ASX ANNOUNCEMENT

08 September 2022

MALLINA GOLD PROJECT

PRELIMINARY FEASIBILITY STUDY OUTCOMES

Substantial improvement since Scoping Study - increased grade, annual production, mine life, cashflow and NPV.

Maiden Hemi JORC Probable Ore Reserve of 5.1Moz @ 1.5g/t Au

Brolga starter pit provides cashflow for 2 year post tax payback

Mallina Gold Project refers to Hemi plus Regional Deposits

Production Profile and Maiden Reserve

- Average total annual gold production[1] of 540,000ozpa over the first 10 years
  - 550,000ozpa in years 1 to 5
  - Peak production of 637,000ozpa in year 5
- Hemi alone contributes average annual gold production of approximately 500,000ozpa over the first 10 years and 520,000ozpa in years 1 to 5
- Total production of 6.4Moz over a 13.6 year life of mine
- Maiden Hemi JORC Probable Ore Reserve of 103Mt @ 1.5g/t Au for 5.1Moz
- Increased production in the PFS is driven by increased Hemi Resources[2], JORC Resource confidence level and grade at all deposits, particularly Diucon and Eagle
- Hemi in production will be in the top five Australian gold mines[3] and is a top three global undeveloped gold development project[4] based on average annual gold production rates

Financial Metrics - Unleveraged

- Undiscounted free cashflow of $5.9 billion pre-tax and $4.2 billion post-tax
- Net Present Value (**$NPV_{5\%}$**) of $3.9 billion pre-tax and $2.7 billion post-tax
- Internal Rate of Return (**IRR**) of 51% pre-tax and 41% post-tax
  - Payback of 1.6 years pre-tax and 1.8 years post-tax
  - Average All-in Sustaining Cost (**AISC**) of $1,220/oz (Yrs. 1 to 5) and $1,280/oz (Yrs. 1 -10)
- Capital cost for the 10Mtpa plant and site infrastructure estimated to be $985M inclusive of $100M in growth allowance. Additional mine preproduction pre-strip capital cost of $68M
- Mallina will be in the lowest quartile of Australian producing gold mines[4] and one of the world's lowest capital intensive gold projects[5]

1 The mine plan contains approximately 13% Inferred Mineral Resources. An Inferred Mineral Resource has a lower level of confidence than an Indicated Mineral Resource and there is no certainty that further exploration work will result in the conversion of the Inferred mineralisation into an Indicated Mineral Resource.
2 Refer to ASX release of 31 May 2022, "Mallina Gold Project Resource Statement – 2022"
3 Refer to details provided in Appendix A of the Summary
4 Refer to details provided in Appendix A of the Summary
5 Refer to details provided in Appendix A of the Summary

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Production Confidence Levels

- Percentage of JORC Measured and Indicated Resources is 97% (Inferred 3%) over the first five years, 89% (Inferred 11%) over the first 10 years and 87% (Inferred 13%) over the current 13.6 year mine life
- Hemi deposits comprise approximately 95% of production over the first five years and approximately 85% of production over the first 10 years
- Mine scheduling software has targeted high grade, low strip ratio ore and with run of mine (ROM) stockpile management delivers an average feed grade over the first 10 years of 1.8g/t Au

Processing

- Nameplate plant throughput of 10Mtpa for the comminution, flotation and CIL circuits with pressure oxidation circuit throughput of 0.8Mtpa
- Average processing recovery of 93.6% over the life of mine from extensive testwork demonstrates excellent amenability of mineralisation to the flowsheet developed for the Project

ESG

- Extensive environmental baseline studies and testwork have been conducted across the Project since 2020
- Widespread community and traditional custodian engagement has been conducted including social impact assessments of the Project
- Engagement with the Kariyarra people on an agreement which provides employment, training, community programs and other benefits
- Heritage clearances have been completed over the Project development and operations area
- The decarbonisation plan forecasts the operation commencing at approximately 0.6 tonnes of CO_2 per annual ounce of gold production (**t.CO_2/ozpa**) reducing to approximately 0.3t.CO_2/ozpa by 2030 with further reductions in carbon intensity to be pursued
- Early adoption of grid based renewable energy planned with multiple options emerging within the North West Interconnected System

Project Development and Value Catalysts

- Commencement of a definitive feasibility study (DFS) in parallel with formal project construction funding discussions with financiers
- Final investment decision (FID) proposed for mid-2023 subject to statutory approvals
- Further catalysts for value accretion through continued de-risking of the project through project financing, DFS, project approvals and potential new discoveries

Outstanding Growth Potential during and beyond the DFS phase

The Mallina Gold Project has the potential to improve production profiles and mine life through:

- increasing the Resource base at Hemi and the Regional deposits through resource extension drilling. For example, the Company recently intersected[6] 359.4 metres at a grade of 1.2g/t Au at Diucon approximately 200 metres beneath the May 2022 MRE block model
- increasing production by conducting new pit shell optimisations in areas where Resources have been extended
- plant de-bottlenecking to increase nameplate throughput
- assessment of underground mining potential below PFS open pits
- new discoveries from ongoing exploration activities

6 Refer ASX announcement “Diucon major new gold intersection” 1 August 2022

Key PFS Outcomes and Assumptions

The PFS confirms that the Mallina Gold Project is a globally significant Tier 1 project and presents a potentially commercially viable development opportunity, with significant upside. A summary of the initial physical and financial evaluation of the Project at a 10Mtpa throughput rate is shown in Table 1 with additional details provided in the PFS Executive Summary.

Table 1: Production and Financial Outcomes and Assumptions

Key Production Outcomes	**Unit**	**Scoping Study**	**Prefeasibility Study**
Life of Mine	Years	10	13.6
Ore tonnes mined	Mt	100	136
Strip Ratio - Hemi	waste:ore	4.9:1	6.1:1
Ore processing rate - nameplate	Mtpa	10	10
Average processed grade	g/t Au	1.4	1.6
Average Metallurgical recovery	%	93.0	93.6
Average gold production (recovered) in first five years	oz pa	473,000	550,000
Average gold production (recovered) in first 10 years	oz pa	427,000	540,000
Recovered gold – million ounces	**Moz**	**4.3**	**6.4**
Financial Outcomes (at gold price of A$2,400/oz)			
All In Sustaining Costs (AISC)			
Average AISC in first five years	**$/oz**	**1,111**	**1,220**
Average AISC in first 10 years	**$/oz**	**1,224**	**1,280**
Net free cashflow (pre-tax)	**$ billion**	**3.9**	**5.9**
Net free cashflow (post-tax)	$ billion	2.9	4.2
EBITDA – Life of Mine	**$ billion**	**4.8**	**7.1**
Payback period (pre-tax)	Years	1.5	1.6
Payback period (post-tax)	Years	1.8	1.8
$NPV_{5\%}$ (pre-tax)	**$ billion**	**2.8**	**3.9**
$NPV_{5\%}$ (post-tax)	$ billion	2.0	2.7
Internal Rate of Return (pre-tax)	**%**	**60**	**51**
Internal Rate of Return (post-tax)	**%**	**49**	**41**
Capital Cost Estimate			
Plant and Infrastructure Capital Cost	$ million	665	885
Plant and Infrastructure growth allowance	$ million	170	100
Pre-Strip Capital Costs	$ million	58	68
Total Pre-Production Capital Costs	**$ million**	**893**	**1,053**
Key Environmental and Social (ES) Statistics			
LOM State Royalties & Corporate Taxes	$ billion	1.3	2.1
LOM Expenditure	$ billion	5.1	9.1
LOM Total Economic Value Add	$ billion	**6.4**	**11.2**
Carbon intensity	**$t.CO_2$/ozpa**	**0.8**	**0.6 – 0.3**

Hemi Maiden JORC Probable Ore Reserve

Mallina Gold Project Resources*									
Deposit	**Measured & Indicated**			**Inferred**			**Total**		
	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz
Hemi	139.1	1.3	5.8	74.1	1.2	2.7	213.3	1.2	8.5
Regional	18.9	1.7	1.1	18.5	1.9	1.1	37.4	1.8	2.2
Total	**158**	**1.4**	**6.9**	**92.6**	**1.3**	**3.8**	**250.7**	**1.3**	**10.6**

Hemi Ore Reserves #									
Deposit	**Proved**			**Probable**			**Total**		
	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz
Oxide				7.3	1.7	0.4	7.3	1.7	0.4
Transition				6.0	1.7	0.3	6.0	1.7	0.3
Sulphide				90.1	1.5	4.4	90.1	1.5	4.4
Total				**103.4**	**1.5**	**5.1**	**103.4**	**1.5**	**5.1**

The rounding in the above tables is an attempt to represent levels of precision implied in the estimation process and apparent errors of summation may result from the rounding.

* Refer to ASX release of 31 May 2022, "Mallina Gold Project Resource Statement – 2022"

Refer to Appendix B in this document for details

De Grey Managing Director and CEO, Glenn Jardine, commenting on the PFS outcomes:

"Today, we are announcing the results of the prefeasibility study into the Mallina Gold Project. We have been targeting material improvements in annual gold production rate, grade, mine life, confidence levels and project economics from last year's scoping study. I would like to acknowledge our people, business partners and stakeholders in achieving an outstanding set of results following months of intense effort.

Total production has increased by nearly 50% from the scoping study to 6.4Moz with the annual gold production rate increasing by around 25% to 540,000ozpa over the first ten years.

The increased production has been achieved at increased levels of JORC Measured and Indicated Resources within the production profile averaging close to 90% over the first ten years of production compared with 70% in the scoping study.

Today, we also announce the maiden Hemi JORC Probable Reserve of 5.1Moz @ 1.5g/t Au, one of the largest and highest grade maiden Reserves in recent decades.

The maiden Hemi Reserve leverages off the Hemi Mineral Resource update announced in May this year of 8.5Moz @ 1.2g/t Au of which 5.8Moz @ 1.3g/t Au are of JORC Indicated classification. This represents an impressive increase in Indicated Resources at Hemi of 3.0Moz over the maiden Resource announced in 2021. This increase and the high conversion rate of the Indicated Resource to Probable Reserve was achieved by targeted resource definition drilling within preliminary pit shell optimisations regularly conducted over the Hemi deposits during the PFS. In addition, the Company saw increased resource grade at most Hemi deposits from resource definition drilling conducted over the past twelve months, particularly at Diucon and Eagle where the average combined Resource grade increased by over 30% from 0.9g/t Au to over 1.2g/t Au.

We remain enthusiastic about the prospect of increasing Resources and Reserves at Hemi and the Regional deposits with continued resource extension drilling. We recently announced mineralised

extensions to Diucon in diamond hole HEDD128 which intersected 359.4 metres at a grade of 1.2 g/t Au, including 19.3m @ 7.4g/t Au and 2.0m @ 22.5g/t Au, 200 metres beneath the May 2022 Resource.

Extensive metallurgical testwork conducted during the PFS has continued to de-risk the Project and demonstrated consistently high gold recoveries, averaging 93.6%. These recoveries have been achieved across the deposits at Hemi using the robust flowsheet developed during the PFS. The PFS processing study settled on pressure oxidation as the preferred oxidation process for the Project. Pressure oxidation and the comminution circuit selected for the Project are both widely and successfully used at other large scale gold mines.

The net present value of the Project on a post-tax basis has increased by approximately 35% to $2.7 billion from $2.0 billion in the scoping study.

Capital costs of the plant and infrastructure have increased by approximately 15% to $985M from the scoping study, which is not unexpected, given economic conditions as they relate to inflationary pressures. The Company made an allowance of around $170M in the scoping study for growth. The more accurate PFS capital estimate includes $100M as a growth allowance. An additional $68M has been estimated for pre-stripping ahead of gold production. The PFS capital estimate has taken place at a time in the economic cycle where cost inputs are high and potentially at peak levels.

Despite the capital cost increase, the payback period of the project remains below two years with an excellent internal rate of return of approximately 50%, underlining the quality of the Project and its insensitivity to capital cost.

The Project has one of the lowest capital cost intensities of any large scale, undeveloped gold project on a global basis and with operating costs remain within the lowest cost quartile of Australian gold producer operating costs.

The Company has incorporated ESG principles in its decision making process during the PFS. In addition, the PFS decarbonization plan shows the Project commencing at a carbon intensity of 0.6 tonnes of CO_2 per annual ounce of gold production reducing to 0.3t.CO_2/ozpa. The reduction is planned to be achieved through a combination of increased use of renewable energy and transition of the mobile equipment fleet away from diesel. Further opportunities to decrease carbon intensity will be pursued.

The results of the PFS are compelling and confirm the Project status as a Tier 1 gold asset. The PFS provides justification that the Project is commercially viable and accordingly will progress to a definitive feasibility study (DFS) expected for completion in mid-2023.

In parallel with the definitive feasibility study, the Company will engage further with potential Project financiers to achieve an appropriate Project funding outcome by mid-2023 in line with the completion of the DFS. Initial engagement has shown strong interest from Australian and International financial institutions in project debt funding.

The Company has achieved rapid resource growth and exploration success in the last 18 months and is committed to continuing an extensive program of exploration activities across its 100% owned, 150km long tenement package."

Conference Call

Managing Director, Glenn Jardine, will host a conference call to discuss the Prefeasibility Study at **9:00AM Australian Western Standard Time ("AWST") / 11:00AM Australian Eastern Standard Time ("AEST") today**, Thursday 8 September 2022.

To access the conference call, participants will need to pre-register for the call at the link below.

https://s1.c-conf.com/diamondpass/10025239-js95uy.html

You will receive a calendar invite and a unique code which is to be quoted when dialling into the call.

Introduction

De Grey Mining Limited (ASX: DEG) (**De Grey** or the **Company**) is pleased to present the outcomes of the prefeasibility study (the **PFS**) completed on its 100%-owned Mallina Gold Project, located in the Pilbara region of Western Australia (**Mallina Gold Project** or the **Project**). The PFS presents a high-quality evaluation of the Project. The Company has also identified clear opportunities for improvement to the PFS which will be examined further during the DFS.

The September 2022 prefeasibility study (**PFS**) follows the October 2021 scoping study which provided an initial 10-year evaluation of the Project based on the June 2021 maiden mineral resource for Hemi of 6.9Moz and Regional resources of 2.2Mozs. Scoping study outcomes included overall production of 4.3Moz, of which 70% was classified as JORC Indicated mineralisation, over the 10-year evaluation period. Average annual gold production was 430,000ozpa at an average AISC of $1,222/oz. Scoping study post-tax financial metrics comprised an $NPV_{5\%}$ of $1.95B, IRR of 49% and a payback period of 1.8 years. The De Grey board approved the progression of Project studies to a prefeasibility study level.

Opportunities to improve upon the scoping study physical and financial metrics were identified at the time. These opportunities included:

- Increasing the scale and grade of the resource at Hemi and particularly at the Diucon and Eagle deposits
- Increasing the amount of JORC Indicated classified mineralisation within open pit mining shapes

In line with the identified opportunities, in May 2022, the Company announced the updated Mineral Resource Estimate (**MRE**) (JORC 2012) for Hemi of 213Mt @ 1.2g/t Au for 8.5Moz of contained gold representing a 25% (1.7Moz) increase to the maiden MRE of June 2021 of 192Mt @ 1.1g/t Au for 6.8Moz. Significantly, the amount of JORC Measured and Indicated resources at Hemi increased by 3.0Moz from 2.8Moz to 5.8Moz from the maiden MRE to the May 2022 MRE. The overall resource grade at Hemi increased from 1.1g/t Au to 1.2g/t Au with Diucon and Eagle grades increasing by 30% from a combined 0.9g/t Au to a combined 1.2g/t Au.

The May 2022 Hemi MRE added to the previously defined Regional resource estimate of 37.4Mt @ 1.8g/t Au of 2.2Moz brings the total Global Mallina Gold Project MRE to 251Mt @ 1.3g/t Au for 10.6Moz of which 6.9Moz is classified as JORC Measured and Indicated**.** The PFS is based on the May 2022 Global MRE.

The PFS does not include extensions to mineralisation at Hemi that have been announced since the assay cut-off date of 5 April 2022 for the completion of the May 2022 MRE, the potential for extensions to the existing resources at Hemi nor new discoveries that could result from the Company's extensive and ongoing exploration activities.

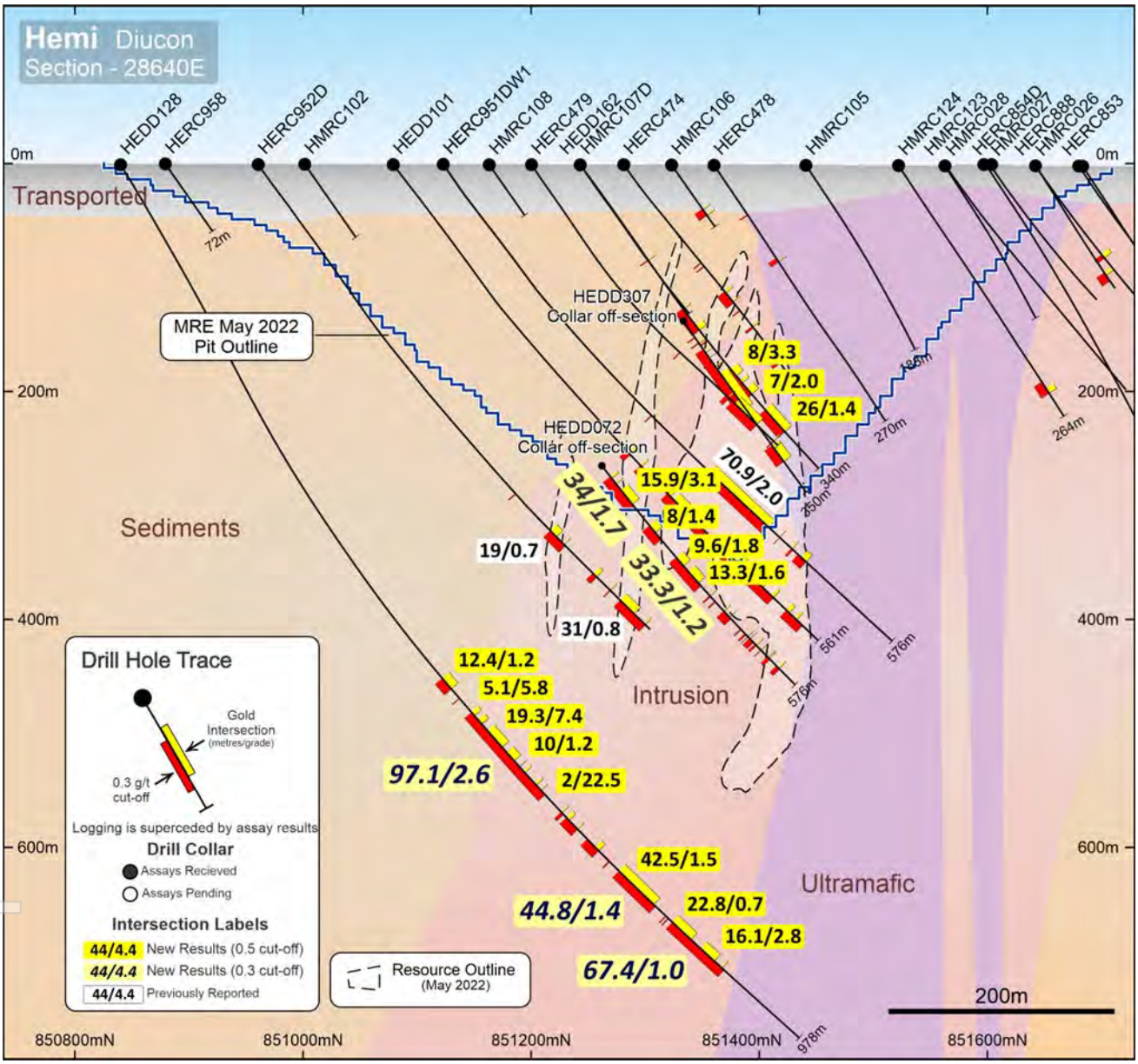
A summary of the outcomes of the PFS is provided in the following sections and further in the Executive Summary appended to the announcement.

The Company has identified opportunities to improve the PFS outcomes. These include:

- Increasing the resource base at the Hemi and Regional deposits through extensional drilling
- Increasing production potential by conducting new pit shell optimisations in areas where resources have been extended
- Increasing the percentage of JORC Indicated mineralisation within the open pit designs at Hemi
- New discoveries that could result from the Company's extensive and ongoing exploration activities
- Increasing reserves at Hemi through targeted resource definition drilling
- Converting Regional resources to reserves through additional technical studies and targeted resource definition drilling
- Assessing the potential for concurrent underground and open pit mining

Increases to resources and reserves at Hemi with continued drilling appear likely. The Company announced in August 2022 the results of resource step out drill hole HEDD128 which intersected 359.4 metres at a grade of 1.2 g/t Au at Diucon, including 19.3m @ 7.4g/t Au and 2.0m @ 22.5g/t Au, 200 metres beneath the May 2022 MRE (figure 1). Large scale step-out drill targets exist at each deposit with extensional drilling ongoing. New pit shell optimisations can be conducted on updated resource models.

Figure 1: Cross section at Diucon showing drill hole HEDD128



Increases to the Hemi reserve can be achieved through targeted resource definition drilling to increase JORC Indicated resources. There are currently 0.5Moz JORC Inferred mineralisation within the open pit designs.

Aircore and reverse circulation (**RC**) drilling has continued to identify gold anomalism in the Greater Hemi and Regional areas. Drilling will continue to follow up these targets with the aim of making new, near surface, large scale, intrusion hosted gold deposits. Of note, the Company is following through on previously announced intersections of shallow mineralisation at Antwerp, to the west of Eagle, and at Charity Well in the western part of the Regional tenement package.

Mineralisation has been consistently intersected at all Hemi deposits below the PFS open pit designs. The potential for concurrent underground mining with open pit mining is an option for future consideration and centres on the scheduled completion of the Stage 1 starter pit at Brolga early in Year 4 of production. The deposits at Aquila, Crow and Falcon are located respectively within approximately 500m, 550m and 850m of the Brolga Stage 1 starter pit.

Along with the potential for moderate increases to plant throughput with de-bottlenecking, this has the potential to lift annual gold production rates. Additional plant throughput of 1Mtpa (10%), combined with production from underground sources at an average mined grade of 5g/t Au or extensions, to current open pit designs at the current LOM average grade, has the potential to lift overall annual gold production respectively by approximately 150,000ozpa or 50,000ozpa.

Project Location

The Project is located (Figure 2) approximately 1,300 kilometres (**km**) north of Perth in the Pilbara region of Western Australia and approximately 85km by road south of the regional Pilbara hub of Port Hedland.

Existing infrastructure capable of servicing the Project includes:

- Two lane bitumen highways; the North West Coastal highway and the Great Northern highway
- Two gas pipelines; the Pilbara Energy gas pipeline and the Wodgina Mine gas pipeline
- Port Hedland to Karratha 220kV power transmission line fed separately by two gas fired power stations located at Port Hedland and Karratha
- The port of Port Hedland, a bulk export and materials import facility
- The international airport at Port Hedland
- Existing combined mobile (cell) tower and optic fibre/wireless communications

Renewable energy sources are being constructed or planned in the Pilbara along with an expanded high voltage distribution network (Figure 3). These initiatives will provide De Grey with the potential to access renewable energy sources as the Project is developed and throughout operations.

Production

The production profile of the Project demonstrates an annual production range up to approximately 636,000 ounces in year 5, with average production of 550,000 ounces over the first 5 years and 540,000 ounces per annum over the first 10 years (Figure 4). Production from Hemi is sourced for six deposits; Aquila, Brolga, Crow, Falcon and Diucon and Eagle as shown in Figure 5.

Production over the first 5 years is achieved with 97% coming from JORC Measured and Indicated resource classifications and over the first 10 years coming from 89% JORC Measured and Indicated resource classifications. JORC Measured and Indicated resources comprise 87% of the overall production of 6.4Moz. The Hemi deposits comprise approximately 97% of production over the first five years, 85% of production over the first ten years and 83% of overall production of 6.4Moz.

Production in the PFS falls after year 10 as lower grade mineralisation is mined and low-grade stockpiles are processed. However, the Project continues to generate strong cashflows throughout each of the remaining 3.5 years of its current life of mine. Extensions to existing resources and the new discoveries have the potential to increase gold production above 500,000ozpa beyond year 10.

Typically, name plate plant throughput capacity is exceeded through plant de-bottlenecking and PFS conservatism. The Company would reasonably expect plant throughput to increase by approximately 10% to 15% over the life of mine with minimal capital expenditure. This would bring forward production from the later years of the PFS production profile or make space for additional production from potential new discoveries.

Figure 2: Hemi Deposits and Regional Deposits Location Map

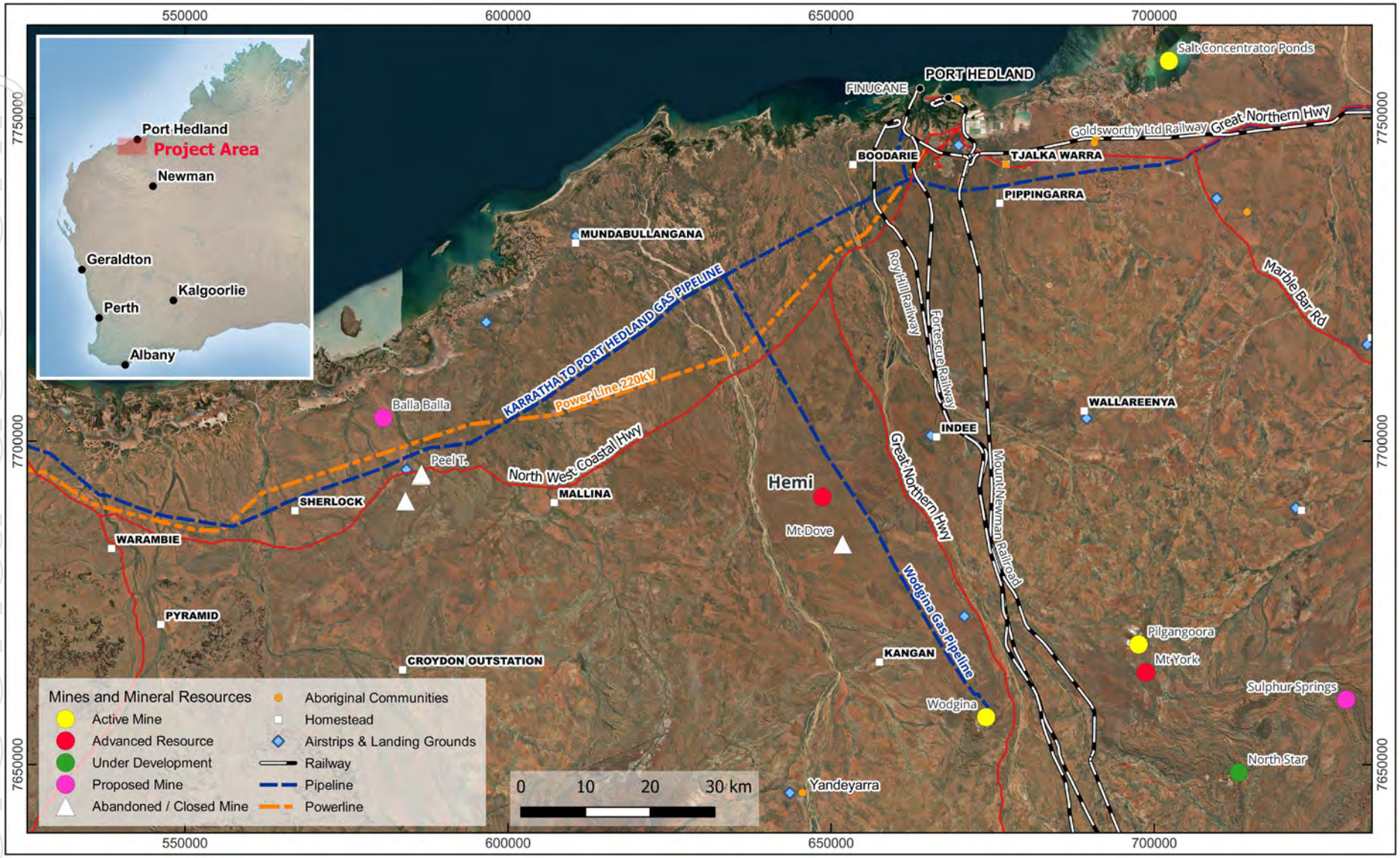


Figure 3: Hemi – Pilbara Generation and Interconnection

Asian Renewable Energy Hub

Final Investment Decision target: 2025

- $36bn project size
- 6,500 square kilometre footprint
- 26GW of combined solar and wind power generating capacity developed in phases
- BP (41%), InterContinental Energy (26%), CWP Energy Asia (18%), Macquarie (15%)

Department of JTSI – North West Hydrogen Hub

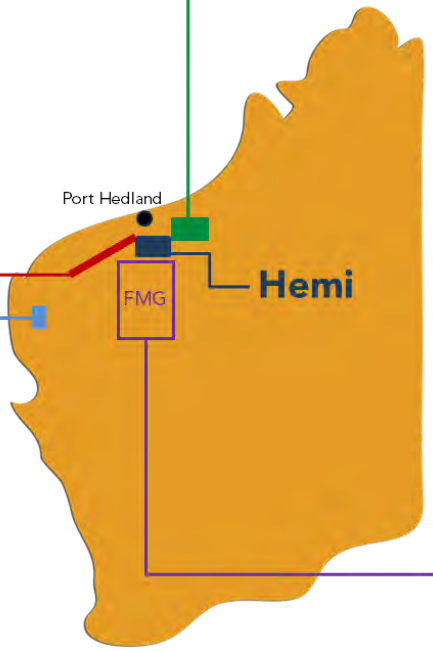
Estimated Launch Date: by 2030

- $117m of initial government funding
- Five interconnected hubs from Onslow to Port Hedland
- 500km of renewable energy generation
- Designed to produce Hydrogen for export
- Includes provision for transmission connection to Asian Renewable Energy Hub

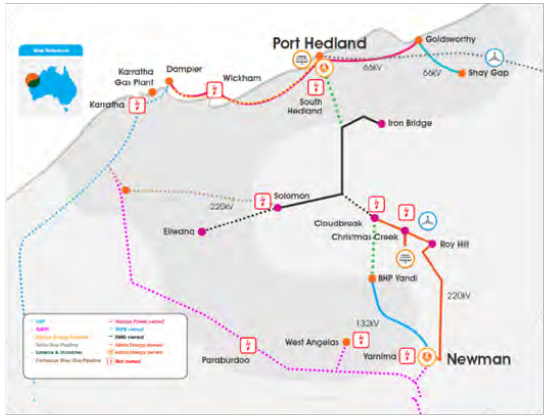
Uaroo Renewable Energy Hub

Estimated Launch Date: by 2030

- Constructed by Fortescue Future Industries
- 5.4GW request submitted to the EPA in early 2022
- Renewable Energy to be used for both hydrogen production and supply into existing FMG power network



Pilbara interconnections



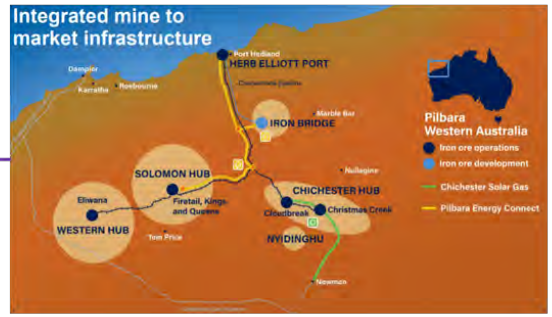


Figure 4: Annual Gold Production ('000ozs)

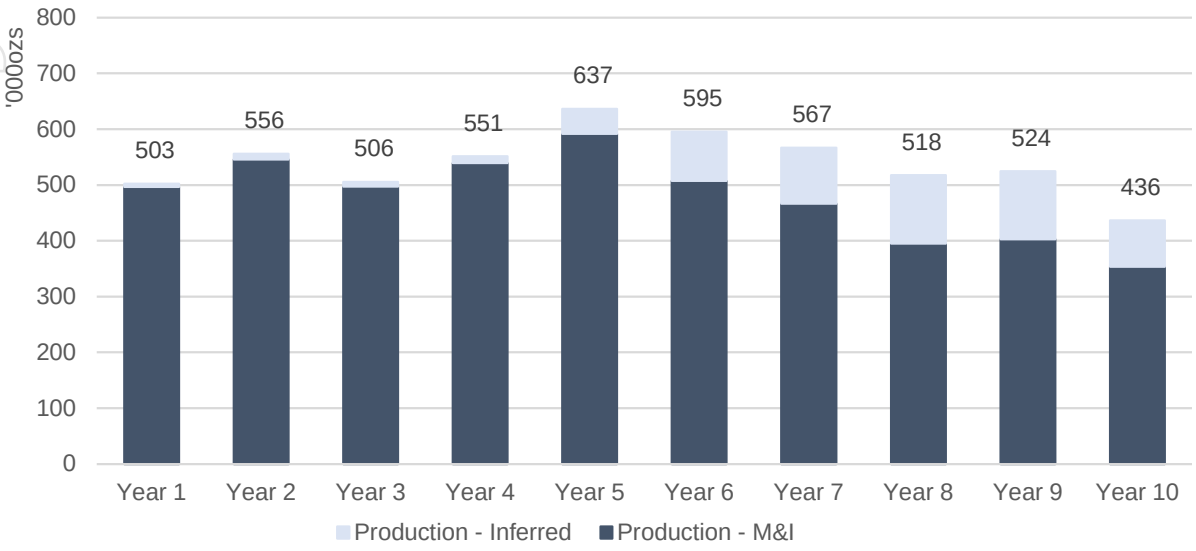
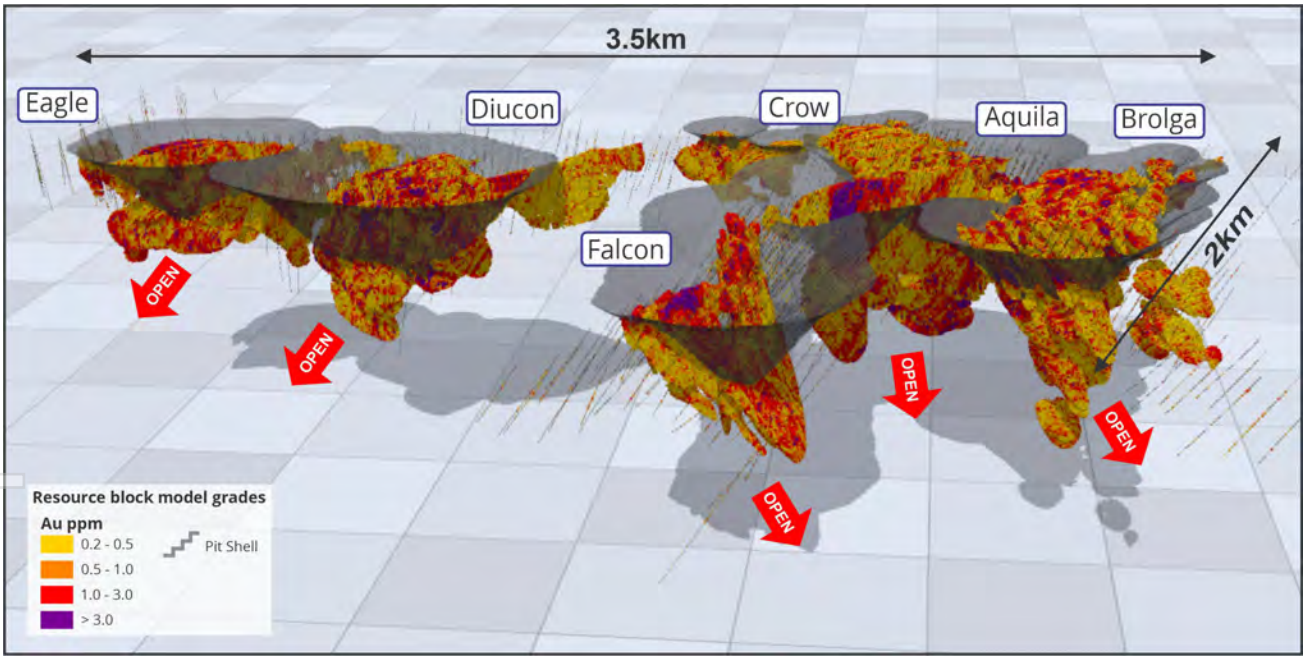


Figure 5: Hemi Open Pit Layout

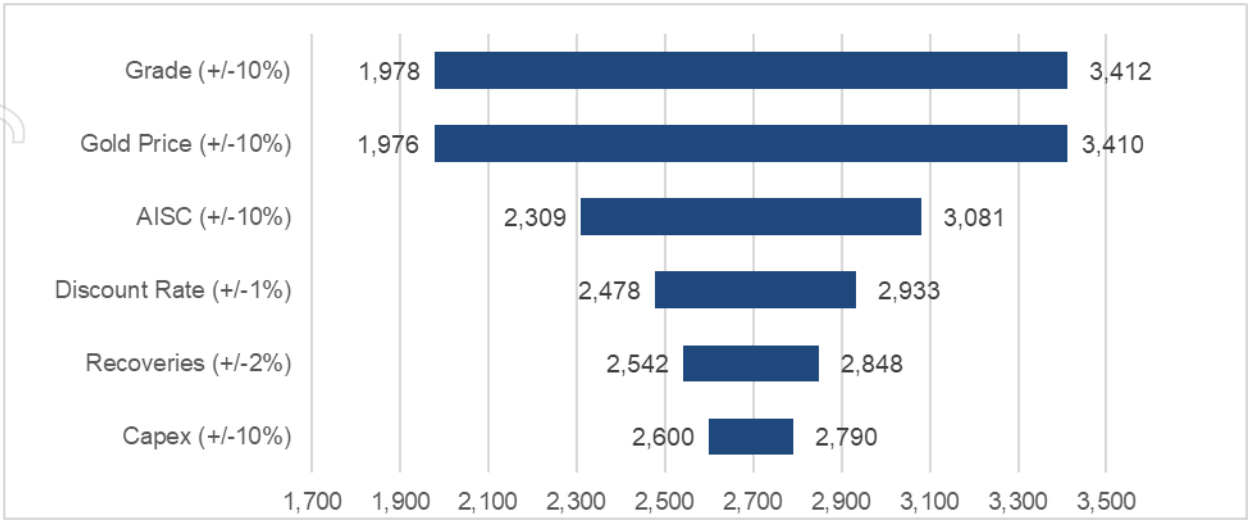


Sensitivity Analysis

Sensitivity analysis (Figure 6) shows the Project to be resilient to changes in capital costs and recoveries, with significant leverage to improved head grade, gold price and AISC.

The increase in capital cost of the Project of approximately 15% from the scoping study has been outweighed by increases in average ore grade of approximately 10% and average annual gold production rate of approximately 25% such that the Project NPV (Post-tax) has increased by approximately 40%.

Figure 6: Project NPV Sensitivity Analysis (A$M) – Post-tax



Project Positioning

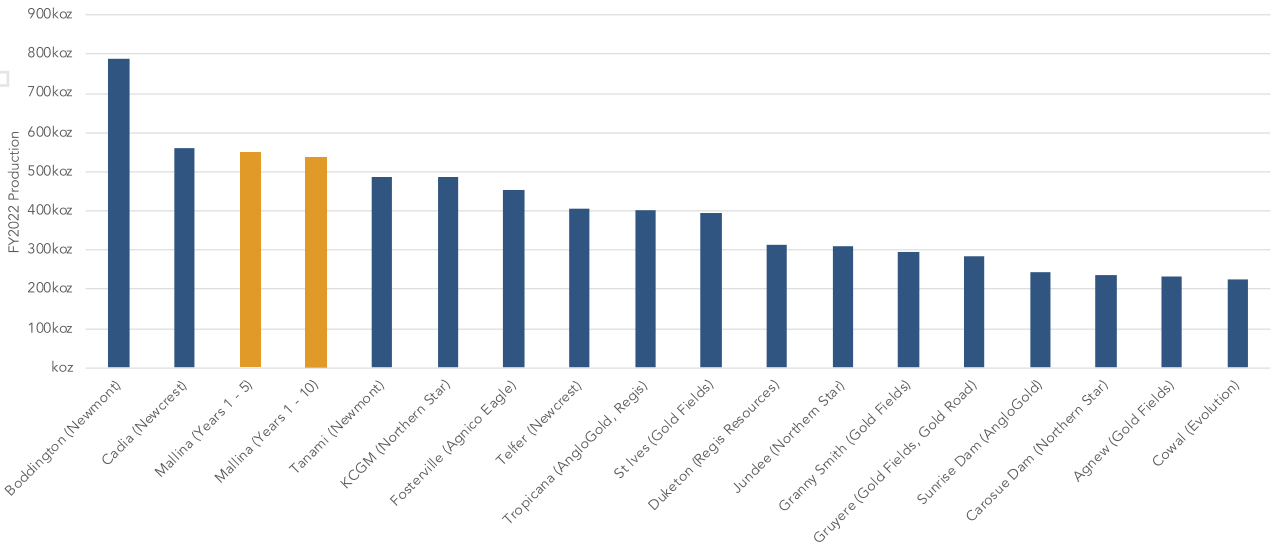
The PFS has identified that the Project will have potential:

- annual gold production in the top 5 Australian gold producers
- lowest capital intensities of any large scale undeveloped gold project on a global basis and a low sensitivity to capital cost increases
- lowest quartile AISC operating costs
- low carbon intensity compared with open pit gold mines in Australia

Given the size and scale of the Tier 1 Project, the Company considers it appropriate to compare it to other Australian gold mines and producers.

A comparison of the Project's forecast production rate compared with Australian gold mines is shown in Figure 7 placing the Project within the top 5 Australian gold mines.

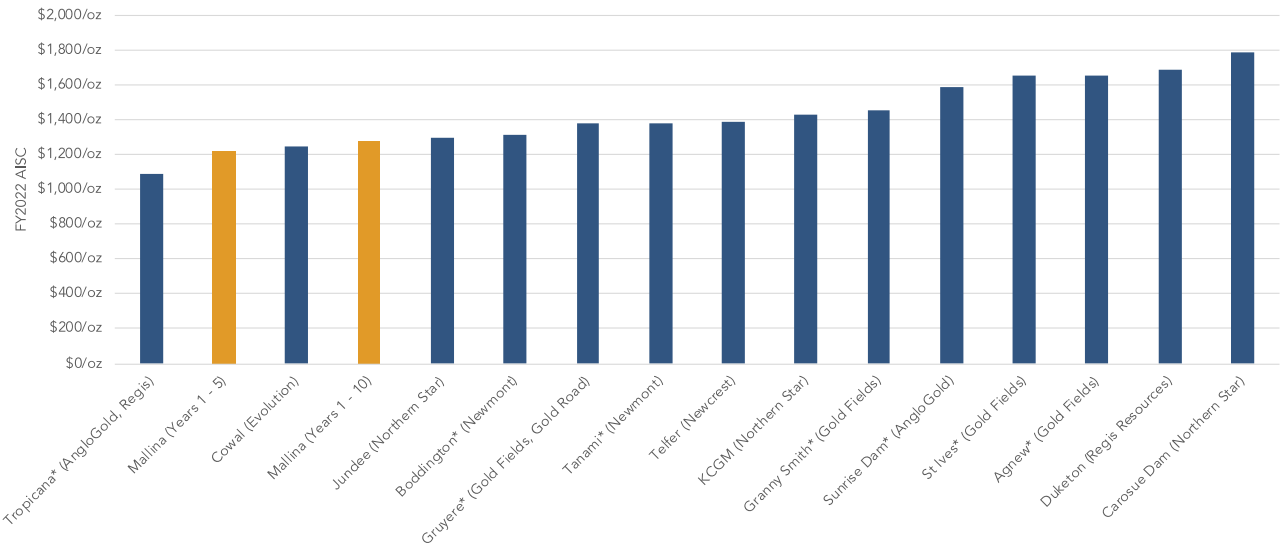
Figure 7: Australian Gold Producer Annual Production (kozpa)[7]



Note 7 Comparison made between Mallina PFS estimates and current producing gold mines in Australia. Refer to announcements from Australian gold producers provided in Appendix A of the Summary

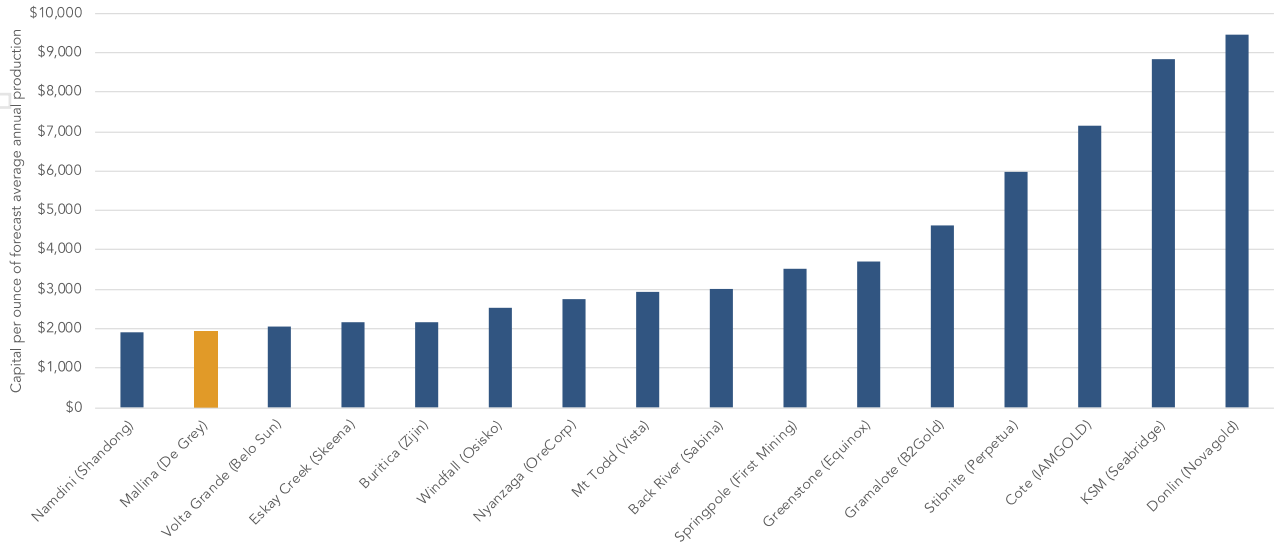
The Project would be a low-cost producer compared with current Australian producing gold mines, with a projected average AISC of $1,220/oz over the first 5 years and $1,280/oz over the first 10 years, placing the Project in the lowest quartile of Australian producing gold mine as shown in Figure 8. Increases in unit mine operating costs on a per tonne basis due increased strip ratio and the current inflationary environment have been offset by increased annual gold production rates. The increase in strip ratio follows the completion of a detailed geotechnical study supported by extensive geotechnical drilling.

Figure 8: Australian Gold Producer All In Sustaining Costs (AISC) (A$/oz)[8]



The capital intensity of the Project is favourable compared with other large global development projects, as shown in Figure 9, with one of the lowest capital intensities of a large scale gold project located in a Tier 1 jurisdiction. The project is one of the largest undeveloped gold projects on a global scale (Figure 10)

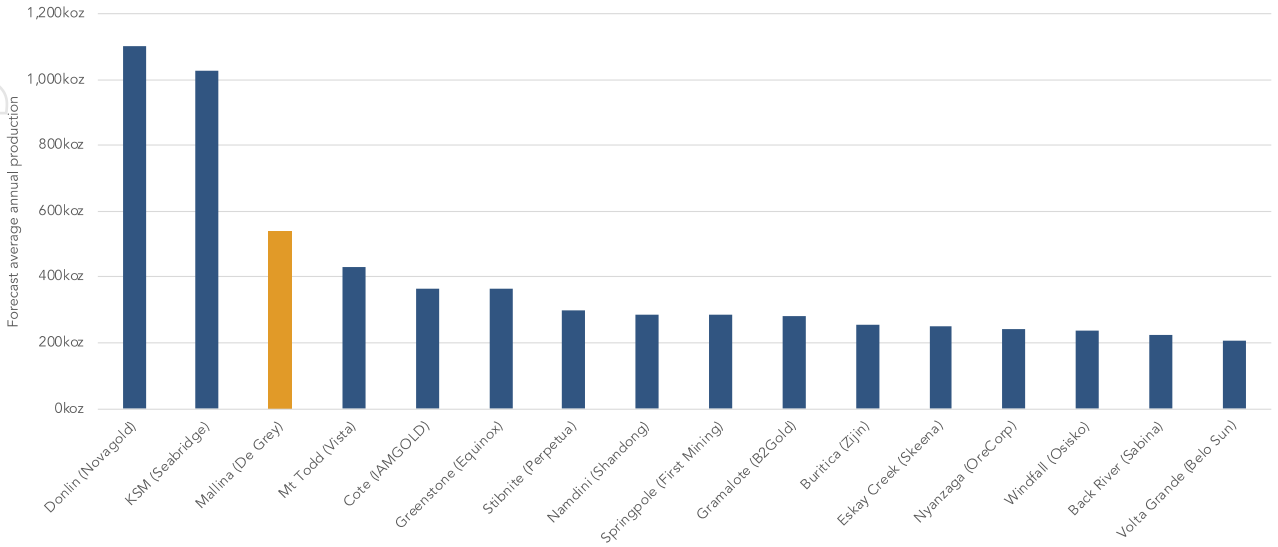
Figure 9: World Gold Development Projects Capital Intensity (A$/annual oz)[9]



Note 8 Comparison made between Mallina PFS estimates and current producing gold mines in Australia. Refer to announcements from Australian gold producers provided in Appendix A of the Summary

Note 9 Refer to announcements from global gold development projects provided in Appendix A of the Summary

Figure 10: World Gold Development Projects Scale (kozpa)[10]



Project Configuration

The Project comprises mine production, all currently from open pit mining, from Hemi and Regional deposits. The Hemi deposits of Aquila, Brolga, Crow, Diucon, Eagle and Falcon are clustered together while the Regional deposits are located across the Company's Mallina tenement package. Toweranna is the most distal Regional deposit, being located approximately 60 kilometres to the west of Hemi.

The Company assessed comminution circuit and oxidation circuit options for the process plant during the PFS. The preferred comminution circuit comprises primary and secondary crushing, high pressure grinding roller (HPGR) and ball mills followed by flotation, pressure oxidation and cyanide leaching. Similar comminution circuits are used in large scale gold projects. Hemi ore has the advantage of generating a low (8%) mass pull sulphide concentrate as feed to the POx circuit. This reduces the POx throughput to 0.8Mtpa compared with the overall plant throughput rate of 10Mtpa.

Hemi mineralisation achieves metallurgical recovery of 93.6%.

Pressure oxidation has been successfully applied as an oxidation process route at numerous plants around the world for more than 30 years. The technology is generally considered as the mainstream method for oxidising sulphide concentrates. Examples of gold plants that have or are utilising pressure oxidation are:

▪ Oceana Gold	Macraes	New Zealand
▪ Evolution	Red Lake	Canada
▪ Barrick / Newmont	Goldstrike	USA
▪ Barrick	Porgera	PNG
▪ Anglo Gold	Sao Bento	Brazil
▪ Barrick / Newmont	Lone Tree	USA
▪ Barrick / Newmont	Twin Creeks	USA
▪ Newcrest	Lihir	PNG
▪ Agnico Eagle	Kittila	Finland
▪ SSR Mining	Copler	Turkey

Note 10 Refer to announcements from global gold developers provided in Appendix A of the Summary

Figure 11: Simplified Process Flowsheet

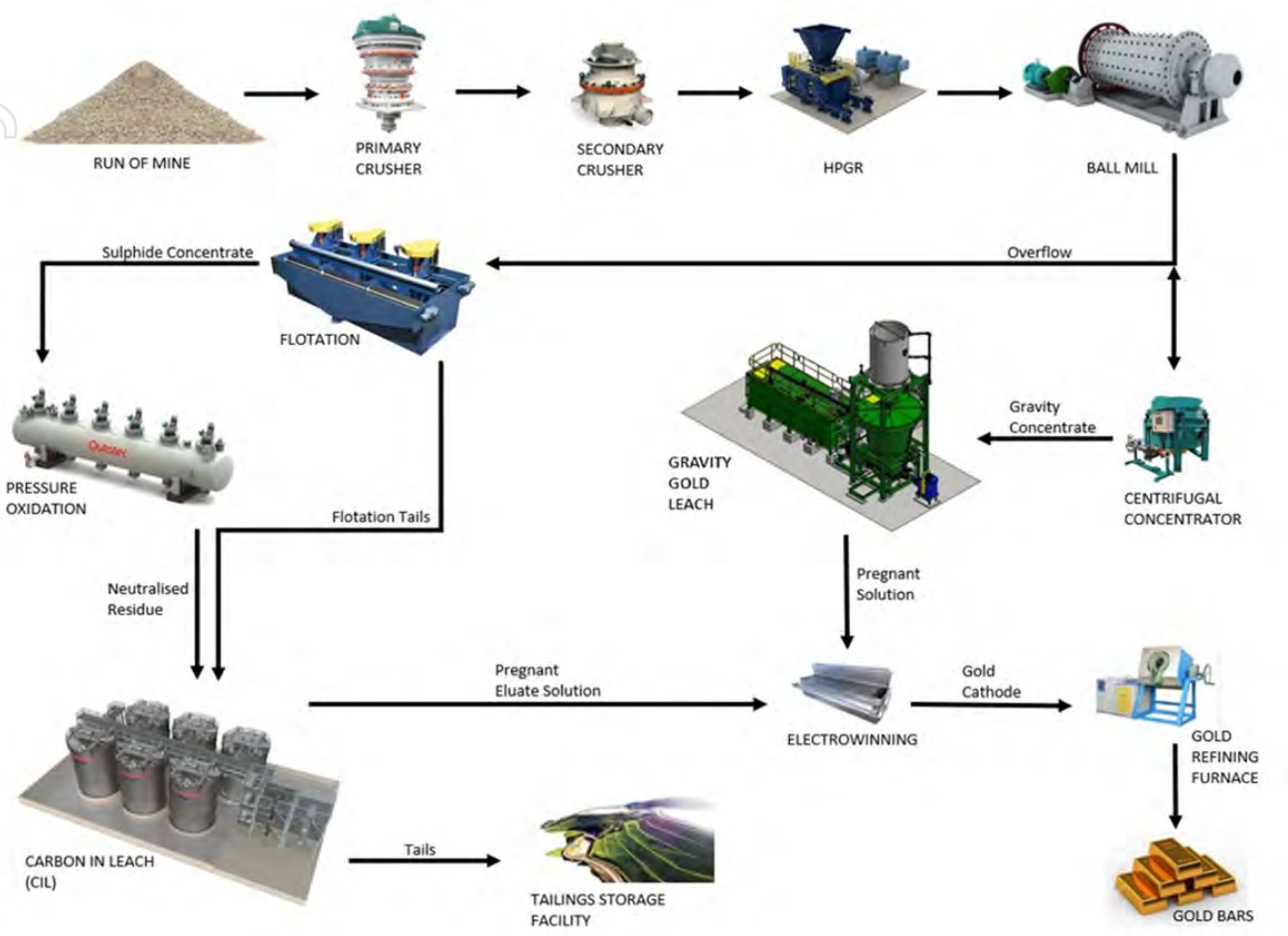


Figure 12: Plant Layout from crushing circuit

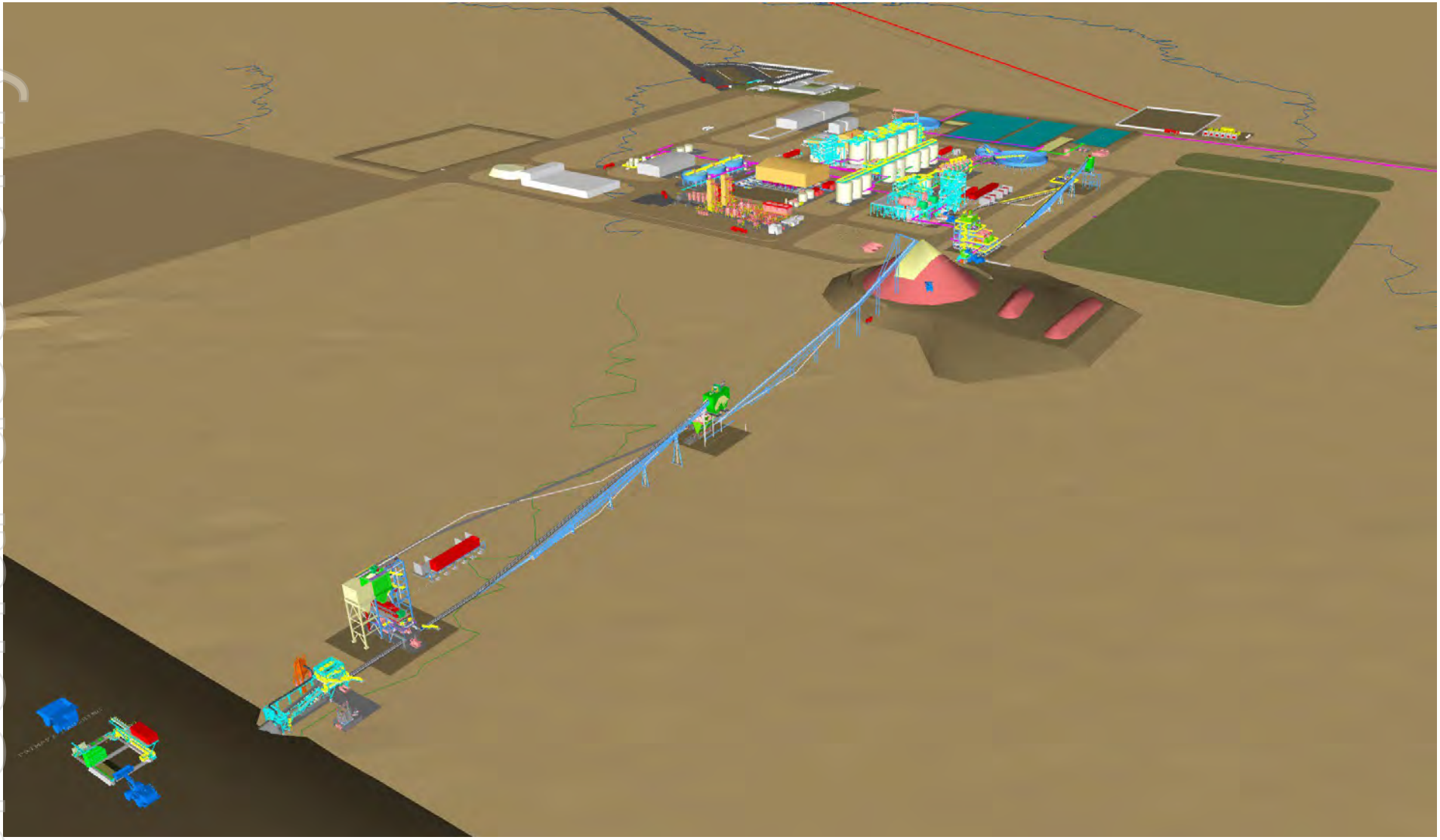


Figure 13: Plant Layout from crusher stockpile

Capital Cost Estimate

The Capital Cost Estimate (CCE) was principally compiled by International Engineering company Wood Australia (Wood) and is based on an Engineering, Procurement, Construction and Management (EPCM) approach for the processing plant, process plant infrastructure and other related infrastructure and covers all the costs associated with the construction and associated expenditure to develop the Project to a production capacity of 10Mtpa to produce over 500,000 ounces of gold doré annually.

The estimate includes all costs associated with engineering, drafting, procurement, construction, construction management, freight, commissioning, first fills of plant reagents, consumables and spares, Owner's costs and project management and a design growth allowance.

The estimate is based on an initial level of engineering, material take-offs and budget price quotations for major equipment and bulk commodities. Preliminary global quantities for earthworks, concrete, steelwork, and platework have been determined from in-house data for similar installations, equipment lists, engineer's calculations, preliminary layout drawings and vendor data.

The CCE excludes the capital cost of an oxygen plant for the pressure oxidation circuit. This plant is proposed to be built and operated by others under an oxygen supply arrangement with De Grey. The supply of oxygen is included in the operating cost estimate.

The CCE includes capital costs for an airstrip and on-site camp for construction and operations. The camp will operate on a fly-in, fly-out basis and drive-in and drive-out basis for employees based in the Pilbara. The Company will assess the potential to assist employees who wish to live within communities in the Pilbara and work at the Project.

Unit rates for bulk materials were developed from in-house data and rates supplied by contractors and suppliers familiar with costs applicable to resource project developments in the Pilbara and other remote regions of WA.

The CCE is judged to have an accuracy of -15 % +25 % and is considered by Wood to be a Class 4 estimate according to AACE International.

The capital cost estimate has been conducted at what is considered by the Company's consultants to be a high point in the development cycle. The Company will conduct a value engineering process immediately following the PFS and through the DFS.

Table 3: 10Mtpa Plant and Infrastructure Capital Cost Estimate

Area	Note	Cost $M	Percentage Of Total
Processing - Plant	*1*	489	50%
Processing - Infrastructure	*2*	115	12%
Processing - Indirects	*3*	41	4%
Infrastructure - Site	*4*	122	12%
EPCM/Owners	*5*	117	12%
Subtotal		**885**	**90%**
Growth Allowance	*6*	100	10%
Total		**985**	**100%**

Notes:
1. Comminution, floatation, oxidation, neutralisation, & leaching circuits; oxygen plant assumed as BOO
2. Power substation, tailings storage facility, buildings, offices, laboratory, and workshops
3. First fill reagents & consumables, ocean freight, spares, commissioning
4. Associated site infrastructure including water supply borefield, village, airstrip, sealed access roads, communications
5. EPCM / Owners Costs / Temporary Facilities / Insurances
6. Growth Allowance overall 10%

Operating Cost Estimate

The Project's operating costs have been developed based on a projected 10.0 million tonnes per annum processing plant, treating 136 million tonnes of ore at a gold grade of 1.6g/t over the 13.6 year mine life, recovering approximately 6.4 million ounces of gold.

The operating costs have been compiled and developed from a variety of sources including:

- first principal estimates based on a ground up build approach based on key physical drivers, volumes, and consumption rates
- metallurgical testwork
- contractor request for quotes (RFQ's or RFP's)
- key consultant and vendor recommendations/inputs
- general and administration costs determined by De Grey
- personnel numbers and salaries costs determined by De Grey and external IR consultants
- supplier requests for pricing and budget quotations, and
- operational unit rates determined by De Grey from similar operations

Operating costs cover all onsite costs directly associated with mining, processing, and administration plus all other costs related to sustaining production of the operation over the lifecycle of the Project including state royalties, sustaining capital and other land access, community investment and other non-production costs. These include the cost of supply, by others, of oxygen required for the oxidation process.

The mining area activity costs have been estimated based on a contractor mining strategy and determined from a first principals cost build up based on the equipment sizing at each deposit, the nature of the deposit and the haul distances to the ROM and to the waste rock emplacements.

Processing costs were determined by Wood based on design plant throughput rates, process plant design criteria, mass balance consumption rates and metallurgical testwork. Administration and all other sustaining operating costs were developed by DeGrey.

Table 4: Hemi Cash Operating Cost Estimate ($/t of ore mined)

Area	Cost Estimate
Mining	$26.10/t ore processed
Processing	$23.94/t ore processed
Administration	$1.38/t ore processed

Operating costs have been estimated for the three key areas of the Project, mining, processing and administration. The operating cost estimates have been derived using a first principles desktop study approach, reagent supplier and mining contractor estimations to an accuracy of -15%/+25% accuracy.

Majesso/Bell Consulting was engaged to independently estimate the mining costs based on a contractor mining strategy. The mining costs were estimated based on the equipment sizing at each deposit, the nature of the deposit and the distance to the ROM (local and Hemi) and to the centroid of the waste rock emplacement. The haul distance was then applied to the costs on an individual basis for each of the Regional deposits.

Wood Australia was engaged to undertake an independent assessment of the processing operating cost estimate at a throughput rate of 10Mtpa. Administration costs were estimated by De Grey at $1.38 per tonne of ore treated. This administration cost estimate accounts for the costs of flights and accommodation for administration and village personnel as well as safety and administration consumables, communications and other ancillary administration costs.

ESG

The Company has conducted extensive environmental baseline studies and testwork across the Project area commencing in 2020, well prior to the maiden Mineral Resource being announced in June 2021. Management regimes have been developed and are incorporated into the Project layout and PFS designs.

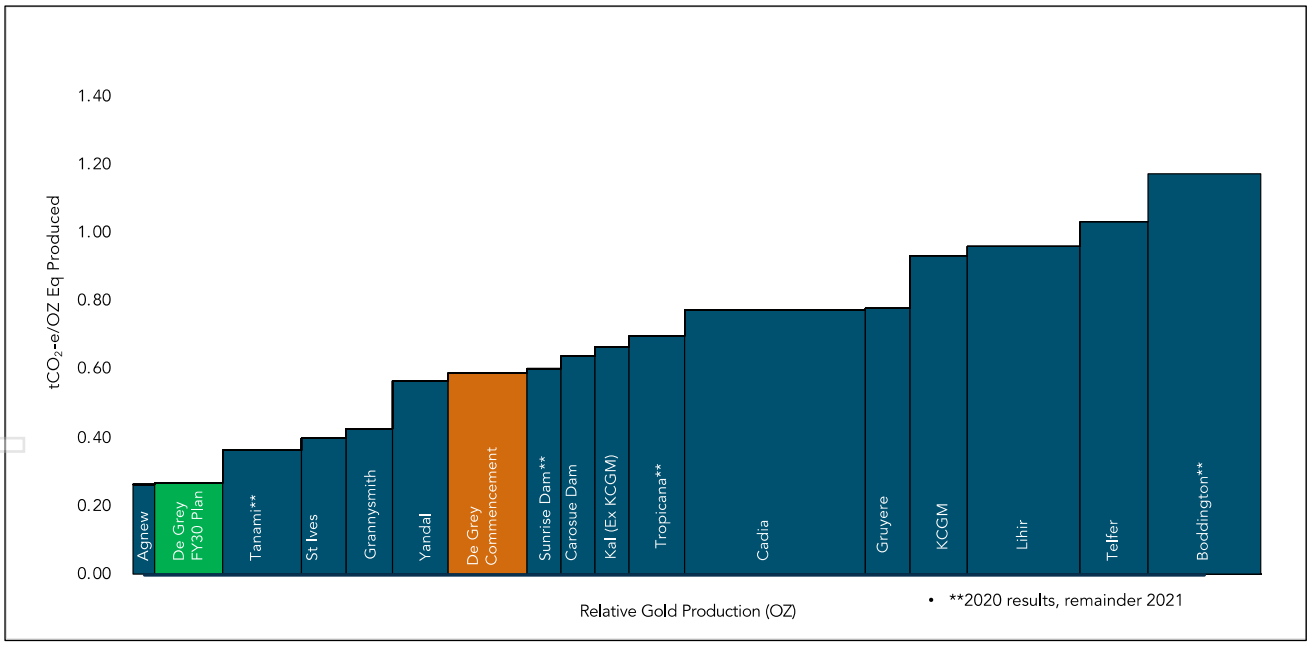
Widespread community consultation and traditional custodian engagement has been conducted including social impact assessments of the Project. Engagement with the Kariyarra people, the traditional custodians of the land over Hemi, on a Partnership Agreement which will provide business opportunities, employment training and community programs is at an advanced stage.

Heritage clearances have been completed over the Project area including at Hemi and over Regional deposits and infrastructure corridors. Heritage surveys will continue over Greater Hemi and Regionally in support of exploration programs.

The early adoption of grid based renewable energy sources, augmented by site based renewable energy as appropriate, is planned with multiple options emerging within the North West Interconnected System (NWIS).

The Project is one of the largest undeveloped gold projects on a global basis and will have low start-up and future carbon intensities respectively of 0.6 and 0.3t.CO_2/oz as shown in Figure 14. The benchmarking shown in Figure 14 references producer's reported actual carbon intensities for financial year 2021. De Grey, along with other producers referenced in Figure 14, have plans to further reduce carbon intensity over time.

Figure 14: Carbon Intensity[11]



Note 11 Refer to public from Australian gold producers provided in Appendix D of the Summary

Funding

The Mallina Gold Project's technical and economic fundamentals provide a strong platform for De Grey to source traditional financing through debt and equity markets, in addition to pursuing other financing strategies should this be to the benefit of shareholders. There is, however, no certainty that De Grey will be able to source funding as and when required.

Formal funding engagement with project financiers will continue following the announcement of the PFS. The Company has appointed Azure Capital as its project debt advisor and Wright Legal as its debt funding legal advisor. Engagement with Australian and international financial institutions regarding funding for the construction of the project will continue. These financial institutions have expressed strong interest in being involved in the funding of the project.

To achieve the range of outcomes indicated in the PFS, pre-production funding of approximately A$1,053M may be required. Typical project development financing would involve a combination of debt and equity. De Grey has formed the view that there is a reasonable basis to believe that requisite future funding for development of the Mallina Gold Project will be available when required. There are grounds on which this reasonable basis is established including:

- Release of the PFS outcomes provides a platform for De Grey to continue discussions with potential financiers
- Outstanding financial metrics of the project including an unleveraged payback period of under two years and one of the lowest capital intensities of a gold project of this scale on a global basis.
- Global debt and equity finance availability for high-quality gold projects remains robust. Recent examples of significant funding being made available for construction of single asset gold developers located in Australia in the last twelve months include Bellevue Gold and Red 5
- De Grey has a current market capitalisation of approximately A$1.3 billion and no debt. The Company has an uncomplicated, clean corporate and capital structure. De Grey owns 100% of the Mallina Gold Project, located in Western Australia, which is a Tier 1 project in the top jurisdiction in the Fraser Institute's Investment Attractiveness Index. These are all factors expected to be highly attractive to potential financiers
- The De Grey Board and management team has extensive experience in mine development, financing and production in the resources industry
- The Company has a strong track record of successfully raising equity funds as and when required to further the exploration and evaluation of the Mallina Gold Project.

Conclusions and Recommendations

The PFS demonstrates that the Project is commercially viable and provides justification for the Project to progress to a DFS.

This announcement has been authorised for release by the De Grey Board.

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DE GREY MINING LTD

PRELIMINARY FEASIBILITY STUDY SUMMARY

MALLINA GOLD PROJECT

SEPTEMBER 2022

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Study Partners

Resource estimation and mining engineering	Process engineering	Environmental	Metallurgical testwork
CUBE CONSULTING	wood.	RPMGLOBAL	ALS
Mine costing	Geotechnical	Geochemical	Power supply
NICK BELL CONSULTING	MINEGEOTECH	srk consulting	ECG ENGINEERING
Hydrogeological	Hydrological	Tailings Storage	Energy and decarbonisation
Geowater CONSULTING	Surface Water Solutions	CMW Geosciences	Mainsheet Capital

Competent Person Statement and JORC Compliance Statements

Ore Reserves - Hemi

Information in this announcement that relates to Ore Reserves at the Hemi Gold Project is based on and fairly represents information and supporting documentation compiled by Mr Quinton de Klerk, a Competent Person who is a full-time employee of Cube Consulting Pty Ltd, a company engaged by De Grey. Mr de Klerk is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr de Klerk has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 JORC Code). Mr de Klerk does not hold securities in De Grey and consents to the inclusion in this announcement of all technical statements based on his information in the form and context in which they appear.

Metallurgy

Information in this announcement that relates to metallurgical test results is based on and extensive metallurgical testwork and supporting documentation compiled by Mr Rod Smith, a Competent Person who is a full-time employee of Salisbury Consulting Pty Ltd, a company engaged by De Grey. Mr Smith is a member of the Australasian Institute of Mining and Metallurgy. Mr Smith has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which being undertaken to qualify as a Competent Person as defined in the 2012 JORC Code. Mr Smith does not hold securities in De Grey and consents to the inclusion in this announcement of all technical statements based on his information in the form and context in which they appear.

There are no material changes in the metallurgical testwork results as the physical properties, gold recovery residue and reagent consumption results from earlier testwork programs have either been validated by, or improved upon, in the PFS testwork programs.

Exploration Results

The information in this report that relates to Exploration Results is based on, and fairly represents information and supporting documentation prepared by Mr Phil Tornatora, a Competent Person who is a Member of The Australian Institute of Geoscientists. Mr. Tornatora is an employee of De Grey Mining Limited. Mr. Tornatora has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves”. Mr. Tornatora consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Mineral Resources – Regional

The Information in this report that relates to Wingina and Withnell Mining Centre Mineral Resources is based on information compiled by Mr Paul Payne, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Payne is a full-time employee of Payne Geological Services. Mr Payne has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Payne consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Mineral Resources - Hemi

The Information in this report that relates to Hemi Mining Centre Mineral Resources is based on information compiled by Mr. Michael Job, a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Job is a full-time employee of Cube Consulting. Mr Job has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Job consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to Mineral Resources has been extracted from the Company's ASX announcement on 31 May 2022 titled "Mallina Gold Project Resource Statement", available at the Company's website https://degreymining.com.au/wp-content/uploads/2022/05/20220531-ASX-DEG-Mallina-Gold-Project-Resource-Statement-2022-lodgement.pdf

De Grey confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements above, and in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

Disclaimer

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Forward Looking Information and Cautionary Statements

This announcement contains forward-looking statements. Wherever possible, words such as "intends", "expects", "scheduled", "estimates", "anticipates", "believes", and similar expressions or statements that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved, have been used to identify these forward-looking statements. Although the forward-looking statements contained in this announcement reflect management's current beliefs based upon information currently available to management and based upon what management believes to be reasonable assumptions, the Company cannot be certain that actual results will be consistent with these forward-looking statements. A number of factors could cause events and achievements to differ materially from the results expressed or implied in the forward-looking statements. These factors should be considered carefully, and prospective investors should not place undue reliance on the forward-looking statements. Forward-looking statements necessarily involve significant known and unknown risks, assumptions and uncertainties that may cause the Company's actual results, events, prospects and opportunities to differ materially from those expressed or implied by such forward-looking statements. Although the Company has attempted to identify important risks and factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors and risks that cause actions, events or results not to be anticipated, estimated or intended, including those risk factors discussed in the Company's public filings. There can be no assurance that the forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, prospective investors should not place undue reliance on forward-looking statements. Any forward-looking statements are made as of the date of this announcement, and the Company assumes no obligation to update or revise them to reflect new events or circumstances, unless otherwise required by law. This announcement may contain certain forward-looking statements and projections regarding:

- estimated Resources and Reserves
- planned production and operating costs profiles
- planned capital requirements. and
- planned strategies and corporate objectives

Such forward-looking statements/projections are estimates for discussion purposes only and should not be relied upon. They are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors many of which are beyond the control of the Company. The forward-looking statements/projections are inherently uncertain and may therefore differ materially from results ultimately achieved. The Company does not make any representations and provides no warranties concerning the accuracy of the projections and disclaims any obligation to update or revise any forward-looking statements/projects based on new information, future events or otherwise except to the extent required by applicable laws.

The Prefeasibility Study referred to in this announcement is based on technical and economic assessments to support the estimation of Ore Reserves. De Grey 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. De Grey 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.

Financial Amounts and Figures

Unless otherwise indicated, all financial values are stated in real Australian dollars (AU$ or $) as at calendar Quarter 2 2022 (Q2-CY2022) 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. Introduction

De Grey Mining Ltd (**De Grey** or **Company**) is a Western Australian based exploration company listed on the Australian Securities Exchange (**ASX:DEG**). De Grey is assessing the potential to develop the Mallina Gold Project (**Project**) in the Pilbara region of Western Australia.

The Project was the subject of a scoping study that was completed in October 2021. The scoping study recommended the completion of a Pre-Feasibility Study (**PFS** or **Study**) into the Project.

In May 2022, the Company announced the updated Mineral Resource Estimate (**MRE**) (JORC 2012) for Hemi of 213Mt @ 1.2g/t Au for 8.5Moz of contained gold. This represented a 25% (1.7Moz) increase to the maiden MRE of June 2021 of 192Mt @ 1.1g/t Au for 6.8Moz upon which the scoping study was based.

Significantly, the amount of JORC Measured and Indicated resources at Hemi increased from 2.8Moz in the maiden MRE to 5.8Moz in the May 2022 MRE. The overall resource grade at Hemi also increased from 1.1g/t Au to 1.2g/t Au with Diucon and Eagle grades increasing by 30% from a combined 0.9g/t Au to a combined 1.2g/t Au. The increase in Indicated Resource at Hemi of 3Moz to 5.8Moz and the overall Resource grade has driven material increases in production and financial metrics in the PFS compared with the scoping study.

Mine scheduling software has targeted high grade, low strip ratio ore and with run of mine (**ROM**) stockpile management delivers an average feed grade over the first 10 years of 1.8g/t Au.

The May 2022 Hemi MRE added to the previously defined Regional resource estimate of 37.4Mt @ 1.8g/t Au of 2.2Moz bringing the total Global Mallina Gold Project MRE to 251Mt @ 1.3g/t Au for 10.6Moz of which 6.9Moz is classified as JORC Measured and Indicated**.** The PFS is based on the May 2022 Global MRE.

The Company is also able to announce a Maiden Ore Reserve Estimate of 103.4Mt @ 1.5g/t Au for 5.1Moz Au as a result of the completion of this PFS.

This PFS assesses the technical requirements, environmental and social impacts, and financial robustness of the Project.

This PFS determined that the development of mining and processing operations at a throughput rate of 10Mtpa in addition to infrastructure requirements (including power and water supply) is viable from a technical, environmental, social, and financial standpoint.

The recommendations of the PFS are:

- Approvals documentation be prepared and submitted to the appropriate regulatory authorities
- Financing documentation be prepared to progress financing options
- Continuation of technical studies and assessments to complete a Definitive Feasibility Study (**DFS**)
- Conduct tenders so that a financial investment decision (**FID**) can be made by the De Grey Board in the June 2023 quarter

Favourable outcomes of the four recommendations outlined above would allow for Project construction to commence in the calendar year of 2023 (subject to regulatory approval), followed by the commissioning and operating phases, with potential for first gold production in the second half of calendar year of 2025.

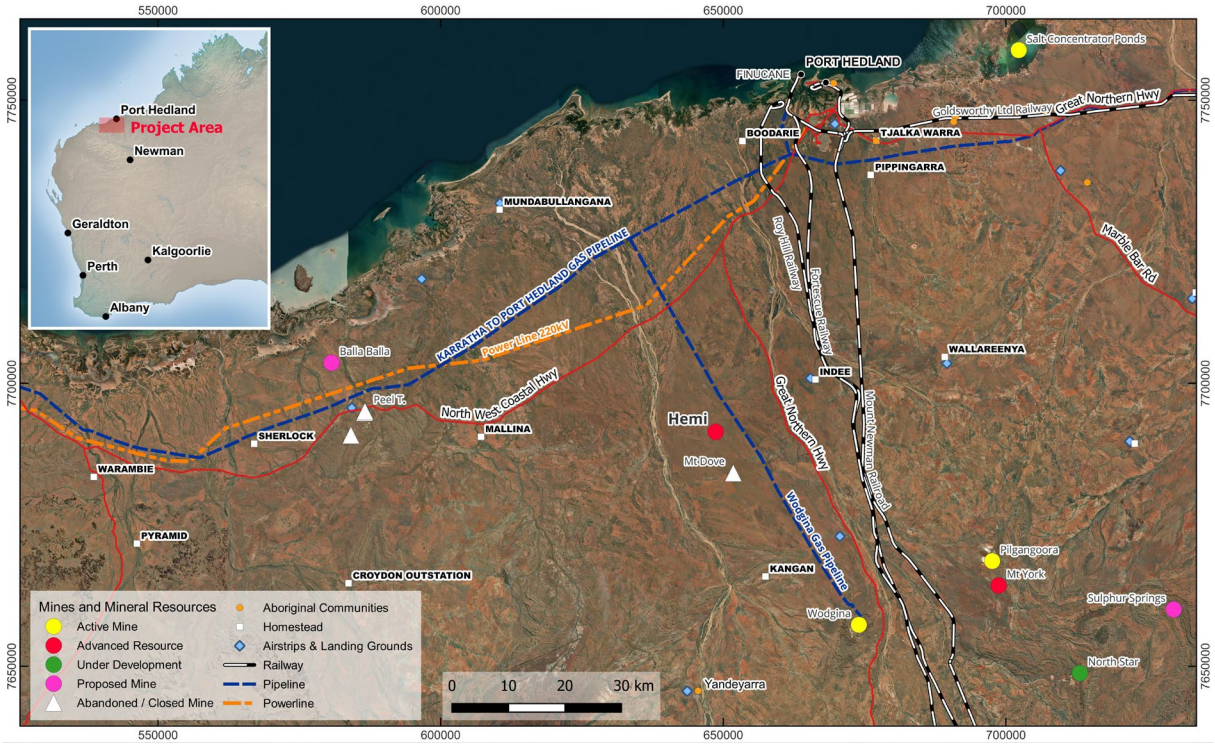
2. Project Location and Infrastructure

The Project is located approximately 85km by road south of Port Hedland in the Pilbara region of Western Australia. Existing infrastructure capable of servicing the Project includes:

- Two lane bitumen highways, the North West Coastal highway and Great Northern highway
- Two gas pipelines, the Pilbara Energy gas pipeline and the Wodgina Mine gas lateral
- Port Hedland to Karratha 220kV power transmission line fed separately by two gas fired power stations located at Port Hedland and Karratha
- The port of Port Hedland, a bulk export and materials importation facility
- The international airport at Port Hedland
- Existing combined mobile (cell) tower and optic fibre / wireless communications.

Renewable energy sources are being constructed or planned in the Pilbara along with an expanded high voltage distribution network. These initiatives will provide De Grey with the potential to access renewable energy sources as the Project is developed and throughout operations.

Figure 2.1: Project Location and Infrastructure Map



The key gold production parameters for the 10Mtpa scenario are shown in Table 2.1 and a summary of the MRE announced on 31 May 2022 are shown in

Table 2.2.

Table 2.1: Key Gold Production Parameters for the Mallina Gold Project at 10.0Mtpa processing rate

Time Period	Tonnes Processed	Gold Grade Processed	Gold Recovery[1]	Average Gold Production[1]	% Indicated
Years	Mt	g/t Au	%	koz Au / annum	
Years 1 - 5	50	1.81	94.5	550	93%
Years 1 - 10	100	1.78	94.4	540	89%

Table 2.2: Summary of Mineral Resource Estimate - Mallina Gold Project - May 2022

Deposit	Indicated[2]			Inferred			Total		
	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz
Hemi[1]	139.1	1.3	5.80	74.1	1.1	2.67	213.3	1.2	8.5
Regional[2]	18.9	1.7	1.05	18.5	1.9	1.11	37.4	1.8	2.2
Total	**158.0**	**1.3**	**6.85**	**92.6**	**1.3**	**3.78**	**250.7**	**1.3**	**10.6**

Note 1. Above -300mRL (370m vertical depth) the deposit has been reported at a cutoff grade of 0.3g/t Au. Below -300mRL the deposit has been reported at a cutoff grade of 1.5g/t Au.

2. Approximately 25% of Indicated shown for Regional deposits are in Measured category.

3. Study Team

The Study Team, consisting of De Grey personnel and external consultants assessed to a PFS level the environmental impacts, community interaction, technical requirements and financial robustness of the Mallina Gold Project.

The Study team comprised:

- Study Compilation — De Grey
- Geology — De Grey
- Resource Estimation — Cube Consulting
- Geotechnical — MineGeoTech
- Geochemical — SRK Consulting
- Hydrogeological — GeoWater
- Hydrological — Surface Water Solutions
- Mining Engineering — Cube Consulting
- Mining Costing — Nick Bell Consulting
- Metallurgy — De Grey and Wood Australia
- Metallurgical Testwork — ALS Australia and Others
- Process Engineering — Wood Australia
- Tailings Storage — CMW Geosciences
- Power Supply — ECG Engineering
- Environmental — RPM Advisory Services (formerly Blueprint)
- Heritage and Native Title — De Grey
- Social and Community — De Grey and Umwelt Consulting
- ESG — Energetics and Mainsheet
- Risk, Health and Safety — De Grey
- Financial Modelling — Azure Capital

Input from the independent experts was summarised into a report format to enable a detailed scope to be prepared for the next phase of studies.

4. Project Area and Tenement Status

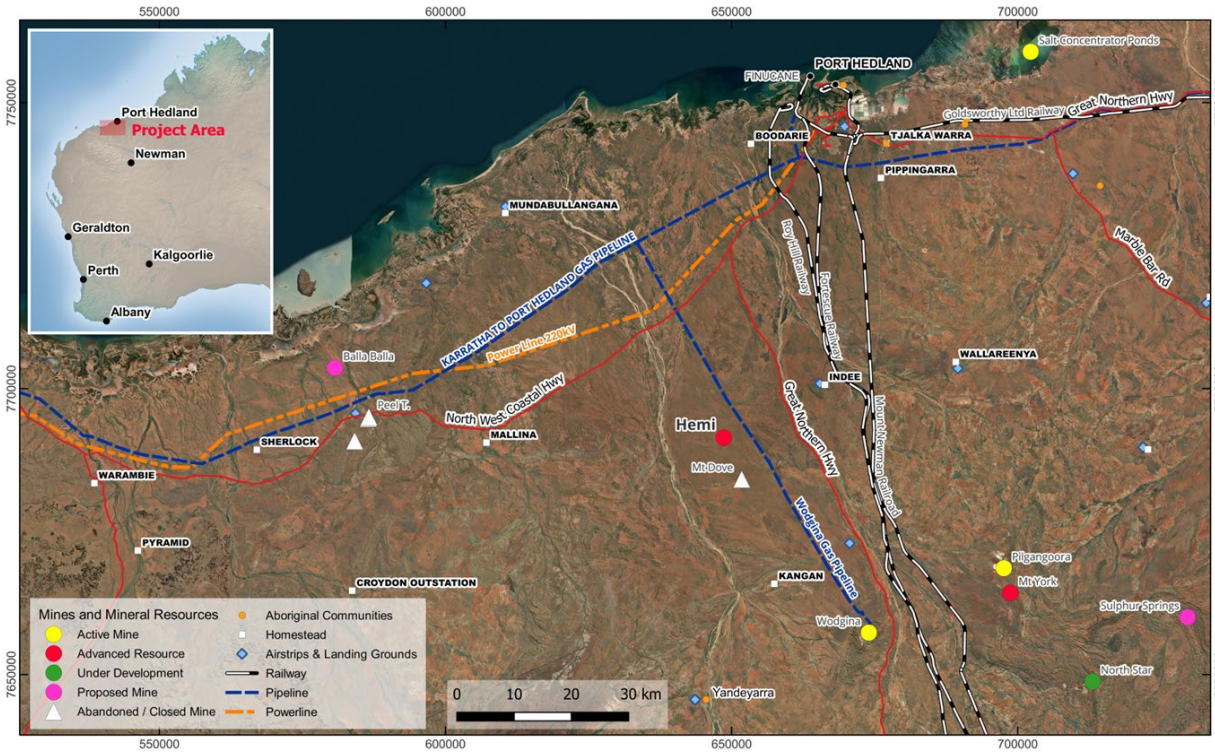
The Project is located in the Pilbara region of Western Australia, a well-established mining hub, approximately 85km (one hour drive) south of Port Hedland, approximately 200km east of Karratha (2 hour 20 minute drive) and approximately 1,600km (two hour flight) north of Perth.

Port Hedland is the closest town to the Project and has a population of around 16,000 people from diverse backgrounds. The traditional owners over Hemi, the Kariyarra people, call the place Marapikurrinya for the hand shaped formation of the tidal creeks coming off the natural harbour.

Port Hedland has Australia's largest bulk export port operated by the Pilbara Ports Authority with an annual export capacity in excess of 460Mt. Three major companies, BHP (eight berths), Fortescue Metals Group (five berths) and Roy Hill Iron Ore (two berths) each export iron ore from their respective port facilities. In addition to the iron ore export berths, there are four other berths with different capabilities and capacities, and which are used for containers, petroleum products, bulk liquids, livestock, bulk salt, mineral commodities and cruise ships. In November 2020 global container company ANL began a new sea freight service into Port Hedland, which allows sea freight imported directly into the Pilbara for the first time. The service will be of significant benefit to the construction and operation of the Project and will result in material reduction in transportation costs related to the Project.

The proposed Project site is connected to Port Hedland by two major sealed highways, with an existing access point (with turn in / out lanes) located approximately 12km from the proposed processing plant location. A high voltage (220kV) overhead powerline and two natural gas pipelines are all in close proximity to the proposed processing plant location as shown in Figure 4.1.

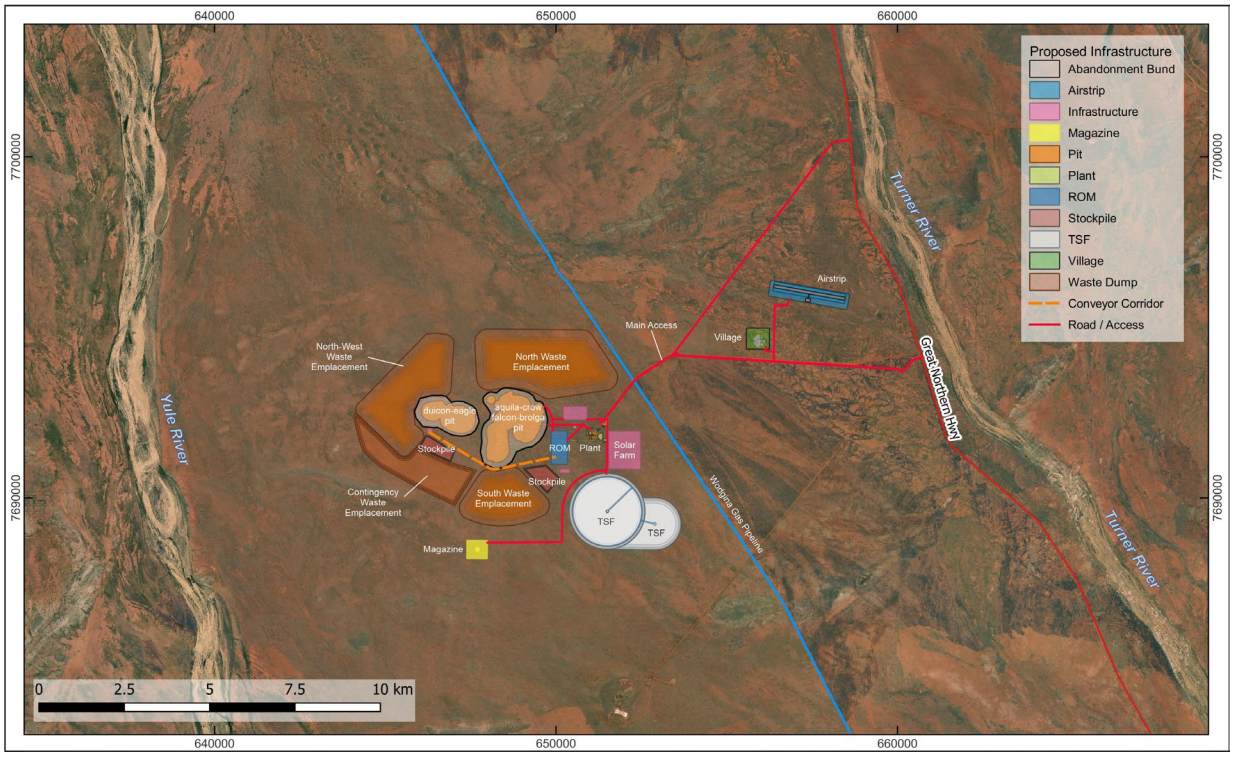
Figure 4.1: Deposit and Regional Infrastructure Map



De Grey's exploration tenements stretch from east to west in the area across a distance of approximately 150km. The Ngarluma people (western), Kariyarra people (central) and Nyamal people (eastern) are the traditional owners across the different areas of the Project.

De Grey has 100% ownership of the Mallina Gold Project, which covers an area of approximately 1,35km², with the exception of one tenement (E47/2502 - 75%). This includes approximately 1,262km² of granted tenements and approximately 97km² of tenements that are pending. In all, De Grey has 35 tenements granted and 44 tenements pending.

Figure 4.2: Project Infrastructure Map



5. Geology

Local Geology

Hemi Deposits

The Hemi discovery comprises a series of gold deposits Aquila, Brolga, Crow, Diucon, Eagle and Falcon hosted within predominately diorite to quartz diorite intrusions and sills that have been emplaced within the Mallina Basin.

There are two main deposit alteration and mineralisation styles, informally named as the Brolga-type and the Diucon-type. The Brolga-type all occur south of the Diucon Thrust and Diucon and Eagle type straddle the Diucon Thrust. The Aquila, Brolga, Crow and Falcon deposits are interpreted as Brolga-type and Diucon and Eagle are interpreted as Diucon-type.

At the Brolga-type, strong albite-chlorite-sulphide alteration occurs within the intrusions and this alteration is intimately associated with a stockwork of chlorite-sulphide veins. Rarer sericite and later chlorite alteration and veins are also observed.

At the Diucon-type a similar assemblage of alteration minerals is present with the exception of an initial development of sericite and albite alteration and smoky quartz veining. Later brittle-ductile shear zones exploit the alteration and veining, where later chlorite-carbonate-talc alteration and sulphide-gold mineralisation is observed.

Native gold is typically constrained to the Diucon and Eagle deposits. Likewise, higher contents of galena, sphalerite and chalcopyrite are observed at the Diucon and Eagle deposits. Away from the gold mineralised zones the arsenopyrite content drops off rapidly to <0.5% and pyrite is the main sulphide mineral. Arsenopyrite is generally absent within the country rock away from mineralisation.

The alteration in the country rock / waste rock units away from the intrusions is typified by regional metamorphic chlorite (possibly with calcite) alteration.

Regional Deposits

Withnell

The Withnell area is dominated by a sequence of Archaean turbidite sediments. Multiple zones of mineralisation lie within the regionally extensive, east-west trending Withnell Shear Zone. Gold mineralisation at Withnell and the adjacent Hester deposit is associated with quartz veins, quartz-sulphide lodes, disseminated sulphides and associated carbonate alteration and hosted by altered and poly-deformed folded sediments. The mineralised zones are typically sub-vertical, however folding and deformation of the sequence has resulted in some complexity to the interpreted geometry.

Toweranna

Toweranna gold mineralisation occurs in numerous variously oriented pyrite-rich quartz veins which occur within, and marginal to, an intermediate granitoid stock. The veins comprise quartz, pyrite, arsenopyrite and can occasionally exhibit free gold. The stock has intruded a suite of moderate to steeply dipping meta-sandstones, greywackes, and argillites of Archaean age.

Mt Berghaus

The Mt Berghaus Central, North Lode and Berghaus West gold deposits are controlled by the Mt Berghaus Shear Zone and are hosted within deformed metasediments of Archean age. Gold mineralisation is developed within a NE-SW striking, sub-vertical zone with resource grade mineralisation defined to date in three separate areas. Gold mineralisation is associated with zones of quartz-pyrite veining developed as multiple steep lodes within metasediments.

Wingina

The Wingina gold deposit is shear-hosted and occurs within deformed cherts and banded iron formation of Archean age. The cherty horizons form a prominent ridge along much of the extent of the identified shear zone. Gold mineralisation is associated with extensive development of pyrrhotite resulting in iron rich gossanous zones in the oxidised portion of the deposit.

Mallina

Mallina gold mineralisation and associated alteration zones occur as linear multiple stacked lodes hosted within metasediments. The gold is intimately associated with quartz-sulphide veining and pervasive carbonate, pyrite-arsenopyrite alteration of the metasedimentary wall rock units.

6. Geotechnical

MineGeoTech wase engaged to undertake a PFS geotechnical assessment to provide bench configurations for pit shell optimisations and mine designs for the Hemi deposits of Aquila, Brolga, Crow, Diucon, Eagle and Falcon.

The geotechnical assessment for the six Hemi deposits is supported by the geotechnical logging of 57 diamond drillholes. This comprised approximately 13,900m of rock mass quality logging and 6,300m of manual structural logging from diamond core drilling at a nominal 400 metre drill spacing.

A data collection program was designed and undertaken in consideration of the scale of the Project to ensure that an appropriate level of data was collected to satisfy industry study guidelines. Data collection methods utilised both resource and geotechnical specific surface diamond drilling programs.

Data was used to characterise the major and minor structural environment, assess intact material strength, assess rock mass quality of the lithology units across the project area and establish geotechnical domains for analysis. Hydrogeological data was provided by consultants to establish hydraulic conductivity of materials and dewatering drawdown rates with the proposed mining sequence.

Using this data, bench scale stability and overall slope stability analysis was completed. Compliance of the data collection and analysis was based on Read and Stacey 2009 recommendations for a PFS level of assessment.

Table 6.1 shows the overall average bench configuration parameters for the Hemi Reserves and Resources case.

Table 6.1: Average Bench Configuration Parameters - Hemi Deposits

Domain	Bench Height	Batter Angle	Berm Width	IRA[1]
	m	degrees	m	degrees
Transported	10	50°	6.0	35.0°
Oxide	10	60°	6.0	40.0°
Transition	10	72°	5.0	50.8°
Fresh	20	79°	8.2	59.0°

Note 1. IRA - Internal Ramp Angle

Bench scale stability analysis and two-dimensional finite element numerical modelling were used to determine the main outcomes. The bench scale stability analysis establishes the kinematic instabilities within the transitional and fresh rock domains. Results were then used to calculate catchment requirements and therefore berm width. A three-dimensional model for each is currently being completed and those results will be included in the DFS.

Kinematic analysis was not appropriate for the weaker transported and oxide domains, as these are driven by the variation in material strength and ground water. Base case bench configurations were tested from two-dimensional finite element numerical modelling with a range of conditions. The bench configuration informs the internal ramp angle (**IRA**) that acceptable factors of safety are used. The IRA with an allowance for the ramp width provides the overall angles for financial options analysis.

7. Geochemical

SRK was engaged to complete a detailed geochemical assessment at Hemi on waste and ore samples as part of the PFS.

The propensity for mined materials to generate acidity is a function of the balance between their acid forming constituents (e.g. sulphides) and acid neutralising constituent minerals (e.g. carbonates). This balance can be determined quantitatively using acid base accounting (**ABA**). Materials are classified as potentially acid forming (**PAF**) when the acid forming potential (**AP**) is greater than the neutralising potential (**NP**).

The available data used for the geochemical assessment consisted of:

- Drillhole database which included geological logging data and multi-element assay data
- Hemi deposits pit shells
- Surface topography
- Groundwater quality data from 22 monitoring bores screened in alluvium three monitoring bores screened in saprock nine production bores screened in alluvium one production bore screened in saprock and one production bore screened in bedrock and
- A total of 391 waste rock samples and 10 ore grade samples collected from intervals within the six proposed Hemi deposit pit shells.

Total sulphur concentrations were generally low to moderate, with 79% of samples containing less than 0.1% sulphur. The lowest sulphur contents were measured in the transported materials with the majority of samples recording contents below the limit of detection (<0.01%). The sulphur contents of the ore samples ranged from <0.01% to 4.9%, with a median of 0.78% sulphur.

Approximately 95% of samples were classified as Non Acid Forming (**NAF**) or Unclassified (**UC** NAF) and would pose a low risk of Acid Metalliferous Drainage (**AMD**). Less than 20% of the NAF samples contained significant sulphide content that may pose a risk of saline drainage or Neutral Mine Drainage (**NMD**).

Less than 5% of waste rock samples were classified as PAF. These included the intrusive, shale, siltstone and sandstone lithologies. PAF materials could therefore pose a risk of AMD if not managed appropriately. Of the ore samples, 80% were classified as NAF and 20% were classified as UC NAF.

Ongoing analysis of the PFS mining schedule will allow waste classification criteria to continue to be optimised in order to identify and manage erosion risk and the encapsulation of the limited amount of PAF material within the waste rock landforms. Kinetic testing programs (15 in total) that are underway will continue to be assessed and the final results of these tests will be included in the DFS.

8. Hydrogeology

GeoWater was engaged to undertake field investigations and assessments over a period of two years in order to develop conceptual and numerical groundwater models for the Project.

The key objectives of the conceptual and numerical groundwater modelling are to:

- Provide dewatering and water supply requirements to a suitable technical standard to support a PFS level of accuracy for water system design and cost estimation
- Provide a robust technical assessment of planned use of the local groundwater resource at the Project and assess any potential impacts of this use on surrounding water users and the environment and
- Enable the completion of an assessment to a 'H3 level' to adequately support the submission of a 5C Groundwater Well Licence application to the Department of Water and Environmental Regulation (**DWER**).

The PFS investigation period saw the completion of 37 drillholes for hydrogeological investigations, the development of 39 monitoring and production bores (with pumping and falling head tests completed in the monitoring bores), detailed water quality analysis of groundwater and select river pool samples, installation of surface water monitoring equipment in the Turner River and a census of pastoral bores and wells.

Groundwater occurs between six and seven metres below ground level at the Hemi deposits and modelling indicates that dewatering of the proposed open pit areas would need to commence in advance of mining to ensure that safe, dry conditions are achieved.

The water requirement for the Project during the operational phase is approximately 25Ml/day with consumption at the respective areas as follows:

- *Processing* — 17.2Ml/day for the processing of ore in slurry form to recover gold
- *Mining* — 7.2Ml/day for use in mining areas for dust suppression
- *Administration* — 0.6Ml/day of potable water for safety, domestic and village requirements.

Sufficient groundwater is present to meet the needs of the Project over the life of mine. Water quality is very good with low chlorides and other elements, making it suitable for conventional mining and processing operations including for the sulphide oxidation process.

Utilising the field investigations and conceptual understanding of groundwater at Hemi, a Numeric Groundwater Model (NGM) was developed to determine the potential impacts of groundwater on the proposed PFS mining schedule over the life of mine.

Based on the known high permeability and spatial extent of the alluvial aquifer at Hemi, a suitable area was selected for groundwater model development for consideration of the potential impacts of planned groundwater use. The model area totalled 1,520km² and includes both the Turner River and the Yule River and extends approximately 25km upgradient and downgradient of Hemi.

The PFS mining schedule was applied to the NGM to determine the required location of dewatering bores, their required capacity and the required timing of their operation. In all, 101 dewatering bores have been

proposed to be installed over the mine life, of which typically 40 to 60 are required at any one point in time for dewatering and reinjection.

In addition to the dewatering bores, an additional 20 reinjection bores located upstream and downstream of Hemi have been modelled. The aquifer reinjection bores minimise the requirement for surplus water discharge in the period between commencement of dewatering and commencement of processing, which is approximately 24 months. The commencement of processing essentially mitigates the need to manage surplus water beyond the Project boundaries.

9. Hydrology

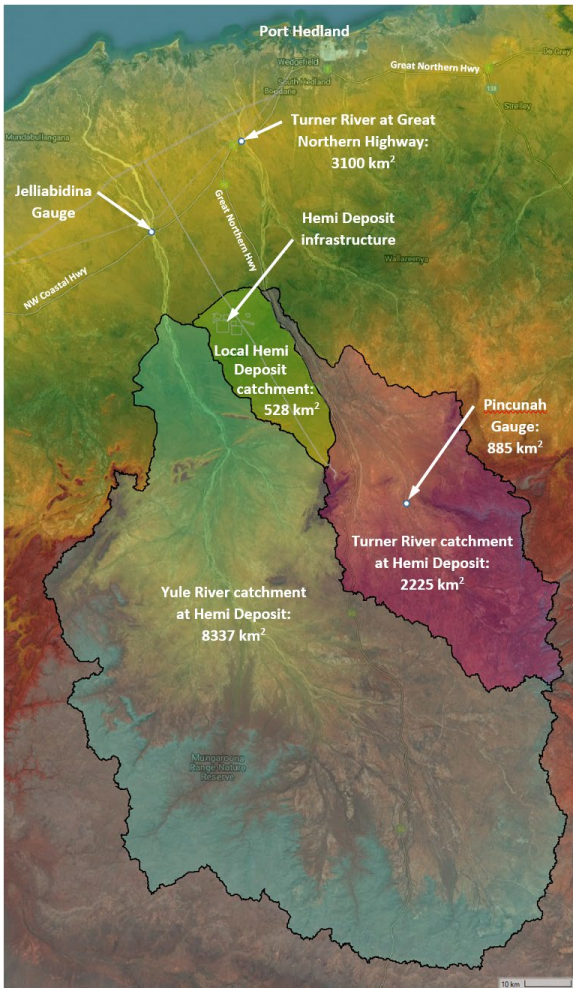
Surface Water Solutions was engaged to undertake a hydrological (surface water) assessment in parallel with the hydrogeological (groundwater) assessment.

As part of the PFS hydrology assessment, De Grey undertook a number of additional LiDAR surveys in order to provide Surface Water Solutions with the necessary topographic data. Discrepancies existed between datasets from different times and so the most recent data was adopted where there was a misalignment of datasets. The 2D flow boundary covered an area of approximately 1,600km².

Preliminary modelling demonstrates that even under 1 in 100 year 72 hour rainfall scenarios, the proposed Hemi site would have approximately only 300 millimetres (**mm**) of sheet water (from the rain event) with flow velocities of approximately 0.4m/s, which would not require rock armouring of pads or waste rock dumps. The Yule River and the Turner River would not be expected to overtop in a 1% AEP (1:100 year, 72 hour) rainfall event.

The two relevant catchments of the Hemi Gold Project are the Yule River catchment at 8,337km² and the Turner River catchment at 2,225km² as shown in Figure 9.1.

Figure 9.1: Yule River and Turner River Catchments Relative to the Hemi Gold Project



Assessments of the peak flow rates for the Yule River and Turner River have been completed by various parties over time utilising the data from the Pincunah Gauge on the Turner River and the Jelliabidina Gauge on the Yule River. For the purposes of the PFS, a 1% AEP (1:100 year 72 hour) peak flow rate of 16,500m³/s (1,425,600Ml/day) was adopted for the Yule River and a peak flow rate of 9,485m³/s (819,504Ml/day) was adopted for the Turner River respectively.

Water flow within the project area during operations will be managed via the construction of earth bunds and where necessary elevated construction pads.

10. Mineral Resource Estimate

The Mallina Gold Project comprises two principal Mineral Resource Estimates the Hemi deposits and the Regional deposits.

The Hemi deposits were first discovered in late 2019 and have been drilled extensively since then. The Regional deposits consist of nine geographically separate areas, located up to approximately 60km from Hemi.

Summaries of the total Mineral Resource Estimates for the overall Project, Hemi and Regional deposits are presented in Table 10.1, Table 10.2 and Table 10.3 respectively.

Table 10.1: Summary of Mineral Resource Estimate - Mallina Gold Project - May 2022

Deposit	Indicated			Inferred			Total			% Indicated
	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	
Hemi[1]	139.1	1.3	5.8	74.1	1.2	2.7	213.3	1.2	8.5	68%
Regional[2]	18.9	1.7	1.1	18.5	1.9	1.1	37.4	1.8	2.2	49%
Total	**158.0**	**1.4**	**6.9**	**92.6**	**1.3**	**3.8**	**250.7**	**1.3**	**10.6**	**65%**

Note 1: Cutoff grade of 0.3g/t Au above -300mRL. Cutoff grade of 1.5g/t Au below -300mRL

Note 2: Approximately 25% of Indicated shown for Regional deposits are in Measured category.

Table 10.2: Summary of Mineral Resource Estimate - Hemi by Deposit – May 2022

Deposit	Indicated			Inferred			Total			% Indicated
	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	
Aquila	12.9	1.5	0.61	7.6	1.3	0.31	20.5	1.4	0.92	67%
Brolga	37.3	1.3	1.61	24.2	1.1	0.82	61.6	1.2	2.43	66%
Crow	20.3	1.1	0.70	12.5	1.2	0.68	32.8	1.1	1.17	60%
Diucon	29.4	1.4	1.31	8.6	1.2	0.32	37.9	1.3	1.63	80%
Eagle	16.6	1.2	0.64	9.9	1.0	0.31	26.5	1.1	0.95	67%
Falcon	22.7	1.3	0.94	11.4	1.2	0.42	34.1	1.2	1.36	69%
Total[1]	**139.1**	**1.3**	**5.80**	**74.1**	**1.1**	**2.67**	**213.3**	**1.2**	**8.47**	**68%**

Note 1: Cutoff grade of 0.3g/t Au above -300mRL. Cutoff grade of 1.5g/t Au below -300mRL.

Table 10.3: Summary of Mineral Resource Estimate - Regional by Deposit – May 2022

Deposit	Indicated			Inferred			Total			% Indicated
	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	Tonnes Mt	Au g/t	Au Moz	
Withnell	4.4	1.8	0.25	3.1	3.5	0.34	7.5	2.5	0.60	43%
Camel	0.6	2.4	0.03	0.2	1.7	0.01	0.8	2.2	0.06	50%
Roe	0.3	2.0	0.01	0.3	2.0	0.02	0.6	2.0	0.04	46%
Dromedary	0.2	2.0	0.01	0.1	1.7	0.01	0.3	1.9	0.02	60%
Calvert	1.0	1.3	0.04	0.3	1.2	0.01	1.3	1.3	0.05	80%
Mallina	1.6	1.2	0.06	5.1	1.5	0.24	6.8	1.4	0.31	21%
Toweranna	4.3	2.1	0.29	3.0	2.4	0.23	7.4	2.2	0.52	56%
Wingina	4.1	1.7	0.22	1.4	1.6	0.07	5.5	1.6	0.29	75%
Amanda	0.6	1.4	0.03	1.4	0.9	0.04	2.0	1.1	0.07	37%
Mt Berghaus	1.0	1.7	0.05	3.4	1.2	0.13	4.3	1.3	0.18	29%
Hester	0.1	2.1	0.00	0.1	1.4	0.00	0.1	1.7	0.01	54%
Leach Pad	0.9	0.7	0.02				0.9	0.7	0.02	100%
Total	**18.9**	**1.7**	**1.05**	**18.5**	**1.9**	**1.11**	**37.4**	**1.8**	**2.16**	**49%**

De Grey engaged Cube Consulting Pty Ltd (**Cube**), to complete a Mineral Resource estimate for the Hemi gold deposit, part of the Project.

This estimate was conducted in accordance with the 2012 Edition of the '*Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves*' prepared by the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Geoscientists and Minerals Council of Australia (2012).

Other than exploration results released subsequently, De Grey confirms that it is not aware of any new information or data that materially affects the information included in its ASX release dated 31st May 2022 (*Hemi Mineral Resource update*). All material assumptions and technical parameters underpinning the estimates in these releases continue to apply and have not materially changed.

11. Mine Design and Schedule

Cube was engaged by De Grey to undertake mining engineering studies in relation to the Hemi and Regional deposits. The scope of works included the collation of input parameters, open pit optimisation studies, open pit designs and pit production scheduling.

Resource Models

The resource models utilised in the mining engineering studies were provided to Cube by De Grey. The Hemi resource model used for this PFS was produced in 2022. The resource models for the Regional deposits were produced over a range of years from 2016 to 2020.

Input Parameters

Input parameters containing processing, operating, fixed and mining costs and recovery were developed in consultation with Cube, which included base economic, geotechnical, mining and processing parameters required for the PFS.

Input parameters were used in completing open pit optimisations using WHITTLE® software, which uses the Lerchs-Grossman algorithm to determine a range of optimal shells at varying metal prices. The program generates economic shells based on input parameters consisting of operating costs (mining & processing costs, royalties, selling costs), metallurgical recoveries, geologic and geotechnical (slope) considerations. The optimal pit shells derived from the open pit optimisation are then used to develop open pit mine plans for the deposit.

Mining Dilution and Ore Loss

The recently produced Hemi resource models were estimated using localised uniform conditioning (**LUC**) modelling techniques which are considered to be recoverable resource models and as a result no additional ore losses or mining dilution were applied to those models.

The regional resource models were estimated using an ordinary kriging estimation process. Cube has applied a blanket 5% mining dilution and 5% ore loss assumption to the in-situ tonnes and grades. This blanket assumption is intended to reflect the fact that detailed work on these inputs has not yet been carried out and rather, reasonably accepted industry standards have been applied.

Geotechnical Parameters

Two sets of geotechnical parameters were applied, the first for the Hemi Indicated Resources Only (Run A) case, the second for the Hemi Indicated and Inferred Resources (Run B) case. Table 11.1 shows the pit design parameters for the Run B case.

Table 11.1: Pit Design Parameters - Hemi Pits

Domain	Batter Height	Batter Angle	Berm Width	IRA[1]
	m	degrees	m	degrees
Cover	10	50°	6.0	35.0°
Oxide	10	60°	6.0	40.0°
Transition	10	72°	5.0	50.8°
Fresh	20	79°	8.2	59.0°

Note 1 – IRA – Internal Ramp Angle

The Hemi Indicated Resources Only case utilised a conservative approach as it formed the basis of the Maiden Ore Reserve Estimate and will provide a conservative baseline for debt funding discussions. As such, saturated wall angles were applied to the Aquila, Brolga, Crow and Falcon pits, and dewatered wall angles to the Diucon and Eagle pits for the pit shell optimisations. The Hemi Indicated and Inferred Resources case utilised the more likely scenario, that being dewatered wall angles for all of the pit shell optimisations. The wall angles used for the regional deposits were those from the Scoping Study 2021 as shown in Table 11.2.

Table 11.2: Pit Design Parameters - Regional Pits

Domain	Batter Height	Batter Angle	Berm Width	IRA[1]
	m	degrees	m	degrees
Oxide	10	50°	6	34.8°
Transition	10	65°	7	40.6°
Fresh	20	75°	8	56.3°

Note 1 – IRA – Internal Ramp Angle

Pit Shell Optimisations

Pit shell optimisations were undertaken for all of the deposits in separate runs (Run A and Run B separately) such that the evaluation and pit shell selections could be undertaken individually for each deposit.

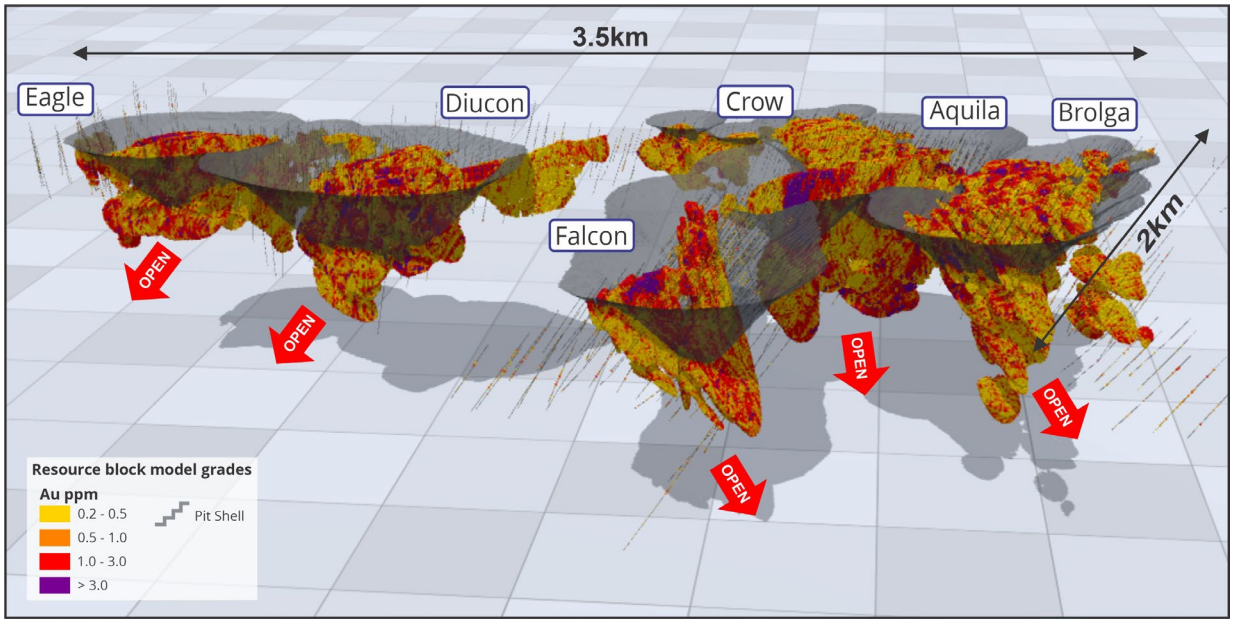
The pit shell selections were largely driven with a focus on the so-called “discounted worst” evaluation, together with a consideration of cost per ounce produced for the project as a whole. This resulted in the selection of shells in many cases which were significantly smaller than the revenue factor 1 shell (that is the shell which corresponds to the best value undiscounted shell).

Mine designs were completed for Hemi Run A pit shells and for the regional Run B pit shells. Table 11.3 shows the ramp design parameters and Figure 11.1 shows the Run A mine designs for all of the Hemi pits.

Table 11.3: Ramp Design Parameters

Description	Units	Value
Ramp Width – Double Lane	m	25
Ramp Width – Single Lane	m	15
Gradient	1:x	9
Single Lane	3	Bottom 60m vertical

Figure 11.1: Hemi Open Pit Designs



Mine Production Schedule

Mine production schedules were developed for the respective mining plans utilising Minemax Scheduler software, which is an advanced schedule optimisation tool capable of maximising the project NPV dynamically within prescribed targets and constraints. The primary aim of the mine production schedule is to produce an ore feed within the prescribed design capacity of 10Mtpa.

Where appropriate, the software also preferentially processes higher grade material and stockpiles lower grade material so as to ensure that sufficient ore (from stockpiles) is available towards the latter part of the mining schedule when vertical advance rates can restrict the availability of mined ore.

Table 11.4 shows the key outputs of the Mine Schedule for the following mining plans:

- Mallina Reserves and Resources Mine Schedule (including Measured, Indicated and Inferred Resources)
  - A mine schedule was produced that used the pit optimisation shells from the Hemi Run B optimisations and the Regional Run B mine designs. This mine schedule included the Measured, Indicated and Inferred resources from Hemi and Regional deposits and underpins the key PFS outcomes
- Hemi Reserves and Resources Mine Schedule (including Indicated and Inferred Resources)
  - A mine schedule was produced using the pit optimisation shells from the Hemi Run B optimisations, which included the Indicated and Inferred Resource from Hemi and underpins the Hemi only PFS outcomes
- Hemi Reserves Mine Schedule (Hemi Indicated Resources only)
  - A mine schedule was produced using the mine design from the Hemi Run A optimisations, and only includes Indicated Resources from Hemi and defines the Hemi Reserve Statement and underpins the PFS outcomes

Table 11.4: Key Outputs from Mine Schedule for the respective Mining Scenarios

Scenario	Life of Mine	% Indicated	Strip Ratio	Waste Tonnes Mined	Ore Tonnes Mined	Gold Grade	Average Au Recovered	
							Yr 1 to 5	Yr 1 to 10
	years	%	waste:ore	Mt	Mt	g/t Au	Koz Au / annum	Koz Au / annum
Mallina Reserves & Resources	13.6	87%	6.9	947	137	1.56	550	539
Hemi Reserves & Resources	11.4	91%	6.1	695	114	1.54	523	496
Hemi Reserves	10.3	100%	6.1	644	103	1.55	554	474

1. *"Hemi Reserves" are based on Indicated Resources only*
2. *"Hemi Reserves and Resources" are based on Indicated and Inferred Resources*
3. *"Mallina Reserves and Resources" are based on Hemi Indicated and Inferred Resources plus Regional Deposit Measured, Indicated and Inferred Resources within pit shells from the previous Oct 2021 Scoping Study with updated mining and transportation costs. Reserves are included from Hemi only.*

Mining Cost Estimate

Mining cost estimates were developed by Nick Bell Consulting. Mining rates have been constrained to 90Mtpa and 60 vertical metres advance per annum. Production from Regional deposits has been constrained to year 3 onwards of the mine production schedule and only three deposits being mined at any one time in addition to Hemi. The Hemi deposits comprise approximately 80% of the production over the first ten year PFS evaluation period. Extensions to mineralisation recently demonstrated at Diucon and Eagle are expected to increase the contribution from Hemi zones in future project evaluations.

Mining load and haul, and drill and blast costs were provided by Nick Bell Consulting for Hemi and Majesso Consulting for the Regional deposits based on a typical contract mining scenario with the scope of work covering the following aspects:

- Supply and mobilisation of mining equipment and personnel
- Establishment of mining facilities
- Preliminary works for clearing, grubbing, topsoil removal and haul road construction
- Drilling and blasting including supply of explosives and presplitting
- Loading and hauling of ore to the Run of Mine (**ROM**) pad stockpiles
- Loading and hauling of waste materials to a single waste rock emplacement
- Rehandle of ore from the ROM pad stockpiles to the processing plant crusher

- Pit dewatering
- Waste rock emplacement profiling and topsoiling and
- Miscellaneous dayworks activities.

The mining costs provided were generated using a first principles approach with inputs that are considered to be typical and consistent with a mining contractor approach for this type of operation. The proposed mining fleet would typically include 600 tonne class excavators and 220 tonne payload haul trucks.

12. Metallurgy and Processing

Comprehensive metallurgical testwork programs have now been completed on representative bulk composite and variability samples from the six Hemi deposits as well as a 4.5 tonne (**t**) pilot plant sample from the Brolga deposit.

The results from these metallurgical testwork programs confirm that Hemi can be processed via conventional carbon in leach (**CIL**) processing with the inclusion of a flotation stage and a sulphide oxidation stage to achieve approximately 94% gold recovery at a gold head grade of 1.5g/t Au.

The transition and fresh domains can be classified as a semi refractory, meaning that a portion of the gold is locked up in the atomic lattice (or in solid solution) of sulphide minerals. These sulphide minerals can be readily recovered via flotation into a concentrate that is only 8% by mass. The concentrate, which contains those sulphide minerals releases the associated gold when subjected to pressure oxidation (**POx**), allowing the released gold to be recovered via conventional CIL processing.

The Hemi ore is considered to be in the harder range in terms of grinding competency, however it has a significant advantage over many other semi refractory ores in that there are inherent carbonates present in the deposits that significantly reduce the requirement for limestone during the neutralisation process after sulphide oxidation, and importantly, an additional 5% to 7% of gold is typically recovered in the downstream CIL process from the flotation tail stream.

Metallurgical Testwork Programs

Eight metallurgical testwork programs have been completed as part of the Scoping Study and PFS phases and an additional ten metallurgical testwork programs are in progress. Of those ten testwork programs that are still in progress, the majority of testwork results are complete and are presented in this PFS, whilst the outstanding results generally relate to refinement and to a lesser degree, optimisation of the process flowsheet as opposed to validation of process design criteria.

- The metallurgical testwork programs have included:
- Physical characteristics and properties (eg comminution)
- Cyanidation leach amenability at conventional grind sizes
- Cyanidation leach amenability at ultrafine grind sizes
- Gravity recoverable gold characteristics
- Flotation amenability at different grind sizes
- Mineralogical characteristics prior to and after flotation
- Sulphide oxidation characteristics using various methodologies
- Cyanidation leach characteristics of flotation tails and oxidised flotation concentrate
- Ancillary testwork (e.g. material flow, settling).

In all cases, the sample selection process included geological, mineralogical and metallurgical input to ensure that all existing mineralogical and geometallurgical domains across the deposits would be sufficiently represented and tested.

The results of the first pilot plant testwork program are included in this PFS report with some further minor optimisation testwork remaining as part of that pilot plant program. A second pilot plant testwork program, which aims to incorporate samples from deposits scheduled to be processed in the first five years of the mine life is now in progress with those results to be reported in the DFS.

The first pilot plant testwork program was completed at ALS Perth laboratory utilising approximately 4.5 t of sample from the Brolga deposit. The sample was crushed and then processed through a continuous milling, classification and flotation circuit. The flotation concentrate stream was then subjected to sulphide oxidation via two alternate technologies (pressure oxidation and Albion).

The flotation concentrate and flotation tail streams were then subjected to individual and combined cyanidation leach testwork and ancillary testwork to validate the process design criteria and previous and ongoing bulk composite and variability sample testwork.

Metallurgical Domaining

The Hemi deposits were metallurgically domained based on their geological, mineralogical and where applicable in retrospect, their metallurgical characteristics. This domaining been significantly advantaged by 5m composite multi element analysis across all of the Hemi deposits. Not only has this benefited the metallurgical and mineralogical domaining of the deposits, but has assisted greatly in providing important metallurgical information in relation to mineral composition of the ore zones as part of the mining schedule in the form of sulphide, iron, arsenic, carbonate and clay contents.

The oxide (or saprolite) domain, which accounts for approximately 4.1% of the Hemi gold ounces, can be described as free milling with gold recoveries readily achieved via conventional CIL processing of greater than 90%.

The transition (or saprock) domain, which accounts for approximately 10.9% of the Hemi gold ounces, generally behaves in a similar manner to the fresh domain displaying semi refractory properties. The addition of a flotation stage to recover the sulphide minerals, which are then oxidised and recombined with the flotation tail, allows the gold to be recovered via conventional CIL processing, achieving gold recoveries in the range of 92% to 95% depending on the head grade of the sample. The contribution of the transition domain in terms of percentage gold ounces has increased since the Scoping Study. This is the result of a detailed regolith study that identified a sub-domain within the fresh domain that contains weathering in the joints and which has since been classified as transition material.

In addition to the more conventional oxide and transition domains, a kaolinised sulphidic zone (**KSZ**) has also been identified and which accounts for approximately 2.4% of the Hemi gold ounces.

The fresh domain, which accounts for approximately 83% of the Hemi gold ounces, behaves as a semi refractory deposit. Approximately 60% to 70% of the gold is recoverable via fine grinding and conventional CIL processing. The remaining gold is contained within the atomic lattice (or in solid solution) of the sulphide minerals, predominantly arsenopyrite. The sulphide minerals which are mostly pyrite and to a lesser extent arsenopyrite, are readily recovered via flotation. Oxidation of these sulphide minerals recovered in the flotation concentrate renders them leachable via conventional CIL processing achieving gold recoveries of >90% depending on the sample grade.

Metallurgical Characteristics

The fresh domains of the Hemi deposits can be described as being in the hard range of ores in terms of milling competency with rod and ball Bond indices (design) of 21.8kWh/t and 19.5kWh/t respectively. The abrasion indices of the deposits are in the moderate to high range (~ 0.15 – 0.35) and the ore is generally not amenable to semi autogenous grinding with Axb values of less than 30. The 85th percentile has been incorporated into the design criteria in establishing comminution design criteria and no benefit has been included as a result of blending fresh domains with softer oxide and transition domains as is the case in the mining schedule.

Flotation testwork has demonstrated a non-dependence of grind size on sulphide recovery at P_{80} grind sizes of 75µm and 150µm. The leach cyanidation characteristics of the flotation tail have however displayed grind dependence with distinct financial value to be gained at a finer P_{80} grind size of 75µm.

The flotation recovery of sulphide minerals to the flotation concentrate is generally excellent and exceeds 95%, and all three mainstream sulphide oxidation technologies, namely POx, bacterial oxidation (**BIOX**) and ultra-fine grinding followed by atmospheric oxidation (**Albion**) demonstrated a capability to oxidise >90% of the sulphide minerals.

The PFS pilot plant testwork program identified that the Hemi deposits have a significant mineralogical advantage in terms of the inherent 'carbonate' content in the samples that significantly reduces limestone consumption in the neutralisation stage, particularly for the POx process. This aspect was not able to be tested in a robust manner during bench scale testwork, however has been confirmed during testwork on larger flotation concentrate samples that the pilot plant testwork program was able to produce. The net effect is that the presence of this inherent carbonate significantly improves reagent consumption requirements versus what was assumed to be the case in the Scoping Study.

The eastern deposits of Aquila, Brolga, Crow and Falcon continued to demonstrate a lack of any material benefit in terms of gold recovery from the inclusion of a gravity circuit, however, the more recently discovered deposits of Diucon and Eagle have a slight difference in mineralogy in the form of quartz veining, which would appear to also include coarser gravity recoverable gold. Early results from current gravity testwork programs that are nearing completion would appear to validate this theory.

Pilot Plant Testwork Programs

A 4.5 t pilot plant testwork program utilising representative sample from five diamond drillholes in the Brolga deposit was completed at ALS Metallurgy (Perth WA) during February 2022.

The pilot plant testwork program included:

- Pre crushing of the diamond drill core to minus 3.35mm
- Ball milling to a target P_{80} grind size of 75µm
- Flotation through a set of rougher cells
- Collection of a flotation concentrate stream and a flotation tail stream
- Sulphide oxidation (POx and Albion) testwork on the flotation concentrate stream
- Cyanidation leach testwork on the oxidised flotation concentrate and flotation tailings streams
- Mineralogical analysis of various process streams
- Other ancillary testwork on individual and recombined process streams

Figure 12.1 is a plan view of the five diamond drillholes located in the Brolga Stage 1 pit sampled for the Brolga pilot testwork.

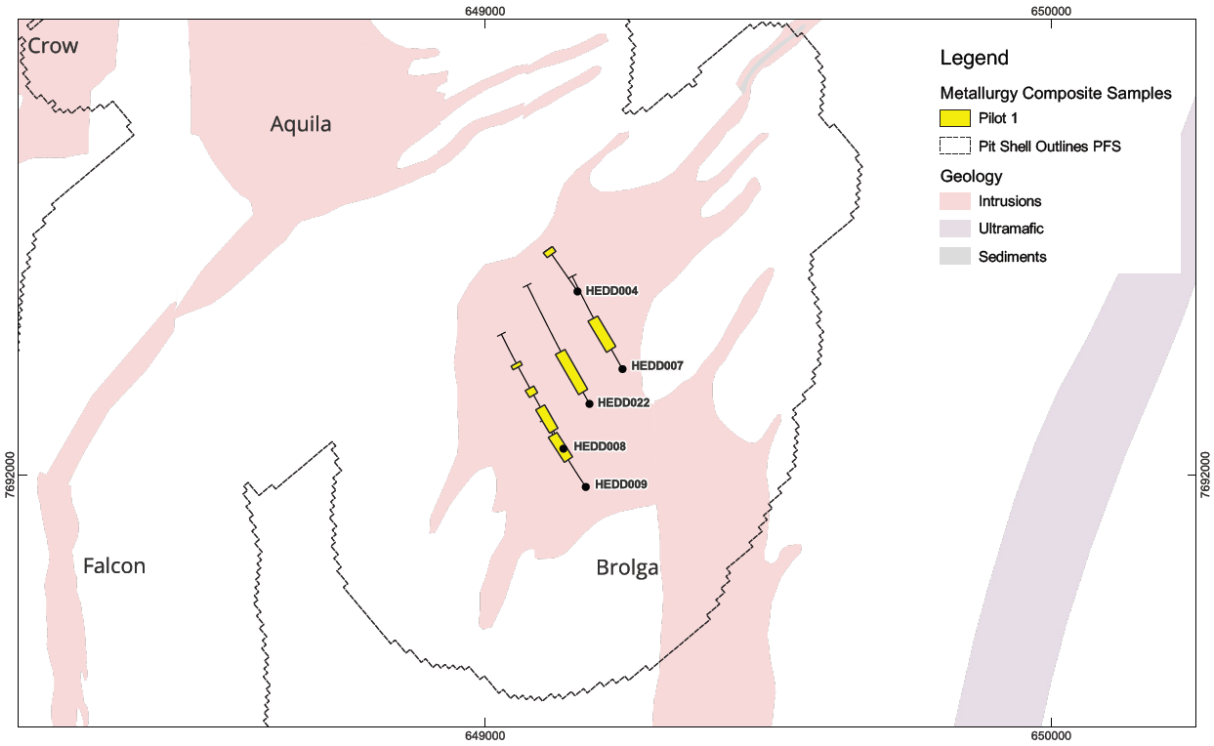
Table 12.1 is a summary of the Brolga pilot plant results.

Table 12.1: Brolga Pilot Plant Results

Stage	Mass	Gold			Sulphur	
		Head Grade	Tail Grade	Recovery	Head Grade	Recovery
	%	g/t Au	g/t Au	%	%	%
Pilot Plant Feed	100.0	0.90			0.73	
Flotation Concentrate	6.8	11.9		89.3	10.6	96.2
Flotation Tail	93.2	0.10		10.7	0.03	3.8
Cyanidation of Oxidised Flotation Concentrate		11.9	0.55	95.4		
Cyanidation of Flotation Tail		0.10	0.03	71.0		
Overall Cyanidation (Sum Product)		**0.90**	**0.07**	**92.8**		

Note: Overall average results presented.

Figure 12.1: Plan view of the locations of the five Brolga diamond drillholes



Metallurgical Recovery

The average metallurgical recovery for the fresh domain of the Hemi deposits based on metallurgical testwork results for the proposed process flowsheet is approximately 93.6% at a gold grade of approximately 1.5g/t Au.

Based on testwork to date, a gold recovery formula has been modelled to enable an accurate calculation of the gold recovery for a wider range of gold grades by applying a percentage gold recovery to the flotation concentrate stream of 95.5% and a fixed residue to the flotation tail stream of 0.06g/t Au.

For gold grades less than 1.5g/t Au, the application of a fixed gold residue of 0.10g/t Au, as was applied in the Scoping Study remains conservative, however for grades exceeding this value, the hybrid approach is considered at this point in time to provide a more accurate outcome. It is possible that with further optimisation testwork on higher gold grade samples at the POx stage and the cyanidation leach stage of the oxidised sulphide stream, that a fixed residue, or hybrid fixed residue approach might be appropriate for all gold grades.

Process Flowsheet

Wood Australia (**Wood**) was engaged to undertake a Pre-Feasibility Study level assessment of the processing requirements for the Hemi Gold Project.

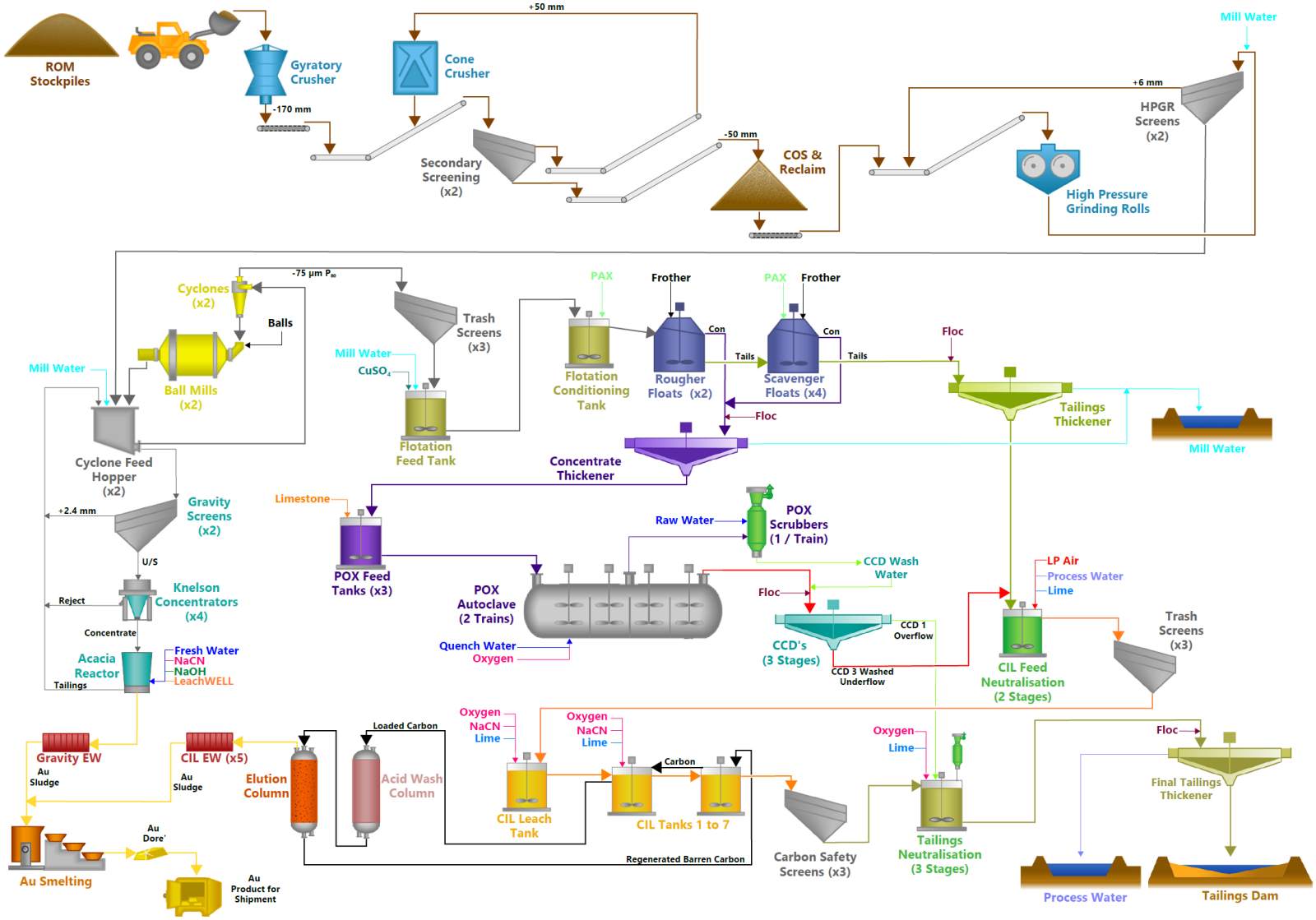
Following the completion of the Scoping Study (September 2021), a comprehensive set of trade-off studies were conducted by process engineer Wood and De Grey over a nine-month period to establish the preferred process plant flowsheet for the Hemi Gold Project based on a 10Mtpa process plant throughput.

Process Flowsheet Selection

The process flowsheet selection was based on economic, technical and environmental, social and governance (**ESG**) considerations and was supported by extensive metallurgical testwork and financial evaluation.

Figure 12.2 is a schematic of the proposed process flowsheet.

Figure 12.2: Schematic of the Proposed Process Flowsheet



The proposed process flowsheet includes:

- Primary crushing
- Secondary crushing and coarse ore stockpiling
- High pressure grinding rolls (**HPGR**) primary grinding
- Ball mill grinding
- Gravity gold recovery and intensive leaching
- Sulphide flotation
- POx of the flotation sulphide concentrate
- Counter current decantation (**CCD**) washing of the POx discharge
- Neutralisation of the CCD underflow with flotation tailings
- CIL gold leaching
- Loaded carbon elution and gold electrowinning and refining and
- Tailings neutralisation and disposal.

Comminution Trade Off Study

A comminution trade off study was completed as part of the PFS. Three comminution circuit options were evaluated as follows:

- Primary crushing followed by wet SAG – ball – pebble crushing (**SABC**)
- Two stage crushing followed by HPGR and wet ball milling and
- Two stage crushing followed by dry vertical roller mills (**VRMs**).

After completing sufficient engineering to allow capital and operating cost estimates to be developed at an order of magnitude level, Wood conducted a ranking exercise evaluating various criteria including technical and risk, financial and funding and health, safety, environmental and community factors. Wood recommended the two-stage crushing followed by HPGR and wet ball milling circuit as the preferred comminution circuit for the PFS.

The comminution circuit will comprise a crushing circuit incorporating a primary gyratory crusher, a secondary cone crusher and HPGR. The secondary cone crusher will operate in closed circuit with a sizing screen while the HPGR will operate in closed circuit with wet sizing screens to produce a nominal less than 6mm mill feed. The grinding circuit will consist of two ball mills with conventional pinion drives each with their own classification circuit.

The HPGR option was chosen from the three alternatives as it:

- Provided the lowest capital and operating costs arrangement
- Provided a reliable robust circuit solution for the style of Hemi mineralisation
- Resulted in the lowest carbon emissions intensity
- Has the ability to expand its throughput capacity by approximately 30% with the addition of a third ball mill
- Has delivery times that aligned with the development schedule, and
- Presents proven technology – the use and reliability of HPGRs in gold plants at the scale of Hemi has increased, along with design and operability improvements, over the past 20 years. HPGRs are currently used at large scale gold operations in Western Australia including the Boddington and Tropicana gold mines.

Sulphide Oxidation Trade Off Study

The sulphide oxidation trade off study evaluated two options for oxidation of the flotation concentrate to liberate the gold from the atomic structure enabling cyanidation leach gold recovery in the downstream CIL circuit. The two options evaluated were:

- POx and
- Atmospheric oxidation using the Albion Process.

Wood conducted a ranking exercise (similar to the comminution evaluation process) evaluating various criteria including technical and risk, financial and funding and health, safety, environmental and community factors. Wood recommended the pressure oxidation as the preferred oxidation process for the PFS.

The sulphide oxidation circuit throughput for Hemi is proposed to be 0.8Mtpa, or 8% of the proposed comminution circuit throughput of 10Mtpa. The sulphide oxidation circuit will treat the gold bearing sulphide concentrate generated by the flotation circuit. The pressure oxidation circuit will consist of flotation concentrate thickening and storage, pressure oxidation utilising autoclave technology and neutralisation in association with the flotation tail prior to co-leaching in a CIL circuit.

The sulphide oxidation circuit will be designed to have sufficient storage capacity prior to the autoclave to allow for typical maintenance shutdowns without the need for a milling circuit shutdown. This allows for a significant level of decoupling of the comminution and sulphide oxidation circuits ensuring that the impact of each circuit on the availability of the other is minimised.

The evaluated options demonstrated a technical ability to oxidise the sulphide concentrate and achieve high gold recovery. POx provided the lowest capital and operating cost for Hemi mineralisation. This was primarily due to the short residence time required and relatively low reagent consumption compared to other options.

Additional advantages of the POx option are the robustness of the process, the long history of this methodology coupled with reliability improvements over the past two decades, both in materials of construction, operability, maintenance, delivery times and improved ESG outcomes.

Hemi mineralisation has been found, through extensive testwork and studies, to be amenable to POx due to:

- the gold bearing sulphide concentrate generated in the flotation circuit has a gold to sulphur ratio (Au g/t to % S_2-) of greater than 1.5 to 1. This ratio is above average (typically 1 to 1 or less for similar projects using this technology) and means that less sulphur needs to be oxidised in the POx circuit for the amount of gold produced
- the level of sulphides present does not require the addition of heating or cooling to sustain or control the oxidation process and
- the mineralisation has neutralising properties from carbonates in the ore resulting in less reagents being required for neutralisation of acid generated within the POx circuit.

The POx circuit at 0.8Mtpa is significantly smaller than the remainder of the plant as it does not require a whole of ore feed. An autoclave circuit of this size has proven to be reliable, operable and maintainable.

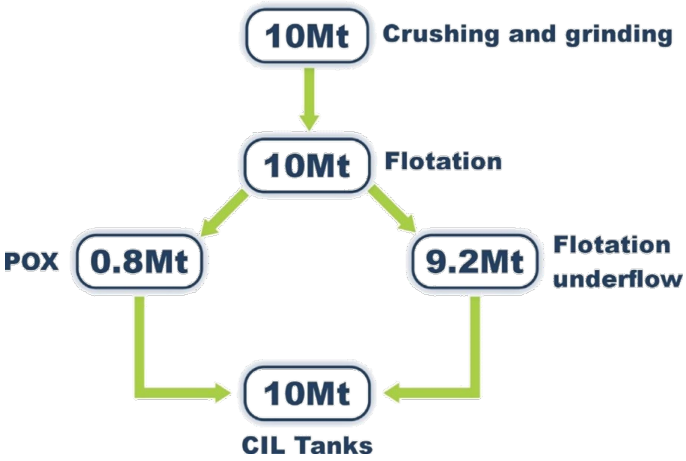
The metallurgical testwork undertaken on the pilot plant concentrate has validated earlier batch testwork and demonstrated that the neutralisation capacity of the non-sulphide minerals in the flotation concentrate and the flotation tailings can significantly reduce the need for limestone in the neutralisation stage delivering operating cost and environmental benefits.

Process Plant Design

The Hemi Gold Project process plant is designed to treat 10Mtpa of fresh gold ore containing 1.5g/t Au at a design sulphur grade of 1.15%. The sulphide ore component is oxidised using pressure oxidation to liberate the gold in the ore from the atomic structure resulting in a design gold recovery of approximately 94%.

Figure 12.3 shows the respective throughput rates of the comminution, flotation and CIL circuits in comparison with the POx circuit.

Figure 12.3: Process Plant Design Throughputs for Comminution, Flotation, CIL and POx



The process plant design criteria proposed by Wood and De Grey in the PFS has been established based on a combination of standard industry practice, benchmarking and metallurgical testwork. Plant availabilities for the crushing, milling and POx circuits have been conservatively set at 70%, 91.3% and 88% respectively. Oxygen capacity has been designed for a sulphide content of 1.15% versus a life of mine average of 1.00% both to account for inherent inconsistencies that will eventuate from the mining schedule and to enable the POx circuit to ramp up when required after maintenance shutdowns.

Wood have as part of the PFS developed a Mechanical Equipment List (**MEL**), an Electrical Equipment List (**EEL**) and Process Flow Diagrams (**PFDs**).

13. Tailings Storage

CMW Geosciences was engaged to design a tailings storage facility (**TSF**) for the Hemi Gold Project. The Integrated Waste Landform (**IWL**) design aligns with Department of Mines, Industry Regulation and Safety (DMIRS), Australian National Committee on Large Dams (**ANCOLD**) and Global Industry Standard on Tailings Management (**GISTM**) guidelines.

The TSF design has two cells (100Mt and a +30Mt) that account for the processing throughput rate of 10Mtpa to produce consolidated tailings at a dry density of 1.4t/m³. Geotechnical investigations were undertaken in the form of test pitting to confirm that the proposed TSF location was suitable and hydrogeological monitoring bores have been installed.

The IWL design concept proposed is a robust design based on downstream raising of the perimeter embankments and which is resistant to liquefaction. The TSF is designed to a height of 30m and the proposed 20m crest width at the top of the TSF wall provides a high factor of safety against slip failures.

The TSF would be constructed in five stages over the life of mine with an initial lift height of 10m followed by four further lifts of 5m each. The embankment will be zoned with a 6m wide upstream zone of low permeability roller compacted clayey mine waste and a 14m downstream zone of general, traffic compacted waste material.

The low permeability clay materials (~1.1Mm³) will be sourced as part of the mining operations from the oxide zone and clayey overburden from within the Hemi deposits. Mine waste (~17.9Mm³) will form the bulk of the embankment and will also be sourced from mining operations. The TSF will have a final embankment slope of approximately 1:3 to ensure that it will provide a stable long term landform.

The TSF is designed in accordance with ANCOLD guidelines for a 1:5,000 year seismic event and a 1:1,000 year 72 hour rainfall event. Cost estimates were similar for both options based on quantities estimated from AutoCAD Civil 3D. The costs were estimated based on rates from other projects in the Pilbara and Goldfields regions of WA and are included in the capital costs section of this summary.

14. Infrastructure

Existing infrastructure capable of servicing the Project includes:

- Two lane bitumen highways the North West Coastal highway and Great Northern highway
- Two gas pipelines the Pilbara Energy gas pipeline and the Wodgina Mine gas pipeline
- Port Hedland to Karratha 220kV power transmission line fed separately by two gas fired power stations located at Port Hedland and Karratha
- The port of Port Hedland, a bulk export and materials importation facility
- The international airport at Port Hedland
- Existing combined mobile (cell) tower and optic fibre / wireless communications.

Power Supply

An assessment of available power supply options was completed as part of the PFS. Three viable supply options will continue to be progressed as part of the DFS phase. They include two suppliers that could provide the required power via a grid network connection with the third option involving the establishment of an on-site gas powered generation facility.

Water Supply

Detailed hydrogeological (groundwater) modelling has identified that sufficient groundwater would be produced from mine dewatering activities for mining, processing and personnel requirements for the life of mine.

Prior to and during processing, groundwater would be reinjected into the upstream and downstream aquifer. Should there be a requirement for additional water at any stage, then these aquifer reinjection bores can be utilised for extraction purposes to increase the quantity of groundwater available.

The mine dewatering infrastructure would include approximately 40 groundwater bores initially with 20 aquifer reinjection bores and an additional 60 groundwater bores over the life of mine, with approximately 40 to 60 bores operational at any point in time.

Village

It is anticipated that there would be a requirement to accommodate approximately 900 persons during the construction phase and approximately 600 persons during the operational phase.

The accommodation requirements during the construction phase would incorporate rooms at the existing Wingina and Withnell villages in addition to hot bedding at the proposed 600 person accommodation village. The establishment and operation of a 600 person accommodation village is included in the capital and operating cost estimates.

Airstrip

A design has been completed for a Code 3C airstrip with capability for Code 3C (F100) sized jet aircraft to take-off and land. Geotechnical test pitting has also been completed at the proposed airstrip location.

Access Road

An 11km access road would utilise an existing highway intersection to provide access to the village, airstrip, mine and processing operations.

Communications

A design has been completed that would see the existing communications network upgraded so as to facilitate the necessary communications systems required for the construction and operations phases of the Project.

15. Environmental

RPM Advisory Services (**RPM**), formerly Blueprint Strategies were engaged by De Grey to assess to a PFS level, the environmental aspects of the Project.

The objectives of the environmental assessment were to identify the key environmental, heritage and social aspects of the Project, potential approvals pathway and associated study requirements.

In addition to RPM, a number of additional specialist consultants were engaged to complete PFS level assessments in their particular area of expertise. These included:

▪ Umwelt	Flora and Vegetation Socio Economic Impact Assessment
▪ Western Wildlife	Fauna and Habitat
▪ Bennelongia	Subterranean Fauna Short Range Endemics
▪ MBS Environmental	Ecological Risk Assessment
▪ Environmental Technologies	Air Quality
▪ Herring Storer	Noise and Vibration
▪ Stantec	Aquatic Fauna
▪ Geowater	Hydrogeology
▪ Surface Water Solutions	Hydrology
▪ SRK Consulting	Materials Characterisation
▪ Energetics	Energy Efficiency & Carbon Emissions
▪ MineEarth	Soils and Landforms
▪ Scarp Archaeology	Heritage.

Key Environmental Considerations

A number of key environmental considerations were identified that may require implementation of management plans and / or additional investigation to reduce the potential impacts and support approval applications.

Conservation Significant Fauna

The habitat of several conservation significant species listed under State and Commonwealth legislation have been recorded in the Project area, including the Bilby, Northern Quoll, Pilbara Olive Python and Ghost Bat. Although no evidence of the presence of this fauna was identified, as part of the environmental impact assessment for approval applications, the following additional work is underway:

- Refinement of fauna assessment findings in order to assess impact avoidance within the definitive Development Envelope
- Refinement and regional assessment of habitat types, with further categorisation of habitats and their value to conservation significant species, in particular the Northern Quoll and Bilby.

Conservation significant management plans will be developed irrespective of their absence for the Bilby, Northern Quoll and Pilbara Olive Python to support the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) Referral. Preliminary survey results indicate that no confirmed short range endemic (**SRE**) species are expected to be at Hemi.

The potential for conservation significant vertebrate species makes it likely that the Environmental Protection Authority will want to assess Terrestrial Fauna as a factor under the Part IV of the Environmental Protection Act 1986 (WA).

Groundwater Management

Due to the depth to the groundwater table at approximately 6 to 7 metres, the Project will require mine dewatering ahead of processing to enable mining to efficiently progress. Water from mine dewatering activities is proposed to be reinjected upstream and downstream of the Project. Other options investigated for any excess groundwater include potential use for irrigation, agriculture, Turner River and third party offtake.

Mine Closure

Potential impacts associated with mine closure, in particular pit lake formation are currently being assessed. Groundwater is likely to flow through and partially fill the pits and mix with rainfall. As part of the above, the following work is being completed to assess these potential impacts:

- Characterisation of the long-term quality of the pit lake and
- Modelling of the likely impacts of pit lake quality on surrounding groundwater.

Greenhouse Gas Emissions

Greenhouse gas (**GHG**) emissions have been identified as a potential component of the approval of the Project.

Predictions of the Project's Scope 1 and 2 emissions have been completed based on power supply demand and mine vehicle fleet numbers. Based on these predictions a decarbonisation plan has been prepared, which demonstrates how the use of renewable energy and a transition to electric or hydrogen fuel cell powered vehicles will reduce Scope 1 emissions and set a trajectory to net zero.

De Grey will commit to five yearly aggregated Scope 1 GHG emission limits, as determined from the decarbonisation strategy.

16. Social & Community

Umwelt Consulting Pty Ltd (**Umwelt**) were engaged by De Grey to assess to a PFS level, the social and community aspects of the Project.

The Pilbara region covers an area of approximately 506,000km², representing 19.7% of WA's total land mass. Although a sizeable land area, the population is relatively small, comprising scattered towns and remote communities. The region is known for its hot climate, natural landscape, cultural heritage values, and mineral deposits.

The Pilbara consists of four local government authorities: the Town of Port Hedland, the City of Karratha, the Shires of Ashburton, and East Pilbara. The main population centres of the Pilbara are Port Hedland, Karratha, and Newman.

Traditional Owners

The Hemi Gold Project is located within the Native Title Determination (**NTD**) area of the Kariyarra Aboriginal Corporation (**KAC**).

At the time of writing this report, negotiations between De Grey and KAC regarding a claim wide Mining Agreement had progressed to the consultation phase.

In addition to the above, the broader Mallina Gold Project also transverses the NTDs of the Nyamal Aboriginal Corporation (**NAC**) and the Yindjibarndi Aboriginal Corporation (**YAC**).

Population Characteristics

The nearest town to the Project area is Port Hedland, located approximately 85km to the north. The 2016 Census shows:

- 14,469 people live within the Town of Port Hedland Local Government Area (**LGA**)
- 53% are male and 47% are female
- 31 years old is the median age
- 2,460 (17%) are of Aboriginal and / or Torres Strait Islander descent
- 24% were born overseas
- 52% completed Year 12 or equivalent
- 43% completed a post-secondary education equivalent and
- 9% hold a Bachelor's Degree.

The 2016 Census shows that the labour force participation rate for people aged 15 to 85 years in the Port Hedland LGA is 67.4%, with an unemployment rate of 5.2%. For the 2021 December quarter the unemployment rate had fallen to 3.0%.

Mining employs 24.9% of the population of the Port Hedland LGA with construction, transport, logistics and freight activities the next largest at 11.9%.

The Project's aim is to employ locally where possible, which would create pathways for existing students (both Indigenous and non-indigenous).

The SIA reports that there are several successful case studies of industry led partnership programs from which to draw from that include:

- Training and Employment Programs
- Engagement of Aboriginal and Torres Strait Islander businesses
- Community Partnerships and
- Industry Collaboration.

Natural Capital

The Pilbara is a vast, diverse region, representing approximately 20% of WA's land mass, with diverse regions of mountain ranges, spectacular gorges, deserts, plains, a stunning coastline, and numerous offshore islands.

Port Hedland is a gateway to a number of internationally renowned national parks, including Karijini and Millstream Chichester National Parks, both of which are sites of significant environmental and cultural importance.

Hemi is located between two ephemeral rivers the Yule River which flow into the Indian Ocean 50km west of Port Hedland and the Turner River which flows into the Indian Ocean 50km east of Port Hedland. The Yule River Water Reserve, which is approximately 8km from the Hemi Project area supplies water to the Port Hedland Regional Water Supply Scheme, which supports the communities of Port Hedland, South Hedland, Wedgefield, Finucane Island and Nelson Point.

The Yule River Water Reserve borefield is located approximately 45km west of Port Hedland and abstracts water from a shallow alluvial aquifer beneath the Yule River. Recreation activities including picnicking, fishing and camping are common on the Yule River Water Reserve. The Yule River flows through semi-permanent water pools which are popular for swimming, while camping on the riverbed is common during the dry season.

The primary land use across the Mallina Gold Project tenure is pastoral activities. The Hemi Gold Project is located on Indee Station, although De Grey's leases extend across five pastoral leases: Indee Station, Mallina Station, Sherlock Station, Wallareenya Station and Mundabullangana Station.

Aboriginal Heritage

Numerous heritage surveys have been undertaken across the Mallina Gold Project and Hemi Gold Project area, in particular, as part of the approval process and exploration drilling programs / activities. These heritage surveys will continue to be undertaken in cooperation with the respective Traditional Owners of each area.

In addition to existing studies that have been completed, future studies will continue to include the Traditional Owners, archaeological expertise and anthropological expertise, so as to identify and assess the significance of Aboriginal heritage in all areas that may be impacted should the Project be developed. A total of five registered Aboriginal sites, one lodged site and three Other Heritage Places are located across the Project area.

Non Indigenous Heritage

The Heritage Council of Western Australia maintains a State Register of Heritage Places under the Heritage Act 2018. No Heritage Places are listed within the Hemi Gold Project area. Two sites are located within the vicinity of the Wingina deposit and the Mallina deposit and on Indee Station.

Social Impact Assessment (SIA)

The key objectives of the SIA were:

Program Objectives:

- To gain an improved understanding of the existing socio-economic environment and future anticipated trends to inform future company decision-making
- To identify and assess the social impacts of the proposed Project
- To work with De Grey and relevant stakeholders to identify appropriate strategies to enhance the positive benefits and reduce the negative impacts of the Project and
- To support the company's future planning and decision making with regards to engagement and investment.

Process Objectives:

- To ensure that potential Project social impacts and opportunities are adequately identified and documented
- To create a climate for constructive stakeholder engagement and input to the program and
- To ensure that social impacts are effectively integrated in Project planning.

Key stakeholder groups were identified and consulted with as part of the SIA process including:

- Pastoralists
- Accommodation Providers
- Local & State Government
- Employment Service Providers
- Health and Emergency Service Providers
- Aboriginal Service Providers
- Businesses and Representative Business Groups and
- Training and Education Providers.

The engagement and consultation with stakeholders for the purposes of this assessment consisted of:

- Project Briefings
- Personal meetings and one on one discussions
- Town Hall Meeting
- SIA Personal meetings / Interviews and
- Attendance at Port Hedland Community and Business Events.

A social baseline assessment was completed and the common issues that emerged through a review and analysis of media relevant to Port Hedland and the broader region include the following:

- Impacts on community's social amenity due to the presence of industry
- Workforce and labour shortages
- Fly In Fly Out (**FIFO**) workforces
- Infrastructure development
- Economic growth and diversification
- Housing and accommodation costs and
- Crime and personal safety.

The socio-economic profile reported in the SIA identified a range of challenges and opportunities in the region more broadly and Port Hedland more specifically which will guide the Project in focusing its efforts. The SIA also outlined the local and regional baseline situation for the Project area to allow for the tracking of impacts and change over time associated with the Project and its activities.

Document review activities undertaken to support the preparation of the SIA have allowed for the identification of several possible focus areas for the Project both from a locally based social / community investment perspective and strategically in the interests of developing a pool of potential employees and suppliers.

SIA has identified potential Project impacts on social amenity and surroundings through consultation with key stakeholder groups. Given the location of the Project, and its proximity to several pastoral stations, the emergence of social amenity and surroundings impacts are of relevance to this stakeholder group. During discussions, pastoralists identified reduced access to natural environments, ground water quality impacts, and damage to roads through increased traffic as key impacts of concern to them.

Stakeholders also raised concerns relating to the Project's impact on the natural environment, in particular ensuring that the Project did not adversely impact on people's access to land and country. Concerns were also expressed about the mining activity changing access to the landscape, or the landscape itself, with a sense of loss arising from significant landscape features being consumed by mining activity.

SIA reports that a loss of natural amenity and damage to the landscape will conflict with strong community values attached to environmental quality. Such conflict could result in reduced engagement with and support for approval processes, and a possible impact the Project's social license to operate.

Conclusions and Recommendations

The assessment concluded that identified negative social impacts of the Project can be reasonably mitigated or managed, with positive impacts increasing in significance if appropriate enhancement measures are put in place.

Several of the social impacts identified may be cumulative in nature and may rely on collaboration and coordination with other industries, local and state government, community groups and service providers.

The SIA recommended the preparation and implementation of a social impact management planning framework for the Project that includes the following key components:

- A Stakeholder Engagement Strategy including a dedicated Aboriginal Engagement Plan
- A Social Investment Program, including an Aboriginal Partnership Plan and
- An Employment and Procurement Strategy, which should contain discreet plans for Aboriginal participation and local participation.

17. Approvals Pathway

RPM were engaged to complete a PFS level Environmental report for the Project.

Based on the preliminary findings of the baseline studies and taking into consideration feedback to date from decision-making authorities and other stakeholders it is possible that the Project may be assessed under Part IV of the EP Act. A determination of 'Assessment on Referral Information with public review' is considered an achievable pathway. Some Project layout options may include the presence of Matters of National Environmental Significance (**MNES**). Depending on the layout options selected, referral under the EPBC Act may be required.

Assuming the Project is assessed as 'Assessment on Referral Information' (**ARI**) with public review and provision of additional information, an indicative timeframe for assessment and grant of Project approvals (including secondary approvals) is approximately 14 months.

The timeline for approval currently assumes that the Project is not a controlled action and therefore does not require assessment under the EPBC Act. If a Project is determined to be a Controlled Action before its referral to the EPA, the proponent can choose whether to adopt the accredited assessment process.

Part IV EPA Referral

Part IV of the EP Act provides for the referral and environmental impact assessment of proposals that are likely, if implemented, to have a significant impact on the environment. The term 'significant impact' is not defined in the EP Act.

DWER's EPA Services unit manages the referral process on behalf of the State's EPA. The Chairman of the EPA is responsible for determining the outcome of referrals.

Once the EPA has validated a referral, it will proceed to determine if the proposal requires assessment or not. If the proposal is determined to be a "significant proposal" requiring assessment, the level of assessment set by the EPA will depend on the nature of the environmental impacts and the level of public interest associated with the Project.

In practice, there are five levels of assessment that may be applied:

- Assessment of referral information
- Assessment of referral information, with the provision of additional information as requested by the EPA
- Assessment of referral information, with or without additional information, with public review
- Preparation of an Environmental Review Document (**ERD**) with no formal public review period and
- Preparation of an ERD with a public review period. This involves public display of the ERD for typically 4 to 6 weeks. Comments received during the public review period must be addressed by the proponent.

Upon completion of its assessment, the EPA prepares a report detailing the environmental issues and effects of the proposal and makes recommendations on managing these issues and effects. This report is submitted to the Minister for Environment and is published in the EPA website. Any person may lodge an appeal with the Minister within 21 days of the publication of the report, against the content and recommendations in an assessment report

18. Project Implementation Strategy

De Grey intends to develop the Project in the Pilbara region of WA. The Project is of a significant scale with a Capital Control Estimate excluding growth allowance or contingency estimated to be approximately $885 million (**M**).

The Project delivery schedule proposes that an Approvals Application be submitted in the second half of 2022 and a Definitive Feasibility Study be completed in the first half of 2023.

Based on these milestones being reached, FID would be expected to be made in the June 2023 quarter, subject to Regulatory Approval of the Project.

The DFS will include a Project Implementation Plan (**PIP**) which will be developed and endorsed as part of that study phase.

The PIP would provide certainty of the implementation strategy so that the Project is delivered to schedule and cost, and that the ramp-up to full production is achieved in an efficient and productive timeframe. The PIP would also dictate the contracting option for each capital works package and how each would be scoped, costed, scheduled and executed. Execution of the PIP would be the responsibility of the appointed Project Director.

Numerous contracting options are available for the different construction areas of the Project as part of the proposed PIP including, but not limited to:

- Engineering, Procurement and Construction Management (**EPCM**)
- Engineering, Procurement, Construction (**EPC**)
- Hybrid approach of EPCM and EPC
- Schedule of Rates
- Service Contract
- Supply Contract
- Consultancy Agreement.

The first three contracting options EPCM, EPC and Hybrid approach would typically represent the most common choices for the majority of capital works for a project of this nature.

The choice between these (and other) contracting options will be influenced by a number of factors including, but not limited to:

- Project and engineering scope definition
- Allocation of risk
- Allocation of cost certainty
- Availability of resources
- Capability, capacity and experience of existing or proposed Owners Team (De Grey)
- Project specific factors
- Financing and debt considerations

The PFS has recommended that subject to additional review and assessment as part of the DFS that De Grey apply different implementation strategies for the different areas of the Project, depending on their timing, complexity and quantum of cost.

Table 18.1 provides a summary of the key areas of the Project and the PFS recommended implementation strategies subject to further review as part of the DFS. It should be noted that it is highly likely that a number of these recommendations may be adjusted during the DFS study phase, either due to updated timing commitments, additional study detail and / or other factors.

Table 18.1: Proposed Project Implementation Strategies

Project Area	Project Implementation Strategy	Comments
Initial Works		
Village	Hybrid EPCM	De Grey responsible for topsoiling, preliminary earthworks and services to battery limit Village contractor delivers village under EPC
Airport	Hybrid EPCM	De Grey responsible for topsoiling, preliminary earthworks and services to battery limit Airstrip contractor delivers airstrip and bituminising under EPC Contractor/s deliver buildings, refuelling under EPC
Mine Dewatering	EPCM	De Grey responsible for water bore construction, bore pump and piping procurement and leasing / purchase of generators Contractor installs pumps and piping arrangement under schedule of rates
Site Administration Units	Hybrid EPCM	De Grey responsible for topsoiling, preliminary earthworks and services to battery limit Buildings contractor delivers buildings under EPC
Mining Area Buildings, Workshops, Washdown and Fuelling	Hybrid EPCM	De Grey responsible for topsoiling, preliminary earthworks and services to battery limit Contractor/s delivers buildings, workshops, fuelling under EPC
Power Supply	Hybrid EPCM	De Grey responsible for tendering construction works of overhead power lines (if required) and substation Electrical engineering consultant (reporting to De Grey) to oversee entire process
Main Works		
Process Plant	EPC or equivalent	To be defined as part of processing plant tender process
Oxygen Plant	Build, Own, Operate (**BOO**)	To be defined as part of the oxygen plant tender process (potentially in parallel with process plant tender process)
Access Roads	Hybrid EPCM	De Grey responsible for topsoiling and preliminary earthworks Civils contractor delivers road and bituminising under EPC Design to account for surface water and infrastructure modelling
TSF	EPCM	De Grey responsible for supervising the mining / civil contractor and QA/QC protocols, including identification and selection of areas within pit with suitable clay materials TSF engineering consultant to oversee TSF construction standards

19. Capital Cost Estimate

The Project Capital Cost Estimate (**CCE**) has been developed based on a projected 10Mtpa processing plant consisting of:

- Comminution circuit: comprising three stage crushing utilising HPGR followed by ball milling, gravity, flotation
- Oxidation circuit: comprising POx treatment of flotation concentrate
- Neutralisation circuit: comprising, POx product and flotation tailing thickening, CCD thickening
- Leaching circuit: comprising conventional carbon in leach, elution, and gold goom to produce gold doré and
- Associated infrastructure including tailings storage facility, water supply borefield, power supply, village, airstrip, sealed access road and other supporting infrastructure including offices, laboratory, and workshops.

Following from the Scoping Study (October 2021), a comprehensive set of trade-off studies were conducted by process engineer Wood and De Grey, including extensive metallurgical testwork and financial evaluation, to establish the optimal process plant flowsheet.

The process flowsheet selected is capable of treating both free milling and refractory sulphide gold bearing ores and has demonstrated advantages relative to other processing technologies including higher gold recoveries, lower energy consumption, lower reagent consumption, lower greenhouse gas emissions, and lower relative capital and operating costs.

The process flowsheet selection of a comminution circuit comprising three stage crushing utilising HPGR followed by conventional ball milling and an oxidation circuit comprising pressure oxidation, together with the key assumptions outlined within the process design criteria, based on a production capacity of 10Mtpa treating 100% Brolga fresh ore at a grind size of 75µm, form the basis of this PFS CCE.

The CCE was principally compiled by Wood and is based on an EPCM approach for the processing plant, process plant infrastructure and other related infrastructure.

The CCE covers all the costs associated with the construction and associated expenditure to develop the Project to a production capacity of 10Mtpa to produce over 500,000 ounces of gold doré annually. The estimate includes all costs associated with engineering, drafting, procurement, construction, construction management, freight, commissioning, first fills of plant reagents, consumables and spares, Owner's costs and project management.

Design growth allowance is included in the overall estimate, based on recommendations by Wood for the processing plant and from De Grey for areas outside of Wood's scope (e.g. TSF).

The estimate is based on an initial level of engineering, material take-offs (**MTO**), and budget price quotations for major equipment and bulk commodities. Preliminary global quantities for earthworks, concrete, steelwork, and platework have been determined from in-house data for similar installations, equipment lists, engineer's calculations, preliminary layout drawings and vendor data.

The CCE excludes the capital cost of an oxygen plant for the pressure oxidation circuit. This plant is proposed to be built and operated by others under an oxygen supply arrangement with De Grey. The supply of oxygen is included in the operating cost estimate.

The CCE includes capital costs for an airstrip and on-site camp for construction and operations. The camp will operate on a fly-in, fly-out basis and drive-in and drive-out basis for employees based in the Pilbara. The Company will assess the potential to assist employees who wish to live within communities in the Pilbara and work at the Project.

Unit rates for bulk materials have been developed from Wood's in-house data and rates supplied by contractors and suppliers familiar with costs applicable to resource project developments in the Pilbara and other remote regions of WA plus applicable costs in the public domain.

The CCE is presented in Quarter 2 2022 (Q2 - CY22) Australian dollars (**AUD** or **$**). No allowance has been made for escalation between the estimate base date and the time at which commitments will be incurred, and payments made.

The CCE is judged to have an accuracy of -15% +25% being a Class 4 as defined by the Association for the Advancement of Cost Engineers International (**AACEI**) in document 18 R-97 Cost Estimate Classification System. This type of estimate is typically prepared when the engineering is approximately between 1 to 15% complete and is used to determine if there is justification to proceed to the next stage of the project. The estimate is considered to be at PFS level in accordance with Wood's Estimating Procedures.

The CCE has been estimated by a number of parties as outlined in Table 19.1 below.

Table 19.1: Proposed Project Implementation Strategies

Contributor	Area
Wood Australia	Process plant including the process plant infrastructure.
Electricals and Control Global Engineering (**ECG**)	HV line switching station and substation design and scope of works.
CMW Geoscience (**CMW**)	Tailings Storage Facility (**TSF**) / Integrated Waste Landform (**IWL**)
McNally Mining & Resources	Village Accommodation
GHD Engineering	Airstrip
Majesso / Bell	Mining Infrastructure
Anthony Elder	Dewatering and reinjection pumping and piping infrastructure
De Grey	Site establishment and temporary construction facilities and equipment. Mobile Assets. Owners Costs.

The capital cost to develop the Project is estimated at $885.2 million plus growth allowance of $99.8 million for a total estimated cost of $984.9 million.

The CCE summary by area is presented in Table 19.2. The direct areas of the Project represent approximately 90% of the total cost, with growth allowance representing approximately 10%.

Table 19.2: Capital Cost Estimate Summary by Facility

Area	Note	Cost $M	Percentage Of Total
Processing - Plant	*1*	489.2	49.7%
Processing - Infrastructure	*2*	115.0	11.7%
Processing - Indirects	*3*	41.3	4.2%
Infrastructure - Site	*4*	122.3	12.4%
EPCM/Owners	*5*	117.4	11.9%
Subtotal		**885.2**	**89.9%**
Growth Allowance	*6*	99.8	10.1%
Total		**984.9**	**100.0%**

Notes:
1. Comminution, flotation, oxidation, neutralisation, leaching circuits. Oxygen plant assumed as BOO
2. Power substation, tailings storage facility, buildings, offices, laboratory, and workshops
3. First fill reagents & consumables, ocean freight, spares, commissioning
4. Associated site infrastructure including water supply borefield, village, airstrip, sealed access roads, communications
5. EPCM / Owners Costs / Temporary Facilities / Insurances
6. Growth allowance overall 10%

20. Operating Cost Estimate

The Project Life of Mine (**LOM**) operating costs have been developed based on a projected 10.0 million tonnes per annum processing plant, treating 136 million tonnes of ore at a gold grade of 1.6g/t over approximately 13.6 years, recovering 6.4 million ounces of gold.

The operating costs have been compiled and developed from a variety of sources including:

- first principal estimates based on a ground up build approach based on key physical drivers, volumes, and consumption rates
- metallurgical testwork
- contractor request for quotation or request for pricing (**RFQ**'s or **RFP**)
- key consultant and vendor recommendations/inputs
- general and administration costs determined by De Grey
- personnel numbers and salaries costs determined by De Grey and external IR consultants
- supplier requests for pricing and budget quotations and
- operational unit rates determined by De Grey from similar operations.

The operating cost estimates presented in this report are considered to have an overall accuracy of -15% +25% and are considered to be a Class 4 estimate according to AACEI. Unless otherwise indicated, all financial values are stated in real Australian dollars (**AUD**) as of calendar Quarter 2 2022 (Q2-CY22), do not allow for escalation (unless otherwise noted) and exclude Australian goods and services tax (GST).

A summary of the LOM AISC is detailed in Table 20.1.

Table 20.1: LOM all in sustaining costs

Area	Total LOM $Million	$/tonne milled	AUD/oz Produced LOM	% of AISC
Mining	4152	30.54	650	49.37%
Processing & Lab	3255	23.95	509	38.71%
Administration	188	1.38	29	2.24%
Cash Operating Costs	**7596**	**55.87**	**1189**	**90.32%**
Non-Production Costs	123	0.91	19	1.47%
Royalties	383	2.82	60	4.55%
Sustaining & Project Capital	126	0.93	20	1.50%
Tailings Dam Wall Lifts	87	0.64	14	1.04%
Rehabilitation	95	0.70	15	1.13%
Total All in Sustaining Costs (AISC)	**8410**	**61.86**	**1316**	**100.00%**

Total LOM All-in Sustaining Cost (**AISC**) for the Project is estimated at $8,410 million at a unit cost per tonne milled of $61.86 and $1,316 per ounce produced. Reported unit operating costs on an annual ounce of gold produced varies from year to year depending on the grade of ore processed and gold produced per annum.

The LOM operating cost calculation excludes mine pre-strip capital costs of $68M which are included as a capital item in the financial model. Cash operating costs represent approximately 90% of the total AISC cost base, with other cost items representing the remaining 10% of the total sustaining cost structure.

The Project AISC and operating cost reporting hierarchy have been developed based on a typical open cut gold mining operation and aims to capture and report costs at the appropriate level within responsibility areas and key activities within those areas.

21. Environmental, Social and Governance (ESG)

Acknowledgement of Country

At De Grey, we acknowledge the Traditional Custodians of the land upon which we operate, the Kariyarra, Ngarluma, Nyamal, Ngarla and Mallina peoples and recognise their unique cultural heritage, beliefs and connection to these lands, waters and communities.

We pay our respects to all members of these Indigenous communities, and to Elders past, present and emerging. We also recognise the importance of continued protection and preservation of cultural, spiritual and educational practices.

As we value treating all people with respect, we are committed to building successful and mutually beneficial relationships with the Traditional Custodians throughout our areas of operation.

Background

The Board and management team of De Grey Limited (**De Grey**) are committed to conducting their business activities in a safe, responsible, ethical and sustainable manner.

De Grey operates within a sustainability framework that outlines the priority areas of focus for the Board, management, employees and contractors at each stage of its development and which provides for a robust foundation from which to expand and grow.

Consistent with the expected growth of De Grey and the scaling up of development activities alongside the current drilling and exploration program, De Grey has also completed a review of its sustainability practices and future reporting standards.

The Board has resolved to implement the International Council of Mining and Metals' (**ICMM**) Mining Principles into its development planning and anticipated future execution of the Hemi Gold Project.

The alignment of De Grey's development planning for the Hemi Gold Project with the ICMM's Mining Principles will have practical outcomes in areas including the use of renewable energy, future procurement decisions, environmental management, and mine closure planning.

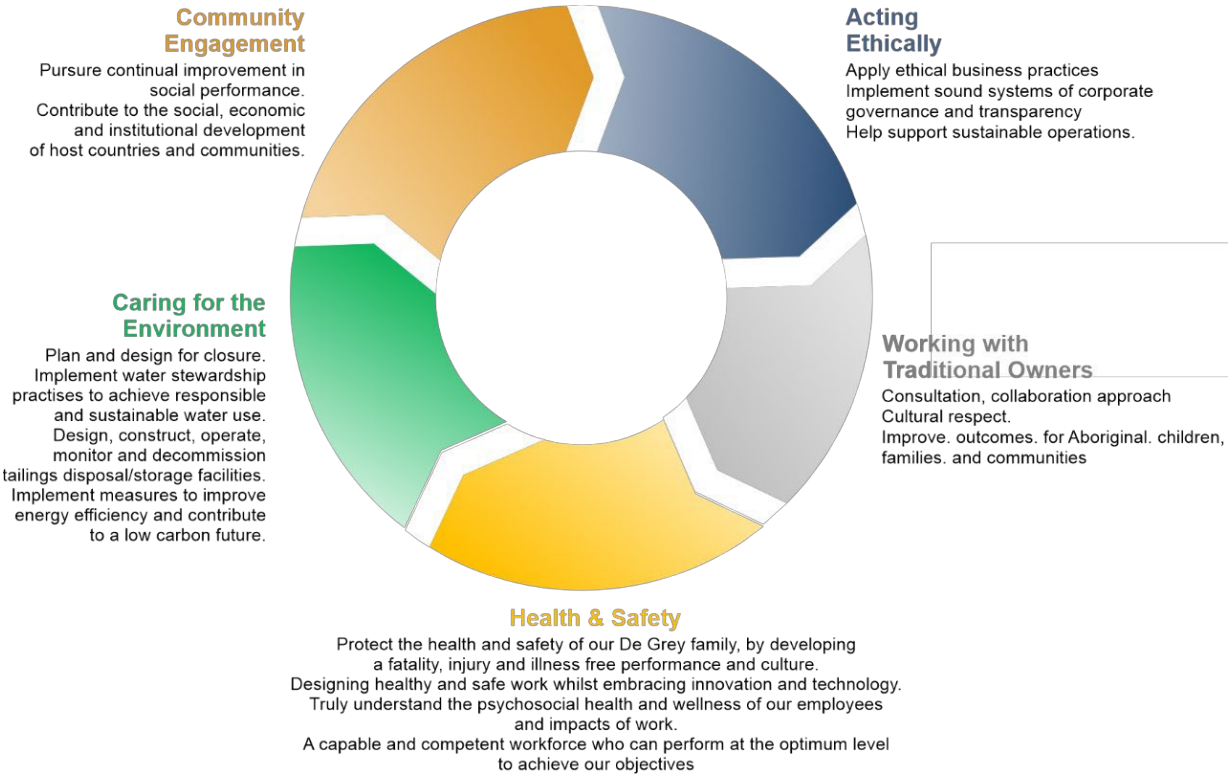
To augment the ICMM Mining Principles in the area of climate change, the Board has also resolved to adhere to the Task Force on Climate Related Financial Disclosures (**TCFD**) as it progresses through the development, construction and operations phases of the Hemi Gold Project. The TCFD sets out eleven recommendations for managing climate related risks to business

Figure 21.1 shows the framework adopted by De Grey so as to undertake its operations in a sustainable manner.

Based on the above, a three-fold approach was incorporated into the PFS in order to allow the various different aspects of ESG to be assessed independently. RPM Advisory Services Pty Ltd, as the primary consultant, focused on ensuring that De Grey had adequately considered the overall guiding principles of ESG in the design of the Hemi Gold Project, in accordance with its stated goals at a policy level. This included a qualitative and where practical, a quantitative assessment of its performance against those ESG principles.

The secondary consultants, Energetics Pty Ltd and Mainsheet Capital Pty Ltd were scoped with providing assessments in more specific areas within the ESG discipline, primarily carbon emissions, but also in the areas of peer benchmarking, Scope 3 emissions reporting, and the development of pathways to reduce carbon emissions over time.

Figure 21.1: De Grey Mining Sustainability Framework



RPM ESG Review

The RPM ESG review considered the design processes that have influenced the principal components of the Project as follows:

- Mine Design
- Waste Rock Emplacements
- Groundwater Management
- Processing Facility
- Tailings Storage Facility
- Power Supply and
- Ancillary Infrastructure.

For each component the most directly relevant ICMM Principles and associated performance expectations were mapped out. The design process for each principal component was then qualitatively assessed against the identified expectations.

In addition, the relevant TCFD metrics for each principal component were identified, with a view to setting targets at a later stage in the Project's development.

Mine Design

- The mining schedule has factored in the varying quality of the groundwater to be dewatered, which enables the achievement of an acceptable quality of surplus water
- The mine layout avoids any encroachment into the 50m buffer zone surrounding the Priority Ecological Community and the associated area of Aboriginal cultural significance
- The Project's infrastructure does not extend to the nearby Priority 1 Public Drinking Water Source Area (**PDWSA**), and the mine dewatering system has been designed so that the 1m groundwater drawdown contour does not extend into the PDWSA

- Landforms have been positioned to minimise haulage distances and the sterilisation of mineralised areas this will result in the need to remove some fauna habitat, and impact two sites of Aboriginal cultural significance, subject to consultation with the Kariyarra people and
- Overall, the design of this component performs well against the considered ICMM principles and performance expectations.

Waste Rock Landform

- Sample testing results indicate that the geochemical characteristics of the waste rock to be stored in the Waste Rock Emplacements (**WRE**) are relatively benign. Any PAF waste rock will be suitably encapsulated in the WRE to prevent potential acid mine drainage
- To achieve the design standards and erosional stability outcomes, conservative landform designs have been adopted that include limiting the WRE lift heights to 10m where there is a risk of erosion
- The Kariyarra people will be consulted on the final appearance and use of the landform during the development of the Project's mine closure plan and
- Overall, the design of this component performs well against the considered ICMM principles and performance expectations.

Groundwater Management

- During the construction period prior to the commencement of mining and processing, surplus groundwater abstracted during mine dewatering will require discharging to the environment
- Options for dewatered groundwater considered in detail during the Project's design include aquifer reinjection, irrigation for agricultural uses and native seed propagation, third party offtake arrangements and outfall to the Turner River
- Once operational, the processing facility will utilise the abstracted groundwater and discharge it to the TSF, from which it will be decanted and returned to the processing facility for reuse. While there will be a gradual loss of water from evaporation and seepage within the TSF, the water will otherwise be continually recycled.
- Overall, the design of this component performs well against the considered ICMM principles and performance expectations.

Processing Facility

- The decision to refine the gold bearing ore concentrate on site to produce gold bars removes the need to transport ore concentrate to Port Hedland for onward shipment to an offshore refinery, significantly reducing the Project's downstream Scope 3 greenhouse gas emissions and avoiding the health, safety and environment risks associated with the road and sea transport of ore concentrate
- The comminution circuit includes two-stage crushing followed by high pressure grinding rollers (HPGR) and wet ball milling out of the other options considered, this resulted in the lowest carbon emissions intensity
- The concentration circuit will use a POx process compared to the other options considered, POx has a lower reagent and power consumption, therefore lower carbon footprint and it is also able to produce benign tailings and stable non-soluble arsenate
- Smelting of gold doré on site increases power demand slightly and associated greenhouse gas emissions however, this increase is significantly less than outsourcing or offshoring them, potentially to plants with higher emissions or lower standards and
- Overall, the design of this component performs well against the considered ICMM principles and performance expectations.

Tailings Storage Facility

- An alternative options study concluded that an IWL is the preferred TSF option as it provides a robust storage option with manageable environment impacts, low business, and regulatory risk
- IWL has significant advantages in relation to closure, as mine waste can be readily deployed during mining for embankment construction at a relatively low cost and capping at closure
- While the IWL option entails somewhat more haulage of mine waste for construction (hence higher greenhouse emissions from haul trucks) than some other options these are offset by the greater stability, and smaller footprint, which enable less clearing of fauna habitat and encroachment on potential heritage sites of cultural significance
- The IWL has been located as close to the pits as practicable to minimise haul distances while keeping the facility upstream of the pits to provide a contingency should seepage control be an issue during operations
- The Kariyarra people will be consulted on the final appearance and use of the landform during the development of the Project's mine closure plan and
- Overall, the design of this component performs well against the considered ICMM principles and performance expectations.

Power Supply

- An alternative options study identified that 95% of all emissions can be attributed to electricity generation and diesel use in mining vehicles and power generation
- The Scope 1 emissions from diesel use and the use of lime to neutralise acid in the processing facility will exceed the 100ktCO_2-e per annum threshold for the Commonwealth Government's Safeguarding Mechanism and the EPA WA GHG assessment trigger
- The Safeguard Mechanism will require De Grey to establish an emissions baseline for the Project, and the EPA WA will require a GHG Management Plan to demonstrate the Project's trajectory to achieving Net Zero by 2050
- The Project's decarbonisation strategy demonstrates that it can achieve significant reductions in GHG emissions relative to the baseline scenario, up to 73%, and can provide a trajectory to Net Zero by 2050 and
- Overall, the design of this component performs well against the considered ICMM principles and performance expectations.

Ancillary Infrastructure

- Freight deliveries will generally follow the lowest cost, most direct means, and routes, which tend to correlate with lower fuel use and associated Scope 3 GHG emissions
- It is also anticipated that third party delivery companies will transition to low or no emissions vehicles as these become more readily available, which will enable De Grey to stipulate their use where practicable
- The construction of an onsite accommodation village and airstrip will be progressed as they offer emissions reduction and safety advantages over the use of infrastructure in Port Hedland
- The accommodation village will meet modern industry standards and workforce expectations, and incorporate hybrid construction, utilising both in-situ and modular techniques which will add value to the whole of asset life through low maintenance costs. The village will also incorporate into its design the necessary security measures and protocols for all residents including minority groups to ensure their wellbeing
- Overall, the design of this component performs well against the considered ICMM principles and performance expectations.

Energetics Emissions Report

The Energetics Emissions Report included an assessment of the Project's emissions, a peer benchmarking exercise and a review of scope 3 emissions.

Project Emissions

The assessment included all aspects of the Project to a detailed level, including, but not limited to the proposed village, airport, water management, explosives and reagent usage, and took into account De Grey's ability to implement the proposed decarbonisation plan over the life of mine.

As part of the assessment of the Project's emissions, Energetics developed a carbon emissions calculation tool to assist De Grey in estimating the emissions associated with the Project for the following three scenarios:

- Scenario 1: Gold mining 'standard practice': This scenario is a model of a 'business as usual' approach which assumes all-diesel mining vehicles, no renewable power generated or procured and a conventional processing circuit
- Scenario 2: Hemi base case: This scenario is based on the current mine design and includes several emissions reducing initiatives including: the use of high-pressure grinding rolls in the comminution circuit and 30% of site demand provided by renewable energy
- Scenario 3: Hemi low emissions: This scenario is based on Hemi as it is anticipated to operate in 2030. This scenario includes additional emissions reducing initiatives including high penetration of electric vehicles and 70% of site demand provided by renewable energy.

Table 21.1 shows the results of emissions modelling for the different scenarios.

Table 21.1: Summary of Scenario Emissions Results

Scenario	Target Year	Scope 1 Emissions	Scope 2 Emissions	Total Emissions	Emissions Intensity
		t CO_2-e	t CO_2-e	t CO_2-e	t CO_2-e/oz
Standard Practice	2025	184,316	315,561	499,877	0.91
Hemi Base Case	2025	176,231	171,408	347,639	0.63
Hemi Lower Emissions	2030	120,517	66,558	187,075	0.34

Peer Benchmarking

The peer benchmarking exercise was undertaken to assist De Grey in gaining an understanding of the ambition and performance of their peers. Peer groups that were evaluated using publicly available data included Northern Star, Anglo Gold Ashanti, Gold Fields and Newmont. The following key findings of the peer benchmarking are noted:

- Scope 1 and 2 emissions reduction targets:
- 30% to 32% reduction in emissions intensity by 2030 are common for the industry
- Most peers have set a 2050 target of net zero
- Scope 3 emissions reduction targets: only one of the peer group (Newmont) has set a scope 3 emissions target of net zero by 2050. A number of peers have, however, begun reporting on scope 3 emissions
- Emissions intensities for the peer group:
- Range: 0.37 – 1.25 tCO_2-e/oz
- WA average: 0.79 tCO_2-e/oz

Scope 3 Emissions

The final scope of work included in this project was a qualitative review of the Project's scope 3 emissions profile. This was completed by reviewing similar gold miners who have begun reporting scope 3 emissions in their annual reports. Key findings include:

- The reporting of scope 3 emissions is becoming more common within the mining sector with a high proportion of miners reporting, or committing to report, their scope 3 emissions
- Scope 3 emissions for gold mining occur almost exclusively upstream of the operation
- For the miners evaluated, nearly all indicated that 90% of emissions occur within the following categories:
  - purchased goods and services
  - capital goods
  - fuel and energy-related activities.

Scope 3 emissions vary considerably from organisation to organisation, reflecting the influence of location and supply chain structure. As such, care should be exercised in extrapolating results.

Mainsheet Decarbonisation Roadmap

Mainsheet evaluated the Scope 1 and 2 emissions for the Project to identify key focus areas and propose a practical and economic decarbonisation plan. In addition to this, the report also benchmarked the Project's proposed energy and emissions against other Australia gold mines.

Mainsheet assessed the Project emissions at a higher level, focussing primarily on the processing power and mining fleet, thereby excluding some of the contributions that were included in the Energetics assessment (e.g. explosives). The quantitative results from the two reports therefore differ slightly, however the decarbonisation plans are generally aligned, as are the reductions in emissions over the life of mine.

The key findings of the Mainsheet report were:

- The proposed decarbonisation plan would achieve a 73% reduction by FY32
- The initial reduction of 33% in carbon emissions is based on low risk assumptions regarding efficient gas generation and solar renewables. The following reduction of a further 40% in carbon emissions assumes acceptable economics and the availability of wind generation and fleet diesel displacement technology.

The proposed decarbonisation plan makes assumptions on the availability, practicality and economics of technology that is still developing. While De Grey has a credible and favourable pathway to achieve decarbonisation on par with industry leaders, it needs to carefully consider external communications and commitments of this pathway as key components are outside of De Grey's direct control.

If De Grey implements the proposed decarbonisation plan it is expected to maintain a better emissions intensity on tCO_2/oz Au production basis than the Australian industry average. That said, it is less likely to be in the top five companies, where higher gold grades and / or higher throughputs provide a distinct advantage to certain companies when applying this metric.

Figure 21.2 shows the outcomes from applying the existing or predicted power and non power technologies, which results in a 58% reduction over the life of mine, or a 73% reduction from FY32 onwards following the electrification of mine haul trucks. Figure 21.3 shows the proposed decarbonisation plan based on predictions for where companies may be by 2030.

Figure 21.2: Total reportable Emissions with the Proposed Decarbonisation Plan

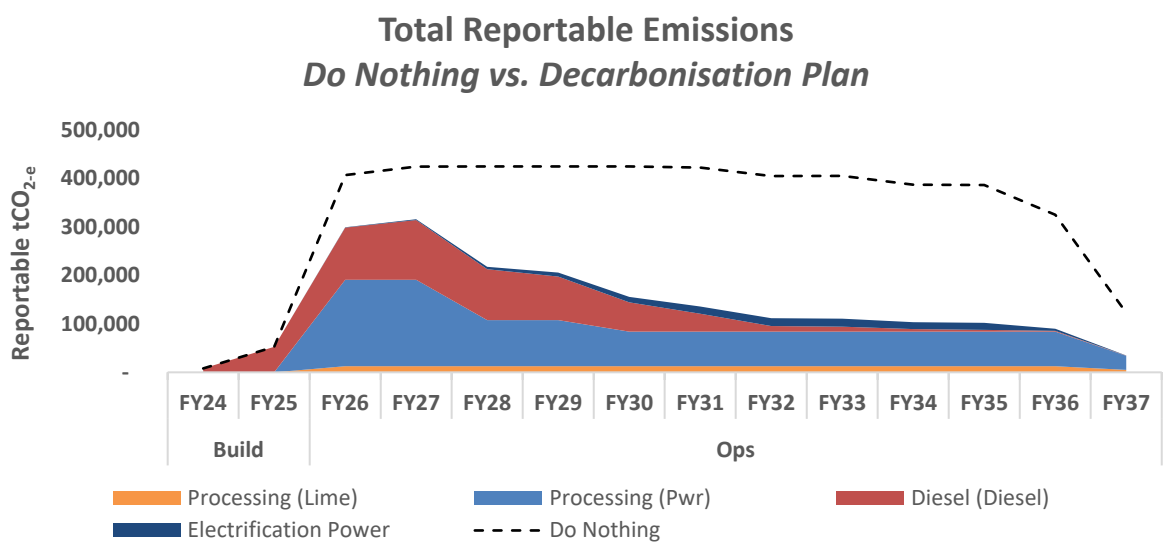
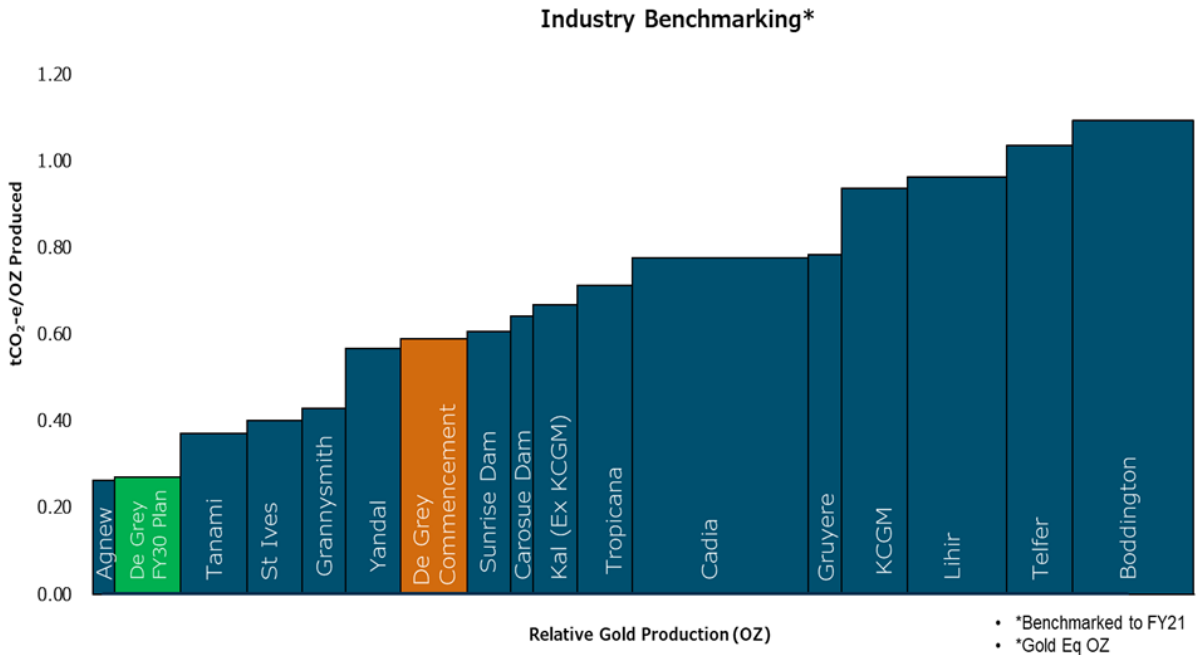


Figure 21.3: Peer Benchmarking based on 2030 Predictions



22. Financial Analysis

The Project financial analysis considers a 10.0M tonnes per annum processing plant, treating 136M tonnes of ore at a gold grade of 1.6g/t over 13.6 years, recovering 6.4M ounces based on the Hemi and Regional Reserves and Resources mine schedule.

The PFS financial modelling is predicated on the construction of a new processing plant and associated infrastructure at Hemi.

The Mineral Resource underpinning the production targets in the financial analysis have been prepared by competent persons in accordance with the requirements of the 2012 JORC Code.

The total LOM production of the Project schedule is underpinned by 118M tonnes in the Measured and Indicated Resource classification or 86.5% of the total Resources with the remaining 13.5% being classified as Inferred Resources. The first 10 years of the Project mine schedule has approximately 99M tonnes classified as Indicated Resources, or 89%, with the remaining 11% classified as Inferred Resources.

The PFS economics for the Project have been assessed at the Project level using the discounted cashflow method, based on a quarterly schedule of material mined and processed. The analysis arrives at an NPV for the Project based on pre-tax cashflows at an appropriately risked real, pre-tax and post-tax discount rate of 5%. The cashflows were assessed from the start of Construction Approvals and uses the mid period discounting convention on an annual basis.

The LOM financial model incorporates revenues, operating costs and capital costs on a quarterly basis for each year of the respective Project (processing) life based on the physical activities scheduled within the quarter. The financial model is based on accrued costs and revenues adjusted for the actual timing of expenditure and revenue receipts through working capital movements to reflect the timing of cashflows on an as incurred/received basis.

The PFS LOM financial model have been compiled and developed from a variety of sources and are based on the assumptions and estimated capital and operating costs as outlined within this PFS.

Unless otherwise indicated, all financial values are stated in real Australian dollars (**AU$** or **$**) as at calendar Quarter 2 2022 (Q2-CY2022) and does not allow for escalation and excludes Australian goods and services tax (**GST**).

Based on the inputs of the financial model and using a gold price of $2,400/oz, the key economic outcomes of the mine schedule over the LOM are summarised below:

- Undiscounted cashflow (pre-tax) generated over LOM (pre-tax) is $5.9B;
- NPV (pre-tax) at a 5% real discount rate is estimated at $3.9B;
- Internal rate of return (IRR) (pre-tax) of 51%;
- Capital payback is 1.6 years; and
- All in sustaining costs (AISC) over LOM are $1,316/oz ($1,220/oz over the first 5 years and $1,280/oz over the first 10 years).

The Project is forecast to have strong pre-tax cashflows, with pre-tax capital payback estimated to be achieved within six quarters (1.6 years) after first gold.

The strong cash flows of the Project case are underpinned by average gold production over the first five years averaging approximately 550kozs per annum. The annual gold production and mill feed grade projected in the mine schedule are outlined in Figure 22.1.

The Mallina annual and cumulative free cashflows (pre-tax, pre-finance) are outlined in Figure 22.2. The total cashflow generated by the Mallina Resources based on the financial assumptions is $5.9billion.

Sensitivity analysis shows the Project to be resilient to changes in the capital costs and recoveries, with significant leverage to improved head grade, gold price and AISC as outlined in Figure 22.3.

The estimated AISCs are forecast to be $1,280/oz over a 10 year evaluation period and $1,316/oz over the LOM schedule.

Figure 22.1: Annual Mallina Gold Production and Mill Feed Grade (Au/t)

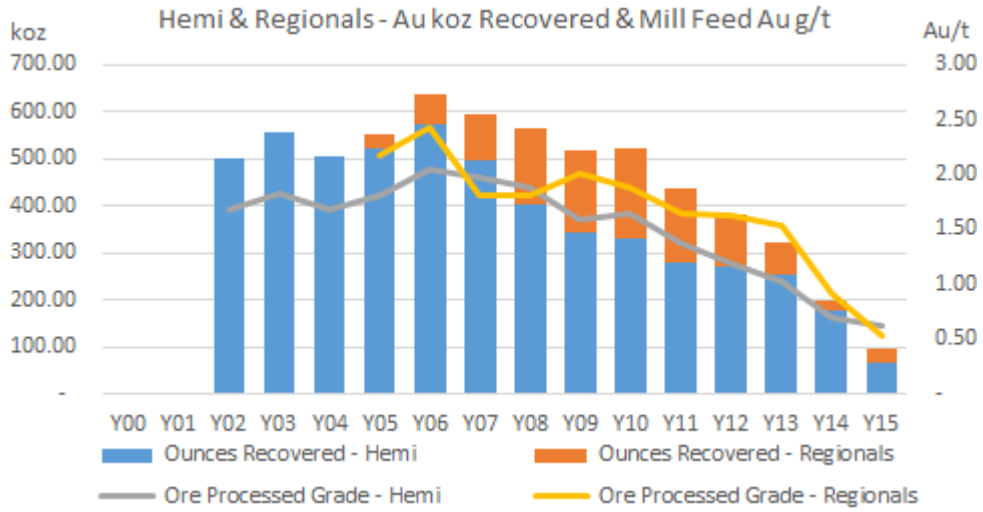


Figure 22.2: Annual and Cumulative (Pre Tax & Finance) Cashflows for Mallina Case

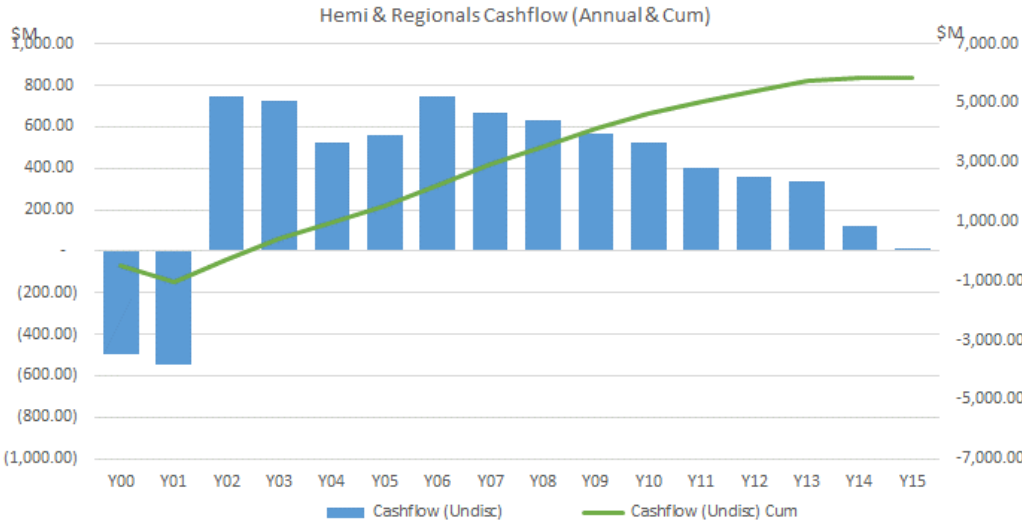
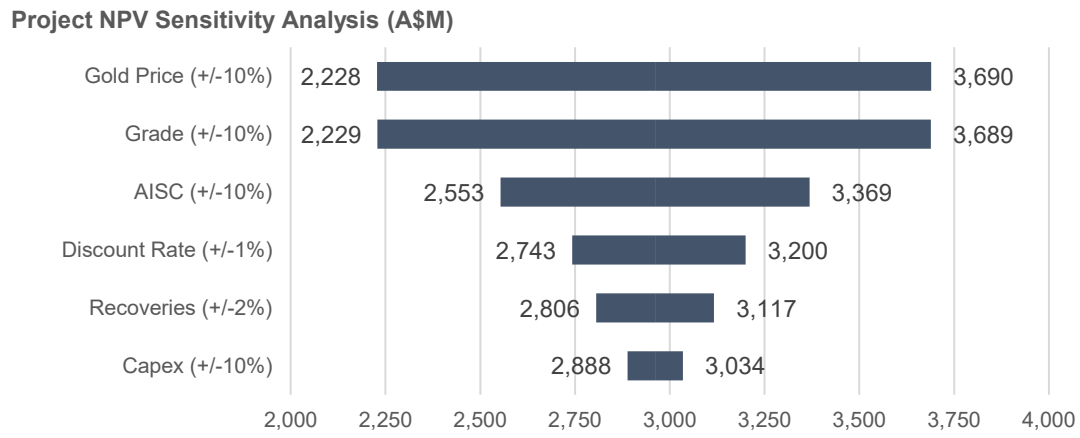


Figure 22.3: Mallina Sensitivity Analysis (pre-tax)



23. Development Schedule

An indicative development schedule for the project is as follows:

- Definitive Feasibility Study 2022-2023
- Development Application Assessment 2022-2023
- Construction Phase 2023-2025
- Operational Phase 2025-ongoing

24. Conclusions and Next Steps

The PFS provides justification that the Mallina Gold Project is commercially viable and accordingly the Board of De Grey has approved progression of the Project to a Definitive-Feasibility Study (DFS).

The DFS will commence immediately, in parallel with ongoing exploration and resource drilling and further metallurgical testwork. The DFS completion is targeted for mid-2023.

25. Reasonable Basis for Funding Assumption

The Mallina Gold Project's technical and economic fundamentals provide a strong platform for De Grey to source traditional financing through debt and equity markets, in addition to pursuing other financing strategies should this be to the benefit of shareholders. There is, however, no certainty that De Grey will be able to source funding as and when required,

Whilst no formal funding discussions have commenced, the Company has engaged with financial institutions and these financial institutions have expressed a high level of interest in being involved in funding of the Project.

To achieve the range of outcomes indicated in the PFS, pre-production funding of approximately A$1,050M may be required. Typical project development financing would involve a combination of debt and equity. Initial indications from financiers are that the debt component of the funding requirement would be greater than the equity funding requirement. De Grey has formed the view that there is a reasonable basis to believe that requisite future funding for development of the Mallina Gold Project will be available when required. There are grounds on which this reasonable basis is established including:

- Global debt and equity finance availability for high-quality gold projects remains robust. Recent examples of significant funding being made available for construction of single asset gold developers located in Australia in the last twelve months include Bellevue Gold, Red 5 and Calidus Resources
- The Mallina Gold Project is world-class by scale and quality parameters. Release of these PFS results provides a platform for De Grey to discuss the outcomes with potential financiers
- De Grey has a current market capitalisation of approximately A$1.3 billion and no debt. The Company has an uncomplicated, clean corporate and capital structure. De Grey also owns 100% of the Mallina Gold Project. These are all factors expected to be highly attractive to potential financiers
- The De Grey Board and management team has extensive experience in mine development, financing and production in the resources industry
- The Company has a strong track record of raising equity funds as and when required to further the exploration and evaluation of the Mallina Gold Project.

26. Acronyms

Acid Base Accounting	**ABA**
Acid Forming Potential	**AP**
Acid Metalliferous Drainage	**AMD**
Advancement of Cost Engineers International	**AACEI**
All-in Sustaining Cost	**AISC**
Assessment on Referral Information	**ARI**
Atmospheric Oxidation	**Albion**
Australian dollars	**AU$** or **$**
Australian Dollars	**AUD**
Australian Goods and Services Tax	**GST**
Australian National Committee on Large Dams	**ANCOLD**
Bacterial Oxidation	**BIOX**
Build, Own, Operate	**BOO**
Capital Cost Estimate	**CCE**
Carbon in Leach	**CIL**
Certified Reference Material	**CRM**
CMW Geoscience	**CMW**
Counter Current Decantation	**CCD**
Cube Consulting Pty Ltd	**Cube**
De Grey Mining Ltd	**De Grey** or **Company**
Definitive Feasibility Study	**DFS**
Department of Water and Environmental Regulation	**DWER**
Electrical Equipment List	**EEL**
Electricals and Control Global Engineering	**ECG**
Engineering, Procurement and Construction Management	**EPCM**
Engineering, Procurement, Construction	**EPC**
Environment Protection and Biodiversity Conservation Act	**EPBC Act**
Environmental Review Document	**ERD**
Environmental, Social and Governance	**ESG**
Financial Investment Decision	**FID**
Fly In Fly Out	**FIFO**
Greenhouse Gas	**GHG**
Hemi Gold Project	**Hemi** or **Project**
High Pressure Grinding Rolls	**HPGR**

Integrated Waste Landform	**IWL**
Internal Ramp Angle	**IRA**
International Council of Mining and Metals'	**ICMM**
Kaolinised Sulphidic Zone	**KSZ**
Kariyarra Aboriginal Corporation	**KAC**
Life of Mine	**LOM**
Local Government Area	**LGA**
Localised Uniform Conditioning	**LUC**
Mallina Gold Project	**Project**
Material Take-Offs	**MTO**
Matters of National Environmental Significance	**MNES**
Mechanical Equipment List	**MEL**
millimetres	**Mm**
million	**M**
Mineral Resource Estimate	**MRE**
Native Title Determination	**NTD**
Neutral Mine Drainage	**NMD**
Neutralising Potential	**NP**
Non Acid Forming	**NAF**
Nyamal Aboriginal Corporation	**NAC**
Pebble Crushing	**SABC**
Potentially Acid Forming	**PAF**
Pre-Feasibility Study	**PFS** or **Study**
Pressure Oxidation	**POx**
Process Flow Diagrams	**PFDs**
Project Implementation Plan	**PIP**
Request for Pricing	**RFP**
Request for Quotation	**RFQ**
RPM Advisory Services	**RPM**
Run Of mine	**ROM**
Short Range Endemic	**SRE**
Social Impact Assessment	**SIA**
Global Industry Standard on Tailings Management	**GISTM**
Tailings Storage Facility	**TSF**
Task Force on Climate Related Financial Disclosures	**TCFD**

tonne	**t**
Umwelt Consulting Pty Ltd	**Umwelt**
Unclassified	**UC**
Vertical Roller Mills	**VRMs**
Waste Rock Emplacements	**WRE**
Wood Australia	**Wood**
Yindjibarndi Aboriginal Corporation	**YAC**

Appendix A – PFS Peer Comparison Reference List

FY2022 Production and AISC data for major Australian gold operations.

Asset	Owner	Production (koz)	AISC ($/oz)	Source
Boddington	Newmont	789.00	1314.6*	https://www.newmont.com/investors/news-release/news-details/2022/Newmont-Announces-Second-Quarter-2022-Results/default.aspx
Cadia	Newcrest	560.70	-	https://www.asx.com.au/asxpdf/20220721/pdf/45c17j041vvb1d.pdf
Tanami	Newmont	488.00	1381.2*	https://www.newmont.com/investors/news-release/news-details/2022/Newmont-Announces-Second-Quarter-2022-Results/default.aspx
KCGM	Northern Star	486.00	1426	https://www.asx.com.au/asxpdf/20220720/pdf/45bzzv6w7jxr90.pdf
Fosterville	Agnico Eagle	455.04	-	https://s21.q4cdn.com/374334112/files/doc_presentations/2022/Q2-2022-Presentation-Final.pdf
Telfer	Newcrest	407.55	1388	https://www.asx.com.au/asxpdf/20220721/pdf/45c17j041vvb1d.pdf
Tropicana	AngloGold	404.00	1087*	https://www.asx.com.au/asxpdf/20220726/pdf/45c53bkb43lgbk.pdf
St Ives	Gold Fields	394.80	1649*	https://www.goldfields.com/reports/q2-2022/pdf/booklet.pdf
Duketon	Regis	315.50	1684	https://www.asx.com.au/asxpdf/20220726/pdf/45c53bkb43lgbk.pdf
Jundee	Northern Star	310.82	1295	https://www.asx.com.au/asxpdf/20220720/pdf/45bzzv6w7jxr90.pdf
Granny Smith	Gold Fields	296.30	1456*	https://www.goldfields.com/reports/q2-2022/pdf/booklet.pdf
Gruyere	Gold Fields	284.00	1376*	https://www.asx.com.au/asxpdf/20220728/pdf/45c7kmyjc0dfwr.pdf
Sunrise Dam	Anglo Gold	244.00	1589*	https://thevault.exchange/?get_group_doc=143/1659671091-Interim2022Summaryofoperations.pdf
Carosue Dam	Northern Star	237.63	1785	https://www.asx.com.au/asxpdf/20220720/pdf/45bzzv6w7jxr90.pdf
Agnew	Gold Fields	231.80	1652*	https://www.goldfields.com/reports/q2-2022/pdf/booklet.pdf
Cowal	Evolution	227.11	1245	https://www.asx.com.au/asxpdf/20220721/pdf/45c16lp9t4l3jh.pdf

Comparison made between Mallina PFS estimates and current producing gold mines in Australia. De Grey's Mallina Project is not in production and a comparison to the Mallina Project has been made based on its scoping study and preliminary feasibility study estimates.

*Denotes reported AISC in H2 FY2022.

Forecast production, capital costs and capital intensity per ounce of annual production for major global gold development projects.

Asset	Owner	Forecast LOM Production (koz pa)	Capex ($m)	Capex (A$m)	Capital Intensity (Capex $/oz pa)
Namdini	Shandong	287	390.1	549.3	1913.8
Volta Grande	Belo Sun	205	298	419.6	2046.8
Eskay Creek	Skeena	249	488	538.4	2162.4
Buritica	Zijin	253	389.2	548	2166.1
Windfall	Osisko	238	544	600.2	2522
Nyanzaga	OreCorp	242	474	667.4	2757.9
Mt Todd	Vista	430	892	1255.9	2920.9
Back River	Sabina	223	610	673.1	3018.2
Springpole	First Mining	287	718	1010.9	3522.5
Greenstone	Equinox	366	1225	1351.6	3693
Gramalote	B2Gold	281	925	1302.4	4635.1
Stibnite	Perpetua	297	1263	1778.3	5987.7
Cote	IAMGOLD	367	1866	2627.4	7159.2
KSM	Seabridge	1027	6432	9056.6	8818.5
Donlin	Novagold	1100	7402	10422.4	9474.9

Asset	Owner	Source
Namdini	Shandong	https://www.cardinalresources.com.au/wp-content/uploads/2019/11/25-Nov-2019-Cardinals-Namdini-FS-NI-43-101-DRAFT-locked.pdf-v2-3461-9335-8606-v.6.pdf-rs.pdf
Volta Grande	Belo Sun	https://www.belosun.com/our-project/feasibility_study_results/
Eskay Creek	Skeena	https://skeenaresources.com/site/assets/files/6312/eskay_creek_pfs_technical_report.pdf
Buritica	Zijin	https://www.continentalgold.com/continental-gold-announces-a-positive-feasibility-study-for-the-buritica-project-2/
Windfall	Osisko	https://www.osiskomining.com/projects/windfall/
Nyanzaga	OreCorp	https://orecorp.com.au/upload/documents/investor/asx/220822002319_220822-DFSAnnouncementFinal.pdf
Mt Todd	Vista	https://www.vistagold.com/images/pdf/technical_reports/2022/John_Rozelle_-_VG-Mt_Todd_NI_43-101_FS_021722_1.pdf
Back River	Sabina	https://www.sabinagoldsilver.com/assets/docs/presentations/2021-09-08-CP-SBB.pdf
Springpole	First Mining	https://firstmininggold.com/_resources/presentations/corporate-presentation.pdf
Greenstone	Equinox	https://www.equinoxgold.com/operations/growth-projects/greenstone-project/#feasibility
Gramalote	B2Gold	https://www.b2gold.com/news/2021/b2gold-reports-strong-q1-2021-results-quarterly-total-gold-production-of-220644-oz-9-above-budget-cash-operating-costs-and-all-in-sustaining-costs-lower-than-budget
Stibnite	Perpetua	https://perpetuaresources.com/wp-content/uploads/Perpetua-Resources_Investor-Presentation_June-2022.pdf
Cote	IAMGOLD	https://s2.q4cdn.com/610165863/files/doc_downloads/2021/12/IAMGOLD_Cote_Factsheet_Dec21.pdf
KSM	Seabridge	https://www.seabridgegold.com/press-release/seabridge-gold-completes-updated-preliminary-feasibility-study-for-ksm-project
Donlin	Novagold	https://www.novagold.com/properties/donlin_gold/overview/

All development projects are currently in the study phase and not in production. Estimates relate to forecasts.

Appendix B – JORC Resource and Reserve Statements

Mallina Gold Project – Global Mineral Resource Estimate by Type, May 2022

Mining Centre	Type	Measured			Indicated			Inferred			Total		
		Mt	Au g/t	Au KOz	Mt	Au g/t	Au KOz	Mt	Au g/t	Au KOz	Mt	Au g/t	Au KOz
Hemi Mining Centre	Oxide				6.7	1.5	324	1.4	0.9	41	8.1	1.4	365
	Sulphide				132.4	1.3	5,480	72.7	1.1	2,624	205.1	1.2	8,105
	Total				**139.1**	**1.3**	**5,804**	**74.1**	**1.1**	**2,666**	**213.3**	**1.2**	**8,470**
Withnell Mining Centre	Oxide	1.0	1.8	58	2.7	1.3	113	1.7	1.4	74	5.4	1.4	245
	Sulphide	0.7	1.7	35	9.0	1.9	550	10.5	2.4	796	20.2	2.1	1,381
	Total	**1.6**	**1.8**	**92**	**11.7**	**1.8**	**664**	**12.2**	**2.2**	**870**	**25.6**	**2.0**	**1,626**
Wingina Mining Centre	Oxide	2.7	1.8	152	1.8	1.5	88	2.2	1.1	75	6.7	1.5	315
	Sulphide	0.4	1.6	21	0.7	1.6	35	4.0	1.3	168	5.1	1.4	224
	Total	**3.1**	**1.7**	**173**	**2.5**	**1.5**	**122**	**6.3**	**1.2**	**243**	**11.9**	**1.4**	**538**
Total	**Oxide**	**3.7**	**1.8**	**210**	**11.2**	**1.5**	**525**	**5.3**	**1.1**	**190**	**20.2**	**1.4**	**925**
	Sulphide	**1.1**	**1.6**	**55**	**142.1**	**1.3**	**6,065**	**87.3**	**1.3**	**3,589**	**230.5**	**1.3**	**9,709**
	Total	**4.7**	**1.7**	**265**	**153.4**	**1.3**	**6,590**	**92.6**	**1.3**	**3,779**	**250.7**	**1.3**	**10,634**

Refer to "Mallina Gold Project Resource Statement – 2022, 31 May 2022".

Mallina Gold Project – Hemi Ore Reserve Estimate, September 2022

Mining Centre	Type	Proved			Probable			Total		
		Mt	Au g/t	Au KOz	Mt	Au g/t	Au KOz	Mt	Au g/t	Au KOz
Hemi Mining Centre	Oxide				7.3	1.7	403	7.3	1.7	403
	Transition				6.0	1.7	329	6.0	1.7	329
	Sulphide				90.1	1.5	4,408	90.1	1.5	4,408
	Total				**103.4**	**1.5**	**5,139**	**103.4**	**1.5**	**5,139**
Total	**Oxide**				**7.3**	**1.7**	**403**	**7.3**	**1.7**	**403**
	Transition				**6.0**	**1.7**	**329**	**6.0**	**1.7**	**329**
	Sulphide				**90.1**	**1.5**	**4,408**	**90.1**	**1.5**	**4,408**
	Total				**103.4**	**1.5**	**5,139**	**103.4**	**1.5**	**5,139**

Note: The rounding in the above table is an attempt to represent levels of precision implied in the estimation process and apparent errors of summation may result from the rounding.

Mallina Gold Project – Hemi Ore Reserve Estimate by deposit, September 2022

Deposit	Type	Proved			Probable			Total		
		Mt	Au g/t	Koz	Mt	Au g/t	Koz	Mt	Au g/t	Koz
Aquila	Oxide				1.6	1.8	95	1.6	1.8	95
	Transition				1.8	2.1	121	1.8	2.1	121
	Sulphide				6.6	1.6	339	6.6	1.6	339
	Total				**10.1**	**1.7**	**555**	**10.1**	**1.7**	**555**
Brolga	Oxide				2.2	1.6	115	2.2	1.6	115
	Transition				1.5	1.6	79	1.5	1.6	79
	Sulphide				25.7	1.6	1,287	25.7	1.6	1,287
	Total				**29.5**	**1.6**	**1,481**	**29.5**	**1.6**	**1,481**
Crow	Oxide				0.8	1.2	31	0.8	1.2	31
	Transition				1.0	1.4	42	1.0	1.4	42
	Sulphide				11.1	1.4	505	11.1	1.4	505
	Total				**12.9**	**1.4**	**578**	**12.9**	**1.4**	**578**
Diucon	Oxide				0.2	2.0	13	0.2	2.0	13
	Transition				0.3	1.9	20	0.3	1.9	20
	Sulphide				21.0	1.7	1,129	21.0	1.7	1,129
	Total				**21.5**	**1.7**	**1,162**	**21.5**	**1.7**	**1,162**
Eagle	Oxide				0.1	2.0	9	0.1	2.0	9
	Transition				0.2	1.7	10	0.2	1.7	10
	Sulphide				11.0	1.4	502	11.0	1.4	502
	Total				**11.3**	**1.4**	**520**	**11.3**	**1.4**	**520**
Falcon	Oxide				2.3	1.9	141	2.3	1.9	141
	Transition				1.2	1.5	57	1.2	1.5	57
	Sulphide				14.6	1.4	646	14.6	1.4	646
	Total				18.1	1.4	843	18.1	1.4	843
Hemi Mining Centre	**Oxide**				**7.3**	**1.7**	**403**	**7.3**	**1.7**	**403**
	Transition				**6.0**	**1.7**	**329**	**6.0**	**1.7**	**329**
	Sulphide				**90.1**	**1.5**	**4,408**	**90.1**	**1.5**	**4,408**
	Total				**103.4**	**1.5**	**5,139**	**103.4**	**1.5**	**5,139**

Note: The rounding in the above table is an attempt to represent levels of precision implied in the estimation process and apparent errors of summation may result from the rounding. There are no Ore Reserves stated for the Withnell and Wingina Mining Centre Resource.

Appendix C: JORC Code, 2012 Edition – Table 1

Section 1: Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	▪ *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* ▪ *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* ▪ *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	▪ All drilling and sampling was undertaken in an industry standard manner. ▪ Core samples were collected with a diamond rig drilling mainly NQ2 diameter core. ▪ After logging and photographing, NQ2 drill core was cut in half, with one half sent to the laboratory for assay and the other half retained. HQ and PQ core was quartered, with one quarter sent for assay. Holes were sampled over mineralised intervals to geological boundaries on a nominal 1m basis. ▪ Sample weights ranged from 2-4kg. ▪ RC holes were sampled on a 1m basis with samples collected from a cone splitter mounted on the drill rig cyclone. The 1m samples typically ranged in weight from 2.5kg to 3.5kg. ▪ Aircore samples were collected by spear from 1m sample piles and composited over 4m intervals. Samples for selected holes were collected on a 1m basis by spear from 1m sample piles. Sample weights ranges from around 1kg to 3kg. Aircore results have not been used in the resource estimate. ▪ Commercially prepared certified reference material (**CRM**) and course blank was inserted at a minimum rate of 2%. ▪ Field duplicates were selected on a routine basis to verify the representivity of the sampling methods. ▪ Sample preparation is completed at an independent laboratory where samples are dried, split, crushed and pulverized prior to analysis as described below. ▪ Sample sizes are considered appropriate for the material sampled. ▪ The samples are considered representative and appropriate for this type of drilling. Diamond core and RC samples are appropriate for use in the Mineral Resource estimate.
Drilling techniques	▪ *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	▪ Diamond core diameters are - NQ2 (51mm), HQ3 (61mm), PQ (85mm). ▪ Reverse Circulation (RC) holes were drilled with a 5 ½ inch bit and face sampling hammer. ▪ Aircore holes were drilled with an 83mm diameter blade bit.
Drill sample recovery	▪ *Method of recording and assessing core and chip sample recoveries and results assessed.* ▪ *Measures taken to maximise sample recovery and ensure representative nature of the samples.* ▪ *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	▪ Core recovery is measured for each drilling run by the driller and then checked by the Company geological team during the mark up and logging process. ▪ RC and aircore samples were visually assessed for recovery. ▪ Samples are considered representative with generally good recovery. Deeper RC and aircore holes encountered water, with some intervals having less than optimal recovery and possible contamination. ▪ No sample bias is observed.

Criteria	JORC Code explanation	Commentary
Logging	▪ *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* ▪ *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* ▪ *The total length and percentage of the relevant intersections logged.*	▪ The entire holes have been geologically logged and core was photographed by Company geologists, with systematic sampling undertaken based on rock type and alteration observed. ▪ RC and diamond sample results are appropriate for use in a resource estimation. ▪ The aircore results provide a good indication of mineralisation but are not used in resource estimation.
Sub-sampling techniques and sample preparation	▪ *If core, whether cut or sawn and whether quarter, half or all core taken.* ▪ *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* ▪ *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* ▪ *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* ▪ *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* ▪ *Whether sample sizes are appropriate to the grain size of the material being sampled.*	▪ All core was logged and photographed. ▪ NQ2 drill core was cut in half, with one half sent to the laboratory for assay and the other half retained. HQ and PQ core was quartered, with one quarter sent for assay. Holes were sampled over mineralised intervals to geological boundaries on a nominal 1m basis. ▪ RC sampling was carried out by a cone splitter on the rig cyclone and drill cuttings were sampled on a 1m basis in bedrock and 4m composite basis in cover. ▪ Aircore samples were collected by spear from 1m sample piles and composited over 4m intervals. Samples for selected holes were collected on a 1m basis by spear from 1m sample piles. ▪ Each sample was dried, split, crushed and pulverised to 85% passing 75µm. ▪ Sample sizes are considered appropriate for the material sampled. ▪ The samples are considered representative and appropriate for this type of drilling. ▪ Core and RC samples are appropriate for use in a resource estimate. ▪ Aircore samples are generally of good quality and appropriate for delineation of geochemical trends but were not used in the Mineral Resource estimate.
Quality of assay data and laboratory tests	▪ *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* ▪ *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* ▪ *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	▪ The samples were submitted to a commercial independent laboratory in Perth, Australia. ▪ For diamond core and RC samples Au was analysed by a 50g charge Fire assay fusion technique with an AAS finish. ▪ Aircore samples were analysed for Au using 25g aqua regia extraction with ICPMS finish. ▪ All aircore samples and at least every fifth RC and DD sample were analysed with ALS procedure MS61 which comprises a four acid digest and repots a 48 element analysis by ICPAES and ICPMS. ▪ The techniques are considered quantitative in nature. ▪ A comprehensive QAQC protocol including the use of CRM, field duplicates and umpire assay at a second commercial laboratory has confirmed the reliability of the assay method.
Verification of sampling and assaying	▪ *The verification of significant intersections by either independent or alternative company personnel.* ▪ *The use of twinned holes.* ▪ *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* ▪ *Discuss any adjustment to assay data.*	▪ A number of significant intersections were visually field verified by the Competent Person. ▪ Two twin holes were completed. The diamond twins verify grade tenor and mineralisation thickness of RC holes. ▪ Sample results have been merged by the company's database consultants. ▪ Results have been uploaded into the company database, checked and verified. ▪ No adjustments have been made to the assay data. ▪ Results are reported on a length weighted basis.

Criteria	JORC Code explanation	Commentary
Location of data points	▪ *Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* ▪ *Specification of the grid system used.* ▪ *Quality and adequacy of topographic control.*	▪ Diamond and RC drillhole collar locations are located by DGPS to an accuracy of +/-10cm. ▪ Aircore hole collar locations are located by DGPS to an accuracy of +/-10cm., or by handheld GPS to an accuracy of 3m. ▪ Locations are recorded in GDA94 zone 50 projection ▪ Diagrams and location tables have been provided in numerous releases to the ASX. ▪ Topographic control is by detailed georeferenced airphoto and Differential GPS data. ▪ Downhole surveys were conducted for all RC and DD holes using a north seeking gyro tool with measurements at 10m downhole intervals.
Data spacing and distribution	▪ *Data spacing for reporting of Exploration Results.* ▪ *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* ▪ *Whether sample compositing has been applied.*	▪ Within the limits of the Mineral Resource, the drillhole spacing varies from 40m by 40m spacing to 80m by 80m spacing. ▪ The extensive drilling programs have demonstrated that the mineralised domains have sufficient continuity in both geology and grade to be considered appropriate for the Mineral Resource and Ore Reserve estimation procedures and classification applied under the 2012 JORC Code. ▪ Samples have been composited to 2m lengths in mineralised lodes using best fit techniques prior to estimation.
Orientation of data in relation to geological structure	▪ *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* ▪ *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	▪ The drilling is approximately perpendicular to the strike of mineralisation. The holes are generally angled at -55o which provides good intersection angles into the mineralisation which ranges from vertical to -45o dip. ▪ The sampling is considered representative of the mineralised zones. ▪ Where drilling is not orthogonal to the dip of mineralised structures, true widths are less than downhole widths.
Sample security	▪ *The measures taken to ensure sample security.*	▪ Samples were collected by company personnel and delivered direct to the laboratory via a transport contractor.
Audits or reviews	▪ *The results of any audits or reviews of sampling techniques and data.*	▪ QAQC data has been both internally and externally reviewed.

Section 2: Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	▪ *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* ▪ *The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.*	▪ The entire Hemi Mineral Resource lies within exploration licence E45/3392-I. The tenement is held 100% by Last Crusade Pty Ltd, a wholly owned subsidiary of De Grey Mining Limited. ▪ The Hemi Prospect is approximately 60km SSW of Port Hedland. ▪ The tenements are in good standing as at the time of this report. ▪ There are no known impediments to operating in the area.
Exploration done by other parties	▪ *Acknowledgment and appraisal of exploration by other parties.*	▪ No detailed exploration is known to have occurred on the tenement prior to De Grey Mining. Prior to the Hemi discovery, De Grey completed programs of airborne aeromagnetics/radiometrics, surface geochemical sampling and wide spaced aircore and RAB drilling. Limited previous RC drilling was carried out at the Scooby Prospect approximately 2km NE of the Brolga deposit at Hemi.
Geology	▪ *Deposit type, geological setting and style of mineralisation.*	▪ The mineralisation style is new to the Pilbara region and is interpreted to be hydrothermally emplaced gold mineralisation within intermediate intrusions that have intruded into the older Archaean Mallina basin sediments. ▪ Host rocks comprise igneous rocks of quartz diorite composition. ▪ The gold mineralisation is intimately associated with sulphide stringer and disseminations. ▪ The sulphide minerals are dominantly arsenopyrite and pyrite.
Drillhole Information	▪ *A summary of all information material to the under-standing of the exploration results including a tabulation of the following information for all Material drillholes:* – *easting and northing of the drillhole collar* – *elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar* – *dip and azimuth of the hole* – *downhole length and interception depth* – *hole length* ▪ *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	▪ All exploration results have previously been communicated in various ASX releases.
Data aggregation methods	▪ *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cutoff grades are usually Material and should be stated.* ▪ *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* ▪ *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	▪ Exploration results are not being reported. ▪ Not applicable, as a Mineral Resource is being reported.

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	▪ *These relationships are particularly important in the reporting of Exploration Results.* ▪ *If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.* ▪ *If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').*	▪ The drillholes are interpreted to be approximately perpendicular to the strike of mineralisation. ▪ Where drilling is not perpendicular to the dip of mineralisation the true widths are less than downhole widths.
Diagrams	▪ *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.*	▪ Relevant diagrams have been included in numerous ASX releases.
Balanced reporting	▪ *Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* ▪ *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	▪ All drilling used in the Mineral Resource estimate has been accurately located using DGPS for collar locations and gyroscopic downhole directional surveys. ▪ Exploration results are not being reported.
Other substantive exploration data	▪ *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations geophysical survey results geochemical survey results bulk samples - size and method of treatment metallurgical test results bulk density, groundwater, geotechnical and rock characteristics potential deleterious or contaminating substances.*	▪ Extensive metallurgical, groundwater, and geotechnical studies have commenced as part of the economic assessment of the project.
Further work	▪ *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large- scale step-out drilling).* ▪ *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	▪ Exploration drilling is ongoing at the project. ▪ Further infill drilling will be conducted prior to commencement of mining. ▪ Refer to diagrams in the body of this and previous ASX releases.

Section 3: Estimation and Reporting of Mineral Resources

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	▪ *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* ▪ *Data validation procedures used.*	▪ All drilling data in the Mineral Resource estimate has been generated by DEG since 2019. It has been systematically recorded and stored using industry best practice for data management. ▪ The database is hosted and managed by Expedio, using their customised SQL data storage system. ▪ Data was geologically logged electronically using the Expedio Ocris Mobile Logger collar and downhole surveys were also received electronically as were the laboratory analysis results. ▪ The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected. Some of the automatic triggers on assay import are listed below. – CRM results > ± 3 standard deviations – CRM weight > 200g – Blank results > 10 x detection limit – Blank weight < 400g – Grind size < 85% passing 75µm ▪ Data extracted from the database were validated visually in Datamine and Seequent Leapfrog software. Also, when loading the data, any errors such as missing values and sample/logging overlaps are highlighted. ▪ In summary the database is of high quality, consisting only of very recent drilling with no significant errors due to data corruption or transcription.
Site visits	▪ *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* ▪ *If no site visits have been undertaken indicate why this is the case.*	▪ The Competent Person visited site on 15 and 16 December 2021, and personally inspected active diamond core drilling and geological logging at the core logging facility. Core recovery and logging was of a very high standard.
Geological interpretation	▪ *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* ▪ *Nature of the data used and of any assumptions made.* ▪ *The effect, if any, of alternative interpretations on Mineral Resource estimation.* ▪ *The use of geology in guiding and controlling Mineral Resource estimation.* ▪ *The factors affecting continuity both of grade and geology.*	▪ The confidence in the underlying geological interpretation is considered to be high and is based on extensive RC and core drilling. The entire project area is overlain by 25m to 45m of transported cover, so no outcrop is present. ▪ Six discrete deposit areas have been defined within the Hemi project. These are: Aquila, Brolga, Crow, Diucon, Eagle and Falcon. ▪ Geochemistry and geological logging have been used to assist with identification of lithology, mineralisation and weathering. ▪ The deposit consists of broad zones of gold mineralisation within well-defined intrusive lithologies. Gold is associated with pyrite and arsenopyrite with sericite and silica alteration of the host rocks. ▪ The controlling lithologies are well defined and lithology boundaries commonly coincide with mineralisation boundaries. ▪ The overall dip and dip direction of the intrusives varies between each deposit area: – Aquila 70° towards the southeast – Brolga 50° towards the southeast – Crow 40° to 60° towards the southeast – Diucon 70° to 80° towards the southeast – Eagle 80° towards the southeast – Falcon 50° to 70° towards the east.

Criteria	JORC Code explanation	Commentary
		▪ Infill drilling has confirmed geological and grade continuity in most areas of the deposit. ▪ The estimation domains were constrained by wireframes constructed in Leapfrog software using an approximate 0.2g/t Au cutoff grade, with the domain orientation consistent with the geological interpretation.
Dimensions	▪ *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	▪ The Hemi Mineral Resource area extends over a north-south strike length of 2,000m, and an east-west extent of 3,600m. It has been drilled and interpreted to a maximum vertical interval of 670m from surface at 70mRL to -600mRL.
Estimation and modelling techniques	▪ *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* ▪ *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* ▪ *The assumptions made regarding recovery of by-products.* ▪ *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).* ▪ *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* ▪ *Any assumptions behind modelling of selective mining units.* ▪ *Any assumptions about correlation between variables.* ▪ *Description of how the geological interpretation was used to control the resource estimates.* ▪ *Discussion of basis for using or not using grade cutting or capping.* ▪ *The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.*	▪ Estimation of the mineral resource was by the non-linear geostatistical method Localised Uniform Conditioning (LUC) using Datamine software. The LUC estimation process was as follows: ▪ Drillhole data was selected within mineralised domains for each deposit area and composited to 2m downhole intervals in Datamine software. ▪ The composited data was imported into Supervisor software for statistical and geostatistical analysis. The statistical analysis ▪ Top-caps were applied based on examination of histograms and Au grade distribution analysis. The caps per deposit area ranged from 10 to 18ppm Au. ▪ Contact analysis of samples within the estimation domains and those outside ('background' domain) showed that hard domain boundaries were suitable. ▪ Variography was performed on capped data transformed to normal scores, and the variogram models were back-transformed to original units. Variography was performed separately for each deposit area. ▪ The variogram models had low to moderate nugget effects (25 to 35% of the total sill), with maximum ranges of ~150m along strike and ~90m down dip for all deposit areas. ▪ Estimation (via Ordinary Kriging (OK) – a necessary precursor step for UC) was into a block model that was rotated +50° from the MGA94 grid. The panel block size of 20mE x 20mN x 5mRL is half the average drill spacing in the main well-drilled part of the deposit ▪ A minimum of 8 and maximum of 20 (2m composite) samples per panel estimate was used, with a search ellipse radius similar to the variogram ranges (160m x 80m x 40m). ▪ Up to two search passes were used for each estimation domain, with the second pass twice the size of the first pass. The number of samples required was the same for both searches. The second pass was only required for 1% of blocks for most deposit areas, except for Brolga where the second pass was required for 5% of the blocks. ▪ A locally varying ellipsoid orientation was used to account for the subtle changes in estimation domain orientation along strike and down dip. The variogram models did not use locally varying orientations in order to be consistent with the Change of Support correction. ▪ The UC process applies a Change of Support correction (discrete Gaussian model) based on the composite sample distribution and variogram model, conditioned to the Panel grade estimate, to predict the likely grade tonnage distribution at the SMU selectivity. ▪ Localisation of the grades was into Selective Mining Units (SMU) block of 5mE x 5mN x 5mRL (16 SMUs per panel). The SMU size is appropriate given the likely mining method (open-cut) and equipment selection.

Criteria	JORC Code explanation	Commentary
		▪ To account for the higher grades that had been capped, a localised OK estimate using uncapped grades was made into SMU sized blocks in the immediate area (5m) of these higher grades. These grades superseded the LUC grades. ▪ Estimates of Au grades were validated against the composited drillhole data by extensive visual checking in cross-section, plan and on screen in 3D, by global (per shoot) comparisons of input data and model, and by semi-local statistical methods (swath plots). All methods showed satisfactory results. ▪ No recovery of by-products is anticipated. ▪ In addition to gold, sulphur, calcium and arsenic were estimated in the model to provide information for metallurgical evaluation. ▪ S, Ca and As were estimated by ordinary kriging into the panel-sized blocks. ▪ Moderate correlation was determined between Au and S and Au and As. Strong correlation was determined between S and As. No assumptions about correlation were made in the estimate.
Moisture	▪ *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	▪ Tonnages and grades were estimated on a dry in situ basis.
Cutoff parameters	▪ *The basis of the adopted cutoff grade(s) or quality parameters applied.*	▪ The Mineral Resource has been reported at a cutoff 0.3g/t Au for mineralisation above 370m vertical depth (-300mRL), and 1.5g/t Au cutoff below 370m from surface. ▪ The reporting cutoff parameters were selected based on economic evaluation of the Hemi deposit to PFS level.
Mining factors or assumptions	▪ *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	▪ The majority of the Hemi deposit would be mined by open pit extraction. Recent pit optimisation work was undertaken using gold prices of between $2,100 and $3,300 per ounce, with mining costs averaging $7.90 per BCM and, processing costs of $31 per tonne for the semi refractory material. ▪ The $3,000 per ounce pit shells reached a maximum depth of 450m at Brolga (to the -380mRL) and an average depth for the other deposit areas of 370 to 400m (-300 to −330mRL). ▪ Therefore the -300mRL was selected as the level to divide open cut from underground resources. ▪ Higher grade zones below the −300mRL within the deposit show potential for large scale underground mining.
Metallurgical factors or assumptions	▪ *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	▪ Extensive metallurgical test work has been undertaken at Hemi, with similar mineralogy and metallurgical characteristics noted across all deposits tested thus far. The gold mineralisation is semi-refractory, and a flowsheet combining the conventional processing technologies of crushing, milling, sulphide flotation, concentrate pressure oxidation, and cyanide leaching has been tested thoroughly, and has proven successful in achieving high recoveries. ▪ For transitional and fresh mineralisation, overall gold recoveries of 95% have been achieved on samples from Brolga, Falcon, and Crow, and 94% on samples from Aquila. Testwork on the Diucon and Eagle orebodies is in progress. ▪ For oxide mineralisation at Aquila, the test work has demonstrated that gold recovery of 95% can be achieved through conventional cyanide leaching

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	▪ *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	▪ There are no known environmental issues, with a number of operational and closed open cut mines (copper, lithium, iron ore) within 50km of Hemi, in similar physical geographical settings. ▪ DEG will work to mitigate environmental impacts as a result of any future mining or mineral processing.
Bulk density	▪ *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* ▪ *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* ▪ *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	▪ Bulk density values applied to the Mineral Resource were based on a substantial number of density determinations on drill core. ▪ The bulk density values were assigned based on oxidation/weathering as follows: – Upper Saprolite 1.7t/m³ – Lower Saprolite 1.8t/m³ – Saprock 2.1t/m³ – Fresh with weathering along joints 2.6 to 2.7t/m³ – Fresh (primary sulphide) 2.78t/m³ ▪ The transported cover material was assigned an assumed density value of 1.7t/m³.
Classification	▪ *The basis for the classification of the Mineral Resources into varying confidence categories.* ▪ *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* ▪ *Whether the result appropriately reflects the Competent Person's view of the deposit.*	▪ The Mineral Resource estimate is reported in compliance with the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' by the Joint Ore Reserves Committee (JORC). ▪ The Hemi Mineral Resource was classified as Indicated and Inferred Mineral Resource based on data quality, sample spacing, and geological and grade continuity and kriging metrics of the panel estimates. ▪ The Indicated Mineral Resource has a drill spacing of 40m x 40m and where the kriging slope of regression is greater than about 0.7. In a very few instances where the mineralisation showed clear continuity into areas of 80m by 40m drillhole spacing, the resource was classified as Indicated. ▪ Wireframes were constructed to constructed to delineate the Indicated Mineral Resource i.e. the classification was not defined on a block-by-block basis. ▪ The Inferred Mineral Resource has been defined with a drillhole spacing of 80m by 80m and with slopes of regression for the panel estimates less than 0.7. ▪ Extrapolation of the mineralisation was generally limited to 60m along strike and down dip of drillhole intersections. Extrapolation of up to 100m down dip was used where the strongest mineralisation remained open and untested. ▪ The input data is on a regular drilling grid and has not been concentrated on higher -grade zones. The definition of mineralised zones is based on high level geological understanding producing a robust model of mineralised domains. ▪ The classification of the Mineral Resource Estimate appropriately reflects the view of the Competent Person.
Audits or reviews	▪ *The results of any audits or reviews of Mineral Resource estimates.*	▪ Cube Consulting have completed internal peer review of the estimate.

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy / confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* ▪ *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* ▪ *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	▪ The deposit geometry and continuity has been adequately interpreted to reflect the classification applied to the Mineral Resource. ▪ The data quality is excellent and the drillholes have detailed logs produced by qualified geologists. An independent commercial laboratory has been used for all analyses. ▪ The Mineral Resource statement relates to global estimates of tonnes and grade.

Section 4: Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	▪ *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* ▪ *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	▪ The Mineral Resource estimate for the Hemi deposit used as a basis for conversion to the Ore Reserve estimate reported here was compiled by Cube Consulting. The resource model was estimated using localized uniform conditioning techniques. ▪ The data included drilling and assay data, geological interpretation, density checks and comparisons to independent check estimates. The August 2022 Hemi Mineral Resource is inclusive of the August 2022 Hemi Ore Reserve.
Site visits	▪ *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* ▪ *If no site visits have been undertaken indicate why this is the case.*	▪ No site visit has been made by the Competent Person
PFS status	▪ *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* ▪ *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	▪ These maiden Ore Reserves are supported by a pre-feasibility study (PFS) including the estimation of a Mineral Resource and Ore Reserve for the Hemi open pits. These Ore Reserves have included all aspects of the PFS study which incudes economical analyses based on a mine schedule incorporating only the stated Ore Reserves and the relevant parameters developed within that study.
Cutoff parameters	▪ *The basis of the cutoff grade(s) or quality parameters applied.*	▪ A lower block cutoff grade of 0.41g/t for Oxide material and 0.5g/t for other material has been applied in estimating the Ore Reserve. The lower cuts have been calculated using the ore based costs, recoveries and net realised revenue inclusive of royalty payments.
Mining factors or assumptions	▪ *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* ▪ *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* ▪ *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* ▪ *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* ▪ *The mining dilution factors used.* ▪ *The mining recovery factors used.* ▪ *Any minimum mining widths used.* ▪ *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* ▪ *The infrastructure requirements of the selected mining methods.*	▪ The Resource model which formed the basis for estimation of the Ore Reserve was used in an open pit optimisation process to produce a range of pit shells using operating costs and other inputs. Mining, processing and capital costs were developed on a first principles basis. The resultant optimal shell was then used as a basis for detailed design. ▪ The mining method assumed in the Ore Reserve study is open cut with conventional excavator and truck fleets. The open pits will be developed using a staged designs where appropriate. ▪ Geotechnical recommendations made by independent consultants have been applied in optimisation and incorporated in design. ▪ The Mineral Resource Model used for the pit optimisation was an LUC model. This is a recoverable resource model and as such no additional dilution or ore loss factors have been applied. ▪ Minimum mining widths of 60m in cutbacks and 40m at pit bottom were applied in the detailed design stages of the mine plan. ▪ No Inferred Mineral Resources are included in the Ore Reserve estimation and reporting process and are therefore not included in any revenue estimates and are treated as waste in the estimation and reporting of Ore Reserves ▪ The mine is currently in exploration phase and has plans for adequate infrastructure to support current and future operation

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	▪ *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* ▪ *Whether the metallurgical process is well-tested technology or novel in nature.* ▪ *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* ▪ *Any assumptions or allowances made for deleterious elements.* ▪ *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* ▪ *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	▪ The Ore Reserve will be processed through a crush, grind, flotation, carbon in leach (CIL) processing plant with the inclusion of a pressure oxidation circuit for the flotation concentrate stream, to produce gold doré. The process plant design is extensively covered within the PFS study. ▪ The proposed processing methodology has been well tested at numerous other mining/processing operations and is considered to be robust. ▪ Comprehensive metallurgical test work has been completed on Hemi ore as part of the PFS. A gold recovery factor resulting from a 0.10g/t Au tail residue has been applied throughout the mine planning process. ▪ Deleterious elements were reported in the mine schedules but did not impact on the schedule. ▪ A pilot scale testwork program has been completed for the Brolga deposit.
Environmental	▪ *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	▪ Environmental studies have been completed for all disciplines to pre-feasibility level or definitive feasibility level. These studies include but are not limited to air quality, noise, visual amenity, ecology, hydrogeology, heritage, traffic, social and economic. ▪ A large presence of water in the cover material has been considered with studies carried out in determining how to best deal with the dewatering of the area to such a level that will allow mining ▪ No fatal flaws have been identified in any of these environmental studies. These study results along with any further work where necessary will be incorporated into either an Environmental Review Document (ERD) or an Environmental Impact Assessment (EIA). The ERD or EIA will be submitted to the WA Environmental Protection Authority (EPA), who will assess the project for approval status ▪ Waste rock characterisation studies have been completed, identifying PAF and NAF waste distribution and are considered representative of the waste expected to be mined at Hemi. Appropriate dump design, waste rock (PAF) management and waste dump sequencing will be required.
Infrastructure	▪ *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	▪ PFS level project layouts have been completed to include key infrastructure such as waste rock dumps, open pit, haul roads, processing facilities, TSF, offices, workshops etc
Costs	▪ *The derivation of, or assumptions made, regarding projected capital costs in the PFS.* ▪ *The methodology used to estimate operating costs.* ▪ *Allowances made for the content of deleterious elements.* ▪ *The source of exchange rates used in the study.* ▪ *Derivation of transportation charges.* ▪ *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* ▪ *The allowances made for royalties payable, both Government and private.*	▪ The majority of the capital costs for the project are accounted for in the processing facility. All capital and operating costs have been estimated to PFS level of confidence. ▪ Mining costs have been estimated based on completed mine schedules using first principle costing methods. ▪ Treatment costs applied in the Ore Reserve estimation are based on metallurgical testwork coupled with estimated labour, consumables and power costs to PFS level of confidence, which includes allowances for the reported deleterious elements.

Criteria	JORC Code explanation	Commentary
Revenue factors	▪ *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* ▪ *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	▪ Royalties payable to the West Australian State Government have been included in the analysis of the Ore Reserve ▪ A gold price of A$2,500/oz has been used in the optimisation of the Hemi Ore Reserve and reporting cutoff grade calculation. Revenue factors within the optimisation process were used to produce a range of nested optimisation shells to assist in the analysis and shell selection for pit design
Market assessment	▪ *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* ▪ *A customer and competitor analysis along with the identification of likely market windows for the product.* ▪ *Price and volume forecasts and the basis for these forecasts.* ▪ *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	▪ N/A, there is a transparent quoted derivative market for the sale of gold.
Economic	▪ *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* ▪ *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	▪ The Ore Reserves have been evaluated referencing a detailed financial model prepared on a quarterly basis over the life of mine. Key economic inputs to the financial model include a gold price of $2,400 per ounce of gold and at a discount rate of 5% to estimate the project net present value (**NPV**) and payback period. All operating and capital costs as well as revenue factors were included in the financial model. The estimation methods and capital and operating cost estimates are detailed in Section 20 of the Summary. This process has demonstrated the estimated Ore Reserves have a positive economic value. The project has been tested for sensitivity to key input parameters such as gold price, metallurgical recoveries, and discount rate and found to be robust. ▪ A sensitivity analysis has been conducted and is included in Section 22 of the Summary. The sensitivity analysis was conducted on the financial model inputs including Gold price, discount rate, capital cost, operating cost and mined grade. The sensitivity analysis showed that the project was most sensitive to the Gold price and least sensitive to capital costs.
Social	▪ *The status of agreements with key stakeholders and matters leading to social licence to operate.*	▪ A Social Impact Assessment was completed as part of the PFS and no fatal flaws were identified. ▪ De Grey has completed an extensive consultation process with the relevant stakeholders as part of the PFS.
Other	▪ *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* ▪ *Any identified material naturally occurring risks.* ▪ *The status of material legal agreements and marketing arrangements.* ▪ *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that*	▪ De Grey has not identified any fatal flaws with respect to naturally occurring materials. ▪ No marketing agreements are required as gold doré will be produced on site. ▪ The Project will be referred to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) (Cth) for assessment as to whether it is a controlled action. This referral has been anticipated as part of the Project schedule.

Criteria	JORC Code explanation	Commentary
	is dependent on a third party on which extraction of the reserve is contingent.	
Classification	▪ *The basis for the classification of the Ore Reserves into varying confidence categories.* ▪ *Whether the result appropriately reflects the Competent Person's view of the deposit.* ▪ *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	▪ The classification of the Hemi Ore Reserve has been carried out in accordance with the recommendations of the JORC code. It is based on the density of the drilling, estimation methodology, the orebody experience and the mining method to be employed. All of the Probable Ore Reserves reported are derived from Indicated Mineral Resources. ▪ The competent person confirms that the results of the Ore Reserves estimated and reported accurately reflects their view of the deposit. ▪ All of the Probable Ore Reserves reported are derived from Indicated Mineral Resources.
Audits or reviews	▪ *The results of any audits or reviews of Ore Reserve estimates.*	▪ An audit has not been undertaken on the Ore reserve estimate as part of the PFS.
Discussion of relative accuracy/ confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* ▪ *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* ▪ *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* ▪ *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	▪ Whilst appreciating that reported Ore Reserves are an estimation only and subject to numerous variables common in mining operations, it is the opinion of the Competent Person that there is a reasonable expectation of achieving the reported Ore Reserves commensurate with the Probable classification.

Appendix D: Project Carbon Emissions

Estimates and Emissions Intensities of Select Australian Gold Mines in 2020/2021

Asset	Owner	Production (oz)	Scope 1 + 2 Reportable (tCO_2)	Emissions Intensity (tCO_2/oz)	Year	Source
Sunrise Dam	AngloGold	256,000	153,758	0.60	2020	https://www.aga-reports.com/21/download/AGA-SR21-workbook.xls
Tropicana	AngloGold	425,714	297,208	0.70		https://www.aga-reports.com/21/wp-content/uploads/2022/03/AGA-IR20-three-year-statistics.pdf
Gruyere	Gold Fields	246,529	193,005	0.78	2021	https://goldroad.com.au/2021-sustainability-report-2/
Agnew	Gold Fields	223,000	58,588	0.26	2021	https://www.goldfields.com/pdf/investors/integrated-annual-reports/2021/gold-fields-tcfd-report-2021.pdf
St Ives	Gold Fields	393,000	157,464	0.40		
Granny Smith	Gold Fields	279,000	119,531	0.43		https://www.goldfields.com/reports/q4-2022/pdf/booklet.pdf
Cadia	Newcrest	1,306,225	1,014,014	0.78	2021	https://www.newcrest.com/sites/default/files/2021-11/211103_Newcrest%202021%20Sustainability%20Report.pdf
Lihir	Newcrest	737,082	709,403	0.96		
Telfer	Newcrest	483,176	500,244	1.04		
Tanami	Newmont	495,000	179,960	0.36	2020	https://www.newmont.com/sustainability/esg-data-tables/default.aspx
Boddington	Newmont	798,000	938,733	1.18		
Yandal	Northern Star	426,214	241,783	0.57	2021	https://www.nsrltd.com/getattachment/sustainability/cy2021-northern-star-sustainability-report-performance-data-tables-(1).xlsx?lang=en-AU
Carosue Dam	Northern Star	234,136	150,238	0.64		
Kalgoorlie	Northern Star	256,970	171,393	0.67		https://www.nsrltd.com/investor-and-media/asx-announcements/2021/august/2021-annual-report
KCGM	Northern Star	478,438	447,784	0.94		