) and a registered professional scientist with the South African Council for Natural Scientific Professions (SACNASP Reg. 400112/09)
- 4. I have worked as a geologist for a total of 15 year since my graduation from university.
- 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 in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. I am responsible for the preparation of section 2, 4, 5, and 6 14 either in part or in full of the technical report titled 'NI 43-101 Technical Report on Blanket Mine, Zimbabwe and dated 28 June 2011 (the "Technical Report") relating to the Blanket Mine property. I visited the Blanket Mine Property on 5<sup>th</sup> to the 7<sup>th</sup> of June 2011for 3 days
- I have had prior involvement with the property that is the subject of the Technical Report. The nature of my prior involvement was as an employee of the previous operator of the property during the period from 1999 to 2001.
- 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 to disclose which makes the Technical Report misleading.
- I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
- I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 28th Day of June, 2011.

BRUNO BVIRAKARE Pr. Sci. Nat

MSA Geoservices (PTY) Limited Registration No: 2000/002800/07

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DIRECTOR: K D Scott



# **APPENDIX 3:**

Blanket Mine Claims (Blanket Mine (1983) (Pvt) Ltd)



### **BLANKET MINE PRODUCING CLAIMS SCHEDULE AS AT 13 MAY 2011**

Block No.	Name	Area	Date Applied	Claims	No. x 5 ha	Туре	Date Renewed	Expiry Date	Certificate No.
35928	OQUEIL	Gda	28-Feb-11	1	1	Au	02-Mar-11	29-Jan-12	079313 CA
35929	OQUEIL 1	Gda	28-Feb-11	2.5	1	Au	02-Mar-11	29-Jan-12	079313 CA
35930	OQUEIL 2	Gda	28-Feb-11	5	1	Au	02-Mar-11	29-Jan-12	079313 CA
35931	OQUEIL 3	Gda	28-Feb-11	3	1	Au	02-Mar-11	29-Jan-12	079313 CA
35932	OQUEIL 4	Gda	28-Feb-11	9	2	Au	02-Mar-11	29-Jan-12	079313 CA
35933	OQUEIL 5	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35934	OQUEIL 6	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35935	OQUEIL 7	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35936	OQUEIL 8	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35937	OQUEIL 9	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35938	OQUEIL 10	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35939	OQUEIL 11	Gda	28-Feb-11	6	2	Au	02-Mar-11	29-Jan-12	079313 CA
35940	OQUEIL 12	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35941	OQUEIL 13	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35942	OQUEIL 14	Gda	28-Feb-11	9	2	Au	02-Mar-11	29-Jan-12	079313 CA
35943	OQUEIL 15	Gda	28-Feb-11	3	1	Au	02-Mar-11	29-Jan-12	079313 CA
35944	OQUEIL 16	Gda	28-Feb-11	9	2	Au	02-Mar-11	29-Jan-12	079313 CA
35945	OQUEIL 17	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079313 CA
35946	OQUEIL 18	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079314 CA
35947	OQUEIL 19	Gda	28-Feb-11	2.5	1	Au	02-Mar-11	29-Jan-12	079314 CA
35948	OQUEIL 20	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079314 CA
35949	OQUEIL 21	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079314 CA
35950	OQUEIL 22	Gda	28-Feb-11	8	2	Au	02-Mar-11	29-Jan-12	079314 CA
35951	OQUEIL 23	Gda	28-Feb-11	3	1	Au	02-Mar-11	29-Jan-12	079314 CA
35952	OQUEIL 24	Gda	28-Feb-11	8	2	Au	02-Mar-11	29-Jan-12	079314 CA



35953	OQUEIL 25	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079314 CA
35954	OQUEIL 26	Gda	28-Feb-11	7	2	Au	02-Mar-11	29-Jan-12	079314 CA
35955	OQUEIL 27	Gda	28-Feb-11	4	1	Au	02-Mar-11	29-Jan-12	079314 CA
35956	OQUEIL 28	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079314 CA
35957	OQUEIL 29	Gda	28-Feb-11	8	2	Au	02-Mar-11	29-Jan-12	079314 CA
35958	OQUEIL 30	Gda	28-Feb-11	7	2	Au	02-Mar-11	29-Jan-12	079314 CA
35959	OQUEIL 31	Gda	28-Feb-11	10	2	Au	02-Mar-11	29-Jan-12	079314 CA
35960	OQUEIL 32	Gda	28-Feb-11	7	2	Au	02-Mar-11	29-Jan-12	079314 CA
35961	OQUEIL 33	Gda	28-Feb-11	6	2	Au	02-Mar-11	29-Jan-12	079314 CA
35962	OQUEIL 34	Gda	28-Feb-11	8	2	Au	02-Mar-11	29-Jan-12	079314 CA
35963	OQUEIL 35	Gda	28-Feb-11	4	1	Au	02-Mar-11	29-Jan-12	079314 CA
5576BM	Harvard	Gda	28-Feb-11	25	5	Tu	02-Mar-11	02-Feb-12	079300 CA
GA547	Blanket J	Gda	28-Feb-11	2	1	Au	02-Mar-11	07-Mar-12	079304 CA
573	Site Housing	Gda	28-Feb-11	23	23		02-Mar-11	17-Mar-12	081143 B
31190	Feudal 3	Gda	28-Feb-11	6	2	Au	02-Mar-11	18-Mar-12	079304 CA
GA2767B	Valentine 37	Gda	28-Feb-11	7.6	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2768	Valentine 38	Gda	28-Feb-11	8	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2769	Valentine 39	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2770	Valentine 40	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2771	Valentine 41	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2772	Valentine 42	Gda	28-Feb-11	7	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2773	Valentine 43	Gda	28-Feb-11	4	1	Au	02-Mar-11	21-Mar-12	079305 CA
GA2774	Valentine 44	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2775	Valentine 45	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2776	Valentine 46	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2777	Valentine 47	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2778	Valentine 48	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2779	Valentine 49	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2780	Valentine 50	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA



GA2781	Valentine 51	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2782	Valentine 52	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2783	Valentine 53	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2784	Valentine 54	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2785	Valentine 55	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2786	Valentine 56	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2787	Valentine 57	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2788	Valentine 58	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2789	Valentine 59	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2790	Valentine 60	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2791	Valentine 61	Gda	28-Feb-11	10	2	Au	02-Mar-11	21-Mar-12	079305 CA
GA2792	Valentine 62	Gda	28-Feb-11	4	1	Au	02-Mar-11	21-Mar-12	079305 CA
36066	Lima 17	Gda	28-Feb-11	2.7	1	Au	02-Mar-11	26-Mar-12	079312 CA
36067	Lima 18	Gda	28-Feb-11	9.8	2	Au	02-Mar-11	26-Mar-12	079312 CA
36068	Lima 19	Gda	28-Feb-11	9.7	2	Au	02-Mar-11	26-Mar-12	079312 CA
36069	Lima 20	Gda	28-Feb-11	9.6	2	Au	02-Mar-11	26-Mar-12	079312 CA
36070	Lima 21	Gda	28-Feb-11	9.5	2	Au	02-Mar-11	26-Mar-12	079312 CA
36071	Lima 22	Gda	28-Feb-11	9.1	2	Au	02-Mar-11	26-Mar-12	079312 CA
36072	Lima 23	Gda	28-Feb-11	8.3	2	Au	02-Mar-11	26-Mar-12	079312 CA
36073	Lima 24	Gda	28-Feb-11	10	2	Au	02-Mar-11	26-Mar-12	079312 CA
36079	Lima 30	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Mar-12	079311 CA
36080	Lima 31	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Mar-12	079311 CA
36081	Lima 32	Gda	28-Feb-11	4	1	Au	02-Mar-11	02-Mar-12	079311 CA
36082	Lima 33	Gda	28-Feb-11	7	2	Au	02-Mar-11	02-Mar-12	079311 CA
36083	Lima 34	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Mar-12	079311 CA
36084	Lima 35	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Mar-12	079311 CA
36085	Lima 36	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Mar-12	079311 CA
36086	Lima 37	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Mar-12	079311 CA
36087	Lima 38	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Mar-12	079311 CA



36088	Lima 39	Gda	28-Feb-11	2.04	1	Au	02-Mar-11	02-Mar-12	079311 CA
36089	Lima 40	Gda	28-Feb-11	3.25	1	Au	02-Mar-11	02-Mar-12	079311 CA
36090	Lima 41	Gda	28-Feb-11	3.25	1	Au	02-Mar-11	02-Mar-12	079311 CA
36097	Lima 48	Gda	28-Feb-11	3	1	Au	02-Mar-11	26-Mar-12	079310 CA
36099	Lima 50	Gda	28-Feb-11	5.8	2	Au	02-Mar-11	26-Mar-12	079310 CA
36100	Lima 51	Gda	28-Feb-11	3.04	1	Au	02-Mar-11	26-Mar-12	079310 CA
36101	Lima 52	Gda	28-Feb-11	9.25	2	Au	02-Mar-11	26-Mar-12	079310 CA
36102	Lima 53	Gda	28-Feb-11	8.3	2	Au	02-Mar-11	26-Mar-12	079310 CA
36103	Lima 54	Gda	28-Feb-11	2.18	1	Au	02-Mar-11	26-Mar-12	079310 CA
36104	Lima 55	Gda	28-Feb-11	7.36	2	Au	02-Mar-11	26-Mar-12	079310 CA
36105	Lima 56	Gda	28-Feb-11	6.3	2	Au	02-Mar-11	26-Mar-12	079310 CA
613	Site Slimes	Gda	28-Feb-11	28	28		02-Mar-11	27-Mar-12	081143 B
36074	Lima 25	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
36075	Lima 26	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
36076	Lima 27	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
36077	Lima 28	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
36078	Lima 29	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
36091	Lima 42	Gda	28-Feb-11	9	2	Au	02-Mar-11	02-Apr-12	079309 CA
36092	Lima 43	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
36093	Lima 44	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
39094	Lima 45	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
36095	Lima 46	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079309 CA
36096	Lima 47	Gda	28-Feb-11	8.1	2	Au	02-Mar-11	02-Apr-12	079309 CA
36098	Lima 49	Gda	28-Feb-11	7.95	2	Au	02-Mar-11	02-Apr-12	079309 CA
36106	Lima 57	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36107	Lima 58	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36108	Lima 59	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36109	Lima 60	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36110	Lima 61	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA



36111	Lima 62	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36112	Lima 63	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36113	Lima 64	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36114	Lima 65	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36115	Lima 66	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36116	Lima 67	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
36117	Lima 68	Gda	28-Feb-11	10	2	Au	02-Mar-11	02-Apr-12	079308 CA
35628	Sheet	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35629	Sheet 1	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35630	Sheet 2	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35631	Sheet 3	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35632	Sheet 4	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35633	Sheet 5	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35634	Sheet 6	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35635	Sheet 7	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35636	Sheet 8	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35637	Sheet 9	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35638	Sheet 10	Gda	28-Feb-11	10	2	Au	02-Mar-11	03-Apr-12	079307 CA
35639	Sheet 11	Gda	28-Feb-11	5	1	Au	02-Mar-11	03-Apr-12	079307 CA
31202	Blanket 9	Gda	28-Feb-11	7	2	Au	02-Mar-11	06-Apr-12	079307 CA
GA281	Sabiwa D B	Gda	28-Feb-11	10	2	Au	02-Mar-11	11-Apr-12	079307 CA
19918	Feudal 3	Gda	28-Feb-11	9	2	Au	02-Mar-11	10-May-12	079398 CA
36160	Mbudzane Rock A	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079393 CA
36161	Mbudzane Rock B	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079393 CA
36162	Mbudzane Rock C	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079393 CA
36163	Mbudzane Rock D	Gda	30-May-11	6.13	2	Au	01-Jun-11	21-May-12	079393 CA
36164	Mbudzane Rock E	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079393 CA
36165	Mbudzane Rock F	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079393 CA
36166	Mbudzane Rock G	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079393 CA



36167	Mbudzane Rock H	Gda	30-May-11	5.83	2	Au	01-Jun-11	21-May-12	079393 CA
36168	Mbudzane Rock I	Gda	30-May-11	2.5	1	Au	01-Jun-11	21-May-12	079393 CA
36169	Mbudzane Rock J	Gda	30-May-11	3.45	1	Au	01-Jun-11	21-May-12	079393 CA
36170	Mbudzane Rock K	Gda	30-May-11	5.1	1	Au	01-Jun-11	21-May-12	079394 CA
36171	Mbudzane Rock L	Gda	30-May-11	8	2	Au	01-Jun-11	21-May-12	079394 CA
36172	Mbudzane Rock M	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079394 CA
36173	Mbudzane Rock N	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079394 CA
36174	Mbudzane Rock O	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079394 CA
36175	Mbudzane Rock P	Gda	30-May-11	6.23	2	Au	01-Jun-11	21-May-12	079394 CA
36176	Mbudzane Rock A1	Gda	30-May-11	9.7	2	Au	01-Jun-11	21-May-12	079394 CA
36177	Mbudzane Rock A2	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079394 CA
36178	Mbudzane Rock A3	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079394 CA
36179	Mbudzane Rock A4	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079394 CA
36180	Mbudzane Rock A5	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079395 CA
36181	Mbudzane Rock A6	Gda	30-May-11	3.5	1	Au	01-Jun-11	21-May-12	079395 CA
36182	Mbudzane Rock B1	Gda	30-May-11	2.25	1	Au	01-Jun-11	21-May-12	079395 CA
36183	Mbudzane Rock B2	Gda	30-May-11	6.5	2	Au	01-Jun-11	21-May-12	079395 CA
36184	Mbudzane Rock B3	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079395 CA
36185	Mbudzane Rock B4	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079395 CA
36186	Mbudzane Rock B5	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079395 CA
36187	Mbudzane Rock B6	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079395 CA
36188	Mbudzane Rock B7	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079395 CA
36189	Mbudzane Rock B8	Gda	30-May-11	3.2	1	Au	01-Jun-11	21-May-12	079395 CA
36190	Mbudzane Rock B9	Gda	30-May-11	6.5	2	Au	01-Jun-11	21-May-12	079397 CA
36191	Mbudzane Rock C1	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079397 CA
36192	Mbudzane Rock C2	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079397 CA
36193	Mbudzane Rock C3	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079397 CA
36194	Mbudzane Rock C4	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079397 CA
36195	Mbudzane Rock C5	Gda	30-May-11	10	2	Au	01-Jun-11	21-May-12	079397 CA



36196	Mbudzane Rock C6	Gda	30-May-11	2.25	1	Au	01-Jun-11	21-May-12	079397 CA
36197	Mbudzane Rock C7	Gda	30-May-11	6	2	Au	01-Jun-11	21-May-12	079397 CA
36198	Mbudzane Rock C8	Gda	30-May-11	9.4	2	Au	01-Jun-11	21-May-12	079397 CA
36199	Mbudzane Rock C9	Gda	30-May-11	9.4	2	Au	01-Jun-11	21-May-12	079397 CA
36200	Mbudzane Rock D1	Gda	30-May-11	9.4	2	Au	01-Jun-11	21-May-12	079397 CA
36201	Mbudzane Rock D2	Gda	30-May-11	9.4	2	Au	01-Jun-11	21-May-12	079397 CA
36202	Mbudzane Rock D3	Gda	30-May-11	9.17	2	Au	01-Jun-11	21-May-12	079397 CA
25610	Sabiwa North 1/2	Gda	30-May-11	7	2	Au	01-Jun-11	30-May-12	079398 CA
35753	Lima1	Gda	04-Sep-10	8	2	Au	10-Sep-10	23-Jun-11	079047 CA
35754	Lima2	Gda	04-Sep-10	8	2	Au	10-Sep-10	23-Jun-11	079047 CA
35755	Lima3	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35756	Lima4	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35757	Lima5	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35758	Lima6	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35759	Lima7	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35760	Lima8	Gda	04-Sep-10	6	2	Au	10-Sep-10	23-Jun-11	079047 CA
35761	Lima9	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35762	Lima10	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35763	Lima11	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35764	Lima12	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35765	Lima13	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35766	Lima14	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35767	Lima15	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079047 CA
35768	Lima16	Gda	04-Sep-10	5	1	Au	10-Sep-10	23-Jun-11	079047 CA
GA248	Blanket B	Gda	04-Sep-10	10	2	Au	10-Sep-10	23-Jun-11	079045 CA
6874BM	Blanket K	Gda	04-Sep-10	25	5	Tu	10-Sep-10	16-Jun-11	079048 CA
GA247	Blanket A	Gda	04-Sep-10	9	2	Au	10-Sep-10	23-Jul-11	079045 CA
GA2994	Valentine 63	Gda	04-Sep-10	10	2	Au	10-Sep-10	11-Jul-11	079046 CA
GA2995	Valentine 64	Gda	04-Sep-10	10	2	Au	10-Sep-10	11-Jul-11	079046 CA



GA2996	Valentine 65	Gda	04-Sep-10	10	2	Au	10-Sep-10	11-Jul-11	079046 CA
19923	Jethro	Gda	04-Sep-10	9	2	Au	10-Sep-10	23-Jul-11	079045 CA
34744	Sheet A	Gda	04-Sep-10	7.5	2	Au	10-Sep-10	28-Jul-11	079045 CA
34751	Sheet B	Gda	04-Sep-10	1	1	Au	10-Sep-10	28-Jul-11	079045 CA
34747	Sheet	Gda	04-Sep-10	9.2	2	Au	10-Sep-10	28-Jul-11	079045 CA
34748	Sheet North A	Gda	04-Sep-10	9.2	2	Au	10-Sep-10	28-Jul-11	079045 CA
34749	Sheet North B	Gda	04-Sep-10	9.2	2	Au	10-Sep-10	28-Jul-11	079045 CA
34750	Sheet North C	Gda	04-Sep-10	2.99	1	Au	10-Sep-10	28-Jul-11	079045 CA
GA446	Feudal South	Gda	04-Sep-10	4	1	Au	10-Sep-10	15-Aug-11	079046 CA
GA512	Blanket F	Gda	04-Sep-10	6	2	Au	10-Sep-10	16-Aug-11	079046 CA
21065	Feudal D B E	Gda	04-Sep-10	8	2	Au	10-Sep-10	19-Aug-11	079045 CA
9629BM	Sheet 3	Gda	04-Sep-10	14	3	Cu	10-Sep-10	26-Aug-11	079048 CA
9627BM	Blanket L	Gda	04-Sep-10	23	5	Cu	10-Sep-10	26-Aug-11	079048 CA
9628BM	Sabiwa 3	Gda	04-Sep-10	15	3	Cu	10-Sep-10	26-Aug-11	079048 CA
10358BM	Feudal West	Gda	04-Sep-10	25	5	As	10-Sep-10	25-Sep-11	079048 CA
21775	DT	Gda	04-Sep-10	10	2	Au	17-Sep-10	01-Sep-11	079058 CA
GA513	Sabiwa 2	Gda	15-Dec-10	5	1	Au	23-Dec-10	09-Sep-11	079146 CA
645	Site Housing	Gda	15-Dec-10	8	8		11-Dec-09	15-Sep-11	026907 XX
646	Site Dump	Gda	15-Dec-10	18	18		23-Dec-10	15-Sep-11	028469 XX
701	Site Compound	Gda	15-Dec-10	10	10		23-Dec-10	15-Sep-11	028469 XX
10925BM	Lima H	Gda	15-Dec-10	93	19	As	23-Dec-10	23-Sep-11	079149 CA
10922BM	Sabiwa 13	Gda	15-Dec-10	68	14	As	23-Dec-10	23-Sep-11	079149 CA
10923BM	Sabiwa 14	Gda	15-Dec-10	93	19	As	23-Dec-10	23-Sep-11	079149 CA
GA341	Sheet 2	Gda	15-Dec-10	9	2	Au	23-Dec-10	14-Oct-11	079146 CA
10050BM	Sabiwa East	Gda	15-Dec-10	20	4	Cu	23-Dec-10	15-Oct-11	079150 CA
10049BM	Sabiwa 4	Gda	15-Dec-10	20	4	Cu	23-Dec-10	15-Oct-11	079150 CA
10051BM	Feudal 2	Gda	15-Dec-10	25	5	Tu	23-Dec-10	15-Oct-11	079150 CA
34856	Sheet North D	Gda	15-Dec-10	2.45	1	Au	23-Dec-10	08-Nov-11	079148 CA
34052	Lima I	Gda	15-Dec-10	10	2	Au	23-Dec-10	16-Nov-12	079148 CA



34053	Lima J	Gda	15-Dec-10	10	2	Au	23-Dec-10	16-Nov-12	079148 CA
34054	Lima K	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34055	Lima L	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
30456	Lima M	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34057	Lima N	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34058	Lima O	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34059	Lima P	Gda	15-Dec-10	5	1	Au	23-Dec-10	16-Nov-11	079148 CA
34060	Lima Q	Gda	15-Dec-10	5	1	Au	23-Dec-10	16-Nov-11	079148 CA
34061	Lima R	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34062	Lima S	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34063	Lima T	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34064	Lima U	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34065	Lima V	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34066	Lima W	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
34067	Lima X	Gda	04-Sep-10	10	2	Au	17-Sep-10	16-Nov-11	079057 CA
10894BM	Sabiwa 10	Gda	15-Dec-10	136	28	As	23-Dec-10	18-Nov-11	079150 CA
10895BM	Sabiwa 11	Gda	15-Dec-10	99	20	As	23-Dec-10	18-Nov-11	079150 CA
10896BM	Sabiwa 12	Gda	15-Dec-10	115	23	As	23-Dec-10	18-Nov-11	079150 CA
32939	Smiler Gold Dump	Gda	15-Dec-10	10	2	Au	23-Dec-10	26-Nov-11	028462 XX
1978	Sabiwa South 1/2	Gda	15-Dec-10	6	2	Au	23-Dec-10	30-Nov-11	079148 CA
GA5030	Blanket 3	Gda	15-Dec-10	7	2	Au	23-Dec-10	30-Nov-11	079148 CA
577	Site Cemetry	Gda	15-Dec-10	2	2	Site	23-Dec-10	14-Dec-11	028463 XX
575	Site Compound	Gda	15-Dec-10	17	17	Site	23-Dec-10	14-Dec-11	028463 XX
578	Site Magazine	Gda	15-Dec-10	29	29	Site	23-Dec-10	14-Dec-11	028463 XX
574	Site Compound	Gda	15-Dec-10	7	7	Site	23-Dec-10	14-Dec-11	028463 XX
1817	Blanket	Gda	15-Dec-10	13	3	Au	23-Dec-10	31-Dec-11	079148 CA
3958	Blanket 2	Gda	15-Dec-10	8	2	Au	23-Dec-10	31-Dec-11	079148 CA
GA349	Blanket D	Gda	15-Dec-10	4	1	Au	23-Dec-10	31-Dec-11	079146 CA
				2883.57	732				



#### **BLANKET MINE NON PRODUCING CLAIMS 2010 - INSPECTION STATUS**

Name	Dec. No.	Λ	No.	No. x	T	Inan D-4:	Date	Data Danson	Expiry	Cautific -t - N
Name	Reg. No.	Area	Claims	5 ha	Туре	Insp. Date	Applied	Date Renewed	Date	Certificate No.
Penzance North	11264BM	Gwanda	40	8	Arsenic	07-Jan	28-Feb-11	02-Mar-11	07-Jan-12	079302 CA
Penzance S2	11265BM	Gwanda	35	7	Arsenic	07-Jan	28-Feb-11	02-Mar-11	07-Jan-12	079302 CA
Bunny's Luck Bunny's Luck	10443BM	Gwanda	25	5	Copper	15-Jan	28-Feb-11	02-Mar-11	15-Jan-12	079303 CA
East	10444BM	Gwanda	25	5	Copper	15-Jan	28-Feb-11	02-Mar-11	15-Jan-12	079303 CA
Bunny's Luck E1	10445BM	Gwanda	25	5	Copper	15-Jan	28-Feb-11	02-Mar-11	15-Jan-12	079303 CA
Bunny's Luck E2	10446BM	Gwanda	25	5	Copper	15-Jan	28-Feb-11	02-Mar-11	15-Jan-12	079303 CA
Bunny's Luck E3	10447BM	Gwanda	25	5	Copper	15-Jan	28-Feb-11	02-Mar-11	15-Jan-12	079303 CA
Bunny's Luck E4	10448BM	Gwanda	25	5	Copper	15-Jan	28-Feb-11	02-Mar-11	15-Jan-12	079303 CA
Cinderella	11122BM	Gwanda	4	1	Arsenic	19-Jan	28-Feb-11	02-Mar-11	19-Jan-12	079302 CA
Cinderella E	11123BM	Gwanda	13	3	Arsenic	19-Jan	28-Feb-11	02-Mar-11	19-Jan-12	079302 CA
Eagle 16	11266BM	Gwanda	51	11	Arsenic	21-Jan	28-Feb-11	02-Mar-11	21-Jan-12	079302 CA
Spruit	10623BM	Gwanda	81	17	Nickel	24-Feb	28-Feb-11	02-Mar-11	24-Feb-12	079302 CA
Spruit 2	10624BM	Gwanda	81	17	Nickel	24-Feb	28-Feb-11	02-Mar-11	24-Feb-12	079302 CA
Spruit 4	GA532BM	Gwanda	50	10	Nickel	22/Oct	28-Feb-11	02-Mar-11	22-Oct-12	079300 CA
Spruit 5	GA533BM	Gwanda	110	22	Nickel	22/Oct	28-Feb-11	02-Mar-11	22-Oct-12	079300 CA
Spruit 6	GA534BM	Gwanda	66	14	Nickel	22/Oct	28-Feb-11	02-Mar-11	22-Oct-12	079300 CA
Shakeshake	10625BM	Gwanda	108	22	Nickel	24-Feb	28-Feb-11	02-Mar-11	24-Feb-12	079302 CA
Shakeshake 2	10626BM	Gwanda	108	22	Nickel	24-Feb	28-Feb-11	02-Mar-11	24-Feb-12	079302 CA
Shakeshake 3	10627BM	Gwanda	72	15	Nickel	24-Feb	28-Feb-11	02-Mar-11	24-Feb-12	079302 CA
Surprise	10628BM	Gwanda	95	19	Nickel	24-Feb	28-Feb-11	02-Mar-11	24-Feb-12	079302 CA
Surprise 2	10629BM	Gwanda	101	21	Nickel	24-Feb	28-Feb-11	02-Mar-11	24-Feb-12	079302 CA
Abercorn 11	11269BM	Gwanda	66	14	Arsenic	11-Mar	28-Feb-11	02-Mar-11	11-Mar-12	079302 CA
Cinderella B	10824BM	Gwanda	128	26	Arsenic	09-Apr	11-Mar-11	11-Mar-11	09-Apr-12	2079327 CA
Cinderella C	10825BM	Gwanda	137	28	Arsenic	09-Apr	11-Mar-11	11-Mar-11	09-Apr-12	2079327 CA
Cinderella D	10826BM	Gwanda	146	30	Arsenic	29-Apr	28-Feb-11	02-Mar-11	29-Apr-11	079300 CA
Banshee J	11093BM	Gwanda	135	27	Arsenic	14-Jul	15-Dec-10	23-Dec-10	14-Jul-11	079149 CA
Great Abercorn	10602BM	Gwanda	150	30	Tungsten	25-Jul	01-Sep-10	10-Sep-10	25-Jul-11	079049 CA
Dan's Luck North	11268BM	Gwanda	27	6	Arsenic	11-Mar	28-Feb-11	02-Mar-11	11-Mar-12	079302 CA
Dan's Luck South	GA538BM	Gwanda	20	4	Arsenic	06-Jul	01-Sep-10	10-Sep-10	16-Jul-11	079049 CA



Dan's Luck East	GA537BM	Gwanda	88	18	Arsenic	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079049 CA
Penzance South	8838BM	Gwanda	24	5	Copper	27-Sep	01-Mar-10	24-Mar-10	27-Sep-10	026477 XX
Abercorn	33251	Gwanda	10	2	Gold Dump	28-Apr	28-Feb-11	02-Mar-11	28-Apr-12	081141 B
Mazeppa	32769	Gwanda	3	1	Gold Dump	26-May	01-Jul-10	12-Jul-10	26-May-11	076832 B
Dan's Luck	32776	Gwanda	10	2	Gold Dump	13-May	01-Jul-10	12-Jul-10	13-May-11	076832 B
Will South	33143	Gwanda	5	1	Gold Dump	30-Sep	01-Sep-10	17-Sep-10	30-Sep-11	028193 XX
Mascot	GA 583	Gwanda	10	2	Gold Reef	03-Jan	28-Feb-11	02-Mar-11	03-Jan-12	079304 CA
Vulture	5031	Gwanda	10	2	Gold Reef	13-Jan	28-Feb-11	02-Mar-11	13-Jan-12	079304 CA
Rubicon O	34913	Gwanda	10	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon P	34914	Gwanda	9	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon Q	34915	Gwanda	8	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon R	34916	Gwanda	10	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon S	34917	Gwanda	10	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon T	34918	Gwanda	7	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon U	34919	Gwanda	10	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon V	34920	Gwanda	10	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon W	34921	Gwanda	6	2	Gold Reef	24-Jan	28-Feb-11	02-Mar-11	23-Jan-12	079315 CA
Rubicon	34519	Gwanda	10	2	Gold Reef	03-Mar	28-Feb-11	02-Mar-11	03-Mar-12	079315 CA
Rubicon 7	34520	Gwanda	10	2	Gold Reef	03-Mar	28-Feb-11	02-Mar-11	03-Mar-12	079315 CA
Mascot 5	32756	Gwanda	10	2	Gold Reef	29-Apr	28-Feb-11	02-Mar-11	29-Apr-12	079316 CA
Annette 9	GA3258	Gwanda	8	2	Gold Reef	30-Apr	28-Feb-11	02-Mar-11	30-Apr-12	079316 CA
Annette 10	GA3259	Gwanda	8	2	Gold Reef	30-Apr	28-Feb-11	02-Mar-11	30-Apr-12	079316 CA
Annette 11	GA3260	Gwanda	8	2	Gold Reef	30-Apr	28-Feb-11	02-Mar-11	30-Apr-12	079316 CA
Mascot 2	29657	Gwanda	10	2	Gold Reef	03-May	30-May-11	06-Jan-11	03-May-12	081013 CA
Dan's Luck N2	GA3769B	Gwanda	8	2	Gold Reef	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079044 CA
GG 7	GA3769	Gwanda	10	2	Gold Reef	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079044 CA
GG 8	GA3770	Gwanda	7	2	Gold Reef	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079044 CA
GG 9	GA3771	Gwanda	9	2	Gold Reef	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079044 CA
GG 10	GA3772	Gwanda	4.9	1	Gold Reef	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079044 CA
GG 11	GA3773	Gwanda	10	2	Gold Reef	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079044 CA
GG 12	GA3774	Gwanda	8	2	Gold Reef	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079044 CA
GG 13	GA3775	Gwanda	4	1	Gold Reef	06-Jul	01-Sep-10	10-Sep-10	06-Jul-11	079044 CA
GG	GA651	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GG2	GA942	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GG3	GA943	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA



GG4	GA944	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GG5	GA945	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GG6	GA946	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GGA	GA947	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GGB	GA948	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GGC	GA949	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GGD	GA950	Gwanda	10	2	Gold Reef	05-Jul	01-Sep-10	10-Sep-10	05-Jun-11	079043 CA
GGE	GA951	Gwanda	10	2	Gold Reef	08-Aug-10	01-Sep-10	10-Sep-10	08-Aug-11	079043 CA
Rubicon C	34795	Gwanda	10	2	Gold Reef	08-Sep	23-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon D	34796	Gwanda	10	2	Gold Reef	08-Sep	23-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon E	34797	Gwanda	10	2	Gold Reef	08-Sep	23-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon F	34798	Gwanda	10	2	Gold Reef	08-Sep	23-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon G	34799	Gwanda	10	2	Gold Reef	08-Sep	23-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon H	34800	Gwanda	10	2	Gold Reef	08-Sep	23-Dec-10	23-Dec-10	08-Sep-11	079146 CA
Rubicon I	34801	Gwanda	10	2	Gold Reef	08-Sep	23-Dec-10	23-Dec-10	08-Sep-11	079146 CA
Rubicon J	34802	Gwanda	10	2	Gold Reef	08-Sep	15-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon K	34803	Gwanda	10	2	Gold Reef	08-Sep	15-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon L	34804	Gwanda	10	2	Gold Reef	08-Sep	15-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon M	34805	Gwanda	10	2	Gold Reef	08-Sep	15-Dec-10	23-Dec-10	08-Sep-11	079147 CA
Rubicon N	34806	Gwanda	10	2	Gold Reef	08-Sep	15-Dec-10	23-Dec-10	08-Sep-11	079152 CA
Eagle Hawk	30544	Gwanda	10	2	Gold reef	08-Oct	15-Dec-10	23-Dec-10	08-Oct-11	079146 CA
Gum 1	GA3060	Gwanda	6	2	Gold reef	10-Oct	15-Dec-10	23-Dec-10	10-Oct-11	079146 CA
Gum 2	GA3061	Gwanda	6	2	Gold reef	10-Oct	15-Dec-10	23-Dec-10	10-Oct-11	079146 CA
Lincoln Vulture Dble	30548	Gwanda	10	2	Gold Reef	20-Oct	15-Dec-10	23-Dec-10	20-Oct-11	079146 CA
Bank	8106	Gwanda	10	2	Gold Reef	13-Dec	15-Dec-10	23-Dec-10	12-Dec-12	079146 CA
Sites										
Site	649	Gwanda	4		W/shop, water	08-May	01-Sep-10	10-Sep-10	08-May-11	028179 XX
Site	512	Gwanda	1		Water	31-Dec	15-Dec-10	23-Dec-10	31-Dec-11	028179 XX 028463 XX
Site	607	Gwanda	1		Water	24-Sep	15-Dec-10 15-Dec-10	23-Dec-10 23-Dec-10	24-Sep-11	026907 XX
Site	608	Gwanda	1		Water	24-Sep 24-Sep	15-Dec-10 15-Dec-10	23-Dec-10 23-Dec-09	24-Sep-11 24-Sep-11	028469 XX
Site	609	Gwanda	1		Water	24-Sep 24-Sep	15-Dec-10 15-Dec-10	23-Dec-09 23-Dec-09	24-Sep-11 24-Sep-11	028469 XX
Site	610	Gwanda	1		Water	24-Sep 24-Sep	15-Dec-10 15-Dec-10	23-Dec-09 23-Dec-09	24-Sep-11 24-Sep-11	028469 XX
Site	010	Gwariua	ı		vvalei	24-3 <del>c</del> p	10-Dec-10	23-Dec-09	24-3 <del>c</del> p-11	020409 AA



KADOMA CLAIMS										
Golden Donkey	1254	Kadoma	4	1	Gold Reef	18-Mar-04	08-Dec-07	Awaiting certificate		
Golden Donkey 2	1255	Kadoma	4	1	Gold Reef	18-Mar-96	08-Dec-07	Awaiting certificate		
Headley NE	1256	Kadoma	10	2	Gold Reef	18-Mar-96	08-Dec-07	Awaiting certificate		
Headley NE 2	1257	Kadoma	10	2	Gold Reef	18-Mar-96	08-Dec-07	Awaiting certificate		
Headley NE 3	1258	Kadoma	10	2	Gold Reef	18-Mar-96	08-Dec-07	Awaiting certificate		
-	IVA CLAIME									
BONDURA / SHAN Electra 7	18482BM	Shamva(Hre)	12	3	Arsenic	13-Apr	10-Oct-07	Awaiting certificate		
Apollo 51	28382BM	Bindura(Hre)	44	9	Arsenic	02-Nov	10-Oct-07	20-Apr-10 Awaiting	27-Sep-11	226641 P
Apollo 52	28383BM	Bindura(Hre)	43	9	Arsenic	02-Nov	10-Oct-07	certificate		
Apollo 53	28384BM	Bindura(Hre)	9	2	Arsenic	02-Nov	10-Oct-07	20-Apr-10 Awaiting	27-Sep-11	226641 P
Apollo 19C	17438	Bindura(Hre)	8	2	Gold Reef	09-Mar	08-Dec-07	certificate Awaiting		
Apollo 20C	17439	Bindura(Hre)	8	2	Gold Reef	09-Mar	08-Dec-07	certificate Awaiting		
Apollo 21C	17440	Bindura(Hre)	7	2	Gold Reef	09-Mar	08-Dec-07	certificate Awaiting		
Apollo 22C	17441	Bindura(Hre)	4	1	Gold Reef	09-Mar	08-Dec-07	certificate		
Apollo 23C	17442	Bindura(Hre)	8	2	Gold Reef	09-Mar	08-Dec-07	Awaiting certificate		
Apollo 24C	17443	Bindura(Hre)	5	1	Gold Reef	09-Mar	08-Dec-07	Awaiting certificate		
Apollo 25C	17444	Bindura(Hre)	7	2	Gold Reef	09-Mar	08-Dec-07	Awaiting certificate		
Apollo 26C	17445	Bindura(Hre)	5	1	Gold Reef	09-Mar	08-Dec-07	Awaiting certificate		
Apollo 27C	17446	Bindura(Hre)	2	1	Gold Reef	09-Mar	08-Dec-07	Awaiting certificate		
Apollo C	28665	Bindura(Hre)	10	2	Gold Reef	27-Sep	19-Jul-08	Awaiting certificate		
Apollo 2C	28666	Bindura(Hre)	5	1	Gold Reef	27-Sep		22-Jan-10	27-Sep-11	245208 P



Apollo 3C	28667	Bindura(Hre)	10	2	Gold Reef	27-Sep	19-Jul-08	Awaiting certificate Awaiting			
Apollo 4C	28735	Bindura(Hre)	7	2	Gold Reef	27-Sep	19-Jul-08	certificate			
Apollo 5C	28668	Bindura(Hre)	7	2	Gold Reef	27-Sep		22-Jan-10	27-Sep-11	245208 P	
Apollo 6C	28669	Bindura(Hre)	10	2	Gold Reef	27-Sep		22-Jan-10	27-Sep-11	245208 P	
Apollo 7C	28670	Bindura(Hre)	10	2	Gold Reef	27-Sep		22-Jan-10	27-Sep-11	245208 P	
Apollo 8C	28671	Bindura(Hre)	10	2	Gold Reef	27-Sep		22-Jan-10 Awaiting	27-Sep-11	245208 P	
Apollo 9C	28672	Bindura(Hre)	10	2	Gold Reef	27-Sep	19-Jul-08	certificate			
Apollo 10C	28673	Bindura(Hre)	10	2	Gold Reef	27-Sep	19-Jul-08	20-Apr-10	27-Sep-11	226641 P	
Apollo 11C	28674	Bindura(Hre)	10	2	Gold Reef	27-Sep		22-Jan-10	27-Sep-11	245208 P	
Apollo 12C	28675	Bindura(Hre)	6	2	Gold Reef	27-Sep		22-Jan-10	27-Sep-11	245208 P	
Apollo 13C	28734	Bindura(Hre)	9	2	Gold Reef	27-Sep	19-Jul-08	20-Apr-10	27-Sep-11	226641 P	
Apollo 14C	28679	Bindura(Hre)	9	2	Gold Reef	27-Sep	19-Jul-08	20-Apr-10 Awaiting	27-Sep-11	226641 P	
Apollo 15C	28678	Bindura(Hre)	8	2	Gold Reef	27-Sep	19-Jul-08	certificate			
Apollo 16C	28677	Bindura(Hre)	8	2	Gold Reef	27-Sep		22-Jan-10	27-Sep-11	245208 P	
Apollo 17C	28676	Bindura(Hre)	6	2	Gold Reef	27-Sep		22-Jan-10	27-Sep-11	245208 P	
Apollo 18C	28736	Bindura(Hre)	9	2	Gold Reef	27-Sep		22-Jan-10 Awaiting	27-Sep-11	245208 P	
Avilin 23A	28030	Bindura(Hre)	10	2	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 66	28031	Bindura(Hre)	10	2	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 67	28032	Bindura(Hre)	2	1	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 30	28033	Bindura(Hre)	10	2	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 68	28034	Bindura(Hre)	10	2	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 38	28035	Bindura(Hre)	9	2	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 69	28036	Bindura(Hre)	2	1	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 46	28037	Bindura(Hre)	10	2	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 22	28038	Bindura(Hre)	10	2	Gold Reef	08-Sep	19-Jul-08	certificate Awaiting			
Avilin 20	28039	Bindura(Hre)	10	2	Gold Reef	08-Sep	19-Jul-08	certificate			



								Awaiting		
Avilin 70	28040	Bindura(Hre)	10	2	Gold Reef	08-Sep	19-Jul-08	certificate		
Avilin 71	28041	Bindura(Hre)	3	1	Gold Reef	08-Sep	19-Jul-08	Awaiting certificate		
AVIIII 7 I	20041	Diriddia(File)	3	'	Oold Neel	00-оср	19-341-00	Awaiting		
Avilin 44	28042	Bindura(Hre)	6	2	Gold Reef	08-Sep	19-Jul-08	certificate		
Avilia 70	20042	Diadora/Llas	7	0	Gold Reef	00.000	40 1.1 00	Awaiting		
Avilin 72	28043	Bindura(Hre)	7	2	Gold Reel	08-Sep	19-Jul-08	certificate Awaiting		
Avilin 73	28044	Bindura(Hre)	8	2	Gold Reef	08-Sep	19-Jul-08	certificate		
BULAWAYO (BI	UBI) CLAIMS									
Stu 21	12072BM	Bubi(Byo)	150	30	Arsenic	07-Jan	01-Mar-10	23-Mar-10	07-Jan-11	021903 XX
Stu 22	12073BM	Bubi(Byo)	150	30	Arsenic	07-Jan	01-Mar-10	23-Mar-10	07-Jan-11	021903 XX
Stu 23	12074BM	Bubi(Byo)	150	30	Arsenic	07-Jan	01-Mar-10	23-Mar-10	07-Jan-11	021903 XX
Chikosi 'A'	12011BM	Bubi(Byo)	45	9	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Chikosi 'B'	12012BM	Bubi(Byo)	27	6	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Chikosi 'C'	12013BM	Bubi(Byo)	119	24	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Chikosi 'D'	12014BM	Bubi(Byo)	58.5	12	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Chikosi 'E'	12015BM	Bubi(Byo)	150	30	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Chikosi 'F'	12016BM	Bubi(Byo)	60	12	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Chikosi 'G'	12017BM	Bubi(Byo)	40	8	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Sandy 8A	12018BM	Bubi(Byo)	150	30	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Sandy 8B	12019BM	Bubi(Byo)	150	30	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Stu 18	12021BM	Bubi(Byo)	45	9	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Ruswayi 37	12022BM	Bubi(Byo)	136	28	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Ruswayi 38	12023BM	Bubi(Byo)	134	27	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Ruswayi 39	12024BM	Bubi(Byo)	50	10	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Ruswayi 40	12025BM	Bubi(Byo)	34	7	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Ruswayi 41	12026BM	Bubi(Byo)	150	30	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Ruswayi 42	12027BM	Bubi(Byo)	40	8	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Lonely 49	12028BM	Bubi(Byo)	70	14	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Lonely 50	12029BM	Bubi(Byo)	150	30	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Lonely 51	12030BM	Bubi(Byo)	150	30	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX
Lonely 52	12075BM	Bubi(Byo)	150	30	Arsenic	02-Feb	01-Mar-10	23-Mar-10	02-Feb-11	021903 XX
Lonely 53	12076BM	Bubi(Byo)	150	30	Arsenic	02-Feb	01-Mar-10	23-Mar-10	02-Feb-11	021903 XX
Spawn	12031BM	Bubi(Byo)	30	6	Arsenic	30-Jan	01-Mar-10	23-Mar-10	30-Jan-11	021903 XX



Spawn 2 12032BM 021903 XX Bubi(Byo) 137 28 Arsenic 30-Jan 01-Mar-10 23-Mar-10 30-Jan-11 Spawn 3 12033BM Bubi(Byo) 29 01-Mar-10 23-Mar-10 30-Jan-11 021903 XX 144 Arsenic 30-Jan



Appendix 4:

**Production History of Blanket Mine** 



YEAR	ROM TONNES	RECOVERED OUNCES	OWNER		
1906	20,865	7,413	MATABELE REEFS		
1907	20,865	6,621	AND ESTATE COMPANY		
1908	22,680	7,156	127,006t		
1909	23,587	5,496	34,129oz		
1910	25,401	4,868			
1911	13,608	2,575			
1912	2,722	,461			
1913	5,433	1,214	FORBES RHODESIA		
1914	5,433	,873	SYNDICATE		
1915	8,165	,135	23,567t		
1916	1,814	1,677	4,360oz		
917-1941	0	0			
1942	6,350	1,927			
1943	7,257	2,928			
1944	1,814	3,678			
1945	10,886	3,341	and the state of t		
1946	9,979	2,559			
1947	12,701	2,819			
1948	12,701	2,687	the three and another three transfers to the same transfers to the		
1949	15,422	2,880	in the second se		
1950	14,515	2,105	F.D.A PAYNE		
1951	12,701	,702	(BHOBOZA)		
1952	9,072	1,753	215,001t		
1953	16,329	2,086	46,654oz		
1954	14,515	1,050	the theory of the		
1955	8,165	2,271	time the trace of		
1956	10,886	1,451			
1957	6,350	1,577			
1958	7,257	1,725			
1959	6,350	1,490			
1960	5,443	1,316			
1961	6,350	1,430			
1962	7,257	2,089	all the state of t		
1963	8,165	1,918			
1964	4,536	,872	The state of the s		
1965	90,719	3,544			
1966	90,719	17,822	man manufacture bije to control of the control of t		
1967	90,719	16,900			
1968	104,326	19,996	The state of the s		
1969	104,326	21,942	alline trained to the same trained and traine		
1970	104,326	23,504			
1971	140,614	25,917	HAMING TO 100 (100 HIN) 100 HIN 100 HI		
1972	141,521	25,026			
1973	144,242	27,603			
1974	146,964	21,878	and the second		
1975	139,669	20,292	n ne meditente e ameti sutificiliti		
1976	142,831	19,464	(i) iiiajim etjimje".		
1977	153,873	18,418	Allien Caliber Half rivers 400		
1978	153,101	16,281	FALCON BRIDGE		



YEAR	ROM TONNES	RECOVERED OUNCES	OWNER		
1979	150,664	15,066	4,028,224t		
1980	150,950	15,486	533,449oz		
1981	152,413	10,702			
1982	144,577	19,859			
1983	145,723	18,729			
1984	151,303	19,565			
1985	149,032	17,341			
1986	160,381	17,078			
1987	160,167	17,026			
1988	158,702	16,578			
1989	158,186	15,037			
1990	166,362	19,832			
1991	157,230	18,298			
1992	155,414	18,324			
1993	119,170	15,939			
1994	173,613	20,848	KINROSS HOLDINGS		
1995	175,620	19,698	2,407,000t		
1996	187,640	33,000	394,570oz		
1997	192,561	35,237			
1998	202,350	35,266			
1999	205,330	37,755			
2000	208,339	34,571	AND THE REST OF THE PERSON OF		
2001	195,400	39,592	100 100 100 100 100 100 100 100 100 100		
2002	179,891	41,639			
2003	173,700	33,973	10-1 11 11 11 11 11 11 11 11 11 11 11 11 1		
2004	178,896	24,119	- Control of the Cont		
2005	212,319	24,783	10-33-07-00-00-00-00-00-00-00-00-00-00-00-00-		
2006	81,900	9,632			
2006	120,700	13,353			
2007	99,107	10,012	CALEDONIA HOLDINGS		
2008	82,000	7,698	559,000t		
2009	103,444	11,027	60,000oz		
2010	153,500	17,793	and the mean of the second second		
2011					
TOTAL	7 359 831	1 073 045			



# Appendix 5:

**Certificate of Accreditation – Antech Laboratories (Pty) Ltd** 



### CERTIFICATE OF ACCREDITATION

In terms of section 22(2)(b) of the Accreditation for Conformity Assessment, Calibration and Good Laboratory

Practice Act, 2006 (Act 19 of 2006), read with sections 23(1), (2) and (3) of the said Act, I hereby certify that:-

#### ANTECH LABORATORIES (PTY) LTD Co. reg no: 10053686

Facility Accreditation Number: T0411

is a South African National Accreditation System accredited Testing laboratory provided that all SANAS conditions and requirements are complied with

This certificate is valid as per the scope as stated in the accompanying schedule of accreditation,

Annexure "A", bearing the above accreditation number for

#### CHEMICAL ANALYSIS

The facility is accredited in accordance with the recognised International Standard

#### ISO/IEC 17025:2005

The accreditation demonstrates technical competency for a defined scope and the operation of a laboratory quality management system

While this certificate remains valid, the Accredited Facility named above is authorised to use the relevant SANAS accreditation symbol to issue facility reports and/or certificates

Mr R Josias Chief Executive Officer

Effective Date: 19 February 2009 Certificate Expires: 18 February 2014



#### ANNEXURE A

#### SCHEDULE OF ACCREDITATION

Testing Laboratory Number: T0411

Technical Signatories

Permanent Address of Laboratory: Antech Laboratories (Ply) Ltd 6km Peg Mvuma Road Kwe Kwe Zimbabwe

Nominated Representative

: Ms S Fis

Mr O Mutumba : Mr E Luwobo

P O Box 150

Kwe Kwe Zimbabwe

Tel

Fax

E-mail

: (+263) 55 22682/25172/22269

: (+263) 55 24172/22269 :sophie.fis@antechlaboratories.com Issue No.

:02

Date of Issue Expiry Date

: 15 February 2011 : 18 February 2014

Materials/Products Tested	Types of Tests/Properties Measured, Range of Measurement	Standard Specifications, Equipment/Techniques Used
Geological and Metallurgical samples	Sample preparation for Assay/Testing	WM 01, WM 02, WM 03
Geological, Metallurgical samples and cyanide solutions	Au, Pt, Pd Lead Collection Fire Assay with AAS finish	WM 04, WM10
	Au Lead Collection Fire Assay with gravimetric finish	WM 04, WM 15
	Au, Ag, Pt, Pd, Cu, Ni, Pb, Zn, As, Sb, Co, Mg, Ca, Mn, Mo Aqua Regia digestion with AAS	WM 08, WM 10
	Au, Ag, Pt, Pd, Cu, Ni, Pb, Zn, As, Sb, Co, Mg, Ca, Mn, Mo Multi Acid digestion with AAS	WM 08, WM 10
	Au, Ag, Pt, Pd, Cu, Ni, Pb, Zn, As, Sb, Co, Mg, Ca, Mn, Mo Peroxide fusion with AAS	WM 08, WM 10
	Au, Ag, Pt, Pd, Cu, Ni, Pb, Zn, As, Sb, Co, Mg, Ca, Mn, Mo in solutions with AAS	WM 10
	Au & Ag Bulk leach extraction (Bottle Roll Cyanide dissolution) with AAS	WM 07, WM 10
	Au & Ag in Bullions	WM 05
	Au in Carbon	WM 06

Original date of accreditation: 13 February 2009

Page 1 of 1

ISSUED BY THE SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

Field Manager