ASX RELEASE
1 April, 2021

BIG RIVER UPDATES COST ESTIMATES FOR 2MTPA BORBOREMA PROJECT AND COMMISSIONS PFS FOR POSSIBLE LARGER PROJECT

Big River Gold Limited (**ASX:BRV**) (**Big River** or **Company**) is pleased to announce the results of its Engineering Cost Estimate study (**ECE**) updated for its 2 million tonnes per annum (**Mtpa**) Borborema gold project (**Project**) in Brazil.

Big River is also pleased to announce that it has commissioned a pre-feasibility study (**PFS**) for an expanded production rate and has advanced the status of its infrastructure development and land access acquisition for the Project.

1. ECE update

The ECE update was conducted by internationally experienced and recognised engineering consultants, GR Engineering Services (**GRES**), with the purpose of updating the capital costs developed for the 2019 Definitive Feasibility Study as updated in 2020 and 2021 (**DFS**)[1] while retaining the other fundamental assumptions including mine/plant scheduling, pit design, mining contractor equipment, process path and use of process water which was outlined in the DFS. Operating costs were updated by Big River's Owners Team with assistance from independent consultants.

The updated DFS study reported to the ASX on 9 July 2020 was reviewed in 2021 to assess the most effective use of capital and the currency of the cost basis assumed. The first part of this review was an **Option Study**, which was a precursor to this ECE update, the results of which were reported to the ASX on 30 March 2021.

These were sufficiently encouraging to warrant completing the exercise with costs in the ECE updated for 2022 conditions. Most operational and economic assumptions remained the same as for the DFS and Option Study, with the material exceptions noted below.

Table 1. Borborema Project.
Key financial and operation assumptions

	2021 Option Study	ECE update March 2022	Notes
Economic inputs and study accuracy			
Gold price	US$1,550	US$1,600	
Exchange rate (BRL:USD)	0.20:1	Unchanged	
Royalty	1.5%	Unchanged	
Corporate tax rate	15.25%	Unchanged	1
NPV discount rate	8%	Unchanged	
Study accuracy	±30%	±20% - 25%	
Capital costs, US$ millions			2
Plant capex	58.2	71.7	3
Indirect & infrastructure capex	12.0	59.5	
Pre-production Owner's costs	16.1	23.0	4
Contingency	11.3	19.8	

[1] Refer (1) ASX announcement 23 December, 2019; (2) ASX announcement 9 July, 2020 and (3) ASX Announcement 30 March, 2021

Total capital and owner's costs (including contingency)	97.6	174.0	5
Operational assumptions			
Mining method	Contract miner, Open pit	Unchanged	6
Processing	CIL, 3 stage crush, mill to 106um, elution, water filtered from tails and stored with waste in dumps	Unchanged process , however some modifications in plant choice reflected in Capital and Operating costs (See Appendix 1). Adopted CIP over CIL and went to single stage crushing followed by SAG/B milling rather than just ball mill.	3
Process water	No tailings dam, tails filtered to recycle water and any process water shortfall augmented with treated town grey water.	Unchanged, however some modifications in plant choice and site water management reflected in Capital and Operating costs	7
Mine life	10.2 years	10.0	
Ore mined (life of mine)	20.1 million tonnes	20.0	
Strip ratio (Waste(t):Ore(t))	4.2	Unchanged	
Feed tonnage rate	2Mtpa	Unchanged	
Feed grade (average)	1.22g/t	Unchanged	
Mill recovery rate	92.5%	92.1%	8
Gold produced, Stage 1 (oz)	729,400	722,500	
Operating costs			2
C1 Site Cost/oz	US$534	US$811	
AISC/oz (Pre-tax)	US$713	US$852	

1. *A concessional corporate tax rate is available to the Project due to its location in north east Brazil making it eligible for Sudene concession reduction. Social Contribution tax remains unchanged.*
2. *Capital and operating costs have been updated to include Q3/2021 and some Q1/2022 estimates derived from supplier and service provider quotes, estimates from comparable operations and current pricing of steel.*
3. *Process path and key plant components remain the same but ongoing engineering identified options in available plant that would provide operating improvements (e.g., Single stage crushing, SAG plus ball mill versus only ball mill, AARL rather than Zadra elution circuit) as well as oversizing the crushing and tails thickening circuits in anticipation of increasing future throughput via an expansion. Some plant not previously included in the DFS was identified as providing benefits and added to the engineering design where it had short payback periods and/or provided operating cost savings and/or improved operational efficiency or security (e.g., gravity gold recovery circuit and cyanide recovery thickener). In addition, the footprint of earthworks was increased to accommodate possible future expansions.*
4. *Increase in Owners and Pre-production costs partly due to reallocation from Plant capex and partly due to the omission or understatement of items in several cost areas of the DFS. Also includes mining pre-production costs that were reported but previously assigned to working capital.*
5. *Pre-production capital costs and do not include sustaining or working capital costs.*
6. *Contract mining to same pit design defined in the DFS.*
7. *An increase in works for water management including upscaling of the waste water pipeline to improve flow, additional maintenance and inclusion of pumps at the Currais Novos sewage works and improvement of water catchments and dams on site.*
8. *GRES recovery adjustments based on its testwork review and process design basis.*

For a side-by-side summary of all studies completed, see Table 3 in the body of the announcement. Note that the 2021 Option Study was the first part and precursor to the final ECE update in 2022 which updated costs and prices.

The ECE update has been delayed by difficulties in obtaining prices and quotes for equipment and services in the current environment which mixes the impact of a mining boom and COVID. As a result, the ECE accuracy level is lower than preferred at ±20% - 25%.

Results of the ECE update confirm a significant increase in the estimated plant and infrastructure cost from US$69.5 million to US$115.2 million (excluding owner's costs and contingency).

These cost increases are predominantly associated with supply chain issues, increases in the cost of equipment and services, upscaling project capacity and layout, and the addition of previously unpriced capital items with short payback benefits.

At the same time, owner's costs and pre-production expenses were updated by independent consultants **Macromet** and Mining Focus Consultants Pty Ltd (**Mining Focus**) with the new estimated total being US$29.9 million including a contingency of US$6.9 million, which differs from the total US$6.6 million adopted in the DFS.

GRES, Macromet and Mining Focus have consented to be named in this announcement and for the content of the ECE updates and studies to be extracted and summarised in this announcement.

Total capital costs are now estimated at US$174.0 million, including contingencies and estimating allowances of US$19.8 million.

The Company updated its 2Mtpa Financial Model base case with the above results at a constant gold price of US$1,600/oz (versus the $1,550/oz used previously).

The base case results, along with a US$1,800/oz gold price scenario for comparative purposes, reveal the following key metrics:

Table 2. Borborema Project at 2Mtpa Stage 1 configuration Financial Outcomes (March 2022 ECE update)

	Gold price US$1,600/0z (Base Case)	**Gold price US$1,800/0z (Comparison Case)**
$NPV_{8\%}$ (Pre tax)	US$173M	US$261M
$NPV_{8\%}$ (Post tax)	US$142M	US$217M
Internal rate of return (IRR)	27.8% (post-tax 25.0%)	35.7% (post-tax 32.1%)
All-in sustaining cost (AISC)	US$852/oz	US$856/oz

With the results of recent site water balance studies suggesting the easing of process water limitations, an investigation into higher throughput production rates was considered justified in addition to the Stage 1 update.

The results of the process water investigations were highly encouraging and in line with the original 2013 plan to mine the 1.6 Moz gold reserve at a rate of 4Mtpa.

2. Possible Expansion of Plant Size and progress to Pre-Feasibility Study

The results of the water studies for the 2 Mpta Project led to the Company exploring a Project with a larger annual throughput, which was originally the plan a number of years ago. The Big River Board was encouraged by the initial internal modelling results and has commissioned GRES to undertake a PFS for a Project with a higher production rate design. The Company will update the market as and when the PFS has been delivered, noting that this work is scheduled for completion in the second quarter of 2022.

3. Land Access Acquisition

The Company is pleased to report that land access acquisition to establish the 69kV power line from Currais Novos to site, is well advanced.

Executive Chairman, Andrew Richards, commented:

"*We are very pleased with the long-term future of the project including the potential for higher throughput rates which could better reflect the original plan for the Borborema Project. This would show a more efficient use of capital and better optimises the resource to deliver high returns over a longer period. This would not have been possible without the implications for water management identified in recent studies. While there has been a significant increase in estimated capital and operating costs, the Company is exploring more innovative ways of managing these costs.*"

Further details in relation to the ECE and the updated financial model for the 2Mtpa project are set out in the following pages. Appendix 1 provides details on the assumptions used in the March 2022 ECE update

For and on behalf of the Board.

Andrew Richards
Executive Chairman
Big River Gold Ltd

1.DESIGN AND ENGINEERING COST ESTIMATE STUDY (ECE)

1.1 BACKGROUND

Big River wishes to advise the results of the ECE update conducted by GRES and BRV with assistance from consultants.

The ECE update was undertaken to address the design and costings of the Borborema Gold Project (**BGP** or **Project**) and its possible expansion from the DFS previously reported in December 2019[2] and updated in 2020 and 2021[3], noting that the DFS adopted an initial stage mining rate of 2Mtpa over 10 years (**Stage 1**). Appendix 1 includes details of the assumptions used in the March 2022 ECE update

Table 3 summarises the capital expenditure estimated for each of these studies.

Table 3: CAPEX Estimates by Study (US$000)

	Dec 2019 DFS	2020 DFS Update	2021 OPTION STUDY 2 MTPA	2022 ECE/Owners costs Study
Accuracy of Estimate	-10% to +15%	-10% to +15%	±30%	±20%-25%
DIRECT FIELD COSTS	**64,986**	**64,209**	**54,142**	**71,700**
INDIRECT / OTHER FIELD COSTS	**13,348**	**6,780**	**15,391**	**43,459**
OWNERS COSTS	**14,996**	**12,290**	**15,437**	**39,036**
TOTAL CAPEX (EXCL CONTINGENCY)	**93,330**	**83,279**	**84,970**	**154,195**
CONTINGENCY	**11,361**	**11,541**	**15,000**	**19,800**
TOTAL CAPEX	**104,691**	**94,820**	**99,970**	**173,995**

The key focus of the ECE was to update the cost of services and supplies for capital and operating costs assumed in the original DFS.

In the course of that exercise, some modifications were proposed for the plant to deliver improved operation, environmental benefits and/or early payback. These are commented on below however, the mining schedules, pit design, resources and reserves were unchanged and material underlying technical assumptions of the DFS were unchanged.

In addition, limitations on production throughput due to lack of process water were alleviated following the dynamic water balance and water management studies undertaken by SRK Consultores do Brasil Ltda (**SRK Brazil**) reported to ASX on 2 December 2021. This led the BRV Project team to instigate a desktop study investigation into the economic benefits of higher throughput production rates.

Specifically, the findings of the SRK Brazil's dynamic water balance study and its implications for water management and security of process water supply provided the opportunity to return to the original 2013 Feasibility Study findings which envisaged a 4Mtpa operation to mine the entire 1.6 Moz Ore Reserve.

That plan was originally put on hold due to the perceived lack of water and the gold price at the time.

However, with sufficient process water now appearing available to support a larger operation, the Big River Board is commissioning GRES to undertake a PFS for a Project with a design criterion including a significantly higher annual throughput. This work is expected to be completed by the end of Q2 and the Company will update the market as and when the PFS has been delivered.

[2] Refer ASX announcement 23 December, 2019

[3] Refer (1) ASX announcement 9 July, 2020 and (2) ASX Announcement 30 March, 2021

1.2 ECE UPDATE RESULTS

The ECE update detailed in the following pages reflects dramatic recent cost increases in the resource sector although parts may be conservative, partly due to logistical difficulties (including COVID-19) in obtaining firm or considered quotes for equipment and services during 2021.

Since receiving quotes and costs assumed in the initial 2019 DFS study, the mining industry has experienced significant increases in capital and operating costs which have in some cases justified the move to a larger throughput operation. Having now addressed the question of process water security at the Project, the Board believes that this is now possible for Borborema.

There are several areas where improvements are sought, and these will be addressed for an increased size operation in the proposed PFS.

- ### Capital Estimates

The ECE update for the 2 Mtpa Stage 1 Project revealed a capital cost for the plant and infrastructure of US$131.2 million, plus a contingency of US$12.9 million for a total of US$144.1 million.

This compares to the total of US$69.5 million plus contingency reported on 30 March, 2021, for the Option Study.

An additional US$29.9 million is attributable to Owner's costs and Pre-production expenses, including a contingency of US$6.9 million.

However, it has been logistically difficult to obtain substantive quotes or information from vendors and service providers who are stretched with the mining boom presently occurring in Brazil. Numerous items have been costed based on single quotes or via substitution of industry costs paid at similar operations. As a consequence, the accuracy of the study is quoted at ±20% - 25%.

Total capital cost is estimated at US$174.0 million, including contingencies of US$19.8 million.

Table 4 summarises the capital expenditure estimated for the ECE update while Table 5 compares that with the Option Study results on a work area basis.

Materially all operational and technical assumptions in the DFS and subsequent updates remain the same including pit design, mine schedule, head grades and process design. Assumed metallurgical recoveries were reduced slightly upon further assessment by GRES.

Areas that have been modified and/or contribute to the increase in capital over previous estimates include:

- The accommodation of possible future expansion in terms of plant, earthworks and layout;
- Significant cost inflation in the mining sector since 2018-19 (the Brazilian average CPI in that period totalled >20%)[4];
- The inclusion of plant previously not in the design, but now included due to obvious benefits identified in ongoing engineering design studies which have short payback periods or improve operational efficiency or security (e.g., gravity gold recovery circuit and cyanide recovery thickener);
- The comminution circuit has been changed to a SAG plus ball mill circuit and adoption of the CIP tank circuit to CIL due to head grades;
- The omission or understatement of items in several cost areas of the DFS including Owners and Pre-production costs, and

[4] *www.inflation.eu/en/inflation-rates/brazil/historic-inflation/cpi-inflation-brazil.aspx* (Worldwide Inflation Data)

- An increase in works for water management including upscaling of the waste water pipeline to improve flow, additional maintenance and inclusion of pumps at the Currais Novos sewage works and improvement of water catchments and dams on site.

Additional taxes levied on supplies and services of US$8.5 million (net) are also to be included and are discussed in the 'Taxation' section below.

Table 4. Breakdown of Capital and Owners Costs (2Mtpa Phase 1) (US$M)	
Capital Costs Line item	**2022 ECE ESTIMATE**
GRES CAPITAL COST	
Mine infrastructure, earthworks	4.43
Processing Plant	46.15
Plant Utilities and Services	18.30
Plant Infrastructure	2.82
Earthworks	8.75
Water	4.04
Power	7.23
Buildings	1.05
Other	0.59
First fills lubricants, Capital/Commission spares	2.10
Construction indirects	19.70
EPCM	16.07
SUBTOTAL	**131.23**
Contingency	12.88
TOTAL PLANT CAPEX	**144.11**
PRE-PRODUCTION OWNERS COSTS	
Permitting, Licences, Access, Community, General	1.93
Corporate + pre-production expenses incl insurances, business systems, legals, security.	3.42
Owners Project Delivery Team	5.86
Pre-Production Labour, Owner's mining team	2.42
Pre-Production Mining	5.33
Vehicles	1.02
First Fill & initial stores reagents and consumables	1.87
Spare parts (6 months operation)	1.11
SUBTOTAL	**22.96**
Contingency	2.30
Contingency – Scope and accuracy	4.63
TOTAL OWNERS COSTS	**29.89**
TOTAL CAPEX & OWNERS COSTS (EXCL CONTINGENCIES)	**154.20**
CONTINGENCY	**19.80**
TOTAL	**174.00**

Table 5: CAPEX Estimates Comparisons by Work Area (US$000)	2021 OPTION STUDY 2 MTPA	ECE/Owners costs Study
Accuracy of Estimate	±30%	±20%-25%
DIRECT FIELD COSTS		
Mine workshop/Infrastructure	1,386	4,432
Processing Plant	39,951	46,146
Plant Utilities and Services	9,708	18,300
Plant Infrastructure	3,097	2,822
	54,142	**71,700**
INDIRECT / OTHER FIELD COSTS		
Earthworks (general site earthworks)	1,365	8,751
Water (inc greywater pipeline)	2,784	4,043
Power (inc 69kV transmission line)	2,112	7,228
Buildings	883	1,052
Other	391	578
First fills lubricants, Capital/Commission spares	1,729	2,104
Construction indirects	6,127	19,703
	15,391	**43,459**
OWNERS COSTS		
EPCM	4,964	16,074
Permitting, Licences, Access, Community, General	-	1,928
Corporate + pre-production expenses incl insurances, business systems, legals, security.	1,166	3,422
Owners Project Delivery Team	3,321	5,858
Pre-Production Labour, Owner's mining team	-	2,423
Pre-Production Mining	5,330*	5,332
Vehicles	656	1,020
First Fill & initial stores reagents and consumables	-	1,865
Spare parts (6 months operation)	-	1,114
	15,437	**39,036**
TOTAL CAPEX (EXCLUDING CONTINGENCY)	**84,970**	**154,195**
CONTINGENCY	**15,000**	**19,800**
TOTAL CAPEX	**99,970**	**173,995**

*Previously reported in working capital, reassigned here into Owners Costs for the purpose of comparison.

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- Taxation

In addition, upfront taxes totalling US$38.4 million have been estimated for purchase of capital equipment, installation and services. However, in accordance with independent guidance and review by Ernst & Young, US$26.4 million of this amount is exempt from payment due to Borborema's eventual status as an exporter of gold (Table 6).

Therefore only US$12.0 million is expected to be paid upfront on capital purchases and installation and this may vary according to the country of origin of the purchase and will be considered during the procurement phase. This will be further offset significantly during production in the form of rebates and government approved reductions. Net taxes of approximately US$8.5 million will be paid on capital expenditure over the life of mine.

A similar treatment of taxation on operating costs during the life of the Project and is summarised in Table 6.

This total may also be further reduced by sourcing more quotes from suppliers for locally produced equipment, supplies and services.

Table 6. Breakdown of supply taxation payable after exemptions, refunds and offsets		
	Capex US$000	**Opex US$000**
Nominal total taxes estimated	(38,449)	(176,929)
Tax exemptions identified	26,404	60,668
Net taxes payable upfront (before refunds and offsets)	(12,045)	(116,261)
Additional tax refunds and offsets (applied during production period)	3,509	84,174
Total net tax payable (LOM)	(8,536)	(32,087)

- ## Economic Assumptions

Economic assumptions used in the latest update studies and financials compared with previous studies are summarised below in Table 7.

Table 7. Economic Study assumptions 2Mtpa Stage 1			
	2019DFS	**Option Study**	**ECE**
Gold price (US$/oz)	1,550	1,550	1,600
Exchange rate (BRL/USD)	0.24	0.20	0.20
NPV discount rate	8%	8%	8%
Corporate taxation (Sudene concession)	15.25%	15.25%	15.25%
Mine life	10 years	10 years	10 years
Study accuracy	±10-15%	±30%	±20-25%

Similar assumptions are used when investigating possible expanded throughput scenarios from 2Mtpa to 6Mpta on the existing resource/reserve model to maximise return except that mine life extends up to 20 years and all of the resource/reserve is exploited rather than the 20 Mt reserves of Stage 1. These are commented on below however, the optimal throughput rate for which sufficient process water appears to be available appears to be higher.

Figure 1. View to the south west over the Borborema pit showing the exposed ore zone and infrastructure

Figure 2: View to the north east over Borborema project site (Concept drawing, (GRES))

Figure 3: View over proposed plant area (Concept drawing, (GRES))

- ## Financial Model

The 2019 DFS financial model provided an NPV8% of US$218 million (US$203 million post-tax) over the 10 year Stage 1 Project and an IRR of 43.6% (41.8% post tax) using a gold price of US$1,550 per ounce.

The results following the ECE update and including updated costs for processing, infrastructure, mining and owner's costs for the same Stage 1 Project are summarised in Table 8 for varying gold price assumptions while Table 9 summarises the average unit costs.

A corporate tax rate of 15.25% was applied as the Borborema project is situated in the north east Brazil region making it eligible for this concessional corporate tax rate (the "Sudene concessions").

- At US$1,600 per ounce the $NPV_{8\%}$ is US$173 million with an IRR of 27.8% (post tax US$142 million and 25.0% respectively).
- At US$1,800/oz gold price the after tax NPV is US$217 million with an IRR of 32.1%.
- The All-In Sustaining Cost (**AISC**) is US$852 per ounce with payback around 2.7 years.

Table 8. Borborema 2Mtpa, Stage 1 Mine.
Key Parameters & Sensitivities estimated at different gold prices

Parameter affected	US$1,400	US$1,500	US$1,600	US$1,700	US$1,800	US$1,900
NPV (8%) pre-tax	$86M	$130M	$173M	$217M	$261M	$305M
NPV (8%) post-tax	$67M	$105M	$142M	$180M	$217M	$254M
IRR (pre-tax)	18.8%	23.5%	27.8%	31.8%	35.7%	39.3%
IRR (post-tax)	16.9%	21.1%	25.0%	28.6%	32.1%	35.3%
Tonnes milled	20.1Mt	20.1Mt	20.1Mt	20.1Mt	20.1Mt	20.1Mt
Gold produced (oz)	729,400	729,400	729,400	729,400	729,400	729,400
C1 Site Cost /oz	$811	$811	$811	$811	$811	$811
AISC/oz	$850	$851	$852	$854	$856	$857
Payback (years)	3.3	3.0	2.7	2.5	2.3	2.0
Ave EBITDA (Full years)	$41.0M	$48.1M	$55.2M	$62.3M	$69.4M	$76.5M

Table 9. ECE Update: Unit operating cost summary – Borborema Stage 1		
Cost	**Unit cost (US$/t milled)**	**Cost per oz (USD/oz)**
Mining	13.92	383
Processing	10.23	282
Selling (Transport, refining)	1.04	28
G&A	2.68	74
Supply Taxes	1.60	44
C1 Opex Site Costs	29.47	811
Royalty	0.87	24
Sustaining capex & closure costs	0.62	17
AISC	30.96	852

- Sensitivity Analysis

A sensitivity analysis has been undertaken using the key financial drivers of the Project. These and their respective impact on the Project in terms of NPV are shown in Figure 4.

The variables that have the greatest impact on the NPV of the Project are ore grade and gold price. The major sensitivities are those affecting revenues, indicating the risk to the Project economics is most levered to the gold price, head grade or recovered quantity of gold sold.

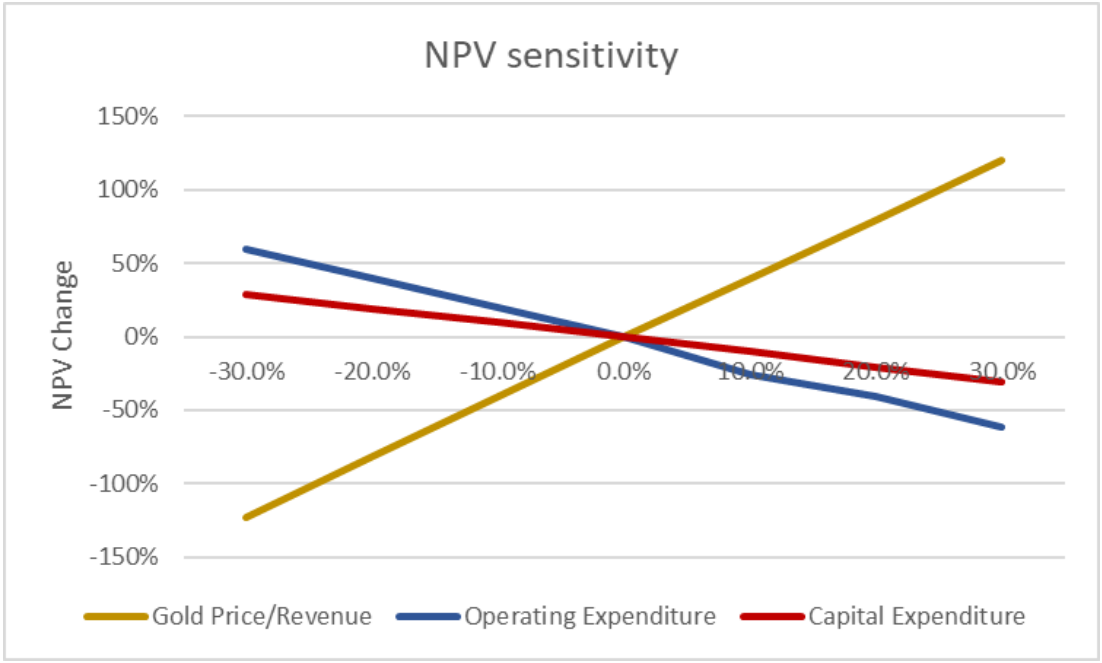

Figure 4: Sensitivity Chart for Project NPV

- Discussion – Design criteria and economic environment

The core process items remain unchanged for the ECE update. As per Table 1 some equipment was upscaled or modified and layout changes incorporated to reduce risk, increase flexibility, and to capitalise on future opportunities presented by economies of scale. These modifications are reflected in Table 1.

More of these opportunities are presenting as ongoing mine planning detail becomes available and gold pricing and recovery assumptions are updated.

There has also been a significant increase in mining and exploration activity in Brazil over the last 2 years. This has seen a significant increase in costs and prices as well as demand on service providers and suppliers. As a result of the disrupted economic environment, the process of updating budget pricing and quotations to the present day has been slower than anticipated and pricing is being carefully interrogated where increases are apparent.

The ECE update focussed on the process plant outlined in the initial 2Mtpa Stage 1 of the Borborema Project and reviewed by Wave International Ltd (**Wave**) in 2021[5]. Selection of equipment and layout was further revised by GRES following Wave's Option review to ensure the best use of capital should a possible mine expansion in Year 3 or 4 of Stage 1 prove feasible. This recognised the significant scale of the Borborema resource and the economies which would result from increased plant throughput as originally planned for the Project.

Detailed assumptions in relation to the March 2022 ECE update are set out in Appendix 1.

In relation to financing of the Project, the assumption is that once at DFS stage estimated to be by Q3/2022, the Company will commence discussions with project financiers in relation to project finance, and once debt can be properly sized, Big River will seek to raise further funds through equity (likely by way of a rights issue) joint ventures or other means.

2. POSSIBLE EXPANSION OF PROJECT – PROGRESS TO PRE-FEASIBILITY STUDY

A range of scenarios were initially scoped at a high level using the similar assumptions as summarised in Appendix 1 and Table 1, slightly lower cut-off grades than in the DFS, and a similar mined grade schedule as well as the revised economic parameters and costs established in the ECE update.

The results returned were sufficiently encouraging to identify optimal throughputs are higher, warranting further investigation and the Company resolved to commence pre-feasibility studies which will be undertaken by GRES, Auralia Mining Ltd (**Auralia**) and SRK (Australia). This work is scheduled to be completed in the second quarter of 2022.

3. LAND ACCESS ACQUISITION

Good progress has been made in acquiring land access for construction of the proposed 69kV power line from Currais Novos to the Borborema Project site with 67% landowners entering into agreements since starting the process.

Ends.

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[5] ASX announcement 30 March, 2021

Competent Person Statements

Borborema mineral resource estimate

The information in this announcement that relates to the mineral resource estimate for the Borborema Project was first reported in accordance with ASX Listing Rule 5.8 on 24 July 2017. Big River confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 24 July 2017 and that all material assumptions and technical parameters underpinning the Mineral Resource estimate continue to apply and have not materially changed.

Borborema ore reserve estimate

The information in this announcement that relates to the Ore Reserve estimate for the Borborema Gold Project was first reported in accordance with ASX Listing Rule 5.9 on 6 March 2018, 29 March 2018 and 11 April 2018. All material assumptions and technical parameters underpinning the Ore Reserve estimate continue to apply and have not materially changed.

That portion of the Ore Reserve that was included in the Stage 1 Mining Schedule for the December 2019 Definitive Feasibility Study (DFS) was reviewed by Porfirio Cabaleiro Rodriguez, BSc. (MEng), MAIG of GE21 as part of the DFS. The Ore Reserve was first reported in accordance with ASX Listing Rule 5.9 on 24 July 2017 and updated on 6 March 2018 and is based on information compiled by Mr. Linton Kirk, Competent Person who is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy. Mr. Kirk is employed by Kirk Mining Consultants Pty Ltd and is an independent consultant to the company.

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About Big River Gold

Big River Gold Ltd (ASX:BRV), is a mineral exploration and development company listed on the Australian Securities Exchange. Its major focus is the 2.43M ounce Borborema Gold Project in Brazil; a country the Company believes is underexplored and offers high potential for the discovery of world class mineral deposits.

Borborema Gold Project

Borborema is a project with a resource of 2.43Moz gold, located in the Seridó area of the Borborema province in north-eastern Brazil. It is 100% owned by Big River and consists of three mining leases covering a total area of 29 km2 including freehold title over the main prospect area.

The Project benefits from a favourable taxation regime, existing on-site facilities and excellent infrastructure such as buildings, grid power, water and sealed roads. It is close to major cities and regional centres and the services they can provide.

BIGRIVERGOLD
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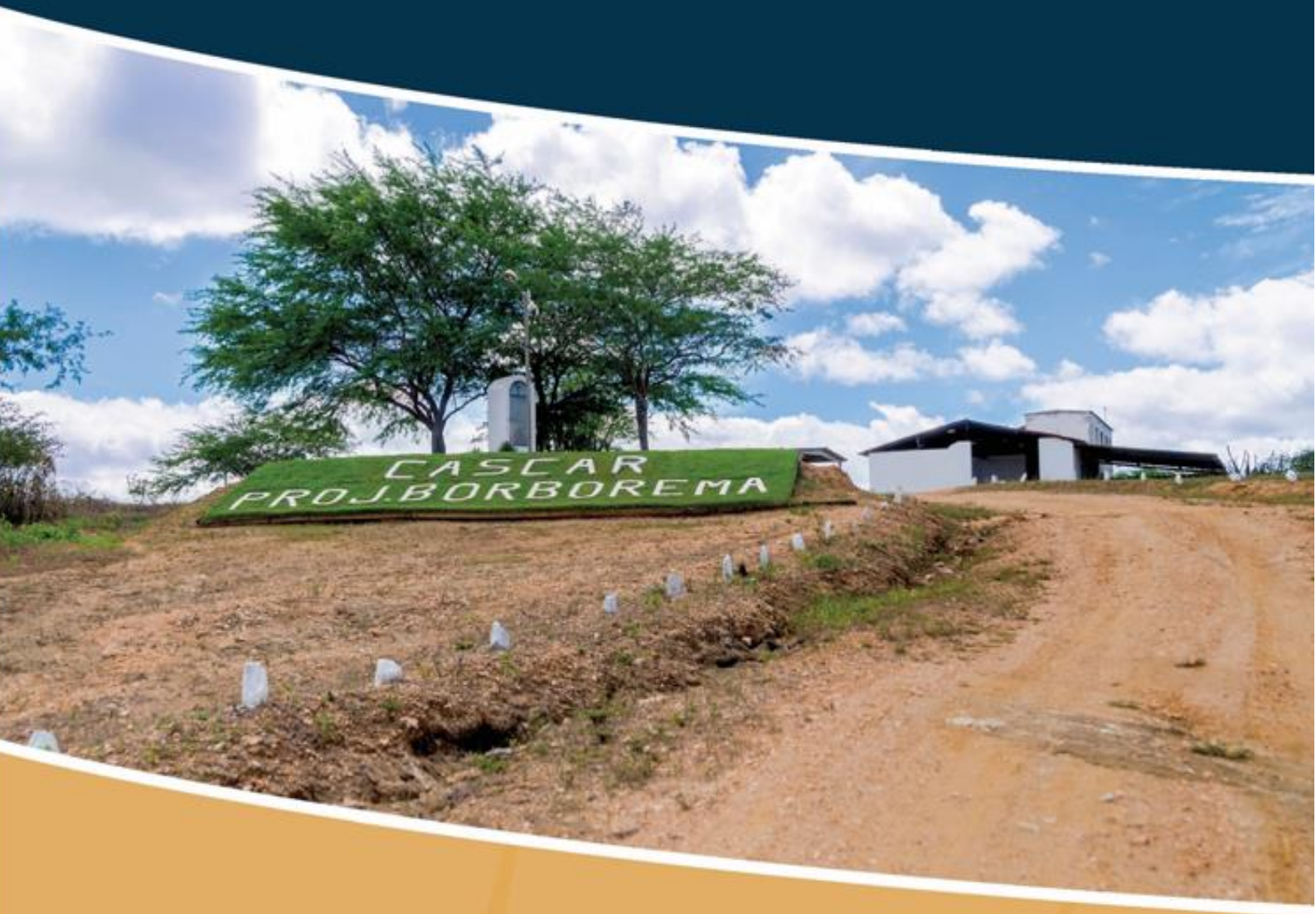

APPENDIX 1
PROJECT OVERVIEW & ASSUMPTIONS. ENGINEERING COST ESTIMATE (ECE) AND OPERATING COST UPDATE STUDY

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The Borborema Project – Overview

Borborema is located in the Seridó area of the Borborema province in north-eastern Brazil. It is 100% owned by Big River through its wholly owned subsidiary Cascar and consists of three mining leases covering a total area of 29 km^2 including freehold title over the main prospect area.

Figure 1. Project Location

Big River owns the freehold land for the area considered by the mine, plant and infrastructure within the DFS. The main Environmental and Installation Permits have also been granted by the relevant Government authorities which will allow construction of the project to commence subject to financing.

There is little or no competing land use in the region, with low density cattle and goat farming as the only other commercial activities. The immediate project area is not populated and there are no indigenous tribes in the area.

The Project benefits from a favourable taxation regime, existing on-site facilities and excellent infrastructure such as buildings, grid power, water and sealed roads. It is close to major cities and regional centres and the services they can provide.

Figure 2. View to the south west over Borborema pit showing exposed ore zone and infrastructure – existing and designed.

Project activities to 2021

Project development activities completed up to 2021 included:

- A 4.0 Mtpa Feasibility Study completed during 2012 by Brazilian consultants on behalf of Crusader Resources.
- A 2.0 Mtpa DFS completed by Wave International Pty Ltd (Wave) and Cascar in December 2019.
- A 2.0 Mtpa DFS Update completed by CPC Design Pty Ltd in July 2020.
- A 4.0 Mtpa expansion study completed by Wave during March 2021

In general, the various outcomes of these studies concluded that the Project was economically sound and Big River Gold Limited (BRV) wished to proceed to Front End Engineering Design (FEED) during early 2021. However, an internal review found significant anomalies within the DFS and DFS Update capital and operating cost estimates given the time elapsed and changes to aspects of the design, both included and omitted, Further feasibility level study were recommended to fully confirm the Project design basis and associated economic outcomes prior to commitment to the detailed design and long lead item purchases associated with the FEED stage.

A major component of the DFS and DFS Update capital cost estimate exclusions was typical Owners Costs associated with Project development and separate to the capital costs associated with Project direct and indirect costs.

BRV decided to conduct an Engineering Cost Estimate Study (ECE) to develop a capital cost estimate and an operating cost estimate for the Project to an accuracy level of ± 20%-25%. The ECE Study was also to allow a process plant design configuration that would allow for a proposed expansion to a nominal plant throughput of 4.0 Mtpa when economic conditions allowed, including:

- Comminution circuit comprised of primary crushing and SAG and ball milling. This was as developed for the DFS but subsequently changed to a 3-stage crush and ball mill approach during the DFS Update.
- Provision for 4.0 Mtpa major equipment items including the primary crusher, milling circuit configuration, classification system and tailings thickening.

A study was also commissioned for Orway Mineral Consultants (OMC) to develop comminution circuit options suitable for the 2.0 Mtpa to 4 Mtpa expansion.

The ECE Study (process plant and infrastructure design and estimating) was awarded to GR Engineering Services (GRES) during early May 2021. Other elements of the ECE Study were completed by BRV with the assistance of internal Consultants and where, in general:

- The mining basis was retained from the DFS (20 Mt of ore at 1.22 g Au/t).
- Cascar arranged/provided all local sourced costs associated with contract mining costs, processing consumables, etc. and process plant construction rates.
- BRV estimated all Owners costs.

The ECE Study Team

In addition to the assistance provided by Cascar, BRV employed several external consultants to assist with the technical and estimating elements of the 2.0 Mtpa ECE Study including:

- *GR Engineering Services (GRES)* — Process plant and infrastructure
- *SRK Consulting (Brazil)* — Dynamic water balance, site geotechnical
- *SRK Consulting (Australia)* — SRK (Brazil) peer review

• *Mining Focus Consultants (MFC)*	Mining information internal review
• *Macromet*	Processing information internal review
• *Vector Financial Modelling*	Project financial modelling
• *GRID (Brazil)*	HV power supply
• *DAMS (Brazil)*	Fines Dyke design

Prior work by external consultants on technical aspects that were assumed in the ESE Study included:

- *GE21 Consultoria Mineral* for the mine reserve and pit optimisation, geotechnical and general site infrastructure;
- *Integratio* for the community and social research;
- *ALS Metallurgy, SGS Laboratories, Testwork Desenvolvimentos, HDA* and *Outotec* for metallurgical testwork.
- *Trepanier Pty Ltd* and *EGRM Consulting Pty Ltd* for Mineral Resource estimates
- *Kirk Mining Consultants* and *Auralia Mining Consulting* for Mining and Mineral Reserve estimates for larger Stage 3 pit (60Mt)
- *TetraTech Inc* who were principal consultants for a draft Bankable Feasibility Study for a 4.2 Mtpa operation in May 2013
- *Ausenco* for partial Scoping Study and process design, and
- *Metifex Pty Ltd, Orway Mineral Consultants* and *ALS* for metallurgical testwork and process design.

Assumptions: General Overview

Several elements of the 2.0 Mtpa ECE Study require the assumption of a Project development schedule.

Many of the unit cost assumptions used to generate the capital and operating costs were provided by Cascar from local company enquiries and generally in response to the BRV Request for Information (RFI) and Request for Proposal (RFP) systems.

Most of the capital and operating cost estimates presented in this report reflect RFI/RFP advice and GRES database values for which the complicated Brazilian duties and taxation systems are not necessarily included or applicable deductions not allowed for. Such deductions were applied to the various presented cost estimates for the financial modelling exercise and variations within some estimate areas exist.

All units in this report are metric and all costs are presented as US$ Q3 2021 unless otherwise directly noted.

Mineral Resource & Reserve

Borborema contains a Mineral Resource (JORC 2012) totalling 69Mt at 1.1g/t Au containing 2.43 Moz gold (refer ASX Announcement dated 24 July 2017).

A Total Mineral Reserve for the Borborema Gold Project (Stages 1 – 3) was announced to the ASX on 6 March 2018 and the resulting Mineral Resources and Reserve estimates reported in accordance with the JORC (2012) Reporting Guidelines are presented in Tables 2 and 3 below. The Mineral Resources are inclusive of the Mineral Reserves.

The Mineral Reserves are entirely in the Proven or Probable category as they are derived from the Measured and Indicated categories of the Mineral Resource. No Inferred category resource is included in the schedule.

Table 2. Borborema Mineral Resource by Multiple Indicator Kriging estimation			
Category (>0.5g/t COG)	**Tonnes (Mt)**	**Grade (g/t Au)**	**Au Ounces (kOz)**
Measured	8.2	1.22	320
Indicated	42.8	1.12	1,547
Measured + Indicated	**51.0**	**1.14**	**1,867**
Inferred	17.6	1.00	566
Total Resource	68.6	1.10	2,430

Mineral Resource (JORC 2012) reported above 0.5 g/t Au cut-off. Parent Block 25mE x 25mN x 5mRL. Selective Mining Unit 5mE x 6.25mN x 2.5mRL. Note, appropriate rounding has been applied, subtotals may not equal total figures. (ASX Announcement 24 July 2017*).*

The reader is referred to the previous announcements for details.

Table 3. Borborema Total Mineral Reserves as at 6 March, 2018				
Category		**Tonnes (Mt)**	**Grade (g/t Au)**	**Contained Au (kOz)**
Proven	Oxide	0.65	0.80	17
	Sulphide	7.26	1.25	292
Probable	Oxide	1.68	0.70	38
	Sulphide	32.82	1.20	1,260
Total in Pit Reserve		**42.41**	**1.18**	**1,610**

Total Ore Reserve estimate for the Borborema Gold Project (Stages 1- 3),.
Reported at a 0.4g/t Au cut-off for oxide and 0.5 g/t Au cut-off for fresh material. Note appropriate rounding has been applied, subtotals may not equate total figures.

Mine Schedule

The Stage 1 open pit designed by GE21 Consultorio Mineral (GE21) for the DFS, incorporated a portion of the previously announced 1.61 Moz Au Mineral Reserve. The portion of the reserves that will be mined in the 10.2 year Life of Mine schedule total 20 Mt grading 1.22 g/t Au containing 784,000 ounces gold are summarised in Table 4. This comprises approximately 48% of the current Mineral Reserve.

The remaining resources and reserves outside of the 20Mt defined for Stage 1 will potentially be exploited in later stages of mining at Borborema.

GE21 reviewed the Mineral Resources and Reserves to identify higher grade, contiguous material that could be preferentially mined in the initial Stage 1 open pit. The resulting Stage 1 Mine Schedule comprises 20Mt at 1.22g/t Au containing 784,100 ounces (Table 4) of which 37% of the contained gold is in the Proven Reserve category and 63% in the Probable category.

The ultimate pit and mine plan for the Stage 1 Borborema DFS were derived following the Whittle optimisation, based on Measured and Indicated Resources only. Reserves are reported using a gold price of $1,245/oz and summarised in Table 4.

All ore considered in the mine and process schedule is derived from the Measured and Indicated categories of the Mineral Resource. No Inferred category resource is included in the schedule.

Table 4. Borborema Mineral Reserves Scheduled for Stage 1 Mining				
Category		Tonnes (Mt)	Grade (g/t Au)	Contained Au (kOz)
Proven	Oxide	0.47	0.93	14.1
	Sulphide	6.77	1.27	276.4
Probable	Oxide	0.55	0.83	14.7
	Sulphide	12.21	1.22	478.9
Total in Pit Reserve		**20.0**	**1.22**	**784.1**
Mineralised Waste Stockpile*		15.6		
Waste		71.9		
Total Waste + LG		**87.5**		
REM		**4.14**		

(1) Block Dimensions 25x25x5 (m); (2) Final slope angle range: 37º to 64º; (3) Mine Recovery 98% - Dilution 0%
(4) JORC (2012) definitions followed for Mineral Reserves. (5) Mineral Reserves are inclusive in Mineral Resources
(6) Reserves were estimated following the parameters:
Gold price US1,245 /oz, mining costs: US$ 2.72/t mined, processing costs: US$ 10.96/t milled and G&A: US$ 4.20 /oz. Recovery 94%.
**See explanation in next section 'Mine/Process Schedule and Stockpiles'*

Mine/Process Schedule and Stockpiles

The mine schedule detailed in Table 4 underpins the process schedules for Stage 1 production at Borborema as summarised in Table 5.

The mine production schedule is based on a production rate of 2 Mtpa and all mined material is separated by grade and stockpiled accordingly. Material above a cut-off grade of 0.7 g/t Au are sent directly to the ROM Stockpile while material grading between 0.5 g/t and 0.7 g/t Au is initially stockpiled separately and processed in the following years as mining costs decline.

The mill processes the higher grade preferentially, starting with the ROM Stockpile in Years 1 to 4 and feeding the medium grade material in Years 5 onwards to augment the millfeed and maintain a throughput of 2 Mtpa.

The remaining mineralised waste (Low grade at approximately 0.3g/t Au) material is considered marginal waste and is unlikely to be processed without a significant increase in gold price.

Table 5. Production Schedules for Stage 1									
	MINE SCHEDULE						PROCESSING SCHEDULE		
	ROM*		Stockpile MG**		Mineralised Waste	Waste	Mt	g/t Au	Rec'd gold (oz)
	Mt	g/t Au	Mt	g/t Au	Mt	Mt			
Pre-stripping						2.4			
Year 1	2.0	1.45	1.1	0.63	3.1	11.8	2.0	1.45	83,888
Year 2	2.0	1.41	1.2	0.63	3.2	10.6	2.0	1.41	83,955
Year 3	2.1	1.50	0.9	0.63	2.8	11.6	2.0	1.50	87,822
Year 4	2.0	1.64	0.8	0.62	1.2	12.2	2.0	1.64	96,968
Years 5-7	3.7	1.25			2.1	20.7	6.0	1.03	183,318
Year 8- Final	4.3	1.22			3.0	2.7	6.1	1.07	193,423
Total	16.1	1.37	4.0	0.63	15.5	71.9	20.1	1.22	729,374

**ROM – High Grade >0.7 g/t Au **MG – Medium Grade (0.5<Au<0.7 g/tAu), Mineralised waste – Low Grade (~0.3g/t Au)*

The stockpiles described in Table 5 are derived entirely from the mined Mineral Reserve detailed in Table 4. Mining will extract 107.5 Mt material comprising the Mineral Reserve of 20Mt to be processed and the remaining 87.5Mt which will be stockpiled as mineralised waste (Low Grade) and Waste.

Mining

The mine will be an open pit with contractor operated equipment including excavators with 3.5 m^3 buckets and 45 t trucks. The access roads will be 15 m wide with 10% maximum inclination, meeting safety standards and specifications of the mining fleet. The operational slopes will have 5 m benches in ore and 10 m benches in waste, with a total height of 20 m.

Operations are based on 24 hour per day, 365 days a year in 8-hour shifts. Where production jobs operate on three shifts there is a panel of four persons per task rotating on shift, on a permanent basis.

Waste rock and low-grade mineralised material will be dumped close to the pits. The sites will be prepared to include drainage at base levels with channels to direct the flow of water ultimately to maximise geotechnical stability and minimise erosion.

Material storage:

- The ROM (Run of Mine) ore >0.7 g/t Au will be transported by trucks and discharged directly into the ROM receiving hopper at an average feed rate of 330 tph. Oversize will be removed and broken by hydraulic hammer. Three days crusher feed of 18,000 tonnes will be stockpiled for wheel loader recovery and production continuity.
- Medium Grade Ore (0.5g/t Au to 0.7g/t Au) in the first 4 years, will be transported to the allocated NW1 Stockpile close to the plant. From years 5 to 10, this material will be reclaimed to feed the plant.
- Marginal ore with less than 0.5 g/t Au, will be stockpiled in the NW Waste stockpile (Figure 3) which will be reserved specifically for low grade or mineralised waste.
- The waste rock will be transported to the NE Waste stockpile where it will be co-disposed with the filtered tailings generated in the Filtration Plant.

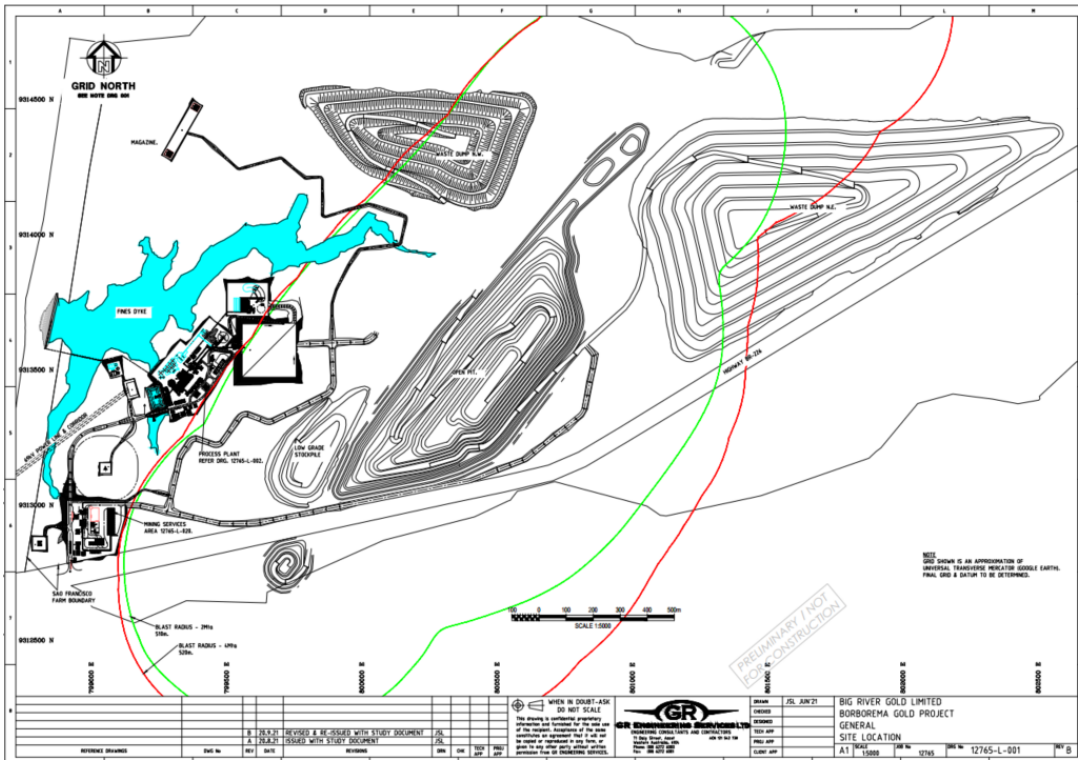

Figure 3. Mine Master Plan showing final Stage 1 pit design, process plant and infrastructure.

Project Design Basis

In general, the ECE Study project design basis was based on the 2019 DFS to provide direct comparison of the derived capital and operating cost estimates. Revised site and process plant layouts are shown as Figures 4 and 5 respectively.

Salient features of this design basis include:

- Identical mining basis to the 2019 DFS including a life-of-mine (LOM) ore reserve of 20.0 Mt of ore at 1.22 g Au/t and 85 Mt of waste and low grade.
- Conventional gold cyanidation processing facility designed for a nominal 2.0 Mtpa mill feed rate and incorporating the unit processes as described below and as shown in Figure 3:
    - Primary jaw crushing to yield a product of 80% passing 115 mm with emergency mill feed stockpile and re-feed system. Average plant utilisation of 75% resulting in required crusher feed rate of 304tph when processing at the 2 Mtpa rate.
    - SAG (Semi-autogenous grinding) and ball milling comminution circuit (SABC) with cyclone classification fed at a rate of 250 tph to achieve a product size of 80% passing 106 µm (91.3% utilisation). The SAG mill will be 7m diameter with 3,200 kW motor and the ball mill will 5.0m by 8.75m with a 3,500 kW motor.
    - Gravity gold recovery via a centrifugal concentrator and intensive leach reactor (ILR).
    - Carbon-in-leach (CIL) gold leaching and adsorption circuit (seven tanks).
    - AARL gold elution and recovery circuit with thermal carbon regeneration.
    - Tailings cyanide recovery, cyanide destruction, thickening and vacuum belt filtration circuits.
    - Process plant ancillaries including reagents preparation facilities, oxygen plant and water and air systems.

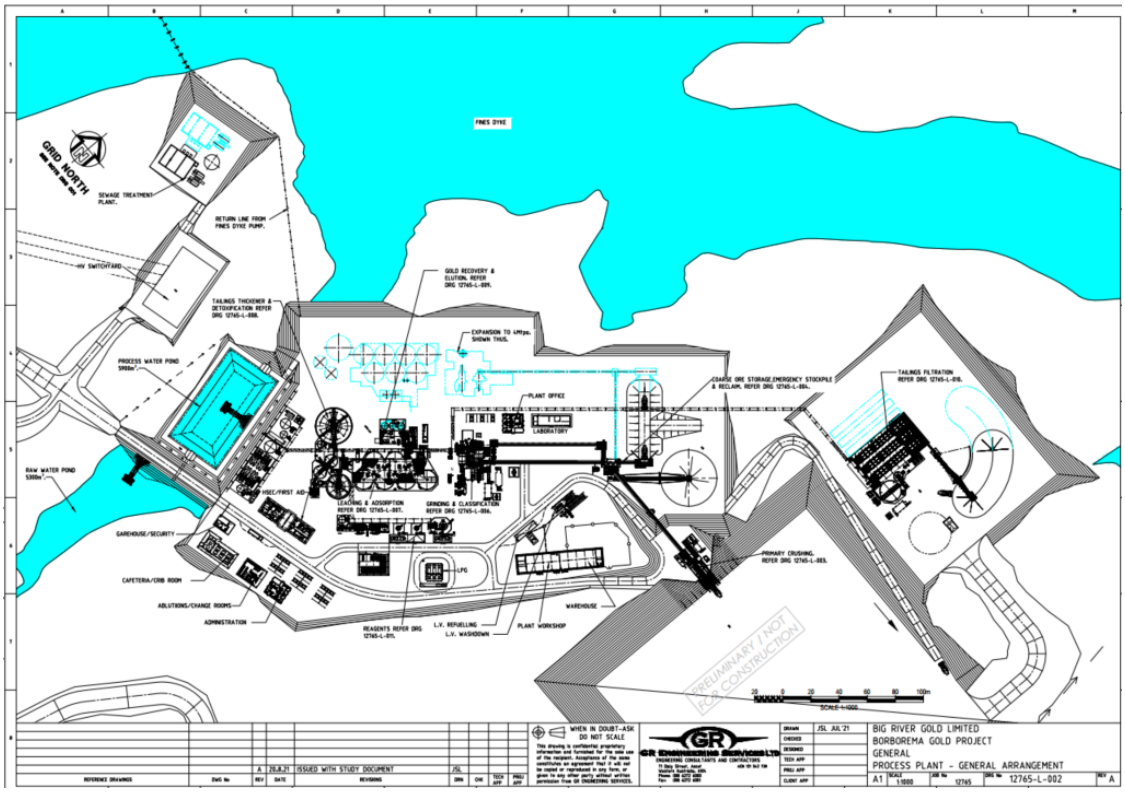

Figure 4: Processing Plant Site Layout (GRES)

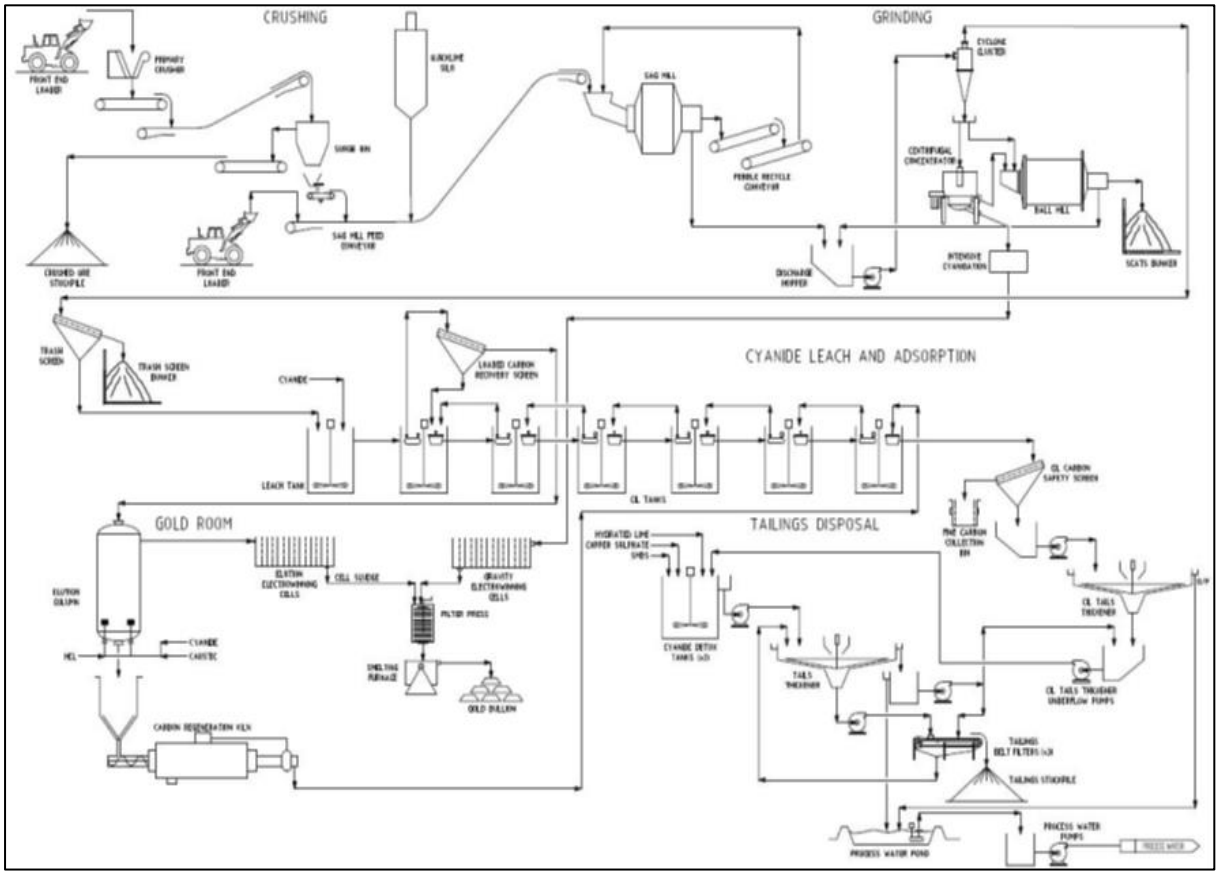

Figure 5: Processing Plant Schematic Diagram (GRES)

- In addition, some major process plant equipment items were specified to enable a higher throughput basis of 4.0 Mtpa following a future expansion and including:
  - Primary crusher and associated bins, conveyors, etc.
  - Single stage SAG milling (SSAG) was initially contemplated for the 2.0 Mtpa comminution circuit design as recommended by OMC. However, GRES considered the approach presented significant technical risk and instead adopted for full duplication of the 2.0 Mtpa SABC circuit for the 4.0 Mtpa expansion with appropriate layout allowances.
  - Similarly, the CIL, gold recovery, cyanide detoxification and tailings filtration unit processes are to be fully duplicated for any 4.0 Mtpa expansion with suitable layout allowances provided.
  - High-rate thickeners (cyanide recovery and final tailings duties) were designed for a 4.0 Mtpa and 2.0 Mtpa throughput basis, respectively.
- Project infrastructure requirements including:
  - Access roads.
  - Mining Contractor facilities, haul roads, etc.
  - Fuel, reagents and consumables storage facilities.
  - Process plant buildings, workshops and warehouse.
  - Power supply infrastructure including the 69 kV HV power transmission line from Currais Novos (35 km), main site switchyard and site distribution.

- Water supply infrastructure including the sewage collection and pumping system at Currais Novos, 27 km pipeline to site, site sewage treatment facility, water storage ponds and tanks, a reverse osmosis (RO) treatment plant for elution water requirements and potable water treatment plant.
- Helicopter landing pad
- The GRES report also includes the testwork datasets used as the basis of the comminution and gravity/CIL/gold recovery circuits designs and as generally derived from selected testwork associated with the original 2012 study and the 2019 DFS.
- With respect to gold recovery, GRES reviewed the salient testwork data and estimated average values for plant design purposes of 20.0%, 90.1% and 92.1% for gravity, CIL and overall gold recoveries, respectively.

Tailings Disposal

Tailings disposal incorporates a co-disposal system of tailings and waste rock. The tailings will be dewatered at the plant and after detoxification will be filtered and sent to the co-disposal dump sites at NE Waste Dump (Figure 3) along with waste from the open pit.

Infrastructure

Borborema has excellent existing infrastructure and the key features of the Project's layout are its compact nature and easy internal and external access, including the process plant, roads, helipad, plant and mining services areas, mine open pit and mine waste dump. Haulage distances to the waste dumps and ROM pad are centrally located adjacent to the pit. The plant will be built in a location with solid foundation conditions.

The overall site development plan is shown in Figure 3.

- The main access to the mine site is from the BR-226 highway, 130 km from Natal or 26 km from Currais Novos. The road design internal to the project covers 3,314 meters of which 1,927 will be paved.
- Water from Currais Novos wastewater pond will be pumped to the process plant storage tank located adjacent to the plant where it will be treated on site for use in the plant. The wastewater treatment will be a combination of filtration, chlorination and reverse osmosis. Conventional treatment will provide raw water for use in all areas of the process with the exception of the elution circuit and WAD cyanide analyser which will receive high-quality water from reverse osmosis treatment.
- Power to the Project will be supplied from the grid by tapping into the Currais Novos II substation and installing a 35km, 69kV transmission line to the project site. The infrastructure and power supply up to the new main sub-station will be provided by power utility COSERN - Companhia Energética do Rio Grande do Norte. The Company is currently in advanced discussions with the utility and will prioritise a formal supply agreement.

Capital Cost Estimate

The 2.0 Mtpa ECE Study capital cost estimate ("Capex") was developed by the following entities:

- GRES Process plant and infrastructure.
- Cascar Mining Contractor establishment costs.
- BRV Owners Costs.

The capital cost estimate was generally developed to a ± 20% – 25% Pre-Feasibility Study (PFS) level of accuracy which GRES terms a Phase 2 level study. The currency adopted for the estimate was United States Dollars (US$) and the base date for the estimate is Q3 2021.

Process Plant and Infrastructure

In general,

- Foreign currency exchange rates for Brazilian Real (B$) to US $ were assumed to be 0.19:1.00.
- The estimate assumed an EPCM contracting strategy.
- Budget pricing was obtained for much of the mechanical equipment supply via a total of 22 packages. Whilst pricing was sought from Brazilian suppliers, timely commercial budget proposals were very limited and other international firms provided the majority of proposals. The mechanical equipment pricing basis was predominantly from these budget quotations at 88% of the total costings, with GRES database and factored pricing forming the remainder.
- Given the accuracy level of this ECE Study, quantities were based on a 3D earthworks model and detailed designs from similar facilities within the GRES database.
- Construction rates were sourced from Brazilian contractors but generally only one proposal was obtained for each major discipline.
- Buildings costs (concrete framed masonry) were provided by a Brazilian contractor.

Owners Costs

Owners Costs include all Project pre-production capital costs not included within the GRES estimate for Process Plant and Infrastructure. The Owners Costs were developed by BRV and in general, all costs were built up by first principles or, where such information was not available within the ECE Study timeframe, allowances were estimated.

Mine establishment costs were provided by Cascar and BRV and predominantly based on a single budget proposal from a local mining contractor (Fagundes) received mid- 2020 in Brazilian Real (R$). Pre-production capital costs included Mining Contractor mobilization and site establishment as well as pre-strip activities including ROM Pad construction but excluding low grade and waste dumps clearing and drainage systems construction and haul roads development.

Process plant first fills and consumables stock were based on the GRES reagent areas design storage capacities, suitable on-site consumables bulk storage and the reagent unit costs. Where appropriate, vehicles are assumed to be supplied on a long-term hire basis from local car rental companies and are thus included in the operating cost estimate.

Owners Costs related to further feasibility studies and detailed design including BRV consultants are assumed to be non-Project (Corporate) expenses and are not included.

Working Capital costs were related to the gold inventory within the gold recovery circuits (predominantly loaded carbon and eluate) as well as a nominal two-week period between pouring gold on site and refinery payment. No working capital related to operating costs incurred within the production period prior to first refinery payment were estimated. No working capital is included within the capital cost estimate and assumed to be a non-Project (Corporate) expense.

Operating Cost Estimate

General Input data

General inputs to the 2.0 Mtpa Opex include:

- Mining basis as for the 2019 DFS, i.e: 20 Mt of ore, 15.6 Mt of low grade and 67.2 Mt of waste for a 10 year life-of-mine (LOM).
- Foreign currency exchange rates of:
  - R$ 5.0 (Brazilian Real):US$ (BRV)
  - A$ 0.75 (Australian Dollar):US$ (GRES Capex basis)
  - 1.19 € (Euro):US$ (GRES Capex basis)
- Power supply unit cost of R$ 0.3468 /kWh (Cascar)
- Diesel supply unit cost of R$ 4.49 /L (Cascar)

Contract Mining

Contract mining costs were developed on the basis of the 2019 DFS open pit with respect to ore and waste tonnes, pit dimensions, etc.

Mining rates were initially provided by Cascar on the basis of preliminary enquiries to Fagundes and Minax, where MFC converted the received costs to a standardized US$/t basis. BRV selected the Fagundes basis for the ECE Study as follows:

- Ore drill and blast, load and haul, crusher feed and MMF of $2.07/t.
- Ore drill and blast, load and haul, crusher feed and MMF of $2.22/t.
- Filtered tailings load and haul and placement at the co-mingled waste/tails dumps (2019 DFS basis) of $1.78/t.
- Grade control allowance of $0.60/t ore (not allowed for by the contractors).

Labour

- Mining Contractor operations and maintenance labour is included within the overall rates detailed above.
- BRV employee numbers generally corresponding to the 2019 DFS with some additions to reflect the ECE Study operating philosophy. These positions included all production roles including those associated with administration, mining (BRV technical), process operations and maintenance.
- Individual roles were assigned I.Ds and categories for salary and oncosts estimation by two independent personnel consultants, i.e:
  - Worqforce Group. 2021 Salary Benchmarking Report, Big River Gold – Borborema Gold Project, Brasil (September 2021).
  - High Class. Salary Scale 2021 AGO – High Class (provided by Cascar).
- Salaries, site loadings and position loadings in R$ were collated from each report and compared. The Worqforce and High Class salaries with oncosts were very similar in most cases and total annual costs values were calculated on an average basis from these two sources for the majority of positions.
- Average total annual costs were then applied to the numbers of personnel for each position.

- Total BRV production labour was calculated as R$18 M/a or US$3/.75 M/a.

Power

- GRES supplied the installed power values for each of the processing and infrastructure areas.
- Each equipment item was allocated:
  - Duty or standby status.
  - A demand factor to reflect the normal operating power draw as a fraction of installed power.
  - Annual operating time (zero for standby equipment).
- Annual power use (kWh) for each area calculated by combination of the installed power and operating factors.
- Unit power supply cost of US$0.0694/kWh (converted from the Cascar's rate of R$ 0.3468 /kWh and confirmed via RFI-31) applied to the calculated annual power use.
- Total annual power usage estimated at 87.2 GWh for a corresponding annual average power cost of US$7.76 M/a.

Reagents and Consumables

Reagents and consumables costs calculations include the following operating cost elements:

- Crusher and SAG mill wear liners where:
  - Consumption rates were estimated based upon the comminution testwork results.
  - Liners unit costs supplied by GRES from selected equipment vendor advice.
- Grinding media for the SAG and ball mills where:
  - Consumption rates were estimated based upon the comminution testwork results by GRES.
  - Media unit costs supplied by Cascar.
- Reagents costs where:
  - Consumption rates were estimated based upon laboratory testwork results, vendor testwork and first principles by GRES .
  - Reagents unit costs supplied by Cascar
  - Reagents and consumables consumption rates and unit costs used to calculate annual usage rates and costs as well as unit costs (US$/t milled).
- Total annual reagents and consumables costs of US$11.3 M/a and equivalent to US$5.61/t milled.

Maintenance

Maintenance costs include the cost for spare parts and maintenance materials to maintain the processing plant. The maintenance cost has been applied as a percentage of the plant area capital cost as developed by GRES but applied to the equipment supply cost only (as compared to installed costs). The percentage factors are based on BRV experience and derived from similar engineering studies. The annual plant maintenance costs are summarized below:

- Fixed plant annual factored maintenance cost of US$2.95 M/a.
- An additional annual cost allowance for other maintenance costs including mill reline assistance, specialist contractors and maintenance related consumables.
- Total plant annual factored maintenance cost of US$3.15 M/a or US$1.58/t milled.

General and Administration

General and administration costs were derived by the application of a 25% 'Inflation and Escalation' factor to a similar list of items included within the 2019 DFS. Allowances for additional cost likely to be incurred by the Brazil (Belo Horizonte) and BRV (Perth) offices were also included. The total annual general and administration costs were estimated at US$5.45 M/a and equivalent to US$2.27/t milled.

Vehicles

Provision for light vehicles, medium/heavy equipment and other equipment to enable plant operation were generally developed as follows:

- Light vehicles number and type based upon the personnel provisions. These vehicles are considered as rental units and appropriate long-term rental costs were supplied by Cascar.
- Similarly, buses for employee transport from local towns was also considered as a rental basis along with the site ambulance.
- Most medium/heavy equipment is not readily available as rental units (costed within Owners Costs) and include trucks, loaders, cranes, etc. Maintenance costs for these units include mechanical parts, tyres, lubricants, etc.
- Other equipment includes generators, welders, etc. and similar maintenance provisions are made.
- Fuel costs for each vehicle and equipment item are estimated on an annual basis and the ECE Study diesel supply unit cost of R$ 4.49 /L applied.
- Total vehicles and equipment rental, maintenance and fuel costs are estimated at US$1.73 M/a

Environment & Environmental Impact

Following submission of a study by Ausenco do Brazil Engenharia Ltda (**Ausenco**) of the Project's processing plant design in 2018, the following two licences were granted:

1. The Environmental License (Licença Prévia LP) in April 2017 and updated 30 July 2018;
2. The Installation License (LI) or Installation Permit approved one year later in April 2019 by the Rio Grande do Norte State Government Environmental Department (IDEMA).

Environmental Licensing

The environmental licensing procedure is initiated with the relevant environmental agency which sets out required projects and studies for coordination via an environmental agency subordinated to SISNAMA. The Company must engage and participate with the public through open hearings. The environmental licensing steps are a basic framework to be followed by the owner, making it possible to control and inspect the proposed economic activity throughout the licensing procedure for each type of licence.

Procedures for obtaining Environmental Licences for projects involving exploitation of minerals are outlined in two resolutions of CONAMA (the National Environment Council). CONAMA resolution number 09/90 deals with environmental licensing of areas under the Concession and Authorization Regime through DNPM. In turn, the Licensing Regime is dealt with in CONAMA Resolution number 10/90.

CONAMA Resolution number 237/1997 has involved three (3) types of environmental licence: Preliminary, Installation and Operational. The Project has already been granted one of the environmental licences which is the Installation Licence (LI), granted in April 2019. This replaces the previous Preliminary licence (LP) obtained in 2017. In the case of mineral exploitation, these licences are applied for through IDEMA.

Additional requirements that were met for the Preliminary licence included:

- A request for authorization for vegetation suppression (where IDEMA is also the competent environmental agency);
- A water use approval obtained from SEMARH; and
- An authorizing decree for archaeological diagnosis from IPHAN. If required, an authorizing decree for archaeological exploration from the same government department may be requested.

(i) Preliminary (Previous) Licence (**LP**)

During the preliminary licensing process, several factors will be analysed in order to define the feasibility, or not, of the project in question. It is during this phase that:

- A survey is made of the probable environmental and social impacts of the project;
- Extent and "footprint" of such impacts are evaluated;
- Measures are formulated to eliminate or reduce these impacts;
- Comments from competent environmental agencies are received;
- Comments from various entities and agencies from the project are received;
- The environmental impacts with respective mitigating and compensating measures are discussed with the community; and
- A decision related to environmental feasibility is made taking into consideration the location and likely impacts of the environmental and social mitigating measures.

The effective term of the preliminary licence will be at least equal to the timetable required for development of the plans, programmes and design of the project or activity and cannot be longer than five years. After the preliminary licence is obtained, work can begin on detailing the construction design including environmental control measures required. It is not advisable to develop the basic design prior to issue of the preliminary licence. Furthermore, an application for this licence does not give the owner any assurance that it will be granted. It is also possible that the project may have to undergo changes in aspects such as location and technical solutions. Therefore, it is recommended that this second phase be developed after the preliminary licence is granted to assure environmental feasibility of the project in terms of location and project concept.

(ii) Installation Licence (**LI**)

The environmental agency granted the Installation Licence that verifies the project is compatible with the affected environment. This licence validates the proposed strategy for handling environmental issues during the construction phase.

Now that the Installation Licence has been granted for the Project, the environmental agency will have:

- Authorized the owner to start work;
- Agreed with the specifications in the environmental plans, programs and projects, their details and respective implementation schedules;
- Verified compliance with all conditions established in the preliminary licence;
- Established environmental control measures to ensure the implementation phase will conform to environmental quality standards established by regulations or laws;
- Established installation licence conditions (mitigating and/or compensatory measures).

The effective term of the installation licence will be at least equal to that established by the timetable for installation of the project or activity for a period no longer than six (6) years.

(iii) Operating Licence (LO)

The operating licence authorizes a party to start its activities. Its purpose is to approve the how the project proposes to integrate with the environment and establish conditions for operational continuity.

The operating licence (LO) is not open-ended and does not have a definitive nature. Therefore, the owner must renew it periodically and comply with any new conditions. Its validity term should consider the environmental control plans; at least four (4) and at the most ten (10) years as established by the environmental agency with a maximum of six (6) years in Rio Grande do Norte.

LO renewal will be requested by the owner at least 120 days prior to its expiration date. Renewal request will be published in the official newspaper of the state where the project is located and in a regional or local newspaper with broad circulation. If the environmental agency fails to complete its review within this period, the licence will be automatically renewed until a definitive decision is given.

In conformity with the environmental law in force (Law 6.938/81), the licensing activity is generally the responsibility of the state whereas IBAMA (a federal agency) has a complementary participation in the event of absence or omission on the part of the state agency. The federal agency does not have the duty to review the environmental licence granted by the states.

By legal provision, IBAMA also has the original competence for licensing. This agency is responsible for licensing activities wherever there is significant environmental impact at the national level or when the project affects two or more states of the Federation.

In the event of dam construction or intervention affecting a federal highway section, such activities will be subject to other environmental licensing procedures which must be registered with IDEMA and will involve other agencies such as SEMARH, DER and DNIT.

Environmental Impact and Management

The major studies incorporated by the Environmental Impact Study (EIA) and Environmental Impact Report (RIMA) undertaken for the Project included the following:

- Physical environment assessment;
- Terrestrial fauna and flora inventory survey;
- Physical-chemical and bacteriological analyses of water;
- Aquatic fauna and flora inventory survey and assessment;
- Socioeconomic assessment;
- Analysis of environmental impacts, impact mitigation measures and environmental control programs; and
- Archaeological inventory survey.

The studies address the following three main areas:

- The Area of Indirect Influence (AII), defined as the area in which there is a probability of direct or indirect impacts occurring, potentially linking the environmental characteristics of this area with the operation;
- The Area of Direct Influence (AID), defined as the area immediately adjacent to the mining project such as adjacent farms and peripheral urban areas., The limits of the AID are determined by the extent of the direct effect of the project over the quality of the environment beyond the immediate area of the project; and
- The Directly Affected Area (ADA) comprising the area occupied by the project installation in all its various phases including the mine, processing plant, support services, waste piles, effluent treatment system and other associated infrastructure.

Flora and Fauna

Of the flora identified, only the species *Myracrodruon urundeuva* and *Amburana cearensis* are on the list of endangered species. The majority of the animal species observed in the EIA study area are reptiles and birds, none of which are currently endangered.

The results of the aquatic flora and fauna analyses suggest that water environments within the EIA study area are already under stressing environmental conditions which can be explained by the anthropic influence and by the fact that some of the dams and other water bodies are under water stress due to the drought currently being experienced.

Socioeconomic

From a broader perspective the local socio-economic development and historical mining culture already existing at Currais Novos are positive factors for the development of the project. This situation makes the Project a viable alternative for growth and income generation in the Project area. This has been the experience of other companies who previously worked on the project and others that are still active in the region such as Mineração Tomaz Salustino (MTS), Largo Minerals and Brazil Tungsten.

Today's work by Mineração Tomaz Salustino on its theme park and museum at "Mina Brejuí" is a reference point for local development and community relations. Any development undertaken by the Company should receive similar acceptance to those of MTS since the community already has a basis for reference.

Despite not having any direct impact on neighbouring communities, there may be some who will expect some kind of commercial benefit. At the community of Maxixe for instance, the Company already employed several local residents. Other communities to be considered will be Povoado da Cruz, Santo André, São Luiz, São Sebastião, São Rafael and Liberdade.

Evaluation of Environmental Impacts

The potential environmental impacts related to the various phases of the project have been evaluated through the use of a correlated quality-quantitative matrix, rating the relative potential of the impact, its nature and the mitigating measures to be taken at each phase of the operation (implementation, operation and de-commissioning).

Due to the project´s size, operational characteristics and impact area, the evaluation of adverse impacts over the physical, biological and social environments indicates low levels of impact and a low degree of importance.

Mitigating Measures and Environmental Management

Environmental management systems will be established for the treatment of industrial effluents, sanitary waste and used oils and impoundment of tailings, controlled disposal of waste, minimisation of the effects of noise and dust on the surrounding areas, preservation of areas of ecological relevance and rehabilitation of degraded areas. Environmental management will follow internationally recognised Equator Principles, demonstrating social responsibility and democratic dialogue with the community.

Sanitary waste generated in all administration and operational areas will be treated in independent systems. Mine drainage water will be pumped to the Onça dam and re-used in the overall water demand.

Residual cyanide in the plant tailings will be detoxified, tailings dewatered to a dry cake and co-disposed with waste rock from mining operations.

To avoid the consequences of erosion, stable geometries will be established where the original morphology has been modified. Correctly designed drainage systems will be installed to control surface water run-off and erosion in order to preserve slope stability in the pit areas, waste dumps, operational areas and accesses.

Dust from internal roads will be controlled by the use of water trucks and dust-binding chemicals. Dust in the crushing area will be controlled by the use of fine water sprays.

Mine closure, comprising rehabilitation of all degraded areas, will involve dismantling of all physical structures, spreading of stockpiled topsoil on impacted areas, including waste dumps and planting of native flora grown in an on-site nursery. Wherever possible, rehabilitation will take place progressively during operations.

Archaeology

As part of the environmental risk analysis and report (EIA / RIMA) of the Project, it was necessary to perform an archaeological study over the EIA study area. The scope of this study was defined by the Institute of Historic Patrimony and National Art (**IPHAN**) of Brazil and was carried out by the consultants Arqueologia Brasileira Consultoria Ltda. The study was submitted to IPHAN and subsequently approved.

The findings of the archaeological studies will not impede the progress of the Project. However, during the implementation phase, ongoing work will be required as defined by IPHAN such as monitoring and monthly reporting to IPHAN and the collection and registry with IPHAN of items and objects of significance from within the ADA of the project.

Acid Rock Drainage

Global Resource Engineering Ltd. (**GRE**) was contracted by the Company to perform a geochemical waste characterisation programme assessing acid rock drainage (ARD) for the Project.

The initial investigation revealed that some material in the onsite waste rock dumps from historic mining activities has the potential to generate acid rock drainage. The second phase of investigations was designed to determine if the Project waste rock presents a geochemical risk to the project from either acid rock drainage or alkaline rock drainage. Subsequent static and kinetic geochemical testing however revealed that Borborema waste is geochemically inert for the following reasons:

- Most samples have low acid generating potential (AP);
- All samples contain some neutralizing potential (NP) with most of the samples containing significant NP;
- Those few samples with the potential to generate acid had slow acid generating kinetics (acid production over time);
- No samples demonstrated alkaline rock drainage behaviour.

Social & Community

The Currais Novos region has a strong mining tradition based largely on the tungsten mining industry which reached its peak in the 1970´s. By the late 1990s, the majority of the mines had either closed or were operating on a semi-artisanal basis although there is currently a move to re-open a number of the old mines. Historical gold mining at an industrial scale is limited to Borborema (formerly São Francisco).

Borborema is located in the municipality of Currais Novos, 30km east of the town of Currais Novos and 12km west of the township of Campo Redondo. A number of small villages are located within a radius of 10km of the project of which the closest is Maxixe, ~4km to the east. None of these settlements will be directly impacted by the project, except as sources of labour. The company already employs a number of field workers from surrounding villages.

Big River owns the freehold land for the area considered by the mine, plant and infrastructure within the DFS. The main Environmental and Installation Permits have also been granted by the relevant Government authorities which will allow construction of the project to commence subject to financing.

There is little or no competing land use in the region, with low density cattle and goat farming as the only other commercial activities. The immediate project area is not populated and there are no indigenous tribes in the area.

A traditional community descendant from 19th century escaped slaves known as a quilombola is located approximately 10km to the west of the project area and outside the area of direct impact of the mine.

Following a detailed analysis of the project´s stakeholders, including federal, state and municipal bodies and agencies, other mining companies and business enterprises, property owners, educational institutions, religious bodies and society leaders, the company has maintained an active communication and education programme to ensure that stakeholders are fully informed of the company´s objectives and strategy. This programme uses the town´s broad range of communication outlets including a number of radio stations, local television channels and two newspapers, and is designed to carefully manage community expectations regarding the offer of jobs and other benefits.

Due to the region´s mining heritage and a relatively high unemployment level, the Company´s presence in the region is openly welcomed, resulting in a low overall social risk. The scarcity of water is a major issue in the region, and the company´s plans to pump water to Borborema will need to take into account likely demand to share water resources with surrounding communities.

The level of educational and social development in Currais Novos is considerably above that of other towns in the region, partly as a result of its mining heritage. There is a total of 49 schools in the municipality, a technical college and two universities, including a campus of the UFRN, the Federal University of Rio Grande do Norte, which offers courses in administration, social studies, arts, teaching and tourism.

The Company is actively pursuing opportunities to develop social programmes and establish partnerships with local educational institutions. Emphasis will be placed on educational partnerships of potential mutual benefit to the community and the company, assisting the latter in meeting its requirements for semi-skilled and skilled labour.

Construction Schedule

The timeline in the ECE Study provides for a construction period of 23 months assuming a 2 Mtpa throughput operation due to several long lead items. Subject to results of the proposed pre-feasibility study into an expanded throughput this may change or be staged.