



REWARD GOLD PROJECT
INFORMATION MEMORANDUM
MARCH 2024

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### 1 INTRODUCTION

Vertex Minerals Limited (The Company, Vertex or VTX) is the 100% owner of the Mining Licences and infrastructure that comprise the Reward Gold Mine at Hill End, NSW.

This report details estimates of the physical and financial outcomes that may be achieved by redeveloping the underground Reward Mine and upgrading the Amalgamated processing plant from 35,000 tonnes per annum (tpa) to 120,000 tpa. A prefeasibility study has been conducted and forms much of the Financial detail in this Memorandum. It must be noted that only indicated Resource is generally used in the Pre-Feasibility study with the majority of the Reward Gold Mine resource not included in the PFS. The early processing of Stockpiles are also not included in the PFS.

The Indicated and Inferred Mineral Resource Estimate (MRE) for the Reward gold deposit at Hill End totals 419,000 tonnes at 16.72g/t Au for 225,200oz Au. The Indicated Mineral Resource contains 70,500 ounces of gold while the Inferred Mineral Resource contains 154,700 ounces (VTX ASX Announcement 21 June 2023).

The Board of Directors recognise that the conversion of the Inferred Resource to an Indicated Resource through more drilling would significantly enhance the Project's key financial metrics. The decision to undertake a PFS on the current resource base reflects the significantly improved exploration drilling outcomes that will be achieved through drilling from new development within the underground mine. The Project topography limits drill platforms, and the existing underground workings are all within the mineralised corridor. The workings do not provide sufficient access to the hanging wall to provide good exploration drill locations.

The positive financial outcome from the PFS provides a justification for the development of a mine plan that will significantly enhance the ability for the Company to upgrade the Inferred Mineral Resource by way of improved access. Importantly, this also allows more effective exploration of the mineralised corridor below and on strike of the existing mineral resource. Whilst exploration success is not guaranteed, it is the Board's opinion that this strategy provides the most effective way to increase mine life.

Whilst alternative development options were considered, the pathway outlined in the updated PFS provided a significantly more robust financial outcome and maximised the extraction of the Indicated Mineral Resource. Whilst the PFS included some Inferred Mineral Resource in the mine plan and financial models, this material was coincidental to the stope and development designs. The mine design targeted the Indicated Mineral Resource.

It is the Board's opinion that development of the mine in parallel with underground exploration drilling will provide the best opportunity to improve the Project's financial outcome.

#### 1.1 ESG

## **Environmental and Sustainable Mining - possibly Australia's greenest gold mine**

- · Gravity Recoverable Gold
- Low Capex and Low Operating cost
- Minimal grind 200 to 500 micron
- Potential renewable energy Wind pump storage
- Benign tails potential commercial sand
- Benign waste
- Low water usage
- Re usable water
- No chemicals no cyanide
- 23 fine gold

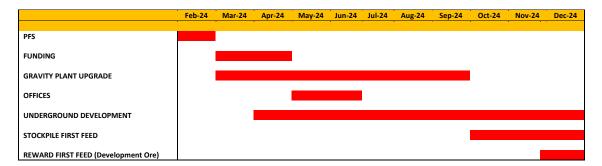
### 1.2 Strategic Focus

## Clear Strategy set for Hill End

- 1. To install a circa 120ktpa Gravity Gold plant in Q1/2 2024
- 2. To commence gold production from existing stockpiles
- 3. To commence mining development in the high-grade Reward Mine in 2024
- 4. To be Australia's most prominent high grade gold miner
- 5. To drill and add high grade gold to the global Hill End gold inventory, from the large-scale gold system/s within the Hill End Corridor.
- 6. To take the existing resources and near surface mineralisation to production utilising gravity gold recovery methods.
- 7. Earn a robust Safety, Environmental, Social and Governance (ESG) reputation.
- 8. Build shareholder value.

## 1.3 Steps to production

- 1. Acquire Morningstar Gekko gravity gold plant
- 2. Equity raise.
- 3. Plant refurbishment and installation.
- 4. Commence underground development
- 5. Debt funding
- 6. Stockpile processing
- 7. Development ore processing
- 8. Reward ore processing



# 1.4 Use Of Equity Funds

ITEM	COST
Plant refurbishment and installation , Gold Room, civils	\$3.3m
Infrastructure build	\$0.15m
Vehicles	\$0.15m
Jumbo - underground drill	\$0.25m
Toro underground loader refurbishment	\$0.05m
Mine labour to undertake Amalgamated adit development (will not cover all development)	\$0.5m
Portal sets Portal sets	\$0.2m
Consumables, safety equipment	\$0.15m
Project Management	\$0.4m
Hill End Administration Costs	\$0.1m
Fuel for Gensets	\$0.1m
Company Sustaining Costs	\$0.4m
Gen set and hire equipment	\$0.15m
	\$6m

## 1.5 Use Of Debt Funds

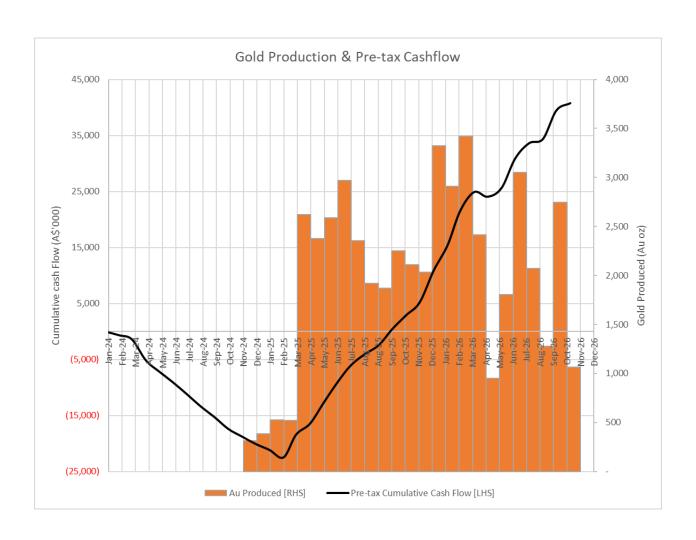
Item	Estimate \$ millions
Establishment	2.3
Equipment	1.1
Labour	4.3
Consumables	3.2
Administration	0.1
Contracting	0.0
Total pre-production expenditure	11

## 1.6 PFS financial metrics

Note- This does not include the processing of the Stockpiles

Project Life 2 years of minerals processing activities	Gold Production 49,890 ounces	Gross Revenue \$150 million
Capital Expenditure \$17 million Pre-production	AISC \$1,833 per ounce	Total Employment 70 Full time employees
Free Cashflow \$41 million pre tax	NPV at 7% \$33.3 million pre tax	IRR 110% pre tax

Parameter	Unit	Total	FY 1	FY 2	FY 3
PHYSICAL					
Ore Processed	kt	181	4	97	81
Grade	g/t Au	9.3	6.8	8.4	10.5
Contained Au	koz	54	0.8	26.3	30
Process Recovery	%	92%	92%	92%	92%
Recovered Au	koz	50	0.7	24.2	27
FINANCIAL					
Gross Revenue	\$m	150	2	72	75
Royalties	\$m	(6)	(0)	(3)	(3)
Operating Expense	\$m	(75)	(3)	(38)	(34)
Sustaining Capital	\$m	(10)	(2)	(6)	(3)
Capital (pre-					
production)	\$m	(17)	(17)	0	0
Pre-tax cashflow	\$m	41	(20)	25	36



## 1.7 Stockpile Production pre-High Grade Reward Gold mine production



Stockpile results referred to in ASX Announcement 27 April 2023

Note the Tons and Grades are not a resource, they are estimates only

- Process Plant Stockpile Trial (2023) processing has determined the stockpiles average 2 g/t
- There is an estimated 50kt of stockpile alongside the Hill End Gravity Gold Plant
- When the new plant is commissioned, Vertex will process these stockpiles while the development is undertaken at the Reward underground.

## 1.8 Reward Gold Mine Start Up

## PRE-FEASIBILITY COMPLETED- ROBUST

The Reward gold mine is well-placed for a simple start-up:

- ✓ The existing gravity processing plant is located adjacent to the underground mine access point/Adit
- ✓ Mine access point extends into the resource, so little development is required. The existing 2.4m by 2.4m adit will be opened up to 3.5m by 3.5m
- ✓ Second egress in place with ladder way and motorised Alimak conveyance.
- ✓ Some underground fleet and utility services already in place.
- ✓ Permitted Mining licence and DA in place for Plant, Stockpiles and the Reward underground mine.
- ✓ Permitted tailings dam has capacity to allow immediate commencement of operations.







### 1.9 Project Setting

Hill End, population 111 (2021 Census), is a historic gold mining town located in the Bathurst Regional Council in New South Wales, Australia. It is 271 km west-northwest of Sydney, 71km north of Bathurst or 66km south of Mudgee.

The town was originally a part of the Tambaroora area and was known as Bald Hills in the 1850s. In 1860, a village was proclaimed, first as Forbes, then in 1862 it was altered to Hill End. The town's peak population was estimated at 8,000 served by two newspapers, five banks, eight churches, and twenty-eight pubs.

Economic quantities of gold were first discovered at Hill End in 1851 and were famed for their richness and coarse-grained nature. During the early history of the Hill End goldfield, as much as 50 tonnes of gold was produced (Wilkins & Quales 2021). Hill End was made particularly famous following the discovery of the 286kg Beyers-Holtermann Nugget in 1872, the largest non-alluvial gold specimen ever mined.

Today Hill End is a well-preserved gold mining town, regional arts precinct, and tourist attraction. The local economy is dominated by tourism and agriculture.

Recent mining operations, specifically The Reward Mine, by Hill End Gold Limited ("HEGL") from 2007 to 2010, allowed underground access to unmined, mineralised vein systems for the first time in more than 100 years. HEGL planned to undertake trial mining to test the economic viability of the project. A small gravity processing plant was constructed to complete the bulk sample. In 2010 the trial ended because reliable throughput could not be maintained, resulting in high operating costs per tonne of ore relative to the value of gold, and the mine was placed on care and maintenance.

Figure 1.1 and Figure 1.2 show the location of the Hill End township together with the company's tenements.

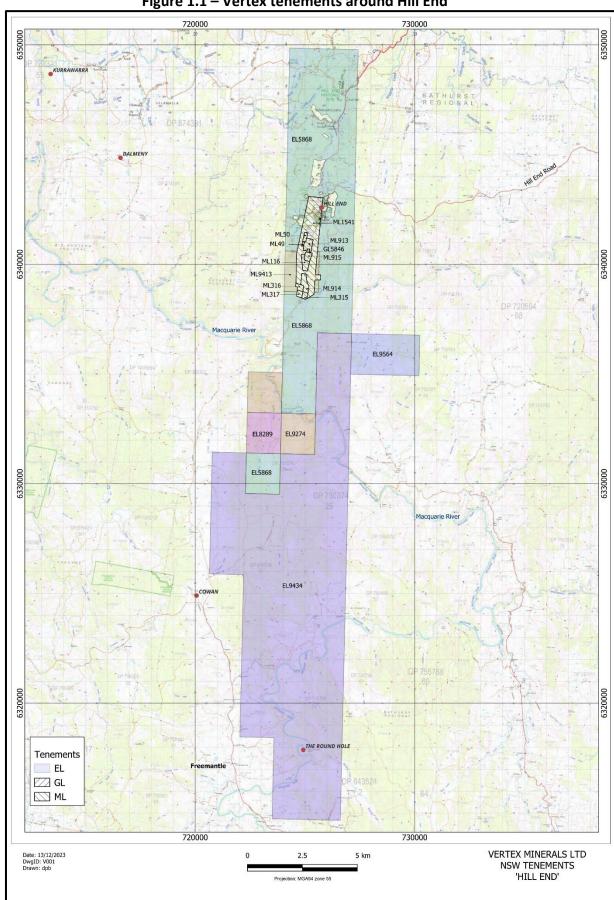


Figure 1.1 - Vertex tenements around Hill End

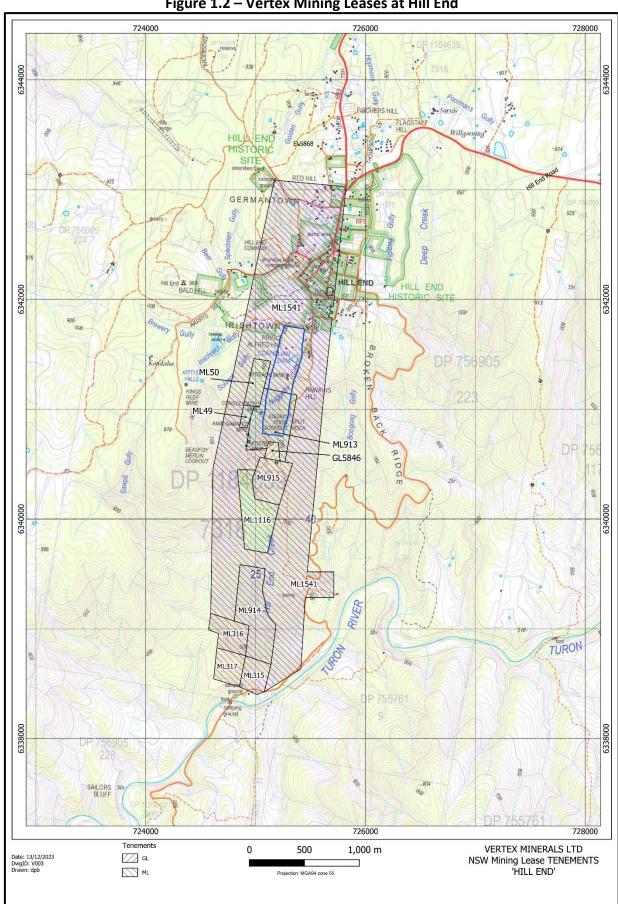


Figure 1.2 - Vertex Mining Leases at Hill End

### 1.10 Cautionary Notes

## 1.10.1 JORC CODE (2012) AND ASX LISTING RULES

This report has been prepared in accordance with the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code – 2012 Edition) and ASX Listing Rules. Investors are referred to several important statements in relation to this Study including the Cautionary Statement; Forward Looking Statements; Sensitivity Analysis; and Competent Persons Statement.

## **1.10.2** Forward Looking Statements and Important Notices

The production target and forecast financial information referred to in this announcement comprise Indicated Mineral Resources (~75%) and Inferred Mineral Resources (~25%). There is a lower level of geological confidence associated with the Inferred Mineral Resource and there is no certainty that further exploration work will result in an upgrade to an Indicated Mineral Resource or that the production target will be achieved.

The study documented in this report is considered to have a +/-25% PFS level of accuracy.

This report contains forecasts, projections, and forward-looking information. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions it can give no assurance that these will be achieved. Expectations and estimates and projections and information provided by the Company are not a guarantee of future performance and involve unknown risks and uncertainties, many of which are out of Vertex Minerals' control.

Actual results and developments will almost certainly differ materially from those expressed or implied. Vertex Minerals has not audited or investigated the accuracy or completeness of the information, statements and opinions contained in this announcement. To the maximum extent permitted by applicable laws, Vertex Minerals makes no representation and can give no assurance, guarantee or warranty, express or implied, as to, and takes no responsibility and assumes no liability for the authenticity, validity, accuracy, suitability or completeness of, or any errors in or omission from, any information, statement or opinion contained in this report and without prejudice, to the generality of the foregoing, the achievement or accuracy of any forecasts, projections or other forward looking information contained or referred to in this report. Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities.

The Prefeasibility Study referred to in this document is based on technical and economic assessments to support the estimation of Ore Reserves. Vertex believes it has reasonable grounds to support the results of the Prefeasibility Study, however there is no assurance that the intended development referred to will proceed as described. The production targets and forward-looking statements referred to are based on information available to the Company at the time of release and should not be solely relied upon by investors when making investment decisions. Material assumptions and other important information are contained in this release. Vertex cautions that mining and exploration are high risk, and subject to change based on new information or interpretation, commodity prices or foreign exchange rates. Actual results may differ materially from the results or production targets contained in this release. Further evaluation is required prior to a decision to conduct mining being made.

The Pre-Feasibility Study is based on the material assumptions outlined below. These include assumptions about the availability of funding. While Vertex considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Pre-Feasibility Study will be achieved. To achieve the range of outcomes indicated in the Pre-feasibility Study, funding in the order of \$28 million will likely be required. Investors should note that there is no certainty that Vertex will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Vertex's existing shares. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Pre-Feasibility Study.

## 1.10.3 Financial Amounts and Figures

Unless otherwise indicated, all financial values are stated in real Australian dollars (AU\$ or \$) as at calendar Quarter 2 2024 (Q4-CY2023) and does not allow for escalation and excludes Australian goods and services tax (GST). Figures in this announcement may not add up due to rounding.

#### 1.11 Study Team

The Study Team, consisting of Vertex personnel and external consultants, assessed to a prefeasibility study (PFS) level the environmental impacts, community interaction, technical requirements, and financial robustness of the Reward Gold Project. The consultants engaged for the study were HGS Australia (HGS), Gekko Systems Pty Limited (Gekko) and Ground Control Engineering Pty Limited (GCE).

The respective responsibilities for each element of the study were:

- Study Compilation Vertex
- Geology Vertex
- Resource Estimation HGS
- Geotechnical GCE
- Hydrogeological GCE
- Mining Engineering GCE
- Mining Costing Vertex
- Metallurgy Gekko
- Process Engineering Gekko
- Tailings Storage Vertex
- Power Supply Vertex
- Environmental Vertex
- Heritage and Native Title Vertex
- Social and Community Vertex
- ESG Vertex
- Risk, Health -Vertex
- Financial Model GCE & Vertex

### 2 PROJECT HISTORY

The Hill End goldfield was one of the richest gold mining areas in NSW and the location of the first reef mining in Australia. Alluvial gold was first discovered in the area in 1851 and by the 1860's reef exploitation had emerged as the most popular and profitable method of mining. The first stamper battery was introduced in 1857 to crush ore from the mines. The most successful mining was carried out immediately to the south of Hill End at Hawkins Hill from 1870 to 1872. In October 1872 the famous Beyers and Holtermann nugget was discovered – the largest single specimen of reef gold ever discovered in the world. It was found in the Star of Hope mine and weighed about 286kg. Hawkins Hill yielded 435,000ozs of gold at a grade of 309 g/t. Major mining operations ceased after 1874.

From 1908 to 1920 there was a revival of activity at Hawkins Hill. The Hill End Reward Company took over the Emmett and Hughes and Reward shafts. In 1910 the Amalgamated Hill End Company began operations to work the central belt of Hawkins Hill below the ground from which the veins were worked in the 1880's. An aerial cableway was installed to supply the mine and the stamp battery with timber and other necessities. The Amalgamated mine was sold in 1917 to the Marshall's Hill End Company due to a lack of capital.

Over the period 1920 to 1980, sporadic small-scale operations were undertaken on the field, but systematic exploration was not possible as the area was held under numerous small independently owned leases. Two exploration licences were taken over the Hill End Anticline in the early 1970's but no significant exploration was carried out in either area.

In 1980 Silver Orchid Pty Ltd consolidated many of the titles and acquired three exploration licences. The combined titles covered and area of 420km<sup>2</sup> extending over a strike length of 32km of the Hill End anticline. Between 1980 and 1983, Silver Orchid carried out an extensive literature search along with surveying, mapping, and sampling programmes. Maps of old workings were constructed from the records and through mapping and surveying some 1,000 shafts and workings were identified over a strike length of 18km. The company also processed 1,200m<sup>3</sup> of alluvial gravels through a gravity separation plant.

In 1983 the Silver Orchid entered two joint ventures for the exploration of separate parts of the EL, with Flanagan McAdam to explore Red Hill Area and with Northern Gold NL to explore Hawkins Hill.

Over the period 1983 to 1986 Northern Gold carried out a comprehensive programme of surface mapping, geophysical investigations, adit and shaft rehabilitation, underground and surface sampling and drilling. An initial programme of seven diamond holes were drilled in the Reward area in 1984 (DDH R1 – DDH R7) for a total of 1,781m including three wedges. A further five holes for a total of 1,492m including three wedges were drilled in 1986 (DDH R8 - DDH R12). Four of these holes drilled beneath the Exhibition shaft reported several good grades.

BHP Exploration entered into a joint venture with Silver Orchid in 1989 to carry out a regional geochemical and rock chip sampling programme. Bulk Leach Extractable Gold (BLEG) samples were collected over the entire area at 200m intervals on traverses 1.5km apart. Rock chip samples were collected from outcrops and mullock heaps. No significant anomalous areas were identified, and BHP withdrew from the joint venture in 1991. Silver Orchid relinquished the EL the same year.

Following the withdrawal of BHP, no significant exploration of the area was undertaken until 1993 when Nugget Resources acquired an option on the Silver Orchid areas. An initial programme of four diamond holes was drilled in 1995 to test the structure and continuity of quartz veins on the crest of the Hill End anticline at the southern end of Hawkins Hill. Quartz veins were intersected as predicted but did not contain significant gold grades.

Nugget Resources changed its name to Hill End Gold Ltd (HEGL) and was listed on the ASX in 2003 with mining lease 1541 granted the same year. The initial focus for Hill End Gold exploration was

the historically very rich Hawkins Hill – Reward deposit, where diamond drilling beneath old workings delineated resources in a number of high-grade zones. Between 2003 and 2010 and extensive trial mining and processing project was undertaken. Approximately \$40m was spent by HEGL on exploration, development and facilities in the area.

HEGL conducted reverse circulation (RC) percussion drilling during 2004 which was subsequently followed by RC and diamond drilling between 2006 to 2008.

During the Reward Gold Mine bulk sampling stage up to May 2010, there were 5,650m of underground development completed and a gravity plant at Amalgamated portal processed 35,390 tonnes at an average grade of 10.6g/t Au with a metallurgical recovery of 91.4% at a coarse grind of ~P800.5mm for 11,029 ounces of payable refined gold.

Hill End Gold was later renamed Peak Minerals Ltd. The Hill End Project and associated tenements were acquired by a subsidiary of Peak Minerals, Vertex Minerals Limited (VTX), which was spun out of the parent company and VTX was listed on the ASX in January 2022.

## 2.1 Existing Processing Plant and Infrastructure

The existing gravity gold recovery plant has a nominal capacity of 35,000tpa and includes a ROM bin with grizzly, jaw crusher, screens, vertical shaft impact crusher, 30" Knelson Centrifugal Bowl Concentrator, spirals, ball mill, gold room Wilfley and Wave table, furnace and the associated conveyor belts, hoppers, pumps and pipelines. A tails storage facility was also constructed to contain the residue from the processing of ore from trial mining activities. Other infrastructure includes water dams, bores, offices, fuel storage and power generation.

The Hawkins Hill and Reward deposits had been developed from the Amalgamated Adit at the 650RL level over a strike length of approximately 800m. A 230m raise bored shaft was developed in 2008 to provide access to ten development levels, provide a second means of egress to the 640 Level and facilitate ventilation for underground operations. Operations ceased in May 2010 and the project has been in care and maintenance since.

## 3 LOM KEY HIGHLIGHTS

This report details an economic assessment for the Reward Gold Project over a 32 month mine life and is summarised in Table 3.1.

Table 3.1 – Key Metrics

Project Life 3 years Processing Life 2 years	Gold Production 49,890 ounces	Gross Revenue \$150 million
Capital Expenditure \$17 million Pre-production	AISC \$1833 per ounce	Total Employment 70 Full time employees
Free Cashflow \$41 million Pre tax	NPV at 7% \$33.3 million Pre tax	IRR 110% Pre tax

Table 3.2 – PFS Outcomes and Assumptions

Parameter	Unit	Amount	
PHYSICALS			
Mill throughput (design)	ktpa	110	
Life of mine <sup>2</sup>	years	3	
Ore processed	kt	181	
Head grade	Au g/t	9.3	
Contained Gold	Au koz	54	
Metal recovered for sale	Au koz	50	
Metallurgical recovery	%	92%	
FINANCIAL			
Revenue	\$m	150	
Operating Expense	\$m	(75)	
Royalties	\$m	(6)	
Sustaining Capital	\$m	(10)	
AISC <sup>3</sup>	\$/oz	1,833	
Capital (pre-production)	\$m	(17)	
AIC <sup>3</sup>	\$/oz	2,182	
Pre-tax cashflow	\$m	41	
NPV @ 7%	\$m	33.3	
IRR	\$m %pa	33.3 110%	
INN	⁄₀ра	110%	
ASSUMPTIONS			
Au Price	USD/oz	1,950	
Exchange rate	AUD:USD	0.65	
Au Price	AUD/oz	3,000	
Discount rate	%	7%	
Corporate tax	%	30%	

Notes:

- 1. Life of mine is calculated on commencement of underground development to the cessation of processing activity.
- 2. All in sustaining costs (AISC) includes all onsite costs associated with mining, processing, administration, royalties and sustaining capital. All in costs (AIC) is the AISC with the addition of pre-production capital.

### 3.1 Key Metrics

- Life of mine pre-tax cash of \$35.7 million at \$3,000/oz gold price.
- 11-month payback from commencement of processing.
- Average monthly gold production of 2,169 oz over 23 months with 92% gold recovery.
- Mine design is based on mechanised mining methods. Long hole open stoping with remotely operated loaders was selected as the primary stoping method.
- Planned processing of 181kt of material at a head grade of 9.3 g/t for 49,890 ounces of gold recovered.

### 3.2 Maiden Ore Reserve

- Probable Ore Reserve of 130kt at 9.7 g/t Au, containing 40,900 ounces of gold.
- Reserve represents 75% of LOM metal production.

#### 3.3 Mineral Resource

- Production schedules and financial estimates are based on Indicated Mineral Resources (~75% of Au) and Inferred Mineral Resources (~25% of Au).
- Combined Mineral Resource Estimate (MRE) for the Reward gold deposit at Hill End stands at 419,000 tonnes at 16.72g/t Au for 225,200oz Au (VTX Announcement 21 June 2023)

Table 3.3 – 2023 Reward Deposit Mineral Resource Estimate

Classificat ion	Cut- off	Tonnes	Au (g/t)	Ounces
Indicated	4	141,00 0	15.54	70,500
Inferred	4	278,00 0	17.28	154,70 0
Total	4	419,00 0	16.72	225,20 0

### 3.4 Mining

These key metrics are based on establishing a modern, mechanised mine, utilising long hole open stoping with waste rock as a backfill medium. Capital and operating development consists of level and inclined drives and crosscuts 3.5m wide by 3.5m high. A significant assumption in cost estimation was project execution using mining teams employed directly by Vertex.

Commencement of mining activities requires the stripping of existing Amalgamated Adit from around 2.4m wide by 2.4m high to 3.5m x 3.5m to facilitate access for suitably sized loaders and trucks. This includes the replacement of the existing portal sets.

Figure 3.2 illustrates the production profile showing development and stope tonnages. The first stope production occurs 12 months after the commencement of development activities. There is sufficient ore from development to commission the processing plant around Month 10.

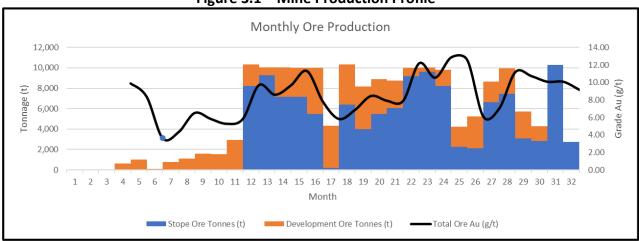


Figure 3.1 – Mine Production Profile

The physical and economic analysis included a Probable Reserve containing 40,900 ounces of gold and additional material, referred to as mining inventory, which contained an additional 13,300 ounces of gold. This mining inventory represented the Inferred Resource contained within the stopes and development drives created from an optimisation targeting the Indicated Resource. The economic analysis included all material summarised in Table 3.4. The breakdown of production from the mining inventory and the Probable Reserve is shown in Figure 3.3 and detailed by quarters in Table 7.1.

Table 3.4 – Mining Inventory and Probable Reserve

Item	Probable Reserve	Mining Inventory
Material tonnes	130,722	50,753
Gold Grade g/t	9.74	8.14
Contained Gold oz	40,936	13,289

Figure 3.2 - Gold mined by resource category 4.500 ■ Probable Reserve ■ Mining Inventory 4.000 3,500 3,000 Au oz Mined 2.500 2,000 1,500 1,000 500 10 11 12 13 14 15 Month

#### 3.5 **Processing**

The preferred processing route for the Project involves crushing and grinding to 600 micro and then separating gold from the ore stream in a batch centrifugal concentrator (BCC), as illustrated in Figure 3.4. Processing only utilises gravity methods, and no cyanide or other leachate is used. The concentrate from the BCC is passed directly to the gold room, where the BCC concentrate is passed over a Wilfley Table to further clean the concentrate ready for direct smelting.

A feature of the Reward Deposit is excellent recoveries of around 92% at the grind size contemplated in this flow sheet.

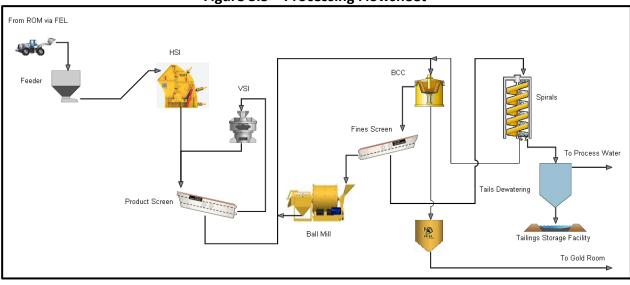


Figure 3.3 – Processing Flowsheet

The capital cost of the processing plant was estimated to be \$7.3 million, with operating costs of \$33.52 per tonne processed (excluding tailings management).

The coarse grind size means that residual material from processing is a fine sand that can be easily dewatered and dry stacked. The cost of tailing management was estimated to be \$6.65, bringing total processing costs to \$40.17 per tonne of ore processed.

## **4 PROJECT DETAILS**

## 4.1 Tenement Status

Figure 4.1 illustrates the Mining Licenses that comprise the Reward Gold Mine, while Table 4.1 lists these tenements and the status. All tenements are either current or subject to renewal.

Table 4.1 - Tenement List and status

Table 4.1 - Tellement List and Status							
Teneme Project		Registered Holder/	Grant	Expiry	Status		
nt	Project	Applicant	Date	Date	Status		
GL 5846 Switchback	Switchback	Vertex Minerals	15/02/19	07/12/20	Current (Renewal		
	SWILCHDACK	Limited	68	24	Pending)		
ML 49	Consolidat	Vertex Minerals	30/07/19	07/12/20	Current (Renewal		
IVIL 43	ed West	Limited	75	24	Pending)		
	West	Vertex Minerals	30/07/19	07/12/20	Current (Renewal		
ML 50	Nuggetty Gully	Limited	75	24	Pending)		
	•	Vertex Minerals	08/12/19	07/12/20	Current (Renewal		
ML 315	South Star	Limited	76	24	Pending)		
ML 316 South Sta	Courth Ctor	Vertex Minerals	08/12/19	07/12/20	Current (Renewal		
	South Star	Limited	76	24	Pending)		
ML 317 South Star	South Star	Vertex Minerals	08/12/19	07/12/20	Current (Renewal		
IVIL 317	South Star	Limited	76	24	Pending)		
	Consolidat						
ML 913	ed -	Vertex Minerals	20/01/19	19/01/20	Current		
IVIL 313	Amalgamat	Limited	81	33	Current		
	ed						
ML 914 South St	014 South Star	Vertex Minerals	20/01/19	19/01/20	Current		
	30dtii 3tai	Limited	81	33	Current		
ML 915 Goldcond	AL 915 Goldconda V	Vertex Minerals	04/02/19	03/02/20	Current		
	Goldcolldd	Limited	81	33	Current		
ML 1116	Fosters	Vertex Minerals	28/03/19	16/10/20	Current (Renewal		
		Limited	84	24	Pending)		
ML 1541	Patriarch -	Vertex Minerals	17/10/20	16/10/20	Current (Renewal		
IAIT TOAT	TSF	Limited	03	24	Pending)		

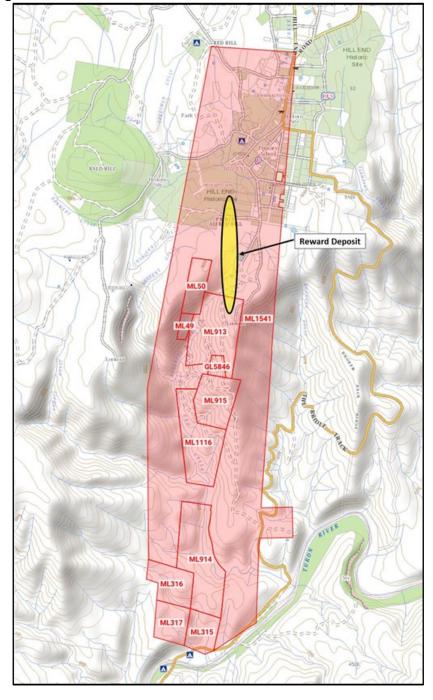


Figure 4.1 – Tenements at Hill End and location of Reward Resource

#### 4.2 Mineral Resource

The Minerals Resource Estimate for the Reward Gold Project was completed by HGS Australia (HGS) in June 2023, and the Resource Report is included in APPENDIX 1.

Classification	Cut-off g/t	Tonnes	Au (g/t)	Ounces
Indicated	4.0	141,000	15.54	70,500
Inferred	4.0	278,000	17.28	154,700
Total	4.0	419,000	16.72	225,200

Table 4.2 - Mineral Resource Estimate

The mineral resource estimate is based on the following factors and assumptions:

- The data was supplied by Vertex including an access database with all original sample files, previous model and interpretations, historical mine development, surface contours, and reports.
- All past validation work was considered and used in this report.
- Mineralised outlines were interpreted by HGS within the coordinates:
- 6341000N to 6341800N,
- 725220E to 725400E and
- 550RL to 1000RL.
- A new interpretation to minimum 1m width was used in compositing the sample data.
- Sample data was composited over 0.25m intervals for drill gold assays.
- Underground face assays were incorporated into the database but only used in interpretation continuity.
- A surface topography profile was supplied by Vertex.
- Geological block models were constructed by HGS using Surpac. The model cell sizes are 10m N, 1m East and 5m RL and sub-celled to 2.5m N, 0.25m E and 1m RL.
- Bulk densities were supplied by Vertex from metallurgical assessments of 2.7t/m³.
- Ordinary Kriging interpolation method was used for the evaluation of gold. Inverse distance squared interpolations were conducted for validation purposes.
- A comparison evaluation was conducted using all data including underground face sampling to demonstrate the potential upside of the resource.
- High-grade cutting of 120ppm Au was used.

 The resource is classified as indicated and inferred due to data density, structural definition and continuity from the underground drives, stopes and face sampling.

HGS conducted a second round of interpolations to include the underground face sampling. This data, though useful in identifying continuous lodes from drive sampling, is not considered by the author as repeatable data and representative of the entire face, therefore may over bias the end result. The main reason to conduct this process is the continuity in the face sampling results contradict many of the drilling comparisons and may have resulted in a conservative resource.

If historical plant recovery reconciliations were available that can be compared to face sampling, then it may be possible to conduct a grade percentage increase or use the face sampling in the interpolations. This was not the case at time of writing.

#### 4.3 Ore Reserve

The PFS established the maiden Ore Reserve for the Reward Gold Mine, with the Probable Ore Reserve estimated to be 130,722 tonnes at 9.7g/t Au and containing 40,936 ounces of gold.

The Ore Reserve estimate is from Indicated Mineral Resource and dilution material contained within practical mine designs. Dilution material comprises either low grade Indicated Mineral Resources or material with no noticeable grade. Coincidental Inferred Resource within the development and stope designs was given no economic value in the estimation process.

No Measured Mineral Resources have been established for this deposit as the classification of resources relies on evaluating geological confidence considering geological and mineralisation continuity.

Table 4.3 – Probable Ore Reserve Estimate

Classification	Tonnes	Au (g/t)	Contained Au (Oz)
Proved Reserves	-	-	-
Probable Reserves	130,722	9.74	40,936

Ore reserves are susceptible to economic, geotechnical, permitting, metallurgical, and other factors. Lower production rates can increase costs and cutoff grades, reducing reserves. Geotechnical challenges may elevate cutoff grades, further impacting Ore reserves.

### 4.4 Geology

## 4.4.1 Regional Geology

The Hill End goldfield of central-western New South Wales (Figure 4.2) lies within the Hill End trough, a 7km succession of late middle Silurian to Middle Devonian (~425–385 Ma), deep-water, epiclastic and volcaniclastic sediments.

Mike Quayle, former Hill End Gold Limited (HEGL) - Geology Manager, together with Plymouth University structural expert, Colin Wilkins Ph. D. provide an excellent summary of the Regional and Project Geological Settings within their, Society of Economic Geologists, Economic Geology paper Volume 116, Number 4 June 2021 "Structural Control of High-Grade Gold Shoots at the Reward Mine, Hill End, New South Wales, Australia." (Wilkins and Quayle, 2021).

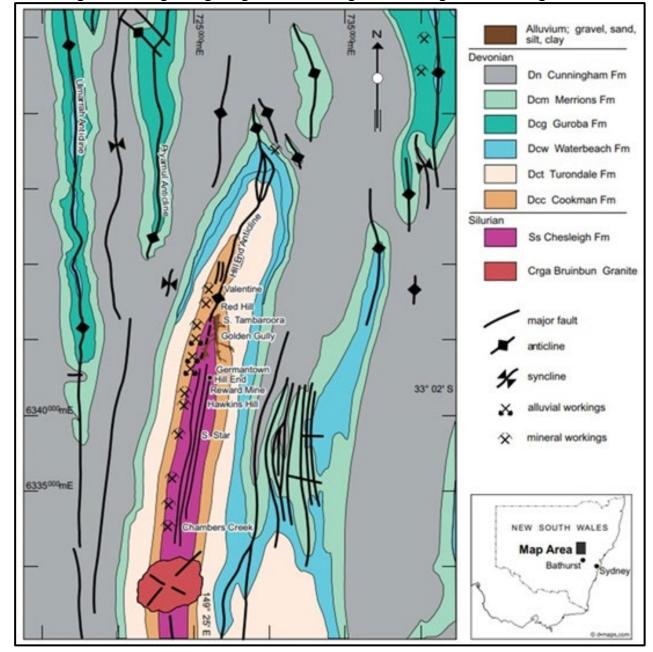


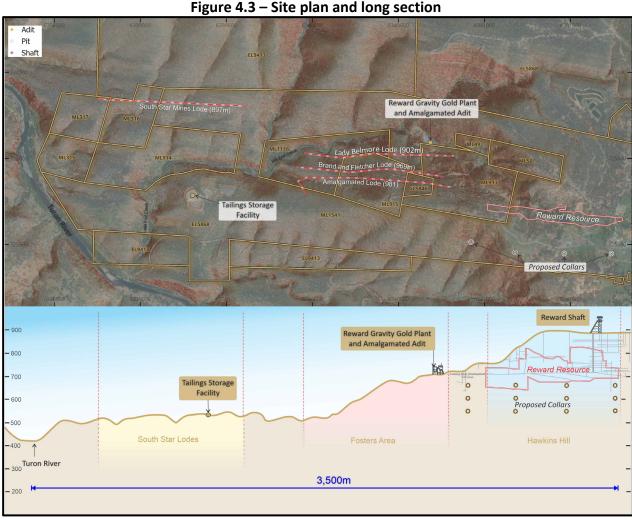
Figure 4.2 - Regional geological features together with significant mining areas.

### Source: Wilkins and Quayle, 2021Project Geology

The Hill End trough is a 70km-wide and more than 200km long, deep marine basin that is underlain by Ordovician volcanic rocks that lie between the Molong Volcanic Belt to the west and the Rockley-Gulgong Volcanic Belt to the east. Both these volcanic belts belong to the Ordovician Macquarie Arc in the Lachlan Fold Belt of eastern Australia (Fergusson, 2009).

The core of the Hill End anticline exposes the late Silurian Chesleigh Formation, which hosts the historic Hawkins Hill mines and more recent Reward Mine, the subject of this Pre-Feasibility Study ("PFS").

and Watkins, 1998).



The Chesleigh Formation consists of interbedded fine-medium and coarse-grained, quartz-rich or quartzo-feldspathic, lithic sandstones (graywackes), siltstones and slates—including minor radiolarian chert and rhyolitic air-fall tuffs in the upper Chesleigh Formation. Bed thickness is generally 10cm to 50cm, with finer-grained units bedded at a centimeter scale and coarse units at a 1m to 2m scale. Graded bedding, soft-sediment deformation, and Bouma A to E sequences indicate deposition from deep-water turbidity currents in a submarine fan environment (Pogson

Furthermore, the Chesleigh Formation is conformably overlain by the Early Devonian Cookman, Turondale, Waterbeach, and Guroba Formations that consist of rhythmically bedded, turbiditic mass flow deposits. These are followed conformably by the Merrions Formation, containing subaqueously emplaced lavas and volcaniclastics deposited as mass flows of explosive eruptive material in a deep marine environment, and the Cunningham Formation, the final major fill of the Hill End trough, consisting of thin-bedded (1cm to 5 cm), fine-grained non-volcanic turbidites (Pogson and Watkins, 1998).

The Hill End trough has a prominent north-south structural trend caused by a major east-west shortening event. It has been deformed into prominent regional, tight to isoclinal, upright N-S trending, gently doubly plunging folds, with an associated penetrative slaty cleavage (Pogson and Watkins, 1998; Meakin and Morgan, 1999).

Greenschist facies metamorphism to chlorite and biotite grade is recorded in the Hill End trough (Smith, 1969; Lu, 1993) with some biotite porphyroblasts crosscutting the regional slaty cleavage, implying peak metamorphism outlasted the period of east-west shortening (Vernon and Flood, 1979).

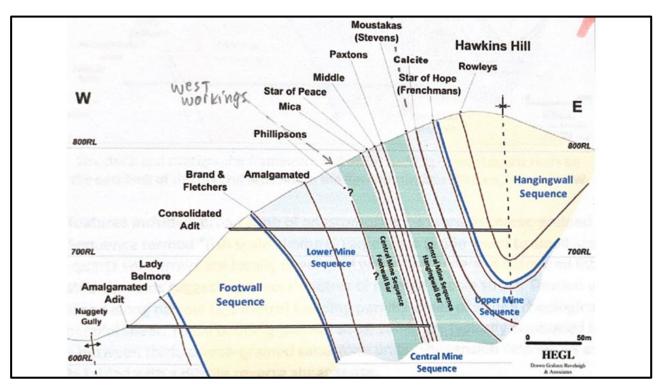
The unfoliated, coarse-grained Bruinbun granite (part of the Bathurst Batholith) intrudes the core of the Hill End anticline 14 km south of Hill End and has a 330 to 325 Ma mid-Carboniferous Rb/Sr age (Shaw and Flood, 1993; Pogson and Watkins, 1998), postdating both Middle Devonian (Tabberabberan) and early Carboniferous (Kanimblan) deformations (Glen, 2005).

After erosion accompanying deformation, sedimentation resumed on the flanks of the trough with the deposition of the Late Devonian siliceous sediments of the Catombal Group (Molong High), Lambie Group, and Mt. Knowles Group (Capertee High), starting in the late Frasnian (367–363 Ma) and ending in the late Famenian or early Carboniferous (354–345 Ma). These Late Devonian sediments were also deformed and incorporated into folds and thrusts at the margins of the Hill End trough.

## 4.4.2 Project Geology

Gold occurs along the 25km strike length of the Hill End anticline (Harper, 1918; Joplin 1949; Seccombe and Hicks, 1989; Windh, 1995), including the historically important Hawkins Hill mines at Hill End, where the late Silurian Chesleigh Formation hosts gold-bearing, bedding-parallel, laminated quartz veins and associated structures on the east limb of the Hill End anticline (Figure 4.4). At Hill End, the anticlinal hinge consists of two closely spaced anticlines and an intervening syncline.

Figure 4.4 - Hawkins Hill with key geological units



Source: Modified from HEGL

Previous mining at Hawkins Hill worked a series of rich, gold-bearing veins over a strike length of 1 km and to a depth of 200m from the surface in places (Figure 4.5).

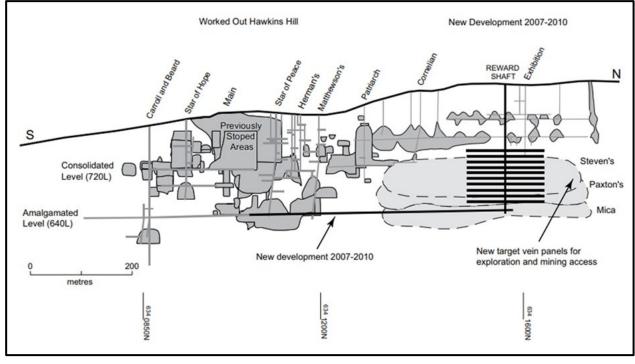


Figure 4.5 - Long-section of Hawkins Hill mines with the more recent Reward Mine

Source: Modified from HEGL

Surface drilling identified potentially minable veins in the untested ground to the north and below previously stoped areas. Figure 4.6 illustrates a simplified cross section through the eastern limb of the Hill End anticline. Surface diamond drill holes are shown that encountered mineralized bedding-parallel veins in a subvertical, north-striking mineralised corridor. Note that the vein thickness has been exaggerated for clarity and that in some cases named veins consist of multiple veins. The Reward shaft and mine development is also shown.

Vein name abbreviations are as follows: Am = Amalgamated, Cc = Calcite, Md = Middle, Mi = Mica, Ph = Phillipson's, Px = Paxton's, Sop = Star of Peace, St = Steven's.

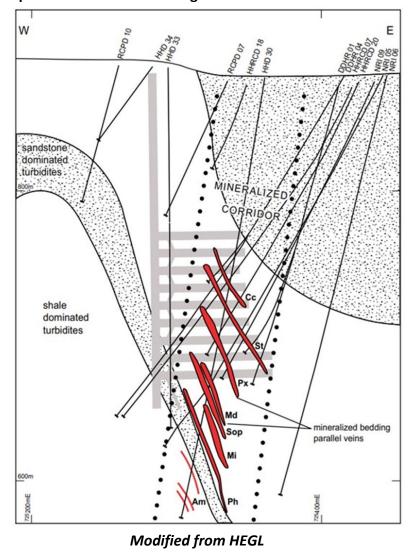


Figure 4.6 - Simplified cross section through the eastern limb of the Hill End anticline

Exploration north from Hawkins Hill to Reward and Germantown indicated that bedding-parallel veins only showed significant gold mineralization (>10 g/t) in a subvertical and N-striking mineralized corridor (Fig. 3) on the east limb of the westernmost anticline in the core of the Hill End anticline.

From 2007 to 2010, the Amalgamated adit (640 Level) was extended to intersect a new 286m shaft, known as Reward Shaft. The shaft also provides access to the Paxton's vein set above the 640 Level, as shown in Figure 4.7. The Consolidated 695 Level (35m above Amalgamated) was widened (from 1.5m to 2.3m) and heightened (to 2.5m) from the adit to the Phillipsons Vein.

Figure 4.7 shows a cross section at 6,341,555mN through the Reward shaft. East dipping metasandstones and shales with associated mineralized bedding-parallel quartz veins are

illustrated. Both are crosscut by late W-dipping faults (e.g., the Reward fault). High-grade gold shoots, mined from the Paxton's vein system, were concentrated between levels 671 and 695.

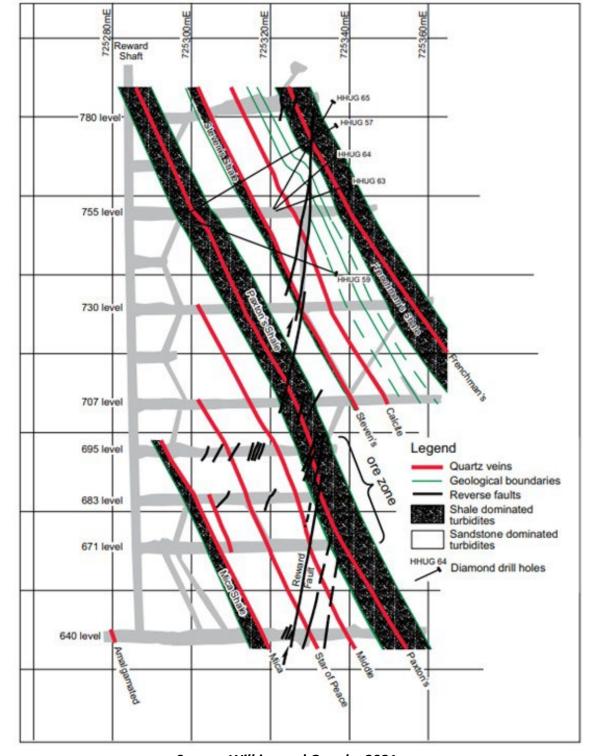


Figure 4.7 - Cross section at 6,341,555mN through the Reward shaft

Source: Wilkins and Quayle, 2021

Level development and drilling in the Reward mine have intersected 14 bedding-parallel vein sets within a 360m thick sequence of metaturbidites on the steeply E dipping anticline limb. Vein names date from the 1870s; on 640 access level. The most westerly vein (Lady Belmore) is followed by a 90m thick metasandstone unit. Then, from west to east, named veins are spaced

stratigraphically at 5m to 25m apart and are sequentially encountered in higher levels in the mine. The principal veins are:

- Brand and Fletcher's,
- Amalgamated,
- Phillipson's,
- Mica,
- Star of Peace,
- Middle,
- Paxton's,
- Steven's (Moustaka's),
- Calcite (Herman's),
- Frenchman's (Star of Hope),
- Far East,
- Rowley's, and
- Mountain Maid

In the Reward mine, metaturbidites young to the east and contain fining upward cycles. Diagenetic and syndeformational low-grade alteration (chlorite, calcite, muscovite, sericite, epidote, pyrite, and arsenopyrite) of sandstone-dominated metaturbidites is common throughout the mine sequence. However, bedding-parallel laminated quartz veins are restricted to shale beds (now represented by cleaved black slates) in either sandstone or shale dominated turbidites.

The principal bedding-parallel veins in the Reward mine have a maximum thickness of  $\sim$ 75 cm. In narrow slate beds they may be represented by individual veins or sets of two to four veins (e.g., Mica and Paxton's). They initially appear to be constant features over 100s of meters; however, in detail along the strike and downdip they tend to have variable persistence, thickness, character, and grade distribution (1,000 g/t).

Other gold occurrences in the project area include the former alluvial gold workings at Golden Gully and Tambaroora.

#### 4.5 Mining

## 4.5.1 Existing Mine Infrastructure

The Reward deposit, trial mined in 2010, is accessed through the Amalgamated Adit at the 640RL. The primary horizontal development profile is approximately 2.4mH x 2.4mW. The 640RL Level continues on the strike of the lodes for approximately 1.1km and intersects the area of the Reward mineral resource.

Three separate declines originating from the 640RL were established to access the lower section of the ore body, currently stopping at 610RL. Above the 640RL, ore body access is facilitated through the Reward raise bored shaft, where level development occurs at distinct intervals ranging from 10m to 20m along the ore body's strike. Mining has already taken place on some sections of the ore body at these levels. Most of the existing underground development infrastructure is in reasonable condition and strategically positioned to offer a cost-effective means of accessing the existing Reward ore body.

Figure 4.8 illustrates the location of the existing drives and declines in a long section looking to the west.

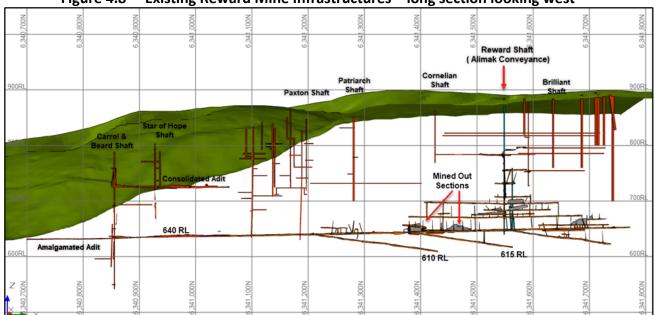


Figure 4.8 – Existing Reward Mine Infrastructures – long section looking west

## 4.5.2 Mining Method

The current area of interest within the Reward deposit is 720 m long and has a vertical extent of 200 m. The area is characterized by a narrow multiple parallel ore lenses, demonstrating a dip that ranges from vertical to 75 degrees.

Considering the current underground and surface infrastructures at the Reward mine, along with the ore body geometry, a conventional mechanised longhole open stoping method has been proposed for ore extraction. This method is expected to provide improved safety and efficiency for the extraction. To facilitate the preparation of the area for longhole stoping and provide access for mobile equipment, the existing 2.4mH x 2.4mW development will be stripped to a larger 3.5mH x 3.5mW development profile.

To facilitate the larger development size, the existing portal sets at Amalgamated will be replaced with concrete culverts with an internal size of 3.5m wide and 3.5m high.

Access to the ore body will be maintained through the 640RL Adit. The proposed extraction levels are designed to align with the existing development intervals, with a floor-to-floor level interval ranging from 10m to 20m. All new development will adopt a 3.5mH x 3.5mW drive profile. The development work will be conducted using the Sandvik DD212 single boom jumbo rig, as illustrated in Figure 4.9.

The primary ventilation and the secondary means of egress will be facilitated through the Reward shaft, which has already linked to all existing levels. Below the 640RL, additional ventilation

infrastructures will be required to connect with the primary ventilation circuit. Working areas will receive secondary ventilation through the deployment of axial fans.

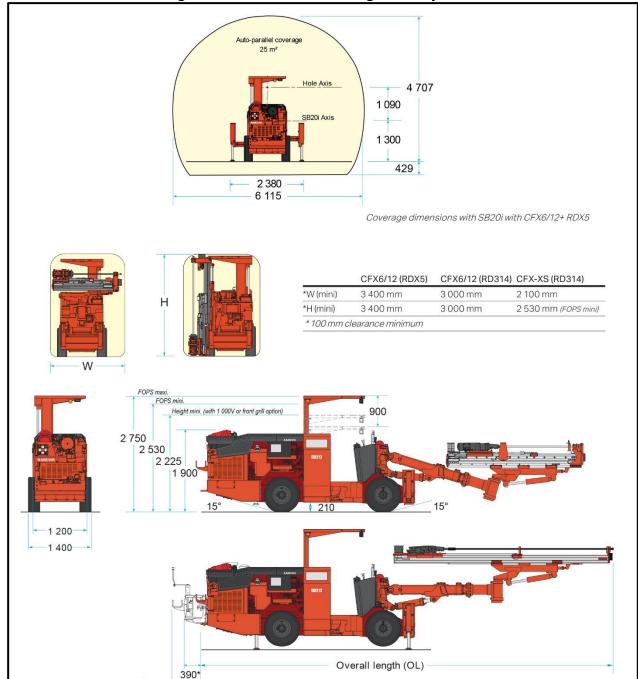


Figure 4.9 - Sandvik DD212 single boom jumbo

Stope extraction will follow a bottom-up sequence retreating along the strike, commencing from the extremities of each level. The proposed method assumes the immediate filling of all stopes with waste rock after extraction. The backfill waste will be sourced from either underground waste development or the surface waste stockpile. To ensure stability, a minimum of 5m rib pillar was located between the stopes.

The production drilling will be conducted using a Sandvik DL210 long-hole drill rig with a 64mm diameter. Stopes will be initiated through a conventional slot, predominantly utilising a single lift.

Both remote and conventional bogging methods will be employed to extract blasted ore from the stopes, directing it to the level stockpile.

The preferred LHD unit is the Komatsu WX04 loader fitted with and aftermarket RCT tele-remote control system.

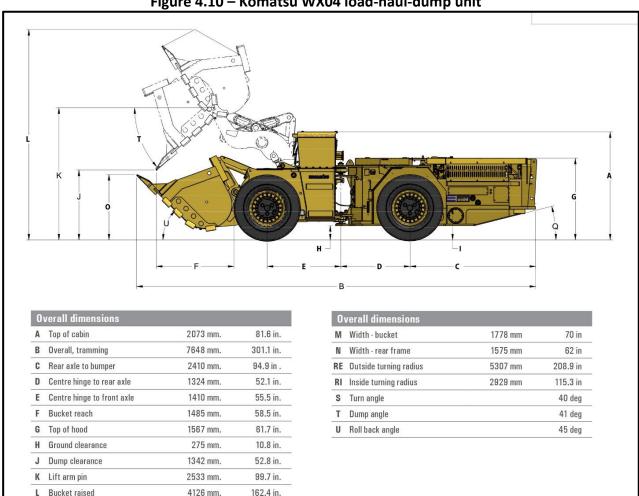


Figure 4.10 - Komatsu WX04 load-haul-dump unit

Material from underground stockpiles will be hauled to the surface using a Sandvik TH 320 truck (or a similar underground low-profile truck). It is envisaged that a single truck will be purchased in the 13 month after commencement of mining development. A single 20t truck provides sufficient capacity for the LOM plan presented in this report.

Vertex presently owns a Bird SDT10 - DL6AC 10 tonne truck, which is operational and on site. This is an older but quite rugged machine manufactured in South Africa. The Bird will augment the larger truck and will be utilised during construction activities.

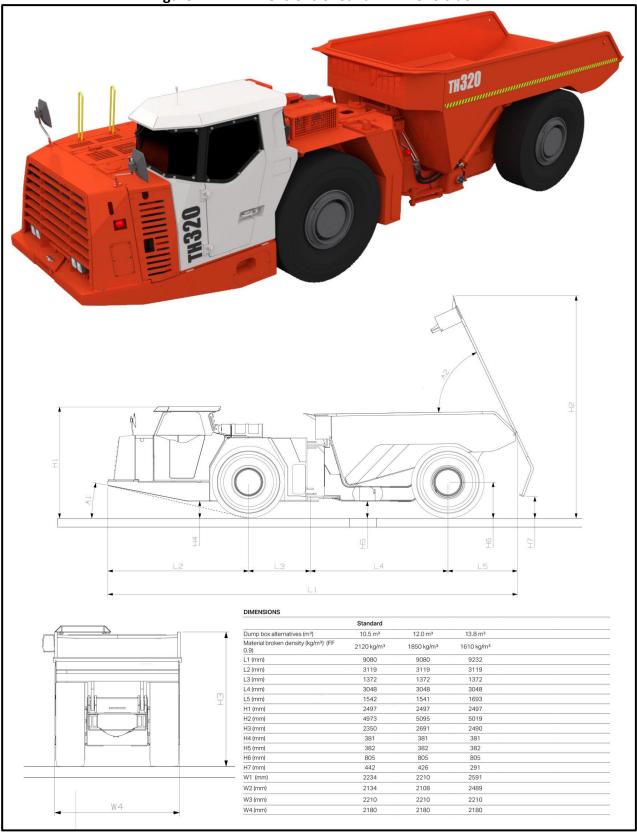


Figure 4.11 – Dimensions of Sandvik TH 320 truck

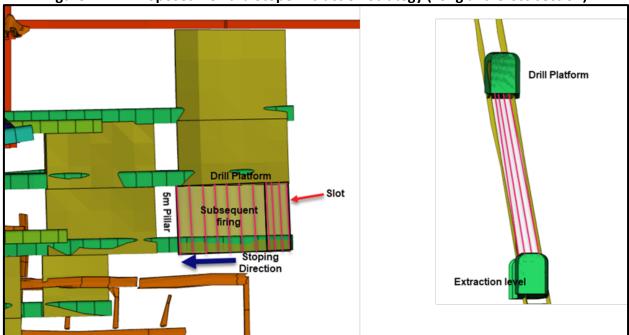


Figure 4.12 – Proposed Reward Stope Extraction Strategy (Long and Cross section)

# 4.5.3 Design Overview

The proposed mine is design to extract the remnant and un-exploited resources from the Reward deposit while optimising the utilisation of existing infrastructures. The initial phase of the project involves upgrading the current drive profile to 3.5mH x 3.5mW. This includes increasing the portal size, stripping all necessary development, including the 640RL Adit, and re-supporting. Anticipated is a total stripping requirement of 1836m over the LOM, with the majority planned for completion within the first 12 months of the operation.

Table 4.4 – Development Stripping estimation

Level	Dev Stripping (m)
615	138
630	267
640	1245
675	186
Total	1836

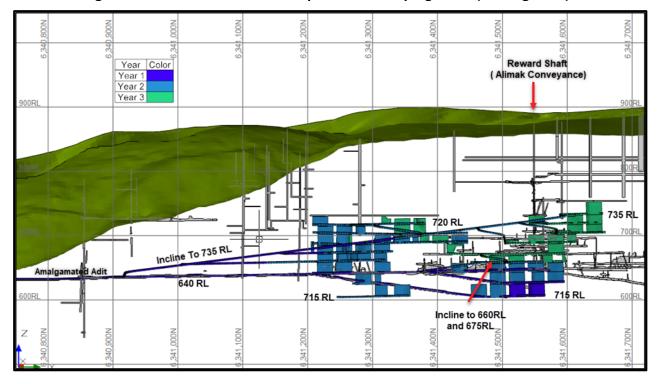


Figure 4.13 - Reward Mine development and stoping areas (looking west)

The new development will adopt a 3.5m x 3.5m drive profile, allowing access to both upper and extended lower levels up to resource boundaries. The new development includes a minimum turning radius of 20m and gradients ranging from 1:7 to -1:7.

The main eastern incline will provide access to most upper levels, while the central incline from the 640RL will connect to the 660RL and 675RL.

The typical production level layout will include level access, sump, level stockpile, and ore drive. The strike of ore drives follows a south - north direction, aligning with the orientation of narrow ore lenses. The production level interval is predominantly based on the existing level development, ranging between 10m and 20m (floor to floor). The newly created levels have implemented with a 15m floor-to-floor level interval.

The total projected full-face development for the proposed strategy is 4,995m.

# 4.5.4 Stope design and Production Sequence

Stope shapes were designed using a 5g/t Au design cut-off, with a minimum true stope width set at 3m and a maximum strike length limited to 25m. A minimum 5m rib was designed, although it is important to note that the rib pillar location has not been optimised for high metal recovery. Furthermore, ore losses and recoveries were incorporated into the shapes during the scheduling

process. Stope dilution of 10% and stope recovery factors of 95% were applied, and dilutant material attributed no grade.

The summary of stope parameters used is shown in the Table 4.5.

**Table 4.5 - Stope Design Parameters** 

Stope Parmeter	Value
Max Strike	25m
Minimum Waste / Rib Pillar	5m
Design Stope Cut off	5g/t
Min. Stope Thickness	3m
Stope Dilution	10%
Stope Recovery	95%
Default SG	2.65
Broken Rock SG	2

The proposed strategy employs a bottom-up stoping sequence, initiating mining activities from the lowermost levels at 615RL and progressively advancing upward in the northern end. Due to a single access design strategy, concurrent activities will be limited in these mining levels. However, multiple stoping fronts will become available once the upper-level developments are established, offering independent stoping fronts.

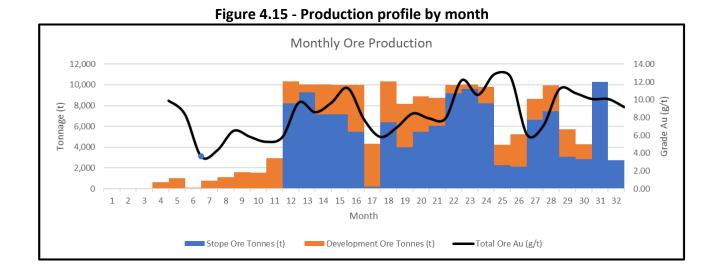
Figure 4.14 - Local Stoping Sequence (615 RL to 690 RL) 16 675 RL 18 20 660 RL 13 19 3 640 RL 8 14 4 630 RL 15 9 615 RL Stoping Direction

The selection of this stoping methodology and sequence maximises resource extraction and is the main reason that stoping does not commence until Month 12 in the LOM schedule. Additional work is required to optimise pillar location (prioritising extraction of high grade ore) and to improve scheduling and financial outcomes.

#### 4.5.5 Indicative Production Profile

An Integrated preliminary LOM schedule was prepared using the Dewsik Suite, incorporating critical attributes, resources, and dependencies. Production priorities have been aligned to favour inventories with higher geological confidence.

The stoping schedule is primarily constrained by the bottom-up stoping sequence. Delays in stope production are anticipated, primarily due to a 12-month refurbishment period for the Reward shaft and primary development stripping activities.



Monthly Development Meters

300

(E) 250

250

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

Month

Full face (m) Stripping (m)

Figure 4.16 - Lateral Development Profile

Table 4.6 outlines the resource productivity assumptions employed in the schedule.

**Table 4.6 - Resource Productivity** 

Resource	Rate
Jumbo	240m/mth
Boggers- Stope Ore	1200t/day
Production Drilling	250m/day
Bogger - Backfill	1000t/day
Boggers	1200t/day
Cable bolting	100m/day
Process throughput.	10,000t/mt h

The mining physicals are summarised in Table 4.7.

**Table 4.7 - Physical Summary** 

Physical Total Year - 2 Year - 3						
•	IOtal	Teal- 1	Teal - Z	Teal - 5		
Production						
Stope Ore Tonnes (t)	123,69	8,232	78,087	37,372		
	1					
Stope Ore Au (g/t)	10.13	9.89	10.15	10.13		
Development Ore Tonnes (t)		11,811	32,215	13,758		
	57,784					
Development Ore Au (g/t)	7.51	6.72	7.49	8.24		
Total Ore Tonnes (t)	181,47	20,043	110,302	51,130		
	5					
Ore Au (g/t)	9.29	8.02	9.37	9.62		
Au Oz delivered to Surface (Inc.		5,169	33,243	15,813		
Inferred)	54,224					
Development						
Full face (m)	4,995	1,420	2,615	960		
Vertical (m)	-	-	-	-		
Stripping (m)	1,836	1,452	196	186		
Capital Lateral Development (m)	3,037	2,065	688	282		
Operating Lateral Development	3,794	807	2,123	863		
(m)						
Total Development Ore Tonnes	57,784	11,811	32,215	13,758		
(t)						

Physical	Total	Year- 1	Year - 2	Year - 3
Total Development Waste Tonnes	108,46	53,353	41,285	13,823
(t)	1			
Total Development Tonnes (t)	166,24	65,164	73,501	27,581
	0			
Drilling				
Production Drilling (m)	29,591	4,288	16,362	8,941
Misc. Drilling (m)	3,600	300	2,068	1,232
Total Drilling (m)	33,191	4,588	18,430	10,173
Cable Bolting (m)	3168	1224	1332	612
Backfilling				
Rock Fill (t)	84,270	6,771	58,797	18,702
Haulage				
Stope Ore (tkm)	114,77	7,590	67,865	39,322
	7			
Development Ore (tkm)	51,976	9,172	27,566	15,237
Total Waste (tkm)	153,52	130,76	91,528	28,715
	8	1		
Total (tkm)	320,28	147,52	186,959	83,275
	1	4		

The truck tonne-kilometre (tkm) was determined by establishing the underground haul network. The main assumption was that the average distance for rehandling underground waste is 1.0 km. All extracted ore was delivered to the surface ore stockpile, and any excess underground development waste was transported to the surface waste stockpile.

In cases where there is a shortage of underground waste, the assumption is that the deficit will be compensated for by supplementing from the surface waste stockpile. Importantly, it is observed that the peak demand for trucking reaches 25,000 tkm per month, and no constraints in the schedule are anticipated due to Truck tkm. Figure 4.17 illustrates the haulage profile for the life of mine.

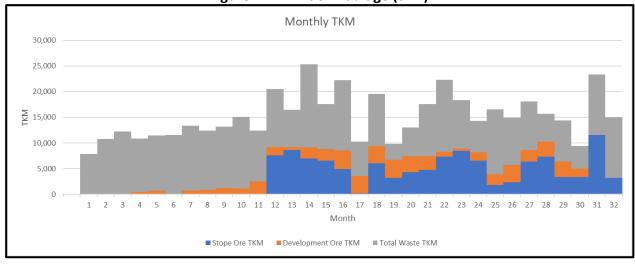


Figure 4.17 - Truck Haulage (tkm)

#### 4.6 Non Processing Infrastructure

Reward is a brownfields gold mining project with some infrastructure from trial mining completed in 2010. The key infrastructure is located at the portal of the Amalgamated adit, which is the entrance to mine and adjacent to the processing plant. At the top of the hill is an area known as Exhibition Flats, which is on the Mining lease and is freehold land owned by Vertex. Exhibition Flats is shown in Figure 4.19.

# Existing Infrastructure includes:

- All weather road to mine and plant
- Changerooms and Ablutions at Adit entry and plant
- Crib Room
- Small workshop for underground Mine and plant
- Explosive magazine
- Water tanks and water supply
- Satellite Communications
- Mine Adit
- 2nd shaft egress with Alimak and ladderway conveyance
- Tails Dam
- Tails lines
- Security Cameras
- Small Gravity Gold Plant
- Diesel Generators
- Plant spare storage
- Laydown area

## Security gates

There is a significant amount of new infrastructure required to support future operations. The Exhibition Flat area will host the following items:

- Security checkpoint at Exhibition Flats.
- Visitor/Employee Car Park.
- Security fence.
- Administration Office.
- Technical Services Office.
- Training and Induction Room.
- Changeroom and Ablutions.
- First Aid facility.
- Sewage.
- Warehouse.

The Company plans to construct a services area adjacent to the Patriarch Shaft (see Figure 4.19) to host the following infrastructure:

- Power generation and fuel facility.
- Washdown bay.
- Hydrocarbon store.
- Workshop.

### 4.6.1 Offices & Administration

The Project's main administration building will be located at Exhibition Flat. The land is owned by Vertex and sits to the south of the Hill End Township. It is on the Company's Mining Lease (ML1542). Exhibition Flat will be the entrance to the mine. The general arrangement of buildings is shown in Figure 4.18.

The administration building will be linked, by walkway, to the sentry building which will be used for security, drug and alcohol testing and security. It will also act as the coordination centre for management and technical, safety and environment services. The administration building will be open planned with six workstations. The managers offices will consist of four private offices.

The Hill End township is owned and managed by National Parks. The town is recognised as a historic mining town. Most buildings in the town are circa 1870s, made from either Brick or corrugated iron. To maintain the theme and blend into the landscape, Vertex plan to build offices and sheds that are zinc corrugated iron. Windows will be black aluminium, and the verandas will be made of hard wood timber.

## 4.6.2 Store and workshop

A secure warehouse and storage area will be constructed at Exhibition Flat. The warehouse will service both mining and processing. The building will also incorporate a workshop that will house a light vehicle bay with hoist and a heavy vehicle bay for mining and processing equipment services and maintenance. The warehouse will have a laydown yard with secure fencing.

The Warehouse end of the building will be separated from the workshop by an internal wall. The warehouse will contain fixed and mobile plant spares, Electrical items consumables, PPE, tools, workwear, and general supplies.

The workshop will be fitted with appropriate tooling, welding area, and lifting equipment. The workshop will also have a 1000-volt electrical supply for servicing of underground drills.

#### 4.6.3 Wash down bay

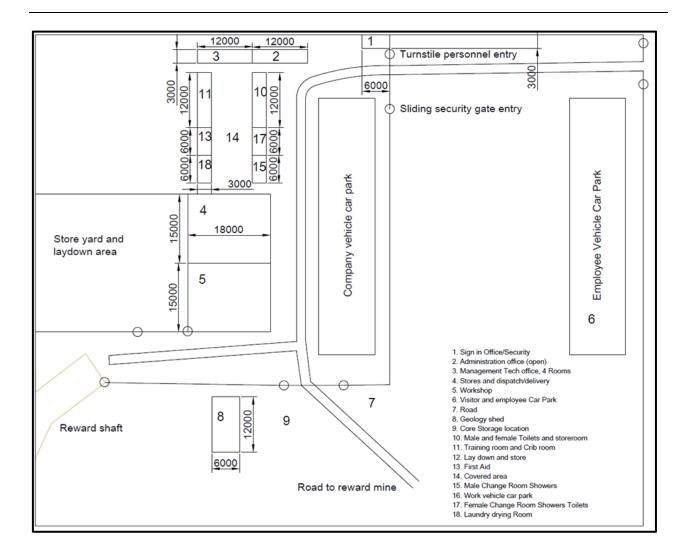
A washdown bay will be constructed beside the Reef Street Warehouse to service, light vehicles, heavy vehicle, and drills. The washdown bay will have a sump with an oil separator. Used water will be pumped back into wastewater tank and recycled for cleaning down heavy equipment.

#### 4.6.4 Communications

Telecommunications for the Hill End Gold project (including Reward Gold mine) will include;

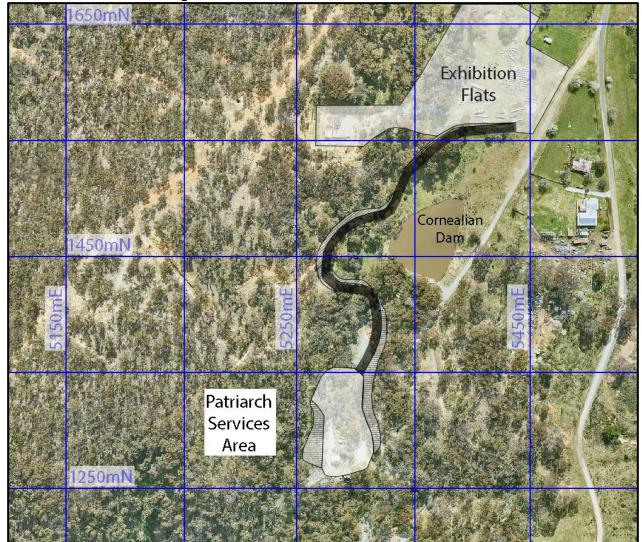
- Two way radio communication on surface and separate channels for underground communications.
- Starlink satellite internet for all sites.
- Mobile Phone service (predominantly Optus).

Figure 4.18 – Exhibition Flats Administration Area



#### 4.7 Power and Fuel Facilities

It is planned to construct and flat pad adjacent to the Patriarch Shaft, as illustrated in Figure 4.19, to install power generation and fuel storage facilities. Preliminary design indicated that approximately 4,000m3 of cut and fill is required to establish the pad and roadway.



# Figure 4.19 – Patriarch Services Infrastructure

# 4.8 Tailings Storage Facility

The existing tails storage facility was constructed between 2008 and 2010. The facility is illustrated in Figure 4.20 and comprises two wet material impoundments (TSF 1 & TSF2) and a dry sand stacking area (TSF3). There is a catchment dam that retains any surface run off from the area and a discharge pond that was originally used as a polishing dam for recycling water and returning it to the processing plant.

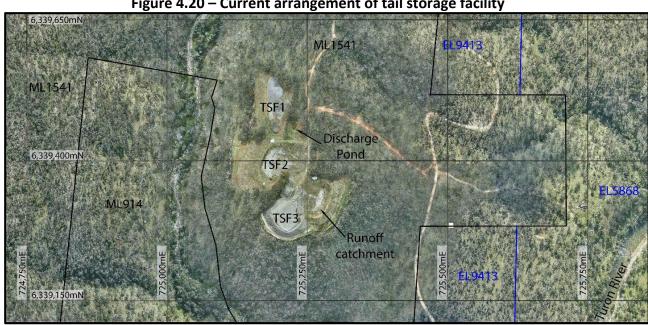


Figure 4.20 - Current arrangement of tail storage facility

#### 4.8.1 **Proposed Tailings Management**

Vertex plans to stack dewatered sand on Mining Lease ML1541 immediately to the west of the existing storage facility. Two sand stacking areas are proposed (SSA1 and SSA2) as shown in Figure 4.21.

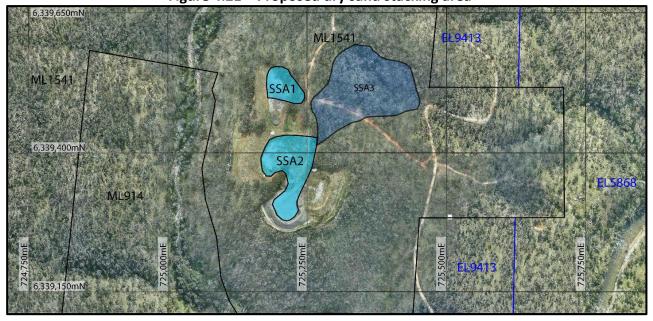


Figure 4.21 – Proposed dry sand stacking area

VTX plans to discharge slurry tailing material into the discharge pond. The discharge pond will be routinely cleaned out, with the tailing material side cast to the crest of the pond as shown in Figure 4.22.

The coarse nature of the tailing material, which is classified as a fine sand, is free draining. Once drained of excess water, the material is loaded onto a truck and transported to final storage as a dry stack. Material will be stacked progressively on SSA 1 and 2 before extending sand storage to SSA3. The estimated capacity of these areas is approximately 200,000 cubic metres.



Figure 4.22 - Cleaning of the Discharge Pond

## 4.9 Minerals Processing

## 4.9.1 Metallurgy

The selection of processing method follows the historical processing plant design which reported gold recoveries in excess of 95% (Figure 4.23), utilising a simple crush, grind, coarse and fine gravity separation circuit.

A review of historical test work indicated that the gold can be classified as predominantly free gold and liberates well at a target  $P_{80}$  grind size of 670  $\mu$ m (Figure 4.24). The ore is hard but fails in a columnar and shear fashion and will be moderately abrasive.

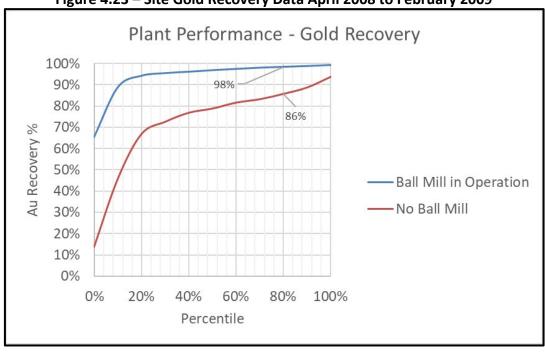
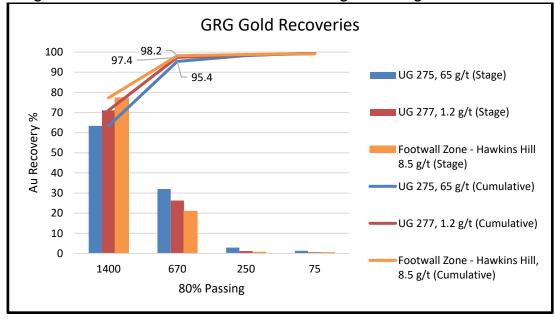


Figure 4.23 – Site Gold Recovery Data April 2008 to February 2009





## 4.9.2 Processing Plant

The mineral processing plant is designed to treat 120ktpa of 'run of mine' ore. Gold is liberated via two stage crushing and ball milling. The gold is concentrated in the Gravity circuit consisting of a batch centrifugal concentrator (BCC) and scavenger spirals. The intermediate gold concentrate is cleaned on a shaking table prior to smelting into dorè.

The processing plant includes the following process unit stages:

- Crushing of ROM ore to sub 1.5mm, utilising open circuit primary crusher (horizontal shaft impactor) and closed-circuit secondary crusher (vertical shaft impactor)
- Gravity concentration of Gold via BCC with scavenger spirals operated in closed circuit with the BCC.
- Gold room activities including tabling, drying and smelting.
- Grinding via a Ball Mill producing a grind size of P<sub>80</sub> 500 μm.
- Screening and dewatering via settling cones.
- Water recycle and tailings system.

A simplified processing flowsheet is shown below in Figure 4.25 as well as an indicative plant layout in Figure 4.26.

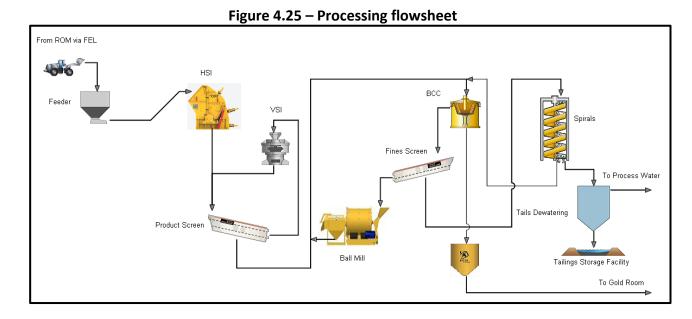
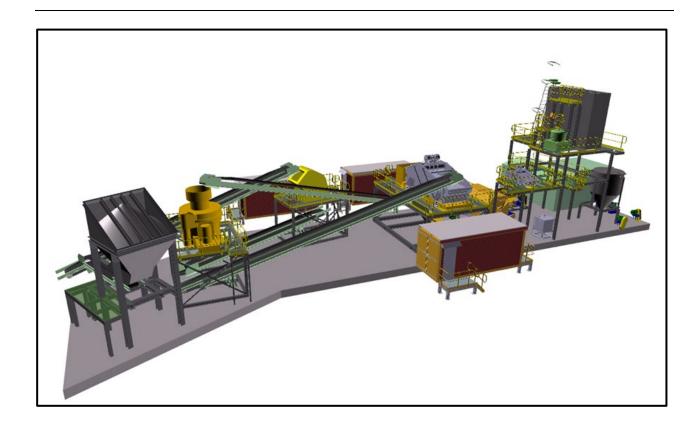


Figure 4.26 - Indicative Process Plant Layout



The Process Design Criteria are listed in Table 4.8.

**Table 4.8 - Process Design Criteria** 

Item	Unit	Design Value
Annual throughput	tpa	120,000
Nominal throughput	tph	20
Operating hours	H/annum	5,957
Gold feed grade	g/t	10
Gold recovery	%	92
Process Feed Size	F <sub>80,</sub> mm	300
	F <sub>100,</sub> mm	400
Unconfined Crushing Strength	MPa	89
Bond Crushing Work Index	kWh/t	13.3
Bond Ball Mill Work Index	kWh/t	16.9

# 4.9.3 Facility Description

# Crushing

ROM material from the underground mine is trucked to the ROM pad. A front-end loader recovers the ore from the ROM pad and tips onto the Primary Grizzly to scalp out +400 mm rock. The +400 mm rock is recovered for either secondary breakage or if designated as waste, removed

to the waste dump, while the -400 mm (P95) is collected in the primary crusher feeder hopper and is conveyed into the Primary Crusher.

The plant feed conveyor is equipped with a belt magnet to remove tramp metal. Feed is presented to the Primary Cusher, a Horizontal Shaft Impactor (HSI). Product (<50 mm) is deposited onto the crusher product belt which then combines with Secondary Crusher product and passes under a second belt magnet to discharge onto the product screen feed conveyor.

## Screening

The product screen feed conveyor discharges onto the product screen. Wet screening is then undertaken on two decks. The top deck is 8 mm x 25 mm slotted apertures, and the bottom deck is 1 mm x 18.5 mm slotted apertures (cross flow to avoid passing slabby material). The top deck protects the lower deck and reduces the load on the bottom deck. Both deck oversize streams are combined and discharged through a 50 mm static screen via a common oversize chute. The oversize chute discharges onto the secondary crusher feed conveyor. The secondary crusher (vertical shaft impactor) crushes the product screen oversize and discharges onto the crusher product conveyor.

#### Batch Centrifugal Concentrator

The undersize slurry from the product screen reports to the BCC feed cone from where it is pumped to the coarse gravity circuit. Water is recovered from the cone overflow and is recycled in the process water system. The BCC feed cone underflow pump pumps to the BCC feed distributor. The distributor diverts the slurry to either BCC feed or BCC bypass. The BCC runs a batch cycle, recovering approximately 30 kg of concentrate per ~45-minute cycle. The concentrate is washed into a transportable concentrate kibble and the tails flows via gravity to the Fines Screen. Fluidisation and Wash water (Raw Water) is added via the raw water system. The concentrate accumulates within the kibble, while de-watering into the bunded area.

The secured kibble is transported to the Gold Room for batch tabling. Gold is recovered, dried and smelted.

#### Fine Screen and Milling

The BCC tail flows via gravity to the Fines Screen. The screen oversize material (+1 mm) flows by gravity into the Mill for grinding whilst the undersize material (<1 mm) is collected in the spiral feed hopper. The ground slurry leaving the Mill discharges to the Mill Discharge Hopper and is pumped to the BCC Feed Cone creating a recirculating load.

# **Spiral Concentrators**

Fines Screen Undersize is pumped to the spiral bank distributor. The distributor feeds the individual spiral starts of which there are 24. Each 'start' produces a concentrate and tailings stream which are collected separately in a launder system. Concentrate reports via gravity to the Mill discharge hopper, effectively creating a fine gold recirculating load. The spiral tails launder discharges via gravity into the Tails De-watering cone.

## **Dewatering and Tails**

The Tailings dewatering cone is fed from the spiral tails launder, an area spillage pump and, if required, flocculant. The tailings cone underflow is pumped to the TSF. The cone overflow reports to the process water tank for re-use as process water.

The key mechanical equipment and parameters are summarised in Table 4.9.

Table 4.9 – Mechanical equipment parameters

Item	Unit	Design Value
Primary Crusher	type	Jaw Crusher 600x400
Installed Power	kW	30
Secondary Crusher	type	Jaw Crusher 510x255
Installed Power	kW	15
Tertiary Crusher	type	Vertical Shaft Impactor
Installed Power	kW	90
Product Screen	type	Double Deck Horizontal Linear Motion
Size	WxL	1800 x 4800
Screen Apertures	Top, mm Bottom, mm	8 x 25 1.6 x 18.5
Grinding Mill	type	Overflow Ball Mill
Mill dimensions	m x m	1.55 x 1.5
Installed mill Power	kW	37
Fine Screen	type	Double Deck Horizontal Linear Motion
Size	WxL	1400 x 3000
Screen Apertures	mm	1 x 18.5
BCC	type	Falcon SB400 and Falcon FR400
InLine Pressure Jig	type	IPJ1000
InLine Spinners	type	ISP02
Shaking Table	type	Wilfley 6A

## 5 PROJECT CAPITAL AND OPERATING COSTS

# **5.1** Capital Costs

Total pre-production capital costs were estimated to be \$38.2 million as summarised in Table 5.1. All operating costs prior to Month 11 (the commencement of processing operations) have been capitalised.

Table 5.1 - Capital Expenditure Summary

Item	Estimate \$ millions		
Pre-production Mining	21.1		
Processing Plant	7.2		
Sustaining Capital	6.6		
Exhibition Flats Admin Precinct	1.0		
Pre-production G&A	1.6		
Patriarch Flats Services Area	0.6		
Prince Alfred Hill Borefield	0.06		
Total Capital expenditure	38.2		

## 5.1.1 Mining

Pre-production mining expenditures totalled \$21.1 million, which included all mining costs prior to the commencement of ore processing and revenue. The key components of estimated capital expenditures for the mining area are summarised in Table 5.2.

**Table 5.2 – Mining Capital Expenditure** 

Item	Capital \$ millions	Operating \$ millions	Total \$ millions
Mobile Equipment	1.1	6.5	7.6
Light Vehicles	0.1	0.4	0.5
Generators & Electrical Equipment	0.4	2.0	2.4
Fans, Pumps & Compressors	0.3	1.2	1.5
Portal Sets	0.4	0.0	0.4
Mines rescue	0.4	0.0	0.4
Other	1.3	0.3	1.6
Total equipment expenditure	4.0	10.4	14.3

# **Establishment**

Included in mobilisation expenditures are:

- Electrical services establishment \$1.00 million
- Underground communications systems \$0.25 million
- Miscellaneous \$0.4 million

# **Equipment**

It was assumed that mobile and fixed plant for the underground mine would be subject to leasing arrangements, with costs substantially accrued in the operating expenditures. Total equipment expenditures are detailed in Table 5.3.

Table 5.3 – Mining Equipment Ownership Cost Estimate

		•	
	Capital	Operating	Total
ltem	\$ millions	\$ millions	\$ millions
Mobile Equipment	1.2	6.5	7.7
Light Vehicles	0.1	0.4	0.5
Generators & Electrical Equipment	0.7	2.0	2.7
Fans, Pumps & Compressors	0.4	1.1	1.5
Portal Sets	0.4		0.4
Mines rescue	0.4		0.4
Other	0.8	0.3	1.1
Total equipment expenditure	4.0	10.3	14.3

# 5.1.2 Processing

The capital cost estimate of the Processing Plant is summarised in Table 5.4 and was estimated to cost \$7.9 million. Full detail Gekko's estimate is provided in APPENDIX 1.

**Table 5.4 – Processing Plant Cost Estimate** 

Hill End Gold Processing Plant Cost Estimation				
Total Project Cost	\$3,586,083			
Total: Direct Capital Equipment Cost	\$2,291,364			
Primary and Secondary Crushing	\$1,201,661			
Gravity and Milling	\$406,531			
Fine Gravity	\$26,362			
Gold Room and Equipment	\$4,176			
Tailing Dewatering and Pumping	\$77,223			
Plant Services	\$121,634			
De-mobilisation of Morningstar	\$453,776			
Total: Site and Mobilisation Cost	\$743,256			
Shipping	\$123,804			
Installation Management and Supervision				
Site Installation	\$401,536			
Site Commissioning	\$217,916			
Indirect Costs	\$551,463			
Engineering, Design, Drafting and Planning	\$360,191			
Project Delivery	\$191,272			

#### 5.1.3 Other infrastructure

Capital estimates include provision for an administration area at Exhibition Flat, and the establishment of a power generation and fuel storage area at the Patriarch shaft area.

## 5.2 Operating Costs

## 5.2.1 Mining

The cost of mining was estimated from first principles and assumed an owner-operator mining strategy. Total life of mining costs were estimated to be \$84.6 million as summarised in Table 5.5.

Table 5.5 – Development and Operating Cost

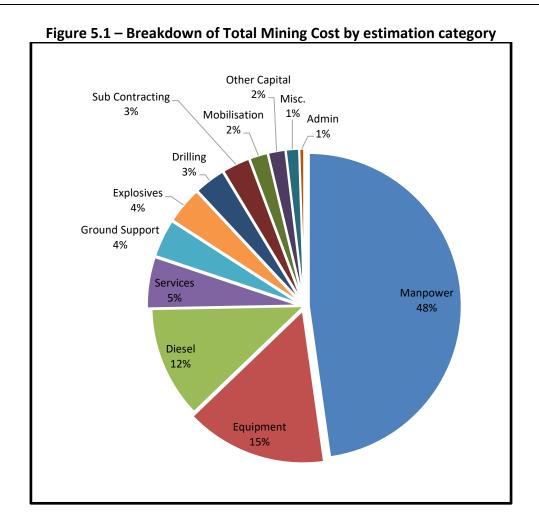
	11.14			3/ 0	
Item	Unit	Year 1	Year 2	Year 3	Total
Capital Expenditure	\$ millions	14.7	4.7	1.0	20.4
Operating Expenditure	\$ millions	8.1	34.1	19.9	62.1
Total	\$ millions	22.8	38.8	20.9	82.5
Development Cost Production Cost	\$ millions \$ millions	21.2 1.6	19.7 19.1	9.3 11.5	50.2 32.3
Total	\$ millions	22.8	38.8	20.9	82.5
Development Cost Stope Cost	\$/metre \$/tonne mined	9,248 198	7,208 245	8,724 309	8,241 261
Total Operating Cost	\$/tonne processed	406	309	389	342

The estimated unit rate for the development of 3.5m wide x 3.5m high drives, declines and inclines was \$8,743 per metre of advance.

The average cost of stope production was \$255 per tonne stoped.

The average operating cost of production for underground mining, inclusive of operating development and stoping was \$318 per tonne processed.

Figure 5.1 shows the breakdown of total cost by estimation category. Costs associated with employment costs comprised 48% of the total cost, while equipment ownership and operating costs was 15% and fuel 12% of the total. These items account for 75% of the total estimated mining cost.



# 5.2.2 Processing

Process operating costs were estimated by Gekko to be \$33.52 per tonne of ore treated as shown in Figure 5.2.

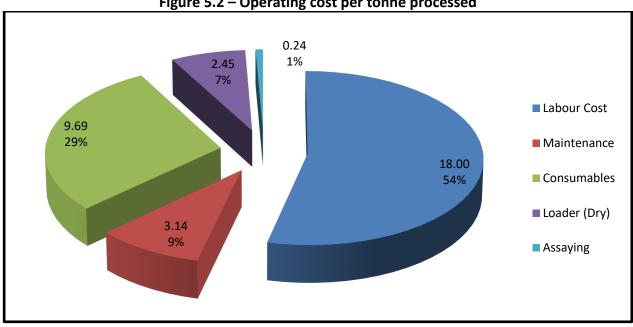


Figure 5.2 – Operating cost per tonne processed

In order to better reflect the fixed cost of some items, particularly labour, a fixed rate of \$144,000 per month and a variable cost of \$15.52 per tonne processed were used in cash flow models. This was done to reflect higher costs in months when the process plant is not fully utilised. Over the life of the project, processing costs average \$33.77 per tonne processed.

## 5.2.3 Tailing Management

The operating cost of managing tails materials into a dry stack facility was estimated to be \$6.65 This estimate included the cost of clearing vegetation and topsoil, per tonne placed. transportation of tailing sand using truck and excavator operations, shaping of final landform and rehabilitation. The estimate is summarised in Table 5.6.

Table 5.6 - Cost estimate of dry stacked sand

		Unit		Annual	
Item	Unit	Rate	Quantity	Cost \$	Comment
Excavator & truck					
operations	\$/t ore	4.63	120,000	555,244	dry stacking sand
Dozer operation	\$/t ore	2.03	120,000	243,282	clearing & rehab
Total	\$/t ore	6.65	120,000	798,526	

# 5.2.4 General and Administration

Life of mine G&A costs were estimated to be \$6.25 million, which equated to \$34.45 per tonne of ore processed. Of this total cost \$1.61 million was capitalised prior to the commencement of production.

Allowances were made for administrative staff, general administration expenditures, operational equipment including a Hino 8 tonne truck, and a Toyota Hiace bus and two light vehicles. G&A expenditures per tonne processed is summarised in Figure 5.3.

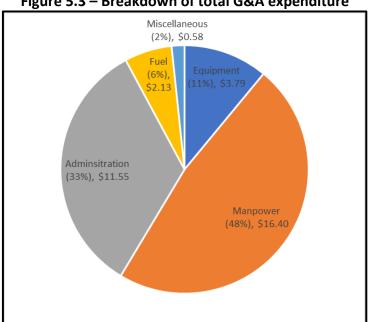


Figure 5.3 – Breakdown of total G&A expenditure

#### 6 PERSONNEL

Vertex has an existing crew processing low grade stockpiles. This team will transition into the Gold plant operators. Hill End and region also has the potential to provide up to a dozen further roles in Administration, Mining and processing.

Vertex plans to operate the mine with a 3-panel roster, with employees working two weeks on and one week off. Additionally, crews will predominantly work a 10 hour shift with allowance of 2 hours travel time per day. The Company plans to operate a daily bus service from Bathurst. This is a significant allowance with the aim of attracting skilled people to the region. Vertex will prioritise the employment of local people before seeking employees from further away.

Total labour requirements was estimated to be 70 full time employees, as detailed in Table 6.1.

Table 6.1 - Estimate of Project Labour

Area Employed	Salaried	Wages	Total
Administration	6		6
Technical Services	9	3	12
Mining	7	33	40
Processing	1	11	12
Total	23	47	70

#### **7 FINANCIAL RESULTS**

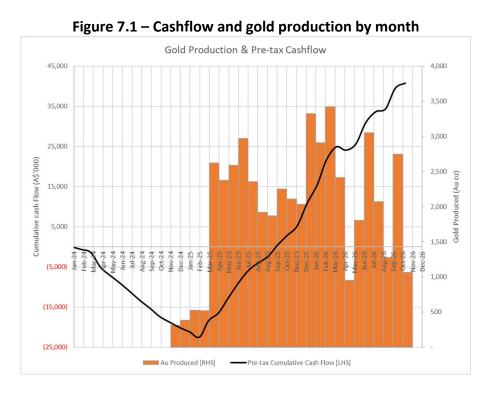
Table 7.1 provides and quarterly summary of the key physical and financial parameters for the project. The cash flow was reported before taxation as the Company has not finalised its tax filings for the previous year and there are tax losses that can be applied to future earnings.

Unit Total FY 2 Parameter PHYSICAL Ore Processed kt 181 g/t Au 9.3 6.8 8.4 10.5 Grade Contained Au 54 0.8 26.3 30 koz Process Recovery 92% 92% 92% 92% Recovered Au koz 27 FINANCIAL Gross Revenue \$m 150 72 75 Royalties \$m Operating Expense \$m (38)(34)Sustaining Capital \$m (10)(6) Capital (preproduction) \$m 0 Pre-tax cashflow \$m (20)

Table 7.1 - Schedule and Cash Flow

The pre-tax free cash flow was estimated to be \$35.7 million for the life of project. The Net Present Value of the project, calculated at a discount rate of 7%, (NPV<sub>7%</sub>) was estimated to be \$28.3 million. This equates to an Internal Rate of Return (IRR)

Figure 7.1 illustrates cumulative cashflow and gold production by month.



# 8 SENSITIVITY ANALYSIS

Analysis was completed to understand the projects sensitivity to the gold price. Table 8.1 and Table 8.2 sumarise the impact of a 10% and 20% reduction in gold price on the Project's pre-tax cashflow.

Table 8.1 – 10% reduction in gold price (A\$2,700/oz)

			YEAR	YEAR	YEAR
Item	Unit	Total	1	2	3
PHYSICAL					
Ore Processed	kt	181	4	97	81
Grade	g/t Au	9.29	6.8	8.4	10.5
Contained Au	koz	54.2	0.8	26.3	27.2
Process Recovery		92%	92%	92%	92%
Recovered Au		50	0.7	24.2	25.0
FINANCIAL					
Gross Revenue	\$m	135	2	65	68
Royalties	\$m	(5)	(0)	(3)	(3)
Operating Expense	\$m	(75)	(3)	(38)	(34)
Sustaining Capital	\$m	(10)	(2)	(6)	(3)
Capital (pre-					
production)	\$m	(17)	(17)	0	0
Pre-tax cashflow	\$m	26	(20)	18	28

Table 8.2 - - 20% reduction in gold price (A\$2,400/oz)

	20,010,000,000,000,000,000,000,000,000,0				
			YEAR	YEAR	
Item	Unit	Total	1	2	
PHYSICAL					
Ore Processed	kt	181	4	97	
Grade	g/t	9.29	6.8	8.4	
	Au				
Contained Au	koz	54.2	0.8	26.3	
Process Recovery		92%	92%	92%	
Recovered Au		50	0.7	24.2	
FINANCIAL					
Gross Revenue	\$m	120	2	58	
Royalties	\$m	(5)	(0)	(2)	
Operating Expense	\$m	(75)	(3)	(38)	
Sustaining Capital	\$m	(10)	(2)	(6)	
Capital (pre-					
production)	\$m	(17)	(17)	0	
Pre-tax cashflow	\$m	12	(21)	11	

A 10% reduction in gold price reduced the pre-tax cash flow to \$21 million while a 20% reduction resulted in a pre-tax cashflow of \$7 million.

#### 9 PERMITTING AND APPROVALS

## 9.1 Summary of Titles Granted under the *Mining Act 1992* (NSW)

The Mining Leases that comprise the Project are listed in Table 9.1. All tenements are 100% held by Vertex.

Vertex Current GL 5846 Switchback Minerals 15/02/1968 07/12/2024 (Renewal 2.044 ha \$450.91 \$496,000 \$496,000 Limited Vertex Pending) Current Consolidated (Group (Group ML 49 Minerals 30/07/1975 07/12/2024 (Renewal 1.618 ha \$100 \$450.91 Security) Security) Limited Pending) Vertex Current West Nuggetty (Renewal Pending) ML 50 Minerals 30/07/1975 07/12/2024 3.02 ha \$100 \$450.91 Limited Vertex Current ML 315 South Star 08/12/1976 07/12/2024 6.671 ha \$100 \$450.91 Minerals (Renewal Limited Pendina) Vertex Current ML 316 South Star 08/12/1976 07/12/2024 8.846 ha \$100 \$450.91 Minerals (Renewal Limited Pendina) \$100 \$450.91 MI 317 South Star Minerals 08/12/1976 07/12/2024 (Renewal 7 ha Pending) Limited Vertex Consolidated -ML 913 Minerals 20/01/1981 19/01/2033 22 ha \$143 \$450.91 Current Amalgamated Limited Vertex ML 914 South Star Minerals 20/01/1981 19/01/2033 Current 21.69 ha \$140.99 \$450.91 Limited Vertex ML 915 04/02/1981 03/02/2033 13.27 ha \$100 \$450.91 Goldconda Current Minerals Limited Vertex Current ML 1116 28/03/1984 16/10/2024 15.71 ha \$102.12 \$450.91 Fosters Minerals (Renewal Limited Pending) V ertex Current Patriarch -ML 1541 Minerals 17/10/2003 16/10/2024 279.2 ha \$1,814.80 \$450.91 (Renewal Pending) Limited

Table 9.1 - Tenement List and status

#### Notes:

• Renewal applications for Mining Leases may be lodged not earlier than five (5) years and not less than one (1) year before the expiry date.

GL 5846 was granted on 15 February 1968 to Silver Orchid Pty Limited ("Silver Orchid") and subsequently renewed until 7 December 2019.

ML 49 and ML 50 were granted to Roland Walton on 30 July 1975 for a term of 21 years. ML 49 and ML 50 were transferred to Silver Orchid on 30 September 1983 and were subsequently renewed by Nugget Resources Australia Pty Ltd on 21 August 2000 until 7 December 2019.

ML 315, ML 316 and ML 317 were granted to Tambaroora Turon Goldfields NL on 8 December 1976 for a term of 21 years. ML 315, ML 316 and ML 317 were transferred to Silver Orchid on 8 September 1983 and were subsequently renewed by Nugget Resources Australia Pty Ltd on 21 August 2000 until 7 December 2019.

ML 913 and ML 914 were granted to Joseph James Clift on 20 January 1981 for a term of 21 years. ML 913 and ML 914. On 16 December 1981 an agreement over these MLs was made with Robert Bruce Cleaver. The Leases were transferred to Silver Orchid on 27 December 1990 and were subsequently renewed by Nugget Resources Australia Pty Ltd on 20 January 2002 until 19 January 2023.

ML 915 was granted to Joseph James Clift and Beryl Lucinda Howard on 4 February 1981 for a term of 21 years. The Lease was transferred to Robert Bruce Cleaver on 26 September 1984 and then transferred to Silver Orchid that same day. The Lease was subsequently renewed by Nugget Resources Australia Pty Ltd on 4 February 2002 until 3 February 2023.

On 10 June 1982, Silver Orchid amended an agreement initially made on 18 March 1982 with First Tiffany Resource Corporation (Tiffany) (Ontario Corp Number 584333) for Tiffany to obtain a 20% free carried interest until presentation of an "economic feasibility study". This agreement included EL 2035, EL 2036, EL 2037, GLs and MLs that Silver Orchid had an interest in at the time.

On 2 August 1983, Silver Orchid entered into a joint venture agreement with Northern Gold NL (Northern Gold). On 6 May 1987, Northern Gold withdrew from the joint venture.

ML 1116 was granted to Silver Orchid on 28 March 1984 for a term of 21 years. The Lease was subsequently renewed by Hill End Gold Limited until 16 October 2024.

On 25 June 1993, Silver Orchid and Tiffany entered into a joint venture agreement with Big Nugget Partnership. Big Nugget Partnership subsequently vendored to Nugget Resources Inc. (Nugget). The agreement covered GL 5846, ML 49, ML 50, ML 315, ML 316, ML 317, ML 913, ML 914 and ML 1116 as well as EL 2037.

In May 1995, Nugget ceased exploration work in dispute with Silver Orchid as Silver Orchid was not contributing pro rata to the joint venture following the agreed initial expenditure by Nugget. The matter was resolved in the Warden's Court on 23 May 1996 that Nugget held 62.96% of 80% and a 5% non-contributory interest, Silver Orchid held 37.04% of 80% and Tiffany held a 15% non-contributory interest. Silver Orchid's interest was to be further diluted by 1% for every \$10,000 (Canadian dollars) spent by Nugget. Silver Orchid subsequently elected not to contribute to the joint venture and was diluted to 0% interest.

GL 5846, ML 49, ML 50, ML 315, ML 316, ML 317, ML 914, ML 915 and ML 1116 were transferred from Silver Orchid Pty Ltd to Nugget Resources Australia Pty Ltd on 15 November 1999. Nugget Resources Australia Pty Ltd subsequently converted to Nugget Resources Australia Limited (a public company) on 10 September 2001.

On 26 September 2002, Nugget Resources Australia Limited. changed its name to Hill End Gold Limited and undertook an initial public offering (IPO) and sought to list on the Australian Securities Exchange (ASX) to raise sufficient capital to develop the Reward deposit.

ML 1541 was granted to Hill End Gold Limited on 17 October 2003 for a term of 21 years. Since ML 1541 was granted over part of EL 2037 (subsequently EL 5868), the conditions of agreements relating to EL 2037 carry through to ML 1541.

In 2018, applications for the renewal of GL 5846, ML 49, ML 50, ML 315, ML 316 and ML 317 were lodged with the former Department of Planning and Environment, Division of Resources and Geoscience (now known as the Department of Regional NSW, Division of Mining, Exploration & Geoscience ("Department")). In 2019, the renewal of the abovementioned Mining Leases was approved by the Department for a further term of 5 years, ending 7 December 2024.

Peak Minerals Limited ("PUA") and Vertex were engaged in negotiations to transfer PUA's NSW assets to Vertex. An agreement was subsequently entered into and an application for approval to transfer the Hill End and Hargraves gold projects to Vertex was lodged on 7 January 2022. Following grant of approval, an application to register the transfer was lodged on 31 May 2022. Vertex successfully acquired and became registered as the holder of the Hill End and Hargraves project tenements on 16 June 2022.

During this time, on 18 January 2022, applications for the renewal of ML 913, ML 914 and ML 915 were lodged with the Department by PUA and were granted in Vertex's name as a result of the above-mentioned transfer for the reduced terms of 10 years.

More recently, renewal applications for ML 1541 and ML 1116 were lodged by Vertex on 11 October 2023. Further, renewal applications for GL 5846, ML 49, ML 50, ML 315, ML 316 and ML 317 were lodged by Vertex on 5 December 2023. The above-mentioned renewal applications remain pending at the time of this PFS, during which the titles will continue to be deemed as current under the *Mining Act 1992* (NSW).

## 9.2 Summary of Approvals and Permits

An overview of the current approvals granted in respect of the Reward Gold Mine have been provided in Table 9.2.

## **Table 9.2 – Current Approvals**

Approval	Relevant Authority	Grant Date	Expiry Date
DA 147/2000	Evans Shire Council (Now Bathurst Regional Council)	27/06/2000	N/A
EDA 2000/0147 (Modification to DA 147/2000)	Bathurst Regional Council	2/01/2008	N/A
EPL 12008	EPA	16/04/2004	N/A
80BL239113	WaterNSW	31/07/2001	30/07/2026

Development Consent No 147/2000 for the Reward Gold Mine was granted by the Evans Shire Council (now part of the Bathurst Regional Council) on 27 June 2000 for the purposes of 'Extractive Industry – Underground Gold Mine'.

A modification to Development Consent No. 147/2000 was submitted in late 2007 for the Reward Shaft development. The Bathurst Regional Council approved the modification in January 2008.

The Reward Gold Mine development is an integrated development (Section 91 of the EP&A Act). It is a development that, as well as requiring a Development Consent, also requires one (or more) nominated state government agency approvals or licences. The approvals that are required for the proposed development include:

- Water Act 1912 (NSW) (Section 5). A water bore licence was granted on 31 July 2001, numbered 80BL239113 for the Amalgamated Adit discharge allowing 40ML per annum and expires on 30 July 2026.
- Protection of the Environment Operations Act 1997 (NSW) (Sections 43, 47 and 55). Environment Protection Licence for tailings water discharge. Licence No. 12008, renewed 16 April 2020. ("EPL 12008").
- The Reward Gold Mine is classified as a level 2 mine as it is a non-coal mine and not considered a state significant development.

#### **10 ENVIRONMENT AND SOCIAL**

### 10.1 Values and Vision

Vertex is committed to building legitimate Environmental, Social, Governance (ESG) credentials. We acknowledge the importance of incorporating ESG into our business model for ethical and financial reasons and we know that a strong environmental, social and governance performance is essential for the success and growth of the Company's business and for our community. VTX's primary objective is to deliver maximum shareholder value through profitable growth and the development of stable and sustainable projects whilst acting lawfully, ethically, and responsibly.

We have commenced ESG reporting as a tangible first step in our ESG journey and published our first baseline reports this year through the global Software-as-a-Service (SaaS) enterprise Social Suite with their 'ESG Go' platform. Through this platform we apply the World Economic Forum's (WEF) framework of ESG metrics and make disclosures based on what it refers to as the four pillars:

- Principles of Governance
- Planet
- People and
- Prosperity

The platform allows us to address, report on and share our disclosures across the 21 themes, which includes but is not limited to: diversity and inclusion, anti-corruption practices, water consumption, and economic contribution data, using the WEF Framework Metrics. This information and analysis inform our internal decision-making and business strategies and it allows investors to see that we are actively engaged in ESG analysis and goal setting, aiming to be a good corporate citizen, responsible environmental steward and that we are led by accountable management.

## 10.2 Environmental

Vertex operates in the Australian mining sector, an industry which is highly regulated. To successfully conduct our exploration and mining projects and activities we must meet the standards and criteria of the NSW Resources Regulator and other government authorities such as the Environmental Protection Agency. Our activities are subject to ongoing assessment, with an obligation to continually prove that we are meeting required standards, conditions, and regulations to achieve and maintain compliance and approvals from the NSW Regulator. Land use, environmental monitoring and rehabilitation are all important considerations in all VTX projects.

The VTX Board aims to ensure that economic, environmental, and social considerations are integrated into our strategy, decision-making, risk and opportunity management, operating policies, processes, and systems. We have made full disclosures (and have begun assessment work where that has not been possible) through Social Suite on all the metrics across 21 themes which are all available on our website. The Environmental disclosures referred to under the 'Planet' metric include TCFD (Taskforce on Climate-Related Financial Disclosures), GHG (Greenhouse Gas Emissions), Land Use and Key Biodiversity Areas and Water Consumption.

#### **10.3** Social and Social Returns

As a responsible explorer transitioning to gold producer, VTX acknowledges its role in protecting the natural environment, reducing global greenhouse gas emissions, and improving people's lives now and for generations to come. VTX believes that a strong ESG performance creates shared value for workers, communities, investors, and broader society.

Our ESG reporting aligns with the WEF Framework but also with the United Nations 17 goals to transform our world which it describes as 'Sustainable Development Goals' (SDGs). These goals include but are not limited to: good health and well-being, decent work and economic growth, sustainable cities and communities, reduced inequalities and responsible consumption and production. VTX understands that our operations make an economic contribution to our communities and support our society's progress – we have social responsibilities.

The 'Social' and 'Governance' components of our ESG reporting consists of disclosures under 'People' and 'Prosperity' on the Social Suite platform and these disclosures are contained on our website. They include but are not limited to reporting on: diversity and inclusion, modern slavery, health and safety, plus data on our economic contributions and taxes paid.

Investment in our skilled workforce while also listening to, working within and collaborating with local communities and wider civil society allows us to support and improve local goals and aspirations, improve environmental outcomes and drive our business. We aim to be a responsible producer of gold – one of the critical minerals required to support a sustainable, net-zero future.

## 11 SUSTAINABILITY

The Company considers the Reward Gold Mine to be one of Australia's most sustainable new mining developments. This idea is supported by the following attributes:

- Gold processing does not require the use of cyanide to achieve high metallurgical recovery (92%).
- No other chemicals are used in the production of gold concentrates.
- Process tailings are inert and are may potentially be suitable for other construction and industrial uses.
- Gold is liberated at a coarse grind size, which means low energy requirements in comminution.
- The coarse grind size also improves the recycling of water from process residue.
- Low surface impact because production is from an underground mine.

#### 12 FUNDING REQUIREMENTS

Financing for the development of the Project was not secured at the time this report was prepared, which is typical for a PFS stage project. Vertex plans to initiate discussions with suitable parties using this study as the primary source of information with these parties.

Potential funding instruments include the following:

- Equity;
- Senior secured project debt finance;
- Secured corporate bond;
- Pre paid off take arrangements and other forms of off taker finance; and/or
- Secondary secured (mezzanine) debt.

Overall, the Company's Board of Directors considers that, based on the positive PFS, that this project will be a low environmental impact gold project. The project has been de-risked by way of successful trial mining and processing, and there is already significant infrastructure and permits in place.

The Projects economics support a decision to invest, given that the Project is forecast to generate \$41M of free cash (pre tax) over the PFS LOM.

The projected cash flows can support sufficient debt funding of the total construction CAPEX, while meeting typical project debt financing requirements:

- Pre-tax NPV<sub>7%</sub> of A\$33.3m, a robust IRR of 110% (above typical returns sought by investors of circa 20%) and payback period of 6 months from production and 12 months from start of development
- Total cash draw down of A\$19m which includes A\$17m in pre-production capital.
- The project is in a Tier- 1 gold mining jurisdiction in NSW Lachlan fold Belt 45km North of Bathurst and 3.5hrs drive west of Sydney.
- The project has significant upside with 34km of strike.
- The Board, and senior management have substantial experience in financing and developing projects in Australia and overseas and have the appropriate mix of skills to manage and direct the progression of the project through funding, construction, commissioning and into operations.
- The company has no debt.
- The company owns 100% of the projects.
- The project is fully permitted on long standing Mining Licences.
- The Company already has a significant asset base.
- ABC Refineries are signed to a gold refining agreement.
- Physical gold can be utilised for loan repayment purposes.
- Vertex is an ethical and sustainable gold producer.

### 13 OPPORTUNITIES

Key opportunities identified during the 2023 PFS include, but are not limited to:

- Optimise stope pillar locations to maximise the extraction of higher grade areas of the orebody.
- Optimise development and stope schedules to improve ore supply and cash flow.
- Upgrade the Inferred Mineral Resource not presently included in production schedules (via drilling or strike development) to extend the life of mine.
- Explore below and on strike of the current resource with cost affective UG diamond drilling to extend life of mine.

#### 14 RISKS

## **14.1** Economic Assumptions

The Reward Gold Mine project economics are most sensitive to those economic assumptions that affect Project revenues. Gross revenue is only generated from gold sales. A prolonged reduction in the gold price or a substantial strengthening of the AUD has the potential to significantly reduce the Project NPV end free cash flow generation of the Project. The financial model is based on flat USA denominated commodity prices and AUD:USD exchange rate that at the time of study completion represented an approximate discount to spot prices In AUD terms. Multiple factors may impact on the AUD denominated price of saleable products and other assumptions in the financial model.

#### **14.2** Mineral Resources and Production Inventory Estimates

Mineral Resource and production inventory estimates are expressions of judgement based on knowledge, experience, and industry practice at the time of the estimate. Estimates which were valid when originally calculated may alter significantly when new information or techniques become available. In addition, by their very nature, MREs are imprecise and depend to some extent on interpretations, which may prove to be inaccurate, in particular the grade or tonnage of payable commodities estimated in the MRE. As further information becomes available through additional drilling, mining or analysis, the estimates are likely to change. This may result in alterations to development and mining plans which may, in turn, adversely affect the Company's operations.

The production inventory and forecast financial information referred to in the PFS comprise Indicated Mineral Resource (75% of contained gold) and Inferred Mineral Resources (25% of

contained gold). The production inventory has been scheduled such that approximately 25% of the gold produced over the first 3 years of the project life is represented by Inferred Mineral Resources. The Inferred Mineral Resources included in the production inventory does not have a material effect on the technical or commercial viability of the Project. There is a lower level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production inventory will be achieved.

## 14.3 Mining Risks

The operational aspects of development and production as they relate to mining at Hill End are generally considered low risk for an underground operation. Geotechnical and hydrogeology assessments and how those conditions may affect the mining process are considered adequate for this PFS level of Study. Given the mining process has been trialled in 2008 to 2010, Vertex has a good knowledge of the ground conditions.

Underground mining is intended to be undertaken by the company. The company is confident of its ability to run a mining operation effectively, efficiently, and safely, given the underground experience of the Directors and key staff. Vertex is confident that the owner-operator is the optimal choice to achieve the best outcomes for the high-grade resource that comprises the operation. An owner-operator model will be better incentivised to deliver production, manage dilution and provide flexibility around mining priorities.

The mining costs are material in value and are derived from a first principles cost model based on a ground-up build approach considering key physical drivers, volumes and consumption rates, labour rates applied in addition to first principal costs. There is a risk that the costs applied may not reflect market rates, or market rates may change before rates are negotiated into a contract. There is a risk that key physical drivers, volumes, or consumption rates may vary from those used in this estimate.

## 14.4 Metallurgical Risks

Vertex has engaged Gekko Systems to undertake a range of desktop metallurgical reviews and mineralogical analysis basis on the 2008 trial mining and bulk sample work that Vertex has recently completed at its existing plant. Further, the Reward Ore body is a free milling coarse gold ore body with gold hosted in the quartz veins, with little sulphide mineralization in association. Gravity liberation processes achieve recoveries greater than 90%. The simplicity of the processing technology and the coarse particle size required to liberate gold results in low risk around this process. This does not mitigate metallurgical risk associated with processing other ore types or changes to the mineralization style.

## 14.5 Laws, Regulations, Rules, Approvals

The Company's operations will be subject to various Federal, State and local laws and plans, including those relating to mining, development permit and licence requirements, industrial relations, environment, land use, taxation, royalties, water, native title and cultural heritage, mine safety and occupational health. No assurance can be given that new rules and regulations will

not be enacted or that existing rules and regulations will not be applied in a manner which could limit or curtail exploration, production, or development.

The Reward Mine sits on a Mining Lease that is permitted to mine, process and deposit tails as at the time of writing the PFS. However, some further licenses will be required to recommence the underground operations including an explosive licence and an approval for the storage of explosives. Also, expansion of mine waste storage facilities will need additional approvals.

Mining operations can be subject to public and political opposition. Opposition may include legal challenges to development permits or approvals, political and public advocacy, electoral strategies, media and public outreach campaigns and protest activity, all which may delay or halt development or expansion.

## 14.6 Operational Risks

The Company's planned operations will be subject to uncertainty with respect to (among other things): ore tonnes, mined grade, ground conditions, metallurgical recovery or unanticipated metallurgical issues, infill resource drilling, the level of experience of the workforce, operational environment, regulatory changes, accidents and other unforeseen circumstances such as unplanned mechanical failure of plant or equipment, or the health and safety of its workforce, storms, floods, bushfires or other natural disasters. Mining operations could also suffer from poor design or poor reliability of equipment, impacts to supply chain, and transport of plant equipment and the workforce to and from site.

## 14.7 Amount of Capital, and Timing, to Commercial Production

The majority of the pre-production capital is associated with mine development and to a lesser extent the processing plant construction costs and then general infrastructure. The mine development is expected to take 10 months and the construction and commissioning schedule of the upgraded plant is conservatively assumed to be executed over a 6-month period. A key risk to the pre-production capital expenditure estimate is ensuring the Project engages a capable and experienced EPC contractor when required.

Another key risk is a delay in ramp-up from first production due to the inability to access capable and experienced mining staff, inability to achieve estimated productivity rates or other operational issues which may affect production (including geotechnical, hydrogeology, health, and safety). An increase in the amount of capital to commercial production or a delay in achieving commercial production levels will result in additional funding requirements, and if adequate

funding requirements are not available, the cost of the additional funding or dilutionary impacts of equity funding could be significant.

## 14.8 Capital expenditure and timing to production

Most of the pre-production capital is associated with mine development and to a lesser extent the processing plant construction costs and then general infrastructure. The mine development is expected to take 10 months and the construction and commissioning schedule of the upgraded plant is conservatively assumed to be executed over a 6-month period. A key risk to the pre-production capital expenditure estimate is ensuring the Project engages a capable and experienced EPC contractor when required.

Another key risk is a delay in ramp-up from first production due to the inability to access capable and experienced mining staff, inability to achieve estimated productivity rates or other operational issues which may affect production (including geotechnical, hydrogeology, health, and safety). An increase in the amount of capital to commercial production or a delay in achieving commercial production levels will result in additional funding requirements, and if adequate funding requirements are not available, the cost of the additional funding or dilutionary impacts of equity funding could be significant.

### 14.9 Finance Risk

Vertex is yet to seek to secure financing for the development of the Project. The Company is confident, that it will be able to obtain financing on acceptable terms. Notwithstanding, there is no guarantee that funding will be available or that it will be available on acceptable terms. Financing will be dependent on numerous factors, including the quantum of funding required, equity market sentiment; the share price of Vertex; interest rates; the cost, availability, and terms of debt; the outcomes of further studies and the outcomes of the approvals process. Obtaining sufficient financing for the development of the Project may result in the dilution of the Company's shareholders in the event that equity financing is required.

## 14.10 Availability of Labour

The resources sector is experiencing limited availability of skilled and professional staff, especially following the lifting of restrictions on travel following the COVID-19 pandemic. Since lifting of these restrictions, the labour market has eased somewhat, however, there remains a risk that suitable and adequately trained and experienced staff cannot be recruited in a timely fashion prior to Project development and commissioning and/or when needed in the future because of normal staff turnover.

Vertex plans to operate the mine with a 3-panel roster, with employees working two weeks on and one week off. Additionally, crews will predominantly work a 10 hour shift with allowance of 2 hours travel time per day. The Company plans to operate a daily bus service from Bathurst. This is a significant allowance with the aim of attracting skilled people to the region. Vertex will prioritise the employment of local people before seeking employees from further away.

The Project's location and amenity, proximal to Bathurst (74km), Mudgee (72km), Orange (123km) and the regional villages of Hill End (2km), Wattle Flat (45km) and Sofala (32km), and the relatively small size of the required workforce are both factors that mitigate and limit these risks.

## 15 ESTIMATED DEVELOPMENT TIMELINE

The estimated development time line to first production is summarised in Figure 15.1.

#### 16 INFORMATION PROVIDE IN ACCORDANCE WITH ASX LISTING RULE 5.9

## **16.1 Material Assumptions**

In accordance with the ASX Listing Rule 5.9.1, the following summary information is provided to assist in understanding the reported estimate of Ore Reserves.

The PFS was completed with the following material assumptions:

- Underground mining operations conducted by the owner.
- All ore is processed at 100% owned hill End Gravity Gold plant.
- Project implementation and oversight by management and emplyees in conjunction with suitably experienced contractors.
- Detailed metallurgical test work from samples collected from drilling representing ore domains within the project, and trial mining and processing from 2009 to 2010.
   Recoveries of 92% were applied.
- Processing costs based on Benchmarking and first derivative basis.
- Mineable stope shapes were designed, producing stopes with "planned internal dilution" a further dilution factor of 10% and stope mining recovery of 95% were applied to the design stopes, no recovery or dilution factors were applied to the ore drive development.
- All Inferred Resources were excluded from the stope optimisation process in the estimation of ore reserves.
- An Australian dollar gold price of \$3,000 per ounce was applied. NSW state royalties
  of 4% were subtracted from revenues as part of the optimisation process and in cash
  flow modelling.
- Bulk densities were derived from test work.
- A lower cut-off grade of 3.8 g/t was applied during mine design.

## **16.2** Criteria for Classification

Indicated Resources have been converted to Probable Ore Reserves subject to mine design physicals and an economic evaluation. There was no Measured Mineral Resource the resource used in this study.

Any inferred material contained within the mine plan has been treated as waste for Ore Reserve estimation purposes. All material has been assumed to be treated at the Hill End Gravity Gold processing plant.

## 16.3 Mining

Underground mining costs were sourced from first principals from other similar operations. All other costs including power, diesel, processing, general and administration and royalty calculations, as well as metallurgical recovery are as per the inputs documented in this announcement.

The Reward underground Ore Reserves estimate is based on mining methods, designs, schedule's, cost estimates and modifying factors which have been determined to a PFS level of accuracy (+/-25%).

Appropriate geotechnical analysis was provided by independent geotechnical consultant GCE.

The Ore Reserve mine plan was generated by running stope optimisation processes on the Resource followed by detailed development and capital infrastructure design.

All material was subjected to an economic evaluation in a detailed cost model underpinned by the PFS analysis.

The assumed gold price for the Ore Reserves was A\$3,000/oz.

The Competent Person has sufficient confidence that the Ore Reserve estimate will be financially viable within reasonably expectable range of possible commodity prices.

## 16.4 Processing Method

The processing method is a 120ktpa gravity only gold processing plant. As documented and outlined in this document.

## 16.5 Cut off Grade

Gold cut-off grade parameters for determining underground Ore Reserves were derived from detailed financial analysis. A gold price of A\$3000/oz was applied. The final derived cut off grade used for design and analysis are detailed in

Table 17.1 – Stope cutoff grade

<u> </u>		
Item	Unit	Quantity
Gold Price	\$/oz	3000
Metal recovery & royalty	%	88%
Stope cost	\$/t	255.14
Processing Cost	\$/t	40.42
G&A	\$/t	25.56
Total op cost	\$/t	321.12
Cut off grade	g/t Au	3.77

Table 17.2 – Development cutoff grade

Table Erie Detelopit		. 8
Item	Unit	Quantity
Gold Price	\$/oz	3000
Metal recovery &		
royalty	%	88%
Development cost	\$/t	236.37
Processing Cost	\$/t	40.42
G&A	\$/t	25.56
Total op cost	\$/t	302.35
Cut off grade	g/t	3.55

## 16.6 Estimation Methodology

The level of study carried out as part of this Reward gold project Ore Reserve is to a Pre-Feasibility Study level. The relative accuracy of the estimate is reflected in the reporting of the Ore Reserves as per the guidelines regarding modifying factors, study levels and Competent Persons contained in the JORC 2012 Code. The Ore Reserve estimate has only utilised the Indicated portion of this Resource based on the applicable cut-off grades and has applied the modifying factors based on the various dilution parameters determined by the performance of the underground geotechnical work, the applicable mining method and recovery factors, to generate the final diluted and recovered Ore Reserve.

## 16.7 Approvals, and infrastructure Requirements

Mining and processing operations are planned wholly within granted Mining Leases and with an approved Development Application. The Reward mine is located within an operating mining operation. Ground and underground water extraction licenses are in place for the project allow