ASANTE GOLD CORPORATION

CSE: ASE, FSE: 1A9, U.S. OTC: ASGOF

NI43-101 Technical Report
BIBIANI GOLD PROJECT
Ghana, West Africa

Effective Date: 28th February 2022

Signature Date: 31st August 2022

Authors / Qualified Persons

David Michael Begg
BSc (Hons) Geology, Pr. Sci. Nat, GSSA, MSAIMM
Director, dMb Management Services

Ian Jackson
BEng, ACSM, CEng, FIMMM, MSAIMM
Principal Process Engineer, BARA Consulting (Pty) Ltd

Clive Wyndham Brown
Bsc (Eng) Mining, Pr.Eng
Principal Mining Engineer, BARA Consulting (Pty) Ltd

Senzeni Maggie Mandava
MSc, GDE, BSc Geology & Chemistry, Pr. Sci. Nat, MGSSA,
Principal Resource Geologist, Snowden Optiro

OFFICE LOCATIONS

Asante Gold Corporation

Asante Gold Corporation
Suite 615-800 West Pender Str
Vancouver BC
Canada V6C 2V6
Tel: 1-604-558-1134
N America: 1-877-339-7525
Email: info@asantegold.com
Website: www.asantegold.com

Asante Gold Corporation
17 Jungle Avenue
East Legon, Accra
Ghana
Tel: +233 (0) 558 799 3309
Email: info@asantegold.com
Website: www.asantegold.com

dMb Management Services

38 Gemsbok Street
Scarborough
Cape Town, 7975
South Africa
Tel: +27 82 5684549
Email: dmbegg62@gmail.com

BARA Consulting Ltd

PO Box 3085
Road Town
Tortola
British Virgin Islands
Tel: +27 82 5575373
Email: clive@baraconsulting.co.za

Snowden Optiro

27 Fricker Road
Illovo 2196
Johannesburg
South Africa
Tel: +27 11 772 7960
Email: senzeni.mandava@snowdenoptiro.com
Website: www.optiro.com

This report was prepared as a National Instrument 43-101 Standards of Disclosure for Mineral Projects Technical Report for Asante Gold Corporation (Asante). The quality of information, conclusions, and estimates contained herein are consistent with the quality of effort involved in all relevant Authors' services. The information, conclusions, and estimates contained herein are based on: (i) information available at the time of preparation; (ii) data supplied by outside sources; and (iii) the assumptions, conditions, and qualifications set forth in this Technical Report. This report is intended for use by Asante subject to the terms and conditions of its contract with the Authors and relevant securities legislation. The contract permits Asante to file this report as a Technical Report with Canadian Securities Administrators/regulatory authorities pursuant to National Instrument 43-101. Except for the purposes legislated under provincial securities law, any other uses of this Technical Report by any third party is at that party's sole risk. The responsibility for this disclosure remains with Asante. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

Issued by:	***dMb Management Services***
Doc ref:	*BIBIANI GOLD PROJECT 2022*
Date:	*31st August 2022*
Number of copies:	*2*

DATE AND SIGNATURE PAGE

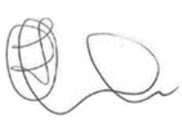
This Report titled - "NI43-101 Technical Report, Bibiani Gold Project, Ghana, West Africa" - was prepared on behalf of Asante Gold Corporation Limited (CSE:ASE; FSE:1A9; U.S. OTC:ASGOF). The Report is compliant with the National Instrument 43-101 and Form 43-101F1. The effective date is 28th February, 2022.

The Qualified Persons responsible for this Report are:

David Michael Begg
BSc (Hons) Geology, Pr. Sci. Nat, MGSSA, MSAIMM
Director, dMb Management Services
31st August, 2022

Clive Wyndham Brown
Bsc (Eng) Mining, Pr.Eng
Principal Mining Engineer, BARA Consulting (Pty) Ltd
31st August, 2022

Ian Jackson
BEng, ACSM, CEng, FIMMM, MSAIMM
Principal Process Engineer, BARA Consulting (Pty) Ltd
31st August, 2022



Senzeni Maggie Mandava
MSc, GDE, BSc Geology & Chemistry, Pr. Sci. Nat., MGSSA
Principal Resource Geologist, Snowden Optiro
31st August, 2022

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. EXECUTIVE SUMMARY

1.1 Terms of Reference

This Technical Report ("TR") was sanctioned on behalf of Asante Gold Corporation ("Asante" or the "Company"), a gold exploration and development company with a high-quality portfolio of projects in Ghana. Mensin Gold Bibiani Limited ("MGBL"), incorporated in Ghana, which owns and operates the Bibiani Gold Mine ("the Project") is a wholly owned subsidiary of Asante. The Company is listed on the Canadian Securities Exchange (CSE: ASE), Frankfurt Stock Exchange (FSE:1A9), United States Exchange (OTC: ASGOF) and has announced plans to co-list its shares on the Ghana Stock Exchange. The Ghanaian Government holds a 10% non-equity free carry interest and 5% Net Smelter Royalty ("NSR") in the Bibiani Mining Lease. The TR has been prepared in accordance with the terminology, definitions and guidelines of CIM (2014) and the National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI43-101").

On 4th August 2021 the Company announced the successful completion, with Ministerial consent, of the purchase of 100% of the shares in MGBL from Resolute Mining Limited ("Resolute") for a total cash consideration of US$90 million.

As a result of changes in its investment plan, Asante intends to adopt a different mine plan to the original underground approach and redevelop open pit operations through a cut back of the Bibiani Main Pit and of two satellite pits, namely Walsh and Strauss. This Technical Report includes an updated Mineral Resource Estimate ("MRE") and Mineral Reserve ("MRev") along with a detailed mining schedule and economic analysis relevant for an open pit mining operation.

The main components of the Project, with an expected life-of-mine of 8 years, will include open pit operations on the Bibiani Main Pit, the Walsh and Strauss Pits (collectively termed the "Satellite Pits") and two rock dumps. The open pit operations will be supported by existing infrastructure such as the refurbished 3.0Mtpa milling circuit and upgraded processing plant, tailings storage facility, explosives magazine and other ancillary infrastructure which have all been previously permitted. Bibiani Gold Mine is fully permitted and received the regulatory Environmental Permit (EPE/EIA/568) and Mine Operating Permit (No. 0000714/22) in February 2022 to commence open pit mining and processing operations. The Project will require the diversion of 13km of the Bibiani-Goaso Highway and a phased Resettlement Action Plan ("RAP"). Open pit mining is planned to commence in March 2022.

This TR is considered to have been compiled to the level of confidence as presented in a Pre-Feasibility Study. The term "Pre-Feasibility Study" has the meaning ascribed by the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM"), as the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, and amended as of May 2014 (CIM, 2014).

This TR supersedes the following earlier technical reports:

1) "Feasibility Study into Recommencement of Bibiani Mining Operations", June 2018, Resolute Mining Limited.
2) "Asante Gold Corporation, Technical Report on the Bibiani Gold Mine, Ghana", November 2021, Optiro.

The Authors and recognised Qualified Persons ("QPs") from **dMb Management Services (Pty) Ltd** (South Africa), **BARA Consulting (Pty) Ltd** (South Africa) and **Snowden Optiro** (South Africa) were commissioned by MGBL to compile the TR.

1.2 Location and Setting

Ghana is a West African country approximately 600km north of the equator on the Gulf of Guinea. It is bordered by Burkina Faso to the north, the Ivory Coast to the west and Togo to the east. Ghana has an area of approximately 239,000km² and an estimated population of 32 million people. English is both the official and commercial language while Twi is the most widely spoken language.

The MBGL concessions are situated in the Sefwi-Bibiani Belt which is host to over 30 million ounces of gold, which in turn is located in the Western North Region of Ghana approximately 250km from the capital Accra and 80km from the Ashanti regional capital of Kumasi (Figure 1-1). This prolific granite-greenstone terrane is the second-most significant gold-bearing belt in Ghana after the Ashanti Belt to the east.

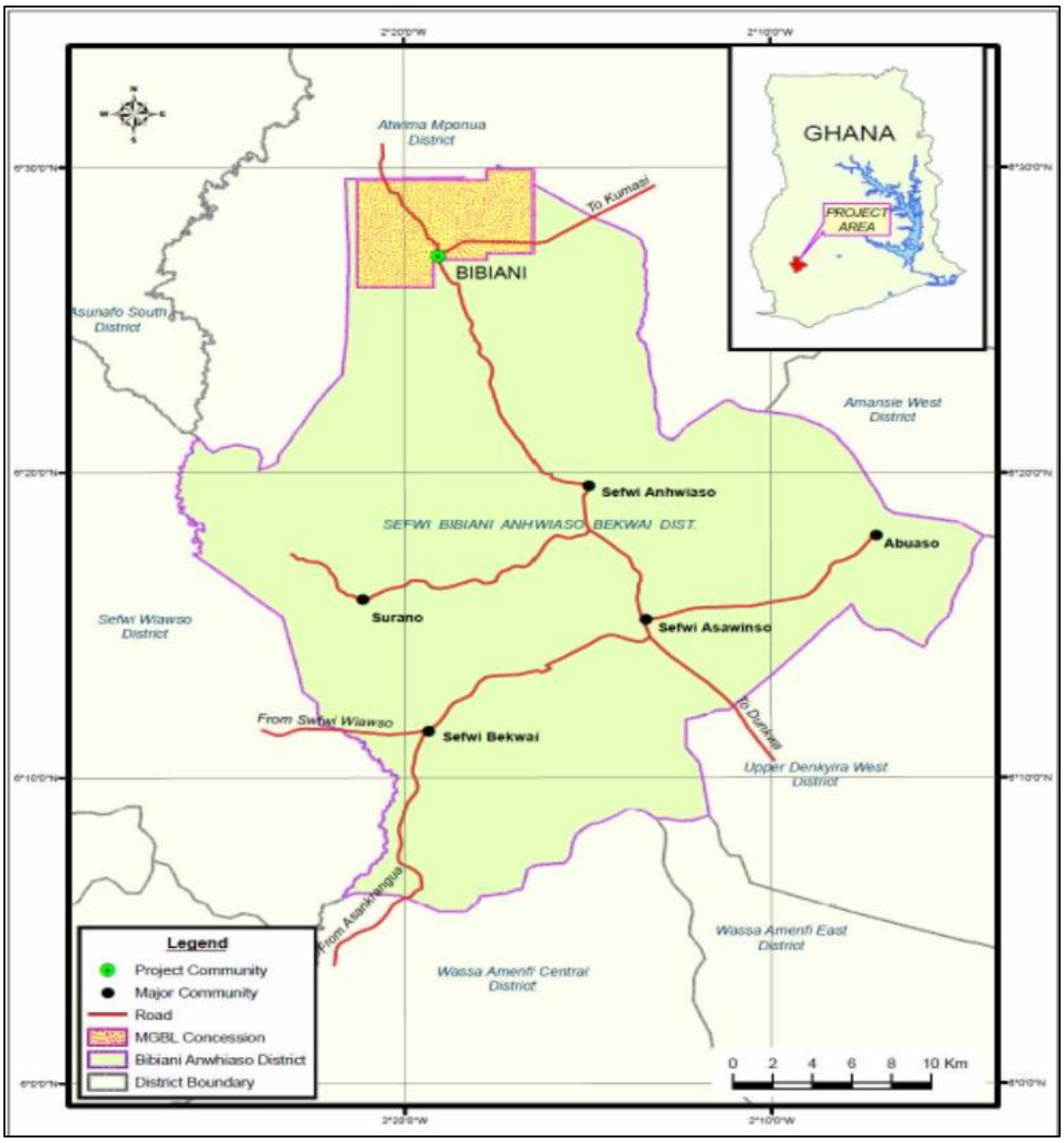


Figure 1-1: Location of Bibiani Gold Mine within Western North Region of Ghana

(Source: Asante 2022)

1.3 Property Description and Ownership

A summary of information regarding the Project proponent is given in the table below and covered in more detail in Section 4.

Table 1-1: Information of Project Proponent

Detail	Description
Proponent	Mensin Gold Bibiani Limited (MGBL)
Registered Address	17 Jungle Avenue, East Legon, Accra, Ghana PO Box CT 6217, Cantonments Post Office, Accra, Ghana
Site Address	Post Office Box 98 Bibiani, Western North Region Tel: +233 (0) 322 085 000
Executive Vice President & Country Director	Mr Frederick Attakumah
Managing Director	Mr. Dean Bertram

MGBL holds one Mining Lease, as well as Prospecting Licences, which collectively make up the MGBL tenements and span 30km strike length hosted in the Kumasi-Afema Basin sediments adjacent to the Sefwi Belt volcanic and volcaniclastic assemblage. The Mining Lease concessions cover an area of approximately 49.82km^2. The Mineral Resources defined to date are contained in the Bibiani Main Pit and Satellite Pits (Walsh and Strauss).

All concessions carry a 10% free carried interest in favour of the Ghanaian government under Section 8 of the Ghanaian Mining Act. The Project is also subject to a 5% royalty on gross revenue of all MGBL gold production based on monthly gold prices and payable to the Government of Ghana.

All other concessions held by MGBL in the area contain exploration potential defined to date. The Ghana Environmental Protection Agency (EPA) grants permits on a perennial basis to conduct exploration. The MGBL concessions are owned 100% by Asante Gold Corporation Limited. The Authors are assured that all permitting within the afore-mentioned governmental permitting structure is up to date and accounted for.

On advice from MGBL, under the current ownership arrangement and status of holdings, there is no environmental liability held over Asante for any of the MGBL concessions relating to the Bibiani project area, except for project works to date.

Table 1-2: Mensin Gold Bibiani Limited – Mining Lease

Tenement Name	Licence Category	Title Ownership	Status of Licence/ Expiration Date	Licence Area (km²)
PL.2/15 LVB/WR.615/97	Mining Lease	Mensin Gold Bibiani, Ghana – 100%	Valid 18th May 2027	49.82

1.4 History

The Bibiani Gold Mine has a long history of gold mining, with commercial production starting in the early 1900s, continuing intermittently up to 2012 and historic production of near 5Moz Au. Resolute acquired Bibiani Gold Mine in 2014 and immediately placed the mine on Care and Maintenance to complete exploration activities designed to enable the development of an economically viable, long-term, large-scale underground operation. In July 2018, Resolute released an updated Feasibility Study for Bibiani Gold Mine (ASX Announcement, 13th July 2018) based on the results of 50,500m of drilling completed since 2015.

The Bibiani Gold Mine has been exploited since 1902 and a summary of the history is given below:

1. 1902 to 1913 – exploitation of the shallow oxide mineralisation
2. 1927 to 1958 – Mining activities continued and was developed and operated by foreign investors until it was nationalised in 1958
3. 1958 to 1973 - Underground mining by the State Gold Mining Company
4. 1995 to 2008 – Ashanti Goldfields/AngloGold Ashanti (AGA) – redeveloped the mine as an open pit operation with a modern processing plant
5. 2008 to 2013 – Central African Gold (CAG)/Noble Mineral Resources
6. 2014 to 2021 – Project owned and operated by Mensin Gold Bibiani, a subsidiary of Resolute Mining Limited, which conducted significant exploration on the Project during this period
7. 2021 to present - The Bibiani Gold Mine is now owned by MGBL (RGD No. CS506392014 incorporated in Ghana), a wholly owned subsidiary of Asante Gold Corporation.

1.5 Geology and Mineralisation

On a regional scale, the Project is located on the eastern limb of the West African Precambrian Shield which is a cratonised complex of Archaean basement (Section 7). The main components are Proterozoic greenstone belts, granitoids and post-orogenic sediments that extend through Ghana, Burkina Faso, Guinea and the Ivory Coast. The majority of gold deposits in Ghana are located in or adjacent to the Ashanti Gold Belt, the Bibiani-Sefwi Belt and the Asankrangwa Belt.

The geology of Ghana is dominated by metavolcanic Paleoproterozoic Birimian Supergroup (2.25 – 2.06 billion years) sequences overlain unconformably by the predominantly coarse-grained clastic sediments of the Tarkwaian Group (2.12 - 2.14 billion years), in the central-west and northern parts of the country. Clastic shallow water sediments of the Neoproterozoic Volta Basin cover the northeast of the country. A small strip of Paleozoic and Cretaceous to Tertiary sediments occur along the coast and in the extreme southeast of the country.

In Ghana, the Paleoproterozoic Birimian terrains consist of five linear northeast-trending volcanic belts with intervening sedimentary basins. The volcanic belts have been folded by multiple deformation events and are generally 15-40km wide and extend for several hundred kilometres laterally (Leube, et al., 1990). The Kumasi Basin is 90km wide and lies between the Ashanti Belt to the south-east and the Sefwi Belt to the north-west. The combined Sefwi and Ashanti volcanic belts and intervening Kumasi Basin host most of the gold endowment in Ghana. Other world class deposits within the Belt include Ahafo (20Moz, Newmont) and Chirano (5Moz, Kinross).

The gold deposits at Bibiani are structurally controlled mesothermal lode-type deposits. The mineralisation is associated with quartz veins and quartz stockworks which are hosted within a sequence of Lower Birimian fine to medium grained turbiditic sandstones. The sedimentary turbidite sequence is tightly folded, with west-dipping axial planes and localised development of steep west-northwest dipping shear zones which have acted as conduits for the initial gold mineralisation. Gold is closely associated with arsenopyrite and pyrite. Sericite alteration is also commonly observed, both along mineralised structures, and associated with the felsic intrusives. High-grade veins often occur within graphitic shales which generally contain significant sedimentary/metamorphic pyrite.

1.6 Status of Exploration, Development and Operations

Canada based Asante Gold Corporation acquired Mensin Gold Bibiani Limited from Resolute in August 2021 and in the period between the purchase and the date of this Report MGBL has embarked on and in some cases completed the following:

- Exploration activities focused on Induced Polarization ("IP") survey and Ground Magnetic ("GMAG") with roughly 40% of the entire lease area covered.
- Exploration drilling of satellite mineralised deposits, resource definition and extension drilling (approximately 15,000m drilled)
- A structural consultancy firm, KAAH Geoservices ("KAAH") was engaged to review the geological approach towards structural targeting and to design a regional exploration model fit for purpose. A target generation exercise was completed on site and among the participants were Professor Kim Hein, lead consultant of KAAH, Mr Paul Abbott (Consultant Geologist), Mr Douglas MacQuarrie (P. Geo Geophysicist and former Asante CEO) and company geologists. The exercise was based on interpretations of structural mapping of underground workings and borehole logging, geophysical and geochemical data of the entire lease. The following new and historical datasets were reviewed:
    - Litho-structural data and model
    - Soil geochemistry
    - IP data for the Mine lease
    - Resistivity data
    - Ground Magnetics
    - MIDAS airborne magnetic data.
- Plant Refurbishment, upgrades and commissioning by Harlequin International, Ghana Limited, project engineers
- Completion of open pit mine design and issue of a mining operations tender. The contract has been awarded to PW International Mining Ghana Limited. Open pit mining is planned to commence in February 2022
- Tailings Storage Facility ("TSF") refurbishment and commission preparation by Knight Piesold, ("KP") Ghana Limited. A lift to provide additional 4 years storage capacity will start in Q3 2022
- General infrastructure (buildings, workshops, residential camps, facilities, offices, etc) upgrades.

1.7 Metallurgical Test Work

Considerable test work was performed during the prior operational phases of the Bibiani plant. This study has focussed on a programme of tests performed by ALS Metallurgy and reported in June 2015 ("Metallurgical Test work Conducted upon Composites from the Bibiani Deposit for Goudhurst Pty Ltd, Report No. A16335 Phase 1"). The programme comprised the following tests:

- Head assays
- Preg-Robbing Index
- Gravity/cyanide leach testing
- Flotation scouting
- Flotation concentrate cyanide leaching.

Based on the results of the composite sample test work an overall recovery of 92% has been applied in the study.

1.8 Mineral Resource Estimates ("MREs")

Snowden Optiro have re-modelled the Mineral Resources (see Section 14) to be applicable and pertinent to MGBL's open pit operational plan. This MRE, and associated MRev, supersedes all previous submissions (Resolute 2018; Optiro 2021).

Snowden Optiro compiled the Mineral Resource Estimates (MREs) and report these in compliance with the definitions and guidelines for the reporting of Mineral Resources and Mineral Reserves in Canada, "The CIM Standards on Mineral Resources and Reserves – Definitions and Guidelines" dated 10th May 2014 (CIM, 2014) (Section 14). These MREs adhere to the Rules and Policies of the Canadian Securities Administrators National Instrument 43-101 Standards of Disclosure for Mineral Projects, Form 43-101F1 and Companion Policy 43-101CP (NI 43-101).

The effective date of the Mineral Resource is 28th February 2022 and comprises the Bibiani Main Pit and Satellite Pits (Walsh and Strauss), which have been combined into a global Mineral Resource Table (Table 1-3).

Table 1-3: Summary of MGBL Mineral Resource at a 0.5 g/t Au cut-off, as at 28th February 2022

Deposit	Measured and Indicated			Inferred		
	Tonnes (Mt)	Au Grade (g/t)	Au Content (Moz)	Tonnes (Mt)	Au Grade (g/t)	Au Content (Moz)
Bibiani Main Pit	30.20	2.23	2.170	3.90	2.69	0.338
Satellite Pit	1.37	2.62	0.116	0.12	4.57	0.020
Total	**31.57**	**2.24**	**2.286**	**4.02**	**2.74**	**0.358**

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1034768g.*
5. *A 0.5g/t gold cut-off has been applied and constrained by a RPEEE US$1,950 (metal price) Resource pit shell.*
6. *A density of 2.75t/m³, 2.50t/m³ and 2.0 t/m³ on fresh, transition and oxidised sediments have been applied respectively.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*

1.9 Mineral Reserve Estimates ("MRev")

The Mineral Reserve Estimate has been prepared by BARA Consulting (Section 15) using the Canadian Institute of Mining, Metallurgy and Petroleum definitions and guidelines adopted as of May 2014 (CIM, 2014) and procedures for classifying the reported Mineral Reserves were undertaken within the context of the Canadian Securities Administrators National Instrument 43-101.

The Mineral Reserves were derived from the Mineral Resource block models and estimates that are presented in Section 14. The Mineral Reserves are based on the Indicated Mineral Resources that have been identified as being economically extractable and which incorporate mining losses and the addition of waste dilution. The mine design supporting the Mineral Reserve is based on an optimum pit shell using an US$1,850/oz Au price. The Mineral Reserve Estimate as at 28th February 2022 is included in Table 1-4.

Table 1-4: Summary of MGBL Mineral Reserve as at 28th February 2022

Item	Tonnes (Mt)	Grade (g/t)	Contained Gold (Moz)
Proven Mineral Reserves	0.258	2.16	0.018
Probable Mineral Reserves	28.151	2.14	1.932
Total Mineral Reserves	**28.409**	**2.14**	**1.950**

Notes:

1. *The Mineral Reserve is reported in accordance with the requirements and guidelines of NI43-101 and are 90% attributable to Asante (10% Ghanaian Government).*
2. *Apparent computational errors due to rounding are not considered significant.*
3. *The Mineral Reserves are reported with appropriate modifying factors of dilution and recovery.*
4. *The Mineral Reserves are reported at the head grade and at delivery to plant.*
5. *The Mineral Reserves are stated at a price of US$1850/oz as at 28 February 2022.*
6. *Although stated separately, the Mineral Resources are inclusive of the Mineral Reserves*
7. *The mine plan underpinning the Mineral Reserves has been prepared by MGBL and reviewed by BARA Consulting.*
8. *No Inferred Mineral Resources have been included in the Mineral Reserve estimate.*
9. *Quantities are reported in metric tonnes.*
10. *The input studies are to the prescribed level of accuracy.*
11. *The scheduled production includes approximately 4% Inferred Mineral Resource, with most towards the tail end of the production forecast.*
12. *The Mineral Reserve estimates contained herein may be subject to legal, political, environmental or other risks that could materially affect the potential exploitation of such Mineral Reserves.*

1.10 Mining Methods

Mining at Bibiani will be by conventional open pit mining methods involving drilling, blasting, loading and hauling with diesel driven equipment. Bench heights for drilling and blasting will be 6.0m. Loading of the blasted mineralised material and waste will take place in 2 x 3m flitches on each bench. The open pit mining operation will be undertaken by a mining contractor (PW Mining International, Ghana Limited) and will commence mining operations in February 2022.

While previous work on the site considered an underground mine, the Life of Mine ("LoM") plan reported here is for open pit mining only (Section 16).

The location of the pits in relation to the mine infrastructure is shown below.

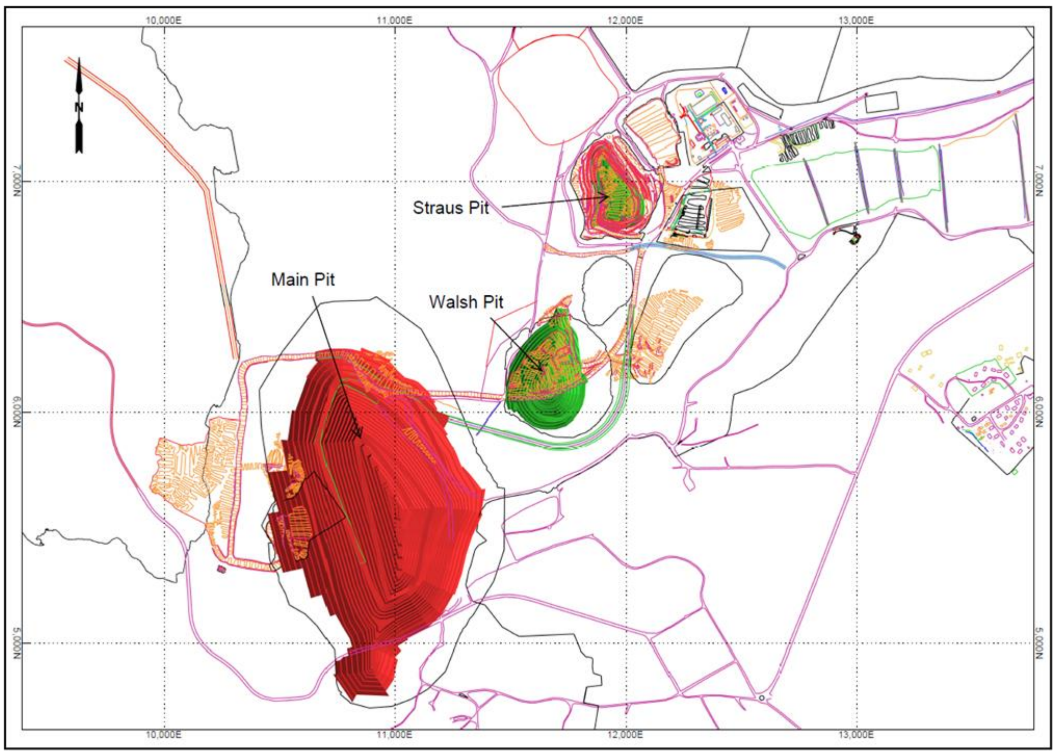


Figure 1-2: Location of Bibiani Project Open Pits

(Source: BARA, 2022)

The design and schedule results in a mining inventory of 29.5Mt at 2.1g/t Au containing 1.993Moz Au. The LoM is 8 years at a steady state of 4.0Mtpa from 2025. The total material mined reaches a maximum of approximately 8Mtpm with an average LoM strip ratio of 17. The mine schedule is illustrated in the figures below.

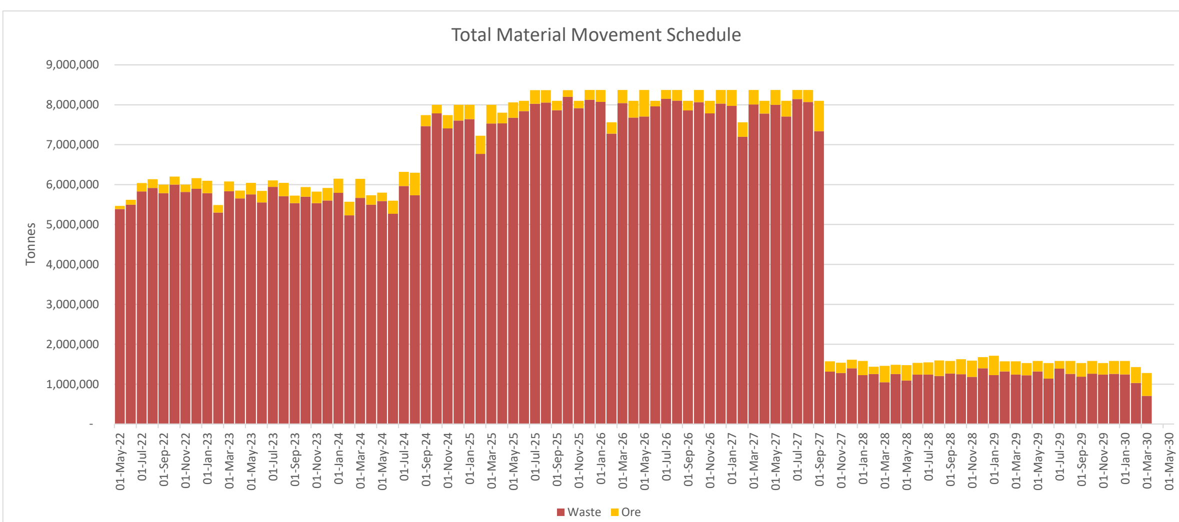


Figure 1-3: Total Material Mined Schedule

(Source: BARA, 2022)

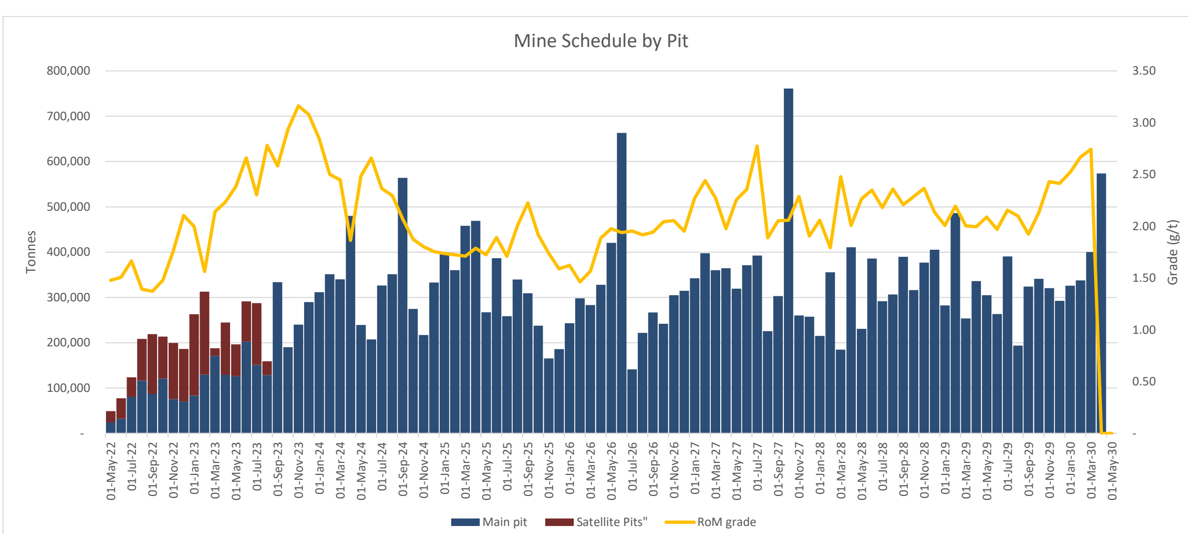


Figure 1-4: Ore Mining Schedule by Pit

(Source: BARA, 2022)

1.11 Mineral Processing

A 3Mtpa process plant already exists and will treat approximately 3Mtpa from 2022 - 2023, comprised of both fresh and oxide mineralised material from Bibiani Main Pit and Satellite Pits (Section 17).

The processing plant has recently been subjected to a full refurbishment and upgrade exercise and will be expanded with further improvements to 4.0Mtpa throughput by 2025 to meet the remaining LoM Plan. The plant currently comprises (Figure 1-5):

- Primary crushing
- Primary SAG mill and secondary ball mill with classification hydrocyclones
- Gravity concentrator
- Flash flotation
- Carbon-in-leach
- Carbon elution and regeneration and electrowinning
- Gold room
- Reagent mixing.

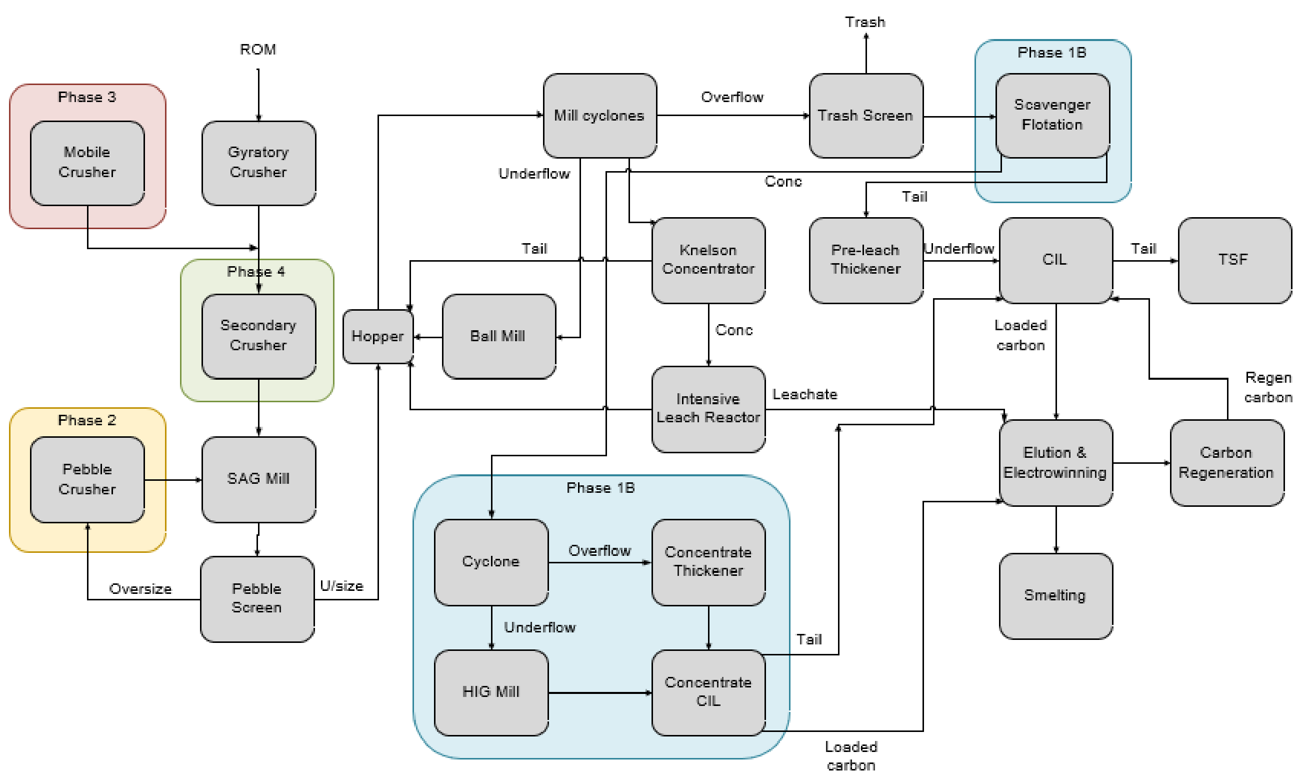


Figure 1-5: Schematic Process Flowsheet Indicating Current and Phased Additions

(Source: BARA, 2022)

The initial plant refurbishment commenced in August 2021 and is almost complete. It has been announced by the Company to start processing of RoM in early June 2022. The process flowsheet delivers the recommendations of the 2015 test work program, including gravity concentration and flotation in the milling circuit, regrinding and intensive cyanide of the flotation concentrates with CIL of the scavenger flotation tailing. Asante is implementing several process improvements and upgrades to the plant to enhance the efficiency of extraction and increase throughput capacity. The modifications being implemented include:

- Phase 1A – recommission existing SAG mill, ball mill, gravity concentration, gravity tails CIL at 2.4 Mtpa by June 2022
- Phase 1B – implement flotation with concentrate regrinding and intensive cyanidation at 2.4 Mtpa by November 2022
- Phase 2 - increase throughput sustainably to 2.7 Mtpa in Q1 2023 by adding pebble crushing to the SAG milling circuit
- Phase 3 - provide for primary crusher by installing a jaw crusher and fragmentation control in Q2 2023, increasing mill utilisation and thereby raising annual throughput to 3.0 Mtpa
- Phase 4 – improve fragmentation by installing a secondary cone crusher, increasing throughput to 3.8 Mtpa by Q1 2024.
- Phase 5 – provide an additional CIL tank to maintain a minimum of 24 h leaching time at a throughput of 4.0Mtpa by Q1 2025.

1.12 Infrastructure

The new infrastructure required to support the LoM includes:

- Refurbishment (in progress) of the TSF however the TSF is ready for production
- Re-alignment of site access and haul roads to accommodate the new open pit mining plan
- Establishment of contractor lay-down areas including offices, workshops, stores and other related infrastructure
- Fuel storage facility (in progress)
- Diversion of the Goaso highway and powerline.

All other infrastructure required to support the planned mining operations exists and is in good condition.

1.13 Environmental Studies, Permitting and Social Impact

1.13.1 Environmental Considerations

MGBL appointed Geosystems Consulting, Limited, to undertake the work associated with the environmental and social impact assessment and permitting for the proposed surface mining operations and road diversions at Bibiani mine in the Bibiani-Anhwiaso-Bekwai municipality of the Western North Region of Ghana.

The environmental work for the open pit and surface expansion was undertaken in compliance with applicable Ghanaian legislation in particular the Environmental Assessment Regulations 1999 (LI1652). MGBL registered the project with the Environmental Protection Agency (EPA) and received a letter dated 6th November 2021 requesting the preparation of an Environmental Impact Assessment report.

Geosystems Consulting Limited has subsequently undertaken the required Environmental and Social Impact Assessment in terms of Ghanaian legislation and the EPA has issued an Environmental Permit authorizing MGBL to commence construction and operation. The date of issue is 21st February 2022 and expires 20th August 2023.

The single, most important, material issue that could impact MGBL's ability to extract the mineral resources as planned is the requirement to relocate a defined community and a realignment of 13km of provincial road to accommodate the expansion of the Bibiani Main Pit. This aspect is discussed in detail in sub-section 20.3.

1.13.2 Permitting

Two key regulatory permits are required for development of the expanded Project in Ghana; these are:

- The Mine Operating Permit ("MOP") issued by the Minerals Commission
- The Environmental Permit issued by the Environmental protection Agency ("EPA").

Asante received the following updated permits in February 2022:

- Environmental Permit (EPE/EIA/568) on 21st February 2022 from the Ghana Environmental Protection Agency. Expiry date: 20th August 2023
- Mine Operating Permit (No. 0000714/22) on 17th February 2022 from the Minerals Commission, Inspectorate Division. Expiry date: 31st December 2022. (The Mine Operating Permit is renewable annually).

These two Permits allow for the commencement of open pit mining operations.

1.13.3 Stakeholder Engagement

Interactions include various stakeholder groups including the government, regulatory authorities and, particularly, members of communities that will be impacted by the development of Bibiani Gold Mine and the various expansion projects.

The engagements follow the lines of free, prior and informed consent ("FPIC") to ensure that, apart from legal and regulatory consent to the project, affected communities are fully informed about the project, its potential technical and socio-economic impacts on them, interventions to mitigate these impacts, among others, so the communities can make the decision on whether or not to allow the Project to be implemented on their land.

1.13.4 Closure Costs

The 2018 Bibiani Feasibility Report provides for a restoration cost of US$7.6 million and a decommissioning cost US$2.21 million. As a result, a provision of US$9.8 million has been made in respect of the reclamation bond with the EPA.

The MGBL Draft EIS report to be updated for the open pit approach provides for an estimated decommissioning and surface reclamation cost of approximately $7 million.

1.14 Capital Cost Estimate

The mining cost estimate for the Bibiani project is based on designs, costs and information as of February 2022. All monetary values are presented United States Dollars (US$) and in real money terms, free of escalation or inflation. The Project is in an advanced stage with much of the engineering work completed and many of the costs based on either actual incurred costs, contractor or supplier quotes. In limited instances costs are based on forecasts prepared as part of the Mine's capital budget estimate.

A summary of the total Capital Cost is shown below.

Table 1-5: MGBL Capital Cost Summary

Capital Cost Item	Capital Cost (US$)
Light Vehicle Purchase	3,757,569
Plant Readiness & Sustaining Capital	20,985,624
Plant Refurbishment Project - 1st Stage	33,202,148
Recovery Improvement Project - 2nd Stage	22,238,891
Pebble and Mobile Crusher	5,000,000
TSF Raise 12 Project	6,300,000
Plant Genset	600,000
Road diversion	20,000,000
RAP	40,000,000
Mine Readiness & Sustaining Capital	9,348,400
Definitive Drilling and Exploration Expenditure	5,400,000
Major Renovation Works & Clinic upgrade	781,000
Security Infrastructure Development	900,000
Fencing upgrade - Old Town Gate to Levee 4	106,000
Airstrip	1,500,000
IT Infrastructure Upgrade	817,759
Capitalised G&A	7,855,733
Capitalised Mining Cost	11,931,883
Total Capital Expenditure	**190,725,007**

In addition to the project capital detailed above an amount of US$742 million for waste stripping is capitalised resulting in a total capital cost over the LoM to US$933 million.

The capital cash flow expenditure (Figure 1-6) was approximated through distributing the total capital costs over periods provided by the mining plan and the project plan for infrastructure and plant upgrades, many of which are already well advanced.

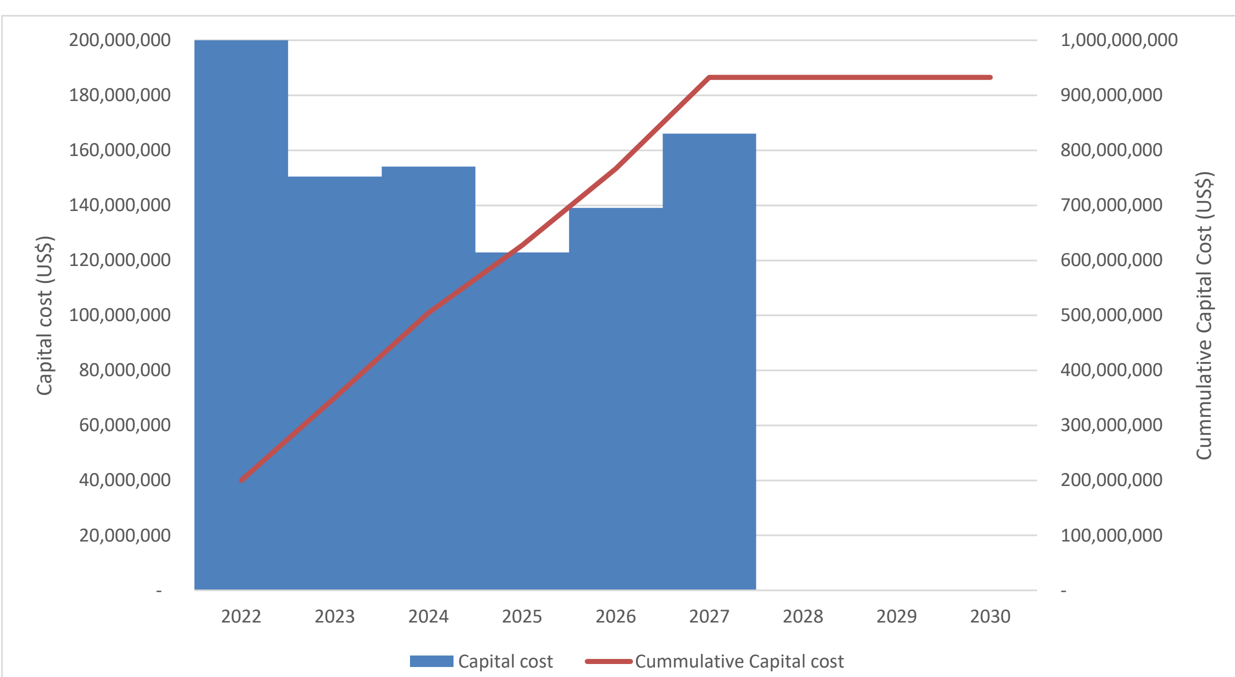


Figure 1-6: MGBL Capital Expenditure Through LoM

(Source: BARA, 2022)

1.15 Operating Cost Estimate

Cash operating costs are defined as the direct operating costs and includes contract mining and Owner's Team mining cost, mineralised material transport and handling, processing and general and administrative (G&A).

The operating costs for Bibiani include the following components:

- Mining – waste
- Mining –mineralised material
- Ore transport and handling
- Processing cost
- G&A cost.

Table 1-6 represents the LoM total and the unit operating cost per tonne milled and per ounce of gold recovered, by activity or area.

Table 1-6: MGBL Summary of Operating Costs

Operating Cost Item	LoM Cost (US$)	Milled (US$/t)	Recovered (US$/oz)
Mining Cost	842,587,840	28.53	453.70
Processing Cost	382,693,190	12.96	206.07
General & Administration Cost	144,267,998	4.89	77.68
Government Royalties - 5%	158,170,222	5.36	85.17
Total Operating Cost	**1,527,719,249**	**51.74**	**822.62**

1.16 Economic Analysis

The economic evaluation of Bibiani was undertaken through a discounted cash flow ("DCF") modelling approach. This approach includes determined project cash flows through deduction of capital and operating costs from operational revenues. The resulting project cash flows are used to determine key financial metrics such as payback period, peak funding requirement, net present value ("NPV") and internal rate of return ("IRR").

The economic analysis (Table 1-7) is based on the LoM mining inventory which includes approximately 3.6% of Inferred Mineral Resources. The cashflow model accounts for all royalties, taxes and free carry payable to the government of Ghana.

Table 1-7: MGBL Key Economic Project Metrics

Description	Unit	Value
Processed Tonnes	Mt	29.529
Processed Gold (Au) Content	Moz	2.023
Processed Gold (Au) Grade	g/t	2.131
Process Recovery	%	92%
Recovered Content	Moz	1.9
Gold Price	US$/oz	1,703
Total Revenue	US$M	3,163
Total operating cost	US$M	1,528
Total project capital cost	US$M	191
Total sustaining capital cost	US$M	742
Cash cost	US$/oz	823
AISC	US$/oz	1,222
AIC	US$/oz	1,325
IRR (Post-tax)	%	43%
NPV 5% (Post-Tax)	US$M	392
Payback period	years	2.0
Project life	years	8.3
Max Negative cashflow	US$M	178

1.17 Interpretation and Conclusions

MGBL holds the relevant mining lease, surface rights, major approvals and permits required for the planned and ongoing mining operations.

The Bibiani mineralisation is part of a regional structure and is not the only deposit of its type in the region. The nature of the mineralisation style and setting are well understood and can support a declared Mineral Resource and further exploration potential.

Sampling methods, preparation, analyses and security are performed to Industry Standards and subsequent data is fit for use in MRE and MRev estimation. Appropriate QA/QC programs, to address precision and accuracy of information, are adhered to by the Company geologists and exploration teams.

This Technical Document reports an update of the previous MRE that was compiled from a geological model relevant to an underground operating strategy by previous owners. The Company has prepared a new geological model and updated Resource Estimate to satisfy the open pit operations. Snowden Optiro have remodelled the geological information to produce a revised and updated Resource Model and Resource Estimation for two mineralised material sources, the Bibiani Main Pit and Satellites Pits (Walsh and Strauss).

The Resource Model is supported by an updated lithological model, analytical data, recent infill and exploration diamond drilling and geophysical logging and survey results. The data used as inputs to the model have been collected and compiled at a high standard supporting the conclusion that the Project is a high-quality mineral asset.

The Bibiani Main Pit and Satellite Pits relevant to this Technical Document have been historically mined by both open pit and underground operations by several previous owners. Mineral Reserves are supported by a positive economic assessment assuming a US$1,850/oz Au price. The cut-off grade selected is appropriate for the Company objectives.

Recovery methods in the refurbished and upgraded feed and processing plant facility and gold recovery assumptions (92%) are supported by test work.

MGBL has received all necessary legal requirements and complies with environmental and social requirements. The TSF was historically designed, recently refurbished and continues to be managed under a current contract by Knight Piesold Ghana Limited.

MGBL has implemented a Resettlement Action Plan in alignment with the LoM Plan that will require a phased engineering and construction program to relocate the impacted community.

The discounted cashflow model for the proposed operation demonstrates that the Project is robust under the current techno-economic assumptions described in the report. The analysis supports the declared Mineral Reserve and supports the Company's decision to progress the project to full production.

1.18 Recommendations

Bibiani has a long history of exploration and mining and as such is considered a well-developed, well maintained, brownfields mining project. At the effective date, processing plant upgrades and refurbishments, open pit mine start up and production preparations, infrastructure upgrades, environmental and social programs and other related Company processes were well advanced, with the plan to start gold production in June 2022 on track. The Project is considered by the QPs to be an advanced project already in the implementation phase and therefore most required engineering, mining and other technical studies, as well as cost estimates, have been completed.

The QPs have therefore made limited recommendations as to successive phases of work and associated breakdown of costs. However, Table 1-8 below summarises those workstreams initiated by the MGBL Management that are in progress.

Table 1-8: MGBL Current Project Workstreams and Budget

Item	Description	Budget (US$)	Comment
1	Updated NI43-101 Study (Budget)	333,381.00	Completed 2Q22
2	Drilling Programme Walsh & Strauss	1,216,684.00	For reserve work
3	Update EPA permit & new EIS	726,465.00	For surface mining
4	Resettlement Action Plan Study	73,319.00	
5	Metallurgical Testwork (Budget)	250,105.00	
6	Road Diversion Concept Study	75,000.00	
	Total	**2,674,954.00**	

1.19 Risks and Opportunities

The risk assessment process for the Project included a facilitated workshop. The objective of the workshop was to determine relevant risks to the Project development and operations as a tool to support future key decisions.

The following significant risks have been identified:

- Open pit mining in the vicinity of historical underground voids presents a safety and production scheduling risk
- Geotechnical risk associated with open pit designs and access
- The re-routing of a section of the National Highway to allow expansion of the Bibiani Main Pit as per mining extraction schedules
- The Resettlement Action Plan to meet the planned expansion of the Bibiani Main Pit and the effect it may have on the mine schedule.

The identified opportunities include:

- Processing recovery upside resulting from the extensive refurbishments and upgrades applied to the processing plant to meet the short-term throughput requirements and proposed expansion to 4.0Mtpa with the introduction of additional processing and recovery related equipment
- Multiple exploration targets within the Mining Lease and Prospect Licenses to augment Mineral Resources
- Expansion through acquisition of neighbouring gold mining operations within the well-defined geological and structural regional setting.

2. INTRODUCTION

2.1 Issuer – Asante Gold Corporation

Asante is a pure gold exploration and development company with a high-quality portfolio of projects in Ghana, Africa's largest gold producer. Asante is focused on developing high margin gold projects which includes the Bibiani Gold Mine. Asante is listed on the Canadian Securities Exchange (CSE: ASE); Frankfurt Stock Exchange (FSE: 1A9) and the United States (OTC: ASGOF) with headquarters at 615-800 West Pender Street, Vancouver, British Columbia. Asante has announced plans to co-list its shares in Ghana. The Ghanaian Government carries a 10% non-equity free carry in the Bibiani Mine.

The Bibiani Project is managed and operated by Mensin Gold Bibiani Limited, a wholly owned Ghanaian subsidiary of Asante Gold Corporation. Bibiani is a historically significant Ghanaian gold mine situated in the western region of the country. The Project has a past production of near 5Moz and is fully permitted with available mining and processing infrastructure on site, consisting of a 3.0Mtpa mill and processing plant and extensive existing underground and surface infrastructure.

As at 28th February 2022, the following is noted:

1. Asante issued share ownership comprises management (12.1%), strategic (39.6%), institutional (16.3%), retail (31.9%) with 315,007,462 shares issued (406,849,860 fully diluted)
2. The top twelve shareholders are: Ghanaian Retail (14.8%), Management and Insiders (12.1%) Emiral Resources (19.7%), Fujairah Holding LLC (15.8%), Jadacore Holdings (4.1%), MIA Investments Ltd. (4.4%), Goknet Mining Company (2.8%), EGH Arlep Anwia Bokazo Community (2.3%), Razak Awudulai (2.1%), Notre Dame Investments (2.1%), Delbrook Resources Opportunity Fund (2.0%) and Mohammad Aminu (1.7%). Total foreign holders make up 61.4% of shareholding. Ghanaian shareholders make up 38.6%.

Asante holds a strategic land position within the region surrounded by world class gold producers. It has interest in +90km² along strike of AngloGold's Obuasi Mine (Measured and Indicated Mineral Resource 22.37Moz, www.anglogoldashanti.com: R&R 2020, Mineral Resource and Ore Reserve Report as at 31st December, 2020) and Perseus' Edikan mine (Measured and Indicated Mineral Resource of 2.57Moz: www.perseusmining.com). It also has interest in +200km² along strike of Asanko-Goldfields JV Esaase and Obotan operating mines, and on April 25, 2022 Asante announced that it had entered into a share purchase agreement with Kinross Gold to purchase their Chirano Gold Mine.

The QP has not attempted to assess or verify the information available in the public space regarding the properties that surround the land holding under licence to Asante and therefore this information is by no means indicative of the mineralisation on the properties mentioned or described in this Technical Report.

Figure 2-1 below illustrates the various interests that Asante is investigating at this current time. It must be noted that some prospecting licences are subject to final transfer, royalties and Governmental approvals.

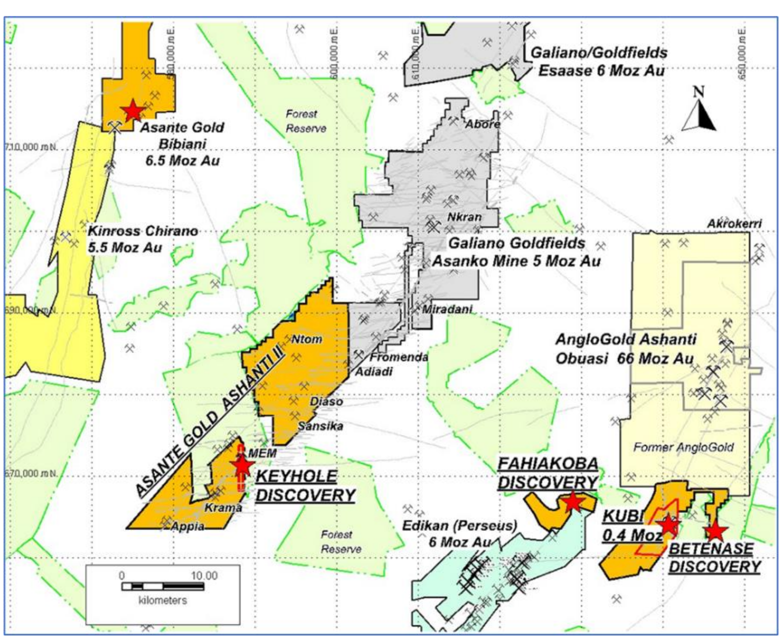


Figure 2-1: Asante Gold Corporation – land package showing mines and current exploration concessions

(Source: Asante 2022)

Note: Some concessions await Ministerial Approval.

2.2 Terms of Reference

This Technical Report ("TR") is a National Instrument 43-101 ("NI 43-101") compliant Technical Report on the Bibiani Gold Mine ("the Mine" or "Project") owned and operated by Mensin Gold Bibiani Limited ("MGBL"). The Mine and adjacent exploration concessions, located in the prolific gold producing Ashanti Region of Ghana, are owned 100% by MGBL, a wholly owned Ghanaian subsidiary of Asante Gold Corporation. ("Asante" or "the Company").

This TR supersedes the following historic technical reports:

1) "Feasibility Study into Recommencement of Bibiani Mining Operations", June 2018, Resolute Mining Limited.
2) "Asante Gold Corporation, Technical Report on the Bibiani Gold Mine, Ghana", November 2021, Optiro.

The Project consists of a multi-deposit complex with essentially three mineral deposits making up the updated Mineral Resources contained in this TR. The Bibiani Main Pit mineralised zone has been historically mined from both open pit and underground operations over a long period of time. The adjacent Walsh and Strauss Pits, collectively called the Satellite Pits, have also been exploited previously as open pit operations.

The Project has extensive existing infrastructure, having been both an open pit and later an underground operation historically, including a recently refurbished and operational carbon-in-leach ("CIL") processing plant with a final planned capacity by 2025 of 4.0Mtpa. Open pit operations are planned by the Company to commence in March 2022 and the processing of declared Mineral Reserves will commence in June 2022, following a 10-month refurbishment and re-construction period. This TR is focused on communicating the status of current mining and processing operations and submitting the updated Mineral Resources and Reserves and LoM plan with an effective date of 28th February 2022.

The TR has been prepared by **dMb Management Services** Pty Ltd ("dMb"), **BARA Consulting** Pty Ltd ("BARA") and **Snowden Optiro** on behalf of the Company, a gold exploration and development company with a high-quality portfolio of projects in Ghana.

The TR is considered to have been compiled to the level of confidence as presented in a Pre-Feasibility Study ("PFS"). The CIM Definition Standards require the completion of a Preliminary Feasibility Study as a minimum prerequisite for the conversion of Mineral Resources to Mineral Reserves. The definition as adopted by the CIM Council on 10th May, 2014 is given as follows:

> *"A Pre-Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study is at a lower confidence level than a Feasibility Study."*

2.3 Authors & Qualified Persons

The principal authors and recognized Qualified Persons ("QP's") of the TR (Table 2-1) are David Michael Begg of **dMb Management Services Pty Ltd** (South Africa), Clive Brown of **BARA Consulting** (South Africa), Ian Jackson of **BARA Consulting** (UK) and Senzeni Mandava of **Snowden Optiro** (South Africa). None of the Qualified Persons hold any interest in Asante, its associated parties, or in any of the mineral properties which are the subject of this TR.

Table 2-1: Qualified Persons – Showing Items and Site Visits Dates and Purpose

Qualified Person	Company	Site Visit Date(s)	Item/Section	Purpose of Site Visit
David Michael Begg	dMb Management Services Pty Ltd	09/10/2021-17/10/2021 06/12/2021-12/12/2021 03/02/2022 – 12/02/2022	1-10; 23-27	Principal Author Geology, exploration and general overview of entire Project.
Clive Brown	BARA Consulting	06/12/2021-12/12/2021	15-16, 18-27	Mining & Mineral Reserves, Opex & Capex , Infrastructure
Ian Jackson	BARA Consulting	06/12/2021-12/12/2021	13 & 17	Metallurgical Test work and Processing Design
Senzeni Mandava	Snowden Optiro	06/12/2021-12/12/2021	11-12;14	Sample Preparation, Data Verification & MRE

2.4 References and Information Sources

Information used in compiling the TR was sourced and derived from the extensive MGBL data room and collection of historical reports, feasibility studies and other specific technical documents relevant to the Bibiani Gold Mine, the historical operations, investigations and exploration.

Current operations and LoM planning have been derived from updated mine site and corporate reports and personal communications with the Asante and MGBL executive and senior management, mine site employees and associated consultants.

The authors, all of whom have visited the mine site and current operations in Ghana, have made all reasonable enquiries to relevant Company management and mine personnel to establish completeness and authenticity of the information provided. In addition, a final draft was presented on site to the Company along with written request to identify any material errors or omissions prior to lodgement.

Professor Kim Hein, Principal Consultant & Director of KAAH Geoservices, Netherlands, has an active contract with MGBL and is currently involved in the structural and geological interpretation of mine and regional geology and mineralisation trends in the Bibiani Shear complex. The Professor had input into Sections 7,2; 7.3; 9.3.1; 9.3.2 which relates to the local geology and the results and interpretation of exploration information.

Mr Desmond Mossop, Partner and Principal Engineering Geologist, Mining Geotechnics, SRK Consulting (South Africa) Pty Ltd visited Bibiani from 16th- 20th August 2021 to carry out a geotechnical site review, familiarise with the rock mass conditions and discuss mine design and planning options with Bibiani staff and various project consultants. SRK submitted the following report that has been referenced in Section 16.2 of this TR:

> "*Geotechnical Assessment of Slope Designs for Asante Gold's Bibiani Mine Operations in Ghana for NI 43-101 Reporting, SRK Consulting, February 2022*".

Mr Peter Roux, Environmental Associate, BARA Consulting (South Africa) assisted with the information found in Section 20.

Ama Nketiah, Regional Manager of Knight Piesold Consulting ("KP"), Ghana Limited, had input into the Technical Report with regard to the TSF. Ms Nketiah holds an MSc Degree, Engineering & Management, Coventry University, UK (2016) and has over 15 years' experience in her field. MGBL has an ongoing contract with KP to manage and maintain the tailings storage facility.

The Authors are satisfied that Asante, its representatives and employees have disclosed all material information pertaining to its Bibiani Project and related matters. Asante has agreed to indemnify the Authors from any liability arising from its reliance upon the information provided or from information not supplied. A draft version of this report was provided to the Directors of Asante for comment in respect of omission and factual accuracy.

2.5 Personal Inspections

The Bibiani Project site was visited by the following QPs and the tasks carried out are summarised below.

1) Mr Begg - The core shed was visited along with Mrs Mandava (QP) to examine and review the core storage, geological and structural logging, core sampling and current QA/QC protocols. The historical Bibiani Main Pit and satellite open pit workings were examined and proposed mine plans discussed. The slimes dam and other infrastructure were visited to validate the current status and plans with relevant mine personnel and consultants. A visit was made into the historic Bibiani Main Pit underground workings accompanied by the structural KAAH Consultant (Professor Kim Hein) and by mine personnel to validate underground diamond drilling and structural interpretation and analysis. Other geotechnical aspects of the mine proposal were discussed on site with accompanying members of mine management and the exploration team. Mr Begg was also shown historical drilling collar positions and markers, as well as the current drilling completed by the Company and the position of validation twin holes. The position and collars of geotechnical drill holes were also located and verified. The roads to and from the mining site to the Bibiani processing plant and other relevant infrastructure were travelled. The nearby residential and community settlements were also observed and established to ascertain the social impact (RAP) of the mine proposal.
2) Mr Brown - While on site discussions were held with MGBL management and technical services team on all aspects of the mine plan. The core shed was visited and relevant geotechnical drill cores and logging examined. The historical mine open pit workings were visited and examined. The RoM pad, tailings facility, waste dumps and general mine infrastructure were visited and inspected. The general area surrounding the mine including access roads and nearby residential areas were also visited.

3) Mr Jackson - The processing flow sheet and metallurgical laboratory test work were discussed with members of the plant and project management team responsible for the full refurbishment of the plant to its 4.0Mtpa capacity. Mr Jackson visited the processing plant and activities related to the refurbishment project were observed and verified. The project and its schedule supplied by the EPCM Contractor was discussed. A visit to the TSF was carried out with the contractor responsible for the management of the TSF and the plans discussed for creating new capacity in line with the detailed mine plan.
4) Mrs Mandava - The Mineral Resource QP conducted pertinent audits (see Sections 11 and 12) which included:

- Drillhole site inspection of current operations and historical collar positions
- Visual inspection of current and historical core
- Observation of core logging, marking, cutting and sampling
- Observation of density determination
- Inspection of geological and geophysical plans and sections
- Laboratory visit and assay certificate audit
- Visit to Bibiani Main and satellite pits
- Verifying and validation of geological, sample and assay logs with data entry
- QAQC and data management standard operating procedures and protocols.

Members of dMb Management Services, BARA Consulting, or any other external sources involved in the preparation of this report, have no material interest in Asante or the mineral assets considered in this report.

All references and information sources are listed in Section 28.

2.6 Units, Currency and Abbreviations

Unless otherwise stated, all currencies are expressed in US dollars (US$), with metric units applied throughout this Technical Report. Section and Item have been used interchangeably in this TR.

Table 2-2: Abbreviations and Units of Measurements

Abbreviation/Unit of Measurement	Description
%	percent
°	degrees
°C	degrees Celsius
3D	three-dimensional
AARL	Anglo American Research Laboratories
AAS	Atomic Absorption Spectrometry
Ag	silver
AISC	all-in sustaining capital
As	arsenic
capex	capital expenditure
CIL	carbon in leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
cm	centimetre(s)
CP	Competent Person
DDH	diamond drill hole
EPA	Environmental Protection Agency
FS	feasibility study
g	gram(s)
g/cm^3	grams(s) per cubic centimetre
g/t	grams per tonne
G&A	general and administration
GPS	global positioning system
hr	hour(s)
ha	hectare(s)
kg	kilogram
KNA	Kriging neighbourhood analysis
JORC	Joint Ore Reserves Committee
JORC Code, 2012	Current Australasian Code for the reporting of mineral resources and ore reserves
kg	kilogram(s)
kg/hr	kilograms per hour
km	kilometre(s)
koz	Kilo ounce/thousand ounce (troy)
kt	thousand tonnes
kW	kilowatt
ℓ	Litre
kℓ	kilolitre
LoM	Life of Mine

Abbreviation/Unit of Measurement	Description
m	metre(s)
m^2	square metre(s)
m^3	cubic metres(s)
Ma	million years
MAMSL	metres above mean sea level
mm	millimetre(s)
MRE	Mineral Resource estimate
MRev	Mineral Reserve estimate
mRL	Reduced level/depth or height of a place (in m) above a reference datum or mean sea level
Mt	million tonnes
Mtpa	million tonnes per annum
NI 43-101	Canadian Securities Administrators National Instrument 43-101
NPV	net present value
opex	operating expenditure
oz	ounce (troy)
Pb	lead
PFS	prefeasibility study
pH	Activity of hydrogen ions
ppm	parts per million
QA	quality assurance
QA/QC	quality assurance/quality control
QC	quality control
QP(s)	Qualified Person(s)
RAP	resettlement action plan
RC	reverse circulation
Resolute	Resolute Mining Limited
RF	revenue factor
RoM	run of mine
SAG	semi-autogenous grinding
SD	standard deviation(s)
SMU	selective mining unit
t	tonne(s)
t/m^3	tonnes per cubic metre
tpa	tonnes per annum
TSF	tailings storage facility
TSX	Toronto Stock Exchange
UCS	unconfined compressive strength
µm	micron
US$	United States dollars
VTEM	versatile time-domain electromagnetic surveying
XRD	x-ray diffraction
XRF	x-ray fluorescence
WRD	waste rock dump
WRDF	waste rock dump facility

3. RELIANCE ON OTHER EXPERTS

The Qualified Persons have relied upon the legal, environmental and permitting information provided by management and employees of MGBL (Table 3-1) for inclusion in Section 4 (Property Description and Location).

The QPs have not researched property title or mineral rights for the Project and express no opinion as to the validity of ownership status of the property. The TR has been prepared on the understanding that the property is, or will be lawfully accessible for evaluation, development, mining and processing.

Table 3-1: QP Reliance on Other Experts

Section	Subject	Company
4	Property description and location	Asante
4.1	Legal and ownership	Asante
4.4	Environmental and permitting	GEOSYSTEMS, Ghana Limited
20	Environmental Studies, Permitting and Social/Community Impact	BARA Consulting
20, 24.4	Tailings storage facility	Knight Piesold, Ghana Limited

MGBL and its attorneys have provided certain information, reports and data to the Authors in preparing this document which, to the best of MGBL's knowledge and understanding, is complete, accurate and true and MGBL acknowledges that the Authors have relied on such information, reports and data in preparing this document. No warranty, or guarantee, be it express, or implied, is made by the authors with respect to the completeness, or accuracy of the legal aspects of this document.

Environmental information was supplied by Dr Charles F A Akayuli, Director of GEOSYSTEMS Consulting, Ghana Limited, based out of Kumasi. Dr Akayuli holds a PhD (Materials and Structures) from Kobe University, 1999. GEOSYSTEMS visited site between 14th - 16th December.

Except for the purposes legislated under provincial securities laws, any use of this Technical Report by a third party is at that party's sole risk.

4. PROPERTY DESCRIPTION AND LOCATION

4.1 Regional Overview

Ghana is in West Africa, approximately 600km north of the Equator and sharing boundaries with Togo to the east, Cote d'Ivoire to the west, Burkina Faso to the north and the Gulf of Guinea to the south.

Gold represents Ghana's major export commodity, followed by crude oil and cocoa. Ghana is the world's sixth and Africa's largest producer of gold. Manganese, bauxite and diamonds are also mined. Tourism is also growing rapidly.

Ghana has a population of 30.8 million (2021 census) and covers an area of approximately 239,000 km². Ghana has a large variety of African tribal or sub-ethnic units. English is the official language, a legacy of British colonial rule. Twi is the most widely spoken local African language. The majority of the population are Christian (71%) whilst the northern ethnic groups are largely Muslim (20%) and indigenous beliefs (9%) are also practiced throughout the country, (2021 Population and Housing Census data).

In 2018 Ghana was divided into sixteen distinct regions and the Bibiani Project falls within the Western North Region, on the boundary of the Ashanti Region as shown in Figure 4-1

Figure 4-1: The Sixteen Regions of Ghana

(Source: Asanti, 2022)

4.2 Project Location and Area

The Bibiani Project is situated in the recently created Western North Region of Ghana (Figure 4-2). The concessions lie 80km southwest of the Ashanti capital, Kumasi. The Bibiani Mine is located at approximately 6˚27' latitude north and 2˚17' longitude west.

The best access to the mine site is from the east along the Kumasi-Bibiani-Sefwi Bekwai tarred highway. The Kumasi airport can be accessed from Accra by a frequent and regular 40-minute flight using various national airlines.

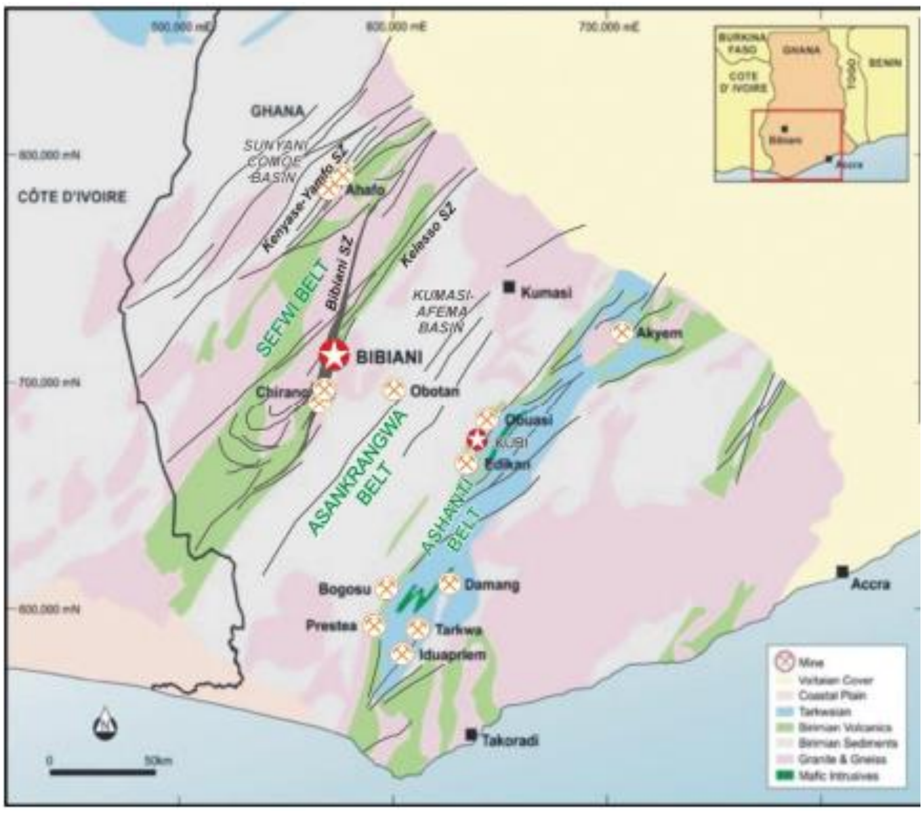


Figure 4-2: Bibiani Mine Location with Respect to Regional Geological Setting and Other Gold Producers

(Source: Asante 2022)

4.3 Licences and Mineral Tenure

Asante has a 100% equity interest in the Bibiani Project, through its subsidiary company Mensin Gold Bibiani Limited and in the Exploitation Permit on which it is based. MGBL is a 100% owned Ghana incorporated subsidiary of Asante Gold Corporation, the parent company, which is based in Canada. The Ghanaian Government holds a non-equity free carried 10% interest in the Bibiani Mining Lease. The legal status of the Mining Lease and prospecting Licences held by MGBL in Ghana in which the Company has an interest has been verified by MGBL staff and was confirmed in written correspondence from the Minerals Commission to JLD & MB Legal Consultancy on the 29th September 2021. As at 28th February 2022, all mineral tenements were in good standing with the Government of Ghana. Furthermore, it has been confirmed that the properties are lawfully accessible for evaluation and mineral production.

MGBL holds one Mining Lease and two Prospecting Licences, which collectively make up the MGBL mineral assets and span over 2km strike length. The MGBL assets are made up of the Bibiani Main Pit, historically a surface and underground mine, with numerous satellite pits along strike to the northeast and southwest along the Bibiani Shear Zone. Satellite mineralised deposits situated on the same geological structure include South Hill, Russell (south of Main Pit), Big Mug, Little Mug, Pamunu South, Pamunu North, Ahyiresu (North of Main Pit) and on identified geological splays off the main structure to the northeast includes Walsh, Strauss South, Strauss, Ahiman, and Grasshopper.

The areas of the respective mining leases and prospecting licences with respective company owners are tabulated in Table 4-1

Table 4-1: Mensin Gold Bibiani Limited – Summary of Mining and Prospecting Leases

Tenement Number	Type	Permit Name	Holder	Equity Interest	Grant Date Expiry Date	Comment	Area (km^2)
PL.2/15 LVB/WR.615/97	Mining Lease	Bibiani	Mensin Gold Bibiani Limited	100%	19 May 1997 18 May 2027	Valid	49.82
PL.6/44	Prospecting Licence	Asuontaa	Mensin Gold Bibiani Limited	100%	16 June 2011 15 June 2012	Renewals Pending Licences in force pursuant to Section 35 (4) of Minerals Act,2006 (Act 703)	29.3
PL.6/353	Prospecting Licence	Donkoto	Mensin Gold Bibiani Limited	100%	23 June 2011 22 June 2013		19.33
						Total	**98.45**

The Mining Lease containing an approximate area of 49.82km² lying to the north of Latitudes 6˚25’52”, 6˚26’47” and 6˚27’11”; south of Latitudes 6˚29’23” and 6˚26’47”; east of Longitudes 2˚17’46” and 2˚19’14” in the Bibiani-Anhwiaso-Bekwai District of the Western Region of the Republic of Ghana.

Figure 4-3 below shows the land package position and relationship within the MGBL Mining Lease and Prospecting Licences. The land package has been carefully acquired based on identified geological strike extension opportunities to the main mineralised deposits of the Bibiani Mine.

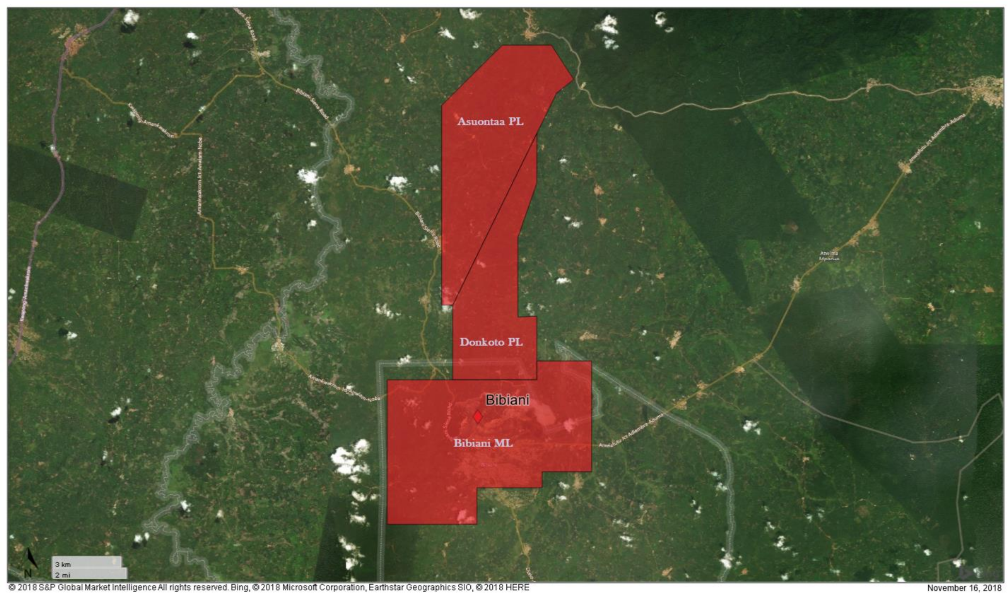


Figure 4-3: Bibiani Prospecting Licence Concession Plan

(Source S&P Global Market Intelligence)

4.3.1 Mining Legislation and Overview

STATE LANDS ACT (1963)

Section 6(1) provides that any person whose property is affected by a public project is entitled to compensation and provides mechanisms through which people not satisfied with compensation may seek redress. Dissatisfied compensation claimants may seek redress by first notifying the minister, who refers the case to a tribunal consisting of three persons appointed by the President.

MINERALS AND MINING ACT 703

The Minerals and Mining Act, 2006 (Act 703) (as amended by the Minerals and Mining (Amendment) Act, 2015 (Act 900) and the Minerals Commission Act, 1993 (Act 450) are the principal enactments setting out the framework of Ghanaian mining law. These acts express the basic position that minerals in their natural state are owned by the state; they also outline the licensing scheme for mineral operations, the incidents of the various mineral rights and the powers of the principal regulatory institutions. The following pieces of subordinate legislation add detail in specific areas to the regime set out in the principal legislation:

a) Minerals and Mining (General) Regulations, LI 2173, 2012
b) Minerals and Mining (Support Services) Regulations, LI 2174, 2012
c) Minerals and Mining (Compensation and Settlement) Regulations, LI 2175, 2012
d) Minerals and Mining (Licensing) Regulations, LI 2176, 2012
e) Minerals and Mining (Explosives) Regulations, LI 2177, 2012
f) Minerals and Mining (Health, Safety and Technical) Regulations, LI 2182, 2012
g) Minerals and Mining (Ground Rent) Regulations, LI 2357, 2018
h) Minerals and Mining (Local Content and Local Participation) Regulations, LI 2341, 2020

The mining law divides the various licences that can be granted for a mineral right into three sequential categories, Reconnaissance Licence, Prospecting Licence and a Mining Lease, defined under the Minerals and Mining Act, 2006 (Act 703). These licences are discussed below.

RECONNAISSANCE LICENCE (SECTIONS 31-33)

A reconnaissance licence entitles the holder to search for specified minerals by geochemical, geophysical and geological means. It does not generally permit drilling, excavation, or other physical activities on the land, except where such activity is specifically permitted by the licence. It is normally granted for 12 months and may be renewed for a period not exceeding 12 months if it is in the public interest. The area extent is negotiable, related to the proposed reconnaissance program.

PROSPECTING LICENCE (SECTIONS 34-38)

A prospecting licence entitles the holder to search for the stipulated minerals and to determine their extent and economic value. This licence is granted initially for a period of up to three years covering a maximum area of 150 km^2. This may be renewed for an additional period of two years, but with a 50% reduction in the size of the licence area if requested. A prospecting licence will only be granted if the applicant shows adequate financial resources, technical competence and experience and shows an adequate prospecting program. It enables the holder to carry out drilling, excavation and other physical activities on the ground.

MINING LEASE (SECTIONS 39-46)
When the holder of a prospecting licence establishes that the mineral to which the licence relates is present in commercial quantities, notice of this must be given to the Minister for Lands and Natural Resources and if the holder wishes to proceed towards mining, an application for a mining lease must be made to the Minister within three months of the date of the notice.

4.4 Agreements, Royalties and Encumbrances

In addition to the 10% non-equity free carry held by the Ghana Government it will receive a royalty on gross revenue of all gold production associated with the development of the Bibiani Mining Lease, of 5%, based on monthly gold prices on the market.

4.5 Environmental Obligations

The MGBL open pit operations will comply with all applicable Ghanaian legislations particularly the Environmental Assessment Regulations 1999 (LI 1652). As required by the LI 1652 MGBL has duly registered the Project with the EPA and filed a Scoping Report and draft Terms of Reference submitted on the 17th January 2022.

MGBL has undertaken a variety of baseline studies to provide a base line from which potential impacts and issues can be evaluated. In addition, detailed stakeholder programmes, including a public hearing, were executed to sensitise catchment communities, regulators, local and regional authorities, and traditional leaders on the proposed Project. The results of the various resource studies, impact evaluations and mitigation development efforts have been compiled into a draft EIS.

4.6 Permits

MGBL also holds the necessary permits for the following:

- Water Abstraction – for both potable and dewatering requirements
- Operation of a fuel dispensing and storage facility
- On site medical facility permits (Issued by the Ghana Health Facilities Regulatory Agency)
- Municipal Business Operating permit issued by the Bibiani Anhwiaso Bekwai Municipal Assembly.

MGBL received the following updated permits in February 2022:

- Environmental Permit (EPE/EIA/568) on 21st February 2022 from the Ghana Environmental Protection Agency. Expiry date: 20th August 2023
- Mine Operating Permit (No. 0000714/22) on 17th February 2022 from the Minerals Commission, Inspectorate Division. Expiry date: 31st December 2022.

These two Permits allow for the commencement of open pit mining operations. Receipt of these permits follows an extensive process of scoping studies, presentation and detailed review of the Environmental Impact Study, public consultation and review of mine operating plans and schedules. The Environmental and Mine Operating Permits provide for all aspects of the Bibiani Mine development, including operation and expansion, re-alignment of the National Highway, management of water and tailings, transport and utilization of explosives, mining and processing.

4.7 Other Significant Factors and Risks

Environmental, permitting, legal title, taxation, socio-economic and political or other relevant issues could potentially materially affect access, title or the right or ability to perform planned operations. However, as of the Effective Date of this Report the QP and other Authors are unaware of any such potential issues that may hinder MGBL’s ability to perform operations.

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

5.1 Accessibility

Most of the major international airlines fly into and from the newly refurbished international airport in Ghana's capital city, Accra. Accra is a modern coastal city with a total population of approximately 4 million people (2021 census). Domestic air travel has increased significantly, and the country has a vibrant telecommunications sector, with six cellular phone operators and several internet service providers. The nearest city to the mine is Kumasi situated 92km east of Bibiani town and about 250km to the north-west of Accra. Kumasi is a fast growing metropolitan and is the commercial, industrial and cultural capital of the Ashanti region with a population of circa 3.4 million residents (2020). Kumasi is served by the Kumasi Airport with two domestic airlines operating regular flights from Accra. This airport has been approved for expansion into an international facility, with an estimated completion date of October 2022.

The main access to the mine is from the east, along the Kumasi-Bibiani – Sefwi Bekwai Highway. The Kumasi airport can be accessed from Accra by a 45-minute flight using various national airlines. Access to the Bibiani mine gate from the Kumasi Highway is excellent.

The mine is also serviced by two well equipped coastal ports, Tema which lies just to the east of the capital Accra, and Takoradi which lies 180km to the south of Bibiani.

5.2 Climate

Ghana has a predominantly tropical climate and consists mostly of low savannah regions with a central, hilled forest belt. Ghana's one dominant geographic feature is the Volta River, upon which the Akosombo Dam was built in 1964. The damming of the Volta created the enormous Lake Volta, which occupies a sizeable portion of Ghana's south-eastern territory.

The Project falls within the semi-equatorial climatic zone which is characterised by two rainy seasons in a year cycle; April to July and September to November. The dry season which occurs between December and March is generally named "Harmattan". Rainfall data collated at the Sefwi Bekwai synoptic station from 1996 to 2015 indicates a mean annual rainfall of 1.42m. For the same period the mean monthly temperature ranges between 21.4˚C and 34.3˚C. Relative humidity for the area is generally high and moist all year round with the lowest mean relative humidity of 73% recorded in February whilst the most humid month is June with an average of 84%. Records at Ghana Meteorological Agency indicate the municipality within the project area experiences NE dry harmattan winds during the dry season.

The Western Region of Ghana, out of which the Western North Region was recently carved, has an average daily temperature of 31^{o}C, with average humidity above 80%. Annual rainfall is depicted for the Western Region of Ghana in Figure 5-1.

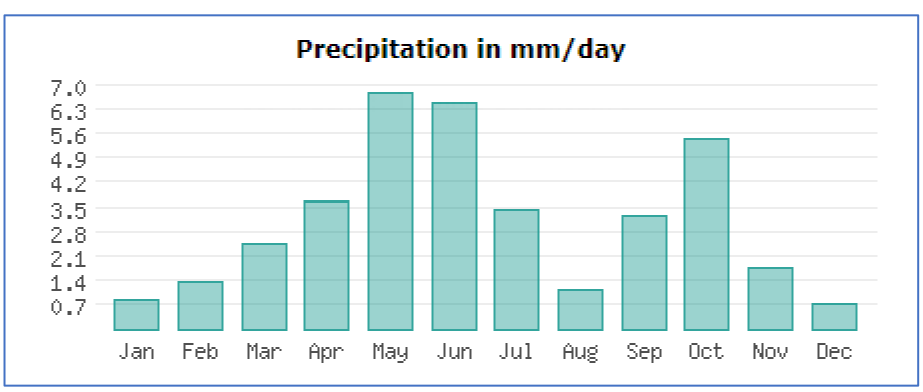


Figure 5-1: Average Monthly Rainfall

(Source: worlddata.info/Africa/Ghana/climate-western)

5.3 Local Resources

Ghana has a market-based economy with relatively few policy barriers to trade and investment in comparison with other countries in the region. It has substantial natural resources and a much higher per capita output than many other countries in West Africa.

The Project is situated adjacent to the township of Bibiani, which has an approximate population of 50,000 people. The mine has been in existence for more than 100 years and therefore skilled labour and other mine related resources are easily available within the nearby region.

MGBL currently has a team on site to carry out the duties required for the re-opening of the open pit mining operations and the completion of the processing plant refurbishment. The team includes senior and executive management, project management and personnel, accounting and procurement staff, open pit management and mining personnel, environmental officer and community liaison personnel, maintenance personnel, geological and technical personnel, plant operations personnel, human resources and camp management. A full contracted security complement is also present. Mining operations, planned to commence in February 2022, will be handled by a contract team that has already been awarded the contract.

Since acquiring the Bibiani project, MGBL's aim is to focus on four community development pillars:

- Water and sanitation
- Community health
- Education
- Local economic development.

Local representatives and MGBL staff have worked together to develop and implement projects around these development goals. In doing so, strong links are being built between the Bibiani community and the project to enable a lasting beneficial legacy.

5.4 Infrastructure

The mine and adjacent residential township have excellent infrastructure and services necessary for reopening and operations of the mine. The mine site infrastructure includes ample administration and operational offices, well established residential areas and canteens, large engineering workshops, mine laboratory, well-constructed mine roads, explosives magazine, fuel storage tanks and a medical clinic managed by a qualified doctor.

The mine already had a 3Mtpa processing plant that has recently been refurbished and will be expanded to 4.0Mtpa by 2025, tailings storage facility and mining contractor lay down areas and workshops are in progress. All mine related areas are fully secured with a contract Security Company deployed in all areas. Senior staff are housed in existing well established residential camps and other mine labour is bussed to site from the surrounding towns and villages.

The Bibiani mine receives electrical power from the national grid. However, the mine also owns and maintains emergency generators to supplement grid power when required. There are two freshwater dams on the property.

5.5 Physiography

The physiographic and topographic characteristics are exemplified by the Bibiani range, which trends southwest to northeast from Axim to Sunyani, about 200km. Rugged terrain is characteristic of the range, with high peaks hovering above 600m.

Figure 5-2 is a 230-metre elevation map of Bibiani taken from floodmap.net website. The map has been generated using elevation data from NASA's 90 m resolution SRTM data.

The Bibiani mine site is located on the eastern flank of the Bibiani range, to the north of the Bibiani township. There are both high and low land areas within the project area. The high lands are located to the southwest of the project area, with topography reaching above 500m elevation. The peaks trend to the north-northeast, following the main structural trend in the area. The lower topography of the project is located to the east. The landscape comprises gentle undulating rolling topography formed by weathering processes.

In general, the concession areas have been transformed, having experienced extensive degradation in recent years. The main land uses include secondary forest, subsistence and cash crop farming, and artisanal gold mining.

The upland soils are suitable to produce a number of climatically suited tree and food crops, as well as cereals, legumes and vegetables. Tree crops such as cocoa, coffee, citrus, oil palm, avocado pear and mangoes do well on these soils. Cassava, yams, plantain, banana and maize are successfully grown on these soils.

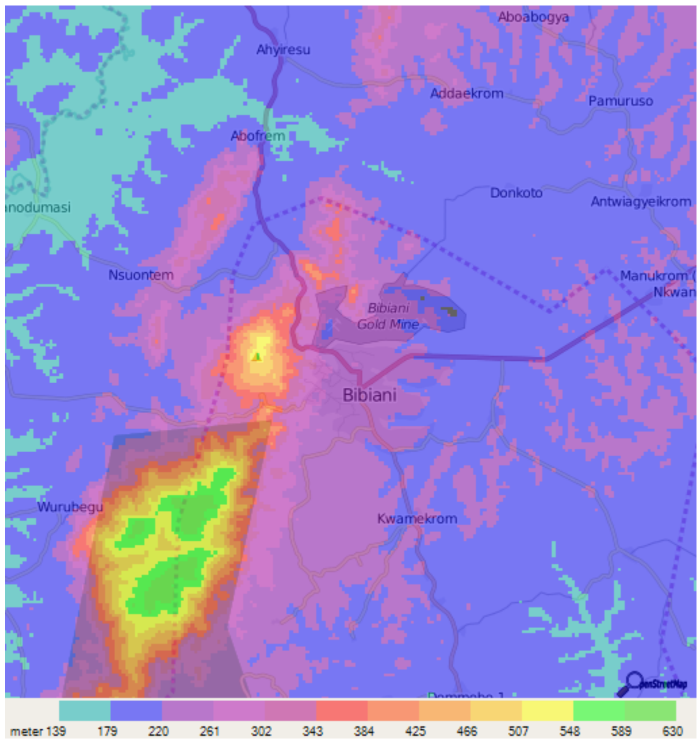


Figure 5-2: 230m Elevation Map of Bibiani, Ghana.

(Source: floodmap.net/elevation/elevation map)

The mining concession is in five sub-catchments in the Tano River Basin of the southwestern basin system of Ghana. These sub-catchments are the Amponsah, Mpokwampa, Mensin, Kyirayaa, and Pamunu. The five rivers of these catchments flow in a westerly direction into the Tano river; these rivers are seasonal, sometimes drying up in the dry season between December and March.

The Tano river valley is about 3km wide, and comprises the present river channel, a flood plain and a valley slope. The areas beyond the valley feature rolling hills which rise to 40m above the river. The Pamunu river is perennial with many dendritic tributaries and meanders through the flood plain varying in width from a few metres to 50m.

Amponsah and Mpokwampa drain various areas of the mine before joining Mensin. The mine area includes a series of levees to catch flood and run-off water. Overflow from levee 5 also joins Mensin. The surface water resources are not consumed due to the impact from mining operations and domestic waste from the local inhabitants and residential areas. As part of MGBL's water monitoring program, surface water sampling locations have been incorporated into the program to assess the physico-chemical and biological content.

5.6 Surface Rights

The laws regarding surface rights are captured in the Mineral and Mining Act 206, Act 703 subsection 72. This section gives rights to the owners of land (ie: Chiefs, families, individuals, etc) to be compensated by Mineral Right holders. In the case of MGBL all concessions belong to three Paramountcy's who have in turn given same right to the relevant Subchiefs to exercise that right in terms of compensation. Compensation with regards to surface rights comes in the form of:

- Crop compensation
- Deprivation of land use compensation
- Compensation of immovable properties (shrines, ponds, etc)
- Ground rent payments through the Government's Stool Lands Department.

There are currently seven levees that were historically constructed as tailings storage ponds. In recent times the levees have been used to store and to supply make-up water for the processing plant. Adjacent levees are conjoined but separated by saddles. There is vegetation growing along the embankments which protects them from erosion and subsequent sedimentation. The levees also collect most of the direct runoff drainage from the mine site area.

The Process Water System water circuit is split into Raw, Process and TSF return water. TSF return water is used for process make-up. In operation phase underground dewatering will be continued and the water used in the processing operations.

Boreholes, hand dug wells and public reticulation are the main water sources for the catchment communities as streams and other surface waters in the mine concession have been contaminated in the past by communities and illegal mining operations.

6. HISTORY

6.1 Prior Ownership and Ownership Changes

There has been a long history of gold mining at Bibiani and it has undergone a number of ownership changes since its discovery. Commercial gold production commenced in the early 1900s, with the local town of Bibiani growing adjacent to the mining operation along the main highway over many years of intermittent mining history. Early mining was conducted by underground methods followed by a period of open pit mining of both oxide from smaller satellite pits and fresh rock material from the more significant Bibiani Main Pit.

The Bibiani mineralisation was first prospected and worked in the 1800s on an extensive scale prior to the granting of the first concession in 1891. Official exploitation of the Bibiani deposit began in 1902 and ran to 1913, with the mining of surface sediments and oxidised mineralised material at shallow levels. Approximately 70,000oz Au was recovered during this period.

Mining activities recommenced in 1927 as an underground mine, developed and operated by foreign investors until it was nationalised in 1958. The history of exploration and development from 1958 onwards by separate owner is discussed in the following paragraphs.

6.2 Historical Exploration and Development

Historical exploration activities over the Bibiani Concessions have been carried out by various previous owners. Drilling and sampling was completed between 1993 and 2017 by:

- AngloGold Ashanti Limited 1993 – 2005
- Central African Gold (CAG) 2007 – 2008
- Noble Mineral Resources (Noble) 2010 – 2012
- Resolute Mining (Resolute) 2014 – 2017.

6.2.1 State Gold Mining Corporation

The exploitation of the Bibiani Mine, which included several satellite mineral deposits, commenced in 1902 with the mining of surface adits and oxidised mineralised material at shallow depths (Section 9). The mine closed in 1913 after recovering approximately 70koz of gold. In 1927 mining activities were resumed as an underground operation under the management of Bibiani (1927) Limited, until nationalisation in 1958 and thereafter by the State Gold Mining Corporation until it was again closed in 1973 having yielded approximately 2Moz of gold. During the SGMC period the outlined reserves within the existing infrastructure were depleted and the old workings were re-worked to recover pillars and remnant lower grade material that was below the economic pay limit (probably +6g/t Au) that was applied to the deposit prior to nationalisation.

6.2.2 Ghana Libya Arab Mining Corporation and International Gold Resources

In the late 1980s and early 1990s Ghana Libya Arab Mining Corporation and International Gold Resources acquired various rights to the Bibiani mine deposits and respectively embarked on separate tailings reclamation and surface exploration programmes.

The surface exploration programme yielded a positive feasibility study for the development of an open pit resource around and encompassing the historic underground Bibiani mine.

6.2.3 Ashanti Goldfields Company Limited

Ashanti Goldfields acquired the Bibiani Mine in the mid 1990's for US$130m, financed an additional US$85M to capitalise the operation, and redeveloped the mine as an open pit operation with a modern processing plant. Ashanti Goldfields (later AngloGold Ashanti or "AGA") produced approximately 1.8Moz of gold from the Main Pit and associated satellite pits. The mining was hampered by a failure on the western Bibiani Main Pit wall and operations continued with mineralised material from the smaller satellite pits and low-grade stockpiles. In addition, a trackless decline was developed in 2004/2005 to access the underground workings for resource estimation and exploration.

EXPLORATION

In 2001 AGA initiated an exploration and development programme to investigate the potential to recommence underground mining operations. The potential for further resource along the mineralised zone strike length down to 12 level (RL-120M) was a trigger for this work.

A surface drilling programme was conducted with results confirming the presence of gold mineralisation below the existing open pit.

OPERATIONS

AGA exploited Bibiani between 1997 and 2003 successfully extending the Bibiani Main Pit down to RL75m, a depth of approximately 200m below surface.

In 2002, following on from the successful surface diamond drilling, a portal near 3 Level was established at the southern end of the Bibiani Main Pit and a trackless decline was developed with the aim of providing access to the underground workings beneath the pit down to 12 Level for further resource estimation and exploration work. The ramp crossed into the footwall of the shear zones between 4 and 5 Levels and was developed down to 9 Level, a total of 1,490m. The old workings were accessed on 5, 6, 7, 8 and 9 Levels and approximately 2,300m of development was completed.

Based on the outcomes of the pre-feasibility study to exploit the underground mine at a production rate of around 100,000tpm, the company expanded the ramp development to provide access to the underground mine for further exploration and future mine production.

Mining production from the open pit operations stopped in November of 2003 due to a failure of the western pit slope. At the time of the wall failure there was still approximately 100,000oz Au in broken rock remaining in the pit. Recovery of the broken material required a considerable cut back on both pit walls, as well as additional capital cost to procure new mining equipment. This, coupled with continued signs of deterioration of the east and west slopes including loss of the main ramp into the pit, resulted in any further open pit extraction being abandoned.

In the interim AGA continued to feed the plant by exploiting a series of small, low grade satellite pits, as well as depleting the remaining ROM and low-grade stockpiles and the treatment of the old GLAMCO tailings resources.

AGA are recorded to have produced approximately 1.8Moz Au from the main and satellite pits.

AGA released a Mineral Resource covering the Bibiani Main Pit mineral deposit which included 1.6Mt at 3.9g/t Au containing 200,000oz Au directly beneath the base of the open pit to the 9 Level (RL-40M). This historic Mineral Resource estimate has not been verified by the QP and is not considered relevant to the Mineral resource estimate that is included in the TR.

In 2006, following a strategic review and prioritisation of its worldwide operations, AGA put the Project up for sale. At this point the Bibiani Mine had produced approximately 4Moz Au over its operational life.

6.2.4 Central African Gold

The Bibiani Project was purchased from AGA by Central African Gold ("CAG"). CAG continued mining underground and persisted with surface and underground exploration to further improve the underground potential. Apart from a small amount of clean up material and bulk sampling of material from old stope draw points there was no significant production until 2007 after CAG took ownership. Between 2007 and 2008 CAG continued underground development and commenced stoping operations targeting a staged build up in production rate to 150kt per month yielding 150koz Au per annum. CAG reported a total of 3,758m of operating and capital development and produced a total of approximately 354Kt at 3g/t Au during this period.

However, in September 2008 due to financial problems CAG was unable to sustain operations and the local subsidiary company, Central African Gold Ghana Limited (CAGGL) and its assets were handed over to principal financiers Investec Bank of South Africa.

Investec Bank put the mine on care and maintenance while it investigated options with regards to continued operations or complete sale.

6.2.5 Noble Mineral Resources / Noble Mining Gold Bibiani

In 2009, Noble Mineral Resources ("Noble") signed a 'Sale of Shares' agreement to acquire CAGGL from Investec Bank. In 2010 Noble commissioned SEMS Exploration Services Ltd ("SEMS") to compile a detailed report on the Bibiani Project, which included a technical review of the geology and a targeting exercise. SEMS developed a district-scale 2D structural interpretation from the aeromagnetic data for target generation.

Major shears with north-northeast and northeast intersections were identified as structurally favourable for Bibiani-style deposits. This information was overlain on the distribution of anomalous gold in soil samples, and a series of targets were identified, which included many of the existing satellite mineral deposits.

In 2010 Noble Gold Bibiani Limited, commenced mining in the satellite open pits to the northeast of the Main Pit.

In 2012 Noble commissioned Coffey Mining specialists based in Perth, Australia to submit a Mining Study of the Bibiani project. The scope of work included:

- Estimate mining recoveries and dilution
- Review mining methods
- Review mining costs
- Pit optimisation
- Mine design and scheduling.

The study pertained to the following other mineralised deposits:

- Main Pit
- Walsh
- Strauss
- Strauss South
- Elizabeth
- Grasshopper
- Ahiman.

Coffey Mining developed Mineral Resources for the Bibiani Main Pit, Elizabeth, Walsh, Strauss and Strauss South deposits. Coffey reviewed in-house Resource estimates done for Grasshopper and Ahiman deposits.

In 2012 construction commenced on expanding the processing plant to a nominal capacity of 3Mtpa. However, despite significant upgrades, work on parts of the processing circuit and the primary crushing circuit remained incomplete. Following a period of declining gold price and subsequent financial difficulties Noble suspended operations at Bibiani in May 2013.

6.2.6 Resolute Mining – Mensin Gold Bibiani Limited

The most notable historical exploration and Resource Estimation activities were performed by Resolute Mining between 2014 to 2017. Resolute focussed primarily on the Bibiani Main Pit deposit from surface and underground positions.

It must be noted that the QP has not done any investigation to validate historical Resource estimates published by Resolute and subsequently MGBL is not considering this historical estimate as a current Mineral Reserve, and it is not relevant to MGBL's plan for open pit mining.

In November 2012 Resolute Mining Limited (Resolute) acquired a 20% stake in Noble backed by an AU$85M financing package. Resolute was able to take over control of the Bibiani assets through a scheme of arrangement with creditors following the suspension of mining operations in 2013. This process was completed in early 2014 allowing Resolute to immediately embark on a re-assessment of the underground potential. Resolute also initiated another extensive surface and underground resource drilling programme.

In December 2013, pursuant to Section 52 of the Ghanaian Minerals and Mining Act 2006, Act 703, Resolute served notice to the Minister of Lands and Natural Resources of its intention to become a controller of NMGL the holder of the Bibiani Mining Lease. In June 2014, the Minister granted Resolute's request for approval of Material Change in Ownership of the company and changed the company name to Mensin Gold Bibiani Limited (MGBL).

In March 2014 Resolute commissioned Model Earth Pty Ltd to complete a full geological review of the Bibiani concessions. This involved a multi-disciplinary campaign spanning three weeks of field work with additional 3D modelling and interpretation (Figure 6-1). A team of 5 consultant geologists from Model Earth were utilised, with assistance from geologists from both Resolute and Noble. This campaign completed the following important tasks:

- Search and rescue of historical information and data
- Collation and validation of all previous drilling and sampling data
- Resampled 3,857m of historical core to confirm the grade of the unsampled intervals
- Resampled 4 CAG historical holes to verify original assays
- Relogging of historical core and review of previous mining records to create a 3-D geological model for the regional interpretations and of the underground workings
- Developed new code library and rock reference collection
- Detailed mapping of the Bibiani Main Pit
- Structural measurements and plotting from both surface and underground
- 3D model assembly in Leapfrog™
- Inspection of underground drives.

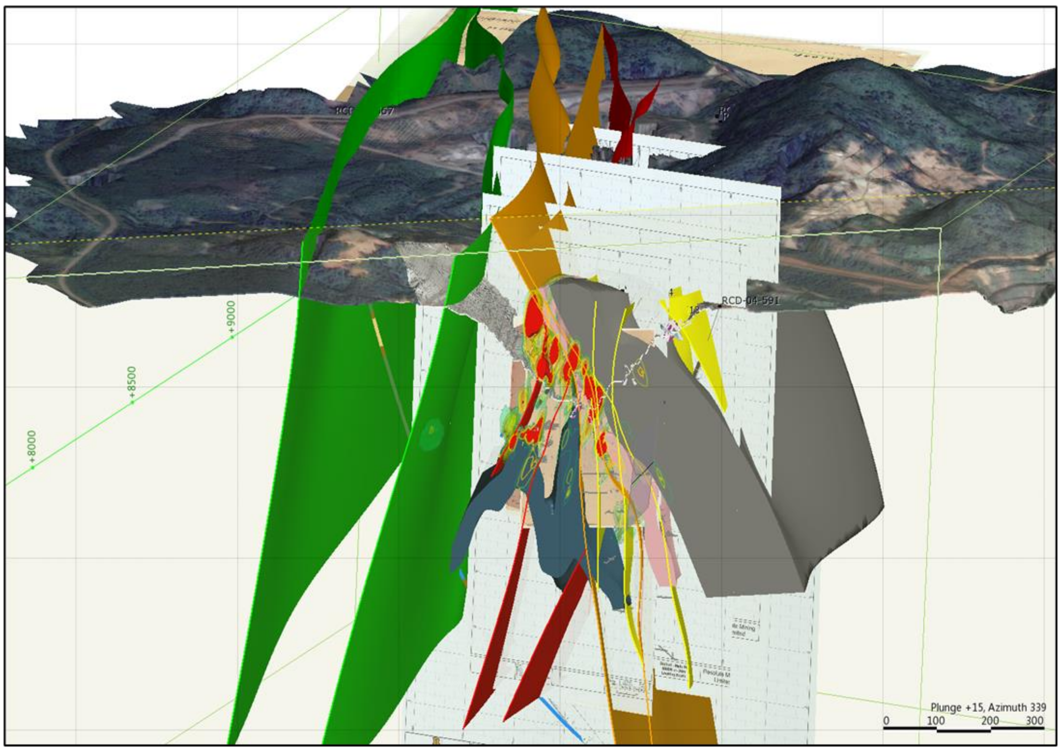


Figure 6-1: Bibiani Gold Mine – Model Earth 3D Modelling and Interpretation during Resolute Ownership

(Source: Model Earth, 2014)

Resolute completed 26,665m of underground and surface diamond drilling at Bibiani with the aim of enhancing the existing 1.7Moz Mineral Resource announced on the 15th August 2014. The underground segment of this campaign was focused on identifying a consistent high-grade zone within the Central Lode on Levels 11 to 13 (375m vertical) over a strike length of 500m between 5000N and 5500N. The drilling identified numerous broad, moderate to high grade, zones of mineralisation. Surface drilling conducted at the same time had success concentrating on areas directly north of the underground workings between 5700N and 6250N. Optiro produced a mineral resource model mid-2016. It resulted in a 60% increase in Indicated Resources over the previous Noble Gold resource estimate (12% increase in total resource ounces). This resulted in the upgraded Resource Estimate in June 2016.

In June 2016 Resolute completed a Feasibility Study. The Study contemplated production of up to 1.2Mtpa from Long Hole Open Stope underground mining. Processing of mineralised material taking place at the refurbished existing processing plant. Most of the US$72m raised was to complete the necessary refurbishments. An initial Ore Reserve (JORC Compliant) of 5.4mt at 3.7g/t Au (640koz Au) was declared. LoM (5 years) production was expected to be approximately 560koz Au. The QP has not carried out sufficient work to be able to verify these historical estimates.

The positive feasibility outcomes triggered a second phase of drilling during 2016/17 which included a further 25,400m DD drilling from both underground and surface positions. The primary focus being to convert Inferred Resources to Indicated Resources. This included 1,000m drilled at the Walsh and Strauss satellite pits.

Resolute, thereafter, released an updated feasibility study for Bibiani (see ASX Announcement dated 13th July 2018 – Bibiani Update) that stated a current JORC compliant Mineral Resources prepared by Optiro (see ASX Announcement dated 18th October 2017) of 21.7Mt at 3.6g/t Au for 2.5Moz Au. A further 25% increase in Indicated Resources over the 2016 estimate. (39% increase in total resource ounces). This included an Inferred Resource of 8.4Mt @ 3.7g/t Au giving 1.0Moz Au.

In September 2019 Resolute commissioned Mining Plus to carry out a pit optimisation for the Walsh Pit.

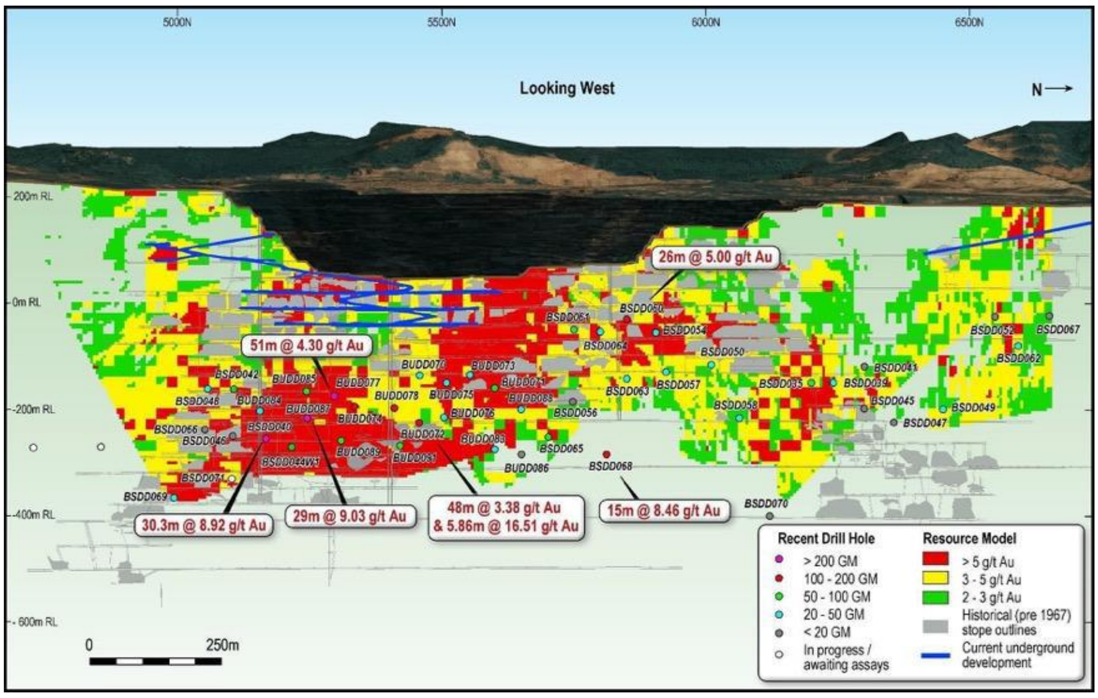


Figure 6-2: Bibiani Gold Mine – Longitudinal Section of Block Model During Resolute Ownership

(Source: Resolute 2017)

6.2.7 Asante Gold Corporation

In August 2021, Asante acquired all Resolute's interest in Mensin Gold Bibiani Limited through the purchase of 100% of the shares of Mensin Bibiani Pty Limited.

Prior to Asante acquiring the Project approximately 1,270 RC/DD holes for circa 218,000m had been drilled by previous owners and operators (excluding satellite deposits and regional exploration). The issuer is not treating the historical estimates derived from this exploration by previous owners as current Mineral Resources or Mineral Reserves. Asante has completed independent Mineral Resource and Reserve Estimates which form part of this TR.

Since taking ownership in 2021 Asante has completed the following infrastructure related projects and drilling exercises:

- Complete Process Plant overhaul and refurbishment
- TSF refurbishment, preparation and improvements
- General mine infrastructure refurbishments (roads, residential camps, sporting facilities, canteens, workshops, offices, security, etc)
- Pit preparation and commencement of open pit mining activities
- The following drilling exercises had been completed by end January 2022
  - 1,204m (12 RC/RCD holes) for resource definition
  - 2,824m (17 DD holes) for resource extension
  - 7,547m (50 RC/RCD/DD holes) for drill testing and resource data validation

6.3 Historical Mineral Resource Estimates

Several Mineral Resource and Mineral Reserve estimations and declarations have been conducted over the various project periods by the different owners of the Bibiani Gold Mine since 2013. These historically declared Mineral Resources have not been verified by the QPs of this TR and the issuer is not treating the historical estimate as current mineral resources or mineral reserves.

It is accepted that these earlier Mineral Resource Estimates were in accordance with best practice guidelines and international mineral reporting codes by suitable qualified persons. The current Mineral Resources and Mineral Reserves are not based on the historical estimates and have been remodelled in 2022 (refer Section 14). Mineral Resources that are not mineral reserves do not have demonstrated economic viability.

BIBIANI MAIN PIT

Of importance is the Resolute MRE history following the completion of the two extensive drilling programs between 2014-2017. The successful drilling campaigns resulted in a complete re-interpretation by Optiro (now Snowden Optiro) and revised geological domains. Optiro used ordinary-kriged methodology constrained by these domain wireframes. The outcome being that the Bibiani Main Pit mineralised system was better classified into discreet domains which reflected more accurately the mineralisation tenure and natural grade of the mineralized deposit. Resolute (2017) published an underground operation JORC compliant Indicated Mineral Resource of 13.3Mt at 3.5g/t Au for 1.5Moz Au and Inferred Mineral Resource of 8.4Mt at 3.73g/t Au for 1.0Moz Au.

In late 2017, after the Optiro MRE was published, several diamond drill holes were drilled to target mineralisation below the central part of the mineral deposit. Results included an intercept of 16m at 7.97g/t Au from 488m (Hole ID: BSDD068) below the Eastern HW Lobe. This zone remains open at depth and for at least 100m along strike to the north and south. The updated MRE (2017) produced a 40% increase in total resources form the earlier estimate, an increase of 729koz over the June estimate to 1.8Moz Au.

The Resource Estimate was prepared by Optiro (2017) using accepted industry practices and was classified and reported in accordance with the JORC Code (JORC, 2012). There are no material differences between the definitions of Measured, Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code.

In October 2021 Snowden Optiro was sanctioned by the Company to compile an NI43-101 compliant Mineral Resource Estimate (MRE) for the Bibiani Gold Mine, presented in Table 6-1 and Table 6-2. This most recent Mineral Resource for the Bibiani Main Pit and Satellite Pits was reported in the "NI43-101 Asante Gold Corporation, Technical Report on the Bibiani Gold Mine, dated 7th November 2021". This MRE was based on the Bibiani Mineral Resource model generated by Optiro in 2017. This model was generated to be suitable for an underground extraction method where its wireframes were generated at a cut-off grade of around 2g/t gold.

The Mineral Resource Estimate completed on 7th November, 2021, and filed on SEDAR, reported Measured and Indicated Resources as at the 18th October 2021 of 20.78Mt at 2.71g/t Au for 1.81Moz Au for the Bibiani Main Pit and Satellite Pits, plus Inferred Resources for the same deposits of 8.41Mt at 2.78g/t Au for 0.75Moz Au from an anticipated open pit mine. The Mineral Resource was reported above a 0.65g/t gold cut-off, a gold price of US$1,950/oz and was depleted for both historical open pit and underground development as of 31st August 2017. No mining has taken place since this date.

Table 6-1: MGBL Measured and Indicated Mineral Resources Reported at 18th October 2021

Bibiani Measured and Indicated Resource - October 2021 Above 0.65 g/t gold cut-off and within US$1,950 shell				
Area	**Classification**	**Tonnes (t)**	**Au (g/t)**	**AU (Oz)**
Bibiani Main Pit	Indicated	19,600,000	2.76	1,740,000
	Sub-total	**19,600,000**	**2.76**	**1,740,000**
Satellite Pits	Measured	783,000	1.77	44,600
	Indicated	396,000	1.89	24,100
	Sub-total	**1,180,000**	**1.81**	**68,700**
Grand Total		**20,780,000**	**2.71**	**1,808,700**

Note: Totals may not sum due to rounding.

Table 6-2: Bibiani Project Inferred Mineral Resources Reported at 18th October 2021

Bibiani Inferred Resource - October 2021 Above 0.65 g/t gold cut-off and within US$1,950 shell				
Area	**Classification**	**Tonnes (t)**	**Au (g/t)**	**Ounce (Oz)**
Bibiani main pit	Inferred	8,380,000	2.79	751,000
Satellite pits	Inferred	33,700	2.13	2,310
Grand Total		**8,413,700**	**2.78**	**753,310**

Note: Totals may not sum due to rounding.

The Bibiani Main Pit resource block model was created using Surpac software, with a block size of 5 mE x 20mN x 20 mRL selected following the application of Kriging Neighbourhood Analysis techniques. The gold estimation used Ordinary Kriging (OK). The Bibiani Mineral Resource has been classified into Indicated and Inferred categories in accordance with the JORC Code (JORC, 2012), and as such is entirely equivalent to the Measured, Indicated and Inferred categories of the CIM Standards.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

These historically declared Mineral Resources have not been verified by the Qualified Person. It is accepted that the MRE was completed in accordance with the best practice guidelines and international mineral reporting codes by suitable qualified persons of Snowden Optiro. The current Mineral Resources are not based on the historical estimates.

The remodelled and revised Mineral Resource Estimate included in this TR, compiled by Snowden Optiro, are in response to a change in strategy by Asante Gold Corporation, whereby the mineral assets are to be extracted by means of open pit mining techniques. This latest Mineral Resource Estimate is the focus of this Technical Report with the effective date 28th February 2022 and is presented in Section 14. The Resources and Reserves declared herein are therefore specific to the planned short to medium term extraction of defined Mineral Reserves in both the Bibiani Main Pit and nominated Satellite Pits (Strauss and Walsh) by open pit methods.

6.4 Historical Mineral Reserve Estimates

A historical reserve was previously published by Resolute Mining Limited in 2019. Table 6-3 details the historic Mineral Reserves, which were based upon the historic Mineral Resource Estimate but reflect underground mining. The reserves were based upon a gold price of USD1,200 and have been quoted above a cut-off grade of 2.0g/t Au.

This historical estimate was relevant to the original Resolute plan for an underground mine. The estimate was based upon a conceptual underground mine design comprising development on mineralisation together with long hole open stoping between levels. The historical estimate comprised only a probable reserve estimate.

The QP has not carried out sufficient work to be able to classify this historical estimate as a current Mineral Reserve. MGBL is not considering this historical estimate as a current Mineral Reserve, and it is not relevant to MGBL's plan for open pit mining.

Table 6-3: Bibiani Historic Mineral Reserves At 18th February 2019

Reserve Classification	Tonnes (Mt)	Au (g/t)	Au (koz)
Proven	-	-	-
Probable	6.40	3.3	660
Total	**6.40**	**3.3**	**660**

(Source: Resolute Mining)

A current Mineral Reserve has been estimated by BARA Consulting and is discussed in Section 15 of this Technical Report.

6.5 Total Historical Production

Reports have suggested that during the first 65 years of production a total of 7.8Mt from underground mining and 0.5Mt from surface operations were milled producing over 2Moz Au at an average grade of 9.5g/t Au.

AngloGold Ashanti produced approximately 1.8Moz Au between the mid 1990's and 2004 when production was hampered by a slope failure in the Main Pit.

Central African Gold produced approximately 54Koz Au between 2007 and 2008 from three sources: tailings, underground and near mine oxides.

Noble resources is reported to have only produced 39Koz in total.

Up to 2012, the total gold production from the Bibiani mine and satellite pits was estimated at over 5Moz of gold.

7. GEOLOGICAL SETTING AND MINERALISATION

7.1 Regional Geology

On a regional scale, the Project is located on the eastern margin of the West African Precambrian Shield, which is a cratonised complex of Archaean basement. The main components are Proterozoic greenstone belts, granitoids and post-orogenic sediments that extend through Ghana, Burkina Faso, Mali, Guinea and the Ivory Coast.

The Upper Birimian Formation is dominantly volcanic in origin, although the sequence starts with conglomerates, grits, quartzites and tuffaceous wackes. The dominant components of the Upper Birimian are basaltic and andesitic lavas, tuffs and tuffaceous sediments with subordinate rhyolite, quartz-feldspar porphyry and felsite. The Birimian Formation rocks are unconformably overlain by the Tarkwaian, which is composed of dominant coarse-grained sediments (Figure 7-1).

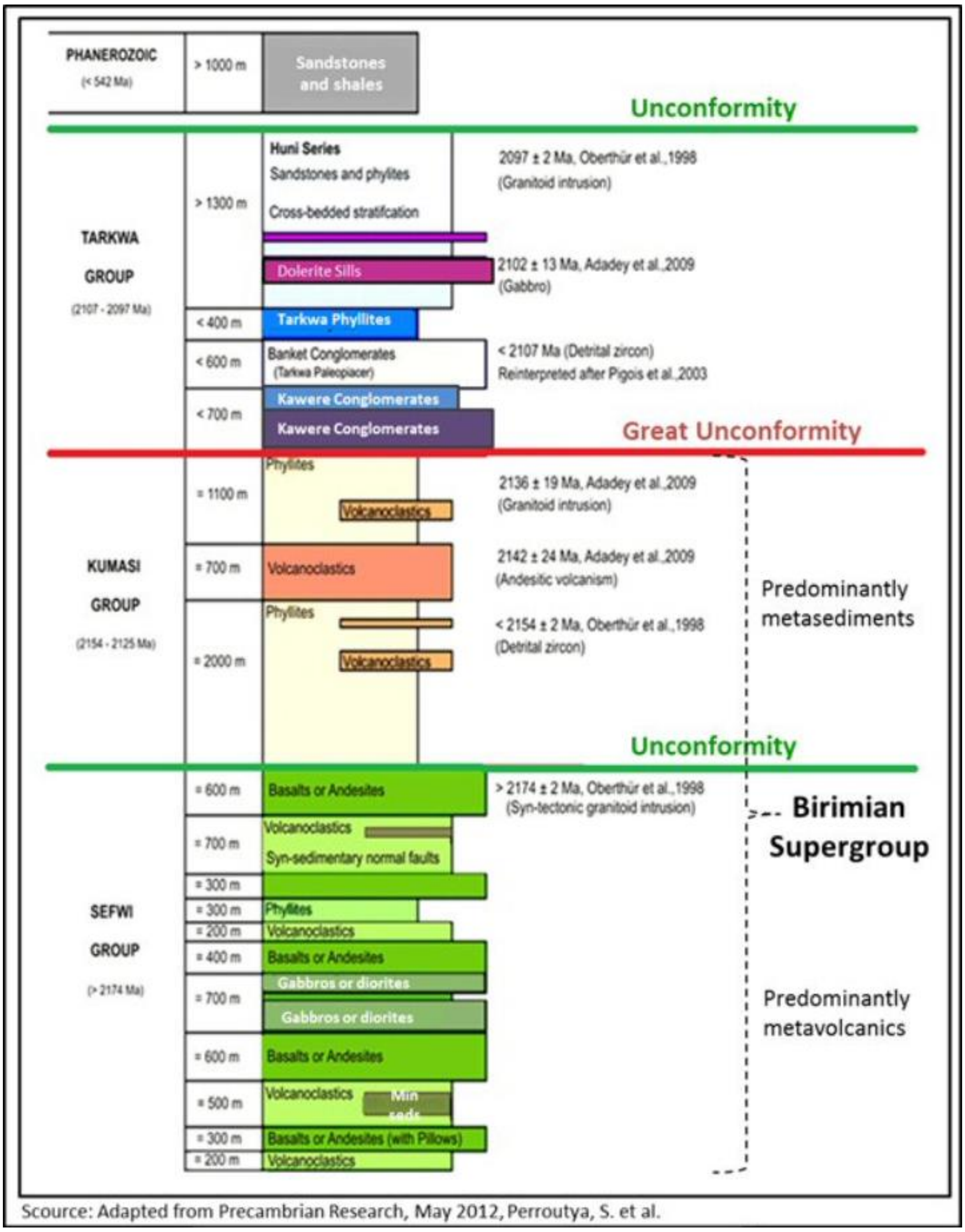


Figure 7-1: Generalised Stratigraphy of Southwest Ghana

Primary gold mineralisation in the region is predominantly associated with northeast-southwest trending Proterozoic greenstone belts separated by basins, which together form part of the West African Craton (Figure 7-2). This craton is believed to have remained geologically stable for the last 1.7 billion years. The greenstone belts represent Proterozoic island arc volcanism which has been mildly metamorphosed to lower greenschist facies.

The Birimian geology throughout West Africa contains several significant gold deposits, including Obuasi, Tarkwa and Konongo. The Bibiani deposit is located in the Sefwi-Bibiani belt which is host to over 30Moz Au (Figure 7-2). Bibiani is the second largest gold occurrence in the region after Newmont's Ahafo deposit.

The Tarkwaian Group, which is not well represented within the Bibiani tenements, is considered to have been deposited as a shallow deltaic sediment sequence within a graben setting and is at least partly coeval with the Birimian Formation.

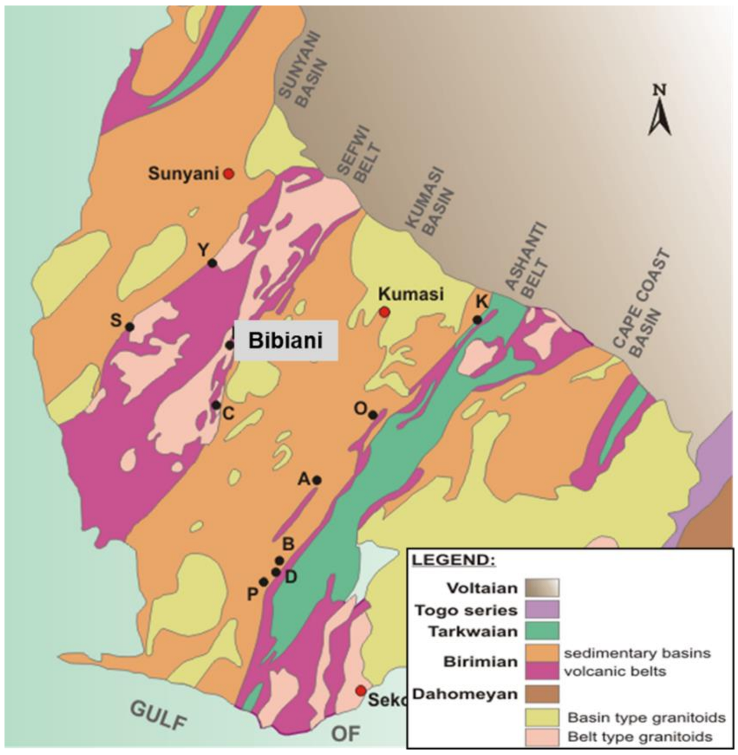


Figure 7-2: Bibiani Project - Regional Geological Setting Within Southwest Ghana

(Source: Geological Survey Department of Ghana (2009))

7.2 Local Geology

The Bibiani mineralized deposit is hosted within the Kumasi-Afema Basin (age 2150-2100Ma), a thick sequence of fine-grained graded turbidites with localised thin interbeds of fine to medium-grained turbiditic sandstones, which lie adjacent to the Sefwi Belt meta-volcanics and volcaniclastic rocks (age 2250-2170Ma). The sedimentary sequence is tightly folded, with west-dipping axial planes and localised development of steep west-northwest dipping shear zones which have acted as conduits for initial gold mineralisation.

The Bibiani mineralized deposit geometry, an over 2km long mineralised trend, is structurally controlled by a steep, north to northeast trending shear corridor 200m to 400m wide, within Lower Birimian sediments and close to the eastern contact of the Upper Birimian. The shear zone includes quartz infill as massive veins (up to 20m) and quartz stockworks. In the widest parts of the deposit, two and locally three individual quartz reefs or lodes can be identified. Two highly graphitic fault zones, historically referred to as pug seams or fissures, are associated with the major shear zone on the foot wall and hanging wall.

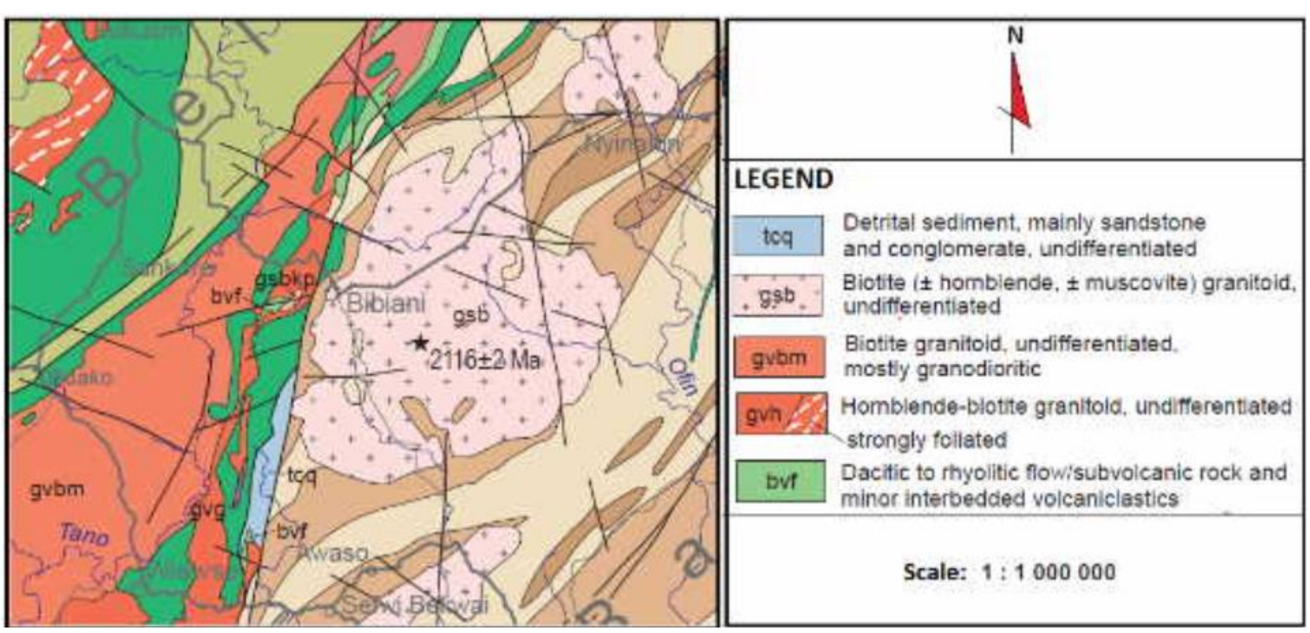


Figure 7-3: Regional Geological Map of Bibiani and Surrounding Areas

(Source: Geological Survey Department of Ghana (2009))

Aside from the historic Bibiani deposit, which has been mined to approximately 800m below surface in certain locations, there are numerous other smaller gold occurrences within the district, which have been mined on both small- and mechanised-scales (Figure 7-4). Mineralisation shows a ubiquitous association with quartz-carbonate-sulphide veining and is structurally controlled, consistent with the orogenic/slate-belt model favoured for the majority of West African gold mineralisation (e.g. Berge, 2011).

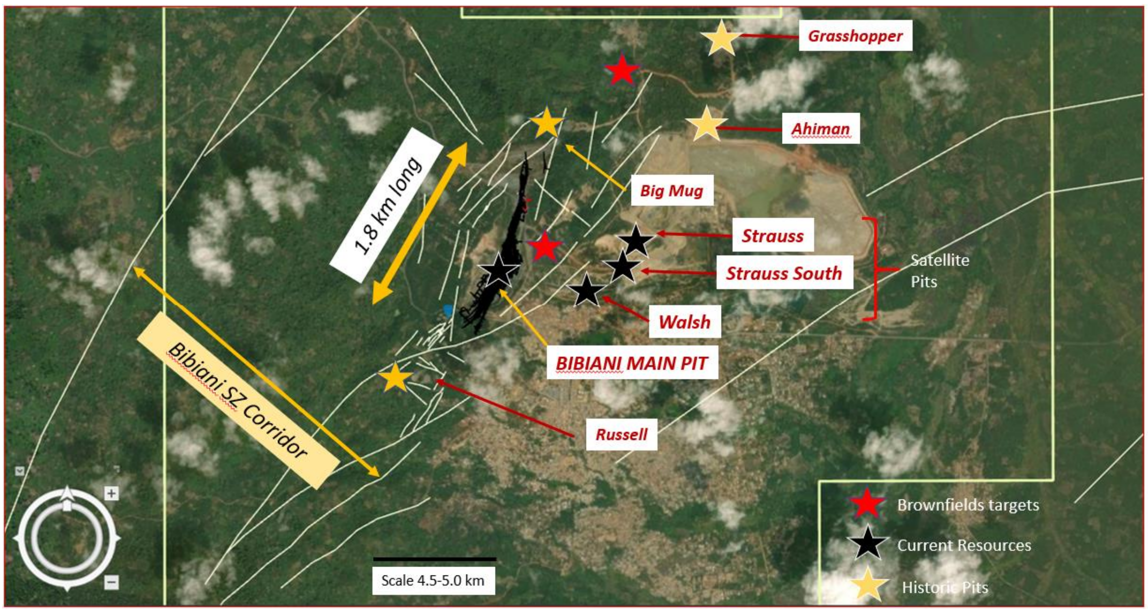


Figure 7-4: Bibiani Project – Localised Structural Interpretation and Adjacent Satellite Mineralised Deposits

(Source: KAAH 2022)

Structurally, the Bibiani district is dominated by the effects of the multiple deformations of the 2130-1980 Ma Eburnean Orogeny. This is most evident in the N to NNE striking sequence exposed in the pit and surrounding drillholes and is located on the eastern limb of a district-scale antiformal syncline. At least three generations of cleavage are developed but limited detailed geological mapping means the overall kinematics are not yet fully understood. The Sefwi Shear, which juxtaposes the 2150-2100 Ma Kumasi Basin against the older Sefwi Belt volcanics (2250-2170 Ma), is also apparent in widespread folding and faulting across the concession area (Figure 7-4).

At least four deformation events are observed locally and can be summarised as follows (Figure 7-5).

1. Large scale isoclinal folding and inversion of sedimentary sequences
2. Further folding with steep axial planes. Development of dominant foliation and localised development of west dipping shear zones and gold mineralisation
3. Plane of failure switches and the formation of east dipping brittle-ductile faults. The emplacement of tonalite intrusives and high-grade gold bearing quartz veins
4. Late shallow dipping crenulation cleavage.

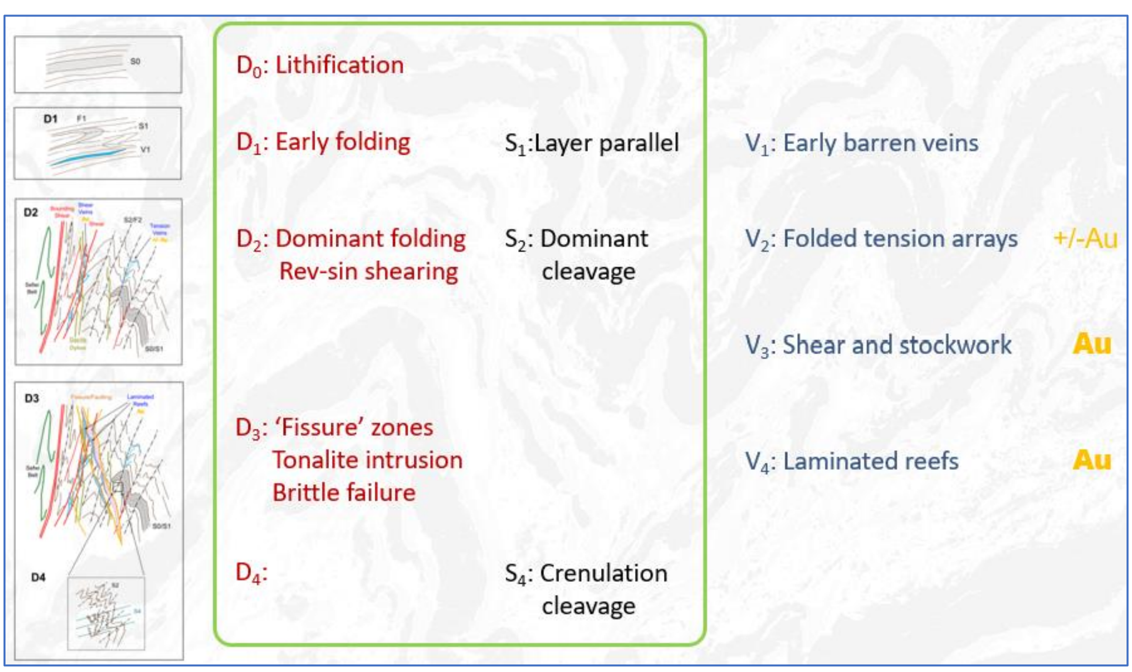


Figure 7-5: Bibiani Relative Timing and Structural Interpretation

(Source Model Earth, 2014)

7.3 Property Geology and Mineralisation

The license area is underlain by Birimian metasedimentary rocks in the eastern parts and by intercalated metasedimentary and metavolcanic rocks in the western part of the three licenses. Granites occur in the south-western corner of the mining lease.

In the southern part of the license the rocks strike about 20º to 30º E and dip steeply to the southeast. Further to the north the strike changes to between 40ºE and 50ºE.

Previous mapping indicates that there are several cross faults (Figure 7-6) that offset the stratigraphy, but there is no clear indication that there is a relationship between these faults and the gold mineralisation. The trend of the Bibiani mineralised deposit appears to continue northwards to the Pamunu River, some 2km to the north of the Bibiani Mine. A parallel splay from the Bibiani trend continues up to the Bibiani North mineralised deposit, which centres about 1km to the north of the Bibiani Mining Lease.

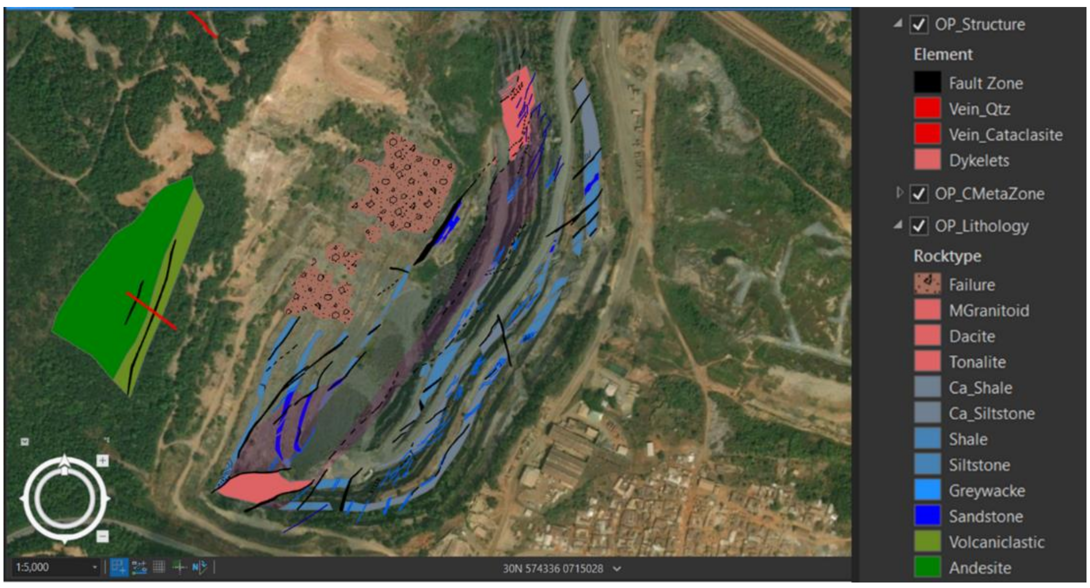


Figure 7-6: Bibiani Project – Bibiani Main Pit Geology and Structure

(KAAH Geoservices, 2022)

7.3.1 Bibiani Main Pit

GEOLOGY

The majority of geological study has been focused on the Bibiani Main Pit mineralisation, which is hosted by Kumasi Basin turbidites several hundred metres east of the Sefwi Shear. Sediments are metamorphosed to lower greenschist facies, with primary textures well preserved away from altered and high strain zones. Turbidites are generally monotonous, and no marker horizons have yet been discovered, which has limited stratigraphic understanding. Common overturned fining-up sequences and fold vergences together indicate that the sequence exposed in the pit and surrounding drillholes is located on the eastern limb of a district-scale antiformal syncline. At least three generations of cleavage are developed but limited detailed geological mapping means the overall kinematics are not yet fully understood. Asante is in the process of finalising detailed geological and structural mapping under the guidance of Professor Kim Hein.

The Bibiani Main Zone within the open pit and the underground zone (Figure 7-7*)* is mineralised over a strike length of approximately 2km. At the centre of the mine the deposit strikes 030° to 035° which changes to around 020° at the northern end of the mine. In general, the mineral deposit dips east at 60° to 80°, crossing the regional structural fabric at acute angles.

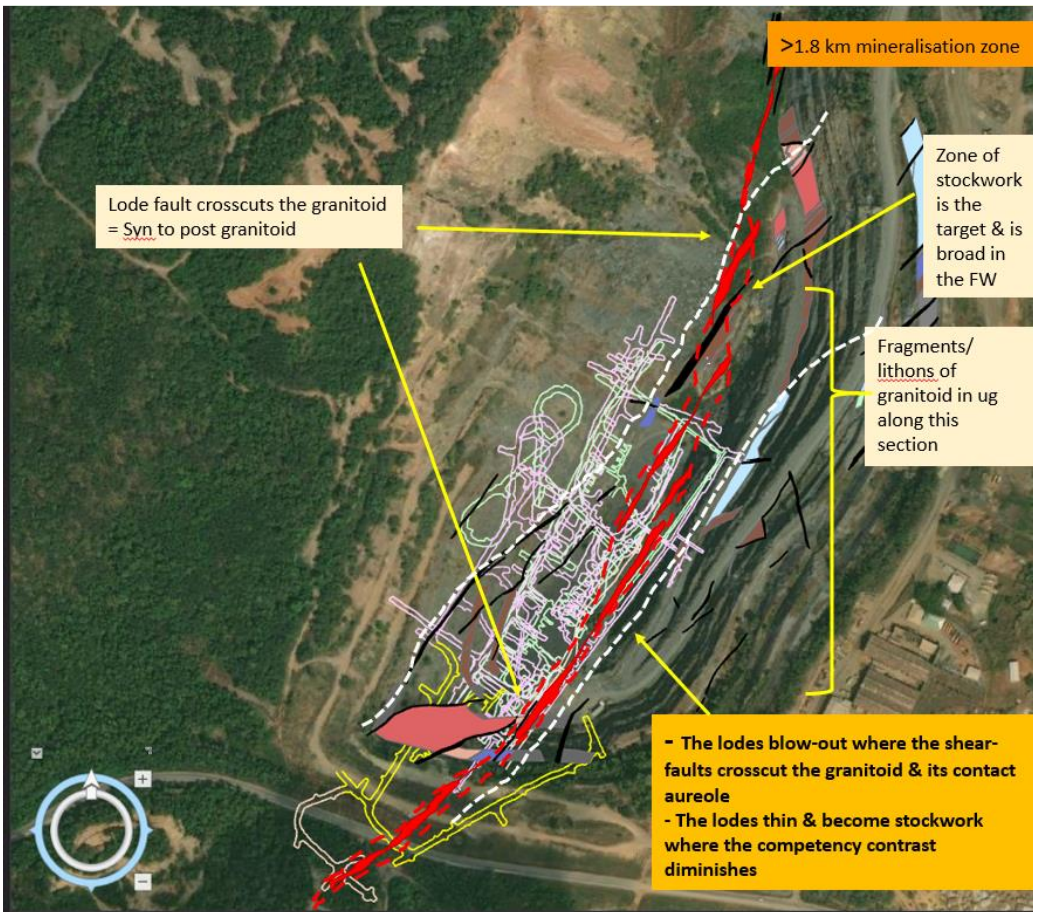


Figure 7-7: Bibiani Project – Bibiani Main Pit Showing Zone of Stockworks

(KAAH, 2022)

Wall rocks adjacent to the quartz veining demonstrate fine-grained disseminated iron-carbonate and sericite alteration with associated sulphide mineralisation. These alteration haloes can also contain gold values up to 2g/t Au.

The Bibiani deposit is weathered and all primary minerals are oxidized to a depth of between 60m and 80m below surface within the mineralised shear system, decreasing to a depth of 20m-40m away from the strongest shearing. A transitional zone of partial oxidation up to 35m thick lies between this oxide and the fresh rock below. Of importance is the re-interpretation of the historic geology understanding and mineralisation with a view to lower grade open pit extraction. Historic stoping was carried out within identified high grade mineralised zones. The work done in the old underground workings by Professor Hein has identified parallel breccia and stockwork veins to the original stopped out structures (Figure 7-8).

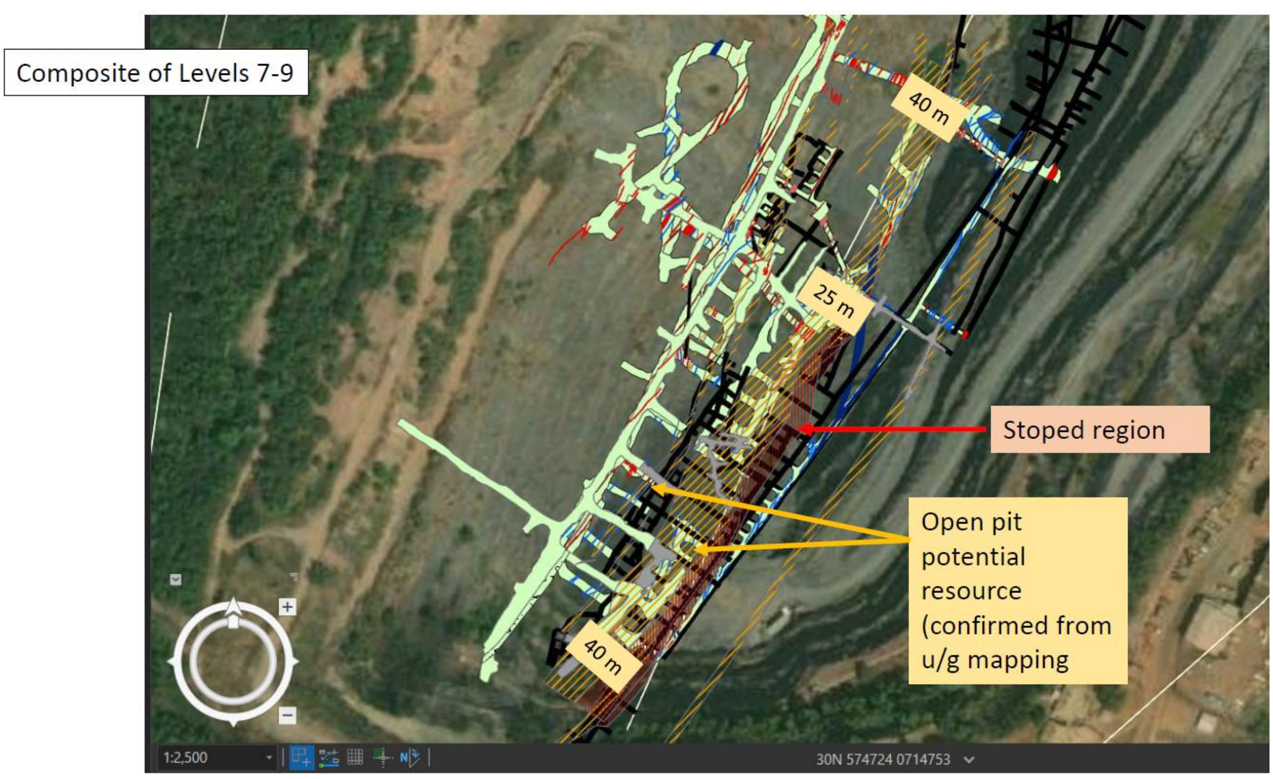


Figure 7-8: Bibiani Project – Bibiani Main Pit FW Breccia and Stock Work Veins Outside Historic Mining

(KAAH, 2022)

Three cross sections (looking north) through Bibiani are presented in Figure 7-9 to Figure 7-11. These figures illustrate the structural geology as well as the geometry of the lodes within the mineralised deposit. Also displayed in the figures is drilling results reported from the earlier 2017 exploration programme.

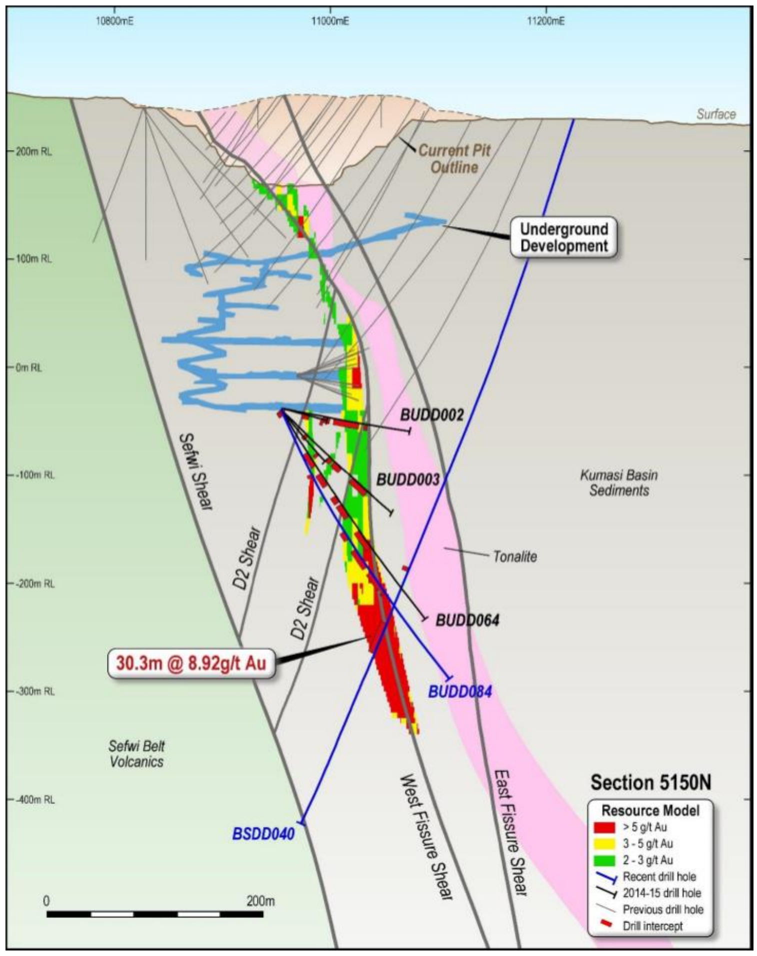


Figure 7-9: Bibiani Project – Typical Cross Section (5150N Looking North) Illustrating the Structure and Geometry of the Bibiani Mineral Deposit

(Source: www.asantegold.com)

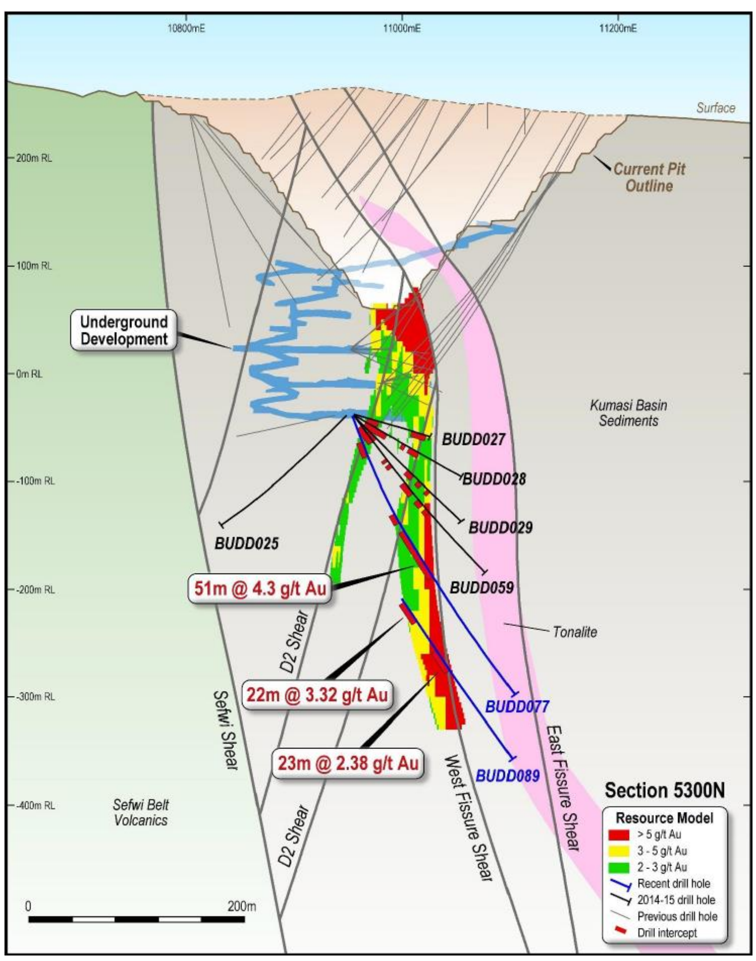


Figure 7-10: Bibiani Project – Typical Cross Section (5300N, Looking North)

(Source: www.asantegold.com)

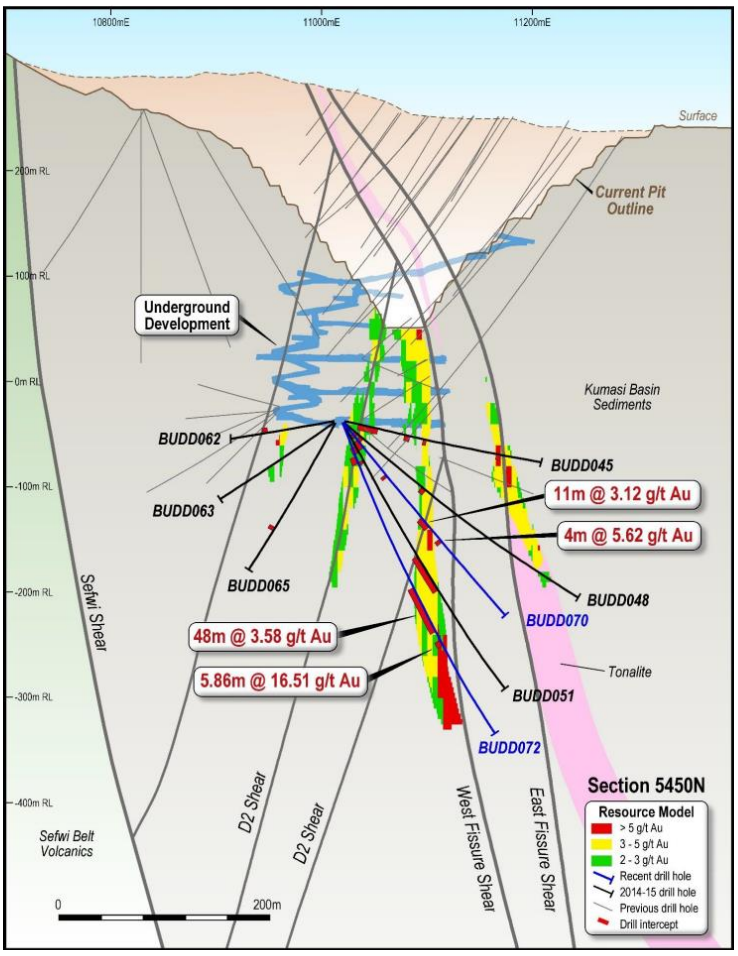


Figure 7-11: Bibiani Project – Typical Cross Section (5450N, Looking North)

(Source: www.asantegold.com)

MINERALISATION

Although mineralisation is essentially continuous, several main structures have been identified. The Central Lode hosts the most significant portion of the mineralisation. Other zones include the West and East lodes.

Traditionally the deposit has been divided into a northern and southern part based on the location of the central shaft, which lies on section line 5400 N (mine grid). The southern mineralised zone is around 180m long and consists of a composite vein of quartz and mineralised country rock dipping about 60° to 70° to the east. The northern deposit consists of the continuation of the West Lode and of the East and Central lodes, which are less distinct toward the south. The latter reef lodes consist of more massive laminated smoky quartz with phyllite partings. Milky white quartz is also present but is generally barren.

The northern mineralised zone has been mapped at 20m-40m in width near the surface and widens substantially at depth. At around 10m to 120 m relative level (mRL; the underground 4 and 5 Levels) the horizontal widths exceed 100m. The mineralisation dips near vertical at surface, but the eastern boundary flattens moderately at depth to less than 65° around 150mRL. The lodes merge approximately 400m to 500m north of the central shaft. Further to the north the mineralised zone narrows and continues as one, near-vertical reef 15m - 25m in width.

The total strike length of the Bibiani mineralised trend is around 4,000m, of which only 1,800m has been exploited by historic mining operations. The mineralisation remains open at depth as evidenced by drilling results both past and present.

Most of the gold mineralisation at Bibiani is associated with quartz and quartz-ankerite (Fe-dolomite) veins and quartz stockworks. Both vein types are associated with pyrite ± arsenopyrite. There is a positive relationship between the presence of gold and the presence of arsenopyrite. The maximum arsenopyrite content has been observed to be around 2% to 3%. Microscopic examination confirms that much of the gold occurs along edges or cracks within the sulphide grains as shown in Figure 7-12. The size of gold grains is typically less than 50 microns, generally observed to be between 1 to 10 microns in size.

Visible gold can be seen in some mineralised quartz veins. It was noted from historical process plant records that around 15% of the total gold reports to the coarse size fraction, with the Knelson concentrator collecting up to 35% of the total gold recovered in the plant.

Figure 7-12:   Bibiani Project – Visible Gold in Quartz Vein

(Source: KAAH Geoservices, 2022)

7.3.2 Walsh and Strauss Satellite Pits

Located immediately east of the Bibiani Main Pit are the Walsh and Strauss satellite pits, the site of previous open pit mining by Noble. Recent drilling (2021/22) carried out by MGBL to follow up on previously intercepted high-grade mineralisation has returned significant assay results from the drilling campaign successfully supporting the presence of *high-grade* extensions of the mineralised zones to the southeast of the pit.

Geological work on re-logged diamond core indicates that the Walsh area may plumb down into the Bibiani Main Zone.

The fact that these two mineralised satellite deposits merge into one structure means the Company will be mining the two historically separated pits as one entity.

8. DEPOSIT TYPES

Gold plays an important role in the economy of Ghana, with up to 1,500t of gold produced throughout its history. From the late 15th century until the mid-19th century, two-thirds of Africa's gold production was estimated to have originated from the Gold Coast. Annual production in the early 1980s was 12,000kg-15,000kg. The major primary gold lodes are found in the shear zone between the Lower Birimian sediments and Upper Birimian greenstones and consist of quartz veins and lenticular reefs. The gold is usually accompanied with arsenopyrite.

Gold deposits in Ghana can be broadly categorised into:

- Tourmalinised turbidite-hosted disseminated gold sulphides
- Tarkwaian paleo-placer
- Mesothermal auriferous arsenopyrite and quartz vein mineralisation
- Mesothermal gold-quartz vein deposits.

The Sefwi belt-type volcanic orogenic gold belt is most likely to succeed the prolific Ashanti gold belt which has produced over 100Moz Au in its history. The lode deposits found in both types have broad similarities in relation to structure, mineralogy, alteration, geochemistry and regional setting.

The vein systems cover a very broad category and include a close association with disseminated sulphides. Sefwi-Bibiani belt is a typical Birimian volcanic belt of considerable width (40-60km) and lateral extent. It is predominantly of extensive belt-type diorite intrusive complexes, mafic volcanics and metasedimentary rocks. Newmont's Ahafo Mine is a large, mineralised deposit along the north-western corridor.

The gold deposits at Bibiani are structurally controlled mesothermal lode-type deposits which are similar to the lode deposits in the Konongo-Axim belt hosting the significant Obuasi deposit (Anglogold Ashanti). The mineralisation is associated with quartz veins and quartz stockworks which are hosted within a thick sequence of fine-grained graded turbidites with localised thin interbeds of fine to medium-grained turbiditic sandstones. Figure 8-1 illustrates the generic hydrothermal environments in which the styles of mineralisation seen at Bibiani occur.

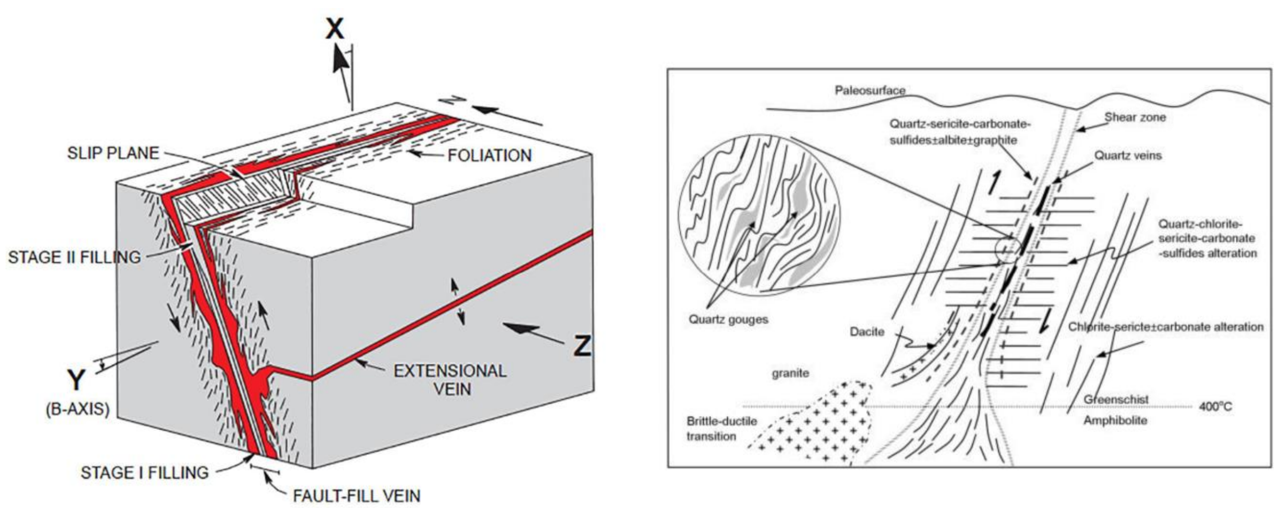


Figure 8-1: Schematic Illustration of Geologic Environments in Which Hydrothermal Gold Deposits Form

(Source: KAAH, 2022)

The deposit geometry is structurally controlled by a steep, north to northeast trending shear corridor which is 200m to 400m wide, and which sits within Lower Birimian sediments close to the eastern contact of the Upper Birimian. Two highly graphitic fault zones are associated with the major shear zones on the footwall and hanging wall of the mineralised deposit.

The above geological mineralisation environment and characteristics of mineral deposits formed within these structural domains has guided all the exploration carried out historically and more recently by Bibiani. The en-echelon pinch and swell characteristics that accompany these steeply dipping shear zone hosted gold deposits , common in the greenstone terrains within the Ghana gold belts, are extensive in strike and are known to extend to depth. The drilling programs adopted by Bibiani take cognisance of this experience and are designed to investigate these deposits accordingly.

9. EXPLORATION

Historical exploration activities over the Bibiani Concessions have been carried out by various previous owners. Drilling and sampling was completed between 1993 and 2017 by:

- AngloGold Ashanti Limited 1993 – 2005
- Central African Gold (CAG) 2007 – 2008
- Noble Mineral Resources (Noble) 2010 – 2012
- Resolute Mining (Resolute) 2014 – 2017.

Samples were analysed at SGS Tarkwa Ghana, SGS Bibiani, ALS Kumasi Ghana, Intertek and Performance Laboratories Ghana. Historically, mainly the mineralised intervals were analysed leaving gaps in sampling assay records. This detail was covered in Section 6.

The exploration strategy for Asante is to deliver a pipeline of new mineralised deposits from generative programmes that increase the quality of near mine targets and that are within trucking distance of the processing plant infrastructure within the Mining Lease. Evaluation of upside potential within the Bibiani mine lease has been carried out using available data sets with focus shifting to potential open pit mining resources.

Exploration activities since August 2021 have therefore focused on Induced Polarization (IP) and Ground Magnetic (GMAG) surveys over the entire Mining Lease.

A structural consultancy firm, KAAH Geoservices, is currently engaged by Asante to review the geological approach towards structural targeting and design a regional exploration model fit for purpose. A target generation exercise was completed on site in February 2022 and among the participants were Professor Kim Hein (Principal Consultant & Director, KAAH Geoservices), Asante's Chief Geophysicist and mine site geologists. The exercise was based on interpretations of structural mapping of underground workings and borehole logging, geophysical and geochemical data of the entire mining Lease. The following new and historical datasets were reviewed:

- Litho-structural data and model
- Soil geochemistry
- IP data for the Mine lease
- Resistivity data
- Ground Magnetics
- MIDAS airborne magnetic data.

9.1 Surveys

9.1.1 Geological Surveys

Geophysical surveys over the Bibiani concessions have included regional aeromagnetic imaging of the Ashanti Belt and adjacent Kumasi Basin by the Ghana Geological Survey, as well as IP ground geophysical surveying and airborne VTEM and magnetic survey centred over specific targets, ground magnetic surveys for restricted areas, as well as satellite radar images (Figure 9-1).

A combined detailed Induced Polarization (IP) and Ground Magnetic (GMAG) surveys commenced on the Bibiani Mining Lease in September 2021. The geophysical survey was conducted by the in-house Asante geophysics team lead by the Chief Geophysicist.

The ongoing program covers a total survey area of about 18km² and comprises 155km of survey lines. The line spacing is 100m and readings are recorded at 25m stations interval in the IP survey and magnetic readings are recorded at a frequency of one hertz which is about a metre long on the ground. The approximate length of lines ranges between 350m-4,500m and are all oriented at 130˚ azimuth.

The outcomes of this work will guide similar such surveys as an exploration targeting technique applied to the Asante exploration regional projects in the future.

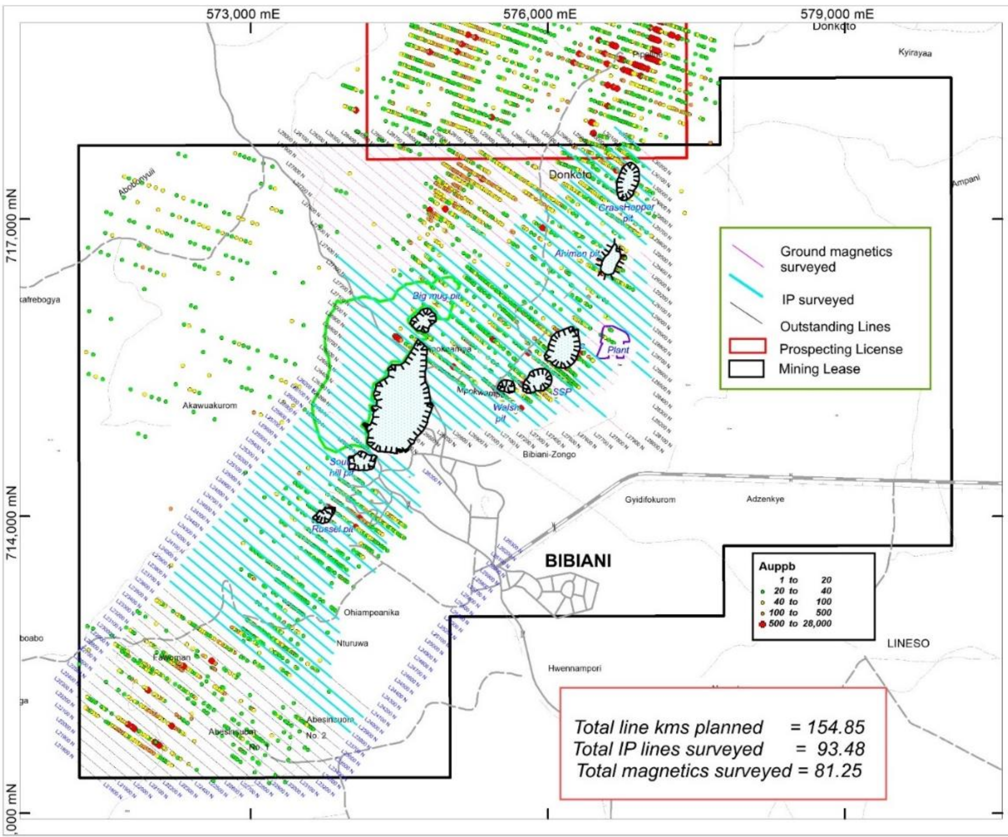


Figure 9-1: Induced Polarisation, Ground Magnetics and Geochemical Surveys Over MGBL Mining Lease Areas.
(Source: Asante 2022)

INDUCED POLARIZATION (IP)

Geophysical lines are orientated in a SE-NW orientation at 130°- 310°. Lines were manually cut in this orientation due to thick vegetation. A 3.6Kw GDD Instrumentation Tx II Induced Polarization transmitter, powered by a Honda EFI70 generator and a state of the art programmable and software-controlled Iris instruments 10 channel Elrec Pro receiver, capable of storing up to 44,000 data points are utilized to acquire and process the data (Figure 9-2).

Figure 9-2: (A) Transmitter Operator; (B) IP Survey Current Injection Rods Being Applied
(Source: Asante 2022)

Pole - dipole array, with a dipole spacing 'a' = 25m, and 'n' = 8 dipoles is employed. Survey lines are 100m apart and readings are recorded at 25m intervals. The equipment measures the IP/Resistivity response in the time domain, utilising an 8 second square wave charge cycle (2-seconds positive charge, 2-seconds off, 2-seconds negative charge, 2-seconds off). The delay time used after the charge shuts off is 40 milliseconds and integration time used is 1,260 milliseconds divided into 20 windows.

Raw apparent resistivity and chargeability data are gridded and contoured after editing. A metal factor image is also produced from the chargeability and resistivity data. These recorded parameters have all been found useful in mapping geologic boundaries, and in defining structures and mineralisation.

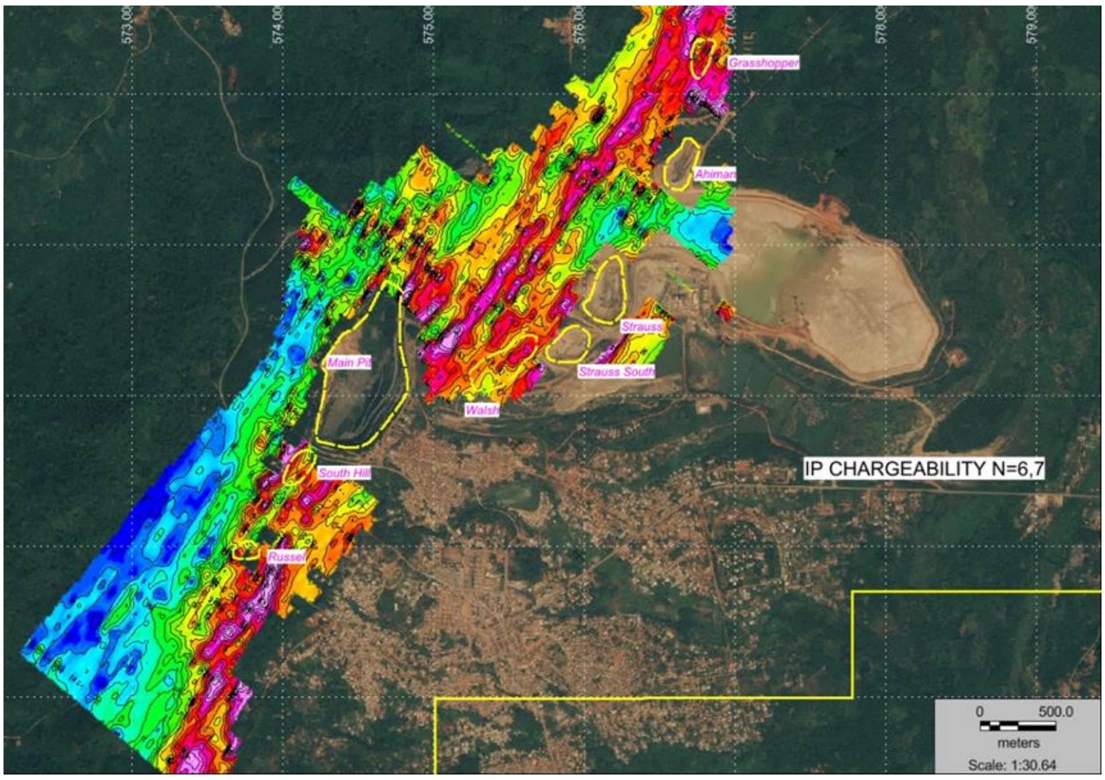


Figure 9-3: Bibiani Mining Lease - Colour contours of IP Chargeability

(Source: Asante 2022)

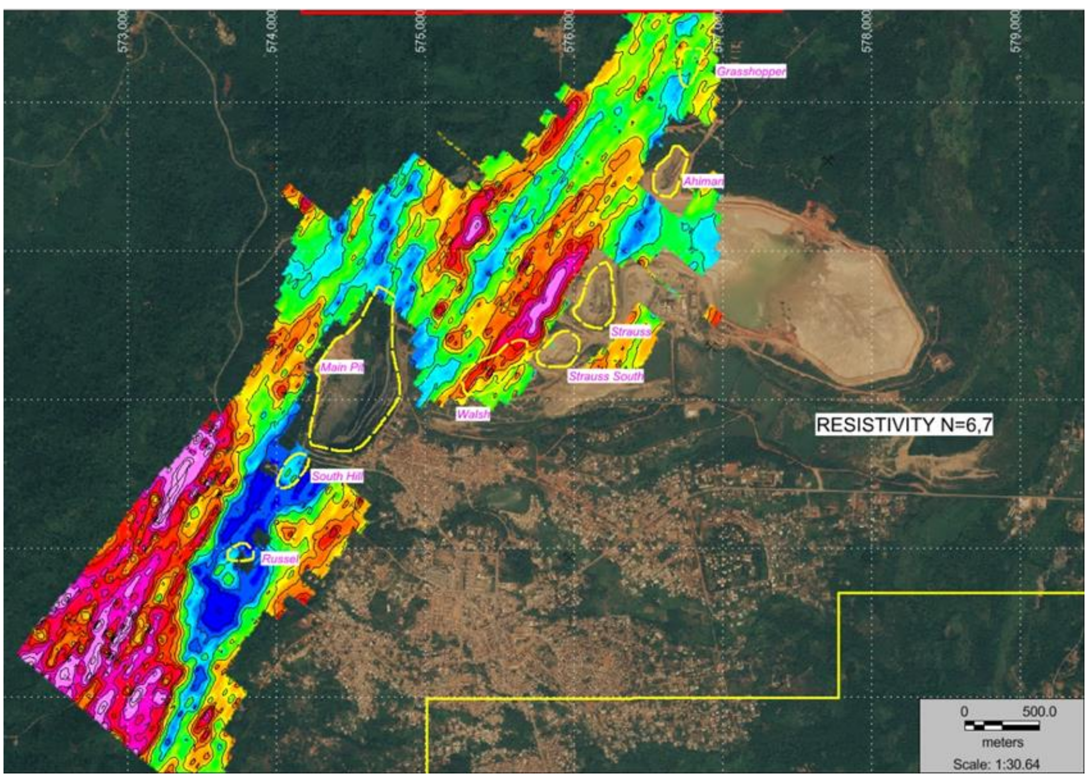


Figure 9-4: Bibiani Mining Lease - Coloured Contours of Apparent Resistivity

(Source: Asante 2022)

GROUND MAGNETICS (GMAG)

The ground magnetic survey is carried out on the same IP survey lines prepared by line cutting crew with handheld GPS units (Figure 9-3 and Figure 9-4). The survey utilises three GEM Systems GSM-19 Overhauser magnetometers. Two for the roving and the third was used for the base station recordings. The GSM-19 is a microprocessor controlled “memory mag” with GPS system attached. All readings were recorded into the instrument’s memory and downloaded daily at the end of the survey.

The programmable walking mag mode was used and all waypoints were preloaded unto the magnetometer’s memory prior to the commencement of the survey. Readings were recorded at a frequency of one hertz making an average reading interval of about a metre or less on the ground.

A base station was occupied by a magnetometer which recorded diurnal and noise fluctuations in the earth’s magnetic field during the traverse readings. It is programmed to cycle at 0.3Hz. The internal quartz clocks on the magnetometers were synchronized daily and used to subtract the base station reading from the traverse reading to remove the effect of diurnal variations. The data from each instrument is dumped daily and diurnal corrections are performed using a software provided by GEM systems. Transfer is by an RS-232 interface and a cable connected to the computer. The dumped data is plotted daily at the end of the day’s work and quality control procedures are performed on the data. The data is thoroughly inspected and manually de-spiked by removing all bad data points.

GEOCHEMICAL

Historical geochemical surveys were conducted over large parts of the mining lease and were orientated at 110°- 290° with line spacings varying between 100m and 200m apart (Figure 9-5). Soil samples were obtained by digging shallow holes of approximately 50cm-60cm deep and manually extracting samples. The comparison between geochemistry and geology shows that elevated gold values frequently appear to be related to porphyritic lithologies. Soil geochemistry anomalies are illustrated in Figure 9-5 below.

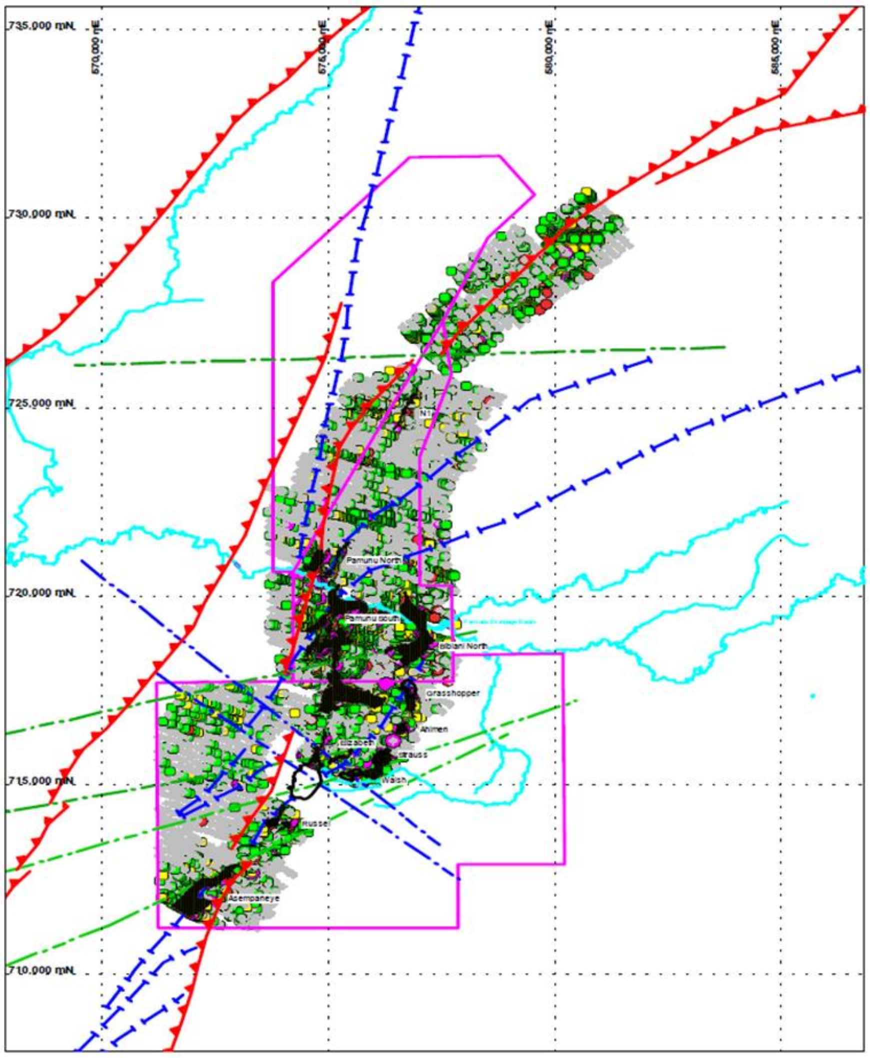


Figure 9-5: Bibiani Mining Lease – Gold in Soil Sample Points Overlain by Historical Structural Interpretation

(Source: Asante 2022)

9.1.2 Geological Mapping

Field and underground mapping has been undertaken at the target properties by qualified MGBL geologists. Outcrop and visible features have been mapped and locations identified using handheld GPS. Mapping has also been undertaken at the Main pit and the underground workings by MGBL geologist and consultants. Professor Kim Hein is currently contracted by MGBL to assist in the geological mapping exercise and her work program includes:

- Physical validation of geology work completed by Model Earth in 2013/14 by detailed geological mapping and structural interpretation of the old Bibiani underground workings from levels 4-9 prior to open pit operations. This resulted in a corrected strato-structural database (1031 data points) created in ArcGis Pro in x,y,z space for importation level by level into Leapfrog™ to allow comparison with the geological resource model
- A revision and update of the strato-structural model of the Bibiani Main Pit with emphasis on producing an updated structural interpretation that will enhance future mineralised deposit modelling and assist in planned open pit mining operations and grade control
- Generalised stratigraphy was formalised from re-logging of core.

It must be noted that the Author, along with other members of the MGBL management and geological teams, accompanied Professor Hein on a Bibiani Mine underground visit.

9.1.3 Trenching

Trenching is undertaken when deemed appropriate to get preliminary information as to the width and structural integrity of possible exploration targets.

Planned and approved programs are sited with a GPS by a geologist or technician, and after pegging, must be ground-truthed by a geologist. The trenches are surveyed by the mine surveyor after or during geological mapping and sampling of the trench. The trenches are dug by using an excavator or manual labour. All dug trenches are barricaded with caution or flagging tapes.

Trench Mapping procedures are described below.

- 1m intervals should be marked from start of trench to end using a tape measure or pre-measured stick. Place a flag with meter mark using a nail or small stick
- Measure trench depth regularly to obtain contour profile
- Log, map and record geology using trench logging format and metric graphing paper with an appropriate scale and clearly label all important data points.

The originating trenching contractor is responsible for reclamation following approval of data entry and QAQC from the project geologist. The supervising geologist shall contact the contractor to perform the reclamation.

9.2 Sampling Methods and Sample Quality

Sampling programmes have been conducted at the main target properties, including grab, rock and soil sampling, as well as sampling of the RC drill chips and DDH core.

9.2.1 Resolute Historical Data Validation 2014-2015

When Resolute took ownership, it inherited a DataShed SQL database containing all drilling and sampling data for the project, as well as the historical files in both digital and hardcopy format. To improve the quality of and increase the confidence in the data Resolute initiated a process of data validation and verification to ensure that the most complete data set was available for resource estimation. In May 2016, Rock Solid Data Consultancy submitted a report titled “Resolute Mining Limited Analytical Gold QC Report for Bibiani Resource Estimate”. This report described the quality and quantity of samples collected by previous owners and during the Phase 1 drilling program completed by Resolute in 2014/15. It was stated in the report that the overall assessment of the quality control data was positive and provided confidence in the veracity of the gold assays used in the subsequent historic resource estimates.

Key Resolute Mining personnel involved in this process continue to be employed by MGBL under Asante Gold Corporation.

9.2.2 MGBL

The sampling methodology and procedures used by MGBL to ensure good quality assurance (QA) and quality control (QC) for data collection are done in a manner acceptable for future feasibility studies. The procedures are therefore deemed to be best practice. All exploration drill core, geochemical and other exploration related samples are assayed by an external accredited laboratory (SGS Tarkwa or Intertek).

SOIL GEOCHEMICAL SAMPLING
Soil samples are collected at the sampling points (stations) defined by the geologists in local grid or UTM using handheld GPS with accuracy within 4m. The sampling grid or sampling spacing may vary from one place to another and is determined by factors that control mineralisation and the level of information required.

Sampling programs are typically undertaken on 400m x 50m spacing and the sampling lines azimuth is determined by the orientation of the structure suspected to be associated with mineralisation. In some cases, the sampling spacing is be reduced to 200m x 25m or 100m x 25m. Samples are not collected if:

- Sampling point is located on an alluvial channel
- Sampling point is located on indurate material (duricrust, ferricrete)
- Sampling point is located on an outcrop of fresh or even weathered rock (saprolite and sap-rock).

The vegetation is cut inside a circle more or less 1.5m in diameter centred on the sampling point. The topsoil is removed to approximately 5cm depth centred on the sampling point. The sampling hole is dug 60cm deep and consists of a circular pit more or less 20cm in diameter. The sample collection process is as follows:

- The sample is collected over one horizon 5-10cm thick
- The sample typically is between 2.5-3.0kg
- In case of field duplicate point, the total sample is between 5kg and 6kg
- Any gravel above 2cm is manually removed
- Sample is collected in a plastic bag with the sample ticket inside.
- All the data is carefully recorded. The sample ID recorded in the soil sampling sheet fits with the ID on the sample book and the ID marked on the sample bag

- The sample bag is properly labelled and closed
- The soil samples are transported to the core shed
- The storage area is secured until the samples are delivered to the laboratory
- QAQC samples are inserted at the core shed and recorded on the soil sample sheet.

TRENCH SAMPLING
Trench sampling procedures are summarized below.

- The trenches are dug by using an excavator or manual labour
- Lead technician will complete trench/RC sample sheet and mark bags
- One technician clears the wall of the trench using a shovel or spade to clean off debris before sampling
- Sampling is done typically on the north wall of the trench 5-10cm above the bottom of the trench to prevent contamination
- Using a geologic hammer (pick end) to make a consistent channel approximately 2cm deep along the entire sample meter onto a clean plastic bag ensuring 100% of sample remains on the bag surface. Approximately 5kg sample is taken
- The sample is poured into the sample bag. Ensuring the bag is clearly marked with the correct sample number and correct tag is inside the bag
- The trenches are surveyed by the mine surveyor.

9.3 Sample Data

9.3.1 Geophysical Surveys

The geophysical survey work is a standard routine method conducted by practicing professionals and thus the integrity of the source survey data would be of an acceptable standard. The greater, extensive regional area has been surveyed. All surveys grid location information is in WGS 84, Zone 30N Universal Transverse Mercator (UTM) coordinates.

9.3.2 Geological Mapping

The geological data points generated from geological mapping exercises are stored in an extensive database. The exercises are considered more as qualitative studies for the geological genesis and interpretation of mineralised deposits within the Bibiani mining and exploration lease areas.

9.3.3 Sampling

Sampling has been and is currently conducted across the extent of the MGBL tenements as described in Section 4 of this Technical Report. MGBL has employed historically under Resolute and continues to employ the procedures as described in the above section. The sampling datasets taken over the years appear to be complete and well managed. Drill core sampling and sample results is dealt with in the following section. Samples across the MGBL tenements are focused on deposits that are not currently the subject of this TR.

9.4 Results and Interpretation of Exploration Information

The detailed geological work carried out by Model Earth in 2014, sanctioned by both Resolute and Mensin, succeeded in largely unlocking the structural and mineralisation interpretation and history of the Bibiani deposits. The simple understanding to that time was of a gold bearing reef along the footwall of a porphyry dyke and hosted in a carbonaceous phyllite bounded by distinctive east and west fissures.

The investigation resulted in a better geological understanding that discovered gold bearing lodes beyond the bonding east and west fissures, identified lodes within and beyond the dyke and recognised As-Au relationships within associated deformed well defined sedimentary lithologies. In essence the phyllites and porphyry had to date been overrepresented and mineralisation was confined to particular identifiable stratigraphic units (fine graphite rich shale). The alteration assemblage was consistent with greenschist facies with chlorite/sericite/quartz as dominant components.

Following interpretation and 3D modelling Model Earth developed a relative timing model and structural paragenesis for the Bibiani deposit. This was shown in Section 7, Figure 7-5.

The work led to a recognition of two main styles of economic gold mineralisation which intersect within the Bibiani Main Pit to develop >5Moz in a relatively small area.

- ESE-dipping laminated reefs
- WNW-dipping shear and stockwork veins.

9.4.1 Bibiani Main Pit

Recent work sanctioned by MGBL within the Bibiani Main Pit environment and completed by Professor Hein during her recent extended visit in February 2022 was summarised as follows (MGBL Mine presentation, February 2022):

> *"Gold mineralisation forms late in the system well after emplacement of dykes (at least 5 suites) that are themselves deformed and mineralised (and therefore meta-granitoids). That dykes that are caught up in the deformation is key to understanding the formation of the vein-breccia systems in rock mechanic space. The deposit can be classified as shear-hosted along the failed hinge and footwall of a second-third order anticline to produce mineralised lode-stockwork-breccia cataclasite-vein systems. The anticline is vergent against a north-western volcanic-volcaniclastic block to form a fold-thrust corridor (the Bibiani Shear Corridor). Volcanic-volcaniclastic rocks comprise sub-aerial hyaloclastite-andesite lavas to basaltic-andesite tuffs, and these are disconformably overlain by ashfall, lithic and lapilli tuffs."*

Professor Hein further evaluated and recorded steeply west dipping fault systems that crosscut the Bibiani Main Pit with a downthrow on the western blocks. These faults were also mapped underground and their importance in forming boundaries to mineralised lodes must be considered in future resource modelling (Figure 9-6). Professor Hein is continuing with geological and structural work focused both on Bibiani Mine and other related near mine and regional targets and works in close collaboration with the MGBL geological team.

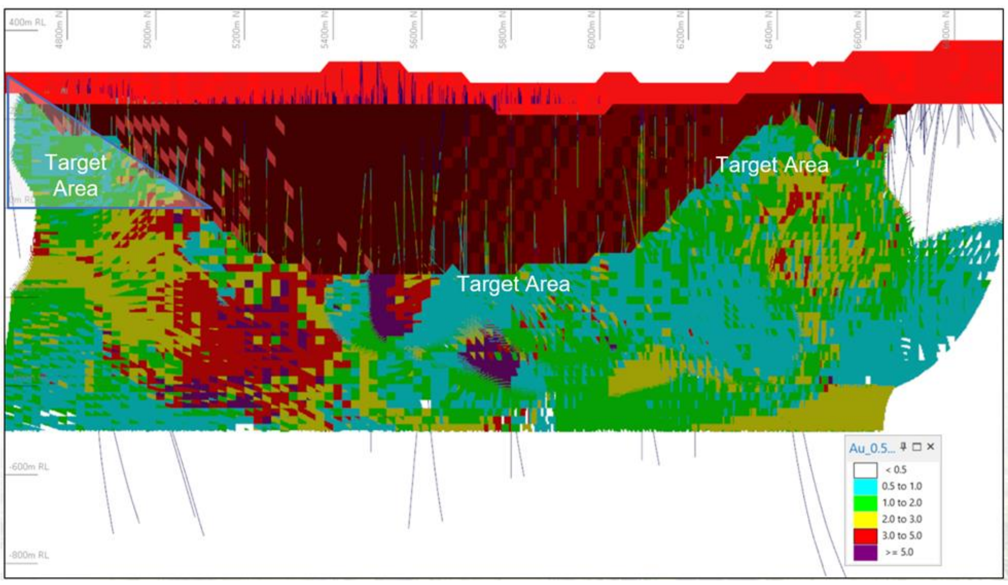


Figure 9-6: Bibiani Project – Longitudinal Section Looking West Showing Proposed Target Mineralised Zones Below Proposed Pit Shell

(Source: MGBL, 2022)

9.4.2 Walsh/Strauss Satellite Pit

Professor Hein, during her recent extended visit, also briefly evaluated the satellite Walsh/Strauss Pit system concluding that:

> *"Walsh is not a shear hosted deposit but a fault-vein-hosted system with alteration and replacement of carbonaceous units. It is situated on the eastern limb of the Bibiani Main Pit anticline. In comparison to the Main Pit there is little to no shearing at Walsh. It constitutes a second (mineralised) deposit style in the Bibiani goldfield leading to the need to re-evaluate the other satellite deposits".*

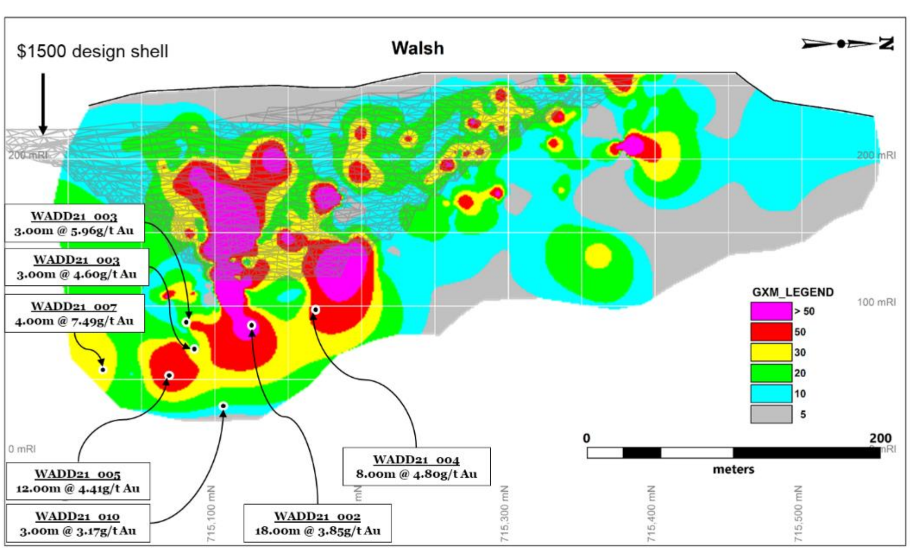


Figure 9-7: Walsh Pit – Recent Drilling and Target Generation Below Proposed Pit Shell

(Source: MGBL, 2022)

10. DRILLING

MGBL have integrated several historical databases with more recent and ongoing drilling programmes and can be considered an advanced exploration project. Drilling that has been completed under Asante ownership after acquisition and up to the effective date off this TR is also included in the following sections. MGBL is currently carrying out several resource definition and resource extension drilling exercises to improve geological understanding and resource definition for the Bibiani Main, Walsh and Strauss pits. Relevant geological logging interpretations and assay results, available at the time of this TR, have been included into the updated geological models and subsequent Mineral Resource Estimates prepared by Snowden Optiro and reported in Section 14.

MGBL's drilling activities are undertaken by independent drilling contractors (Toomahit and Geodrill Limited) and supervised by Mr Kwamina Ackun-Wood, MGBL Exploration Manager, as well as qualified geologists employed on a fulltime basis by MGBL.

10.1 Type and Extent of Drilling

Historically, drilling at Bibiani included Auger (AUG), Rotary Air Blast (RAB) RC, DD and RCD drilling (Table 10-1). Drilling for mineral resource delineation focused on the Bibiani Main Pit and satellite mineralised pits of Walsh, Strauss, Ahiman and Grasshopper, although extensive drilling has also been undertaken at Elizabeth and Russell mineralised deposits. The most extensive drilling was conducted over the Project areas under the management of CAG, Noble and Resolute.

Historical drilling and sampling, prior to Resolute, included in the Bibiani resource estimate was completed by AngloGold Ashanti Limited (1993-2005), Central African Gold (2007-2008) and Noble Mineral Resources (2010-2012). Samples were analysed at SGS Tarkwa Ghana, SGS Bibiani, ALS Kumasi Ghana, Intertek and Performance Laboratories Ghana.

Limited information remains on the quality controls used by AGA, CAG and Noble during the drilling and underground sampling campaigns. Coffey Mining Pty Ltd reviewed the Bibiani QAQC data in 2012 and concluded that the available data demonstrated acceptable levels of assay precision and accuracy. During 2014-2015 Resolute initiated a data validation and verification process to increase confidence in the historical data. This process resulted in 38% of the assays from the historical drillholes being validated by or resampled by resolute and saw a significant improvement in the quality of the data for the historical drillholes.

Table 10-1 below summarises all surface and underground drilling and underground channel sampling done prior to February 2022 within the Main Pit by the various owners. It must be noted that Snowden performed their own database validation (Section 12) and this information has been used in the Mineral Resource Estimation as reported by Snowden (Section 14).

Table 10-1: Type and Extent of Drilling – Updated as at 31st December 2021

Drilling Type	Company	Holes (No)	Drilled (m)
AUG	NMG	131	294
	Total AUG	**131**	**294**
DD	AngloGold Ashanti	184	33 941
	Central African Gold	12	902
	IGR	2	191
	MGBL	209	75 456
	Noble	50	6 637
	Total DD	**457**	**117 126**
-	NMG	7	667
	Total	7	667
RAB	AngloGold Ashanti	12	275
	Total RAB	**12**	**275**
RC	AngloGold Ashanti	450	36 057
	Central African Gold	186	20 867
	IGR	12	1 017
	Noble	3 167	190 135
	-	2	155
	Total RC	**3 817**	**248 231**
RCD	AngloGold Ashanti	169	51 997

Drilling Type	Company	Holes (No)	Drilled (m)
	Central African Gold	24	8 630
	MGBL	20	6 159
	NMG	4	720
	Total RCD	**217**	**67 506**
UG_CHAN	Central African Gold	270	3 273
	MGBL	34	3 568
	Total UG_CHAN	**304**	**6 840**
UG_DDH	AngloGold Ashanti	80	8 499
	Central African Gold	167	9 342
	MGBL	21	6 583
	Total UG_DDH	**268**	**24 424**
Grand Total		**5 213**	**465 364**

Notes:

DD – Diamond drilling, RC – Reverse Circulation drilling, RCD – Reverse Circulation & Diamond drilling, UG_CHAN – Underground channel sampling, UG_DD – Underground diamond drilling.

10.2 Resolute Drilling – 2014 to 2017

MGBL as a subsidiary of Resolute Mining, initiated and successfully completed a Phase 1 drilling program (Figure 10-1) during 2015 which comprised 106 resource drill holes for 26,283m in the Bibiani Main Pit deposit for inclusion in the February 2015 Resource Estimate.

African Mining Services performed the drilling which included 1,107m PQ core, 17,275m HQ core, 6.631m NQ core and 1,270m RC pre-collars. A total of 23,452 core samples and 953 RC samples were collected with an average length of 1m. Samples were dispatched to Intertek Tarkwa for gold analysis by 25g fire assay technique with AAS instrument finish.

During this same period Resolute located and re-logged and sampled the diamond core for 92 previously completed resource holes including 36 AGA, 54 CAG and 2 Noble drill holes. MGBL collected 3,681 samples with an average length of 1m from these holes.

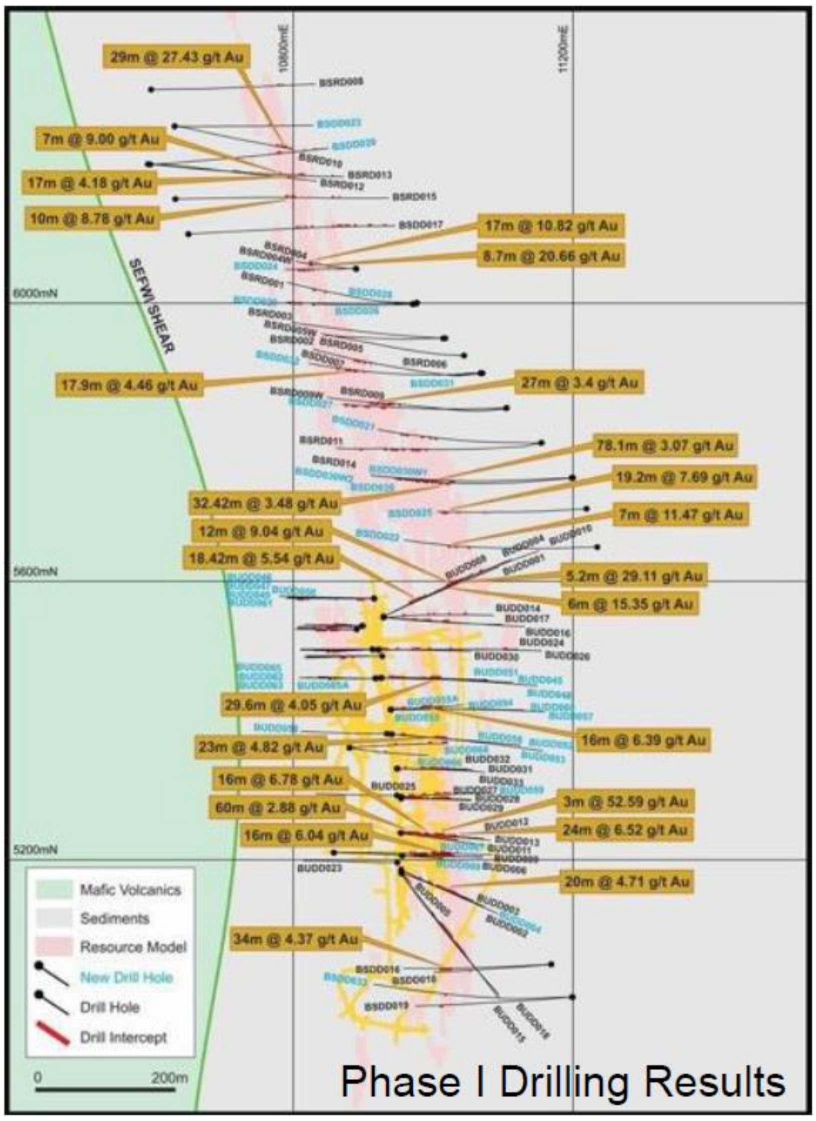


Figure 10-1: Bibiani Project – MGBL Phase 1 Drilling Significant Intercept Results 2015

(Source: Resolute, 2017)

A Phase 2 drilling program (Figure 10-2) was completed in 2016/17 which included 55 DD holes, a total of 22,884m in the Bibiani Main Pit area of the Bibiani Project. The results were included in the updated published 2017 Mineral Resource Estimate which reported a 25% increase in total Indicated Mineral Resource ounces over previous estimates.

The drilling was completed by African Mining Services and included 2,785m PQ, 17,622m HQ and 2,477m NQ core. A total of 22,542 samples were collected with an average length of 1m. Samples were dispatched to Intertek Tarkwa for gold analysis by 25g fire assay technique with AAS instrument finish.

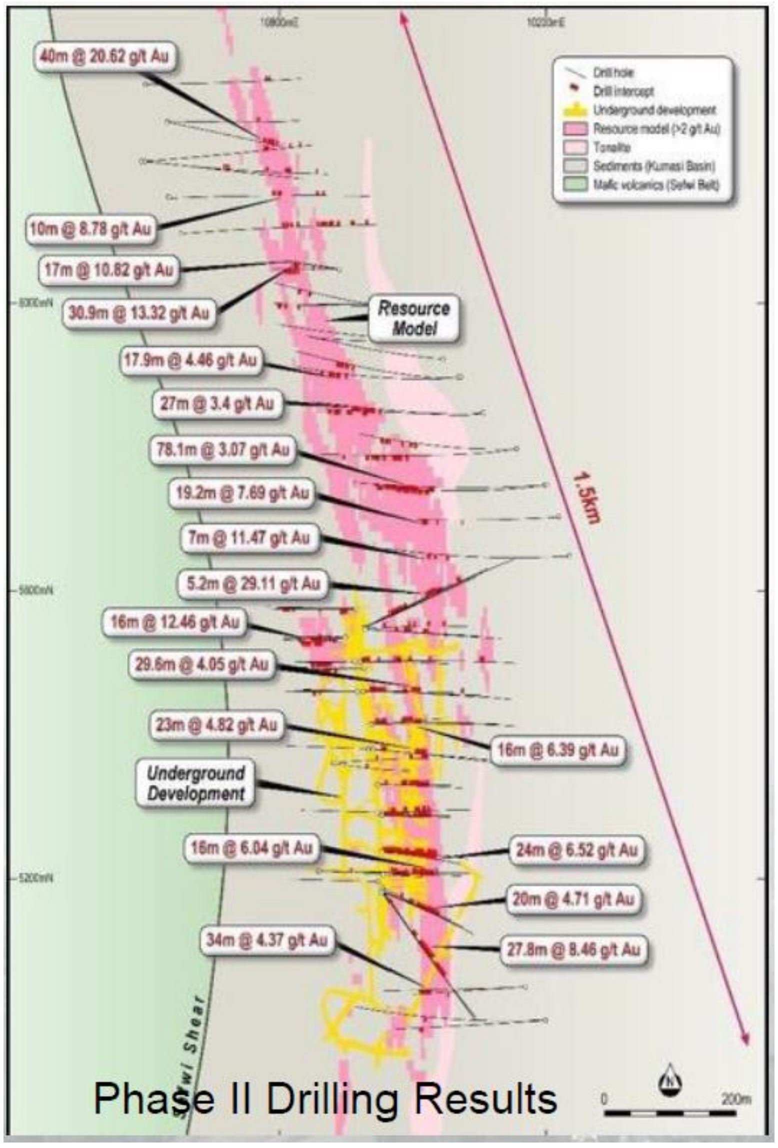


Figure 10-2: Bibiani Project – MGBL Phase 2 Drilling Significant Intercept Results

(Source: Resolute, 2017)

The results of this drilling extended the underground workings to below 750m. It indicated that mineralisation at the time continued approximately 200m below the adopted resource model.

10.3 MGBL Drilling – August 2021 to February 2022

Exploration drilling carried out by MGBL, since ownership by Asante, has occurred on most of the target mineralised deposits within the Bibiani Mine Lease and Prospecting License areas. Table 10-2 below summarises the total drilling on all prospects between August 2021 and February 2022.

Table 10-2: Drill Hole Summary Over Total Mine Lease and Prospecting License Area

Company	Targets	Hole Type	Holes (No)	Drilled (m)	Sampled (m)
MGBL Asante Gold Corporation 2021/22	MAINPIT	DD	6	897	619
		RC	2	242	242
	WALSH	DD	20	3,126	3,050
		RC	3	315	315
		RCD	8	1,070	1,070
	STRAUSS	RC	8	947	947
	RUSSELL	RC	2	478	478
	AHIMAN	RCD	4	832	832
		RC	11	1,195	1,195
	BIG MUG	RC	1	123	123
		RCD	2	754	754
	GRASSHOPPER	DD	11	1,843	1,843
		RC	7	742	742
	TOTAL		**85**	**12,565**	**12,212**

**Numbers rounded to nearest metre*

Table 10-3 below summarises the location and significant intercepts received from the surface drilling described above.

Table 10-3: Asante Surface Drilling - Selected Drill Hole Locations With Significant Intercepts

Project Area	Hole ID	Easting (UTM)	Northing (UTM)	RL (m)	From (m)	To (m)	Interval (m)	Au (g/t)
BIG MUG	MGRCD21-044	574793.4437	715819.076	-49.2810	330	339	9	0.82
BIG MUG	MGRCD21-044	574816.8548	715801.448	-103.3411	393	399	6	1.31
GRASSHOPPER	MGRC21-027	576863.9092	717458.8901	202.0855	45	48	3	1.26
GRASSHOPPER	MGRC21-029	576806.4283	717334.067	182.9585	57	67	10	3.46
MAIN_PIT	MGDD21-015	574287.5868	714612.8016	76.4769	173	183	10	4.83
MAIN_PIT	MGDD21-031	574212.3842	714541.9933	108.2314	160	163	3	1.00
MAIN_PIT	MGDD21-032	574179.7784	714565.1625	154.5539	119	125	6	0.94
RUSSEL	MGRCD21-047	573682.1769	713818.4648	135.2451	194	210	16	5.75
RUSSEL	MGRCD22-048	573641.4352	713836.4183	220.8020	121	129	8	1.80
WALSH	WADD21-002	575497.1848	715125.124	87.1192	141	159	18	3.85
WALSH	WADD21-003	575473.8556	715080.8031	89.1562	140	143	3	5.96
WALSH	WADD21-004	575533.7556	715169.4475	97.8303	137	145	8	4.80
WALSH	WADD21-005	575502.7285	715069.1441	53.3888	174	186	12	4.41
WALSH	WADD21-007	575475.8328	715023.5532	56.8572	170	174	4	7.49
WALSH	WADD21-008	575568.0716	715151.0665	65.2361	173	176	3	6.28
WALSH	WADD21-009	575449.8085	715040.8576	92.3061	132	135	3	13.54
WALSH	WADD21-014	575220.3443	715039.2712	207.2459	2.7	5.7	3	0.60
WALSH	WARCD21-001	575633.5463	715277.4726	180.6893	69	73	4	2.12
WALSH	WARCD21-002	575580.091	715236.4216	156.9932	85	94	9	2.98
WALSH	WARCD21-003	575516.8087	715183.0478	120.0972	114	117	3	3.35
WALSH	WARCD21-004	575481.1758	715149.0598	111.1224	121	126	5	1.84
WALSH	WARCD21-006	575384.5535	715031.0323	145.3675	70	73	3	1.16
WALSH	WARCD21-007	575447.885	715119.7028	124.8546	105	110	5	1.50
WALSH	WARCD21-007	575444.4947	715122.6591	114.8163	116	121	5	4.85

Figure 10-3 below indicates the location of the drilling completed by Asante up to February 2022. Data pertaining to the Walsh Satellite pit and Main Pit were included in the Mineral Resource Estimate database validated and utilised by Snowden this Technical Report.

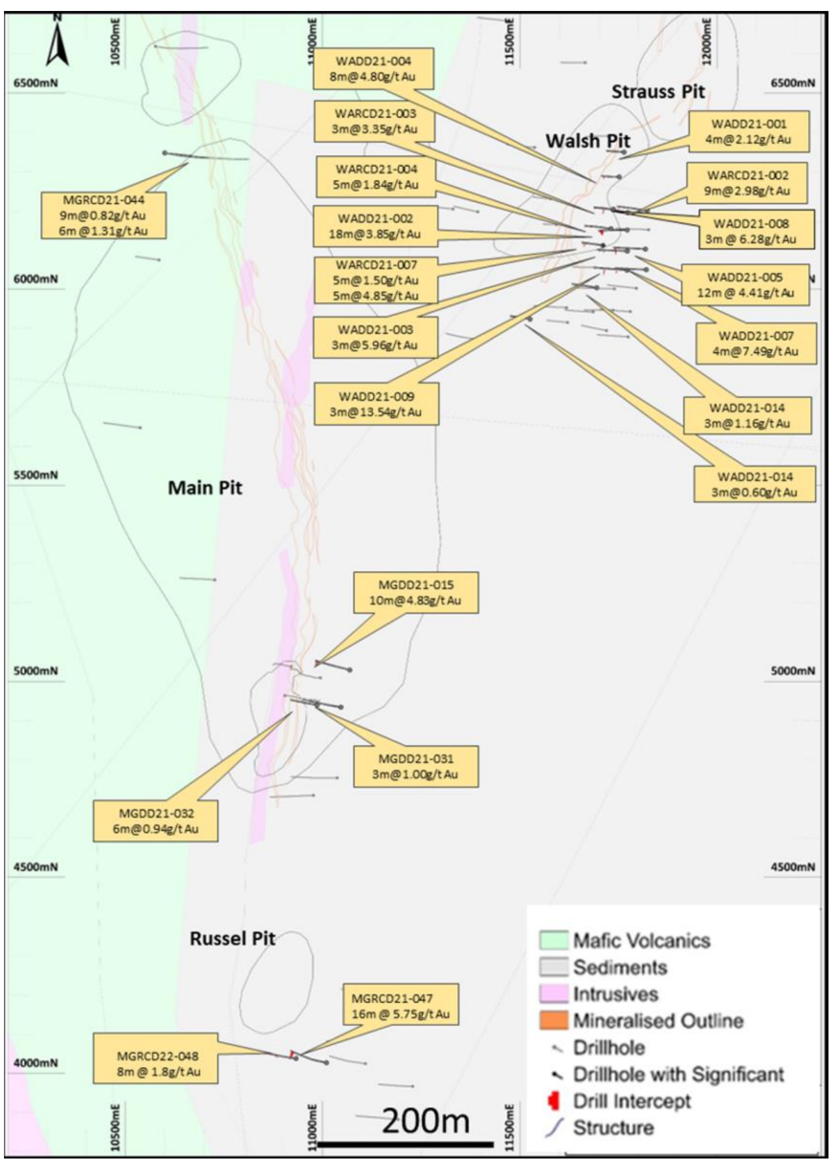


Figure 10-3: Asante Surface Drilling – Location and Significant Intercepts

10.4 Project and Exploration Drilling

Significant exploration potential (Figure 10-4) exists within the Bibiani concessions to grow the Resource beyond current levels to support a mine life extension. Numerous identified mineralised deposits exist north and south of the Bibiani Main Zone.

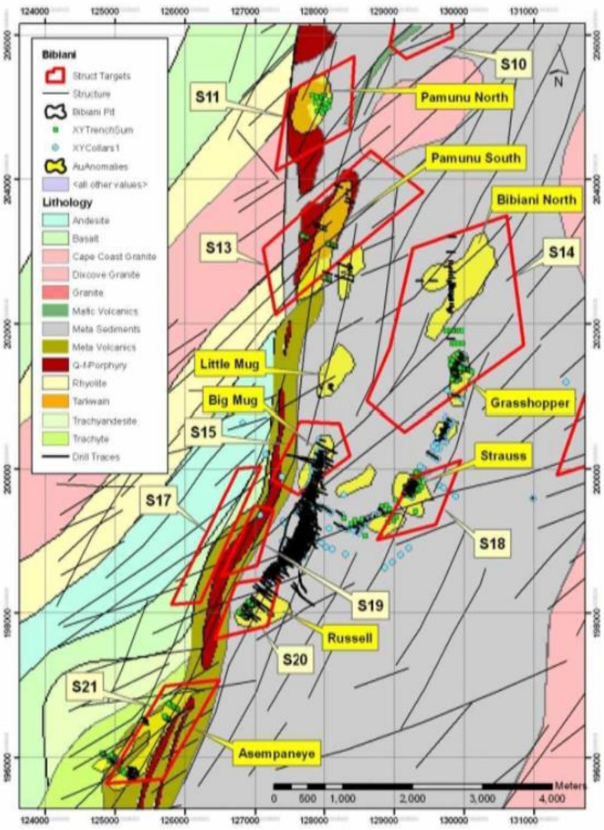


Figure 10-4: Bibiani Project – Exploration Targets

(Source: MGBL, 2022)

ASEMPANEYE

Located on the southern boundary of the permit area. Two N-S striking strong Au soil anomalies with encouraging first phase drilling results. 41 drill holes completed in 2000 and 2007. Significant results from historical drilling by Resolute are shown below:

- AS-01-09 25.5m at 1.13g/t Au from 34.5m.
- AS-00-01 16.5m at 0.85g/t Au from 36m.
- ASR-01-02 9m at 1.44g/t Au from 0m.

A structurally complex area with multiple shears and potential structural traps. Mineralisation is shear hosted in mafic volcanics similar to the Chirano Mine located 10km to the south.

LITTLE MUG

Little Mug is located along strike to the north of Bibiani main Pit. Soil sampling outlined an extensive Au soil anomaly confirmed by good Au assays from trenching (13m at 1.9g/t Au; 11m at 0.78g/t Au). Only 6 RC holes have been drilled to date (LM-98-04: 28m at 0.92g/t Au from 26m).

Recent exploration indicates that the Bibiani Main Pit mineralised system is likely to continue to the south and is also structurally and lithologically similar to the Big Mug mineralised deposit in the north. Lithological data for Big Mug has been captured into ArcGisPro for Levels 15-18 and 21. A borehole that was drilled at Big Mug intersected substantial grade at about the 9 Level which indicates down dip continuity of gold resource from 9 to 24 levels over a 450m depth interval. Further exploration is planned to confirm recent interpretations.

PAMUNU

Pamunu is a broad zone of anomalous gold 2.5km north of the Bibiani Main Pit. 43 drill holes were completed between 1998 and 2007. The results define a broad zone of low-grade mineralisation over a strike length of approximately 200m. Some promising results from Pamunu north and south mineralised deposits included:

- PN-01-02 1.5m at 32g/t Au from 43.5m
- PN-01-013 3m at 5.27g/t Au from 33m
- PM-006 16m at 1.26g/t Au from 14m
- PS-01-018 9m at 1.71g/t Au from 55m.

10.5 Drilling Procedures

Drilling procedures described below have been used by MGBL during the Resolute period of ownership and are continued by the geological team under the current Asante management.

10.5.1 Drill Hole Location

A good drill pad setup is very important to optimize drilling efficiency, safety and to minimize environmental impact. The proposed drill hole coordinates are prepared by the project geologist and approved by the exploration manager. The drill hole collar location is marked and surveyed by the site surveyors except for regional drill programs where the drill locations are marked with a GPS. A pegged hole will have the coordinates boldly written on the flagging tape. This flagging tape is not tampered with during pad preparation by a bulldozer. A total station or gyro azimuth aligner is used to set up and align the drill rig and the dip is checked by supervising geologist and/or supervising drilling technician.

If any deviations in the proposed drill hole location are encountered due to topography or other reasons, alternative locations are determined by the field technician/field geologist and communicated to the project geologist for approval before pad construction begins. The pad is approximately 20m in length, with at least 10m in front of the collar. The size and shape of the pad is important, so the drillers and samplers have enough room to work around the rig in a safe and efficient manner.

A perimeter of danger tape is erected around the drilling equipment to enclose the drill rig, booster truck, and rod truck and all drilling operations. This ensures that only experienced personnel are within the work area.

The drilling technician's tent is positioned to have a clear view of all drilling operations. With the platform constructed, the surveyors return to re-mark the proposed collar location and the geologist marks up the orientation of the drill hole (azimuth) with two additional stakes referred to as a front-site and a back-site and finishes by marking the line (created by the three points) with flagging tape for final rig alignment.

Once the drill rig has been aligned and set-up, the geologist completes a pre-start geology check list ensuring that the drill is on the correct platform, the hole ID is established, and the azimuth and inclination of the drill coincides with the information on the proposed drill hole list. Before the drill crew initiates its activities the project geologist and an HSE representative from the drill contractor completes a pre-start safety checklist.

Once the drill hole has been completed, the surveyor returns to pick up the "final coordinate" with a total station GPS, or DGPS. This information is mailed to the project geologist. It is the responsibility of the logging Geologists to update the database with the final collar coordinates.

10.5.1 Down Hole Survey

At the Bibiani project, downhole surveying methods have varied between the various historic project owners and the different drilling programmes. The database that was received from the previous owners included some holes with limited downhole survey data. Where possible, paper records were used to verify the downhole survey information.

Asante employs either the Reflex Eztrac or Sprint Gyro survey equipment for downhole surveys for all RC and DD drillholes. Drillhole information is either manually entered into the equipment's tough pad or generated in the Imdex hub and synced into the tough pad. The drill crew is responsible for completing the survey. The first survey is collected within the first run (3 rods or 6m) and subsequently at 30m intervals. The last run to end of hole (EOH) must be surveyed. A continuous downhole survey is done at the end of hole at 6m interval. The down hole survey is monitored by the rig geologist while drilling is in progress so that any excessive deviation may be identified and communicated to the driller.

The Reflex EZ Shot tool is a completely magnetic manual single shot tool and gives a read out of the basic azimuth (AZ), dip (Incl), temperature (Temp) and magnetic susceptibility (Mag Field) data which is manually recorded and reported via a Reflex data (template) which is signed by the drilling supervisor.

Once the survey has been completed, the result is synced and received by the geologist (Az, Incl, Mag Field and Temp data and QC data). The driller also notes the data in a prepared sheet which is submitted to the drill supervisor or project geologist at the end of each drill hole. The project geologist is responsible for downloading the raw data from the EZ palm daily. The driller also reports the data via the drill shift report which is signed daily.

10.5.2 Core Recovery

Core recoveries are calculated at the drilling site by qualified technicians and recorded in the geological logs. The core is transferred from the trays and pieced together on a V-rail (angle iron) rack and the recoveries calculated. The recording of recoveries is the responsibility of the geologist. Core recoveries are typically in excess of 95%.

10.5.3 Core Handling

Core is carefully handled by the drill crew under the supervision of the rig technician. The core from the field is transported to the core shed by exploration drivers.

The core is correctly oriented with the digital orientation tool (Reflex Act III). The core orientation tool and barrel are used for orienting and marking core. The barrel is oriented using the electronic orientation unit prior to the drill run. The full, oriented barrel is then retrieved, the core aligned and marked using a bottom hole convention. The down hole direction is marked on the core at the base. The core is marked with a red permanent marker in the bottom hole position. The core is cleaned and carefully arranged in pre labelled core trays starting from the top left corner, "START" is written at the corner of the box to indicate the start of the box. Manual core breaks are clearly identified by marking the core on both sides of all such breaks with an "X". To ensure that pieces of core are not lost, rotated end for end, or misplaced in the tray the operator reconstructs the core after it has been placed in the tray. Wooden or plastic block markers are inserted by the driller or technician to record depth. The core boxes are then stacked on each other and gently transported the core shed after each shift.

At the core shed, the technician arranges the core on a V shaped angle iron and draw the orientation line from two or more consecutive orientation marks using red China graph pencil. A straight orientation line from two or more consecutive orientation marks represents high quality orientation and can be used for structural measurements of core. If two sections of broken core cannot be matched, the orientation mark from a subsequent run is used to draw broken line which indicate the orientation quality is low. The core is then marked with a black permanent marker and the core is then arranged back into the core boxes for logging and photographs.

10.5.4 Drill Core Logging

After orientation and meter marking, the core is laid on logging tables, the geologist checks all the boxes to verify the correct box numbering and the correct place for the drilling blocks. Logging starts after the meter marks and the records include geological and structural data as well as collar information.

- Collar records:
    - The Prospect Name
    - Hole ID
    - Collar coordinates
    - Depth of hole
    - Drillhole purpose
    - Person logging
    - Date of logging.
- Geological data recorded includes:
    - Lithological unit
    - Regolith domain
    - Stratigraphic domain.
- Alteration:
    - Sulphide intensity and type.
    - Weathering type and intensity
    - Alteration mineral
    - Alteration intensity.
- Structural:
    - Structure type
    - Younging (if visible for beds)
    - Alpha (dip of structure)
    - Beta (strike of structure)
    - Structure style.
- Structure zones:
    - Veining
    - Veining density.

All logging data is captured digitally with a Toughbook or a laptop and then transferred to Maxwell LogChief and later transferred to DataShed5 software.

10.5.5 Core Photography

All exploration core is photographed, described in Section 11, with sufficient clarity and scale to allow later review of core blocks, lithology, and structure. The core is photographed both dry and wet. The colour and texture of the rock are best seen when the core is wet but the fracture patterns which are important to the geotechnical study are best viewed when the core is dry. The core is washed with water using a hard-bristle brush.

10.5.6 Core Sampling

The sampling methodology and procedures used by MGBL, during ownership by Resolute and now under Asante, at the Bibiani project are deemed best practice and are described further in Section 11. All exploration drill core, geochemical and other exploration related samples are assayed by an external accredited laboratory (SGS Tarkwa or Intertek). Internal operational pit sampling, channel sampling and samples derived from GC drilling are assayed at the SGS or Intertek laboratories in Tarkwa.

10.5.7 Geotechnical Logging

Data of the drilling blocks is recorded in the geotechnical logging form by the logging geologist. He then verifies that the blocks are marked in the box trays and checks the run length data. The geotechnical characteristics of the rock mass are recorded to provide all necessary data for rock mass classification schemes.

Logging records include:

- Depth from/to
- Core diameter
- Recovery
- Rock quality designation
- Lithology
- Alteration
- Defects
- Origin
- Alpha, beta
- Planarity, roughness
- Infill type and thickness
- Hardness
- Broken zone
- Orientation.

10.6 Factors Influencing the Accuracy of Results

The Author is of the opinion that the drilling programmes have been undertaken according to strict industry standard protocols and under the experienced supervision of Paul Abbott, Manager Geology for Asante.

Drilling is carried out by Geodrill Limited (a TSX listed company), a leading exploration drilling company with operations in two continents and vast experience in Africa, in particular Ghana (Figure 10-5). It has a fleet of 71 world class surface and underground drill rigs and is operated by experienced professional drill crews. Additional drilling is done by Toomahit Drill Limited of Accra.

The data generated is considered suitable for incorporation into subsequent improved geological models and MREs. The drilling programmes are intelligently planned to be appropriate for the nature and style of mineralisation. No recovery factors are likely to impact the accuracy or reliability of reported results.

Figure 10-5: Bibiani Project – Drill Site Establishment and Geodrill Rig

(Source dMb, 2022)

10.7 Exploration Properties – Drill Hole Detail

The Bibiani mineralised bodies relevant to this Technical Report no longer constitute pure exploration properties as they have undergone some degree of mining in the past. Therefore, this summary is not considered relevant to the subject of this Report.

11. SAMPLE PREPARATION, ANALYSES AND SECURITY

To avoid misleading disclosure, technical reports must provide sufficient detail for a reasonably knowledgeable person to understand the nature and significance of the results, interpretation, conclusions, and recommendations presented in the technical report. However, it is also accepted that technical reports need not be a repository of all technical data and information about a property or include extensive geostatistical analysis, charts, data tables, assay certificate, drill logs, appendices, and other supporting technical information. The QP from Optiro was introduced to all the sample preparation, analyses and security protocols during the site visit and these are discussed in the section below.

11.1 Sample Dispatch

11.1.1 Historical Data

Sample data pertinent to the Bibiani Main Pit Mineral Resource is from drilling conducted over a broad history with numerous project owners. In 2012 Coffey Mining completed an assessment of sampling procedures during an external audit for the previous owners, Noble Mineral Resources. The Coffey report concluded that the procedures of the former owners prior to 2008 were not verifiable; however, the data collected by Noble Mineral Resources between 2008 and 2012 was deemed to be of an appropriate industry standard. Although, Coffey could not verify the data prior to 2008, Snowden Optiro did not remove this data from the current database used in the MRE process on the basis that mining did occur in these areas.

11.1.2 Sampling Procedures

For resource drilling conducted by Resolute Mining between 2014 and 2017, the samples dispatched for assay were collated in a dispatch report created within DataShed software. The dispatch report included all the drill sample identification records including quality control samples, details of the analysis laboratory and the required analysis profile. Completing the dispatch form with DataShed software provided a confirmed link with sample intervals (from and to depths) and logging data already loaded within the database by the logging geologist. The Sample Dispatch form is an extension in DataShed designed for capturing all dispatch data required for submission of samples to the laboratory.

All samples for dispatch were collected into batches and sealed in bags for shipment. The number of packages for shipment was also recorded as part of the dispatch report. The laboratory was provided with an email and electronic listing of the dispatched samples.

The transport carrier was arranged by the destination laboratory and was used exclusively for the transport of project samples. Relevant information regarding the transport company was included in the dispatch report. The procedure for the arrival of the transport vehicle at the project site included the driver's name, registration of the vehicle, and the completion of a site entry permit specific to each dispatch. The vehicle was escorted through the project site and MGBL personnel conducted the loading and unloading of sample packages.

All aspects of the sampling and dispatch process were supervised and tracked by MGBL personnel. When the samples were received by the destination laboratory, a list of received sample numbers was compiled, and any differences to the dispatch report were noted and investigated.

All sampling procedures discussed apply to all drilling programmes conducted at Bibiani.

DRILL CORE SAMPLING

Sampling is undertaken after geological, structural and geotechnical logging. Sampling intervals are selected by the geologist, and for both HQ and NQ core conform to a minimum sample length of 30cm and maximum of 200cm. The following procedures are followed:

- Cutting is done along the cutting lines on the core making sure core is cut into two equal halves. If the indicated cutting line (parallel to the orientation line) is not exactly 90° in rotation to the orientation line the core is referred to the orientation crew for correction
- During the structural logging, if the cutting line is not perpendicular to the dominant fabric so that structures and veins are divided equally between the two halves logging geologists redefine the cutting line
- Sampling is done using the marked intervals by the logging geologists
- The half core that doesn't contain the orientation line is taken and broken into the sample bag with the other half left in the box as archive
- Sample bags are legibly labelled with the unique sample numbers and one of the two paper sample tickets containing the sample number placed in it. Sample bag numbers and ticket numbers are matched to ensure that they correspond

- The drill hole ID, interval, sample type and requested analysis are recorded in the ticket book stub to provide a permanent archive record of the samples
- Samples of about 2kg - 3kg are collected carefully and placed in plastic bags
- Insertion of QC samples (standards and blanks) is done by either the project geologist or the supervising geologist
- Only the indicated standard types by the logging geologist is inserted; making sure there are no swaps and wrong insertions. If the indicated standard is out of stock it is communicated to the project geologist for replacement with a similar one
- The standard identification sticker (serial number) is removed and attached to the corresponding ticket stub in the ticket book to provide a record of the inserted standard
- Records of submission must be kept on the assay submission tab table on the exploration network drive as soon as the samples are dispatched.

DENSITY SAMPLING

The samples used for density measurements are representative of the deposit for which mineral resource or reserve estimates are determined.

- Approximately 10cm length of full core and half core is selected by the logging geologist for the density measurement
- One to three representative sample is taken in each 10m interval of unmineralized core, and two to five samples taken within the mineralised zone
- Samples are allowed to be air-dried for not less than 10 minutes to get rid of all water that filled the surficial pores during cutting. The samples are cleaned and labelled with the hole ID and depth.

The density measurement sequence consists of the following steps:

- Zero Calibration
- The tensiometer is installed onto a KT-20 instrument
- Using a firm grip, the KT-20 is held in the air and measurement taken
- The sample holder wire is fastened around the sample
- The sample is then dipped in water for about 5 seconds
- It is then attached to the tensiometer using a hook provided with the system
- KT-20 is held, and measurement taken
- Place the sample in the bucket of clean water
- Ensure sample is fully submerged
- Measure reading
- Results of the density measurement are displayed in g/cm^3
- Record the displayed density on the template.

RC SAMPLING

Prior to operation, daily rig inspection sheet is completed. Set up work area for efficient movement including location of sampling supplies, weight scale, and riffle splitter.

Splitting and sampling procedures are as follows:

- Each sample is collected from the cyclone using a large plastic bag marked with hole ID and sample interval. The sample is weighed to provide an accurate measurement of recovery if available
- The sample is fed into the 50-50 Jones-type riffle splitter with two trays placed squarely beneath the splitter. The samples are homogenized by passing them through the splitter and recombined at least once into the large bag. This will help to reduce sampling error and improve precision
- Pour one tray into the reject bag. (18kg)
- The remaining filled tray is evenly poured into the splitter and one tray is poured into the reject bag (or sample bag if duplicate).
- Sample bags are sealed and neatly organized
- The riffle splitter is cleaned after every sample
- The remaining bulk samples are organized neatly and in order near the drill rig with the open top turned down to prevent contamination
- Once QAQC has passed, the bulk samples are disposed of with bags brought to waste dump by the technicians at the direction of the supervising geologist.

SOIL GEOCHEMICAL SAMPLING

Soil samples are collected at the sampling points (stations) defined by the geologists in local grid or UTM using handheld GPS with accuracy within 4m. The sampling grid or sampling spacing may vary from one place to another and is determined by factors that control mineralisation and the level of information required.

Sampling programs are typically undertaken on 400m x 50m spacing and the sampling lines azimuth is determined by the orientation of the structure suspected to be associated with mineralisation. In some cases, the sampling spacing is be reduced to 200m x 25m or 100m x 25m. Samples are not collected if:

- Sampling point is located on an alluvial channel
- Sampling point is located on indurate material (duricrust, ferricrete)
- Sampling point is located on an outcrop of fresh or even weathered rock (saprolite and sap-rock).

The vegetation is cut inside a circle more or less 1.5m in diameter centred on the sampling point. The topsoil is removed to approximately 5cm depth centred on the sampling point. The sampling hole is dug 60cm deep and consists of a circular pit more or less 20cm in diameter. The sample collection process is as follows:

- The sample is collected over one horizon 5-10cm thick
- The sample typically is between 2.5-3.0kg
- In case of field duplicate point, the total sample is between 5kg and 6kg
- Any gravel above 2cm is manually removed
- Sample is collected in a plastic bag with the sample ticket inside.
- All the data is carefully recorded. The sample ID recorded in the soil sampling sheet fits with the ID on the sample book and the ID marked on the sample bag
- The sample bag is properly labelled and closed
- The soil samples are transported to the core shed
- The storage area is secured until the samples are delivered to the laboratory
- QAQC samples are inserted at the core shed and recorded on the soil sample sheet.

TRENCH SAMPLING
Trench sampling procedures are summarized below.

- The trenches are dug by using an excavator or manual labour
- Lead technician will complete trench/RC sample sheet and mark bags
- One technician clears the wall of the trench using a shovel or spade to clean off debris before sampling
- Sampling is done typically on the north wall of the trench 5-10cm above the bottom of the trench to prevent contamination
- Using a geologic hammer (pick end) to make a consistent channel approximately 2cm deep along the entire sample meter onto a clean plastic bag ensuring 100% of sample remains on the bag surface. Approximately 5kg sample is taken
- The sample is poured into the sample bag. Ensuring the bag is clearly marked with the correct sample number and correct tag is inside the bag
- The trenches are surveyed by the mine surveyor.

CORE PHOTOGRAPHY

All exploration core is photographed with sufficient clarity and scale to allow later review of core blocks, lithology, and structure. The core is photographed both dry and wet. The colour and texture of the rock are best seen when the core is wet but the fracture patterns which are important to the geotechnical study are best viewed when the core is dry. The core is washed with water using a hard-bristle brush.

Digital cameras and processing software are used to make this procedure simple, fast, and efficient. For efficiency and consistency, there is a standard setup that gives a consistent frame, a camera mount, and is compatible with smooth processing of the core boxes. Core boxes are placed in correct order on the table where photos are taken. The interval and box number of each core box is written on the top left corner of the box with a permanent marker. Core photographs are taken after the core has been oriented and returned to the core tray with the reference line facing the bottom edge of the tray so that any structures or fabric in the rock are consistently aligned. The metre marks and core blocks are clearly visible. The drill hole ID, tray number, depths start/end of tray and indication are clearly visible. Photographs are taken ensuring that core boxes are centered and in focus. Photos are stored electronically in folders on the exploration network drive named by the hole number and interval to facilitate sorting.

Snowden Optiro accepts that all exploration cores are photographed by cameras with high resolution. The captured photos include hole number, box number, approximate drilled interval and scale and stored electronically in the exploration network drive. An example of a core photography core tray box and lighting and a photographed core is shown in Figure 11-1**Error! Reference source not found.** and Figure 11-2 respectively.

Figure 11-1: Bibiani Project - Core Photography Core Tray Box and Lighting

(Source: dMb, 2022)

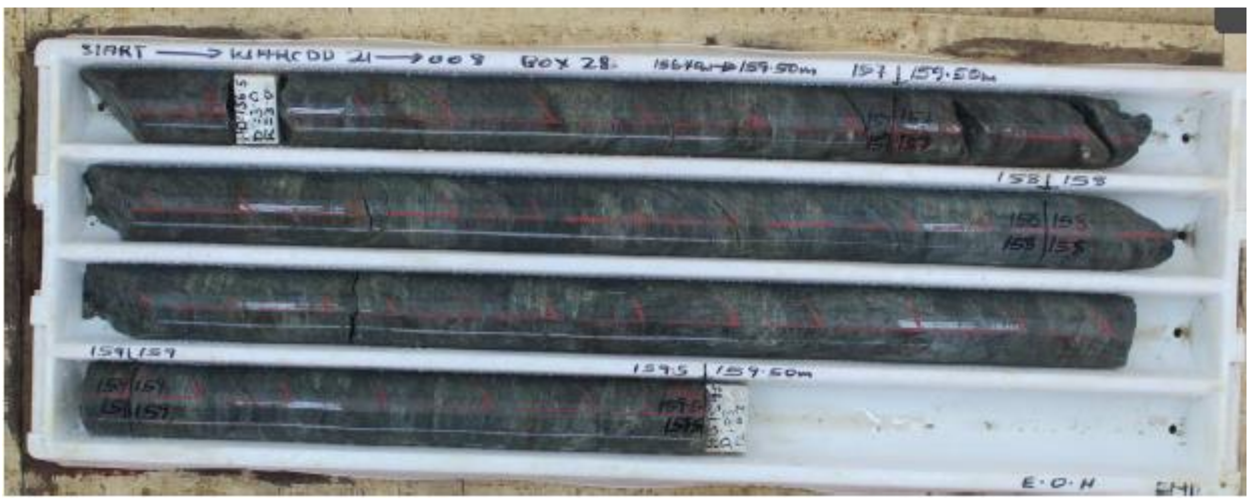


Figure 11-2: Example of Photographed Core

(Source: Snowden Optiro)

CORE CUTTING AND CORE SAMPLING

Core cutting is carried out along the indicated cutting line which is parallel to the orientation line on the core where the core is split into two equal halves.

Sampling is carried out on the marked intervals where the half core that does not contain the orientation line and broken into the sample bag which has been labelled with a unique sample number. The drillhole ID, interval, sample type and requested analyses are then recorded on the sampling sheet. The other half core is retained for future reference.

11.1.3 Quality Control Insertion

Insertion of QC samples is carried out by either the core shed supervising geologist or the logging geologist where they ensure that any samples submission to the laboratory contain control samples i.e., standards and blanks. The standard identification sticker is removed before insertion and its ID written on the sample sheet. The records of submission are kept on the exploration network drive as soon as the samples are dispatched to the laboratory.

11.1.4 RC Splitting, Sampling & QAQC

The RC chip samples are homogenized, prior to final splitting, by passing them through the splitter and then recombined into the large bag. This helps reduce sampling error and improve precision. After splitting with a riffle splitter, each sample is then collected from the cyclone using a large plastic bag marked with hole ID and sample interval where it is the weighed and the sample bag sealed. The riffler splitter is cleaned thoroughly after every sample.

RC QAQC samples are inserted as follows:

- Blanks are inserted one in every 40 samples
- Standards are inserted one in every 60 samples; and
- Duplicates are taken one in every 25 samples where duplicates comprise splits of the same sampling interval. The splits are bagged separately with separate sample numbers so as to be blind to the laboratory.

11.2 Sample Preparation

Historical drilling and sampling relevant to the Resource Estimation was completed between 1993 and 2012 by AGA (1993-2005), CAG (2007-2008) and Noble(2010-2012). Samples were analysed at SGS Tarkwa Ghana, SGS Bibiani, ALS Kumasi Ghana, Intertek and Performance Laboratories Ghana.

Samples were assayed only at external laboratories by the various owners of the project. The majority of the samples were assayed at Ghanaian laboratories of major global assaying companies, such as Intertek, SGS or ALS. As such, these global organisations are subject to international quality accreditation standards such as ISO9000. The assaying programmes were accompanied by umpire testing at intervals and the QP endorses the QC methods applied by the various owners of the project.

Registration and accreditation of the laboratories are as follows:

- Intertek is currently accredited with SANAS for ISO17025. Accreditation No. T0796; and
- SGS is currently accredited with SANAS for ISO/IEC17025. Accreditation No. T0638.

During the site visit, which included the designated laboratories, the QP was informed that due to poor turnaround time from Intertek, MGBL swapped the roles of the primary and secondary laboratories i.e., SGS is now the primary laboratory while Intertek is the check laboratory. Also, plans are currently underway to commission an onsite laboratory which will become the primary laboratory.

All the resource samples were analysed for gold. The method used for analysis was the industry standard, 50g fire assay technique with Atomic Absorption Spectrometry (AAS) analysis to finish. Snowden Optiro conducted a laboratory audit at Intertek and SGS laboratories on 10th December 2021.

The sample preparation consisted of the following steps:

- The samples were dried in an oven
- Samples were crushed to 10mm
- Samples were split; and
- The split sample was pulverised to generate a pulp with 85% passing 75 microns.

For diamond core, coarse duplicates were split by the laboratory after crushing at a rate of 1 in 20 samples. Reverse circulation field duplicates were collected by MGBL personnel prior to dispatch at a rate of 1 in 20 primary samples.

11.3 Sample Analysis

Coffey's 2012 review of the analysis procedures concluded that the data was found to be of industry standard for the Noble Mineral Resources data (2011-2012); however, data that pre-dated Noble from 1994 to 2008 was not verifiable.

After Resolute took ownership of the Bibiani project in 2014, a data validation and verification process was initiated for available stored historical drillholes. All MGBL samples have been assayed for gold by 25g fire assay with an AAS instrument finish.

The laboratories have in place QAQC procedures for the analysis and handling of the samples. An overall high level of cleanliness is maintained to minimize contamination. Furthermore, the laboratories also included standards and blanks in each sample batch and any anomaly identified in the quality control samples is addressed as required.

The analytical method is appropriate for the style of mineralisation and constitutes a total gold extraction.

11.4 Quality Analysis and Quality Control

11.4.1 Historical Drill Data

Resolute initiated a data validation and verification process in 2014 and 2015 to increase confidence in the historical data collected from 1993 to 2012. This process involved cross-checking co-ordinates, surveys, samples, void intervals and assays against the original data sources, including old MS Access databases, MS Excel files, reports, and original laboratory assay certificates, both in hardcopy and digital format.

The validation of the assay data was achieved through recompiling the historical assay data from the original data sources to obtain analytical techniques, job numbers and dates, repeat assays, screen fire assay fractions and laboratory repeats, standards and blanks, as well as resampling and assaying the historical diamond core. The outcome of the assay verification process was that 38% of the assays from the historical drillholes included in the resource estimate were either sampled by or validated by Resolute.

DIAMOND CORE RESAMPLING RESULTS

MGBL resampled 4 historical holes (8LN10W05, 8LN8W03, 8LN8W04 and MPD26) which were originally drilled by CAG during 2007 and 2008. Resampling was completed to verify the original SGS Bibiani fire assay values. All samples had an average interval length of 1m and were remnant core samples. Samples were submitted to Intertek Tarkwa for analysis by FA25/AAS, and included in each dispatch were coarse duplicates, certified reference materials ("CRM"s) and blank samples.

A comparison between the original samples (Au1) and resamples (Au2), for sample pairs >0.01ppm, is summarised in Table 11-1. Figure 11-3 illustrates the duplicate pairs as scatter and QQ plots. The pairs exhibit correlation that is consistent with core duplicates. The QP considers that the study has demonstrated the veracity of the original SGS Bibiani assays.

Table 11-1: Field Resample Summary

Range Au	No of samples	Mean Au1	Mean Au2	SD Au1	SD Au2	CV Au1	CV Au2	Mean HRD
Pairs >0.01 ppm	201	3.91	3.42	9.18	7.32	2.35	2.14	16.78

(Source: Rock Solid Data Consultancy Pty Ltd, 2016)

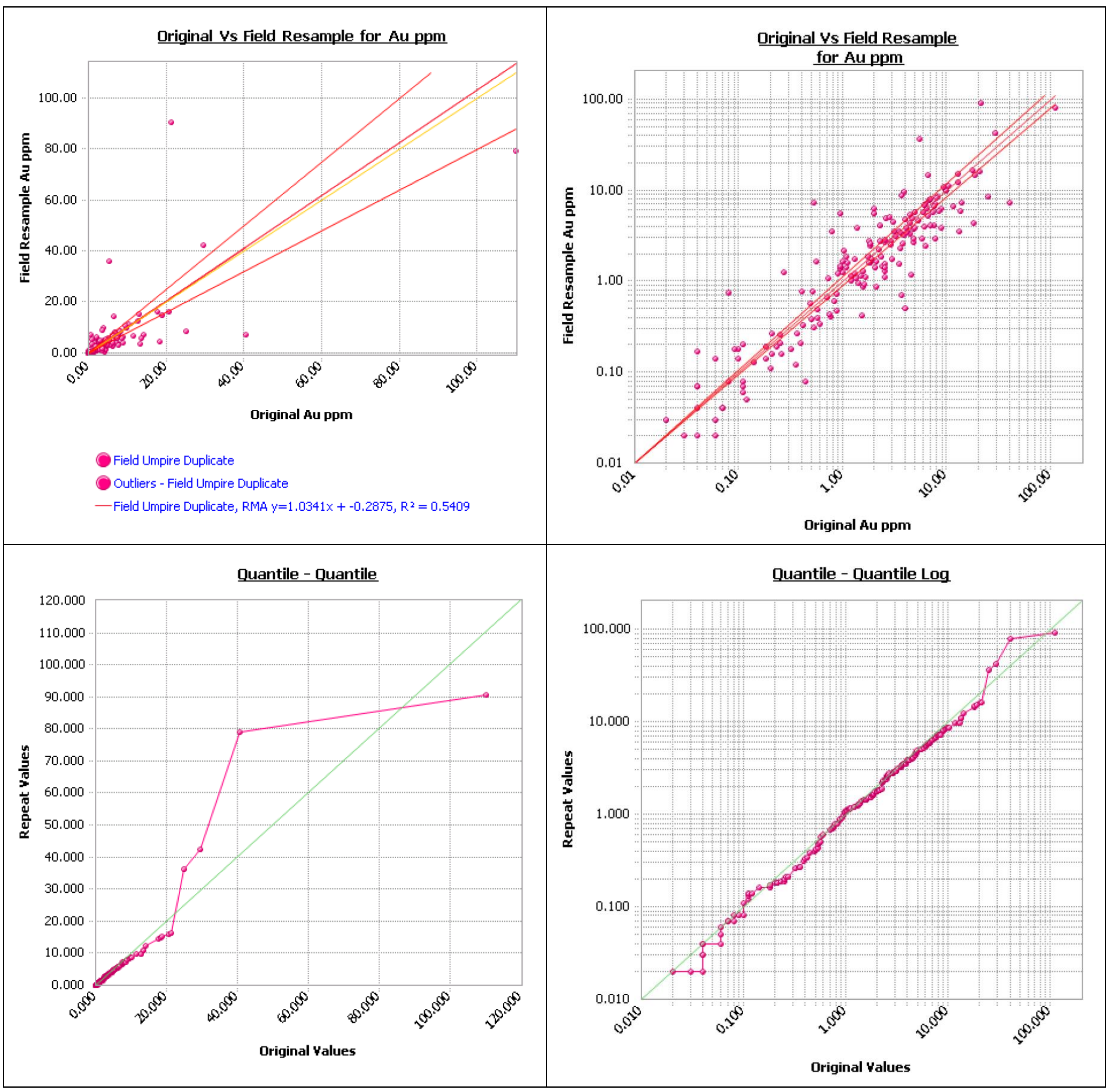


Figure 11-3: Field Re-Sample Scatter Plot And Q-Q Plot

(Source: Rock Solid Data Consultancy Pty Ltd, 2016)

11.4.2 QAQC Procedures and Results

MGBL, under Resolute, completed two drilling campaigns. Phase 1 saw 106 resource drillholes completed for 26,284 metres of drilling in 2014- 2015, and Phase 2 added a further 55 drillholes for 22,844 metres in June 2017. Both programmes were undertaken from a combination of surface and underground positions.

A combined total of 46,995 diamond core samples and 953 RC samples were collected between the two drill programmes. The average sample interval was 1m. Samples were analysed at Intertek Tarkwa for gold using a 25g fire assay charge, with AAS instrument finish.

The MGBL Quality Control (QC) protocol is designed to assess the accuracy and precision of the assay results reported by Intertek Tarkwa. QC samples were included with the main batch when submitted to the laboratory. The rates at which they were inserted into the main sample stream are detailed below:

- Coarse duplicate samples – 1 in every 20 samples, duplicate samples, to test the ability of the lab to repeat the same assay result i.e., the precision of the assays
- Blank samples – 1 in every 20 samples; blanks test for any smearing of grade or cross-contamination from one sample to another through the sample preparation and/or analysis process; and
- Certified Reference Material (CRM) – 1 in every 20 samples; these samples have a certified gold value which is unknown to the laboratory. This QAQC type tests for the accuracy of the results returned.

As part of the quality control procedures a total of 495 coarse rejects and 1,388 pulps were re-submitted to Intertek for gold analysis. A further 316 pulps were sent to SGS Tarkwa for gold analysis.

A total of 611 gold batches were received from Intertek Tarkwa between 2014 and 2017, and SGS Tarkwa received 9 quality control batches. QC samples were included in all 611 batches and the QAQC samples represent 19% of the total MGBL samples analysed. The total number of drillholes, metres drilled, and metres sampled is summarised in Table 11-2.

Table 11-2: Summary Table for the Resolute Phase 1 and 2 Drilling Campaigns

Campaign	Hole type	Holes (no)	Metres (m)	Sampled (m)
Phase 1	Diamond	93	21,110	19,267
	RC-Diamond tail	13	5,174	5,016
Phase 2	Diamond	55	22,884	22,712
Total		161	**49,168**	**46,995**

The performance of the CRMs, blanks, and duplicates have all been evaluated. It is the opinion of the QP that the overall assessment of the quality control data is positive and provides confidence in the veracity of the gold assays used in the resource estimate.

CERTIFIED REFERENCE MATERIAL ANALYSIS

CRMs were included in drilling samples at regular intervals and represent 3 percent of samples analysed. Up to 13 different CRMs were used in drilling campaigns; these were sourced from Rocklabs Limited in Auckland, New Zealand.

The CRMs, with expected gold values ranging from 0.599ppm to 8.671ppm, were used during the programme and were included in each dispatch to the laboratory. The CRMs provide a good indication of the overall accuracy and precision of each batch of analytical results.

CRM performance was monitored throughout the drilling programmes by charting the analytical results over time compared with the control limits. The overall performance of the CRMs is illustrated in Figure 11-4 below. The summary table (Table 11-3) shows the Rocklabs certified value versus the calculated mean, standard deviation and bias for the data.

A total of 1,921 CRMs were analysed; of these 96% reported within 3 standard deviations from the certified expected value. Intertek Tarkwa reported 32 significant outliers, 28 of which can be attributed to standard mix-ups either during dispatch or laboratory preparation processes.

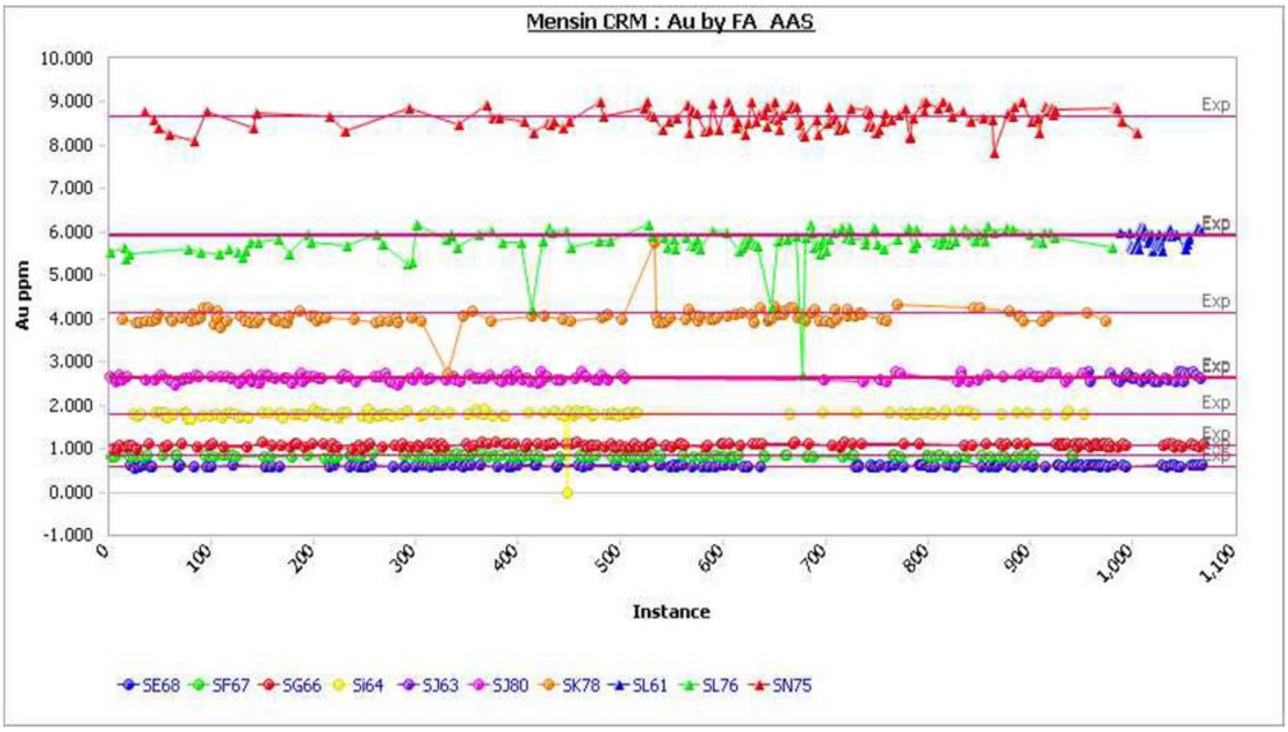


Figure 11-4: Bibiani CRM Performance Chart

(Source: Resolute Bibiani Resource QC Report 2016)

Table 11-3: Bibiani CRM Performance Summary

Standard ID	Method	Expected Au ppm	Expected SD	No. of samples	Mean Au ppm	SD	CV	Mean bias%
SE68*	FA_AAS	0.6	0.013	65	0.62	0.04	0.06	3.94%
SE86	FA_AAS	0.6	0.015	74	0.6	0.02	0.03	1.41%
SF67*	FA_AAS	0.83	0.021	46	0.85	0.04	0.05	1.72%
SF85*	FA_AAS	0.85	0.018	56	0.84	0.04	0.05	-1.03%
SG66*	FA_AAS	1.09	0.032	64	1.09	0.05	0.04	0.53%
SG84*	FA_AAS	1.03	0.025	48	1.04	0.04	0.04	1.45%
Si81*	FA_AAS	1.79	0.03	134	1.8	0.06	0.03	0.56%
SJ63*	FA_AAS	2.63	0.055	12	2.63	0.07	0.03	-0.01%
SJ80*	FA_AAS	2.66	0.057	95	2.68	0.07	0.03	1.01%
SK78	FA_AAS	4.13	0.138	78	4.12	0.17	0.04	-0.37%
SL61*	FA_AAS	5.93	0.177	5	6.01	0.13	0.02	1.37%
SL76*	FA_AAS	5.96	0.192	69	6.01	0.19	0.03	0.76%
SN75	FA_AAS	8.67	0.199	78	8.67	0.29	0.03	-0.01%

(Source: Asante)

Note:

** Outliers excluded from statistics*

BLANK MATERIAL

MGBL submitted barren coarse material during the two phases of drilling to test for inter-sample contamination. The gravel used for this purpose was from a single source supply, but it was not certified.

Blanks were inserted at regular intervals and represent approximately 2% of the samples dispatched. The lower limit of acceptance was derived from the lower limit of detection (0.0ppm) of the laboratory analytical equipment. The upper limits of acceptance of 0.05ppm and 0.04ppm were applied to the blanks in the Phase 1 and Phase 2 drilling respectively.

The performance of the blanks is illustrated in Figure 11-5 and Figure 11-6.

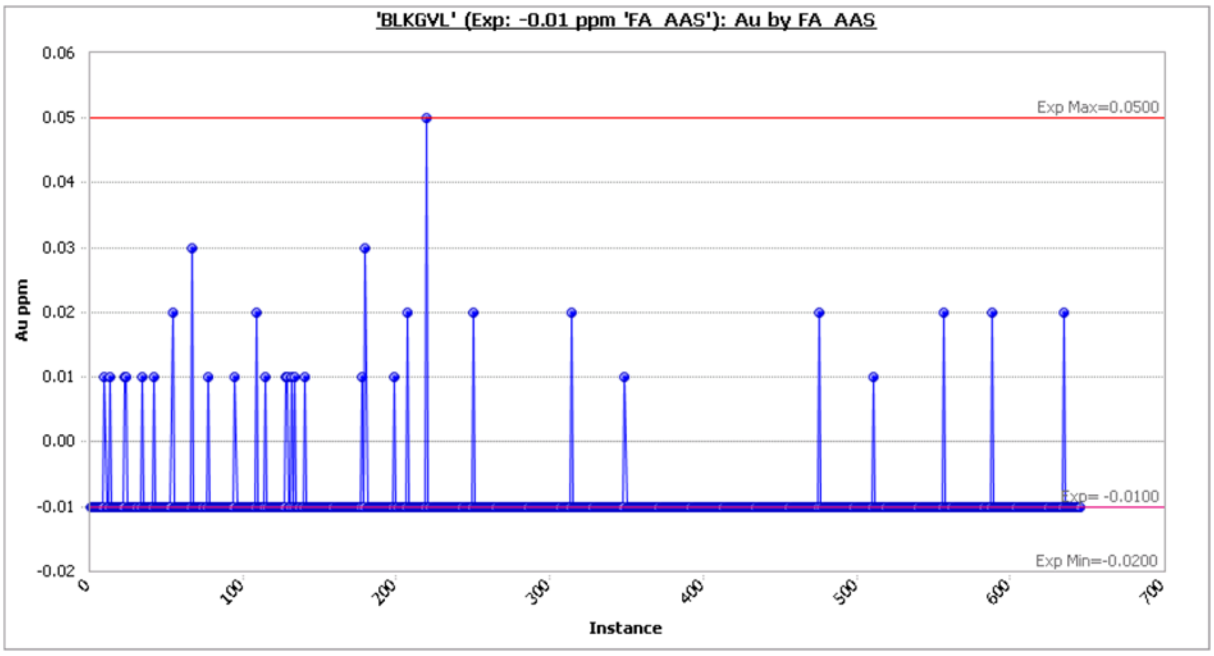


Figure 11-5: Blank Performance for Phase 1 Drilling

(Source: Resolute Bibiani Resource QC Report 2016)

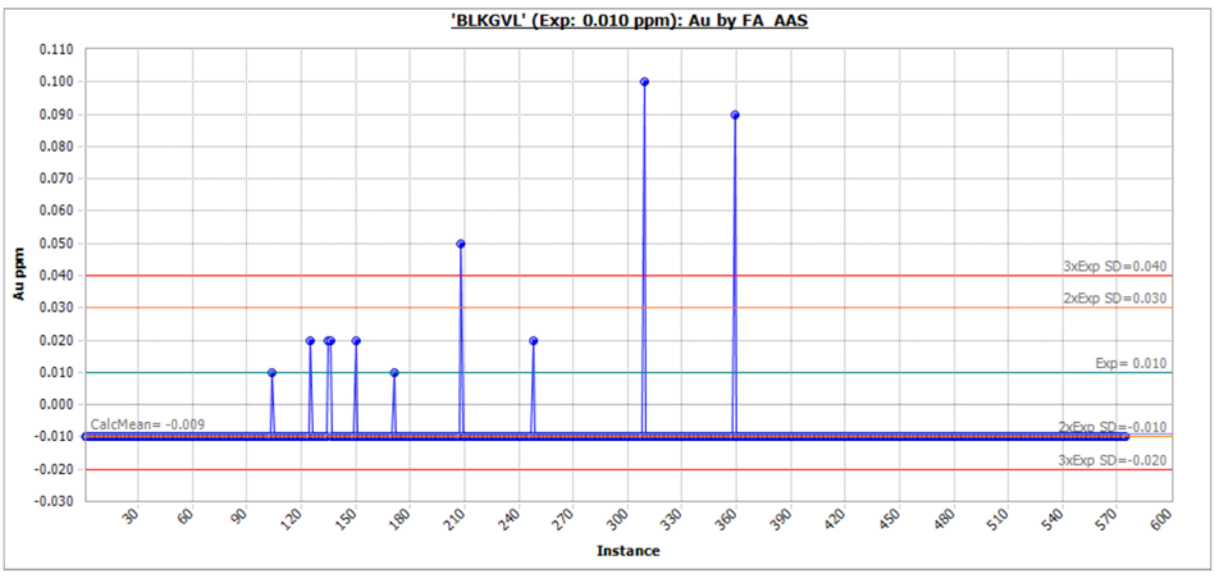


Figure 11-6: Blank Performance for Phase 2 Drilling

(Source: Resolute Bibiani Resource QC Report 2018)

Table 11-4 summarises the performance of the blank gold results, including the expected value, calculated mean, standard deviation, and the percentage of samples that reported gold results below the upper limit of acceptance.

Table 11-4: Bibiani Blanks Performance Summary

Drilling Campaign	Standard	Samples (No)	Expected Au (ppm)	Mean Au (ppm)	Min Au (ppm)	Max Au (ppm)	SD	CV	% < Upper Limit
Phase 1	BLKGVL	648	-0.01	-0.01	-0.01	0.48	0.02	-	99.00%
Phase 2	BLKGVL	503	0.01	-0.01			0.01	0	99.00%

(Source: Asante)

Of the 1,151 results reported for the blanks, only 5 exceeded the expected maximum limit; these results are reported in Table 11-5.

Table 11-5: Bibiani Blank Outliers

Standard	Lab	Batch (no)	Sample ID	Exp	Au (ppm)
BLKGVL	ITK_TK	1884/1400874	B107770	<0.05	0.48
BLKGVL	ITK_TK	1884/1550030	B117530	<0.05	0.35
BLKGVL	ITK_TK	1884/1750539	B142030	<0.04	0.05
BLKGVL	ITK_TK	1884/1750961	B149770	<0.04	0.1
BLKGVL	ITK_TK	1884/1751238	B150330	<0.04	0.09

(Source: Asante)

COARSE DUPLICATES

During the Resolute MGBL resource drilling programs, every 1 in 20 diamond core samples was designated as a routine coarse reject duplicate. This indicates to the laboratory that these samples are to be split after the crushing stage during sample preparation and analysed by the same method in the same batch as the original parent sample.

A comparison between the original assays (Au1) and the coarse duplicates (Au2), for sample pairs >0.01 ppm, is summarised in Table 11-6. A total of 1,787 sample pairs reported above 0.01ppm. The coarse duplicate assay results exhibit good correlation with the original assays, with no indication of bias.

Table 11-6: Bibiani Coarse Duplicate Summary

Drilling Campaign	Samples (no)	Mean Au1	Mean Au2	SD Au1	SD Au2	CV Au1	CV Au2	sRPHD (mean)	HRD (mean)
Phase 1	537	2.11	2.1	9.35	9.32	4.43	4.44		0.1
Phase 2	1250	0.32	0.32	2.95	3.16	9.31	9.9	0.04	

(Source: Asante)

The duplicate pairs are illustrated in Figure 11-7 for the phase 1 drilling and Figure 11-8 for the phase 2 drilling.

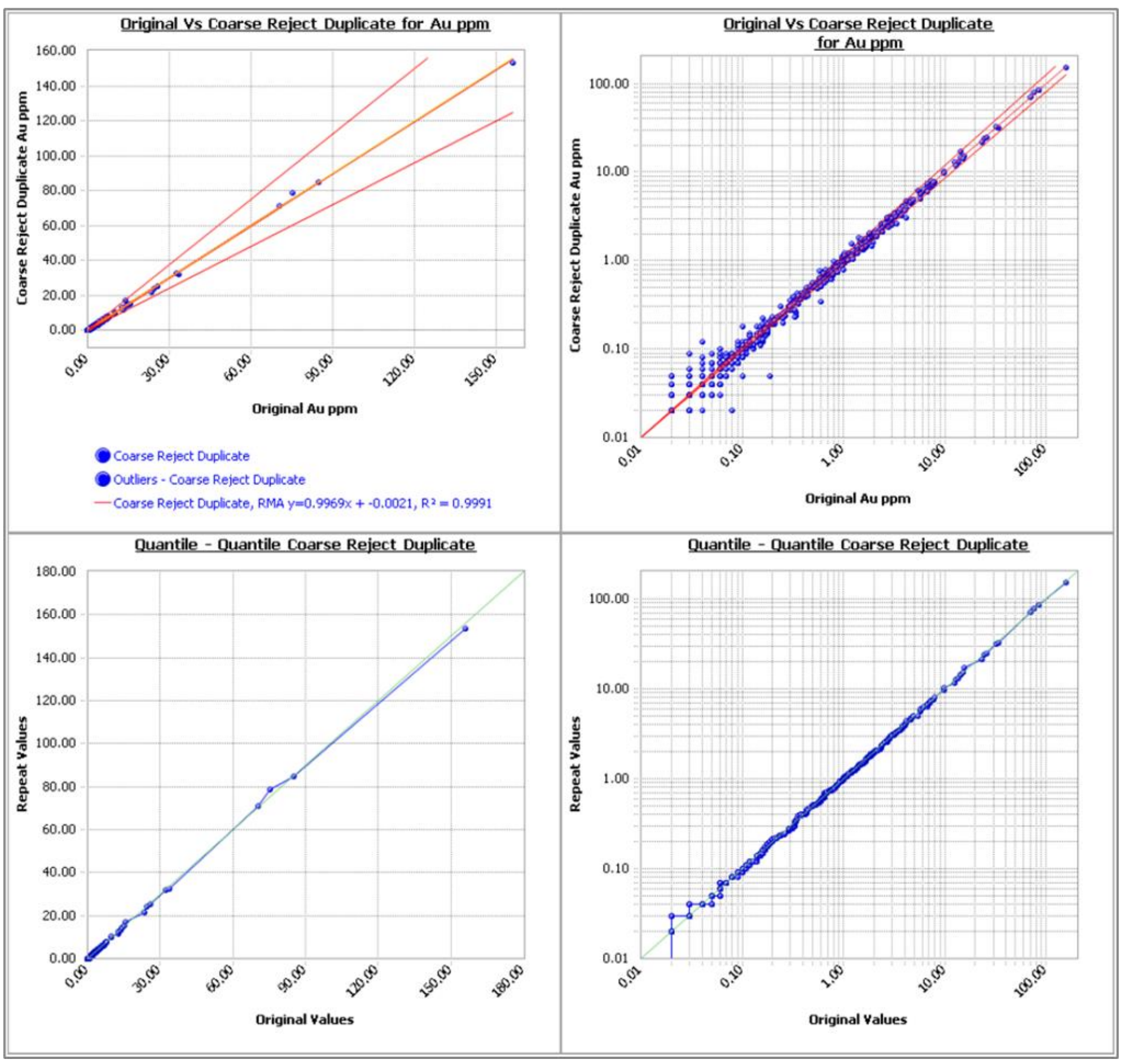


Figure 11-7: Coarse Reject Duplicate Scatter Plot and QQ Plot for the Phase 1 Drilling

(Source: Resolute Bibiani Resource QC Report 2016)

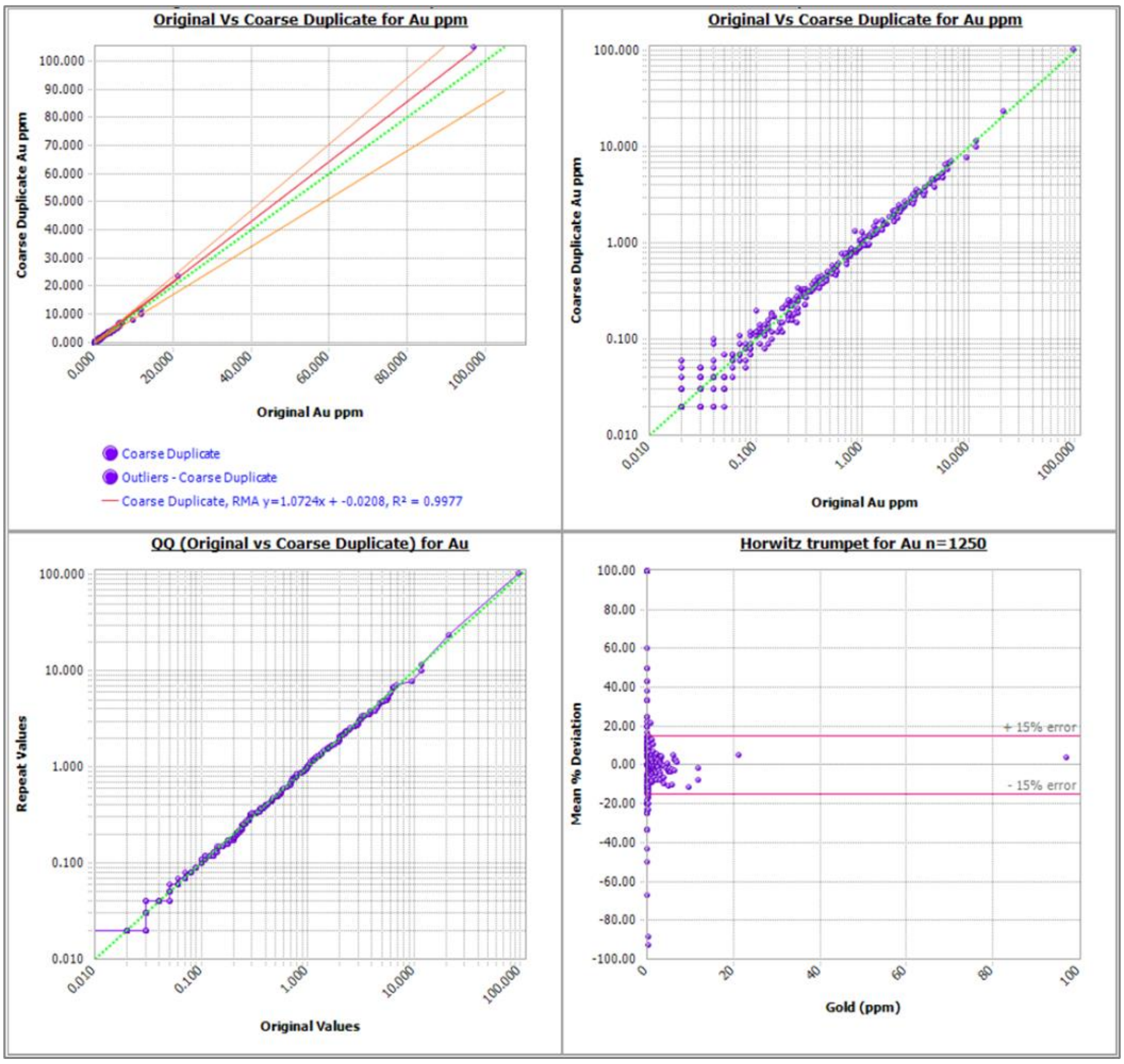


Figure 11-8: Coarse Duplicate Scatter Plot, Horwitz Trumpet and QQ Plot for the Phase 2 Drilling

(Source Resolute Bibiani Resource QC Report 2018)

FIELD DUPLICATES

MGBL collected 52 routine RC field duplicates during the Phase 1 drilling campaign in 2014-2015. Duplicates were collected at the same time as the original sample and were analysed at Intertek Tarkwa by the same analytical method and reported in the same batch as the original parent sample.

A comparison between the original assays (Au1) and the field duplicates (Au2), for sample pairs >0.01 ppm, is summarised in Table 11-7 below. The QP considers that the QAQC reflects reliable accuracy and precision.

Table 11-7: Field Duplicate Summary for Sample Pairs above 0.01ppm Au

Drilling Campaign	Samples (no)	Mean Au1	Mean Au2	SD Au1	SD Au2	CV Au1	CV Au2	HRD (mean)
Phase 1	11	0.07	0.06	0.08	0.07	1.13	1.15	8.99

(Source: Asante)

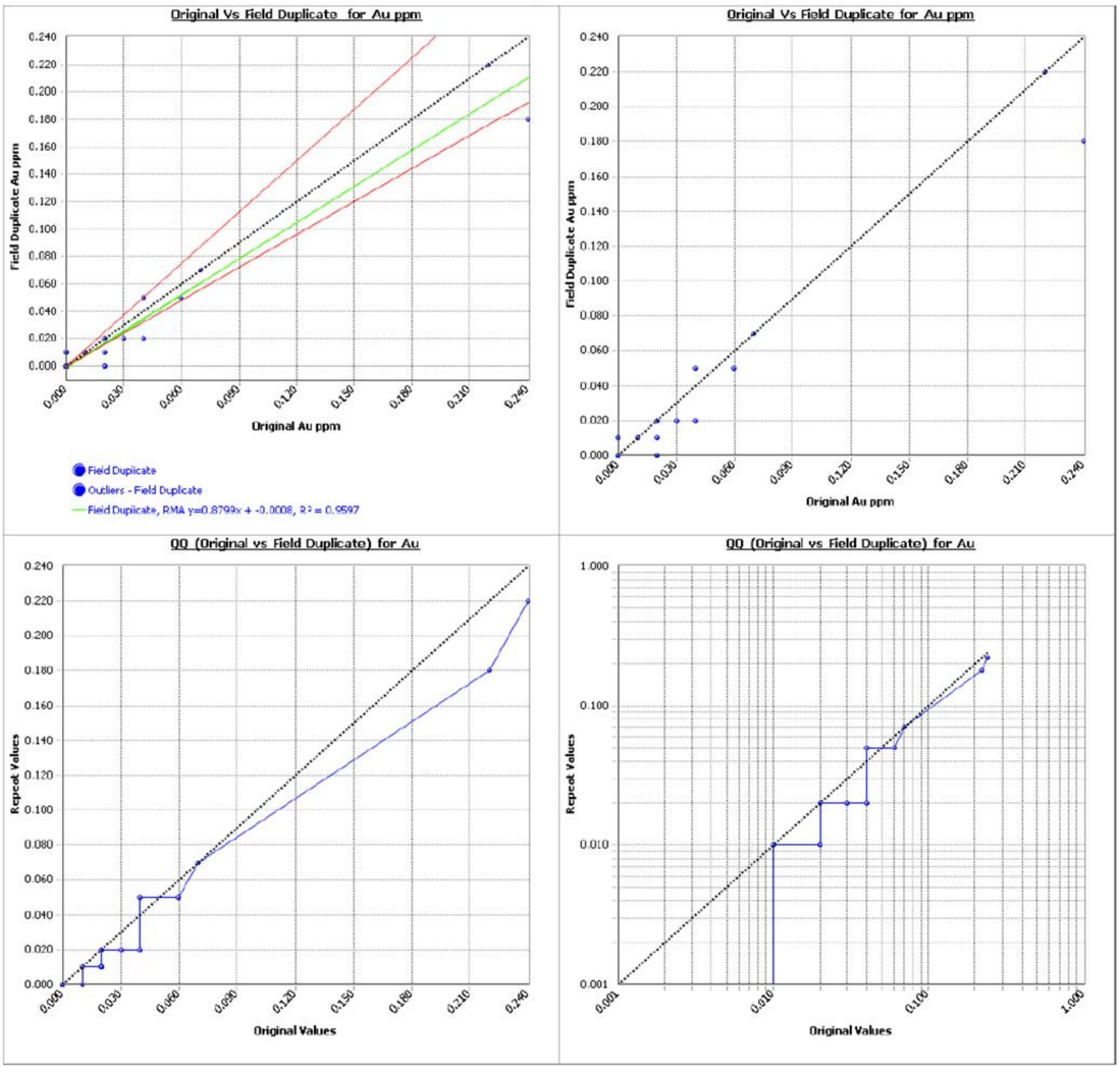


Figure 11-9: Field Duplicate Scatter Plot and QQ Plot for the Phase 1 Drilling

(Source: Resolute Bibiani Resource QC Report 2016)

11.5 Data Management

All data and interpretative inputs to Bibiani Main and Satellite pits Mineral Resource estimates have been checked and verified in accordance with a range of MGBL standard operating procedures (SoPs). Core is logged directly in Logchief using the Panasonic tough book or laptops. This is done as soon as the core becomes available, in this way the data can be immediately exported from Logchief and imported into Micromine to be able to create sections. Core is then marked up, and photographed with geology, bulk density, and geotechnical information. All logging and assay data is stored in a DataShed SQL database managed by MaxGeo, to which login and access permissions are limited to control access and to maintain integrity of the resource data. Data access is generally limited to the geologists and database administrators.

The DataShed SQL database has several inbuilt data validation checks that run when data is imported. Any discrepancies in the data return an error and must be corrected before the database will accept the new information into the system.

11.6 Security

For all MGBL drilling programmes sample security was maintained by MGBL personnel during all stages of on-site preparation and dispatch.

All samples for dispatch were sealed in bags and the number of packages included in the shipment were recorded as part of the dispatch report. The laboratory was provided with an email and electronic listing of the dispatch advice. The company used for transporting the samples from site to the laboratory was used exclusively, and relevant information regarding the transport company was included in each dispatch report.

All aspects of the sampling and dispatch process were supervised and tracked by MGBL personnel. The procedure for the arrival of a transport vehicle at the Bibiani project site included greeting the vehicle at the site entrance where the driver's name, registration of the vehicle, and the completion of a site entry permit was completed. The vehicle was then escorted through the project site and MGBL personnel conducted the loading and unloading of sample packages.

11.7 Bulk Density Determination

MGBL utilise a KT-20, an advanced instrument that is used to measure the density of a geological sample. Density measurements are taken using the custom external tensiometer and accessories included with the KT-20 and a water source. The KT-20 calculates the density of the sample through water displacement and the density measurements are displayed on the screen. The Geologist selects a maximum of 12 samples for density measurement in 3 composites per hole comprising:

- Composite 1 – 3 samples before the mineralised zone
- Composite 2 – 5 samples within the mineralised zone; and
- Composite 3 – 3 samples after the mineralised zone.

Where each composite is cut to a length of 10cm for both full and half core. The samples are then air-dried for no less than 10 minutes making sure that all water that filled the superficial pores during cutting evaporates. The samples are then cleaned and labelled with the hole ID and depth. Before the KT-20 instrument is used, it is first calibrated and then installed with a tensiometer. The density is then determined using the following steps:

- The sample is measured by first fastening the sample holder wire around the sample
- Dipping sample in clean water for 5 seconds making sure the superficial pores are filled with water
- Attaching the sample to the tensiometer using the hook provided
- Holding the KT-20 instrument in the air and selecting "Measure" pressing the "OK" button on the instrument
- Once the measurement is complete, the sample is placed in a bucket of clean water making sure that it is fully submerged and then "Measure" is selected again
- Results of the density measurement are displayed in g/cm^3.

Figure 11-10 shows a pictorial representation of the density determination process conducted by MGBL Geologists.

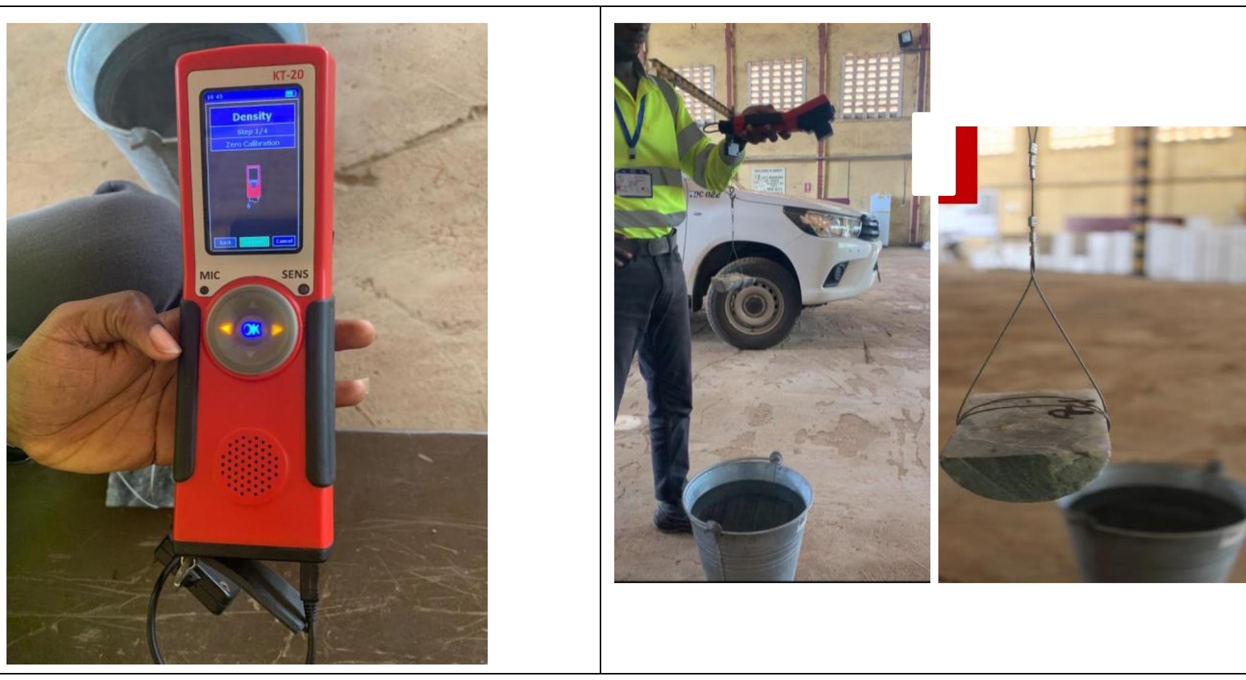


Figure 11-10: Determination of Bulk Density Using Kt-20 (Instantaneous Water Immersion Method)

(Source: Snowden Optiro)

The QP has reviewed the MGBL Density Determination SoP that outlines the density determination method as well as observed the process during the site visit, portrayed in Figure 11-10 and can confirm that it is appropriate for the deposit type and is consistent with industry best-practice.

11.8 Author's Opinion

The QP from Optiro was introduced to all the sample preparation, analyses and security protocols during the site visit and these have been discussed in the section above.

It is the opinion of the QP that the adequacy of the sample preparation, security, analytical procedures for the Bibiani Gold Mine deposits under investigation are acceptable for use in Mineral Resource estimation.

12. DATA VERIFICATION

Senzeni Mandava of Snowden Optiro, the Mineral Resource QP conducted a site visit to Bibiani mine during the period 6th – 12th December 2021 and as part of the site visit conducted the following:

- Drillhole site inspection where drilling was currently underway
- Visual inspection of historical and new drillholes at the core shed/yard
- Observed the logging, marking, cutting and sampling of core
- Observed the density determination process
- Inspected and validated rehabilitated collar positions of previously drilled drillholes
- Inspected geophysical plans on site
- Visit to Tarkwa Laboratories and inspected laboratory assay certificates as received from the laboratory and conducted spot checks to compare with captured assay results in the database provided in the dataroom; and
- Main and Walsh satellite pits visit.

With a printed version of the geological, sample and assay logs, the QP was able to assess the correspondence in lithological/stratigraphic depths between the electronic version and the physical core, also confirming that the mineralised intervals according to assays correspond with visual and geological indications of mineralisation. It is the QP's opinion that the logging/capturing of the details of these variables is generally consistent with MGBL's protocols as adopted from the previous owners.

Snowden Optiro verified and validated the drillhole database (Table 10-1) and the database used in the current 2022 MRE (Table 14-3and Table 14-4). Data validation included review of drilling, logging, sampling, assaying, QAQC SoPs and database management. MGBL stores and manages all drillhole related data in DataShed SQL database managed by MaxGeo. Data imported electronically from the Core Logger software undergoes built-in validations to check for logging continuity, missing information and other basic checks. Regarding sample storage and security, the QP found the SoPs to be robust and appropriate.

The QP reviewed MGBL's SoPs and it is the QPs opinion that MGBL has produced comprehensive procedure manuals, including SoPs for all activities. The QP also reviewed previous audits undertaken by MGBL with respect to pit mapping, drilling, and sampling to verify that the data being used in modelling and MRE is of sufficient quality and has been collected with due diligence and have found these all to be of a satisfactory quality to provide confidence in the resulting data.

12.1 Opinion of Qualified Persons

MGBL's internal protocols governing drilling, logging, sample preparation, sample analysis, sample security, QAQC, data collection and database management measures applied by MGBL and by previous owners of the Bibiani Project are consistent with industry norms. The QP notes that no deficiencies (be it material or immaterial) have been identified specific to the sampling governance system in place and the QP's own review of the SoPs indicates reliability in the governance system. The QP is of the opinion that MGBL data is appropriately captured and stored and that adequate checks are done to verify the accuracy of the data used for Mineral Resource estimation and mine planning and are thus adequate and sufficient to allow the estimation of a Mineral Resource.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Previous Metallurgical Test Work

Considerable test work was performed during the prior operational phases of the Bibiani plant. This study has focussed on a programme of tests performed by ALS Metallurgy and reported in June 2015 ("Metallurgical Test work Conducted upon Composites from the Bibiani Deposit for Goudhurst Pty Ltd, Report No. A16335 Phase 1"). The programme comprised the following tests:

- Head assays
- Preg-Robbing Index
- Gravity/cyanide leach testing
- Flotation scouting
- Flotation concentrate cyanide leaching
- Flotation tails cyanide leaching.

Based on the results of the composite sample test work carried out in the ALS test program the resultant overall recovery of 92% has been accepted and applied in this Technical Report.

13.1.1 Sample Characterisation

Three composite samples labelled B1, B2 and B3 were prepared that had been taken from the locations shown in Figure 13-1 were tested.

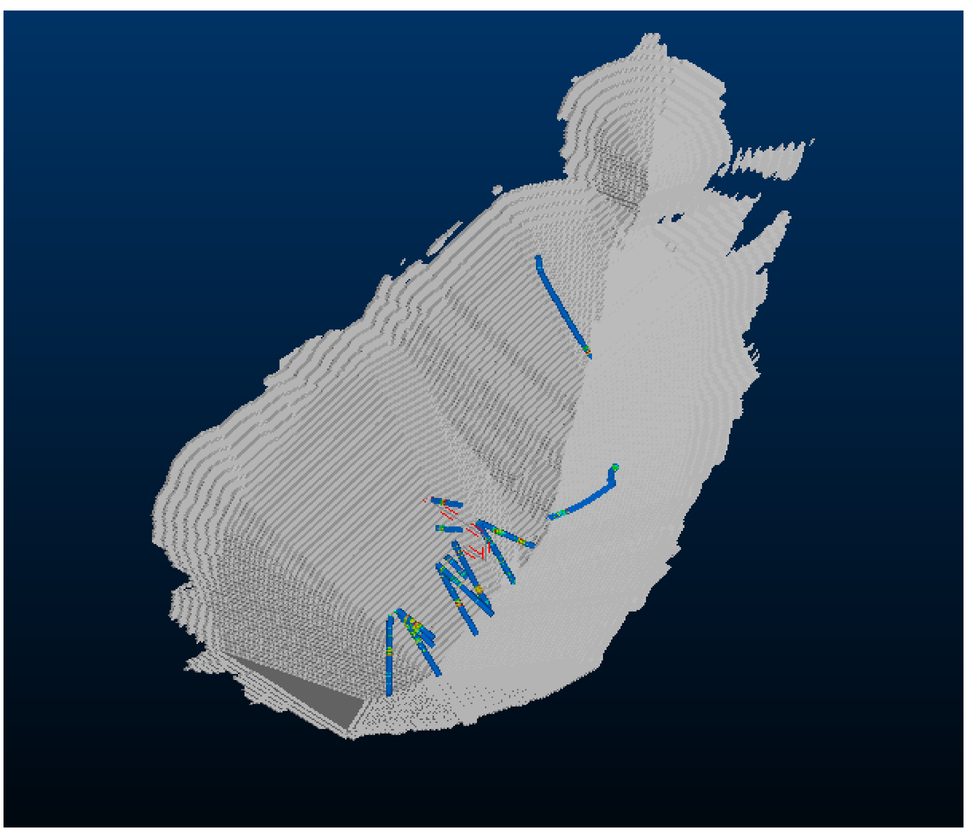


Figure 13-1: Locations of Composite Samples used for Metallurgical Testwork

(Source: Snowden Optiro 2022)

Table 13-1: Composite Sample Head Assays

Analyte	Unit	B1	B2	B3
Au 1 – fire assay	g/t	2.12	5.92	2.86
Au 2 – fire assay	g/t	6.00	5.24	2.75
Au 1 – aqua regia	g/t	0.06	3.28	0.26
Au 2 – aqua regia	g/t	0.32	2.02	0.34
Au – screen, fire assay	g/t	1.97	5.32	4.52
Ag	g/t	<0.3	0.3	<0.3
As	ppm	2125	7925	4025
C_{Total}	%	2.16	1.59	1.50
$C_{Organic}$	%	0.72	0.36	0.45
S_{Total}	%	0.52	0.98	0.72
$S_{Sulphide}$	%	0.42	0.84	0.62

The following observations were made by ALS:

- The differences in gold grade obtained by the various methods indicates the likely presence of coarse gold
- The gold contents determined by the aqua regia method are significantly lower than obtained by fire assay and this is likely a result of preg-robbing during the aqua regia digest
- All three samples contain organic carbon, which could be the source of the preg-robbing
- All three samples contained elevated levels of arsenic and sulphides which may indicate the potential presence of refractory gold associated with pyrite and/or arsenopyrite.

Mineralogical examination has shown that the gold is generally fine-grained, being generally less than 50µm and typically between 1µm and 10µm in size. Much of the gold is associated with sulphides and frequently occurs along grain boundaries or in cracks within the sulphide grains as illustrated by Figure 13-2.

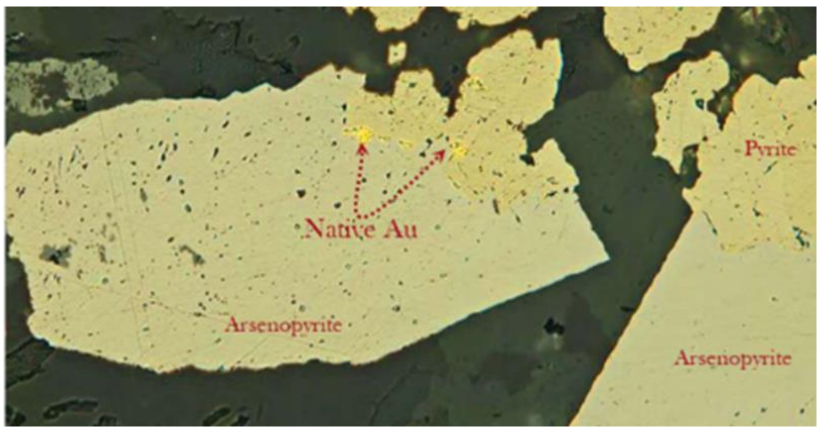


Figure 13-2: Photomicrograph Showing Typical Association of Gold with Sulphides

(Source: Optiro, 2022)

Visible gold can be seen in some mineralised quartz veins. It was noted from historical process plant records that around 15% of the total gold reports to the coarse size fraction, with the Knelson concentrator collecting up to 35% of the total gold recovered in the plant.

The metallurgical laboratory testing program was structured around recovering both coarse and fine gold and is described in the sections below.

13.1.2 Preg Robbing Index

Preg-robbing Index (PRI) tests were performed on samples from each of the three composites. The method used is described in the ALS report. A PRI of zero indicates that the sample is not preg-robbing while a PRI of 3.4 indicates that all of the gold added in the “spike” has been adsorbed during the test and the sample is therefore highly preg-robbing. The PRI values obtained for each sample are shown in Table 13-2.

Table 13-2: PRI Values

Sample	PRI
B1	0.84
B2	0.04
B3	0.27

The results show that the samples have low preg-robbing capacity.

13.1.3 Gravity Concentration and Cyanide Leaching

Sub-samples of each composite were subjected to gravity concentration in a 3” Knelson concentrator at two different grind sizes (P80 106µm and P80 38µm) – and the gravity concentration tailings were then cyanide leached. The procedures for the gravity concentration and cyanide leaching stages are detailed in the ALS report. The results as presented in the ALS report are reproduced in Table 13-3.

Table 13-3: Gravity Concentration and Tailings Leach Test Results

Sample	P80, µm	Au head grade		Au extraction at hours					Au tail (g/t)	NaCN (kg/t)	CaO (kg/t)
		Assay (g/t)	Calc (g/t)	Gravity (%)	4 (%)	8 (%)	24 (%)	48 (%)			
B1	106	2.12/6.00	2.66	40.5	78.2	75.8	80.2	82.4	0.47	0.99	0.39
	38		1.89	34.2	87.2	87.2	84.6		0.29	0.81	0.37
B2	106	5.92/5.24	4.86	23.1	83.6	84.8	87.0	86.4	0.66	0.94	0.33

Sample	P80, µm	Au head grade		Au extraction at hours					Au tail (g/t)	NaCN (kg/t)	CaO (kg/t)
		Assay (g/t)	Calc (g/t)	Gravity (%)	4 (%)	8 (%)	24 (%)	48 (%)			
	38		5.06	31.3	88.7	91.8	94.1		0.30	0.81	0.32
B3	106	2.86/2.75	3.20	18.6	68.3	70.2	70.0	72.0	0.90	1.00	0.25
	38		3.20	23.4	93.6	86.1	92.2	86.6	0.35	0.91	0.34

The finer grind did not have a significant effect on the gravity recovery, the average recovery from the three tests at P80 106µm being 27.4% and the average from the three tests at P80 38µm being 29.6%. The recovery at the coarser grind was more variable, however. Sample B1 yielded the highest gravity recovery and also showed the greatest variability in assayed head grade, both indicating the likely presence of coarse gold.

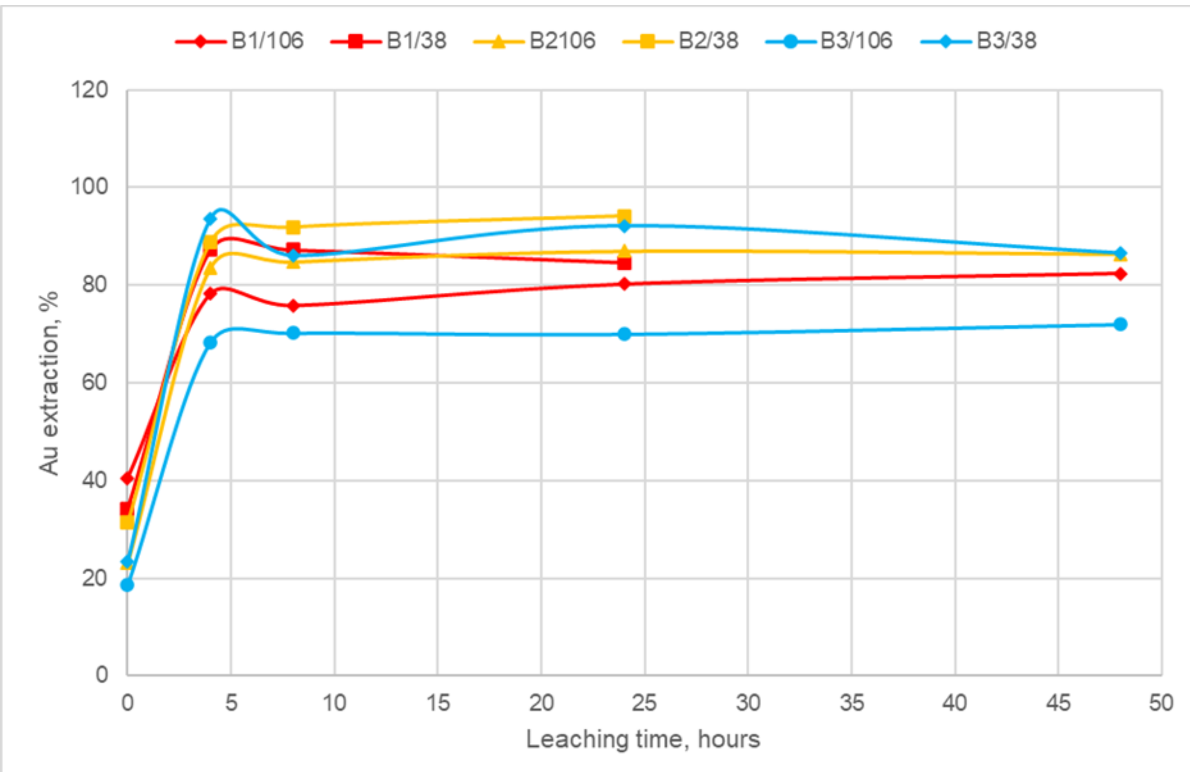


Figure 13-3: Graph of Gravity Tail Leach Extraction Versus Time

(Source: BARA, 2022)

The finer grind resulted in significantly higher leach extraction from the gravity tailings, despite the shorter residence time of these tests. The effect of extending the leaching time from 24hr to 48hr is deemed insignificant when considered in relation to likely experimental and analytical errors at the low tailings grades that were achieved.

Diagnostic analysis of the leach tailings at both grind sizes showed very similar deportment of gold that had not been extracted. The results of the diagnostic leach tests are summarised in Table 13-4 and Table 13-5.

Table 13-4: Diagnostic Analysis of -106µm Gravity Tailing Leach Residue

Deportment	B1		B2		B3	
	Au (g/t)	Distn (%)	Au (g/t)	Distn (%)	Au (g/t)	Distn (%)
Preg-robbed/carbon-bound	0.06	14.6	0.00	0.0	0.18	23.3
Sulphide-locked	0.26	60.0	0.40	66.7	0.38	48.6
Silicate-locked	0.11	25.4	0.20	33.3	0.22	28.1
Total	0.43	100.0	0.60	100.0	0.78	100.0
Assayed grade	0.47		0.66		0.90	

Table 13-5: Diagnostic Analysis of -38µm Gravity Tailing Leach Residue

Deportment	B1		B2		B3	
	Au (g/t)	Distn (%)	Au (g/t)	Distn (%)	Au (g/t)	Distn (%)
Preg-robbed/carbon-bound	0.05	17.4	0.00	0.0	0.05	16.0
Sulphide-locked	0.18	57.2	0.16	61.5	0.17	50.1
Silicate-locked	0.08	25.4	0.10	38.5	0.12	33.9
Total	0.31	100.0	0.26	100.0	0.34	100.0
Assayed grade	0.29		0.30		0.35	

At both grind sizes most of the gold in the leach tailing is locked in sulphides. The amount of gold that is preg-robbed or bound in carbon is variable, ranging between 0 and 23.3%. The balance is locked in silicates.

13.1.4 Flotation

Flotation tests were performed on sub-samples of each composite after grinding to P80 106µm. Potassium amyl xanthate and Aero 3477 were the collectors and total flotation time was 16 minutes. Additional tests were performed on material from the B3 composite, one at a grind size of P80 150µm to evaluate the effect of grind size and a bulk test at P80 106µm to produce sufficient concentrate and tailing material on which to perform cyanidation tests. The results of all the flotation tests are presented in Table 13-6.

Table 13-6: Results of Flotation Tests

Sample	P80 (µm)	Mass pull, (%)	Flotation Concentrate				Flotation Tail	
			Au (g/t)	Au Recovery (%)	S^{2-} (%)	S^{2-} recovery (%)	Au (g/t)	S^{2-} (%)
B1	106	8.8	20.8	93.5	4.62	97.8	0.14	<0.02
B2	106	7.9	61.5	95.5	11.8	99.0	0.25	<0.02
B3	106	6.2	49.7	92.9	8.42	98.2	0.10	<0.02
	106 (bulk)	9.4	24.1	96.7	6.30	98.5	0.09	<0.02
	150	7.8	38.0	96.5	9.12	98.7	0.12	<0.02

The recovery of sulphide to flotation concentrate was very high and this resulted in very good recovery of gold, which is to be expected given the observed association between gold and sulphides. The coarser grind size of P80 150µm tested on sample B3 did not have any noticeable effect on the recovery of gold or sulphide or the mass pull to concentrate over the standard-sized test on the same sample. The mass pull during the bulk test on sample B3 was approximately 50% higher than achieved during the standard-sized test on B3 at P80 106µm and this resulted in a 4% increase in gold recovery but at the expense of concentrate grade, which was 52% lower.

13.1.5 Flotation Concentrate Leaching

Cyanide leaching tests were performed on concentrates from the flotation tests after regrinding to P80 25µm. An additional test was performed on concentrate from composite B3 after regrinding to P80 15µm. Samples were leached in the presence of 15g/l activated carbon (to negate potential for preg-robbing) for 48hr at a nominal cyanide concentration of 0.20% w/v, with periodic oxygen sparging to maintain a dissolved oxygen concentration of approximately 10ppm. The results are summarised in Table 13-7 and shown graphically in Figure 13-4.

Table 13-7: Results of Flotation Concentrate Leaching Tests

Sample	P80 (µm)	Au head grade (calc) (g/t)	Au extraction at hours					Au tail (g/t)	NaCN cons (kg/t)	CaO cons (kg/t)
			2 (%)	4 (%)	8 (%)	24 (%)	48 (%)			
B1	25	20.8	68.3	77.9	84.2	87.6	88.9	2.32	5.51	0.98
B2	25	61.5	81.9	87.2	90.6	91.8	92.2	4.81	5.66	1.10
B3	25	49.7	73.4	79.6	84.0	88.4	88.7	5.62	6.16	0.74
	15	24.1	76.8	83.7	87.9	89.3	89.6	2.50	5.01	0.64

The finer grind size on the sample from composite B3 had a beneficial effect on the initial leaching rate although the difference in extraction after 24hr and 48hr was much less than earlier in the tests.

Figure 13-4 shows that leaching is initially rapid and is essentially complete after 24 hours. There is no evidence of preg-robbing occurring.

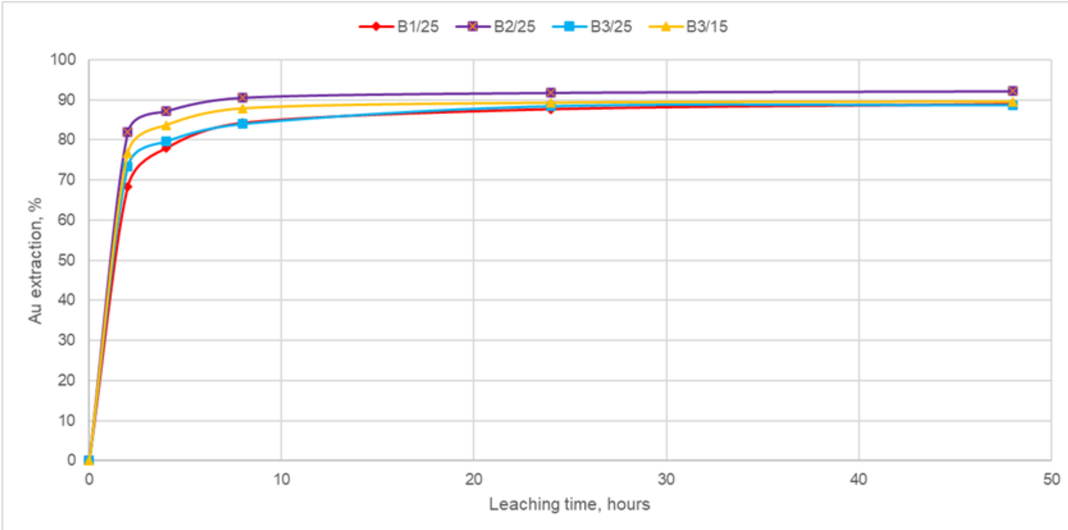


Figure 13-4: Flotation Tail Leach Extraction Curves

(Source: BARA, 2022)

Diagnostic leach analysis on the flotation concentrate leach residue showed similar gold deportment to that in the head samples. The gold locked in sulphides averaged 74.1% across the three samples (flotation concentrate leach residue from composites B1, B2 and B3), the silicate-locked gold averaged 11.2% and the balance (14.7%) was preg-robbed or carbon-bound.

13.1.6 Flotation Tails Leaching

Cyanide leaching tests were performed on tailings from the flotation tests without regrinding. Samples were leached in the presence of 15g/l activated carbon (to negate potential for preg-robbing) for 48hr at a nominal cyanide concentration of 0.20% w/v, with periodic oxygen sparging to maintain a dissolved oxygen concentration of approximately 10ppm. The results are summarised in Table 13-8.

Table 13-8: Results of Flotation Tailing Leaching Tests

Sample	Au head grade (calc) (g/t)	Au extraction at hours					Au tail (g/t)	NaCN cons (kg/t)	CaO cons (kg/t)
		2 (%)	4 (%)	8 (%)	24 (%)	48 (%)			
B1	0.14	29.6	29.6	48.7	48.7	72.0	0.04	0.71	0.39
B2	0.25	31.9	57.7	57.7	57.7	74.1	0.07	0.64	0.34
B3	0.25	67.6	67.6	67.6	67.6	68.2	0.08	0.77	0.32

The large increments by which the reported extraction increases between some time intervals is due to experimental and analytical effects at such low gold grades.

Diagnostic leach analysis on the flotation concentrate leach residue showed similar gold deportment to that in the head samples. The gold locked in sulphides averaged 71.3% across the three samples (flotation concentrate leach residue from composites B1, B2 and B3), the silicate-locked gold averaged 28.7% and none was preg-robbed or carbon-bound.

13.2 Current Metallurgical Testing

A laboratory testing program is presently being conducted by Intertek in Tarkwa, Ghana. Preliminary tests have investigated the sensitivity of leaching of sub-samples from a single composite to grind size, dissolved oxygen concentration, lead nitrate addition and cyanide concentration. Gravity concentration has not been included in the tests performed to date.

13.2.1 Grind Sensitivity

Cyanide leach tests were performed at grind sizes of P80 106µm, 75µm and 53µm and the results are summarised in Table 13-9. Nominal conditions during leaching were:

- Sodium cyanide addition 500g/t
- Activated carbon 10g/l
- pH 10.5
- Dissolved oxygen 20ppm
- Conditioning time 2 hours.

Table 13-9: Results of Grind Sensitivity Tests

P80 (µm)	Au head (g/t)	Au tail (g/t)	Au extraction (%)	NaCN cons (kg/t)
106	2.94	0.53	82.0	0.42
75	2.94	0.39	86.7	0.38
53	2.94	0.31	89.5	0.35

Grinding finer clearly resulted in increased extraction, as would be expected given the understanding of gold deportment gained from previous test work.

13.2.2 Dissolved Oxygen Sensitivity

Cyanide leach tests were performed at nominal DO concentrations of 10, 15 and 20ppm and the results are summarised in Table 13-10. Nominal conditions during leaching were:

- Sodium cyanide addition 500g/t
- Activated carbon 10g/l
- pH 10.5
- Grind size P80 106µm
- Conditioning time 2hr.

Table 13-10: Results of Dissolved Oxygen Sensitivity Tests

DO (ppm)	Au head (g/t)	Au tail (g/t)	Au extraction (%)	NaCN cons (kg/t)
10	2.94	0.60	79.6	0.25
15	2.94	0.56	81.0	0.23
20	2.94	0.49	83.3	0.15

Elevated dissolved oxygen concentration resulted in increased gold extraction and reduced consumption of sodium cyanide.

13.2.3 Lead Nitrate Sensitivity

Cyanide leach tests were performed at nominal lead nitrate addition rates between 0 and 100g/t and the results are summarised in Table 13-11. Nominal conditions during leaching were:

- Sodium cyanide addition 500g/t
- Activated carbon 10g/l
- pH 10.5
- Grind size P80 106µm
- Conditioning time 2hr
- DO 20ppm.

Table 13-11: Results of Lead Nitrate Sensitivity Tests

$Pb(NO_3)_2$ (g/t)	Au head (g/t)	Au tail (g/t)	Au extraction (%)	NaCN cons (kg/t)
0	2.94	0.51	82.7	0.32
30	2.94	0.48	83.7	0.33
50	2.94	0.46	84.4	0.35
75	2.94	0.47	84.0	0.31
100	2.94	0.50	83.3	0.35

Lead nitrate addition is beneficial up to approximately 50g/t, above which there is no increase in extraction.

13.2.4 Cyanide Sensitivity

Cyanide leach tests were performed at nominal sodium cyanide addition rates between 0.5kg/t and 1.0kg/t and the results are summarised in **Error! Reference source not found.**. Nominal conditions during leaching were:

- Activated carbon 10g/l
- pH 10.5

- Grind size P80 106µm
- Conditioning time 2hr
- DO 20ppm.

Table 13-12: Results of Cyanide Sensitivity Tests

NaCN (kg/t)	*Au head (g/t)*	*Au tail (g/t)*	*Au Extraction (%)*	*NaCN cons (kg/t)*
0.5	2.94	0.54	81.6	0.32
0.8	2.94	0.50	83.0	0.57
1.0	2.94	0.44	85.0	0.63

13.3 Estimation of Recovery

The results presented in Section 13.1 demonstrate that:

- Gravity concentration is likely to be beneficial to overall recovery, especially in the context of the presence of spotty, coarse gold
  - Tests were performed at P80 106µm and 38µm and did not demonstrate a clear increase in recovery at the finer grind and the results at P80 106µm are applied
- Sulphide minerals and gold can be concentrated by froth flotation
  - Tests were generally performed at a grind size of P80 106µm and the results of those tests are used in this estimation
  - One test at P80 150µm yielded higher recovery of gold and sulphide to concentrate and this may provide an opportunity for increased recovery for further investigation
- Fine grinding of the sulphide concentrate increases overall recovery
  - The recovery from the single concentrate leaching test performed at a grind size of 15µm was not significantly different to that achieved at a grind size of P80 25µm and the results from the tests at the coarser size are used in this estimation.

The overall recovery has therefore been estimated from a process comprising:

- Grinding to P80 106µm
- Gravity concentration
- Froth flotation
- Regrinding of flotation concentrate to 25µm
- Cyanide leaching of flotation concentrate for 24hr
- Cyanide leaching of flotation tailing for 24hr.

The estimated recovery from samples B1 – B3 is illustrated in Table 13-13.

Table 13-13: Estimation of Overall Recovery

Process	**B1**	**B2**	**B3**	**Average**
Gravity concentration [1]	40.5	23.1	18.6	27.4
Flotation [2]	93.1	95.5	92.9	93.8
Flotation concentrate leaching stage extraction [3]	87.6	91.8	88.4	89.3
Extraction via flotation + concentrate leach	***81.6***	***87.7***	***82.1***	***83.8***
Gold to flotation tailing	6.9	4.5	7.1	6.2
Flotation tailing leaching stage extraction [4]	48.7	57.7	67.6	58.0
Recovery to float tail leach	***3.4***	***2.6***	***4.8***	***3.6***
Overall Recovery	**85.0**	**90.3**	**86.9**	**87.4**

The overall recovery calculation assumes that all gold recovered to a gravity concentrate is reporting to the flotation concentrate. Combining the flotation recovery with the extraction from flotation concentrate, this part of the process yielded an average of 83.8% extraction. Leaching of flotation tailing yielded an additional extraction of 3.6% for a combined extraction of 87.4%. The ALS report presents slightly higher overall recovery which uses the leach extractions at 48h leaching time whereas the extractions applied in Table 13-13 are those after 24hr of leaching, the respective estimates being otherwise calculated in the same way.

Analysis of the test results on samples B1, B2 and B3 and others tested during other phases of the program was performed for the Resolute study in 2018 [REF] and included normalisation of recovery values for variations in head grade between samples. That analysis predicted an average recovery of 89.9%.

The programme reported in the Resolute feasibility study included testing of other samples, for which the detailed laboratory reports are not available and have therefore not been included in the detailed analysis. Results are presented in that report on tests on all samples in that suite of 15 samples, including B1, B2 and B3, using a process that included flotation, regrinding of the flotation and separate leaching of both flotation concentrate and tailing but without gravity concentration. The gold extraction from individual samples ranged from 82.8% to 96.4% and averaged 89.7%. A Master composite of all 15 samples was also tested and yielded an extraction of 92.2%.

This extraction has been used for the project on the expectation that inclusion of gravity concentration will prevent low extraction rates when coarse gold is present.

The recent tests sanctioned by MGBL and performed by Intertek have the objective of evaluating the effect of changing leach parameters such as grind, dissolved oxygen concentration and lead nitrate addition on gold extraction during CIL. These tests intentionally did not include gravity concentration or froth flotation and therefore do not directly represent the recovery process discussed in later sections. The results of these tests therefore have not been used in the current estimation of recovery that is used to evaluate the project.

14. MINERAL RESOURCE ESTIMATES

14.1 Introduction

The Bibiani Main Pit Mineral Resources comprise the open pit resource, which has been classified as Indicated and Inferred only. No Measured Mineral Resources have been defined for the Main Pit. The Satellite Pit (Walsh and Strauss) has been classified as Measured, Indicated and Inferred Mineral Resources.

Both Mineral Resources have been prepared under the direction of Competent Persons under the JORC Code (2012) using accepted industry practices and have been classified and reported in accordance with the JORC Code. There are no material differences between the definitions of Measured, Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code (2012).

***Note**: All Figures and Tables contained in this section have been created by Snowden Optiro in the process of the estimation of the resources.*

14.2 Mineral Resource Tabulation

Both Mineral Resources (Main and Satellite Pits) are reported according to the guidelines of the JORC Code (2012) and according to the CIM Definition Standards. The Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them. Estimates (tonnes and content) for the pits and summaries quoted in this report are on a 100% basis. The QP who has signed off on the Mineral Resource has the minimum requirements established by international mining codes. The Mineral Resources for the Bibiani Main Pit and Satellite Pits, as reported at 28th February 2022, are presented in Table 14-1. The Mineral Resources have been depleted for both historical open pit and underground development as at 31st August 2017 and have been reported above a 0.5g/t Au cut-off and constrained by a Reasonable Prospects for Eventual Economic Extraction (RPEEE) US$1,950 Resource optimised pit shell.

Table 14-1: Total Mineral Resource of Bibiani Main Pit and Satellite Pits as at 28th February 2022 at 0.5 g/t Au cut-off

Area	Classification	Tonnage (Mt)	Au Grade (g/t)	Metal Au Content (Moz)
Main Pit	Measured	-	-	-
	Indicated	30.2	2.23	2.17
	Measured + Indicated	**30.2**	**2.23**	**2.17**
	Inferred	3.9	2.69	0.338
Satellite Pits	Measured	0.37	2.27	0.027
	Indicated	1.00	2.76	0.089
	Measured + Indicated	1.37	2.62	0.116
	Inferred	0.12	4.57	0.017
Total Measured		**0.37**	**2.27**	**0.03**
Total Indicated		**31.20**	**2.25**	**2.26**
Total Measured +Indicated		**31.57**	**2.25**	**2.29**
Total Inferred		**4.02**	**2.74**	**0.36**

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1034768g.*
5. *A 0.5g/t gold cut-off has been applied and constrained by a RPEEE US$1,950 (metal price) Resource pit shell.*
6. *A density of 2.75t/m^3, 2.50t/m^3 and 2.0 t/m^3 on fresh, transition and oxidised sediments have been applied respectively.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*

14.3 Assumptions and Parameters

It has increasingly become a stringent requirement from reputable Investors, Stock Exchanges and reporting guidelines to enforce the application of a cut-off grade and also outline the parameters considered in determining the cut-off grade.

To assess the RPEEE, the QP reviewed MGBL's cut-off grade calculations based on the economics, mining and processing assumptions supplied by MGBL. The parameters considered in the calculations used are based on outputs from the financial model. The cut-off values calculated are shown in Table 14-2.

Table 14-2: Cut-off Calculation Parameters for MGBL Main and Satellite Pit Mineral Resources

Parameter	Units	Value
Mining cost	(US$/t ore)	3.03
G&A	(US$/t ore)	9.23
Process costs	(US$/t ore)	13.01
Gold recovery	(%)	92
Gold price	(US$/oz)	1,950

Using the parameters stated in Table 14-2, the QP has checked and confirmed that the application of a cut-off grade of 0.5g/t Au for the reporting of MGBL Mineral Resources is appropriate.

14.4 Drilling Database

The database used for this Mineral Resource update was named, "DSBibianiRSExportDHDATA.mdb". The Main Pit and Satellite Pit data was extracted from this database. A summary of the total number drillholes used in the MRE process are presented in Table 14-3 and Table 14-4 for the Main Pit and Satellite Pit respectively.

Table 14-3: Holes used in MRE – Main Pit

Drilling Type	Company	Holes (No)	Drilled (m)
DD	AngloGold Ashanti	144	29 880
	Central African Gold	2	217
	MGBL	155	50 756
	Noble	23	3 160
	Total DD	**324**	**84 013**
RC	AngloGold Ashanti	157	15 921
	NMG	232	32 867
	Total RC	**459**	**51 203**
RCD	AngloGold Ashanti	174	53 693
	Central African Gold	22	7 705
	MGBL	13	5 367
	Total RCD	**209**	**66 765**
UG_CHAN	Central African Gold	265	3 030
	Total UG_CHAN	**265**	**3 030**
UG_DDH	AngloGold Ashanti	80	8 499
	Central African Gold	166	9 325
	Total UG_DD	**246**	**17 824**
Grand Total		**1 433**	**220 420**

Notes: DD – Diamond drilling, RC – Reverse Circulation drilling, RCD – Reverse Circulation & Diamond drilling, UG_CHAN – Underground channel sampling, UG_DD – Underground diamond drilling

Table 14-4: Holes used in MRE – Satellite Pit

Drilling Type	Company	Holes (No)	Drilled (m)
DD	AngloGold Ashanti	4	503
	Central African Gold	10	686
	IGR	2	191
	MGBL	20	3 128
	Noble	11	1 355
	Total DD	**47**	**5 862**
Not Recorded	**NMG**	**5**	**491**
RC	AngloGold Ashanti	107	7 484
	Central African Gold	73	8 000
	IGR	12	1 017
	Noble	2 045	105 661
	Total RC	**2 237**	**122 162**
RCD	AngloGold Ashanti	1	150
	MGBL	8	1 070
	Noble	4	720
	Total RCD	**13**	**1 940**
UG_CHAN	Central African Gold	4	239
	Total UG_CHAN	**4**	**239**
Grand Total		**2 306**	**130 694**

Notes: DD – Diamond drilling, RC – Reverse Circulation drilling, RCD – Reverse Circulation & Diamond drilling, UG_CHAN – Underground channel sampling, UG_DD – Underground diamond drilling

The drillholes were reviewed and validated in preparation for the MRE process. A few holes were removed prior to estimation with reason for their removal outlined in Table 14-5. All sample categories defined as “FILL” or “STOPEFILL” were also removed prior to estimation.

Table 14-5: Holes Removed Prior to Main Pit Estimation

Hole ID	Reason
RC-17	Suspected contamination
RC-39	Suspected contamination
RC-141	Suspected contamination
BMWD*	Waste dump holes
MP11_005A	Waste dump hole
MP10_086	Incorrect collar Rl
MP10_087	Incorrect collar Rl
MP10_092	Incorrect collar Rl
MP10_101	Incorrect collar Rl
MP10_102	Incorrect collar Rl
MP10_103	Incorrect collar Rl
MPD51	Incorrect collar Rl

14.5 Bulk Density

A database containing 39,862 density determinations exists for the Bibiani deposit. Approximately 1% of the density data (2,509) was excluded during the validation process, which identified issues including erroneous hole locations, duplicates, sampling issues or suspect readings. A total of 37,123 data points were categorised into material type, with no statistical differences observed. Density values were applied by material type (weathering) and utilise a global average for the Bibiani area. Density values applied for the different material types are presented in Table 14-6.

Table 14-6: Density Values Applied for Different Material Types at Walsh Strauss

Material Type	Density (t/m^3)
Oxidised Sediments	2.00
Transition Sediments	2.50
Fresh Sediments	2.75

14.6 Main Pit

14.6.1 Geological and Mineralisation Modelling

The Bibiani deposit is hosted within a thick sequence of fine-grained graded turbidites, interspersed with thin, localised, fine- to medium-grained turbiditic sandstones. The geometry of the mineralisation is structurally controlled, and is hosted in a steep, north to northeast trending shear corridor ranging in width of 200m to 400m. In general, mineralisation lodes dip east at between 60° to 80°, cross-cutting the regional shear structure at low angles. In the widest parts of the mineralised zone, two (and locally up to three) individual quartz reefs or lodes have been identified.

Three-dimensional (3D) mineralisation interpretations were generated, suitable for open pit mining studies using Leapfrog™ Geology software and based upon the available DD and RC drilling, as well as underground channel “chip” sampling data. An exploratory data analysis (EDA) and review of the spatial distribution of the lower grade material was carried out to assess if a lower cut-off would produce coherent interpretations. After statistical analysis of the assay data, a nominal cut-off value of 0.3g/t Au was selected. Interpretations were geology based, guided by the presence of a logged structure, with or without quartz veining, and combined with gold grade.

The previous MRE modelling was used as guide to create the current wireframes. The existing mineralisation domain codes were imported and manually updated to include the additional lower grade assay intervals. Validation of the domains used the development solids and stope models to align the mineralisation domains with as mined orientations and widths.

The overall framework is of NNE-SSW trending, steep east dipping to subvertical anastomosing vein sets which exhibit jogs/bends related to the arcuate shear zone and folding of the western stratigraphy (Figure 14-1). There is a Central main vein that is prominent throughout the deposit with parallel veins. The eastern part of the deposit has two domains (Eastern/Eastern HW) that are sub parallel to the Central lodes (Figure 14-2). A set of north-east trending, west dipping veins are also modelled, parallel to known shears, which truncate against the main vein and are interpreted as a secondary mineralisation event.

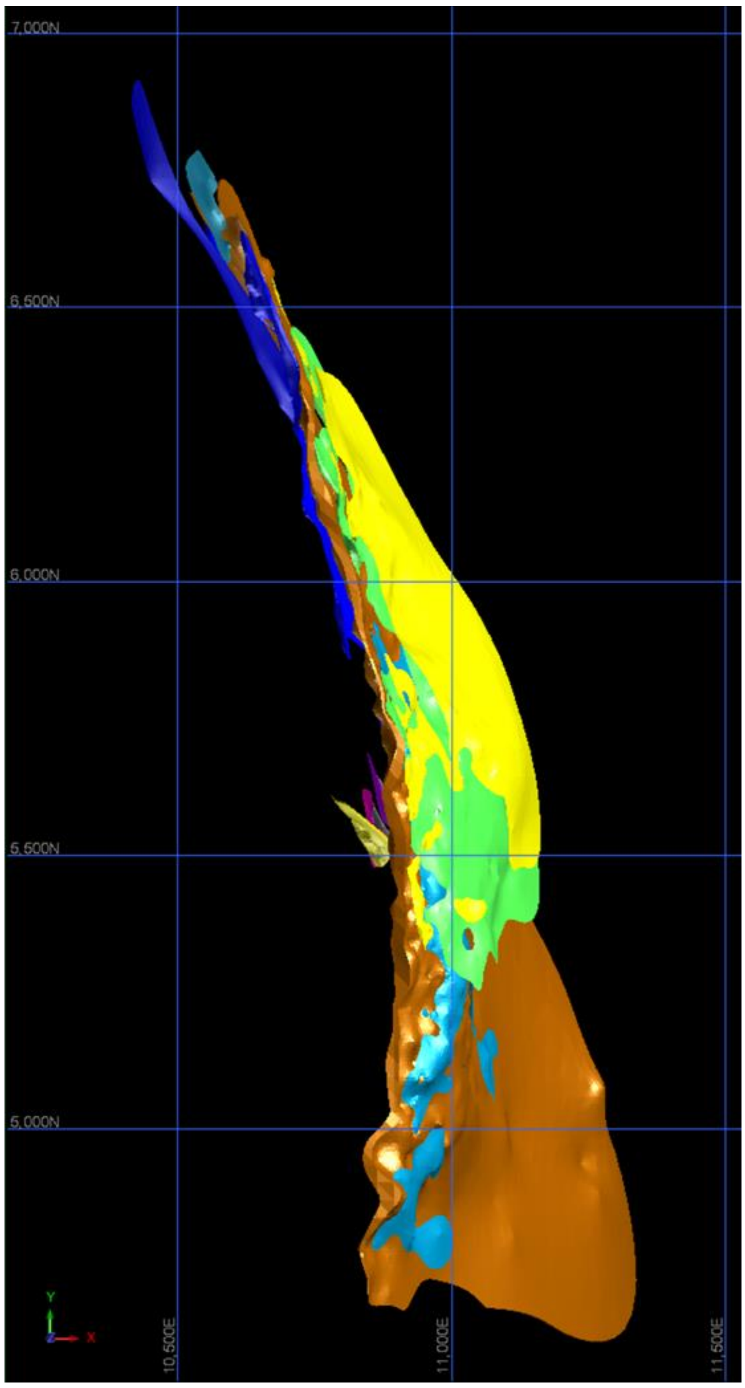


Figure 14-1: Plan View of Bibiani Mineralisation Domains

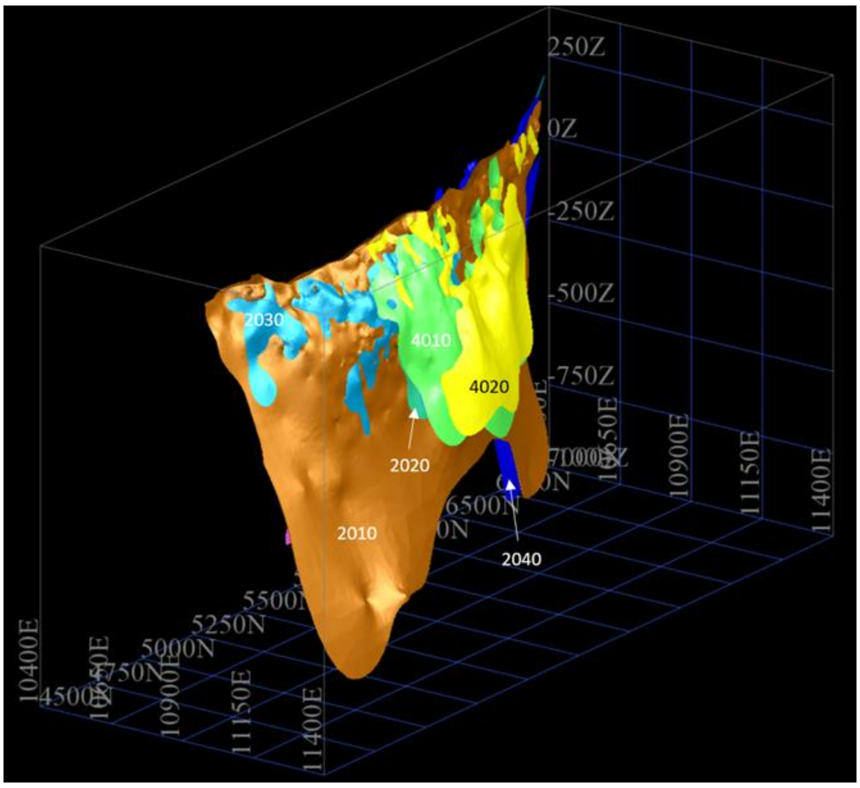


Figure 14-2: Oblique View of Main Pit Mineralisation Domains Looking Northwest

Figure 14-3 is a cross section showing vein relationships and lithology models. The Western lodes were initially proposed as a folded unit, following the carbonaceous shale lower zone model. When the spatial grade patterns were reviewed it became apparent that these could not be formed into a single folded domain, and in fact there were discrete subvertical patterns of intersections that could be formed into separate subvertical veins. A total of seven West lode domains were modelled and these are located between the Mine Shear 2 and the West Wall shear zone surfaces (Figure 14-4). One of the issues with the West lodes is the lack of strike and dip continuity and when the structural framework was overlaid the bounding shears fitted around the vein models to produce a shear bounded tension vein array. The West HW7 domain is above the West Wall shear and is a different structure, with an orientation that is more consistent with the Central lode package. This is shown in Figure 14-4.

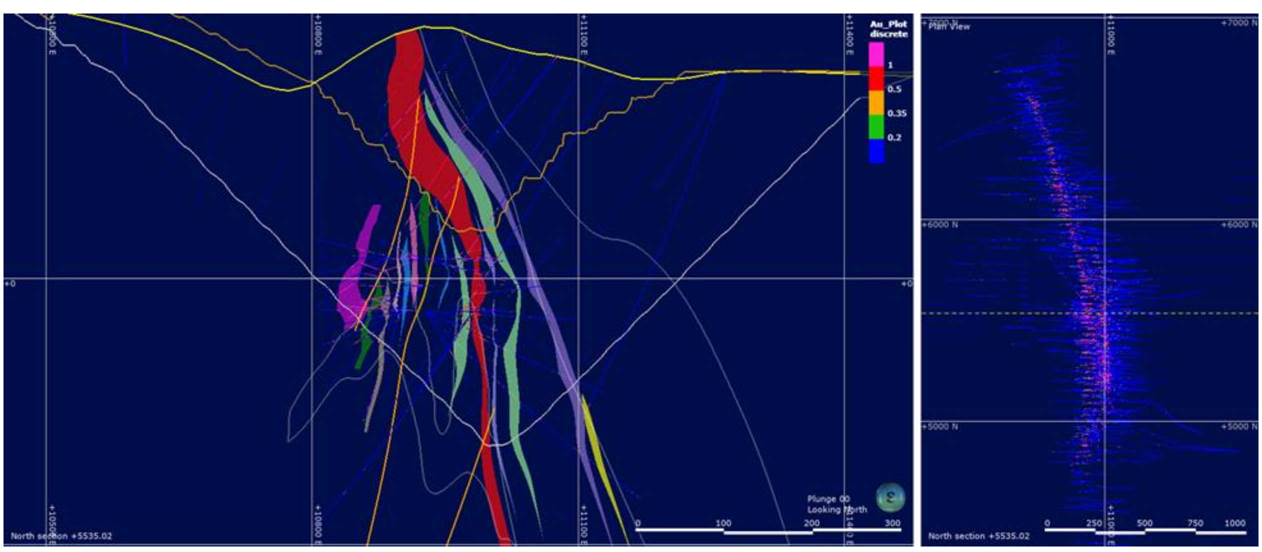


Figure 14-3: Cross Section Looking North Showing Lithology and Vein Relationships

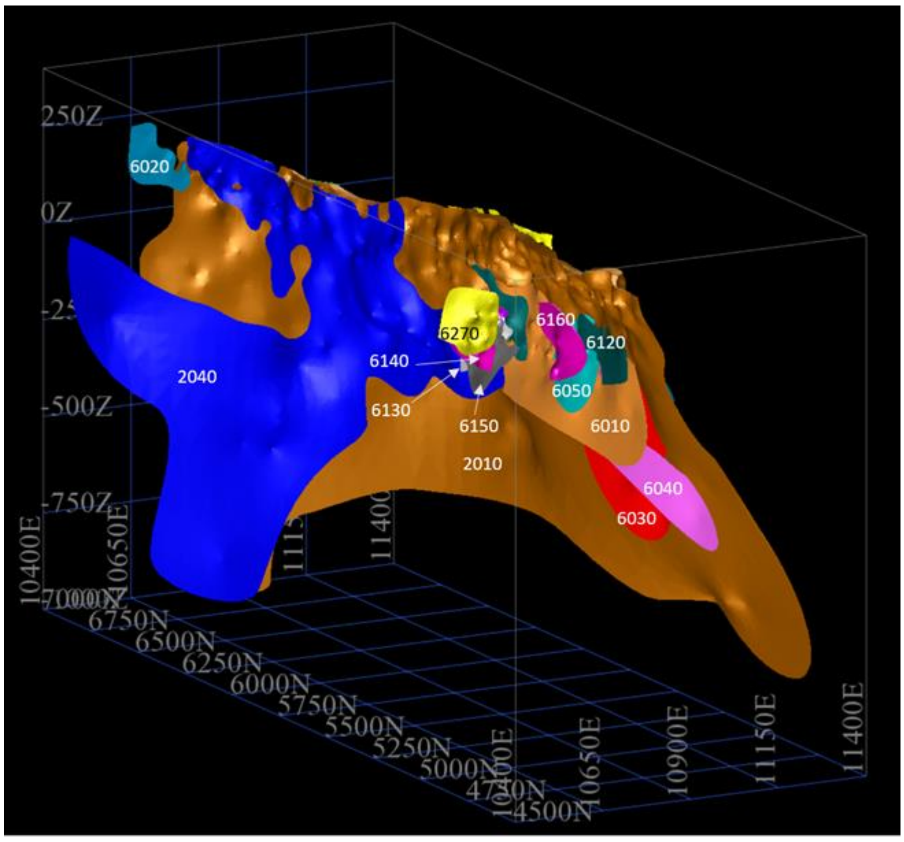


Figure 14-4: Oblique View of Main Pit Mineralisation Domains Looking Northeast

A review of the main domain (2010) determined there was a mixed population, so a categorical indicator (CI) approach was adopted. The higher-grade blocks were determined by using a 1g/t Au threshold. The blocks and composites were coded as either low grade or higher grade based on the probability that they contained more than 1g/t Au. The composites were coded with a categorical indicator (IND) as shown below:

$$\boldsymbol{IND} = \begin{cases} 1 & if\ Au\ grade\ \geq 1.0 \\ 0 & Otherwise \end{cases}$$

Variograms were generated for the grade indicator. A summary of the indicator variogram parameters is displayed in Table 14-7.

Table 14-7: Summary of the Indicator Variography

Indicator	Direction		Nugget effect	Sill 1	Range 1 (m)	Sill 2	Range 2 (m)	Sill 3	Range 3 (m)
	Major	-00°→355°			10		35		400
IND	Semi-major	-85°→265°	0.2	0.46	15	0.2	60	0.14	180
	Minor	00°→355°			3		25		30

The probability (IND) that the block grade was above or below 1g/t Au threshold was estimated using Ordinary Kriging (OK) into the blocks. After visual and statistical examination of the drillhole data against the probability estimates, a probability of 0.40 (40%) was selected to discriminate the lower grade and higher-grade blocks. The blocks and the drillhole composites above 0.40 were assigned a domain code of 201010 and the remaining blocks and composites were assigned a domain code of 20100 (Figure 14-5).

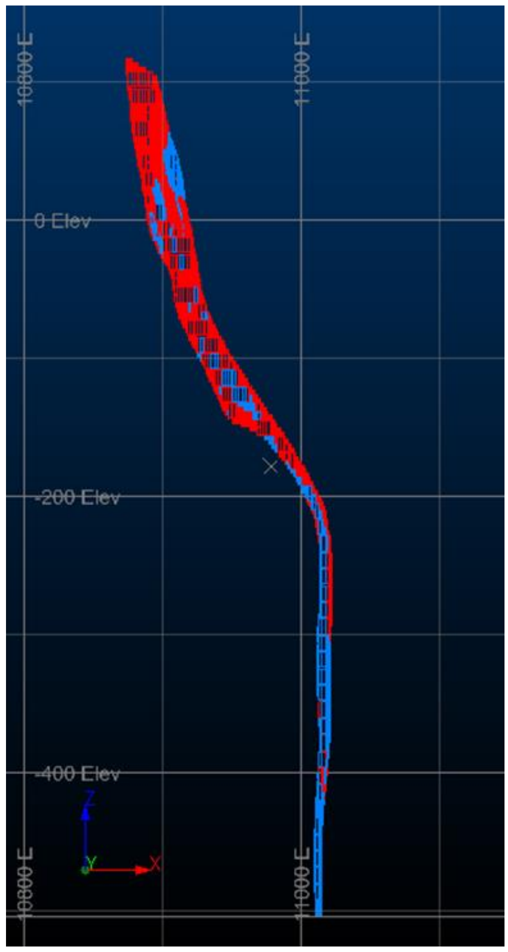


Figure 14-5: Cross Section 5750 mN Showing the Subdomaining of Lode 2010 With The Higher Grade Domain In Red (201010) and the Lower Grade Domain in Blue (20100)

Seventeen mineralised domains were created using this method (Table 14-8).

Table 14-8: Mineralisation Domains

Leapfrog™ dxf	Datamine Name	Description	Domain
Central	Central	Main lode (combined N + S domains)	2010
Central	Central	Main lode high grade	201010
Central	Central	Main lode low grade	20100
Central_FW	Central_FW	Main lode FW (combined N + S domains)	2040
Central_HW	Central_HW	Main lode HW	2030
Central_Mid_HW	Central_Mid_HW	Intermediate lode	2020
Eastern	Eastern	Eastern lode	4010
Eastern_HW	Eastern_HW	Eastern HW lode	4020
West	West	West lode	6010
West_N	West_N	Small lode at nth end of deposit	6020
West_FW	West_FW	West FW lode	6030
West_FW2	West_FW2	West FW lode	6040
West_HW	West_HW	West HW lode series	6050
West_HW2	West_HW2	West HW lode series	6120
West_HW3	West_HW3	West HW lode series	6130
West_HW4	West_HW4	West HW lode series	6140
West_HW5	West_HW5	West HW lode series	6150
West_HW6	West_HW6	West HW lode series	6160
West_HW7_updated	West_HW7_v2	West HW lode series	6270

14.6.2 Data Conditioning

Data for the Mineral Resource is comprised of DD and RC drillholes, as well as a proportion of underground channel chip sample data from either face, wall or back exposures. Using Datamine software, the data was flagged inside the 3D wireframes and coded by domain. A composite length of 1m was selected as appropriate; however, prior to compositing, it was noted that many samples had sample lengths exceeding 1.5m, including approximately 27% (by length) of samples which exceeded 3.0m. After investigation by MGBL geologists, these samples were determined to be predominantly underground channel samples or intercepts from mineralised fill material from within mined voids and were included. Compositing of these larger samples to 1m has the potential to bias the statistical and variography analysis and as such, samples greater than 3.01m were excluded from this analysis.

All samples were composited to 1m using a best-fit approach using a minimum composite length of 0.50m. Comparisons between the raw and composited sample lengths and grade (metal) were used to validate the compositing process. Naïve composite statistics for all samples is presented in Table 14-9Table 14-9. The coefficient of variation (CoV) which measures the variability in a dataset is the ratio between the standard deviation and the mean. Generally, the CoV for each domain is more than 1.5, relatively high for shear-hosted gold mineralisation with the exception of Domains 6010, 6020, 6130 indicating high variability in the data set. Domain 6020 has the lowest CoV of 0.33 whilst Domain 4010 has the highest CoV of 3.36.

Table 14-9: Composite Statistics

Domain	Samples	Minimum	Maximum	Mean	Standard deviation	CoV
2010	16398	0.001	183.00	2.62	5.33	2.04
201010	9964	0.001	183.00	3.91	6.41	1.64
20100	6434	0.001	74.00	0.58	1.57	2.72
2020	224	0.005	15.20	1.40	2.26	1.62
2030	2364	0.005	190.00	3.23	9.87	3.05
2040	1622	0.001	44.37	1.12	1.95	1.74
4010	2695	0.001	126.00	2.04	6.87	3.36
4020	868	0.005	98.34	1.57	4.23	2.70
6010	2395	0.001	44.71	2.02	2.64	1.31
6020	25	0.27	0.73	0.39	0.13	0.33
6030	1159	0.005	17.60	1.67	2.03	1.22
6040	162	0.005	12.30	1.17	1.49	1.28
6050	557	0.005	21.80	1.44	2.17	1.51
6120	289	0.005	37.21	1.38	3.12	2.27
6130	240	0.005	20.80	2.24	3.17	1.42
6140	138	0.005	31.75	2.26	4.83	2.13
6150	201	0.005	23.00	2.09	3.13	1.49
6160	271	0.005	52.65	3.00	5.31	1.77
6270	517	0.005	52.64	3.21	5.63	1.75
0	134312	0.001	98.35	0.08	0.67	8.83

Top-cut analysis was completed using a combination of approaches, including examination of the grade distributions (histograms and probability plots), domain statistics and population disintegration. Although many of the statistical measures of outlier grade distribution were not extreme, most domains contained some outlier values when compared with the overall domain population. As such, top-cutting (or capping) of these identified outliers was completed to minimise the local impact of these samples on the estimate. The top-cuts selected, and the impact on the domain statistics for all composites, are presented in Table 14-10.

Table 14-10: Domain Top-Cuts

Domain	Top-cut	Percentile	Number cut	Mean			CoV		
				Un-cut	Cut	Diff%	Un-cut	Cut	Diff%
0	1	98.70%	1686	0.08	0.05	30.4%	8.85	2.75	69.2%
2010	40	99.70%	49	2.60	2.52	2.9%	2.01	1.65	17.8%
201010	80	99.9%	8	3.91	3.88	0.8%	1.64	1.51	7.8%
20100	8	99.5%	29	0.58	0.54	7.4%	2.72	1.56	42.7%
2030	40	98.90%	26	3.16	2.73	13.5%	2.08	2.13	30.9%
2040	20	99.90%	2	1.11	1.10	1.6%	1.40	1.50	13.9%
4010	20	98.70%	34	2.05	1.65	19.3%	3.39	1.87	44.9%
4020	20	98.90%	9	1.56	1.40	10.0%	2.72	1.59	41.3%
6010	20	99.90%	3	2.01	2.00	0.6%	1.31	1.25	4.6%
6120	15	98.60%	4	1.38	1.28	7.0%	2.27	1.81	20.4%
6140	20	98.60%	2	2.26	2.09	7.4%	2.13	1.86	12.7%
6160	25	99.30%	2	3.00	2.82	6.1%	1.77	1.40	20.9%
6270	25	99.00%	5	3.21	3.04	5.1%	1.75	1.51	13.9%

14.6.3 Variography

Variography for the mineralised domains was completed in Supervisor v8.14 using normal score transformed data, with the variogram model back-transformed prior to use. For domains with insufficient samples and similar orientations (6120, 6130, 6140, 6150 and 6160), these domains were combined for both the variography and estimation.

Although there is an overall arcuate geometry to the more strike extensive domains, the rate of change did not justify the use of an unfolding approach and the variography was prepared in Euclidean space. The downhole variogram was used to define the nugget component of the modelled variogram and the spatial variograms were modelled using spherical structures. All back-transformed variogram models are presented in Table 14-11.

Table 14-11: Domain Variogram Models (Back-Transformed)

Domain	Direction		Nugget effect	Sill 1	Range 1m	Sill 2	Range 2m	Sill 3	Range 3m
	Major	-00°→355°			25		125		320
0	Semi-major	-80°→265°	0.223	0.535	20	0.116	120	0.126	165
	Minor	-15°→352°			6		15		23
	Major	-00°→355°			17		44		437
201010	Semi-major	-80°→265°	0.352	0.538	22	0.049	105	0.061	200
	Minor	-10°→353°			4		20		50
	Major	-00°→355°			8		40		280
20100	Semi-major	-85°→260°	0.217	0.653	10	0.076	60	0.054	110
	Minor	-10°→171°			5		20		25
	Major	-00°→355°			45		115		
2020	Semi-major	-85°→085°	0.254	0.487	15	0.259	20		
	Minor	-35°→172°			5		6		
	Major	00°→345°			15		65		120
2030	Semi-major	-80°→075°	0.19	0.405	35	0.28	70	0.125	155
	Minor	-05°→164°			4		9		10
	Major	-00°→340			33		125		
2040	Semi-major	-90°→000	0.24	0.475	35	0.285	90		
	Minor	-30°→160			2		4		
	Major	-00°→340			20		145		
4010	Semi-major	-60°→070°	0.301	0.404	5	0.295	65		
	Minor	-013°→348			11		12		
	Major	-00°→340			40		100		
4020	Semi-major	-70°→070°	0.247	0.439	110	0.314	115		
	Minor	-37°→356			5		10		
	Major	-00°→355°			10		85		
6010	Semi-major	-80°→265°	0.235	0.619	9	0.146	35		
	Minor	-44°→185°			4		5		
	Major	00°→345°			8		25		55
6030	Semi-major	-90°→000	0.175	0.475	15	0.23	40	0.12	60
	Minor	-70°→345°			2		4		6
	Major	-00°→000			5		40		50
6050	Semi-major	-75°→270	0.244	0.382	10	0.232	27	0.142	30
	Minor	-69°→224			2		8		14
	Major	-00°→340			5		50		
6100	Semi-major	-75°→250	0.378	0.416	4	0.206	12		
	Minor	-57°→184			8		11		
	Major	-00°→315			20		75		
6270	Semi-major	-85°→225	0.179	0.375	20	0.446	45		
	Minor	-65°→304			4		5		

14.6.4 Block Model

A block model was created in Surpac utilising the block model parameters presented in Table 14-12. The block model is not rotated and was created using the local mine grid. Comparison between the domain wireframes and block model volumes confirms that these parameters appropriately capture the mineralisation.

Table 14-12: Main Pit Block Model Parameters

	Northing (mN)	Easting (mE)	Elevation (mRL)
Minimum coordinates	4,500	10,300	-504
Maximum coordinates	7,000	11,700	409
Parent block size (m)	20.0	5.0	24.0
Minimum block size (m)	5.0	0.625	3.0

Kriging Neighbourhood Analysis (KNA) was undertaken using Supervisor v8.14 to ensure the optimal block size and estimation parameters (minimum and maximum numbers of informing samples, search radius and discretisation) were selected. Domain 2010, the Central domain which had the greatest gold accumulation (volume x mean grade), was selected to test the optimal block size. Using the domain variography and several block locations, comparative metrics (kriging efficiency, slope of regression and number of negative weights) were analysed. In summary, a block size of 5 mE x 20 mN x 24 mRL was selected, with testing on other significant domains supporting its suitability.

The number of informing samples were then tested for the selected block size and consistently a minimum of 8 samples was required. No significant improvement in the estimation metrics was observed for any of the zones once there were at least 34 samples, and so these limits were selected as the minimum and maximum number of informing samples for estimation.

14.6.5 Grade Estimation

The block model was exported into Datamine Studio RM for estimation of gold using OK. No other elements have been estimated. Due to the arcuate overall geometry of the mineralisation, Dynamic Anisotropy (DA) was adopted for grade estimation. DA uses local orientation information to transform the search and variogram ellipses for estimation for each block, optimising the estimation for domains with varying geometry like that at Main Pit. The mineralised wireframes were used to estimate the true dip and true dip direction (Figure 14-6) for each domain.

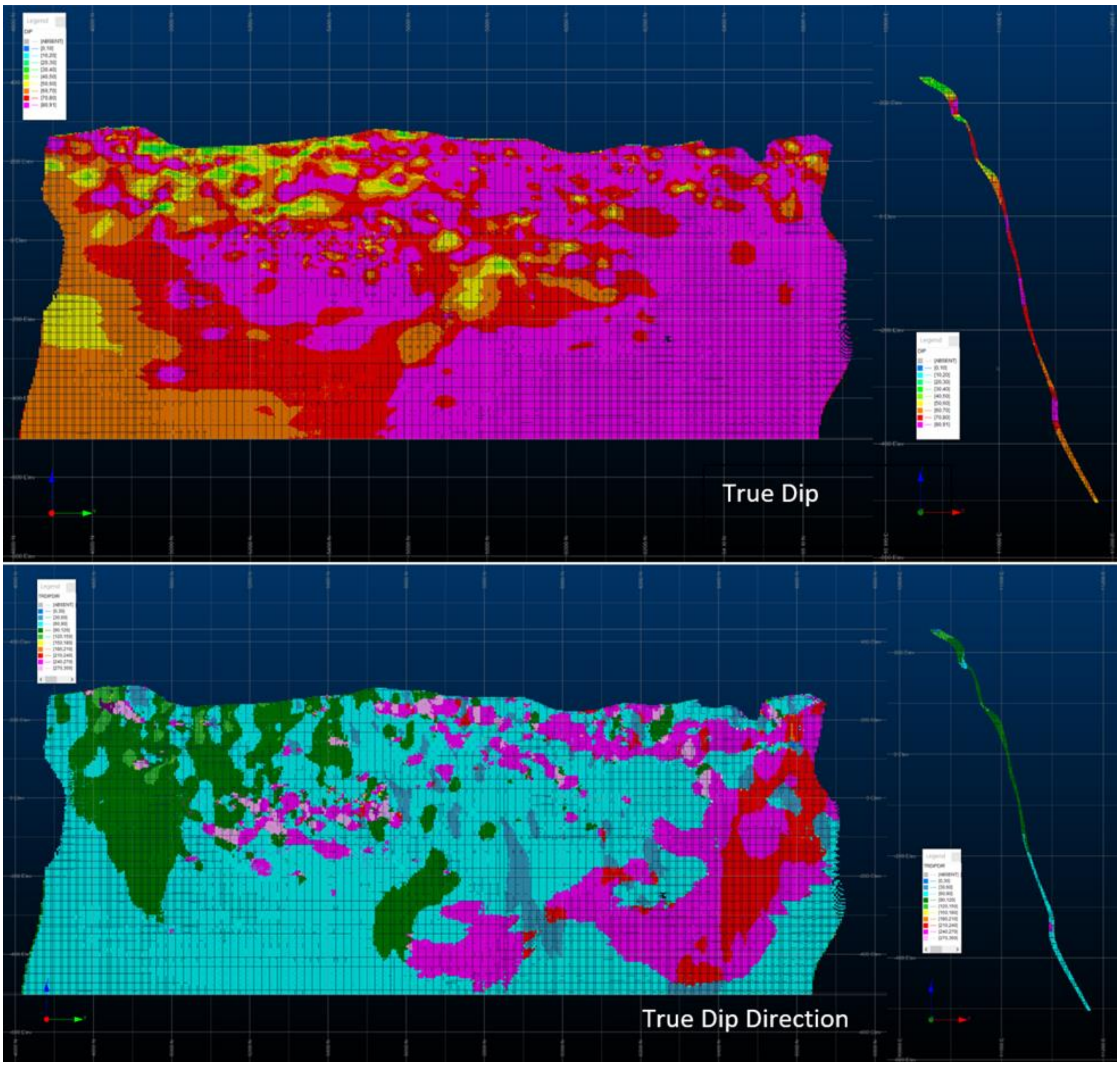


Figure 14-6: Domain 2010 Long-Section and Cross-Section Views Showing True Dip (Upper) and True Dip Direction (Lower)

Search parameters are presented in Table 14-13. A total of three search passes were used; if blocks remained un-estimated after the final pass blocks were assigned the grade of the nearest informed block. Of the total model, 77% (by volume) was estimated in the first pass, 10% in the second pass, 8% in the third pass and 5% had grades assigned. Where the grade of the assigned block was greater than the average grade of the domain the blocks were given the average grade, this accounted for 1% of the blocks.

Table 14-13: Search Parameters

Domain	Max Key	Pass 1	Pass 2	Pass 3
		8 to 34 Samples	**6 to 34 Samples**	**4 to 34 Samples**
201010	-	195m x 100m x 30m	243.75m x 125m x 37.5m	292.5m x 150m x 45m
20100	3	455m x 188m x 35m	568.75m x 235m x 43.75m	682.5m x 282m x 52.5m
2020	3	115m x 20m x 6m	143.75m x 25m x 7.5m	172.5m x 30m x 9m
2030	30	120m x 155m x 10m	150m x 193.75m x 12.5m	180m x 232.5m x 15m
2040	4	125m x 90m x 4m	156.25m x 112.5m x 5m	187.5m x 135m x 6m
4010	4	145m x 65m x 12m	181.25m x 81.25m x 15m	217.5m x 97.5m x 18m
4020	2	100m x 115m x 10m	125m x 143.75m x 12.5m	150m x 172.5m x 15m
6010	4	85m x 35m x 5m	106.25m x 43.75m x 6.25m	127.5m x 52.5m x 7.5m
6030	4	55m x 60m x 6m	68.75m x 75m x 7.5m	82.5m x 90m x 9m
6040	4	55m x 60m x 6m	68.75m x 75m x 7.5m	82.5m x 90m x 9m
6050	3	50m x 30m x 14m	62.5m x 37.5m x 17.5m	75m x 45m x 21m
6100	3	50m x 12m x 11m	62.5m x 15m x 13.75m	75m x 18m x 16.5m
6270	4	75m x 45m x 5m	93.75m x 56.25m x 6.25m	112.5m x 67.5m x 7.5m
0	3	320m x 165m x 20m	320m x 165m x 20m	320m x 165m x 20m

14.6.6 Block Model Validations

The techniques adopted for the validation of the block estimates range from global mean comparison of estimates and composites using classical statistics, visual comparisons and swath analyses between the block model estimates and the composite data used to inform them.

GLOBAL MEAN COMPARISONS

Global domain mean comparisons between the declustered top-cut composites and the block model estimates are presented in Table 14-14.

Table 14-14: Global Composite and Block Estimate Comparisons

Domain	No Comps	Estimated Mean	Topcut Comp Mean	Declustered Topcut Comp Mean	% Diff with Topcut Mean	% Diff with Topcut Declustered Mean
201010	9955	3.38	3.60	3.27	-6.4%	3.2%
20100	6421	0.66	0.63	0.71	4.8%	-6.9%
2020	224	1.28	1.40	1.24	-8.6%	2.7%
2030	2329	2.81	2.79	2.43	0.6%	15.7%
2040	1623	1.08	1.10	1.05	-1.4%	3.1%
4010	2675	1.60	1.67	1.64	-4.3%	-2.4%
4020	868	1.36	1.46	1.46	-6.4%	-6.6%
6010	2380	2.11	2.00	1.94	5.0%	8.5%
6030	1160	1.51	1.67	1.32	-9.5	14.2%
6040	162	1.21	1.17	1.25	3.2%	-3.2%
6050	557	1.60	1.45	1.58	10.5%	0.9%
6100	1139	1.87	2.09	1.51	-10.6	23.6%
6270	517	2.15	3.04	2.18	-29.4%	-1.4%

It is observed from Table 14-14 that the global correspondence between the estimates and composites in the domains is satisfactory.

VISUAL CHECKS

Initial validation consisted of a visual comparison of the input samples and the estimated block grade in cross section and plan view. The block estimates and sample composites data were superimposed on each other, and colour coded with the same legend for Au for comparison purposes. Visual checks of the model against the sample data used to inform the estimates shows that the estimated blocks reasonably match the sample data used to inform them particularly in areas that have significant data to inform the estimates. All the visual checks confirm that the block estimates are a reasonable representation of the informing data considering the current level of geological and geostatistical understanding of areas within the reach of the definition drilling as shown in Figure 14-7 and Figure 14-8.

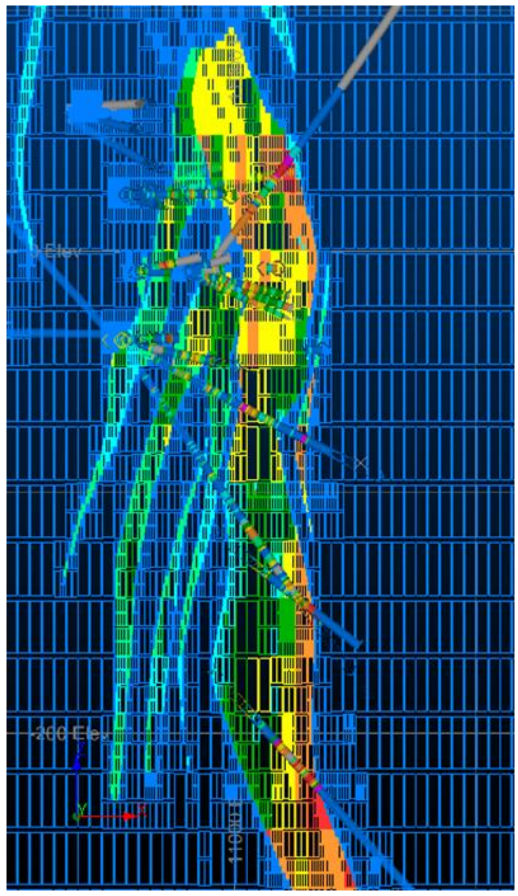


Figure 14-7: Comparison Between Composites and Block Grades in Cross Section (5235 mN)

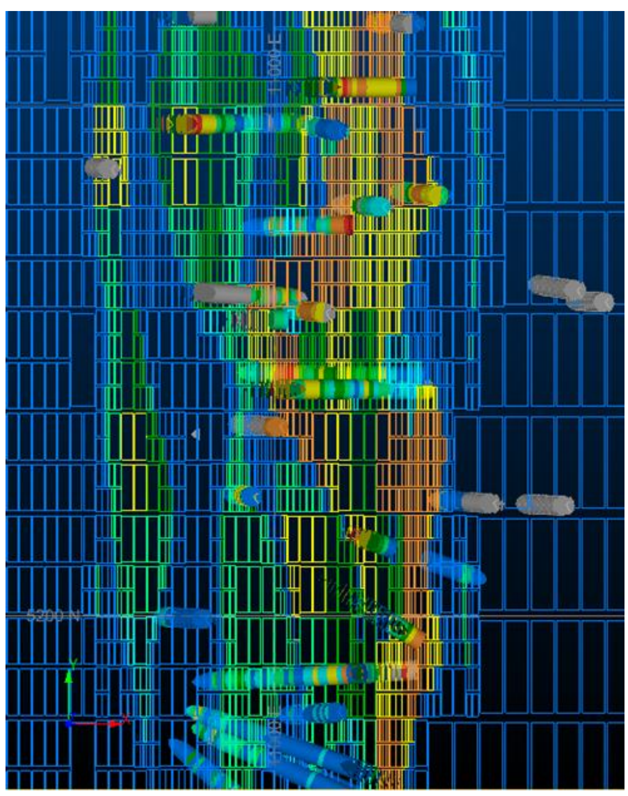


Figure 14-8: Visual Comparison of Samples and Block Model in Plan View (0 Rl)

SWATH ANALYSIS

Swath plots for local scale comparison i.e., validation between the averages of the estimated block contents with the averages of the clustered samples were generated. This validation was performed for each domain along easting, northing and elevation dimensions. An example from domain 201010 is presented in Figure 14-9.

The results of the swath validation for sample data and block model estimates exhibited an expected degree of smoothing due to kriging. The estimated values tend to follow the sample values reasonably well, particularly in well sampled areas. But as you move further away from the well sampled areas and into areas that are poorly sampled (low drilling density) and towards deeper portions of the deposit, the estimates are poorly informed.

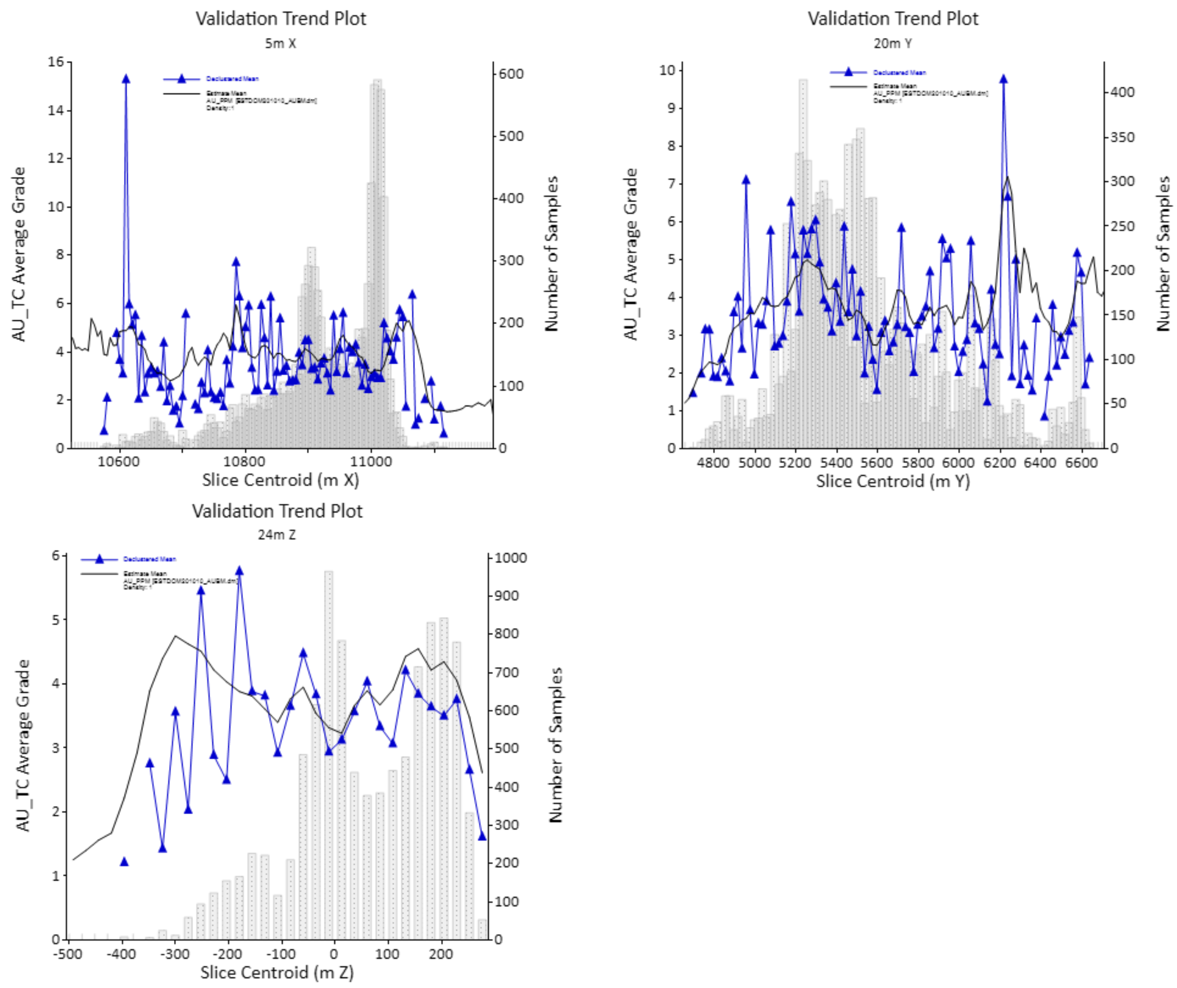


Figure 14-9: Swath Plots for Domain 201010; Easting (Top Left), Northing (Top Right) and Elevation (Bottom)

14.6.7 Depletion

The 2022 Mineral Resource has been depleted for both the open pit and underground workings to 31st August 2017. There have been no mining activities since 2017.

14.6.8 Mineral Resource Classification

The 2022 Main Pit Mineral Resource has been classified into Indicated and Inferred categories in accordance with the JORC Code (2012). There are no material differences between the definitions of Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code (2012). Currently no Measured Mineral Resources have been classified at Main Pit. The Mineral Resource QP endorses the classification applied at Main Pit.

The default classification for the resource is Inferred. Indicated Mineral Resources have been defined within a contiguous zone where the approximate drillhole density is less than a nominal 30m to 50m spacing, in conjunction with a kriging efficiency greater than 30%. Where there is a reduced confidence in the interpretation and/or grade estimate or an average grade was assigned, the blocks are classified as Inferred. The Mineral Resource QP endorses the classification applied on the Main Pit. Figure 14-10 and Figure 14-11 show the classification first as a long section and then as a cross section.

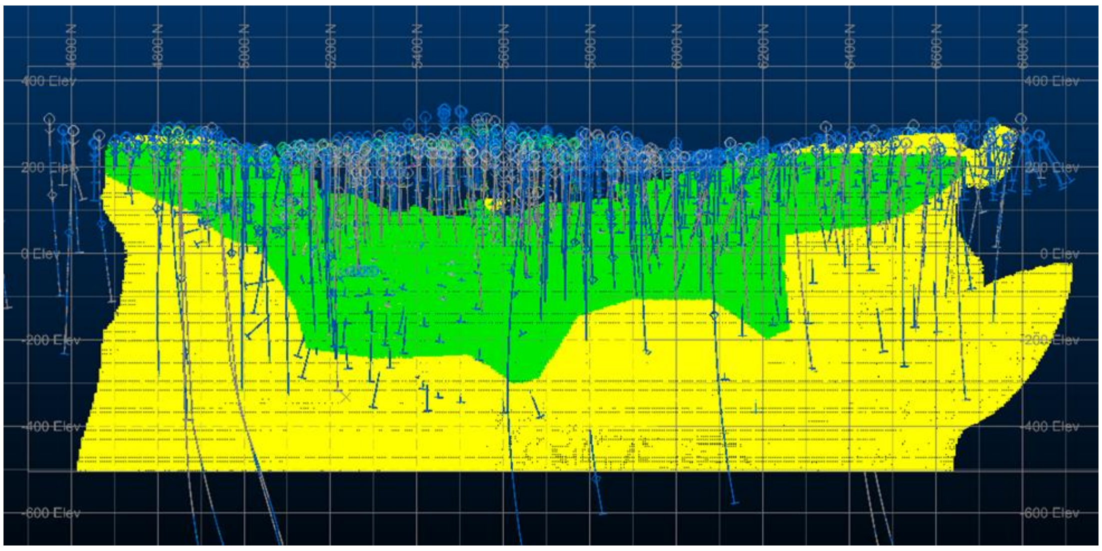


Figure 14-10: Long Section of Applied Mineral Resource Classification (Green – Indicated and Yellow – Inferred)

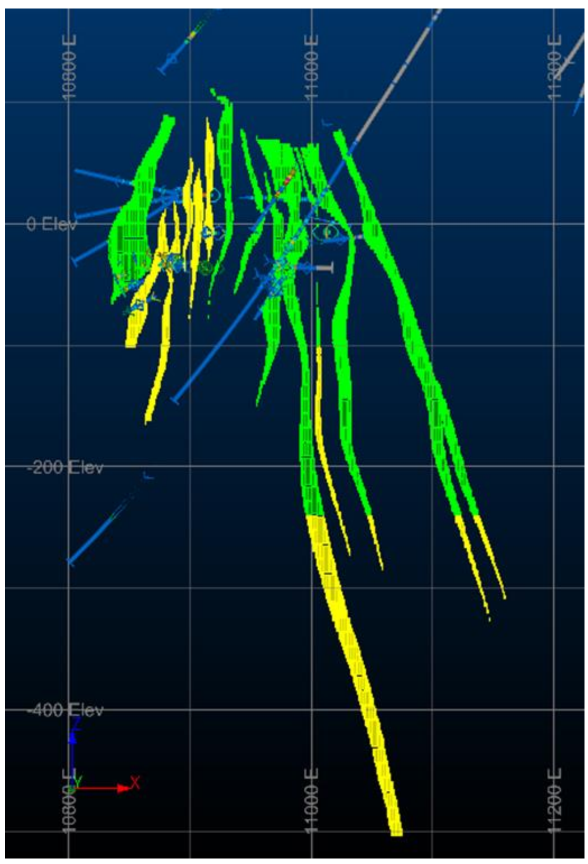


Figure 14-11: Cross Section (5525 mN) of Resource Classification (Green – Indicated and Yellow – Inferred)

14.6.9 Mineral Resource Reporting

The Bibiani Main Pit Mineral Resource estimates are reported according to the CIM Definition Standards. The Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them. Estimates (tonnes and content) for the operations and summaries quoted in this report are on a 100% basis. The QP who has signed off on the Mineral Resource has the minimum requirements established x international mining codes. The Mineral Resource for the Bibiani Main Pit, as reported at 28th February 2022, is presented in Table 14-15. The Mineral Resource has been depleted for both historical open pit and underground development as at 31st August 2017 and has been reported above a 0.5g/t gold cut-off and constrained by a RPEEE US$1,950 Resource optimised pit shell.

Table 14-15: Total Mineral Resource of Bibiani Main Pit as at 28th February 2022 at 0.5g/t Au Cut-Off

Classification	Tonnage (Mt)	Au Grade (g/t)	Au Content (Moz)
Measured	-	-	-
Indicated	30.20	2.23	2.170
Measured + Indicated	**30.20**	**2.23**	**2.170**
Inferred	3.90	2.69	0.338

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them.*

4. *1 troy ounce = 31.1034768g.*
5. *A 0.5g/t gold cut-off has been applied and constrained by a RPEEE US$1,950 (metal price) Resource pit shell.*
6. *A density of 2.75t/m³, 2.50t/m³ and 2.00t/m³ on fresh, transition and oxidised sediments have been applied respectively.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*

14.6.10 Comparison with the Previous Mineral Resource

The most recent Mineral Resource for the Bibiani Main Pit was reported in the NI 43-101 Asante Gold Corporation Technical Report on the Bibiani Gold Mine dated 7 November 2021. This Mineral Resource was based on the Bibiani Mineral Resource model generated by Optiro in 2017. This model was generated to be suitable for an underground extraction method where its wireframes were generated at a cut-off grade of around 1g/t Au.

The November 2021 Mineral Resources represent material to be mined via open pit and were thus reported above a cut-off grade of 0.65g/t gold inside an economic pit shell defined at a gold price of US$1,950. The Mineral Resource statement is presented in Table 14-16.

Table 14-16: Bibiani Main Pit Mineral Resources Reported as at 18th October 2021 at 0.65g/t Au cut-off.

Classification	Tonnage (Mt)	Au Grade (g/t)	Au Content (Moz)
Measured	-	-	-
Indicated	19.6	2.76	1.740
Measured + Indicated	**19.6**	**2.76**	**1.740**
Inferred	8.4	2.79	0.751

Notes:
1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *1 troy ounce = 31.1034768g.*

The objective of the 2022 MRE was to create a model suitable to be mined via an open pit method and thus a remodelling exercise was undertaken where wireframes were generated at a cut-off of 0.3g/t gold. The 2 models have been compared and the outcome of the different cut-off grades has resulted in a drop in grade of 19%, an increase of tonnes of 54% and an overall increase in ounces of 25% for the Indicated portion.

14.7 Walsh Strauss Satellite Pits

14.7.1 Geological and Mineralisation Modelling

The Walsh, Strauss and Strauss South Deposits, collectively termed the Satellite Deposits are hosted within a sequence volcanoclastic sediments. A series of felsic intrusive parallel the foliation and mineralisation. The geometry of the mineralisation is structurally controlled, and is hosted in a steep, north to northeast trending shear corridor ranging in width of 100m to 200m. In general, mineralisation lodes dip east at between 60° to 80°.

3D mineralisation interpretations were generated suitable for open pit mining studies using Leapfrog™ software based upon the available DD and RC drilling. An EDA and review of the spatial distribution of the lower grade material was carried out to assess if a lower cut-off would produce coherent interpretations. After statistical analysis of the assay data a nominal cut-off value of 0.3g/t Au was selected. Mineralisation wireframes were created using this cut-off and a minimum downhole thickness of 2m. Up to three metres of internal waste were included in domains to maintain continuity. Interpretations were geology based, guided by the presence of a logged structure, with or without quartz veining, and combined with gold grade. Previous MRE modelling was used as guide to create the current wireframes.

A total of 25 mineralisation domains (Figure 14-12, Figure 14-13 and Table 14-17) have been identified at Walsh Strauss, seven at Walsh, five at Strauss South and 13 at Strauss. Domains at Walsh (5000 to 5500) strike ENE, dip steeply to the east and are continuous over 600m. The domains at Strauss South (6100 to 6500) curve around from ENE to N-S over 400m and dip steeply to the east. At Strauss (7100 to 7460) the domains strike N-S and dip steeply to the east. Mineralisation is continuous over 900m of strike length.

High grade mineralisation at Walsh and Strauss is delineated utilising 2D strings to develop subdomains.

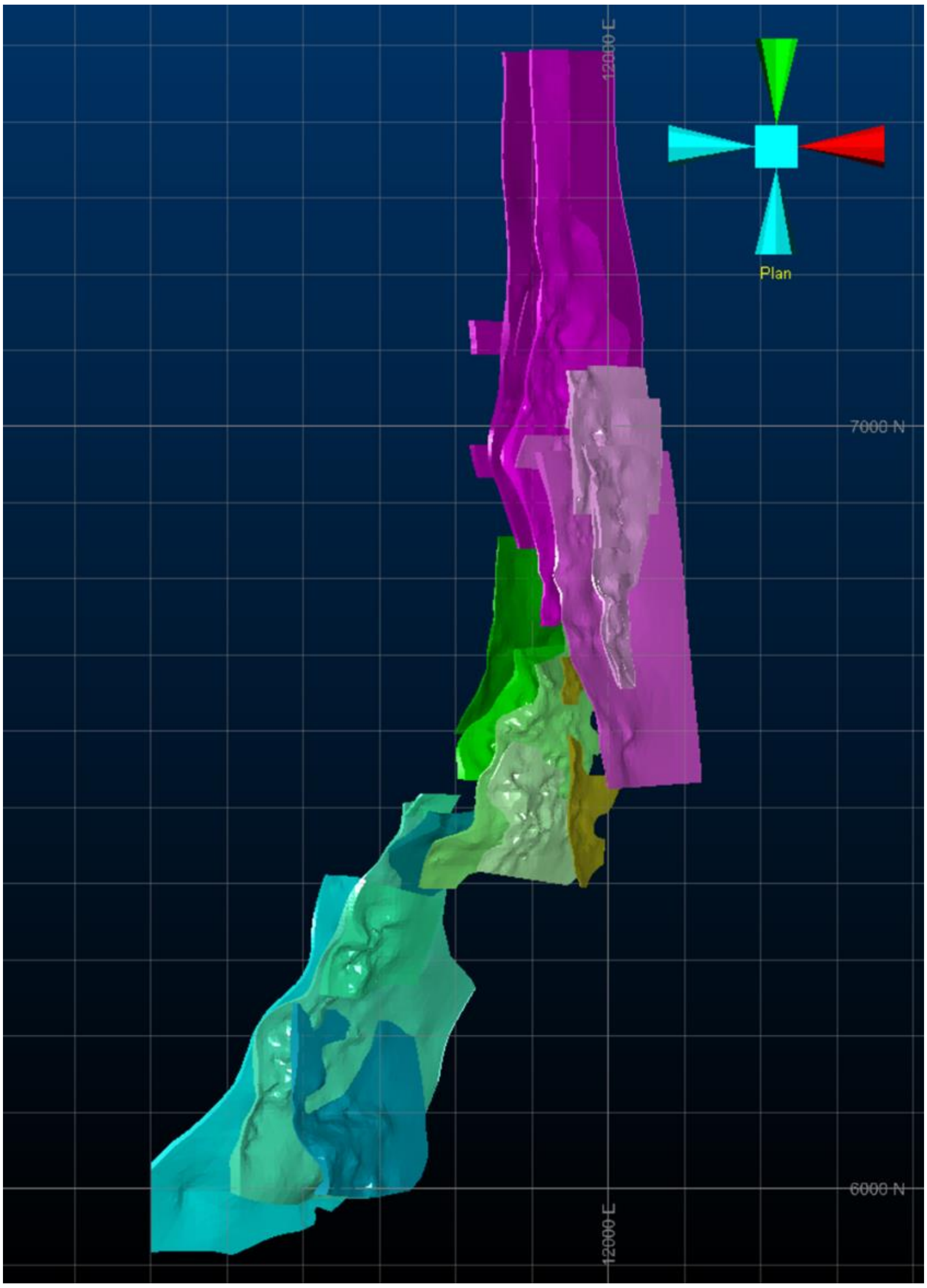


Figure 14-12: Plan View of Domains at Walsh Strauss. Blue = Walsh Domains; Green = Strauss South; Purple = Strauss

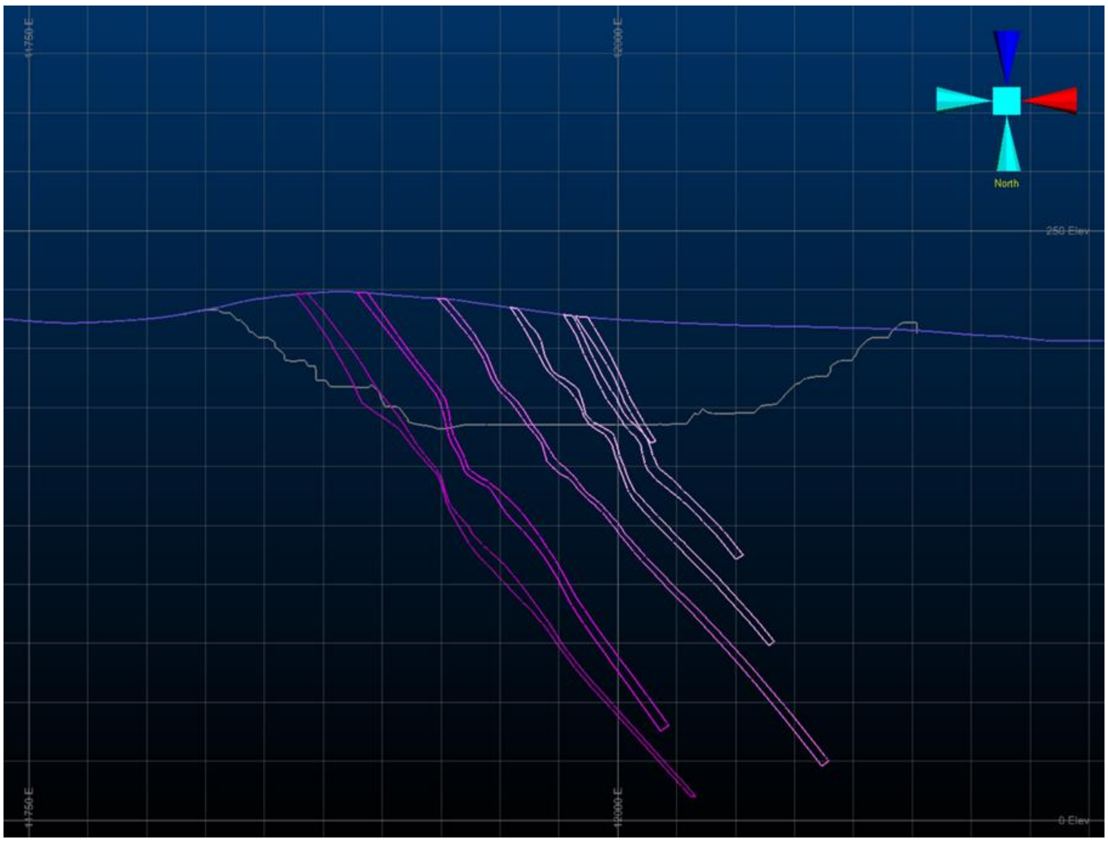


Figure 14-13: Cross Section (6895mn) Through the Strauss Domains Showing Pre-Mining Topography, as Mined Pit Shell and Mineralisation Domains

Table 14-17: The Wireframe Names and Corresponding Domain Numbers used to Code the Wireframes and Block Model

Name	Domain Number
Walsh Main splay	5100
Walsh SW	5200
Walsh SE	5300
Walsh SE HG	5301
Walsh NE	5400
Walsh NE HG	5401
Walsh NE Vertical	5500
Strauss South 01	6100
Strauss South 02	6200
Strauss South 03	6300
Strauss South 04	6400
Strauss South 05	6500
Strauss 1A	7100
Strauss 1A HG	7101
Strauss 1B	7150
Strauss 1B HG	7151
Strauss 1A_E	7160
Strauss 1A_W	7170
Strauss 1C	7180
Strauss 2A	7200
Strauss 2B	7250
Strauss 3A	7300
Strauss 4A	7400
Strauss 4A_E	7450
Strauss 4A_W	7460
Waste	9999

14.7.2 Data Conditioning

Data for the Mineral Resource was provided as an Access database, where end tables were exported in .csv format for use. Assays from drillhole intervals with lithology logged as FILL were excluded from the data set used to interpret and estimate the Mineral Resource. Using Datamine Studio RM software, the data was flagged inside the three-dimensional wireframes and coded by domain. A composite length of 1m was selected as appropriate; however, prior to compositing, it was noted a small number of samples were either smaller (5%) or larger (4%) than the selected composite length. The minimum length is 0.5m and the maximum length is 1.5m. Compositing of longer samples to 1m have the potential to bias the statistical and variography analysis, however the impact of these samples at Walsh Strauss is not considered material.

All samples were composited to 1m using a best-fit approach using a minimum composite length of 0.50m. Comparisons between the raw and composited sample lengths and Au grade were used to validate the compositing process. Naïve composite statistics for all samples and the subset used for variography are presented in Table 14-18. Overall, the CoV for each domain are considered relatively high for shear-hosted gold mineralisation with all domains having large positive coefficients of skewness indicative of high variability in the data. Domain 5200 has a considerably high CoV of 14.04 whilst Domain 7460 has the lowest CoV of 1.34.

Table 14-18: Walsh Strauss 1m Composite Statistics of Gold Grade.

Domain	Samples	Minimum	Maximum	Mean	Standard Deviation	Variance	CoV
5000	2288	0.0005	323.10	1.88	9.02	81.29	4.79
5100	479	0.0005	15.40	0.97	1.76	3.10	1.82
5200	1326	0.0005	453.30	0.97	13.69	187.37	14.04
5300	597	0.0005	79.40	1.70	5.33	28.41	3.13
5400	414	0.0005	15.09	0.59	1.35	1.82	2.30
5500	29	0.0005	3.77	0.30	0.75	0.57	2.55
6100	279	0.0005	7.89	0.41	0.75	0.57	1.85
6200	481	0.0005	55.51	1.12	4.30	18.51	3.84
6300	1273	0.0005	31.43	0.90	1.91	3.66	2.13
6400	441	0.0005	6.93	0.27	0.70	0.49	2.62
6500	283	0.0005	49.20	0.86	4.24	17.95	4.93
7100	417	0.0005	102.78	2.29	8.20	67.17	3.58
7150	403	0.0005	78.62	2.45	6.69	44.72	2.73
7160	235	0.0005	24.41	0.33	1.65	2.72	5.01
7170	172	0.0005	5.60	0.22	0.73	0.54	3.37
7180	153	0.0005	16.42	0.93	1.55	2.39	1.66
7200	544	0.0005	46.61	1.15	3.54	12.55	3.07
7250	87	0.0005	27.76	1.01	3.28	10.73	3.26
7300	1109	0.0005	73.84	1.12	2.70	7.31	2.42
7400	982	0.0005	34.17	0.90	2.32	5.38	2.58
7450	129	0.0005	4.56	0.29	0.57	0.33	1.95
7460	96	0.0005	4.09	0.55	0.74	0.55	1.34

Note High Grade Domains are Absent from this Analysis and are Incorporated into the Low Grade Data.

Top-cut analysis was completed using a combination of approaches, including examination of the grade distributions (histograms and probability plots), domain statistics and population disintegration. Although many of the statistical measures of outlier grade distribution were not extreme, the majority of domains contained some outlier values when compared with the overall domain population. As such, top-cutting of these identified outliers was completed to minimise the local impact of these samples on the estimate. The top-cuts selected, and the impact on the domain statistics for all composites and the variography subsets, are presented in Table 14-19.

Table 14-19: Walsh Strauss Domain Top Cuts

Domain	No. Composites	Top-cut			Mean			Coefficient of Variation		
		Value	# Cut	Percentile	Uncut	Cut	% diff.	Uncut	Cut	% diff.
5000	1651	15	6	99.7%	1.03	0.84	18.3%	7.57	1.96	74.1%
5001	637	30	19	97.0%	3.87	3.11	19.6%	2.75	1.89	31.0%
5100	479	10	4	99.2%	0.93	0.89	3.5%	1.92	1.75	9.4%
5200	1326	5	16	98.9%	0.94	0.4	57.2%	14.26	1.9	86.7%
5300	346	7	7	98.1%	1.01	0.69	31.8%	4.66	1.98	57.6%
5301	251	20	9	96.4%	2.63	2.34	10.8%	2.23	1.93	13.4%
5400	240	no top cut			0.09			3.17		
5401	174	no top cut			1.26			1.46		
5500	29	2	1	96.0%	0.34	0.27	20.8%	2.42	1.97	18.4%
6100	279	no top cut			0.41					
6200	481	10	8	98.3%	1.12	0.81	28.1%	3.84	1.98	48.3%

Domain	No. Composites	Top-cut			Mean			Coefficient of Variation		
		Value	# Cut	Percentile	Uncut	Cut	% diff.	Uncut	Cut	% diff.
6300	1273	15	6	99.5%	0.89	0.86	3.3%	2.14	1.83	14.1%
6400	441	2	10	97.7%	0.27	0.23	15.5%	2.62	1.99	24.0%
6500	283	5	6	97.9%	0.86	0.48	44.8%	4.92	1.9	61.4%
7100	285	10	1	99.6%	0.74	0.57	22.8%	4.74	1.72	63.8%
7101	132	50	3	97.7%	5.65	5.15	8.8%	2.31	1.97	14.9%
7150	197	7	2	99.0%	0.52	0.49	5.3%	2.1	1.91	9.4%
7151	206	45	3	98.6%	4.28	4.06	5.1%	2.11	1.86	11.6%
7160	235	3	3	98.7%	0.35	0.24	30.2%	4.76	1.74	63.3%
7170	172	2.5	5	96.9%	0.23	0.18	20.6%	3.3	2.75	16.6%
7180	153	10	1	99.4%	0.91	0.87	4.5%	1.69	1.33	0.6%
7200	544	8	18	96.8%	1.12	0.84	24.4%	3.13	2.13	31.9%
7250	87	6	4	95.5%	0.98	0.66	32.7%	3.32	1.93	41.9%
7300	1109	25	1	99.5%	1.11	1.07	3.9%	2.42	1.63	32.7%
7400	982	15	5	99.5%	0.9	0.84	7.1%	2.57	1.98	29.8%
7450	129	no top cut			0.3			1.96		
7460	96	no top cut			0.57			1.35		

14.7.3 Variography

Variography for the mineralised domains was completed in Supervisor v8.14.1. Parallel, subsidiary, domains utilised variogram orientations borrowed from the main domains. Directions of maximum continuity along strike and down dip fit the overall geology of the mineralised package.

Although there is an overall arcuate geometry, particularly in the Strauss South domains, the rate of change did not justify the use of an unfolding approach, DA was applied during estimation to account for variations in domain orientation. The downhole variogram was used to define the nugget component of the modelled variogram and the spatial variograms were modelled using spherical structures. All variogram models are presented in Table 14-20.

Table 14-20: Variogram Models Applied to the Walsh Strauss

Domain	Rotations	C_0	Structure 1		Structure 2	
			C_1	A_1	C_2	A_2
Walsh	120– axis 3	0.29	0.43	28	0.28	165
	50 – axis 1			28		125
	165 – axis 3			7		10
Strauss South	100 – axis 3	0.30	0.40	30	0.30	50
	50 – axis 1			18		25
	180 – axis 3			4		5
Strauss	90 – axis 3	0.30	0.60	15	0.10	135
	50 – axis 1			9		60
	0 – axis 3			8		10

14.7.4 Block Model

A block model was created in Datamine Studio RM utilising the block model parameters presented in Table 14-21. The block model is not rotated and was created using the local mine grid. Comparison between the domain wireframes and block model volumes confirms that these parameters appropriately capture the mineralisation.

Table 14-21: Walsh Strauss Block Model Parameters

	Northing (mN)	Easting (mE)	Elevation (mRL)
Minimum coordinates	5,850	11,400	-60
Maximum coordinates	7,500	12,150	324
Parent block size (m)	5	10	6
Minimum block size (m)	0	0	0

KNA was undertaken using Supervisor v8.14.1 to ensure the optimal block size and estimation parameters (minimum and maximum numbers of informing samples, search radius and discretisation) were selected. Domain 5000, the main domain at Walsh, was selected to test the optimal block size. Using the domain variography comparative metrics (kriging efficiency, slope of regression and number of negative weights) were analysed. In summary, a block size of 5mE x 20mN x 6mRL was selected, with testing on other significant domains supporting its suitability.

The number of informing samples were then tested for the selected block size, a minimum of 10 provided robust results, this coupled with a maximum of three samples per drillhole ensures at least three holes are used to estimate a block. No significant improvement in the estimation metrics was observed for any of the zones once there were at least 30 samples, and so these limits were selected as the minimum and maximum number of informing samples for estimation.

14.7.5 Grade Estimation

The Au grade was estimated using OK into the mineralised blocks. No other elements were estimated. Variogram parameters are presented in Table 14-20, and search parameters are presented in Table 14-22. A maximum of 3 samples per drillhole were used to ensure that at least three drillholes were informing each block estimate and three search passes were used to inform the blocks. Of the mineralised model, 83% was estimated in the first pass, 13% in the second pass and 4% in the third pass.

DA was adopted for grade estimation to ensure the search ellipse orientation was optimised to the orientation of the wireframe. DA uses local wireframe orientation information to transform the search and variogram ellipses for estimation for each block, the true dip and true dip direction data from the wireframes is estimated into blocks for each domain and used to orient the search ellipse in estimation (Figure 14-14).

Table 14-22: Search Parameters Applied to the Walsh Strauss Estimation

Domain	Pass 1	Pass 2	Pass 3
	10 to 30 Samples	8 to 30 Samples	6 to 30 Samples
Walsh	165m x 125m x 10m	165m x 125m x 10m	330m x 250m x 20m
Strauss South	50m x 25m x 10m	100m x 50m x 20m	200m x 100m x 40m
Strauss	135m x 60m x 10m	270m x 120m x 20m	540m x 240m x 40m

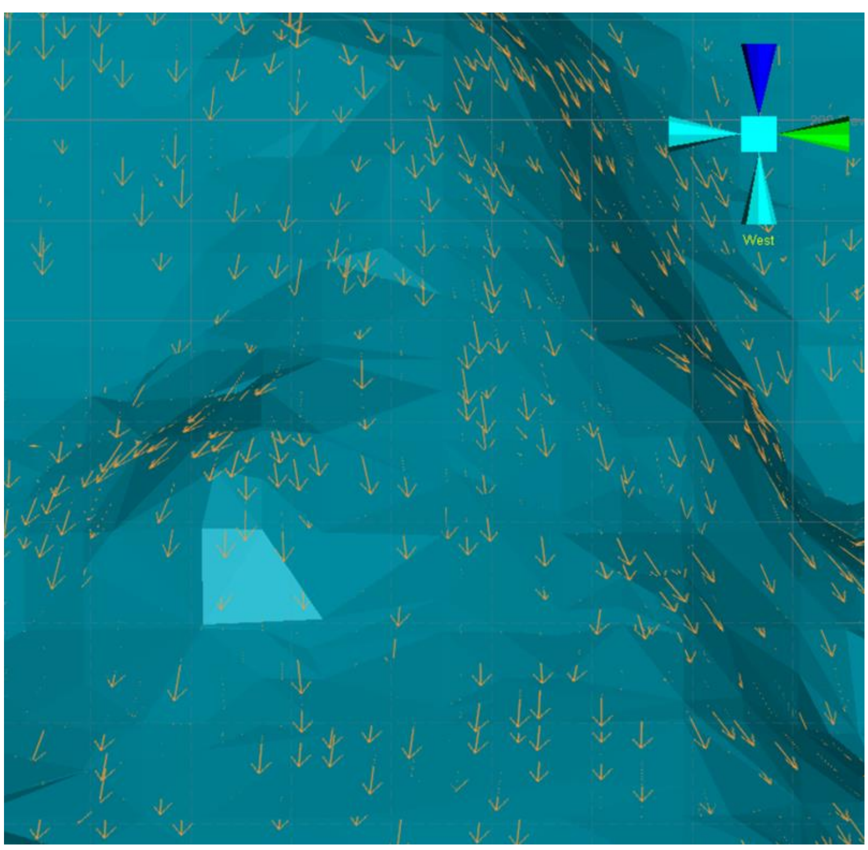


Figure 14-14: Example of Wireframe Dip and Dip Direction Information from Domain 5300 used to Inform the Orientation of the Search Ellipse in Estimation

14.7.6 Block Model Validations

GLOBAL MEAN COMPARISONS

Global domain mean comparisons between the top-cut composites and the block model estimates were also completed and the result are presented in Table 14-23. Composites were also declustered for this comparison.

Table 14-23: Gold Composite and Block Estimate Comparisons

Domain	# Samples	Top-cut Sample Mean	Declustered Sample Mean	Model Mean	Variance to Naive Mean	Variance to Declustered Mean
5000	1651	0.88	1.04	0.93	5.0%	-11.0%
5001	637	2.98	3.02	3.03	1.6%	0.3%
5100	479	0.94	0.77	0.83	-12.1%	7.1%
5200	1326	0.40	0.38	0.40	-0.7%	6.1%
5300	346	0.67	0.67	0.75	12.4%	13.2%
5301	251	3.51	4.97	5.46	55.4%	9.8%
5400	240	0.09	0.11	0.07	-24.3%	-34.0%
5401	174	1.27	1.31	1.25	-1.7%	-4.7%
5500	29	0.24	0.21	0.23	-2.3%	10.6%
6100	279	0.41	0.43	0.43	4.7%	0.2%
6200	481	0.80	0.81	0.87	8.2%	7.4%
6300	1273	0.87	0.82	0.82	-6.2%	-0.7%
6400	441	0.23	0.23	0.20	-11.0%	-14.1%
6500	283	0.47	0.49	0.50	5.2%	2.7%
7100	285	0.56	0.50	0.51	-9.6%	1.0%
7101	132	5.15	5.14	5.84	13.4%	13.6%
7150	197	0.53	0.62	0.68	27.7%	9.2%
7151	206	4.03	4.12	4.02	-0.1%	-2.2%
7160	235	0.22	0.22	0.22	-0.4%	2.8%
7170	172	0.17	0.15	0.15	-14.5%	-1.3%
7180	153	0.89	0.75	0.69	-22.6%	-7.9%
7200	544	0.87	0.67	0.62	-29.3%	-8.6%
7250	87	0.68	0.63	0.63	-6.3%	0.5%
7300	1109	1.07	0.96	0.97	-10.1%	0.7%
7400	982	0.84	0.72	0.77	-8.0%	7.5%
7450	129	0.29	0.29	0.27	-8.2%	-7.2%
7460	96	0.55	0.55	0.56	1.6%	0.9%

It is observed from Table 14-14 that the global correspondence between the estimates and composites in the domains is satisfactory with the exception of Domain 5400 whose high percentage difference is attributed to low grades and are thus immaterial.

VISUAL CHECKS

Initial validation consisted of a visual comparison of the input samples and the estimated block grade in cross section, plan view and longitudinal projection. The plots are shown in Figure 14-15. Visual checks of the model against the sample data used to inform the estimates shows that the estimated blocks reasonably match the sample data used to inform them particularly in areas that have significant data to inform the estimates. All the visual checks confirm that the block estimates are a reasonable representation of the informing data considering the current level of geological and geostatistical understanding of areas within the reach of the definition drilling as shown in Figure 14-15, although it is noted in poorly informed areas, the estimates are less well constrained. There are areas with limited to no drilling information.

SWATH ANALYSIS

Swath or profile plots were generated for each domain along easting, northing and elevation dimensions. Plots of the results of swath analyses on domain 5000 along, X, Y and Z axis are displayed in Figure 14-16, Figure 14-17 and Figure 14-18. The swath analyses indicate general smoothing of the estimates as expected due to kriging. The estimated values tend to follow the sample composite values quite well particularly in well sampled areas. However, the estimates appear to be overly estimated in the eastern portion of the Domain 5000 and this is attributed to low drilling density in this area. It is poorly informed. However, this particular portion has been classified as an Inferred resource due to low confidence in the estimates and is thus also not included in the optimised pit shell.

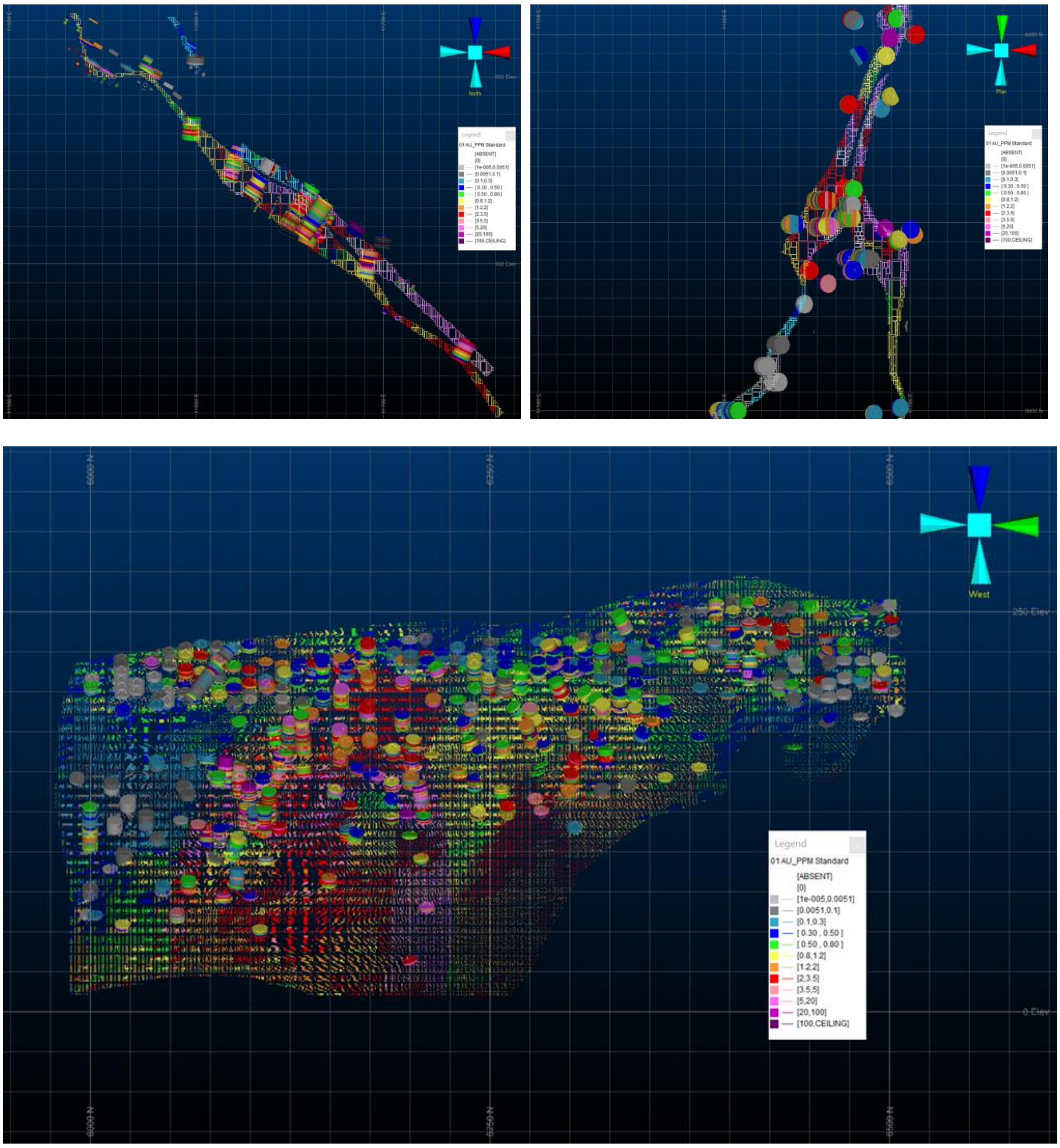


Figure 14-15: Comparison Between Composite Input Data and Block Grades In Cross Section (6110mN), Plan View (122mrl) (Domains 5000, 5001, 5300 And 5301) and Longitudinal Projection Looking West (Domain's 5000 And 5001 Only)

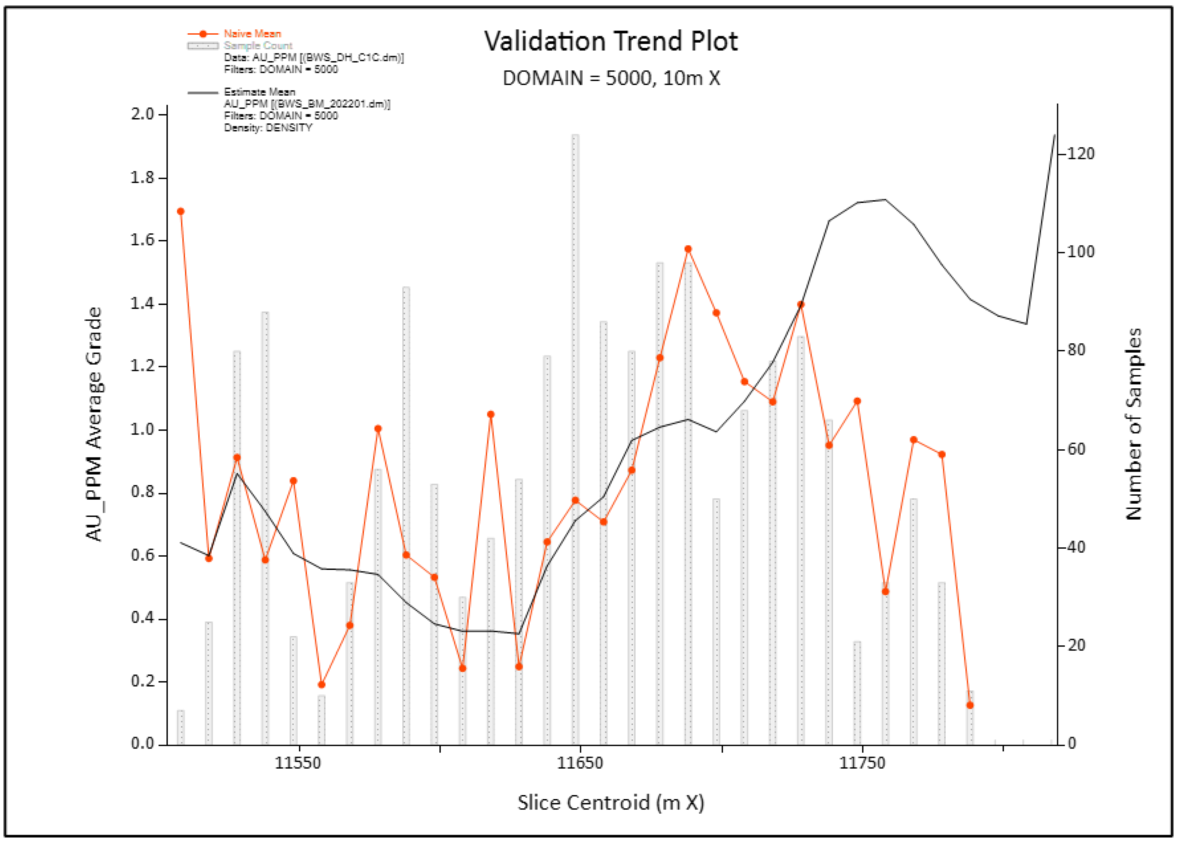


Figure 14-16: X Swath Plot for Domain 5000

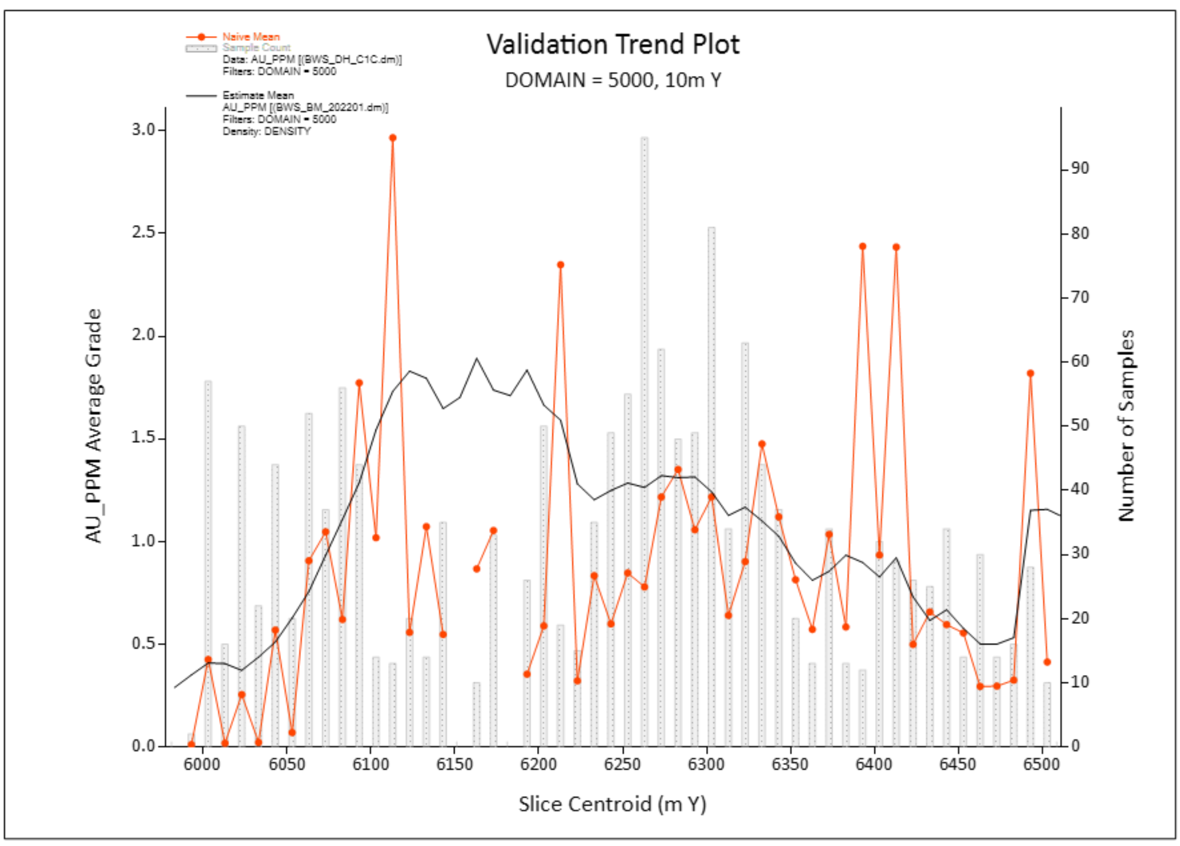


Figure 14-17: Y Swath Plot for Domain 5000

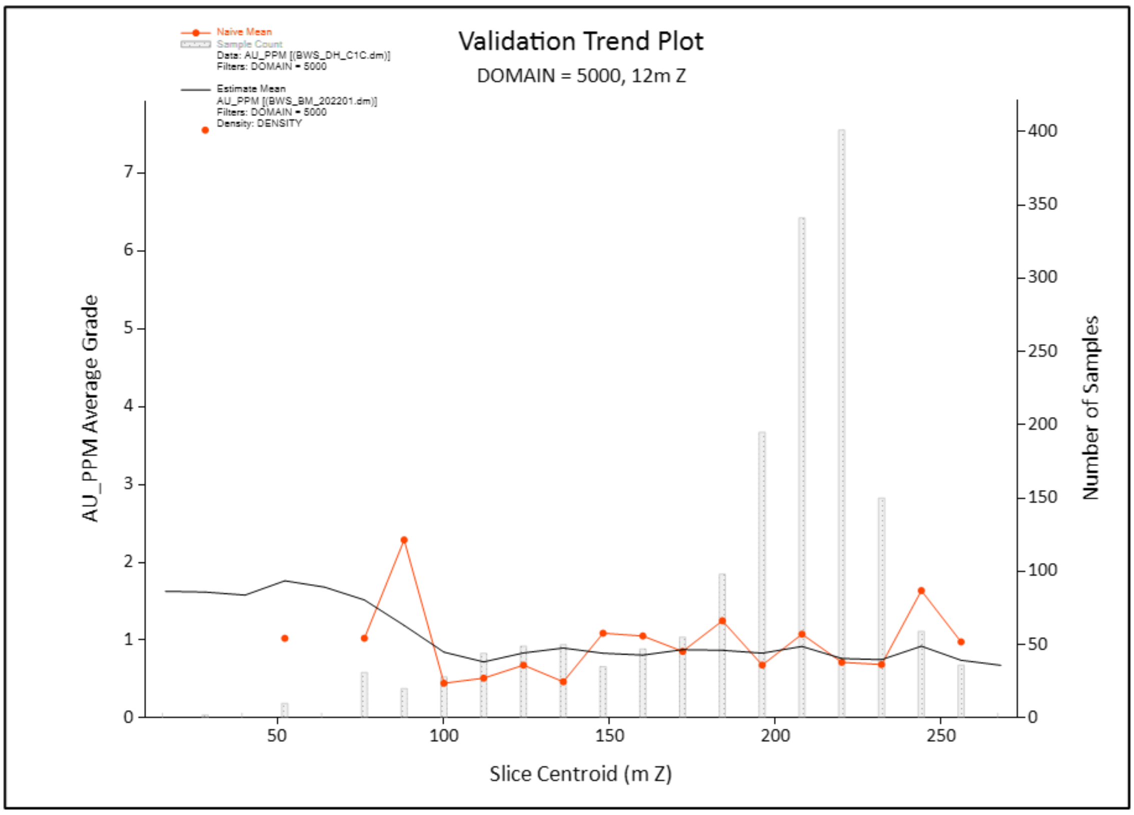


Figure 14-18: Z Swath Plots for Domain 5000

14.7.7 Depletion

The 2022 Mineral Resource has been depleted for open pit operations to May 2013. Mined material is coded MSTATUS=1 and densities have been re-set to zero. The Walsh pit has been backfilled and the volume of fill is defined by the difference between the May 2013 surface and current topography surface which was surveyed during the month of February 2022. This material is coded FILL=1 and density has been re-set to 1.80 t/m^3.

14.7.8 Mineral Resource Classification

The 2022 Walsh Strauss Mineral Resource has been classified into Measured, Indicated and Inferred categories in accordance with the JORC Code (2012). There are no material differences between the definitions of Indicated and Inferred Mineral Resources under the CIM Definition Standards and the equivalent definitions in the JORC Code (2012).

Measured Mineral Resources at Walsh Strauss are confined to zones where there is grade control drillhole spacing at 10m x 10m, or better, and kriging efficiency generally better than 40%. This material has been mined out. The Measured classification has not been extended past these zones due to a lack of historic reconciliation data. The Mineral Resource QP endorses the classification applied at Walsh Strauss.

Indicated Mineral Resources have been defined within a contiguous zone where the approximate drillhole density is better than a nominal 30m x 30m spacing, commonly 20m x 20m, in conjunction with a kriging efficiency greater than 30%.

Inferred Mineral Resources have been defined where the drillhole spacing becomes irregular but is better than a nominal 75m x 75m. Inferred mineralisation is considered to be interpolated.

Some areas of the interpreted mineralisation have been excluded from the Mineral Resource due to the degree of extrapolation and the lack of support for the interpretation. These zones are unclassified and have not been reported; they include significant portions of Domains 7200, 7300 and 7400. All other areas have been classified as an Inferred Mineral Resource.

14.7.9 Mineral Resource Reporting

The Bibiani Satellite Pits MRE are reported in accordance to the guidelines of the JORC Code (2012) and CIM Definition Standards. The Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them. Estimates (tonnes and content) for the operations and summaries quoted in this report are on a 100% basis. The QP who has signed off on the Mineral Resource has the minimum requirements established by international mining codes. The Mineral Resource for the Bibiani Satellite Pits, as reported at 28th February 2022, is presented in

Table 14-24. The Mineral Resource has been depleted for historical open pit operations as at May 2013 and reported above a 0.5g/t Au cut-off and constrained by a RPEEE US$1,950 Resource optimised pit shell.

Table 14-24: Total Mineral Resource of Bibiani Satellite (Walsh & Strauss) as at 28th February 2022 At 0.5g/t Au Cut-Off

Classification	Deposit	Tonnage (Mt)	Au Grade (g/t)	Au Content (Moz)
Measured	Walsh	0.29	2.23	0.020
	Strauss South	0.01	1.32	0.001
	Strauss	0.07	2.61	0.006
Total Measured		**0.37**	**2.27**	**0.027**
Indicated	Walsh	0.96	2.74	0.085
	Strauss South	-	-	-
	Strauss	0.03	3.19	0.004
Total Indicated		**1.00**	**2.76**	**0.089**
M+I	Walsh	1.25	2.62	0.105
	Strauss South	0.01	1.32	0.001
	Strauss	0.11	2.80	0.010
Total M+I		**1.37**	**2.62**	**0.116**
Inferred	Walsh	0.11	4.64	0.017
	Strauss South	-	-	-
	Strauss	0.003	2.28	0.0002
Total Inferred		**0.12**	**4.57**	**0.02**

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *Mineral Resources are not Mineral Reserves.*
3. *The Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them.*
4. *1 troy ounce = 31.1034768g.*
5. *A 0.5g/t gold cut-off has been applied and constrained by a RPEEE US$1,950 (metal price) Resource pit shell.*
6. *A density of 2.75t/m³, 2.50t/m³ and 2.00t/m³ on fresh, transition and oxidised sediments have been applied respectively.*
7. *Geological losses and depletions have been applied.*
8. *Inferred Mineral Resources have a lower level of confidence than that applying to Indicated Mineral Resources and have not been converted to Mineral Reserves. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.*

14.7.10 Comparison with Previous Mineral Resource

The most recent Mineral Resource for the Bibiani Satellite Pits was reported in the NI 43-101 Asante Gold Corporation Technical Report on the Bibiani Gold Mine dated 7 November 2021. This Mineral Resource was based on an update of the Bibiani Satellite Mineral Resources generated by Resolute in 2018. This model was generated to be suitable for an underground extraction method where its wireframes were generated at a cut-off grade of around 1g/t gold. The November 2021 Mineral Resources represent material to be mined via open pit and were thus reported above a cut-off grade of 0.65g/t gold inside an economic pit shell defined at a gold price of US$1,950. The Mineral Resource statement is presented in Table 14-25.

Table 14-25: Bibiani Satellite Pit Mineral Resources reported as at 18th October 2021 at 0.65g/t Au cut-off

Classification	Tonnage (Mt)	Au Grade (g/t)	Au Content (Moz)
Measured	0.78	1.77	0.045
Indicated	0.40	1.89	0.024
Measured + Indicated	**1.18**	**1.81**	**0.069**
Inferred	0.03	2.13	0.002

Notes:

1. *Tonnes and ounces have been rounded and this may have resulted in minor discrepancies.*
2. *1 troy ounce = 31.1034768g.*

Reinterpretation of mineralisation domains in the 2022 MRE aimed at confirming and extending the mineralisation below the historical Walsh pit with new drill information and to minimise internal dilution in the previous domain wireframes. The objective was to create a model suitable to be mined via an open pit method and thus a remodelling exercise was undertaken where wireframes were generated at a cut-off of 0.3g/t gold. At the time of current Mineral Resource data cut off, assays from several drillholes remain outstanding and need to be incorporated into future updates. The 2 models have been compared and the outcome of the different cut-off grades has resulted in an increase in grade of 45%, an increase of tonnes of 16% and an overall increase in ounces of 68% for the Measured and Indicated portion.

14.8 Disclosure

Mineral Resources reported in Sections 14.6.9 and 14.7.9 were prepared by Ms. S. Mandava, Principal Consultant and a full-time employee of Snowden Optiro.

The above is a Qualified Person as defined in NI43-101. Snowden Optiro is independent of MGBL.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

14.9 Risks

As all Mineral Resources are estimates, they are not without inherent geological and grade risk. The Qualified Persons believe that these risks are generally low given that there has been mining at both the main Bibiani deposit and at the satellite deposits.

Other risks do exist which do not relate to the Mineral Resources. Given that the project is fully permitted and that there has been previous mining, the Qualified Persons do not consider that environmental or permitting risks are likely to have a material impact on the progression and re-start of the Bibiani Project. It is also unlikely that the Mineral Resource estimates as detailed in this section will be materially affected by legal, title, taxation, socio-economic, marketing or political factors. The greatest risk to the Mineral Resource estimate, which is not considered to be material, is the social impact of an expansion of the Bibiani Main open pit.

15. MINERAL RESERVE ESTIMATES

15.1 Introduction

The Mineral Reserve estimate has been prepared as part of the LoM plan prepared by Mensin Gold technical services using the CIM definitions and guidelines adopted as of May 2014 (CIM, 2014) and procedures for classifying the reported Mineral Reserves were undertaken within the context of the Canadian Securities Administrators National Instrument 43-101 (NI 43-101). The LoM planning was completed by the Mensin Gold technical services and has been reviewed by the QP for Mineral Reserves and Mining.

The Mineral Reserves were derived from the Mineral Resource block models and estimates that are presented in Section 14. The Mineral Reserves are based on the Measured and Indicated Mineral Resources that have been identified as being economically extractable and which incorporate mining losses and the addition of waste dilution. A summary of the Mineral Reserves by pit is shown in Table 15-1.

Table 15-1: Summary of Mineral Reserves for Bibiani Gold Mine as at 28th February 2022

Pit	Item	Tonnes (Mt)	Grade (g/t)	Contained Gold (koz)
Main Pit	Proven Mineral Reserves	-	-	-
	Probable Mineral Reserves	26.929	2.14	1.856
	Total Mineral Reserves	**26.929**	**2.14**	**1.856**
Satellite Pits	Proven Mineral Reserves	0.258	2.16	0.018
	Probable Mineral Reserves	1.222	1.96	0.077
	Total Mineral Reserves	**1.480**	**1.99**	**0.095**
Total	**Total Proven Reserves**	**0.258**	**2.16**	**0.018**
	Total Probable Reserves	**28.151**	**2.14**	**1.932**
	Total Mineral Reserves	**28.409**	**2.14**	**1.950**

Notes:

1. *The Mineral Reserve is reported in accordance with the requirements and guidelines of NI43-101 and are 90% attributable to Asante (10% Ghanaian Government)*
2. *Apparent computational errors due to rounding are not considered significant*
3. *The Mineral Reserves are reported with appropriate modifying factors of dilution and recovery*
4. *The Mineral Reserves are reported at the head grade and at delivery to plant*
5. *The Mineral Reserves are stated at a price of US$1850/oz as at 28 February 2022*
6. *Although stated separately, the Mineral Resources are inclusive of the Mineral Reserves*
7. *The mine plan underpinning the Mineral Reserves has been prepared by MGBL and reviewed by BARA Consulting*
8. *No Inferred Mineral Resources have been included in the Mineral Reserve estimate*
9. *Quantities are reported in metric tonnes*
10. *The input studies are to the prescribed level of accuracy*
11. *The scheduled production includes approximately 4% Inferred Mineral Resource, with most towards the tail end of the production forecast*
12. *The Mineral Reserve estimates contained herein may be subject to legal, political, environmental or other risks that could materially affect the potential exploitation of such Mineral Reserves.*

The location of the deposits included in the Mineral Reserve estimate and the central processing plant are shown in Figure 15-1.

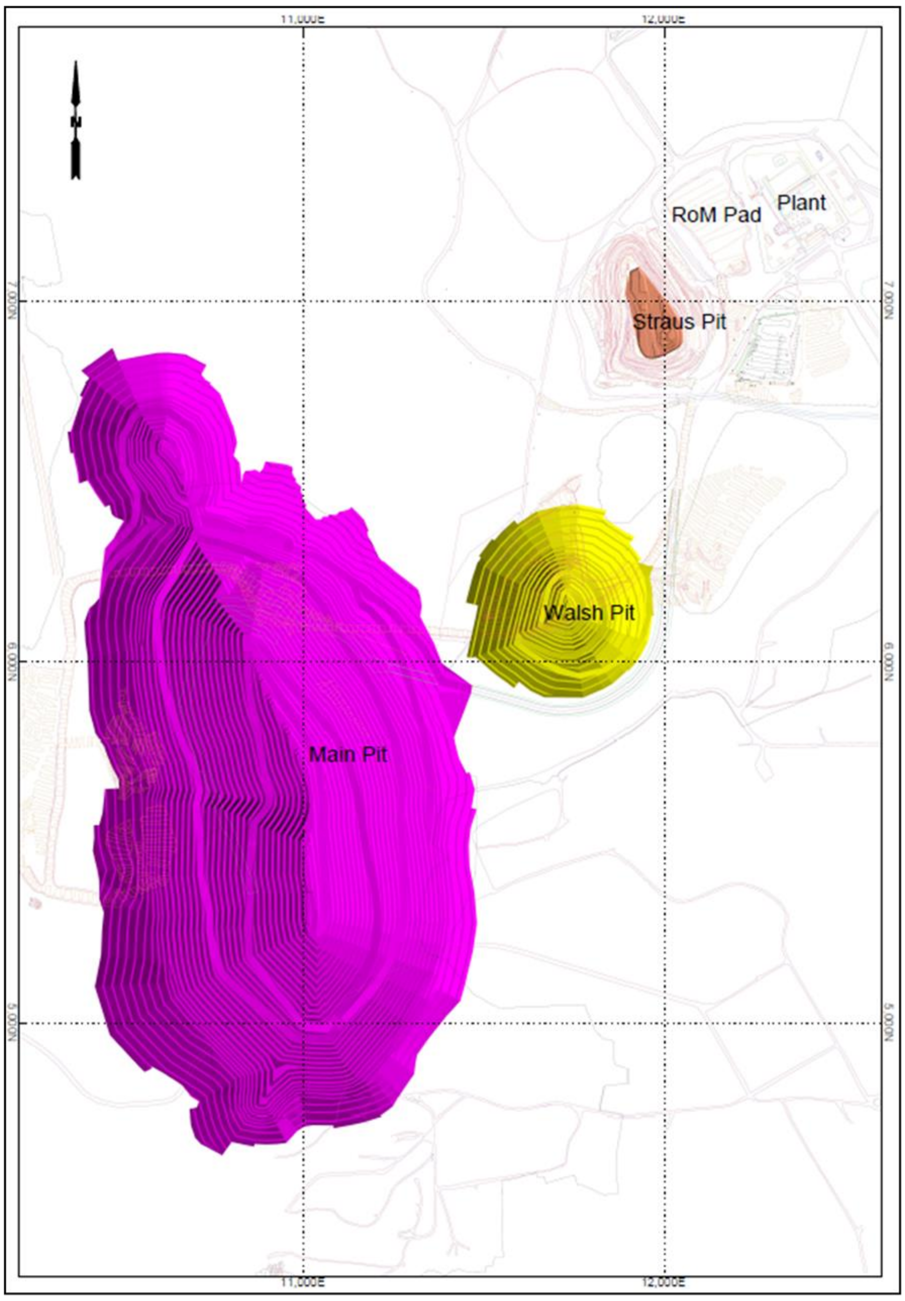


Figure 15-1: Location of Deposits and Processing Plant

(Source: MGBL, 2022)

15.2 Key Assumptions, Parameters and Methods

15.2.1 Methodology

The Bibiani Gold LoM Study and Mineral Reserves followed a process of pit optimisation, design and scheduling:

- The Mineral Resource models were prepared by Optiro/DataMine and described in Section 14, above
- The mining models were derived from the Mineral Resource models modified for dilution and mining loss by Mensin Gold
- The mining models were depleted to the actual end of February 2022 pit surfaces
- Using the mining models, pit optimisations were completed in Whittle Four-X™ software (Whittle). The software determines the economic limits of each deposit after accounting for estimated revenues and costs associated with mining each block and the maximum allowable slope angles. Nested pit shells produced by the pit optimisation were used in the selection of an "optimum" pit shell and for guiding the location of pit stages
- Using the selected pit shells as templates, pit designs for the final pit limits and stages were developed in Surpac®. The pit designs considered practical access issues, mining constraints and geotechnical design criteria
- Based on these designs, a LoM schedule was completed in MineShed®
- The mining schedule was used to drive the cost models and discounted cashflow model for the project. The discounted cashflow model was reviewed to confirm that the Mineral Reserves considered in the plan can be viably extracted.

15.2.2 Geotechnical Parameters

SRK carried out a geotechnical study to support the mine planning inputs for the LoM Study. Refer to the geotechnical considerations Section 16.2 for more details on the geotechnical parameters used.

The overall wall angles used for pit optimisation were based upon the overall wall angles able to be achieved in design when incorporating ramps, minimum mining width, and geotechnical berms. The slope angles used in the pit optimisation are summarised in Table 15-2.

Table 15-2: Pit Slope Angles used in Pit Optimisation

	Unit	Main Pit	Satellite Pits
Oxide	degrees	26	29
Transition	degrees	31	40
Fresh	degrees	44/45	44

Note: (1) Whittle angles refers to the adjusted slope angles after consideration of ramps and safety berms

15.2.3 Mining Modifying Factors

The modifying factors used to convert resources to run of mine (RoM) tonnes in the mine plan are summarised in Table 15-3.

Table 15-3: Mining Modifying Factors

Factor	Unit	Value	
		Main Pit	**Satellite Pits**
Mining Recovery	%	96.5	96.5
Ore Dilution	%	3.5	3.5

The Mineral Resource Estimate (MRE) models were created using Ordinary Kriging to simulate the grade tonnage distribution based on 5mE x 20mN x 24mRL block dimensions. During the mining process these blocks are combined into grade bins based on practical mining, stockpiling and processing considerations, called mining polygons or dig strings.

The size and shape of mining polygons are affected by mining bench height, mining equipment size, blast movement, direction of mining, and orientation of mineralisation continuity. The design of mining polygons is a manual process completed by the mine geology team using both MRE and GC models to develop the three-monthly rolling mine plan and daily production dig plans. The mining polygons represent the mineralisation expected to be recovered by mining. During mining inaccuracies occur along the boundaries of the mining polygons due to a few reasons such as:

- Movement of material because of blasting
- Errors in demarcation of mineralised material/waste boundaries
- Errors in digging according to the demarcated polygons.

All these issues contribute to either mineralised material loss which is that material loaded to waste or dilution, when waste or low grade material is hauled to the RoM pad.

The factors allowed for and shown in Table 15-3 account for these inaccuracies during the mining process.

15.2.4 Cost and Revenue Factors

The processing recovery assumed in the pit optimisation is 92% and was estimated by Mensin Gold and supported by the QP for metallurgy and Metallurgical test work. The cost and revenue factors used in the pit optimisation are tabled below.

Table 15-4: Cost and Revenue Factors

Revenue	Unit	Main pit	Satellite Pits
Gold Price - Optimisation (Base)	US$/oz	1,850	1,850
Selling Cost	US$/oz	96.84	96.84
Refinery and Shipment	US$/oz	4.34	4.34
Government Royalty	%	5.00	5.00
Government Royalty	US$/oz	92.50	92.50
Operating Cost			
Mining			
Oxide Waste	US$/t mined	2.05	1.84
Oxide Ore	US$/t mined	2.11	2.27
Transition Waste	US$/t mined	2.23	2.03
Transition Ore	US$/t mined	2.33	2.33
Fresh Waste	US$/t mined	2.82	2.33
Fresh Ore	US$/t mined	3.03	2.64

Revenue	Unit	Main pit	Satellite Pits
Contractor Management fees	US$/t milled	2.33	2.91
Grade Control	US$/t milled	1.33	1.33
Owner Mining Fixed Cost	US$/t milled	2.33	3.11
Processing			
Process Feed - CIL	US$/t milled	12.01	14.85
Process G&A	US$/t milled	1.00	1.34
Admin G&A	US$/t milled	4.74	6.33
Ore Rehandling	US$/t milled	0.83	0.83

15.3 Pit Optimisation

15.3.1 Main Pit

Table 15-5 shows the results of the pit optimisation for the Main pit. The optimum pit, or revenue factor 1.00 pit contains 32.9Mt at 2.18g/t Au and 644Mt of waste for an overall strip ratio of 19.6. The graph of the nested pit shell results, shown in Figure 15-2, shows that after Pit 17 the cashflow curve flattens and there is little gain in NPV in the remaining pits. Pit 18 has a revenue factor of 89% which implies that even if revenues decrease by as much as 11% the pit will still not result in a reduction on NPV. Pit 17 was selected as the ultimate pit on which the main pit designs were based. Pit 17 contains 27.9Mt at 2.13g/t Au and 479Mt of waste resulting in a strip ratio of 17.2:1 (tonne:tonne).

Table 15-5: Pit Optimisation Results – Main Pit

Pit Shell No.	Revenue Factor	Cashflow (US$)	Ore (t)	Grade (g/t)	Mining cost (US$)	Selling cost (US$)	Processing cost (US$)	Waste (t)	Revenue (US$)	Total (t)	Strip ratio
1	0.43	263,564,506	2,782,445	2.899	(85,713,473)	(23,101,509)	(68,944,270)	32,465,768	441,323,759	35,248,213	11.67
2	0.46	269,941,677	2,894,363	2.865	(88,343,253)	(23,752,253)	(71,718,190)	33,441,679	453,755,374	36,336,042	11.55
3	0.49	291,813,737	3,280,177	2.777	(99,298,232)	(26,093,778)	(81,281,358)	37,836,895	498,487,106	41,117,072	11.54
4	0.51	303,972,538	3,525,532	2.721	(106,059,593)	(27,474,831)	(87,363,330)	40,314,708	524,870,292	43,840,240	11.44
5	0.54	324,352,732	3,930,932	2.657	(119,732,337)	(29,910,936)	(97,412,855)	45,208,624	571,408,860	49,139,556	11.5
6	0.57	403,599,808	5,555,879	2.503	(179,721,835)	(39,826,993)	(137,693,375)	66,716,786	760,842,012	72,272,665	12.01
7	0.59	462,500,478	6,780,121	2.462	(235,171,814)	(47,819,647)	(168,039,153)	90,735,825	913,531,093	97,515,946	13.38
8	0.62	497,362,339	7,655,545	2.408	(268,932,622)	(52,808,925)	(189,740,758)	103,029,640	1,008,844,644	110,685,185	13.46
9	0.65	726,797,060	13,535,805	2.275	(534,778,278)	(88,218,735)	(335,508,143)	197,110,563	1,685,302,217	210,646,368	14.56
10	0.68	747,623,980	14,145,431	2.263	(561,632,702)	(91,687,057)	(350,616,179)	207,152,321	1,751,559,918	221,297,752	14.64
11	0.70	804,517,295	16,011,221	2.222	(643,139,114)	(101,886,543)	(396,864,640)	236,228,962	1,946,407,591	252,240,183	14.75
12	0.73	832,199,960	17,134,587	2.19	(688,606,882)	(107,465,155)	(424,707,602)	253,168,714	2,052,979,599	270,303,301	14.78
13	0.76	846,141,955	17,701,602	2.179	(714,799,507)	(110,458,507)	(438,763,660)	262,597,600	2,110,163,629	280,299,202	14.83
14	0.78	898,894,154	20,050,612	2.146	(835,390,906)	(123,250,045)	(496,993,929)	306,028,482	2,354,529,033	326,079,094	15.26
15	0.81	994,062,026	24,670,302	2.121	(1,107,300,000)	(149,857,282)	(611,515,254)	399,759,539	2,862,825,094	424,429,841	16.2
16	0.84	1,011,803,968	25,554,739	2.124	(1,169,300,000)	(155,470,412)	(633,440,349)	421,704,220	2,970,056,518	447,258,959	16.5
17	0.86	1,049,975,766	27,880,592	2.128	(1,334,800,000)	(169,905,026)	(691,098,095)	479,333,183	3,245,810,728	507,213,775	17.19
18	0.89	1,054,024,226	28,167,677	2.129	(1,356,800,000)	(171,738,990)	(698,214,919)	487,010,445	3,280,846,170	515,178,122	17.29
19	0.92	1,061,840,559	29,026,571	2.127	(1,419,900,000)	(176,833,375)	(719,506,908)	508,392,243	3,378,167,668	537,418,814	17.51
20	0.95	1,070,850,072	30,024,272	2.145	(1,524,000,000)	(184,444,963)	(744,239,927)	543,543,810	3,523,576,976	573,568,082	18.1
21	0.97	1,074,176,513	30,823,482	2.14	(1,582,800,000)	(188,971,855)	(764,052,342)	563,082,437	3,610,057,252	593,905,919	18.27
22	**1.00**	**1,076,403,312**	**32,891,918**	**2.177**	**(1,821,400,000)**	**(205,104,439)**	**(815,328,857)**	**643,605,145**	**3,918,248,927**	**676,497,063**	**19.57**

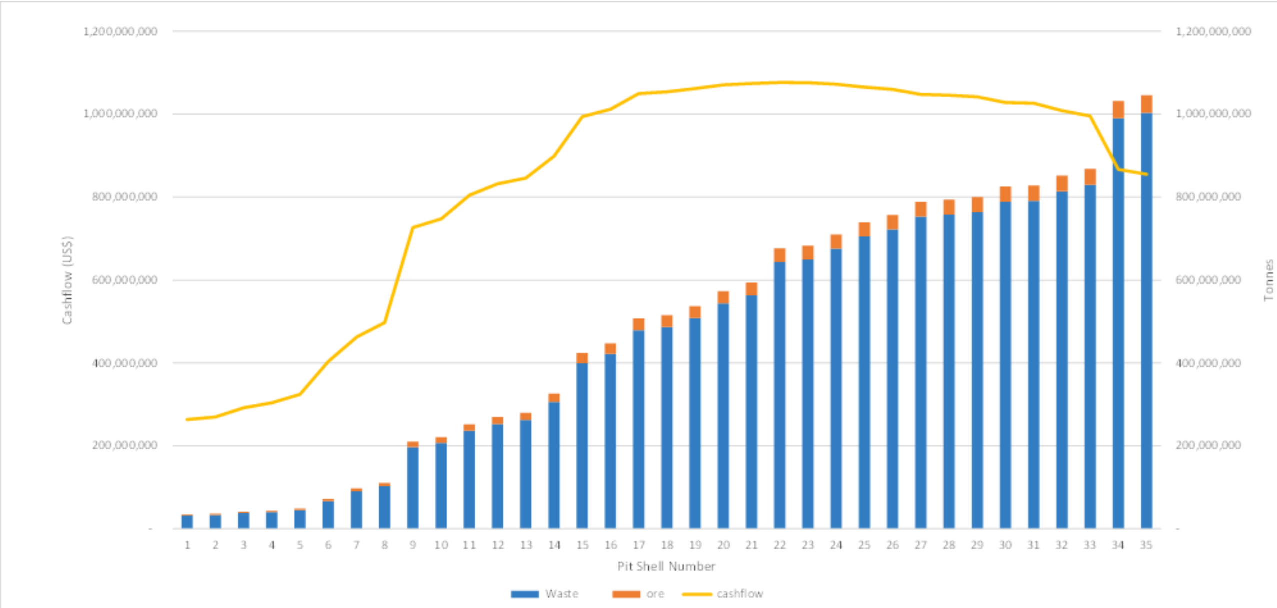


Figure 15-2: Pit Optimisation Results – Main Pit

(Source: BARA, 2022)

15.3.2 Satellite Pits

Table 15-6 shows the results of the pit optimisation for the Satellite pits. The optimum pit, or revenue factor 1.00 pit contains 1.58Mt at a grade of 2.21g/t Au and 28.5Mt of waste for an overall strip ratio of 18.0. The graph of the nested pit shell results, shown in Figure 15-2, shows that after Pit 17 the cashflow curve flattens and there is little gain in NPV in the remaining pits. Pit 17 has a revenue factor of 86% which implies that at even if revenues decrease by as much as 14% the pit will still not result in a reduction on NPV. A large increase in waste tonnes and the associated strip ratio occurs between Pit shells 17 and 18.

WALSH PIT

Pit 17 was selected as the ultimate pit on which the Walsh pit design was based. Pit 17 contains 1.26Mt at 2.53g/t Au and 21.3Mt of waste resulting in a strip ratio of 16.9:1 (tonne:tonne).

Table 15-6: Pit Optimisation Results – Satellite Pits

Pit Shell No.	Revenue Factor	Cashflow (US$)	Ore (t)	Grade (g/t)	Mining Cost (US$)	Selling Cost (US$)	Processing Cost (US$)	Waste (t)	Revenue (US$)	Total (t)	Strip Ratio
1	1	0.43	2,637,989	35,313	2.56	(1,039,185)	(256,499)	(1,018,038)	546,525	4,951,711	581,838
2	2	0.46	2,685,653	36,062	2.56	(1,057,394)	(261,272)	(1,039,540)	555,736	5,043,859	591,798
3	3	0.49	2,818,982	38,530	2.53	(1,118,130)	(275,765)	(1,110,766)	584,843	5,323,643	623,373
4	4	0.51	27,362,189	460,185	2.28	(13,863,705)	(2,975,213)	(13,235,436)	6,715,137	57,436,544	7,175,322
5	5	0.54	55,434,504	987,025	2.28	(32,899,303)	(6,376,391)	(28,386,152)	15,438,250	123,096,351	16,425,275
6	6	0.57	57,952,766	1,029,081	2.29	(34,953,877)	(6,692,260)	(29,595,308)	16,352,001	129,194,211	17,381,082
7	7	0.59	58,163,011	1,037,280	2.29	(35,043,344)	(6,721,517)	(29,831,138)	16,387,404	129,759,010	17,424,684
8	8	0.62	58,593,224	1,049,863	2.28	(35,418,019)	(6,785,251)	(30,192,913)	16,548,879	130,989,407	17,598,742
9	9	0.65	58,658,227	1,053,533	2.28	(35,435,911)	(6,795,544)	(30,298,416)	16,553,015	131,188,097	17,606,548
10	10	0.68	60,317,271	1,097,679	2.27	(37,637,582)	(7,075,818)	(31,568,132)	17,533,639	136,598,803	18,631,318
11	11	0.70	60,999,825	1,120,484	2.27	(38,516,563)	(7,196,951)	(32,223,940)	17,910,152	138,937,279	19,030,636
12	12	0.73	62,590,746	1,161,231	2.28	(41,628,645)	(7,517,873)	(33,395,409)	19,274,970	145,132,672	20,436,201
13	13	0.76	63,152,117	1,188,860	2.27	(42,523,316)	(7,640,828)	(34,190,074)	19,674,504	147,506,336	20,863,364
14	14	0.78	63,827,999	1,213,054	2.27	(44,080,053)	(7,800,796)	(34,885,670)	20,343,950	150,594,517	21,557,004
15	15	0.81	64,015,692	1,218,409	2.27	(44,638,069)	(7,849,946)	(35,039,642)	20,586,705	151,543,349	21,805,114
16	16	0.84	64,370,140	1,239,530	2.27	(45,646,650)	(7,957,584)	(35,646,937)	21,014,003	153,621,312	22,253,533
17	17	0.86	64,558,093	1,257,504	2.25	(46,304,027)	(8,032,002)	(36,163,821)	21,302,424	155,057,942	22,559,928
18	18	0.89	66,998,169	1,504,210	2.16	(58,281,074)	(9,207,126)	(43,257,372)	26,451,382	177,743,741	27,955,592
19	19	0.92	67,090,826	1,514,921	2.16	(58,916,856)	(9,263,743)	(43,565,318)	26,725,716	178,836,743	28,240,637
20	20	0.95	67,395,447	1,561,397	2.15	(62,008,146)	(9,522,264)	(44,901,629)	28,049,370	183,827,486	29,610,767
21	21	0.97	67,399,587	1,564,580	2.15	(62,036,478)	(9,529,039)	(44,993,177)	28,060,105	183,958,281	29,624,685
22	22	1.00	67,427,112	1,580,946	2.15	(63,106,227)	(9,614,690)	(45,463,734)	28,516,871	185,611,763	30,097,817

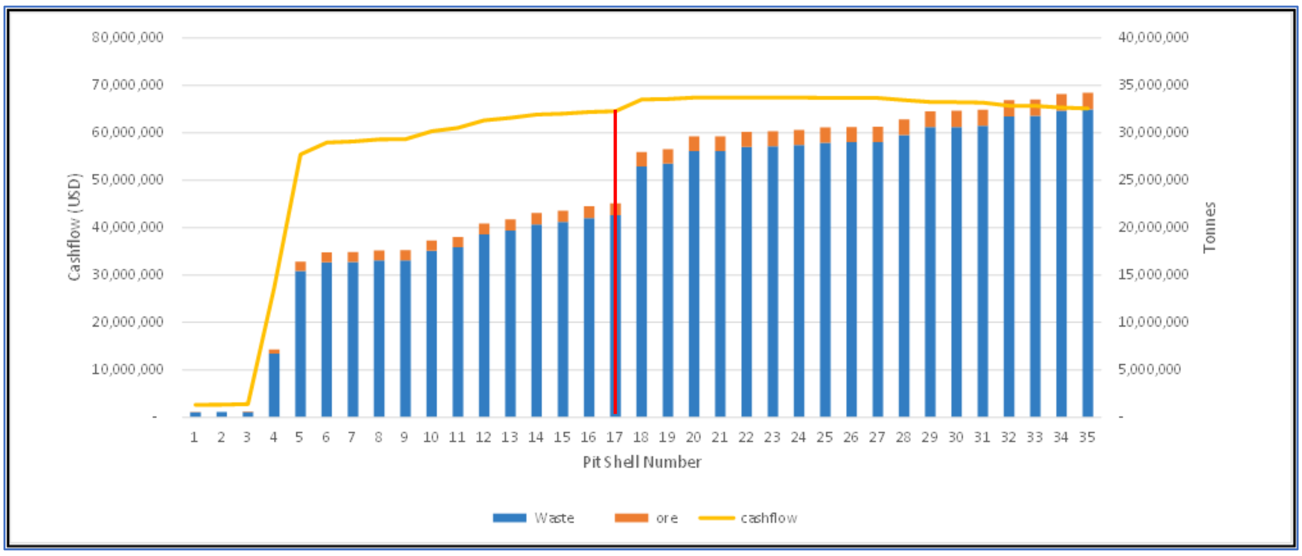


Figure 15-3: Pit Optimisation Results – Walsh

(Source: BARA, 2022)

STRAUSS PIT

The Strauss pit design was based on Pit Shell number 22 (Revenue Factor 1.0) which was run for all the satellite pits.

15.4 Pit Design

Pit designs were completed based on the selected pit shells for each deposit. The geotechnical parameters used are summarised in Section 16.2. Other practical mining parameters were applied, as shown in Table 15-7.

Table 15-7: Design Parameters

Parameters	Main Pit	Satellite Pits
Ramp width – double (m)	22	16
Ramp width – single (m)	16	12
Ramp gradient (1:x)	10	10
Minimum mining width – cutback (m)	40	35
Minimum mining width – pit base (m)	20	20

All pit designs were subjected to geotechnical review to ensure compliance with the intended parameters and factors of safety.

The mine design for the main pit includes a number of cut-backs, which are based on pit shells that were selected on lower revenue factor pits but the final pit, is referred to as Cut 5, is shown in Figure 15-4 below.

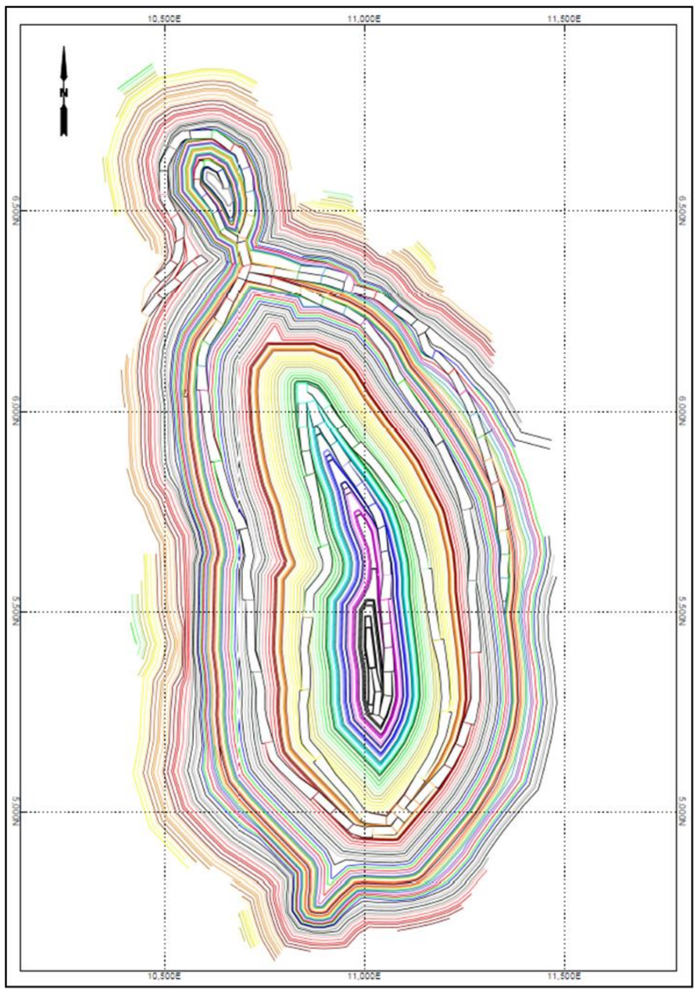


Figure 15-4: Main Pit Design

(Source: MGBL, 2022)

The pit designs for the satellite pits, Straus and Walsh are shown in Figure 15-5. These designs are based on Pit shell number 17 from the pit optimisation conducted on the satellite pits.

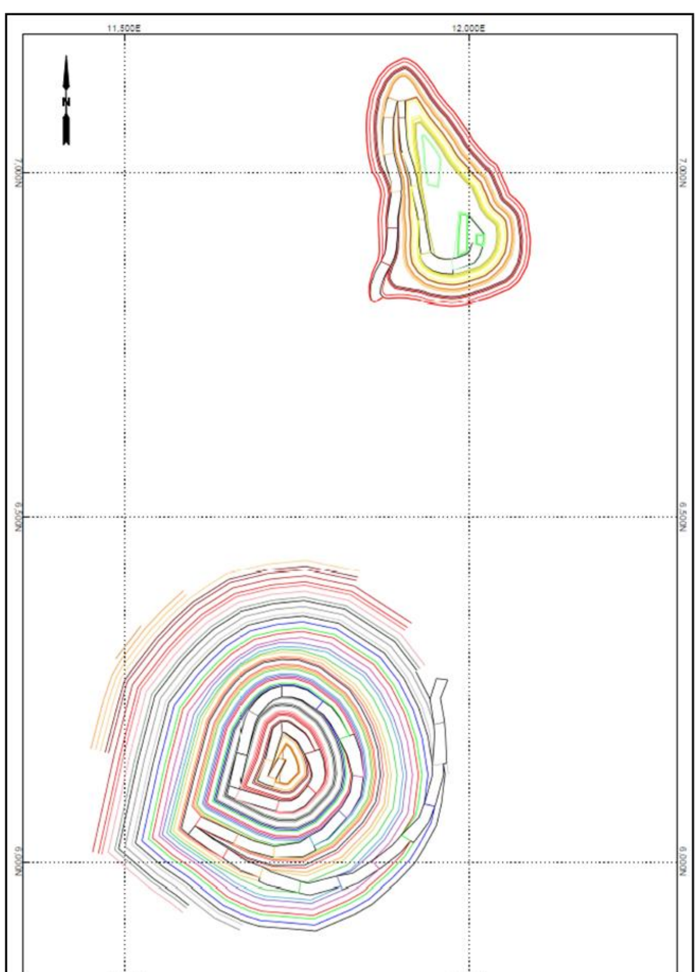


Figure 15-5: Satellite Pit Designs

(Source: MGBL, 2022)

A reconciliation between the final pit designs and the selected pit shells was completed. The results are shown in Table 15-8 below. The variances in tonnes and gold content between the pit shells and pit designs are deemed acceptable.

Table 15-8: Reconciliation Between Pit Designs and Pit Optimisation Shells

	Main pit			Satellite pits		
	Pit Shell	**Pit Design**	**Difference (%)**	**Pit Shell**	**Pit Design**	**Difference (%)**
Ore (M t)	27.880	27.991	0.4%	1.504	1.492	-0.8%
RoM Grade (g/t)	2.13	2.13	0.0%	2.16	2.11	-2.3%
Gold content (M oz)	1.907	1.921	0.7%	0.104	0.101	-2.9%
Waste (M t)	479	467	-2.5%	26.4	20.9	-20.8%
Strip ratio (t:t)	17.2	16.7	-2.9%	17.6	13.0	-26.1%

The reconciliation between the Main pit optimisation shell and final pit design shows negligible differences in tonnes, grade, gold content and waste tonnes. The differences in the satellite pits, when considered as a percentage difference appear large but due to the small size of the satellite pits compared to the Main pit the real discrepancies in tonnes, contained ounces and waste tonnes are insignificant when considered in the context of the LoM. The main reason for the difference between the pit shell and the pit design for the satellite pits is the small areas which the pit optimisation included in the pit shell but which were not included by the technical team in the mine design. These outlier pits were considered too small to justify inclusion in the mine design. The excluded outlier pits are shown in Figure 15-6.

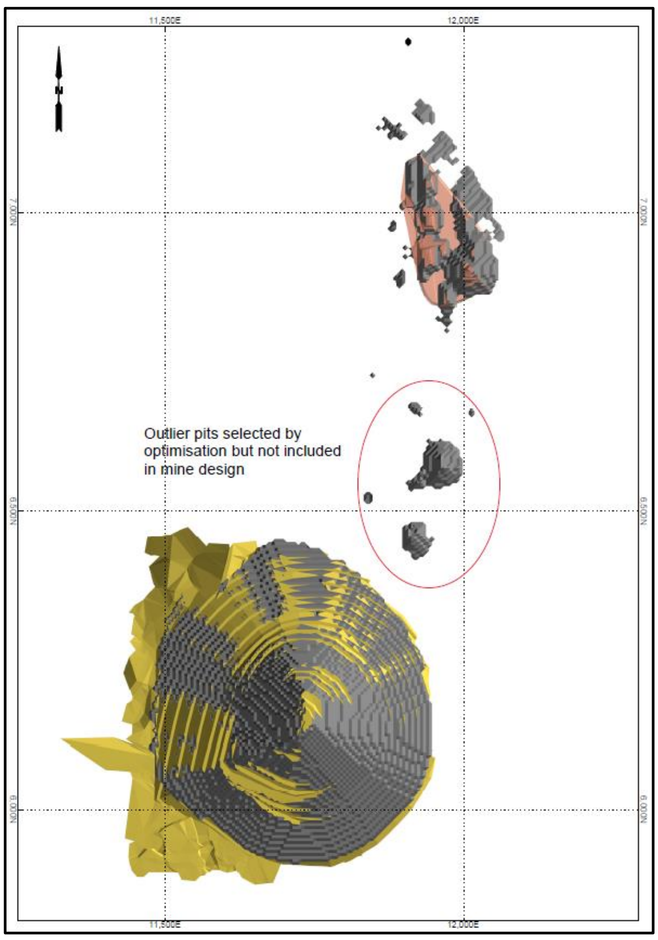


Figure 15-6: Outlier Pits Included in Satellite Pit Optimisation but Excluded from Design

(Source: MGBL, 2022)

15.5 Cut Off Grade

MGBL uses two cut-off grades:

- Resources cut-off: This is the cut-off grade based on costs incurred during steady state operations. It includes fixed mining costs and full general and administrative costs. The gold price used in calculating this cut-off is the Mineral Resource gold price, which in this case is US$1950/oz
- Reserve cut-off: This is the cut-off grade based on costs incurred during steady state operations. It includes fixed mining costs and full general and administrative costs. The gold price used in calculating this cut-off is the Mineral Reserve gold price, which in this case is US$1850/oz
- Marginal cut-off: This is the cut-off grade applied after mining is complete and only stockpile depletion and processing occur. In this case, the mining costs are removed.

The mining schedule and ultimately the Mineral Reserve, were calculated on the Reserve cut-off grades, which are tabled below.

Table 15-9: Cut-Off Grades used for Mineral Reserve Estimation

Material Type	Cut-off grade (g/t)	
	Main Pit	**Satellite Pits**
Oxide	0.474	0.599
Transition	0.475	0.596
Fresh	0.477	0.597

15.6 Mineral Reserve Statement

The Mineral Reserves for Bibiani Mine, as at 28th February 2022 are tabled below.

Table 15-10: MBGL Mineral Reserve Statement as at 28th February 2022

Item	Tonnes (Mt)	Grade (g/t)	Contained Gold (koz)
Proven Mineral Reserves	0.258	2.16	0.018
Probable Mineral Reserves	28.151	2.14	1.932
Total Mineral Reserves	**28.409**	**2.14**	**1.950**

Notes:

1. *The Mineral Reserve has been reported in accordance with the requirements and guidelines of NI-43101 and are 90% attributable to Asante (10% Ghanaian Government).*
2. *Apparent computational errors due to rounding are not considered significant.*
3. *The Mineral Reserves are reported with appropriate modifying factors of dilution and recovery.*
4. *The Mineral Reserves are reported at the head grade and at delivery to plant.*
5. *The Mineral Reserves are stated at a price of US$1850/oz as at 28 February 2022.*
6. *Although stated separately, the Mineral Resources are inclusive of the Mineral Reserves.*
7. *No Inferred Mineral Resources have been included in the Mineral Reserve estimate.*
8. *Quantities are reported in metric tonnes.*
9. *The input studies are to the prescribed level of accuracy.*

The Mineral Reserve estimates contained herein may be subject to legal, political, environmental or other risks that could materially affect the potential exploitation of such Mineral Reserves.

15.7 Mineral Reserve Reconciliation

The previous Mineral Reserve estimate for Bibiani was completed by Resolute in 2018 and was based on underground mining. The Mineral Resource estimate methodology, mining methods, cost base, cut-off grades and modifying factors differ considerably between the previously considered underground mine and the current open pit mine plan. It is not possible to reconcile between the two Mineral Reserve estimates. The previous underground Mineral Reserve Estimate is tabled below for reference.

Table 15-11: Mineral Reserves for Bibiani Gold Mine as at 18th February 2019 (JORC 2016)

Ore Reserve Classification	Tonnes (Mt)	Grade (g/t)	Metal (Moz)
Proved Ore Reserve	-	-	-
Probable Ore Reserve	6.4	3.25	0.66
Total Ore Reserves	**6.4**	**3.25**	**0.66**

15.8 Factors Affecting Mineral Reserve Estimation

The Mineral Resource and Mineral Reserves are sensitive to cut off grade as shown in Mineral Resource grade tonnage curves from the Mineral Resource Section 14. The factors affecting the Mineral Reserve cut-off grade are:

- Gold price (US$/oz)
- Mining costs (US$/t)
- Processing recovery (%)
- Processing costs (US$/t)

Other factors that can affect the Mineral Reserve estimate are:

- Environmental and social risks including the timeous completion of the Resettlement Action Plan required to allow the mining of the final Main Pit to its final pit design. This may cause delays impacting the mine scheduling and consequently the project cashflows.
- Timeous completion of the proposed diversion of the national road. If the diversion is not successfully completed this will impact the pit design and could sterilize some of the Main Pit Mineral Reserves. All processes required for the successful diversion of the road are in progress at the time of writing this report.
- Since the project infrastructure is largely in place it is unlikely that infrastructure issues, other than the Resettlement Action Plan and road diversion, discussed above, will have a material impact on the Mineral Reserves.
- All the required operating permits are in place so permitting does not present a material risk to the Mineral Reserve estimate.

16. MINING METHODS

16.1 Mining Strategy

16.1.1 Mining Method

Mining at Bibiani will be by conventional open pit mining methods involving drilling, blasting, loading and hauling with diesel driven equipment. Bench heights for drilling and blasting will be 6.0m. Loading of the blasted mineralised material and waste will take place in two by three metre flitches on each bench.

The open pit mining operation will be undertaken by a mining contractor, who has been engaged and has commenced mining operations.

While previous work on the site considered an underground mine, the LoM plan reported here is for open pit mining only.

16.1.2 Operating Philosophy

Mining operations are planned to work 365 days per year less unplanned delays due to issues such as weather. The work roster for the Bibiani operation is tabled below.

Table 16-1: Bibiani Work Roster

Personnel Category	Calendar
Expatriates	6 weeks on site, 2 weeks off
Management and Administration	5 day week (45 hours)
Shift workers	12 hour shift per day, 1 swing shift
Engineering	5 x 10 hours per week plus 5 hours every alternate Saturday and Sunday

16.1.3 Mining Sequence

The Bibiani mining operation is planned to sustain a steady state production rate of 4.0Mtpa. The current LoM plan includes mining from three pits; the Main pit and two satellite pits; namely Walsh and Straus Pits. Figure 16-1 shows the location of the three pits and a general site layout.

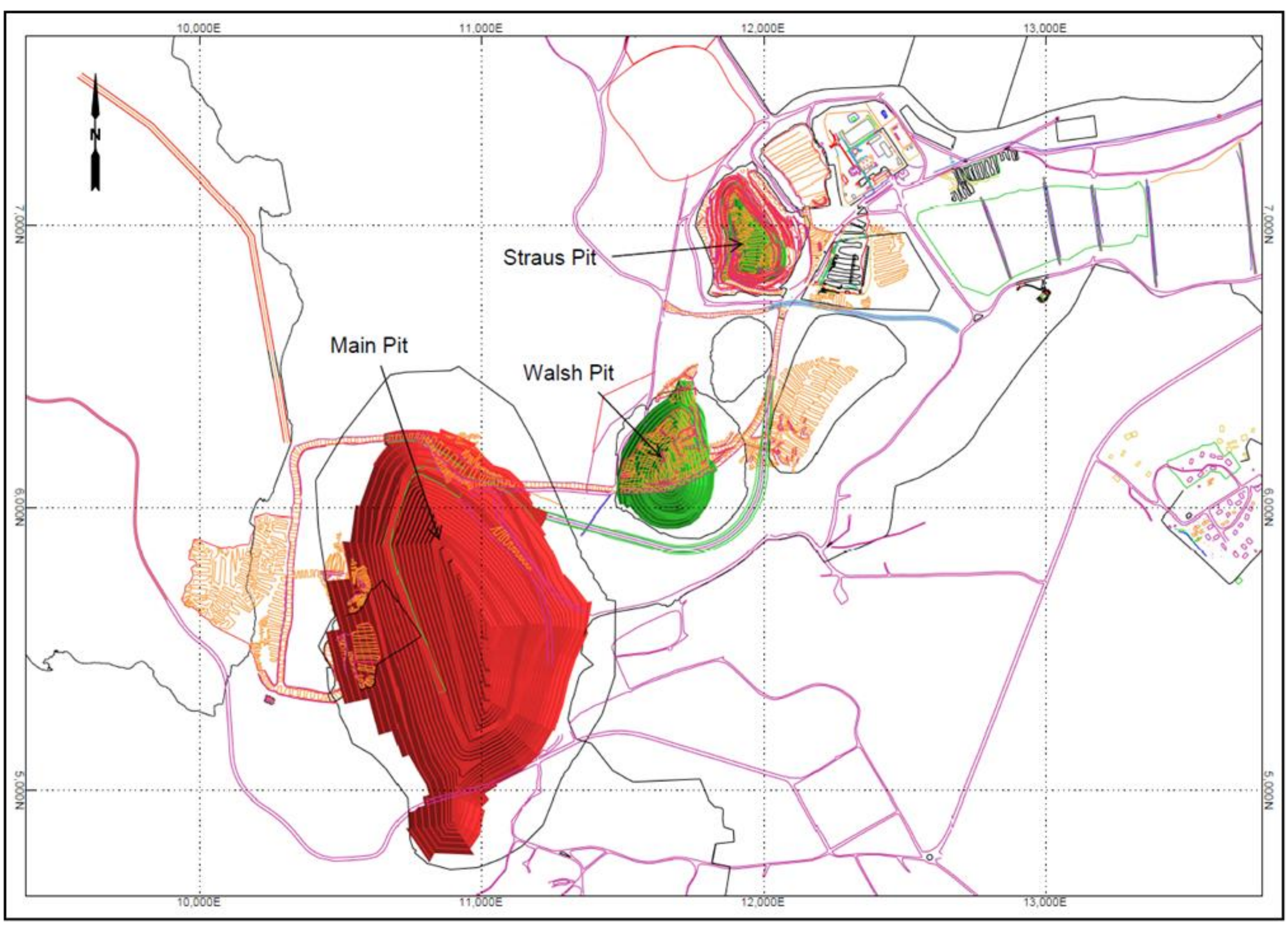


Figure 16-1: Bibiani Site Layout

(Source: MGBL, 2022)

The mining strategy that will be followed at Bibiani is to commence pre-stripping at the Bibiani Main Pit and Walsh simultaneously. This work started in March 2022. Mineralised material will be produced from the Satellite Pits (Walsh and Strauss) while waste stripping continues in the Bibiani Main Pit and production from the Bibiani Main Pit is built up. In the early years of operation production will be from a combination of the Satellite Pits and the Bibiani Main Pit. Once the Satellite Pits are mined out the full production rate will be produced from the Bibiani Main Pit.

16.2 Geotechnical Considerations

SRK Consulting (South Africa) (Pty) Ltd. (SRK) was commissioned by Asante to carry out a geotechnical review of their planned operations at Bibiani Gold Mine (Bibiani) west of Kumasi in Ghana. The review was to additionally provide slope design angle recommendations in fulfilment of the requirements for Asante's NI43-101 reporting for the 2021/2022 reporting cycle.

SRK's Mr Desmond Mossop visited Bibiani from the 16th to the 20th of August 2021 to carry out a geotechnical site review, familiarise himself with the rock mass conditions and discuss mine design and planning options with Bibiani staff and various project consultants.

16.2.1 Introduction

SRK was requested to carry out a geotechnical site visit and review in order to provide recommended design slope angles for the highest priority open pits at the Bibiani project. The key focus of the site visit and review was the Bibiani Main pit, which has the longest mining record and greatest slope exposures at the site. Other pits within the project area are expected to be geologically and geotechnically similar to the Main pit and were also visited, although in less detail. The mining areas inspected during the site visit are:

- Bibiani Main Pit and west and east slope historic failures
- Bibiani underground sections adjacent to the Main pit
- Ahiman pit
- Grasshopper pit
- Strauss pit
- Strauss South pit; and
- Walsh pit.

The Bibiani Main Pit has been dormant since 2005, with the site on care and maintenance, but is expected to restart production early in 2022, with the start of initial waste stripping scheduled from February 2022. The Main Pit experienced historic pit slope failures, with the central NW slope failing in late 2003 and the SE slope in September 2004. Further failure of the central NE slope occurred subsequently to operations in the pit ceasing in 2005. These failures occurred in the saprolite and saprock transition slope, extending into unweathered rock along geological structures. Therefore, it was deemed necessary to carry out a geotechnical investigation to confirm revised slope design parameters for the proposed Main pit cutback.

Site observations, litho-structural models, geological mapping and drilling data and several geotechnical reports were utilised to evaluate site conditions and provide revised recommended slope angles for pit design purposes.

The pits are to be excavated by traditional drill and blast operations in the unweathered rock and saprock transition zones, and by free digging with excavators in the saprolite and transported soil horizons. Material is to be loaded and hauled to crushers for stockpiling and processing on site.

Mining operations at Bibiani are to be supported by a Mine Technical Services team, including an on-site geotechnical department that will be led by a suitably qualified and experienced geotechnical practitioner.

This provides confidence in the company's ability to adapt to unexpected litho-structural or rock mass conditions, manage the associated geotechnical risks and adopt the necessary risk mitigation measures to ensure successful mining operations.

16.2.2 Site Observations

The gold occurrence at Bibiani is of the lode or vein type which occurs within NE trending sub-vertical to steeply SE dipping shear and graphitic fault structures which are coincident in the vicinity of the pit. These structures usually occur within close proximity to the contact zones between Upper and Lower Birimian sequences. The zone of gold mineralisation is typically 30m wide.

In the central and southern portions of the Main pit, a porphyry dyke, which is up to 80m wide, strikes in an approximate NE direction, closely following the hanging wall of the reef. The dyke bifurcates in the north of the pit with the major branch of the dyke continuing NE and the other minor branch continuing N parallel to the reef.

Locally, there is distinct evidence of shearing within and at the contacts of the mineral deposit. Examples of shearing in the pit are visible by evidence of striations indicating directional shear displacement. An example of this is shown in the photograph in Figure 16-2, taken along the western slope of the Main pit within the phyllite.

Figure 16-2: Directional Shearing in the Phyllites of the Bibiani Main Pit

(Source SRK, 2022)

Several shears are identifiable in the pit and have been mapped and modelled, these vary from primary through secondary and tertiary shears. The primary shear zone is a regional scale shear zone that strikes between 000° and 035° azimuth along the main axis of the pit and resultantly has little impact on the pit slope stability. Its dip varies from 60° W in the southern end of the pit to sub-vertical in the northern end. There are several second and third order splays that emanate from the primary shear zone.

Second order shears and faults are widespread in the meta-sediments on both sides of the main shear zone, with their dip and strike varying on either side. These second order structures appear to have a significant influence on slope stability.

To the west of the main shear zone, the second order shear planes dip sub-vertically E to SE, are distinctly slickensided and appear to undulate (described as curvi-linear in the 2006 SRK Report) along both dip and strike. They appear to be sympathetic to the bedding, steepening to become more obliquely cross-cutting to the north. The dip appears to fan outwards from the main shear, varying from approximately 70° to subvertical approaching the main shear zone. The direction of shearing was measured by SRK in 2006 at a pitch angle of 30° to 40° N.

To the east a well-defined secondary shear zone is prevalent, dipping at from 48° W to sub-vertically, and exhibiting evidence of significant movement along the direction of shearing, with distinct gouge present between the shear surfaces. There is less visible slickensiding than to the west of the main shear zone. The general orientation was measured at 046°/247° dip/dip direction in the north of the Main pit.

The second order shears show high persistence, extending over significant lengths of the Main pit where they are exposed. Due to the fan-like nature of the dip variability on either side of the main shear zone, these secondary shears and faults appear to all have a negative impact on slope stability.

Third order shears are particularly prevalent along the western slope of the Main pit, and follow a similar trend to the second order shears. However, they appear less persistent and influence mainly bench-scale stability.

The variability in particularly the second order shear planes presents a challenge for numerical modelling, with representative models proving difficult to simulate. Examples of these structural features from the work completed by SRK in 2006 are shown in

Figure 16-3.

Recent observations during the August 2021 SRK site visit confirmed these conditions, with further validation provided by Bibiani Mine staff.

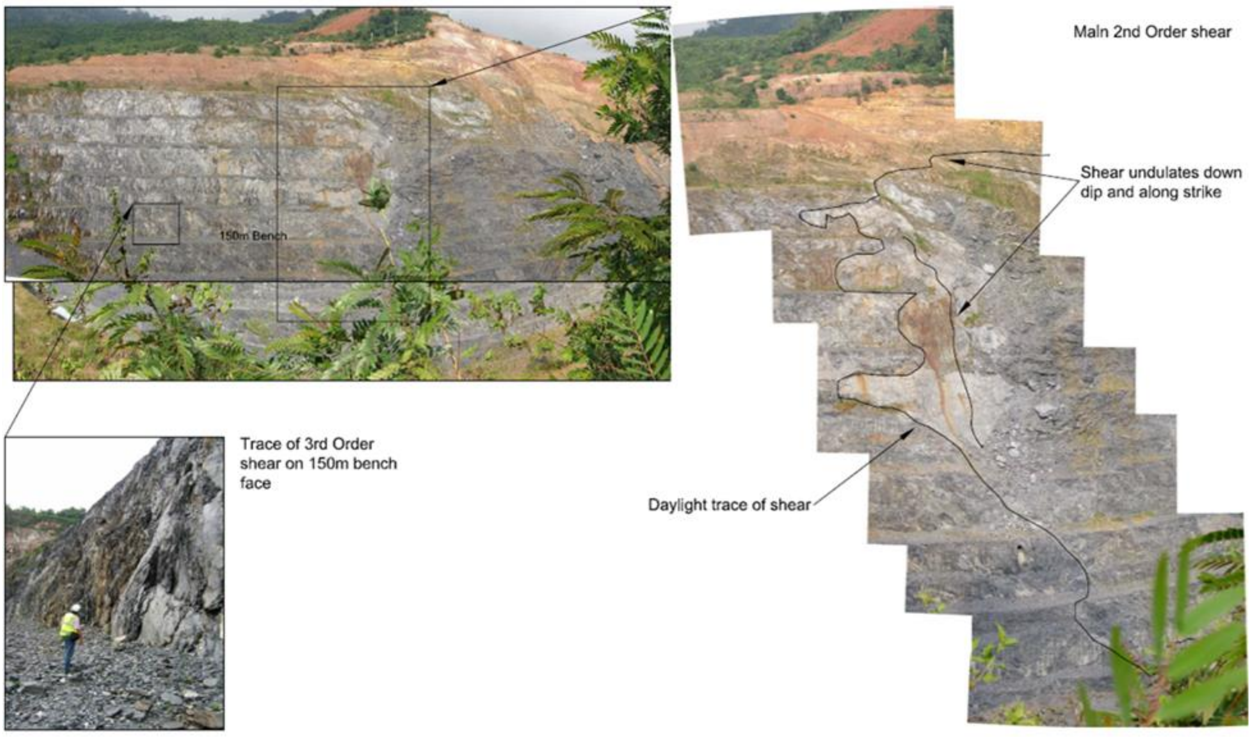


Figure 16-3: Bibiani Main Pit West Wall Viewed from the SE, Showing 2nd and 3rd Order Shearing

(Source SRK, 2006)

Structural orientation measurements from various site investigations, and in particular from studies carried out by SRK from 2005 to 2006, indicate that due to the curvi-linear nature of the shear planes, their orientations lie within a broad range, with the steeper shear orientations being parallel to the average foliation orientation. The shear plane orientations are shown on the stereonet in Figure 16-4 and vary between 58°/050° and 87°/110° (dip/dip direction) to the west of the main shear.

Figure 16-5 shows a stereonet representation of the shear plane orientation to the east of the main shear. It should be noted that only one reliable measurement was achieved on the east of the main shear zone.

Strong foliation is prevalent in the meta-sediments, especially in the phyllite, with foliation thicknesses ranging from millimetre to centimetre scale. The foliation and potentially the shearing are the result of intense folding. However, distinct marker units could not be readily identified.

The foliation dip varies from 70° to 90°, with most of the foliation present in the current west wall of the Main pit approaching 70° and generally steepening towards the main shear zone. The strike is sub-parallel to the current Main pit east and west walls.

It should be noted that the Bibiani Main pit is to be mined adjacent up dip of the historic Bibiani underground mine. Underground mining was by means of open stoping, with stope voids present behind and adjacent below the pit slope. Therefore, the maintenance of an adequate crown pillar between the planned open pit and historic underground operations is important, i.e., where pits slopes are planned to intersect underground voids, the stability of the pit slopes must be protected by maintaining a stable crown pillar until the pillar can be drilled and collapsed into the voids in a controlled manner, ensuring ongoing pit slope stability.

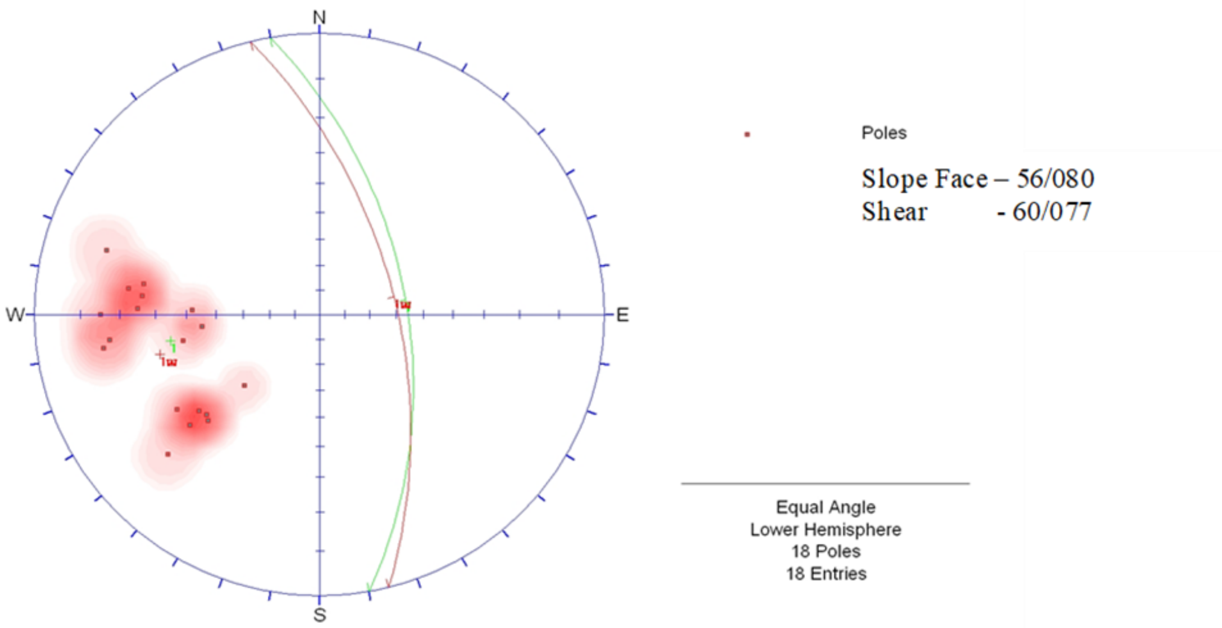


Figure 16-4: Pole Plot of Shear Plane Orientations to the West of the Main Shear

(Source SRK, 2022)

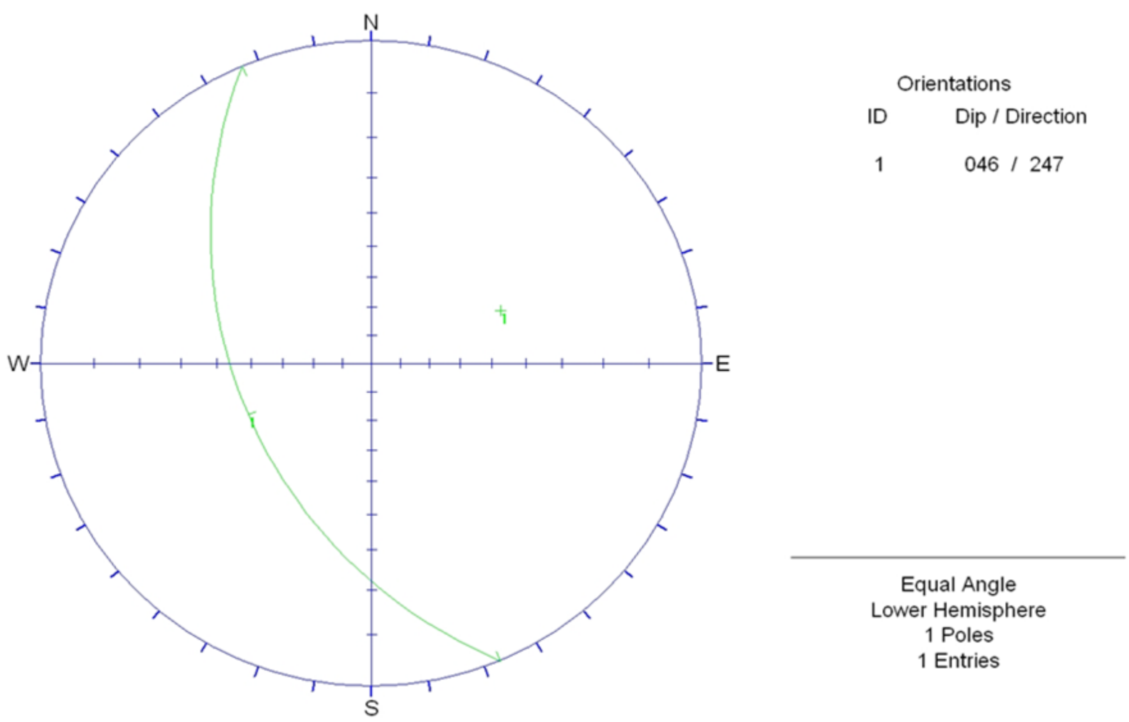


Figure 16-5: Pole Plot of Shear Plane Orientations to the East of the Main Shear

(Source SRK, 2022)

16.2.3 Geotechnical Design Analysis

The geotechnical design analysis was carried out by Professor Carlos Carranza-Torres on subcontract to SRK, with review of the design analysis by our Mr Desmond Mossop. The analysis was carried out in Itasca's FLAC3D software, with litho-structural models provided by Bibiani and rock mass parameters provided by SRK, and detailed numerical mesh modelling carried out by Professor Carranza-Torres.

FLAC3D (Fast Lagrangian Analysis of Continua in 3 Dimensions) is numerical modelling software for geotechnical analyses of soil, rock, groundwater, constructs, and ground support. Such analyses include engineering design, factor of safety prediction, research and testing, and back-analysis of failure.

FLAC3D utilizes an explicit finite volume formulation that captures the complex behaviours of models that consist of several stages, show large displacements and strains, exhibit non-linear material behaviour, or are unstable (including cases of yield/failure over large areas, or total collapse).

The Bibiani design analysis utilised FLAC3D to produce results as 2D sections through strategic points in the pit slopes related to historic instabilities and planned future mining, with consideration given to pit to underground interaction.

The slope failure in the central NW slope was back-analysed to provide representative material input parameters for the predictive analysis carried out on the proposed Main pit design shell.

The chosen section positions for the back-analysis and predictive design analyses are shown in Figure 16-6 and Figure 16-7 respectively.

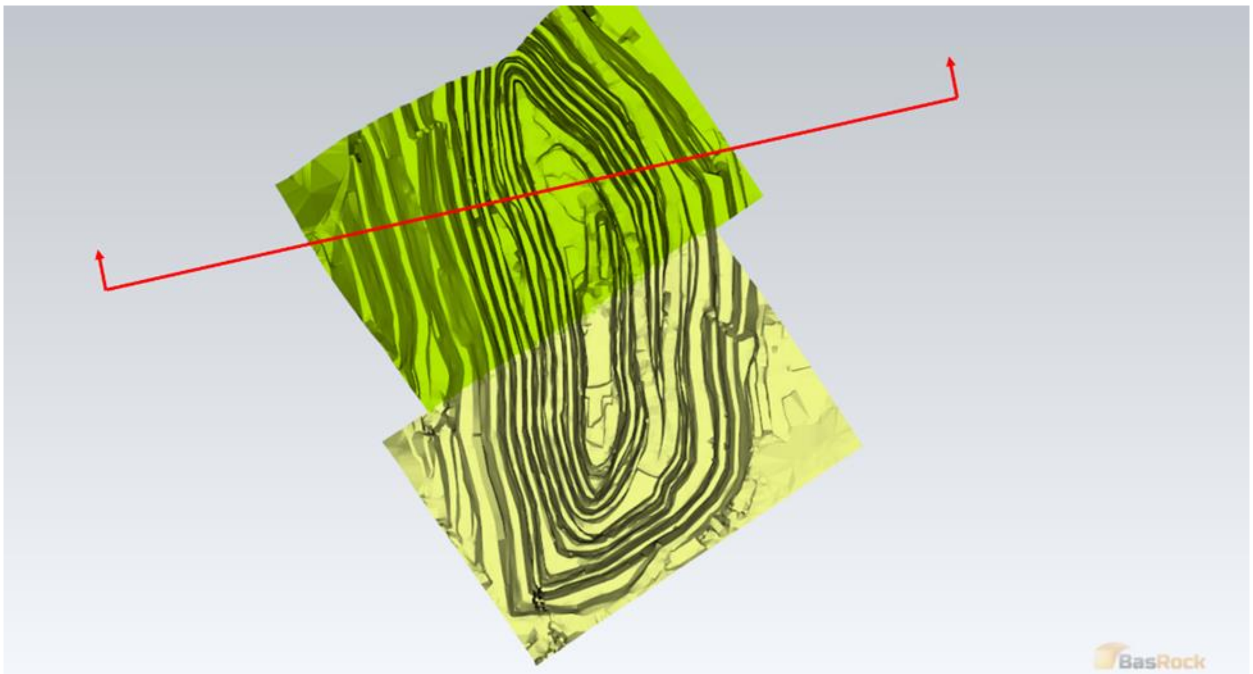


Figure 16-6: Bibiani Main Pit Central NW Slope Failure Back-Analysis Section

(Source SRK, 2022)

Design factors of safety (FoS) were analysed for the proposed pit shell and compared with agreed design criteria to confirm the preliminary slope design angles recommendations provided by SRK during and immediately after the site visit. The defined design criteria were for the design slopes to meet a FoS of at least approaching 1.4

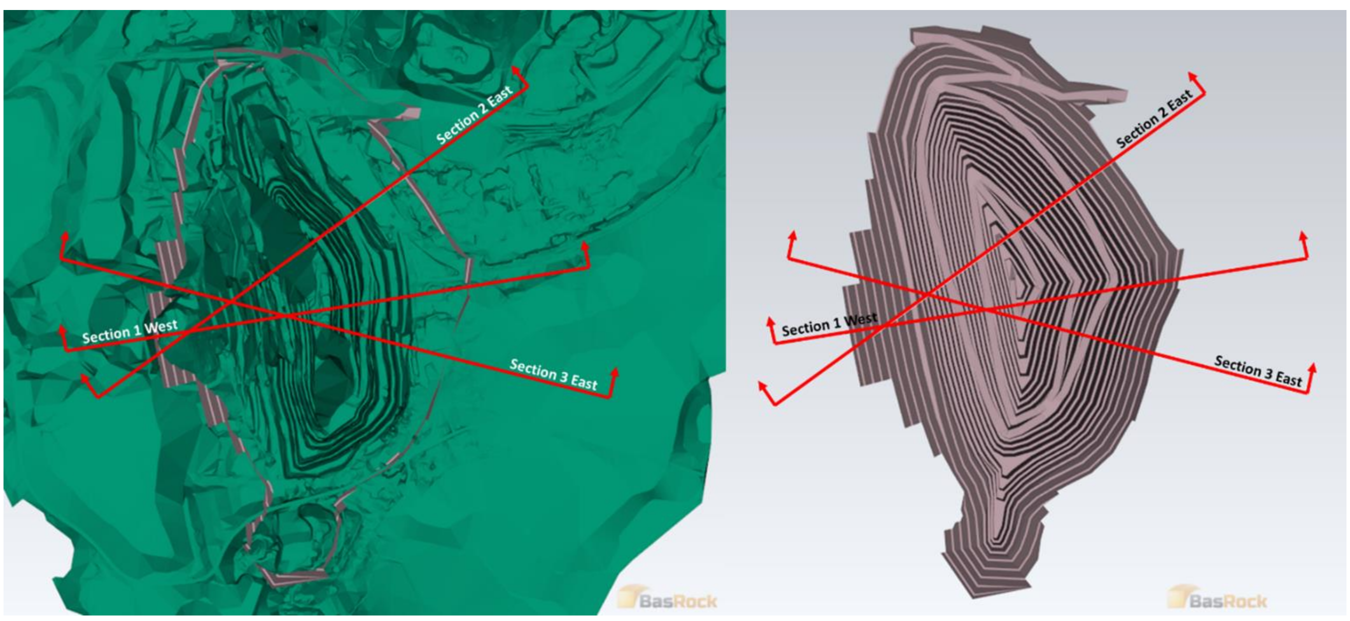


Figure 16-7: Bibiani Main Pit Proposed Pit Shell with Selected Design Analysis Sections

(Source SRK, 2022)

BACK ANALYSIS

A back-analysis was carried out on the Central NW slope failure that occurred in the Bibiani Main pit in 2004 to 2005. This back-analysis provided calibrated rock mass and structural defect strengths to apply in the predictive design analysis, providing confidence in the results of the predictive analysis.

The position of the back-analysis section through the centre of the failed mass is given in Figure 16-6, with the FLAC3D modelled section in Figure 16-8 showing the excavation steps modelled to represent the mining state at failure of the slope. The numerical model is excavated in mining steps to ensure stress equilibration during modelling and thus provide confidence in the modelled results.

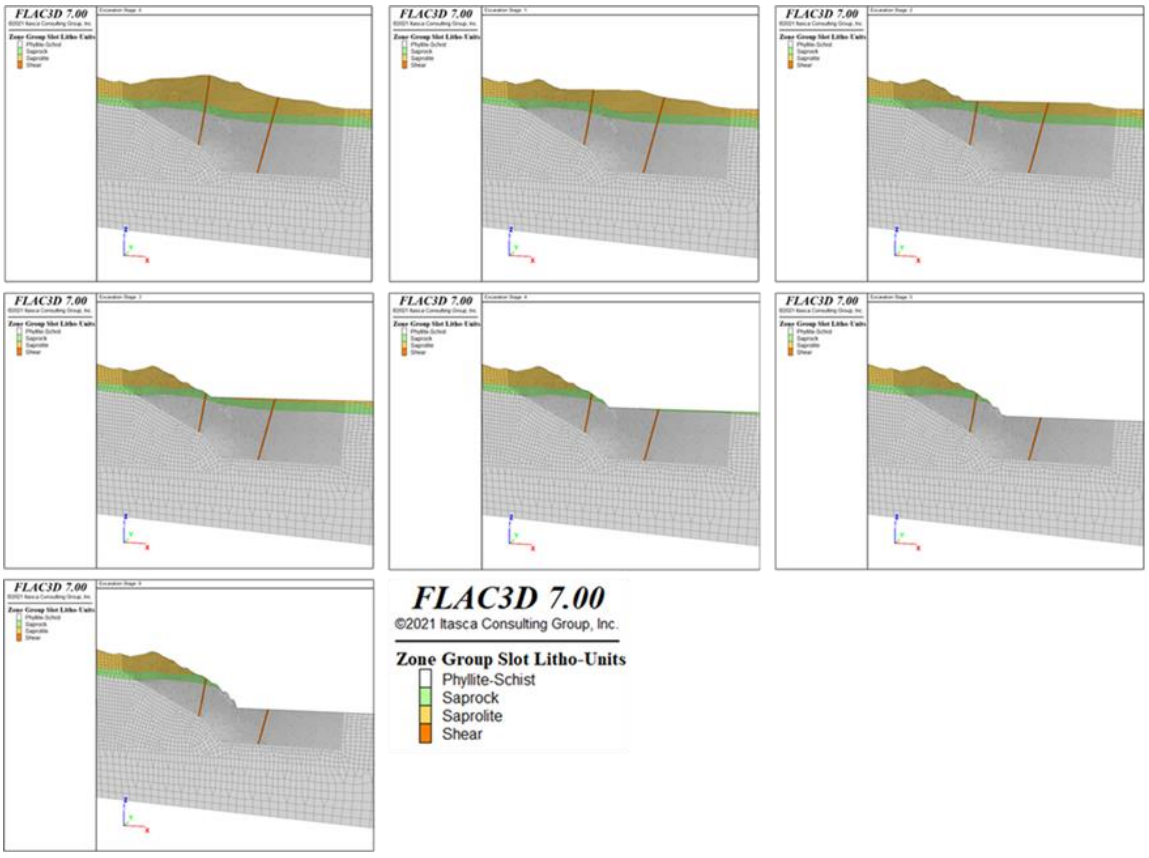


Figure 16-8: Mining Excavation Stages Modelled in the FLAC3D for the Back-Analysis Section of the Central NE Slope Failure in the Bibiani Main Pit

(Source SRK, 2022)

The initial material properties for the Bibiani Main pit Central NW failure are given in Table 16-2. These properties were derived from literature provided by Bibiani and were further adjusted to achieve a back-analysis FoS approaching 1.0, i.e., with the slope in a state of equilibrium immediately prior to failure. The adjusted material properties that where then taken forward into the predictive design analysis are summarised in Table 16-3, with the corresponding back-analysis results shown in Figure 16-7.

Table 16-2: Initial Material Properties Derived from Available Literature for Bibiani

Undamaged Properties

Unit No.	Material	Young's Modulus (MPa)	Poisson	Cohesion (kPa)	Friction (°)	Tensile Strength (Mpa)	Density	mi	UCS (Mpa)	GSI
1	Saprolite	1180	0.25	330	37	0.47	2.6	10	68	52
2	Andalusite	40990	0.49	7500		12.97	3.2	6	110	
3	Tonalite	73580	0.23	4400		13.54	2.7	11	123	
4	Shear			0.76	27		2.6			
5	Fault			0.76	27		2.6			
6	Fault-Zone			0.76	27		2.6			

Damaged Zone Properties

Unit No.	Material	Young's Modulus (MPa)	Poisson	Cohesion (kPa)	Friction (°)	Tensile Strength (Mpa)	Density	mi	UCS (Mpa)	GSI
1	Saprolite	826	0.175	231	25.9	0.329	1.82	7	47.6	36.4
2	Andalusite	28693	0.343	5250		9.079	2.24	4.2	77	
3	Tonalite	51506	0.161	3080		9.478	1.89	7.7	86.1	
4	Shear			0.532	18.9		1.82			
5	Fault			0.532	18.9		1.82			
6	Fault-Zone			0.532	18.9		1.82			

Undamaged Joint Properties

Unit No.	Material	Young's Modulus (MPa)	Poisson	Cohesion (kPa)	Friction (°)	Tensile Strength (Mpa)	Density	mi	UCS (Mpa)	GSI
7	Saprock	1680	0.25	600	37	672	2.6	10	68	90
8	Carb Shale	17400	0.18			8	1.8	4	62	
9	Phyllite-Schist	3380	0.3	250	46	1300	2.7	10	70	52

Damaged Zone Joint Properties

Unit No.	Material	Young's Modulus (MPa)	Poisson	Cohesion (kPa)	Friction (°)	Tensile Strength (Mpa)	Density	mi	UCS (Mpa)	GSI
7	Saprock	1176	0.175	420	25.9	470.4	1.82	7	47.6	63

8	Carb Shale	12180	0.126			5.6	1.26	2.8	43.4	0
9	Phyllite-Schist	2366	0.21	175	32.2	910	1.89	7	49	36.4

Foliation Properties

Unit No.	Material	Cohesion (kPa)	Friction (°)	Tensile Strength (MPa)
7	Saprock	1	30	0
8	Carb Shale	2.3	33	0
9	Phyllite-Schist	2.3	33	0

Table 16-3: Calibrated Material Properties from Back-Analysis Carried Forward into Bibiani Predictive Design Analysis

Undamaged Properties

Unit No.	Material	Young's Modulus (MPa)	Poisson	Cohesion (kPa)	Friction (°)	Tensile Strength (kPa)	Dilation	Density	mi	UCS (Mpa)	GSI
1	Saprolite	1680	0.25	150	35	4700	37.5	2.3	10	68	52
2	Andalusite	40990	0.49	7500	42	12970	45	3.2	6	110	55
3	Tonalite	73580	0.23	4400	42	13540	45	2.7	11	123	60
4	Shear	25000	0.2	76	30	0	0	1.8			
5	Fault	15000	0.2	76	30	0	0	1.8			
6	Fault-Zone	30000	0.25	76	30	0	0	1.8			

Damaged Zone Properties

Unit No.	Material	Young's Modulus (MPa)	Poisson	Cohesion (kPa)	Friction (°)	Tensile Strength (kPa)	Dilation	Density	mi	UCS (Mpa)	GSI
1	Saprolite	1176	0.175	105	24.5	3290	26.25	1.61	7	47.6	36.4
2	Andalusite	28639	0.343	5250	29.4	9079	31.5	2.24	4.2	77	38.5
3	Tonalite	51506	0.161	3080	29.4	9478	31.5	1.89	7.7	86.1	42
4	Shear	18000	0.1	53.2	21	0	0	1.26			
5	Fault	12000	0.12	53.2	21	0	0	1.26			
6	Fault-Zone	25000	0.1	53.2	21	0	0	1.26			

Undamaged Joint Properties

Unit No.	Material	Young's Modulus (MPa)	Poisson	Cohesion (kPa)	Friction (°)	Tensile Strength (kPa)	Dilation	Density	mi	UCS (Mpa)	GSI
7	Saprock	25000	0.25	300	37	6700	0	2.6	10	68	90
8	Carb Shale	30000	0.25	1200	35	10000	0	1.8	8	62	55
9	Phyllite-Schist	28000	0.3	1200	40	8000	0	2.7	10	70	52

Damaged Zone Joint Properties

Unit No.	Material	Young's Modulus (MPa)	Poisson	Cohesion (kPa)	Friction (°)	Tensile Strength (kPa)	Dilation	Density	mi	UCS (Mpa)	GSI
7	Saprock	17500	0.175	210	25.9	4690	0	1.82	7	47.6	63
8	Carb Shale	21000	0.175	840	24.5	7000	0	1.26	5.6	43.4	38.5
9	Phyllite-Schist	19600	0.21	840	28	5600	0	1.89	7	49	36.4

Foliation Properties

Unit No.	Material	Cohesion (kPa)	Friction (°)	Tensile Strength (MPa)	Dilation
7	Saprock	200	34	5	0
8	Carb Shale	800	37	10	0
9	Phyllite-Schist	800	37	8	0

Foliation Damaged Zone Properties

Unit No.	Material	Cohesion (kPa)	Friction (°)	Tensile Strength (MPa)	Dilation
7	Saprock	140	23.8	3.5	0
8	Carb Shale	560	25.9	7	0
9	Phyllite-Schist	560	25.9	5.6	0

Waste Rock Underground Void Backfilling

Unit No.	Material	Cohesion (kPa)	Friction (°)	UCS (MPa) Intact Rock	Density (Broken Rock)
10	Andalusite	50	55	110	2.2

During the back-analysis, sensitivity studies were conducted to determine representative material properties for all values, including those that could not be derived from the available literature. This resulted in confidence in the properties applied during the predictive design analysis. This notwithstanding, a programme of updated geotechnical drilling, sampling and testing should be implemented to confirm these values as soon as possible during the planned pit mining activities.

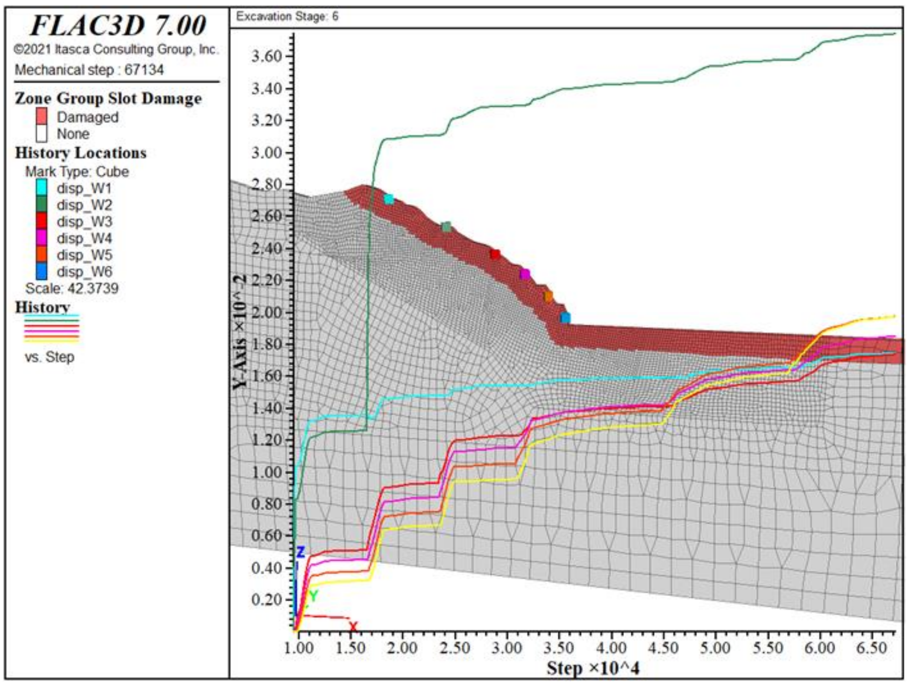


Figure 16-9: Bibiani Main Pit Central NW Failure Back-Analysis Showing Displacement Points Down Slope at FOS ≈ 1.0

(Source SRK, 2022)

The back-analysis achieved a good simulation of the Main pit Central NW failure, i.e., the results provided a calibrated simulation of reality, in turn providing the calibrated material properties presented in Table 16-3 for input to predictive design analyses. Pore water pressures were considered from groundwater level data provided by Bibiani staff, with the modelled pore pressure grid applied in the back-analysis given in Figure 16-9.

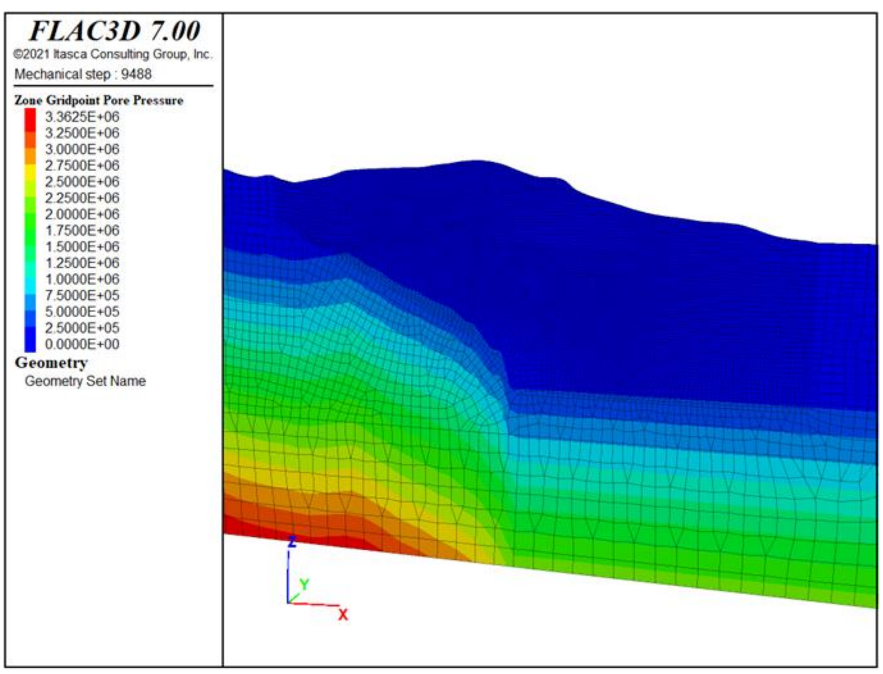


Figure 16-10: Pore Pressure Grid Applied in the Bibiani Central NW Slope Failure Back-Analysis Design Slope Analysis

(Source SRK, 2022)

16.2.4 Design Slope Analysis

The predictive slope stability analysis carried out on the proposed slope design applied the material properties obtained from the back-analysis, as shown in Table 16-4. FLAC3D stability analyses were carried out for Sections 1 West, 2 East and 3 East, as shown in Figure 16-7, for the proposed design pit shell. Sensitivity analyses were carried out considering slope angles, with the base case (the proposed pit shell) achieving the desired design criteria of FoS greater than 1.4.

The mining excavation stages considered in the analysis for each Section are shown in Figure 16-11, the underground voids were included as a final excavation stage and filled with waste rock backfill to ensure stability of the slope, and test the recommended void mining process.

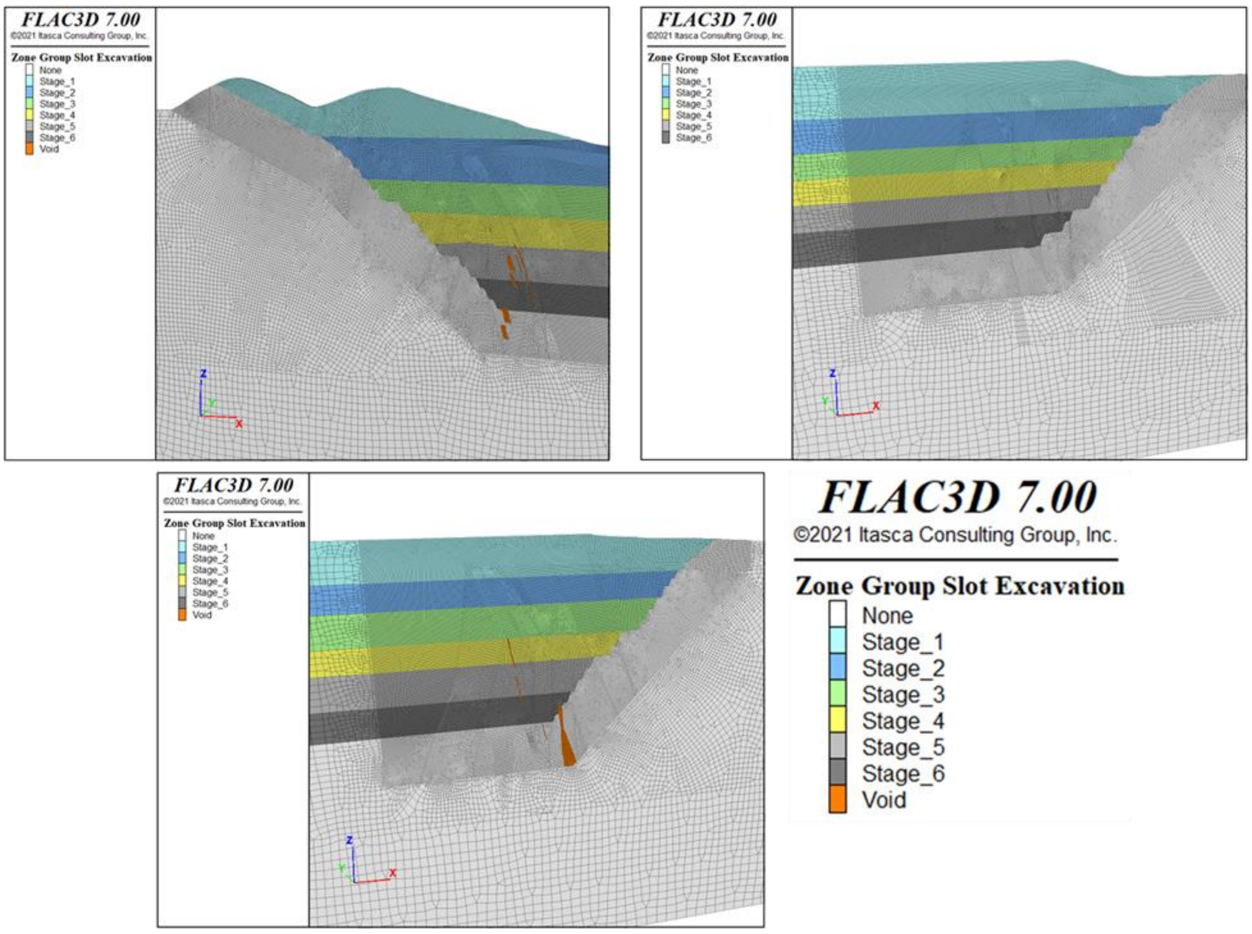


Figure 16-11: Mining Excavation Stages for Sections 1 West (Top Left), 2 East (Top Right) and 3 East (Bottom), Including Underground Voids

(Source SRK, 2022)

The sections included litho-structural details from the latest models provided by Bibiani staff, as shown in Figure 16-12. The foliation dip in the foliated units was considered parallel to the bounding shear zones associated with each unit, with the foliation dip fanning with distance towards the shear zones.

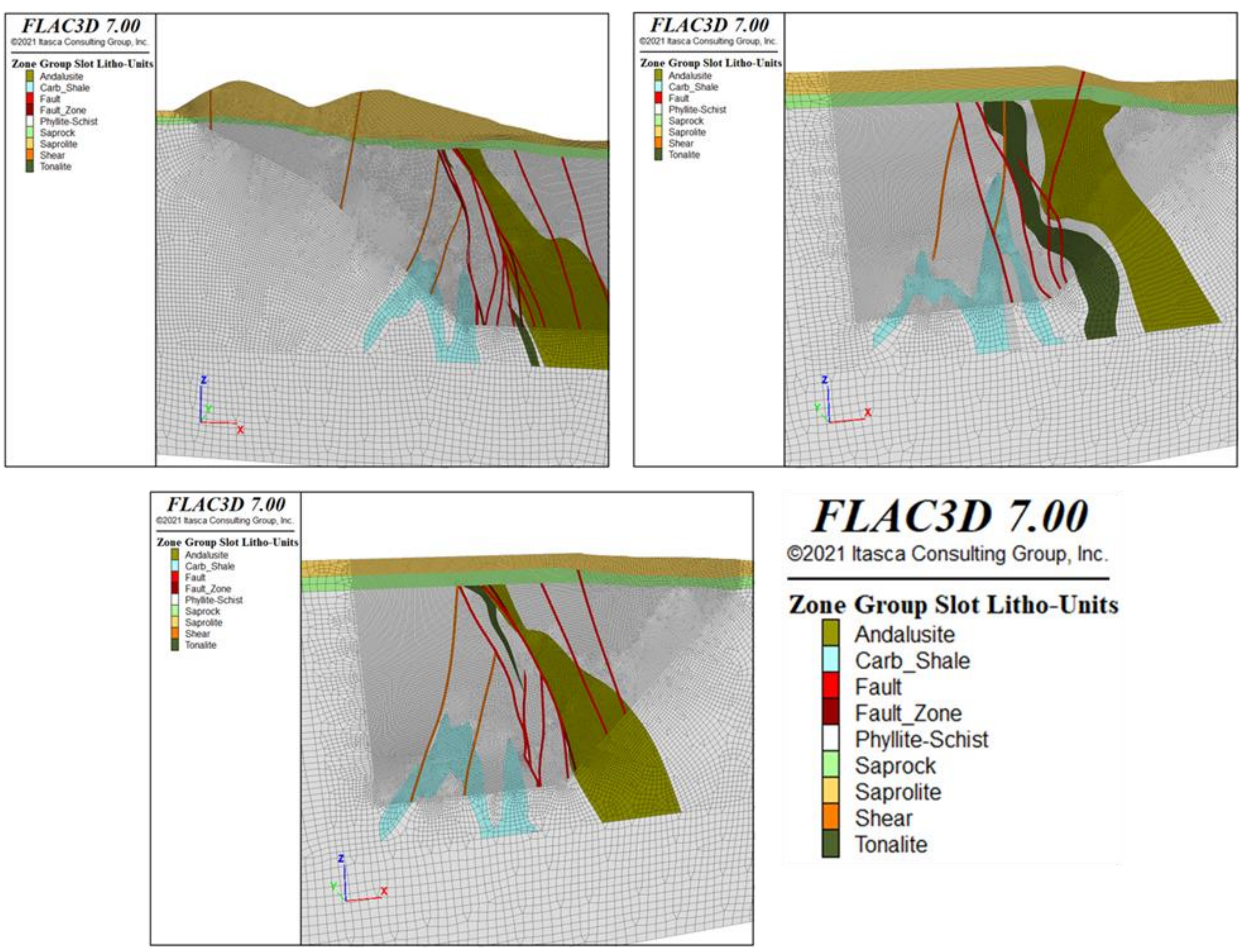


Figure 16-12: Litho-Structural and Underground Void Detail Included in Sections 1 West (Top Left), 2 East (Top Right) and 3 East (Bottom)

(Source SRK, 2022)

The final excavated FoS results for the three Sections are shown in Figure 16-13, with the desired design criteria achieved in each case, and the resulting recommended slope design parameters given in Table 16-4. The modelled slope displacements in Figure 16-13 indicate the slope relaxation at each mining excavation step, with the associated displacement graphs flattening in each case, indicating that stability is achieved. A continued accelerating graph would indicate slope instability.

The maximum displacements occur as the slopes approach and mine through the underground voids, but by backfilling the voids with typical hardrock waste, stability is achieved.

It is to be expected that stress concentrations will occur around the underground voids and in the crown pillar between the voids and the pit slope, as the pit slope approaches the voids, these stresses will increase. Therefore, the required crown pillar thickness to ensure that these stress concentrations do not destabilise the underground stope backs, resulting in localised failure of the crown pillars, should be analysed in detail before mining approaches these areas. This did not form part of the scope of the work carried out to date, as the overall pit slopes remain stable and there is still significant time before the pit mining approaches these areas.

These stress concentrations can be seen in Figure 16-13 for Sections 1 West and 3 East, with Section 2 East not intersecting any underground voids.

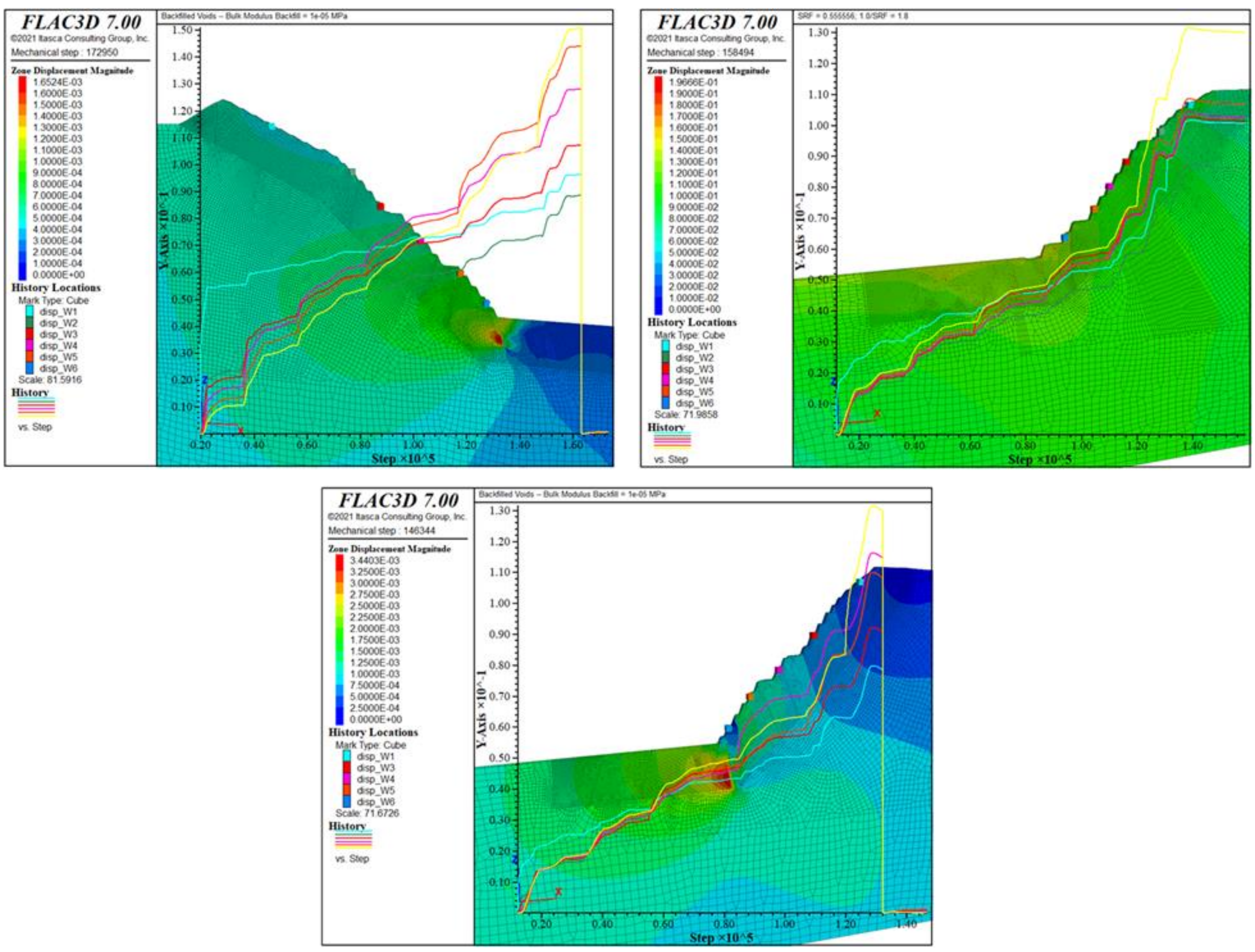


Figure 16-13: Slope Displacements for the Final Modelled FoS at 1.4 for Sections 1 West (Top Left), 2 East (Top Right) and 3 East (Bottom)

(Source SRK, 2022)

Other pits visited that are to be prioritised for the restart of mining production at Bibiani include the Walsh and Strauss satellite pits, with similar design parameters applied in similar geology to the Main pit. The only observed difference in the Walsh and Strauss pits being that the saprolite horizon appears less affected by remnant structure and not as thick as at the Main pit. Therefore, the recommended slope angles for the Walsh and Strauss pits saprolite horizon were considered from a thorough benchmarking of stable and unstable West African saprolite slopes, as shown in Figure 16-14.

It should be noted that the recommended slope angles in Table 16-4 consider depressurised slopes. This means that both active slope depressurisation (continued underground pumping, and ex-pit and in-pit pumped wells, as required) and passive depressurisation (sub-horizontal drain holes installed along successive pit benches) should be considered as part of the mining schedule.

Further, good surface water management and in-pit drainage are recommended to ensure that infiltration of surface water behind and along the pit slopes in minimised, in turn minimising the potential for transient pore water pressure increases in the slope.

Table 16-4: SRK Recommended Maximum Slope Angles for the Bibiani Main and Satellite Pits

Bibiani Main Pit			Bibiani Satellite Pits		
Oxide/Saprolite	**East, North & West Slopes**	**South Slope & North East Slope**	**Oxide/Saprolite**	**Walsh**	**Strauss**
Bench height (m)	12	12	Bench height (m)	12	10
Berm width (m)	5	5	Berm width (m)	5	8
Batter angle (°)	31.5	37	Batter angle (°)	35	47
Inter-ramp angle (°)	**26.0**	**29.8**	**Inter-ramp angle (°)**	**28.5**	**30.0**
Transition/Saprock	**All Slopes**		**Transition/Saprock**	**Walsh**	**Strauss**
Bench height (m)	12		Bench height (m)	12	12
Berm width (m)	6		Berm width (m)	6	6
Batter angle (°)	55		Batter angle (°)	55	70
Inter-ramp angle (°)	**39.8**		**Inter-ramp angle (°)**	**39.8**	**49.2**
Fresh/Unweathered	**West Slope**	**East Slope**	**Fresh/Unweathered**	**Walsh**	**Strauss**
Bench height (m)	18	18	Bench height (m)	18	15
Berm width (m)	8	7	Berm width (m)	7	6
Batter angle (°)	65	70	Batter angle (°)	70	70
Inter-ramp angle (°)	**47.7**	**53.0**	**Inter-ramp angle (°)**	**53.0**	**52.6**

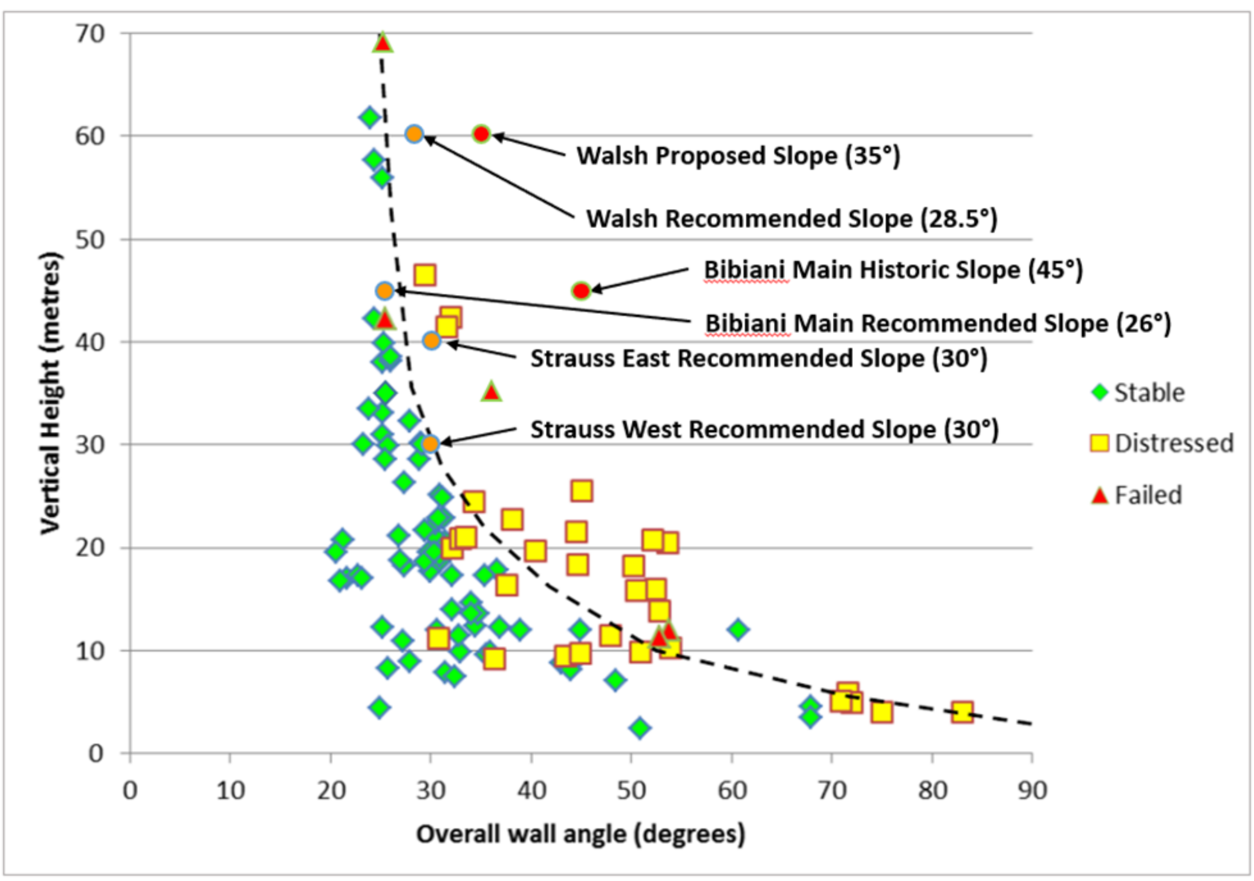


Figure 16-14: Empirical Design Chart - Stable, Distressed and Failed Saprolite Slopes West Africa

(Source: SRK & MMG)

CONCUSIONS

The planned restart of mining operations at Bibiani prioritises the Main pit along with the Walsh and Strauss satellite pits. Historically, the Main pit has experienced slope instability in both its east and west slopes extending from the saprolite and transition horizons to the unweathered rock along structure. The secondary shear zones present in the pit splay from the Main Shear zone and dip unfavourably with the pit slopes. Strike of the shear zones is sub-parallel with the pit slopes, resulting in potential for slope instability. The shear planes undulate in both dip and strike, resulting in potential for localised instabilities with complex failure mechanisms on a stack slope and bench scale.

Back-analysis of the Main pit Central NW slope failure provided calibrated material properties and pore water pressures for application in predictive design slope stability analyses. The proposed Main pit design shell was derived from preliminary SRK recommendations during the site visit of August 2021 and analysed for stability based on the back-analysis calibration.

The proposed Main pit design shell achieved the required slope design criteria of FoS greater than 1.4, with depressurised slopes and normal waste rock backfilling of the underground voids intersected by the pit.

Similar geological conditions are expected in the satellite pits, with ongoing geological and geotechnical drilling to confirm these assumptions. However, the weathering profile is variable across the project areas. Therefore, the saprolite slope design for the satellite pits was benchmarked against stable, distressed and unstable West African saprolite slopes to provide recommended saprolite slope angles.

The geotechnical review and slope design analysis are based on site observations and historic data. As mining continues, a detailed geotechnical drilling, sampling and testing programme should be implemented to validate the rock mass properties applied in this design analysis. The project area is structurally complex, resulting in complex failure mechanisms and in order to fully understand the influence of the structural environment on pit slope stability, a detailed structural study of the project area and individual pits should be considered to update structural models and provide a thorough understanding of the structural controls on both slope stability and hydrogeology for the individual pits.

The recommended slope angles in Table 16-4 consider depressurised slopes. This means that both active slope depressurisation (continued underground pumping, and ex-pit and in-pit pumped wells, as required) and passive depressurisation (sub-horizontal drain holes installed along successive pit benches) should be considered as part of the mining schedule.

Further, good surface water management and in-pit drainage are recommended to ensure that infiltration of surface water behind and along the pit slopes is minimised, in turn minimising the potential for transient pore water pressure increases in the slope.

With active mining excavation, the stresses around the pits will change and should be modelled along with the impact of blasting on the slopes to ensure that controlled blasting practices are successful in minimising the energy propagated back into the unexcavated slope.

While the current geotechnical design analysis has included the impact of the underground voids on the slope stability of the final proposed cutback slopes, it only considers backfilled stopes to simulate controlled collapse of the stopes as open pit mining approaches. It has not yet considered the minimum required crown pillar dimensions to ensure stability of the surrounding open pit slopes and benches before deliberate, controlled collapse of the crown pillars into the stope voids. This will require detailed 3D modelling of the crown pillars and approaching open pit mining, along with detailed 3D modelling of the associated blast energy propagation and should be carried out prior to the open pit mining approaching these areas. Further to this, detailed 3D modelling of the proposed crown pillar collapse blast should be undertaken to ensure the efficacy of these blasts and the resultant potential impact on the surrounding slope stability.

RECOMMENDATIONS

The following recommendations should be considered when restarting mining operations at Bibiani:

- Strictly implement the design slope angles recommended in Table 16-4 for the Main, Walsh and Strauss pits;
- Implement a good limit blasting programme to ensure that blast energy propagated back into the unexcavated slope is minimised;
- Carry out detailed stress and blast energy modelling to guide the mining implementation, including the collapse of the crown pillars between the approaching open pit and underground voids;
- Implement an integrated and risk-based site geotechnical programme, supported by adequate geotechnical and other mining technical staffing, both on site and at corporate/external level;
- Implement an integrated slope stability monitoring programme to ensure safety of personnel and provide validation of slope design assumptions and calibration of stability analysis results as mining continues;
- Carry out a detailed structural geology study of the mining area to provide updated structural models for the pits (and underground, as required), and inform both geotechnical and hydrogeological modelling and analysis;
- Carry out and hydrogeological study to provide detailed requirements for continued mine dewatering and slope depressurisation, and inform pore water pressure modelling in future slope stability analyses;
- Implement both active (via pit crest pumped wells or continued underground pumping) and passive (via in-pit sub-horizontal drains) slope depressurisation programmes to manage groundwater (the phreatic surface) and transient water (infiltration);
- Implement a good surface and in-pit water management programme to ensure that surface water infiltration is minimised, in turn minimising transient pore water pressure increases in the slopes from surface water infiltration. Sub-horizontal drain holes are an important part of this; and
- Implement regular external geotechnical review to ensure good geotechnical oversight and assurance from both an operational and design perspective.

16.3 Mining Operations

16.3.1 Site Preparation

All three pits included in the mine plan, Main, Straus and Walsh pits have been previously mined so there is limited site preparation required. The additional area required for the pit expansions will be cleared of vegetation to a depth of 0.3m. The previous pit benches will be cleared of vegetation and rubble as access is gained to these areas. The actual depth recovered will vary depending on location and based on recommendations from the Environmental department. The topsoil will be pushed into piles by a dozer or grader before a loader or excavator is used to load it into trucks. Trucks will then haul the soil to stockpiles for later use on rehabilitation, or directly to active rehabilitation areas. Prior to topsoil deposition, the stockpile areas will be cleared and surveyed.

16.3.2 Drill and Blast

Ore and waste will be broken using conventional drilling and blasting techniques. It is anticipated that it is possible to free dig some of the material using either backhoe excavators or by ripping with a CAT D9 dozer, (or equivalent). It is anticipated that approximately 80% of the oxide material in the production schedule will be amenable to free dig, with the remainder of material being drilled and blasted.

The blast hole drilling will be performed using Sandvik DP1500 drill rigs, or equivalent, capable of drilling 102mm to 152mm vertical and inclined holes. An explosive delivery truck and several special purposes built LDV's will be used to carry personnel and explosive accessories. Stemming will be used to fill the blast holes after they have been charged.

The blast design parameters are detailed in Table 16-5 below. These might differ from time to time as required while mining through different zones and weathering areas.

Table 16-5: Blast Design Parameters

Material Type	Pattern Size	Pattern Area (m^2)	Subdrilll (m)	Stemming Height (6m Blast)	Stemming Height (9m Blast)	Diameter (mm)	Penetration Rate (m/h)
Oxide	6.1m x 6.2m	37.8	1.0	3.0	3.5	127	50
Oxide	5.0m x 5.5m	27.5	1.0	3.0	3.5	127	50
Oxide	5.0m x 5.0m	25.0	1.0	3.0	3.5	127	50
Oxide	5.0m x 4.8m	24.0	1.0	3.0	3.5	127	50
Transition	4.5m x 4.8m	21.6	1.0	3.0	3.5	127	50
Transition	4.2m x 4.8m	20.2	1.0	3.0	3.5	127	35
Transition	4.3m x 4.5m	19.4	1.0	3.0	3.5	127	35
Fresh	4.3m x 4.5m	19.4	1.0	3.0	3.5	127	35
Fresh	3.9m x 4.5m	17.6	1.0	3.0	3.5	127	35
Fresh	3.8m x 4.2m	16.0	1.0	3.0	3.5	127	35
Fresh	3.7m x 4.3m	15.9	1.0	3.0	3.5	127	25
Fresh	3.5m x 4.0m	14.0	1.0	3.0	3.5	127	25
Fresh	3.2m x 3.8m	12.2	1.0	3.0	3.5	127	25
Fresh	3.0m x 3.5m	10.5	1.0	3.0	3.5	127	25

The pit configuration, bench height and waste material type anticipated best suits drill rigs capable of drilling drill holes with a diameter of 127mm. The burden, spacing and sub-drill design are dependent on the varying material types of the deposit.

An emulsion-based product with water resistant characteristics and a high velocity of detonation is used to achieve the best fragmentation result. The blast pattern is dictated by the powder factor required to ensure appropriate fragmentation and heave. The selection of the powder factor is based on the unconfined compressive strength (UCS) measurement results obtained from the preliminary excavation characterisation work.

The current explosives contracts are managed by the mining contractor and are included as part of the contractor's cost. There is an established explosives storage facility (Magazine) on site which complies to Ghanaian Minerals and Mining (Explosives) Regulation 145 with clear indication of types of explosives being stored, design, fenced-off and plans supplied to the Commission. Explosives and accessories are delivered by the explosive contractor to ensure production requirements and legal storage limitations. Emulsion storage capacity is also already established on site to meet both production and regulatory requirements. An emulsion plant will be erected during Q4 2022.

16.3.3 Load and Haul

The mining fleet for the Main pit will include CAT 6030, 300t hydraulic backhoe excavators with a 17m^3 bucket capacity, or equivalent, Hitachi 1900, 190t hydraulic backhoe excavator with a 12m^3 bucket capacity or equivalent and CAT 6015 excavators with an 6m^3 bucket capacity. The primary hauling fleet will be CAT 777D dump trucks with a 94t capacity.

The mining fleet for the Satellite Pits will typically include CAT 6015, 140t hydraulic backhoe excavator or equivalent and CAT 390, 90t hydraulic excavators with a 4.6m^3 bucket capacity or equivalent. Haul trucks will be Cat 775 Dump trucks with a 64t capacity.

Excavation will be executed from the mining dig plan as provided by the mine planning team to the operations team, with mineralised material being hauled from the pits to the ROM pad, or directly to the crusher.

The crushing circuit will operate seven (7) days per week, 24 hours per day. The requirement shall always be to keep the primary crusher bin full to appropriate levels and the plant crushing systems fed in accordance with the crusher feed plan while the crushers are operational.

The primary crusher is located at the main ROM stockpiles. The crusher is designed to accept direct tipping by haulage trucks from the pits. The crusher feed plan shall consist of blending from the pits and from ROM stockpiles. A certain quantity of mineralised material from the pits shall be dumped at the respective ROM stockpiles and then re-handled into the primary crusher bin as per the crusher feed plan. A layout of the ROM stockpiles is depicted in Figure 16-15.

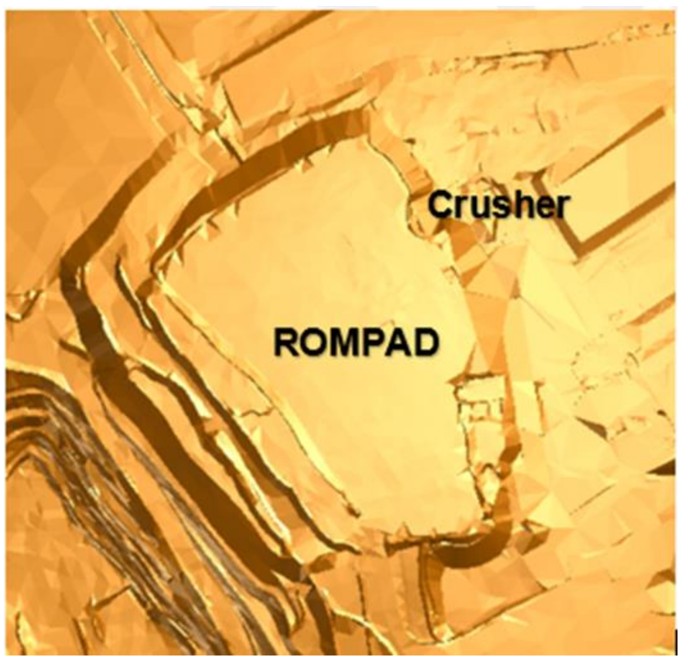


Figure 16-15: ROM Pad Design

(Source MGBL, 2022)

16.3.4 Grade Control

Grade control (GC) drilling and sampling will be required to determine whether material in a given area is above, or below the cut-off grade. The mineralised material is not anticipated to be visually controlled in the active mining face. GC definition drilling and sampling will be required to delineate the mineralised zone prior to the blast planning of the mineralised blocks.

GC drilling will be conducted by a dedicated RC drill that will drill a 10m x 5m pattern to a depth of 24m. Sampling will be conducted at 1.5m intervals using composited drill chippings along the full length of the hole. This data will be used to generate a GC model, which will be used for short term planning. This GC drilling will be accompanied by deeper holes which is called dynamic drilling, these holes cover the area deeper the 24m (24m to 48m) which is used for the medium-term planning. Blast hole sampling may be required during the mining cycle when/if topographical limitations impact access of GC drilling rigs or if additional samples are required to compile the grade-control model used for short-term planning.

The technical services team will be responsible for collecting the definition drilling assay data and interpreting the results to define the economic zones. They will communicate the mineralised zones to the mine planning engineer and drill and blast supervisor for inclusion into the short term mine plan. Finally, they will delineate those zones in the field and provide direction to the mine operations crew during excavation. The technical services team are also responsible, as part of the sample process, to provide the BWI information to assist with the plant optimisation throughput.

Mapping of the pit for lithology, alteration, structure, mineralisation, hardness will be undertaken utilizing the following process:

- Logging of the blast holes for lithology and alteration
- Development of a hardness model based on logging, mapping and drill penetration rates
- Development of an alteration model based on logging and mapping data
- Generation of dig plans based on assay results and the hardness and alteration models
- These dig plans are communicated to the mining team to direct the mine personnel and mining contractor
- The grade control geologist visits the mining faces on a regular basis to monitor production and can update dig lines.

16.3.5 Underground Mining Voids

The Bibiani mine has previously been mined as an underground mine. The proposed open pit mining will be mining into and in the vicinity of the existing voids. Special precautions will need to be made to ensure the safety of people and equipment when mining close to voids. Operating procedures specifically dealing with mining in the vicinity of the voids will be prepared and adhered to. These procedures should specifically deal with:

- The early identification of and demarcation of voids by the survey department
- Early warning of mining approaching voids by technical services department to mine production personnel
- Procedures to be adopted by production crews to ensure safety of personnel and equipment
- Safety pillars to be left above and adjacent to voids. The geotechnical study has recommended that detailed 3D modelling of the crown pillars and approaching open pit mining, along with detailed 3D modelling of the associated blast energy propagation is carried out. This should be carried out prior to the open pit mining approaching these areas. Further to this, detailed 3D modelling of the proposed crown pillar collapse blast should be undertaken to ensure the efficacy of these blasts and the resultant potential impact on the surrounding slope stability.

16.3.6 Ancillary Equipment

The ancillary mining equipment will include dozers, motor graders, fuel bowsers, water bowsers, hydraulic hammer, tractor-loader-and-backhoe and wheel loaders. The function of this equipment will be to support the primary mining equipment by maintaining the pit floor and haul roads, provide clean-up around the excavators to prevent excessive tire damage, secondary breakage of oversize rocks and to water-down road surfaces to supress dust.

Costing methodology around this is included in the mining rates provided by the Contractor.

16.3.7 Rehabilitation

The surface waste dumps at each of the various mining locations will be progressively rehabilitated during their construction. Once a mining location is completed, the upper surface of the waste dump will be rehabilitated. Topsoil will be sourced directly from the mining areas or from topsoil stockpiles. There will be no backfilling of the pits based on the guidance from Minerals Commission, Ghana to avoid sterilisation of future potential resources.

The following activities were allowed for the rehabilitation of waste dumps:

- Push down waste dump batters to final formation
- Form waste dump top to final formation
- Load topsoil and dump at rehabilitation area within 1,000m of source
- Spread topsoil onto battered slopes
- Rip and seed waste dump battered slopes
- Spread topsoil onto waste dump top
- Rip and seed waste dump top.

Mine closure and rehabilitation are covered in more detail in Section 20.

16.3.8 In-Pit Water Management

In-pit water management will primarily consist of run-off control and sumps. The dewatering infrastructure and equipment is sized to handle ground water inflows and precipitation. The pit dewatering plan is based on diverting as much surface water as possible away from the open pits. Collecting of water that does report to the open pits is collected, using ditches and sumps before pumping it to the mine water pond. There will be intermediate sumps on the pits walls as well as on the surface between the pit and the mine water pond. De-watering wells will be drilled and pumped from around the Main pit.

As the Main pit will be operating at depths greater than 200m below the crest, specialty high lift pumps will be required. Pontoon mounted pumps will be used to draw water from the sumps. This will ensure the pumps are not submerged as sump water levels rise rapidly in response to rainfall events. Pumping infrastructure will advance as the mining activity advances deeper.

16.3.9 Waste Rock Dumps

The waste rock dumps (WRDs) associated with mining operations will be constructed to meet the requirements of the Ghanaian Mining Regulations. The WRDs will initially constructed with the natural rill angle of approximately 35° degrees with 10m lifts and 13.2m berms. This is then to be contoured progressively to an overall slope angle of 20° (1:2.8) to allow for slope stability and revegetation. The WRDs will be progressed by tipping from a higher level against a windrow and progressively pushing the waste out with a dozer. The WRDs locations for Main Pit and the Satellite Pits are shown in Figure 16-16 and Figure 16-17.

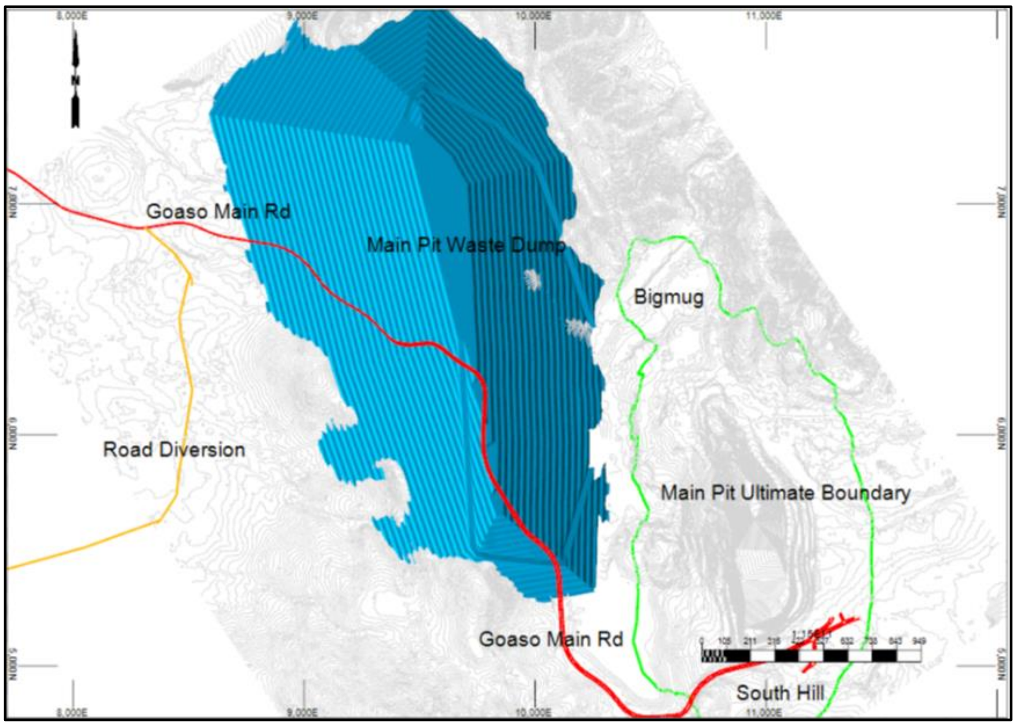


Figure 16-16: Main Waste Dump Location

(Source MGBL, 2022)

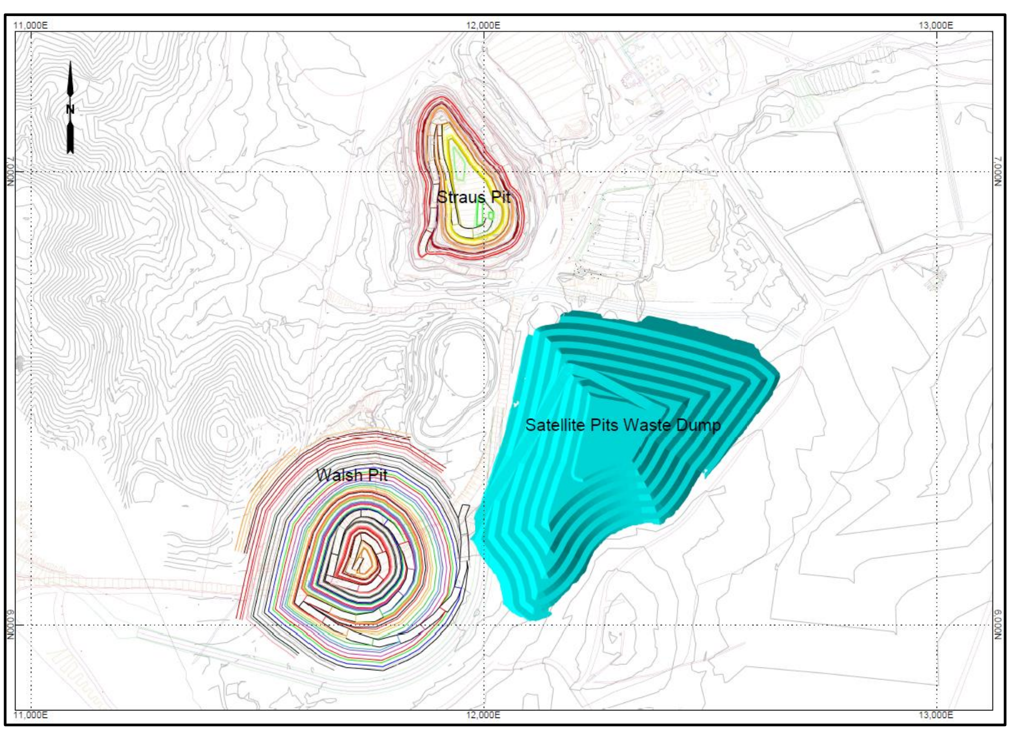


Figure 16-17: Satellite Pits Waste Dump Location

(Source MGBL, 2022)

The waste dumps will be progressively rehabilitated with topsoil, where possible. Surfaces of dumps will be contoured to minimise batter scour and ripped at 1.5m centres to a depth of 400mm, where practicable. All of the rehabilitation work will be carried out progressively. Seepage and shallow ground water flow along the perimeter of the mine residue deposits should be controlled with suitable toe drains.

Selected waste rock will also be used for the construction of the ROM pad, TSF walls and other infrastructure items during the site construction phase and for further TSF wall lifts during the LoM.

Table 16-6 summarises the dump capacities. Waste was assumed to have a loose density of between 1.6 and 2.1t/m^3.

Table 16-6: Waste Dump Capacities

Waste Dump	Capacity (Loose Cubic Metres, LCM)
Main pit	268 million
Satellite pits	8.2 million

The current LoM of mine plan for Main pit produces 246 million LCM so the waste dump has capacity for an additional 9% or 22 million LCM.

The Walsh and Straus mine plans produce a total of 11 million LCM of waste. The satellite pit waste dump design caters for 8.2 million LCM. The balance of 2.8 million LCM will be used for the tailings dam wall lift.

16.4 Mining Schedule

The mining schedule was developed using Geovia MineShed®, a scheduling package which is integrated with Geovia's Surpac® mine design software.

The schedule was completed in monthly periods for the full LoM. The mining inventory was separated into pit stages and 6m vertical benches for scheduling. Within each bench, material was separated into the material types and grade bins for grade maximisation or blending purposes.

The material bins used for this schedule are tabled below.

Table 16-7: Material Bins used in Mine Schedule

Weathering	Grade
Oxide	High grade (>2.4g/t)
Oxide	Medium grade (1.2g/t to 2.4g/t)
Oxide	Low grade (0.5g/t to 1.2g/t)
Transition	High grade (>2.4g/t)
Transition	Medium grade (1.2g/t to 2.4g/t)
Transition	Low grade (0.5g/t to 1.2g/t)
Fresh	High grade (>2.4g/t)
Fresh	Medium grade (1.2g/t to 2.4g/t)
Fresh	Low grade (0.5g/t to 1.2g/t)

A breakdown of the total mining inventory available for scheduling is provided in Table 16-8.

Table 16-8: Scheduling Inventory

Material type		Tonnes (t)	AU (g/t)	Au (oz)
Main pit				
Oxide	High grade (>2.4g/t)	19,125	3.22	1,980
Oxide	Medium grade (1.2g/t to 2.4g/t)	65,347	1.76	3,705
Oxide	Low grade (0.5g/t to 1.2g.t)	91,373	0.68	1,987
Transition	High grade (>2.4g/t)	67,387	3.25	7,044
Transition	Medium grade (1.2g/t to 2.4g/t)	106,194	1.76	6,016
Transition	Low grade (0.5g/t to 1.2g/t)	235,927	0.70	5,318
Fresh	High grade (>2.4g/t)	10,453,457	3.59	1,205,416
Fresh	Medium grade (1.2g/t to 2.4g/t)	9,012,440	1.68	487,761
Fresh	Low grade (0.5g/t to 1.2 g/t)	7,939,654	0.79	201,484
Satellite pits				
Oxide	High grade (>2.4g/t)	11,700	3.59	1,351
Oxide	Medium grade (1.2g/t to 2.4g/t)	18,900	1.50	911
Oxide	Low grade (0.5g/t to 1.2g/t)	73,500	0.72	1,693
Transition	High grade (>2.4g/t)	34,875	3.55	3,979
Transition	Medium grade (1.2g/t to 2.4g/t)	45,375	1.58	2,310
Transition	Low grade (0.5g/t to 1.2g/t)	85,500	0.77	2,105

Material type		Tonnes (t)	AU (g/t)	Au (oz)
Fresh	High grade (>2.4g/t)	497,063	3.89	62,142
Fresh	Medium grade (1.2g/t to 2.4g/t)	317,625	1.61	16,451
Fresh	Low grade (0.5g/t to 1.2g/t)	407,550	0.79	10,318
Total MGBL				
Oxide	High grade (>2.4g/t)	30,825	3.36	3,331
Oxide	Medium grade (1.2g/t to 2.4g/t)	84,247	1.70	4,615
Oxide	Low grade (0.5g/t to 1.2g/t)	164,873	0.69	3,680
Transition	High grade (>2.4g/t)	102,262	3.35	11,023
Transition	Medium grade (1.2g/t to 2.4g/t)	151,569	1.71	8,327
Transition	Low grade (0.5g/t to 1.2g/t)	321,427	0.72	7,423
Fresh	High grade (>2.4g/t)	10,950,519	3.60	1,267,558
Fresh	Medium grade (1.2 g/t to 2.4 g/t)	9,330,065	1.68	504,213
Fresh	Low grade (0.5g/t to 1.2g/t)	8,347,204	0.79	211,802

The Main pit was scheduled with five pit cutbacks, or stages over the LoM, with Cut 5 being the final pit. Walsh pit is planned to have two cuts while Straus will be mined in a single stage. The staging has been designed to, where possible, follow the progression of pit optimisation shells to prioritise value, but also consider practical aspects such as the provision of access to the top of the pits and minimum mining widths. The pit stages in the Main pit and Walsh pit are illustrated in Figure 16-18, Figure 16-19 and Figure 16-20 below.

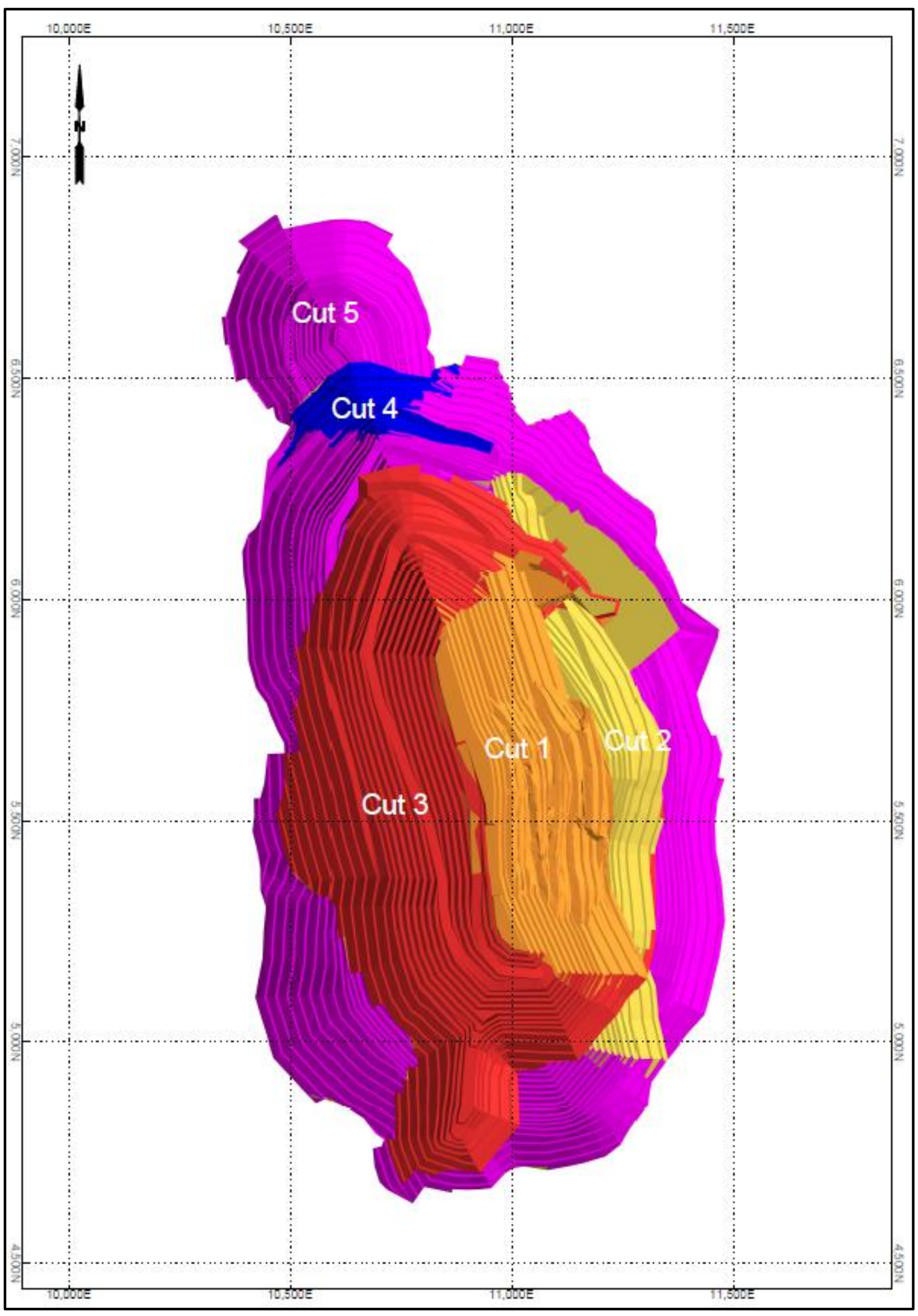


Figure 16-18: Plan View of Main Pit Stages

(Source MGBL, 2022)

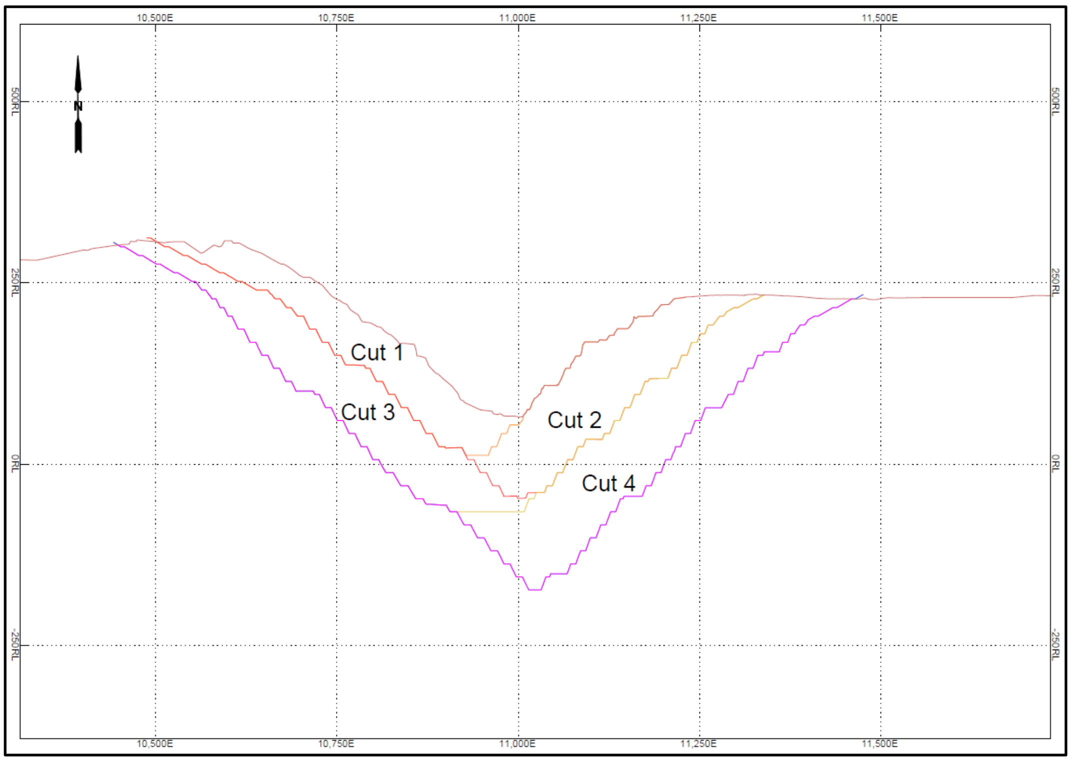


Figure 16-19: Cross Section (East – West) Showing Main Pit Stages 1 to 4

(Source MGBL, 2022)

Cut 5 is not visible in the East-West Cross section above as Cut 5 is an extension of the Main pit to the North.

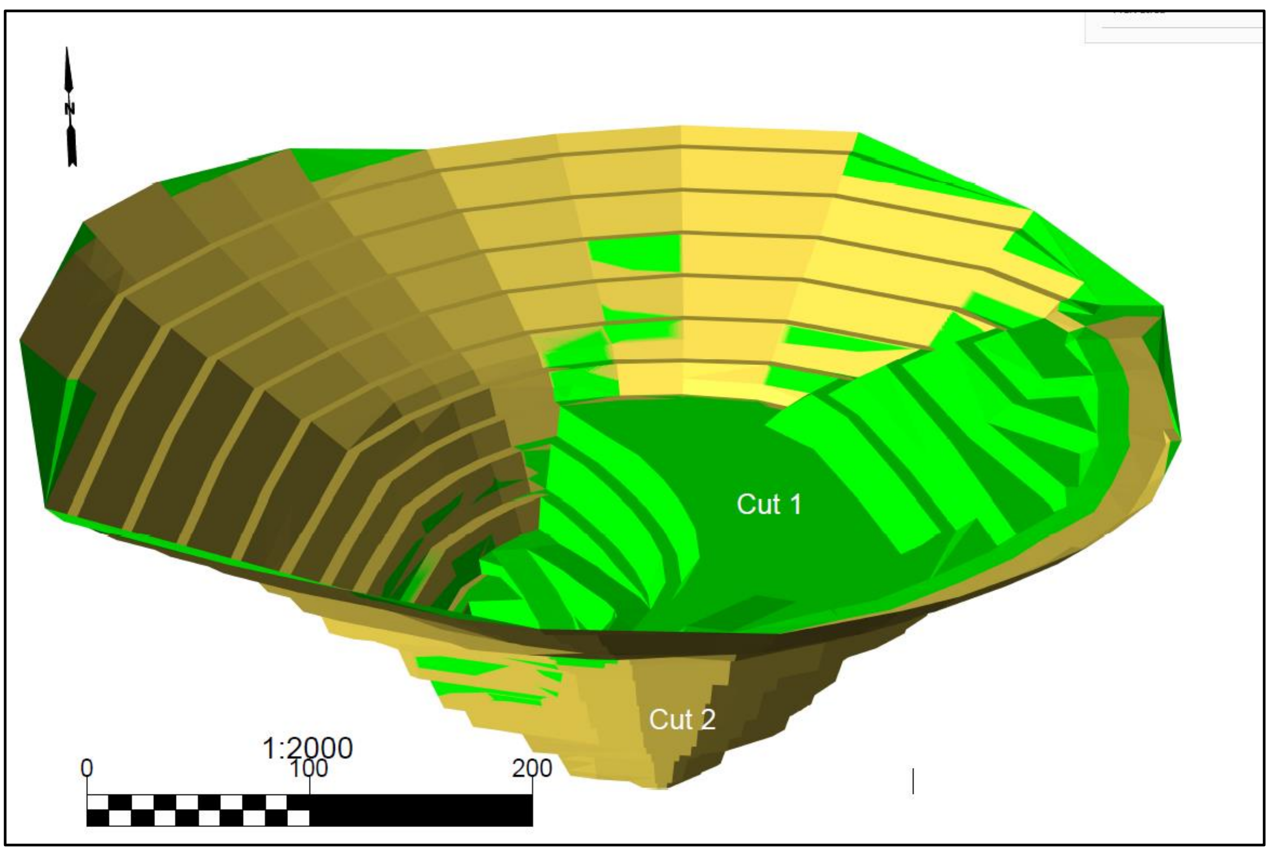


Figure 16-20: Walsh Pit Stages

(Source MGBL, 2022)

The schedule minimised the number of pit stages mined in any period to simplify the mining operation. Table 16-9 shows the total material mined by pit stage by year. Generally mining will be taking place in three pit stages simultaneously except for years one and two when mining takes place in both the two satellite pits as well as the Main pit.

Table 16-9: Material Movement by Pit Stage

Pit Stage	2022	2023	2024	2025	2026	2027	2028	2029	2030
Strauss	783,937	-	-	-	-	-	-	-	-
Walsh Cut 1	12,334,450	436,513	-	-	-	-	-	-	-
Walsh Cut 2	2,561,997	4,785,828	-	-	-	-	-	-	-
Main Cut 1	36,331,706	36,619,987	3,967,591	-	-	-	-	-	-
Main Cut 2	-	25,221,494	24,339,995	3,696,215	-	-	-	-	-
Main Cut 3	-	3,882,169	50,774,770	91,028,240	49,959,9	9,359,710	-	-	-
Main Cut 4	-	-	-	2,126,956	48,589,7	68,950,261	16,624,998	12,752,9	2,771,326
Main Cut 5	-	-	-	-	-	118,819	1,953,898	6,125,77	1,515,065

A maximum mining rate of 8Mtpm was targeted in the schedule. Mining ramps up to 7Mtpm by January 2023 after which it remains between 7Mtpm and 8Mtpm until September of 2027 when it tails off.

The mining schedule is illustrated in Figure 16-21, Figure 16-22, and Figure 16-23 below. The processing schedule is shown in Figure 16-24.

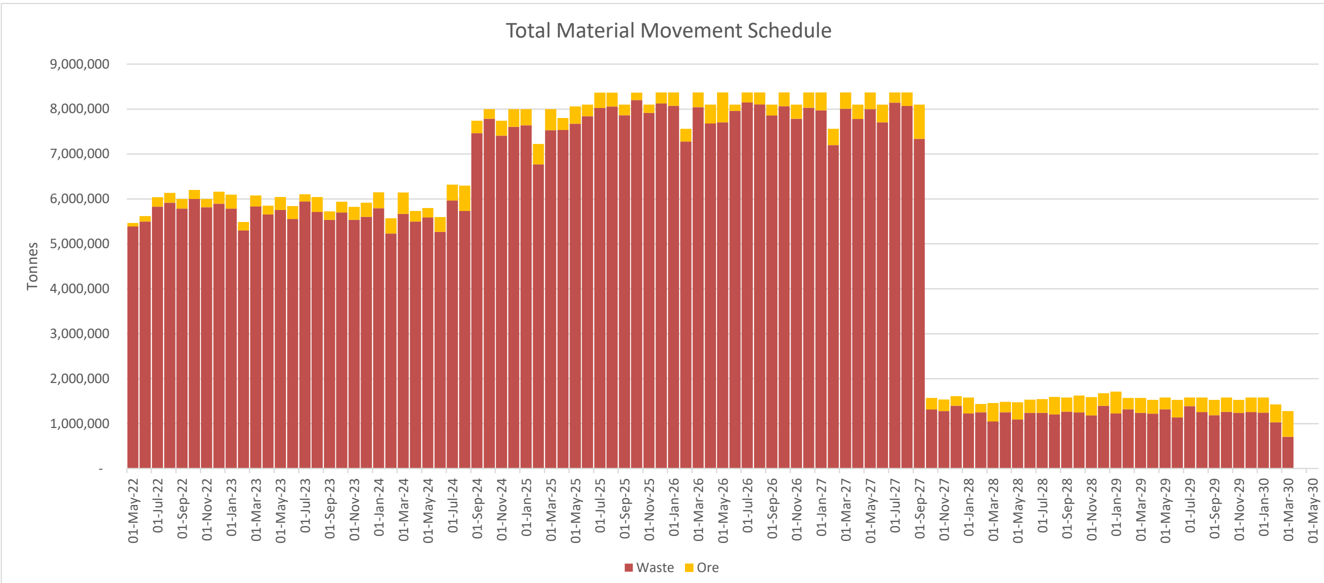


Figure 16-21: Total Material Mined Schedule

(Source BARA, 2022)

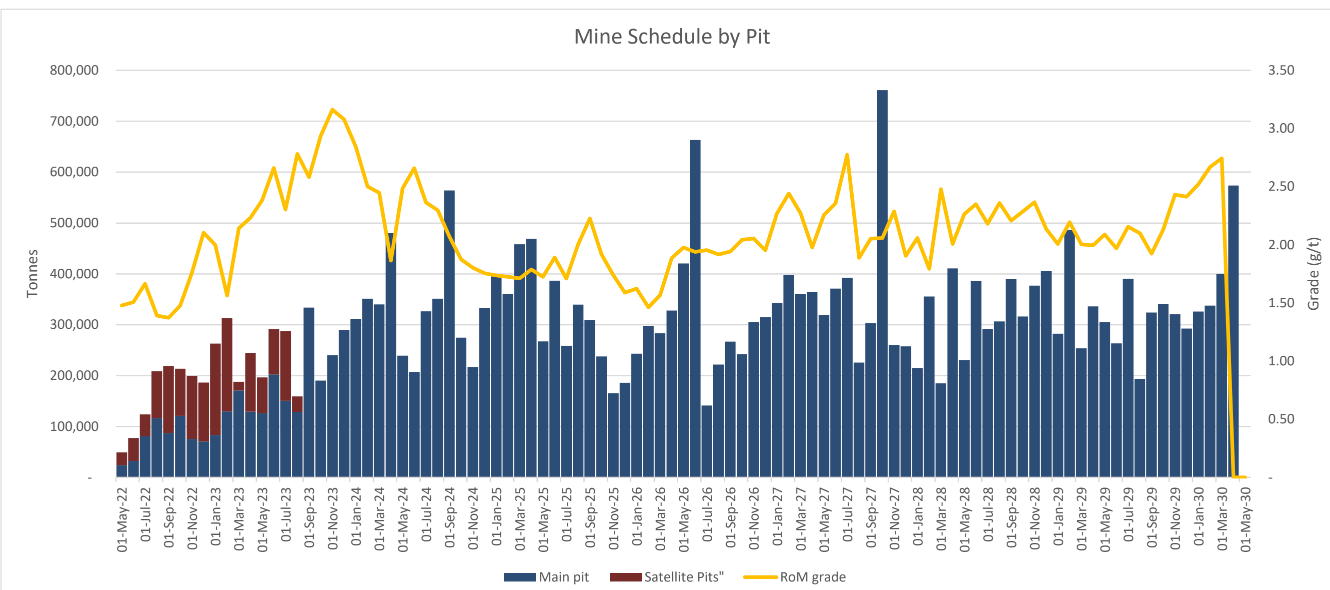


Figure 16-22: Ore Mining Schedule by Pit

(Source BARA, 2022)

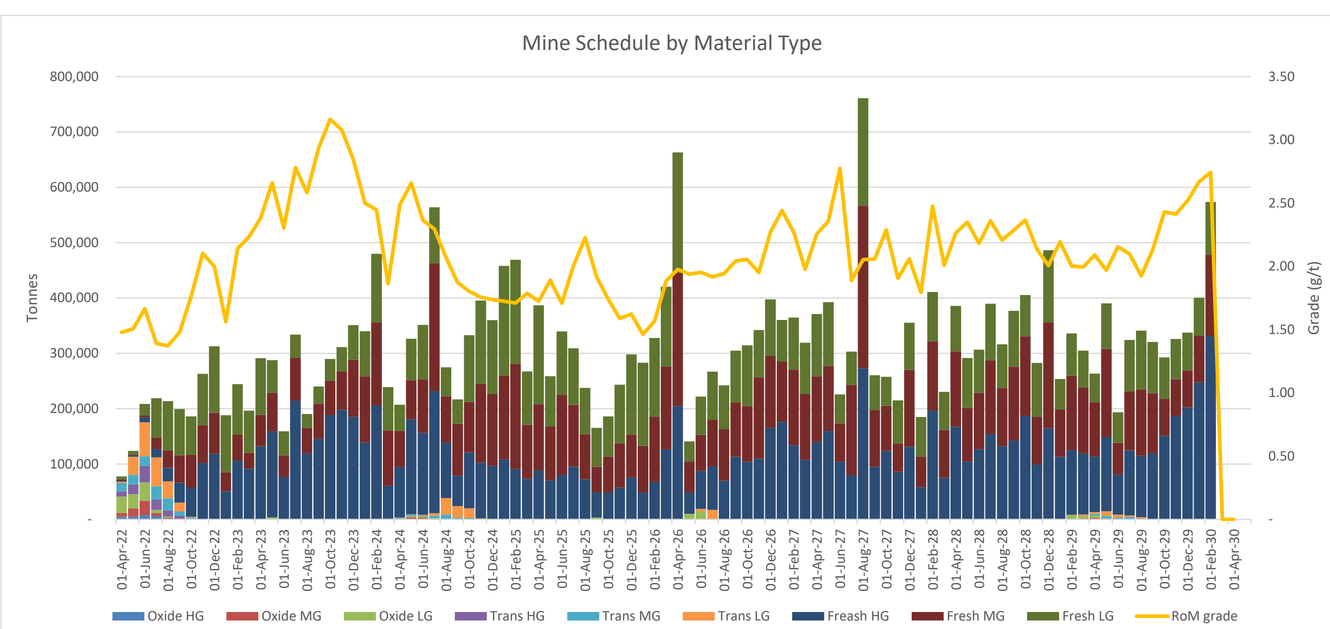


Figure 16-23: Ore Mining Schedule X Material Type

(Source BARA, 2022)

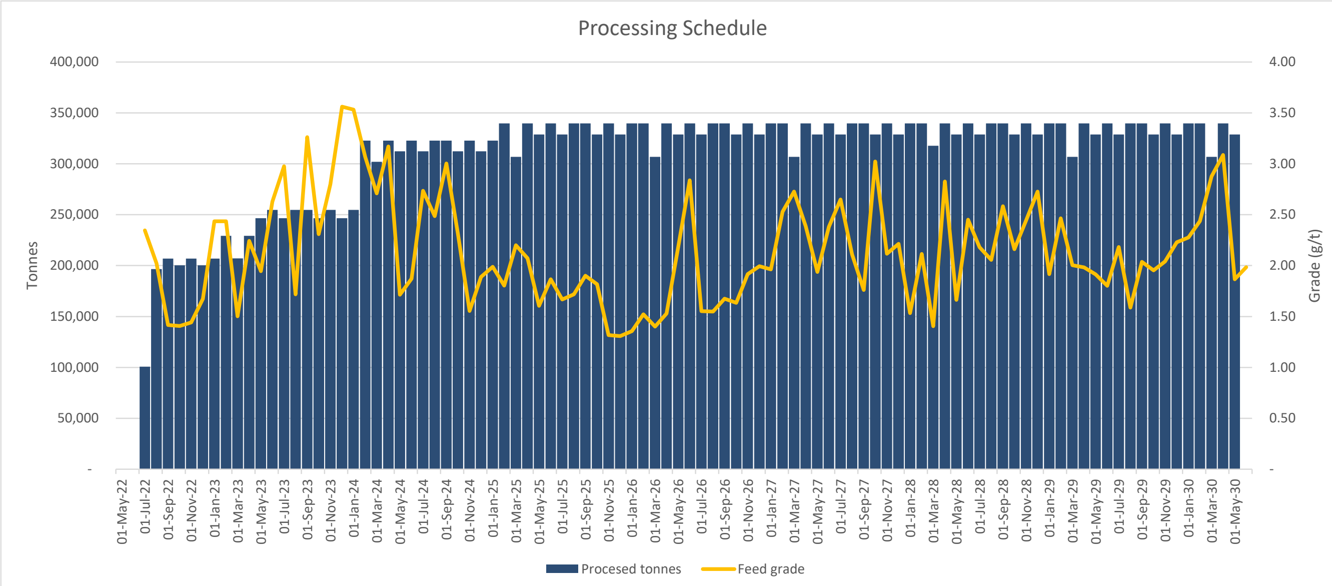


Figure 16-24: Processing Schedule

(Source BARA, 2022)

An annual summary of the mining and processing schedule is provided in Table 16-10.

The optimum pit shells and practical pit designs are based on Measured and Indicated Resources only. However, these designs include some Inferred Resource blocks within the pit volume. These inferred resource blocks have been included in the mining and processing schedule. The volume of inferred resource in the mine plan and schedule amounts to 3.6% of the mining inventory and is considered to have no material effect on economic outcomes.

Table 16-10: Mining and Processing Schedule Annual Summary

	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Mining										
Oxide										
Tonnes	203,557	4,163	16,763	3,319	24,600	-	2,138	25,406	-	279,944
Grade g/t	1.43	0.74	1.22	0.59	0.65	-	0.80	1.14	-	1.29
Contained Oz	9,336	99	655	63	513	-	55	934	-	11,654
Transition										
Tonnes	411,289	117	102,281	-	21,563	-	-	40,008	-	575,258
Grade g/t	1.64	1.89	0.97	-	0.66	-	-	1.12	-	1.45
Contained Oz	21,660	7	3,205	-	458	-	-	1,443	-	26,773
Fresh										
Tonnes	926,073	3,041,448	3,959,628	3,678,500	3,780,461	4,228,430	3,935,892	3,765,791	1,311,564	28,627,787
Grade g/t	1.67	2.53	2.31	1.80	1.88	2.20	2.24	2.12	2.66	2.16
Contained Oz	49,583	247,720	293,448	212,454	228,654	299,032	283,385	257,002	112,295	1,983,573
Total Mensin										
Tonnes	1,540,918	3,045,311	4,079,089	3,681,819	3,826,624	4,228,430	3,936,679	3,832,555	1,311,564	29,482,989
Grade g/t	1.63	2.53	2.27	1.80	1.87	2.20	2.24	2.11	2.66	2.13
Contained Oz	80,579	247,801	297,333	212,517	229,624	299,032	283,402	259,417	112,295	2,022,000
Waste tonnes	50,471,171	67,900,681	75,003,266	93,169,591	94,723,109	74,200,360	14,642,217	15,046,215	2,974,827	488,131,435
Total material movement	52,012,089	70,945,991	79,082,355	96,851,410	98,549,732	78,428,790	18,578,896	18,878,770	4,286,391	517,614,425
Processing										
Tonnes	1,318,646	2,925,955	3,810,426	4,000,035	4,000,035	4,000,035	4,010,994	4,000,035	1,462,634	29,528,795
Grade g/t	1.78	2.60	2.38	1.72	1.82	2.28	2.22	2.04	2.51	2.13
Contained Oz	75,434	244,238	291,067	220,810	233,576	292,616	285,651	262,267	117,840	2,023,499
Recovery (%)	87%	91%	92%	92%	92%	92%	92%	92%	92%	92%
Recovered Gold (Oz)	65,362	223,285	267,782	203,145	214,890	269,207	262,799	241,286	108,412	1,856,167

16.5 Mining Fleet

16.5.1 Primary Equipment

The Bibiani Gold Mine will be a contractor-based mining operation. The general approach is that the larger Main pit will require 300t excavators with 100t rigid dump trucks for hauling to increase productivity, while the smaller Satellite Pits will typically use 140t excavators that will load 64t dump trucks to improve manoeuvrability and increase selectivity in the smaller deposits.

A single Mining contractor has been selected for the operation of the Main and satellite pits and MGBL has finalised contractual agreements with the contractor. The selection of equipment is based on the pit designs and mainly driven by the mineralised body size and production requirement from each pit to achieve the required blend and feed to the plant. The proposed primary production equipment is summarised in Table 16-11.

Table 16-11: Proposed Primary Mining Equipment Fleet

Description	Estimated Quantity
CAT 6030 Excavator	5
CAT 6015B Excavator	3
HITACHI 1900-6	2
CAT 390D Excavator	3
CAT 777E Dump Truck	70
CAT 775 Dump Truck	10
Sandvik DP 1500i Drill Rig	24

Based on current typical planned productivities (Table 16-12), the equipment requirements over the LoM can be estimated as per the mining production schedule illustrated in Figure 16-21 above.

The mining fleet for the Main pit will include CAT 6030, 300t hydraulic backhoe excavators with a 17m^3 bucket capacity, or equivalent, Hitachi 1900, 190t hydraulic backhoe excavator with an 12m^3 bucket capacity or equivalent. The primary hauling fleet will be CAT 777D dump trucks with a 94t capacity.

The mining fleet for the satellite pits will typically include CAT 6015B, 150t hydraulic backhoe excavator with an 8m^3 bucket capacity or equivalent and CAT 390, 90t hydraulic excavators with a 4.6m^3 bucket capacity or equivalent. Haul trucks will be Cat 775 Dump tricks with a 64t capacity.

The productivity factors for excavators were estimated and used in the mine scheduling. Table 16-12 shows the productivity by excavator model.

Table 16-12: Excavator Productivity Summary

Excavator Model	Productivity (t/hr)
CAT6030	1,950
HITACHI 1900-6	1,600
CAT6015B	1,300
CAT390D	900

Industry norms were used as basis for availability and utilisation (at 85%), resulting in an effective utilisation of 72%. This is applied to the total available time with two twelve-hour shifts being used for production. The availability and utilisation accounts for shift change, inspections, breaks and all maintenance related aspects.

16.5.2 Ancillary Equipment

In addition to the primary mining equipment additional support equipment is required to support the mine operation. A list of secondary equipment proposed for deployment at Bibiani was provided by the mining contractor and is tabled below.

Table 16-13: Ancillary Equipment Fleet

Equipment Description	Quantity
CAT 16 Grader	4
CAT D9 Bulldozer	14
CAT Rigid Frame Water Tanker	3
CAT 966 Payloader	1
CAT 950 Payloader	1
4x4 Hardtop (LV)	2

Equipment Description	Quantity
4x4 Personnel Carrier (LV)	11
4x4 Double Cab Pickup (LV)	11
4x4 Single Cab Pickup (LV)	13
Fuel Bowser	3
Service Truck	2
Hiab Crane Truck	2
Telehandler	2
Tyre Handling Attachment	2
Mobile Crane	2
Mobile Elev working Platform	3
Mobile Lighting Set	60
Light Duty Truck	2
Low Loader	1
Earthworks Roller	1
HL160M Water Pump	10
CD100 Water Pump	2
Equipment Simulator	1
CAT 988 Payloader	2
Rock hammer	2

16.6 Manpower

16.6.1 Owner's Team

Mining labour includes technical services and mining production (part of the owner team). Technical services will be responsible for all technical input into mining related activities. This includes:

- Mine planning - responsible for short-term and medium-term planning
- Mine geology that is responsible for grade-control, modelling (for short-term planning), dilution and loss control and reconciliation
- Resource geology is responsible for exploration and grade-control drilling
- Geotechnical engineering to ensure mining compliance to design and pit stability
- Survey to ensure compliance to design, volume measurement and production reconciliation.

The department consists of 66 employees, with personnel make-up shown in Table 16-14.

Table 16-14: Owners Team Technical Services Personnel

Position/ Job Title	Total Number Required	Level
Technical Services Manager	1	Senior manager
Unit manager mine planning	1	Lower manager
Senior planning engineer	1	Senior
Short term planning engineer	2	Senior
Junior planning engineer	2	Senior
Unit manager Geotechnical	1	Lower manager
Senior geotechnical engineer	1	Senior
Geotechnical engineer	1	Senior
Junior slope monitoring engineer	3	Junior
Geotechnical field technician	1	Senior
Unit Manager Survey	1	Lower manager
Senior surveyor	1	Senior
Surveyor	3	Senior
Survey technicians	6	Senior
Survey assistants	6	Junior
Unit manager Resource Geology	1	Lower manager
Senior resource geologist	1	Senior
Unit Manager Mine Geology	1	Lower manager
Senior geologist production and grade control	1	Senior
Database geologist	1	Senior
Grade control Geologist	2	Senior
Production geologist	3	Senior

Position/ Job Title	Total Number Required	Level
Drill samplers	10	Junior
Ore Spotter	6	Junior
RoM pad spotter	3	Junior
Senior mine geologist	1	Senior
Structural geologist	2	Senior
Geotechnicians	3	Senior
Total Technical Services	**66**	

The mining production team will be a small department that manages all mining production related issues and manages the contractor's team. This team ensures that the contractor adheres spatially and volumetrically to the mining plan, as well as ensuring that the contractors work to the contract guidelines in terms of cost, procedures and other disciplines. This department comprises 24 employees and is made up as tabled below.

Table 16-15: Owners Team Mining Personnel

Position/ Job Title	Total Number Required	Level
Unit Manager/ Deputy Manager	2	Lower Manager
Drill & Blast Technicians	3	Junior
Control Room Dispatchers	10	Junior
General Manager, Mining	1	Senior Manager
Mine Captain	4	Senior
Senior Supervisor (Drill & Blast)	3	Senior
Reports & Database Officer	1	Senior
Total Mining	**24**	

16.6.2 Mining Contractor

The mining contractor, PW Mining, will have responsibility for mining operations including drilling, blasting, load-and-haul and re-handling on ROM pad (both at the Main and Satellite Pits). A summary of the Contractor manpower requirement submitted by PW Mining is shown below.

Table 16-16: Mining Contractor Manpower Schedule

Description	2022	2023	2024	2025	2026	2027
Management/Admin	12	12	12	12	12	12
Supervision/Supervision	12	14	14	15	14	14
Maintenance Dept	252	362	385	388	340	341
Operators	185	356	388	400	330	344
Technical/Other	76	107	105	99	82	83
Security	9	9	9	9	9	9
Total	**546**	**860**	**913**	**923**	**787**	**803**

17. RECOVERY METHODS

A processing plant at Bibiani was previously used for production and is still in place. The plant comprises:

- Primary crushing
- Primary SAG mill and secondary ball mill with classification hydrocyclones
- Gravity concentrator
- Flash flotation
- Carbon-in-leach
- Carbon elution and regeneration and electrowinning
- Gold room
- Reagent mixing.

During the times of previous operation, the plant had a demonstrated capability of processing 230 kt/month, equivalent to an annual throughput of approximately 2.7 Mtpa.

The plant has been under care and maintenance and is being refurbished; a local contractor having been engaged in Q3 2021. The process flowsheet delivers the recommendations of the 2015 test work program, including gravity concentration in the milling circuit, scavenger flotation of the mill circuit product, regrinding and intensive cyanide of the flotation concentrates with CIL of the scavenger flotation tailing. Asante is implementing a number of process improvements and upgrades to the plant to enhance the efficiency of extraction and increase throughput capacity. The modifications will be implemented in phases as follows:

- Phase 1A – recommission existing SAG mill, ball mill, gravity concentration, gravity tails CIL at 2.4 Mtpa by June 2022
- Phase 1B – implement flotation with concentrate regrinding and intensive cyanidation at 2.4 Mtpa by November 2022
- Phase 2 - increase throughput sustainably to 2.7 Mtpa in Q1 2023 by adding pebble crushing to the SAG milling circuit
- Phase 3 - provide for primary crusher by installing a jaw crusher and fragmentation control in Q2 2023, increasing mill utilisation and thereby raising annual throughput to 3.0 Mtpa
- Phase 4 – improve ROM fragmentation by installing a secondary cone crusher, increasing throughput to 3.8 Mtpa by Q1 2024.
- Phase 5 – provide an additional CIL tank to maintain a minimum of 24 h leaching time at a throughput of 4.0Mtpa by Q1 2025.

A schematic flowsheet and the unit processes added during subsequent Phases (Figure 17-1)

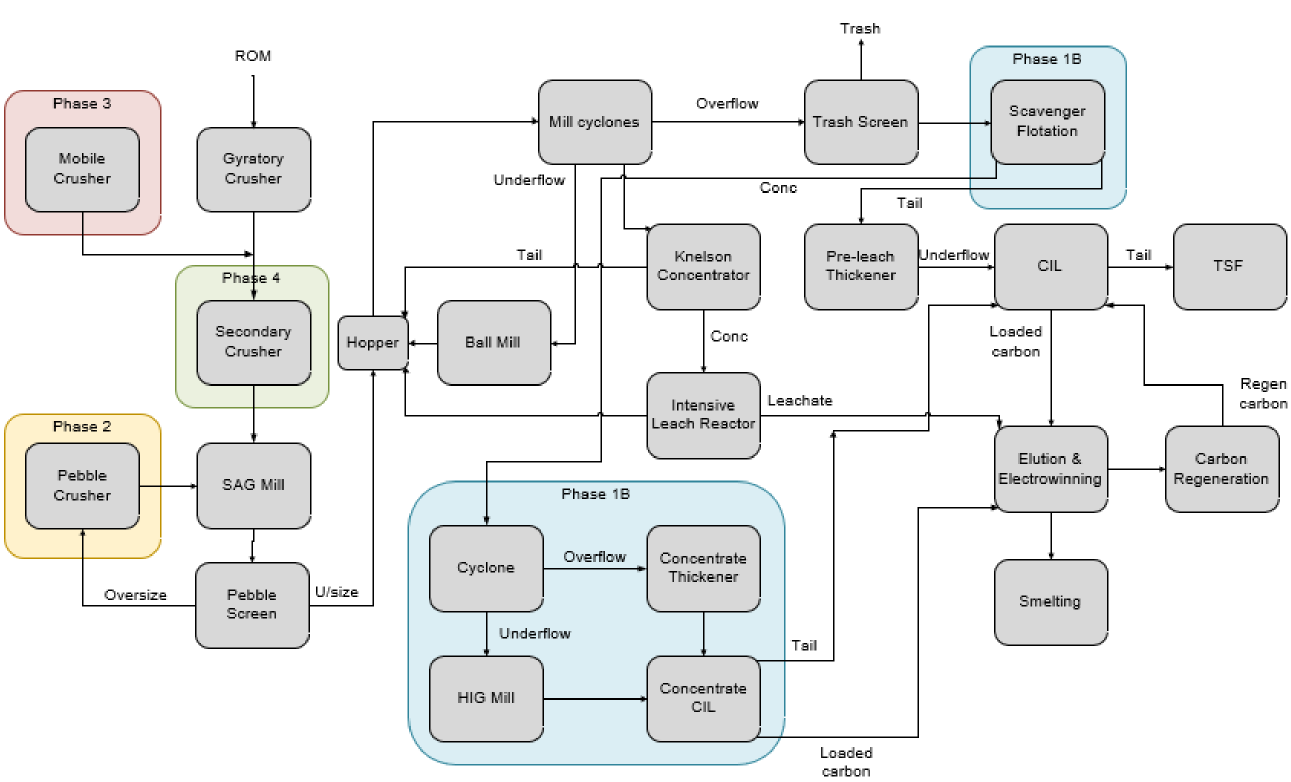


Figure 17-1: Schematic Process Flowsheet Indicating Current and Phased Additions

(Source: BARA, 2022)

17.1 Phase 1A Process Description

Phase 1A is the recommissioning of a basic process of milling, gravity concentration and CIL on the gravity tailings at a nominal rate of 2.4 Mtpa. This circuit is scheduled to produce its first gold during May 2022.

17.1.1 Crushing

Haul trucks tip run-of-mine (ROM) material onto a finger stockpile to provide a buffer between haulage and crusher operations and facilitate blending to smooth potential variations in feed quality. ROM material is reclaimed with a front-end loader and tipped into an existing 42” x 70” gyratory crusher which discharges into a chamber. An existing apron feeder withdraws the crushed material from the chamber and delivers it to a series of existing conveyors which transport the material the milling section.

17.1.2 Milling

Crushed mineralised material is fed into an existing 5.5m diameter x 8.7m EGL primary semi-autogenous grinding (SAG) mill which is equipped with a 3.8 MW motor. The SAG mill discharge passes through an existing trash screen before entering the mill discharge pump box and being pumped to a cluster of fourteen 500mm diameter Weir Cavex classification hydrocyclones. Screen oversize is returned to the SAG mill feed by conveyors. The underflow from the cyclones enters a box which splits the flow into four streams:

- One stream feeds a Knelson concentrator for gravity recovery
- Three streams flow directly to the secondary ball mill.

The discharge from the secondary ball mill also enters the mill discharge pump box and returns to the hydrocyclones.

17.1.3 Gravity Gold Recovery

One quarter of the cyclone underflow passes to a batch 48” Knelson concentrator. Tailing from the Knelson concentrator flows to the mill discharge pump box for return to the hydrocyclones. Knelson concentrate is discharged periodically and collected in a tank.

The contents of the gravity concentrate tank are passed through a Gekko Intensive Leach Reactor (ILR) daily. Gold is leached from the concentrate and recovered from the leachate in a dedicated electrowinning circuit. Electrowinning sludge is filtered, dried and smelted.

Residue from the ILR is pumped to the mill discharge pump box.

Figure 17-2: View of Bibiani Processing Plant with TSF in Background

(Source: Asantegold.com)

17.1.4 CIL

Overflow from the mill classification cyclones passes through a trash screen and enters the existing 22°m diameter pre-leach thickener. Thickener underflow is pumped to the first CIL tank while thickener overflow returns to the process water circuit.

The CIL circuit comprises six mechanically agitated tanks of 2,740 m³ each in series, each with two inter-tank screens to retain carbon. Sodium cyanide solution, lime and oxygen are added to the slurry, which flows through the tanks sequentially. Activated carbon adsorbs the gold and is transferred counter currently to the slurry flow by a transfer pump in each tank.

Loaded carbon is pumped to the elution plant via the loaded carbon screen which separates the carbon from the slurry.

CIL tailings gravitate through a sampling system and over two carbon safety screens. The slurry is then pumped to the tailings dam.

17.1.5 Elution and Electrowinning

Loaded carbon is acid washed and eluted in 4 tonne batches using a standard AARL process.

Gold is recovered from the eluate in four electrowinning cells. Sludge is washed from the cathodes, filtered and dried before being smelted to doré.

Eluted carbon is regenerated in a rotary kiln, quenched and the fines removed by screening before being returned to the last CIL in the series.

17.1.6 Reagents

CYANIDE
Sodium cyanide is used in the CIL and elution circuits and is received in solid form in bulk. The tankers are sparged to dissolve the solid sodium cyanide and transfer the solution to a storage tank. Cyanide solution is dosed to the CIL and elution processes as necessary.

CAUSTIC SODA
Caustic soda is received in 1 tonne bulk bags of solid pellets. Caustic solution is prepared on site and dosed to the elution process as necessary.

HYDROCHLORIC ACID
Hydrochloric acid is delivered to the site in 1 m^3 isotainers. Dilute acid is mixed and dosed to the acid wash column as required.

LIME
Lime is supplied in the form of hydrated lime powder in bulk bags and lime slurry is made in a mixing pumped to the leaching/CIL as required.

FLOCCULANT
Flocculant is required to settle solids in the pre-leach thickener. The flocculant is delivered to the reagent store in bulk bags in powder form. Flocculant solution is prepared on site and dosed to the pre-leach thickener continuously.

17.1.7 Process Plant Services

WATER
The primary source of process water is decant from the tailings storage facility. Decanted water is pumped into a lined storage pond from where it is distributed to the process plant, the largest addition point being at the mill discharge pump box. Overflow from the pre-leach thickener also returns to the process water pond.

Raw water make-up to the plant is received from pit dewatering.

OXYGEN
A Pressure Swing Adsorption (PSA) oxygen plant on the plant site generates oxygen which is used in the CIL process.

LPG
The carbon regeneration kiln uses LPG as its fuel. Bulk LPG deliveries are received into storage tanks which are connected to kiln.

17.2 Phase 1B Process Description

Phase 1B comprises completion of the scavenger flotation installation, flotation concentrate regrinding and intensive cyanidation. These additions to the circuit are made with the objective of increased gold recovery whilst maintaining the Phase 1A throughput (2.4 Mtpa). Phase 1B commissioning is scheduled for September 2022.

17.2.1 Scavenger Flotation

Overflow from the cluster of mill classification cyclones passes through a trash screen and into a flotation conditioning tank where flotation reagents are added. The conditioned slurry is fed to three 100 m³ FLSmidth next STEP type rougher flotation cells operating in series.

The concentrate from the tank cells would advance to the concentrate treatment circuit. Flotation tailing passes to the pre-leach thickener.

17.2.2 Flotation Concentrate Treatment

The concentrates from the three tank cells is pumped to a cluster of four Krebs gMAX6-3193 hydrocyclones for classification. Underflow from these cyclones flows through an FLSmidth VXP5000 Vertical Regrind Mill which reduces the material size to 80% passing 25µm. Cyclone overflow passes through a 10m diameter thickener, the underflow of which joins the VXP Mill discharge. Thickener overflow returns to the process water tank.

The combined VXP Mill discharge and thickener underflow streams enter a mechanically agitated pre-oxidation tank. Slurry is from this tank is circulated through an Aachen reactor, in which the slurry is contacted with oxygen and lead nitrate, and returns to the pre-oxidation tank.

Slurry overflows the pre-oxidation tank and enters the leach tank where sodium cyanide is added, and the slurry is sparged with oxygen and leached for 20h.

Leached slurry then passes through four stages of CIL in which the gold in solution is adsorbed by activated carbon. Oxygen and lime are added to the CIL tanks as necessary to maintain the required leaching conditions. Loaded carbon is sent to the elution plant. The discharge from the last CIL tank in the series is sent to the first flotation tailings CIL tank for further leaching.

Copper sulphate pentahydrate is delivered in 0.9 tonne bulk bags in crystal form. Copper sulphate solution is prepared on site and dosed to the cyanide destruction process as necessary.

17.3 Phase 2 Process Description

Phase 2 has the objective of increasing the plant throughput to 2.7 Mtpa through the installation of a pebble crusher to crush pebbles in the SAG mill discharge.

During Phases 1A and 1B, oversize from the SAG mill discharge screen is returned to the SAG mill feed by conveyors. Through modifications to the conveyor profiles a cone crusher and its associated equipment will be installed in one of the existing conveyor transfer towers.

Commissioning of the pebble crushing system is scheduled for Q1 2023.

17.4 Phase 3 Process Description

The present configuration of the crushing system includes a facility to build a relatively small stockpile which can be fed back onto the mill feed conveyor by front-end loader during periods when the primary crusher is not available. Previous operational experience showed this to be an inefficient arrangement and losses in throughput resulted. Phase 3 envisages provision of a mobile primary crushing system that can be fed from the ROM stockpile and deliver directly into the mill feed conveyor system. This system is expected to increase the annual plant running time.

17.5 Phase 4 Description

It is anticipated that by increasing the quantity of fines in the SAG mill feed, the milling rate can be increased whilst maintaining the target mill circuit product d80 of 106µm. Phase 4 envisages addition of secondary crushing prior to SAG milling to reduce the mill feed d80 to 60 mm, at which size the power available in the SAG mill, pebble crusher and ball mill appears sufficient to achieve the required product size at an hourly rate equivalent to 4.0 Mtpa.

Modelling of this revised comminution circuit is at a very preliminary stage and more detailed investigation is required to determine the optimal configuration of the secondary crushing section validate the product size at the specified throughput.

17.6 Phase 5 Description

At 4.0 Mtpa throughput, the residence time in the CIL system will reduce to less than 24 hours and the amount of gold extracted will consequently reduce. Preliminary assessment has shown that a seventh CIL tank will be necessary to maintain at least 24h leaching time. A space provision for this tank was made during the design and construction of the existing plant and retrofitting an extra tank is expected to be straightforward.

The current strategy is for Phase 4 to deliver 3.8 Mtpa by Q1 2024 and Phase 5 to be on-line by Q1 2025, at which time plant throughput can be increased to 4.0 Mtpa. The details of the process plant modifications and the economics of each phase will be developed. There may be economic value in executing Phase 4 and Phase 5 concurrently in order that the benefit of higher throughput without loss of recovery may be realised at the earliest opportunity.

17.7 Consumables

17.7.1 Reagents

Unit rates of consumption of reagents and grinding and the annual quantities at the highest planned processing rate of 4.0 Mtpa are shown in Table 17-1.

Table 17-1: Reagent Consumption

Material	Rate g/t	Annual Quantity Tonnes
Grinding media – SAG mill	500	2,000
Grinding media – ball mill	542	2,169
Grinding media – flotation concentrate regrind mill	304	1,217
Quicklime	450	1,800
Sodium cyanide	950	3,800
Sodium hydroxide	35	138
Lead nitrate	50	200
Activated carbon	30	120
Hydrochloric acid	73	291
Xanthate	60	240
Copper sulphate	388	1,552
Flocculant	18	72

17.7.2 Water

Water is reclaimed from the TSF and returned to the process plant for use, mainly in the milling circuit. Where applications demand water of higher quality than TSF return, raw water from nearby sources is used. Water that is pumped from the mining pit is supplemented by water from dams and levees.

The average daily volumes of water at the highest planned processing rate of 4.0 Mtpa are shown in Table 17-2.

Table 17-2: Average Daily Consumption of Water in Process Plant

Source	Volume m^3/d
TSF return	7,970
Mine dewatering	2,880
Dams & levees	1,493
Total	**12,343**

17.7.3 Energy

On completion of Phase 1A, the average electrical power demand of the processing plant is forecast to be 15 MW and this is expected to increase to approximately 18 MW after installation of the flotation and regrind equipment. At the maximum planned throughput of 4.0 Mtpa the total plant power draw is predicted to be approximately 24 MW. Asante is in negotiations with the Electricity Corporation of Ghana for increased electrical supply.

18. PROJECT INFRASTRUCTURE

18.1 Overview

The Bibiani Mine operated as both and open pit and underground mine. The surface infrastructure constructed to support both the open pit and the underground mine is largely still in place ad has been well maintained during an extended period of care and maintenance by the various owners of the project. The existing infrastructure consists of:

- Site access and internal roads
- Site security arrangements
- Buildings including camps, offices, stores, workshops
- Storm water arrangements and water collection dams
- Electrical supply and site reticulation
- Sewerage handling facilities
- Waste dumps
- Tailings storage facility.

The presence and condition of the infrastructure listed above was observed by Messes Clive Brown and David Begg during site visits which took place in December 2021.

Figure 18-1 shows a site plan of the mine infrastructure.

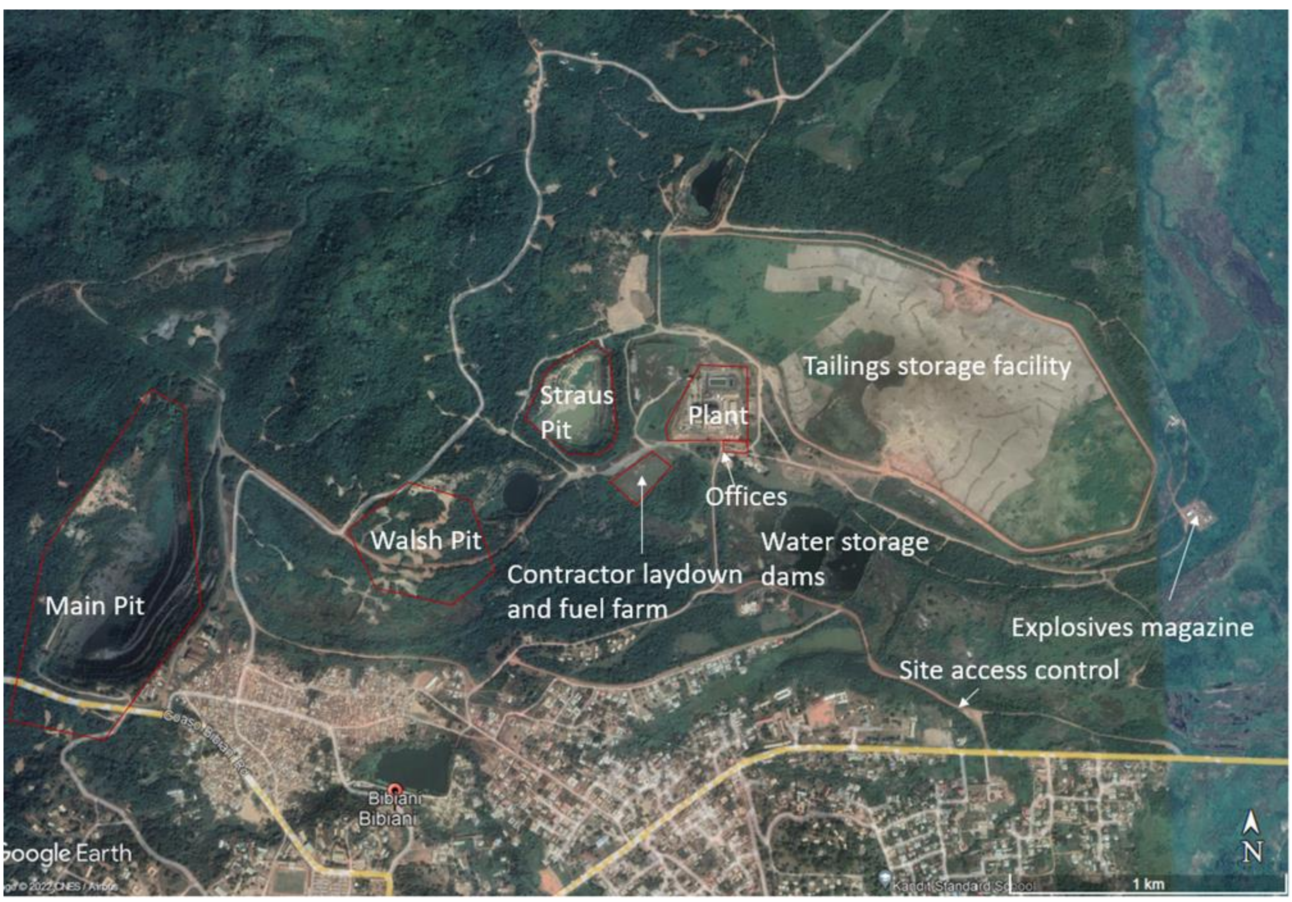


Figure 18-1: Site Infrastructure Plan

(Source: BARA, 2022)

18.2 Site Access and Roads

Public access to the mine site is from the South East-off of the main Kumasi-Bibiani–Sefwi Bekwai Highway. A security and access control checkpoint is in operation and controls public access to the mine site.

All roads on the mine site accessing the main infrastructure including open pit mining sites, offices, plant, tailings facility are in good condition and have been well maintained during the care and maintenance period. The access and haul road between the Main pit and the plant will need to be re-routed once mining at Walsh pit commences. This is planned and costs have been allowed for this in the capital estimate.

The Goaso-Bibiani Road which runs to the South of the Main pit will need to be rerouted to allow the mining of the Main pit. The costs and time for this public road diversion have been provided for in the capital estimate and the planning for this road diversion is currently in progress.

18.3 Buildings and Facilities

The mine infrastructure building including offices, stores, mess and accommodation camps have been well maintained and are in good condition and fit for use. The mine offices are currently in use and are equipped with power and water supply as well as functioning telecommunications and internet connectivity.

The mining contractor will establish their own laydown area, offices and workshops and mess. Sites has been allocated for this infrastructure. The infrastructure that will be supplied by the mining contactor is tabled below.

Table 18-1: Infrastructure to be Supplied by Mining Contractor

Item	Description	Building Type	Quantity
1.1	Mine Services Area Prep Works	N/A	1
1.2	Site Services connections etc.	N/A	1
1.3	Mining Contactor Office	Prefab	1
1.4	HME Workshop & Stores	Steel frame	1
1.5	Wash Bay	Concrete	1
1.6	Tyre Bay	Container	1
1.7	Junior Staff Change House	Prefab	1
1.8	Ablutions Facility	Prefab	1
1.9	LV & Drill Rig Workshop	Container	1
1.1	Service / Lube Bay	Container	1
1.11	Junior Staff Mess	Prefab	1
1.12	Staff Training Facility	Prefab	1
1.13	Security Guard House	Prefab	1
1.14	Equipment Simulator	N/A	1

The cost of the infrastructure detailed above is included in the site establishment charge.

MGBL own three accommodation villages in Bibiani with enough capacity to house the work force. Individual rooms at each location may need maintenance work or renovations. Accommodation for 25 senior mining contractor personnel will be provided by MGBL in their senior camp. Accommodation for other contactor personnel will be the responsibility of the contractor and they will not be housed on site but will take up residence in Bibiani town.

18.4 Water Management

The mine will rely on underground dewatering for the raw water for its operations (dust suppression, domestic use and process plant). Raw water is stored in the mine dewatering settling pond and the levees. The main purpose of the water storage system is to provide a secure plant supply in case of extended drought conditions.

From the settling pond and levees, water is pumped to a 5,000m^3 raw water pond (HDPE lined earth dam) located at the plant site. There are seven (7) levees that were historically constructed as tailings storage ponds. In recent times the levees have been used to store and to supply makeup water for the processing plant. Adjacent levees are conjoined but separated by saddles. There is vegetation growing all along the embankments which protects them from erosion and subsequent sedimentation of the levees. Wetland vegetation at the levees ameliorates the water quality by removing sediment trace metals and nutrients. The levees also collect most of the direct runoff from the mine area and in the care and maintenance phase they receive dewatered water from underground dewatering.

The Process Water System water circuit is split into a Raw, Process and TSF return water. TSF Return water will be used for CIL slurry dilution. Excess TSF return water will be detoxified before being used for Process Water makeup. In the care and maintenance phase, dewatering discharge from underground entered the top of the levee system. In the operation phase, the Mineral Processing Plant will reuse the dewatering supply and the water released to the environment will cease. All decant water from the TSF will be reused by the plant and none of that water will be released to the environment.

Boreholes, hand dug wells, and public reticulated water pipes are the main water sources for catchment communities as streams and other surface waters in the mine concession have been contaminated in the past in earlier mining operations.

In terms of drainage, the concession is in five sub-catchments in the Tano River Basin of the Southwestern Basin System of Ghana. These sub-catchments are the Amponsah, Mpokwampa, Mensin, Kyirayaa and Pamunu. The five rivers of these catchments are seasonal, sometimes drying up in the dry season from December to March. The Amponsah and the Mpokwampa drain various areas of the mine before joining the Mensin through the levees. The Mensin joins the Kyirayaa and which then joins the Pamunu which in turn joins the Tano River.

Most of the direct runoff from the mine area is collected in the levees. However, incident rainfall runoff in the Mineral Processing Plant is contained and discharged to the Tailings Storage Facility.

The underground dewatering, as well as water pumped from the pit dewatering boreholes and operating open pits will be the source of raw water for dust suppression and the processing plant. If required water can be drawn from a dam situated approximately 5.0km to the East of the mine site, which belongs to MGBL. Refurbishing of the pipeline and pumping system is 90% completed.

18.5 Sewerage Handling

All ablution facilities on the mine site are serviced by septic tanks and soak aways for sewage disposal. A local contractor empties the septic tanks at the required intervals and disposes of the solid waste at a licensed sewage treatment site.

18.6 Power Supply

The existing arrangement for power supply is provided via a 33kV grid to Bibiani from the Electricity Company of Ghana (ECG). The 33kV overhead power line terminates at the main plant substation from where reticulation to facilities remote rom the main plant is by 11kV overhead power lines. A Standby 1MVA diesel fuelled generator provides backup power to the process plant agitators and essential ancillary services. In addition, there are eight other generators ranging in size from 30kVA to 651 kVA for use in other areas of the mine.

Prior to care and maintenance this system was adequate to supply the processing plant, though it is noted that the plant never reached its target throughput rate of 3.0Mtpa and there is some suggestion that the supply at the time was unreliable with fluctuations in voltage and blackouts. This continued during care and maintenance with additional generators brought to site to power underground diamond drills, pumps and fans during the exploration programme from 2015 to 2017.

Power supply is a risk to the project although this can be mitigated by negotiating a stable supply from the ECG.

MGBL have entered into a memorandum of understanding with ECG for the following works:

- To undertake a network reconfiguration and upgrades necessary to meet the electricity requirements of MGBL with timelines as specified below:
  - April 2022 – 5.9MW
  - May 2022 – 13.0MW
  - Sept 2022 – 15.0MW
  - To provide a dedicated powerline to MGBL by May 2022
- Negotiation with ECG to upgrade and supply power of 25MW by October 2022 to support the required power for the process plant at full production, when all upgrades are completed.
- To conclude on the cost estimate of power to the mine.

The Goasa power line needs to be diverted to allow mining of the main pit. To replace the Goaso line the existing powerline from Bibiani Old Town to Ekomyeya is to be upgraded to 33KV and extended to Abofrem to meet the 33KV powerline.

18.7 Fuel Storage

Diesel fuel will be stored on site in a tank farm which will be constructed and maintained by the selected fuel supply contractor. Mensin have entered into an agreement with Gaso for the supply of fuel to the mine. The total storage capacity currently installed is 400,000 litres but this is planned to be increased to 1.2 million litres. The expected monthly consumption of fuel will be approximately 640,000 litres, when the mining rate reaches its maximum of 8Mtpa.

18.8 Resettlement and Road Diversion

The mining of the Main pit requires a number of people who reside to the east and south of the mining area to be re-settled. MGBL appointed an EPCM who started the resettlement process with the assessment process in March 2022 and RAP is currently being finalised. The RAP will be executed as a phased approach with the resettlements taking place in phases. The phasing and scheduling of the re-settlements is shown in Table 18-2.

The total resettlement plan involves the resettlement of approximately 900 residences over a period of 39 months. The resettlement costs have been included in the capital estimate for the project. The re-settlement plan is also discussed in Section 20 of this report.

Table 18-2: Phasing and Schedule of Resettlements

Task Name	Start	End	Duration
Phase 1	October, 2022	December, 2022	15 months
Cut 2	June, 2023	October, 2025	28 months
Phase 2	January, 2024	December, 2024	12 months
Cut 3	September, 2023	July, 2027	46 months
Phase 3	January, 2025	December, 2025	12 months
Cut 4	January, 2026	Start of underground	To be determined

The Bibiani-Goaso public road also needs to be diverted to allow for the expansion of the Main pit and to provide space for the location of a waste dump for the waste generated by the mining of the Main Pit. The Project will require the diversion of approximately 13km of the Bibiani-Goaso Highway from Tanodumase Junction to Mota Junction and from there to join the Kumasi – Bibiani road at Lineso junction. Permissions for the road re-routing have been lodged with the authorities and the road diversion has been included in information discussed with local communities during stakeholder engagements. The proposed re-routing of the Bibiani Goaso Main Road is illustrated below.

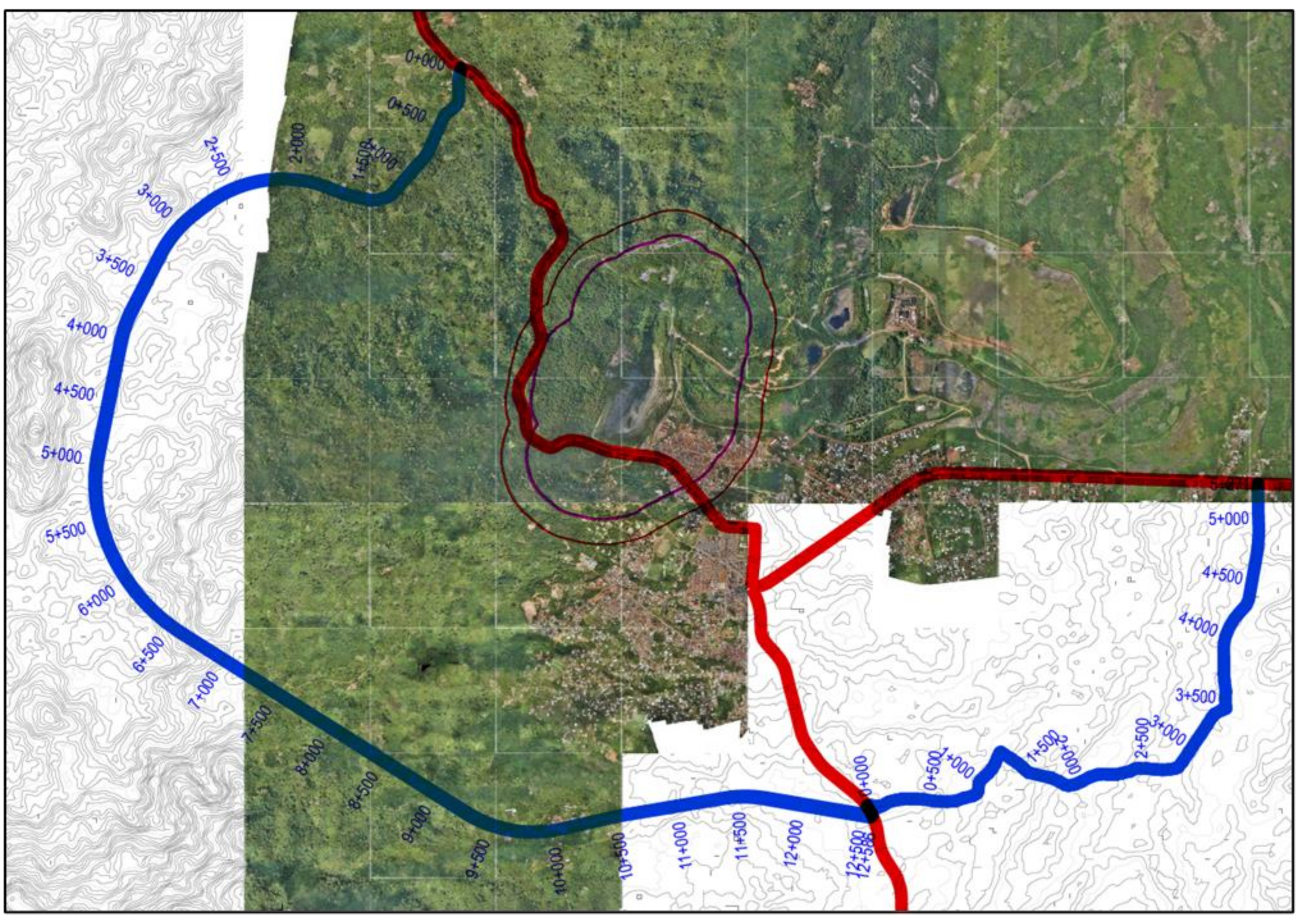


Figure 18-2: Proposed Bibiani Goaso Main Road Re-Routing

(Source: Asante, 2022)

The road re-routing project will take place in two phases; an initial temporary detour which will allow for the road closure to take place in Quarter 2 of 2022, followed by the construction of the permanent by-pass along the route to the South of Bibiani town, shown as a blue line in Figure 18-2 above.

18.9 Tailings Storage Facility

18.9.1 TSF Background and History

Tailings from the early mining operations (1902-1973) were discharged to a series of tailings ponds (Ponds 1-7) known as levees, downstream of the process plant south of the plant facility (Figure 18-3).

Knight Piesold Ghana Limited has been associated with the investigation, design, construction and ongoing development of the TSF since 1995. KP supervised the construction of the TSF Stage 1 and subsequently completed the design and supervised the construction works from Stages 2 to 10, the current embankment crest (RL211m). KP also undertook quarterly inspections to ensure that it had been managed in accordance with internationally accepted standards and best practices. When the mine ceased operation in 2008 the TSF was left partially filled and retained some capacity. A survey carried out by Advisian, Worley Parsons Group, and reported in 2017 (TSF Assessment Mensin Gold Bibiani, 2nd March 2017) estimated this storage capacity, with allowance for the freeboard in accordance with the Ghana Minerals and Mining (Health, Safety and Technical) Regulations, 2012, to be 3.95Mm³.

Figure 18-3: Historical Tailings Dam Facility and Levee System

(Source: Advisian, 2017)

18.9.2 Existing Tailings Storage Facility

The Bibiani TSF is a cross-valley impoundment located in a northeast– southwest trending valley adjacent to and to the north of the existing Plant Site. The existing TSF covers an area of approximately 150Ha.

The existing facility comprises a Main Embankment located approximately 1km due east of the Process Plant and three saddle embankments located on the northern, southern and western perimeter of the facility.

The existing facility layout is shown in Figure 18-4.

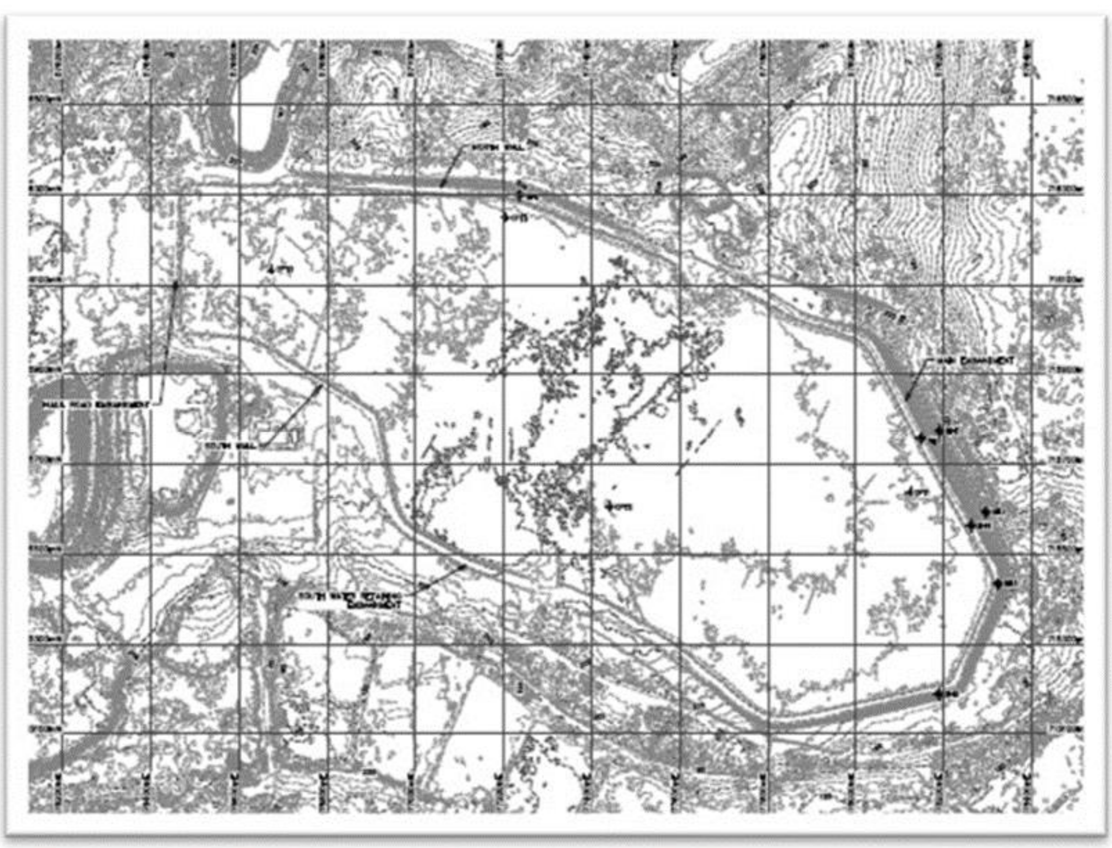


Figure 18-4: Bibiani Mine Tailings Storage Facility

(Source: Advisian, 2017)

Tailings were previously deposited by spigoting from the Main Embankment in the east, northern saddle embankment and by open end discharge from the top of the valley in the west, resulting in the formation of a dish shaped deposit, with the supernatant pond located in the centre of the facility.

Details of the existing facility embankments are presented in Table 18-3.

Table 18-3: TSF Existing Embankment Detail

Embankment	Approximate Crest Elevation (m RL)	Approximate Embankment Length (m)	Maximum Height (m)
Main	210	2,200	34
Northern	210	1,100	6
Southern	210	1,000	3
Haul road	211	330	3.5

The TSF will be recommissioned with the current configuration. Approximately 6Mt of tailings storage capacity is to be realised once the confining embankments are raised to a crest elevation of 211mRL.

Future raises will comprise a 10m downstream raise to the Main Embankment and centreline raise to the other embankments. Future raises are expected to provide enough storage for the LoM (approximately 24Mt of tailings storage capacity).

18.9.3 Historic Tailings and Physical Characteristics

Historic physical testing of tailings samples produced at the plant is being used for design and engineering analysis. It is assumed that the physical properties of the tailings material will remain relatively unchanged, as a mineral deposit similar to historically processed material will be processed upon recommissioning of the plant. Once the Process Plant is operational, a representative sample of tailings will be required for physical and chemical testing to confirm this assumption.

The release of water following the deposition of tailings in the facility has been estimated from drained and undrained sedimentation tests. The rate of release determines the amount of supernatant that can reach the decant pond and become available for collection and return to the plant. Water release was estimated at 45% and 36% for the undrained and drained conditions at a solids content of 45%. A lower solids content is expected to yield higher water release volumes.

The dry densities of tailings to be deposited into the facility were estimated to range from 1.3 t/m³ and 1.4 t/m³.

18.9.4 Facility Seepage Management

The facility has two seepage sumps located at the downstream toe of the Main Embankment. The sumps collect seepage from the upstream toe drain constructed along the Main Embankment during Stage I and the downstream buttress internal drainage constructed along the downstream slope of the Main Embankment during Stage VII raise. The sumps were provided with pumps to continuously transfer water to the tailings beach surface during operations. It is understood this practice was generally maintained during the care and maintenance period.

18.9.5 Facility Decant and Pond Management

The facility supernatant pond during historic operations was decanted using diesel pumps mounted on a floating barge moored along the southern high ground. The pumps transferred water to the process ponds for use at the plant.

18.9.6 Geotechnical Investigation

A number of site investigations have been completed in support of design of the TSF in the past. This includes the most recent site investigation completed during the early part of 2022 to verify the structural integrity of the facility after almost a decade under care and maintenance and support the planned Stage XII raise. These investigations included site reconnaissance, desktop review of existing geotechnical investigations and in-situ investigations with corresponding in-situ testing and sampling as well as geotechnical laboratory testing of recovered materials which is on-going.

The principal aims of the recent investigation was:

- To determine the strength of the in-situ materials of the existing embankments
- To determine the strength of the foundation materials
- To determine the strength properties of the deposited tailings and

- To establish the appropriate material parameters for detailed stability analysis including the level of the phreatic surface
- Inform the rehabilitation effort required prior to recommissioning of the facility.

The following key conclusions were drawn based on the site investigation findings:

The confining embankments comprise stiff sandy gravelly silty CLAY material.

- The foundation of the Northern and Southern embankments comprise stiff gravelly sandy SILTS underlain by residual phyllite to a depth of approximately 10m then transitions to highly to moderately weathered phyllite at depths of 50m
- The foundation and the downstream toe area of the Main Embankment comprise a 46m thick layer of soft to firm gravelly sandy SILTS. This unsuitable layer within the downstream toe area will have to be removed and backfilled with competent rockfill to provide a stable platform for future raises to the facility
- A structural rockfill buttress will be required downstream of the Main Embankment to improve the overall stability of the Main Embankment and serve as a platform for future raises. Structural fill for the buttress can be sourced from existing waste rock dumps
- Low permeable oxides and saprolites (extremely to distinctly weathered rocks) required for future raises are not readily available within the TSF area. Borrow materials will have to be sourced from outside the immediate TSF area. Future borrow material investigations will have to be performed
- Future raises will turn the facility into a paddock facility, as such basin lining works will not be required within the current facility footprint
- Drainage and filter materials required for inclusion in the TSF permanent works can be sourced from crushed suitable mine waste rocks and stockpiled for use within economical hauls of the TSF construction.

Stability analysis conducted on the critical embankments of the TSF using the results of the site investigation and incorporating the unsuitable material removal within the main embankment downstream area and construction of the main embankment rockfill buttress indicate the impounding walls would mobilize adequate Factors of Safety (FoS) against anticipated destabilizing loads or stress conditions. The FoS realized satisfied the minimum limits for the most severe hazard class recommended in the current Ghana Mining Regulations (L.I. 2182) and ANCOLD guidelines for TSF design/operations.

18.9.7 Facility Documentation

In keeping with international best practice guidelines, a probabilistic water balance model is being developed for the TSF. The water balance model will be developed to provide the functionality to meet the following objectives:

- Evaluate the likelihood of water surpluses and/or deficits under a variety of climatic conditions for the proposed future operational conditions
- Verify that the water storage facilities are adequately sized from a dam safety perspective
- Provide operational guidelines, such as water pumping rates and water storage requirements, to manage the system efficiently
- Identify potential solutions to water surpluses and/or deficits.

Also, a dam break assessment is underway to support dam classification and provide input to the emergency response plan and operations manual.

18.9.8 Rehabilitation

Based on observations during the facility inspection, output from the geotechnical investigations and requirements from international best practice guidelines, the following systems have been designed and are being implemented in preparation for recommissioning of the facility.

EMBANKMENT WORKS
As part of the rehabilitation of the facility, the confining embankment crests will be raised to a level of 211mRL to match the crest elevation of the Haul Road embankment. Erosion gullies on the upstream slope of the embankments will be ripped, moisture conditioned and backfilled to the design slopes. Erosion protection riprap will be placed along the slopes to protect the slopes during tailings deposition. Wearing coarse material and safety berms will be placed on the crest to allow safe access.

SPILLWAY SYSTEM
Severe rainstorms create significant risks for TSFs. It is important that TSFs be designed to safely store and/or route the storm flows to avoid overtopping the facility embankments.

The Ghanaian regulation L. I. 2182 requires TSFs to store the inflow of water from all catchments of a 1:100 year, 24-hour storm and maintain at least 1m freeboard from storm pond elevation to crest elevation.

As a conservative measure, the TSF has also been analysed for the Probable Maximum Flood (PMF) 24-hour storm. The TSF is designed to safely store and pass the inflow of a PMF storm through the spillway without overtopping of the embankment. The spillway be located along the northern embankment and will discharge into a detention pond at the occurrence of the PMP event.

SEEPAGE MANAGEMENT SYSTEMS
The existing seepage sumps at the downstream toe of the Main Embankment will be extended using reinforced concreted rings to allow continued access to the sumps for emptying. The tower will be supported/surrounded by free draining rockfill which will form part of the downstream rockfill buttress. The sump will be fitted with a submersible pump and the water returned to the surface of the tailings beach.

At the downstream toe of the rockfill buttress, a secondary confinement system comprising a trapezoidal channel lined with geotextile and HDPE geomembrane and emptying into a reinforced concrete sump will be constructed to capture and convey seepage from the Main Embankment rockfill buttress.

DECANT SYSTEM
During the start-up operations of the TSF, the pond is to be decanted via a pump on a floating barge and pumped to the process ponds for recycle. A causeway will be required from the southern high ground to facilitate decanting of the supernatant pond. During future operations, a permanent decant tower will be required. To allow siting of the decant tower at the lowest point of the tailings beach, a reinforced concrete tower comprising solid and perforated concrete rings will be constructed within the causeway prior to recommissioning.

FACILITY MONITORING INSTRUMENTATION
In keeping with international best practice guidelines, the following surveillance and monitoring instrumentation have been designed for installation within the confining embankments of the facility.

- 6 No. Piezometers comprising 1 Standpipe piezometer and 5 Vibratory Wire Piezometers with response zones within the tailings, embankment section and foundation
- 5 No. In-place Inclinometers founded at least 5m into the foundation and positioned along the embankments
- 5 No. survey pins installed on the confining embankment crest.

Vibrating Wire Piezometers (VWPs) and Open Standpipe Piezometers (OSPs) will be installed in the TSF embankments as determined appropriate to monitor pore water pressures within the embankment to confirm that facility performance is consistent with design intent with regards to continued slope stability. The piezometers will be monitored at regular intervals and changes in water level noted and discussed with the design engineer.

Survey Pins and Prisms will be installed at regular intervals along the embankment crests per the requirements of the Ghanaian Regulations and to international best practice guidelines to monitor potential deformations in the impounding walls in support of remediation and overall dam safety.

19. MARKET STUDIES AND CONTRACTS

19.1 Introduction

The major commodity produced at MGBL is gold, which is widely and freely traded on the international market with known and instantly accessible pricing information.

19.2 Marketing Strategy

The key elements of marketing strategy are as listed. Gold, as doré, is:

- Transported from the mine via Accra to MKS Pamp, in Switzerland. The transportation of the gold bar is the responsibility of the refining contractor
- Refined at MKS Pamp under a refining contact
- Sold to MKS or an alternative purchaser at the discretion of the Company.

19.3 Marketing Contacts

19.3.1 Refining Contract

The gold refining industry is competitive with several gold refineries in South Africa, India, Switzerland and several other countries that have the capacity to refine gold from MGBL. MGBL have entered into a refining and offtake agreement with MKS PAMP SA of Switzerland for the refining and sales of gold doré. The contract specifies a standard refining charge. This charge is credited for payables (e.g. silver content of the doré) and debited for any deleterious content (e.g. arsenic) in accordance with specific terms in the contract. MGBL has the option to sell the final refined metal directly to MKS or on the London LBMA AM or PM auction price or by mutually accepted pricing method.

19.3.2 Pricing

At the time of authoring this report, global commodity prices have been significantly influenced by ongoing geopolitical uncertainty in Europe, including the ongoing COVID-19 pandemic, which is inducing significant volatility, particularly for gold.

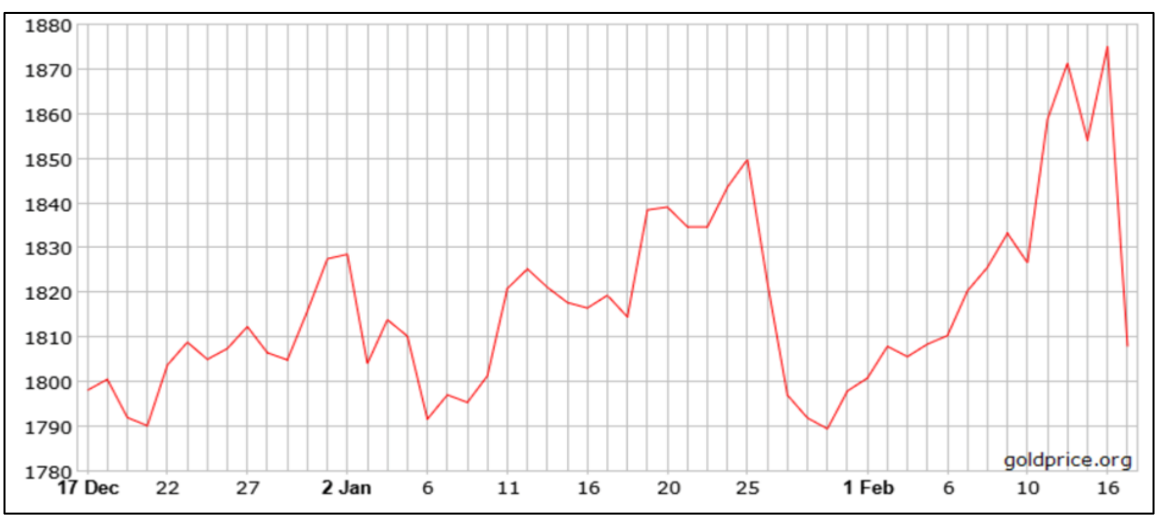


Figure 19-1: Monthly Gold Price Trend

(Source: Goldprice.org)

A realised gold price of US$1,800/oz for 2022 and US$1,700/oz thereafter was used as the gold price for economic evaluation, for this Technical Report. The applied price is considered as a prudent view, based on the average broker median gold prices over the longer term (See Figure 19-1).

19.3.3 Product Specification

The product specification is defined in the refining contract.

19.3.4 Shipping, Storage and Distribution

Transport of doré from mines to refineries elsewhere in the world is a relatively common occurrence. For the Bibiani mine, transport of doré from MGBL will be the responsibility of the refinery. The doré will be transported from the mine site via helicopter.

19.3.5 QP Opinion on Gold Price Applied

A realised gold price of US$1,750/oz was used as the gold price for economic evaluation. BARA considers this price prudent for the Technical Report.

19.4 Other Material Contracts

19.4.1 Mining Contract

MGBL has engaged a mining contractor to conduct the open pit mining operations at both the Main pit and Satellite pits. At the effective date of this report the contractor has mobilised, but the final contract document has not been signed. This contact forms the basis of the mining operating cost estimate reported in this technical and on which the Company's business plan is based. The terms, conditions pricing schedules submitted by the contractor, and on which the final contract documents will be based, are within industry norms and similar to other contracts in place on other mines in West Africa.

19.4.2 Security Contract

MGBL has entered into a contract with Protea Coin Group Ghana for provision of mine wide security services including the high security areas.

20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL / COMMUNITY IMPACT

20.1 Background

MGBL appointed Geosystems Consulting Limited to undertake the work associated with the environmental and social impact assessment and permitting for the proposed surface mining operations and road diversions at Bibiani mine in the Bibiani-Anhwiaso-Bekwai municipality of the North Western region of Ghana.

The mine consists of decommissioned underground workings and open pits previously mined from 1891 – 2013. Asante assumed control of the mine in 2021and is currently undergoing refurbishment. MGBL obtained an environmental permit in July 2021 to commence underground mining and processing activities and is valid from 2021 to 2023.

The environmental work for the open pit and surface expansion was undertaken in compliance with applicable Ghanaian legislation in particular the Environmental Assessment Regulations 1999 (LI1652). MGBL registered the project with the Environmental Protection Agency (EPA) and received a letter dated 6th November 2021 to requesting the preparation of an Environmental Impact Assessment report.

Geosystems Consulting Limited has subsequently undertaken the required Environmental and Social Impact Assessment in terms of Ghanaian legislation and the EPA has issued an Environmental Permit authorizing MGBL to commence construction and operation. The date of issue is 21st February 2022 and expires 20th August 2023.

The single most important material issue that could impact MGBL ability to extract the mineral resources as planned is the requirement to move and resettle a community to accommodate the expansion of the open pits and realignment of a road. This aspect is discussed in detail in sub-section 20.3.

It must be noted that no specific specialist reports in terms of surface and ground water studies, fauna and flora, noise and vibration, air quality and others have been provided. From an environmental perspective and based on the reviewed documentation there do not appear to be any material issues.

The documents reviewed are listed below:

- MGBL Permit EPA 2021
- EPA Permit and Schedule 2019
- Permit and Schedules 19062018
- MGBL_ Final EIS 20032018
- FINAL MGBL_ EIS Permit Renewal 15 December 2020
- FINAL MGBL_ EIS Permit Renewal Update 06082019
- Draft MGBL_ EIS Permit Renewal 15 Dec 2020
- Letter EPA 18102021 Received 031121
- Environmental Assessment Registration Form EA2 – Restart of Surface Mining
- Appendix B – MGBL Stakeholder Engagement Report Final
- MGBL Draft EIS report
- 16.02.22 MGBL Scoping Report Final
- EPA Letter Processing Fee
- Processing Fee Payslip
- 20220221 – EPA Permit – Environmental Impact Assessment

20.2 Waste Dumps and Tailings Facilities

20.2.1 Waste Dumps

The waste rock dumps (WRDs) associated with mining operations, and discussed in Section 18, above will be constructed to meet the requirements of the Ghanaian Mining Regulations. The WRDs will initially constructed with the natural rill angle of approximately 35° degrees with 10m lifts and 13.2m berms. This is then to be contoured progressively to an overall slope angle of 20° (1:2.8) to allow for slope stability and revegetation.

The waste dumps will be progressively rehabilitated with topsoil. Surfaces of dumps will be contoured to minimise batter scour and ripped at 1.5m centres to a depth of 400mm, where practicable. All of the rehabilitation work will be carried out progressively. Seepage and shallow ground water flow along the perimeter of the mine residue deposits should be controlled with suitable toe drains.

20.2.2 TSF

The following paragraphs describing the closure arrangements or the Tailings Storage Facility were extracted from the Draft Environmental Impact Assessment for re-opening of Underground Mining Operations at Bibiani Gold Mine, completed by Mensin Gold in 2018.

A qualitative or semi quantitative risk assessment will be carried out on the tailings storage facility and adequate control measures will be put in place to address all significant risks that the facility may pose to the Bibiani community and surrounding ecosystem. Potential risks would include accidental releases of effluent to the environment, death of flora or fauna, significant harm to trespassers and post closure team of the HSE department. The sensitivity analysis will identify the key areas of concern and facilitate the preparation of a risk management plan.

The main works to be undertaken to achieve closure of the TSF are:

- *Spillway excavation*
- *Embankment Capping*
- *Embankment re-vegetation*
- *Surface re-vegetation*
- *Final check on tailings dam stability*
- *Pumping and discharge of the remaining effluent into the tailings pond*
- *Monitoring of surface water and groundwater quality and levels*
- *Crop trials prior to cessation of operation.*

During the final stages of mining operations, the position of tailings will be planned and managed to achieve the desired final bench configuration. The intention is to establish a vegetation cover directly on the tailings surface. The lower slopes of the dam are earth fill structure and will be progressively re-vegetated throughout the life of the mine operation. The tailings pipeline and return water system will be decommissioned in conjunction with the plant site decommissioning.

20.3 Community and Social Aspects

A number of documents specific to the RAP were reviewed which included:

- Environmental Assessment Registration Form EA2 – Restart of Surface Mining
- Appendix B – MGBL Stakeholder Engagement Report Final
- MGBL Draft EIS report
- 16.02.22 MGBL Scoping Report Final
- Mensin Gold RAP Project Presentation – Revised (ES Jan 22)
- Bibiani RAP Technical Proposal_6.4.22 – DMB
- Mensin Gold Bibiani Project - Draft Project Plan 11-4-2022
- MKM-Social Profile
- RAP Progress Report_11.04.22.

The planned expansion of surface operations at Bibiani requires the resettlement of community households and businesses. MGBL have undertaken an Environmental and Social Impact Assessment (ESIA) of the project. As part of this ESIA process MGBL have committed to undertaking a RAP in terms of Ghanaian legislative requirements, as well as standards and requirements of the Equator Principles. As Ghana is deemed a Non-Designated country by the Equator Principles the International Finance Corporations Performance Standards apply.

Under Principle 7 of the Equator Principles (EP), an Independent Environmental and Social Due Diligence Review (Review) by an Independent Environmental and Social Consultant (the 'Consultant') is required for all Category A and, as appropriate Category B Projects.

MGBL have appointed MKM Social ("MKMS"), a Ghanaian registered company, experienced in delivering Socio-economic, health, environmental and resettlement solution, for this purpose.

MKM provide resettlement services, which include: strategy development; due diligence and risk assessments; socio-economic and asset surveys; design and implementation of Resettlement Action Plans(RAP); government relations and negotiations; livelihood research, planning and restoration; capacity building for companies, government and community leaders and organizations; facilitation of community-based planning; conflict risk assessment, mediation and resolution; monitoring and evaluation throughout the process.

MGBL have proposed to undertake the resettlement of affected communities in three phases to coincide with the open pit expansion. A preliminary assessment provides the following:

Phase One affects 350 houses within the Zongo and Old Town community. The budget cost for phase one has been determined as US$15 750 000. The market value for the construction of a house has been determined at US$45 000.

Phase Two affects 275 houses within the Zongo and Old Town community. The budget cost for phase two has been determined as $12 375 000.

Phase Three affects 275 houses within the Zongo and Old Town community. The budget cost for phase three has been determined as US$12 375 000.

Based on an assessment of various documents it is noted that several businesses and ancillary infrastructure will be impacted. No details of the costing associate with the budget have been presented. The presentation report provides for the price for a standard house as per a recent market study.

Stakeholder engagement and data gathering activities as part of Resettlement Action Plan preparation process in Bibiani Zongo and Old Town in the Bibiani-Anhwiaso- Bekwai Municipality of the Western North Region are scheduled to take place in March 2022. The Team designated to complete this work is comprised of specialists in the fields of socio-economic and social safeguard as well as valuation.

As per the provided project schedule the following activities are in progress:

- Socio-economic and valuation surveys
- Eligibility and entitlements
- Establishment of RAP Committee
- Resettlement Site Selection
- Planning for Transitional Support Programs
- Preparation of RAP Report
- Disclosure of RAP

However, as per the requirements of International Best Practice and the IFC Performance Standards the following would be expected with regard to project planning:

- Completion of Draft RAP
- Approval of Draft RAP
- Community Consultation (Ongoing)
- Negotiation for resettlement sites
- Contractor receives approval
- Confirmation of resettlement sites
- Set up community-based organization
- Notification of entitlement
- Contractor testing
- Agreement of entitlement
- Notification of demolition
- Payment of Compensation
- Establish linkages with Government entities
- Contractor excavation works
- Grievance mechanism & procedure
- Preparation of site plan and site
- Construction of new structures
- Demolition of old structures
- Movement of RAP's to new site
- Training programs
- Performance monitoring
- External evaluation.

In terms of International Best Practice and the IFC Performance Standards the expectation would be to provide a budget that would include:

- Salaries and wages
- Office costs
- Transportation
- Consulting services
- Compensation for landowners of agricultural land

- Compensation for lost crop production for landowners and tenants
- Compensation for dwellings and structures
- Compensation for house plots
- Compensation for trees
- Compensation for enterprises
- Compensation for moving / disturbance
- Land acquisitioning
- Site planning
- Infrastructure
- RAP monitoring and evaluation
- Agricultural extension services
- Small enterprise training
- Revolving credit
- Contingency.

At the date of this Technical Report a detailed project plan and budget for the RAP was not yet available for review. Whilst MGBL and MKM have commenced with the work associated with resettlement of the affected communities the level of documentation, budget and plans does not yet satisfy International Best Practice and the requirements of the Equator Principles and IFC Performance Standards.

The work stream that MKMS (Figure 20-1) is currently engaged in includes the RAP risk assessment and details on site selection, design aspects, contractor appointment and management, construction planning and scheduling, contractor management and contingency plans.

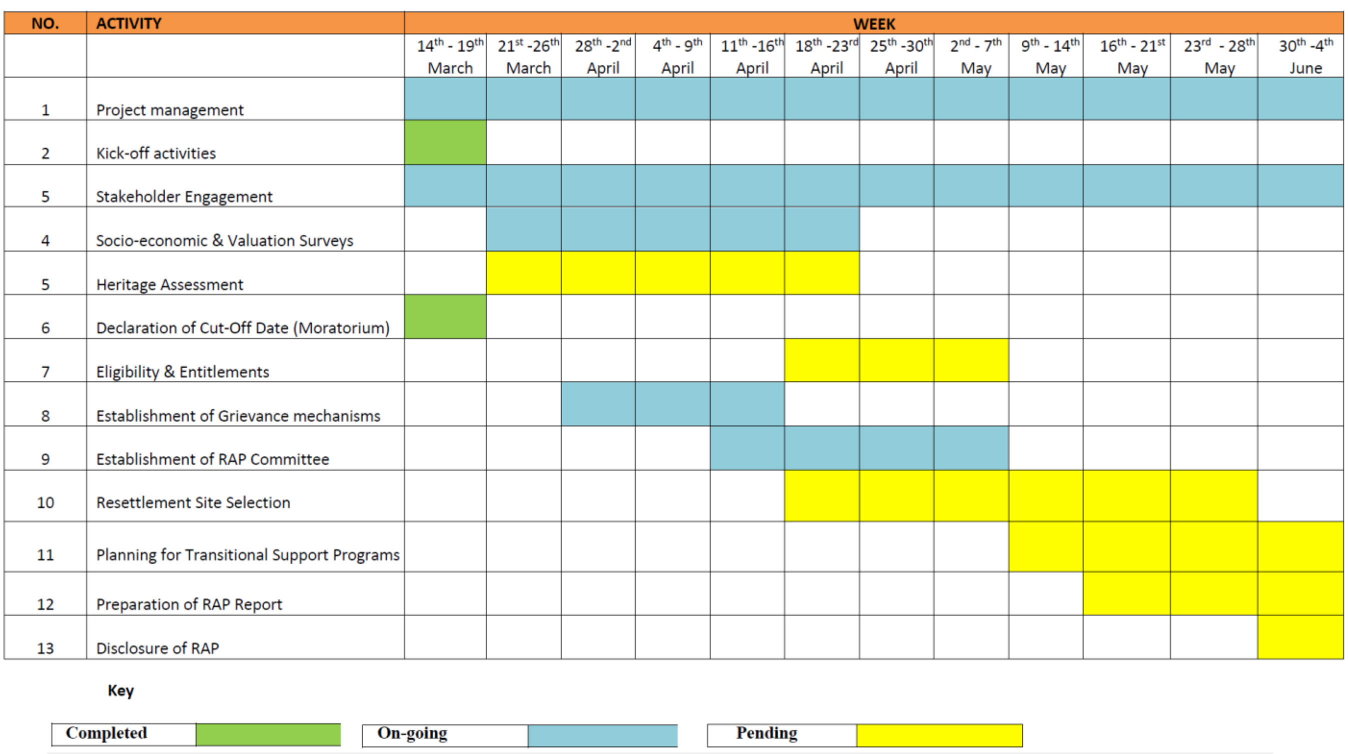


Figure 20-1: MKMS RAP Preparation Workstream

(Source: MKMS. February 2022)

The risk identified exists between the timing of resettlement and mining advance and may result in project delays. Therefore, the required resettlement of the Bibiani Zongo and Old Town communities is the project's most significant risk. The finalisation of the various stages of the RAP planning and execution, to an acceptable level of detail, is at this point in time, a priority for the Project Management team.

20.4 Mine Closure

The 2018 Bibiani Feasibility Report provides for a restoration cost of US$7.6 million and a decommissioning cost US$2.21 million. As a result, a provision of US$9.8 million has been made in respect of the reclamation bond with the EPA.

The MGBL Draft EIS report, still to be updated, provides for an estimated decommissioning and surface reclamation cost of "approximately" $7 million.

21. CAPITAL AND OPERATING COSTS

21.1 Basis of Cost Estimate

21.1.1 Base Date and Terms

The mining cost estimate for the Bibiani project is based on designs, costs and information as of February 2022. All monetary values are presented United States Dollars (US$) and in real money terms, free of escalation or inflation.

21.2 Estimating Methodology

The Bibiani Project is in an advanced stage with much of the engineering work completed and many of the costs based on either actual incurred costs, contractor or supplier quotes. In limited instances costs are based on forecasts prepared as part of the Mine's capital budget estimate.

21.2.1 Exclusions

The cost estimate does not make provision for any environmental or closure costs related to the infrastructure or mine plan presented in this report. No provisions have been allowed for escalation of any costs.

21.3 Capital Costs

21.3.1 Definition of Capital Cost

Capital costs have been defined as the costs incurred to re-establish production from Bibiani and any costs associated with increasing the production capacity of the mine, which include:

- The cost of surface vehicles and mobile plant, excluding the open pit mining fleet provided by the mining contractor
- The costs of refurbishing the processing plant including plant upgrades to optimise recovery and increase throughput rate to 4.0Mtpa
- Tailings storage facility wall lifts
- The RAP needed to allow mining of the Main Pit to proceed
- Diversion of the Main Bibiani Goaso road and construction of a bye-pass to avoid the mine
- An exploration programme to improve resource confidence and increase LoM
- General mine infrastructure upgrades
- Airstrip suitable for light aircraft
- Indirect and contingency costs related to the above.

21.3.2 Summary of Capital Estimate

A summary of the total Capital Cost is presented in Table 21-1.

Table 21-1: Summary of Capital Cost

Capital Cost Item	Capital cost (US$)
Light Vehicle Purchase	3,757,569
Plant Readiness & Sustaining Capital	20,985,624
Plant Refurbishment Project - 1st Stage	33,202,148
Recovery Improvement Project - 2nd Stage	22,238,891
Pebble and Mobile Crusher	5,000,000
TSF Raise 12 Project	6,300,000
Plant Genset	600,000
Road diversion	20,000,000
RAP	40,000,000
Mine Readiness & Sustaining Capital	9,348,400
Definitive Drilling and Exploration Expenditure	5,400,000
Major Renovation Works & Clinic upgrade	781,000
Security Infrastructure Development	900,000
Fencing upgrade - Old Town Gate to Levee 4	106,000
Airstrip	1,500,000
IT Infrastructure Upgrade	817,759
Capitalised G&A	7,855,733
Capitalised Mining Cost	11,931,883
Total Capital Expenditure	**190,725,007**

In addition to the project capital detailed above an amount of US$742 million for waste stripping is capitalised. The definition of capitalised waste stripping follows the *International Financial Reporting in the Mining Industry, International Financial Reporting Standards, 6th Edition, PWC*. This brings the total capital cost over the LoM to US$933 million.

21.3.3 Capital Cost Cash Flow

Capital expenditure through LoM is presented in Figure 21-1. The capital cash flow expenditure was approximated through the distributing the total capital costs over periods provided by the mining plan and the project plan for infrastructure and plant upgrades, many of which are already well advanced.

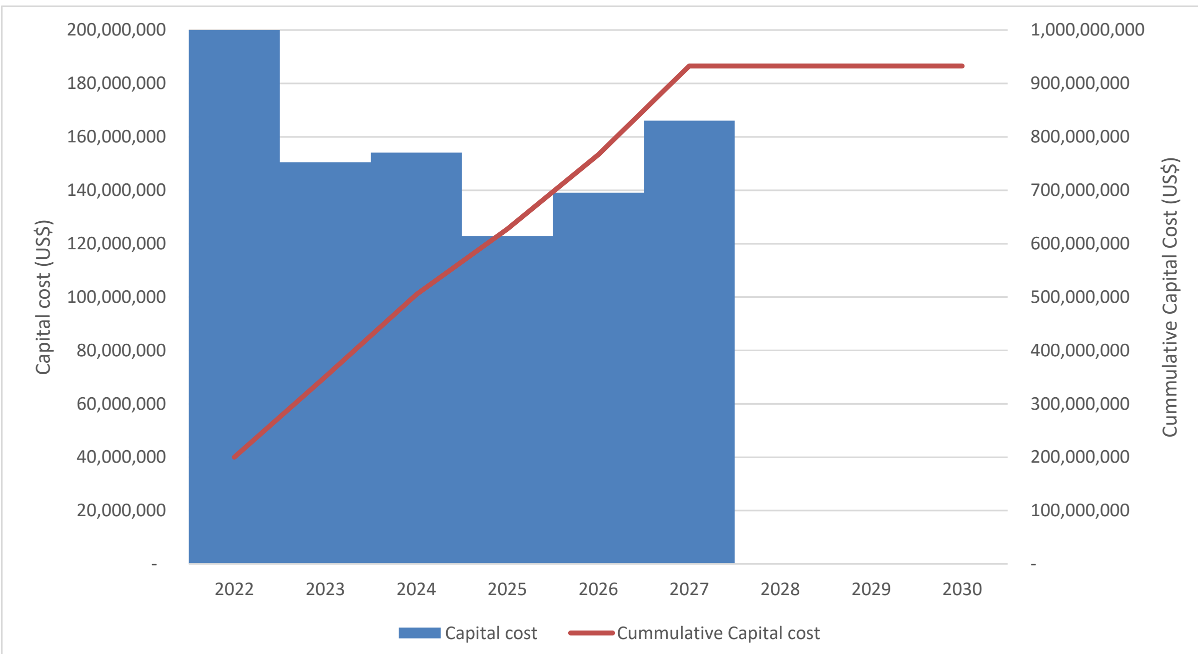


Figure 21-1: Capital Expenditure Through LoM

(Source BARA, 2022)

21.4 Operating Costs

21.4.1 Definition of Operating Cost

Cash operating costs are defined as the direct operating costs and includes contract mining and Owner's Team mining cost, mineralised material transport and handling, processing and general and administrative (G&A).

The Bibiani Mine is an advanced project and a significant proportion of the operating cost build-up used for the LoM Study is based on contract mining prices submitted by the selected mining contractor. Where required, additional data was generated from first principles – utilising directly applicable project experience.

The operating costs for Bibiani include the following components:

- Mining – waste
- Mining – mineralised material
- Ore transport and handling
- Processing cost
- G&A cost.

A contractor mining approach is envisaged in the long term for Bibiani. PW Mining have been engaged to conduct the open pit mining operation. The mining contract is based on a wet rate – diesel being supplied by Bibiani from an on-site diesel farm at an agreed rate and charged back to the mining contractor.

Explosives are delivered and managed by an explosives contractor to the on-site magazines and supplied on a "down-the-hole contract" basis.

21.4.2 Summary of Operating Cost Estimate

The operating cost estimate is presented in Table 21-2. The table presents the LoM total and the unit operating cost per tonne milled and per ounce of gold recovered, by activity or area.

Table 21-2: Summary of Operating Costs

Item	LoM Cost (US$)	Milled (US$/t)	Recovered (US$/oz)
Mining Cost	842,587,840	28.53	453.70
Processing Cost	382,693,190	12.96	206.07
General & Administration Cost	144,267,998	4.89	77.68
Government Royalties - 5%	158,170,222	5.36	85.17
Total Operating Cost	**1,527,719,249**	**51.74**	**822.62**

The main cost drivers and basis for the mining operating costs include the following:

- Diesel pricing based on a rate of US$1.10/ltr
- Explosives costs as tabled below.

Table 21-3: Cost of Explosives

Product Description	Unit Cost (US$)
MULTI SPD:9M/500MS (U500)	4.22
PENT. BOOSTER 250G	5.60
PENT. BOOSTER 400G	6.99
TRUNKLINE:6M/17MS	4.68
TRUNKLINE:6M/25MS	4.68
TRUNKLINE:6M/42MS	4.68
TRUNKLINE:6M/67MS	4.68
TRUNKLINE:50M/00MS	16.85
HARNES WIRE: ($/m)	0.50
HARNES CONNECTOR	1.72
S120 BULK EXPLOSIVE: ($/t)	828.80
Presplit Explosive: ($/m)	7.00

Cost driver contributors and basis for the process plant operating costs include the following:

- The labour cost is based on the 2022 operating cost budget for the Bibiani Mine
- Power cost is based on the current price paid by Bibiani to ECG of US$0.135/ kWh
- Reagents costs are based on breakdown and consumptions aligned to Bibiani unit cost data
- Grinding media consumptions and mill liners are based on estimated consumption rates and wear. Costs are based on current prices of reagents delivered to site
- Plant maintenance cost has been estimated based on experience of the Bibiani maintenance team from other projects in Ghana. This also includes the TSF maintenance cost.

21.4.3 Contingency

No contingency allowance has been calculated or has been allowed for in operating cost.

21.4.4 Operating Cost Cash Flow

LoM operating cost cash flow per annum presented in Figure 21-2 with the unit cash operating cost per tonne on the secondary axis. The operating cost cash flow is largely estimated by applying unit rates to the mine production schedule, with fixed costs applied over the LoM where appropriate.

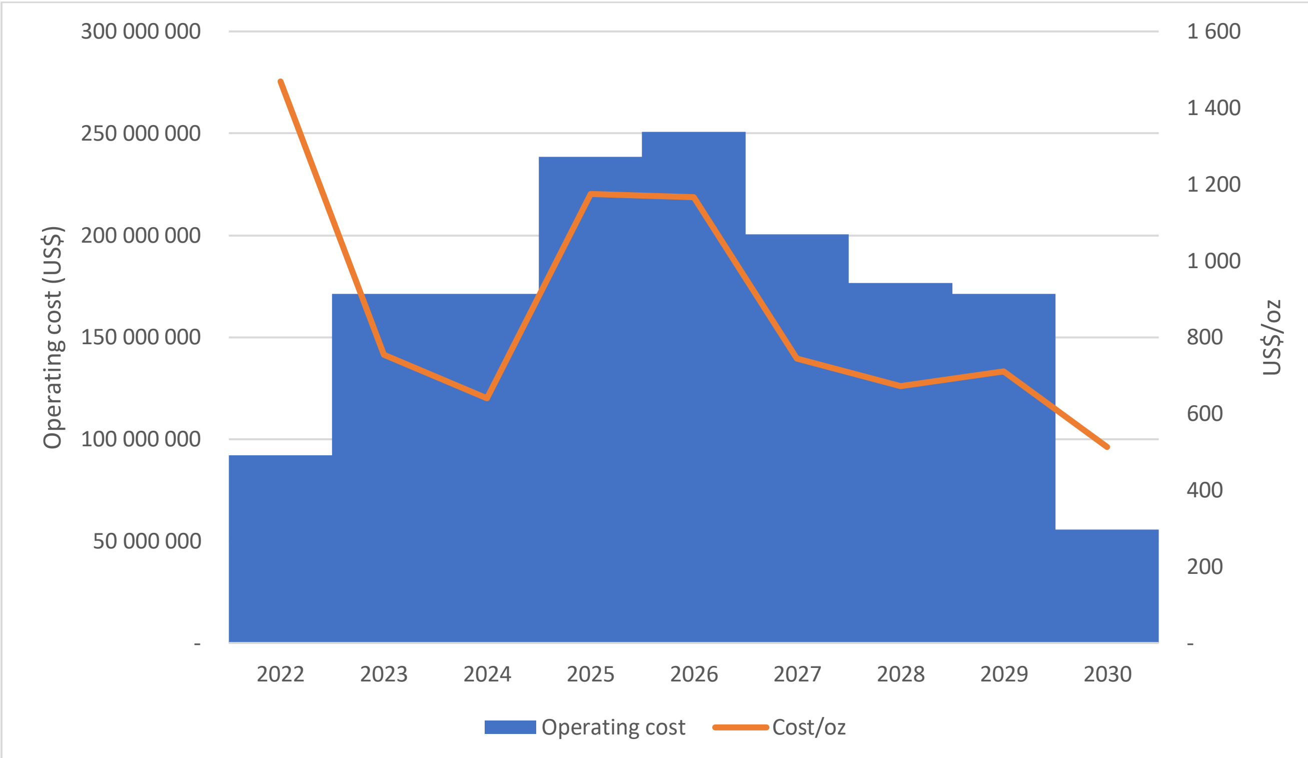


Figure 21-2: Operating Cost Cash Flow and Unit Operating Cost

(Source: BARA 2022)

22. ECONOMIC ANALYSIS

22.1 Evaluation Methodology

The economic evaluation of Bibiani was undertaken through a discounted cash flow ("DCF") modelling approach. This approach includes determined project cash flows through deduction of capital and operating costs from operational revenues. The resulting project cash flows are used to determine key financial metrics such as payback period, peak funding requirement, net present value ('NPV") and internal rate of return ("IRR").

The economic analysis presented below is based on the LoM mining inventory which includes approximately 4% of Inferred Mineral Resources.

22.2 Revenue

The revenue was calculated by applying the gold price to the respective quantity of gold recovered from the processing facility. The sales pricing of gold applied in the evaluation is USD1,800/oz for the current year (2022) and US$1,700/oz thereafter. This equates to an average gold price, over the LoM of US$1,704/oz. The gold price was provided by Asante as their forecast pricing for projects. Assumed process recovery and physicals which drive the calculation of revenue is presented in Table 22-1. A total project revenue of US$3.164 billion has been calculated over the LoM.

Table 22-1: Summary of Revenue Factors Used in Discounted Cashflow Model

Description	Unit	Value
Processed Tonnes	Mt	29.528
Processed Gold (Au) Content	Moz	2.023
Processed Gold (Au) Grade	g/t	2.13
Process Recovery	%	91.8(1)
Recovered Content	Moz	1.857
Gold Price	US$/oz	1,704(1)
Total Revenue	**US$ M**	**3,164**

Note: (1) Average over LoM

22.3 Royalties

Ghanaian government royalties of 5% of revenue have been included in the discounted cashflow model.

22.4 Tax

Company tax has not been considered in the economic analysis and all cashflows presented are pre-tax.

22.5 Principal Assumptions

The principal assumptions employed in the economic analysis of the Project are presented in Table 22-3. The DCF model assumes that both revenue and costs, as well as royalty and taxes, are incurred in US$, therefore, no exchange rate assumptions are necessary. For the purposes of the economic analysis, a discount rate of 5%, as directed by Asante, and an average realised gold price of US$1,703/oz. was applied.

Table 22-2: Principal Assumptions Employed in Economic Analysis

Techno-Economic Assumptions	Unit	Value	Source/Justification
Tonnes Mined (Ore and Waste)	Mt		Mining Schedule
Tonnes Milled	MT		Mining Schedule
Milled Grade	g/t		Mining and Processing Schedule
Process Recovery	%	91.8	Metallurgical Testwork
Gold Price	US$/oz	1,703	Asante
Operating Costs	US$M		Estimates (Section 20)
Capital Cost	US$M		Estimates (Section 20)
Steady State Processing Rate	tpa	4.0	Design for Steady State (Section 17)
Royalty Rate	%	5	Ghana Revenue Authority https://gra.gov.gh/
Tax Rate	%	35	Ghana Revenue Authority https://gra.gov.gh/
Discount Rate	%	5	Asante

22.6 Discounted Cash Flow Analysis

An annual cashflow model and discounted cashflow model were prepared based on the mining schedule discussed in Section 16. The annualised production schedule and cashflows are tabled below.

The cashflow presented below is based on a mining and processing schedule which includes a small quantity of Inferred Mineral Resources which occur within the final pit design. The volume of inferred resource in the mine plan and schedule is 3.6% and is not considered by the QP to have a material impact on the project economics.

The government of Ghana has a free carry of 10% equity in the project. The distribution of dividend payments due to the government because of this equity holding are accounted for in the cashflow model. The cashflow accounts for all royalties, company tax and free carry payable to the Ghanaian government.

Table 22-3: Summary of Annualized Cash Flow Model

	Unit	TOTAL	2022	2023	2024	2025	2026	2027	2028	2029	2030
Mining:											
Waste Tonnes	t	517,614,425	52,012,089	70,945,991	79,082,355	96,851,410	98,549,732	78,428,790	18,578,896	18,878,770	4,286,391
Ore Tonnes	t	29,482,989	1,540,918	3,045,311	4,079,089	3,681,819	3,826,624	4,228,430	3,936,679	3,832,555	1,311,564
Grade	g/t	2.13	1.63	2.53	2.27	1.80	1.87	2.20	2.24	2.11	2.66
Contained ounces	Oz	2,021,967	80,582	247,799	297,333	212,518	229,625	299,038	283,385	259,390	112,296
Processing:											
Tonnes	t	29,528,795	1,318,646	2,925,955	3,810,426	4,000,035	4,000,035	4,000,035	4,010,994	4,000,035	1,462,634
Grade	g/t	2.13	1.71	2.63	2.38	1.72	1.82	2.28	2.22	2.04	2.51
Contained Ounces	Oz	2,023,466	72,535	247,105	291,067	220,809	233,576	292,616	285,650	262,267	117,839
Recovery	%	92%	87%	92%	92%	92%	92%	92%	92%	92%	92%
Gold Revenue:											
Ounces produced & Sold	Oz	1,857,135	62,752	226,863	267,782	203,145	214,890	269,207	262,798	241,286	108,412
Gold price	US$	1,703	1,800	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700
Gold Revenue	**US$**	**3,163,404,437**	**112,953,977**	**385,666,987**	**455,229,057**	**345,345,949**	**365,312,650**	**457,651,579**	**446,757,245**	**410,186,078**	**184,300,914**
Mining Cost	US$	(842,587,840)	(56,292,605)	(96,287,427)	(81,539,682)	(151,690,198)	(163,016,223)	(107,928,155)	(84,531,853)	(81,241,814)	(20,059,882)
Processing Cost	US$	(382,693,190)	(17,089,652)	(37,920,377)	(49,383,121)	(51,840,454)	(51,840,454)	(51,840,454)	(51,982,482)	(51,840,454)	(18,955,743)
General & Administration Cost	US$	(144,267,998)	(13,158,286)	(17,677,714)	(17,677,714)	(17,677,714)	(17,677,714)	(17,677,714)	(17,677,714)	(17,677,714)	(7,365,714)
Government Royalties - 5%	US$	(158,170,222)	(5,647,699)	(19,283,349)	(22,761,453)	(17,267,297)	(18,265,632)	(22,882,579)	(22,337,862)	(20,509,304)	(9,215,046)
Total Operating Cost	**US$**	**(1,527,719,249)**	**(92,188,241)**	**(171,168,867)**	**(171,361,970)**	**(238,475,663)**	**(250,800,023)**	**(200,328,902)**	**(176,529,912)**	**(171,269,286)**	**(55,596,385)**
Pre-stripping capitalised	US$	(742,056,990)	(72,566,025)	(109,573,562)	(131,835,529)	(122,846,216)	(139,120,206)	(166,115,451)	(0)	(0)	-
Capital expenditure	**US$**	(190,725,007)	(127,472,233)	(40,910,699)	(22,242,075)	(100,000)	-	-	-	-	-
Total Capital Cost	**US$**	**(932,781,996)**	(200,038,259)	(150,484,261)	(154,077,604)	(122,946,216)	(139,120,206)	(166,115,451)	(0)	(0)	-
Cashflow Summary											
Project cashflow		**702,903,191**	(179,272,523)	64,013,859	129,789,484	(16,075,930)	(24,607,580)	91,207,227	270,227,333	238,916,792	128,704,529
Mandatory payments											
Ghana government 10% distribution		**(33,512,376)**	-	-	-	-	-	-	(7,791,661)	(17,418,551)	(8,302,164)
Ghana corporate tax		**(113,399,632)**	-	-	-	-	-	-	(10,396,680)	(64,372,494)	(38,630,457)
Net project post tax cashflow	US$	**555,991,183**	(179,272,523)	64,013,859	129,789,484	(16,075,930)	(24,607,580)	91,207,227	252,038,992	157,125,747	81,771,908
Cumulative Project cashflow	**US$**	**555,991,183**	**(179,272,523)**	**(115,258,664)**	**14,530,820**	**(1,545,110)**	**(26,152,690)**	**65,054,537**	**317,093,529**	**474,219,276**	**555,991,183**

A summary of the results of the DCF analysis is presented in Table 22-4. The table shows that the post-tax project NPV is US$392 million at a discount rate of 5% and the post-tax IRR is 43%. The peak funding requirement for the project is approximately US$178 million with a payback period of 2.0 years.

Table 22-4: Summary of Project Metrics

Description	Unit	Value
Processed Tonnes	Mt	29.529
Processed Gold (Au) Content	Moz	2.023
Processed Gold (Au) Grade	g/t	2.13
Process Recovery	%	92%
Recovered Content	Moz	1.9
Gold Price	US$/oz	1,703
Total Revenue	US$M	3,163
Total operating cost	US$M	1,528
Total project capital cost	US$M	191
Total sustaining capital cost	US$M	742
Cash cost	US$/oz	823
AISC	US$/oz	1,222
AIC	US$/oz	1,325
IRR (Post-tax)	%	43%
NPV 5% (Post-tax)	US$M	392
Payback period	years	2.0
Project life	years	8.3
Max Negative cashflow	US$M	178

22.7 Sensitivity Analysis

A sensitivity analysis was performed on the financial model in order to determine the effect of likely variances on the capital cost, operating cost and revenue on the project. The analysis determined that the project is mostly sensitive to changes in operating cost and revenue. The results of the analysis are presented in Figure 22-1 and Figure 22-2. The figure presents post-tax NPV and IRR in relation to changes in capital cost, operating cost, and revenue respectively.

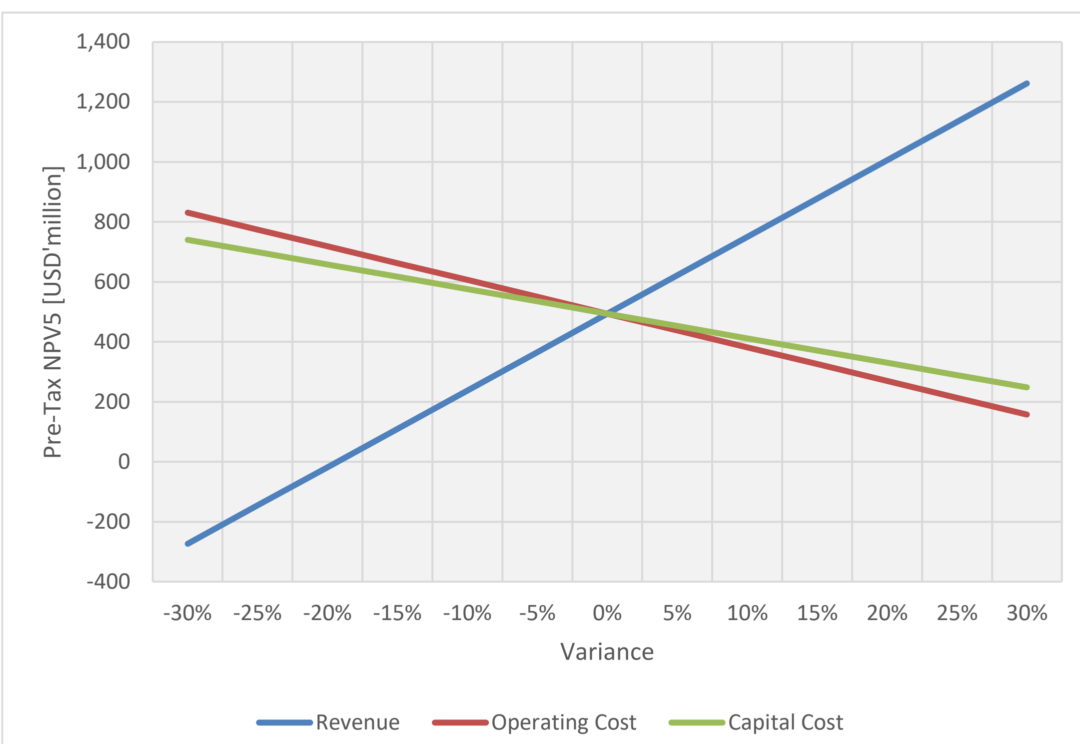


Figure 22-1: Post Tax NPV Sensitivity

(Source BARA, 2022)

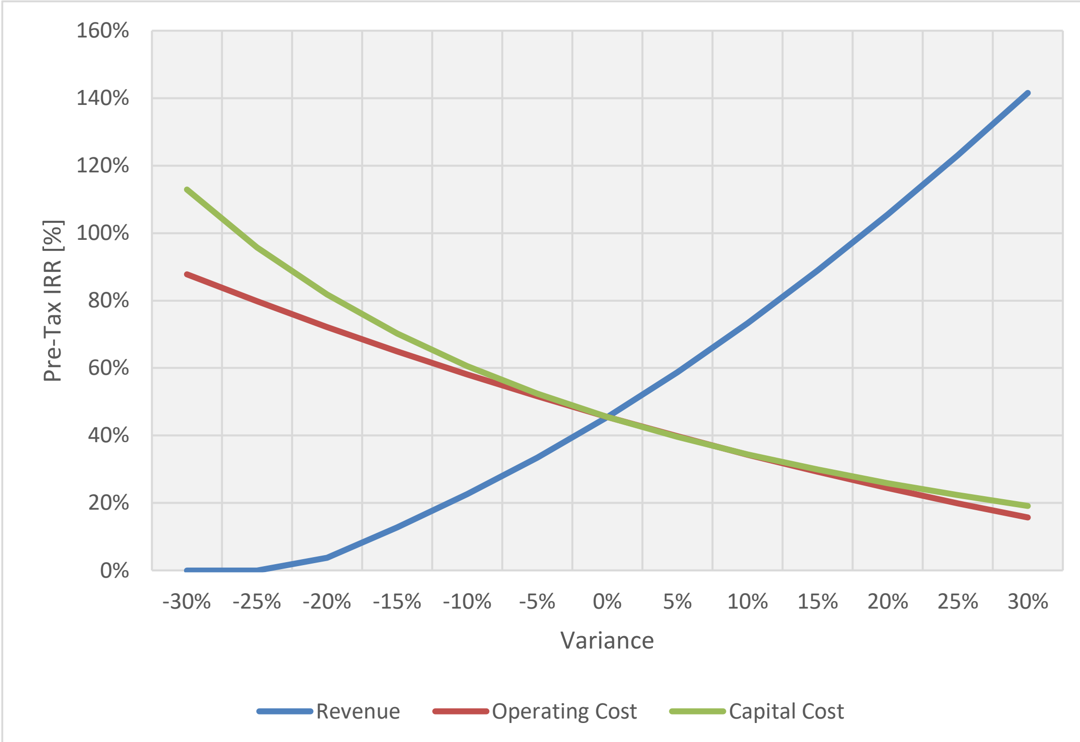


Figure 22-2: Post Tax IRR Sensitivity

(Source BARA, 2022)

23. ADJACENT PROPERTIES

The closest mining camp to Bibiani is the Chirano Gold Mine, owned by Kinross Gold (TSX:K; NYSE: KGC). The mine consists of 10 separate mineral deposits with both open pit and underground operations and has been producing since 2005. The mining camp is approximately 100km southwest of Kumasi and 37km from the town of Bibiani.

The gold deposit is located within the Bibiani gold belt and can be described as epigenetic mesothermal gold deposits demonstrating strong structural controls and a brittle structural style. Hosted in mafic volcanics and granites ranging from stacked veinlet systems, vein stockworks and breccias. Veins dominated by quartz. Deposits occur close to a major fault (Chirano Shear). Deposits range in strike length from 150m to 700m and in thickness from a few meters to 70m. (Technical Report on the Chirano Gold Mine, Republic of Ghana for Red Back Mining; Hugh Stuart BSc, MSc, MAusIMM; May 14, 2009).

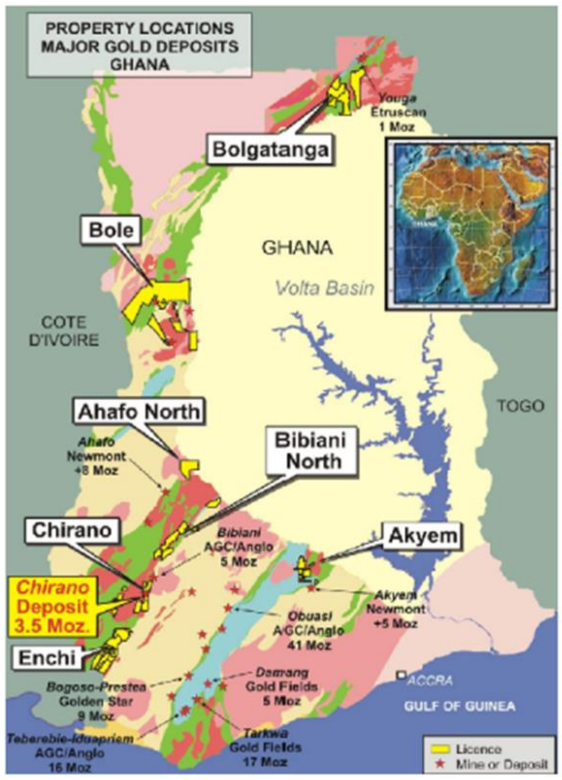


Figure 23-1: Position of Chirano in Relation to Bibiani Mine

(Source: Technical Report on the Chirano Gold Mine, 2009)

The open pit and underground mining operation is situated immediately south, approximately 10km along geological strike of Asante's Bibiani Mine. Figure 23-2 below illustrates the geological relationship and similarity between the two mining camps.

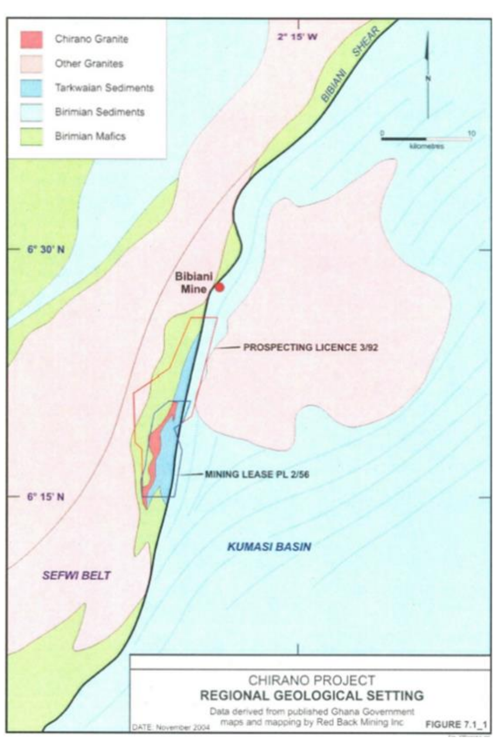


Figure 23-2: Chirano Gold Mine Regional Geological Setting in Relation to Bibiani Mine

(Source: Technical Report on the Chirano Gold Mine, 2009)

The Author has not visited Chirano mine or its related mineral deposits owned by Kinross Gold at the time of producing this Report and cannot verify the information extracted from public sources. Properties adjacent to the Bibiani Operation have however had no material impact on the Mineral Resources as reported in this TR.

On April 25, 2022 Asante announced that it has entered into a share purchase agreement with Kinross Gold Corporation ("Kinross") to acquire Kinross' 90% interest in the Chirano Gold Mine for a total consideration of US$225 million. The Ghanaian government retains a 10% carried interest in Chirano. Closing is expected in the near future. The acquisition of Chirano by Asante could generate some significant cost advantages with respect to the Bibiani Mine development referred to in this report.

24. OTHER RELEVANT DATA AND INFORMATION

24.1 Project Execution Plan (PEP)

The Mining project at Bibiani has been changed from an underground operation to a surface mining operation mainly due to:

1. Improved safety
2. Optimal mineralised material supply
3. Increased availability to provide grade flexibility
4. Optimise plant capacity
5. Reduced capital requirement
6. Better supply timelines to meet mill optimal capacity.

This new strategy incorporates additional project execution requirements and will involve:

1. Changes in the site layout to accommodate revised open pits
2. Changes in infrastructure requiring:
    a. Road diversions
    b. Resettlement programs
    c. Environmental challenges
    d. Compensation programs
3. Demobilization of the underground infrastructure and continued dewatering.

The Bibiani project is being driven through six main workstreams:

1. Plant refurbishment and expansion
2. Surface mining of main pit and satellite pits
3. Establishment of supporting infrastructure
4. Main road and power diversions
5. Resettlement of affected community
6. Community and Government related issues.

24.2 Security

No further security measures are required over and above the current operations at the Bibiani site.

24.3 Logistics

Fully developed logistics and supply chain management processes and procedures are already in place at the Bibiani Gold Mine.

25. INTERPRETATION AND CONCLUSIONS

The Authors and QPs involved in the compilation of this Technical Report on the Bibiani Project have submitted inputs to the conclusion and recommendations relevant to their specific sections and pertaining to the planned change in operational strategy that will result in the reported Mineral Reserves extraction by open pit operations as opposed to the previous underground scenario. Bibiani has a long history of exploration and mining and as such is considered a well-developed, well maintained, brownfields mining project. At the effective date processing plant upgrades and refurbishments, open pit mine start up and production preparations, infrastructure upgrades and other related Company processes were well advanced with the plan to start gold production in June 2022.

25.1 Mineral Titles and Agreements

The mineral rights for MGBL, which include the Mining Lease and the Prospecting Licenses, granted under the Minerals and Mining Act 2006 (Act 703) are in good standing. MGBL holds the relevant mining lease, surface rights, major approvals and permits required for the planned and ongoing mining operations.

MGBL is subject to a 5% royalty on gross revenue payable quarterly to the Government of Ghana.

25.2 Geology, Exploration, Drilling and Analytical Data Collection

The Bibiani mineralisation is part of a regional structure and is not the only deposit of its type in the region. The nature of the mineralisation style and setting are well understood and can support a declared Mineral Resource and further exploration potential. Exploration completed to date is exercised to acceptable industry standards and is appropriately planned to the style of deposits investigated. The Authors are of the opinion that there remains significant potential for resource additions and extensions both near mine and on a more regional level.

The geology, mineralisation and structural characteristics of the mineral deposits are well understood. The contract between MGBL and KAAH Consulting has greatly improved the geological data capture, interpretation and regional understanding of the Bibiani mineralised trend and associated parallel structures. The Mineral Resource potential has been indicated through new geophysical investigations to exist within the Project along strike and down dip of all identified resource sources and as such the Authors conclude that the Company strategy to maintain ongoing exploration and tighter spaced infill drilling is warranted and will continue to enlarge, upgrade and reduce potential risk for the current Mineral Resources.

Sampling methods, preparation, analysis and security are performed to Industry Standards and subsequent data is fit for use in MRE and MRev estimation. Appropriate QA/QC programs, to address precision and accuracy of information, are adhered to by the Company geologists and exploration teams.

25.3 Mineral Resources

This Technical Document reports an update of the previous Mineral Resource Estimate that was compiled from a geological model relevant to an underground operating strategy by the previous owners. The Company required a new geological model and updated Resource Estimate to satisfy the new open pit operations. Snowden Optiro and the Qualified Person have remodelled the geological information to produce a revised and update Resource Model and Resource Estimation for two mineral deposit sources, the Bibiani Main Pit and Satellites Pits (Walsh and Strauss). The QP carried out a week site visit and reviewed the data base, QAQC procedures and results, drill core, geological interpretations, mapping and other historical information.

The Resource Model is supported by an updated lithological model, analytical data, recent infill and exploration diamond drilling and geophysical logging and survey results. The data used as inputs to the model have been collected and compiled at a high standard supporting the conclusion that the Project is a high-quality mineral asset.

The QP is satisfied that the Mineral Resource presented for the Bibiani Main Pit and Satellite mineral deposits is a reliable estimate and have a reasonable expectation of economic extraction with estimates constrained by open pit optimisation shells and appropriate cut-off grades at a US$1,950/oz Au.

25.4 Mineral Reserves

The Bibiani Main Pit and Satellite Pits relevant to this Technical Document have been extensively mined by both open pit and underground operations in the past by several previous owners. Mineral reserves are supported by a positive economic assessment assuming a US$1,850/oz Au price. The cut-off grade selected is appropriate for the Company objectives.

25.5 Mining Method

The conversion by the Company from historical underground extraction methods to large open pit oxide and fresh rock extraction has proved to be sensible and appropriate. Ghana has vast experience and human resources aligned to open pit mining methods and it is commonly applied within the region by numerous gold mining companies.

A geotechnical study was completed by SRK. The study included assessment of the historical open pits, a geotechnical drilling and data acquisition programme and recommendations for open pit slope design. The study also considered the impact of existing underground voids on the proposed open pit mining operation.

The mining operation will be carried out by a mining contractor. The contract has been awarded to a well-established open pit contractor with extensive operating experience in Ghana.

Mining operations are expected to commence in March 2022. Stockpiled material will be stored in preparation for the Process Plant start-up.

25.6 Processing

Recovery methods in the refurbished and upgraded production feed and processing plant facility and gold recovery assumptions (92%) are supported test work.

The plant is expected to be commissioned by end May 2022.

25.7 Environment, Permitting and Social

MGBL has received all necessary legal requirements and is in compliance of its environmental and social requirements. The TSF was historically designed, recently refurbished and continues to be managed under a current contract by Knight Piesold, Ghana.

MGBL has implemented a RAP in alignment with the LoM Plan that will require a 3 phased engineering and construction exercise to relocate the impacted community.

MGBL has been an integral part of the Bibiani Town and community for many years and is committed to environment and social responsibilities. MGBL employs dedicated and skilled staff in environment, safety, health, community affairs, resettlement and security.

25.8 Infrastructure

Bibiani has been mined and developed over many years by a number of historical mining companies. It has extensive well-maintained surface infrastructure sufficient to support the Company objective and long-term strategies.

The limited new infrastructure required has been adequately provided for in the capital estimate.

25.9 Economic Analysis Outcomes

The discounted cashflow model for the proposed operation demonstrates that the Project is robust under the current techno-economic assumption described in the report. The analysis supports the declared Mineral Reserve and support the Company's decision to progress the project to full production.

25.10 Risks

The project has many of the normal risks associated with mining operations but also has inherent risks associated with its location and proximity to community settlements, people and skills. The following are highlighted for consideration.

25.10.1 Resources

The Mineral Resources have been remodelled from first principles and contain new and updated geological interpretation, drilling samples and geophysical information. The mine design includes less than 5% Inferred Resources and therefore has a high degree of confidence. The risk has been greatly reduced from previous Resource Estimates and related designs.

25.10.2 Ground Conditions

The ground conditions are expected to be stable and pit slopes and geotechnical designs have been investigated by SRK. Mine planning has implemented all recommendations. With sound geotechnical planning and execution, the following risks will be managed:

- Slope stability
- Dilution
- Mining recovery
- Flooding.

25.10.3 Mining

The open pit design and operations must consider the historical mining voids that exist from previous underground mining operations. Operating procedures specifically dealing with mining in the vicinity of the voids will be prepared and adhered to. These procedures should specifically deal with:

- The early identification of and demarcation of voids by the survey department
- Early warning of mining approaching voids by technical services department to mine production personnel
- Procedures to be adopted by production crews to ensure safety of personnel and equipment
- Safety pillars to be left above and adjacent to voids. The geotechnical study has recommended that detailed 3D modelling of the crown pillars and approaching open pit mining, along with detailed 3D modelling of the associated blast energy propagation is carried out. This should be carried out prior to the open pit mining approaching these areas. Further to this, detailed 3D modelling of the proposed crown pillar collapse blast should be undertaken to ensure the efficacy of these blasts and the resultant potential impact on the surrounding slope stability.

Dewatering of the pit is always a risk in high rainfall periods. Dewatering holes are being established around the pits to manage water ingress and pit floor flooding.

25.10.4 Processing Plant and Recovery

Operational risks such as chemical spills, accidents and throughput are well managed. The plant has been operational intermittently over many years and current refurbishment and upgrades has addressed expected shortcomings.

Recovery has the largest direct effect on the project success and economic viability.

The sulphide content in the process feed is a critical parameter as it drives the recovery efficiency of the floatation, concentrate regrind and thickening process.

Consistent and reliable availability of electrical power remains a risk to production throughput. Backup generators have been installed to ensure continuous operation of critical components in the process.

Gravity recovery is variable and may be less than test work figures.

25.10.5 Economic Analysis

CAPITAL COST

Considering the advanced status of the project the risk on capital overspend is comparatively low. However, the two components of the capital budget, which are not yet based on firm tenders, include the RAP and National Road diversion. The risk being that the capital currently may be insufficient.

OPERATING COSTS

The risk in operating costs include fluctuations in costs of:

- Fuel
- Explosives
- Power
- Labour.

At the effective date world prices of oil, shipping, steel and other related commodities are particularly volatile and difficult to predict.

25.10.6 Environmental and Social

The main risks pertinent to the Project include:

RESETTLEMENT ACTION PROGRAM

The mine expansion is in close proximity to the fringes of the Bibiani town and the mine schedule depends on the timeous and successful implementation and completion of the proposed resettlement plan. This is dependent on acceptance of the overall plan by the local District Council and affected communities.

ILLEGAL MINING

Artisanal mining is commonplace in the region. Proper security and safety measures must be in place to prevent encroachment of artisanal workings into the mining lease area.

ROAD DIVERSIONS

The mine expansion requires the diversion of a part of a National Road. The regulatory processes and community may delay the Project.

25.11 Opportunities

MINERAL RESOURCE UPSIDE

Historical and current exploration has identified potential extensions and parallel mineralised zones that could result in positive resource expansion.

MINING

The future development of underground mining operations on identified mineral deposits remains a positive opportunity for extending the mine life.

26. RECOMMENDATIONS

The Bibiani Project is considered by the QPs to be an advanced project already in the implementation phase and therefore the majority of engineering, mining and technical studies, as well as cost estimates, have been completed.

The QPs have therefore made limited recommendations as to successive phases of work and associated breakdown of costs. However, Table 26-1 below summarises those workstreams initiated by the MGBL Management that are in progress.

Table 26-1: Current Project Workstreams and Budget

Item	Description	Budget (Us$)	Comment
1	Updated NI43-101 Study (Budget)	333,381.00	Completed 2Q22
2	Drilling Programme Walsh & Strauss	1,216,684.00	For reserve work
3	Update EPA permit & new EIS	726,465.00	For surface mining
4	Resettlement Action Plan Study	73,319.00	
5	Metallurgical Testwork (Budget)	250,105.00	
6	Road Diversion Concept Study	75,000.00	
	Total	**2,674,954.00**	

The following points cover recommendations for which capital estimates have not been presented as they are expected to form part of the mine operations.

GEOLOGY AND RESOURCES

The improved regional exploration interpretation and ongoing drilling and geophysical projects have highlighted the persistent geological and structural characteristics consistent with the mineralisation style experienced with the Bibiani Mining Lease and deposits proposed for current extraction. Further exploration is strongly recommended along the geological trend both to the north and to the south towards the Chirano (Kinross Gold) and Kubi (Asante) mineral deposits.

MINING AND GEOTECHNICAL

Procedures to deal with the existing underground voids during open pit mining will need to be developed and implemented. The procedures should ensure that mining in the vicinity of voids is undertaken in a safe manner.

To ensure that the targeted feed grade is consistently achieved a strict grade control system be implemented. This will include adequately spaced grade control drilling, polygon generation, mineralised material loading supervision, reconciliation as well as stockpile management.

ENVIRONMENTAL AND SOCIAL

Finalisation of budgets and timelines, as well as successful implementation, of the RAP and road diversion are a priority to the success of the project.

27. CERTIFICATES OF QUALIFIED PERSONS

David Michael Begg

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30th June, 2011, Part 8.1.

a) Name, Address, Occupation
David Michael Begg
38 Gemsbok Street, Scarborough, Western Cape, South Africa, 7985,
Director, dMb Management Services Pty Ltd

b) Title And Effective Date of Technical Report
National Instrument 43-101 Technical Report, Bibiani Gold Project, Ghana, West Africa. Effective date: 28th February 2022.

c) Qualifications
Honours Degree in Geology from University of Cape Town (UCT) (BSc Hons Geology).
Member of the Geological Society for South Africa (MGSSA).
Member of the South African Council for Natural Scientific Professions (Pr. Sci. Nat.).
Member of the South African Institute of Mining & Metallurgy (MSAIMM).
I have over 25 years' gold experience in exploration and mining operations; senior and executive management; project planning and execution; technical due diligence; mineral resource and reserve estimation.
I have read the definition of "qualified person" set out by National Instrument 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 am a "Qualified Person" for the purpose of NI 43-101.

d) Site Inspection
I have visited the Bibiani Gold Project on numerous occasions between October 2021 to February 2022. The latest visit was from the 3rd to 12th February 2022.

e) Responsibilities
I am responsible for Sections 1-10, 23-27 and for the compilation of this NI43-101 document in collaboration with relevant Qualified Persons and technical experts from other consultancies.

f) Independence
I am independent of the issuer according to the definition of independence described in section 1.5 of National Instrument 43-101.

g) Prior Involvement
I have not been involved with Asante Gold Corporation on the Bibiani Gold Project prior to this Technical Report.

h) Compliance with NI 43-101
I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i) Disclosure
As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Date 31st August 2022

____

David Michael Begg
BSc (Hons) Geology. GSSA, SACNASP, SAIMM

Ian Jackson

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30th June 2011, Part 8.1.

a. **Name, Address, Occupation**
   Ian Jackson
   14 Winchester Road, Basingstoke, Hampshire, RG21 8UQ, England.
   Principal Process Engineer, BARA Consulting Pty Limited

b. **Title And Effective Date of Technical Report**
   National Instrument 43-101 Technical Report, Bibiani Gold Project, Ghana, West Africa. Effective date: 28th February 2022.

c. **Qualifications**
   BEng Degree in Mineral Process Engineering; Camborne School of Mines, 1987
   Chartered Engineer registered with the Engineering Council (UK);
   Fellow of the Institute of Materials, Minerals and Mining (IOM3);
   Member of the Southern African Institute of Mining & Metallurgy (MSAIMM).

   I have worked as a Metallurgist and Process Engineer on production plants and performed project evaluation and engineering roles in project engineering companies for a total of 34 years since my graduation.

   I have read the definition of "qualified person" set out in the 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 fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.

d. **Site Inspection**
   I have visited the Bibiani Gold Project from the 6th to 12th December 2021.

e. **QP Responsibilities**
   I am responsible for Sections 13 & 17 of this report.

f. **Independence**
   I am independent of the issuer according to the definition of independence described in section 1.5 of National Instrument 43-101.

g. **Prior Involvement**
   I have not had prior involvement with the property that is the subject of the Technical Report.

h. **Compliance with NI 43-101**
   I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. **Disclosure**
   As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Date 31st August 2022

____

Ian Jackson
BEng, ACSM, CEng, FIMMM, MSAIMM

Clive Brown

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30^{th} June 2011, Part 8.1.

a. Name, Address, Occupation

Clive Wyndham Brown
40 Groenekloof Road, Hilton, Kwazulu-Natal, South Africa
Principal Mining Engineer, BARA Consulting Pty Limited

b. Title and Effective Date of Technical Report

National Instrument 43-101 Technical Report, Bibiani Gold Project, Ghana, West Africa. Effective date: 28^{th} February 2022.

c. Qualifications

BSc (Eng) Mining University of the Witwatersrand
Pr. Eng. (Engineering Council of South Africa)
Fellow of South African Institute of Mining and Metallurgy

I have 30 years of experience in mining operations, management, technical services and mineral reserve estimation. More than five years of this experience has been directly in gold mining.

I have read the definition of “qualified person” set out by National Instrument 43-101 and certify that, by reason of my education, affiliation with a professional associations and relevant work experience. I am a “Qualified Person” for the purpose of NI 43-101.

d. Site Inspection

I have visited the Bibiani Gold Project from the 6^{th} to 12^{th} December 2021.

e. Responsibilities

I am responsible for Section 15-16,18-27 of this report.

f. Independence

I am independent of the issuer according to the definition of independence described in section 1.5 of National Instrument 43-101.

g. Prior Involvement

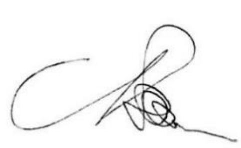
I have not had prior involvement with the property that is the subject of the Technical Report.

h. Compliance with NI 43-101

I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i. Disclosure

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.



Date 31^{st} August 2022

____

Clive Wyndham Brown
BSc (Eng) Mining, Pr.Eng

Senzeni Maggie Mandava

This Certificate of Author has been prepared to meet the requirements of National Instrument 43-101 Standards of Disclosure for Minerals Projects as published 30th June, 2011, Part 8.1.

a) Name, Address, Occupation
Senzeni Maggie Mandava
14 Boundary Road, Linden Ext, Johannesburg, 2195, South Africa
Principal Resource Geologist at Snowden Optiro

b) Title and Effective Date of Technical Report
National Instrument 43-101 Technical Report, Bibiani Gold Project, Ghana, West Africa. Effective date: 28th February 2022.

c) Qualifications
Master of Science in Engineering from University of the Witwatersrand (Wits) (MSc Eng), Post Graduate Diploma in Engineering from University of the Witwatersrand (Wits) (GDE), Bachelor of Science in Geology and Chemistry from the University of Zimbabwe (UZ) (BSc Geology & Chemistry). Registered with the Geological Society for South Africa (GSSA).
Registered with the South African Council for Natural Scientific Professions (Pr. Sci. Nat).
I have worked as a geologist for 20 years since graduation, in a range of commodities including Gold, PGM, Base metals, Iron and Manganese in the field of mine geology, geological modelling and Mineral Resource estimation. I have 15 years' gold experience in exploration and mining specialising in Mineral Resource modelling and estimation. I have worked extensively in due diligence audits, Mineral Resource estimation process audits, and reviews and formulation of quality assurance and control systems for exploration and operating mines.
I have read the definition of "qualified person" set out by National Instrument 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 am a "Qualified Person" for the purpose of NI 43-101.

d) Site Inspection
I visited the Bibiani Gold Project from the 6th to 12th December 2021.

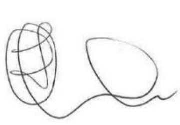
e) Responsibilities
I am responsible for Sections 11, 12 and 14 in collaboration with other relevant technical experts from Snowden Optiro.

f) Independence
I am independent of the issuer according to the definition of independence described in section 1.5 of National Instrument 43-101.

g) Prior Involvement
I have not been involved with Asante Gold Corporation on the Bibiani Gold Project prior to this Technical Report.

h) Compliance with NI 43-101
I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with same.

i) Disclosure
As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.



Date 31st August 2022

Senzeni Maggie Mandava
MSc, GDE, BSc Geol & Chem, MGSSA, SACNASP

28. REFERENCES

Feasibility Study into Recommencement of Bibiani Mining Operations. Mensin Gold Bibiani Limited CA-28.347. June 2018

Tailings Storage Facility, Mensin Gold Bibiani Limited. Advisian, t/a WorleyParsons Services (Pty) Ltd. February 2018

TSF Assessment Mensin Gold Bibiani. Project No: 2013320-14396. Advisian, t/a WorleyParsons Services (Pty) Ltd. March 2017

Bibiani Geological Review 2014. Model Earth (Pty) Ltd and Resolute Mining Ltd. March-April 2014

Analytical Gold QC Report for Bibiani Resource Estimate. Resolute Mining Ltd. May 2016

Bibiani Analytical Gold QC Report, Main Pit Phase 2 Drilling Campaign. Resolute Mining Ltd. October 2017

Comparison of Modelling Methods – Bibiani. Resolute Mining Ltd and Optiro Pty Ltd. August 2016

Mining Study – Bibiani Gold Project. Coffey Mining and Noble Mineral Resources Ltd. October 2012

Mining Operating Permit – February 2022, for Mensin Gold Bibiani Ltd. Minerals Commission Inspectorate Division, Ghana. Issued 21st February 2022; Expiry 31st December 2022

Environmental Permit (Environmental Impact Assessment) for Mensin Gold Bibiani Ltd. Environmental Protection Agency. Issued 19th July 2021; Expiry 18th January 2023

Technical Report on the Bibiani Gold Mine, Ghana. Asante Gold Corporation. November 2021

Bibiani Feasibility Study Completed. Resolute Mining Ltd. June 2016

Bibiani Update, Environmental Permit Received. Resolute Mining Ltd. July 2018

Memorandum – Bibiani Tailings Storage Facility Discussion for NI43-101 Document. Knight Piésold Consulting. April 2022

The Bibiani Goldfield: Towards an Exploration Model 18 February 2022. Professor Kim Hein, KAAH Geoservices

Geotechnical Review of Planned Operations at Bibiani Gold Mine. SRK Consulting (South Africa) (Pty) Ltd, commissioned by Asante Gold Corporation. August 2021

Metallurgical Test work Conducted upon Composites from the Bibiani Deposit for Goudhurst Pty Ltd, Report No. A16335 Phase 1. ALS Metallurgy. June 2015

Technical Report on the Chirano Gold Mine, Republic of Ghana for Red Back Mining; Hugh Stuart BSc, MSc, MAusIMM; May 14, 2009

Draft Environmental Impact Assessment for re-opening of Underground Mining Operations at Bibiani Gold Mine, completed by Mensin Gold in 2018.

International Financial Reporting in the Mining Industry, International Financial Reporting Standards, 6th Edition, PWC

Resolute Mining Limited Analytical Gold QC Report for Bibiani Resource Estimate, Catherine Carney, Managing Consultant Rock Solid Data Consultancy Pty Ltd, May 2016