Complete Target

Case Study #1

Gruyere Au Mine

Gold Road Resources

Western Australia

Overview

Gold Road is pioneering development of Australia's newest goldfield, the Yamarna Greenstone Belt, 200 kilometres east of Laverton in Western Australia. Gold Road's tenements cover a vast area of approximately 5,000 square kilometres on the eastern edge of the Yilgarn Craton — a globally recognised pre-eminent gold district.

The area is a historically under-explored and highly prospective new gold region. Gold Road has defined a total Mineral Resource of 6.1 million ounces of gold to date.

The 5.6 million ounces of contained gold at the Gruyere Deposit, the flagship resource on the Yamarna Belt, was discovered in 2013. It is currently the focus of development studies.

While progressing Gruyere towards production, Gold Road continues to explore for new world-class gold deposits. Gold Road retains a strong 'first-mover' advantage on Yamarna. The Company will be the first developer located on the greenstone belt with full mine infrastructure and a large-scale mill with expansion potential. It controls the majority of the greenstone belt which is not shrouded under deep cover.

In 2013, Gold Road split its Yamarna tenements into north and south projects. Gold Road owns 100% of the North Yamarna Project (covering approximately 2,100 square kilometres) and 70% of the South Yamarna Joint Venture (SYJV). Sumitomo Metal Mining Oceania Pty Ltd (a subsidiary of Sumitomo Metal Mining Co., Limited) earned a 30% interest in May 2015 in the SYJV and has the ability to earn up to a 50% interest.

A full feasibility was completed on Gruyere in early November 2016.

Gold Fields Australia (GFA) entered into a 50-50 joint venture with Gold Road in November 2016. GFA paid $350M cash with a 1.5% net smelter royalty payable on all gold mined beyond 2 million ounces. The project is currently in construction.

Geology

Gruyere is located on the Dorothy Hills Greenstone Belt (Figure 1), which extends over more than 90 kilometres and varies in width from 3 to 10 kilometres. It trends north-west to south-east and is poorly exposed due to prevailing sand and sandstone cover.

Gold mineralisation is hosted within the steeply east dipping Gruyere Porphyry, a medium-grained quartz monzonite porphyry (plagioclase, quartz and ferromagnesium minerals) that has intruded the country rocks proximal to the NNW striking regional Dorothy Hills Shear Zone.

The cover overlying the Archaean host rocks at Gruyere includes Quaternary aeolian sands generally 1 to 3 metres thick. A semi-consolidated Permian sandstone underlying the sand is absent over the southern portion of the Gruyere Deposit and gradually increases in thickness at the northern end to approximately 30 metres.

Weathering of the Archaean rocks increases in depth from 45 metres in the south to 85 metres in the north. Mineralisation occurs within all weathered zones of the porphyry with approximately 93% of the Mineral Resource in fresh rock and 7% in weathered rock.

The Gruyere Porphyry averages 90 metres in horizontal thickness and ranges from 5 to 10 metres width at the northern and southern extremities, to a maximum of 190 metres at its thickest point in the centre of the deposit.

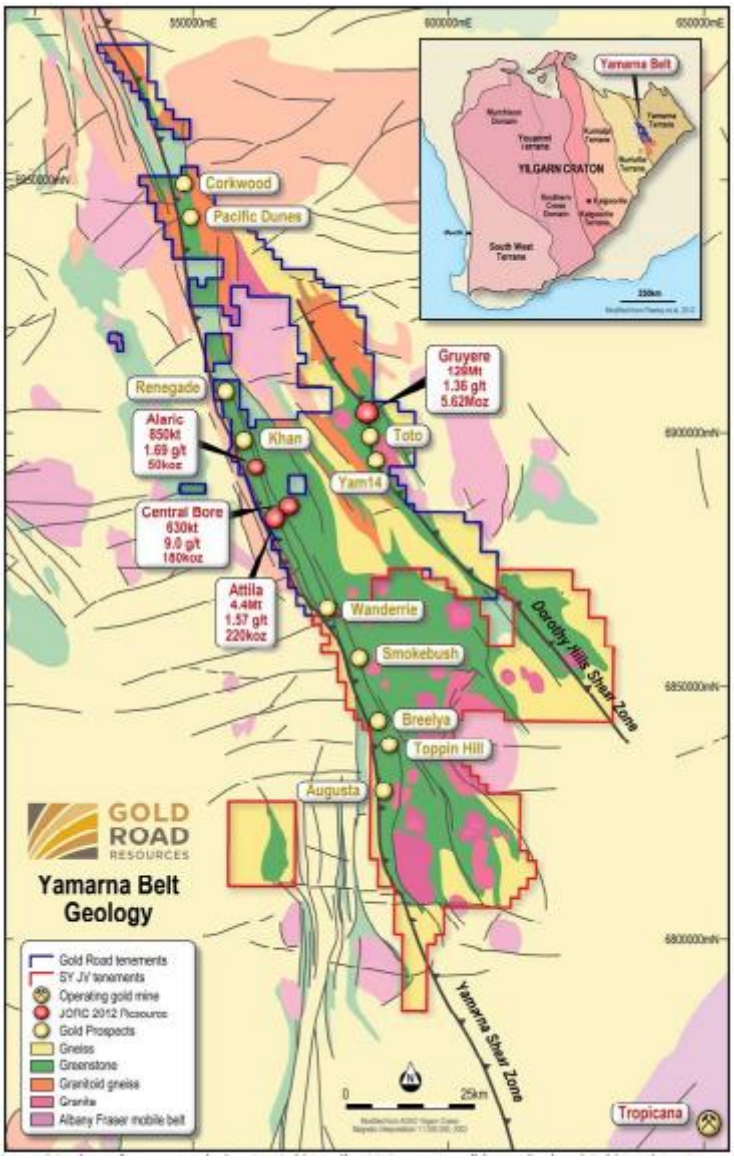

Figure 1. Location and geology of Gold Road's Yamarna tenements and 2015 resources.

Parameter Selection

Prospect Location Parameters

The southernmost point on the FW surface for Gruyere is located at approximately 583900mE and 6903400mN (GDA 94 Zone 51). These parameters are entered at the initial project page, along with milestone stage, commodities mined and deposit-style (Figure 2). With the exception of the easting

and northing, all of these parameters can be adjusted at a later point but will require the optimisers to be rerun. The proposed mill location is to the SSE of the end of the resource (Figure 3,4) and Gold Road cite a milling cost of $15.90 / t in the ASX Release GOLD ROAD PRE-FEASIBILITY STUDY INFORMATION BOOKLET (22 February 2015).

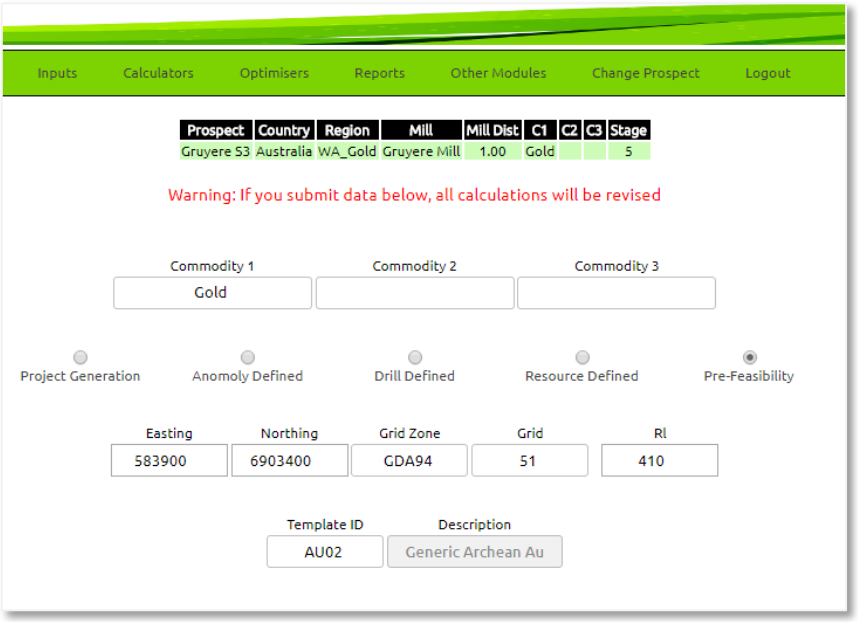

Figure 2. Initial entry parameters for the Gruyere case study.

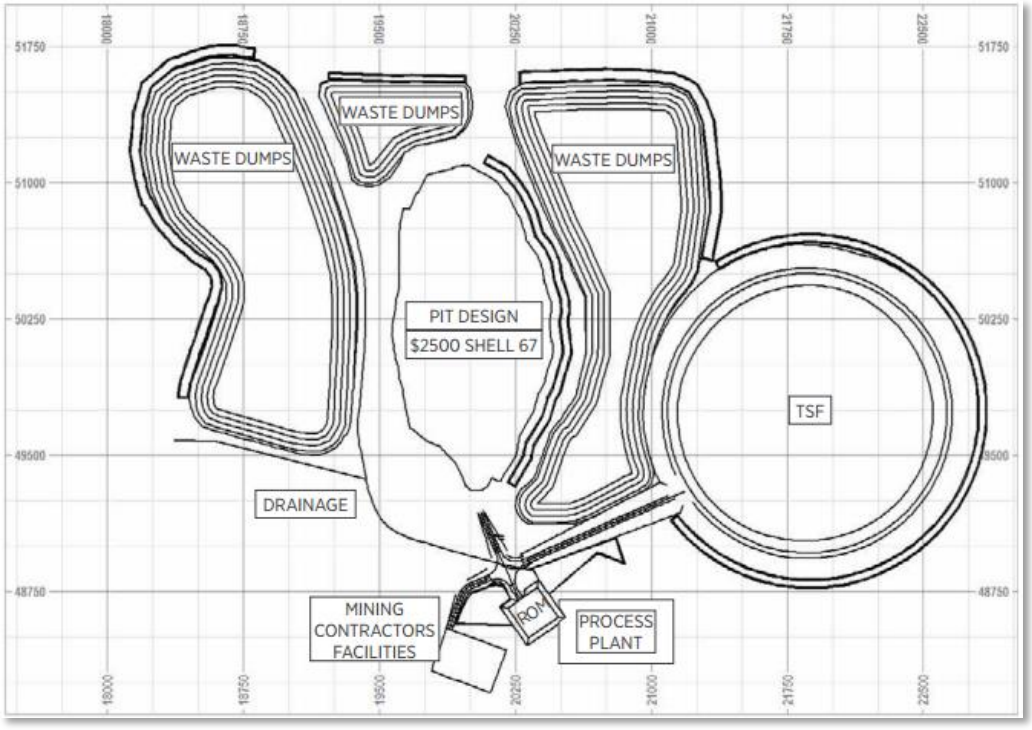

Figure 3. Location of the proposed processing facility with respect to the orebody, from the ASX Release GOLD ROAD PRE-FEASIBILITY STUDY INFORMATION BOOKLET (22 February 2015).

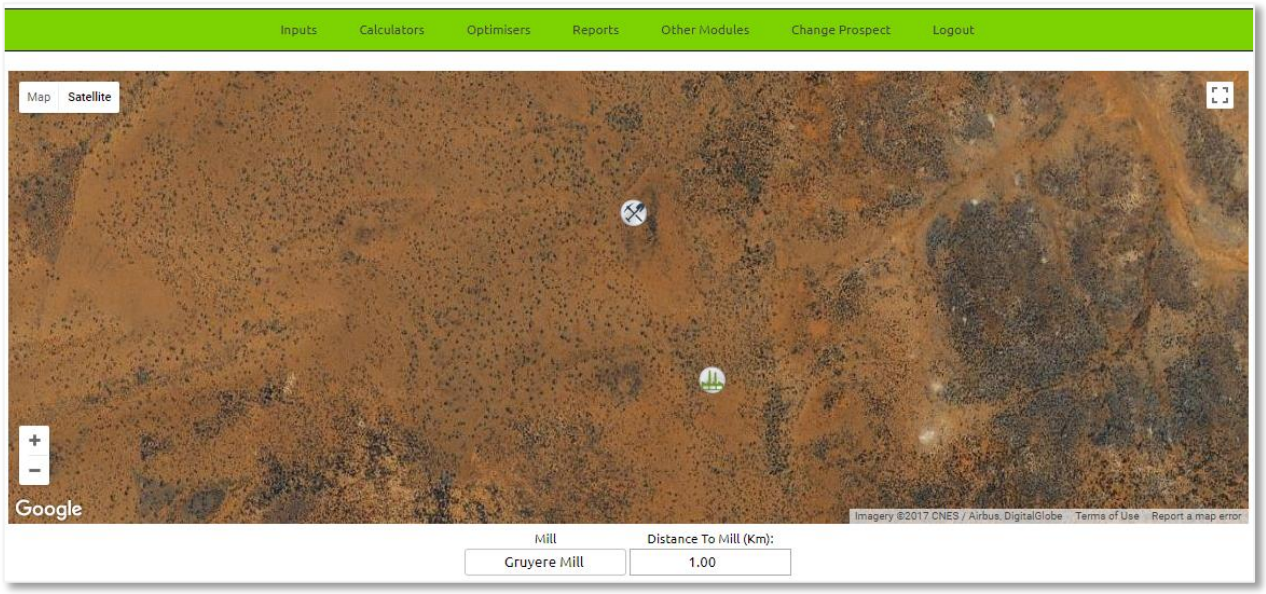

Figure 4. Visual check of orebody and mill location and a distance to mill entry required.

Prospect Input Parameters

The Gruyere Deposit is comprised of one orebody. The one orebody though can be subdivided into four main zones; Southern HG, Central Thick, Northern HG (not actual names!) and a bulk low-grade zone. Complete Target is limited to modelling three orebodies. The decision was made for the Gruyere case study to model the three high-grade zones as "separate" orebodies. The three orebodies modelled are the Southern HG (Orebody 1), Central Thick (Orebody 2) and the Northern HG (Orebody 3). The majority of the low-grade resource lies in the southern end of the Gruyere Deposit.

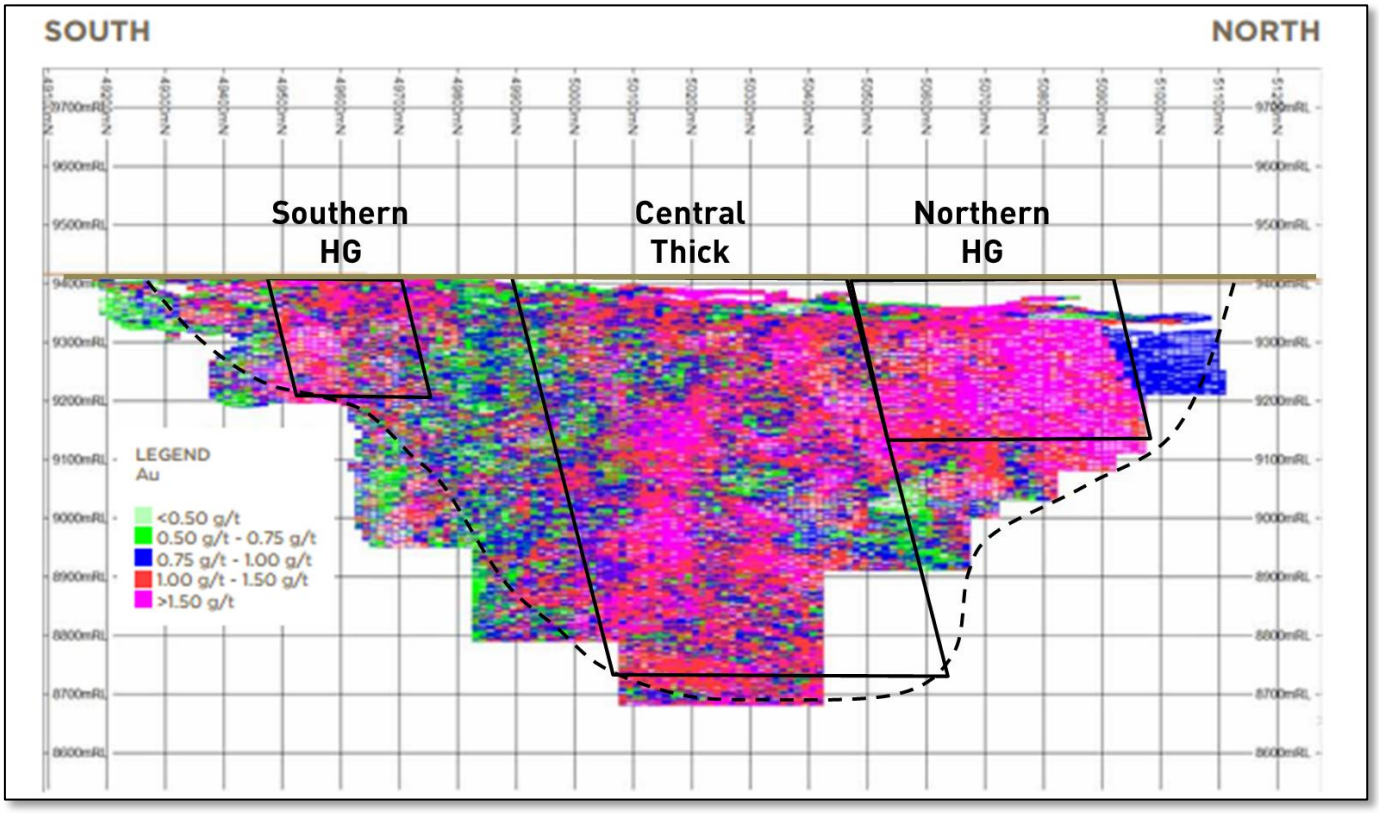

Figure 5. Longitudinal section of the Gruyere Resource Model with annotation of the ore zones designated in this study.

The parameter page requires the following inputs for each orebody;

- Depth to ore
- Length
- True thickness
- Down Dip Depth
- Orebody Dip
- Orebody Dip Direction
- Orebody Plunge
- Orebody Plunge Direction
- Base of Cover Sequence 1
- Density of Cover Sequence 1
- Base of Cover Sequence 2
- Density of Cover Sequence 2
- Ore Zone Density
- Fresh Waste Rock Density
- Gold Grade (g/t)
- Copper Grade (%)
- Metal Recovery

The inputs were selected from both the ASX Release GOLD ROAD PRE-FEASIBILITY STUDY INFORMATION BOOKLET (22 February 2015) and the ASX Release GRUYERE RESOURCE INCREASES TO 5.62 MILLION OUNCES; YAMARNA MINERAL RESOURCE FULLY JORC 2012 COMPLIANT (16th August 2015). Orebody parameters, such as length and width, were adjusted to reflect the resource tonnages cited in the report.

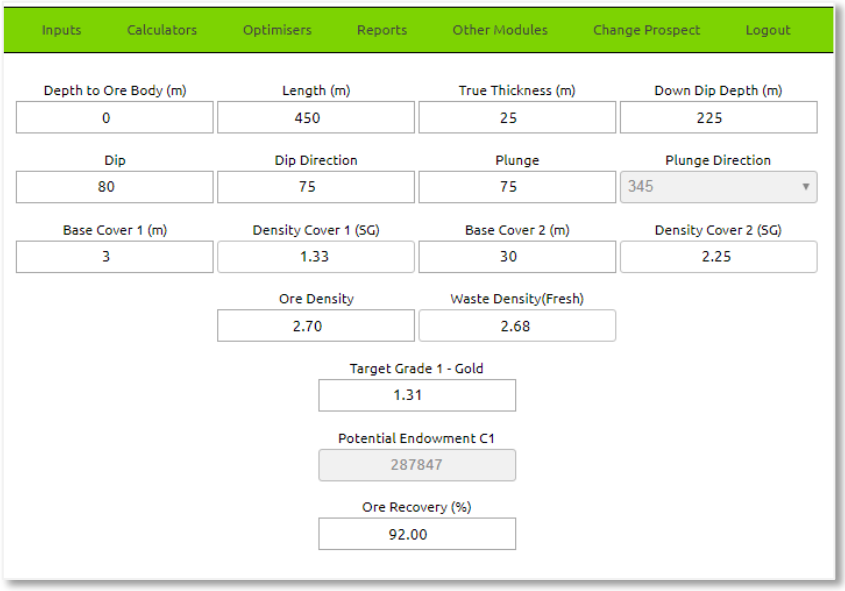

Figure 6. Southern HG parameters

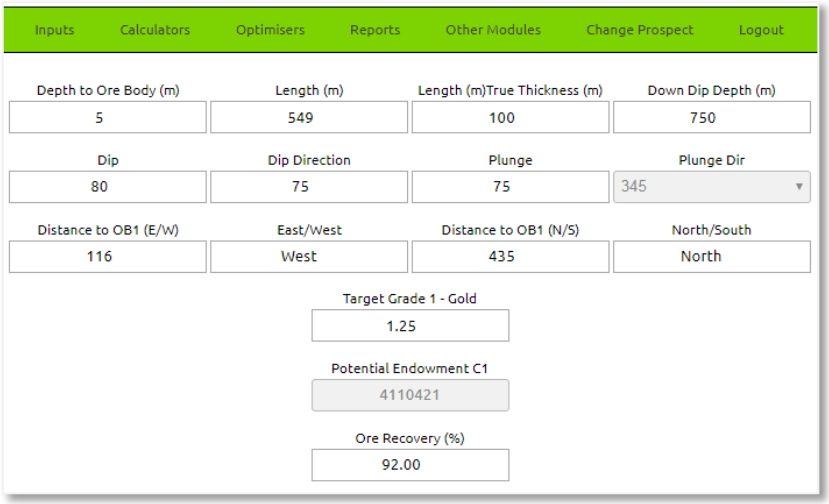

Figure 7. Central Thick parameters.

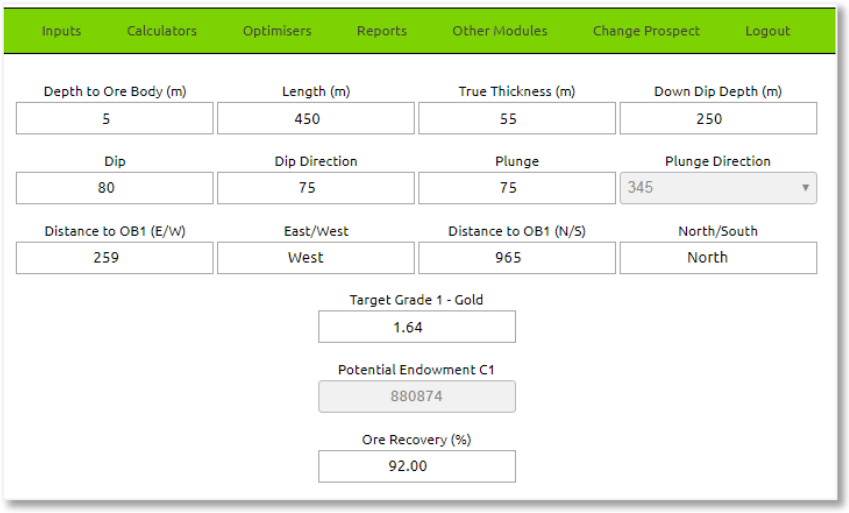

Figure 9. Northern HG parameters.

Financial Input Parameters

The Financial Input parameters are entered into the Financials Tab on the drop down menu. These parameters need only be entered once for each region and updated when cost assumptions change or when the business sets new metal price forecasts.

Financial input parameters required for entry are;

- Royalty 1 (% NSR) – typically State or Federal royalty
- Royalty 2 (% NSR) – 2nd party, native title, or any other required royalty
- Royalty 3 (% NSR) – as per Royalty 2
- Royalty 4 (% NSR) – as per Royalty 2
- Payability % - metal content to be paid on e.g. sale of concentrate will require downstream smelting and refining and therefore the margin paid on will be less than 100% metal price
- Administration – cost $ / t mined
- Yearly mining days – days per year
- Working Capital - $ million per annum
- UG Development – cost $ / t mined
- OP Mining – cost $ / t mined
- UG Production – cost $ / t mined
- UG Haulage – cost $ / t mined
- Haulage to Mill – cost $ / t hauled
- Salvage Value – of mill infrastructure at end of mine life (typically 10%)
- Mill Construction Cost – $ million

And commodity prices are required for pertinent commodities. In this case gold was the only commodity which is generating revenue (Gold $ / oz).

Estimates of cost for Gruyere were based on the ASX Release GOLD ROAD PRE-FEASIBILITY STUDY INFORMATION BOOKLET (22 February 2015) and industry averages.

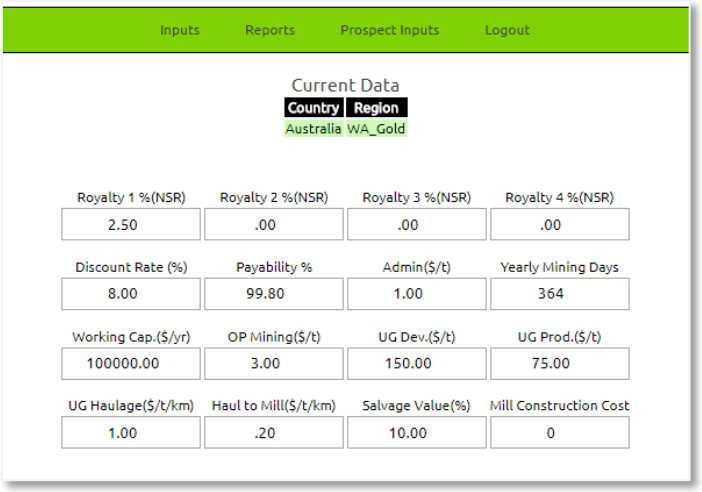

Figure 10. Regional financial parameters screen

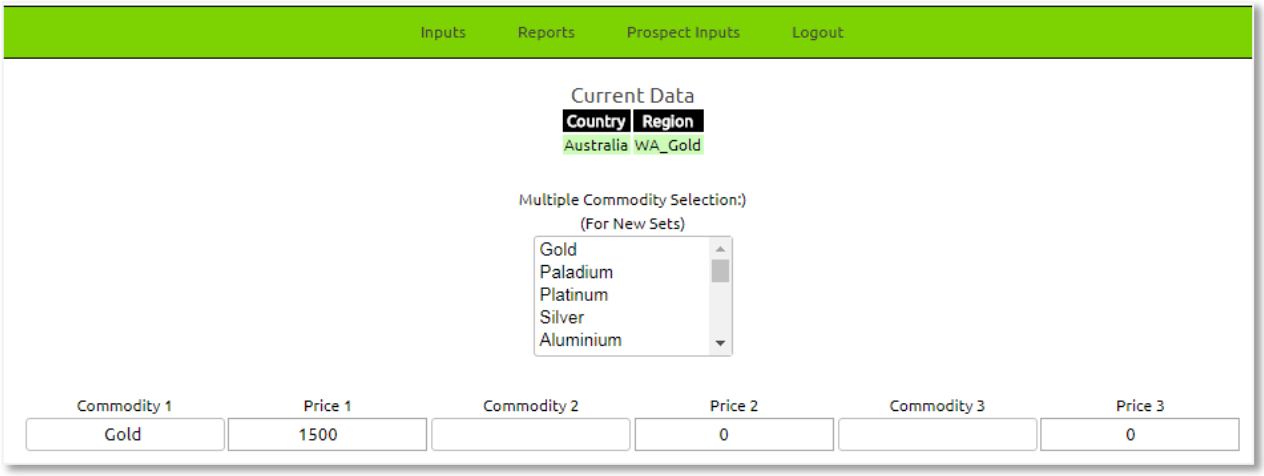

Figure 11. Gold as the only commodity listed for the region. Expected price is entered as $1500 / oz.

Evaluation Results

Open pit mine

The open pit is scheduled to be mined in one stage from top down. Complete Target scales the block size according to the orebody widths; in the Gruyere example the block size is a maximum 15m x 15m x 15m.

The Complete Target Open Pit Optimiser limits maximum pit depth at 250m before initiating the Underground Optimiser. To compare the Gruyere deposit, the Stage 3 Pit was used as the Gruyere baseline. The CT Open Pit Optimiser was run over the orebody parameters previously listed (Parameter Selection - Prospect Input Parameters) and generated results comparable to the Gold Road Pre-feasibility Study.

Despite the many assumptions on HG ore zone grades, widths and depths, as well as the limitations of uniform grade and simple orebody geometry assumed in the software, Complete Target has produced a meaningful analysis of the Gruyere Deposit.

	Unit	Gruyere LOM	Gruyere Stage 3	Complete Target	CT-S3 Diff (%)	CT- LOM Diff (%)
PHYSICAL						
Ore inventory	kt	81,816	57,318	53,277	93%	65%
Contained gold	oz	3,182,706	2,177,709	2,004,059	92%	63%
Grade	g/t	1.21	1.2	1.17	98%	97%
Waste inventory	kt	246,254	120,040	163,301	136%	66%
Total inventory	kt	328,069	177,357	216,578	122%	66%
Stripping ratio	w : o	3.0 : 1	2.1 : 1	3.1 : 1		
Mined years		1-12	1-8	1-12		
Pit Length	m	1800	1800			
Pit Width	m	890	750			
Pit Depth	m	340	260	250*		
FINANCIAL						
Capital Cost	A$M	507		342**		67%
Pre-tax NPV8%	A$M	486		504		
Pre-tax IRR	%	24		27		
AISC ***	A$/oz	945		954		
AIC ****	A$/oz	1,103		1,119		
Payback Period	Months	48		49		

* max pit depth in Complete Target

** pro rata total capital based on ounce mined differential between Stage 3 and 4 pit (67.5%)

*** AISC = C1 + Royalties + Levies + Sustaining Capital + Project related offsite Corporate expenditure

**** AIC = AISC + Development Capital Expenditure

Table 1. Gold Road Feasibility study results vs the Complete Target pit results.

A comparison between the physical attributes of the Gruyere Stage 3 Pit and the Complete Target modelled pit is possible. The comparison shows a close relationship with ore tonnes and grade optimised. The Complete Target pit contains a higher waste component and produces a strip ratio of

3.1 : 1 (w : o). Coincidentally although appearing high for the S3 comparison, the Complete Target strip ratio is extremely close to the final Gruyere pit strip ratio.

The financial data listed in the Prefeasibility document pertained only to the final Gruyere Pit. In order to create a meaningful all in cost per ounce comparison, the upfront capital spend was pro-rated based on the percentage of ounces produced in the S3 pit (approximately 68% of $507M). The $342M capital spend was entered into Miscellaneous Costs.

Once the capital spend was determined NPV, IRR, AIC and payback period were determined. All figures were within 10% of the Gruyere final pit financials. Pre-tax IRR was 27% compared to the 24% from the feasibility study. The payback period on the initial investment was at 4 of 12 years mine life in both scenarios. All in Cost (inclusive of development capital) was determined to be $1,119 AUD / oz in the Complete Target study against $1,103 AUD / oz in the feasibility.

Case Study Summary

The Gruyere case study has highlighted that meaningful financial analysis of exploration targets can be conducted despite the limitations of uniform orebody grade, planar orebody geometries and fixed pit wall angles. The Gruyere case study was aided by the fact it is a large, wide, reasonably consistent grade orebody. However

Selection of orebody physical parameters can be made at any stage from the conceptual to prefeasibility stage to provide a simple overview of a project's capacity to return a financial mine. Prospects stored in Complete Target should be updated regularly as new data helps to clarify physical parameters. It should provide criteria for exploration success and progression of targets.

By documenting the Gruyere case study we hope to have given you a brief insight into the workflow and simple usability of the software. This case study has not explored the UG Optimiser or some of the other functionality such as the geological ranking template builder, life of mine drill cost calculator or ore density calculator. These will be incorporated into upcoming case studies. In the meantime, if you have any further queries regarding the functionality of the software please get in touch with us at info@completetarget.com.

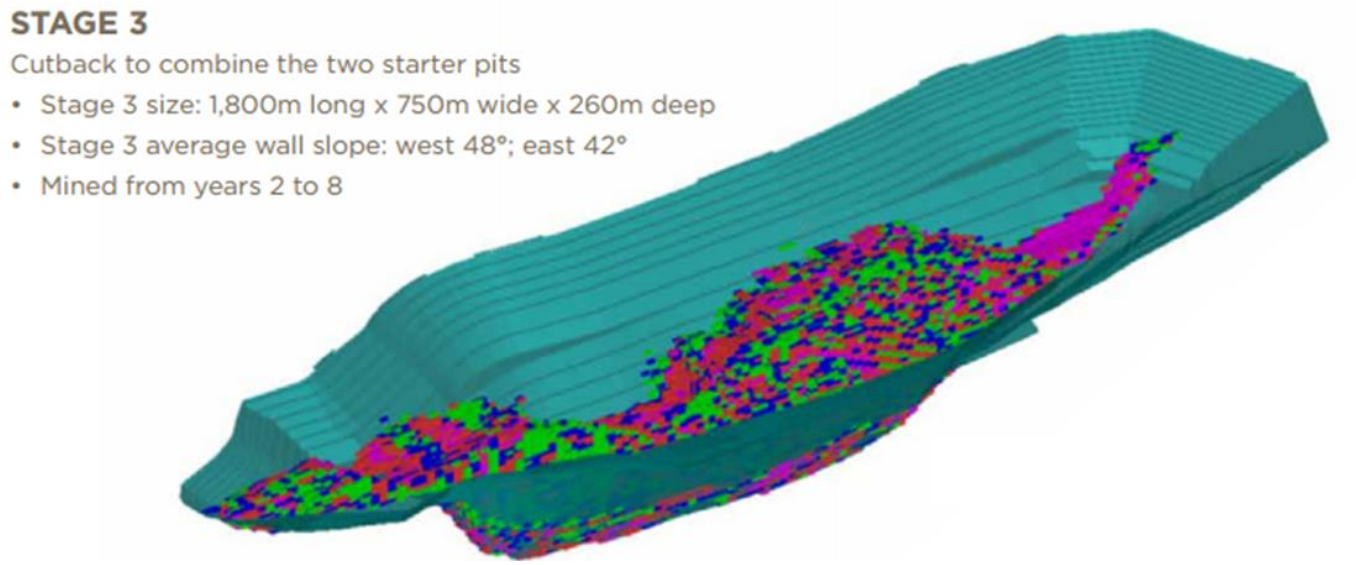

Figure 12. Gruyere Stage 3 Pit taken from ASX Release GOLD ROAD PRE-FEASIBILITY STUDY INFORMATION BOOKLET (22 February 2015).

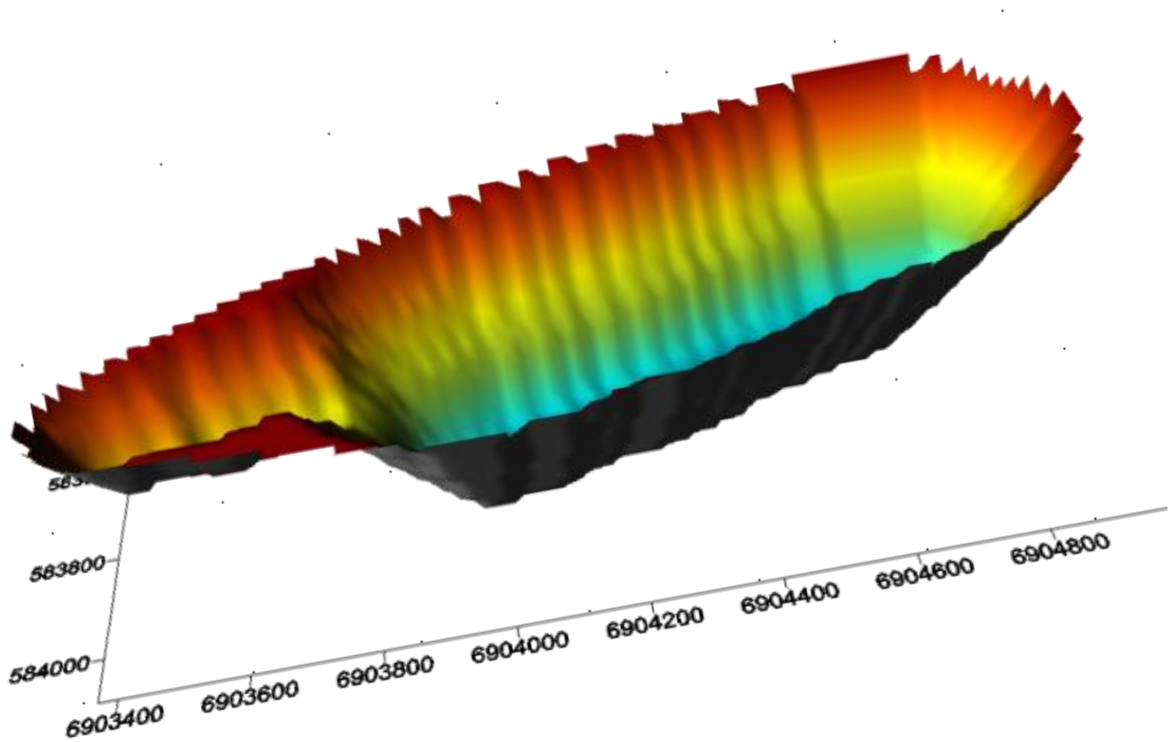

Figure 13. Complete Target model of the Gruyere Pit – surfaces wireframed in Leapfrog. Pit topography points can be exported in csv form from Complete Target.