



## ABC Project Scoping Study

**Resolute Mining Limited**

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**MineScope Services Pty Ltd**  
Geology, Mining, Metallurgy, Project Development, and ESG Services

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- Appendix B : Section 6 Process Plant
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- Appendix D : Section 12 Capital Cost Estimate
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## 1.0 Executive Summary

Resolute Mining Limited (“Resolute”), have requested MineScope Services Pty Ltd (“MineScope”) undertake a Scoping Study (the “Study”) on the ABC Project (the “Project”), an undeveloped gold deposit located in northwest Côte d’Ivoire. The Study has been developed to align with an AusIMM Class 5 Scoping Study.

It should be noted that this study has been completed to a “Scoping Study” level and therefore does not support an Ore Reserve under the definition of the JORC 2012 guidelines. The use of the word "ore" in this report should not be interpreted as referring to an Ore Reserve but indicates material that has been selected as suitable for processing feed

### 1.1 Introduction

The ABC Project is located in the Kabadougou region of northwest Côte d’Ivoire, approximately 90 km south-south-east of the city of Odienné, and 540 km north-west of Côte d’Ivoire capital city, Abidjan. The location of the Project is depicted in Figure 2-1, which also includes the Doropo Project for reference.

The ABC (Archean-Birimian Contact) Project is made of up the Kona and Fraka Nafana Exploration Permits. Centamin plc (“Centamin”) applied for the Kona exploration permit in December 2015 and commenced field work in March 2017. The Farako Nafana exploration permits were acquired by Centamin in 2017. Centamin completed over 60,000 m of exploratory drilling resulting in an inferred Mineral Resource Estimate of 2.16 Moz at 0.9 g/t gold. An NI 43-101 Technical Report was released by Centamin in November 2021, with an effective date of July 2021. This report was relied on for the purposes of this Study.

In November 2024 AngloGold Ashanti (“AGA”) acquired Centamin, including the ABC Project and the Doropo Project. In May 2025 Resolute acquired these projects from AGA. This Scoping Study is the first study conducted on the ABC Project and released for public consumption, since the 2021 Technical Report conducted by Centamin.

The Scope of Work for the project includes:

- Open pit mining across both Kona Central and Kona South pits,
- Waste rock dump and stockpiling,
- Process Plant and associated infrastructure,
- Utilities (power supply, water, air, sewerage) associated with the Process Plant and Surface Mine Infrastructure,
- Surface buildings including those necessary to support mining operations and process plant,
- Water management structures and systems,
- Tailings storage facility and associated infrastructure;
- Offsite accommodation and administration buildings, and
- Onsite administration buildings.

Subject to future studies, the ABC Project will likely consist of the following components:

- Open pit mining operations at moving approximately 15-30 Mtpa of material from both Kona Central and Kona South pits,
- A 7 Mtpa process plant producing gold doré,
- Onsite infrastructure including tailings storage facility (“TSF”), mine and plant workshops, water management facilities, and administration facilities, and
- Offsite infrastructure including camp, training and administration facilities.

## 1.2 Geology

The ABC Project is located in the Kabadougou Region of the Denguélé District, in the north-west of Cote D’Ivoire. The Kona permit occurs approximately 600 km west of Resolute’s Doropo Project (Bounkani region, north-eastern Cote d’Ivoire), and 540 km north-west of the capital city of Abidjan.

A Technical Report was produced by Centamin in 2021 stating Mineral Resources for the ABC Project. Resolute has not completed any additional resource development drilling since the acquisition. The current stated Inferred Mineral Resource for the ABC Project is 72.0 Mt at a grade of 0.93 g/t for a contained 2.16 Moz of gold.

The ABC Project is located within the Leo-Man shield (Figure 1-1), where Paleoproterozoic rocks of the Birimian domain are in contact with the Archaean basement, with the contact known as the Sassandra suture. The ABC Project is situated within the Birimian domain.

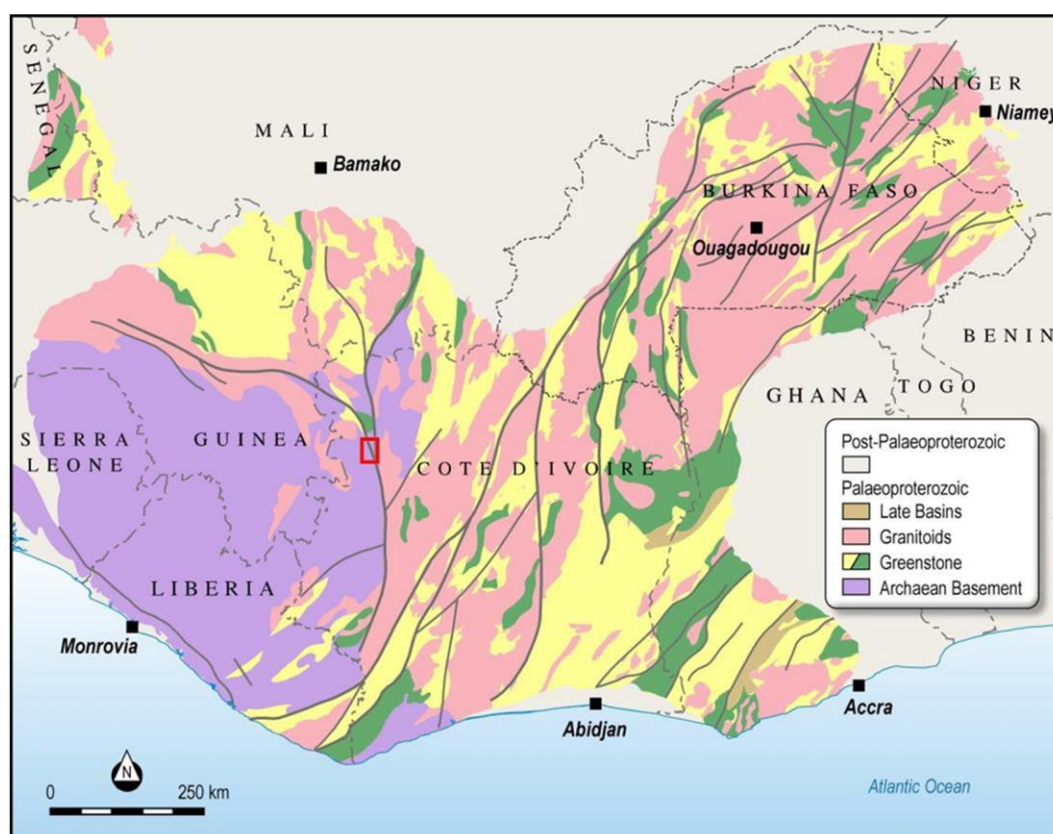


**Figure 1-1: Geology of the Leo-Man Shield – from the BRGM interpretations**

The ABC Project’s Kona permit includes approximately 25 km strike length of the Archean-Birimian Contact (“ABC”). Two main areas within the Kona permit, Kona South and Kona Central, were identified in early stage exploration involving permit scale mapping and rock chip sampling. Initial



drill testing and later resource definition drilling focused on the Kona South, followed by phased drilling at Kona Central. Drillhole collar locations within the Kona permit are shown in Figure 1-2.

At Kona the gold mineralisation is hosted almost entirely within a north-south trending psammite unit which dips at approximately 70° to the west. At Kona South the average thickness of the mineralisation is approximately 100 m, with well-developed mineralisation occurring for a strike length of approximately 1.0 km. Kona Central has a mineralised zone which is often much wider but with a lower grade tenor and currently drill defined over a strike extent of 1.6 km. The gold mineralisation has a close spatial relationship with arsenopyrite with the presence of arsenopyrite nominally corresponding to the presence of gold. Arsenopyrite occurs as disseminated grains and aggregates within the psammitic host, usually aligned to the foliation. The rock is strongly silicified within the mineralized zones; but quartz veining is rare to absent and not an important control to mineralisation.

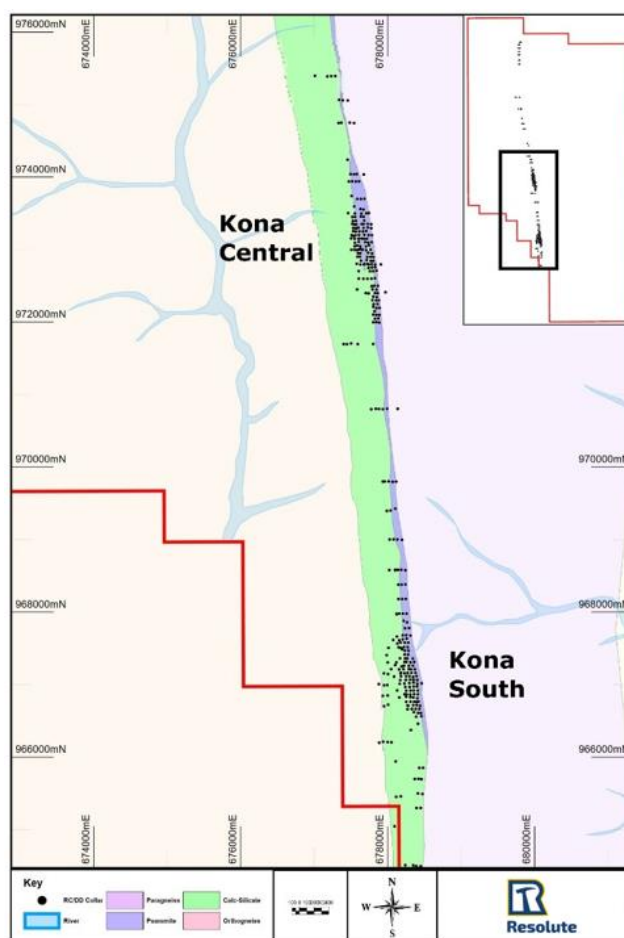


**Figure 1-2: Location and Local Geology of the Kona Deposit showing Drillhole Collars.**

Geological information regarding the ABC Project is summarised from the Centamin 2021 Technical Report “NI 43-101 Technical Report Mineral Resource Estimate Update On The Kona Gold Deposit Cote d’Ivoire”, which is available on the Resolute website or SEDAR (under 2021 Centamin filings).

An Inferred Mineral Resource of 72.0 Mt at a grade of 0.93 g/t for a contained metal content of 2.16 Moz (Table 1-1) was defined by Cube Consulting in July 2021. The Mineral Resource was reported above a lower cut-off grade of 0.5 g/t Au and at elevation less than or equal to 250 m below surface and within 100 m of the nearest sample composite.

**Table 1-1: Mineral Resource Estimate, Kona South and Kona Central, July, 2021**

| Prospect     | Classification  | Mt        | Grade (g/t Au) | Metal (Moz Au) |
|--------------|-----------------|-----------|----------------|----------------|
| Kona South   | Inferred        | 31        | 1.05           | 1.05           |
| Kona Central | Inferred        | 41        | 0.84           | 1.11           |
| <b>TOTAL</b> | <b>Inferred</b> | <b>72</b> | <b>0.93</b>    | <b>2.16</b>    |

### 1.3 Mining

Conventional open pit mining is planned for the ABC Project. All open pits will be mined with a conventional truck and excavator approach utilising a typical drill, blast, load and haul production cycle. Mining of both ore and waste will be undertaken using excavators to load rigid body dump trucks. Drill and blast will be carried out on 5 m blast bench heights. The ore will be excavated in 2.5 m flitches to minimise dilution and ore loss. Ore mined will be transported to either the primary crusher, run of mine (“ROM”) stockpile fingers or long-term stockpiles.

Waste will be placed in designated waste rock dumps (“WRD”) adjacent to the open pits.

It is assumed all insitu material will require some degree of drill and blast.

Rehabilitation works will be carried out on an ongoing basis as areas of WRD are finalised or infrastructure such as roads etc are no longer required.

The mine operating strategy is based on utilising a mining contractor to undertake all production related mining activities, with Resolute responsible for overall management of the project including all activities related to geology, grade control and mine planning. This is the preferred operational strategy for the following reasons:

- Reduces initial capital outlay and time requirements to build up and train a workforce,
- A contractor provides equipment and personnel (locally sourced), with procedures and systems to reduce startup risk.

Consequently, this approach is considered to generate the best project value with the greatest likelihood of success for a greenfields operation.

The mining costs utilised for this study are based on the recent completed Doropo Project DFS Update (2025) as the basis for the ABC Project Scoping Study mining evaluation, which align well with similar West African mining benchmark projects. Doropo is located in northeastern Côte d’Ivoire approximately 600 km east of the ABC Project site. It is a similar environment to the Project and is located at a similar latitude and distance from the main port of Abidjan. Therefore, the project logistics and associated costs are considered appropriate for the Project at a Scoping Study level. This study assumes the following fleet:

- 300 t and 150 t class excavators matched to 90 t payload haul trucks for all mining activities,
- Dozers for floor control and management of the waste rock dump tip-head,
- Graders for road maintenance,
- Front end loaders for ongoing ROM rehandle, stockpile reclaim, and general site maintenance,

- Water trucks for dust suppression in all mine working areas.

### 1.3.1 Pit Optimisation

The pit optimisation was undertaken using the Geovia Whittle (“Whittle”) software tool. The input parameters are detailed in Section 4 Mining.

### 1.3.2 Optimisation Results

The optimisations were done separately on the central and southern models. A number of sensitivities were run with the following observations:

- The Kona Central is marginally more sensitive to parameter changes than Kona South, most likely due to the Kona South’s higher average grade,
- As is usual, both pits are most sensitive to changes in (gold) price or recovery, inputs that directly affect revenue. In the case of the Kona Central, it is an almost 3-fold sensitivity on average discounted cash flow (“DCF”) (i.e. a 20% variation in price or recovery results in a 60% change in average DCF). The Kona South pit DCF sensitivity is just over 2-fold,
- Total tonnes is an indication of overall pit size sensitivity. Kona South shows a 1:1 sensitivity ratio for price to total tonnes and the same for recovery. It is less sensitive to costs at 1:0.6. Kona Central is more sensitive at 1:1.3 for price and recovery and 1:0.8,
- Both Kona Central and Kona South are relatively insensitive to slope changes, most likely a function of the relatively low strip ratios.

Resolute Mining selected a gold price of US\$2750/oz as the basis for this study’s financial evaluation.

Evaluation of the average DCF shells for this gold price indicated that the base case slopes detailed in Section 4.8.2 were most likely too steep to account for ramps across the pit for multiple stages. This was primarily a result of the pit walls being predominantly in fresh material at the steepest slopes of 55°. Therefore, to select a shell for the purposes of generating a realistic life of mine schedule, an optimisation was run at the selected price at slopes of 30°, 40° and 50° for oxide, transitional, and fresh material respectively.

The shells selected for the further evaluation in the study are summarised in Table 1-2.

**Table 1-2: Optimisation Results – Shells Selected for Scheduling**

| Pit      | Scenario | Shell | Rev. Fac. | Ore    |      |           |           | Waste   | Total   | Undisc. Cashflow | Strip Ratio |
|----------|----------|-------|-----------|--------|------|-----------|-----------|---------|---------|------------------|-------------|
|          |          |       |           | kt     | g/t  | Con. oz.  | Rec. oz.  | kt      | kt      | \$M              |             |
| Central  | C17      | 24    | 0.96      | 52,561 | 0.66 | 1,110,037 | 915,622   | 76,019  | 128,580 | \$729.2          | 1.45        |
| South    | S17      | 23    | 0.94      | 30,678 | 0.91 | 900,165   | 764,826   | 74,346  | 105,024 | \$883.5          | 2.42        |
| Combined | C/S17    |       |           | 83,239 | 0.75 | 2,010,202 | 1,680,447 | 150,365 | 233,604 | \$1,612.7        | 1.81        |

The final optimisation parameters generated the following oxide, transitional and fresh cut-off grades which were carried through into the mine scheduling were 0.255 g/t, 0.259 g/t and 0.376 g/t respectively.

### 1.3.3 Stage Layout and Scheduling Parameters

For scheduling purposes, the selected shells were split into three approximate stages to allow for:

- Initial targeting areas of higher value areas,
- Balancing of ore and waste on a period-by-period basis.

The stage design layout for Kona Central pit and Kona South pit are shown in Figure 1-3 and Figure 1-4 respectively.

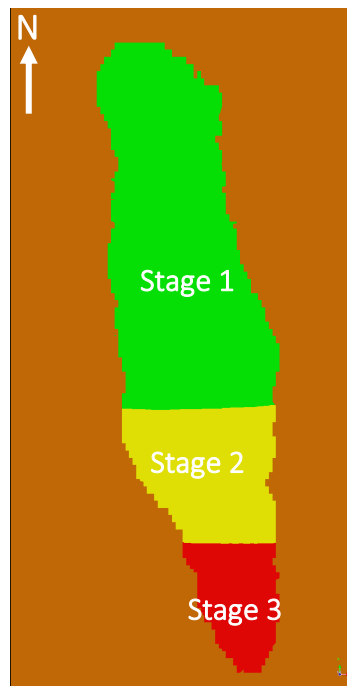


Figure 1-3: Central Pit Stage Layout

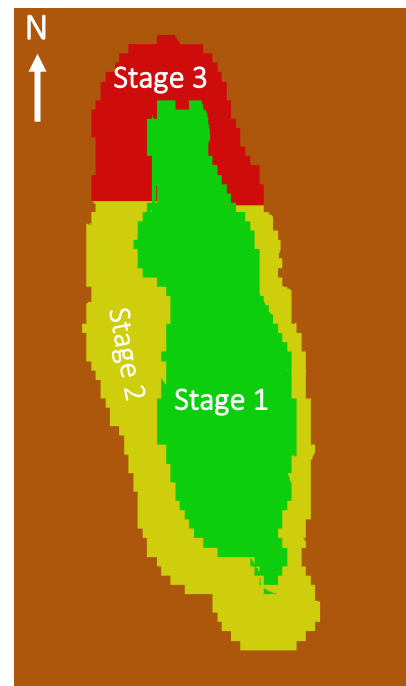


Figure 1-4: South Pit Stage Layout

Other scheduling constraints included:

- Mining production rates based on 7.75 Mtpa for a 300 t excavator and 6.25 Mtpa for a 150 t unit,
- Maximum vertical advance rate of 50 m per year at any given stage,
- A mining priority sequence of:
  1. South Stage 1
  2. Central Stage 1
  3. South Stage 2
  4. Central Stage 2
  5. South Stage 3
  6. Central Stage 4
- A plant ramp-up in the first half year of production of 88.3% of nominal throughput, based on 50% in month 1, 80% in month 2 and then 100% thereafter.

### 1.3.4 Scheduling Results

The schedule outcomes are present graphically in Figure 1-5 to Figure 1-7.

It can be seen that Kona South Stage 1 is mined first, with Kona Central Stage 1 starting in Year 1 H1 followed by Kona South Stage 2 straight after. While the schedule stockpiles some low-grade material to try and raise the plant feed grade. At the plant throughput rate of 7 Mtpa, the schedule is constrained by the ore that can be presented at the overall mining rate and within bench limits. The drop in grade seen through Year 3 is most likely a result of this limitation. The grade presentation profile can almost certainly be improved through an improved stage layout and use of a more sophisticated scheduling optimiser which may be addressed in future studies.

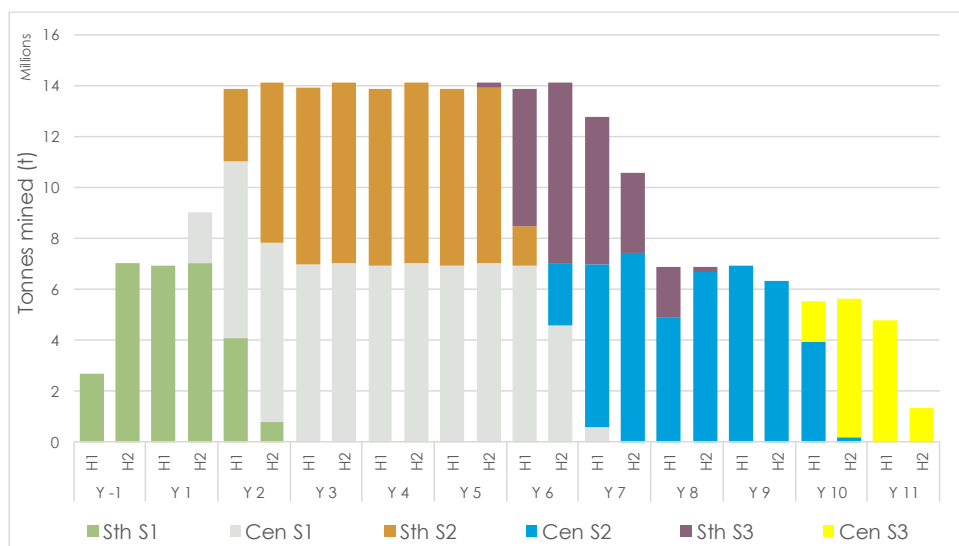


Figure 1-5: Total Material Mined by Stage

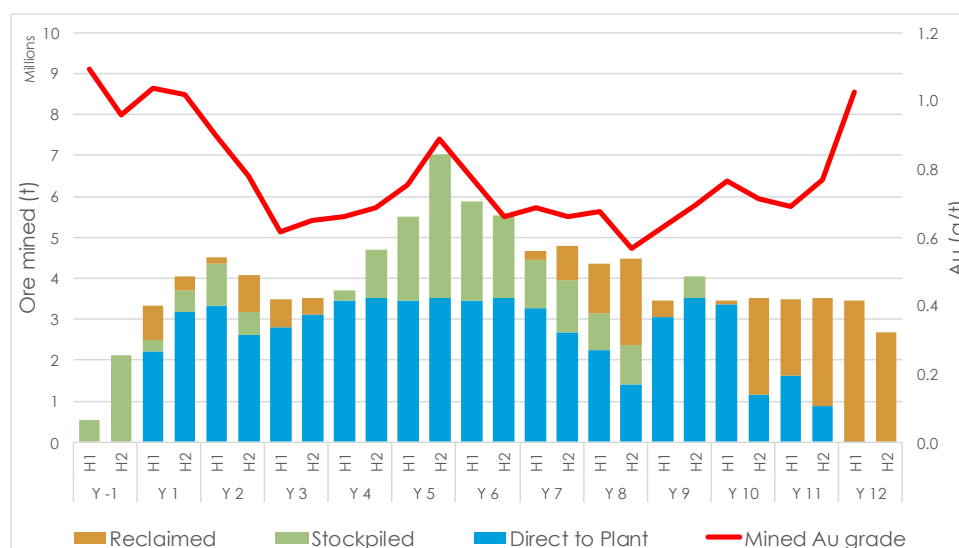


Figure 1-6: Ore Mined by Stage

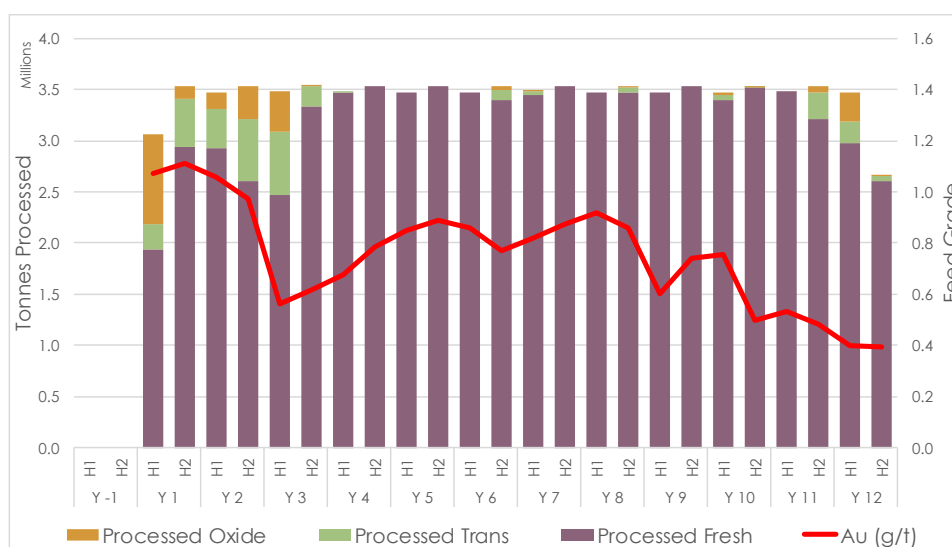


**Figure 1-7: Process Plant Feed by Stage**

The following observations are made:

- Schedule does not exceed the prescribed 10 bench per year turnover limit,
- In general, only two stages operating at any time other than start and end of stages,
- Plant feed is maintained through the life of mine,
- Higher grade material is fed for the first two years (average 1.1), with a dip in Year 3 to 0.56 g/t before elevating again by Year 5. It then averages 0.85 g/t from Year 5 to Year 8 before decreasing over the remaining mine life, opportunity for future optimisations,
- Stockpile balance peaks at approximately 14 Mt through Year 7 to 8, of which approximately 25% is high grade material.

### 1.3.5 Project Mining Cost Estimate

Mining costs were determined utilising a similar approach to the mining costs developed for the pit optimisation process. The only key change was to apply the global average load and haul cost from the Doropo DFS, specific pits were selected that more closely replicated the actual haulage distance for the Kona Central and Kona South pits.

The resulting total mining cost estimate for the project totals US\$1,041 M which equates to US\$4.46 / total tonne mined.

## 1.4 Metallurgy

Metallurgical testwork completed to date is limited to a single historical composite sample (ALS, 2018), supplemented by BLEG testwork on 50 drill core samples. As such, the current metallurgical understanding is considered preliminary and indicative only, additional testwork will be required as the project progresses to PFS.

Gold occurs predominantly as native gold, with minor association to sulphide minerals such as arsenopyrite. While this suggests generally free-milling behaviour, the presence of sulphides and organic carbon introduces uncertainty regarding potential refractory behaviour and gold-robbing characteristics.

The comminution testwork indicated that the ore is very hard and competent implying relatively high grinding energy requirements and associated operating cost.

Two processing routes were assessed:

- Gravity recovery followed by cyanidation,
- Flotation followed by concentrate regrind and cyanidation.

The flowsheets achieved similar overall recoveries (approximately 87%–89%). The gravity plus cyanidation (“CIL”) flowsheet achieved the highest recovery (88.9%) with significantly lower reagent consumption and therefore been selected as the preferred processing route for the Study.

BLEG testwork indicates high gold recoveries (average ~91%), supporting good leachability; however, these results are considered optimistic due to aggressive test conditions.

The gravity followed by the CIL flowsheet is considered technically viable. However, the limited testwork presents a high level of uncertainty, and further metallurgical testwork is required to support progression to PFS.

## 1.5 Process Plant

The ABC Project process plant is designed as a conventional gold processing facility capable of treating 7 Mt/y of ROM ore. The selected flowsheet follows a typical gold processing flowsheet comprising of crushing, SABC, gravity recovery, and carbon in leach (“CIL”). This flowsheet represents a proven and widely applied approach for gold ore types.

The design incorporates a primary gyratory crusher and a SABC grinding circuit, reflecting the relatively competent ore (BBMWi ~20 kWh/t) and the need for operational flexibility. The inclusion of a pebble crushing circuit is to mitigate SAG mill critical size buildup and maintain throughput.

The gold recovery is high, with an overall plant recovery of 88.9%. The use of an intensive leach reactor (“ILR”) for the gravity concentrate treatment further enhances recovery and reduces gold lock-up.

The plant design includes key features to support operability and flexibility, including:

- Stockpiling for surge capacity,
- Standby equipment in critical areas to achieve ~91.3% availability,
- A pre-leach thickener to optimise leach performance,
- A standard AARL elution circuit with carbon regeneration.

Tailings detoxification via the SO<sub>2</sub>/air (SMBS) process ensures compliance with environmental discharge criteria (WAD CN ≤ 50 ppm), with water recovery from the TSF supporting reduced freshwater demand.

## 1.6 Tailings Storage Facility and Water Management

Knight Piésold Pty Ltd (“KP”) was commissioned by MineScope to undertake a Scoping Study for the Tailings Storage Facility (“TSF”) and Water Management sections for the Project.

A conventional thickened, lined tailings storage facility has been proposed for the Study. The TSF will be a cross valley storage facility formed by multi-zoned earth fill embankments. The TSF will be designed to accommodate the total quantity of tailings over the life of mine and comprise of a

single cell which will remain in continuous operation throughout the life of mine. TSF embankments will be constructed using a downstream raise construction method.

Tailings will be discharged into the TSF by sub-aerial deposition methods, using a combination of spigots at regularly spaced intervals around the TSF embankments to locate the supernatant pond in the decant area, which will be returned to the process plant as process water. A downstream seepage collection system has been allowed for, along with groundwater and embankment stability monitoring systems. A TSF closure concept and allowance has been captured within the Study.

Raw water will be collected from the Boa River, which flows in a south-easterly direction across the southern end of the Project tenement, via a water harvest dam. The dam effectively acts as a weir to allow harvesting of water from the river in the wet season with minimal river flow interruption. The harvested water will be pumped to the water storage dam ("WSD") for later use in the process plant and other site activities. Dewatering bores will be installed in and around the mining pits, to maintain a safe working environment, with water pumped to the WSD.

## 1.7 Infrastructure

The proposed ABC Project plant and infrastructure location was selected by limiting construction to occur within the current tenement boundary, along with avoiding interaction with nearby communities and protected forests. Consideration was also given to minimise ore haulage, waste rock haulage and cut-and-fill requirements.

The following new infrastructure has been allowed for to support mining, processing and waste management:

- Site roads (haul and general) and site access road from the existing national road network,
- Helipad,
- New 48 km 225 kV transmission line to connect site to the Labosa substation,
- Power distribution on site and emergency power generation,
- Site facilities and services including but not limited to, raw water harvesting, water storage dam, water treatment, sewage treatment, general non-production waste management, communications, fuel supply, medical, analytical, cleaning, catering and laundry, site security, maintenance, and transport services,
- Plant and general infrastructure buildings,
- Tailings storage Facility,
- Mine Services Area consisting of infrastructure facilities to support the mining operation,
- Accommodation, permanent and construction camps.

ECG Engineering ("ECG") was commissioned by MineScope to undertake a Scoping Study for the HV power supply and connection to the National Interconnected Transmission System in Côte d'Ivoire. The Project is estimated to have a maximum demand of 39.5 MW and an expected annual energy consumption of approximately 328 GWh. Power supply reliability in Côte d'Ivoire is generally strong. As such, the Study has assumed that the preferred power supply option is connection to the Côte d'Ivoire national electricity grid. Emergency power has been allowed for via diesel fired generators, which will service the process plant and accommodation camp.

Transport and logistics options to and from site will be primarily via an upgraded access road connecting site to the national highway, A7. Air transport to site is possible via a site helipad or



nearby commercial airstrips located at the cities of Odienné and Man. Each of these airports have regular flights to the capital city of Abidjan. Road access from the Project site to Abidjan, once the access road has been upgraded, is approximately 800km, which will likely take 10-12 hours to traverse. Seaport facilities are available in the capital city of Abidjan (in the south-east) and the port city of San-Pédro (in the south-west). There are no rail facilities suitable for servicing the ABC Project.

## **1.8 Permitting Requirements**

Up until this point, little work has been conducted to understand the permitting requirements for the Project or identify specific site requirements with respect to environmental, social and governance (“ESG”). As the ABC Project is a greenfield project, care needs to be given to develop a robust environmental and social impact assessment (“ESIA”) and permitting strategy to allow project progression. A project permitting strategy has been developed for this Study. Execution of this strategy will ensure that both Côte d’Ivoire requirements, as well as International Best Practice Standards (“IBPS”) requirements, the Equator Principles (“EP”) and the International Finance Corporation (“IFC”) Performance Standards (“PSs”), are adhered to for future studies.

## **1.9 Operations Management**

The mining and processing operation will be operated 24 hours per day, 365 days per year using a predominantly Ivorian workforce with supplementary expatriate personnel where the appropriate skill sets are not available in country.

The mining operation will be conducted by a competent and experienced mining contractor. The contractor will be responsible for the operation and maintenance of the necessary mining equipment, supervision of mining operations and provision of the infrastructure required to deliver the mining services. Resolute will maintain overall management of the mining operation with a mining team that will be responsible for supervision and control of the contractors (mining and grade control drilling), geological, geotechnical and mine planning technical support (including survey control), and grade control sampling. The processing and infrastructure facilities will operate on a continuous basis by Resolute personnel.

### **1.10 Project Execution**

The Project Execution Plan describes a delivery strategy that will be further developed during future Studies. Under the plan, a single organisation (the Engineer) will undertake engineering, procurement and construction management (“EPCM”) of the process plant and infrastructure.

The mining contractor will be responsible for all aspects of the mine establishment and operation including installation of much of the owners mine capital items. The mining contractor will mobilise to site with a small establishment team to prepare site services and commence mine site civils.

Resolute will maintain an Owners team which will have contractual and technical oversight on the Engineer and Mining Contractor as well as responsibility for government and community relations, operational readiness and other minor contractors (e.g. accommodation construction contractor).

The preliminary project schedule is based upon the delivery strategy approach described above and is estimated to be 50 months from the conclusion of the Scoping Study, with a duration of 26 months from final investment decision to first gold pour.

The mining contractor will be brought to site with sufficient time to establish the surface mine infrastructure and complete start up development prior to the process plant being available for ore processing. The schedule will be updated and expanded during future studies.

### 1.11 Capital Cost Estimate

The capital cost estimate for the Scoping Study has been prepared by the contributing parties to an accuracy of  $\pm 30\%$ , equivalent to a Class 5 AusIMM level. A summary of the capital cost estimates is provided in Table 1-3. It is reported in United States dollars (US\$) with a base date of second quarter 2026 (Q2 2026).

**Table 1-3: ABC Scoping Study Capital Cost Estimate Summary**

| WBS | Cost Area                 | Units        | Total        | Contingency (%) |
|-----|---------------------------|--------------|--------------|-----------------|
| 100 | Mining                    | US\$M        | 43.6         | 10.0            |
| 200 | Process Plant             | US\$M        | 139.1        | 30.0            |
| 300 | Reagents & Plant Services | US\$M        | 38.9         | 30.0            |
| 400 | Infrastructure            | US\$M        | 131.5        | 30.0            |
| 500 | Construction Indirects    | US\$M        | 64.3         | 10.0            |
| 600 | Project Indirects         | US\$M        | 38.0         | 10.0            |
| 700 | Owners Costs              | US\$M        | 77.3         | 10.0            |
|     | <b>Sub-Total</b>          | <b>US\$M</b> | <b>532.5</b> |                 |
| 900 | Contingency               | US\$M        | 115.1        | 21.6            |
|     | <b>Total</b>              | <b>US\$M</b> | <b>647.6</b> |                 |

The mining estimate has been built up by Orelogy based on the mining contractor RFQ submission utilised for the Doropo DFS Update. Additional capital cost was estimated based on the Doropo DFS capital cost estimate and other equivalent West African projects for all items typically excluded from a contract miners scope (e.g. surface infrastructure, site preparation etc.).

The process plant and associated infrastructure was developed by MineScope based on Doropo DFS capital cost estimate and other equivalent West African projects and factored accordingly. Where unique equipment were selected for the process vendor pricing was obtained.

The tailings and waste storage facility has been designed and cost estimated by Knight Piésold using the Project's waste and production schedule.

The grid power supply and power unit rate has been developed by ECG Engineering. A first principles estimate was built up. The remainder of infrastructure costs have been derived from Doropo DFS capital cost estimate and other equivalent West African projects and factored accordingly.

Indirect costs and owner's costs were derived from the Doropo DFS estimate and factored accordingly.

A contingency allocation ranging between 10-30% has been applied to the different WBS in the capital cost estimate as per Table 1-2. The contingency selected for each WBS was measured against the maturity of the source data and engineering conducted during the Study. The overall contingency is 21.6%.

## 1.12 Sustaining and Closure Costs

Sustaining capital is used to account for the complete replacement of original capital equipment that have reached the end of their useful life on a like-for-like basis. It is not part of the maintenance costs for capital assets. The sustaining capital cost summary is depicted in Table 1-4.

**Table 1-4: Sustaining Cost Summary**

| WBS     | Description           | Units        | Sustaining Cost per year Year 1 | Sustaining Cost per year Years 2-12 | Total        |
|---------|-----------------------|--------------|---------------------------------|-------------------------------------|--------------|
| 400     | TSF and WSD           | US\$M        | -                               | 10.7                                | 117.5        |
| 100-700 | Process Plant & Other | US\$M        | 4.2                             | 2.8                                 | 34.8         |
|         | <b>Total</b>          | <b>US\$M</b> | <b>4.2</b>                      | <b>13.5</b>                         | <b>152.3</b> |

The cost of sustaining capital for the processing plant and other infrastructure over the life of the ABC Project was factored off the total direct mechanical cost for the processing plant. A factor of 3% was used for year 1 and 2% was used for every year after for years 2-12 as advised by Resolute.

Knight Piésold produced the capital costs for the TSF. The lump sum cost of the TSF lifts from stage 2 onwards is US\$117.5M. For the purposes of calculating sustaining capital costs for the TSF, this cost has been evenly spread across the life of mine from year 2 to year 12 on an annualised basis.

Closure costs include remobilisation of personnel, the physical removal of the mining and processing infrastructure and making the sites safe to allow for rehabilitation works. Rehabilitation costs include the costs of fulfilling the agreed environmental plan, government and legislative requirements and community expectations. These associated costs for the Project are shown in Table 1-5.

The majority of the closure and rehabilitation costs were sourced directly from the Doropo DFS, except for the TSF which was provided by Knight Piésold. Resolute have advised that a contingency of 30% should be applied to the total closure and rehabilitation costs. The total costs were then offset by the proceeds from the resale of equipment and infrastructure, the amount for which was also supplied by Resolute.

**Table 1-5: Closure and Rehabilitation Costs**

| Description                              | Cost (US\$)       | Reference           |
|------------------------------------------|-------------------|---------------------|
| <b>Physical Closure Costs</b>            | <b>55,840,000</b> |                     |
| Mine Pit Rehab & Safety                  | 900,000           | Doropo 2025 DFS     |
| ROM Pad Rehab                            | 180,000           | Doropo 2025 DFS     |
| Plant Decommissioning and Rehab          | 18,000,000        | Doropo 2025 DFS     |
| Waste Rock Dump Rehab                    | 3,000,000         | Doropo 2025 DFS     |
| WSD and Water Harvesting Decommissioning | 60,000            | Doropo 2025 DFS     |
| Tailings Storage Facility                | 33,100,000        | KP ABC SS Estimate  |
| Other Buildings and Infrastructure       | 600,000           | Doropo 2025 DFS     |
| <b>Other Closure Costs</b>               | <b>2,640,000</b>  |                     |
| Closure Investigations (Contaminants)    | 1,200,000         | Doropo 2025 DFS     |
| Post Mine Monitoring                     | 1,440,000         | Doropo 2025 DFS     |
| <b>Sub-total</b>                         | <b>58,480,000</b> |                     |
| Contingency (30%)                        | 17,544,000        | Advised by Resolute |
| Resale of Equipment and Infrastructure   | -10,000,000       | Advised by Resolute |
| <b>Total</b>                             | <b>66,024,000</b> |                     |

### 1.13 Operating Cost

The operating cost estimate for the Scoping Study has been prepared by the contributing parties to an accuracy of  $\pm 30\%$ , equivalent to a Class 5 AusIMM level. A summary of the operating cost estimates is provided in Table 1-6. It is reported in United States dollars (US\$) with a base date of second quarter 2026 (Q2 2026).

**Table 1-6: ABC Scoping Study Operating Cost Estimate Summary**

| Cost Area                                                     | Oxide/Transitional Ore |              | Fresh Ore     |              |
|---------------------------------------------------------------|------------------------|--------------|---------------|--------------|
|                                                               | Cost (\$M/y)           | Cost (\$/t)  | Cost (\$M/y)  | Cost (\$/t)  |
| <b>Mining</b>                                                 | <b>81.42</b>           | <b>11.63</b> | <b>81.42</b>  | <b>11.63</b> |
| Owner's Team Labour                                           | 1.70                   | 0.24         | 1.70          | 0.24         |
| Contract Mining                                               | 71.56                  | 10.22        | 71.56         | 10.22        |
| Stockpile Rehandle                                            | 1.72                   | 0.25         | 1.72          | 0.25         |
| ROM Reclaim                                                   | 3.10                   | 0.44         | 3.10          | 0.44         |
| Grade Control                                                 | 3.34                   | 0.48         | 3.34          | 0.48         |
| <b>Process Plant, Reagents, Plant Services &amp; Infrast.</b> | <b>77.03</b>           | <b>11.00</b> | <b>94.75</b>  | <b>13.54</b> |
| Labour                                                        | 4.65                   | 0.66         | 4.65          | 0.66         |
| Power                                                         | 28.64                  | 4.09         | 39.22         | 5.60         |
| Maintenance Materials                                         | 6.74                   | 0.96         | 8.03          | 1.15         |
| Reagents & Consumables                                        | 33.87                  | 4.84         | 39.72         | 5.67         |
| Miscellaneous                                                 | 3.13                   | 0.45         | 3.13          | 0.45         |
| <b>General and Administration</b>                             | <b>10.06</b>           | <b>1.44</b>  | <b>10.06</b>  | <b>1.44</b>  |
| Labour                                                        | 5.88                   | 0.84         | 5.88          | 0.84         |
| Miscellaneous                                                 | 4.18                   | 0.60         | 4.18          | 0.60         |
| <b>Total</b>                                                  | <b>168.51</b>          | <b>24.07</b> | <b>186.22</b> | <b>26.60</b> |

An operating cost estimate for mining was provided by Orelogy based on the mining contractor RFQ submission utilised for the Doropo DFS Update. The site based owners team was estimated based on the Doropo DFS estimate and other equivalent West African projects. The operating cost estimate includes all site-related operating costs associated with processing both the oxide/transitional ore and fresh ore types, from the ROM pad to produce final gold doré.

The processing plant, reagents and plant services labour requirements were derived from the Doropo DFS. An overhead cost has been applied as a percentage of the base wage for each employee, to cover accommodation, transport, on-costs, and other miscellaneous labour-related costs. The split of accommodation costs between site accommodation (camp) and residential accommodation (villages) has been derived from the Doropo Project.

Power costs have been developed from the mechanical and electrical equipment lists, based on the consumed power from each WBS. Power consumption has been estimated for plant equipment drives based on the installed power with typical service factors. The power cost estimate has been calculated from the annualised power consumption and the cost of electricity supplied by ECG Engineering. A consumed power allowance for the plant buildings and workshops and mining facilities was factored from the Doropo DFS and included in the estimate.

Maintenance materials costs are factored from the direct installed capital costs found in the capital cost estimate.

Reagent consumption rates and operating and maintenance consumables quantities were either sourced from the ABC process design criteria, Doropo DFS or benchmarked from similarly sized processing plants within the region. Unit costs, including those for diesel, have been sourced from the Doropo DFS (inclusive of delivery to site) or benchmarked from similarly sized processing plants.

Miscellaneous operating costs consist of laboratory, external consultant costs and mobile equipment costs. These have been derived from the Doropo DFS operating cost estimate and MineScope's database.

The general and administration ("G&A") cost estimate covers the indirect costs associated with the ABC Project and estimated at US\$10.1 M per year. These have been produced by MineScope in consultation with the Resolute.

#### **1.14 Market Analysis**

The gold market is characterised by a deep, liquid and globally traded commodity with transparent pricing mechanisms. As a result, gold production does not require active product marketing at the project or company level.

There is an established and readily accessible market for gold doré and refined bullion. Gold doré produced from the Project would be transported to third party refiners for refining into bullion. A number of internationally recognised refiners operate globally, with refiners accredited under recognised "Good Delivery" standards, such as those administered by the London Bullion Market Association ("LBMA"), providing access to the global wholesale gold market.

#### **1.15 Financial Analysis**

An economic analysis has been undertaken by Resolute and incorporates Study outputs including milled tonnages and grades, associated recoveries, gold price (revenue), operating costs, bullion transport and refining charges, government royalties and capital expenditures (both initial and

sustaining). The purpose is to provide an estimate of project cashflows and overall economics for evaluation.

The economic analysis applies a long-term gold price of USD3,500/oz, in line with consensus forecasts, on a flat line basis from commencement of production.

The Project is estimated to produce an average 141 Koz per annum over its 12 year mine life, at an average all-in sustaining cost (AISC) of \$1,614/oz gold sold. The initial capital is expected to be \$648M.

The Project economics are:

- A pre-tax NPV5% of \$1,624M and an IRR of 46%
- A post-tax NPV5% of \$1,178M and an IRR of 39%

Table 1-7 provides a summary of the Project's physical, financial, and economics metrics.

**Table 1-7: ABC Project Physical, Financial, and Economic Metrics**

| Parameter                                    | Units | Value |
|----------------------------------------------|-------|-------|
| <b>Production</b>                            |       |       |
| Mine Life                                    | years | 12    |
| Total gold production                        | koz   | 1,693 |
| Capital cost                                 | USDM  | 648   |
| <b>LOM (annual average)</b>                  |       |       |
| Gold production                              | koz   | 141   |
| Revenue                                      | USDM  | 494   |
| EBITDA                                       | USDM  | 276   |
| Free cash flow                               | USDM  | 210   |
| Cash cost                                    | \$/oz | 1,524 |
| AISC                                         | \$/oz | 1,614 |
| <b>Project years 1 to 5 (annual average)</b> |       |       |
| Gold production                              | koz   | 163   |
| Revenue                                      | USDM  | 569   |
| EBITDA                                       | USDM  | 323   |
| Free cash flow                               | USDM  | 262   |
| Cash cost                                    | \$/oz | 1,493 |
| AISC                                         | \$/oz | 1,565 |
| <b>Pre-Tax Economics</b>                     |       |       |
| NPV5%                                        | USDM  | 1,624 |
| IRR                                          | %     | 46%   |
| <b>Post-Tax Economics</b>                    |       |       |
| NPV5%                                        | USDM  | 1,178 |
| IRR                                          | %     | 39%   |
| Payback (from first production)              | Years | 1.4   |

### 1.16 Forward Work Plan

The next phase of work for the Project is to move to a Pre-Feasibility Study or Definitive Feasibility Study. To allow for study progression, site baseline studies, surveys and fieldwork are required to be completed.

The initial key activities include:

- Environmental baseline studies,
- Drill programme (resource, geotechnical, metallurgical),
- Water supply investigations,
- Metallurgical testwork,
- Geotechnical testwork,
- Resource upgrade (to support any potential Reserve declaration).

The following general work will need to be carried out in the next phase of study

- Site survey,
- Overall surface mine layout and optimisation,
- Mine option evaluation and design,
- Hydrology and hydrogeology investigation,
- Geotechnical investigation,
- Metallurgical testwork to define/confirm process performance,
- Surface engineering design,
- Mine dewatering engineering design,
- Process plant design,
- Mine Design to support a JORC Reserve estimate,
- Operational readiness planning,
- Completion of trade off studies.

## 2.0 Project Description

### 2.1 Introduction

Resolute Mining Limited (“Resolute”), have requested that MineScope Services Pty Ltd (“MineScope”) undertake a Scoping Study (the “Study”) on the ABC Project (the “Project”), an undeveloped gold deposit located in northwest Côte d’Ivoire. The Study aligns with an AusIMM Class 5 Scoping Study and associated levels of development and accuracy.

### 2.2 Project Location and Access

The ABC Project is located in the Kabadougou region of northwest Côte d’Ivoire, approximately 90 km south-south-east of the city of Odienné, 150 km north-north-west of the city of Man, and 540 km north-west of Abidjan. The location of the Project is depicted in Figure 2-1, which also includes the Doropo Project for reference.

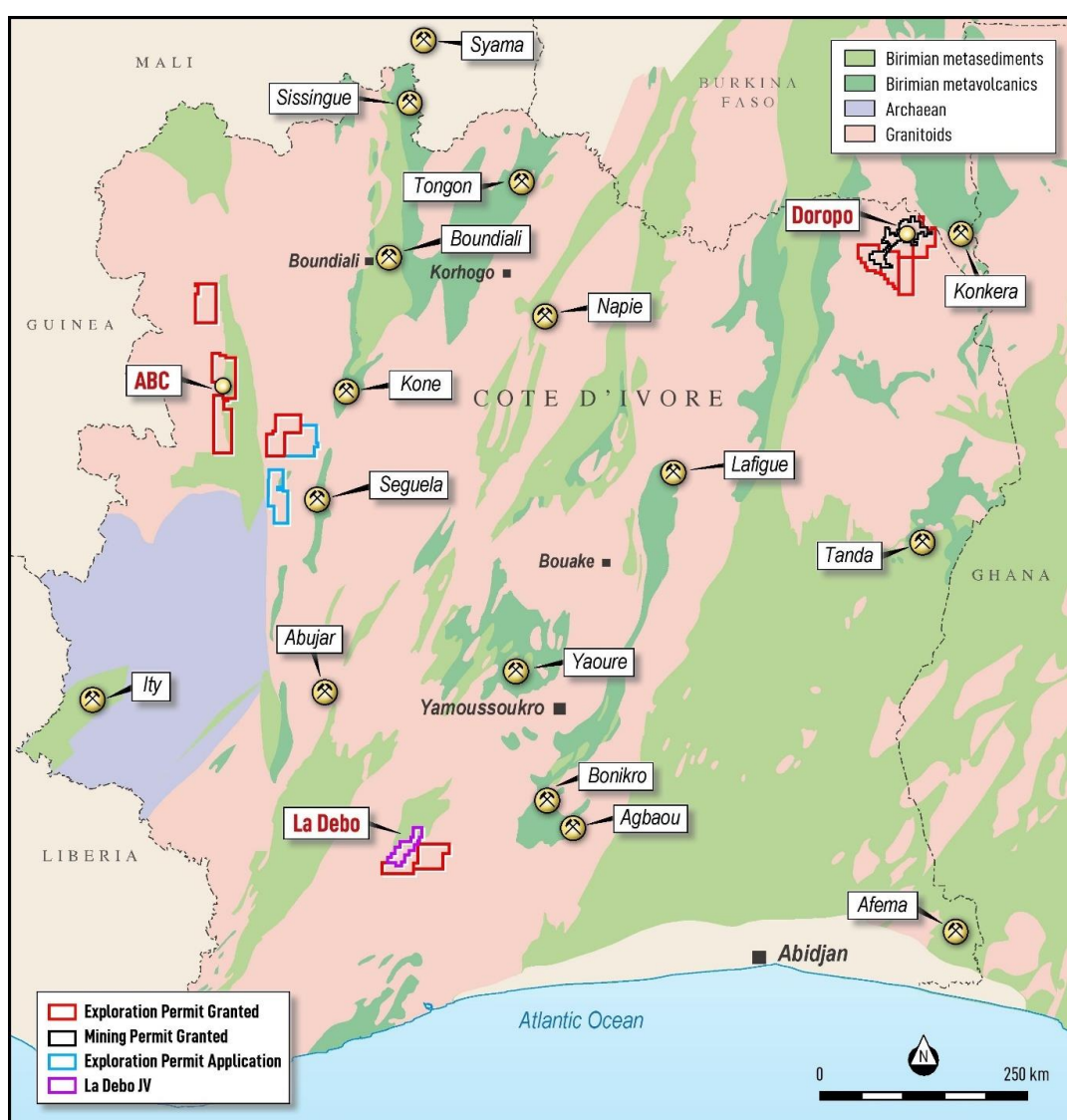


**Figure 2-1: Project Location**

The Kona permit is located adjacent to the A7 national highway, the main sealed road that joins Odienné to Yamoussoukro (A6) and beyond on the M1 motorway to Abidjan. A well-maintained



dirt road starts from the village of Mamoya, on the A7, to reach the village of Kona (approximately 16 km east) which is located within the permit. The Project site is approximately 13 hours from Abidjan.

Odienné is easily accessible by commercial airline, Air Cote d'Ivoire, three times a week, from Abidjan airport. The drive between Odienné Airport and Kona is 1.5 hours.

## 2.3 Project History and Ownership

The ABC (Archean-Birimian Contact) Project is made of up the Kona, Windou, Gbemanzo and Faraka Nafana Exploration Permits. Centamin plc ("Centamin") applied for the Kona exploration permit in December 2015, the permit was granted in November 2016 by presidential decree, field work commenced March 2017. The Faraka Nafana exploration permits were acquired by Centamin in 2017.

Centamin completed over 60,000 m of exploratory drilling, resulting in an inferred Mineral Resource Estimate of 2.16 Moz at 0.9 g/t gold. An NI 43-101 Technical Report was released by Centamin in November 2021, with an effective date of July 2021.

In November 2024 AngloGold Ashanti ("AGA") acquired Centamin, including the ABC Project and the Doropo Project. In May 2025 Resolute acquired these projects from AGA for US\$150 M.

This Scoping Study is the first study conducted on the ABC Project and released for public consumption, since the 2021 Technical Report conducted by Centamin.

## 2.4 Project Climate and Ambient Conditions

The Kabadougou Region of Côte d'Ivoire has a climate classified as "Sudanese-type", with a wet season from April to October and a dry season from October to April peaking from December to February when the site is under the hot, dry and dusty "Harmattan" wind from the Saharan regions.

The average annual rainfall is 1,385 mm, with the vast majority of this falling in the wet season, although water resources are considered non-seasonal. The mean average annual temperature is approximately 25°C.

Odienné is the nearest major city, located north of the Project, which has climatic conditions as illustrated in Figure 2-2, courtesy of the World Meteorological Organization<sup>1</sup>.

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<sup>1</sup> World Meteorological Organization (2026), <https://worldweather.wmo.int/en/city.html?cityId=2881>

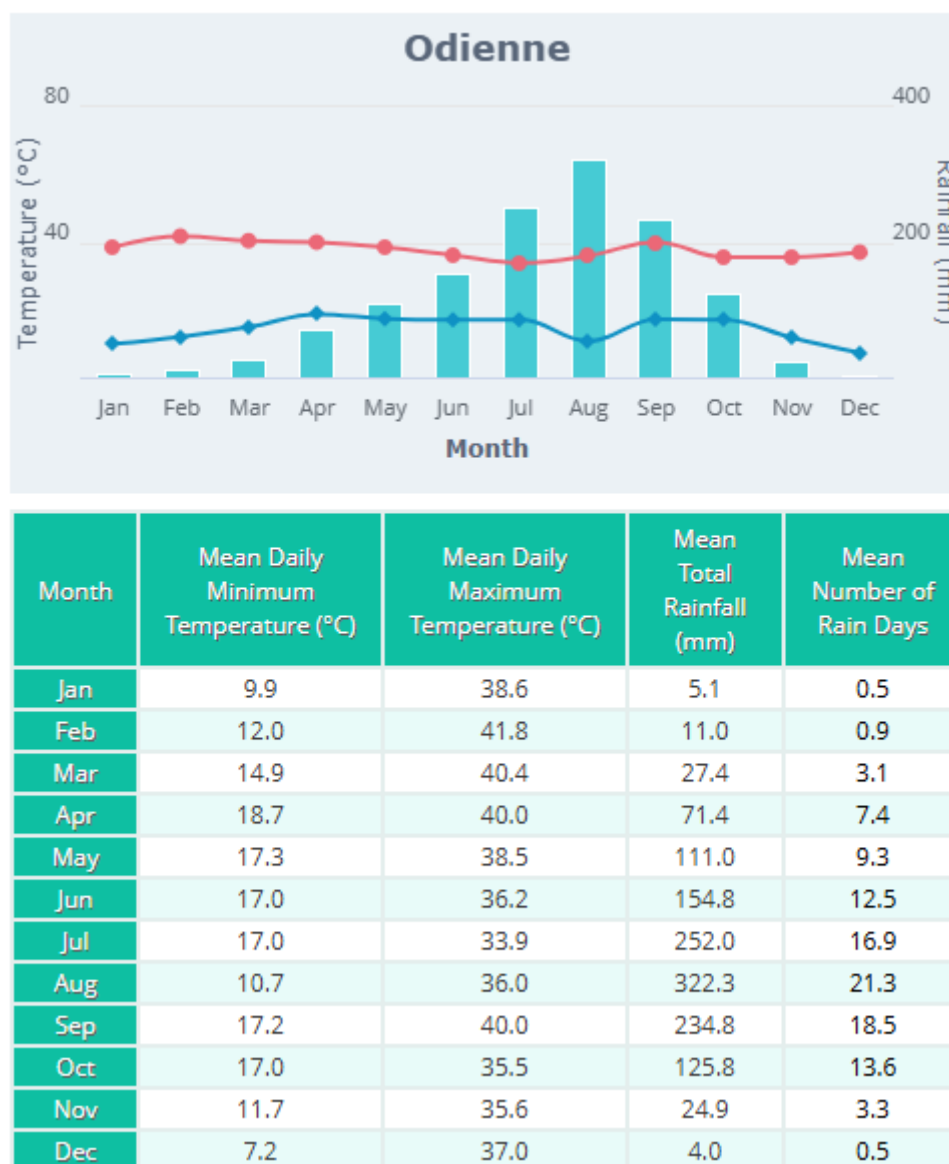


**Figure 2-2: Odiénne Climate**

## 2.5 Project Description

Subject to future studies, the ABC Project will likely consist of the following components:

- Open pit mining operations at moving approximately 15-30 Mtpa of material from both Kona Central and Kona South pits,
- A 7 Mtpa process plant producing gold doré,
- Onsite infrastructure including tailings storage facility ("TSF"), mine and plant workshops, water management facilities, and administration facilities, and
- Offsite infrastructure including camp, training and administration facilities.

## 2.6 Scoping Study Contributions

Multiple specialist consultants have contributed to the Study in addition to key Resolute personnel. Table 2-1 outlines the key external parties contributing to the Scoping Study.

**Table 2-1: Scoping Study Contributions**

| Consultant         | Scope of Work                                                                           |
|--------------------|-----------------------------------------------------------------------------------------|
| MineScope Services | Study Management, Metallurgy Review, Process Engineering and Infrastructure, Permitting |
| Orelogy            | Mining Study                                                                            |
| Knight Piésold     | Tailings and Water Management Study                                                     |
| ECG Engineering    | Power Supply                                                                            |

### 3.0 Geology and Mineral Resources

#### 3.1 Introduction

The ABC Project is located in the Kabadougou Region of the Denguélé District, in the north-west of Cote D'Ivoire. The Kona permit occurs approximately 600 km west of Resolute's Doropo Project (Bounkani region, north-eastern Cote d'Ivoire), and 540 km north-west of the capital city of Abidjan.

The ABC Project was acquired from AngloGold Ashanti in 2025, following the latter's takeover of Centamin. The Mineral Resource model utilised in this Scoping Study is that created by Cube Consulting ("Cube") in December 2020. A Technical Report was produced by Centamin in 2021 stating Mineral Resources for the ABC Project. Resolute has not completed any additional resource development drilling since the acquisition. The current stated Inferred Mineral Resource for the ABC Project is 72.0 Mt at a grade of 0.93 g/t for a contained 2.16 Moz of gold.

Geological information regarding the ABC Project is summarised from the Centamin 2021 Technical Report "NI 43-101 Technical Report Mineral Resource Estimate Update On The Kona Gold Deposit Cote d'Ivoire", which is available on the Resolute website or SEDAR (under 2021 Centamin filings).

#### 3.2 Regional Geology

The ABC Project is located within the Leo-Man shield (Figure 3-1, highlighted in red), where Paleoproterozoic rocks of the Birimian domain are in contact with the Archaean basement, with the contact known as the Sassandra suture. The ABC Project is situated within the Birimian domain.

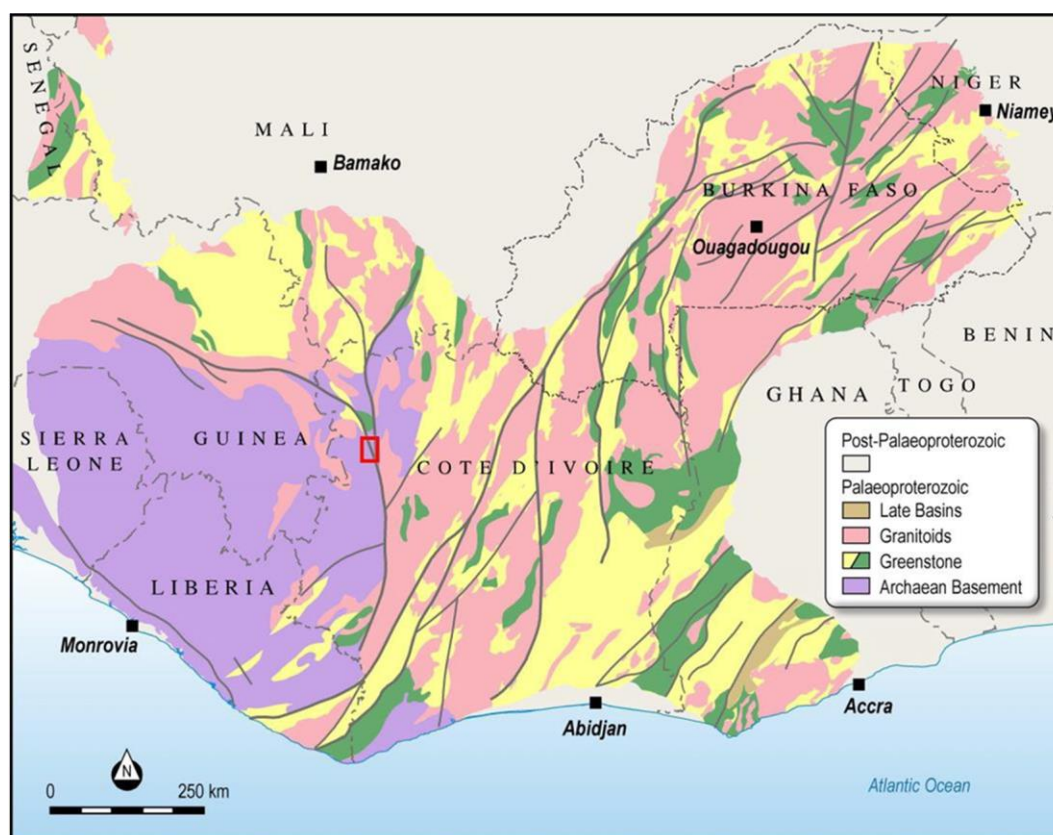


Figure 3-1: Geology of the Leo-Man Shield – from the BRGM interpretations

The structure within the Birimian domain was formed during the Eburnean megacycle between 2.5 to 1.6 billion years ago and the main tectono-metamorphic events occurred between 2.2 to 2.0 billion years ago. This Paleoproterozoic domain includes greenstone belts (volcano-sediments) bounded by large areas of tonalitic granite-gneiss, trondhjemite and granodiorite (TTG orthogneiss suite, Tonalite-Trondhjemite-Granodiorite). Later stages of alkaline and calc-alkaline granitic plutons intrude this rock package. The majority of the mafic dyke swarms which crosscut the Birimian rocks are Jurassic in age and relate to the opening of the Atlantic and the break-up of Pangaea.

### 3.3 Project Geology

The ABC Project's Kona permit includes approximately 25 km strike length of the Archean-Birimian Contact ("ABC"). Permit scale mapping and rock chip sampling in 2017 highlighted the Lolosso structure, a mineralised feature which traverses the Kona permit in a north-south direction. Although this structure is located just within the Archean domain, it is interpreted to be a western splay from the major transcurrent Sassandra Fault, where a narrow keel of later Birimian volcano-sediments is entrapped within an earlier Archean thrusting granite and adjacent gneissic sheets. It is this unit of Birimian volcano-sediments that hosts the mineralisation within the project area.

Fresh rock exposure in the area is limited due to tropical regolith weathering profile; but the main Kona deposit mineralisation follows a prominent silicified line of hills known as the Lolosso structure, which have limited surface regolith. Deeply weathered saprolite or transported soils and sediments cover most of the surrounding areas beyond the mineralised structure.

Two main areas within the Kona permit, Kona South and Kona Central, were identified in early stage exploration involving permit scale mapping and rock chip sampling. Initial drill testing and later resource definition drilling focused on the Kona South, followed by phased drilling at Kona Central. Drillhole collar locations within the Kona permit are shown in Figure 3-2.

At Kona the gold mineralisation is hosted almost entirely within a north-south trending psammite unit which dips at approximately 70° to the west. A calc-silicate hanging wall unit lies to the west and a paragneiss footwall unit to the east (Figure 3-2). A mafic volcanic unit abuts the calc-silicate unit further to the west, as the final part of the Birimian inlier stratigraphy. Beyond this to the west is the Archean granitic domain only 500-800 m to the west of the Kona mineralised structure, which sits on the eastern footwall of the inlier thrust.

The psammite unit has an average true thickness of 100 m at Kona South up to 200 m at Kona Central, and it is often interbedded with the calc-silicate lithologies. The psammite unit is fine to medium grained and a moderately well sorted dark-coloured sedimentary rock. The psammite has a feldspathic to arkosic composition; and the principal minerals observed in thin section are quartz, feldspar and biotite, as well as epidote and amphibole as minor accessory minerals.

The calc-silicate unit displays fine greenish coloured banding alternating with dark clastic banding, the latter being similar in composition to the psammite unit. This green banding is typically composed of calcite, epidote, plagioclase and amphibole, as well as minor amounts of biotite and muscovite. The unit is usually barren of any mineralisation and often behaves as the hanging wall unit.

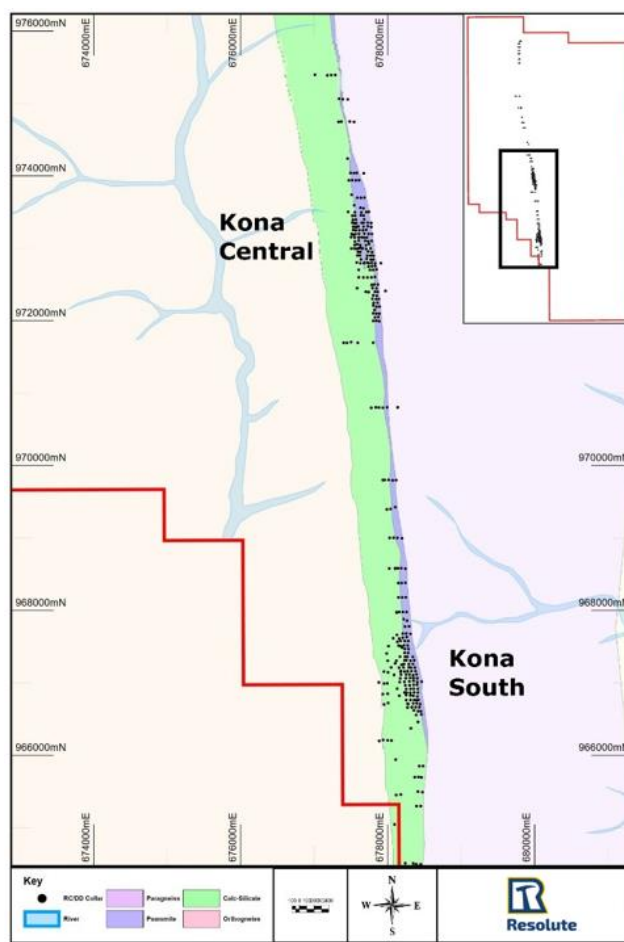


**Figure 3-2: Location and Local Geology of the Kona Deposit showing Drillhole Collars.**

The paragneiss unit is interpreted to have formed by the partial melting and migmatization of the psammite and calc-silicate sediments. Evidence of progressive partial melting is observed throughout the volcano-sedimentary units, becoming more intense closer to the footwall paragneiss contact. The paragneiss unit composition is therefore almost identical to that of the sediments and is mostly composed of feldspar, quartz and biotite, overprinted with large phenocrysts of tourmaline.

The presence of foliation and mesoscale folding is noted and this is more visible within the calc-silicate unit with the alternating banding of green and black minerals often folded. Foliation can also be observed within the psammite unit, but this is less obvious due to the homogeneous nature of this unit. Sulphides and small quartz veinlets are often observed to be orientated and controlled by the foliation which strikes north-south and dips approximately 70° to the west.

At Kona South the average thickness of the mineralisation is approximately 100 m, with well-developed mineralisation occurring for a strike length of approximately 1.0 km; whilst at Kona Central the mineralised zone is often much wider but with a lower grade tenor and currently drill defined over a strike extent of 1.6 km. The gold mineralisation has a close spatial relationship with arsenopyrite with the presence of arsenopyrite nominally corresponding to the presence of gold. Arsenopyrite occurs as disseminated grains and aggregates within the psammitic host, usually aligned to the foliation. The rock is strongly silicified within the mineralized zones; but quartz veining is rare to absent and not an important control to mineralisation.

### 3.4 Drilling

Drill definition took place at the Kona deposit between 2017 and 2020, with a total of 57,343.6 m of RC and diamond drilling having been completed (Table 3-1).

RC drilling utilised 5 ¼, 5 ½ and 5 ¾ inch drill bits, with holes predominantly dry and sample recovery high. No correlation is noted between the few lower recovery samples and gold grade. 162 of the total of 356 RC drill holes had over 10 m of intervals logged as moist or wet; but analysis of the downhole gold assay but no obvious pattern or downhole smearing was observed. The data was considered to be of acceptable quality for use in the resource estimation process.

Diamond drilling utilised PQ core for the initial 10 m, and then HQ core with some holes changing to NQ at depth. Core recovery was generally very high, with only isolated narrow zones of low recovery.

All drillhole collars were measured using DGPS or total station, and downhole surveying was conducted using Reflex EZ Shot.

**Table 3-1: Kona Deposit Drillhole Summary by Type**

| Prospect     | Hole Type | No Hole    | Total Metres    |
|--------------|-----------|------------|-----------------|
| Kona South   | DD        | 23         | 7,104.5         |
|              | RC        | 156        | 21,291.0        |
| Kona Central | DD        | 9          | 2,542.1         |
|              | RC        | 200        | 26,406.0        |
| <b>TOTAL</b> |           | <b>388</b> | <b>57,343.6</b> |

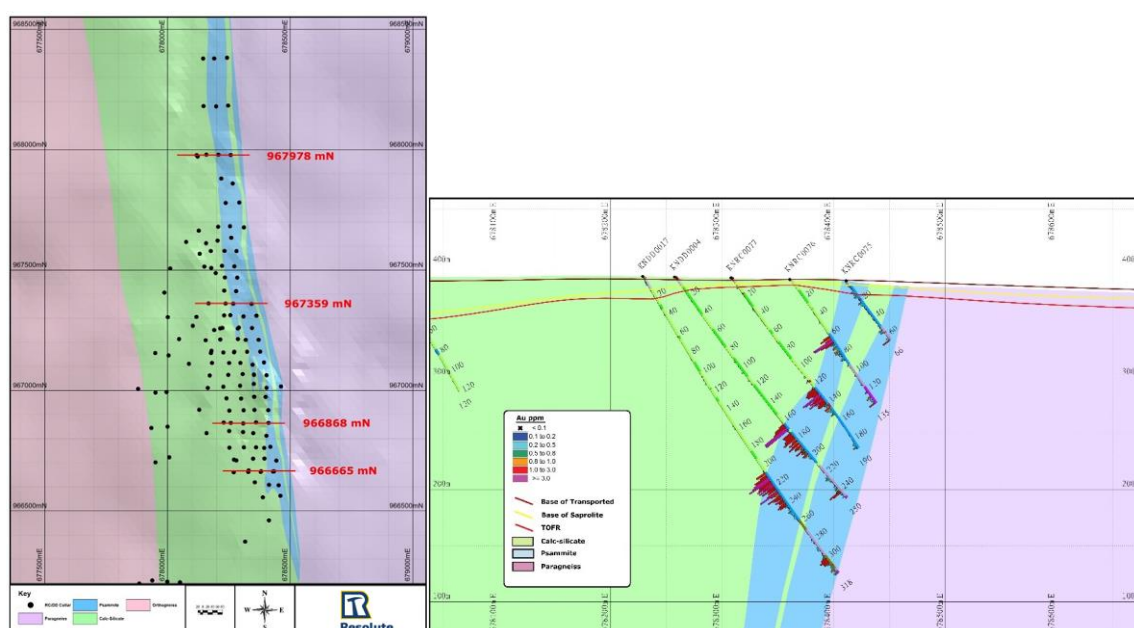


**Figure 3-3: Kona South Drillhole Collars and Example Cross Section 966,866N.**



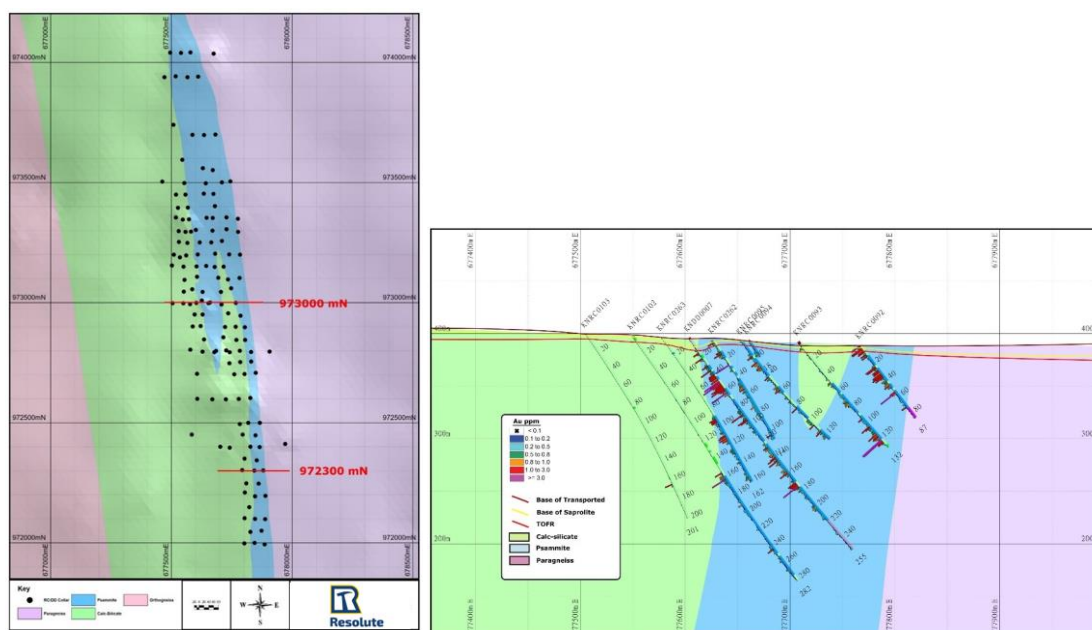


**Figure 3-4: Kona Central Drillhole Collars and Example Cross Section 973,000N.**

The current drilling at Kona South and Kona Central has been on 50 m spaced sections with drilling on each section at 25 m - 50 m spacing (Figure 3-3 and Figure 3-4).

### 3.5 Sampling

Samples from the RC drilling were collected into large plastic bags from the cyclone at 1 m intervals, with each 1 m sample weighed. The cyclone sample was then passed through a multi-stage riffle splitter to obtain a sample split of approximately 5 kg in weight. This sample was then passed through a further 3-tier splitter to achieve a sample weight of between 2 kg and 3 kg in a small plastic bag for submission to the laboratory. Sample numbers were written on the outside of the bag with black marker and a stub from a unique sample ticket was then stapled to the top of the bag. Field duplicate samples were generated via another split of the original cyclone sample that followed the same sampling methodology as the primary sample. The final stubs of the sample tickets were stored at the site office in Feremadougou. The sample bags for dispatch to the laboratory were weighed and placed into poly woven bags containing 10 to 15 samples each and transported to the processing area at the Kona camp by Company personnel. Samples were dispatched by road to Bureau Veritas Minerals Laboratory ("BVML") in Abidjan, Côte d'Ivoire via a truck from that laboratory.

Diamond drill core was oriented and placed into plastic core trays at the drill site. Rock Quality Designation ("RQD") and core recovery were measured whilst still at the rig site, and core trays were then returned by company personnel to the central logging and processing facility. Lithological and structural logging was then carried out by company geologists, sampling intervals determined and core sample intervals marked up. The core trays and core were photographed in a wet and dry state. The core intervals were placed in a cradle and cut in half with a core saw, with the cut made to the left of the orientation line and both halves returned to the core tray. The right side of the core was then removed and placed into a calico bag. Sample intervals were at the discretion of the logging geologist based upon lithology and observed mineralisation but were nominally at 1 m intervals. The sample number was written onto the outside of the calico sample bag and a uniquely numbered sample ticket stub placed into the bag with the sample. The core trays with the remaining half-core were then retained in the core storage area.



After samples were received at the BVML facility, all RC and DD samples followed the same preparation path. Samples were sorted and weighed and recorded into the laboratory LIMs system.

Samples were dried for 12 hours at a temperature of 105°C, after which they were crushed in a jaw crusher to achieve 70% passing 2 mm. The sample was then passed through a single stage riffle splitter until approximately 1 kg in weight was obtained, and the remainder retained as a coarse reject. The 1 kg sub-sample was then pulverized using an LM2 mill until 85% passing 75µm. A 250 g sample of this pulp was then placed into a pulp packet in preparation for final analyses. A standard fire assay for gold (FA450) was then performed, with a 50 g sub-sample taken from the pulverised material, mixed with flux and then fired. The resultant lead button was then transformed to a prill using cupellation. The prill was then dissolved in aqua regia solution and the resultant liquor read by AAS with a detection limit of 0.01 g/t Au.

### 3.6 Quality Assurance and Control

Quality control procedures employed by Centamin included the industry standard drill core and RC sample processing techniques outlined in the previous section.

Laboratory sample submissions for RC drillholes included either a certified reference material (“CRM”) standard, a blank sample or a field duplicate sample inserted at every 10<sup>th</sup> drillhole sample. For diamond drill core laboratory sample submissions either a CRM, a blank or a spike sample were inserted every 10<sup>th</sup> drillhole sample.

CRM standards were sourced from Ore Research & Exploration Pty Ltd (OREAS), with expected grades in the range of 0.214 g/t to 8.73 g/t. A CRM was normally inserted at every 30<sup>th</sup> sample before submission to BVML. A total of 16 different CRMs were used to verify the BVML reported gold assay values.

Centamin compared the expected and assayed CRM values during the database importation process. Centamin enforced sample batch failure criteria such that if any one of the following criteria were met:

- One CRM +/- 3 standard deviations from expected,
- Two CRM assays in a row outside 2 standard deviations on the same side from expected,
- Three CRM assays in a row +/- 2 standard deviations from expected.

The batches identified by the above rules were investigated thoroughly by reviewing photographs of the standards, and reviewing sample tickets to identify CRM mix-ups, and transcription or sampling errors. If no obvious errors can be found, then 5 samples above and below the “failing” standard were requested for re-assay by the BVML laboratory. If the results of the re-assay are not significantly different from the originals, the originals are kept and the re-assay results rejected, along with the original failing standards.

A total of 1,975 CRM analyses from 15 separate OREAS CRM standards were reported for the Kona Project (Table 3-2). The bias was calculated as the mean of the difference between expected and reported values for each CRM divided by each CRM’s expected value; and the results show that the analytical accuracy of the BVML laboratory was within acceptable limits.

**Table 3-2: Kona Deposit CRM Analyses**

| CRM      | Analyses | Au expected (g/t) | Au mean (g/t) | Bias | Au min (g/t) | Au max (g/t) |
|----------|----------|-------------------|---------------|------|--------------|--------------|
| OREAS250 | 118      | 0.31              | 0.32          | 2.6  | 0.29         | 0.35         |
| OREAS217 | 222      | 0.34              | 0.33          | -0.9 | 0.30         | 0.52         |
| OREAS218 | 150      | 0.53              | 0.52          | -2.3 | 0.35         | 0.59         |
| OREAS252 | 160      | 0.67              | 0.68          | 0.8  | 0.48         | 0.73         |
| OREAS220 | 178      | 0.87              | 0.87          | 0.7  | 0.72         | 1.18         |
| OREAS203 | 86       | 0.87              | 0.88          | 0.6  | 0.81         | 0.95         |
| OREAS221 | 214      | 1.06              | 1.06          | 0    | 0.91         | 1.27         |
| OREAS253 | 147      | 1.22              | 1.23          | 1    | 0.91         | 1.32         |
| OREAS222 | 6        | 1.22              | 1.22          | -0.3 | 1.19         | 1.25         |
| OREAS224 | 284      | 2.15              | 2.15          | -0.1 | 2.00         | 3.03         |
| OREAS254 | 2        | 2.55              | 2.54          | -0.6 | 2.52         | 2.55         |
| OREAS214 | 245      | 3.03              | 2.97          | -2.1 | 2.23         | 3.46         |
| OREAS215 | 29       | 3.54              | 3.49          | -1.5 | 2.99         | 3.68         |
| OREAS210 | 133      | 5.49              | 5.37          | -2.1 | 3.57         | 5.73         |
| OREAS228 | 1        | 8.73              | 8.63          | -1.1 | 8.63         | 8.63         |

The CRM results were plotted on a Shewart control chart (percentage relative difference) including data from batches that were re-assayed due to suspicious CRM assays (Figure 3-5). The y axis shows the relative difference from the expected CRM value; where relative difference values greater than 100% indicate that the assayed value was higher than the expected value. The x axis in this graph is ordered by the expected CRM value and then the assay date to illustrate variation over time.

A number of original CRM analyses from BVML were outside acceptable limits, and in these cases part or all of the batch was re-analysed by the laboratory. Overall, the data showed that the CRM submissions returned acceptable precision and successfully identified issues that were addressed with the re-analysis.

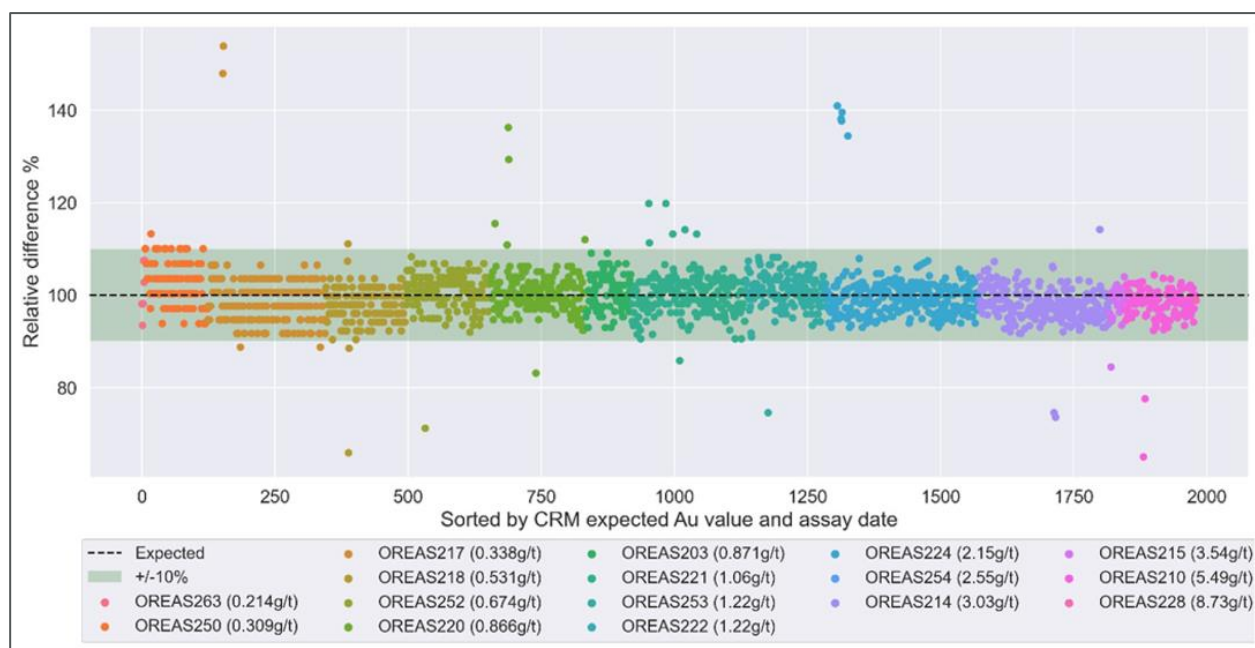


**Figure 3-5: Kona Project CRM Analyses**

Field duplicates taken at the RC drill rig by riffle splitting of the reject sample were submitted to BVML laboratory at a frequency of one every 30 samples. The results (Table 3-3) show that the repeatability of the original primary sample gold grade is reasonable with no significant bias but minor scatter. This provides support that the sub-sampling methodology is not introducing any significant bias.

**Table 3-3: Kona RC Field Duplicate Sample Au Value Statistics**

| Deposit      | Statistic | Original (g/t Au) | Field duplicate (g/t Au) | Difference (g/t Au) |
|--------------|-----------|-------------------|--------------------------|---------------------|
| Kona South   | mean      | 0.306             | 0.310                    | 0.004               |
|              | min       | 0.005             | 0.005                    | 0                   |
|              | max       | 5.800             | 3.680                    | 2.12                |
| Kona Central | mean      | 0.242             | 0.242                    | 0                   |
|              | min       | 0.005             | 0.005                    | 0                   |
|              | max       | 7.210             | 7.270                    | 0.06                |

Barren or blank samples were routinely inserted every 30 samples submitted to BVML. The blank samples were used to check for potential sample contamination within the laboratory sample preparation procedure. Blank material was sourced from reject samples of RC intervals where the analysis had shown those intervals to be barren and also distant from defined mineralised intervals. A total of 2,670 blank samples were submitted to BVML (Figure 3-6). Only six submitted blank samples returned analyses that were below 0.1 g/t gold, which is ten times the detection limit. The QAQC procedure resulted in the identification of these instances and the re-analysis of the concerned sample batches.

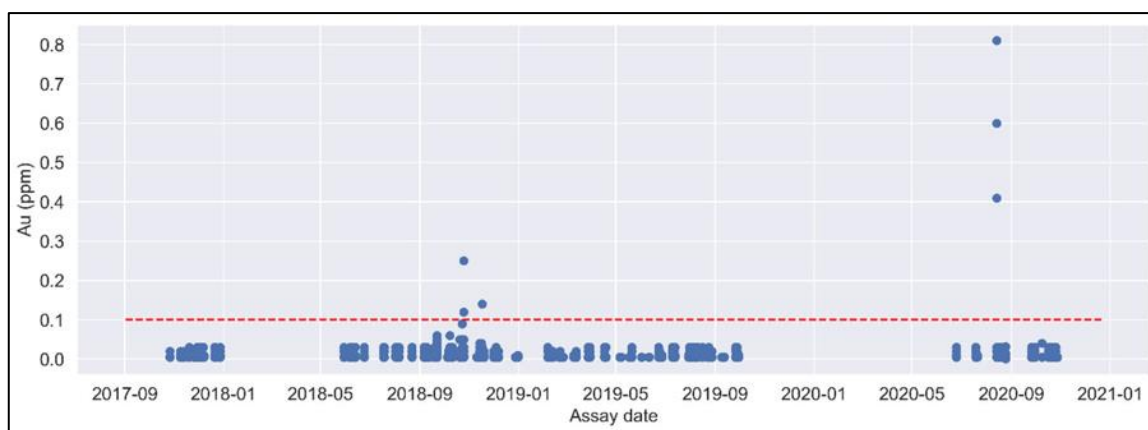


**Figure 3-6: Kona Project Blank Sample Analyses**

Visits were made in 2021 to the BVML laboratory by Centamin and Cube personnel to audit the processes, with no significant defects noted at the time of the visits.

Umpire analysis was undertaken at SGS Ouagadougou in October 2020 with 407 pulps representative of the defined range of gold grades covering the span of Kona drilling activity. Comparison of the SGS umpire and BMVL original analyses returned a correlation coefficient between the two datasets of 0.96 with the precision pairs analysis returning 95% of pairs within 20% (Table 3-4).

**Table 3-4: Umpire Analysis Summary Statistics**

|             | Original | Umpire | Units  | Distribution | orig | dups | Units  |
|-------------|----------|--------|--------|--------------|------|------|--------|
| Population  | 407      |        |        | 25.0%        | 0.36 | 0.37 | g/t Au |
| Minimum     | 0.01     | 0.01   | g/t Au | 50.0%        | 0.41 | 0.44 | g/t Au |
| Maximum     | 7.96     | 8.15   | g/t Au | 75.0%        | 0.53 | 0.53 | g/t Au |
| Mean        | 0.88     | 0.85   | g/t Au | 80.0%        | 0.64 | 0.64 | g/t Au |
| Std Dev     | 0.93     | 0.83   | g/t Au | 90.0%        | 0.75 | 0.77 | g/t Au |
| CV          | 1.06     | 0.98   |        | 97.5%        | 0.95 | 0.95 | g/t Au |
| Correlation | 0.957    |        |        | 99.9%        | 1.08 | 1.05 | g/t Au |

### 3.7 Geological Interpretation

Cube were supplied a single file “kona\_weatheringsurfaces.dtm” including base of transported cover, base of completely oxidised, and top of fresh rock surfaces for the two prospects Kona South and Kona Central covering the drill-tested areas of the project area (Figure 3-7). Cube split out these surfaces to individual files by weathering state and then extended the surfaces to ensure complete coverage of the block model extents (Table 3-5).

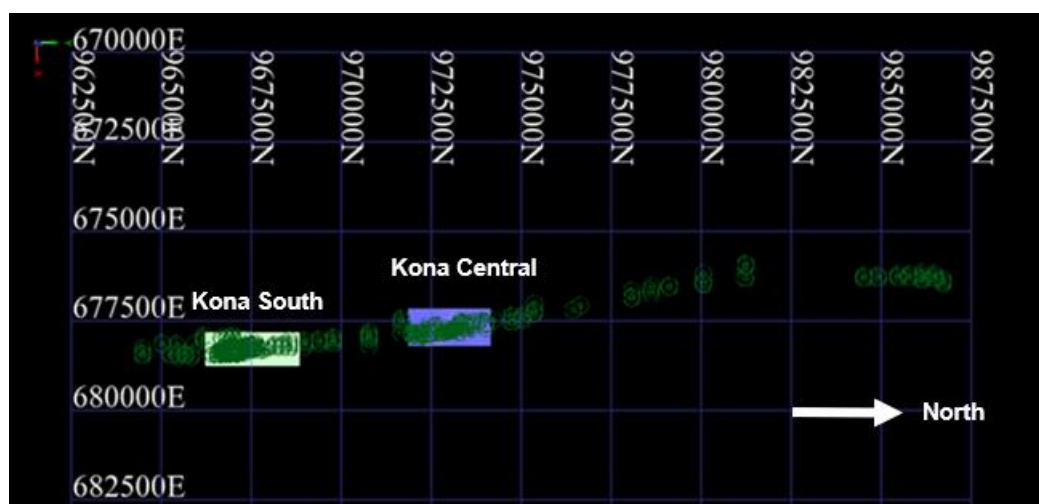


**Figure 3-7: Kona Central and South Weathering Surfaces**

**Table 3-5: Kona Weathering Surface Files**

| DTM file                            | Description                                                                        |
|-------------------------------------|------------------------------------------------------------------------------------|
| KONA_WEATHERING_BOFRTRANSPORTED.DTM | South and Central base of transported supplied                                     |
| KONA_WEATHERING_BOCO.DTM            | South and Central base of complete oxidation supplied                              |
| KONA_WEATHERING_TOPOFRESH.DTM       | South and Central top of fresh supplied                                            |
| CUBE_INFILL_TOFR_ALL.DTM            | South and Central top of fresh extended to cover block model extents               |
| CUBE_INFILL_BOCO_ALL.DTM            | South and Central base of complete oxidation extended to cover block model extents |
| ABC_2020.DTM                        | topographic surface supplied                                                       |

Gold mineralisation at Kona is predominantly within the psammite unit, and more elevated grade volumes are potentially rheologically controlled within the more competent psammitic units, but at a broad micro-ingress scale unrelated to local faults or shears. Cube were provided with geological interpretations by Centamin in the form of 3D DTM files based on the geological logging of drill holes and surface mapping. These interpretations provide a consistent elongated corridor of psammitic units at Kona within which the bulk of mineralisation is located.

Subsequent generation of mineralisation wireframes by Cube made use of the geological models provided by generally limiting mineralisation volumes to the psammitic units. A review of interpreted mineralised domain wireframes provided by Centamin and the Log probability plot of the raw data indicated a 0.2 g/t Au low threshold was suitable for defining zones of mineralisation. “Economic” compositing (in LeapFrog®) at a lower cut-off grade of 0.2 g/t Au with maximum consecutive waste (less than 0.2 g/t Au) of 2 m, a maximum included waste of 6 m and a minimum width of 4 m were used to define the mineralised intercepts. Solid models were interpreted using vein modelling of the coded intercepts within LeapFrog®. Five mineralisation domains (1001 to 1005 shown in Figure 14-4) were defined in the Kona South prospect (Figure 3-8).

However, the same process at Kona Central resulted in numerous domains of dubious continuity; and hence Cube adopted a bulk mineralisation approach for Kona Central using a single solid mineralisation model (2000 as in Figure 14.3) encapsulating all the coded “economic” intercepts (Figure 3-9).

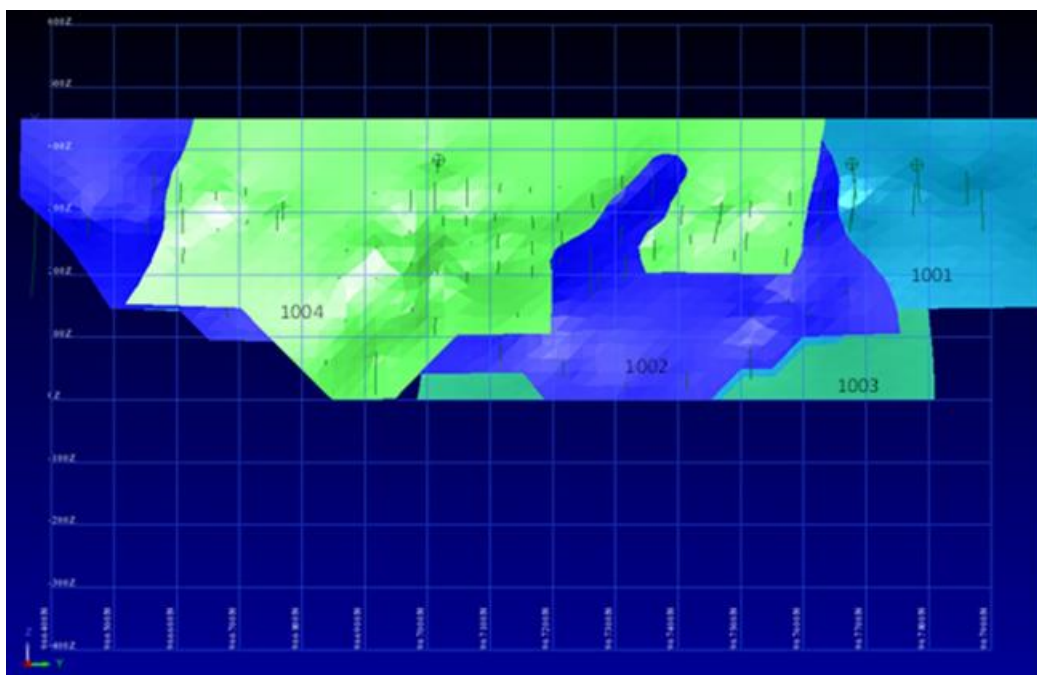


**Figure 3-8: Kona South Mineralisation Domains**

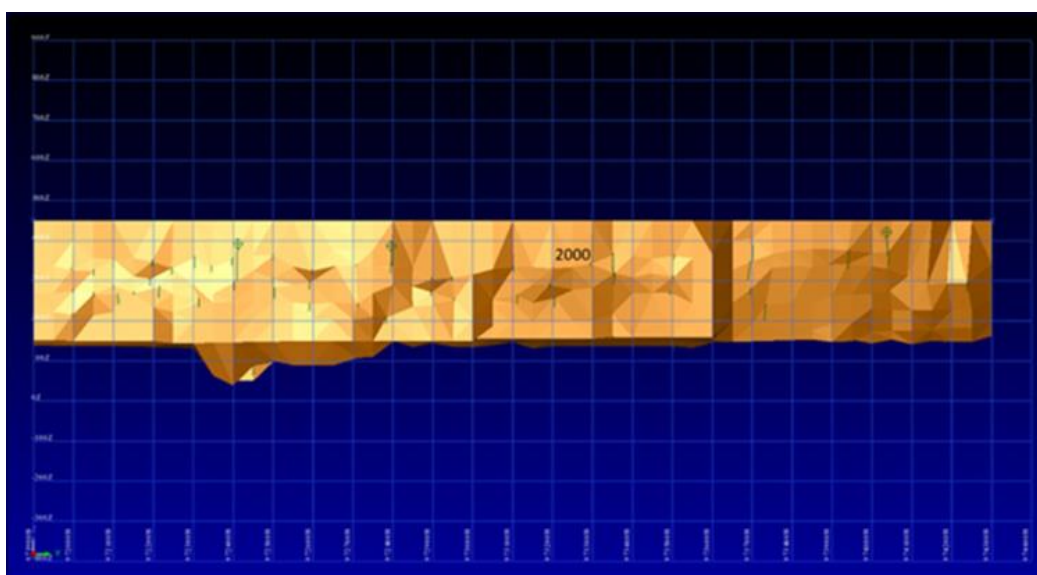


**Figure 3-9: Kona Central Mineralisation Domain**

### 3.8 Sample Compositing and Grade Capping

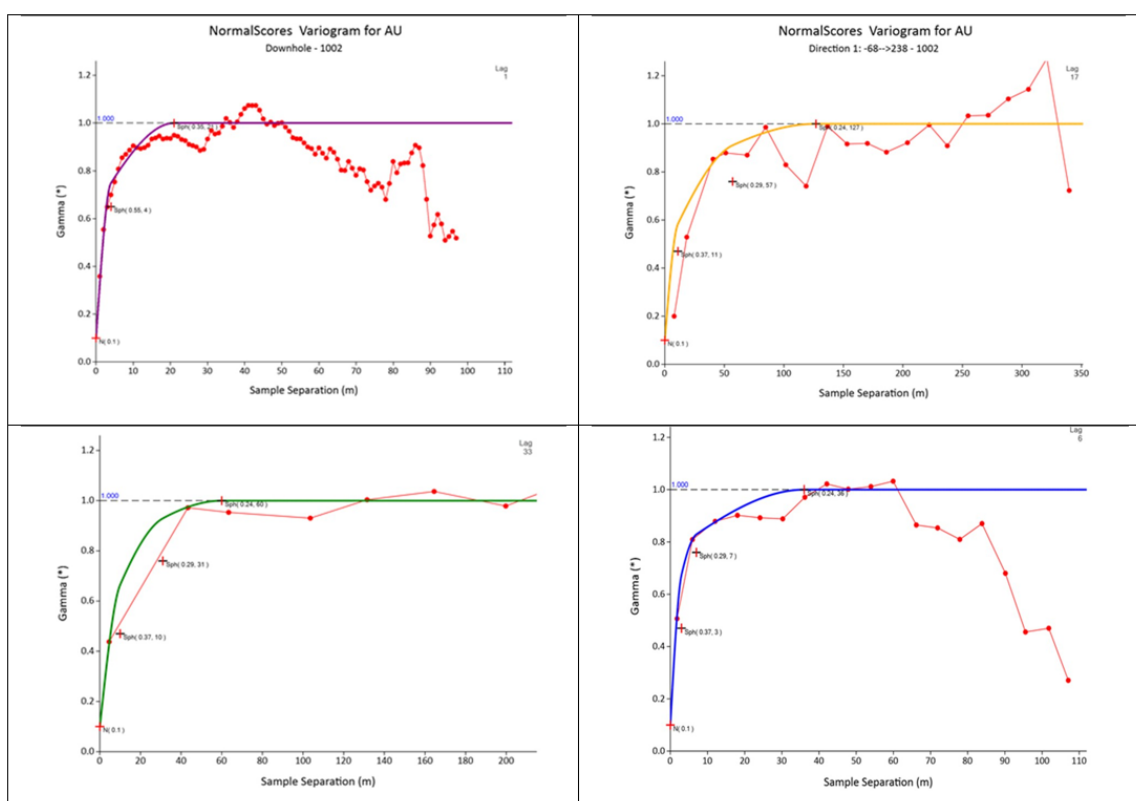
Sample intervals for Kona drilling range from 0.05 m to a maximum of 4.3 m, with a mean of 0.998 m; with a sample compositing interval of 1 m selected. Composite data was then analysed by mineralisation domain, and Cube determined that a top cap of 7 g/t Au should be applied to Domain 1001 and 1002 (Table 3-6).

**Table 3-6: Kona 1 m Composite Domain Statistics**

| Deposit      | Domain     | Count | Mean (g/t Au) | Minimum (g/t Au) | Maximum (g/t Au) | Standard Deviation | Coefficient of Variation |
|--------------|------------|-------|---------------|------------------|------------------|--------------------|--------------------------|
| Kona South   | 1001       | 2112  | 0.987         | 0.006            | 7.00             | 0.960              | 0.97                     |
|              | 1002       | 2751  | 0.805         | 0.005            | 7.00             | 0.754              | 0.94                     |
|              | 1003       | 1535  | 0.729         | 0.005            | 5.46             | 0.638              | 0.88                     |
|              | 1004       | 754   | 0.481         | 0.005            | 3.26             | 0.390              | 0.81                     |
|              | 1005       | 149   | 0.659         | 0.040            | 3.38             | 0.611              | 0.93                     |
| Kona Central | 2000 min   | 6319  | 0.670         | 0.005            | 14.66            | 0.744              | 1.11                     |
|              | 2000 waste | 9592  | 0.213         | 0.005            | 2.30             | 0.264              | 1.24                     |

### 3.9 Block Modelling

Variographic analysis was performed by Cube on the normal scored transform gold values for domains 1001, 1002, 1003, 1004 and 1005; and on the indicator variable for domain 2000 and the mineralised and waste composites for domain 2000.

**Figure 3-10: Kona South Domain 1002 Variography**

Experimental variograms were found to be poorly structured due to the relatively wide drill spacing whilst for the semi-major direction, it was not possible to model a variogram. The ranges of the semi-major direction are aligned with the major (omni-directional in the reference plane) when it was not possible to model it correctly (Figure 3-10 and Figure 3-11). The direction of maximum



continuity was selected as down dip, as there is insufficient data density to assess for the presence of a plunge component.

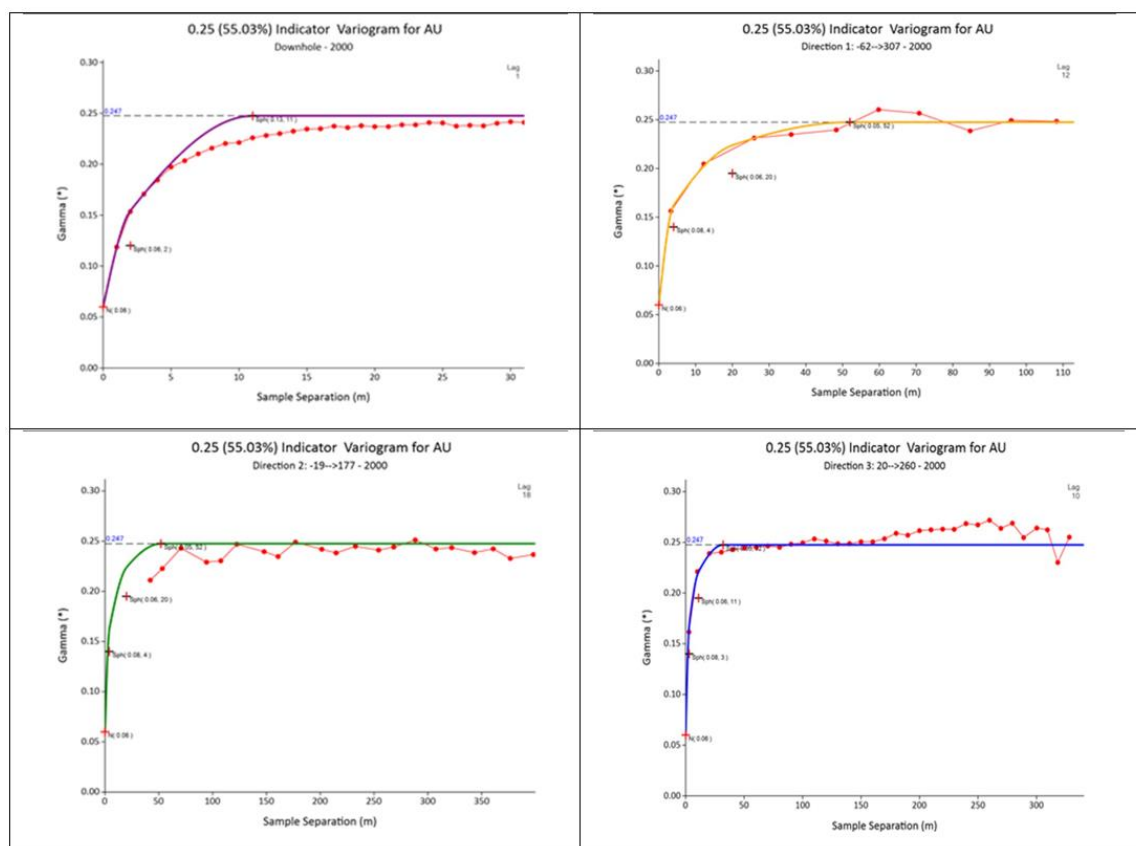


**Figure 3-11: Kona Central Domain 2000 Variography**

Cube defined a prototype block model “abc\_10dec2020.mdl” in Surpac Mining Software and flagged this by mineralisation domain. The order of the flagging was 1005, 1003, 1004, 1001, 1002 and 2000. Coordinates represent the position of block centroids in the UTM WGS84 coordinate system (Table 3-7).

**Table 3-7: Kona Block Model Dimensions**

|                | X      | Y      | Z     |
|----------------|--------|--------|-------|
| Minimum        | 677200 | 966300 | -100  |
| Maximum        | 678800 | 974320 | 500   |
| Discretisation | 3      | 3      | 3     |
| Parent Cell    | 20     | 20     | 5     |
| SMU            | 5.0    | 5.0    | 2.5   |
| Sub-block      | 1.25   | 1.25   | 0.625 |

Whilst there were 1,955 density determination from core samples, the in situ bulk density was assigned based upon weathering domains; with values of 2.01 t/m<sup>3</sup> for transported cover, 2.05 t/m<sup>3</sup> for oxide, 2.73 t/m<sup>3</sup> for transition and 2.80 t/m<sup>3</sup> for fresh rock coded into the block model.

The estimations were undertaken by Cube in Isatis Mining Software® using a combination of linear and non-linear methods.



For domains 1001 to 1005 (Kona South), an Ordinary Kriging (“OK”) interpolation onto a 20 m x 20 m x 5 m panel size was undertaken, followed by Uniform Conditioning (“UC”) and then localisation on SMU support (“LUC”). The LUC assumed SMU size was 5 m x 5 m x 2.5 m.

For domain 2000 (Kona Central), indicator kriging was first performed to separate mineralised from waste blocks and composite samples into mineralised and waste sub-domains. Each sub-dataset was then kriged on the corresponding sub-domain (mineralised composites into mineralised blocks) on panel support (20 m x 20 m x 5 m) followed by Uniform Conditioning and localisation on SMU support (“LUC”). The LUC assumed SMU size used was 5 m x 5 m x 2.5 m.

The estimation parameters are summarised in Table 3-8.

**Table 3-8: Kona Panel Block Estimation Parameters**

| Domain Code           | 1001   | 1002   | 1003   | 1004   | 1005   | IND 2000 | ORE 2000 | 2000 WASTE |
|-----------------------|--------|--------|--------|--------|--------|----------|----------|------------|
| No. structures        | 3      | 3      | 2      | 3      | 2      | 3        | 3        | 2          |
| CO                    | 0.12   | 0.10   | 0.20   | 0.19   | 0.20   | 0.06     | 0.18     | 2.00       |
| C1                    | 0.11   | 0.37   | 0.25   | 0.25   | 0.25   | 0.08     | 0.42     | 0.16       |
| a1                    | 7.00   | 18.00  | 14.00  | 4.00   | 2.00   | 4.00     | 23.00    | 0.35       |
| C2                    | 0.42   | 0.29   | 0.55   | 0.16   | 0.55   | 0.06     | 0.40     | 12.00      |
| a2                    | 19.00  | 31.00  | 74.00  | 29.00  | 18.00  | 20.00    | 74.00    | 0.49       |
| C3                    | 0.35   | 0.24   |        | 0.40   |        | 0.05     |          | 70.00      |
| a3                    | 125.00 | 127.00 |        | 93.00  |        | 52.00    |          |            |
| Total Sill            | 1.00   | 1.00   | 1.00   | 1.00   | 1.00   | 0.25     | 1.00     | 1.00       |
| 1. Major : semi-major | 1.00   | 1.80   | 1.00   | 1.00   | 1.00   | 1.00     | 1.53     | 1.00       |
| 1. Major : minor      | 3.50   | 6.00   | 7.00   | 2.00   | 1.00   | 1.33     | 7.67     | 4.00       |
| 2. Major : semi-major | 1.00   | 1.00   | 1.00   | 1.00   | 1.00   | 1.00     | 1.35     | 1.40       |
| 2. Major : minor      | 1.90   | 4.43   | 8.22   | 9.67   | 2.00   | 1.82     | 8.22     | 8.75       |
| 3. Major : semi-major | 2.12   | 2.12   |        | 1.00   |        | 1.00     |          |            |
| 3. Major : minor      | 5.21   | 3.53   |        | 11.29  |        | 1.63     |          |            |
| Rotation convention   | Isatis | Isatis | Isatis | Isatis | Isatis | Isatis   | Isatis   | Isatis     |
| Azimuth               | 170.00 | 240.00 | 170    | 170.00 | 170.00 | 170.00   | 170.00   | 170.00     |
| Dip                   | 70.00  | 70.00  | 60     | 70.00  | 60.00  | 70.00    | 70.00    | 70.00      |
| Plunge                | 90.00  | 80.00  | 80     | 100.00 | 80.00  | 110.00   | 50.00    | 40.00      |

Domains 1001, 1002, 1003, IND 2000 and ORE 2000 used grade dependent parameters whereby composite data above the nominated threshold had limited search distances applied. For example, in domain 1001 composites greater than 3.5 g/t Au were capped to 3.5 g/t Au for estimation only within blocks that were located 20 m or more from the composite data. The impact of this type of

limitation was to further reduce the influence of isolated higher-grade data, in order to reduce the risk of grade smearing from outlier higher tenor composites.

The implementation of UC used Isatis Mining Software® to model grade distributions for each OK estimated block within each of the domain volumes and limited by the LUC area attribute flagged greater than 0. A total of 44 grade cut-offs were modelled with an information effect assuming future drill data on a 5 m x 5 m x 2.5 m spacing. The cut-offs selected ranged from 0 g/t to 1 g/t Au in 0.05 g/t Au steps, then from 1 g/t to 3 g/t Au in 0.1 g/t Au steps, and then at 5 g/t Au, 10 g/t Au, 15 g/t Au and 20 g/t Au; allowing a detailed distribution model at lower grade cut offs.

The LUC modelling was also undertaken in Isatis Mining Software® under an assumed SMU size of 5 m x 5 m x 2.5 m within the same constrained domain volumes. The UC and LUC modelling was validated against the OK panel estimates and each other using average domain statistics (Table 3-9).

**Table 3-9: Kona Panel Block Grade Estimation Validation to UC and LUC Summary**

| Estimate | 1001  | 1002  | 1003  | 1004  | 1005  | IND 2000 | ORE 2000 | 2000_WASTE |
|----------|-------|-------|-------|-------|-------|----------|----------|------------|
| LUC      | 0.885 | 0.61  | 0.602 | 0.479 | 0.622 | 0.367    | 0.652    | 0.211      |
| OK       | 0.882 | 0.609 | 0.6   | 0.476 | 0.622 | 0.367    | 0.652    | 0.212      |
| UC       | 0.882 | 0.609 | 0.6   | 0.476 | 0.622 | 0.367    | 0.652    | 0.212      |
| LUC/UC   | 0.28% | 0.08% | 0.23% | 0.52% | -0.05 | -0.16    | -0.02%   | -0.14%     |
| OK/UC    | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00%    | 0.00%    | 0.00%      |

### 3.10 Validation and Resource Classification

Validation was performed by Cube both locally for each domain and each sub-domain type (Domain 2000) as well as globally via careful analysis of the statistics of the estimated values against the input datasets, visual cross-section checks and swath plots. Table 3-10 summarises the OK panel estimates by domain to composite grade comparison. For domain 1002, the estimated grade on panel is lower than the declustered composite mean which is due to extrapolation of low-grade in poorly informed areas. In well-informed areas the estimated grade was demonstrated to be within 1% of the moving window average composite grades in all estimated domains.

**Table 3-10: Kona Panel Block Grade Estimation Validation to Composite Input Data Summary**

| Domain     | Comps | Min  | Max   | Mean_AUCUT | STD  | CV   | Declust AUCUT | Blocks | Min  | Max  | Mean_aucut_ok | STD  | CV   |
|------------|-------|------|-------|------------|------|------|---------------|--------|------|------|---------------|------|------|
| 1001       | 2112  | 0.01 | 7.00  | 0.99       | 0.96 | 0.97 | 0.82          | 9,878  | 0.21 | 3.89 | 0.78          | 0.50 | 0.65 |
| 1002       | 3751  | 0.01 | 7.00  | 0.81       | 0.75 | 0.94 | 0.73          | 26,754 | 0.16 | 3.12 | 0.60          | 0.32 | 0.54 |
| 1003       | 1535  | 0.01 | 5.46  | 0.73       | 0.64 | 0.88 | 0.68          | 8,459  | 0.20 | 2.05 | 0.63          | 0.28 | 0.45 |
| 1004       | 754   | 0.01 | 3.26  | 0.48       | 0.39 | 0.81 | 0.46          | 5,392  | 0.16 | 1.05 | 0.46          | 0.13 | 0.27 |
| 1005       | 149   | 0.04 | 3.38  | 0.66       | 0.61 | 0.93 | 0.63          | 511    | 0.30 | 1.20 | 0.62          | 0.14 | 0.23 |
| 2000_Ore   | 6319  | 0.01 | 14.66 | 0.67       | 0.74 | 1.10 | 0.65          | 25,406 | 0.17 | 2.63 | 0.62          | 0.28 | 0.45 |
| 2000_Waste | 9592  | 0.01 | 2.50  | 0.21       | 0.26 | 1.24 | 0.22          | 57,515 | 0.01 | 0.97 | 0.22          | 0.09 | 0.40 |

The current Mineral Resource has been classified as Inferred by Cube; with the classification of the project resources having considered a number of risk items during the process. These risk items included the sampling representivity, accuracy and distribution, the geological continuity risk, the grade and volume continuity risk, and the estimation risk inherent with the available drilling and sampling information. The grade continuity risk is clearly demonstrated in the poor variographic outcomes with a lack of robust 3D variogram models resulting in uncertainty in local spatial characteristics necessitating material assumptions to enable local estimation.

Whilst the Cube multi-step OK + indicator kriging + UC/LUC workflow attempts to compensate for the current relatively wide drillhole spacing, the approach in itself is of lower confidence. Importantly the UC/LUC application highlights volumes above different lower cut-off grades but in no way can it show that these can be selectively mined, as there is no area of closer-spaced drilling to determine the modelled levels of selectivity within the deposit.

The current levels of uncertainty can only be reduced and the confidence level increased by the completion of further infill drilling at the Kona deposits.

### 3.11 Mineral Resource Statement

An Inferred Mineral Resource of 72.0 Mt at a grade of 0.93 g/t for a contained metal content of 2.16 Moz (Table 3-11) was defined by Cube in July 2021. The Mineral Resource was reported above a lower cut-off grade of 0.5 g/t Au and at elevation less than or equal to 250 m below surface and within 100 m of the nearest sample composite.

**Table 3-11: Mineral Resource Estimate, Kona South and Kona Central, July, 2021**

| Prospect     | Classification  | Tonnes (Mt) | Grade (g/t Au) | Metal (Moz Au) |
|--------------|-----------------|-------------|----------------|----------------|
| Kona South   | Inferred        | 31          | 1.05           | 1.05           |
| Kona Central | Inferred        | 41          | 0.84           | 1.11           |
| <b>TOTAL</b> | <b>Inferred</b> | <b>72</b>   | <b>0.93</b>    | <b>2.16</b>    |

## 4.0 Mining

### 4.1 Resource Description

The MRE block models were provided to Orelogy by Centamin CI SARL in October 2024. Both models were in Surpac format and dated 10 December 2020 with the names detailed below:

- Central – abc\_kona\_cent\_10dec2020.mdl
- South – abc\_kona\_sth\_10dec2020.mdl

Both models reconcile with the NI 43-101 resource reported for both areas released by Centamin with an effective 31 July 2021 (Plc, 2021), as detailed in Table 3-11. It should be noted that the resources comprise Inferred classification material only.

### 4.2 Densities

Material densities used in the MRE were based on density determinations using the water immersion bulk density method as a standard procedure, except in the very near surface oxidised units, or where core is significantly porous, where the sample is wrapped in cling wrap. A total of 2,028 density measurements taken from drill core, predominantly in the fresh material which accounted for 1,955 of the measurements. Very little to no measured density values are available from the transported, saprolite and partially oxidised zones. The average density within each of the weathering domains was applied to the block model as detailed Table 4-2.

**Table 4-1: Modelled Oxidation State and assigned In-situ Dry Density**

| Material type  | In-situ Dry Density (t/m <sup>3</sup> ) |
|----------------|-----------------------------------------|
| Transported    | 2.01                                    |
| Fully Oxidised | 2.05                                    |
| Saprolite      | 2.73                                    |
| Fresh          | 2.80                                    |

### 4.3 Geotechnical Parameters

No geotechnical assessment has been undertaken at the Kona site. Approximate wall slopes based on weathering state were applied for the open pit optimisations, based on industry best practice and experience. Pit optimisation sensitivity analysis of this modifying factor was also undertaken.

### 4.4 Hydrogeological Considerations

No geotechnical assessment has been undertaken at the Kona site.

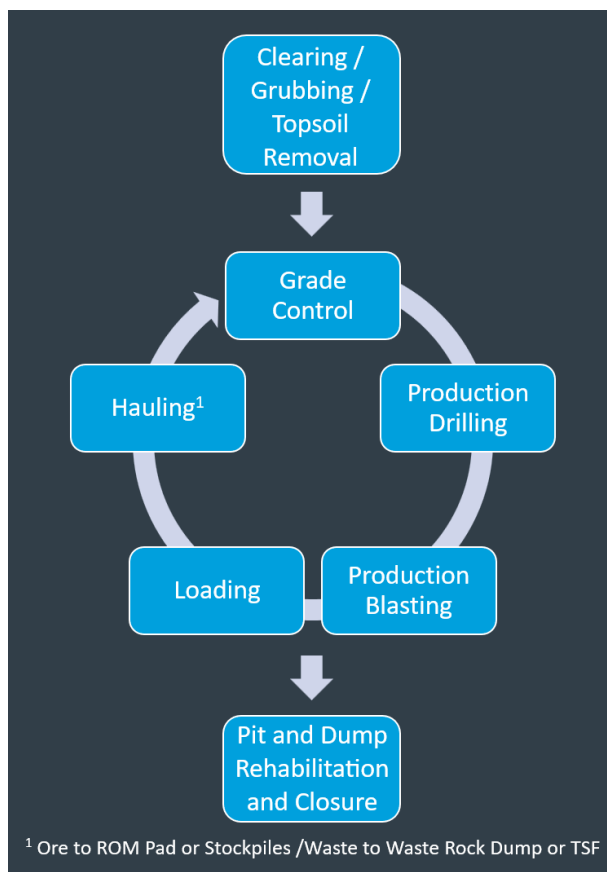
### 4.5 Economic Criteria

A range of gold prices were assessed as part of the open pit optimisation process and these sensitivities are discussed in pit optimisation section (Section 4.13). A gold price of \$2,750\*oz was selected as the base case study price. The basis for this selection is covered in more detail in Section 4.13.4.

## 4.6 Mining Approach

Conventional open pit mining is planned for the ABC Project. All open pits will be mined with a conventional truck and excavator approach utilising a typical drill, blast, load and haul production cycle as shown in Figure 4-1.

**Figure 4-1: Open Pit Mining Cycle**



Mining of both ore and waste will be undertaken using an excavator (backhoe configuration) to load rigid body dump trucks. Drill and blast will be carried out on 5 m blast bench heights. The ore will be excavated in 2.5 m flitches to minimise dilution and ore loss. Waste will be mined in either 2.5 metre flitches or at the 5 m blast height depending on the size of the excavator being used. It is assumed all insitu material will require some degree of drill and blast.

Ore mined will be transported with the mining dump trucks to the processing facility where it will be either:

- Directly dumped to the primary crusher bin,
- Placed on stockpile fingers on top of the primary crusher ROM pad for subsequent FEL rehandle,
- Dumped to a low-grade stockpile on natural ground level adjacent to the primary crusher ROM pad.

Waste will be placed in designated waste rock dumps (“WRD”) adjacent to the open pits.

Rehabilitation works will be carried out on an ongoing basis as areas of WRD are finalised or infrastructure such as roads etc are no longer required.

## 4.7 Operating Philosophy

Orelogy has utilised the recent completed Doropo Project DFS Update (2025) as the basis for the ABC Project Scoping Study mining evaluation. Doropo is located in northeastern Côte d'Ivoire approximately 600 km east of the ABC Project site. It is a similar environment to the Project and is located at a similar latitude and distance from the main port of Abidjan. Therefore, the project logistics and associated costs are considered appropriate for the Project at a Scoping Study level.

The mine operating strategy is based on utilising a mining contractor to undertake all production related mining activities, with Resolute responsible for overall management of the project including all activities related to geology, grade control and mine planning.

A mining contractor approach is the preferred operational strategy for the following reasons:

- Reduces initial capital outlay and time requirements to build up and train a workforce
- A contractor provides equipment and personnel (locally sourced), with procedures and systems to reduce startup risk.

Consequently, this approach is considered to generate the best project value with the greatest likelihood of success for a greenfields operation.

A suitably qualified and experienced mining contractor will undertake production related activities, including, but not limited to:

- Construction of all mining infrastructure required for undertaking mining operations such as workshops, warehousing, fuel and lube area, washdown facilities, administration building, crib rooms, and ablutions,
- Construction of all mine haul roads and of the ore haulage roads from the pits to the processing plant,
- Site preparation for pits, WRD's, roads etc. (i.e., clearing and grubbing of vegetation, removal and stockpiling of topsoil material),
- Primary production drilling and blasting,
- Primary production loading and hauling,
- Support of the primary production activities with a suitable sized fleet of support equipment (i.e., bulldozers, graders, water trucks etc.),
- Pit dewatering via in pit sump pumps,
- Establishment and maintenance of suitable surface water management infrastructure,
- Site rehabilitation and closure works such as re-profiling WRDs to final landform, rehandling and spreading stockpiled topsoil material etc.

Clearing of the surface vegetation will be necessary before removal of topsoil to stockpiles for later use in rehabilitation of the site. To preserve the soil viability and reduce rehandle costs, it is planned that rehabilitation is undertaken progressively. After initial topsoil stripping, any topsoil from new areas will be placed directly onto reprofiled waste landform slopes whenever possible.

The fleet assumed for the Doropo Project, and the basis of the mining costs used in this study, comprises a combination of 300 t and 150 t class excavators matched to 90 t payload haul trucks for all mining activities. The 300 t class excavator will be primarily used for excavation of bulk waste and ore in the pits. This is considered an appropriate fleet for the ABC Project.

The following ancillary equipment will be required for the activities detailed below:

- Dozers for floor control and management of the waste rock dump tip-head,
- Graders for road maintenance,
- Front end loaders for ongoing ROM rehandle, stockpile reclaim, and general site maintenance,
- Water trucks for dust suppression in all mine working areas,
- Trailer mounted diesel pumps for dewatering sumps within the open pit,
- Lighting towers for night operations in the pit and at tip-heads.

## 4.8 Pit Optimisation

The pit optimisation component of this study was undertaken prior to the metallurgical and processing review. Consequently, the processing costs and recoveries from the Doropo Project DFS Update (2025) were utilised for the pit optimisation along with the mining costs. The final parameters developed for the financial modelling component of this study generally improve on the Doropo parameters (i.e. higher recovery and lower cost). On this basis, the pit optimisation outcomes can be considered conservative. The following sub-sections detail the modifying factors were utilised.

### 4.8.1 Open Pit Optimisation Methodology

The pit optimisation was undertaken using the Geovia Whittle (“Whittle”) software tool. In broad terms, the process that Whittle undertakes is to vary the base input price by a range of factors (referred to as the Revenue Factors), up and down from a base value of 1. For any given Revenue Factor Whittle then produces a three-dimensional shape, or “shell”, that generates the maximum possible value for all the input parameters and the associated factored price.

Lower factored prices will produce smaller shells, the higher price factor, the larger the shell. This results in a set of “nested” shells, with each shell lying inside the shell of the next largest Revenue Factor.

The value of each shell is reported at the base price. The effect of this is that:

- Shells with a Revenue Factor  $<1$  are smaller and have less ore than the shell with Revenue Factor 1. This reduces the revenue generated and therefore they will have a lower value.
- Shells with a Revenue Factor  $>1$  are bigger and have relatively more waste. This increases the costs and therefore they will have a lower value.
- The result is the classic Whittle cash flow curve that generally peaks at the base price (i.e., Revenue Factor 1). The robustness of this shell is reflected in how quickly the value falls away either side of this peak.

These nested shells are important for several reasons:

- The smaller shells indicate the areas of highest value in the ore body and therefore give a guide as to where mining should commence.
- The larger shells provide an indication of how much additional mineralisation may become economic, or alternatively what current ore may become unviable, should input parameters change in the future.

- They permit Whittle to develop a “schedule” for mining the deposit over time and therefore allow a DCF to be generated.

It is important to have some appreciation of how Whittle generates a DCF as these values are used in this study as a guide to both sensitivity and the shell selected as the basis for pit design. It should be noted that Whittle cash flows differ from accounting cash flows which include the effects of debt servicing, depreciation and taxation.

Whittle generates the following two standard DCF's:

**Worst Case DCF** assumes that, for any given shell, extraction is undertaken bench by bench sequentially from the top to bottom of the pit. This results in a significant amount of any overlying overburden being removed prior to presentation of ore (i.e., a large pre-strip), and there are no initial shells or stages that access higher value ore earlier in the schedule. This is clearly not a preferred pit extraction scenario from a value perspective.

**Best Case DCF** assumes that, for any given shell, extraction is undertaken sequentially from the smallest shell generated by the optimisation, through all the intervening shells out to the shell selected. This approach focuses on the highest value areas of the orebody and generates the least amount of waste stripping. As such it provides the highest DCF for the selected shell. However, this approach is constrained by practical considerations as it is effectively mining the orebody using an impractically high number of small incremental pushbacks that could not be achieved in reality as:

- The distances between successive shells are invariably too narrow to mine practically,
- The bench turnover required to mine the shell in the time frame is not achievable,
- The base of the shell is too small and constricted to allow for practical access or safe extraction.

Figure 4-2 and Figure 4-3 illustrate a schematic representation of the Worst Case DCF mining and Best Case DCF mining sequences. The figures indicate the amount of waste that needs to be moved to gain access to the orebody, and as can be seen the Worst Case approach requires significantly more waste movement than the Best Case, hence two divergent cash flows are generated.

In essence, these two DCF'S provide the extremities or theoretical value that can be generated from a deposit. The shell that represents what will happen in reality will in fact lie somewhere between these two endpoints.

**Figure 4-2: Worst Case DCF Mining Sequence**



**Figure 4-3: Best Case DCF Mining Sequence**



It is important to note that the cashflows reported by Whittle, both discounted and undiscounted, will differ from those in the Project's financial model as the optimisation:

- Generally, excludes capital and financing costs,



- Does not account for the effects of taxation,
- Is based on a high-level annual mining schedule.

#### 4.8.2 Inputs and Assumptions

##### **Material Types**

The ABC resource models comprise 4 weathering zones. The costs, metallurgical recoveries and slopes utilised from the Doropo Gold Project 2025 DFS Update were based on three weathering type. The mapping of these types are as follows:

| Doropo       | ABC         |
|--------------|-------------|
| Oxide        | Transported |
|              | Oxide       |
| Transitional | Saprolite   |
| Fresh        | Fresh       |

##### **Ore Loss and Dilution**

Dilution and ore loss were applied in Whittle at 10% and 5% respectively. This was considered a relatively conservative approach for the ABC orebodies which are relatively broad in plan and sub-vertical in dip.

##### **Wall Slope Parameters**

The overall slope angles utilised for the study are detailed below:

- Oxide 35°
- Transitional 45°
- Fresh 55°

##### **Mining Costs**

Mining costs were derived from the Doropo DFS. The fuel cost of US\$ 1.145/litre was carried over.

Drill and blast rates were applied on the basis of weathering as shown in Table 4-3.

**Table 4-2: Optimisation – Drill and Blast Costs**

| Material    | US\$/BCM | t/m <sup>3</sup> | US\$/t |
|-------------|----------|------------------|--------|
| Oxide       | \$1.23   | 2.01             | \$0.61 |
| Trans       | \$2.03   | 2.05             | \$0.99 |
| Fresh Waste | \$2.74   | 2.73             | \$1.00 |
| Fresh Ore   | \$3.30   | 2.80             | \$1.18 |

Load and Haul costs were developed by bench on weighted average basis using all the pits in the Doropo DFS. The rates were adjusted for the different surface RL datum at ABC. They are detailed in Table 4-4.

**Table 4-3: Optimisation – Load and Haul Costs**

| Bench<br>RL | Rate excl.<br>Fuel | Fuel    | Total<br>Rate | Bench<br>RL | Rate excl.<br>Fuel | Fuel    | Total<br>Rate |
|-------------|--------------------|---------|---------------|-------------|--------------------|---------|---------------|
| 400         | \$2.387            | \$0.857 | \$3.244       | 295         | \$4.099            | \$1.554 | \$5.653       |
| 395         | \$2.399            | \$0.875 | \$3.274       | 290         | \$4.160            | \$1.575 | \$5.735       |
| 390         | \$2.400            | \$0.879 | \$3.279       | 285         | \$4.250            | \$1.614 | \$5.863       |
| 385         | \$2.478            | \$0.909 | \$3.387       | 280         | \$4.350            | \$1.645 | \$5.995       |
| 380         | \$2.561            | \$0.944 | \$3.505       | 275         | \$4.439            | \$1.675 | \$6.115       |
| 375         | \$2.666            | \$0.990 | \$3.656       | 270         | \$4.537            | \$1.709 | \$6.247       |
| 370         | \$2.788            | \$1.040 | \$3.828       | 265         | \$4.570            | \$1.722 | \$6.292       |
| 365         | \$2.882            | \$1.079 | \$3.961       | 260         | \$4.665            | \$1.755 | \$6.420       |
| 360         | \$3.006            | \$1.131 | \$4.137       | 255         | \$4.729            | \$1.776 | \$6.505       |
| 355         | \$3.132            | \$1.180 | \$4.312       | 250         | \$4.805            | \$1.803 | \$6.608       |
| 350         | \$3.255            | \$1.229 | \$4.484       | 245         | \$4.820            | \$1.811 | \$6.631       |
| 345         | \$3.357            | \$1.268 | \$4.625       | 240         | \$4.918            | \$1.848 | \$6.766       |
| 340         | \$3.498            | \$1.326 | \$4.824       | 235         | \$4.989            | \$1.875 | \$6.863       |
| 335         | \$3.598            | \$1.366 | \$4.964       | 230         | \$5.078            | \$1.903 | \$6.982       |
| 330         | \$3.668            | \$1.396 | \$5.064       | 225         | \$5.141            | \$1.927 | \$7.068       |
| 325         | \$3.733            | \$1.419 | \$5.152       | 220         | \$5.234            | \$1.959 | \$7.193       |
| 320         | \$3.810            | \$1.449 | \$5.259       | 215         | \$5.282            | \$1.975 | \$7.257       |
| 315         | \$3.873            | \$1.469 | \$5.342       | 210         | \$5.347            | \$2.000 | \$7.347       |
| 310         | \$3.934            | \$1.492 | \$5.425       | 205         | \$5.354            | \$2.010 | \$7.364       |
| 305         | \$3.995            | \$1.518 | \$5.513       | 200         | \$5.407            | \$2.029 | \$7.436       |
| 300         | \$4.051            | \$1.537 | \$5.588       | 195         | \$5.456            | \$2.046 | \$7.502       |

The remaining costs associated with contract mining were accumulated into a single LOM US\$/t operating cost using the total mined material of 348.8 Mt. The resulting costs are shown in Table 4-5.

**Table 4-4: Optimisation – Additional Mining Costs**

| Cost           | Total          |                |
|----------------|----------------|----------------|
| US\$M          | US\$M          | (US\$/t)       |
| Early Works    | \$15.9         | \$0.05         |
| Site Prep      | \$34.4         | \$0.10         |
| Fixed Costs    | \$178.3        | \$0.51         |
| Dayworks       | \$24.5         | \$0.07         |
| Rehabilitation | \$14.6         | \$0.04         |
| <b>Total</b>   | <b>\$267.7</b> | <b>\$0.767</b> |

For the purposes of coding the model with these costs a regression was developed for the load and haul costs as shown in Figure 4-4.

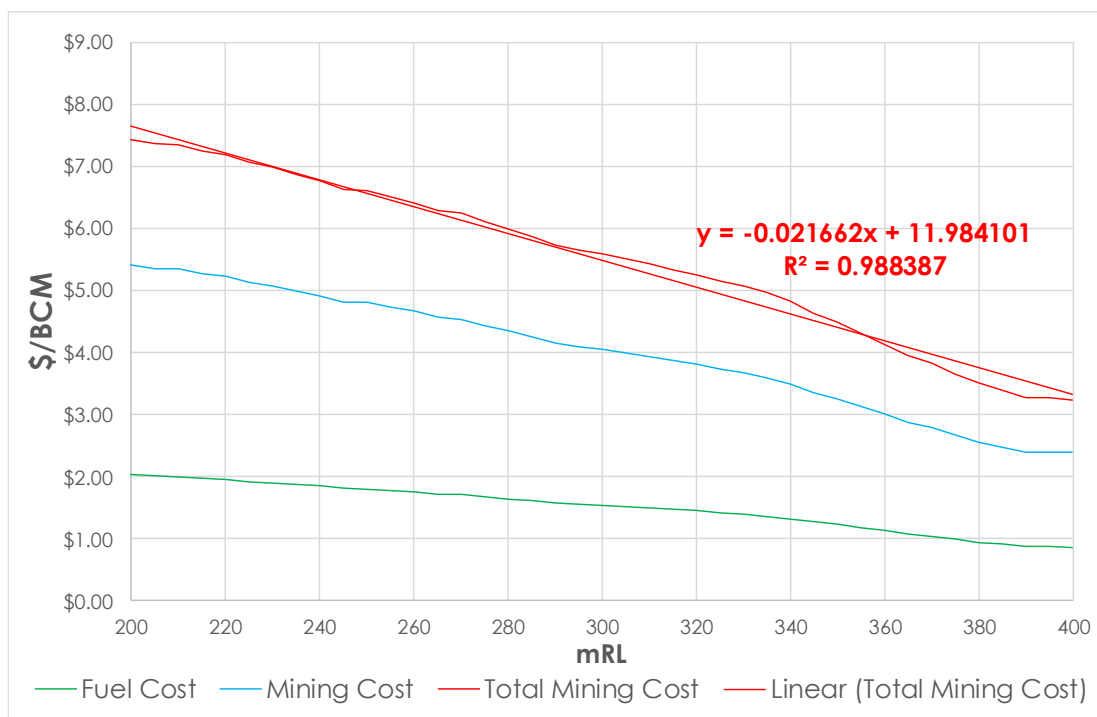


**Figure 4-4: Load and Haul Regression**

A total mining cost regression was then developed for coding the total mining cost into the block model on a US\$/t basis. The logic for the regression is

$$(L\&H (\$/BCM) + D\&B (\$/BCM)) / \text{Block Density} + \text{Fixed Cost}$$

The resulting regression for total contractor mining costs for waste by material type are shown below:

- Oxide (US\$/t) =  $(-0.021662 \times mRL + 11.984101 + 1.23) / \text{density} + 0.767$
- Transitional (US\$/t) =  $(-0.021662 \times mRL + 11.984101 + 2.03) / \text{density} + 0.767$
- Fresh (US\$/t) =  $(-0.021662 \times mRL + 11.984101 + 2.74) / \text{density} + 0.767$

### **Ore Related Mining Costs**

The mining cost utilised by Whittle is effectively the “waste mining cost”. Any cost that are specifically related to ore need to be isolated out and applied as part of the Processing Cost in Whittle. Whittle determines ore and waste as part of the optimisation process and therefore the definition of ore can change for any given optimisation scenario. Applying the ore mining costs in Processing ensure these costs are allocated to the correct material in any given scenario. The ore related mining costs applied in the ABC optimisation are detailed in Table 4-6.

**Table 4-5: Optimisation – Ore Related Mining Costs**

| Item                  |                                      | Rate              | Cost                          |
|-----------------------|--------------------------------------|-------------------|-------------------------------|
| LG Stockpile Rehandle | Cost per tonne rehandled             | US\$ / t          | \$0.97                        |
|                       | Proportion of feed rehandled         | %                 | 10%                           |
|                       | Cost per tonne feed                  | US\$ / t ore feed | \$0.10                        |
| Drill and Blast       | Fresh Ore Cost –<br>Fresh Waste Cost | US\$ / t ore feed | \$1. 18 – \$1.00 <sup>1</sup> |
|                       |                                      |                   | = \$0.17                      |
| Grade Control         |                                      | US\$ / t ore feed | \$0.50                        |
| Owners Team           | Annual Cost                          | M US\$ / year     | \$3.39                        |
|                       | Oxide                                | Mtpa ore feed     | 5.0                           |
|                       |                                      | US\$/ t ore feed  | \$0.63                        |
|                       | Transitional                         | Mtpa ore feed     | 5.0                           |
|                       |                                      | US\$/ t ore feed  | \$0.63                        |
|                       | Fresh                                | Mtpa ore feed     | 4.5                           |
|                       |                                      | US\$/ t ore feed  | \$0.85                        |
| Total                 | Oxide                                | US\$/ t ore feed  | \$1.23                        |
|                       | Transitional                         | US\$/ t ore feed  | \$1.23                        |
|                       | Fresh                                | US\$/ t ore feed  | \$1.62                        |

<sup>1</sup> refer to Table 4-3

### ***Processing Recoveries and Costs***

The processing recoveries used for the optimisation were sourced from the Doropo DFS Update, which in turn were based on the metallurgical test work completed by Centamin Plc during the original 2024 Doropo DFS. They consisted of a range of fixed recoveries for all the deposits at Doropo, split by weathering type and also by three Au head grade ranges. The average across all the deposits was utilised for the optimisation and are detailed in Table 4-7.

**Table 4-6: Optimisation – Processing Recovery by Weathering and Head Grade<sup>1</sup>**

| Weathering Type | Grade Range (g/t) |             |             |       |
|-----------------|-------------------|-------------|-------------|-------|
|                 | <0.25             | ≥0.25 < 0.5 | ≥0.50 < 1.0 |       |
| Oxide           | 0%                | 90.8%       | 94.0%       | 95.7% |
| Transitional    |                   | 88.7%       | 90.2%       | 93.0% |
| Fresh           |                   | 78.5%       | 80.7%       | 87.9% |

Table 4-8 provides the processing costs derived from the Doropo DFS.

**Table 4-7: Optimisation – Processing Costs**

| Item                |                          | Rate              | Cost    |
|---------------------|--------------------------|-------------------|---------|
| ROM Rehandle        | Cost per tonne rehandled | US\$ / dmt        | \$0.90  |
|                     | % Direct tip             | % Stockpiled      | 50%     |
|                     | Cost per tonne feed      | US\$ / t ore feed | \$0.45  |
| Variable Processing | Oxide                    | US\$/ t ore feed  | \$11.43 |
|                     | Transitional             | US\$/ t ore feed  | \$11.26 |
|                     | Fresh                    | US\$/ t ore feed  | \$14.35 |
| Fixed G&A Cost      | Annual Cost              | M US\$ / year     | \$20.57 |
|                     | Oxide                    | Mtpa ore feed     | 5.0     |
|                     |                          | US\$/ t ore feed  | \$3.81  |
|                     | Transitional             | Mtpa ore feed     | 5.0     |
|                     |                          | US\$/ t ore feed  | \$3.81  |
|                     | Fresh                    | Mtpa ore feed     | 4.5     |
|                     |                          | US\$/ t ore feed  | \$5.14  |
| Total               | Oxide                    | US\$/ t ore feed  | \$15.69 |
|                     | Transitional             | US\$/ t ore feed  | \$15.52 |
|                     | Fresh                    | US\$/ t ore feed  | \$19.94 |

### **Capital Cost**

Capital costs were not included as part of the optimisation process. This is not considered material as initial capital is applied without discounting to all shells equally and therefore does not affect shell selection.

### **Revenue and Financial**

The optimisations were run at a range of gold prices, with the associated royalties and “selling” costs in line with the Doropo DFS. The gold prices used and associated net prices are shown in Table 4-9.

**Table 4-8: Optimisation – Net Gold Price Range**

| Base      | US\$ /oz.            | \$1,750 | \$2,000 | \$2,250 | \$2,500 | \$2,750 | \$3,000 | \$3,250 | \$3,500  |
|-----------|----------------------|---------|---------|---------|---------|---------|---------|---------|----------|
| Royalties | Govt.                | 8.00%   |         |         |         |         |         |         |          |
|           | Tenement             | 0.50%   |         |         |         |         |         |         |          |
|           | Social Fund          | 0.50%   |         |         |         |         |         |         |          |
| Refining  | Gold Loss            | 0.05%   |         |         |         |         |         |         |          |
|           | Refining<br>US\$ /oz | \$4.00  |         |         |         |         |         |         |          |
| Net       | US\$ /oz             | \$1,588 | \$1,815 | \$2,042 | \$2,270 | \$2,497 | \$2,725 | \$2,952 | \$3,179  |
|           | US\$ /gm             | \$51.04 | \$58.35 | \$65.66 | \$72.97 | \$80.28 | \$87.59 | \$94.90 | \$102.22 |

A 5% discount rate was used for NPV calculations, consistent with the 2024 FS.

### 4.8.3 Sensitivity Analysis

The optimisations were done separately on the central and southern models. The results of the optimisation scenarios are presented in two tables, one showing the physicals (tones and grade) generated, the other showing the financial outcomes (costs, revenue, undiscounted and discounted cashflows), refer to Section 4.13.1. The second table also shows some key metrics, being strip ratio, cost per oz, and mine life, for comparative purposes.

The two tables for Kona Central pit are provided in Table 4-10 and Table 4-11, with Kona South pit presented in Table 4-12 and Table 4-13. The two pits combined for each scenario are provide in Table 4-14 and Table 4-15. It should be noted that the discounted cashflows cannot be combined as the results for each pit assume starting at Year 1 and fully supply the required plant feed.

The results are shown graphically in Figure 4-5 for Kona Central, and Figure 4-6 for Kona South. The following general observations are made:

- All graphs are shown with a vertical access of +150% to -150% to show the relative sensitivity.
- Kona Central is marginally more sensitive to parameter changes than Kona South, most likely due to Kona South's higher average grade.
- Both pits are most sensitive to changes in (gold) price or recovery, inputs that directly affect revenue. In the case of Kona Central, it is an almost 3-fold sensitivity on average DCF (i.e. a 20% variation in price or recovery results in a 60% change in average DCF). Kona South DCF sensitivity is just over 2-fold.
- Total tonnes is an indication of overall pit size sensitivity. Kona South shows a 1:1 sensitivity ratio for price to total tonnes and the same for recovery. It is less sensitive to costs at 1:0.6. Kona Central is more sensitive at 1:1.3 for price and recovery and 1:0.8. It is noted that the gradient of the curve for Kona Central seems to be steepening for the price parameter, indicating the relative variation in total tonnes would increase the lower the gold price. However, both the ore tonnes and average DCF curves are more constant, indicating the smaller shell are retaining value.
- Both Central and South are relatively insensitive to slope changes, most likely a function of the relatively low strip ratios.

Table 4-9: Optimisation Physical Results – Kona Central Pit

| Scenario | Optimal Shell | Revenue Factor | Description                  | Ore         |      |       |      |           |      |        |      |        |      |           |           | Waste  | Total   |
|----------|---------------|----------------|------------------------------|-------------|------|-------|------|-----------|------|--------|------|--------|------|-----------|-----------|--------|---------|
|          |               |                |                              | Transported |      | Oxide |      | Saprolite |      | Fresh  |      | Total  |      |           |           |        |         |
|          |               |                |                              | kt          | g/t  | kt    | g/t  | kt        | g/t  | kt     | g/t  | kt     | g/t  | Con. koz. | Rec. koz. | kt     | kt      |
| C1       | 23            | 0.94           | 2500 US\$/oz                 | 139         | 0.53 | 791   | 0.56 | 1,805     | 0.55 | 40,269 | 0.71 | 43,005 | 0.70 | 971       | 805       | 59,929 | 102,933 |
| C2       | 22            | 0.92           | 2750 US\$/oz                 | 158         | 0.50 | 899   | 0.52 | 2,067     | 0.51 | 48,126 | 0.67 | 51,251 | 0.66 | 1,091     | 901       | 64,108 | 115,358 |
| C3       | 21            | 0.90           | 3000 US\$/oz                 | 166         | 0.48 | 933   | 0.51 | 2,175     | 0.50 | 52,947 | 0.65 | 56,220 | 0.64 | 1,158     | 954       | 66,320 | 122,540 |
| C4       | 24            | 0.96           | 2250 US\$/oz                 | 127         | 0.55 | 739   | 0.58 | 1,660     | 0.57 | 33,671 | 0.76 | 36,198 | 0.75 | 867       | 721       | 58,313 | 94,511  |
| C5       | 24            | 0.96           | 2000 US\$/oz                 | 105         | 0.61 | 614   | 0.63 | 1,381     | 0.62 | 24,859 | 0.81 | 26,959 | 0.80 | 690       | 577       | 46,736 | 73,695  |
| C6       | 25            | 0.98           | 1750 US\$/oz                 | 82          | 0.67 | 495   | 0.70 | 1,072     | 0.68 | 12,437 | 0.90 | 14,085 | 0.87 | 395       | 334       | 23,219 | 37,304  |
| C7       | 24            | 0.96           | C1 Mining Costs +15%         | 139         | 0.53 | 788   | 0.56 | 1,780     | 0.55 | 39,325 | 0.72 | 42,032 | 0.70 | 952       | 789       | 57,291 | 99,323  |
| C8       | 23            | 0.94           | C1 Mining Costs -15%         | 139         | 0.53 | 792   | 0.56 | 1,827     | 0.54 | 43,141 | 0.71 | 45,900 | 0.70 | 1,030     | 852       | 68,993 | 114,892 |
| C9       | 24            | 0.96           | C1 Processing Costs +15%     | 125         | 0.56 | 728   | 0.58 | 1,585     | 0.58 | 33,014 | 0.77 | 35,453 | 0.76 | 863       | 719       | 61,998 | 97,450  |
| C10      | 22            | 0.92           | C1 Processing Costs -15%     | 165         | 0.48 | 928   | 0.51 | 2,151     | 0.50 | 50,230 | 0.66 | 53,474 | 0.65 | 1,115     | 919       | 61,678 | 115,152 |
| C11      | 23            | 0.94           | C1 Processing Recoveries +5% | 157         | 0.50 | 886   | 0.53 | 2,031     | 0.52 | 43,779 | 0.70 | 46,853 | 0.69 | 1,035     | 898       | 64,966 | 111,819 |
| C12      | 23            | 0.94           | C1 Processing Recoveries -5% | 132         | 0.54 | 760   | 0.57 | 1,702     | 0.56 | 37,098 | 0.73 | 39,692 | 0.72 | 922       | 727       | 59,198 | 98,889  |
| C13      | 22            | 0.92           | C1 Slopes +5 degrees         | 139         | 0.53 | 784   | 0.56 | 1,777     | 0.55 | 40,438 | 0.72 | 43,137 | 0.71 | 980       | 812       | 53,853 | 96,990  |
| C14      | 23            | 0.94           | C1 Slopes -5 degrees         | 139         | 0.44 | 793   | 0.56 | 1,830     | 0.54 | 40,433 | 0.71 | 43,195 | 0.70 | 970       | 803       | 67,954 | 111,149 |
| C15      | 21            | 0.90           | 3250 US\$/oz                 | 194         | 0.44 | 1,067 | 0.47 | 2,498     | 0.46 | 60,705 | 0.61 | 64,465 | 0.60 | 1,253     | 1,030     | 66,101 | 130,565 |
| C16      | 20            | 0.88           | 3500 US\$/oz                 | 196         | 0.50 | 1,083 | 0.47 | 2,539     | 0.46 | 63,842 | 0.60 | 67,661 | 0.59 | 1,290     | 1,059     | 67,223 | 134,884 |
| C17      | 22            | 0.92           | C2 Slopes +5 degrees         | 158         | 0.50 | 900   | 0.52 | 2,096     | 0.51 | 46,747 | 0.67 | 49,902 | 0.66 | 1,060     | 875       | 68,347 | 118,249 |

**Table 4-10: Optimisation Financial Results – Kona Central Pit**

| Scenario | Optimal Shell | Revenue Factor | Description                  | Undiscounted Financials |           |               |           |           | Discounted Cashflows |           |              | KPI         |              |           |
|----------|---------------|----------------|------------------------------|-------------------------|-----------|---------------|-----------|-----------|----------------------|-----------|--------------|-------------|--------------|-----------|
|          |               |                |                              | Mining Cost             | Ore Cost  | Selling Costs | Revenue   | Cashflow  | Worst Case           | Best Case | Average Case | Strip Ratio | Cost per Oz. | Mine Life |
|          |               |                |                              | \$M                     | \$M       | \$M           | \$M       | \$M       | \$M                  | \$M       | \$M          | W:O         | \$/Oz        | Years     |
| C1       | 23            | 0.94           | 2500 US\$/oz                 | \$350.7                 | \$914.0   | \$185.3       | \$2,011.6 | \$561.6   | \$411.1              | \$455.5   | \$433.3      | 1.39        | 1,802        | 10.6      |
| C2       | 22            | 0.92           | 2750 US\$/oz                 | \$394.6                 | \$1,089.9 | \$227.8       | \$2,476.8 | \$764.5   | \$533.4              | \$598.6   | \$566.0      | 1.25        | 1,901        | 12.6      |
| C3       | 21            | 0.90           | 3000 US\$/oz                 | \$420.3                 | \$1,196.3 | \$263.0       | \$2,863.4 | \$983.7   | \$669.9              | \$749.0   | \$709.4      | 1.18        | 1,969        | 13.8      |
| C4       | 24            | 0.96           | 2250 US\$/oz                 | \$321.3                 | \$768.3   | \$149.8       | \$1,622.9 | \$383.6   | \$291.2              | \$321.8   | \$306.5      | 1.61        | 1,718        | 8.9       |
| C5       | 24            | 0.96           | 2000 US\$/oz                 | \$248.0                 | \$571.2   | \$106.7       | \$1,153.1 | \$227.2   | \$183.2              | \$199.1   | \$191.2      | 1.73        | 1,606        | 6.6       |
| C6       | 25            | 0.98           | 1750 US\$/oz                 | \$121.0                 | \$295.8   | \$54.3        | \$584.9   | \$113.8   | \$100.7              | \$105.1   | \$102.9      | 1.65        | 1,409        | 3.4       |
| C7       | 24            | 0.96           | C1 Mining Costs +15%         | \$389.0                 | \$893.2   | \$181.6       | \$1,972.0 | \$508.2   | \$372.1              | \$416.0   | \$394.1      | 1.36        | 1,856        | 10.3      |
| C8       | 23            | 0.94           | C1 Mining Costs -15%         | \$334.1                 | \$976.3   | \$196.3       | \$2,131.2 | \$624.5   | \$450.7              | \$499.8   | \$475.2      | 1.50        | 1,767        | 11.3      |
| C9       | 24            | 0.96           | C1 Processing Costs +15%     | \$331.6                 | \$865.6   | \$165.5       | \$1,796.9 | \$434.2   | \$332.4              | \$365.0   | \$348.7      | 1.75        | 1,896        | 8.7       |
| C10      | 22            | 0.92           | C1 Processing Costs -15%     | \$393.9                 | \$966.7   | \$211.6       | \$2,297.7 | \$725.4   | \$498.7              | \$563.3   | \$531.0      | 1.15        | 1,711        | 13.2      |
| C11      | 23            | 0.94           | C1 Processing Recoveries +5% | \$382.2                 | \$995.4   | \$206.9       | \$2,246.2 | \$661.8   | \$473.8              | \$527.4   | \$500.6      | 1.39        | 1,763        | 11.5      |
| C12      | 23            | 0.94           | C1 Processing Recoveries -5% | \$336.7                 | \$843.3   | \$167.4       | \$1,817.6 | \$470.2   | \$350.5              | \$387.4   | \$368.9      | 1.49        | 1,853        | 9.8       |
| C13      | 22            | 0.92           | C1 Slopes +5 degrees         | \$331.8                 | \$917.1   | \$186.9       | \$2,029.3 | \$593.6   | \$435.9              | \$481.2   | \$458.5      | 1.25        | 1,769        | 10.6      |
| C14      | 23            | 0.94           | C1 Slopes -5 degrees         | \$377.4                 | \$918.0   | \$184.9       | \$2,007.8 | \$527.4   | \$383.3              | \$428.5   | \$405.9      | 1.57        | 1,843        | 10.6      |
| C15      | 21            | 0.90           | 3250 US\$/oz                 | \$448.8                 | \$1,371.8 | \$307.0       | \$3,346.6 | \$1,219.0 | \$792.2              | \$895.1   | \$843.7      | 1.03        | 2,066        | 15.9      |
| C16      | 20            | 0.88           | 3500 US\$/oz                 | \$464.6                 | \$1,440.4 | \$339.7       | \$3,706.9 | \$1,462.2 | \$938.4              | \$1,050.0 | \$994.2      | 0.99        | 2,119        | 16.7      |
| C17      | 22            | 0.92           | C2 Slopes +5 degrees         | \$402.3                 | \$1,060.7 | \$221.3       | \$2,407.1 | \$722.8   | \$506.5              | \$566.1   | \$536.3      | 1.37        | 1,924        | 12.3      |



Table 4-11: Optimisation Physical Results – Kona South Pit

| Scenario | Optimal Shell | Revenue Factor | Description                  | Ore         |      |       |      |           |      |        |      |        |      |           |           | Waste  | Total   |
|----------|---------------|----------------|------------------------------|-------------|------|-------|------|-----------|------|--------|------|--------|------|-----------|-----------|--------|---------|
|          |               |                |                              | Transported |      | Oxide |      | Saprolite |      | Fresh  |      | Total  |      |           |           |        |         |
|          |               |                |                              | kt          | g/t  | kt    | g/t  | kt        | g/t  | kt     | g/t  | kt     | g/t  | Con. koz. | Rec. koz. | kt     | kt      |
| S1       | 23            | 0.94           | 2500 US\$/oz                 | 100         | 0.88 | 1,123 | 0.80 | 1,129     | 0.78 | 26,313 | 0.96 | 28,665 | 0.95 | 873       | 743       | 60,343 | 89,008  |
| S2       | 24            | 0.96           | 2750 US\$/oz                 | 106         | 0.84 | 1,140 | 0.79 | 1,152     | 0.77 | 31,165 | 0.90 | 33,562 | 0.90 | 966       | 819       | 73,653 | 107,215 |
| S3       | 22            | 0.92           | 3000 US\$/oz                 | 106         | 0.84 | 1,147 | 0.79 | 1,165     | 0.76 | 32,121 | 0.89 | 34,539 | 0.88 | 981       | 831       | 74,825 | 109,364 |
| S4       | 24            | 0.96           | 2250 US\$/oz                 | 99          | 0.88 | 1,104 | 0.81 | 1,095     | 0.80 | 22,863 | 1.01 | 25,162 | 1.00 | 805       | 688       | 53,426 | 78,588  |
| S5       | 24            | 0.96           | 2000 US\$/oz                 | 91          | 0.94 | 1,057 | 0.83 | 1,036     | 0.82 | 20,358 | 1.06 | 22,542 | 1.04 | 754       | 646       | 49,876 | 72,418  |
| S6       | 24            | 0.96           | 1750 US\$/oz                 | 83          | 0.99 | 992   | 0.86 | 969       | 0.85 | 16,937 | 1.12 | 18,981 | 1.10 | 669       | 576       | 42,838 | 61,820  |
| S7       | 23            | 0.94           | S1 Mining Costs +15%         | 100         | 0.88 | 1,123 | 0.80 | 1,126     | 0.78 | 24,560 | 0.98 | 26,910 | 0.96 | 832       | 710       | 53,824 | 80,733  |
| S8       | 23            | 0.94           | S1 Mining Costs -15%         | 100         | 0.88 | 1,123 | 0.80 | 1,130     | 0.78 | 27,515 | 0.95 | 29,869 | 0.94 | 901       | 766       | 65,741 | 95,609  |
| S9       | 24            | 0.96           | S1 Processing Costs +15%     | 97          | 0.90 | 1,097 | 0.81 | 1,082     | 0.80 | 23,065 | 1.02 | 25,340 | 1.00 | 813       | 694       | 55,685 | 81,026  |
| S10      | 23            | 0.94           | S1 Processing Costs -15%     | 106         | 0.84 | 1,144 | 0.79 | 1,160     | 0.77 | 29,697 | 0.91 | 32,106 | 0.90 | 929       | 789       | 64,951 | 97,057  |
| S11      | 23            | 0.94           | S1 Processing Recoveries +5% | 105         | 0.85 | 1,135 | 0.79 | 1,146     | 0.77 | 27,628 | 0.95 | 30,015 | 0.93 | 900       | 804       | 64,296 | 94,311  |
| S12      | 23            | 0.94           | S1 Processing Recoveries -5% | 99          | 0.88 | 1,110 | 0.81 | 1,109     | 0.79 | 23,891 | 1.00 | 26,210 | 0.98 | 826       | 670       | 55,627 | 81,837  |
| S13      | 24            | 0.96           | S1 Slopes +5 degrees         | 100         | 0.88 | 1,123 | 0.80 | 1,118     | 0.78 | 28,693 | 0.94 | 31,034 | 0.93 | 930       | 790       | 59,247 | 90,281  |
| S14      | 22            | 0.92           | S1 Slopes -5 degrees         | 100         | 0.88 | 1,124 | 0.80 | 1,133     | 0.78 | 24,584 | 0.97 | 26,941 | 0.96 | 829       | 706       | 64,662 | 91,603  |
| S15      | 21            | 0.90           | 3250 US\$/oz                 | 109         | 0.82 | 1,155 | 0.78 | 1,178     | 0.76 | 34,388 | 0.86 | 36,831 | 0.86 | 1,013     | 857       | 77,661 | 114,491 |
| S16      | 23            | 0.94           | 3500 US\$/oz                 | 110         | 0.82 | 1,157 | 0.78 | 1,187     | 0.75 | 35,933 | 0.85 | 38,387 | 0.84 | 1,038     | 877       | 82,362 | 120,749 |
| S17      | 22            | 0.92           | S2 Slopes +5 degrees         | 106         | 0.84 | 1,140 | 0.79 | 1,157     | 0.77 | 28,276 | 0.92 | 30,678 | 0.91 | 900       | 765       | 74,346 | 105,024 |

**Table 4-12: Optimisation Financial Results – Kona South Pit**

| Scenario | Optimal Shell | Revenue Factor | Description                  | Undiscounted Financials |          |               |           |           | Discounted Cashflows |           |              | KPI         |              |           |
|----------|---------------|----------------|------------------------------|-------------------------|----------|---------------|-----------|-----------|----------------------|-----------|--------------|-------------|--------------|-----------|
|          |               |                |                              | Mining Cost             | Ore Cost | Selling Costs | Revenue   | Cashflow  | Worst Case           | Best Case | Average Case | Strip Ratio | Cost per Oz. | Mine Life |
|          |               |                |                              | \$M                     | \$M      | \$M           | \$M       | \$M       | \$M                  | \$M       | \$M          | W:O         | \$/Oz        | Years     |
| S1       | 23            | 0.94           | 2500 US\$/oz                 | \$319.5                 | \$606.8  | \$171.1       | \$1,858.1 | \$760.7   | \$616.5              | \$655.3   | \$635.9      | 2.11        | 1,477        | 7.0       |
| S2       | 24            | 0.96           | 2750 US\$/oz                 | \$389.2                 | \$712.2  | \$207.2       | \$2,252.8 | \$944.3   | \$747.9              | \$800.1   | \$774.0      | 2.19        | 1,597        | 8.2       |
| S3       | 22            | 0.92           | 3000 US\$/oz                 | \$397.5                 | \$733.1  | \$228.9       | \$2,492.6 | \$1,133.1 | \$895.1              | \$948.5   | \$921.8      | 2.17        | 1,636        | 8.5       |
| S4       | 24            | 0.96           | 2250 US\$/oz                 | \$280.3                 | \$531.6  | \$142.8       | \$1,547.9 | \$593.2   | \$489.7              | \$518.2   | \$503.9      | 2.12        | 1,388        | 6.1       |
| S5       | 24            | 0.96           | 2000 US\$/oz                 | \$257.3                 | \$475.6  | \$119.5       | \$1,292.3 | \$439.8   | \$368.3              | \$389.8   | \$379.0      | 2.21        | 1,319        | 5.5       |
| S6       | 24            | 0.96           | 1750 US\$/oz                 | \$217.9                 | \$399.5  | \$93.5        | \$1,007.9 | \$297.0   | \$253.5              | \$267.0   | \$260.2      | 2.26        | 1,234        | 4.6       |
| S7       | 23            | 0.94           | S1 Mining Costs +15%         | \$331.1                 | \$569.0  | \$163.4       | \$1,774.2 | \$710.6   | \$580.3              | \$616.3   | \$598.3      | 2.00        | 1,499        | 6.6       |
| S8       | 23            | 0.94           | S1 Mining Costs 15%          | \$292.9                 | \$632.8  | \$176.5       | \$1,916.2 | \$814.0   | \$657.8              | \$696.3   | \$677.1      | 2.20        | 1,438        | 7.3       |
| S9       | 24            | 0.96           | S1 Processing Costs +15%     | \$289.0                 | \$615.8  | \$159.9       | \$1,736.1 | \$671.4   | \$554.4              | \$586.9   | \$570.6      | 2.20        | 1,533        | 6.2       |
| S10      | 23            | 0.94           | S1 Processing Costs 15%      | \$350.4                 | \$578.6  | \$181.6       | \$1,972.2 | \$861.5   | \$686.4              | \$730.1   | \$708.2      | 2.02        | 1,408        | 7.9       |
| S11      | 23            | 0.94           | S1 Processing Recoveries +5% | \$339.8                 | \$635.8  | \$185.1       | \$2,009.8 | \$849.2   | \$684.7              | \$727.2   | \$706.0      | 2.14        | 1,444        | 7.3       |
| S12      | 23            | 0.94           | S1 Processing Recoveries 5%  | \$292.1                 | \$554.1  | \$154.2       | \$1,674.7 | \$674.3   | \$554.1              | \$585.7   | \$569.9      | 2.12        | 1,493        | 6.4       |
| S13      | 24            | 0.96           | S1 Slopes +5 degrees         | \$327.5                 | \$657.9  | \$181.9       | \$1,975.1 | \$807.7   | \$649.4              | \$694.8   | \$672.1      | 1.91        | 1,478        | 7.6       |
| S14      | 22            | 0.92           | S1 Slopes 5 degrees          | \$325.9                 | \$569.6  | \$162.6       | \$1,765.9 | \$707.7   | \$577.7              | \$612.4   | \$595.0      | 2.40        | 1,498        | 6.6       |
| S15      | 21            | 0.90           | 3250 US\$/oz                 | \$417.4                 | \$782.4  | \$255.5       | \$2,784.9 | \$1,329.6 | \$1,039.3            | \$1,096.8 | \$1,068.0    | 2.11        | 1,698        | 9.0       |
| S16      | 23            | 0.94           | 3500 US\$/oz                 | \$441.5                 | \$815.9  | \$281.4       | \$3,070.3 | \$1,531.6 | \$1,190.4            | \$1,251.0 | \$1,220.7    | 2.15        | 1,754        | 9.4       |
| S17      | 22            | 0.92           | S2 Slopes +5 degrees         | -\$376.4                | -\$650.0 | -\$193.4      | \$2,103.3 | \$883.5   | \$707.3              | \$756.9   | \$732.1      | 2.42        | 1,595        | 7.5       |

**Table 4-13: Optimisation Physical Results – Combined Pits**

| Scenario | Description               | Ore         |      |       |      |           |      |        |      |         |      |           |          | Waste   | Total   |
|----------|---------------------------|-------------|------|-------|------|-----------|------|--------|------|---------|------|-----------|----------|---------|---------|
|          |                           | Transported |      | Oxide |      | Saprolite |      | Fresh  |      | Total   |      |           |          |         |         |
|          |                           | kt          | g/t  | kt    | g/t  | kt        | g/t  | kt     | g/t  | kt      | g/t  | Con. koz. | Rec koz. | kt      | kt      |
| C/S1     | 2500 US\$/oz              | 240         | 0.67 | 1,914 | 0.70 | 2,934     | 0.64 | 66,582 | 0.81 | 71,670  | 0.80 | 1,844     | 1,548    | 120,272 | 191,942 |
| C/S2     | 2750 US\$/oz              | 264         | 0.63 | 2,039 | 0.67 | 3,219     | 0.60 | 79,291 | 0.76 | 84,812  | 0.75 | 2,057     | 1,720    | 137,761 | 222,573 |
| C/S3     | 3000 US\$/oz              | 272         | 0.62 | 2,080 | 0.66 | 3,339     | 0.59 | 85,067 | 0.74 | 90,759  | 0.73 | 2,139     | 1,785    | 141,145 | 231,904 |
| C/S4     | 2250 US\$/oz              | 226         | 0.70 | 1,843 | 0.72 | 2,755     | 0.66 | 56,535 | 0.86 | 61,359  | 0.85 | 1,672     | 1,409    | 111,740 | 173,099 |
| C/S5     | 2000 US\$/oz              | 196         | 0.76 | 1,670 | 0.76 | 2,417     | 0.70 | 45,217 | 0.92 | 49,501  | 0.91 | 1,444     | 1,223    | 96,612  | 146,113 |
| C/S6     | 1750 US\$/oz              | 165         | 0.83 | 1,487 | 0.81 | 2,041     | 0.76 | 29,374 | 1.03 | 33,066  | 1.00 | 1,065     | 910      | 66,057  | 99,123  |
| C/S7     | Mining Costs +15%         | 240         | 0.67 | 1,911 | 0.70 | 2,906     | 0.64 | 63,885 | 0.82 | 68,942  | 0.80 | 1,784     | 1,498    | 111,115 | 180,056 |
| C/S8     | Mining Costs 15%          | 240         | 0.67 | 1,916 | 0.70 | 2,957     | 0.63 | 70,656 | 0.80 | 75,768  | 0.79 | 1,931     | 1,619    | 134,734 | 210,502 |
| C/S9     | Processing Costs +15%     | 222         | 0.71 | 1,825 | 0.72 | 2,667     | 0.67 | 56,079 | 0.87 | 60,793  | 0.86 | 1,676     | 1,413    | 117,683 | 178,476 |
| C/S10    | Processing Costs 15%      | 271         | 0.62 | 2,071 | 0.67 | 3,311     | 0.59 | 79,926 | 0.75 | 85,580  | 0.74 | 2,044     | 1,708    | 126,629 | 212,209 |
| C/S11    | Processing Recoveries +5% | 262         | 0.64 | 2,022 | 0.68 | 3,177     | 0.61 | 71,407 | 0.79 | 76,868  | 0.78 | 1,935     | 1,702    | 129,262 | 206,130 |
| C/S12    | Processing Recoveries 5%  | 231         | 0.69 | 1,871 | 0.71 | 2,811     | 0.65 | 60,988 | 0.84 | 65,901  | 0.83 | 1,749     | 1,397    | 114,825 | 180,726 |
| C/S13    | Slopes +5 degrees         | 239         | 0.67 | 1,907 | 0.70 | 2,895     | 0.64 | 69,131 | 0.81 | 74,171  | 0.80 | 1,909     | 1,602    | 113,100 | 187,271 |
| C/S14    | Slopes 5 degrees          | 240         | 0.67 | 1,917 | 0.70 | 2,962     | 0.63 | 65,017 | 0.81 | 70,135  | 0.80 | 1,799     | 1,509    | 132,616 | 202,751 |
| C/S15    | 3250 US\$/oz              | 303         | 0.58 | 2,222 | 0.63 | 3,677     | 0.56 | 95,093 | 0.70 | 101,295 | 0.70 | 2,266     | 1,887    | 143,761 | 245,057 |
| C/S16    | 3500 US\$/oz              | 306         | 0.58 | 2,241 | 0.63 | 3,725     | 0.55 | 99,775 | 0.69 | 106,048 | 0.68 | 2,328     | 1,936    | 149,586 | 255,633 |
| C/S17    | S2 Slopes +5 degrees      | 264         | 0.63 | 2,040 | 0.67 | 3,253     | 0.60 | 75,023 | 0.77 | 80,580  | 0.76 | 1,960     | 1,640    | 142,693 | 223,273 |

Table 4-14: Optimisation Financial Results – Combined Pits

| Scenario | Description                  | Undiscounted Financials |            |               |           |           | Discounted Cashflows |           |              | KPI         |              |           |
|----------|------------------------------|-------------------------|------------|---------------|-----------|-----------|----------------------|-----------|--------------|-------------|--------------|-----------|
|          |                              | Mining Cost             | Ore Cost   | Selling Costs | Revenue   | Cashflow  | Worst Case           | Best Case | Average Case | Strip Ratio | Cost per Oz. | Mine Life |
|          |                              | \$M                     | \$M        | \$M           | \$M       | \$M       | \$M                  | \$M       | \$M          | W:O         | \$/Oz        | Years     |
| C/S1     | 2500 US\$/oz                 | \$670.2                 | \$1,520.9  | \$356.4       | \$3,869.8 | \$1,322.3 | Not Cumulative       |           |              | 1.68        | 1,646        | 17.6      |
| C/S2     | 2750 US\$/oz                 | \$783.7                 | \$1,802.1  | \$434.9       | \$4,729.6 | \$1,708.8 |                      |           |              | 1.62        | 1,756        | 20.8      |
| C/S3     | 3000 US\$/oz                 | \$817.8                 | \$1,929.5  | \$491.9       | \$5,356.1 | \$2,116.9 |                      |           |              | 1.56        | 1,814        | 22.3      |
| C/S4     | 2250 US\$/oz                 | \$601.6                 | \$1,299.9  | \$292.6       | \$3,170.8 | \$976.8   |                      |           |              | 1.82        | 1,557        | 15.0      |
| C/S5     | 2000 US\$/oz                 | \$505.4                 | \$1,046.8  | \$226.2       | \$2,445.4 | \$667.0   |                      |           |              | 1.95        | 1,454        | 12.1      |
| C/S6     | 1750 US\$/oz                 | \$338.8                 | \$695.3    | \$147.8       | \$1,592.7 | \$410.8   |                      |           |              | 2.00        | 1,299        | 8.0       |
| C/S7     | C1 Mining Costs +15%         | \$720.1                 | \$1,462.2  | \$345.0       | \$3,746.2 | \$1,218.8 |                      |           |              | 1.61        | 1,687        | 16.9      |
| C/S8     | C1 Mining Costs 15%          | \$627.0                 | \$1,609.1  | \$372.8       | \$4,047.4 | \$1,438.5 |                      |           |              | 1.78        | 1,611        | 18.6      |
| C/S9     | C1 Processing Costs +15%     | \$620.7                 | \$1,481.4  | \$325.4       | \$3,533.1 | \$1,105.6 |                      |           |              | 1.94        | 1,718        | 14.9      |
| C/S10    | C1 Processing Costs 15%      | \$744.3                 | \$1,545.3  | \$393.3       | \$4,269.8 | \$1,586.9 |                      |           |              | 1.48        | 1,571        | 21.0      |
| C/S11    | C1 Processing Recoveries +5% | \$721.9                 | \$1,631.2  | \$392.0       | \$4,256.1 | \$1,511.0 |                      |           |              | 1.68        | 1,612        | 18.9      |
| C/S12    | C1 Processing Recoveries 5%  | \$628.9                 | \$1,397.4  | \$321.6       | \$3,492.3 | \$1,144.4 |                      |           |              | 1.74        | 1,681        | 16.2      |
| C/S13    | C1 Slopes +5 degrees         | \$659.3                 | \$1,575.0  | \$368.8       | \$4,004.4 | \$1,401.3 |                      |           |              | 1.52        | 1,625        | 18.2      |
| C/S14    | C1 Slopes 5 degrees          | \$703.3                 | \$1,487.7  | \$347.5       | \$3,773.6 | \$1,235.1 |                      |           |              | 1.89        | 1,682        | 17.2      |
| C/S15    | 3250 US\$/oz                 | \$866.1                 | \$2,154.2  | \$562.4       | \$6,131.5 | \$2,548.6 |                      |           |              | 1.42        | 1,899        | 24.9      |
| C/S16    | 3500 US\$/oz                 | \$906.0                 | \$2,256.3  | \$621.1       | \$6,777.2 | \$2,993.8 |                      |           |              | 1.41        | 1,954        | 26.1      |
| C/S17    | S2 Slopes +5 degrees         | -\$778.7                | -\$1,710.7 | -\$414.7      | \$4,510.4 | \$1,606.2 |                      |           |              | 1.77        | 1,771        | 19.8      |

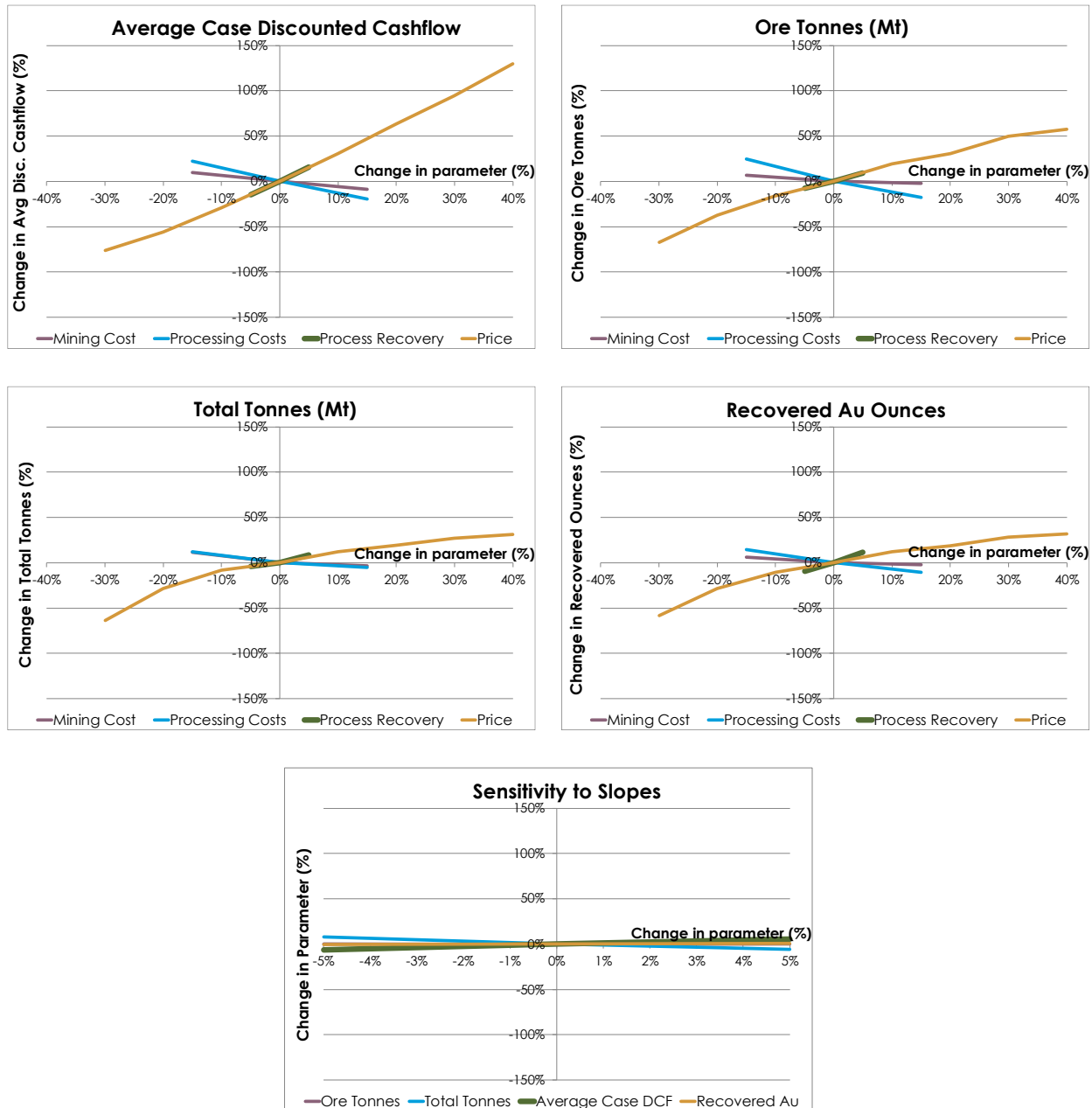


Figure 4-5: Optimisation Sensitivity – Kona Central Pit

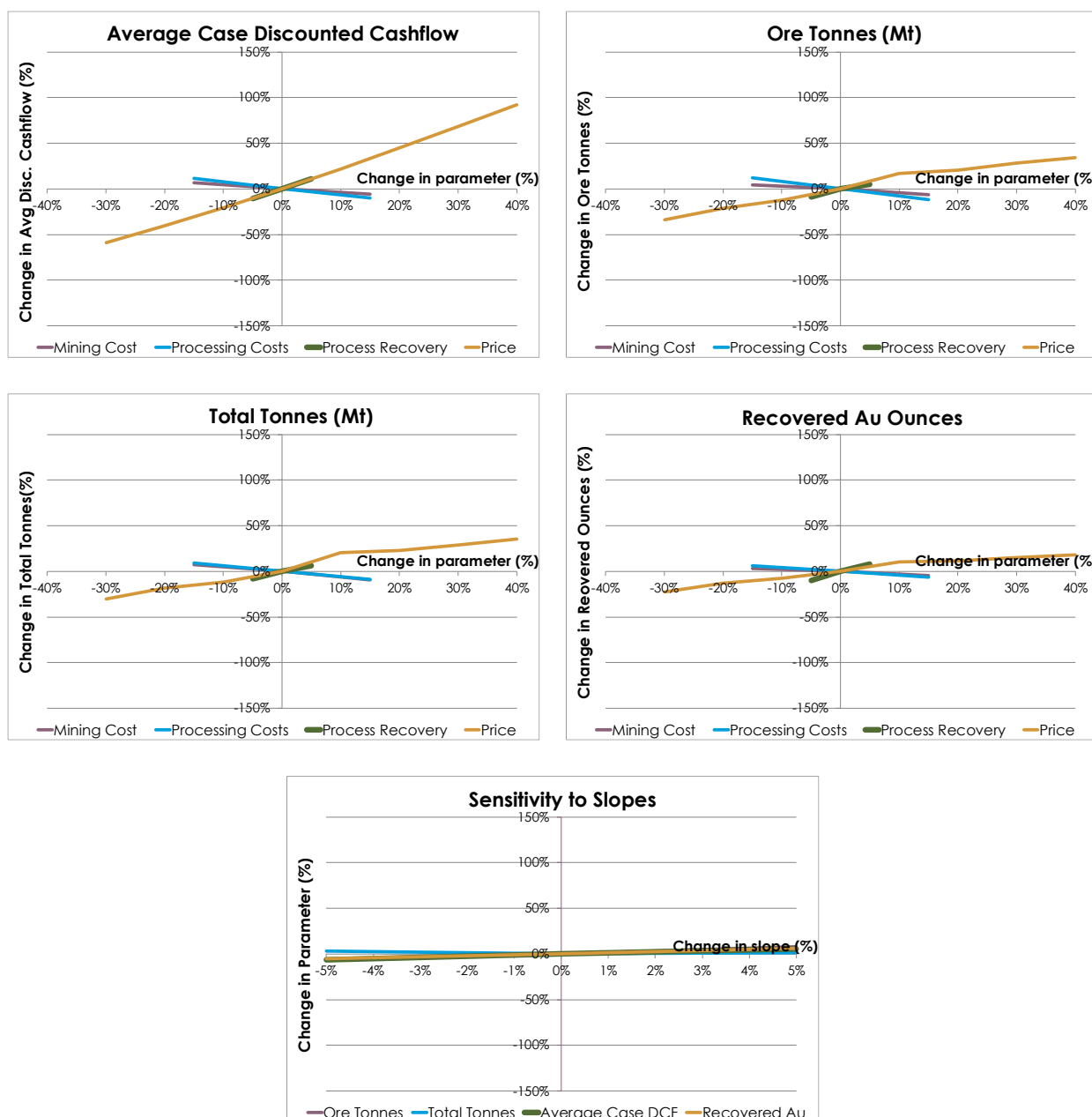


Figure 4-6: Optimisation Sensitivity – Kona South Pit

#### 4.8.4 Shell Selection

Resolute Mining selected a gold price of US\$2750/oz as the basis for this study's financial evaluation.

Evaluation of the average DCF shells for this gold price indicated that the base case slopes detailed in Section 4.13.2 were most likely too steep to account for ramps across the pit for multiple stages. This was primarily a result of the pit walls being predominantly in fresh material at the steepest slopes of 55°. Therefore, to select a shell for the purposes of generating a realistic life of mine schedule, an optimisation was run at the selected price at slopes of 30°, 40° and 50° for oxide, transitional, and fresh material respectively.

The shells selected are highlighted in the previous tables as the “Selection Case” Scenario 17 and are summarised in Table 4-16.

**Table 4-15: Optimisation Results – Shells Selected for Scheduling**

| Pit      | Scenario | Shell | Rev. Fac. | Ore    |      |           |           | Waste   | Total   | Undisc. Cashflow | Strip Ratio |
|----------|----------|-------|-----------|--------|------|-----------|-----------|---------|---------|------------------|-------------|
|          |          |       |           | kt     | g/t  | Con. oz.  | Rec oz.   | kt      | kt      | \$M              |             |
| Central  | C17      | 24    | 0.96      | 52,561 | 0.66 | 1,110,037 | 915,622   | 76,019  | 128,580 | \$729.2          | 1.45        |
| South    | S17      | 23    | 0.94      | 30,678 | 0.91 | 900,165   | 764,826   | 74,346  | 105,024 | \$883.5          | 2.42        |
| Combined | C/S17    |       |           | 83,239 | 0.75 | 2,010,202 | 1,680,447 | 150,365 | 233,604 | \$1,612.7        | 1.81        |

The Tonne / Value Curve and Strip Ratio / Cost per Tonne Curve for Kona Central are shown respectively in Figure 4-7 and Figure 4-8. Figure 4-7 shows the very flat value curve between the maximum worst case DCF shell and maximum best case DCF shell. Consequently, selecting a point between these two points will have minimal impact on shell value, and applying some interim staging to the any scheduling approach should provide value towards the best case shell. Figure 4-8 shows the shell selected (Shell 24 / Revenue Factor 0.96) sit at a point where the incremental strip ratio drops but is below Revenue Factor 1.

The Tonne / Value Curve and Strip Ratio / Cost per Tonne Curve for the Kona South Pit are shown respectively in Figure 4-9 and Figure 4-10. Figure 4-9 shows a value curve even flatter than the central pit. Figure 4-10 shows the shell selected (Shell 23 / Revenue Factor 0.94) sit at a point where the incremental strip ratio is at the lowest point.

**Figure 4-7: Optimisation Selection Case – Kona Central Pit Tonne / Value Curve**

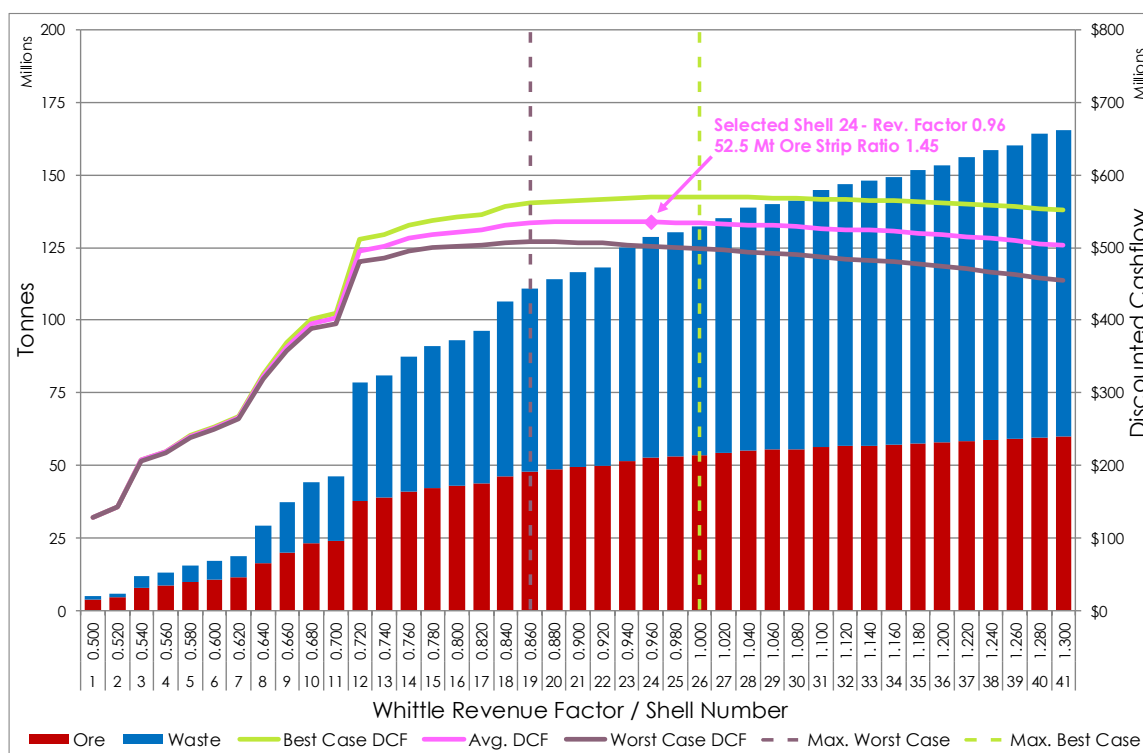


Figure 4-8: Optimisation Selection Case – Kona Central Pit Strip Ratio / Cost per Tonne Curve

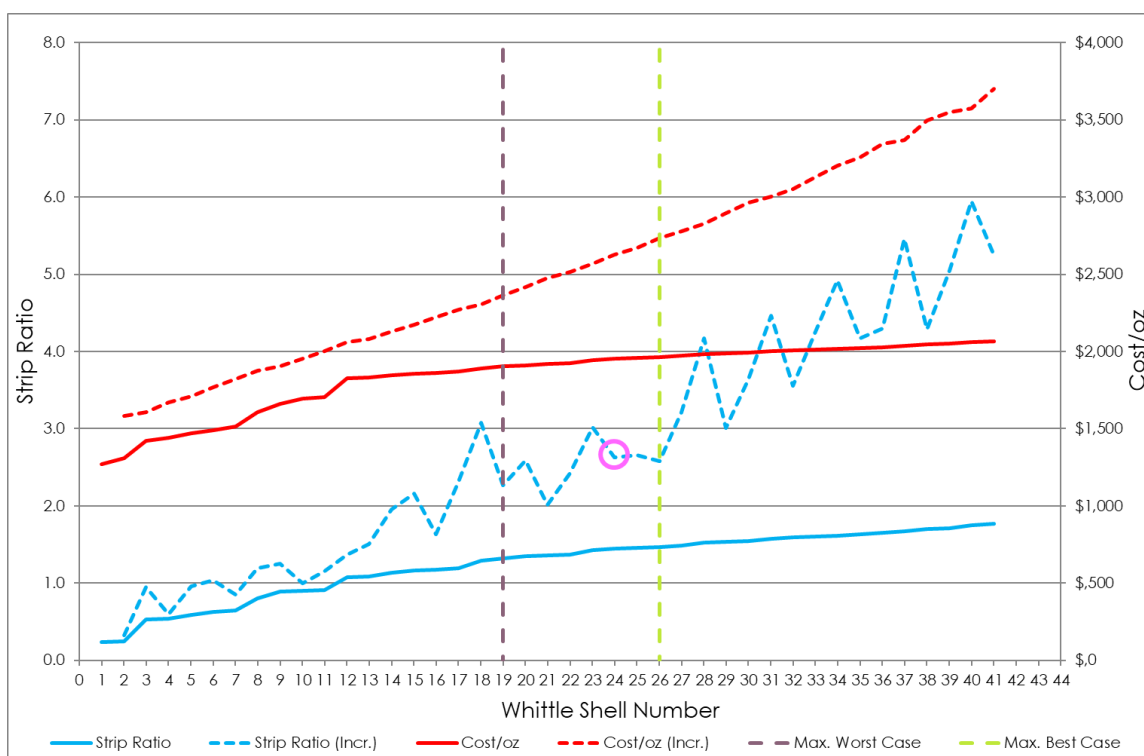


Figure 4-9: Optimisation Selection Case – Kona South Pit Tonne / Value Curve

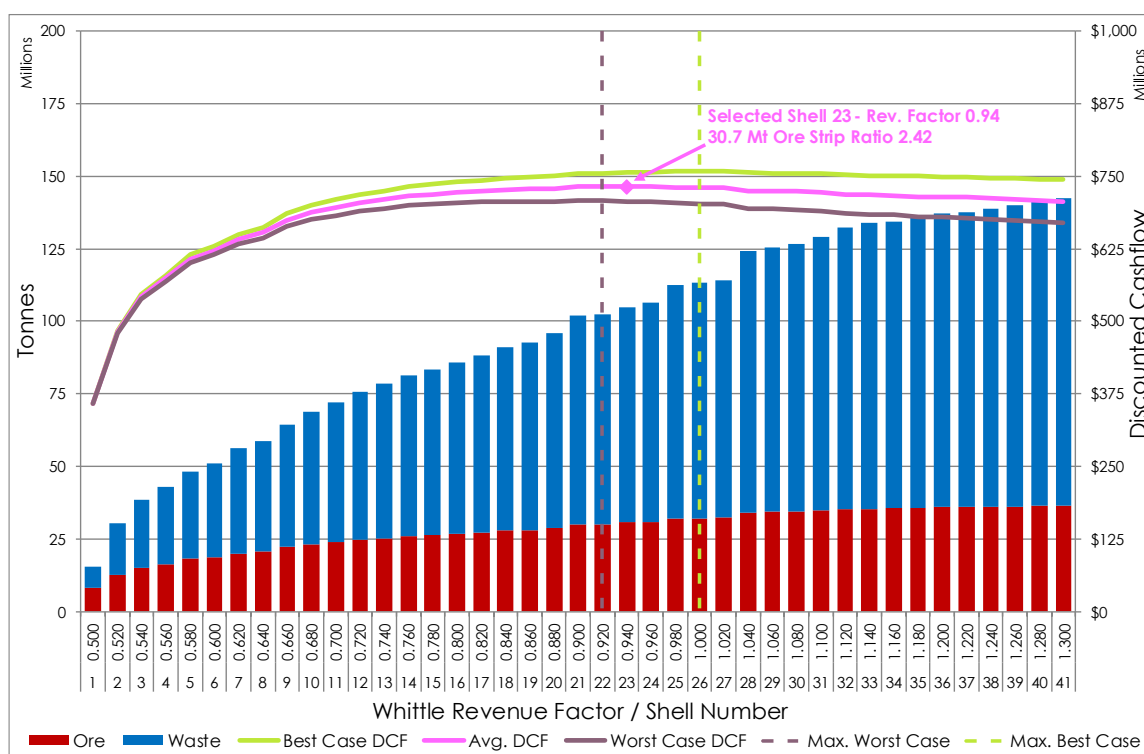
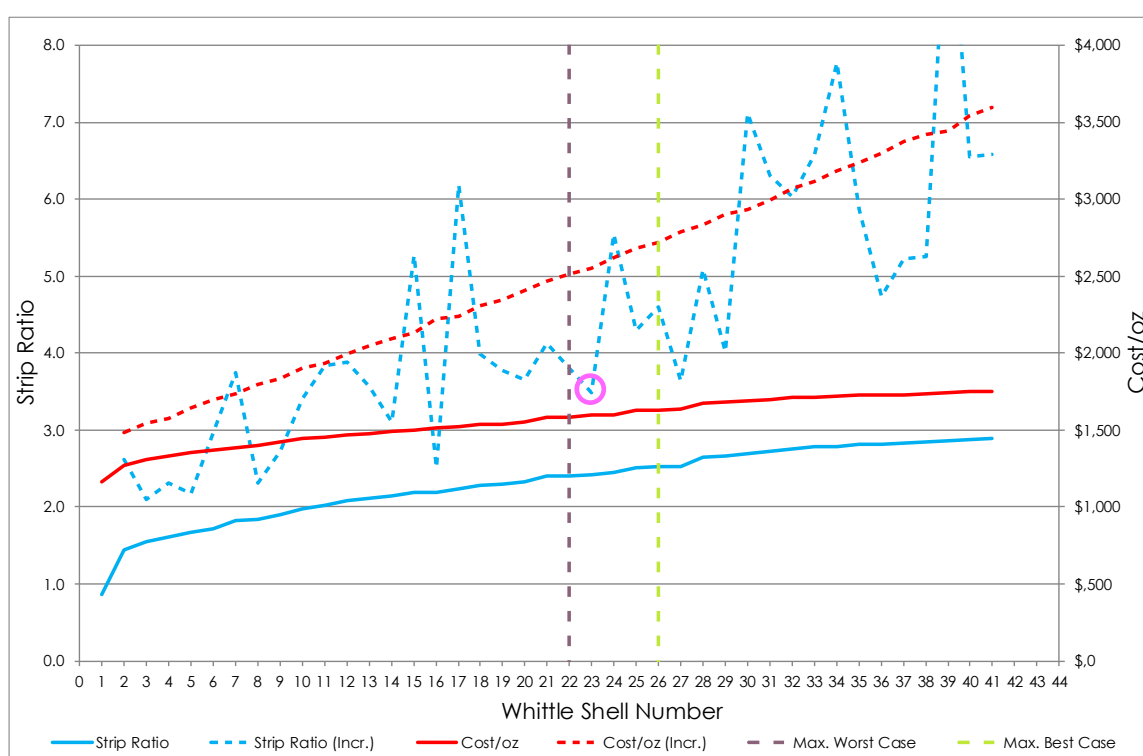




**Figure 4-10: Optimisation Selection Case – Kona South Pit Strip Ratio / Cost per Tonne Curve**

## 4.9 Mine Production Rate

The Doropo DFS assumed a 300 t excavator would be able to produce 7.5 to 8.0 Mtpa material movement, with the smaller 150 t unit producing 6.0 to 6.5 Mtpa.

Initially schedules were undertaken to feed a process plant of 4 Mtpa, based on the ore feed being predominantly fresh material (>90%). However, one of the key components of this study was to determine the maximum sustainable mill feed above the nominal 4 Mtpa. For the final 7 Mtpa mill feed schedule, mining was scheduled at the mid-point of the above ranges, being 7.75 Mtpa for the 300 t unit and 6.25 Mtpa for the 150 t unit. At peak there were one of each unit size allocated to each mining area (Kona South and Kona Central).

## 4.10 Mining Limits

The key mining constraint applied to the scheduling process was a maximum bench turnover rate of 10 x 5 m benches per year of 50 vertical metres. This is considered achievable given the size of the pits and the low strip ratio.

## 4.11 Ore/Waste Determination

The ore was defined on a cut-off grade basis of the breakeven cut-off formula utilised by Whittle is described as:

$$\text{Breakeven Cut-Off Grade} = [\text{Processing Cost} \times (1 + \text{Dilution})] / \text{Price} \times \text{Recovery}$$

Consequently, a cut-off is determined for oxide, transitional, and fresh material due to the differing costs and recoveries. The recovery for the bottom grade range is utilised on the basis the breakeven sits in this bandwidth. Details of the cut-off grade are illustrated in Table 4-17.

**Table 4-16: Breakeven Cut-off grade by Material Type**

| Item                    | Unit     | Oxide   | Trans   | Fresh   |
|-------------------------|----------|---------|---------|---------|
| Total Ore Cost          | US\$ / t | \$16.92 | \$16.75 | \$21.56 |
| Dilution                | %        | 10%     |         |         |
| Net Price               | US\$ / g | \$80.28 |         |         |
| Processing Recovery     | %        | 90.8%   | 88.7%   | 78.5%   |
| Breakeven Cut-Off Grade | g/t      | 0.255   | 0.259   | 0.376   |

## 4.12 Production Sequence and Schedules

### 4.12.1 Mining Stage Layout

For scheduling purposes, the selected shells were split into three approximate stages to allow for:

- Initial targeting areas of higher value areas,
- Balancing of ore and waste on a period-by-period basis.

The stage design layout for Kona Central and Kona South are shown in Figure 4-11 and Figure 4-12 respectively.

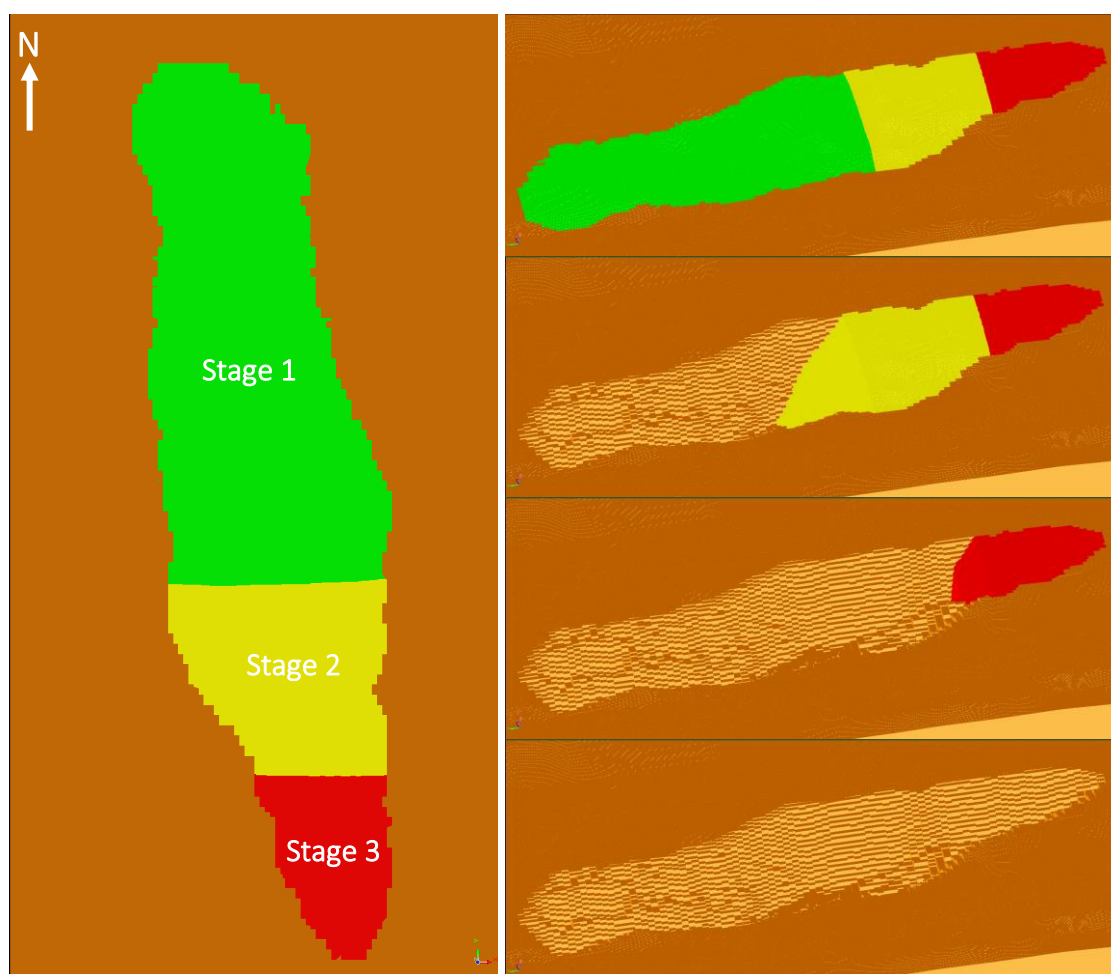


**Figure 4-11: Kona Central Pit Stage Layout for Scheduling**

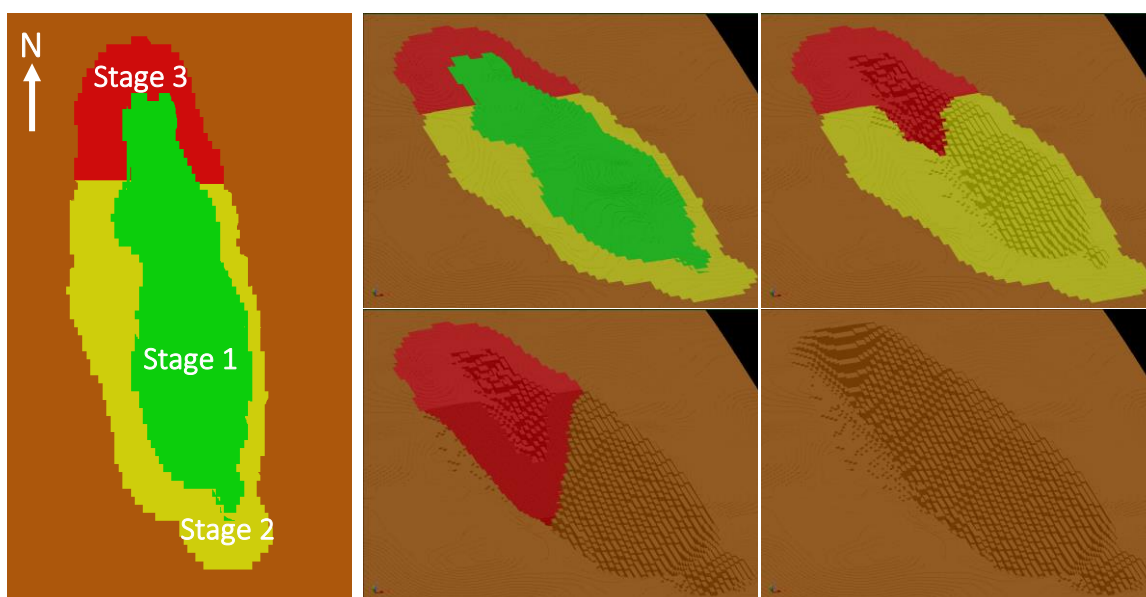


**Figure 4-12: Kona South Pit Stage Layout for Scheduling**

#### 4.12.2 Mining Inventory

The undiluted ore and waste was reported from the Surpac resource model (refer to Section 4.4) by bench, with ore and waste defined on the basis of the cut-off grades described in Section 4.16.

Dilution and ore loss was then applied in the spreadsheet on the same basis as the Whittle optimisation, being 10% and 5% respectively. However, Whittle applies these factors globally after the fact, whereas for scheduling this needed to be applied on a bench-by-bench basis. For any given bench, the ore loss was applied first, transferring 5% of the ore into the waste. Dilution was then applied, with a tonnage of waste added to the ore equivalent to 10% of the “recovered” ore tonnes. The waste dilution was assumed to have zero grade, in line with the Whittle approach. However, for each bench, it was checked that there was sufficient waste to undertake the 10% dilution. In other words, the diluent tonnes could not exceed the waste tonnage “available for dilution”, where the waste included the 5% of ore loss moved to the waste. Consequently, in benches where this was the case the dilution would be less than 10%. This will only occur on the bottom most bench of a stage if it is predominantly ore.

Table 4-18 shows the reconciliation between the Whittle shell inventory and the inventory calculated for scheduling. As can be seen:

- All pits reconcile exactly on total tonnes,
- Kona Central pit ore and waste reconciliation is effectively the same within the level of accuracy,
- Kona South pit shows the issue described above, where the ore tonnes have dropped slightly, but the grade has increased, maintaining the same contained metal.

**Table 4-17: Whittle Shell Inventory vs Scheduling Inventory**

| Area    | Material | Unit     | Inventory  |         | % Variation |
|---------|----------|----------|------------|---------|-------------|
|         |          |          | Scheduling | Whittle |             |
| Central | Ore      | Mt       | 52.74      | 52.56   | 0.3%        |
|         |          | Au (koz) | 1,112      | 1,110   | 0.2%        |
|         |          | Au (g/t) | 0.66       | 0.66    | -0.2%       |
|         | Waste    | Mt       | 75.84      | 76.02   | -0.2%       |
|         | Total    | Mt       | 128.57     | 128.58  | 0.0%        |
| South   | Ore      | Mt       | 30.06      | 30.68   | -2.0%       |
|         |          | Au (koz) | 900        | 900     | 0.0%        |
|         |          | Au (g/t) | 0.93       | 0.91    | 2.0%        |
|         | Waste    | Mt       | 74.95      | 74.35   | 0.8%        |
|         | Total    | Mt       | 105.01     | 105.02  | 0.0%        |
| TOTAL   | Ore      | Mt       | 82.79      | 83.24   | -0.5%       |
|         |          | Au (koz) | 2,012      | 2,010   | 0.1%        |
|         |          | Au (g/t) | 0.76       | 0.75    | 0.6%        |
|         | Waste    | Mt       | 150.79     | 150.36  | 0.3%        |
|         | Total    | Mt       | 233.58     | 233.60  | 0.0%        |

### 4.12.3 Schedule Parameters

Scheduling was undertaken using a relatively simple spreadsheet approach that used:

- A mining total material movement (“TMM”) limit per pit based on number of excavators,
- A mining priority sequence of:
  1. South Stage 1
  2. Central Stage 1
  3. South Stage 2
  4. Central Stage 2
  5. South Stage 3
  6. Central Stage 4
- A maximum bench turnover limit as described in Section 4.15,
- A plant ramp-up in the first half year of production of 88.3% of nominal throughput, based on 50% in Month 1, 80% in Month 2 and then 100% thereafter.

In any given period, the spreadsheet methodology is to mine the stages in the priority above until:

- The TMM limit is reached, or
- The bench turnover constraint is hit, or

- The stage is completed.

#### 4.12.4 Schedule Results

The schedules were generated in half yearly periods. Schedules were completed at a nominal 4 Mtpa throughput rate and a 7 Mtpa throughput rate.

The improved project value generated by the higher throughput rate resulted in this option being selected as the study go forward case. The physicals for the schedule are detailed in Table 4-19 and Table 4-20. Further details are provided graphically in Figure 4-13, Figure 4-14, Figure 4-15, Figure 4-16, and Figure 4-17.

As can be seen Kona South Stage 1 is mined first, with Kona Central Stage 1 starting in Year1 H1 and Kona South Stage 2 straight after in Y2 H1. Kona Central Stage 1 and Kona South Stage 2 together until Kona South Stage 2 finishes in Year 6 H1 and Kona South Stage 3 commences. Kona Central Stage 2 commences in Year 6 H2 while Kona Central Stage 1 is completed in Year 7. Kona South Stage 3 finishes in Year 8 while Kona Central Stage 2 continues to Year 10. Kona Central Stage 3 commences in Year 10 and is completed at the end of the mine life within Year 12.

While the schedule stockpiles some low-grade material to try and raise the plant feed grade. At the plant throughput rate of 7 Mtpa, the schedule is constrained by the ore that can be presented at the overall mining rate and within bench limits. The drop in grade seen through Year 3 is most likely a result of this limitation. It also indicates that Kona Central Stage 1 pit is possibly too large which exacerbates the issue, not presenting the higher-grade ore in a timely fashion. This is supported by the fact Kona Central Stage 1 has the longest life of all the stages. The grade presentation profile will almost certainly be improved through an optimised stage layout and use of a more sophisticated scheduling optimiser which may be addressed in future studies.

**Table 4-18: Life of Mine production Schedule – Mined Physicals**

| Area    | Item         | Unit      | Total         | Y -1 |      | Y 1  |       | Y 2   |       | Y 3   |       | Y 4   |       | Y 5   |       |
|---------|--------------|-----------|---------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|         |              |           |               | H1   | H2   | H1   | H2    | H1    | H2    | H1    | H2    | H1    | H2    | H1    | H2    |
| South   | Ore          | Mt        | 30.06         | 0.54 | 2.13 | 2.50 | 3.07  | 2.16  | 0.72  | 0.32  | 0.46  | 0.86  | 1.52  | 2.12  | 3.21  |
|         |              | g/t       | 0.93          | 1.09 | 0.96 | 1.04 | 1.10  | 1.20  | 1.37  | 0.57  | 0.62  | 0.65  | 0.73  | 0.87  | 1.11  |
|         |              | Cont. koz | 899.8         | 18.9 | 65.8 | 83.4 | 109.1 | 83.4  | 31.8  | 5.9   | 9.3   | 18.0  | 35.4  | 59.5  | 114.4 |
|         | Waste        | Mt        | 74.95         | 2.16 | 4.93 | 4.44 | 3.98  | 4.79  | 6.34  | 6.66  | 6.59  | 6.08  | 5.54  | 4.82  | 3.85  |
|         | <b>Total</b> | <b>Mt</b> | <b>105.01</b> | 2.70 | 7.06 | 6.94 | 7.06  | 6.94  | 7.06  | 6.98  | 7.06  | 6.94  | 7.06  | 6.94  | 7.06  |
| Central | Ore          | Mt        | 52.74         |      |      |      | 0.64  | 2.21  | 2.45  | 2.48  | 2.66  | 2.84  | 3.19  | 3.39  | 3.83  |
|         |              | g/t       | 0.66          |      |      |      | 0.60  | 0.60  | 0.60  | 0.62  | 0.65  | 0.66  | 0.67  | 0.68  | 0.70  |
|         |              | Cont. koz | 1,112.0       |      |      |      | 0.01  | 0.04  | 0.05  | 0.05  | 0.06  | 0.06  | 0.07  | 0.07  | 0.09  |
|         | Waste        | Mt        | 75.84         |      |      |      | 1.32  | 4.73  | 4.60  | 4.50  | 4.40  | 4.10  | 3.86  | 3.55  | 3.23  |
|         | <b>Total</b> | <b>Mt</b> | <b>128.57</b> |      |      |      | 1.95  | 6.94  | 7.06  | 6.98  | 7.06  | 6.94  | 7.06  | 6.94  | 7.06  |
| Total   | Ore          | Mt        | 82.79         | 0.54 | 2.13 | 2.50 | 3.71  | 4.37  | 3.18  | 2.80  | 3.12  | 3.71  | 4.71  | 5.51  | 7.04  |
|         |              | g/t       | 0.76          | 1.09 | 0.96 | 1.04 | 1.02  | 0.90  | 0.78  | 0.62  | 0.65  | 0.66  | 0.69  | 0.76  | 0.89  |
|         |              | Cont. koz | 2,011.8       | 18.9 | 65.8 | 83.4 | 121.5 | 125.7 | 79.5  | 55.6  | 65.2  | 78.5  | 104.2 | 133.9 | 201.0 |
|         | Waste        | Mt        | 150.79        | 2.16 | 4.93 | 4.44 | 5.30  | 9.52  | 10.94 | 11.16 | 10.99 | 10.18 | 9.41  | 8.37  | 7.08  |
|         | <b>Total</b> | <b>Mt</b> | <b>233.58</b> | 2.70 | 7.06 | 6.94 | 9.01  | 13.89 | 14.12 | 13.96 | 14.12 | 13.89 | 14.12 | 13.89 | 14.12 |

Table 4-19: Life of Mine production Schedule – Mined Physicals (Continued)

| Area    | Item         | Unit      | Y 6   |       | Y 7   |       | Y 8  |      | Y 9  |      | Y 10 |      | Y 11 |      | Y 12 |
|---------|--------------|-----------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
|         |              |           | H1    | H2    | H1    | H2    | H1   | H2   | H1   | H2   | H1   | H2   | H1   | H2   | H1   |
| South   | Ore          | Mt        | 1.83  | 1.97  | 2.67  | 2.06  | 1.75 | 0.16 |      |      |      |      |      |      |      |
|         |              | g/t       | 0.95  | 0.69  | 0.76  | 0.78  | 0.79 | 0.84 |      |      |      |      |      |      |      |
|         |              | Cont. koz | 55.8  | 43.4  | 65.4  | 51.6  | 44.2 | 4.4  |      |      |      |      |      |      |      |
|         | Waste        | Mt        | 5.11  | 5.09  | 3.16  | 1.12  | 0.27 | 0.01 |      |      |      |      |      |      |      |
|         | <b>Total</b> | <b>Mt</b> | 6.94  | 7.06  | 5.83  | 3.18  | 2.02 | 0.17 |      |      |      |      |      |      |      |
| Central | Ore          | Mt        | 4.06  | 3.56  | 1.78  | 1.89  | 1.40 | 2.22 | 3.05 | 4.04 | 3.36 | 1.15 | 1.62 | 0.89 | 0.01 |
|         |              | g/t       | 0.70  | 0.65  | 0.57  | 0.53  | 0.54 | 0.55 | 0.63 | 0.70 | 0.76 | 0.71 | 0.69 | 0.77 | 1.03 |
|         |              | Cont. koz | 0.09  | 0.07  | 0.03  | 0.03  | 0.02 | 0.04 | 0.06 | 0.09 | 0.08 | 0.03 | 0.04 | 0.02 | 0.00 |
|         | Waste        | Mt        | 2.89  | 3.50  | 5.20  | 5.52  | 3.46 | 4.49 | 3.89 | 2.32 | 2.19 | 4.50 | 3.17 | 0.41 |      |
|         | <b>Total</b> | <b>Mt</b> | 6.94  | 7.06  | 6.98  | 7.41  | 4.86 | 6.71 | 6.94 | 6.35 | 5.56 | 5.65 | 4.79 | 1.30 | 0.01 |
| Total   | Ore          | Mt        | 5.89  | 5.53  | 4.45  | 3.95  | 3.15 | 2.38 | 3.05 | 4.04 | 3.36 | 1.15 | 1.62 | 0.89 | 0.01 |
|         |              | g/t       | 0.78  | 0.66  | 0.69  | 0.66  | 0.68 | 0.57 | 0.63 | 0.70 | 0.76 | 0.71 | 0.69 | 0.77 | 1.03 |
|         |              | Cont. koz | 147.1 | 117.5 | 98.2  | 84.1  | 68.6 | 43.5 | 61.9 | 90.2 | 82.7 | 26.4 | 35.9 | 22.2 | 0.5  |
|         | Waste        | Mt        | 8.00  | 8.59  | 8.36  | 6.64  | 3.73 | 4.50 | 3.89 | 2.32 | 2.19 | 4.50 | 3.17 | 0.41 |      |
|         | <b>Total</b> | <b>Mt</b> | 13.89 | 14.12 | 12.81 | 10.59 | 6.88 | 6.88 | 6.94 | 6.35 | 5.56 | 5.65 | 4.79 | 1.30 | 0.01 |

**Table 4-19: Life of Mine production Schedule – Process Feed**

| Area            | Item      | Total   | Y -1 |      | Y 1   |       | Y 2   |       | Y 3  |      | Y 4  |      | Y 5  |       |
|-----------------|-----------|---------|------|------|-------|-------|-------|-------|------|------|------|------|------|-------|
|                 |           |         | H1   | H2   | H1    | H2    | H1    | H2    | H1   | H2   | H1   | H2   | H1   | H2    |
| Direct to Plant | Mt        | 61.53   |      |      | 2.22  | 3.18  | 3.34  | 2.62  | 2.80 | 3.12 | 3.47 | 3.53 | 3.47 | 3.53  |
|                 | g/t       | 0.81    |      |      | 1.11  | 1.12  | 1.06  | 0.86  | 0.62 | 0.65 | 0.68 | 0.79 | 0.85 | 0.89  |
|                 | Cont. koz | 1,598.8 |      |      | 79.5  | 115.0 | 113.9 | 72.6  | 55.6 | 65.2 | 75.6 | 89.2 | 94.5 | 101.0 |
| To Stockpile    | Mt        | 21.26   | 0.54 | 2.13 | 0.28  | 0.53  | 1.03  | 0.56  |      |      | 0.23 | 1.18 | 2.04 | 3.51  |
|                 | g/t       | 0.60    | 1.09 | 0.96 | 0.43  | 0.38  | 0.36  | 0.39  |      |      | 0.40 | 0.40 | 0.60 | 0.89  |
|                 | Cont. koz | 413.0   | 18.9 | 65.8 | 3.9   | 6.5   | 11.8  | 6.9   |      |      | 3.0  | 15.0 | 39.4 | 99.9  |
| From Stockpile  | Mt        | 21.26   |      |      | 0.84  | 0.35  | 0.13  | 0.91  | 0.69 | 0.40 |      |      |      |       |
|                 | g/t       | 0.60    |      |      | 0.97  | 0.97  | 0.97  | 1.30  | 0.33 | 0.37 |      |      |      |       |
|                 | Cont. koz | 413.0   |      |      | 26.4  | 10.8  | 4.2   | 38.1  | 7.3  | 4.8  |      |      |      |       |
| Plant Feed      | Mt        | 82.79   |      |      | 3.07  | 3.53  | 3.47  | 3.53  | 3.49 | 3.53 | 3.47 | 3.53 | 3.47 | 3.53  |
|                 | g/t       | 0.76    |      |      | 1.07  | 1.11  | 1.06  | 0.98  | 0.56 | 0.62 | 0.68 | 0.79 | 0.85 | 0.89  |
|                 | Cont. koz | 2,011.8 |      |      | 105.9 | 125.9 | 118.1 | 110.7 | 62.9 | 69.9 | 75.6 | 89.2 | 94.5 | 101.0 |



**Table 4-20: Life of Mine production Schedule – Process Feed (Continued)**

| Area            | Item      | Y 6  |      | Y 7  |      | Y 8   |      | Y 9  |      | Y 10 |      | Y 11 |      | Y 12 |      |
|-----------------|-----------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|
|                 |           | H1   | H2   | H1   | H2   | H1    | H2   | H1   | H2   | H1   | H2   | H1   | H2   | H1   | H2   |
| Direct to Plant | Mt        | 3.47 | 3.53 | 3.26 | 2.69 | 2.25  | 1.42 | 3.05 | 3.53 | 3.36 | 1.15 | 1.62 | 0.89 | 0.01 |      |
|                 | g/t       | 0.86 | 0.77 | 0.79 | 0.79 | 0.79  | 0.69 | 0.63 | 0.74 | 0.76 | 0.71 | 0.69 | 0.77 | 1.03 |      |
|                 | Cont. koz | 95.9 | 87.5 | 83.3 | 68.2 | 57.2  | 31.4 | 61.9 | 83.7 | 82.7 | 26.4 | 35.9 | 22.2 | 0.5  |      |
| To Stockpile    | Mt        | 2.42 | 2.00 | 1.19 | 1.26 | 0.90  | 0.96 |      | 0.51 |      |      |      |      |      |      |
|                 | g/t       | 0.66 | 0.47 | 0.39 | 0.39 | 0.39  | 0.39 |      | 0.40 |      |      |      |      |      |      |
|                 | Cont. koz | 51.2 | 30.0 | 14.9 | 15.9 | 11.4  | 12.1 |      | 6.5  |      |      |      |      |      |      |
| From Stockpile  | Mt        |      |      | 0.23 | 0.84 | 1.22  | 2.11 | 0.42 |      | 0.11 | 2.38 | 1.87 | 2.63 | 3.46 | 2.67 |
|                 | g/t       |      |      | 1.15 | 1.15 | 1.15  | 0.97 | 0.40 |      | 0.40 | 0.40 | 0.40 | 0.39 | 0.40 | 0.39 |
|                 | Cont. koz |      |      | 8.4  | 30.8 | 45.1  | 66.0 | 5.4  |      | 1.4  | 30.3 | 23.8 | 32.6 | 43.9 | 33.9 |
| Plant Feed      | Mt        | 3.47 | 3.53 | 3.49 | 3.53 | 3.47  | 3.53 | 3.47 | 3.53 | 3.47 | 3.53 | 3.49 | 3.53 | 3.47 | 2.67 |
|                 | g/t       | 0.86 | 0.77 | 0.82 | 0.87 | 0.92  | 0.86 | 0.60 | 0.74 | 0.75 | 0.50 | 0.53 | 0.48 | 0.40 | 0.39 |
|                 | Cont. koz | 95.9 | 87.5 | 91.7 | 99.0 | 102.3 | 97.3 | 67.3 | 83.7 | 84.0 | 56.6 | 59.7 | 54.8 | 44.4 | 33.9 |

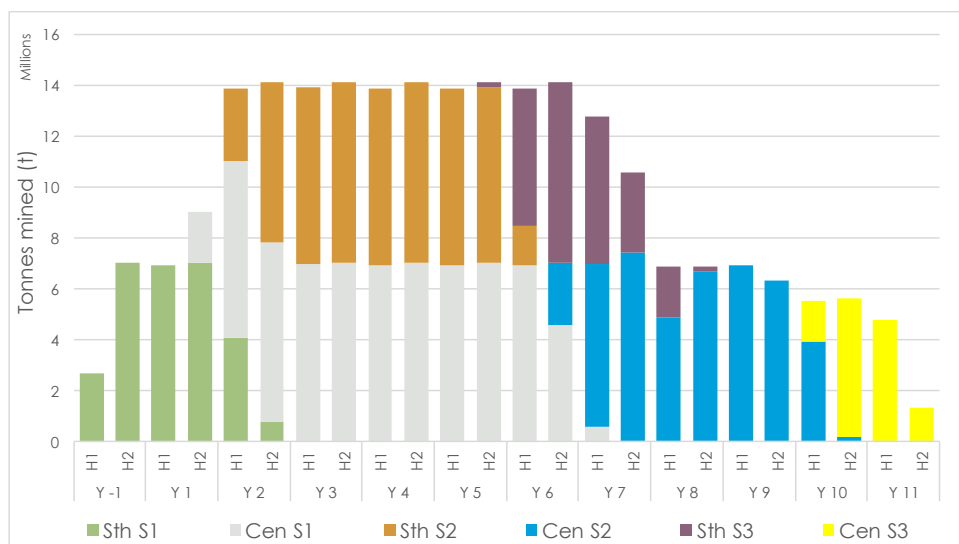


Figure 4-13: Total Material Mined by Stage

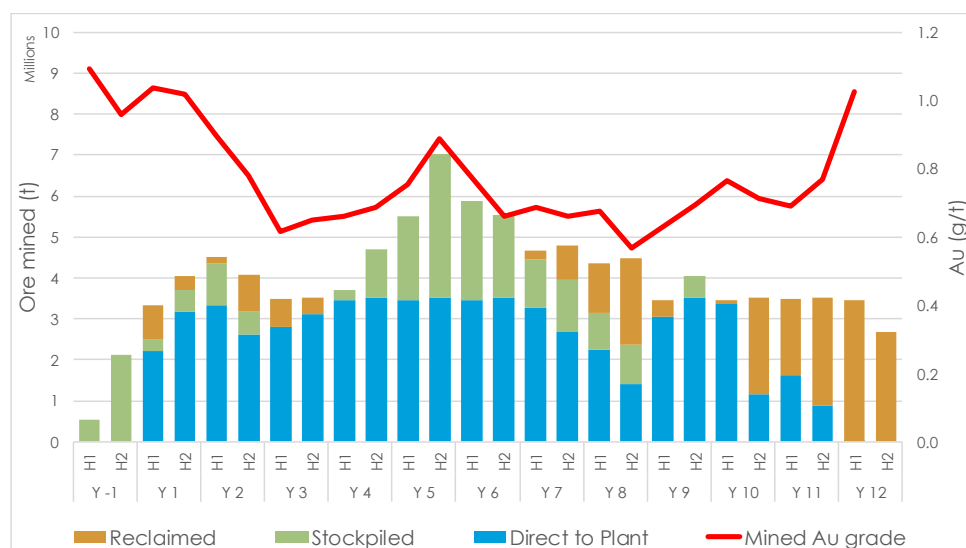


Figure 4-14: Ore Mined by Stage

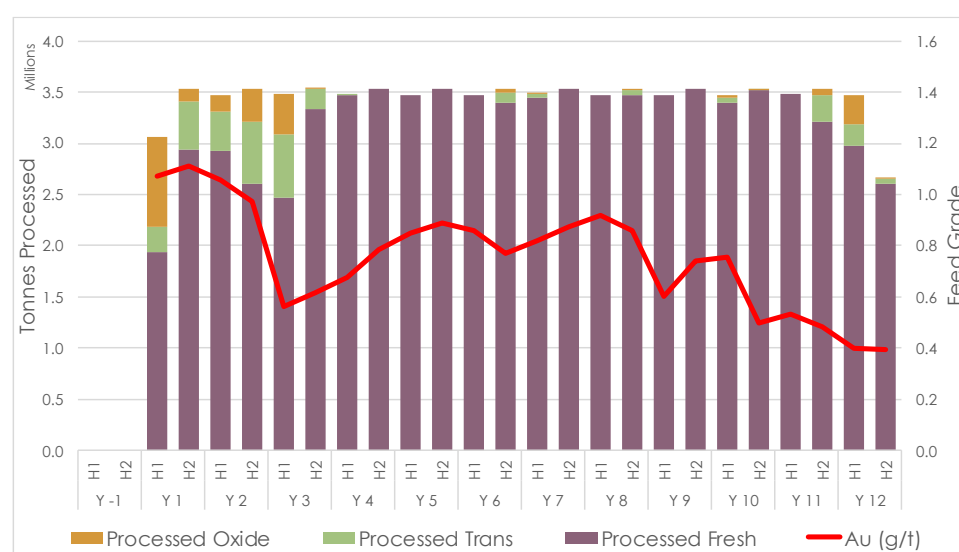


Figure 4-15: Process Plant Feed by Stage

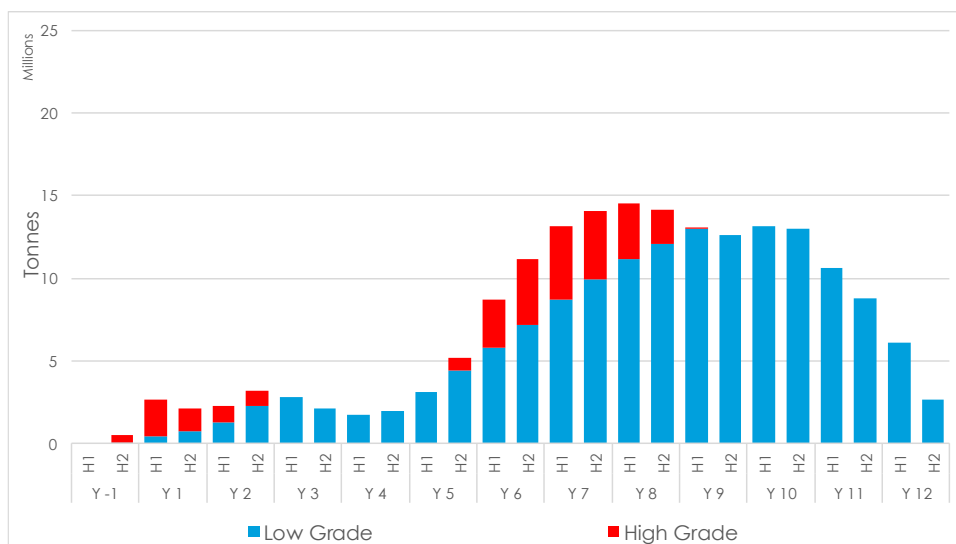


**Figure 4-16: Stockpile Closing Balance by Grade**

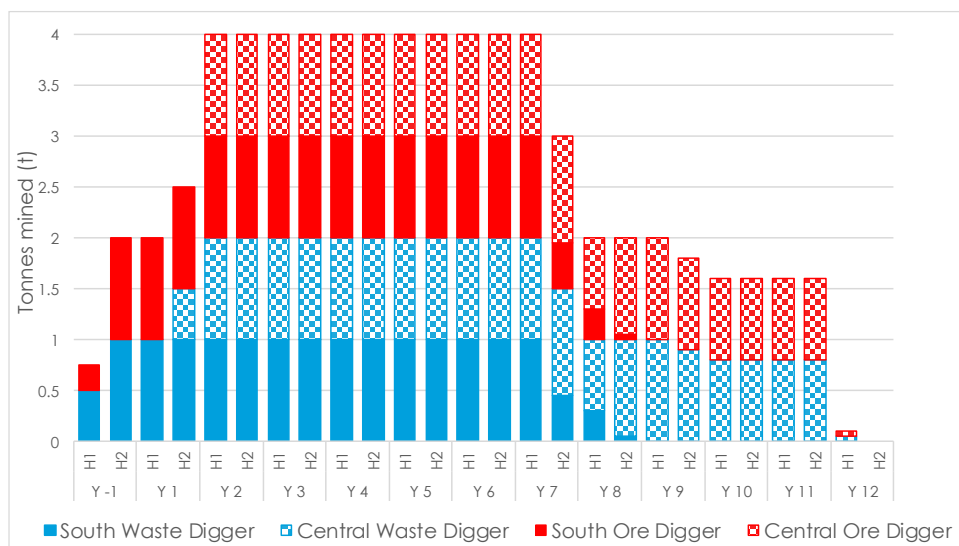


**Figure 4-17: Schedule Digger Allocation (Note: Waste Digger = 300 t unit, Ore Digger = 150 t unit)**

The following observations are made:

- Schedule does not exceed the prescribed 10 bench per year turnover limit,
- In general, only two stages operating at any time other than start and end of stages,
- Plant feed is maintained through the life of mine,
- Higher grade is fed for the first two years (average 1.1 g/t), with a dip in Year 3 to 0.56 g/t before elevating again by Year 5. It then averages 0.85 g/t from Year 5 to Year 8 before decreasing over the remaining mine life,
- Stockpile balance peaks at approximately 14 Mt through Year 7 to 8, of which approximately 25% is high grade material,
- Digging capacity in the first half year period comprises one 300 t waste unit and a smaller 150 t unit for a quarter. It then ramps up to one ore and one waste unit per mining area (i.e. four total) by Year 2. This fleet is maintained through to Year 7 after which it drops to one of each unit for the remainder of the mine life.

It should be emphasised that while the spreadsheet-based schedule follows a strategy to bring value forward, it is not a schedule “optimising” tool and there are opportunities to increase project value further with more sophisticated scheduling approaches.

### 4.13 Project Mining Costs

Mining costs were determined utilising a similar approach to the mining costs developed for the pit optimisation process.

#### 4.13.1 Variable Load and Haul

Based on the general site arrangement developed for the project (refer to Section 7.1 Tailings Storage, and Section 8.0 Infrastructure), it was determined that the ore haulage distance to the proposed processing facility was approximately 1.2 km for the Kona South pit and 4.2 km for the Kona Central pit. Assessment of the individual Doropo pits indicated that the pits that most closely approximated these distances was the Souwa Stage 2 pit and Chegue Main pit for Kona South and Kona Central pits respectively. These costs are detailed in Table 4-21.

**Table 4-20: Mining Cost Estimate – Load and Haul Cost by Pit**

| Depth from Surface | Kona Central Pit |        |        | Kona South Pit |        |        |
|--------------------|------------------|--------|--------|----------------|--------|--------|
|                    | Oxide            | Trans  | Fresh  | Oxide          | Trans  | Fresh  |
| 0                  | \$3.48           |        |        | \$3.09         |        |        |
| -5                 | \$3.56           |        |        | \$3.03         |        |        |
| -10                | \$3.59           |        |        | \$3.14         |        |        |
| -15                | \$3.63           | \$4.08 |        | \$3.20         | \$3.62 |        |
| -20                | \$3.68           | \$4.13 |        | \$3.20         | \$3.62 |        |
| -25                | \$3.81           | \$4.24 |        | \$3.21         | \$3.63 |        |
| -30                | \$3.93           | \$4.38 |        | \$3.25         | \$3.67 | \$4.24 |
| -35                | \$3.99           | \$4.45 | \$5.02 | \$3.36         | \$3.77 | \$4.27 |
| -40                | \$4.03           | \$4.51 | \$5.08 | \$3.42         | \$3.84 | \$4.35 |
| -45                |                  | \$4.57 | \$5.18 | \$3.50         | \$3.92 | \$4.45 |
| -50                |                  | \$4.67 | \$5.31 | \$3.60         | \$4.03 | \$4.58 |
| -55                |                  | \$4.79 | \$5.36 | \$3.69         | \$4.13 | \$4.69 |
| -60                |                  | \$4.91 | \$5.50 |                | \$4.25 | \$4.83 |
| -65                |                  | \$5.02 | \$5.61 |                | \$4.36 | \$4.98 |
| -70                |                  | \$5.10 | \$5.70 |                | \$4.44 | \$4.99 |
| -75                |                  |        | \$5.79 |                | \$4.52 | \$5.07 |
| -80                |                  |        | \$5.86 |                |        | \$5.13 |
| -85                |                  |        | \$5.93 |                |        | \$5.19 |
| -90                |                  |        | \$6.01 |                |        | \$5.25 |
| -95                |                  |        | \$5.99 |                |        | \$5.41 |
| -100               |                  |        | \$6.06 |                |        | \$5.47 |
| -105               |                  |        | \$6.10 |                |        | \$5.44 |
| -110               |                  |        |        |                |        | \$5.49 |
| -115               |                  |        |        |                |        | \$5.56 |
| -120               |                  |        |        |                |        | \$5.62 |
| -125               |                  |        |        |                |        | \$5.71 |
| -130               |                  |        |        |                |        | \$5.80 |
| -135               |                  |        |        |                |        | \$5.89 |
| -140               |                  |        |        |                |        | \$5.90 |
| -145               |                  |        |        |                |        | \$5.97 |
| -150               |                  |        |        |                |        | \$6.01 |
| -155               |                  |        |        |                |        | \$6.06 |

These costs were then applied to the LOM production schedule on a bench-by-bench basis using the regressions shown in Figure 4-18 and Figure 4-19.

**Figure 4-18: Central Pit Load and Haul Cost Regressions**

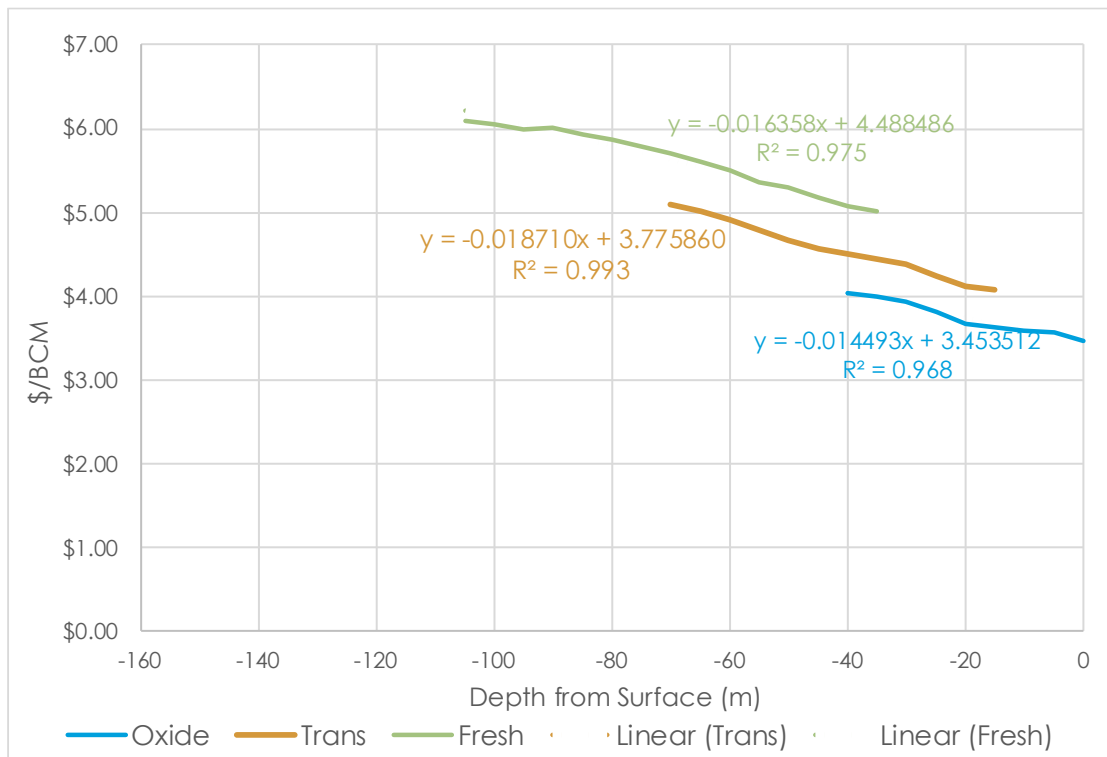
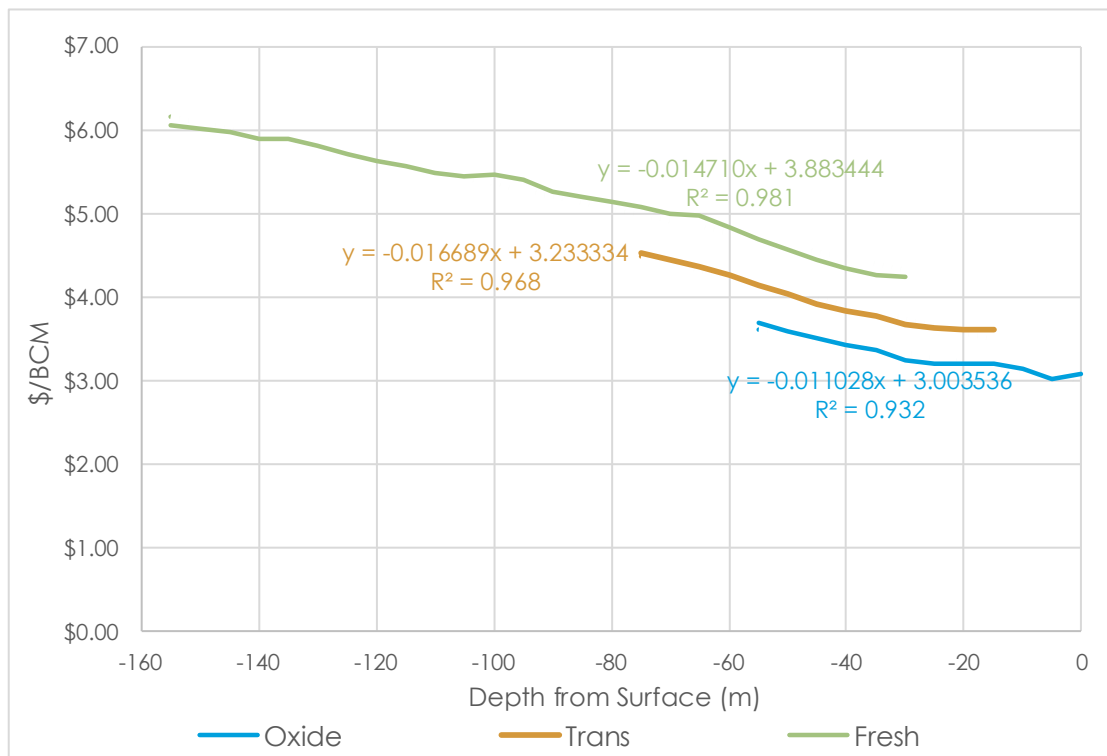


**Figure 4-19: South Pit Load and Haul Cost Regressions**



### 4.13.2 Variable Drill and Blast

Drill and blast costs were applied on the same basis as the optimisation discussed in Section 4.8.2, which are shown again in Table 4-22.

**Table 4-21: Optimisation – Drill and Blast Costs**

| Material    | US\$/BCM | t/m <sup>3</sup> | US\$/t |
|-------------|----------|------------------|--------|
| Oxide       | \$1.23   | 2.01             | \$0.61 |
| Trans       | \$2.03   | 2.05             | \$0.99 |
| Fresh Waste | \$2.74   | 2.73             | \$1.00 |
| Fresh Ore   | \$3.3    | 2.80             | \$1.18 |

### 4.13.3 Other Variable Costs

The life of mine costs from the Doropo DFS were converted to a US\$/t mined cost using the total mined material of 348.8 Mt, depicted in Table 4-23. The Early Works component included in the optimisation calculation (refer to Table 4-5) has been separated out and applied as an upfront capital cost as detailed Section 4.13.5.

**Table 4-22: Other Variable Costs**

| Cost           | Total          |                |
|----------------|----------------|----------------|
| \$M            | \$M            | (US\$/t)       |
| Site Prep      | \$34.4         | \$0.10         |
| Fixed Costs    | \$178.3        | \$0.51         |
| Dayworks       | \$24.5         | \$0.07         |
| Rehabilitation | \$14.6         | \$0.04         |
| <b>Total</b>   | <b>\$267.7</b> | <b>\$0.722</b> |

### 4.13.4 Ore Related Costs

The following ore related mining costs were applied in the cost estimate build up.

- ROM Reclaim of US\$0.45/t mill feed on the basis of 50% of the material is reclaimed at US\$0.90/t, with the remaining 50% direct tipped to the crusher,
- Grade control costs of US\$0.50/t ore mined,
- Quantities of low-grade and/or high-grade ore reclaimed from long-term stockpiles is calculated as part of the LOM production schedule. A cost of US\$0.97/t rehandled was applied to this quantity.

### 4.13.5 Fixed Cost

The fixed Owners team cost of US\$3.39M was separately applied on a period-by-period basis.

#### 4.13.6 Initial Capital

The mining related capital component estimated comprises of:

- Site establishment of US\$5.45 M
- Equipment mobilisation of US\$ 4.30 M
- All pre-production mining operating costs.

#### 4.13.7 Mining Cost Estimate

Table 4-24 provides the mining cost by period broken down by mining activity. Figure 4-20 presents the data in Table 4-24 graphically. Figure 4-21 presents the total mining cost graphically and also shows the proportion of each activity of the total cost.

The cost estimate generates a life of mine total mining cost of US\$1,041 M which equates to US\$ 4.46/t mined. The mining cost peaks at US\$126.7 M in Year 5, which equates to US\$4.52/t mined.

A fuel sensitivity was carried out on the mining cost, and this is presented in Figure 4-22. As can be seen the costs are relatively insensitive, with a 20% variation in fuel price generating approximately 3% variation in total mining cost.

Table 4-23: Project Mining Cost Estimate

| Item                 |                       |         | Unit | TOTAL     | Y -1   |        | Y 1    |        | Y 2    |        | Y 3    |        | Y 4    |        | Y 5    |        |
|----------------------|-----------------------|---------|------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                      |                       |         |      |           | H1     | H2     | H1     | H2     | H1     | H2     | H1     | H2     | H1     | H2     | H1     | H2     |
| Owners Team          |                       |         | \$M  | \$40.7    | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  |
| Contract Mining Cost | Ore                   | South   | \$M  | \$107.5   |        |        | \$8.9  | \$11.4 | \$8.3  | \$2.8  | \$1.1  | \$1.7  | \$3.3  | \$5.9  | \$8.6  | \$13.6 |
|                      |                       | Central | \$M  | \$210.0   |        |        |        | \$2.1  | \$7.7  | \$8.7  | \$9.1  | \$10.0 | \$10.8 | \$12.4 | \$13.4 | \$15.5 |
|                      | Waste                 | South   | \$M  | \$251.0   |        |        | \$15.8 | \$14.7 | \$16.7 | \$21.4 | \$23.5 | \$24.2 | \$23.0 | \$21.6 | \$19.5 | \$16.1 |
|                      |                       | Central | \$M  | \$290.4   |        |        |        | \$4.3  | \$16.4 | \$16.5 | \$16.6 | \$16.5 | \$15.6 | \$15.0 | \$14.0 | \$13.1 |
|                      | Stockpile Rehandle    |         | \$M  | \$20.6    |        |        | \$0.8  | \$0.3  | \$0.1  | \$0.9  | \$0.7  | \$0.4  |        |        |        |        |
|                      | ROM Reclaim           |         | \$M  | \$37.3    |        |        | \$1.4  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  |
|                      | Grade Control         |         | \$M  | \$41.4    | \$0.3  | \$1.1  | \$1.3  | \$1.9  | \$2.2  | \$1.6  | \$1.4  | \$1.6  | \$1.9  | \$2.4  | \$2.8  | \$3.5  |
| Capital              | Pre-Production Mining |         | \$M  | \$32.5    | \$8.6  | \$23.9 |        |        |        |        |        |        |        |        |        |        |
|                      | Site Establishment    |         | \$M  | \$5.5     | \$5.5  |        |        |        |        |        |        |        |        |        |        |        |
|                      | Mobilisation          |         | \$M  | \$4.3     | \$4.3  |        |        |        |        |        |        |        |        |        |        |        |
| Total Mining Cost    |                       |         | \$M  | \$1,041.0 | \$20.3 | \$26.6 | \$29.8 | \$38.0 | \$54.7 | \$55.2 | \$55.6 | \$57.6 | \$57.8 | \$60.6 | \$61.6 | \$65.1 |
|                      |                       |         | \$/t | \$4.46    | \$7.54 | \$3.77 | \$4.29 | \$4.22 | \$3.94 | \$3.91 | \$3.98 | \$4.08 | \$4.16 | \$4.29 | \$4.43 | \$4.61 |



**Table 4-24: Project Mining Cost Estimate (Continued)**

| Item                 |                       |         | Unit | Y 6    |        | Y 7    |        | Y 8    |        | Y 9    |        | Y 10   |        | Y 11   |        | Y 12     |       |       |
|----------------------|-----------------------|---------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|-------|-------|
|                      |                       |         |      | H1     | H2     | H1     | H2     | H1     | H2     | H1     | H2     | H1     | H2     | H1     | H2     | H1       | H2    |       |
| Owners Team          |                       |         | \$M  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$1.7  | \$0.0    |       |       |
| Contract Mining Cost | Ore                   | South   | \$M  | \$7.5  | \$7.3  | \$10.4 | \$8.4  | \$7.5  | \$0.7  |        |        |        |        |        |        |          |       |       |
|                      |                       | Central | \$M  | \$17.0 | \$15.0 | \$6.9  | \$7.1  | \$5.4  | \$8.9  | \$12.7 | \$17.5 | \$15.1 | \$4.4  | \$6.5  | \$3.8  | \$0.1    |       |       |
|                      | Waste                 | South   | \$M  | \$17.7 | \$18.7 | \$12.3 | \$4.6  | \$1.2  | \$0.1  |        |        |        |        |        |        |          |       |       |
|                      |                       | Central | \$M  | \$12.1 | \$13.5 | \$18.9 | \$20.7 | \$13.4 | \$17.9 | \$16.1 | \$10.0 | \$8.5  | \$16.8 | \$12.6 | \$1.7  |          |       |       |
|                      | Stockpile Rehandle    |         | \$M  |        |        | \$0.2  | \$0.8  | \$1.2  | \$2.0  | \$0.4  |        | \$0.1  | \$2.3  | \$1.8  | \$2.6  | \$3.4    | \$2.6 |       |
|                      | ROM Reclaim           |         | \$M  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6  | \$1.6    | \$1.6 | \$1.2 |
|                      | Grade Control         |         | \$M  | \$2.9  | \$2.8  | \$2.2  | \$2.0  | \$1.6  | \$1.2  | \$1.5  | \$2.0  | \$1.7  | \$0.6  | \$0.8  | \$0.4  | \$0.0    |       |       |
| Capital              | Pre-Production Mining |         | \$M  |        |        |        |        |        |        |        |        |        |        |        |        |          |       |       |
|                      | Site Establishment    |         | \$M  |        |        |        |        |        |        |        |        |        |        |        |        |          |       |       |
|                      | Mobilisation          |         | \$M  |        |        |        |        |        |        |        |        |        |        |        |        |          |       |       |
| Total Mining Cost    |                       |         | \$M  | \$60.4 | \$60.5 | \$54.2 | \$46.9 | \$33.5 | \$34.0 | \$34.0 | \$32.9 | \$28.7 | \$27.5 | \$24.9 | \$11.8 | \$5.0    | \$3.8 |       |
|                      |                       |         | \$/t | \$4.35 | \$4.29 | \$4.23 | \$4.43 | \$4.87 | \$4.95 | \$4.90 | \$5.17 | \$5.16 | \$4.86 | \$5.20 | \$9.04 | \$363.60 | NA    |       |

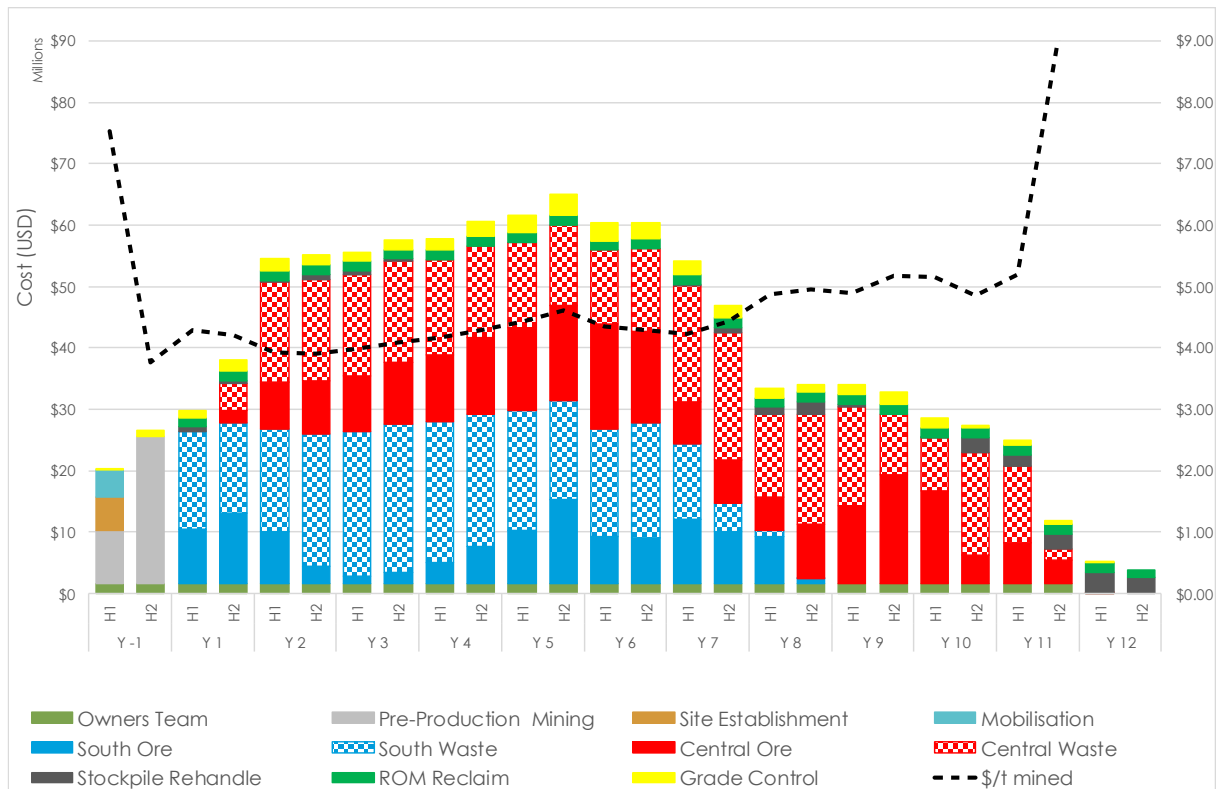


Figure 4-20: Mining Cost by Period

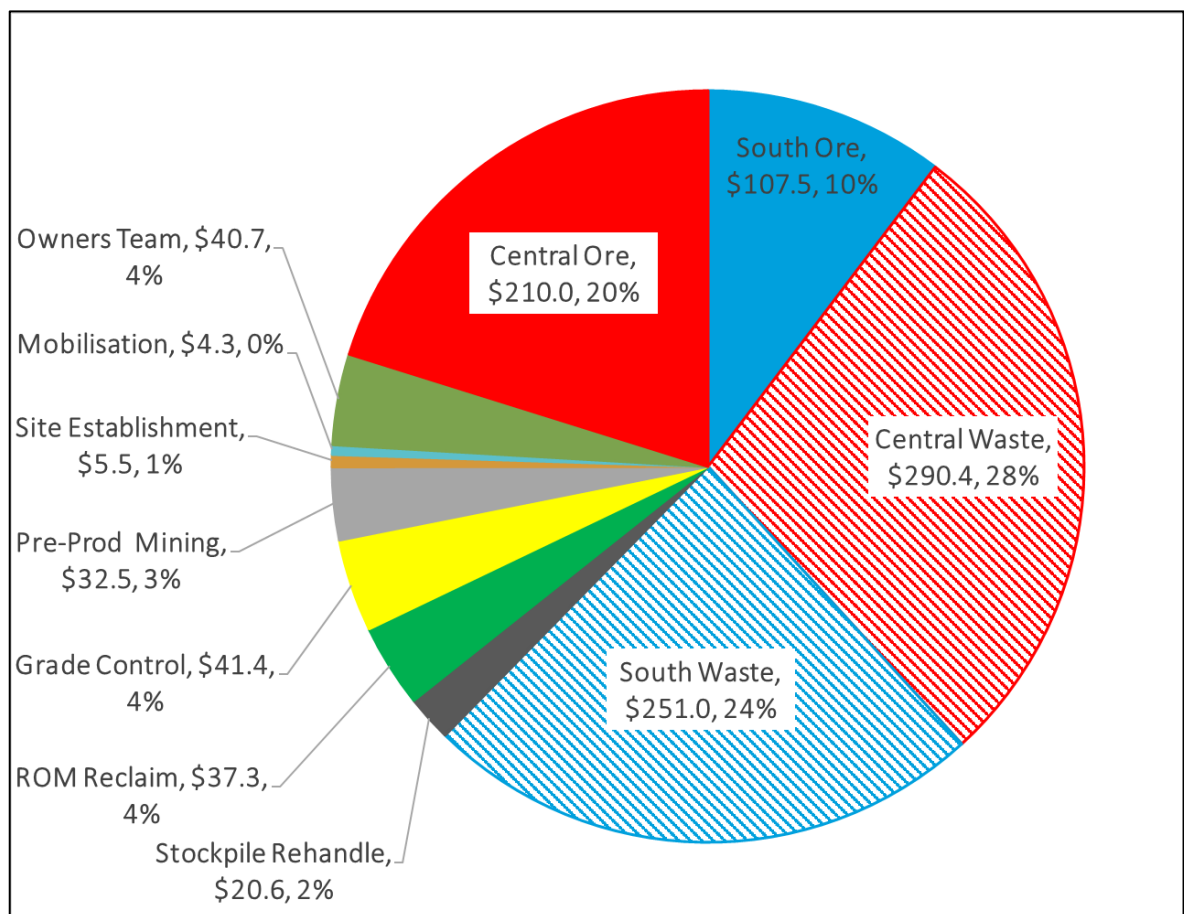


Figure 4-21: Mining Cost Proportions

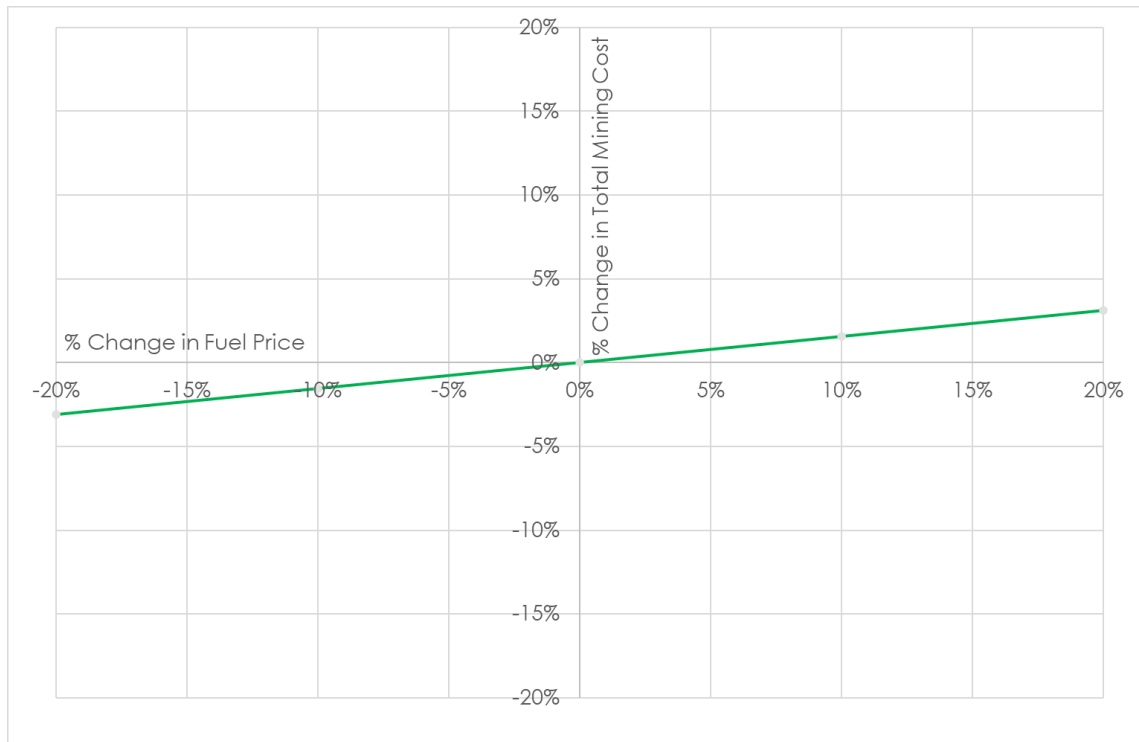


**Figure 4-22: Mining Cost Sensitivity to Fuel Price**

## 5.0 Metallurgy

### 5.1 Introduction

The ABC project is located in Côte d'Ivoire and contains two gold deposits, Kona Central and Kona South. The stated Inferred Mineral Resource for the Project is 72.0 Mt at a grade of 0.93 g/t for a contained 2.16 Moz of gold. They are of a similar size, with Kona Central being marginally bigger at 1.09 Moz.

Since 2018 only one metallurgical testwork program (A19126 by ALS Metallurgy) has been completed on ABC ores. It was completed on a single composite representing the Kona South deposit and included the following tests:

- Mineralogy,
- Comminution characterisation,
- Gravity,
- Cyanidation,
- Flotation.

As the program was conducted on a single composite sample, and the representativeness of the material relative to the broader deposit is uncertain, the results should be considered as indicative only.

The ALS Metallurgical Testwork Report A19126 is provided in full in Appendix A, with key discussions raised within this report section. The testwork is supplemented by bulk leach extractable gold ("BLEG") tests on a further 50 individual drill hole intervals.

### 5.2 Samples

The composite sample used in A19126 was generated from approximately 100 kg of quarter core fragments. No details on sample origin was found, other than it was from the Lolosso Structure within the Kona Exploration permit. The 2018 NI-43101 Technical Report indicates this is Kona South. The representivity of the composite sample across the Kona South deposit is not defined within the Technical Report.

In the absence of separate composite testwork, the comminution and metallurgical characteristics of Kona Central is assumed to be the same as derived for Kona South.

The BLEG samples were taken from 12 drill holes across the Kona deposit, as listed in Table 5-1.

**Table 5-1: BLEG Sample Origin**

| Sample_ID | Hole_ID  | From (m) | To (m) | Sample_ID | Hole_ID  | From (m) | To (m) |
|-----------|----------|----------|--------|-----------|----------|----------|--------|
| CIS283094 | KNRC0013 | 9        | 10     | CIS283065 | KNRC0008 | 49       | 50     |
| CIS283095 | KNRC0013 | 32       | 33     | CIS283066 | KNRC0008 | 51       | 52     |
| CIS283096 | KNRC0014 | 85       | 86     | CIS283067 | KNRC0008 | 69       | 70     |
| CIS283097 | KNRC0014 | 128      | 129    | CIS283068 | KNRC0008 | 71       | 72     |
| CIS283088 | KNRC0012 | 68       | 69     | CIS283069 | KNRC0008 | 77       | 78     |
| CIS283089 | KNRC0012 | 85       | 86     | CIS283072 | KNRC0009 | 54       | 55     |
| CIS283090 | KNRC0012 | 88       | 89     | CIS283073 | KNRC0009 | 58       | 59     |
| CIS283091 | KNRC0012 | 110      | 111    | CIS283074 | KNRC0009 | 69       | 70     |
| CIS283092 | KNRC0012 | 133      | 134    | CIS283075 | KNRC0009 | 83       | 84     |
| CIS283093 | KNRC0012 | 152      | 153    | CIS283076 | KNRC0009 | 92       | 93     |
| CIS283083 | KNRC0011 | 29       | 30     | CIS283077 | KNRC0009 | 121      | 122    |
| CIS283084 | KNRC0011 | 34       | 35     | CIS283078 | KNRC0009 | 131      | 132    |
| CIS283085 | KNRC0011 | 41       | 42     | CIS283057 | KNRC0004 | 39       | 40     |
| CIS283086 | KNRC0011 | 78       | 79     | CIS283058 | KNRC0004 | 62       | 63     |
| CIS283087 | KNRC0011 | 113      | 114    | CIS283098 | KNRC0015 | 26       | 27     |
| CIS283079 | KNRC0010 | 1        | 2      | CIS283100 | KNRC0015 | 58       | 59     |
| CIS283080 | KNRC0010 | 10       | 11     | CIS283099 | KNRC0015 | 73       | 74     |
| CIS283081 | KNRC0010 | 24       | 25     | CIS283051 | KNRC0001 | 5        | 6      |
| CIS283082 | KNRC0010 | 61       | 62     | CIS283052 | KNRC0001 | 65       | 66     |
| CIS283059 | KNRC0006 | 1        | 2      | CIS283053 | KNRC0002 | 15       | 16     |
| CIS283060 | KNRC0006 | 8        | 9      | CIS283054 | KNRC0002 | 38       | 39     |
| CIS283061 | KNRC0006 | 18       | 19     | CIS283055 | KNRC0002 | 74       | 75     |
| CIS283062 | KNRC0008 | 35       | 36     | CIS283056 | KNRC0002 | 120      | 121    |
| CIS283063 | KNRC0008 | 37       | 38     | CIS283070 | KNRC0008 | 82       | 83     |
| CIS283064 | KNRC0008 | 40       | 41     | CIS283071 | KNRC0008 | 105      | 106    |

## 5.3 Head Assay

### 5.3.1 A19216 Composite Sample

Key analyte values from the head assay analysis is provided in Table 5-2.

**Table 5-2: A19216 Head Assay**

| Au <sub>1</sub><br>g/t | Au <sub>2</sub><br>g/t | Ag<br>g/t | As<br>ppm | C <sub>organic</sub><br>% | S <sub>sulphide</sub><br>% |
|------------------------|------------------------|-----------|-----------|---------------------------|----------------------------|
| 1.98                   | 1.82                   | <2        | 1,680     | 0.21                      | 0.26                       |

Gold head grade is well above the Study mineable average, as such it is advised to confirm this with additional testwork as samples become available.

Silver grades are low.

Arsenic and sulphide sulphur is present in quantities suggesting the possible presence of arsenopyrite which can contain refractory gold, locked within the sulphide mineral matrix.

Organic carbon was reported at 0.21%, which may potentially result in preg-robbing behaviour during cyanidation, although preg-robbing behaviour was not specifically evaluated during the historical testwork program.

### 5.3.2 BLEG Samples

The head assays<sup>2</sup> of the 50 BLEG samples covered a wide range of 0.3 g/t to 4.52 g/t and averaged 2.1 g/t. Only 16% percent of these were below 1 g/t, therefore the expected life of mine grades are underrepresented.

## 5.4 Mineralogy

Quantitative Automated Mineralogical Analysis by QEMSCAN and XRD was performed on a sub-sample of the composite. The sample was subject to gravity concentration to produce a:

- gravity concentrate fraction which was analysed using QEMSCAN Field Scan, Trace Mineral Search and Energy Dispersive Spectrometry, and a
- tail fraction which was analysed by XRD to give bulk mineralogy.

### 5.4.1 QEMSCAN

QEMSCAN-FS analysis showed:

- Arsenopyrite (FeAsS) constitutes 4.8% of the pan concentrate mass, of which 77.1% is well liberated and 16.9% occurs as high-grade middlings (60–90% mineral content within particles),
- Löllingite (FeAs<sub>2</sub>) constitutes 1.14% of the pan concentrate mass, with 23.8% reported as well liberated,
- Minor quantities of pyrrhotite (Fe<sub>1-x</sub>S) and pyrite (FeS<sub>2</sub>) were also identified,
- The remaining mineral phases are predominantly silicate minerals.

Gold mineralogical analysis identified native gold as the only gold-bearing phase. Nine gold particles were detected:

- One particle was fully liberated,
- One particle occurred as a binary arsenopyrite–löllingite association,
- Three particles occurred within arsenopyrite-rich particles,
- Four particles occurred within silica-rich particles.

Mineralogical analysis indicates that gold occurs predominantly as native gold, although some particles are associated with arsenopyrite and silica-rich gangue minerals.

### 5.4.2 XRD

XRD analysis of the gravity tails showed it consisted primarily of silicate minerals, including plagioclase, quartz, and biotite.

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<sup>2</sup> 50g Fire Assay

## 5.5 Comminution

The results of the comminution tests are shown Table 5-3.

Comminution test results indicate that the material is extremely competent, with Axb of 25.1, and very hard with a Bond Ball Mill Work Index (BBMWi) of 20 kWh/t and a Bond Rod Mill Work Index (BRMWi) of 25.4 kWh/t. These values suggest high grinding energy requirements compared with typical free-milling gold deposits.

The Abrasion Index (Ai) of 0.2586 indicates that the material is moderately abrasive, which may have implications for grinding media consumption and equipment wear.

**Table 5-3: Comminution Summary**

| Parameter          | Unit  | Value  | Comment             |
|--------------------|-------|--------|---------------------|
| SMC                |       |        |                     |
| A                  |       | 78.4   |                     |
| b                  |       | 0.32   |                     |
| A * b              |       | 25.1   | Extremely competent |
| Mia                |       | 28.7   |                     |
| Mih                |       | 23.5   |                     |
| Mic                |       | 12.1   |                     |
| BRMWi              | kWh/t | 25.4   | Very hard           |
| BBMWi - CSS 106 µm | kWh/t | 20.0   | Hard/very hard      |
| Ai                 |       | 0.2586 | Moderately abrasive |

## 5.6 Gravity/Cyanidation

A flowsheet consisting of gravity concentration followed by cyanide leaching of the gravity tails was evaluated using material ground to 80% passing 75 µm, representing a typical cyclone overflow grind size.

The gravity concentrate was amalgamated, and the gravity tails were subjected to direct cyanide leaching under the following conditions:

- Initial NaCN concentration: 0.05%,
- Maintained at: 0.025%,
- Leach duration: 24 hours,
- Oxygen sparging applied.

The gravity circuit recovered 15.5% of the gold to concentrate. This indicates that a proportion of the gold occurs as free or liberated particles. Subsequent leaching of the gravity tails achieved 73.4% gold extraction, resulting in an overall gold recovery of 88.9%.

Reagent consumptions were relative low:

- Sodium cyanide: 0.18 kg/t,
- Lime: 0.17 kg/t.

The final leach residue grade was 0.23 g/t Au.

## 5.7 Flotation/Cyanidation

A grind size of 80% passing 106  $\mu\text{m}$  was used to conduct a bulk rougher flotation rate test targeting sulphide minerals associated with gold

At a mass pull of 5.5%, the flotation circuit achieved:

- Gold recovery: 71%,
- Gold grade: 23.6 g/t,
- Sulphide sulphur recovery: 84.4%,
- Sulphide sulphur grade: 5.6%,

The rougher rate results are shown in Figure 5-2.

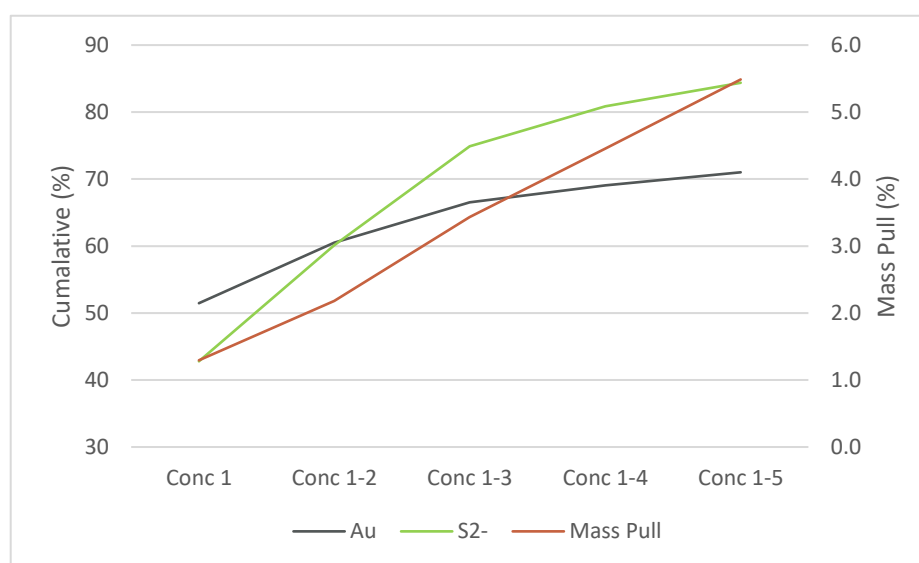


**Figure 5-1: Rougher Rate Results**

The cumulative rougher flotation concentrates up to concentrate 5 were combined for further leaching testwork.

The flotation concentrate was reground to 80% passing 63  $\mu\text{m}$  and 80% passing 10  $\mu\text{m}$ , followed by carbon-in-leach (CIL) treatment under the following conditions:

- Initial NaCN concentration: 0.25%,
- Maintained at 0.1%,
- Leach time: 24 hours,
- Oxygen sparging applied.

The 10  $\mu\text{m}$  regrind achieved a higher gold recovery of 97.3%, with a residue grade of 0.61 g/t Au. The 63  $\mu\text{m}$  regrind achieved 95.0% gold recovery, with a residue grade of 1.09 g/t Au.

However, the finer grind required significantly higher cyanide consumption:

- 10  $\mu\text{m}$ : 6.04 kg/t NaCN,
- 63  $\mu\text{m}$ : 3.45 kg/t NaCN.

Lime consumption was similar for both tests:

- 10  $\mu\text{m}$ : 1.15 kg/t,



- 63 µm: 0.95 kg/t.

The flotation tails were milled to 80% passing 75 µm and leached under the same conditions used for the gravity tail leach tests.

The flotation tail leach achieved:

- Gold recovery: 66.2%
- Residue grade: 0.22 g/t Au,
- Sodium cyanide consumption: 0.06 kg/t
- Lime consumption: 0.35 kg/t.

The overall metallurgical results for the flotation–leach flowsheet are summarised in Table 5-4

**Table 5-4: Overall Flotation Leach Results**

|                                  | Overall          |            |               |                | Consumption  |              |
|----------------------------------|------------------|------------|---------------|----------------|--------------|--------------|
|                                  | Concentrate<br>% | Tails<br>% | Recovery<br>% | Residue<br>g/t | NaCN<br>Kg/t | Lime<br>Kg/t |
| Flotation/63 µm conc/75 µm tails | 67.5             | 19.2       | 86.7          | 0.27           | 0.25         | 0.38         |
| Flotation/10 µm conc/75 µm tails | 69.1             | 19.2       | 88.3          | 0.24           | 0.39         | 0.39         |

## 5.8 BLEG

A total of 50 samples were selected for BLEG analysis. The samples were sourced from various drill holes and depths across the deposit.

The BLEG results indicated high gold recoveries, with an average extraction of 91.2% and an average residue grade of 0.18 g/t Au.

The calculated average head grade for the tested samples was 2.23 g/t Au, with grades ranging from 0.32 g/t Au to 4.79 g/t Au.

The elevated recoveries suggest that a significant proportion of the gold is amenable to cyanide leaching. However, it should be noted that BLEG tests are typically conducted under intensive leaching conditions, including fine grind sizes, extended leach times, high cyanide concentrations, and excess oxygen availability. These conditions may result in higher recoveries than those achievable under conventional processing conditions in an operating plant.

In addition, the grind size used during the BLEG tests is unknown, which introduces uncertainty when directly comparing these results with the historical metallurgical testwork.

Nevertheless, the BLEG results provide further indication that the mineralisation is likely amenable to conventional cyanide leaching.

### 5.8.1 Grade / Recovery Relationship

The recovery and head grade relationship from the BLEG data is shown in Figure 5-3.

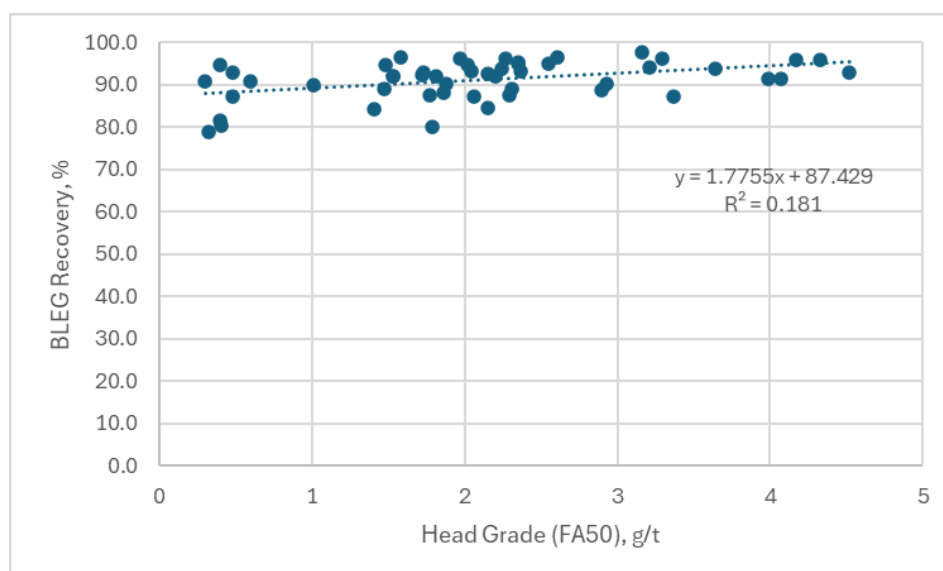


**Figure 5-2: BLEG Recovery / Head Grade Relationship**

The results suggest recovery increases with grade although the correlation in the data is low.

### 5.8.2 Tails Grade / Head Grade Relationship

The tails grade versus head grade from the BLEG data is shown in Figure 5-4.

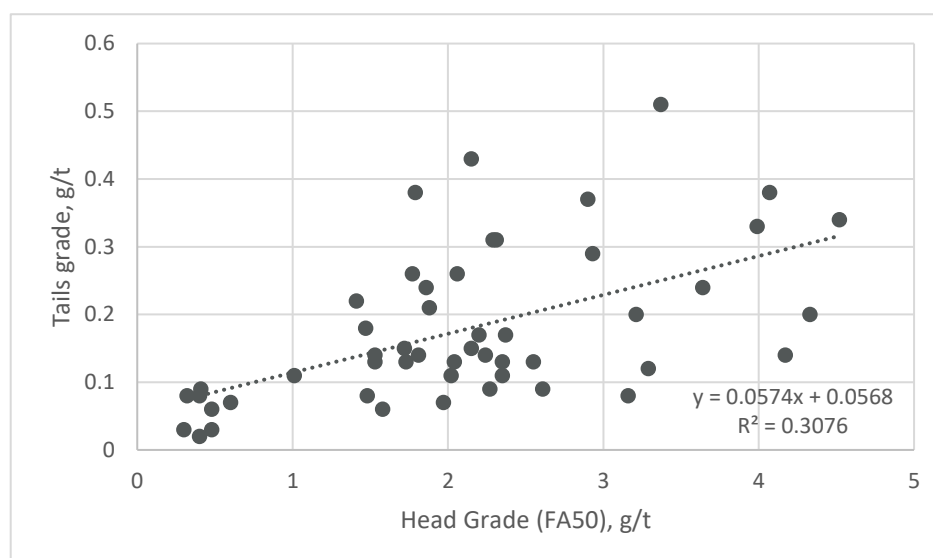


**Figure 5-3: Tails Grade vs Head Grade Relationship**

The results show tails grade increasing with head grade and while the correlation is higher than for recovery it remains reasonably low.

## 5.9 Conclusions

Three processing flowsheets were evaluated during the historical metallurgical testwork program. These included a gravity recovery followed by cyanide leaching of the gravity tails, as well as flotation followed by cyanide leaching of the flotation concentrate and flotation tails at two different concentrate regrind sizes.

The results indicate that all three flowsheets achieved comparable overall gold recoveries, ranging from 86.7% to 88.9%.

The gravity followed by cyanide leaching flowsheet achieved the highest overall recovery of 88.9% at a grind size of 80% passing 75 µm, with relatively low reagent consumptions.

The flotation–leach flowsheets produced slightly lower to comparable overall recoveries (86.7% – 88.3%). The finer 10 µm regrind of the flotation concentrate resulted in a marginally higher gold recovery compared with the 63 µm regrind, but this required significantly higher sodium cyanide consumption.

Overall, the results suggest that a simple gravity recovery followed by cyanidation flowsheet may provide the most favourable balance between recovery and reagent consumption based on the available data.

The summary of metallurgical results is presented in Table 5-5.

**Table 5-5: Summary of Metallurgical Results**

|                                          | Overall    |             | Consumption |           |
|------------------------------------------|------------|-------------|-------------|-----------|
|                                          | Recovery % | Residue g/t | NaCN Kg/t   | Lime Kg/t |
| Gravity 75 µm/tails                      | 88.9       | 0.23        | 0.18        | 0.17      |
| Flotation 212 µm/63 µm conc/75 µm tails  | 86.7       | 0.27        | 0.25        | 0.38      |
| Flotation 212 µm /10 µm conc/75 µm tails | 88.3       | 0.24        | 0.39        | 0.39      |

Based on the results of the historical metallurgical testwork, a gravity recovery followed by cyanide leaching (CIL) flowsheet was selected as the preferred processing option for the Scoping Study.

This flowsheet was selected due to its high overall gold recovery, relatively low reagent consumption, and operational simplicity compared to the flotation–leach alternatives.

## 5.10 Predicted Recovery and Select Design Criteria

### 5.10.1 Gold Recovery

#### Gravity

Gravity recovery is assumed to be 15.5% for the Study. It is based on the only data point available and is assumed to apply across all grades.

#### Total Plant

Only one gravity/cyanidation test has been completed at a known grind size and controlled conditions. It returned a total plant recovery of 88.9% after 24 hours of leaching. The calculated head grade of which 2.03 g/t (refer Section 5.6) and is well above the expected mill feed grade over the life of mine, which are expected to average 0.76 g/t, varying between 0.39 g/t and 1.14 g/t on a half year basis.

Applying a flat 88.9% recovery across all grades for the Study was discounted on the basis it would overestimate performance.

The BLEG results suggest a relationship of decreasing tails grade / recovery with decreasing head grade.

Gold recovery using the BLEG test tails grade vs head grade relationship is:

$$\text{Recovery (BLEG Model)} = 100 \times \frac{(\text{Head Grade} - (0.0574 \times \text{Head Grade} + 0.0568))}{\text{Head Grade}}$$

This model calculates a recovery of 91.5% for 2.03 g/t which is 2.6% higher the actual test data point. The differential is accounted for the extreme leaching conditions of the BLEG tests in comparison with the conventional gravity / cyanidation test.

Adopting this model for the study also risks overstating recovery performance. To mitigate this MineScope has reduced the BLEG model recovery by this 2.6% offset. The resultant adjusted recovery and adjusted tails grades are compared over a range of head grades as shown in Table 5-6.

**Table 5-6: Recovery Model Comparison**

| Head Grade, g/t | BLEG Model   |             | Adjusted Model |             |
|-----------------|--------------|-------------|----------------|-------------|
|                 | Residue, g/t | Recovery, % | Residue, g/t   | Recovery, % |
| 0.3             | 0.074        | 75.3        | 72.8           | 0.082       |
| 0.4             | 0.080        | 80.1        | 77.5           | 0.090       |
| 0.5             | 0.086        | 82.9        | 80.3           | 0.098       |
| 0.6             | 0.091        | 84.8        | 82.2           | 0.107       |
| 0.7             | 0.097        | 86.1        | 83.6           | 0.115       |
| 0.8             | 0.103        | 87.2        | 84.6           | 0.123       |
| 0.9             | 0.108        | 87.9        | 85.4           | 0.132       |
| 1.0             | 0.114        | 88.6        | 86.0           | 0.140       |
| 1.1             | 0.120        | 89.1        | 86.5           | 0.148       |
| 2.03            | 0.173        | 91.5        | 88.9           | 0.225       |

The equation for the adjusted recovery model is

$$\text{Recovery} = 100 \times \frac{(\text{Head Grade} - (0.083 \times \text{Head Grade} + 0.0568))}{\text{Head Grade}}$$

MineScope recommends using this recovery model for the Study for all ore types.

Significant testwork is required in the next phase of project development to verify the assumptions made.

### 5.10.2 Design Inputs

The key design parameters adopted for the Scoping Study process design are summarised in Table 5-7.

**Table 5-7: Summary of Design Parameters**

|                      | Unit        | Value  |
|----------------------|-------------|--------|
| Comminution          |             |        |
| Ai                   |             | 0.2586 |
| BRMWi                | kWh/t       | 25.4   |
| BBMWi                | kWh/t       | 20.0   |
| Axb                  |             | 25.1   |
| SG                   |             | 2.74   |
| Primary Grind Target | 80% passing | 75 µm  |
| Gravity Circuit      |             | Yes    |
| Leach Residence Time | Hours       | 24     |
| Reagent Consumption  |             |        |
| NaCN                 | kg/t        | 0.18   |
| Lime                 | kg/t        | 0.17   |

## 6.0 Process Plant

The ABC Project process plant is proposed to treat run-of-mine (“ROM”) ore at a nominal throughput of approximately 7.0 Mt/y, producing gold doré and tailings.

The processing route is based on a conventional gold flowsheet, incorporating crushing, grinding, gravity recovery, and a Carbon-In-Leach (“CIL”) circuit for gold extraction. Gold will be recovered from loaded carbon via elution and electrowinning, followed by smelting to produce doré.

Tailings from the process plant are expected to be detoxified prior to disposal in a Tailings Storage Facility (“TSF”), with process water reclaimed for reuse.

### 6.1 Process Plant Design

The proposed process plant design is based on the Doropo flowsheet, with modifications to suit the ABC Project ore characteristics. These include the adoption of a primary gyratory crusher instead of a primary jaw crusher and the inclusion of a pebble crushing circuit.

Key process design criteria adopted for this Study include:

- Nominal throughput of approximately 7.0 Mt/y, as nominated by Resolute,
- Crusher circuit availability of 75%,
- Overall process plant availability of 91.3% with standby equipment in crucial areas to ensure operational availability is met,
- Sufficient plant design flexibility for treatment of typical ore variability,
- The ability to blend ore feeds from stockpiles and not be limited by reagents or plant capabilities.

These criteria are considered appropriate for a Scoping Study.

### 6.2 Selected Process Flowsheet

The proposed flowsheet comprises the following key processing stages:

- Primary crushing of ROM ore, followed by stockpiling to provide surge capacity,
- Reclaim of crushed ore and feeding to a SAG milling circuit for primary grinding,
- Secondary grinding via a ball mill operating in closed circuit with cyclones,
- Pebble crushing of the SAG mill oversize, with recycle back to the SAG mill,
- Gravity recovery of a portion of the gold from the cyclone underflow via gravity screens and concentrators, with subsequent leaching of the gravity concentrate in an intensive leach reactor (“IRL”) unit,
- Recovery of leached gravity gold via electrowinning, followed by smelting to produce doré,
- Thickening of the cyclone overflow in a pre-leach thickener prior to leaching,
- Gold leaching and adsorption in a CIL circuit, with the addition of cyanide and oxygen,
- Recovery of gold from loaded carbon via elution and electrowinning, followed by smelting to produce doré,
- Regeneration of eluted carbon for reuse in the CIL circuit,

- Detoxification of tailings prior to discharge to the TSF,
- Recycle of process water from the TSF to the processing plant,
- Reagent mixing and storage facilities to support the process plant,
- Air and water services to support the plant.

The proposed flowsheet is summarised in the Process Flow Diagram (“BFD”) illustrated in Figure 6-1. This is also available in Appendix B.

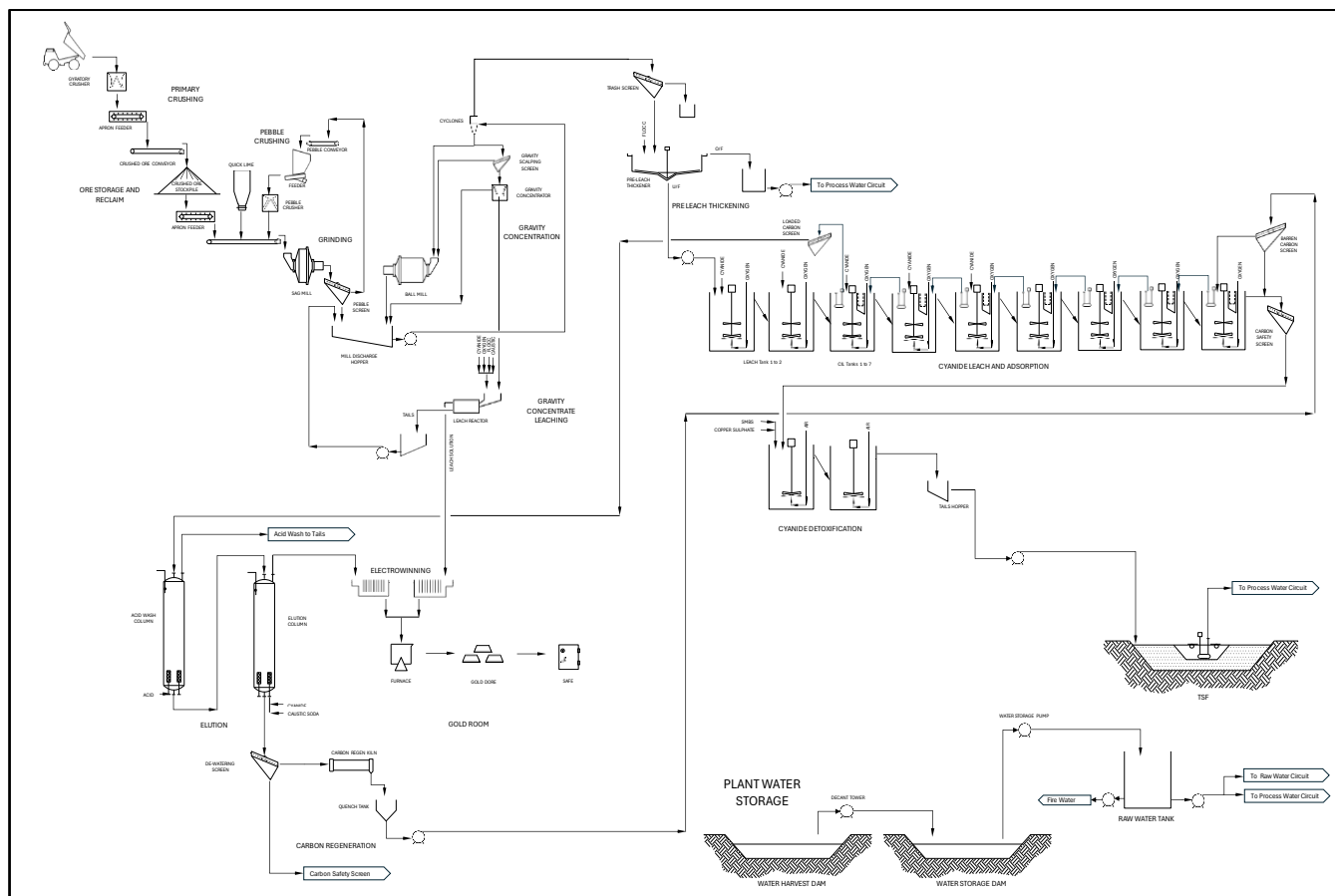


**Figure 6-1: ABC Project Process Flow Diagram**

### 6.3 Basis of Design

The process plant design has been developed based on a combination of available testwork, project-specific data, and industry-standard design practices appropriate for a Scoping Study level of accuracy.

Key design inputs and references include:

- Metallurgical testwork completed on a composite sample in 2018,
- Data and information provided by the Client,
- Design criteria and reference flowsheets from the Doropo Gold Project,
- Industry experience and benchmarked data,
- Internal MineScope experience and supporting calculations,

- Vendor equipment information and datasheets for the primary gyratory crusher and for the pebble cone crusher.

The design will be refined as additional testwork, engineering, and vendor data become available in subsequent study phases.

The key process design criteria parameters are listed in Table 6-1. The full process design criteria and mass balance can be viewed in Appendix B.

**Table 6-1: Key Process Design Criteria**

| AREA | PARAMETER                                | UNITS                                  | Design    |
|------|------------------------------------------|----------------------------------------|-----------|
| 3.1  | Annual Treatment Rate                    | t/y                                    | 7,000,000 |
| 2.4  | Design Head Grades                       | g/t Au                                 | 1.20      |
| 2.5  | Design Gravity Recovery                  | % Au                                   | 15.5      |
| 2.5  | Design CIL Leach Recovery                | % Au                                   | 73.4      |
| 2.5  | Total Design Plant Recovery              | % Au                                   | 88.9      |
| 3.2  | Crushing Availability                    | %                                      | 75.0      |
| 3.3  | Milling and Leach Availability           | %                                      | 91.3      |
| 2.1  | Ore Specific Gravity                     | t/m <sup>3</sup>                       | 2.74      |
| 2.3  | Bond Rod Mill Work Index (LS 1180 µm)    | kWh/t                                  | 25.4      |
| 2.3  | Bond Ball Mill Work Index (LS 106 µm)    | kWh/t                                  | 20.0      |
| 2.3  | SMC Test Results (Axb)                   | kWh/t                                  | 25.1      |
| 2.3  | Abrasion Index                           | -                                      | 0.26      |
| 3.2  | Crushing Throughput Rate                 | t/h                                    | 1,065     |
| 3.3  | SAG Mill Throughput Rate                 | t/h                                    | 875       |
| 6.1  | SAG Mill Specific Energy                 | kWh/t                                  | 15.08     |
| 6.1  | Ball Mill Specific Energy                | kWh/t                                  | 15.10     |
| 6.1  | Grinding Circuit P <sub>80</sub>         | µm                                     | 75        |
| 6.4  | Circulating Load                         | %                                      | 250       |
| 9.2  | Pre-leach Thickener Underflow Solids     | % w/w                                  | 50        |
| 10.1 | Total CIL Residence Time                 | h                                      | 24.1      |
| 10.1 | Number of Leach/ CIL Tanks               | #                                      | 2 + 7     |
| 17.2 | CIL NaCN Consumption (Nominal)           | kg/t                                   | 0.18      |
| 17.1 | CIL Lime Addition (Nominal)              | kg/t                                   | 0.17      |
| 11.1 | Elution Circuit                          | t/strip                                | 10        |
| 11.1 | Frequency of Elution                     | #/week                                 | 7         |
| 15.1 | Design Detox Discharge CN <sub>WAD</sub> | g CN <sub>WAD</sub> /m <sup>3</sup>    | 50        |
| 15.1 | Cyanide Destruction SMBS Addition        | g SO <sub>2</sub> /g CN <sub>WAD</sub> | 3.5       |
| 16.1 | Tailings Slurry Solids to TSF            | % w/w                                  | 50        |
| 16.1 | Decant Water Recovery                    | %                                      | 40        |

## 6.4 Process and Plant Description

The proposed processing plant is based on a conventional gold processing flowsheet consisting of primary crushing, SAG milling with pebble crushing, and secondary grinding using a ball mill in closed circuit with cyclones. A portion of the cyclone underflow will be treated through a gravity



concentration circuit, with the gravity concentrate processed in an intensive leach unit for enhanced gold recovery.

The cyclone overflow will report to a pre-leach thickener prior to gold extraction in a CIL circuit, consisting of two leach stages followed by seven adsorption stages.

Gold recovery from loaded carbon is proposed via an elution circuit utilising an AARL elution column. The eluted solution will be treated in electrowinning cells, with gold recovered from the cathodes using high-pressure water sprays. The resulting product will be filtered, dried and smelted to produce doré.

Eluted carbon will be regenerated in a carbon regeneration kiln prior to being returned to the CIL circuit.

A more detailed description of each process area is provided in the sections below.

#### **6.4.1 Primary Crushing**

Run-of-mine (ROM) ore will be delivery via dump truck and direct tipped into the ROM bin feeding the primary gyratory crusher (Metso Superior 5065 MK-111 LS gyratory crusher). This has a 450 kW motor and would operate with a CCS of 140 mm to achieve a  $P_{80}$  of 117 mm.

Crushed material will be reclaimed via an apron feeder and conveyed to a coarse ore stockpile providing surge capacity between the crushing and grinding circuits for when crusher maintenance is required.

#### **6.4.2 Ore Storage and Reclaim**

The stockpile is uncovered and will have live capacity of 16 hours. Ore will be reclaimed from the stockpile using three apron feeders that will transfer the crushed material to the SAG mill feed chute.

#### **6.4.3 SAG Milling**

The grinding circuit adopted for the ABC ore is a SABC circuit.

Primary grinding consists of a SAG mill treating crushed ore reclaimed from the coarse ore stockpile. Quicklime will be added from a silo to the SAG mill feed conveyor for pH control, while process water will be introduced at the mill feed chute to regulate slurry density.

The SAG mill is proposed to have dimensions of approximately 11.1 m (diameter) by 6.1 m (effective grinding length) and be equipped with a 16 MW motor. It operates with a discharge density of 70% w/w.

The SAG mill discharge will be screened via a trommel, with the undersize reporting to the mill discharge hopper. This undersize stream will be combined with the ball mill discharge and gravity concentrator tails prior to being pumped to the classification circuit.

#### **6.4.4 Pebble Crushing**

The SAG mill oversize material (scats) will be conveyed to a pebble crushing circuit. The crushed pebbles will be recycled back to the SAG mill feed.

The pebble crushing circuit consists of a Metso HP800e cone crusher with an installed power of 600 kW. The crusher will operate at a closed-side setting of 12 mm to produce a crushed product  $P_{80}$  of 11 mm that is suitable for reintroduction to the SAG mill.

#### 6.4.5 Classification

Grinding classification is achieved using a cyclone cluster fed from the mill discharge hopper. The cyclone cluster consists of 20 cyclones, including 16 duty units and 4 standby units, operating at a nominal pressure of approximately 100 kPa.

The cyclone overflow will report to a trash screen prior to the pre-leach thickener. The cyclone underflow will be split, with approximately 25% directed to the gravity recovery circuit and the remaining being fed to the ball mill for further grinding.

#### 6.4.6 Ball Milling

Secondary grinding is achieved by an overflow ball mill operating in closed circuit with cyclones. The ball mill will treat material from the cyclone underflow to achieve the target grind size of a  $P_{80}$  of 75  $\mu\text{m}$  for downstream gold recovery processes.

The ball mill has a diameter of 7.8 m, a length of 11.9 m, and is equipped with a 16.5 MW motor. It operates with a discharge density of 70% w/w

#### 6.4.7 Gravity

A portion of the cyclone underflow is treated in a gravity recovery circuit. The stream will first pass over a gravity scalping screen with an aperture of 3.6 mm. The oversize will report to the ball mill feed chute, while the undersize will be directed to two Knelson batch centrifugal concentrators (KC-QS40). Gravity tails from the concentrators will be returned to the mill discharge hopper prior to recycling to the classification circuit.

The gravity concentrate produced by the Knelsons will be processed in an Acacia CS3000 intensive cyanide leach reactor with a nominal capacity of 4,500 kg per batch. The leach residue will be returned to the mill discharge hopper.

The pregnant solution from the intensive leach reactor will be treated in a dedicated 1000 x 1000, 12 cathode electrowinning cell. The deposited gold will be combined with the gold electrowon from the CIL circuit prior to final smelting to produce doré.

#### 6.4.8 CIL

Cyclone overflow will be directed to vibrating trash screens prior to reporting to a high rate, 38 m diameter pre-leach thickener. The slurry density will increase from 45% to 50% w/w solids, with flocculant addition to achieved solids settling and good overflow clarity.

Thickener underflow will be pumped to a CIL circuit consisting of two leach tanks followed by seven adsorption tanks with a live capacity of 3,200  $\text{m}^3$  each. The total minimum residence time is 24 hours.

Leaching will occur in the initial two tanks with the addition of sodium cyanide and oxygen to facilitate gold dissolution. The pH will be controlled via lime addition to the SAG mill feed conveyor, which is upstream in the processing plant.

Barren activated carbon will be screened prior to introduction to the final adsorption tank. The carbon will advance in a counter-current direction to the slurry flow using recessed impellor

pumps. Intertank screens will prevent carbon from moving down the line of tanks in the wrong direction.

Loaded carbon will be recovered from the first adsorption tank using a recessed impellor pump and delivered to the loaded carbon recovery screen. Wash sprays will be used to remove entrained slurry prior to transfer to the AARL elution circuit.

A carbon safety screen will be installed on the final adsorption tank discharge to capture any carbon losses.

#### **6.4.9 Gold Recovery and Carbon Regeneration**

Loaded carbon from the CIL circuit is transferred to an acid wash column with a nominal capacity of approximately 10 t. The acid wash removes inorganic fouling species, such as scale-forming compounds, from the carbon prior to elution.

A dilute hydrochloric acid solution of 3 %w/v is delivered to the carbon bed, followed by a soak period to assist in the removal of contaminants. The carbon will then be rinsed with filtered water to remove residual acid prior to transfer to the elution circuit.

Acid-washed carbon will be transferred to a elution column, with a nominal capacity of approximately 10 t. A split AARL-type elution process will be used. In this process, a heated caustic (3% w/v) and cyanide (2% w/v) solution will be circulated through the carbon bed to desorb gold, followed by a water rinse stage. The elution circuit is expected to operate at a frequency of seven stripping cycles per week.

Pregnant eluate will be collected in a pregnant solution tank prior to treatment in the electrowinning circuit. This consists of 2 off 1000 x 1000 cells with 20 cathodes each. The gold recovered to the cathodes is combined with the product from the gravity intensive leach electrowinning circuit prior to smelting in a Ansac TA200LP furnace to produce doré.

Stripped carbon will be screened prior to transfer to a diesel-fired thermal regeneration kiln (Ansac HK510), which restores the adsorption capacity of the carbon by removing organic fouling. Regenerated carbon will be returned to the CIL circuit for reuse via the barren carbon screen.

Allowance has been made in the layout and cost estimates for all gold bullion to be cleaned, sampled, weighed, and stored in a vault, for later transport to an offsite refinery.

#### **6.4.10 Tailings Detoxification and Disposal**

Slurry discharges from the final adsorption tank and over the carbon safety screen. This screen captures any fine carbon losses to a bunker so that they are not sent to final tailings.

The underflow from the carbon safety screen will be sent to the cyanide detoxification circuit, where sodium metabisulphite ("SMBS"), oxygen, and copper sulphate are added to destroy residual cyanide prior to disposal to the TSF.

The detoxification circuit consists of two agitated tanks. Reagents will be added in the first tank to initiate cyanide destruction, after which the slurry will be transferred to the second tank, where it will be sparged with oxygen only to complete the detoxification process. The final WAD cyanide concentration is to be reduced to a design target of 50 ppm following detoxification.

The detoxified slurry will then report by gravity to the tails hopper for pumping to the TSF. Decant water from the TSF will be recovered and returned to the process water circuit for reuse in the processing plant.

#### 6.4.11 Reagents

Reagents will be delivered to site in bulk or containerised form, depending on supply logistics.

Quicklime will be delivered in powder form and stored in a lime silo, from where it will be dosed onto the SAG mill feed conveyor. Lime addition will be used to maintain an alkaline pH of approximately 10.5 to support cyanide leaching and minimise the formation of hydrogen cyanide gas.

Sodium cyanide will be delivered to site as briquettes in 1 t bulka bags. The cyanide briquettes will be dissolved in a dedicated mixing tank to produce a solution of the required strength. The solution is delivered to the processing plant for use in CIL, elution and intensive leaching by duty/standby ringmain pumps.

Caustic soda will be supplied in solid pearl form and dissolved with fresh water to produce a concentrated solution for use in the elution circuit, intensive leach reactor and detoxification circuit. The solution will be dosed to the process using duty/standby ringmain pumps.

Hydrochloric acid will be supplied as a liquid in IBCs and stored in a dedicated tank. It will be used in the elution process and dosed via metering pumps.

Flocculant will be supplied in powdered form and mixed with filtered water to form a stock solution. This solution will be further diluted prior to dosing to the pre-leach thickener to achieve solids settling and a good overflow clarity.

Grinding media for the SAG and ball mills will be stored in dedicated bunkers. Media will be added via a SAG mill ball loading hopper (fed by FEL) on the SAG mill feed conveyor, and by a ball loading hoist and hopper for the ball mill.

Antiscalant will be delivered in bulk containers (isotainers) and dosed into relevant circuits, including water systems and the elution circuit, to minimise scale formation associated with dissolved salts.

Activated carbon will be used within the CIL circuit for gold adsorption. Carbon losses are expected during operation due to attrition and handling. Make-up carbon will be added to the final adsorption tank to maintain the required carbon inventory for efficient gold recovery.

SMBS and copper sulphate will both be supplied in 1 t bulka bags and mixed with fresh water in their respective mixing tanks. The solution will be transferred to dedicated storage tanks for dosing by duty/standby pumps to the cyanide detoxification circuit.

Fluxes required for gold smelting, including borax, silica flour, sodium nitrate, and sodium carbonate, will be supplied in bags and added to the gold sludge prior to smelting to produce doré.

Diesel will be required for the elution heater, the regeneration kiln, smelting furnace and the emergency power plant. Diesel will be kept in a diesel storage plant and pumped to the processing plant.

#### 6.4.12 Water Services

Process water for the plant is sourced from the pre-leach thickener overflow, TSF decant return, TSF underdrainage and raw water makeup. It is stored in the process water dam (PWD) and delivered to the processing plant by duty/standby pumps. Process water is predominantly used in the grinding circuit, for the trash screen sprays and for flocculation dilution at the pre-leach thickener.

Raw water to the process plant will be supplied from the WSD, which is replenished from surface water run off collection points and the nearby Boa River (refer to Section 7.2 Water Management, for further details regarding river water harvesting). A portion of this water will be transferred to the PWD as makeup water, while the rest is used in the processing plant, mainly as screen sprays and gravity concentrator fluidisation water. Raw water distribution occurs by duty/standby pumps from the raw water tank. Refer to Section 7.2 Water Management for further details to the water management system.

A filtered water treatment plant is fed by raw water to produce fresh water. The product is stored in a dedicated fresh water tank and delivered to the processing plant by duty/standby pumps. Fresh water is used by the ILR, the potable water RO plant and during elution, regeneration and reagent mixing. Fresh water supplies the gland water for the processing plant.

The WSD will also service a separate fire water storage tank with adequate secured capacity, reserved at all times, for fire water requirements. The fire water tank should also be sufficiently located to be able to draw out of the WSD if excess fire water supply is required.

A provision has been made for potable water supply, and a sewerage and water treatment facility, which will be assessed in greater detail in future studies.

#### **6.4.13 Air Services**

Plant and instrument air will be supplied by three rotary screw air compressors (two duty and one standby).

Oxygen will be supplied from an PSA to support the CIL circuit and the cyanide detoxification circuit.

### **6.5 Mechanical Equipment List**

A mechanical equipment list was prepared for the process flowsheet. This is provided in Appendix B.

### **6.6 Electrical Load List**

An electrical load list was prepared for the process flowsheet. This is provided in Appendix B.

## 7.0 Tailings Storage and Water Management

Knight Piésold Pty Ltd (“KP”) was commissioned by MineScope to undertake a Scoping Study for the Tailings Storage Facility (“TSF”) and Water Management sections for the Project. This section details KP’s scope and methodology to establish the Project’s indicative capital and operating costs for the nominated infrastructure.

### 7.1 Tailings Storage

#### 7.1.1 Design Objectives

The design objectives for the TSF are as follows:

- Permanent and secure containment of all solid waste materials (tailings) generated by the process plant,
- Maximisation of tailings densities using subaerial deposition,
- Removal and reuse of free water as much as practicable,
- Reduction and control of seepage,
- Excess storage capacity to retain Australian National Committee on Large Dams (“ANCOLD”) and Global Industry Standard on Tailings Management (“GISTM”) prescribed design storms and annual rainfall sequence, including containment of runoff from upstream catchments,
- Rapid and effective rehabilitation,
- Ease of operation,
- Monitoring network comprising embankment piezometers, survey pins and groundwater bores.

#### 7.1.2 Design Parameters

The design parameters for the TSF are summarised in Table 7-1. The design parameters were supplied by MineScope, through discussions with Resolute, or assumed using KP benchmark data where details were not available. These design parameters will need to be confirmed during future study phases.

The TSF design adopted is summarised as follows:

- The TSF embankment comprises of an upstream low permeability zone (Zone A), a transition fill (Zone B) and a downstream structural fill zone (Zone C).
- A cutoff trench will be located beneath the upstream low permeability zone (Zone A) of the embankments to key into competent low permeability foundation material. The cutoff trench will be excavated continuously along the embankment and backfilled with low permeability fill (Zone A).
- The TSF basin area will be cleared, grubbed and topsoil stripped, and a compacted soil liner of 300 mm thickness will be placed within the basin area. The compacted soil liner will comprise either reworked in-situ material or imported low permeability material. The compacted soil liner will be overlain by a 1.5 mm HDPE geomembrane liner for the full TSF basin area.

- An underdrainage system will be installed over the HDPE liner comprising of a network of collector and finger drains, of slotted pipe drains, covered with a sand drainage medium and wrapped in geotextile. The underdrainage system will drain by gravity to a collection sump located at the lowest point in the TSF basin.
- A leakage collection and recovery system (“LCRS”) will be installed beneath the basin composite liner.
- A downstream seepage collection system will be installed within and downstream of the TSF embankment, to allow monitoring and collection of seepage from the TSF in the collection sump located downstream of the final TSF downstream toe.
- Supernatant water will be removed from the TSF via a floating decant turret system.
- The TSF will be designed with sufficient capacity to completely contain all design criteria storm events and rainfall sequences. An operational emergency spillway will be available at all times during TSF operation to protect the integrity of the constructed embankments in the event that a storm event greater than the TSF design criteria occurs that exceeds the available storage capacity during operation.
- Tailings will be discharged into the TSF by sub-aerial deposition methods, using a combination of spigots at regularly spaced intervals from the TSF embankments and other specified locations, to locate the supernatant pond at the decant towers.

**Table 7-1: Tailings Storage Facility Design Criteria and Specifications**

| Parameter                        | Detail                                                                                                                                                                                                                                                                              |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TSF Design</b>                |                                                                                                                                                                                                                                                                                     |
| Tailings Production              | 7 Mtpa                                                                                                                                                                                                                                                                              |
| Nominal Life of Mine             | ~12 years                                                                                                                                                                                                                                                                           |
| Storage Capacity (nominal)       |                                                                                                                                                                                                                                                                                     |
| - Stage 1 (18 months)            | 10.5 Mt                                                                                                                                                                                                                                                                             |
| - Total (~12 years)              | 82.8 Mt                                                                                                                                                                                                                                                                             |
| Embankment Freeboard             | This will be determined based on a dam break assessment (“DBA”)                                                                                                                                                                                                                     |
| Stormwater Capacity              | This will be determined based on a DBA                                                                                                                                                                                                                                              |
| Spillway                         | This will be determined based on a DBA                                                                                                                                                                                                                                              |
| Earthquake Loading               | This will be determined based on a DBA                                                                                                                                                                                                                                              |
| <b>TSF Operation</b>             |                                                                                                                                                                                                                                                                                     |
| Slurry Characteristics (assumed) | <ul style="list-style-type: none"> <li>• Conventional thickened tailings</li> <li>• Percent solids = 50% (w/w) (assumed)</li> <li>• Tailings density = 1.4 t/m<sup>3</sup> (assumed)</li> </ul>                                                                                     |
| Fluid Management                 | <ul style="list-style-type: none"> <li>• Basin underdrainage gravity system into collection sump</li> <li>• Return to the supernatant pond via a submersible pump</li> <li>• Decant system for removal of supernatant solution. Return to the plant via submersible pump</li> </ul> |
| General                          | <ul style="list-style-type: none"> <li>• Spigot deposition of tailings</li> <li>• The supernatant pond will be maintained at the decant location</li> </ul>                                                                                                                         |

Typical embankment designs are illustrated in Figure 7-1, Figure 7-2, and Figure 7-3.

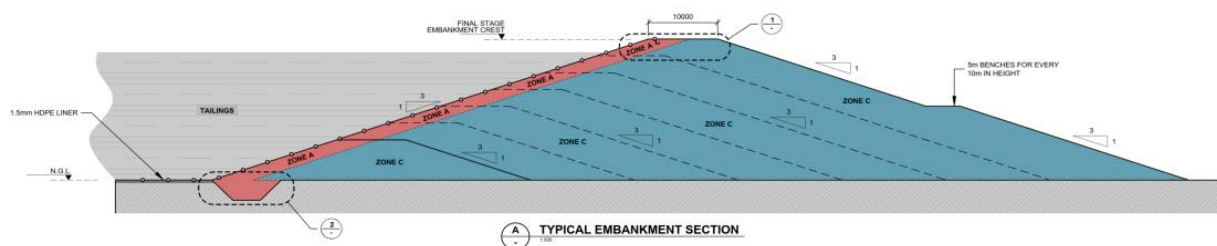
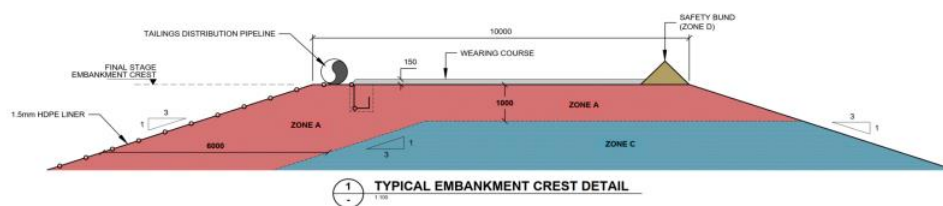


Figure 7-1: Typical Embankment Section



| ZONE KEY | ZONE TYPE      | DESCRIPTION                              |
|----------|----------------|------------------------------------------|
| Red      | ZONE A         | LOW PERMEABILITY FILL (OXIDE MINE WASTE) |
| Blue     | ZONE C         | STRUCTURAL FILL                          |
| Grey     | ZONE D         | APPROVED GENERAL FILL                    |
| Yellow   | WEARING COURSE | GRAVEL                                   |

Note - Zone B transitional fill may be added depending on the Zone A and Zone C material characteristics

Figure 7-2: Typical Embankment Crest Detail

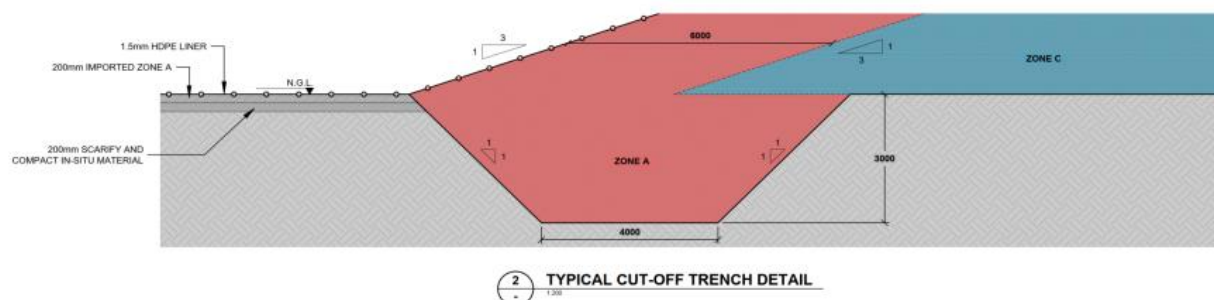


Figure 7-3: Typical Cut-Off Trench Detail

### 7.1.3 Design Summary

The TSF will comprise of a fully High-Density Polyethylene (“HDPE”) lined cross valley storage facility formed by multi-zoned earth fill embankments. The TSF will be designed to accommodate the total quantity of tailings as outlined in Table 7-1. The TSF will comprise of a single cell and will remain in continuous operation throughout the life of mine. The embankment will be constructed using a downstream raise construction method. A downstream seepage collection system will be installed within and downstream of the TSF embankment. Tailings will be discharged into the TSF by sub-aerial deposition methods, using a combination of spigots at regularly spaced intervals around the TSF embankments to locate the supernatant pond in the decant area.

The Stage 1 TSF (or “starter dam”) will be designed for 18 months storage capacity (as per Table 7-1). Subsequently, the TSF will be constructed in annual raises to suit storage requirements; however, this may be adjusted to suit mine schedules during the operation.

Estimated staged embankment crest elevations and heights are presented in Table 7-2.



**Table 7-2: TSF Staged Embankment Levels**

| Stage | Months of Storage | Cumulative Tailings Storage (Mt) | TSF Embankment Elevation (RL m) |
|-------|-------------------|----------------------------------|---------------------------------|
| 1     | 18                | 10.5                             | 365.0                           |
| 2     | 12                | 17.5                             | 368.7                           |
| 3     | 12                | 24.5                             | 371.7                           |
| 4     | 12                | 31.5                             | 374.3                           |
| 5     | 12                | 38.5                             | 376.7                           |
| 6     | 12                | 45.5                             | 379.1                           |
| 7     | 12                | 52.5                             | 381.4                           |
| 8     | 12                | 59.5                             | 383.7                           |
| 9     | 12                | 66.5                             | 385.9                           |
| 10    | 12                | 73.5                             | 388.1                           |
| 11    | 16                | 82.8                             | 391.1                           |

#### 7.1.4 Monitoring

Groundwater monitoring stations will be installed downstream of the TSF to facilitate early detection of changes in groundwater level and / or quality, both during the operating life and following decommissioning. Standpipe and vibrating wire piezometers will be installed in the TSF embankment to monitor pore water pressures at several locations within the embankments to assess embankment stability. Survey pins will be installed at regular intervals along the TSF embankment crest in order to monitor embankment movements and assess the impact.

#### 7.1.5 TSF Closure Summary

At the end of the TSF operation, the downstream faces of the embankment will have a slope of 3H:1V, with 5 m benches located at 10 m height intervals, for an overall slope profile of approximately 3.5H:1V. The profile will be inherently stable under both normal and seismic loading conditions and will provide a stable surface water drainage system and will allow for revegetation.

Rehabilitation of the tailings surface will commence after termination of deposition into the TSF. The closure spillway will be constructed in such a manner to allow rainfall runoff from the surface of the rehabilitated TSF to discharge via the closure spillway. The TSF closure spillway will be excavated after the remaining supernatant water is proven to be suitable for release and during rehabilitation of the tailings surface subsequent to decommissioning. The closure spillway will discharge into the existing drainage course downstream of the TSF. The TSF will be a fully water-shedding structure on closure. The closure spillway will allow conveyance of probable maximum precipitation ("PMP") storm events without any attenuation in the TSF.

The final soil cover for the tailings surface subsequent to decommissioning will be confirmed during operation, based on ongoing operational tailings geochemistry testing results.

The following cover design for the tailings beach has been adopted at this stage, although it is subject to ongoing testing and review:

- Mine waste capillary break (500 mm),
- Low permeability fill layer (300 mm),
- Topsoil growth medium layer (200 mm),
- The finished surface will be shallow ripped and seeded with shrubs and grasses.

## 7.2 Water Management

### 7.2.1 Site Water Balance

A detailed site-wide water balance has not been developed as part of the current study. A project-specific water balance (including climatic inputs based on wet and dry conditions, process demand, decant return from TSF, seepage, losses, operational contingencies etc.) is to be completed as part of the next design phase of study to confirm storage requirements and abstraction rates.

Preliminary water calculations show the process plant requires approximately 939 m<sup>3</sup>/h of process to manage plant operations. The process water make up includes approximately 350 m<sup>3</sup>/h of decant water, approximately 377 m<sup>3</sup>/h recovered from the pre-leach thickener, resulting in approximately 212 m<sup>3</sup>/h of raw water make-up required to maintain plant operations.

Based on experience with comparable projects in the region, a water storage dam with an approximate capacity of 3.0 Mm<sup>3</sup> is anticipated to be adequate to meet process plant demand, subject to confirmation during a detailed water balance assessment in future studies. It is proposed to abstract raw water from the Boa River during the wet season, with a nominated abstraction point located approximately 9 km south-south-east of the process plant and transferred to the water storage dam (“WSD”) located approximately 9 km north of the abstraction point.

### 7.2.2 Raw Water Sources – Surface Water Harvesting

It is proposed to harvest raw water from the Boa River, which flows in a south-easterly direction across the southern end of the Project tenement. The river experiences seasonal flows, with the wet season between April and October, and the dry season between November and March.

The Boa River has a mean average volumetric flow<sup>3</sup> of approximately 10,200 m<sup>3</sup>/h, while the processing plant requires approximately 212 m<sup>3</sup>/h of make-up water to maintain operations. A water harvest dam is proposed, which effectively acts as a weir to allow harvesting of water from the river in the wet season with minimal river flow interruption. The harvested water is pumped to the WSD for later use.

### 7.2.3 Raw Water Sources – Ground Water

Dewatering bores will be installed in and around the mining pits, to maintain a safe working environment, with water pumped to the WSD for use in the processing plant and other operations. Further dewatering will occur through underdrainage below the TSF, which will report to the process water storage dam.

The opportunity to directly extract water from underground aquifers will likely not be necessary and will be assessed in detail in future study phases.

### 7.2.4 Water Storage Dam

The WSD is the primary storage pond for raw water on site. The WSD is envisaged to have a capacity to store 3.0 Mm<sup>3</sup> of water to meet process plant demand. This is subject to confirmation during a detailed water balance assessment in future studies.

The WSD is intended to be recharged by water abstracted from a nearby river source, being the Boa River, and rainfall runoff from its upstream catchment. Pit dewatering will be pumped to the

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<sup>3</sup> Japan International Cooperation Agency, [https://openjicareport.jica.go.jp/pdf/11634235\\_02.pdf](https://openjicareport.jica.go.jp/pdf/11634235_02.pdf)

WSD, and it was assumed that dust suppression and wash down water will be sourced from the WSD. The water collected in the WSD will be pumped back to the plant to supply plant raw water requirements and process make-up water requirements. Water will be recovered from the WSD by a decant tower.

The WSD has been constructed within one of the existing depressions, east of the Kona South pit, that make up the tributaries to the local river systems, whereby the embankments would be partially made from the natural terrain.

The WSD embankment will comprise a central low-permeability core (Zone A), a transition fill (Zone B), a downstream structural zone (Zone C1) and upstream Zone A and Zone C1. Typical specifications for material types are summarised as follows:

- Zone A material shall be won from borrow to form the low permeability core of the embankment,
- Zone B material shall be won from borrow,
- Zone C1 material shall be won from borrow to form the outer structural zones,
- Zone F1 shall be clean sand/gravel drainage material supplied to a stockpile adjacent to the works.

The WSD basin area will be cleared, grubbed and topsoil stripped to ensure that the process water supply remains free of organic material.

The intended operation of the WSD would be to fill the dam during the wet season, and consume the volume during the dry season, with only minor top-ups from surrounding water catchments to be performed as required.

### **7.2.5 Water Discharge**

It is not proposed that the Project will discharge any water from site.

If the need to discharge water from site arises in future studies, then discharge options will need to be assessed.

## 8.0 Infrastructure

The ABC Project is a Greenfields development comprising of the following new infrastructure to support mining, processing and waste management:

- Site roads (haul and general) and site access road from the existing national road network,
- Helipad,
- New 48 km 225 kV transmission line to connect site to the Labosa substation,
- Power distribution on site and emergency power generation,
- Site facilities and services including but not limited to, raw water harvesting, water storage dam (“WSD”), water treatment, sewage treatment, general non-production waste management, communications, fuel supply, medical, analytical, cleaning, catering and laundry, site security, maintenance, and transport services,
- Plant and general infrastructure buildings,
- Tailings storage Facility (“TSF”),
- Mine Services Area (“MSA”) consisting of infrastructure facilities to support the mining operation,
- Accommodation, permanent and construction camps.

A site layout drawing can be seen in the Figure 8-1 below.

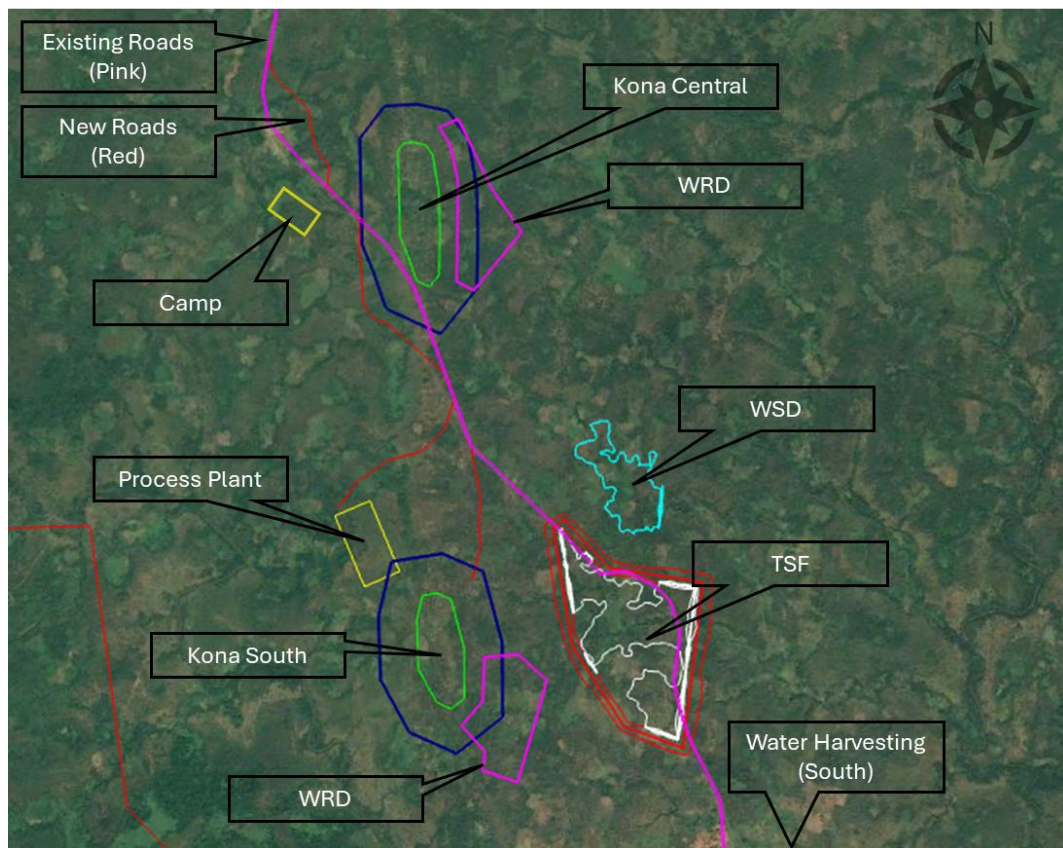


**Figure 8-1: ABC Project Site Layout**

## 8.1 Plant and Infrastructure Location

The proposed ABC Project plant and infrastructure location was selected by limiting construction to occur within the current tenement boundary, along with avoiding interaction with nearby communities and protected forests. Consideration was also given to minimise ore haulage, waste rock haulage and cut-and-fill requirements.

The plant and infrastructure conceptual layout was developed using the following assumptions:

- Plant and infrastructure will be located adjacent to the first online pit, being Kona South
- The plant site will be well drained
- Site geotechnical characteristics are suitable
- The process plant site doesn't have layout restrictions, beyond limiting cut-and-fill requirements
- Suitable lay down areas for construction can be made available nearby
- The orientation of the plant suits other infrastructure i.e. ROM pad, TSF, incoming HV power, incoming water, roads, etc.
- The TSF will be situated within reasonable pumping distance from the process plant, with a single stage tailings pump requirement.

## 8.2 Utilities

### 8.2.1 Power Supply: Grid Power

ECG Engineering ("ECG") was commissioned by MineScope to undertake a Scoping Study for the HV power supply and connection to the National Interconnected Transmission System in Côte d'Ivoire. This section details ECG's scope and methodology to establish the project's indicative capital and operating costs for the nominated infrastructure.

The Project is estimated to have a maximum demand of 39.5 MW and an expected annual energy consumption of approximately 328 GWh. Historically, electricity supply reliability in parts of Africa has been a challenge, leading some mining operations to install embedded diesel generation to maintain plant availability. However, power supply reliability in Côte d'Ivoire is generally strong, particularly at transmission voltages. As such, the Study has assumed that the preferred power supply option is connection to the Côte d'Ivoire national electricity grid.

The most suitable grid connection strategy involves upgrading the Laboa Substation through the extension of the existing 225 kV bus, the addition of a new 225 kV transmission line feeder, construction of approximately 48 km of 225 kV single-circuit lattice tower transmission line, and the establishment of a new substation at the Project site.

The Project substation would be owned and operated by Compagnie Ivoirienne d'Électricité ("CIE"). The site would be supplied via a 225 kV tariff-metered feeder, with installing a 225/11 kV transformer at the substation and distributing power to the plant via an 11 kV feeder to the Plant Main 11 kV Switchboard. The Point of Supply ("POS") has been assumed at the incoming terminals (225 kV) of the 11 kV supply transformer from the Laboa substation where the tariff metering would be installed.

The Laboa supply point is connected to the 225 kV network and forms part of a ring-main system, which provides a high level of reliability. Network availability is expected to exceed 99%, as demonstrated by historical performance, and power quality is relatively stable. Given that the ABC

Substation would be connected to the 225 kV ring-main system, power reliability and quality for this grid connection are expected to be high.

### **8.2.2 Power Supply: Emergency Power**

Emergency power has been allowed for via diesel fired generators, which will service the process plant and accommodation camp.

Diesel will be supplied to the emergency power generators via a day tank attached to the main site storage tank. Diesel will be delivered to site via bulk fuel delivery.

### **8.2.3 Power Supply: Plant Reticulation**

The electrical system for the Project is based on 11 kV distribution and 11 kV / 425 V working voltage. System frequency is designed at 50 Hz. The largest drives within the process plant are the ball mill at 16.5 MW installed and the SAG mill at 16.0 MW installed.

From the 215 kV / 11 kV switchyard, the 11 kV supply will be reticulated from a tariff-metered feeder to the process plant 11 kV switchboard. Remote loads such as the mine services area, tailings storage facility and camp loads will be fed via 11 kV overhead transmission lines. Step-down transformers shall supply 415 V to the remaining areas of the process plant motor control centres ("MCC") and to the non-process infrastructure main switchboards.

### **8.2.4 Diesel Storage Facility**

A bulk fuel storage facility will be provided. This will principally supply diesel to the emergency power generators with capacity to facilitate refuelling of light vehicles and the process plant mobile fleet. Sufficient storage will be included to sustain operations for a period of 30 days at normal consumption rates.

A transfer line will be used to transfer fuel from the primary storage tank to the mining fuel farm which will be used to refuel light vehicles and the mining fleet.

Portable power generators will have portable sources of diesel (such as pumps on the back of vehicles).

Diesel will be delivered to site via bulk fuel delivery.

### **8.2.5 Raw Water**

Raw water will be primarily sourced from the nearby Boa River located approximately 9 km south-south-east of the process plant, and then pumped to the WSD, located 3 km east of the process plant for storage. From this dam, water will be provided for the various distribution points including the process plant and mine services area. Refer to Section 7.2 Water Management for further details to the site water management systems.

## **8.3 Buildings**

Key site buildings have been allowed for as part of this scoping study. These are described below.

### **8.3.1 Process Plant Buildings:**

The primary plant and general infrastructure buildings allowed for in the Study will be prefabricated flatpack buildings, unless otherwise stated. Office areas will be airconditioned, while warehouse



and workshop areas will not. All buildings will include dedicated ablutions facilities, unless otherwise stated. The process plant buildings are summarised below:

- Main Administration Offices, sized to accommodate the senior management, accounting, commercial, human resources, environmental and community, mining, survey, and geology personnel at the mine,
- Clinic / First Aid and Emergency Response Buildings, including offices, storage rooms, examination rooms, and treatment facilities,
- Warehouse, constructed from steel frames and roof sheeting, with wall cladding, motorised roller doors, and concrete floor slab. Will contain pallet racking, shelving, and offices for warehouse personnel,
- Light Vehicle Workshop, constructed from prefabricated steel frame and roof sheeting, with personnel offices,
- Social Performance Offices, used for personnel training, and meetings with local community members,
- Gatehouse and Security Building, constructed from blockwork or brickwork, including boom gates and turnstiles for access control,
- Security Command Posts / Guardhouses, with various installations located strategically around the ABC Project tenement,
- Security Control Centre, located at the accommodation camp,
- Plant Security Gatehouse and Change Room, constructed from blockwork or brickwork, housing separate male and female change facilities with lockers,
- Processing Plant Offices and Control Room, sized to accommodate plant metallurgist offices, shift supervisor offices, and a meeting room,
- Plant Diner (Crib Room), located within the processing plant for on-shift administration, operations, and maintenance personnel, with food preparation to occur in the accommodation camp,
- Plant Ablutions, general access facilities at various locations around the processing plant,
- Plant Laboratory, constructed from blockwork or brickwork, with adjoining steel-framed sample rooms, and air conditioning in metallurgical and assay rooms. The laboratory building fit-out will be provided by laboratory services contractor,
- Plant Workshop, constructed from steel frames and roof sheeting, with an overhead crane, consisting of mechanical, boilermaker, electrical, and instrument workshops, with tool store and hydraulic store. Offices for the maintenance planner and maintenance mechanical and electrical supervisors will be contained within or adjacent to the facilities,
- Reagent Stores, constructed from steel frames and roof sheeting, with concrete flooring and bunds, and separate sump systems,
- MCC and Substations, will be airconditioned and insulated to optimise electrical and computing operability and safety, and will not include dedicated ablutions.

### **8.3.2 Mine Services Area Buildings:**

Mining support facilities will be developed by the Mining Contractor in consultation with Resolute at the Mine Services Area ("MSA"). These MSA facilities will include the following:

- Mining Offices, including meeting rooms, kitchen and ablutions,

- Mining Training Building, including a simulator,
- Canteen (crib room),
- Change Room, with separate areas for males and females, including showers and ablutions,
- Heavy Vehicle Mine Workshop, including maintenance area, welding area, machines repair area, components repair area, oil storage area and greases area,
- Tyre Change Bay, including short-term storage for new and used tyres,
- Mine Warehouse, constructed from steel frames and roof sheeting, with wall cladding, motorised roller doors, and concrete floor slab. Will contain pallet racking, shelving, and offices for warehouse personnel,
- Truck Washdown Bay, with bunded area to prevent water and dirt from freely entering the environment,
- Waste Area,
- Container and Laydown Area,
- Heavy Vehicle / Equipment Parking, with floor markings to delineate roads, parking bays, and pedestrian walkways,
- Light Vehicle Parking, with floor markings to delineate roads, parking bays, and pedestrian walkways,
- Heavy Vehicle Refuelling Bays, with fuel pumped from the nearby bulk fuel storage facility,
- Supporting Utilities and Services, including power, lighting, communications, raw water, potable water, and sewerage reticulated from the nearby process plant facilities.

#### 8.4 Camp Facilities

The Project requires both a temporary camp and a permanent village to accommodate construction and operational personnel. The temporary camp will support the early works and construction phase of the Project, housing contractors and construction personnel. An allowance for the temporary camp and facilities has been captured within the Study capital estimate, refer to Section 13.0 Capital Cost Estimate.

The permanent accommodation camp village, inclusive of all accommodation units, messing facilities, administration buildings, utilities, and support services, will be designed and constructed to house approximately 410 non-residential employees and contractors, as outlined in Section 14.0 Operating Cost Estimate. The camp will be located approximately 6 km North of the process plant by road.

The camp will provide individual rooms consisting of bedding and ablution facilities, a common messing area, recreational and social facilities, as well as camp administration, maintenance, security facilities, communication, and fire services. All rooms will be connected via verandas and footpaths, complying with grading and accessibility requirements. Power will be supplied from the process plant power supply, with a local back-up diesel generator to ensure uninterrupted power for critical infrastructure (such as refrigeration equipment, emergency lighting, and communications). Potable water will be supplied from the site water treatment plant. Light vehicle parking facilities will be provided, with road access to the process plant, administration buildings, and the site main access road.

Accommodation camp security will see the camp surrounded by a double perimeter fence and include a security gatehouse with 24-hour security.



## 8.5 Transport

Transport and logistics options to and from site will be primarily via an upgraded access road connecting to the A7 highway. Air transport to site may also be possible via a site helipad or nearby commercial airstrips located at the cities of Odienné and Man, each located approximately 110 km north by road and 230 km south by road respectively. Each of these airports have regular flights to the capital city of Abidjan. Road access from the Project site to Abidjan, once the access road has been upgraded, is approximately 800km, which will likely take 10-12 hours to traverse.

Seaport facilities are available in the capital city of Abidjan (in the south-east) and the port city of San-Pédro (in the south-west). There are no rail facilities suitable for servicing the ABC Project.

### 8.5.1 Site Road Access

Site access roads have been designed to maximise the use of existing roads where practicable, connecting the proposed infrastructure to National Highway A7, near the town of Memouya. The alignment has been configured to avoid impacts to the protected forest located west of the tenement, and divert around communities of Memouya, Kona, and Mamouroudougou. As part of these community diversions, new access road construction is required across seven segments totalling approximately 21 km. Where existing roads are utilised, totalling approximately 22 km, they shall be upgraded as necessary to meet the applicable design standard.

The adopted design speed for the site access road is 60km/h, with a road width of 7.0m (comprising 2 lanes of 3.5m width), with a maximum vertical grade of 8%. The safety berm proposed is 0.5m high where fill batters exceed 2m in height. A 150mm laterite gravel-wearing course will be placed over the subgrade/general fill. It is expected that routine maintenance and re-surfacing (as required) of the site access road will be completed during the operation.

Culvert crossings will be installed at significant stream crossing locations along the access road alignment to convey all runoff resulting from an assumed 10-year average recurrence interval storm event.

### 8.5.2 Interior Roads

All interior roads will be suitable for light vehicles to traverse, while only access roads and necessary haulage, mining, and processing plant roads will be suitable for heavy vehicles.

The interior road network will be designed to provide access to all areas of the Project operations, without the need to exit the site boundary and re-enter again.

### 8.5.3 Logistics

International freight movements for the Project will be handled through the Port of Abidjan, the principal deep-water port of Côte d'Ivoire and the main maritime gateway for containerised and break-bulk cargo. The alternate seaport, with closer proximity although smaller capacity, is the Port of San-Pédro (in the south-west of Côte d'Ivoire).

Transport from either port will be via national highways. Items will be delivered directly to their dedicated storage areas or end users, such as reagent storage, diesel storage facility, warehouse, etc.

Applicable commercial airstrips are located at the cities of Odienné and Man, as described in Section 8.5. There is no suitable rail infrastructure to support the Project's logistics program.

## 8.6 Communication

Internal communications and IT services will be via a site wide fibre optic network.

One of the local mobile phone providers will be contracted to install facilities on site and provide a link into the local, national and international telecommunication network.

A radio network will be established with dedicated operational, security and emergency channels.

A local ground station will be installed to provide a data connection via microwave to the local ISP.

## 8.7 Mobile Plant

The mobile plant allocation used within this scoping study is as per Table 8-1, distributed across the processing plant and administration. Mining equipment is not included in this analysis.

**Table 8-1: Mobile Equipment**

| Mobile Equipment           | Number |
|----------------------------|--------|
| Light Vehicles             | 23     |
| Medium and Heavy Vehicles  | 21     |
| Generators and Other Plant | 15     |

## 8.8 Site Security

Allowance has been made for security fencing and services for site operations. A security gatehouse will regulate entry of personnel to the low security buildings such as the site administration building and warehouse. A separate gatehouse with turnstile and search facility will regulate personnel entry to the process plant itself. The goldroom area will be fenced off separately. Goldroom security will include CCTV surveillance and security personnel. The accommodation will also be fenced and will include a security gatehouse and security personnel.

## 9.0 Permitting Requirements

### 9.1 Introduction

The ABC Project, located in the Kabadougou Region of the Denguélé District, north-west of Côte d'Ivoire was acquired from AngloGold Ashanti in 2025, following the latter's takeover of Centamin in 2022. Up until this point, little work has been conducted to understand the permitting requirements for the Project or identify specific site requirements with respect to environmental, social and governance ("ESG"). As the ABC Project is a greenfield project, care needs to be given to develop a robust environmental and social impact assessment ("ESIA") and permitting strategy to allow project progression.

This section outlines the strategy for the project's permitting, as well as other key environmental and social requirements related to the project. Execution of this strategy will ensure that both Côte d'Ivoire requirements, as well as International Best Practice Standards ("IBPS") requirements, the Equator Principles ("EP") and the International Finance Corporation ("IFC") Performance Standards ("PSs"), are adhered to as part of the future Pre-Feasibility Study ("PFS").

### 9.2 Environmental and Social Impact Assessment / Management Plan

A comprehensive ESIA and environmental and social management plan ("ESMP") will need to be undertaken for the project, in compliance with key regulatory requirements. Specifically, the ESIA / ESMP must conform to the 2014 Mining Code, the implementing Decree No. 2014-397, and the 2023 Environmental Code, which is further supported by several other decrees, such as Decree No. 96-894 – which specifies requirements regarding social and environmental impacts.

In addition, the ESIA / ESMP must conform to the EPs and the IFC PSs to ensure alignment with IBPS. To ensure this, it is required that seasonal data be collected, resulting in an estimated timeline of 12 to 18 months.

Specialist studies required for a typical ESIA / ESMP include the following:

- Ambient air quality,
- Greenhouse gas ("GHG") and climate adaptation,
- Pedology, land use, and land capability,
- Hydrology, hydrogeology, and geochemistry,
- Biodiversity,
- Noise, blasting, and vibration,
- Traffic impact assessment,
- Waste management plan,
- Conceptual mine rehabilitation and closure,
- Social studies, and
- ESIA / ESMP approvals process.

A more detailed explanation of these studies may be found in Appendix C. A high-level timeline for these studies is provided in Section 9.6.

### 9.3 Other Permits

The ESIA / ESMP forms the base approval to secure a mining licence and is therefore foundational to the project.

Several other permits may need to be obtained for the project, including:

- Water use licences for water abstraction and the discharge of effluents,
- Waste management authorisations, including relating to general, hazardous, and mining waste materials,
- Air emissions and pollution control authorisations,
- Land use and land occupation authorisations,
- Protected area clearance (if applicable, where critical habitats are identified), and
- Community development plan approval.

### 9.4 Future Study Requirements

Environmental and social considerations must be incorporated into the PFS and, when relevant, the Definitive Feasibility Study (“DFS”). The ABC Project environmental and social team will be required to work in collaboration with the engineering teams to ensure that the operation is designed and developed to meet Côte d’Ivoire and IBPS requirements.

The financial requirements for the ESMP’s implementation must be quantified, and adequate capital and operational expenditure must be provided to support it over the life of the project.

### 9.5 ESG Systems Implementation

Beyond the permitting process, the project will be required to develop and implement an appropriate Environmental, Social, and Governance (“ESG”) Management System to ensure ongoing compliance with legal requirements and with corporate and IBPS requirements. The ESG Management System must incorporate the findings of the ESIA / ESMP, and must effectively address day-to-day, and long-term ESG risk management requirements and controls.

This aspect is becoming increasingly important to lenders, and its development and implementation will likely form part of contractual obligations with lenders through the Environmental and Social Action Plan (“ESAP”).

While Resolute can leverage its existing ESG Management Systems, it must be ensured that it is adequately tailored to the operation’s context, risk materiality, and risk profile, and that sufficient time is allowed for this body of work to be undertaken as part of the project’s operational readiness phase.

### 9.6 High Level Permitting Schedule

A high-level schedule for typical ESIA / ESMP assessments and permitting studies may be seen in Table 9-1.

**Table 9-1: High-Level Schedule for ESIA / ESMP Assessments and Permitting Studies**

| Project ABC High-Level Environmental and Social Schedule    | Study Phase<br>Month |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    | Approvals Phase<br>Month |    |    |    |    |
|-------------------------------------------------------------|----------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|--------------------------|----|----|----|----|
|                                                             | 1                    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19                       | 20 | 21 | 22 | 23 |
| Ambient Air Quality                                         |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| GHGs and Climate Change                                     |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Pedology, Land Use and Land Capability                      |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Hydrology, Hydrogeology and Geochemistry <sup>(1) (2)</sup> |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Biodiversity                                                |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Noise, Blasting and Vibration                               |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Traffic Impact Assessment                                   |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Waste Management Plan <sup>(3)</sup>                        |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Conceptual Mine Rehabilitation and Closure Plan             |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Social Studies                                              |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Resettlement and Livelihood Restoration <sup>(4)</sup>      |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| ESIA / ESMP Compilation                                     |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| ESIA / ESMP Approvals Process                               |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| Other Permits <sup>(5)</sup>                                |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |
| ESG Systems Development and Implementation                  |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |                          |    |    |    |    |

**Notes:**

- <sup>(1)</sup> Schedule assumes that geochemical data is available.
- <sup>(2)</sup> Schedule excludes drilling of groundwater monitoring boreholes.
- <sup>(3)</sup> Schedule excludes TSF / WRD design. These are to be provided by the engineering team.
- <sup>(4)</sup> RAP / LRLP implementation not included. Allow 18 - 24 months, including confirmatory survey in operational readiness phase (i.e., post ESIA / ESMP approval).
- <sup>(5)</sup> Note that permits such as land clearance, drilling, etc. may be required at commencement of site-based activities.

## 10.0 Operations Management

### 10.1 General

The mining and processing operation will be operated 24 hours per day, 365 days per year using a predominantly Ivorian workforce with supplementary expatriate personnel where the appropriate skill sets are not available in country.

A permanent accommodation village for 425 personnel will be used to house all non-residential personnel and contractors. Staff employed from the immediate area around the mine will be transported in to site each day. The camp will be located approximately 6 km North of the process plant and buses will be available to bring staff based in the camp to and from site.

### 10.2 Mining

The mining operation will be conducted by a competent and experienced mining contractor. The contractor will be responsible for the operation and maintenance of the necessary mining equipment, supervision of mining operations and provision of the infrastructure required to deliver the mining services. Resolute will maintain overall management of the mining operation with a mining team that will be responsible for:

- Supervision and control of the contractors (mining and grade control drilling),
- Geological, geotechnical and mine planning technical support (including survey control),
- Grade control sampling.

### 10.3 Processing

The processing facilities will operate on a continuous basis by Resolute personnel.

Ore will be fed to the crusher from the ROM stockpile. The crushing area is planned to operate 75% of the time (6,570 h/y) and the downstream processing area is planned to operate 91.3% of the time (8,000 h/y).

### 10.4 Management and Readiness

The operation will be led by a General Manager/VP Operations reporting to the Resolute Chief Operating Officer. The General Manager will be supported by a team including a Mine Manager, Plant Manager, OH&S Manager, Finance and Admin Manager, HR Manager, ESG Manager, Laboratory Manager, Security Manager, and Camp Manager.

The operational leadership team will be recruited early in the project implementation phase and will take ownership of operational readiness. This will include:

- Detailed operational descriptions and control philosophies,
- Detailed safety management system for the new site including major hazard controls, risk management and safe work procedures,
- Development of the asset management, performance management and management operations systems to describe how the team will effectively manage the operation, work together and communicate on needs, problems, risks and opportunities,
- Detailed operational and maintenance procedures,
- Recruitment of workforce and development of onboarding and training programmes,

- Oversight of spares and materials procurement and the establishment of supply chain management processes.

## 11.0 Project Execution

There are three key activities that comprise the delivery of a new mining project:

1. Mining Strategy: For the purpose of the Scoping Study, it has been assumed that all mining activities will be carried out under contract by a third party under supervision of a small owner's team.
2. Plant and Infrastructure Strategy: For the purposes of the Scoping Study, it has been assumed that an Engineering, Procurement and Construction Management ("EPCM") style of project delivery model will be used with the capital cost and schedule build up.
3. Owners Strategy: For the purpose of the Scoping Study, it has been assumed that a small Owners team comprising specialist project delivery personnel to manage the project delivery on Resolute's behalf. The key project delivery roles of that will need to be filled include:
  - Project Director,
  - Contracts Manager,
  - Project Controls Manager,
  - Construction Manager,
  - Administration Manager,
  - Operational Readiness Manager.

A range of support staff will provide additional Owner's Team capacity under the direction of the management team.

The Operational Readiness Manager will be responsible preparing Resolute to manage a new mining operation with a key focus on developing in-house resources and capacity to take on the project during and after commissioning.

### 11.1 Engineering

All engineering and design relating to the processing facility and site infrastructure will be carried out by a 3rd party engineering contractor as part of the EPCM package of work.

### 11.2 Procurement and Contracts

All procurement and contracts relating to the processing facility and site infrastructure will be carried out on behalf of Resolute by a 3rd party engineering contractor as part of the EPCM package of work. Contracts and procurement relating to the supply of first fill reagents and consumables will be managed by the Owners project team through new suppliers where applicable.

### 11.3 Construction

All construction activities onsite relating to the processing facility and surface infrastructure will be carried out by contractors under the supervision of the EPCM engineering contractor.

### 11.4 Commissioning

Commissioning will be carried out by the EPCM engineer commissioning personnel in combination with Resolute operational readiness personnel who will transition to the operation longer term.



Where necessary, additional experienced specialist commissioning personnel will be mobilised to site for short term contracts to support commissioning activities. No allowance has been made in the processing plant fixed operating costs in the first year of operation for additional support personnel, this shall be reviewed in future studies.

## 11.5 HSEC

A project specific HSEC strategy and plan will be developed in line with typical site practises and systems to support the various construction and operational activities envisaged at project.

Part of this plan will be a series of HSEC workshops to map out the key risks associated with the planned activities and the mitigations required to be put in place prior to commencement of work.

## 11.6 Scheduling

The two key drivers of the project development schedule relate firstly to the Technical Studies (Pre-Feasibility Study and Definitive/Feasibility Study), equipment supply and construction timelines. The second schedule constraint is associated with the permitting studies and supporting studies. Whilst there is some overlap between the two schedules (i.e. a reasonably detailed Project Brief requires some Pre-Feasibility Study level of design to be completed), the two schedules largely progress in parallel. A high-level schedule is presented in Figure 11-1 which combines both development timelines. As can be seen, the likely mining commencement occurs during 2029 with first gold production in 2030.

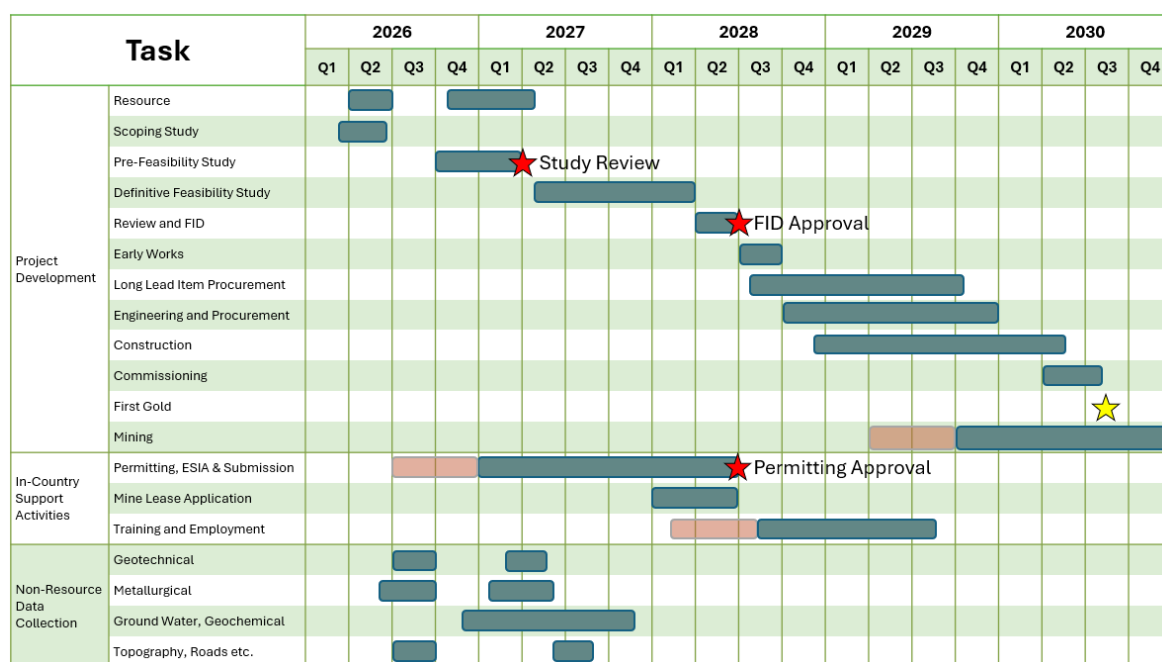


**Figure 11-1: Summary Project Schedule**

A preliminary engineering and construction schedule has been prepared indicating a total period of 26 months from Final Investment Decision (“FID”) to completion of commissioning.

A detailed implementation schedule will be developed as part of the next phase of study.

## 12.0 Capital Cost Estimate

### 12.1 Introduction

The capital cost for the Project was estimated based on the scope of work defined in the Study. The basis of estimate (“BOE”) included in this section communicates the approximations, assumptions, and interpretations affecting the capital cost estimate. The BOE includes description of the methodologies, references and defining deliverables, used assumptions and exclusions, and some indication of the level of risk and uncertainty.

### 12.2 Capital Cost Estimate Summary

A summary of the capital cost estimates is provided in Table 12-1. It is reported in United States dollars (US\$) with a base date of second quarter 2026 (Q2 2026), an accuracy of  $\pm 30\%$  (Class 5 AusIMM level). The detailed capital cost estimate can be found in Appendix D.

**Table 12-1: ABC Scoping Study Capital Cost Estimate Summary**

| WBS | Cost Area                 | Units        | Total        | Contingency (%) |
|-----|---------------------------|--------------|--------------|-----------------|
| 100 | Mining                    | US\$M        | 43.6         | 10.0            |
| 200 | Process Plant             | US\$M        | 139.1        | 30.0            |
| 300 | Reagents & Plant Services | US\$M        | 38.9         | 30.0            |
| 400 | Infrastructure            | US\$M        | 131.5        | 30.0            |
| 500 | Construction Indirects    | US\$M        | 64.3         | 10.0            |
| 600 | Project Indirects         | US\$M        | 38.0         | 10.0            |
| 700 | Owners Costs              | US\$M        | 77.3         | 10.0            |
|     | <b>Sub-Total</b>          | <b>US\$M</b> | <b>532.5</b> |                 |
| 900 | Contingency               | US\$M        | 115.1        | 21.6            |
|     | <b>Total</b>              | <b>US\$M</b> | <b>647.6</b> |                 |

### 12.3 Mining Capital Cost Estimate

A capital cost estimate for mining was provided by Orelogy. Please refer to Section 4 Mining for more information. The total cost was US\$43,584,000 for Year -1.

### 12.4 Processing Plant, Reagents and Plant Services Capital Cost Estimate

#### 12.4.1 Estimate Summary

A summary of the process plant, reagents and plant services capital cost estimate produced by MineScope is provided in Table 12-2. The detailed capital cost estimate is provided in Appendix D.

The battery limits for this sub-section of the capital estimate include:

- Feed to the ROM bin for a 7 Mt/y gold processing plant,
- Production of gold doré,
- Discharge from the tailings line spigots at the tailings storage facility (“TSF”),
- Suction from the decant water pump at the TSF,
- Suction to the raw water storage decant pumps (at the water storage dam),

- Reagents,
- Air, water, and electrical services (HV power distribution, plant substations, plant control system, and general E&I),
- Plant services (process water storage, event pond, sewage collection and treatment).

**Table 12-2: Process Plant, Reagents and Plant Services Capital Cost Summary**

| WBS | Cost Area                            | Units       | Total        |
|-----|--------------------------------------|-------------|--------------|
| 200 | <b>Process Plant</b>                 | <b>US\$</b> | <b>139.1</b> |
|     | Primary Crushing                     | US\$        | 25.6         |
|     | Ore Storage and Reclaim              | US\$        | 12.0         |
|     | SAG Milling                          | US\$        | 32.4         |
|     | Classification                       | US\$        | 2.2          |
|     | Ball Milling                         | US\$        | 21.8         |
|     | Gravity                              | US\$        | 2.2          |
|     | Pebble Crushing                      | US\$        | 4.6          |
|     | Preleach & CIL                       | US\$        | 27.3         |
|     | Gold Recovery & Carbon Regeneration  | US\$        | 7.3          |
|     | Cyanide Destruct & Tailings          | US\$        | 3.6          |
| 300 | <b>Reagents &amp; Plant Services</b> | <b>US\$</b> | <b>38.9</b>  |
|     | Reagents                             | US\$        | 2.7          |
|     | Water Services                       | US\$        | 5.6          |
|     | Air Services                         | US\$        | 4.1          |
|     | Plant Services                       | US\$        | 3.3          |
|     | Electrical Services                  | US\$        | 23.2         |

#### **12.4.2Basis of Estimate**

The following documents provided the basis for the capital cost estimate:

- Process flow diagram
- Process design criteria
- Mass balance
- Mechanical equipment list
- MineScope's estimating database
- Recent vendor pricing for the primary gyratory crusher and the pebble cone crusher.

The scoping study estimate is an AusIMM Class 5 estimate, with a combination of mostly database/factored costs, with some recently tendered pricing.

#### **Base Date**

The base date for the capital cost estimate is second quarter 2026 (Q2 2026).

#### **Accuracy**

The estimate is factored based on the cost of the mechanical equipment, and benchmarked against recent studies and projects, to meet the required accuracy criteria of  $\pm 30\%$  for the Study.

### **Base Currency**

The estimate has been presented in the United States Dollars (US\$) currency in present day (second quarter 2026) terms.

### **Exchange Rates**

Prices obtained in other currencies have been converted to US\$ using the applicable exchange rates as per Table 12-3.

**Table 12-3: Foreign Exchange Rates**

| Currency            | Currency Code | Foreign Exchange Rate (per US\$) |
|---------------------|---------------|----------------------------------|
| European Union Euro | EU€           | 0.86                             |
| Australian Dollars  | A\$           | 1.45                             |

Any fluctuations in the exchange rates since the publication date of the Scoping Study report have not been considered in the estimate.

### **Escalation**

Where database costs have been used for the same or similar sized equipment from other projects, prices have been escalated to obtain present day costs. The escalation factors are based on inflation rates and are summarised in Figure 12-1.

Escalation after the estimate base date has not been allowed for in the capital cost estimate.

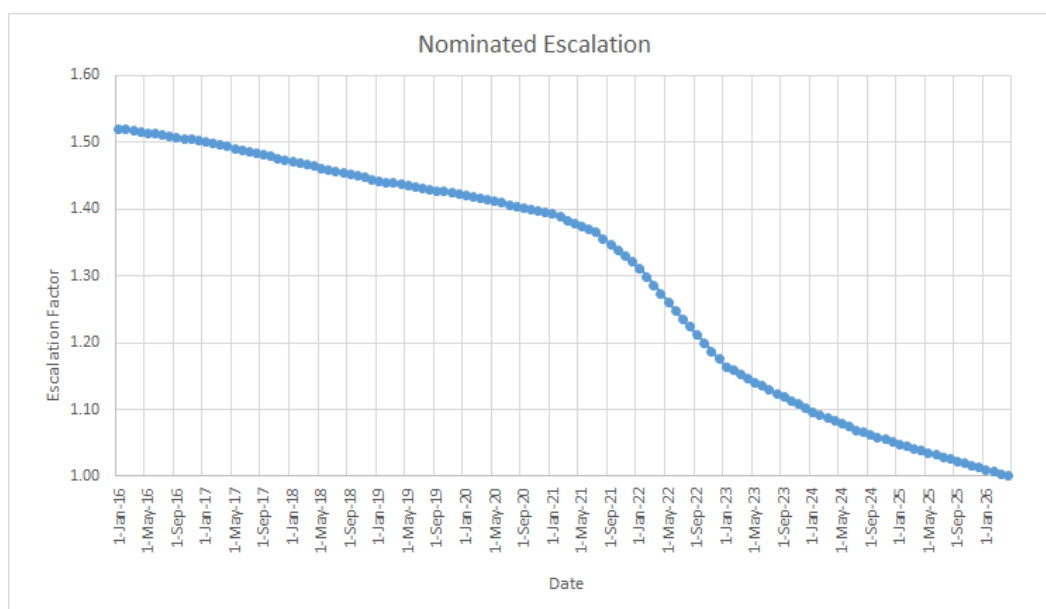


**Figure 12-1: Nominated Escalation**

### **Estimating System & Format**

The estimate has been prepared utilising the standard MineScope estimating process and procedures, and database of project costs, to produce an estimate in MS Excel format.

### ***Estimate Report Requirements***

The capital cost estimate detail comprises the priced mechanical equipment list (“MEL”) with factors consistently applied to arrive at cost estimates for the other costs categories. A summary sheet has been produced utilising the priced MEL and combining detailed elements as required for the process plant flowsheet and non-mining infrastructure.

#### **12.4.3 Estimating Methodology**

This section covers the estimating methodology adopted by MineScope for the plant, associated equipment and non-mining infrastructure.

#### **12.4.4 Direct Costs**

Generally, direct costs were developed for the mechanical equipment, including freight and installation. The total cost for sub-areas of the plant (as per the work breakdown structure or WBS) was then factored by way of a percentage of the total installed mechanical cost for each area.

##### ***Mechanical Equipment***

The mechanical equipment list has been developed from the process flow diagrams and expanded using lists from projects with similar unit operations. The mechanical equipment list provided equipment numbers, type, size and power.

##### ***Installation***

The installation cost for the mechanical equipment has been factored at 10% of the mechanical equipment supply cost. This factor was derived from the Doropo DFS capital cost estimate.

##### ***Transport***

Freight and transport costs have been estimated at 18% of the mechanical equipment supply costs. This factor was derived from the Doropo DFS capital cost estimate.

##### ***Bulk Commodities***

Bulk commodities costs, including concrete, structural steel, platework, piping and valves, and electrical and instrumentation, have been factored from the total installed mechanical costs. The total installed mechanical cost is the supply cost plus the installation cost plus the freight cost.

The factors used to develop these bulk commodity costs were derived from the Doropo DFS, with the exception of the Primary Crushing WBS (which comprises a gyratory crusher for the ABC Project vs. a jaw crusher in the Doropo Project) and the Pebble Crushing WBS (only future provision for a pebble crusher was included in the Doropo Project). For these two WBS’s, the capital cost estimate referenced multiple West African projects to derive the required factors.

These factors are calculated as the cost of the bulk commodity as a percentage of the total installed mechanical equipment cost for each WBS.

The factors include material supply and installation costs including contractor’s labour, small tools, construction equipment, consumables, any associated freight costs, overheads, mobilisation/demobilisation costs, overheads and profit.

### **Plant Services**

The cost of plant services (process water storage, event pond, sewage collection and treatment) were derived from the Doropo DFS capital cost estimate. The event pond and sewage costs were kept the same, whereas the cost for process water storage was increased by 6/10<sup>th</sup> factoring to accommodate the increase in throughput for the ABC Project compared to Doropo.

### **Electrical Services**

Electrical costs relating to HV power distribution, plant substations, plant control system and general electrical and instrument requirements were each factored from the Doropo DFS estimate. These separate factors were calculated as the cost as a percentage of the total plant E&I costs.

## **12.5 Infrastructure**

A summary of the infrastructure capital cost estimates produced by MineScope is provided in Table 12-4. The detailed capital cost estimate is provided in Appendix D.

**Table 12-4: Infrastructure Capital Cost Summary**

| WBS | Cost Area                 | Units | Total |
|-----|---------------------------|-------|-------|
| 400 | Infrastructure            | US\$  | 131.5 |
|     | Site Earthworks           | US\$  | 16.0  |
|     | Site Access Road          | US\$  | 5.1   |
|     | Power Supply              | US\$  | 39.0  |
|     | Tailings Disposal         | US\$  | 31.7  |
|     | Raw Water Supply          | US\$  | 5.3   |
|     | Water Management          | US\$  | 1.6   |
|     | Communications            | US\$  | 0.5   |
|     | Helipad                   | US\$  | 0.4   |
|     | Waste Disposal & Landfill | US\$  | 0.4   |
|     | Laboratory                | US\$  | 0.5   |
|     | Accommodation             | US\$  | 20.7  |
|     | Buildings                 | US\$  | 10.3  |

### **12.5.1 Site Earthworks**

Site earthworks include the following:

- Bulk and detailed site earthworks,
- In-plant roads,
- Ore haul roads to the ROM pad,
- Mine waste haul roads to the waste rock dumps,
- Upgrade to existing roads.

Most of the costs for site earthworks were derived from the Doropo DFS estimate, with 6/10<sup>th</sup> factoring applied to some of the sub-costs where they are expected to increase for the higher throughput of the Project. The rest of the earthworks sub-costs were kept the same as the Doropo DFS capital cost estimate.

An additional allowance of 3.1% was applied to the site earthworks cost to accommodate for a primary gyratory crusher being installed instead of a primary jaw crusher. This 3.1% factor was derived using the capital cost estimates from multiple West African projects and is the total cost of the primary crusher civils divided by the total mechanical cost.

The lengths of the ore haul roads, mine waste haul roads, and existing roads requiring upgrade were determined from a GIS map of the ABC Project. The unit costs from the Doropo DFS (US\$137,000/km for 30 m wide mine waste haulage roads and US\$87,000/km for 20 m wide ore haulage road) were used to derive the costs for the construction of these roads. For the existing roads requiring upgrade, the unit cost for the 20 m wide roads was applied with a 50% discount.

### **12.5.2 Site Access Roads**

Knight Piésold provided the capital cost for construction of the new site access roads, for a total of US\$5,137,000. Please refer to Section 8.5.1 for more information.

### **12.5.3 Power Supply**

A capital cost estimate for power supply was provided by ECG Engineering. Please refer to Section 8.2.1 for more information. The total cost was US\$34,076,000.

This amount does not include emergency/standby power. MineScope factored this from the Doropo DFS capital cost estimate for a total of US\$4,908,000. A 6/10<sup>th</sup> factor was used to allow for the increase in throughput for the ABC Project compared to Doropo.

### **12.5.4 Tailings Disposal**

Knight Piésold provided a capital cost estimate for the earthworks and concrete component of the tailings storage facility ("TSF"). Please refer to Section 7.1 for more information. The total cost for stage 1 only was US\$30,224,000.

MineScope also incorporated the costs for the decant return pumps, the TSF underdrainage pumps, seepage pumps and monitoring bores pumps in the MEL. Factors for the cost of pipework and E&I for the TSF and decant return were derived from Doropo as a percentage of the total installed mechanical costs.

### **12.5.5 Raw Water Supply**

Knight Piésold provided a capital cost estimate for the earthworks and concrete component of the raw water supply abstraction tower. Please refer to Section 7.2.2 for more information. The total cost was US\$411,000.

MineScope also incorporated the costs for the water harvest decant pumps in the MEL. Factors for the cost of pipework and E&I for the abstraction tower and pipelines from the abstraction tower to the raw water storage dam were derived from Doropo as a percentage of the total installed mechanical costs.

### **12.5.6 Water Management**

Knight Piésold provided a capital cost estimate for the earthworks component of the raw water storage dam. Please refer to Section 7.2.4 for more information. The total cost was US\$524,000. Delivery of raw water from the storage dam is covered under the Water Services WBS for the Process Plant.

The other component of water management was site drainage management, which was sourced directly from the Doropo DFS capital cost estimate without any adjustment.

#### **12.5.7 Communications**

The owner's costs for communications were assumed to be the same as for the Doropo DFS estimate.

#### **12.5.8 Helipad**

Helipad earthworks were assumed to cost US\$100,000. The owner's costs for the helipad were assumed to be the same as those used for the airport in the Doropo DFS estimate (US\$252,000).

#### **12.5.9 Waste Disposal and Landfill**

The owner's costs for waste disposal and landfill were assumed to be the same as for the Doropo DFS estimate.

#### **12.5.10 Laboratory, Accommodation and Buildings**

The owner's costs for the laboratory were assumed to be the same as for the Doropo DFS estimate given that process plant sample quantities are not expected to significantly change for the ABC Project.

The cost for the accommodation camp was assumed to be the same as for the Doropo DFS capital estimate given the manning schedule did not appreciably change for the ABC Project.

Building costs were derived from the Doropo DFS estimate, with 6/10<sup>th</sup> factoring applied to some of the sub-costs where they are expected to increase for the higher throughput ABC Project. The rest of the costs were kept the same as the Doropo DFS. Buildings include the following:

- General plant buildings,
- Main office,
- Clinic and emergency response,
- Security,
- Ablutions, change rooms, and crib rooms,
- Plant offices,
- Maintenance workshops,
- Warehouse and stores,
- Laboratory,
- Reagent storage.

### **12.6 Indirect Costs**

#### ***Construction Indirect Costs***

The construction indirect costs were derived from the Doropo DFS estimate. Factors were calculated from the cost as a percentage of the total direct mechanical cost for the process plant, reagents and plant services. The construction indirect costs cover the following:



- Construction distributables – contractors,
- Site construction distributables – general,
- Site construction facilities,
- Site construction facilities other,
- Construction operations,
- Construction accommodation.

### **Project Indirect Costs**

The project indirect costs were derived from the Doropo DFS estimate. Factors were calculated from the cost as a percentage of the total direct mechanical cost for the process plant, reagents and plant services. Project indirect costs include the following:

- EPCM costs (project management, detailed engineering, procurement, and construction management costs directly associated with the implementation of the project),
- Vendor representatives,
- Third party consultants.

## **12.7 Owner's Costs**

The owner's costs were derived from the Doropo DFS estimate, with 6/10<sup>th</sup> factoring applied to some of the sub-costs where they are expected to increase for the higher throughput ABC Project. The rest of the costs were kept the same as the Doropo DFS with the exception of certain community costs that were directly advised by Resolute. The owner's costs are summarised in Table 12-5.

**Table 12-5: Owner's Costs Capital Cost Summary**

| WBS | Cost Area                    | Units        | Total       |
|-----|------------------------------|--------------|-------------|
| 700 | <b>Owner's Costs</b>         | <b>US\$M</b> | <b>77.3</b> |
|     | Owners Costs - General       | US\$M        | 26.2        |
|     | Plant & Admin Pre-Production | US\$M        | 13.3        |
|     | Admin Pre-Production Other   | US\$M        | 4.5         |
|     | Mining Pre-Production        | US\$M        | 3.4         |
|     | Spare Parts                  | US\$M        | 6.9         |
|     | Community                    | US\$M        | 18.8        |
|     | Plant Mobile Equipment       | US\$M        | 4.1         |

General costs include the labour for the owner's project management team, project insurance, specialist consultants, office costs, IT/software costs, HSEC and other general costs. These were all adopted directly from the Doropo DFS capital cost estimate with the exception of insurances which were 6/10<sup>th</sup> factored.

Plant and admin pre-production costs include labour costs, G&A expenses and first fills. The cost for first fill reagents and consumables includes the supply and delivery to site of all first fill reagents, grinding media and an allowance for miscellaneous greases and lubricants. Admin preproduction costs include small tools and maintenance equipment, training, information technology and security.

Community costs include those associated with:

- land acquisition (costs supplied by the Client)
- OSH and ESG management costs incurred during the construction phases of the project (costs supplied by the Client).

Community relocation and land compensation have been excluded from the capital cost estimate as advised by the Client.

Plant mobile equipment includes light vehicles, cranes, forklifts, trucks, boom and scissor lifts and other plant mobile equipment.

## 12.8 Provisions

### ***Taxes and Duties***

GST and import duties are not included in the estimate.

### ***Contingency***

A contingency allocation ranging between 10-30% has been applied to the different WBS in the capital cost estimate as per Table 12-6. The contingency selected for each WBS was measured against the maturity of the source data and engineering conducted during the Study. The overall contingency is 21.6%.

**Table 12-6: ABC Capital Cost Contingency**

| WBS | Cost Area                 | Contingency (%) |
|-----|---------------------------|-----------------|
| 100 | Mining                    | 10.0            |
| 200 | Process Plant             | 30.0            |
| 300 | Reagents & Plant Services | 30.0            |
| 400 | Infrastructure            | 30.0            |
| 500 | Construction Indirects    | 10.0            |
| 600 | Project Indirects         | 10.0            |
| 700 | Owners Costs              | 10.0            |
| 900 | Contingency               | 21.6            |

The risks applicable to the Project have not been assessed in detail, and allowances for estimating inaccuracies have not been applied over and above the contingency allowance. The priced options have been benchmarked against other projects for order of magnitude estimate comparison.

### ***Escalation***

Escalation beyond the base date has been excluded from the estimates.

## 12.9 Exclusions

The following items are specifically excluded from the estimate at this level of study:

- Cost changes due to currency fluctuation,
- Escalation beyond the base date,
- Force majeure issues,
- Sunk costs,

- Future scope changes,
- Future feasibility studies and testwork,
- Mine closure and rehabilitation costs,
- Community relocation has been excluded as advised by the Client,
- Land compensation has been excluded as advised by the Client,
- Weather events resulting in construction labour stand down costs,
- Relocation or preservation costs, delays, and redesign work associated with any antiquities and sacred sites,
- Geotechnical assessments,
- Specific operator training other than on-the-job training during commissioning,
- Collation of spares for maintenance or asset register generation,
- Management of injuries and return to work beyond the project duration,
- Excavation of non-rippable rock,
- Capitalised interest,
- Import duties and taxes,
- Sustaining capital (captured elsewhere).

## 12.10 Sustaining Cost Estimate

Sustaining capital is used to account for the complete replacement of original capital equipment that have reached the end of their useful life on a like-for-like basis. It is not part of the maintenance costs for capital assets. A summary of sustaining capital costs are presented in Table 12-7.

**Table 12-7: Sustaining Cost Summary**

| WBS     | Description           | Units        | Sustaining Cost per year Year 1 | Sustaining Cost per year Years 2-12 | Total        |
|---------|-----------------------|--------------|---------------------------------|-------------------------------------|--------------|
| 400     | TSF and WSD           | US\$M        | -                               | 10.7                                | 117.5        |
| 100-700 | Process Plant & Other | US\$M        | 4.2                             | 2.8                                 | 34.8         |
|         | <b>Total</b>          | <b>US\$M</b> | <b>4.2</b>                      | <b>13.5</b>                         | <b>152.3</b> |

### 12.10.1 Process Plant and Other

The cost of sustaining capital for the processing plant over the life of the ABC Project was factored off the total direct mechanical cost for the processing plant (US\$139.1M). A factor of 3% was used for year 1 and 2% was used for every year after for years 2-12 as advised by Resolute.

### 12.10.2 Tailings Storage Facility

Knight Piésold produced the capital costs for the tailings storage facility (TSF), which has been discussed in Section 7.1. The lump sum cost of the TSF lifts from stage 2 onwards is US\$117.5M. For the purposes of calculating sustaining capital costs for the TSF, this cost has been evenly spread across the 12-year life of the ABC Project on an annualised basis.

### 12.10.3 Closure and Rehabilitation

Closure costs include remobilisation of personnel, the physical removal of the mining and processing assets and making the sites safe to allow for rehabilitation works. Rehabilitation costs include the costs of fulfilling the agreed environmental plan, government and legislative requirements and community expectations. These associated costs for the ABC Project are shown in Table 12-8.

**Table 12-8: Closure and Rehabilitation Costs**

| Description                              | Cost (US\$)       | Reference           |
|------------------------------------------|-------------------|---------------------|
| <b>Physical Closure Costs</b>            | <b>55,840,000</b> |                     |
| Mine Pit Rehab & Safety                  | 900,000           | Doropo 2025 DFS     |
| ROM Pad Rehab                            | 180,000           | Doropo 2025 DFS     |
| Plant Decommissioning and Rehab          | 18,000,000        | Doropo 2025 DFS     |
| Waste Rock Dump Rehab                    | 3,000,000         | Doropo 2025 DFS     |
| WSD and Water Harvesting Decommissioning | 60,000            | Doropo 2025 DFS     |
| Tailings Storage Facility                | 33,100,000        | KP ABC SS           |
| Other Buildings and Infrastructure       | 600,000           | Doropo 2025 DFS     |
| <b>Other Closure Costs</b>               | <b>2,640,000</b>  |                     |
| Closure Investigations (Contaminants)    | 1,200,000         | Doropo 2025 DFS     |
| Post Mine Monitoring                     | 1,440,000         | Doropo 2025 DFS     |
| <b>Sub-total</b>                         | <b>58,480,000</b> |                     |
| Contingency (30%)                        | 17,544,000        | Advised by Resolute |
| Resale of Equipment and Infrastructure   | -10,000,000       | Advised by Resolute |
| <b>Total</b>                             | <b>66,024,000</b> |                     |

Most of the closure and rehabilitation costs were sourced directly from the Doropo DFS, except for the TSF. Knight Piésold produced the capital costs for the tailings storage facility (TSF), which has been discussed in Section 7.1. The closure costs for the TSF are US\$33.1M. Resolute advised that a contingency of 30% should be applied to the total closure and rehabilitation costs. The total costs were then offset by the proceeds from the resale of equipment and infrastructure, the amount for which was also supplied by Resolute.

## 13.0 Operating Cost Estimate

### 13.1 Introduction

The operating cost for the Project was estimated based on the scope of work defined in the Study. The basis of estimate ("BOE") included in this section communicates the approximations, assumptions, and interpretations affecting the operating cost estimate. The BOE includes description of the methodologies, references and defining deliverables, used assumptions and exclusions, and some indication of the level of risk and uncertainty.

### 13.2 Operating Cost Estimate Summary

A summary of the operating cost estimate is provided in Table 13-1. The Project operating cost estimate is reported in United States dollars (US\$) with a base date of second quarter 2026 (Q2 2026), developed to an accuracy level of  $\pm 30\%$  (Class 5 AusIMM level). The detailed operating cost estimate can be found in Appendix E.

**Table 13-1: ABC Scoping Study Operating Cost Estimate Summary**

| Cost Area                                                     | Oxide/Transitional Ore |              | Fresh Ore     |              |
|---------------------------------------------------------------|------------------------|--------------|---------------|--------------|
|                                                               | Cost (\$M/y)           | Cost (\$/t)  | Cost (\$M/y)  | Cost (\$/t)  |
| <b>Mining</b>                                                 | <b>81.42</b>           | <b>11.63</b> | <b>81.42</b>  | <b>11.63</b> |
| Owner's Team Labour                                           | 1.70                   | 0.24         | 1.70          | 0.24         |
| Contract Mining                                               | 71.56                  | 10.22        | 71.56         | 10.22        |
| Stockpile Rehandle                                            | 1.72                   | 0.25         | 1.72          | 0.25         |
| ROM Reclaim                                                   | 3.10                   | 0.44         | 3.10          | 0.44         |
| Grade Control                                                 | 3.34                   | 0.48         | 3.34          | 0.48         |
| <b>Process Plant, Reagents, Plant Services &amp; Infrast.</b> | <b>77.03</b>           | <b>11.00</b> | <b>94.75</b>  | <b>13.54</b> |
| Labour                                                        | 4.65                   | 0.66         | 4.65          | 0.66         |
| Power                                                         | 28.64                  | 4.09         | 39.22         | 5.60         |
| Maintenance Materials                                         | 6.74                   | 0.96         | 8.03          | 1.15         |
| Reagents & Consumables                                        | 33.87                  | 4.84         | 39.72         | 5.67         |
| Miscellaneous                                                 | 3.13                   | 0.45         | 3.13          | 0.45         |
| <b>General and Administration</b>                             | <b>10.06</b>           | <b>1.44</b>  | <b>10.06</b>  | <b>1.44</b>  |
| Labour                                                        | 5.88                   | 0.84         | 5.88          | 0.84         |
| Miscellaneous                                                 | 4.18                   | 0.60         | 4.18          | 0.60         |
| <b>Total</b>                                                  | <b>168.51</b>          | <b>24.07</b> | <b>186.22</b> | <b>26.60</b> |

### 13.3 Mining Operating Cost Estimate

An operating cost estimate for mining was provided by Orelogy. Refer to Section 4 Mining for more information. The total operating cost over the life of mine (Years 1-12, excluding Year -1) is US\$956.7M.

## 13.4 Processing Plant, Reagents, Plant Services and Infrastructure Operating Cost Estimate

### 13.4.1 Estimate Summary

The operating cost estimate for the processing plant, reagents, plant services and infrastructure WBS was developed by MineScope for both oxide/transitional and fresh ore. A summary is provided in Table 13-2, while the detailed operating cost estimate is provided in Appendix E.

**Table 13-2: Process Plant, Reagents, Plant Services and Infrastructure Operating Cost Summary**

| Cost Area              | Oxide/Transitional Ore |              | Fresh Ore    |              |
|------------------------|------------------------|--------------|--------------|--------------|
|                        | Cost (\$M/y)           | Cost (\$/t)  | Cost (\$M/y) | Cost (\$/t)  |
| Labour                 | 4.65                   | 0.66         | 4.65         | 0.66         |
| Power                  | 28.64                  | 4.09         | 39.22        | 5.60         |
| Maintenance Materials  | 6.74                   | 0.96         | 8.03         | 1.15         |
| Reagents & Consumables | 33.87                  | 4.84         | 39.72        | 5.67         |
| Miscellaneous          | 3.13                   | 0.45         | 3.13         | 0.45         |
| <b>Total</b>           | <b>77.03</b>           | <b>11.00</b> | <b>94.75</b> | <b>13.54</b> |

### 13.4.2 Basis of Estimate

The operating cost estimate includes all site-related operating costs associated with processing both the oxide/transitional ore and fresh ore types, from the ROM pad to produce final gold doré.

The battery limits for this sub-section of the operating cost estimate include:

- Feed to the ROM bin for a 7 Mt/y gold processing plant,
- Production of gold doré,
- Discharge from the tailings line spigots at the tailings storage facility (“TSF”),
- Suction to the TSF decant return water pumps,
- Water management pumps at the TSF (underdrainage, seepage and monitoring bore pumps),
- Suction to the water harvest abstraction pumps through to delivery to the raw water circuit at the processing plant,
- Reagents,
- Air, water, and electrical services (HV power distribution, plant substations, plant control system, and general E&I),
- Plant services (process water storage, event pond, sewage collection and treatment).

The following documents provided the basis for the operating cost estimate:

- Process design criteria,
- Mass balance,
- Mechanical equipment list and electrical equipment list,
- Capital cost estimate,
- MineScope’s estimating database,
- Resolute Doropo Gold Project DFS,

- Client supplied data.

Industry standards and the MineScope database were used to support the estimate. Scale-up factors were applied where appropriate.

### **Base Date**

The base date for the operating cost estimate is second quarter 2026 (Q2 2026).

### **Accuracy**

The estimate is factored based on the cost of the mechanical equipment, and benchmarked against recent studies and projects, to meet the required accuracy criteria of  $\pm 30\%$  for the Study.

### **Base Currency**

The estimate has been presented in the United States Dollars (US\$) currency in present day (second quarter 2026) terms.

### **Exchange Rates**

Prices obtained in other currencies have been converted to US\$ using the applicable exchange rates as per Table 13-3

**Table 13-3: Foreign Exchange Rates**

| Currency            | Currency Code | Foreign Exchange Rate (per US\$) |
|---------------------|---------------|----------------------------------|
| European Union Euro | EU€           | 0.86                             |
| Australian Dollars  | A\$           | 1.45                             |

Any fluctuations in the exchange rates since the publication date of the Scoping Study report have not been considered in the estimate.

### **Escalation**

Where database costs have been used for the same or similar sized equipment from other projects, prices have been escalated to obtain present day costs. The escalation factors are based on inflation rates and are summarised in Figure 13-1.

Escalation after the estimate base date has not been allowed for in the operating cost estimate.

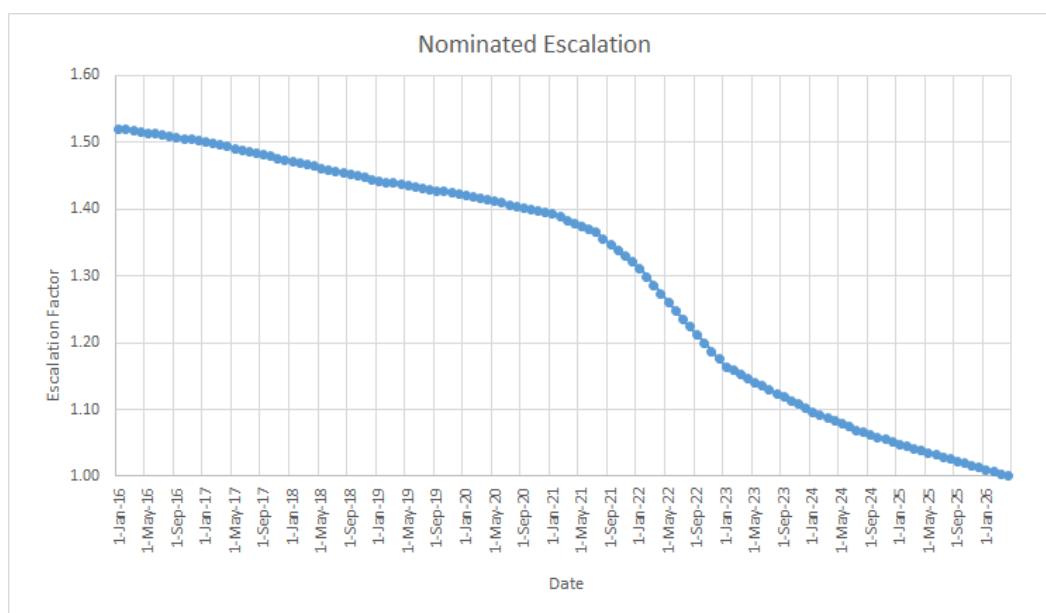


**Figure 13-1: Nominated Escalation**

### ***Estimating System & Format***

The estimate has been prepared utilising the standard MineScope estimating process and procedures, and database of project costs, to produce an estimate in MS Excel format.

### **13.4.3 Estimating Methodology**

#### ***Labour***

The processing plant, reagents and plant services labour requirements were derived from the Doropo DFS. Overhead costs have been calculated as a percentage (55%) of the base wage for each employee, to cover accommodation, transport, on-costs, and other miscellaneous labour-related costs. The split of accommodation costs between site accommodation (camp) and residential accommodation (villages) has been derived from the Doropo Project.

#### ***Power***

Power costs have been developed from the mechanical and electrical equipment lists, based on the consumed power from each WBS. Power consumption has been estimated for plant equipment drives based on the installed power with typical service factors. The power cost estimate has been calculated from the annualised power consumption and the cost of electricity supplied by ECG Engineering (US\$0.131/kWh). The process plant operating throughput of 7 Mt/y and an operating time of 8,000 h/y has been applied for both ore feed types.

A consumed power allowance for the plant buildings and workshops and mining facilities was factored from the Doropo DFS and included in the estimate.

#### ***Maintenance Materials***

Maintenance materials costs are factored from the direct installed capital costs found in the capital cost estimate (see Section 12.0 Capital Cost Estimate). A percentage factor was applied to these costs for each individual WBS to calculate the annual maintenance materials cost. Factors have been derived based on data from benchmarked operations and range from 2.5% to 5% depending on the WBS.



***Reagents and Consumables***

Reagent consumption rates and operating and maintenance consumables quantities were either sourced from the ABC process design criteria, Doropo DFS or benchmarked from similarly sized processing plants within the region. Unit costs, including those for diesel, have been sourced from the Doropo DFS (inclusive of delivery to site).

Maintenance consumables for the pebble crusher were estimated based on operations with similar ore characteristics.

***Miscellaneous Costs***

Miscellaneous operating costs consist of laboratory, external consultant costs and mobile equipment costs. These have been derived from the Doropo DFS operating cost estimate and MineScope's database.

**13.4.4 Labour**

In total, 60 full time employees have been allowed for in plant operations. The plant maintenance labour requirements are based closely on the Doropo Project, with the addition of 3 fitters and 3 boilermakers (one per shift), to account for the increased maintenance requirements expected from the Project's more complex crushing circuit. This brings the maintenance workforce to 74 employees.

Similarly to the Doropo Project, an all-inclusive laboratory operation contract is envisaged, with 22 contractors to support laboratory operations. These contractors are not considered as part of the process plant labour workforce; however, accommodation will be allowed for within both the camp and the local villages.

It is assumed that that no labour difference is required between the two ore feed types. No allowance has been made in the labour cost estimate for additional commissioning, start-up, and ramp-up support (which is included in the capital cost estimate).

The labour cost basis and totals are shown in Table 13-4.

Table 13-4: Labour Cost Summary

| Role                                     | No of Employees | Accom Type | Base Wage (\$/y)                         | Overhead Costs (US\$/person) | Total Annual Labour Costs (US\$) |
|------------------------------------------|-----------------|------------|------------------------------------------|------------------------------|----------------------------------|
| <b>Plant Operations</b>                  | <b>82</b>       |            |                                          |                              | <b>2,640,000</b>                 |
| Plant Manager                            | 1               | Camp       | 225,000                                  | 123,750                      | 349,000                          |
| Metallurgist Senior                      | 1               | Camp       | 175,000                                  | 96,250                       | 271,000                          |
| Metallurgist                             | 3               | Camp       | 74,270                                   | 40,849                       | 345,000                          |
| Senior Metallurgical Technician          | 3               | Camp       | 31,830                                   | 17,507                       | 148,000                          |
| Metallurgical Technician                 | 3               | Camp       | 10,610                                   | 5,836                        | 49,000                           |
| General Foreman                          | 1               | Camp       | 125,000                                  | 68,750                       | 194,000                          |
| Metallurgical Clerk                      | 1               | Villages   | 10,610                                   | 5,836                        | 16,000                           |
| Shift Supervisor                         | 3               | Camp       | 31,830                                   | 17,507                       | 148,000                          |
| Shift Lead Operator                      | 3               | Camp       | 15,920                                   | 8,756                        | 74,000                           |
| Shift Operator                           | 18              | Villages   | 10,610                                   | 5,836                        | 296,000                          |
| Goldroom Supervisor                      | 2               | Camp       | 125,000                                  | 68,750                       | 388,000                          |
| Goldroom Operator                        | 2               | Villages   | 10,610                                   | 5,836                        | 33,000                           |
| Day Crew Supervisor                      | 1               | Camp       | 21,220                                   | 11,671                       | 33,000                           |
| Reagents / TSF Operator                  | 6               | Camp       | 10,610                                   | 5,836                        | 99,000                           |
| Day Crew Operator                        | 12              | Villages   | 10,610                                   | 5,836                        | 197,000                          |
| Assay Laboratory Manager (Contractor)    | 1               | Camp       | Included under laboratory contract costs |                              |                                  |
| Assay Laboratory Supervisor (Contractor) | 3               | Camp       | Included under laboratory contract costs |                              |                                  |
| Assay Laboratory Technician (Contractor) | 18              | Villages   | Included under laboratory contract costs |                              |                                  |
| <b>Plant Maintenance</b>                 | <b>74</b>       |            |                                          |                              | <b>2,008,000</b>                 |
| Maintenance Supt.                        | 1               | Camp       | 175,000                                  | 96,250                       | 271,000                          |
| Maintenance Planner                      | 2               | Camp       | 42,440                                   | 23,342                       | 132,000                          |
| Maintenance Clerk                        | 2               | Camp       | 13,270                                   | 7,299                        | 41,000                           |
| Maintenance Supervisor Senior            | 1               | Camp       | 150,000                                  | 82,500                       | 233,000                          |
| Maintenance Supervisor                   | 1               | Camp       | 31,830                                   | 17,507                       | 49,000                           |
| Fitter Leading Hand                      | 2               | Camp       | 28,000                                   | 15,400                       | 87,000                           |
| Fitter Senior                            | 3               | Camp       | 21,220                                   | 11,671                       | 99,000                           |
| Fitter                                   | 13              | Camp       | 10,610                                   | 5,836                        | 214,000                          |
| Boilermaker Leading Hand                 | 2               | Camp       | 31,830                                   | 17,507                       | 99,000                           |
| Boilermaker                              | 13              | Camp       | 10,610                                   | 5,836                        | 214,000                          |
| Instrument Tech Leading Hand             | 1               | Camp       | 31,830                                   | 17,507                       | 49,000                           |
| Instrument Tech                          | 3               | Camp       | 10,610                                   | 5,836                        | 49,000                           |
| Electrical Leading Hand                  | 1               | Camp       | 31,830                                   | 17,507                       | 49,000                           |
| Electrician Senior                       | 3               | Camp       | 21,220                                   | 11,671                       | 99,000                           |
| Electrician                              | 6               | Camp       | 10,610                                   | 5,836                        | 99,000                           |
| Mechanics                                | 4               | Villages   | 10,610                                   | 5,836                        | 66,000                           |
| Trade Assistant                          | 16              | Villages   | 6,370                                    | 3,504                        | 158,000                          |
| <b>Processing Plant Total</b>            | <b>156</b>      |            |                                          |                              | <b>4,648,000</b>                 |

### 13.4.5 Power

The power costs are summarised by ore type in Table 13-5 (oxide/transitional ore) and Table 13-6 (fresh ore). In the absence of comminution data, the consumed power for the SAG mill and the ball mill has been discounted by 65% for the softer oxide/transitional ore compared to the power consumption for fresh ore.

**Table 13-5: Oxide/Transitional Ore Power Cost Summary**

| Plant Area                             | Installed Power (kW) | Consumed Power (kW) | Annual Power Required (kWh/y) | Annual Cost (\$/y) |
|----------------------------------------|----------------------|---------------------|-------------------------------|--------------------|
| Primary Crushing                       | 945                  | 732                 | 5,853,840                     | 767,000            |
| Ore Storage and Reclaim                | 373                  | 251                 | 2,011,320                     | 263,000            |
| SAG Milling                            | 16,889               | 9,154               | 73,230,040                    | 9,593,000          |
| Classification                         | 1,408                | 602                 | 4,812,480                     | 630,000            |
| Ball Milling                           | 16,756               | 9,602               | 76,818,222                    | 10,063,000         |
| Gravity                                | 123                  | 99                  | 791,600                       | 104,000            |
| Pebble Crushing                        | 706                  | 604                 | 4,831,064                     | 633,000            |
| Preleach & CIL                         | 2,747                | 2,008               | 16,061,160                    | 2,104,000          |
| Gold Recovery & Carbon Regeneration    | 508                  | 312                 | 2,495,600                     | 327,000            |
| Reagents                               | 251                  | 68                  | 547,720                       | 72,000             |
| Water Services                         | 1,860                | 763                 | 6,103,280                     | 800,000            |
| Cyanide Destruct & Tailings            | 902                  | 552                 | 4,418,960                     | 579,000            |
| Air Services                           | 447                  | 305                 | 2,438,400                     | 319,000            |
| Water Supply and Treatment (inc. Camp) | 1,620                | 705                 | 5,638,834                     | 739,000            |
| Plant Buildings and Workshops          | 1,235                | 968                 | 7,743,607                     | 1,014,000          |
| Mining Facilities                      | 412                  | 225                 | 1,801,294                     | 236,000            |
| Raw Water Supply                       | 710                  | 302                 | 2,414,000                     | 316,000            |
| TSF/Return Water                       | 134                  | 76                  | 605,200                       | 79,000             |
| <b>Total</b>                           | <b>48,025</b>        | <b>27,327</b>       | <b>218,616,621</b>            | <b>28,638,000</b>  |

**Table 13-6: Fresh Ore Power Cost Summary**

| Plant Area                             | Installed Power (kW) | Consumed Power (kW) | Annual Power Required (kWh/y) | Annual Cost (\$/y) |
|----------------------------------------|----------------------|---------------------|-------------------------------|--------------------|
| Primary Crushing                       | 945                  | 732                 | 5,853,840                     | 767,000            |
| Ore Storage and Reclaim                | 373                  | 251                 | 2,011,320                     | 263,000            |
| SAG Milling                            | 16,889               | 14,083              | 112,661,600                   | 14,759,000         |
| Classification                         | 1,408                | 602                 | 4,812,480                     | 630,000            |
| Ball Milling                           | 16,756               | 14,773              | 118,181,880                   | 15,482,000         |
| Gravity                                | 123                  | 99                  | 791,600                       | 104,000            |
| Pebble Crushing                        | 706                  | 604                 | 4,831,064                     | 633,000            |
| Preleach & CIL                         | 2,747                | 2,008               | 16,061,160                    | 2,104,000          |
| Gold Recovery & Carbon Regeneration    | 508                  | 312                 | 2,495,600                     | 327,000            |
| Reagents                               | 251                  | 68                  | 547,720                       | 72,000             |
| Water Services                         | 1,860                | 763                 | 6,103,280                     | 800,000            |
| Cyanide Destruct & Tailings            | 902                  | 552                 | 4,418,960                     | 579,000            |
| Air Services                           | 447                  | 305                 | 2,438,400                     | 319,000            |
| Water Supply and Treatment (inc. Camp) | 1,620                | 705                 | 5,638,834                     | 739,000            |
| Plant Buildings and Workshops          | 1,235                | 968                 | 7,743,607                     | 1,014,000          |
| Mining Facilities                      | 412                  | 225                 | 1,801,294                     | 236,000            |
| Raw Water Supply                       | 710                  | 302                 | 2,414,000                     | 316,000            |
| TSF/Return Water                       | 134                  | 76                  | 605,200                       | 79,000             |
| <b>Total</b>                           | <b>48,025</b>        | <b>37,426</b>       | <b>299,411,839</b>            | <b>39,223,000</b>  |

#### 13.4.6 Maintenance Materials

Maintenance materials costs have been estimated as a percentage of direct installed capital costs. The factors applied for the oxide/transitional ore range from 1% to 4%, whilst higher factors of up to 5% have been applied to the harder fresh ore, due to higher expected wear rates. Table 13-7 provides annual maintenance materials costs for the oxide/transitional ore, and Table 13-8 for the fresh ore.

**Table 13-7: Oxide/Transitional Ore Maintenance Materials Cost Summary**

| Plant Area                             | Direct Capital Cost (\$) | Maintenance Materials Factor (%) | Maintenance Materials (\$/y) |
|----------------------------------------|--------------------------|----------------------------------|------------------------------|
| Primary Crushing                       | 25,595,000               | 4.0                              | 1,024,000                    |
| Ore Storage and Reclaim                | 12,043,000               | 4.0                              | 482,000                      |
| SAG Milling                            | 32,427,000               | 4.0                              | 1,297,000                    |
| Classification                         | 2,207,000                | 4.0                              | 88,000                       |
| Ball Milling                           | 21,765,000               | 4.0                              | 871,000                      |
| Gravity                                | 2,231,000                | 4.0                              | 89,000                       |
| Pebble Crushing                        | 4,592,000                | 4.0                              | 184,000                      |
| Preleach & CIL                         | 27,333,000               | 4.0                              | 1,093,000                    |
| Gold Recovery & Carbon Regeneration    | 7,291,000                | 2.5                              | 182,000                      |
| Reagents                               | 2,711,000                | 2.5                              | 68,000                       |
| Water Services                         | 5,574,000                | 2.5                              | 139,000                      |
| Cyanide Destruct & Tailings            | 3,581,000                | 2.5                              | 90,000                       |
| Air Services                           | 4,066,000                | 2.5                              | 102,000                      |
| Water Supply and Treatment (inc. Camp) | 1,562,000                | 2.0                              | 31,000                       |
| Plant Buildings and Workshops          | 26,519,000               | 1.0                              | 265,000                      |
| Raw Water Supply                       | 5,265,000                | 2.0                              | 105,000                      |
| TSF/Return Water                       | 31,697,000               | 2.0                              | 634,000                      |
| <b>Total</b>                           | <b>216,459,000</b>       |                                  | <b>6,744,000</b>             |

**Table 13-8: Fresh Ore Maintenance Materials Cost Summary**

| Plant Area                             | Direct Capital Cost (\$) | Maintenance Materials Factor (%) | Maintenance Materials (\$/y) |
|----------------------------------------|--------------------------|----------------------------------|------------------------------|
| Primary Crushing                       | 25,595,000               | 5.0                              | 1,280,000                    |
| Ore Storage and Reclaim                | 12,043,000               | 5.0                              | 602,000                      |
| SAG Milling                            | 32,427,000               | 5.0                              | 1,621,000                    |
| Classification                         | 2,207,000                | 5.0                              | 110,000                      |
| Ball Milling                           | 21,765,000               | 5.0                              | 1,088,000                    |
| Gravity                                | 2,231,000                | 5.0                              | 112,000                      |
| Pebble Crushing                        | 4,592,000                | 5.0                              | 230,000                      |
| Preleach & CIL                         | 27,333,000               | 5.0                              | 1,367,000                    |
| Gold Recovery & Carbon Regeneration    | 7,291,000                | 2.5                              | 182,000                      |
| Reagents                               | 2,711,000                | 2.5                              | 68,000                       |
| Water Services                         | 5,574,000                | 2.5                              | 139,000                      |
| Cyanide Destruct & Tailings            | 3,581,000                | 2.5                              | 90,000                       |
| Air Services                           | 4,066,000                | 2.5                              | 102,000                      |
| Water Supply and Treatment (inc. Camp) | 1,562,000                | 2.0                              | 31,000                       |
| Plant Buildings and Workshops          | 26,519,000               | 1.0                              | 265,000                      |
| Raw Water Supply                       | 5,265,000                | 2.0                              | 105,000                      |
| TSF/Return Water                       | 31,697,000               | 2.0                              | 634,000                      |
| <b>Total</b>                           | <b>216,459,000</b>       |                                  | <b>8,026,000</b>             |

### 13.4.7 Reagents and Consumables

Table 13-9 and Table 13-10 summarise the operating costs for reagents, operating consumables, and maintenance consumables for oxide/transitional and fresh ore types. In the absence of comminution data, the SAG and ball mill media consumption has been discounted by 65% for the softer oxide/transitional ore compared to the consumption rates for the fresh ore. A diesel price of US\$1.20/L has been used.

**Table 13-9: Oxide/Transitional Ore Reagent and Consumables Cost Summary**

| Item                                      | Cost per Year (\$/y) |
|-------------------------------------------|----------------------|
| <b>Reagents</b>                           | <b>20,724,000</b>    |
| Quicklime                                 | 2,187,000            |
| Sodium Cyanide                            | 7,064,000            |
| Sodium Hydroxide                          | 477,000              |
| Hydrochloric Acid                         | 147,000              |
| Carbon                                    | 610,000              |
| SMBS                                      | 2,506,000            |
| Copper Sulphate                           | 6,332,000            |
| Borax                                     | 5,000                |
| Silica                                    | 1,000                |
| Nitre                                     | 1,000                |
| Soda Ash                                  | 1,000                |
| Antiscalant - Decant Return Water         | 41,000               |
| Antiscalant – Elution                     | 3,000                |
| Sulphamic Acid                            | 5,000                |
| Flocculant                                | 830,000              |
| Coagulant                                 | 514,000              |
| <b>Operating Consumables</b>              | <b>3,886,000</b>     |
| Stainless Steel Stocking                  | 1,000                |
| Crucibles                                 | 47,000               |
| Diesel                                    | 3,734,000            |
| Lubricants                                | 20,000               |
| Plant Operating Tools & Equipment         | 10,000               |
| Gold Room Tools & Equipment               | 10,000               |
| Potable Water                             | 64,000               |
| <b>Maintenance Consumables</b>            | <b>9,259,000</b>     |
| Primary Gyratory Crusher - Mantle Liners  | 490,000              |
| Primary Gyratory Crusher - Concave Liners | 467,000              |
| SAG Mill - Lifters/Liners                 | 2,480,000            |
| SAG Mill - Grinding Media                 | 1,656,000            |
| Ball Mill - Lifters/Liners                | 1,459,000            |
| Ball Mill - Grinding Media                | 2,621,000            |
| Pebble Crusher – Mantle                   | 43,000               |
| Pebble Crusher – Concave                  | 43,000               |
| <b>Reagents and Consumables Total</b>     | <b>33,869,000</b>    |

**Table 13-10: Fresh Ore Reagent and Consumables Cost Summary**

| Item                                      | Cost per Year (\$/y) |
|-------------------------------------------|----------------------|
| <b>Reagents</b>                           | <b>20,724,000</b>    |
| Quicklime                                 | 2,187,000            |
| Sodium Cyanide                            | 7,064,000            |
| Sodium Hydroxide                          | 477,000              |
| Hydrochloric Acid                         | 147,000              |
| Carbon                                    | 610,000              |
| SMBS                                      | 2,506,000            |
| Copper Sulphate                           | 6,332,000            |
| Borax                                     | 5,000                |
| Silica                                    | 1,000                |
| Nitre                                     | 1,000                |
| Soda Ash                                  | 1,000                |
| Antiscalant - Decant Return Water         | 41,000               |
| Antiscalant – Elution                     | 3,000                |
| Sulphamic Acid                            | 5,000                |
| Flocculant                                | 830,000              |
| Coagulant                                 | 514,000              |
| <b>Operating Consumables</b>              | <b>3,886,000</b>     |
| Stainless Steel Stocking                  | 1,000                |
| Crucibles                                 | 47,000               |
| Diesel                                    | 3,734,000            |
| Lubricants                                | 20,000               |
| Plant Operating Tools & Equipment         | 10,000               |
| Gold Room Tools & Equipment               | 10,000               |
| Potable Water                             | 64,000               |
| <b>Maintenance Consumables</b>            | <b>15,105,000</b>    |
| Primary Gyratory Crusher - Mantle Liners  | 490,000              |
| Primary Gyratory Crusher - Concave Liners | 467,000              |
| SAG Mill - Lifters/Liners                 | 2,480,000            |
| SAG Mill - Grinding Media                 | 3,919,000            |
| Ball Mill - Lifters/Liners                | 1,459,000            |
| Ball Mill - Grinding Media                | 6,204,000            |
| Pebble Crusher - Mantle                   | 43,000               |
| Pebble Crusher – Concave                  | 43,000               |
| <b>Reagents and Consumables Total</b>     | <b>39,715,000</b>    |

#### 13.4.8 Miscellaneous

Miscellaneous operating costs comprise of laboratory, external consultants, and mobile equipment costs. These are independent of the ore feed type. A summary is provided in Table 13-11. The detailed operating cost estimate can be found in Appendix 13.

**Table 13-11: Miscellaneous Cost Summary**

| Item                            | Cost per Year (\$/y) |
|---------------------------------|----------------------|
| Fixed Lab Costs                 | 918,000              |
| Process Assays                  | 980,000              |
| External Metallurgical Testwork | 50,000               |
| External Consultants            | 660,000              |
| Mobile Equipment                | 525,000              |
| <b>Total</b>                    | <b>3,133,000</b>     |

Allowances, including travel time, have been made for external consultants for major process equipment and infrastructure including:

- Crushers and mills,
- Thickeners,
- Regen kiln, furnace and elution heaters,
- Air compressors and PSA oxygen plant,
- Gravity concentrators and ILR,
- HV electrical system,
- VSDs,
- Laboratory,
- Water treatment and sewage plants.

These consultant costs have been determined using the consultant's fixed costs and daily rates, as well as the days worked per year. This data has been sourced directly from the Doropo DFS.

Numbers of the following equipment was sourced directly from the Doropo DFS:

- 23 light vehicles (2WDs, 4WDs, buses, personnel carriers),
- 21 medium/heavy vehicles (trucks, forklifts, bobcats, tool carrier, telescopic handler, frannas, cranes, front end loaders, scissor lifts, fire truck and ambulance),
- Generators for emergency backup power and other equipment (portable compressors, diesel welder, mobile lighting towers, fusion butt welder) for a total of 15 pieces of equipment.

Maintenance costs associated with these mobile equipment were used to calculate the annualised vehicle operating expenses. Diesel costs associated with these vehicles are captured under reagents and operating consumables.

### 13.5 General and Administrative Project Costs

The general and administration ("G&A") cost estimate covers the indirect costs associated with the ABC Project and are outlined in Table 13-12. These have been produced by MineScope in consultation with the Resolute based on the G&A costs for the Doropo Gold Project DFS. The costs are independent of the feed ore type.



**Table 13-12: General and Administration Operating Costs Summary**

| Cost Area                           | Cost (\$M/y) | Cost (\$/t) |
|-------------------------------------|--------------|-------------|
| <b>General &amp; Administration</b> | <b>10.06</b> | <b>1.44</b> |
| Labour                              | 5.88         | 0.84        |
| Abidjan Office                      | 0.00         | 0.00        |
| ABC Site Office                     | 0.56         | 0.08        |
| Insurances                          | 0.40         | 0.06        |
| Financial                           | 0.00         | 0.00        |
| Government Charges                  | 0.14         | 0.02        |
| HR Administration                   | 0.28         | 0.04        |
| Contracts                           | 1.65         | 0.24        |
| Community Relations                 | 0.17         | 0.02        |
| OHS&E                               | 0.30         | 0.04        |
| Transport                           | 0.49         | 0.07        |
| Miscellaneous                       | 0.19         | 0.03        |

G&A labour consists of the general manager and staff associated with HR and payroll, administration, accounting, IT, stores and purchasing, security and training. The majority of ESG and OSH staff are included in the Doropo Project. Camp personnel costs are included under the camp contract.

Office costs include communications, postage, courier and light freight costs, stationery and office supplies, computer supplies, software licenses, public relations, office equipment and rental. It should be noted that the costs for the Abidjan office are already included under the Doropo Project and therefore not captured for ABC.

Insurance costs cover medical, motor vehicle fleet and bullion insurance. Financial costs were excluded as per the Client's direction. Government charges include tenement fees and environmental licenses. HR administration costs include first aid and medical costs, medicals, visas, passports, safety supplies, training, recreation, and professional memberships and subscriptions.

The contracts portion of the G&A costs includes provision for the camp, catering and cleaning contract, where the camp will accommodate 425 of the Project's total labour. The remaining 175 personnel will reside in the villages. Other contracts include those for worker transport. Miscellaneous costs include other hired services and light vehicles for administration.

### 13.6 Inclusions

The operating cost estimate includes the following:

- Labour costs for the onsite management and technical activities directly associated with mining operations,
- Contract mining costs,
- Stockpile rehandling and ROM reclaim costs,
- Grade control costs,
- Labour costs for the onsite management and technical activities directly associated with the processing plant, reagents and plant services areas,
- Labour costs for the operation and maintenance of the processing plant, reagents, plant services and supporting infrastructure,

- Costs associated with the direct operation of the processing plant, reagents and plant services including all reagents, consumables and maintenance materials,
- Cost of power as provided by ECG Engineering,
- Maintenance materials costs,
- Reagents, operating consumables and maintenance consumable costs,
- Labour, assay and operating costs for the on-site laboratory,
- Labour, maintenance and operating costs for the camp,
- An allowance for external metallurgical testwork and external process plant consultants,
- Mobile equipment for the processing plant and administration staff,
- Office costs,
- Some insurances (medical, motor vehicle fleet and bullion)
- Tenement fees and environmental licenses,
- General site environmental management and community relations costs,
- HR administration costs,
- Other general and administrative costs for the ABC Project.

### **13.7 Exclusions**

The operating cost estimate excludes the following:

- Exploration costs,
- Exploration geology and mine geology operating costs,
- Transport of gold doré from the gold room vault offsite,
- Head office administration costs,
- Taxes and duties,
- Native title fees,
- Local government fees,
- Bullion refining costs,
- Workers compensation insurance,
- Death and disability insurance
- Financing, accounting and legal costs
- Royalties,
- Environmental compliance testing
- Specialists consultants
- Contingency provisions,
- Escalation beyond the base date,
- Water abstraction fees or other such charges,
- Rehabilitation and closure costs (included elsewhere)

- Opening stocks, first fill consumables or insurance spares as these form part of the capital cost estimate,
- Allowance for additional commissioning, start-up, and ramp-up labour as that forms part of the capital cost estimate.

## **14.0 Market Analysis**

The gold market is characterised by a deep, liquid and globally traded commodity with transparent pricing mechanisms. As a result, gold production does not require active product marketing at the project or company level.

There is an established and readily accessible market for gold doré and refined bullion. Gold doré produced from the Project would be transported to third party refiners for refining into bullion. A number of internationally recognised refiners operate globally, with refiners accredited under recognised “Good Delivery” standards, such as those administered by the London Bullion Market Association (“LBMA”), providing access to the global wholesale gold market.

### **14.1 Transport**

It is planned that the gold produced at the Project, in the form of doré bars, will be transported by helicopter from site to a nearby airport and from there on to refineries in Europe or Asia.

## 15.0 Financial Analysis

### 15.1 Introduction

The economic analysis presented in this Scoping Study includes, and is dependent upon, forward-looking information including Mineral Resource estimates, metal prices, mine production plans and recoveries, capital and operating costs, regulatory aspects, and project development timeframes. These forward-looking aspects are subject to known and unknown risks and uncertainties which may cause actual results to differ materially from those presented.

Description of the assumptions and factors utilized when developing the forward-looking information, and the risk factors that could cause actual results to differ materially from the forward-looking information are provided in the relevant sections of this Scoping Study. The production schedules, economic analysis, and other aspects of this Study are based, entirely on Inferred Mineral Resources, which do not have the level of geologic confidence to enable them to be categorized as Mineral Reserves. There is no certainty that the economic forecasts presented or the assumptions on which this Study is based will be realized.

The economic analysis is presented in US dollars on a real-basis and utilizes a discounted cash flow approach, with an annual discount rate of 5% applied. This discount rate is considered reasonable due to the project's location in a stable, established mining jurisdiction with use of conventional mining methods, and a relatively simple project configuration. For calculating NPV, cash flows have been discounted to the start of year -2 (beginning of surface construction activities).

The evaluation method assumes that the Project has been assessed on a 100% ownership basis, with no debt financing or dividend distributions. The outputs are a Project Cashflow, Net Present Value (NPV) at a 5% discount rate ('NPV5%') and the Internal Rate of Return (IRR). The financial analysis does not consider funding options or funding structures.

### 15.2 Summary

The economic analysis applies a long-term gold price of USD3,500/oz, in line with consensus forecasts, on a flat line basis from commencement of production.

The Project is estimated to produce an average 141 Koz per annum over its 12 year mine life, at an average all-in sustaining cost ("AISC") of \$1,614/oz gold sold. The initial capital is expected to be \$648M.

The Project economics are:

- A pre-tax NPV5% of \$1,624M and an IRR of 46%,
- A post-tax NPV5% of \$1,178M and an IRR of 39%.

Table 15-1 provides a summary of the Project's physical, financial, and economics metrics.

**Table 15-1: ABC Project Physical, Financial, and Economic Metrics**

| Parameter                                    | Units | Value |
|----------------------------------------------|-------|-------|
| <b>Production</b>                            |       |       |
| Mine Life                                    | years | 12    |
| Total gold production                        | koz   | 1,693 |
| Capital cost                                 | USDM  | 648   |
| <b>LOM (annual average)</b>                  |       |       |
| Gold production                              | koz   | 141   |
| Revenue                                      | USDM  | 494   |
| EBITDA                                       | USDM  | 276   |
| Free cash flow                               | USDM  | 210   |
| Cash cost                                    | \$/oz | 1,524 |
| AISC                                         | \$/oz | 1,614 |
| <b>Project years 1 to 5 (annual average)</b> |       |       |
| Gold production                              | koz   | 163   |
| Revenue                                      | USDM  | 569   |
| EBITDA                                       | USDM  | 323   |
| Free cash flow                               | USDM  | 262   |
| Cash cost                                    | \$/oz | 1,493 |
| AISC                                         | \$/oz | 1,565 |
| <b>Pre-Tax Economics</b>                     |       |       |
| NPV5%                                        | USDM  | 1,624 |
| IRR                                          | %     | 46%   |
| <b>Post-Tax Economics</b>                    |       |       |
| NPV5%                                        | USDM  | 1,178 |
| IRR                                          | %     | 39%   |
| Payback (from first production)              | Years | 1.4   |

The cash flow model is based on 100% ownership i.e. no allowance for minority shareholders and government free carry. Other assumptions that the analysis has been based include:

- 5% discount rate,
- \$3,500/oz gold price applied flat forward,
- Capital costs as per Section 12.0,
- Operating costs as per Section 13.0,
- A mining inventory and schedule as per Section 4.0,
- A production schedule as per Section 6.0,
- Provision for \$10M made for salvage value of remaining assets upon cessation of mining and processing activities,
- Closure cost modelled as single payment in Y13,
- Government royalty of 6% of turnover,
- Mines operating in local communities in Côte d'Ivoire are required to pay 0.5% of their turnover to a Local Mining Development Fund, which aims to finance community development projects in mining region,

- Provision has been made for depreciation using a unit of production method for all capital and accelerated depreciation in Y1.

No allowance has been made in the financial model for:

- Pre-cursor and project sunk costs prior to Final Investment Decision (“FID”),
- Corporate overheads, working capital allowances and further exploration expenditure,
- Finance and Taxation costs associated with the project,
- Escalation of costs or commodity prices across time.

Table 15-2 illustrates the forecasted Project cash flows for the LOM.

Table 15-2: Forecast Project Cash Flows

| Parameter                | Units  | LOM Total      | Y-2   | Y-1   | Y1     | Y2     | Y3     | Y4     | Y5     | Y6     | Y7     | Y8     | Y9     | Y10    | Y11   | Y12   | Y13   |
|--------------------------|--------|----------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| <b>MINING</b>            |        |                |       |       |        |        |        |        |        |        |        |        |        |        |       |       |       |
| Total Tonnes             | kt     | <b>233,581</b> | 0     | 9,756 | 15,957 | 28,005 | 28,082 | 28,005 | 28,005 | 28,005 | 23,398 | 13,761 | 13,297 | 11,202 | 6,094 | 14    | 0     |
| Waste Tonnes             | kt     | <b>150,787</b> | 0     | 7,088 | 9,741  | 20,461 | 22,158 | 19,590 | 15,452 | 16,589 | 14,997 | 8,234  | 6,211  | 6,689  | 3,579 | 0     | 0     |
| Production Target        | kt     | <b>82,794</b>  | 0     | 2,668 | 6,216  | 7,544  | 5,924  | 8,415  | 12,553 | 11,417 | 8,401  | 5,528  | 7,086  | 4,513  | 2,515 | 14    | 0     |
| Au grade                 | g/t    | <b>0.76</b>    | 0.00  | 0.75  | 1.03   | 0.84   | 0.63   | 0.67   | 0.82   | 0.72   | 0.67   | 0.62   | 0.66   | 0.74   | 0.73  | 0.26  | 0.00  |
| Contained Au             | koz    | <b>2,012</b>   | 0     | 85    | 205    | 205    | 121    | 183    | 335    | 265    | 182    | 112    | 152    | 109    | 58    | 0     | 0     |
| <b>PROCESSING</b>        |        |                |       |       |        |        |        |        |        |        |        |        |        |        |       |       |       |
| Tonnes Processed         | kt     | <b>82,794</b>  | 0     | 0     | 6,595  | 7,000  | 7,019  | 7,000  | 7,000  | 7,000  | 7,019  | 7,000  | 7,000  | 7,000  | 7,019 | 6,141 | 0     |
| Head Grade               | g/t    | <b>0.76</b>    | 0.00  | 0.00  | 1.09   | 1.02   | 0.59   | 0.73   | 0.87   | 0.81   | 0.85   | 0.89   | 0.67   | 0.63   | 0.51  | 0.40  | 0.00  |
| Contained Au             | koz    | <b>2,012</b>   | 0     | 0     | 232    | 229    | 133    | 165    | 196    | 183    | 191    | 200    | 151    | 141    | 114   | 78    | 0     |
| Recovery                 | %      | <b>84%</b>     | 0%    | 0%    | 87%    | 87%    | 83%    | 83%    | 84%    | 84%    | 84%    | 85%    | 83%    | 83%    | 81%   | 79%   | 0%    |
| Recovered gold           | koz    | <b>1,693</b>   | 0     | 0     | 203    | 198    | 110    | 137    | 165    | 154    | 161    | 169    | 125    | 116    | 93    | 62    | 0     |
| <b>FINANCIAL SUMMARY</b> |        |                |       |       |        |        |        |        |        |        |        |        |        |        |       |       |       |
| Gold price               | USD/oz |                | 3,500 | 3,500 | 3,500  | 3,500  | 3,500  | 3,500  | 3,500  | 3,500  | 3,500  | 3,500  | 3,500  | 3,500  | 3,500 | 3,500 | 3,500 |
| Revenue                  | USDM   | <b>5,927</b>   | 0     | 0     | 709    | 694    | 386    | 480    | 577    | 539    | 562    | 591    | 437    | 407    | 325   | 218   | 0     |
| Royalties                | USDM   | <b>(356)</b>   | 0     | 0     | (31)   | (43)   | (27)   | (27)   | (34)   | (34)   | (33)   | (36)   | (28)   | (27)   | (20)  | (15)  | (3)   |
| Mining costs             | USDM   | <b>(997)</b>   | 0     | (3)   | (68)   | (110)  | (113)  | (118)  | (127)  | (121)  | (101)  | (68)   | (67)   | (56)   | (37)  | (9)   | 0     |
| Processing costs         | USDM   | <b>(1,107)</b> | 0     | 0     | (85)   | (91)   | (92)   | (95)   | (95)   | (94)   | (95)   | (95)   | (95)   | (95)   | (94)  | (82)  | 0     |
| Site G&A & Other costs   | USDM   | <b>(161)</b>   | 0     | (0)   | (15)   | (15)   | (13)   | (13)   | (14)   | (14)   | (14)   | (14)   | (13)   | (13)   | (12)  | (12)  | 0     |
| Total Operating Costs    | USDM   | <b>(2,621)</b> | 0     | (3)   | (199)  | (259)  | (245)  | (254)  | (269)  | (263)  | (243)  | (212)  | (202)  | (190)  | (163) | (117) | (3)   |



| Parameter                    | Units | LOM Total | Y-2   | Y-1   | Y1    | Y2   | Y3   | Y4   | Y5   | Y6   | Y7    | Y8    | Y9    | Y10   | Y11   | Y12   | Y13   |
|------------------------------|-------|-----------|-------|-------|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Operating Margin             | USDM  | 3,306     | 0     | (3)   | 511   | 436  | 141  | 226  | 309  | 277  | 320   | 379   | 235   | 216   | 162   | 101   | (3)   |
| Construction capital         | USDM  | (648)     | (230) | (418) | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Sustaining capital           | USDM  | (153)     | 0     | 0     | (4)   | (14) | (14) | (14) | (14) | (14) | (14)  | (14)  | (14)  | (14)  | (14)  | (14)  | 0     |
| Closure & rehab              | USDM  | (66)      | 0     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | (66)  |
| Net pre-tax cashflow         | USDM  | 2,440     | (230) | (421) | 506   | 422  | 128  | 213  | 295  | 263  | 306   | 365   | 222   | 203   | 149   | 87    | (69)  |
| Income tax                   | USDM  | (652)     | 0     | 0     | (2)   | (83) | (96) | (29) | (46) | (64) | (57)  | (66)  | (79)  | (47)  | (42)  | (29)  | (12)  |
| Net post-tax cashflow        | USDM  | 1,788     | (230) | (421) | 504   | 339  | 32   | 184  | 249  | 199  | 249   | 299   | 142   | 156   | 107   | 59    | (81)  |
| Cumulative post-tax cashflow | USDM  |           | (230) | (651) | (147) | 192  | 224  | 408  | 657  | 856  | 1,105 | 1,404 | 1,547 | 1,703 | 1,810 | 1,868 | 1,788 |

### 15.3 Sensitivities

The after tax NPV sensitivity comparing varying discount rate percentages and gold price in USD/oz is presented in Table 15-3. The reported result for the ABC Project is highlighted.

**Table 15-3: Sensitivity in USDM of Discount Rate vs Gold Price in USD/oz**

|     | \$3,000 | \$3,250 | \$3,500        | \$3,750 | \$4,000 | \$4,250 | \$4,500 | \$4,750 | \$5,000 | \$5,250 | \$5,500 |
|-----|---------|---------|----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| 5%  | \$749   | \$963   | <b>\$1,178</b> | \$1,392 | \$1,607 | \$1,821 | \$2,036 | \$2,250 | \$2,465 | \$2,679 | \$2,894 |
| 6%  | \$681   | \$883   | \$1,085        | \$1,287 | \$1,489 | \$1,691 | \$1,892 | \$2,094 | \$2,296 | \$2,498 | \$2,700 |
| 7%  | \$619   | \$809   | \$999          | \$1,190 | \$1,380 | \$1,570 | \$1,761 | \$1,951 | \$2,142 | \$2,332 | \$2,522 |
| 8%  | \$561   | \$741   | \$921          | \$1,101 | \$1,280 | \$1,460 | \$1,640 | \$1,819 | \$1,999 | \$2,179 | \$2,359 |
| 9%  | \$509   | \$679   | \$848          | \$1,018 | \$1,188 | \$1,358 | \$1,528 | \$1,698 | \$1,868 | \$2,038 | \$2,208 |
| 10% | \$460   | \$621   | \$782          | \$943   | \$1,103 | \$1,264 | \$1,425 | \$1,586 | \$1,747 | \$1,908 | \$2,068 |
| 11% | \$415   | \$568   | \$720          | \$873   | \$1,025 | \$1,177 | \$1,330 | \$1,482 | \$1,635 | \$1,787 | \$1,940 |
| 12% | \$374   | \$518   | \$663          | \$808   | \$952   | \$1,097 | \$1,242 | \$1,387 | \$1,531 | \$1,676 | \$1,821 |

The after tax NPV sensitivity comparing operating expenditure fluctuations with varying gold prices in USD/oz is presented in Table 15-4. The reported result for the ABC Project is highlighted.

**Table 15-4: Operating Expenditure % Change vs Gold Price USD/oz, NPV5% in USDM**

|      | \$3,000 | \$3,250 | \$3,500        | \$3,750 | \$4,000 | \$4,250 | \$4,500 | \$4,750 | \$5,000 | \$5,250 | \$5,500 |
|------|---------|---------|----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| -20% | \$991   | \$1,205 | \$1,420        | \$1,635 | \$1,850 | \$2,064 | \$2,279 | \$2,494 | \$2,708 | \$2,923 | \$3,138 |
| -10% | \$870   | \$1,084 | \$1,299        | \$1,513 | \$1,728 | \$1,943 | \$2,157 | \$2,372 | \$2,587 | \$2,801 | \$3,016 |
| 0%   | \$749   | \$963   | <b>\$1,178</b> | \$1,392 | \$1,607 | \$1,821 | \$2,036 | \$2,250 | \$2,465 | \$2,679 | \$2,894 |
| 10%  | \$628   | \$842   | \$1,056        | \$1,271 | \$1,485 | \$1,700 | \$1,914 | \$2,128 | \$2,343 | \$2,557 | \$2,772 |
| 20%  | \$506   | \$721   | \$935          | \$1,150 | \$1,364 | \$1,578 | \$1,792 | \$2,007 | \$2,221 | \$2,435 | \$2,649 |

The after tax NPV sensitivity comparing up-front capital expenditure fluctuations with varying gold prices in USD/oz is presented in Table 15-5. The reported result for the ABC Project is highlighted.

**Table 15-5: Upfront Capital Cost % Change vs Gold Price USD/oz, NPV5% in USDM**

|      | \$3,000 | \$3,250 | \$3,500        | \$3,750 | \$4,000 | \$4,250 | \$4,500 | \$4,750 | \$5,000 | \$5,250 | \$5,500 |
|------|---------|---------|----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| -20% | \$848   | \$1,063 | \$1,277        | \$1,492 | \$1,706 | \$1,921 | \$2,135 | \$2,350 | \$2,564 | \$2,779 | \$2,993 |
| -10% | \$799   | \$1,013 | \$1,228        | \$1,442 | \$1,657 | \$1,871 | \$2,086 | \$2,300 | \$2,515 | \$2,729 | \$2,944 |
| 0%   | \$749   | \$963   | <b>\$1,178</b> | \$1,392 | \$1,607 | \$1,821 | \$2,036 | \$2,250 | \$2,465 | \$2,679 | \$2,894 |
| 10%  | \$699   | \$913   | \$1,128        | \$1,342 | \$1,557 | \$1,771 | \$1,986 | \$2,200 | \$2,415 | \$2,629 | \$2,844 |
| 20%  | \$649   | \$863   | \$1,078        | \$1,292 | \$1,507 | \$1,721 | \$1,936 | \$2,150 | \$2,365 | \$2,579 | \$2,794 |

## 16.0 Risks and Opportunities

Each of the key study areas being; geology, mining, metallurgy, processing, tailings storage, water management, infrastructure and permitting have developed a list of key risks and opportunities on their relevant scope of work. The identified risks and opportunities may then be incorporated into a project risk and opportunity register so they can be addressed in future study work plans with a project goal of addressing them to mitigate/eliminate fatal flaws or realise additional value within the project.

It should be noted that there are “typical” risks and opportunities associated with any mining and processing activity that would “naturally apply” to the ABC Project. Many of these are a function of the maturity of the project and that this study is at a “Scoping” level. As such, the risks and opportunities listed below are specific to this project and do not list all risks and opportunities which would naturally be addressed throughout study progress as project maturity improves.

### 16.1 Geology

Identified risks and opportunities for ABC Project associated with Geology and Mineral Resource are outlined below:

#### 16.1.1 Risks

- Lower confidence level in modelled mineralisation continuity and tenor as well as uncertainty over potential mining selectivity. This will be resolved by infill drilling ahead of the PFS and recommended to drill some selected areas to grade control drill density.
- Multi-step OK + indicator kriging + UC/LUC workflow for estimation is an overly complex process that potentially overstates (or understates) mining selectivity. This be me resolved by employing a simpler OK methodology once infill drilling has been completed.
- Current mineralisation envelope cut-offs may be overly constrained as modelled grade may be over-stated in peripheral volumes where lower grade composites have been excluded. This may be resolved by reviewing the threshold for mineralisation envelopes, consider 0.1 g/t Au for the main cut-off grade and review support for higher grade internal envelopes after infill drilling has been completed.
- Kona South search ellipsoid applied in the estimation appears to be 90° to the intended direction reducing modelled high grade continuity. It is suggested to review parameters after infill drilling and ensure applied orientations match the intended directions.

#### 16.1.2 Opportunities

- Higher grade continuity currently poorly defined due to relatively wide drillhole spacing. Infill drilling to be conducted ahead of the PFS and target potential southerly plunge as well as eastern contact higher grade volumes.
- Limited drilling to define potentially economic volumes between Kona South and Kona Central as well as to north and south of these pits. Conduct further exploration and infill drilling outside the main resource area.

### 16.2 Mining

Identified risks and opportunities for ABC Project associated with Mining are outlined below:

### 16.2.1 Risks

- No geotechnical assessment have been undertaken and the slopes used for this study are rule-of-thumb estimates. However, optimisation sensitivity indicates the project value is not sensitive to these parameters.
- Any hazardous material aspects (e.g. acidified or chemical leachate, fibrous materials) have not been assessed at this time.
- A large proportion of the pits are fresh material which will provide benefits in terms of overall wall slope stability but also means that drill and blast assessments will likely have a significant influence in future cost estimating.
- Any near surface mineralised material of high grade presents a material risk of illegal mining activity, particularly following public disclosure of advanced study results (e.g., PFS, DFS). Similar cases of site encroachment have been documented across West Africa during the pre-construction phase.

### 16.2.2 Opportunities

- There is a considerable amount of Inferred material below the optimal shell. This may become economic if a higher gold price is realised and/or it is assessed from an underground approach.
- There is also a considerable amount of unclassified material both at depth and along strike which may be converted to an acceptable Resource category and grade with further drilling.
- Given the broad nature of both the orebody and the pits there is the potential to go to larger equipment to reduce the mining cost. Also, a higher bench height could be evaluated to reduce drill and blast costs.
- The pit optimisation component of this study was undertaken prior to the metallurgical and processing review. Consequently, the processing costs and recoveries from the Doropo Project DFS Update (2025) were utilised for the pit optimisation along with the mining costs. It was identified as the study progressed, that the initial processing recovery and cost assumptions were overly conservative against the outcomes of this Study. As such, there is a significant opportunity to improve on the pit optimisation and study outcomes.

### 16.2.3 Metallurgy

Identified risks and opportunities for ABC Project associated with Metallurgy are outlined below:

### 16.2.4 Risks

- Only one composite sample has been tested, with no confirmation of variability across Kona Central and Kona South. Metallurgical performance may vary across the orebody.
- The BLEG test samples are generally higher grade creating a risk of overestimating recovery due to intensive leach conditions and unknown grind sizes.
- High comminution indices indicate elevated grinding energy requirements, which may impact operating costs and mill sizing.
- Presence of arsenopyrite and sulphides introduces risk of gold association with sulphides, which may reduce recovery in certain zones.

- Organic carbon is present and has not been tested for gold-robbing behaviour, posing a risk to cyanide leach performance.

### 16.2.5 Opportunities

- Testwork indicates the ore is generally amenable to cyanide leaching, supporting a conventional processing route with low-complexity and lower-risk.
- Initial gravity recovery (~15%) indicates recoverable free gold, with potential for further optimisation.
- Cyanide and lime consumptions are relatively low in the initial tests, suggesting potential for a low operating cost.
- No optimisation testwork has been conducted. Opportunities exist to improve recovery and/or reduce costs through grind size and leach optimisation.

## 16.3 Process Plant

Identified risks and opportunities for ABC Project associated with Process Plant are outlined below:

### 16.3.1 Risks

- The design is primarily based on a single composite sample (2018), which may not adequately represent ore variability, including hardness, recovery, and reagent consumption.
- Variations in the ore competency (SMC Axb, BBMWi) and mineralogy could impact grinding performance, throughput, and gold recovery if not well understood and managed.
- The selected grind size of P80 passing 75 µm may not be optimal across all the ore types, potentially affecting the gold recovery and operating cost (over or under grinding risk).
- The leach kinetics, oxygen demand, and cyanide consumption are based on one sample tested. While the actual performance may differ, impacting the gold recovery and reagent costs and supply.
- Achieving consistent WAD cyanide levels of ≤50 ppm will depend on suitable reagent control and sufficient residence time; variability in feed conditions could affect this performance.
- Reliance on recycled TSF water may introduce variability in water chemistry (e.g., dissolved salts), impacting the process efficiency and scaling.

### 16.3.2 Opportunities

- The potential to coarsen the grind to 106 µm or even 150 µm while the gold recoveries remain the same will reduce power consumption and operating costs.
- The selected equipment sizing and SABC configuration may allow an increase beyond 7.0 Mt/y throughput with some optimisation.
- Opportunities exist to reduce cyanide, lime, and oxygen consumption through optimisation of the leach conditions and control strategies.
- Depending on future testwork outcomes, potential exists to simplify the circuits with reduced CIL residence time or the number of tanks.
- Enhanced TSF water recovery strategies could reduce raw water demand and improve sustainability.

## 16.4 Tailings Storage and Water Management

Identified risks and opportunities for ABC Project associated with Tailings Storage and Water Management are outlined below:

### 16.4.1 Risks

- Some communities may be considered within close proximity to the proposed Project pit and infrastructure. Although effort has been put into the Scoping Study to minimise interaction with these communities, future assessments and consultation will be required.
- Excess water on site requiring discharge (i.e. excess water within site water balance). The site water balance was not considered during this Study. Possible mitigations include a water treatment facility capable of producing suitable discharge water quality.
- A dam breach assessment (“DBA”) has not been completed as part of this study. A DBA should be undertaken to determine the TSF consequence category, including evaluation of PAR and PLL. In the event of TSF breach, the selected option would discharge to the Bien River. The Bien River is a tributary of the larger Boa River and flows south. Protected forest areas are present in the vicinity and potential impacts must be assessed.
- The selected TSF option receives external catchment runoff, which may result in water ponding adjacent to the western embankment. The need for a diversion channel (to route runoff away from the embankment) should be assessed and incorporated into the next design phase as required.

### 16.4.2 Opportunities

- A detailed TSF options assessment shall be completed during the next design phase. The assessment should focus on optimising storage efficiency, improving overall facility performance, minimising community and environmental impacts, improving constructability, reducing capital expenditure, and enhancing closure outcomes. It should also consider geotechnical, hydrological, permitting, and operational constraints.
- The WSD capacity shall be optimised based on the project water balance outcomes as part of the next stage of design. This may potentially reduce the WSD earthworks volume.
- In addition to the currently identified abstraction point on the Boa River (south of the tenement), a potential alternative abstraction location has been identified east of the tenement near the Bien River. Detailed catchment assessment and abstraction studies should be undertaken to determine the most efficient option. The available head at the Bien River may also be more favourable than the Boa River, potentially minimising pumping requirements.
- The proximity of the TSF to the pit supports the use of mine waste in TSF embankment construction.
- The plant site is located near the crest of a local topographic high, which increases the likelihood of competent foundation conditions. The plant site is also at a higher elevation than the TSF, which may reduce the consequences of a dam breach, including potential reductions in people at risk (“PAR”) and potential loss of life (“PLL”), subject to a detailed assessment.

## 16.5 Infrastructure

Identified risks and opportunities for ABC Project associated with Infrastructure are outlined below:

### 16.5.1 Risks

- The power connection corridor to site has not been assessed, i.e. the risk of building the power transmission line through non-tenement land.
- Lack of site geotechnical work may result in significant changes to the plant and infrastructure locations. In addition, seasonal impacts have not been factored as yet into the design.

### 16.5.2 Opportunities

- Enhanced topographical data to optimise infrastructure designs and layouts. Current placement of infrastructure was based on best practice and experience. Options studies should be completed to minimise cut and fill requirements, reduce haulage/transport distances and minimise interaction with nearby communities.
- Review the conversion of construction camp to permanent accommodation. In addition, through community engagement, residential accommodation rates may be reviewed to reduce camp accommodation requirements.

## 16.6 Permitting Requirements

As noted in Section 9.0, to date little work has been conducted to understand the permitting requirements for the Project or identify specific site requirements with respect to ESG and Permitting. As such, the work program requires significant planning and effort to understand the specific needs of the surrounding communities, environment and permitting activities to allow project progression.

## 16.7 Capital and Operating Estimates

Beyond the natural development of the project to improve maturity, there are several strong opportunities to list based on Resolute's progression of the Doropo Project:

- Ability to build an Owners Team to execute and operate the Doropo Project who may then train and/or transfer to the future ABC Project team, or share resources between the two projects. In addition, in-country experience learnt through contractor engagement, such as mining contractor, procurement in-country consultants and vendors will mitigate project execution and operational risk for the ABC Project.
- Owners costs should be well understood through the progression of the Doropo Project.
- ESG and Permitting pathway should be well understood through the progression of the Doropo Project.

## 17.0 Recommendations and Forward Work Plan

The next phase of work for the Project is to complete a comprehensive Pre-Feasibility Study or Definitive Feasibility Study. To allow for study progression, site baseline studies, surveys and fieldwork are required to be completed.

The initial key activities include:

- Environmental baseline studies,
- Drill programme (resource, geotechnical, metallurgical),
- Water supply investigations,
- Metallurgical testwork,
- Geotechnical testwork,
- Resource upgrade (to support any potential Reserve declaration).

The following general work will need to be carried out in the next phase of study

- Site survey,
- Overall surface mine layout and optimisation,
- Mine option evaluation and design,
- Hydrology and hydrogeology investigation,
- Geotechnical investigation,
- Metallurgical testwork to define/confirm process performance,
- Surface engineering design,
- Mine dewatering engineering design,
- Process plant design,
- Mine Design to support a JORC Reserve estimate,
- Operational readiness planning,
- Completion of trade off studies.

Below is a detailed breakout of recommendations for each of the key study areas. The identified recommendations may be incorporated into future study work plans.

### 17.1 Geology

The current drilling and Mineral Resource Estimate has defined a significant potentially economic endowment at Kona, but currently at a lower level of confidence. This, however, justifies further work to increase the level of confidence and definition of the mineralisation continuity and tenor.

It is recommended to:

- Prioritise infill drilling to about 25 m x 25 m in the core resource areas, with 50 m x 25 m as an intermediate density where appropriate.
- Select areas of Kona South and Kona Central within which to undertake a grade control level drill spacing study ( $\leq 12.5$  m x 12.5 m) to better understand the potential mining scale selectivity of the deposits.



- Revise the mineralised wireframes using broader external envelopes interpreted at approximately 0.10 g/t Au, and to reassess the internal 0.25 g/t threshold currently applied at Kona Central. In conjunction with a significant infill drilling program (as listed above). This approach is expected to improve the geological continuity and estimation confidence, and support the potential conversion of a portion of the current Inferred Mineral Resources to the Indicated Mineral Resource category.
- Consider adopting a nested wireframing approach at Kona South, comprising a broad low-grade envelope together with internally defined higher-grade domains should the results of the infill drilling support this. The definition and domaining of these internal mineralised zones requires closer-spaced infill drilling to demonstrate geological continuity and deliver improved estimation confidence.
- Retain a bulk-style approach at Kona Central unless additional drilling demonstrates discrete, continuous lodes that justify more detailed sub-domaining.
- Re-estimate the resource using a straightforward OK approach rather than the current multi-step OK + indicator kriging + UC/LUC workflow.
- Tighten and re-orient the search ellipsoids so that they follow the observed mineralised trend in both plan and section, and explicitly control the number of informing holes and the spatial balance of samples.
- Reassess the current grade capping levels after infill drilling and re-modelling using a clear domain-by-domain top-cap study.

The proposed drilling program should be viewed as a pit-shell-driven infill and conversion program. The optimisation shells generated for this Scoping Study by Oreology provide the most relevant first-pass tool for focusing drilling within, and immediately below, the portions of Kona South and Kona Central that have the best prospects for eventual economic extraction by open pit mining methods. This approach is broadly consistent with earlier recommendations that optimisation work be followed by targeted infill drilling to improve confidence in and convert the current Inferred Mineral Resources to Indicated Mineral Resource confidence level.

Drilling should be prioritised on a nominal 25 m × 25 m spacing within the latest open pit optimisation shells to support resource conversion and improve local grade continuity. Outside of these areas, along the mineralised strike, a broader pattern of approximately 50 m × 25 m to 50 m × 50 m is considered appropriate for step-out and continuity drilling. Particular attention should be given to targeting the down-dip extensions of mineralisation, noting zones that potentially plunge or dip south (Figure 17-1 and Figure 17-2), to better constrain the geometry and continuity of the mineralised system at depth.

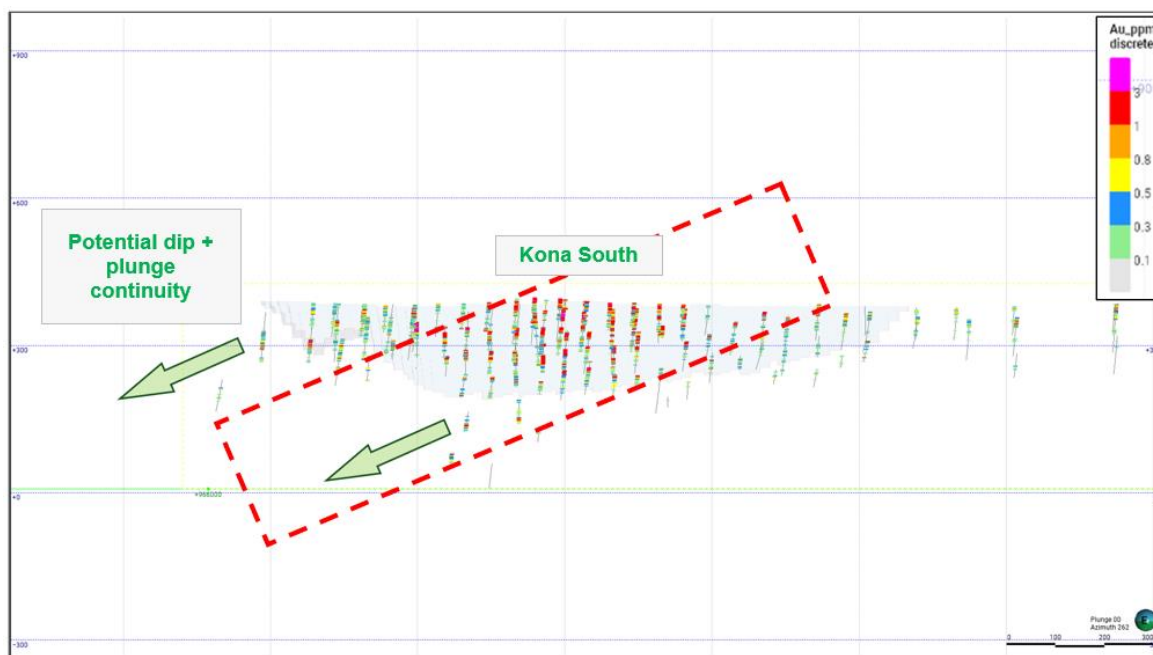


**Figure 17-1: Kona South – Potential Plunge of Higher Grade Mineralisation**

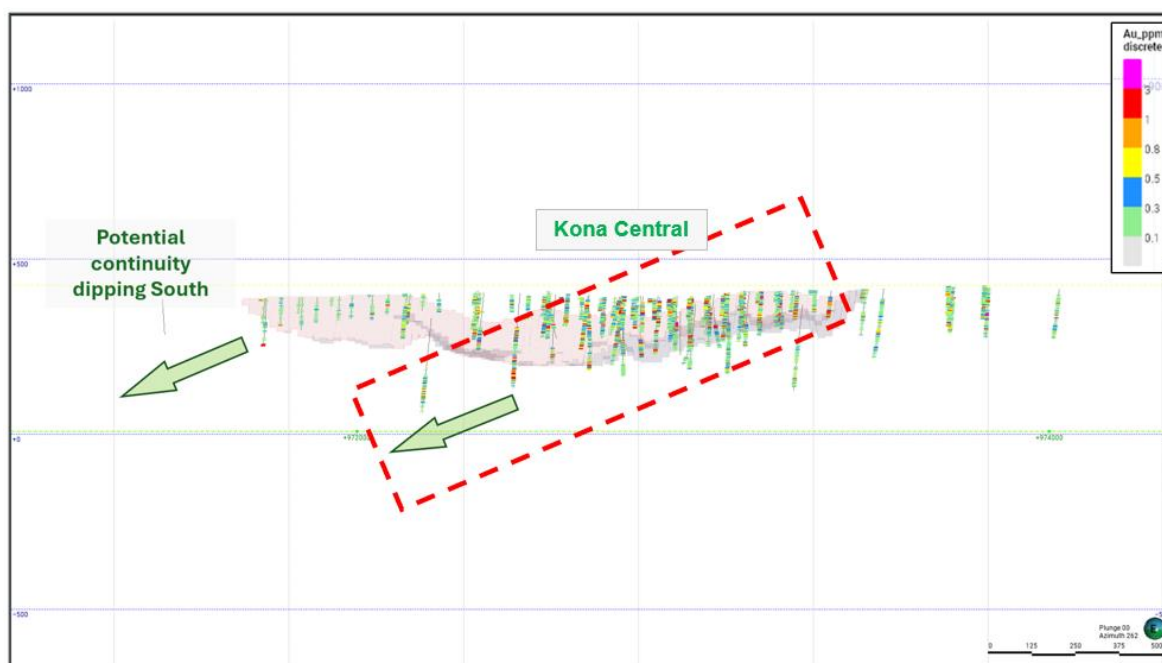


**Figure 17-2: Kona Central – Potential Plunge of Higher Grade Mineralisation**

It was noted that there was potentially an error in the search orientation at Kona South, with grades appearing to be interpolated across strike rather than along strike. Revision of the parameters could lead to definition of a higher grade domain on the eastern contact of the psammite (Figure 17-3).



**Figure 17-3: Kona South – Apparent Misalignment of Principal Search Orientation**

## 17.2 Mining

Overall, the mining assumptions underpinning the ABC Scoping Study are considered reasonable and broadly aligned with regional benchmarks. The project demonstrates several positive attributes, including cost robustness, low sensitivity to scheduling, and favourable deposit geometry.

Key risks identified relate primarily to near-surface high-grade material (security) and opportunities for further optimisation in geotechnical design, operating costs and resource extension. Addressing these aspects in upcoming project phases will further strengthen the project's technical and economic resilience.

To progress the ABC Project to the next level of evaluation (i.e. PFS or further), the following work programs are recommended.

- A geotechnical sampling program and associated evaluation should be included as part of any future drilling.
- A surface and ground water evaluation should be undertaken prior or during the next study phase. This includes any associated drilling and pump testing which should be included as part of any future drilling.
- A detailed topographical survey needs to be undertaken to ensure all of the project area is adequately cover.
- Develop a site security strategy in advance of further public disclosures, and engage with local authorities and communities to mitigate this risk of illegal mining.

## 17.3 Metallurgy

Advancement to the PFS stage will require a more comprehensive and representative metallurgical testwork program to reduce technical risk and improve confidence in the PDC.

As a general guideline, it is recommended that approximately one composite sample per one million tonnes of ore within the Mineral Reserve be tested to ensure adequate representation of the orebody variability.

### **17.3.1 Comminution Testwork**

Additional comminution testwork is required to confirm and refine the design parameters. The proposed program includes:

- SMC testing,
- Crusher Work Index (“CWi”),
- Abrasion Index (“Ai”),
- Bond Ball Mill Work Index (“BBMWi”).

This testwork will support the development of a robust comminution design and allow for assessment of variability in ore hardness across the deposit.

### **17.3.2 Leaching and Process Testwork**

For the next phase of metallurgical testwork, it is recommended that a master composite sample be developed and tested to confirm the processing flowsheet and optimise leaching conditions.

The testwork program should include:

- Cyanide leach optimisation (grind size, residence time, reagent addition, oxygen requirements),
- CIL performance testing,
- Gold recovery and reagent consumption validation.

In addition, downstream process testwork should be conducted to support plant design, including:

- Tailings detoxification testwork,
- Thickening and settling testwork,
- Rheology and slurry handling testwork,
- Environmental characterisation of tailings.

### **17.3.3 Variability Testwork**

Following the optimisation of processing conditions using the master composite, a program of variability testwork should be undertaken.

This will involve testing multiple samples representing different:

- Lithologies,
- Grade ranges,
- Oxidation states (if applicable).

All variability samples should be tested under the optimised process conditions established from the master composite program.

This work will provide a representative metallurgical response dataset and support the development of reliable recovery models and design criteria for the PFS.

## 17.4 Process Plant

To advance the process design from the Scoping Study to a Pre-Feasibility and then Feasibility level, the following work programs are recommended:

### Metallurgical Testwork

- Perform comminution testing (SMC, Bond Ball Mill Work Index, abrasion index) on variability samples,
- Undertake grind size optimisation testwork (e.g., 75 µm, 106 µm, 150 µm),
- Complete detailed leach testwork, including kinetics, oxygen demand, and cyanide consumption,
- Perform tailings detoxification testwork to confirm the reagent requirements.

### Process Design and Engineering

- Update the mass balance and process design criteria based with new testwork data,
- Review and optimise the equipment sizing, particularly for the grinding circuits,
- Assess plant operability, maintainability, and control philosophy,
- Develop a detailed water balance, including water quality impacts.

### Risk Reduction

- Develop ore blending strategies to manage any variability,
- Engage with equipment vendors to refine equipment selection and performance guarantees,
- Environmental and operational considerations,
- Validate the detoxification performance and compliance with any environmental requirements,
- Assess the reagent logistics and supply chain risks,
- Optimise water management strategy including TSF return water quality.

## 17.5 Tailings Storage and Water Management

The forward work plan for the tailings and water management aspects of the study focuses on:

- Collection of more detailed site data such as, but not limited to topography, geotechnical, geochemical, hydrology, geohydrology etc.
- Conducting more detailed analyses of the inputs to calculations and designs and confirming the assumptions that have been made.
- Conducting technology trade-offs for, but not limited to, tailings storage, water collection, water discharge and the optimisation of these designs. Infrastructure location assessments also need to be revised once additional site data has been collected.
- Assess in detail the availability of water from the Boa River and commence permitting applications to harvest from the river. Climatic data for the region will need to be assessed to design surface water management systems. Water treatment options will need to be investigated more thoroughly, including the need for treatment of potential water discharge from site.

- A detailed geotechnical site investigation is required during later design stages to confirm foundation conditions, assess site suitability, and define any required ground improvement measures.

## **17.6 Infrastructure**

Further ABC Project studies will need to assess in greater detail the inputs to infrastructure requirements. This will include:

- Detailed topographical surveys,
- Water supply investigations,
- Power supply investigations,
- Access road requirements and designs,
- Safety and Security designs.

Investigations and further developments in other areas of the Project will also influence the infrastructure designs and requirements, such as:

- Environmental baseline studies,
- Metallurgical and geochemical testwork, and associated process plant design, and tailings quantities and qualities,
- Geotechnical and Hydrogeological testwork,
- Geological analyses and Mineral Resource and Reserve Estimates,
- Mine dewatering options and opportunities.

## **17.7 Permitting Requirements**

Execute required works for the ESIA / ESMP assessments and permitting studies as listed in Section 9.0 Permitting Requirements.

## 18.0 References

Scholtz, A. (2025), *Resolute Mining Ltd Doropo Gold Project Definitive Feasibility Study Update*. Lycopodium, Report Number 2326-GREP-001

Bills, J., Barker, C. and Adams, P. (2021), *NI 43-101 Technical Report Mineral Resource Estimate Update On The Kona Gold Deposit Cote d'Ivoire*, Centamin Technical Report, SEDAR.

ALS Report (2018), *Composite from the Lolosso Structure – Kona Exploration Permit*, Report No. A19126.

ALS Report (2018), *Quantitative Automated Mineralogy Analysis*, Report No. MIN3412.

JK Tech Report (2018), *SMC Test Report*, JKTech Job No. 18001/P91.

ALS Report (2018), *ABC Bleg Prelim Met Test Excel data*.

## **Appendix A: Section 5 Metallurgical Testwork**





**Metallurgical Testwork**  
conducted upon a  
**Composite from the**  
**Lolosso Structure – Kona Exploration Permit**  
for  
**Ampella Mining Côte d'Ivoire**



**Report No. A19126**

**October 2018**

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## SUMMARY

A defined program of metallurgical testwork was conducted on a single gold ore composite from the Lolosso structure, part of the Kona exploration permit in Côte d'Ivoire.

Testing included determination of comminution parameters, head assays, mineralogical analysis, and gold recovery testwork.

Key results and outcomes from the testwork are presented in the table below.

| SUMMARY OF RESULTS                                                                                                                                                      |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Testwork Parameter                                                                                                                                                      | Kona - Lolosso |
| SMC DWi (kWh/m <sup>3</sup> )                                                                                                                                           | 11.1           |
| Bond Abrasion Index                                                                                                                                                     | 0.2586         |
| Bond Rod Mill Work Index (kWh/t)                                                                                                                                        | 25.4           |
| Bond Ball Mill Work Index (kWh/t) @ 106 µm Closing Screen Size                                                                                                          | 20.0           |
| Au Head Assays (g/t)                                                                                                                                                    | 1.82/1.98      |
| Overall Au Extraction (%) via Gravity Gold Recovery and Cyanide Leaching @ P <sub>80</sub> 75 µm                                                                        | 88.9           |
| Overall Au Extraction (%) via Flotation @ P <sub>80</sub> 106 µm, Leaching of Flotation Tail, and Leaching of Flotation Concentrate re-ground to P <sub>100</sub> 63 µm | 85.4           |
| Overall Au Extraction (%) via Flotation @ P <sub>80</sub> 106 µm, Leaching of Flotation Tail, and Leaching of Flotation Concentrate re-ground to P <sub>80</sub> 10 µm  | 87.2           |

## 1. INTRODUCTION

In July 2018, Mr Pierrick Couderc, representing Ampella Mining Côte d'Ivoire (the Client), requested that ALS Metallurgy Services conduct a defined program of metallurgical testwork on a single gold ore composite from the Lolosso structure, part of the Kona exploration permit, located in western Côte d'Ivoire.

Testwork was conducted between July and September 2018, and included the following:

- Sample preparation
- SMC testwork
- Bond abrasion index, rod, and ball mill work index determinations
- Head assays
- Mineralogical analysis
- Grind establishment testwork
- Gravity gold recovery and cyanide leach testwork
- Bulk flotation testwork and cyanide leach tests on flotation products.

The testwork program is presented as a series of flowsheets in Figures 1 to 3.

The testwork was controlled by Mr Paul Elms, on behalf of the Client, with Mr Brett Kay supervising the program on behalf of ALS Metallurgy Services. Testwork results were communicated to the client immediately when available, which enabled the program to progress on a fully informed basis.

The purpose of this report is to outline the testwork procedure and present results, together with some brief comments and observations.



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## 2. SAMPLES AND SAMPLE PREPARATION

The samples were received at ALS Metallurgy Balcatta on the 17<sup>th</sup> of July 2018, and were comprised of five bags of quarter-core fragments, labelled as Kona Metallurgical samples.

The samples were combined to generate a single composite of approximately 100 kg. The following work was then conducted:

1. The entire composite was crushed to a nominal top-size of 25 mm.
2. The crushed material was homogenised by passing three times through a 12-segment rotary sample divider (RSD). A 40 kg sub-sample was split out for comminution testwork, including SMC testwork, Bond abrasion index determination, Bond rod mill work index determination, and Bond ball mill work index determination.
3. The remaining material was control-crushed to 100% passing 3.35 mm, then thoroughly homogenised via RSD, and split into representative 1.0 kg charges.

The photograph below shows a sub-sample of the material received.



### 3. TESTWORK WATER

All testwork, in which wet grinding and/or slurry preparation was required, was conducted using Perth tap water.

### 4. ANALYTICAL

All assay samples generated during the test program were submitted for analysis to the on-site assay laboratory in Balcatta.

The following analytical methods were employed:

|                                   |                                            |
|-----------------------------------|--------------------------------------------|
| Gold in solids:                   | Fire assay/ICPOES                          |
| Gold in solution:                 | Direct ICPMS                               |
| Gold in mercury amalgam:          | Acid digest/ICPMS                          |
| Gold in carbon:                   | Ash/acid digest/ICPOES                     |
| Carbon speciation:                | <i>Labfit</i> CS2000 analyser              |
| Sulphur speciation:               | <i>Sherritt</i> method/CS2000 analyser     |
| Arsenic:                          | D7 multi-acid digest/ICPOES                |
| Antimony, mercury, and tellurium: | D1 low-temperature mixed acid digest/ICPMS |
| General elemental scan:           | D3 4-acid digest/ICP (MS and OES)          |



## 5. SMC TESTWORK

A sub-sample of the composite was submitted for SMC testwork.

The standard (full) JKTech drop-weight testwork provides ore-specific parameters for use in the JK Sim Met Mineral Processing Simulator Software and JK Sim Met Crusher model. The SMC test was developed by SMC Testing Pty Ltd to provide a cost-effective means of obtaining these parameters from drill core or broken rock samples in situations where limited quantities of material are available.

The SMC test generates a relationship between specific input energy (kWh/t) and the proportion of fragmented/broken product passing a specified sieve size. The results are used to determine the drop-weight index (DWi), which is a measure of the strength of the ore sample when broken under impact conditions. The DWi is directly related to the JK rock breakage parameters A and b, and can be used to determine the values of these parameters.

### 5.1 Test Procedure

The test procedure was as follows:

- (1) A sub-sample of the crushed material was utilised for SG determination. The SG measurements were carried out by weighing each specimen in air and then in water. The data were inserted in the following formula:

$$\text{Density (insitu SG)} = \frac{A}{A - B}$$

Where:

A = Weight of quartered core specimen in air

B = Weight of specimen, whilst it was totally submerged in water

- (2) One hundred particles in the size range -22.4+19.0 mm were selected in accordance with the SMC proprietary test procedure. These were divided into 5 groups of 20 specimens.
- (3) Each group of 20 specimens was broken using the JK drop-weight tester at a different specific energy level. The target specific breakage energy levels (Eis) are listed below:
  - 3.5 kWh/t
  - 2.5 kWh/t
  - 1.0 kWh/t
  - 0.5 kWh/t
  - 0.25 kWh/t.

- (4) The drop-weight device was configured such that a drop-weight head was raised to a known height and allowed to fall onto each specimen resting on the anvil. The key measurement used in the drop-weight test is the input energy. This was determined from the mass of the drop-weight head and the distance through which it falls and also the mass of the specimen being tested.

The difference in distance between the initial starting point and the final rest height of the drop-weight head is used to calculate the energy that is expended in breaking the particle.

Thus:

$$E_i = Mg(h - X_m)$$

Where:

|       |   |                                                        |
|-------|---|--------------------------------------------------------|
| $E_i$ | = | Energy used for breakage                               |
| $M$   | = | Drop-weight mass                                       |
| $g$   | = | Gravitational constant                                 |
| $h$   | = | Initial height of the drop-weight head above the anvil |
| $X_m$ | = | Final height of the drop-weight head above the anvil   |

The assumption is made that all the energy provided is utilised in the breakage of the particles (i.e. no rebounds).

$$E_{cs} = E_{is} = E_i/m$$

Where:

|          |   |                             |
|----------|---|-----------------------------|
| $E_{is}$ | = | Specific energy input       |
| $E_{cs}$ | = | Specific comminution energy |
| $m$      | = | Mean particle mass          |

- (5) For each single drop test, the rest height was recorded. After the completion of breakage of 20 particles in each group, the broken product was screened at a sieve size that is one-tenth of the original test particle size.

## 5.2 Results

A detailed report is included in Appendix I, whilst a summary of results is presented in the following table.

| SMC TESTWORK: SUMMARY OF RESULTS |                              |      |                |      |                |                |                |                |
|----------------------------------|------------------------------|------|----------------|------|----------------|----------------|----------------|----------------|
| Composite ID                     | DWi<br>(kWh/m <sup>3</sup> ) | SG   | Derived Values |      |                |                |                |                |
|                                  |                              |      | A              | b    | Mia<br>(kWh/t) | Mih<br>(kWh/t) | Mic<br>(kWh/t) | t <sub>a</sub> |
| Kona – Lolosso                   | 11.1                         | 2.74 | 78.4           | 0.32 | 28.7           | 23.5           | 12.1           | 0.24           |

## 6. BOND ABRASION INDEX (Ai) DETERMINATION

A sub-sample of the composite was tested to determine the Bond Ai using the standard procedure developed by F.C. Bond<sup>1</sup>.

### 6.1 Test Procedure

The test procedure was as follows:

- (1) The testing machine consists of an impeller rotating at 632 rpm within a contra-rotating drum. The impeller incorporates a *Bisalloy*, 500 Brinell hardness steel paddle.
- (2) Four successive 400 g samples of ore (-19.0+12.7 mm) were processed for 15 minutes each in the testing machine.
- (3) At the completion of the test, the weight lost by the paddle is measured to 0.10 of a milligram. The abrasion index, Ai, is equivalent to the paddle weight loss expressed in grams.
- (4) The combined products from the four 15-minute test periods were combined and then screened.

### 6.2 Results

A detailed logsheet is included in Appendix II, whilst a summary is presented in the following table.

| BOND ABRASION INDEX: SUMMARY OF RESULTS |                     |
|-----------------------------------------|---------------------|
| Composite ID                            | Bond Abrasion Index |
| Kona – Lolosso                          | 0.2586              |

<sup>1</sup> Bond, F.C. "Metal Wear in Crushing and Grinding" (1963), 54<sup>th</sup> Ann. Mtg of Inst. Chem. Engrs. Houston, Texas

## 7. BOND ROD MILL WORK INDEX (RWi) DETERMINATION

A sub-sample of the composite was submitted for Bond RWi determination at a closing screen size of 1180 µm using the standardised procedure detailed by F.C. Bond<sup>2</sup>.

### 7.1 Test Procedure

The test procedure for each composite was as follows:

- (1) The test sample was stage crushed to 100% passing 12.7 mm and test portions were rotary split for the work index test.
- (2) A known volume of ore (1250 mL) was ground in the standard rod mill for a counted number of revolutions.
- (3) The ground material was screened at a test aperture of 1180 µm to remove the -1180 µm material.
- (4) Fresh feed was added to the +1180 µm fraction to make up to the original test weight.
- (5) The number of mill revolutions was adjusted at each cycle until a stable recirculating load was achieved.
- (6) The work index was calculated from the formula:

$$(Wi)_R = \frac{62.0}{(Pi)^{0.23} \times (Grp)^{0.625} \times \left( \frac{10}{\sqrt{P_{80}}} - \frac{10}{\sqrt{F_{80}}} \right)} \times 1.102$$

Where:

- $(Wi)_R$  = Work index value expressed in kWh/tonne  
 $P_i$  = Grindability test aperture (micrometres)  
 $Grp$  = Mean of equilibrium grindability values (g/rev)  
 $P_{80}$  = 80% passing size of the equilibrium product (micrometres)  
 $F_{80}$  = 80% passing size of the feed to period 1 (micrometres)

### 7.2 Results

A detailed test report sheet is included in Appendix III, whilst a summary is presented in the following table.

| BOND ROD MILL WORK INDEX: SUMMARY OF RESULTS |             |          |                |                             |                     |
|----------------------------------------------|-------------|----------|----------------|-----------------------------|---------------------|
| Sample ID                                    | Micrometres |          | Grp<br>(g/rev) | Test Aperture $P_i$<br>(µm) | Bond RWi<br>(kWh/t) |
|                                              | $F_{80}$    | $P_{80}$ |                |                             |                     |
| Kona - Lolosso                               | 10,807      | 825      | 3.278          | 1180                        | 25.4                |

<sup>2</sup> Bond, F.C. "Crushing and Grinding Calculations" (1961) British Chemical Engineering, Vol 6, No's 6, 8

## 8. BOND BALL MILL WORK INDEX (BWi) DETERMINATION

A sub-sample of the composite was tested using the standardised procedure detailed by F.C. Bond<sup>3</sup> to determine the Bond BWi. A closing screen size of 106 µm was requested by the client.

### 8.1 Test Procedure

The test procedure was as follows:

- (1) The composite was stage crushed to 100% passing 3.35 mm, and test portions rotary split out for the work index test.
- (2) A known volume of ore (700 mL) was ground in the standard mill for a counted number of revolutions.
- (3) The ground material was screened at a test aperture of 106 µm to remove the <106 µm material.
- (4) Fresh feed was added to the >106 µm fraction to make-up to the original test weight.
- (5) The number of mill revolutions was adjusted at each cycle until a stable recirculating load was achieved.
- (6) The work index was calculated from the formula:

$$(Wi)_B = \frac{44.5}{(Pi)^{0.23} \times (Gbp)^{0.82} \times \left( \frac{10}{\sqrt{P_{80}}} - \frac{10}{\sqrt{F_{80}}} \right)} \times 1.102$$

Where:

- (Wi)<sub>B</sub> = Work index value expressed in kWh/tonne  
 Pi = Grindability test aperture (micrometres)  
 Gbp = Mean of equilibrium grindability values (g/rev)  
 P<sub>80</sub> = 80% passing size of the equilibrium product (micrometres)  
 F<sub>80</sub> = 80% passing size of the feed to period 1 (micrometres)

### 8.2 Results

Full results are included in Appendix IV, whilst a summary is presented in the following table.

| BOND BALL MILL WORK INDEX: SUMMARY OF RESULTS |                 |                 |                |                          |                     |
|-----------------------------------------------|-----------------|-----------------|----------------|--------------------------|---------------------|
| Composite ID                                  | Micrometres     |                 | Gbp<br>(g/rev) | Test Aperture Pi<br>(µm) | Bond BWi<br>(kWh/t) |
|                                               | F <sub>80</sub> | P <sub>80</sub> |                |                          |                     |
| Kona - Lolosso                                | 2,718           | 79              | 0.875          | 106                      | 20.0                |

<sup>3</sup> Bond, F.C. "Crushing and Grinding Calculations" (1961) British Chemical Engineering, Vol 6, No's 6, 8

## 9. HEAD ASSAYS

A sub-sample was submitted for comprehensive head assays. A summary of key results is presented below, while full head assays are included in Appendix V.

| HEAD ASSAYS           |       |                |
|-----------------------|-------|----------------|
| Analyte               | Units | Kona - Lolosso |
| Ag                    | g/t   | <2             |
| Au <sub>1</sub>       | g/t   | 1.82           |
| Au <sub>2</sub>       | g/t   | 1.98           |
| C <sub>TOTAL</sub>    | %     | 0.21           |
| C <sub>ORGANIC</sub>  | %     | 0.21           |
| Ca                    | %     | 1.50           |
| Fe                    | %     | 4.40           |
| K                     | %     | 1.20           |
| Na                    | %     | 3.78           |
| S <sub>TOTAL</sub>    | %     | 0.46           |
| S <sub>SULPHIDE</sub> | %     | 0.26           |
| SiO <sub>2</sub>      | %     | 67.2           |
| Te                    | ppm   | 0.6            |

Comments on the above data are as follows:

- Duplicate gold assays show good repeatability, suggesting significant coarse gold is unlikely to be present.
- The composite contains negligible silver.
- The composite contains organic carbon (0.21%). Organic carbon may exhibit preg-robbing behaviour during leaching.

## 10. MINERALOGICAL ANALYSIS

A 1.0 kg sub-sample of the composite was ground to  $P_{80}$  75  $\mu\text{m}$  and passed through a 3" Knelson KC-MD3 gravity concentrator, with the following specifications:

- Feed rate ~750 g/min
- 1500 rpm (60 G's)
- 3.5 L/min fluidising water flow rate.

The Knelson concentrate was recovered and further concentrated by hand-panning. The pan concentrate was dried, weighed, and submitted for mineralogical analysis via QEMScan. The Knelson tail was recovered and combined with the pan tail. The combined gravity tail was dried, weighed, homogenised, and a representative sub-sample split out and submitted for mineralogical analysis via XRD.

A copy of the mineralogy report (MIN3412) is included in Appendix VI, whilst the main findings are outlined in the following sections.

### 10.1 Bulk Mineralogy

The main points regarding bulk mineralogy were as follows:

- In the Pan-Con fraction, arsenopyrite makes up 4.77% by mass and has a  $P_{80}$  of 67  $\mu\text{m}$ . 77.1% of the arsenopyrite is classified as 'well liberated' and 16.9% as 'high-grade middlings'. The unliberated portion is mainly locked with silicates and lollingite.
- Lollingite makes up 1.14% by mass in the Pan-Con and has a  $P_{80}$  of 67  $\mu\text{m}$ . Approximately half of the lollingite is classified as 'well liberated' and another 23.8% as 'high-grade middlings'. The unliberated portion is mainly locked with arsenopyrite.
- Minor amounts of pyrrhotite (1.91% by mass with a  $P_{80}$  of 44  $\mu\text{m}$ ) and pyrite (0.32% by mass with a  $P_{80}$  of 93  $\mu\text{m}$ ) were also detected in the Pan-Con fraction. Both are not well liberated and mostly associated with silicates, rather than with arsenopyrite or lollingite.
- Most of the remaining sample mass in the Pan-Con is contributed by silicates, i.e. plagioclase (47.6%), quartz (19.6%), biotite (12.2%), and amphibole/pyroxene (5.22%).
- The gravity tail fraction is mainly made up of plagioclase, quartz, and biotite.

## 10.2 Gold Mineralogy

The main points regarding bulk mineralogy were as follows:

- Native gold (with silver content typically <10%) is the only gold-bearing phase detected.
- A total of nine native gold grains were detected.
- One gold grain is well liberated and is approximately 20  $\mu\text{m}$  in size. This gold grain hosts nearly two-thirds of the total gold mass detected.
- One gold grain occurs in a binary arsenopyrite-lollingite particle. It is approximately 10  $\mu\text{m}$  in size and exposed.
- Another three gold grains are enclosed in arsenopyrite-rich particles. These grains range in size from 1  $\mu\text{m}$  to 5  $\mu\text{m}$ , with one grain associated with lollingite.
- The remaining four gold grains occur in silicate-rich particles, with one exposed and the other three enclosed. These grains range in size from 2  $\mu\text{m}$  to 10  $\mu\text{m}$ , and one of them is associated with arsenopyrite.

Note: Gold grains smaller than 1  $\mu\text{m}$  and solid solution gold in sulphides/arsenides are not detectable by QEMSCAN, and hence not included in the report.



## 11. GRIND ESTABLISHMENT TESTWORK

Sub-samples of the composite were submitted for grind establishment testwork. The objective of the grind establishment test was to determine the time required to grind a sub-sample of crushed material (-3.35 mm) to  $P_{80}$  75  $\mu\text{m}$  using a laboratory rod mill.

### 11.1 Test Procedure

The grind establishment procedure is summarised as follows:

- (1) One-kilogram sub-samples were ground in a laboratory stainless steel rod mill at 50% solids (w/w) for various times.
- (2) The ground solids were wet screened over a 75  $\mu\text{m}$  aperture sieve. The undersize material was dried and retained.
- (3) The oversize material was dried and then re-screened over a series of screens using a *Rotap* sieve shaker. The undersize (-75  $\mu\text{m}$ ) material was combined with the undersize material from step (2).
- (4) Each size fraction was dried, weighed, and the masses used to determine particle size distribution and  $P_{80}$ .
- (5) The grind times were plotted against the resultant  $P_{80}$  to determine the grind times required to achieve the target grind sizes.

### 11.2 Grind Time

The requisite grind time is presented in the table below.

| GRIND ESTABLISHMENT TESTWORK: SUMMARY OF RESULTS |                                                                           |
|--------------------------------------------------|---------------------------------------------------------------------------|
| Composite ID                                     | *Requisite Grind Time to Achieve $P_{80}$ 75 $\mu\text{m}$<br>(min' sec") |
| Kona - Lolosso                                   | 16'53"                                                                    |

\* 1.0 kg sample

## 12. GRAVITY/CYANIDE LEACH TESTWORK

A 1.0 kg sub-sample was ground to P<sub>80</sub> 75 µm and submitted for gravity gold recovery testwork ahead of cyanide leaching. The sample was leached for 24 hours.

### 12.1 Gravity Gold Recovery Procedure

The gravity gold recovery procedure is summarised as follows:

- (1) The ground sample was passed through a 3" *Knelson* KC-MD3 gravity concentrator, with the following specifications:
  - Feed rate ~750 g/min
  - 1500 rpm (60 G's)
  - 3.5 L/min fluidising water flow rate.
- (2) The Knelson concentrate was transferred to a 1-litre bottle and combined with 5 g of accurately weighed mercury for amalgamation. The sample was then amalgamated for a period of at least 2 hours.
- (3) After amalgamation, the loaded amalgam was recovered by hand panning and assayed for total gold and silver content (µg).
- (4) The amalgamation residue (Knelson concentrate) was combined with the Knelson tail and submitted for cyanide leach testwork.

### 12.2 Cyanide Leach Procedure

The cyanide leach test procedure is summarised as follows:

- (1) The combined gravity tail was transferred to a 4-litre plastic bottle and adjusted to 45% solids (w/w).
- (2) Sufficient hydrated lime (~60% CaO) was added to achieve a pH of 10.5.
- (3) Sufficient solid sodium cyanide was then added to achieve the initial target cyanide concentration of 0.05% (w/v).
- (4) The head-space of the bottle was sparged with oxygen before being sealed and placed on a bottle-roller to commence leaching.
- (5) The pH, DO, and sodium cyanide concentration were monitored at regular intervals (2, 4, and 8 hours). Lime and sodium cyanide were added as required to maintain target pH (9.8) and NaCN concentration (>0.025%, w/v).
- (6) At each monitoring interval, a 30 mL solution sample was removed. A 10 mL aliquot was utilised for titration with silver nitrate to determine sodium cyanide concentration. The remainder was submitted for assay to determine gold and silver concentration.

- (7) At the termination of the test (24 hours), the terminal pH, oxygen, and sodium cyanide levels were determined and a solution sample collected for gold and silver assay.
- (8) The residual slurry was filtered, washed, and dried to provide leach residue solids, a sub-sample of which was split out and submitted for assay. The residue was assayed for gold (in duplicate) and silver.

## 12.3 Results

Results from the gravity/leach tests are summarised in the table below, whilst more detailed test report sheets are included in Appendix VII.

| GRAVITY/CYANIDE LEACH TESTWORK: SUMMARY OF RESULTS |                   |                                  |                              |      |      |                           |                    |      |
|----------------------------------------------------|-------------------|----------------------------------|------------------------------|------|------|---------------------------|--------------------|------|
| Composite ID                                       | Test No.<br>(BK-) | Calc'd Au<br>Head Grade<br>(g/t) | Au Extraction (%)<br>@ hours |      |      | Au Tail<br>Grade<br>(g/t) | Reagents<br>(kg/t) |      |
|                                                    |                   |                                  | Gravity                      | 8    | 24   |                           | NaCN               | Lime |
| Kona - Lolosso                                     | 11664             | 2.03                             | 15.5                         | 83.6 | 86.9 | 0.23                      | 0.18               | 0.17 |

Comments on the above data are as follows:

- Gravity gold recovery was low-moderate, at approximately 15%.
- Overall gold extraction was approximately 87% after 24 hours of cyanide leaching.
- Reagent consumption was low.

## 13. BULK FLOTATION TESTWORK

A bulk sample (51 kg) was ground to  $P_{80}$  106  $\mu\text{m}$  and submitted for bulk flotation testwork. The sample was ground in 17 kg batches using a large laboratory rod mill.

### 13.1 Test Procedure

The bulk flotation procedure is summarised as follows:

- (1) Excess water was decanted from the combined gravity tailings slurry before the sample was transferred to a 140-litre flotation cell.
- (2) Perth tap water was added to achieve a slurry of ~30% to 35% solids (w/w).
- (3) The slurry was agitated using an *Agitair* flotation machine at ~1000 rpm.
- (4) Copper sulphate was added and the slurry allowed to condition for 2 minutes. Collector (PAX) was then added and the slurry conditioned for another minute. Frother was added drop-wise as required.
- (5) Air was introduced manually to commence flotation.
- (6) In total, five concentrates were collected (separately) from each test after 4, 8, 16, 24, and 30 minutes of flotation.
- (7) Additional PAX was added prior to each new concentrate being collected. The slurry was conditioned for 1 minute after each new addition of PAX.
- (8) Each concentrate was filtered, dried, and weighed. A representative sub-sample was split out and submitted for assay, whilst the remainder was reserved for leach testwork.
- (9) A representative sub-sample of the flotation tail was collected and filtered. The residue was washed and dried. A sub-sample was submitted for assay, whilst an additional sub-sample was submitted for leach testwork.
- (10) All flotation products (concentrates and tailings) were assayed for gold, total sulphur, and sulphide sulphur.

## 13.2 Results

Results from the bulk flotation test are summarised in the table below. Detailed test report sheets are included in Appendix VIII.

| BULK FLOTATION TESTWORK: SUMMARY OF RESULTS |                |                       |                           |                           |                |              |
|---------------------------------------------|----------------|-----------------------|---------------------------|---------------------------|----------------|--------------|
| Composite ID                                | Test No (BKF-) | Flotation Concentrate |                           |                           |                |              |
|                                             |                | Mass (%)              | S <sup>2-</sup> Grade (%) | S <sup>2-</sup> Rec'y (%) | Au Grade (g/t) | Au Rec'y (%) |
| Kona – Lolosso                              | 980            | 5.5                   | 5.58                      | 84.4                      | 23.6           | 71.0         |

Comments on the above data are as follows:

- Sulphide recovery was ~84%, whilst mass pull was low at only 5.5%.
- Despite the reasonably high S<sup>2-</sup> recovery, gold recovery to concentrate was only 71%. Gold in flotation tail is most likely associated with silicate-rich particles, as identified in the mineralogical analysis.

## 14. CYANIDE LEACH TESTWORK: BULK FLOTATION CONCENTRATE

The remaining concentrates from the bulk flotation test (after assay sub-samples were removed) were combined to generate a single rougher concentrate. Sub-samples of the combined concentrate were ground prior to cyanide leaching. A sub-sample was stage-ground to P<sub>100</sub> 63 µm, whilst another sub-sample was ground to P<sub>80</sub> 10 µm (using a ceramic bead mill) prior to leaching.

### 14.1 Test Procedure

The procedure used for the cyanide leach tests on the flotation concentrate samples is summarised as follows:

- (1) The ground sample was transferred to a 4-litre plastic bottle. Water was added to achieve 20% solids (w/w).
- (2) Sufficient hydrated lime (~60% CaO) was added to achieve a pH of 10.5.
- (3) Activated carbon was added at a concentration of 30 g/L of slurry.
- (4) Sufficient solid sodium cyanide was then added to achieve the initial target concentration of 0.25% (w/v).
- (5) The head-space of the bottle was sparged with oxygen prior to being sealed and placed on a bottle-roller to commence leaching.

- (6) The pH, DO, and cyanide concentration were monitored at regular intervals (2, 4, and 8 hours). Lime and sodium cyanide were added as required to maintain target pH (>9.8) and NaCN concentration (>0.10%, w/v).
- (7) At each monitoring interval, a 30 mL solution sample was removed. A 10 mL aliquot was utilised for titration with silver nitrate to determine sodium cyanide concentration. The remainder was submitted for assay to determine gold and silver concentration.
- (8) A sample of loaded carbon was also removed at each check. The carbon samples were thoroughly washed, dried, and weighed then submitted for assay to determine gold and silver content.
- (9) At the termination of the test (24 hours), the terminal pH, oxygen, and sodium cyanide levels were determined and a solution sample collected for gold and silver assay.
- (10) The remaining loaded carbon was removed from the slurry, washed, dried, weighed, and submitted for gold and silver assay.
- (11) The residual slurry was filtered, washed, and dried to provide leach residue solids, a sub-sample of which was split out and submitted for assay to determine residual gold and silver grades.

## 14.2 Results

Results from the cyanide leach tests on flotation concentrate are summarised in the table below, whilst detailed logsheets are included in Appendix IX.

| BULK FLOTATION CONCENTRATE - CYANIDE LEACH TESTWORK: SUMMARY OF RESULTS |                |                                        |                     |        |                   |      |      |       |                     |                 |      |
|-------------------------------------------------------------------------|----------------|----------------------------------------|---------------------|--------|-------------------|------|------|-------|---------------------|-----------------|------|
| Comp ID                                                                 | Test No. (BK-) | Target Grind Size P <sub>80</sub> (µm) | Au Head Assay (g/t) |        | Au Extraction (%) |      |      |       | Au Tail Grade (g/t) | Reagents (kg/t) |      |
|                                                                         |                |                                        | Assay               | Calc'd | 2-hr              | 4-hr | 8-hr | 24-hr |                     | NaCN            | Lime |
| Kona - Lolosso                                                          | 11725          | 45*                                    | 23.6                | 21.8   | 95.3              | 94.8 | 94.4 | 95.0  | 1.09                | 3.45            | 0.95 |
|                                                                         | 11726          | 10                                     |                     | 22.7   | 85.6              | 98.1 | 98.0 | 97.3  | 0.61                | 6.04            | 1.15 |

\* Sample stage-ground to P<sub>100</sub> 63 µm

Comments on the above data are as follows:

- Gold extraction improved at the finer grind size.
- Reagent consumption also increased at the finer grind size.

## 15. CYANIDE LEACH TESTWORK: BULK FLOTATION TAIL

A sub-sample of the bulk flotation tail was submitted for cyanide leach testwork.

### 15.1 Test Procedure

The cyanide leach procedure was identical to that described in Section 12.2.

### 15.2 Results

The results from the cyanide leach tests on bulk flotation tails are summarised in the table below. Detailed test report sheets are included in Appendix X.

| BULK FLOTATION TAIL - CYANIDE LEACH TESTWORK: SUMMARY OF RESULTS |                   |                                  |                              |      |      |                           |                    |      |
|------------------------------------------------------------------|-------------------|----------------------------------|------------------------------|------|------|---------------------------|--------------------|------|
| Composite ID                                                     | Test No.<br>(BK-) | Calc'd Au<br>Head Grade<br>(g/t) | Au Extraction (%)<br>@ hours |      |      | Au Tail<br>Grade<br>(g/t) | Reagents<br>(kg/t) |      |
|                                                                  |                   |                                  | 4                            | 8    | 24   |                           | NaCN               | Lime |
| Kona - Lolosso                                                   | 11724             | 0.64                             | 56.3                         | 61.8 | 66.2 | 0.22                      | 0.06               | 0.35 |

## 16. OVERALL GOLD EXTRACTION SUMMARY

This section summarises the overall gold extraction achieved via the various processing options considered.

The following table summarises the various options considered.

|                 |                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------|
| <b>Option 1</b> | Gravity + Whole Ore Leach @ P <sub>80</sub> 75 µm                                                  |
| <b>Option 2</b> | Flotation @ P <sub>80</sub> 106 µm + Leaching of Float Tail and Con (CIL) @ P <sub>100</sub> 63 µm |
| <b>Option 3</b> | Flotation @ P <sub>80</sub> 106 µm + Leaching of Float Tail and Con (CIL) @ P <sub>80</sub> 10 µm  |

Overall gold extraction and tail grades for the various options are summarised in the table below.

| OVERALL GOLD EXTRACTION: SUMMARY OF RESULTS |                            |                           |                             |
|---------------------------------------------|----------------------------|---------------------------|-----------------------------|
| Option No.                                  | Kona - Lolosso             |                           |                             |
|                                             | Calc'd Au Head Grade (g/t) | Overall Au Extraction (%) | Overall Au Tail Grade (g/t) |
| 1                                           | 2.03                       | 88.9                      | 0.23                        |
| 2                                           | 1.80                       | 85.4                      | 0.26                        |
| 3                                           | 1.85                       | 87.2                      | 0.24                        |

The results show that no improvement in overall gold recovery was achieved by incorporating flotation and re-grinding the flotation concentrate prior to cyanide leaching.



## FIGURES



FIGURE 1: COMMINATION TESTWORK FLOWSHEET

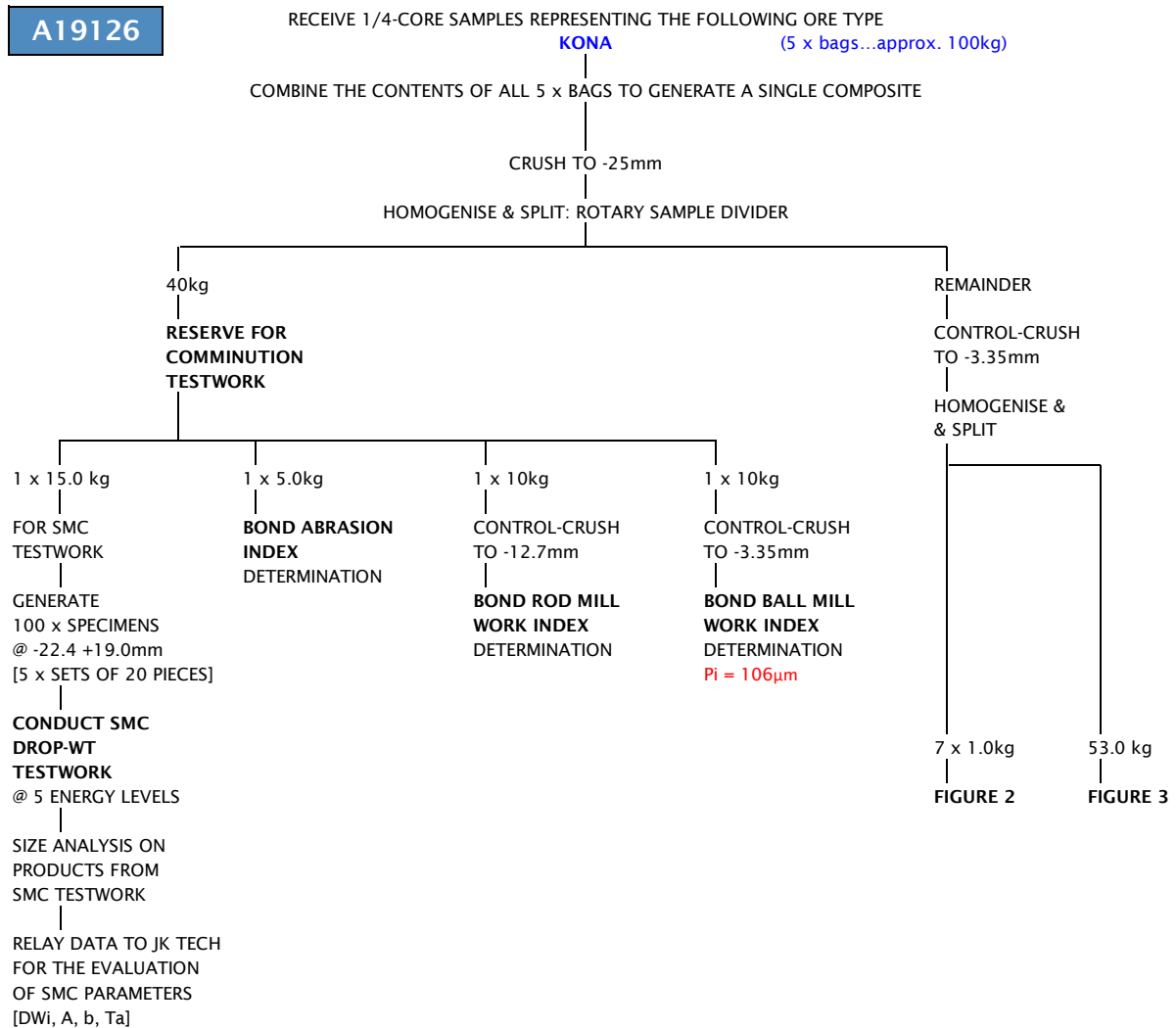




FIGURE 2: EXTRACTIVE TESTWORK FLOWSHEET

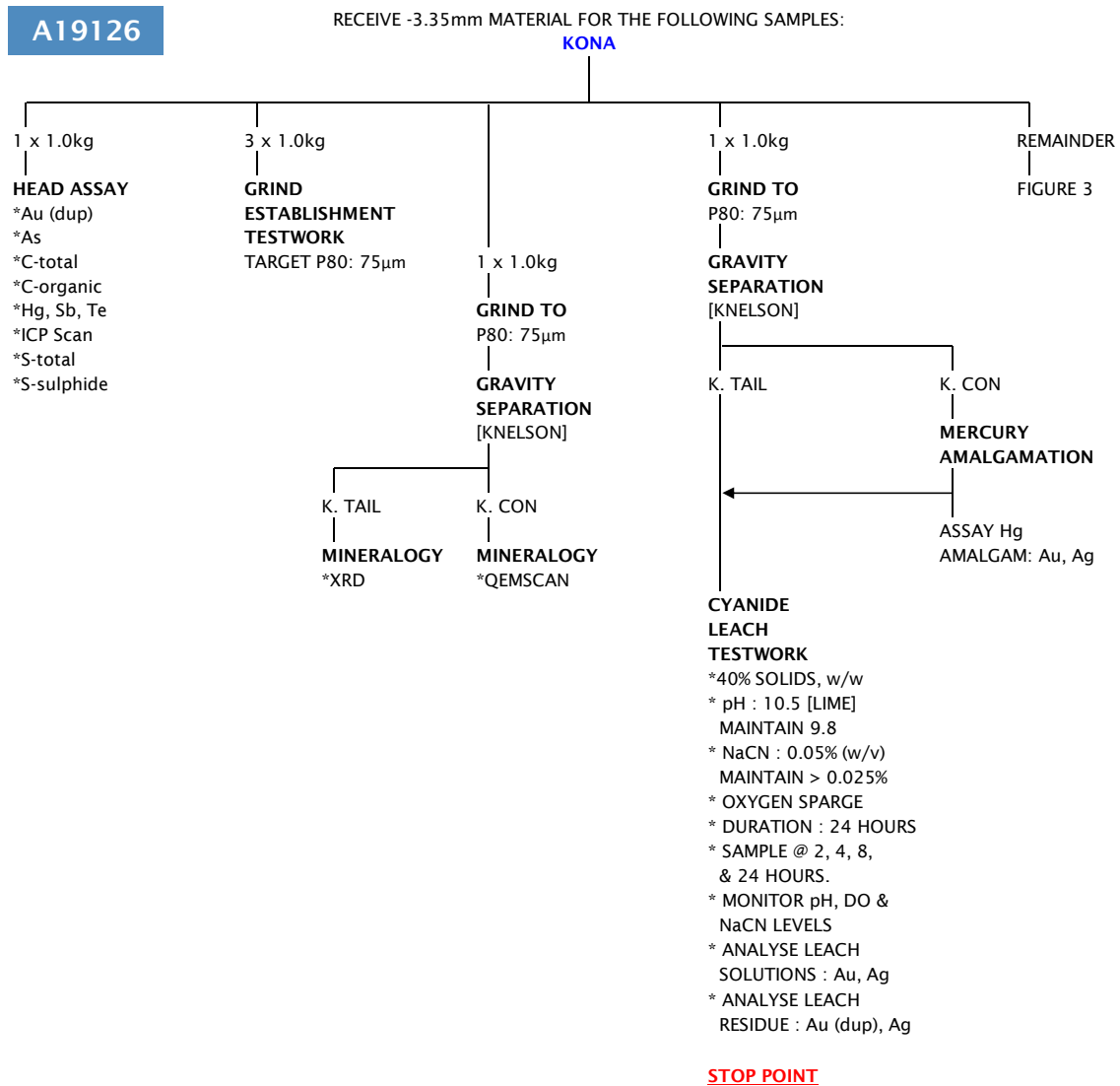
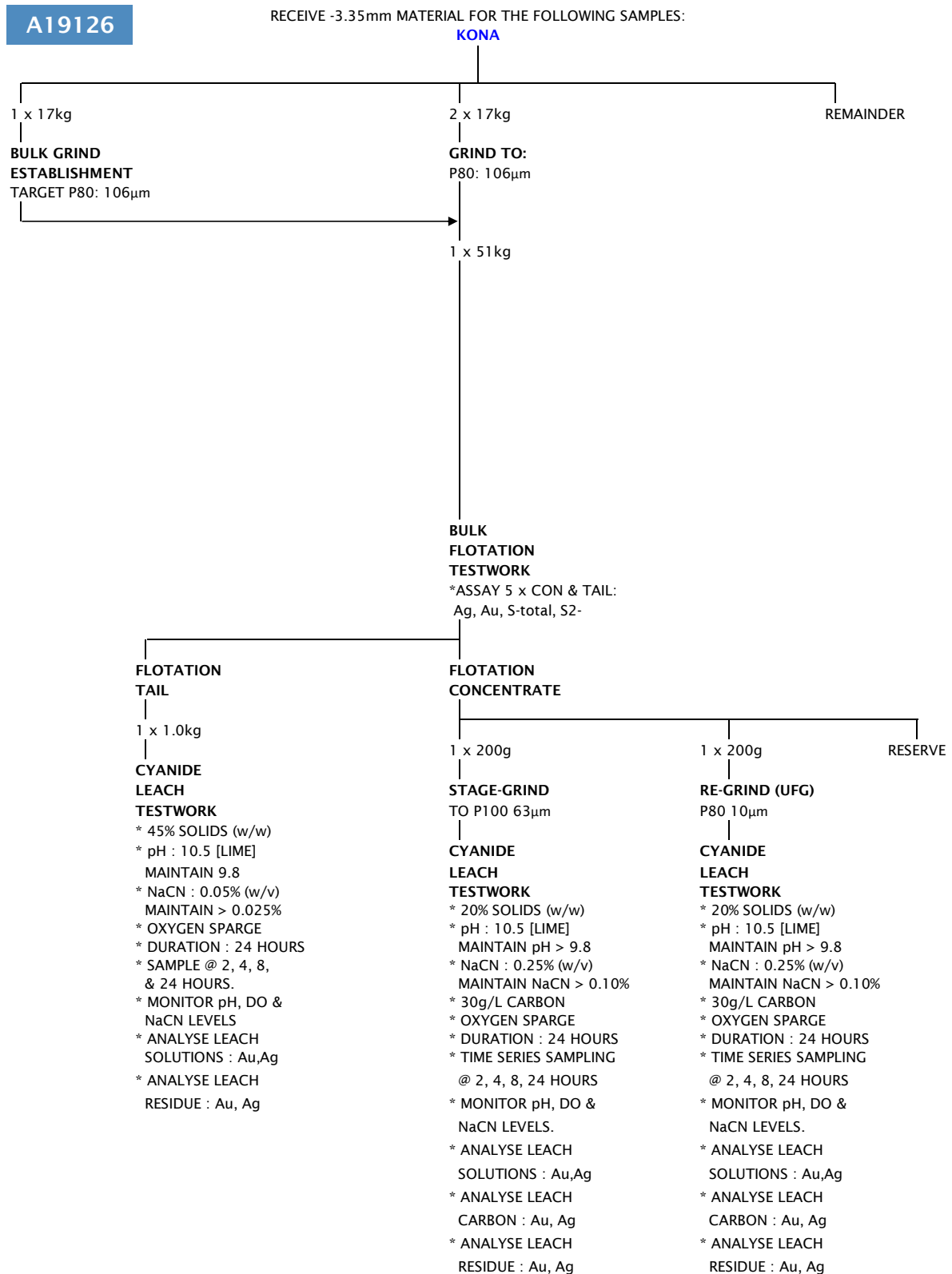




FIGURE 3: EXTRACTIVE TESTWORK FLOWSHEET



# APPENDICES

# **APPENDIX I**

**SMC Testwork**

**JKTech Report**

# **SMC TEST® REPORT**

**Centamin Cote D'Ivoire**

**Tested by: ALS Metallurgy WA**

Perth, Western Australia

Prepared by: Matt Weier

JKTech Job No: 18001/P91  
Testing Date: August 2018

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# 1 EXECUTIVE SUMMARY

## 1.1 SMC Results Summary

**Table 1 - SMC Test® Results**

| Sample Designation | DWi (kWh/m³) | DWi (%) | Mi Parameters (kWh/t) |      |      | SG   |
|--------------------|--------------|---------|-----------------------|------|------|------|
|                    |              |         | Mia                   | Mih  | Mic  |      |
| Kona               | 11.1         | 93.0    | 28.7                  | 23.5 | 12.1 | 2.74 |

**Table 2 – Parameters derived from the SMC Test® Results**

| Sample Designation | A    | b    | A*b  | t <sub>a</sub> | SCSE (kWh/t) |
|--------------------|------|------|------|----------------|--------------|
| Kona               | 78.4 | 0.32 | 25.1 | 0.24           | 12.53        |

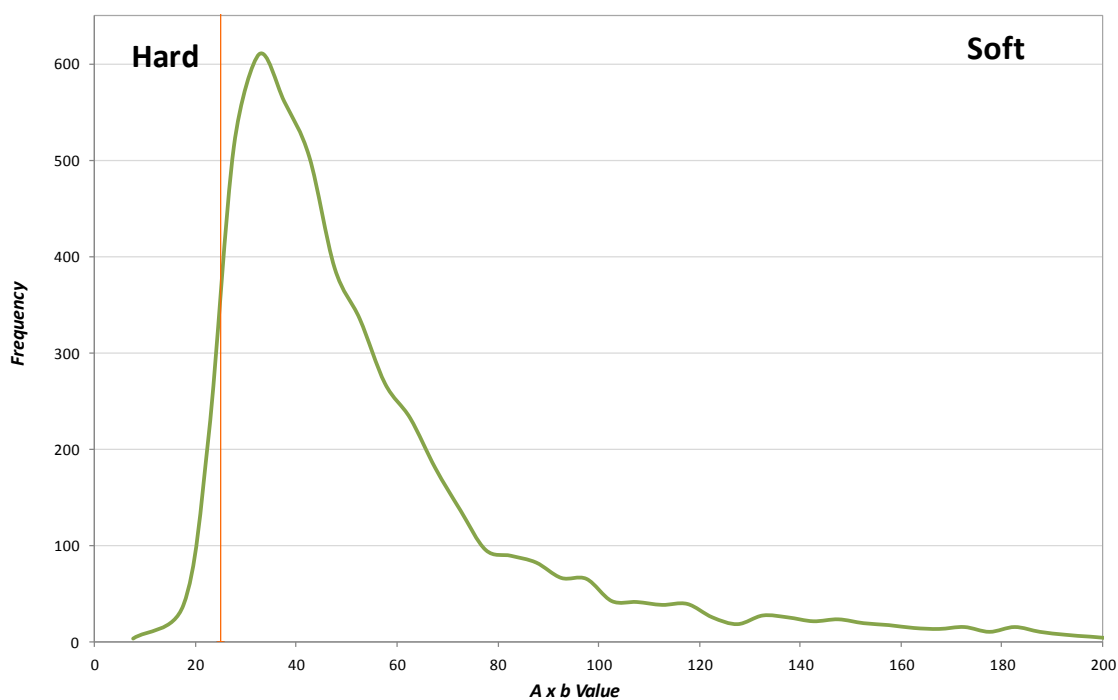


Figure 1 - Frequency Distribution of  $A*b$  in the JKTech Database

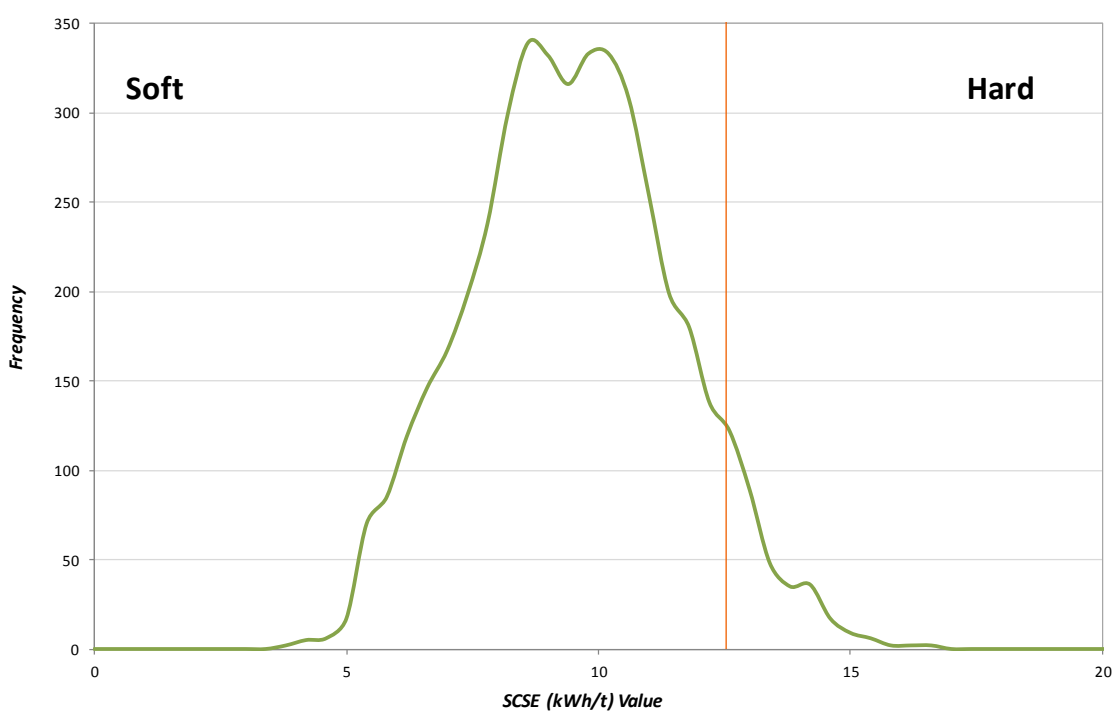


Figure 2 - Frequency Distribution of SCSE in the JKTech Database

## **2 INTRODUCTION**

SMC data for one sample from Kona Project were received from ALS Metallurgy WA on September 07, 2018, by JKTech for SMC test analysis. The sample was identified as Kona. The data were analysed to determine the JKSimMet and SMC Test comminution parameters. SMC Test results were forwarded to SMC Testing Pty Ltd for the analysis of the SMC Test data. Analysis and reporting were completed on September 10, 2018.

### 3 THE SMC TEST®

#### 3.1 Introduction

The standard JK Drop-Weight test provides ore specific parameters for use in the JKSimMet Mineral Processing Simulator software. In JKSimMet, these parameters are combined with equipment details and operating conditions to analyse and/or predict SAG/autogenous mill performance. The same test procedure also provides ore type characterisation for the JKSimMet crusher model.

The SMC Test was developed by Steve Morrell of SMC Testing Pty Ltd (SMCT). The test provides a cost effective means of obtaining these parameters, in addition to a range of other power-based comminution parameters, from drill core or in situations where limited quantities of material are available. The ore specific parameters have been calculated from the test results and are supplied to Centamin Cote D'Ivoire in this report as part of the standard procedure

#### 3.2 General Description and Test Background

The SMC Test® was originally designed for the breakage characterisation of drill core and it generates a relationship between input energy (kWh/t) and the percent of broken product passing a specified sieve size. The results are used to determine the so-called JK Drop-Weight index (DWi), which is a measure of the strength of the rock when broken under impact conditions and has the units kWh/m<sup>3</sup>. The DWi is directly related to the JK rock breakage parameters A and b and hence can be used to estimate the values of these parameters as well as being correlated with the JK abrasion parameter -  $t_a$ . For crusher modelling the  $t_{10}-E_{cs}$  matrix can also be derived. This is done by using the size-by-size  $A*b$  values that are used in the SMC Test® data analysis (see below) to estimate the  $t_{10}-E_{cs}$  values for each of the relevant size fractions in the crusher model matrix.

For power-based calculations, (see APPENDIX B), the SMC Test® provides the comminution parameters  $M_{ia}$ ,  $M_{ih}$  and  $M_{ic}$ .  $M_{ia}$  is the work index for the grinding of coarser particles ( $> 750 \mu m$ ) in tumbling mills such as autogenous (AG), semi-autogenous (SAG), rod and ball mills.  $M_{ih}$  is the work index for the grinding in High Pressure Grinding Rolls (HPGR) and  $M_{ic}$  for size reduction in conventional crushers.

The SMC Test® is a precision test, which uses particles that are either cut from drill core using a diamond saw to achieve close size replication or else selected from crushed material so that particle mass variation is controlled within a prescribed range. The particles are then broken at a number of prescribed impact energies. The high degree of control imposed on both the size of particles and the breakage energies used, means that the test is largely free of the repeatability problems associated with tumbling-mill based tests. Such tests usually suffer from variations in feed size (which is not closely controlled) and energy input, often assumed to be constant when in reality it can be highly variable (Levin, 1989).

The relationship between the DWi and the JK rock breakage parameters makes use of the size-by-size nature of rock strength that is often apparent from the results of full JK Drop-Weight tests. The effect is illustrated in Figure 3, which plots the normalized values of  $A*b$  against particle size. This figure also shows how the gradient of these plots varies across the full range of rock types tested. In the case of a conventional JK Drop-Weight test, these values are effectively averaged and a

mean value of A and b is reported. The SMC Test® uses a single size and makes use of relationships such as that shown in Figure 3 to predict the A and b of the particle size that has the same value as the mean for a JK full Drop-Weight test.

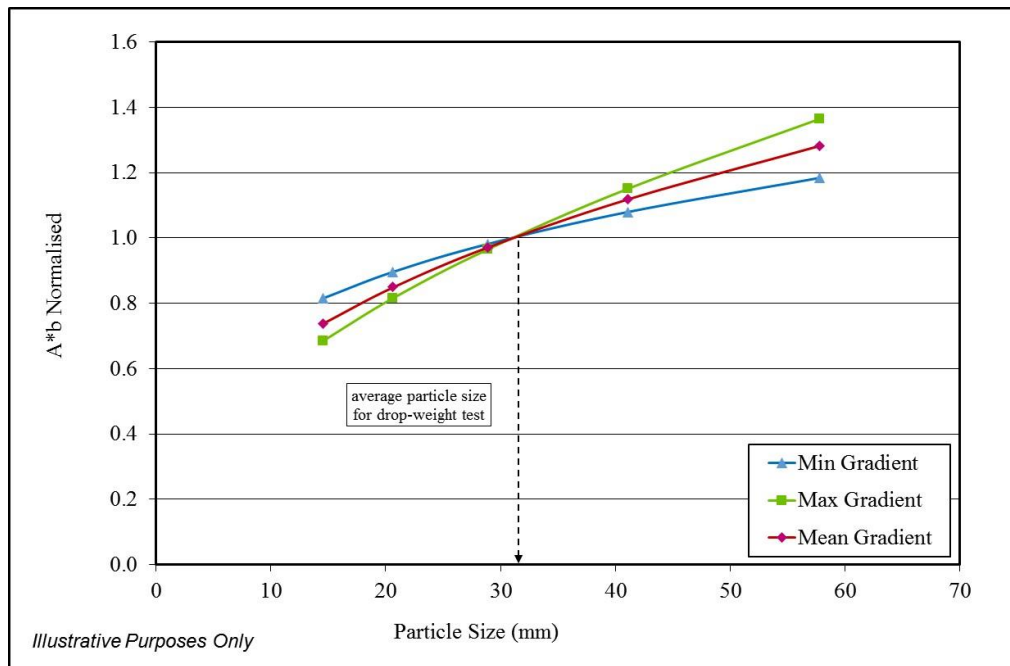


**Figure 3 – Relationship between Particle Size and  $A*b$**

### 3.3 The Test Procedure

In the SMC Test®, five sets of 20 particles are broken, each set at a different specific energy level, using a JK Drop-Weight tester. The breakage products are screened at a sieve size selected to provide a direct measurement of the  $t_{10}$  value.

The test calls for a prescribed target average volume for the particles, with the target being chosen to be equivalent to the mean volume of particles in one of the standard JK Drop-Weight test size fractions.

The rest height of the drop-head (gap) is recorded after breakage of each particle to allow for a correction to the drop energy. After breaking all 20 particles in a set, the broken product is sieved at an aperture size, one tenth of the original particle size. Thus, the percent passing mass gives a direct reading of the  $t_{10}$  value for breakage at that energy level.

There are two alternative methods of preparing the particle sets for breakage testing: the particle selection method and the cut core method. The particle selection method is the most commonly used as it is generally less time consuming. The cut core method requires less material, so tends to be used as a fallback method, only when necessary to cope with restricted sample availability.

#### 3.3.1 Particle Selection Method

For the particle selection method, the test is carried out on material in one of three alternative size fractions: -31.5+26.5, -22.4+19 or -16+13.2 mm. The largest size fraction is preferred but requires more material.



In the particle selection method, particles are chosen so that their individual masses lie within  $\pm 30\%$  of the target mass and the mean mass for each set of 20 lies within  $\pm 10\%$  of the target mass. A typical set of particles is shown in Figure 4.



**Figure 4 – A Typical Set of Particles for Breakage (Particle Selection Method)**

Before commencing breakage tests on the particles, the ore density is determined by first weighing a representative sample of particles in air and then in water.

### **3.3.2 Cut Core Method**

The cut core method uses cut pieces of quartered (slivered) drill core. Whole core or half core can be used, but when received in this form it needs to be first quartered as a preliminary step in the procedure. Once quartered, any broken or tapered ends of the quartered lengths are cut, to square them off. Before the lengths of quartered core are cut to produce the pieces for testing, each one is weighed in air and then in water, to obtain a density measurement and a measure of its mass per unit length.

The size fraction targeted when the cut core method is used depends on the original core diameter. The target size fraction is selected to ensure that pieces of the correct volume will have “chunky” rather than “slabby” proportions.

Having measured the density of the core, the target volume can be translated into a target mass and with the average mass per unit length also known, an average cutting interval can be determined for the core.

Sufficient pieces of the quartered core are cut to generate 100 particles. These are then divided into the five sets of 20 and broken in the JK Drop-Weight tester at the five different energy levels. Within each set, the three possible orientations of the particles are equally represented (as far as possible, given that there are 20 particles). The orientations prescribed for testing are shown in Figure 5.



**Figure 5 – Orientations of Pieces for Breakage (Cut Core Method)**

The cut core method cannot be used for cores with diameters exceeding 70 mm, where the particle masses would be too large to achieve the highest prescribed energy level.

### 3.4 SMC Test® Results

The SMC Test® results for the Kona sample from Kona Project are given in Table 3. This table includes the average rock density and the DWi (Drop-Weight index) that is the direct result of the test procedure. The values determined for the  $M_{ia}$ ,  $M_{ih}$  and  $M_{ic}$  parameters developed by SMCT are also presented in this table. The  $M_{ia}$  parameter represents the coarse particle component (down to 750  $\mu\text{m}$ ), of the overall comminution energy and can be used together with the  $M_{ib}$  (fine particle component) to estimate the total energy requirements of a conventional comminution circuit. The use of these parameters is explained further in APPENDIX B. The derived estimates of parameters  $A$ ,  $b$  and  $t_a$  that are required for JKSimMet comminution modelling are given in Table 4.

Also included in the derived results are the SAG Circuit Specific Energy (SCSE) values. The SCSE value is derived from simulations of a “standard” circuit comprising a SAG mill in closed circuit with a pebble crusher. This allows  $A*b$  values to be described in a more meaningful form. SCSE is described in detail in APPENDIX A.

In the case of the Kona sample from Kona Project, the  $A$  and  $b$  estimates are based on a correlation using the database of all results so far accumulated by SMCT.

**Table 3 - SMC Test® Results**

| Sample Designation | $DW_i$ (kWh/m <sup>3</sup> ) | $DW_i$ (%) | $M_i$ Parameters (kWh/t) |          |          | SG   |
|--------------------|------------------------------|------------|--------------------------|----------|----------|------|
|                    |                              |            | $M_{ia}$                 | $M_{ih}$ | $M_{ic}$ |      |
| Kona               | 11.08                        | 93         | 28.7                     | 23.5     | 12.1     | 2.74 |

For more details on how the  $M_{ia}$ ,  $M_{ih}$  and  $M_{ic}$  parameters are derived and used, see APPENDIX B or go to the SMC Testing website at <http://www.smctesting.com/about> and click on the link to download Steve Morrell's paper on this subject.

**Table 4 – Parameters derived from the SMC Test® Results**

| Sample Designation | $A$  | $b$  | $t_a$ | SCSE (kWh/t) |
|--------------------|------|------|-------|--------------|
| Kona               | 78.4 | 0.32 | 0.24  | 12.53        |

The influence of particle size on the specific comminution energy needed to achieve a particular  $t_{10}$  value can also be inferred from the SMC Test® results. The energy requirements for five particle sizes, each crushed to three different  $t_{10}$  values, are presented in Table 5.

**Table 5 – Crusher Simulation Model Specific Energy Matrix**

| Sample Designation | Particle Size (mm)                                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------|-----------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                    | 14.5                                                            |      |      | 20.6 |      |      | 28.9 |      |      | 41.1 |      |      | 57.8 |      |      |
|                    | t <sub>10</sub> Values (%) for Given Specific Energies in kWh/t |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                    | 10                                                              | 20   | 30   | 10   | 20   | 30   | 10   | 20   | 30   | 10   | 20   | 30   | 10   | 20   | 30   |
| Kona               | 0.55                                                            | 1.18 | 1.88 | 0.48 | 1.02 | 1.63 | 0.42 | 0.89 | 1.43 | 0.36 | 0.77 | 1.23 | 0.32 | 0.68 | 1.08 |

The SMC Test® database now contains over 40,000 test results on samples representing more than 1300 different deposits worldwide.

Around 99% of the  $DW_i$  values lie in the range 0.5 to 14.0 kWh/m<sup>3</sup>, with soft ores being at the low end of this range and hard ores at the high end.

A cumulative graph of  $DW_i$  values from the SMC Test® Database is shown in Figure 6 below. This graph can be used to compare the  $DW_i$  of the material from Kona Project, with the entire population of ores in the SMCT database. The figures on the

y-axis of the graph represent the percentages of all ores tested that are softer than the x-axis (DWi) value selected.

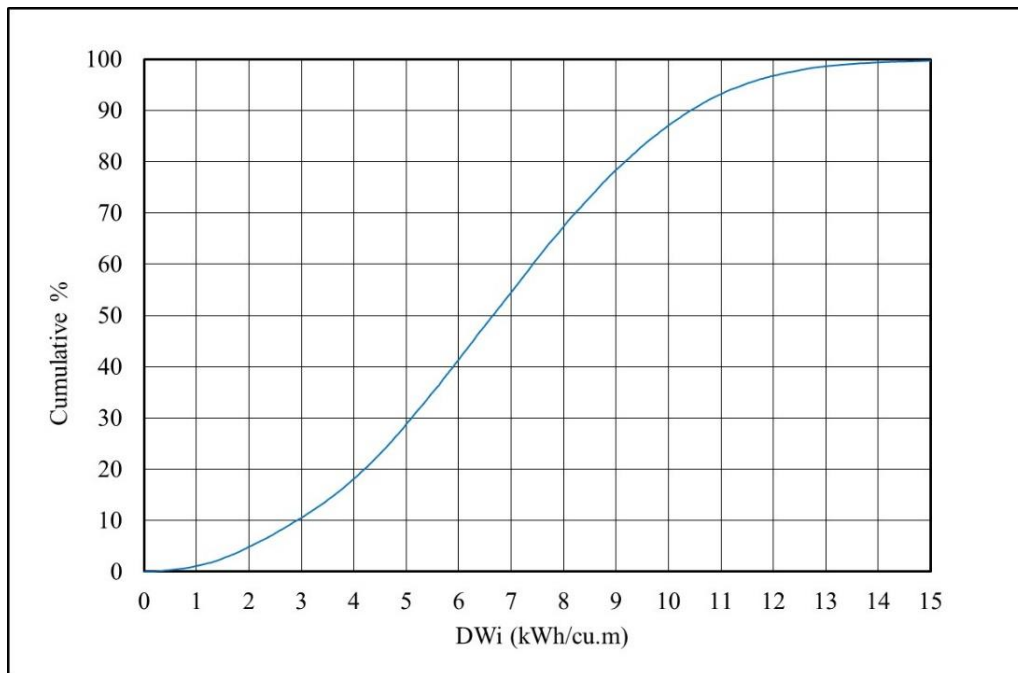


**Figure 6 – Cumulative Distribution of DWi Values in SMCT Database**

A further cumulative distribution graph is provided in Figure 7 to allow a comparison of the  $M_{ia}$ ,  $M_{ih}$  and  $M_{ic}$  values obtained for the Kona Project material, with the entire population of values for these parameters contained in the SMCT database.

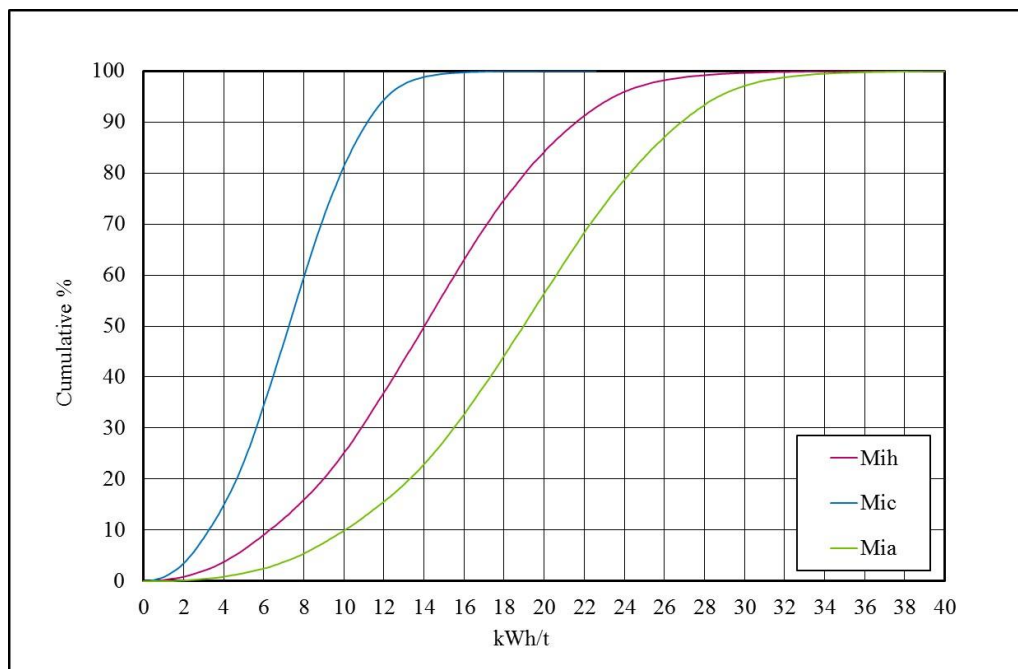


**Figure 7 - Cumulative Distribution of  $M_{ia}$ ,  $M_{ih}$  and  $M_{ic}$  Values in the SMCT Database**

The value of  $A*b$ , which is also a measure of resistance to impact breakage, is calculated and presented in Table 6, which also gives a comparison to the population

of samples in the JKTech database, with the percent of samples present in the JKTech database that are softer. Note that in contrast to the DWi, a high value of  $A*b$  means that an ore is soft whilst a low value means that it is hard.

**Table 6 – Derived Values for  $A*b$ ,  $t_a$  and SCSE**

| Sample Designation | $A*b$ |      | $t_a$ |      | SCSE (kWh/t) |      |
|--------------------|-------|------|-------|------|--------------|------|
|                    | Value | %    | Value | %    | Value        | %    |
| Kona               | 25.1  | 94.4 | 0.24  | 88.3 | 12.53        | 92.8 |

In Figure 8 and Figure 9 below, histogram style frequency distributions for the  $A*b$  values and for the SCSE values in the JKTech DW database are shown respectively.

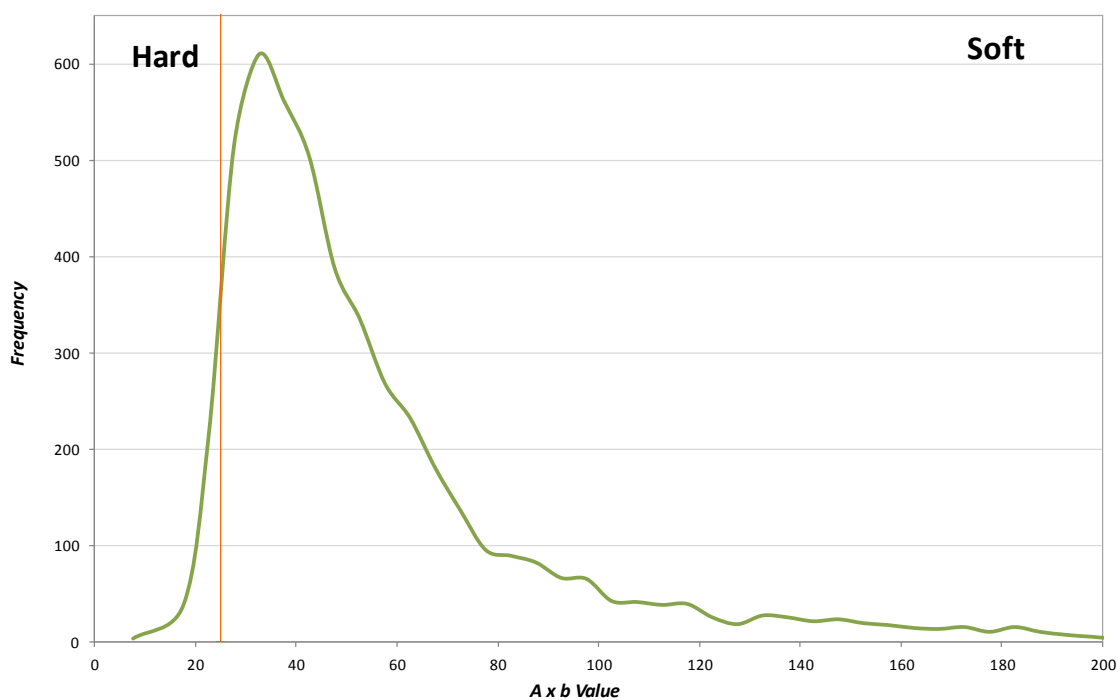


Figure 8 - Frequency Distribution of  $A*b$  in the JKTech Database

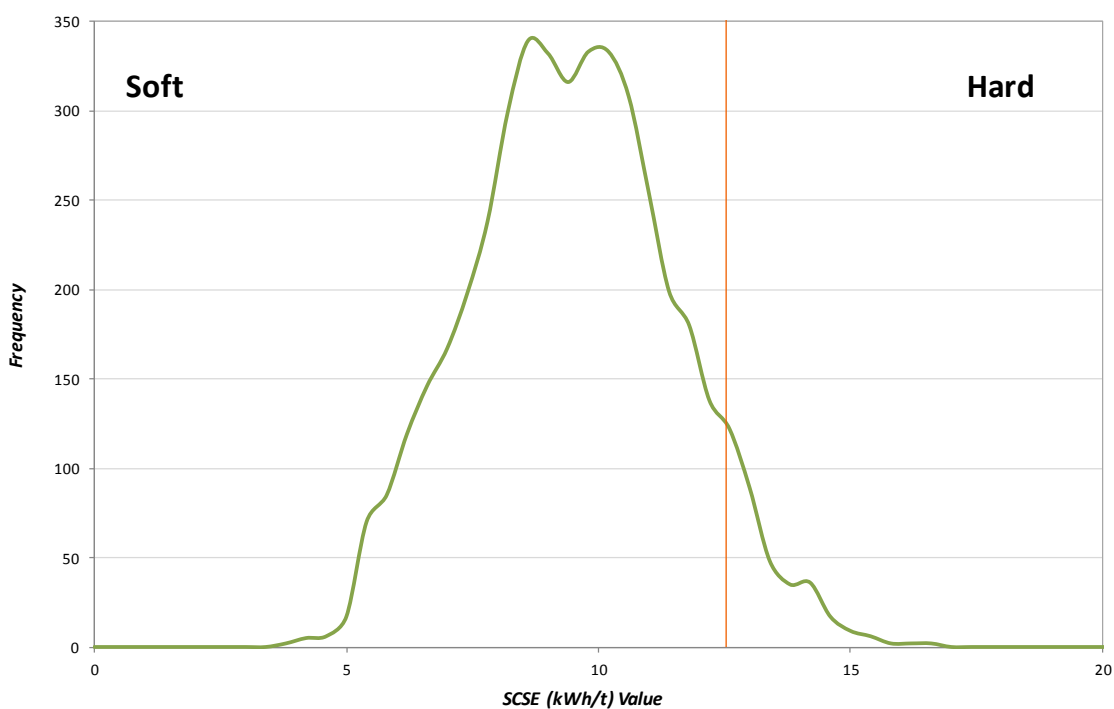


Figure 9 - Frequency Distribution of SCSE in the JKTech Database



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## 5 DISCLAIMER

### **Warranty by JKTech**

- a. JKTech will use its best endeavours to ensure that all documentation, data, recommendations, information, advice and reports ("Material"), provided by JKTech to the client ("Recipient"), is accurate at the time of providing it.

### **Extent of Warranty by JKTech**

- b. JKTech does not make any representations as to any matter, fact or thing that is not expressly provided for in the Material.
- c. JKTech does not give any warranty, nor accept any liability in connection with the Material, except to the extent, if any, required by law or specifically provided in writing by JKTech to the Recipient.
- d. JKTech will not be liable to the Recipient for any claims relating to Material in any language other than in English.
- e. If, apart from this Disclaimer, any warranty would be implied whether by law, custom or otherwise, that warranty is to the full extent permitted by law excluded.
- f. The Recipient will promptly advise JKTech in writing of any losses, damages, compensation, liabilities, amounts, monetary and non-monetary costs and expenses ("Losses"), incurred or likely to be incurred by the Recipient or JKTech in connection with the Material, and any claims, actions, suits, demands or proceedings ("Liabilities") which the Recipient or JKTech may become liable in connection with the Material.

### **Indemnity and Release by the Recipient**

- g. The Recipient indemnifies, releases, discharges and saves harmless, JKTech against any and all Losses and Liabilities, suffered or incurred by JKTech, whether under the law of contract, tort, statutory duty or otherwise as a result of:
- i) the Recipient relying on the Material;
  - ii) any liability for infringement of a third party's trade secrets, proprietary or confidential information, patents, registered designs, trademarks or names, copyright or other protected rights; and
  - iii) any act or omission of JKTech, any employee, agent or permitted sub-contractor of JKTech in connection with the Material.

### **Limit of Liability**

- h. JKTech's liability to the Recipient in connection with the Material, whether under the law of contract, tort, statutory duty or otherwise, will be limited to the lesser of:
- i) the total cost of the job; or
  - ii) JKTech providing amended Material rectifying the defect.

### **Exclusion of Consequential Loss**

- i. JKTech is not liable to the Recipient for any consequential, special or indirect loss (loss of revenue, loss of profits, business interruption, loss of opportunity and legal costs and disbursements), in connection with the Material whether under the law of contract, tort, statutory duty or otherwise.

### **Defects**

- j. The Recipient must notify JKTech within seven days of becoming aware of a defect in the Material. To the extent that the defect is caused by JKTech's negligence or breach of contract, JKTech may, at its discretion, rectify the defect.

### **Duration of Liability**

- k. After the expiration of one year from the date of first providing the Material to the client, JKTech will be discharged from all liability in connection with the Material. The Recipient (and persons claiming through or under the Recipient) will not be entitled to commence any action, claim or proceeding of any kind whatsoever after that date, against JKTech (or any employee of JKTech) in connection with the Material.

### **Contribution**

- l. JKTech's liability to the Recipient for any loss or damage, whether under the law of contract, tort, statutory duty or otherwise will be reduced to the extent that an act or omission of the Recipient, its employees or agents, or a third party to whom the Recipient has disclosed the Material, contributed to the loss or damage.

### **Severability**

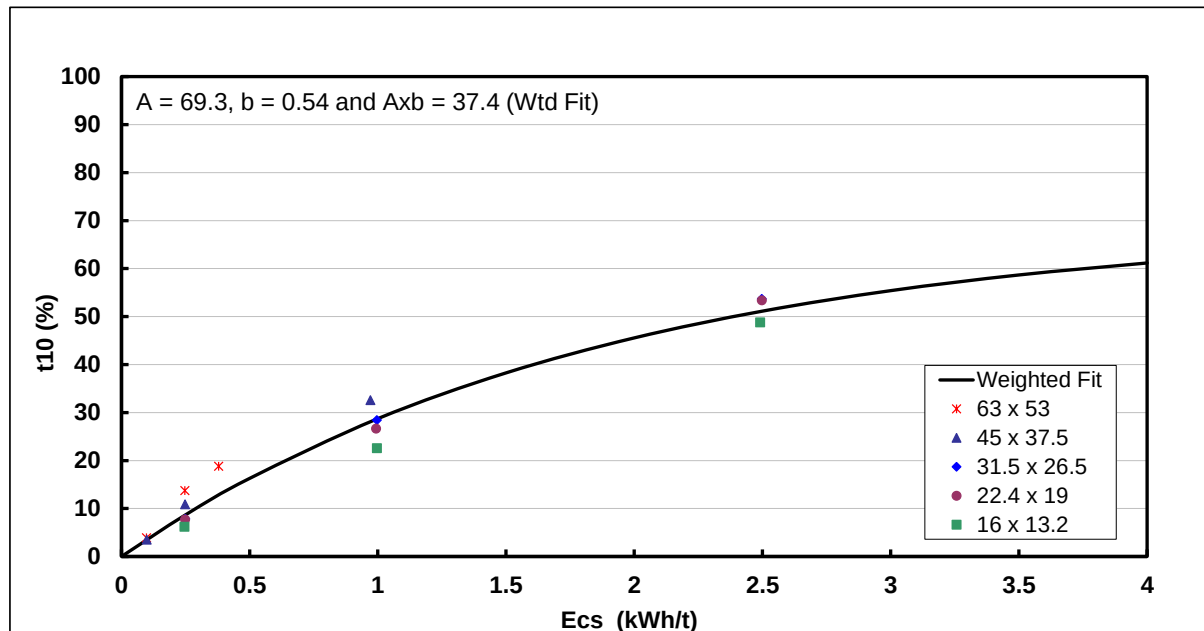
- m. If any provision of this Disclaimer is illegal, void, invalid or unenforceable for any reason, all other provisions which are self-sustaining and capable of separate enforcement will, to the maximum extent permitted by law, be and continue to be valid and enforceable.



## **APPENDICES**

## APPENDIX A. SAG CIRCUIT SPECIFIC ENERGY (SCSE)

For a little over 20 years, the results of JK Drop Weight tests and SMC tests have been reported in part as A, b and  $t_a$  parameters. A and b are parameters which describe the response of the ore under test to increasing levels of input energy in single impact breakage. A typical  $t_{10}$  v  $E_{cs}$  curve resulting from a Drop Weight test is shown in App Figure 1.



App Figure 1 – Typical  $t_{10}$  v  $E_{cs}$  curve

The curve shown in App Figure 1 is represented by an equation which is given in Equation 1.

$$t_{10} = A(1 - e^{-b.E_{cs}}) \quad \text{Equation 1}$$

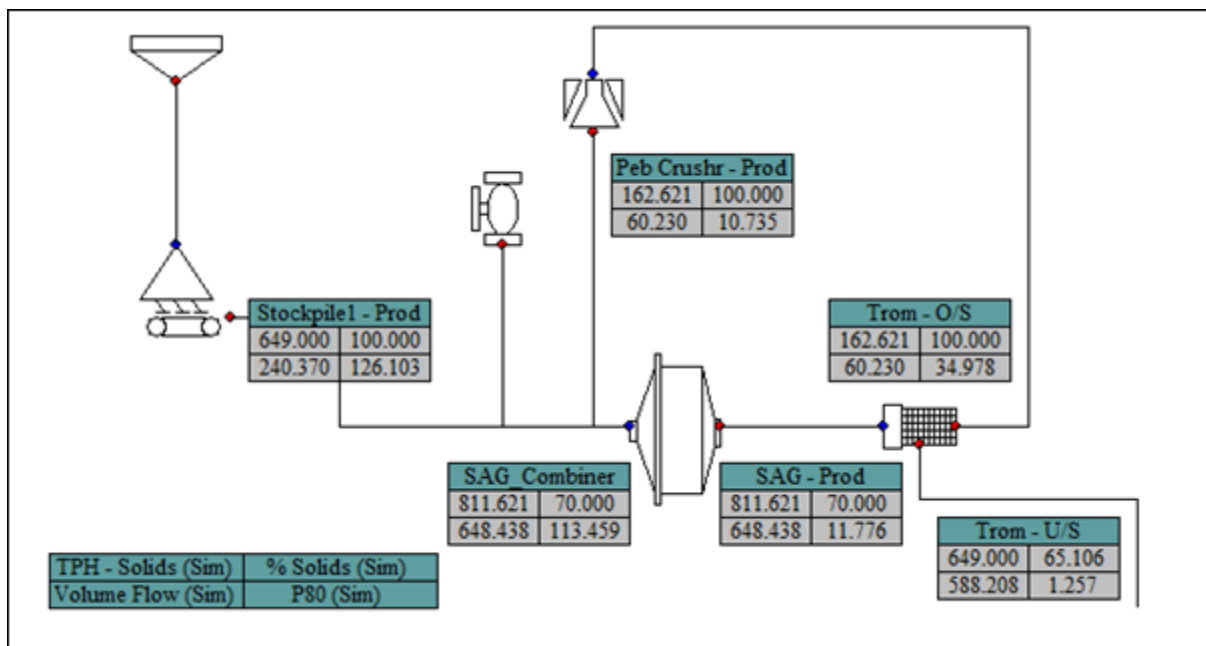
The parameters A and b are generated by least squares fitting Equation 1 to the JK Drop Weight test data. The parameter  $t_a$  is generated from a tumbling test.

Both A and b vary with ore type but having two parameters describing a single ore property makes comparison difficult. For that reason the product of A and b, referred to as  $A*b$ , which is related to the slope of the  $t_{10} - E_{cs}$  curve at the origin, has been universally accepted as the parameter which represents an ore's resistance to impact breakage.

The parameters A, b and  $t_a$  have no physical meaning in their own right. They are ore hardness parameters used by the AG/SAG mill model in JKSimMet which permits prediction of the product size distribution and the power draw of the AG/SAG mill for a given feed size distribution and feed rate. In a design situation, the dimensions of the mill are adjusted until the load in the mill reaches 25 % by volume when fed at the required feed rate. The model predicts the power draw under these conditions and from the power draw and throughput the specific energy is determined. The specific energy is mainly a function of the ore hardness (A and b values), the feed size and the dimensions of the mill (specifically the aspect ratio) as well as to a lesser extent

the operating conditions such as ball load, mill speed, grate/pebble port size and pebble crusher activity.

There are two drawbacks to the approach of using  $A*b$  as the single parameter to describe the impact resistance of a particular ore. The first is that  $A*b$  is inversely related to impact resistance, which adds unnecessary complication. The second is that  $A*b$  is related to impact resistance in a non-linear manner. As mentioned earlier this relationship and how it affects comminution machine performance can only be predicted via simulation modelling. Hence to give more meaning to the  $A$  and  $b$  values and to overcome these shortcomings, JKTech Pty Ltd and SMC Testing Pty Ltd have developed a “standard” simulation methodology to predict the specific energy required for a particular tested ore when treated in a “Standard” circuit comprising a SAG mill in closed circuit with a pebble crusher. The flowsheet is shown in App Figure 2 .



**App Figure 2 – Flowsheet used for “Standard” AG/SAG circuit simulations**

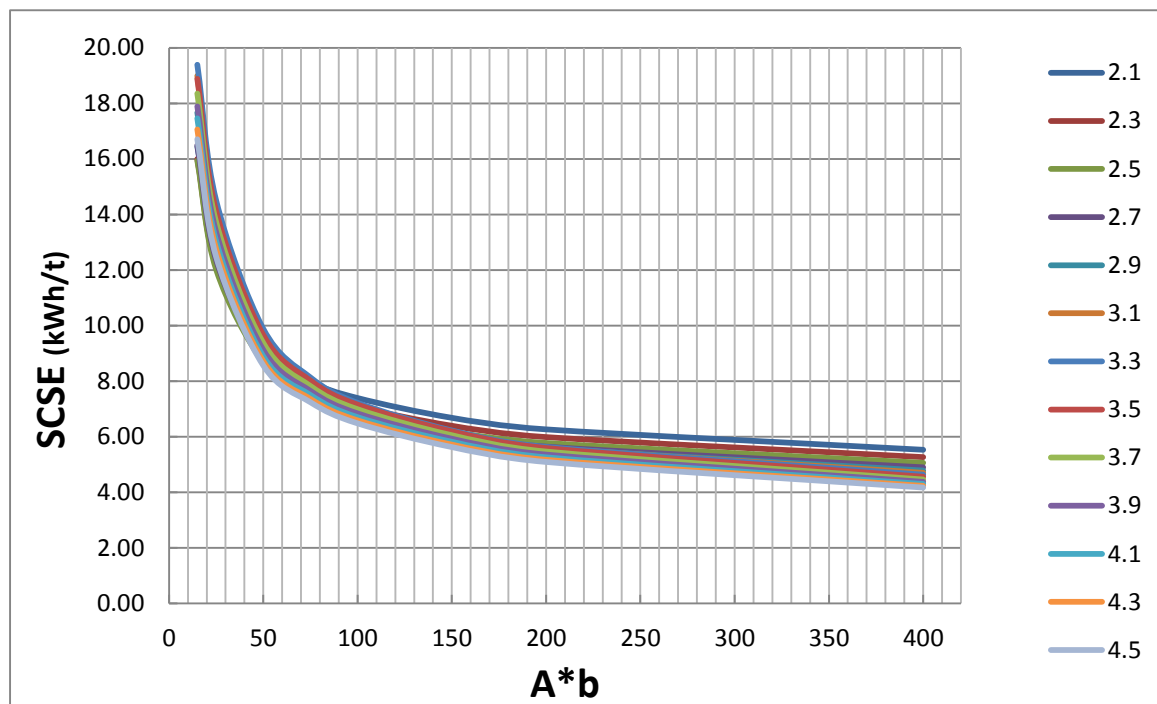
The specifications for the “standard” circuit are:

- SAG Mill
  - inside shell diameter to length ratio of 2:1 with 15 ° cone angles
  - ball charge of 15 %, 125 mm in diameter
  - total charge of 25 %
  - grate open area of 7 %
  - apertures in the grate are 100 % pebble ports with a nominal aperture of 56 mm
- Trommel
  - Cut Size of 12 mm
- Pebble Crusher
  - Closed Side Setting of 10 mm
- Feed Size Distribution
  - $F_{80}$  from the  $t_a$  relationship given in Equation 2

The feed size distribution is taken from the JKTech library of typical feed size distributions and is adjusted to meet the ore specific 80 % passing size predicted using the Morrell and Morrison (1996)  $F_{80} - t_a$  relationship for primary crushers with a closed side setting of 150 mm given in Equation 2.

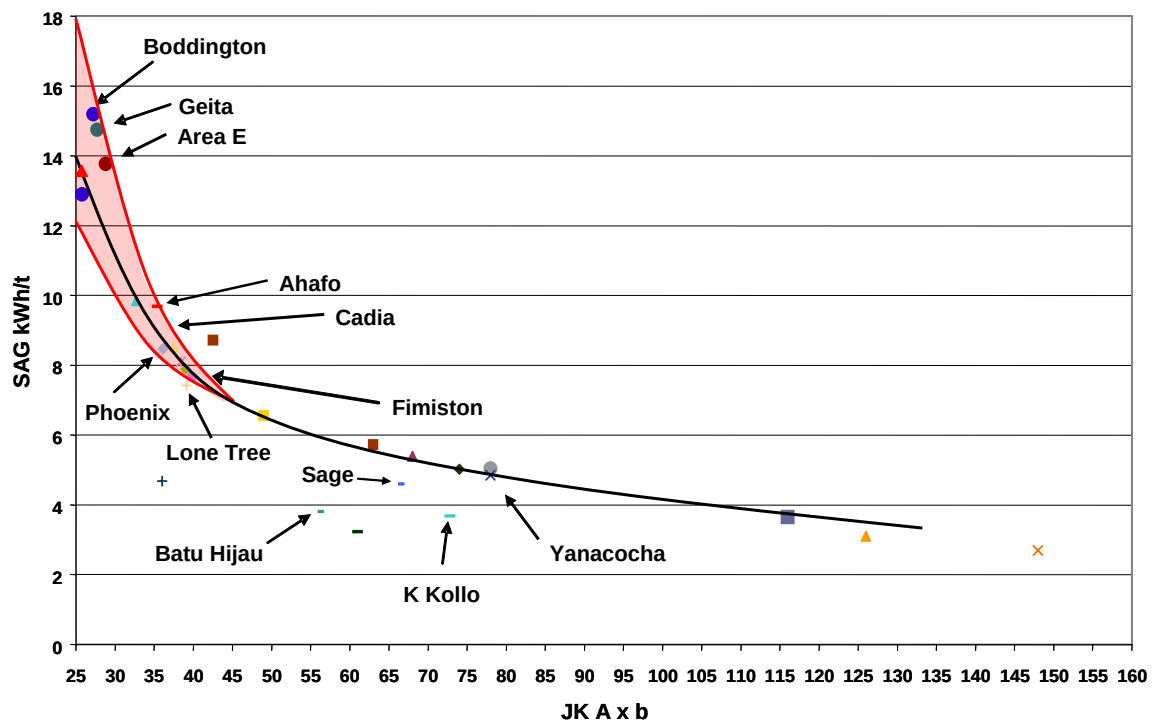
$$F_{80} = 71.3 - 28.4 * \ln(t_a) \quad \text{Equation 2}$$

Simulations were conducted with  $A*b$  values ranging from 15 to 400,  $t_a$  values ranging from 0.145 to 3.866 and solids SG values ranging from 2.1 to 4.5. For each simulation, the feed rate was adjusted until the total load volume in the SAG mill was 25 %. The predicted mill power draw and crusher power draw were combined and divided by the feed rate to provide the specific energy consumption. The results are shown in App Figure 3.



**App Figure 3 – The relationship between  $A*b$  and specific energy at varying SG for the “Standard” circuit.**

It is of note that the family of curves representing the relationship between Specific energy and  $A*b$  for the “standard” circuit is very similar to the specific energy –  $A*b$  relationship for operating mills published in Veillette and Parker, 2005 and reproduced here in App Figure 4.



**App Figure 4 – A\*b vs SAG kWh/t for operating AG/SAG mills (after Veillette and Parker, 2005).**

Of course, the SCSE quoted value will not necessarily match the specific energy required for an existing or a planned AG/SAG mill due to differences in the many operating and design variables such as feed size distribution, mill dimensions, ball load and size and grate, trommel and pebble crusher configuration. The SCSE is an effective tool to compare in a relative manner the expected behaviour of different ores in AG/SAG milling in exactly the same way as the Bond laboratory ball mill work index can be used to compare the relative grindability of different ores in ball milling (Bond, 1961 and Rowland and Kjos, 1980). However the originally reported A and b parameters which match the SCSE will be still be required in JKSimMet simulations of a proposed circuit to determine the AG/SAG mill specific energy required for that particular grinding task. Guidelines for the use of JKSimMet for such simulations were given in Bailey *et al*, 2009.

## APPENDIX B. BACKGROUND AND USE OF THE SMC TEST®

### B 1 Introduction

The SMC Test® was developed to provide a range of useful comminution parameters through highly controlled breakage of rock samples. Drill core, even quartered small diameter core is suitable. Only relatively small quantities of sample are required and can be re-used to conduct Bond ball work index tests.

The results from conducting the SMC Test® are used to determine the so-called drop-weight index ( $DW_i$ ), which is a measure of the strength of the rock, as well as the comminution indices  $M_{ia}$ ,  $M_{ih}$  and  $M_{ic}$ . The SMC Test® also estimates the JK rock breakage parameters  $A$ ,  $b$  and  $t_a$  as well as the JK crusher model's  $t_{10}$ - $E_{cs}$  matrix, all of which are generated as part of the standard report output from the test.

In conjunction with the Bond ball mill work index the  $DW_i$  and the  $M_i$  suite of parameters can be used to accurately predict the overall specific energy requirements of circuits containing:

- AG and SAG mills.
- Ball mills
- Rod mills
- Crushers
- High Pressure Grinding Rolls (HPGR)

The JK rock breakage parameters can be used to simulate crushing and grinding circuits using JKTech's simulator – JKSimMet.

### B 2 Simulation Modelling and Impact Comminution Theory

When a rock fragment is broken, the degree of breakage can be characterised by the " $t_{10}$ " parameter. The  $t_{10}$  value is the percentage of the original rock mass that passes a screen aperture one tenth of the original rock fragment size. This parameter allows the degree of breakage to be compared across different starting sizes.

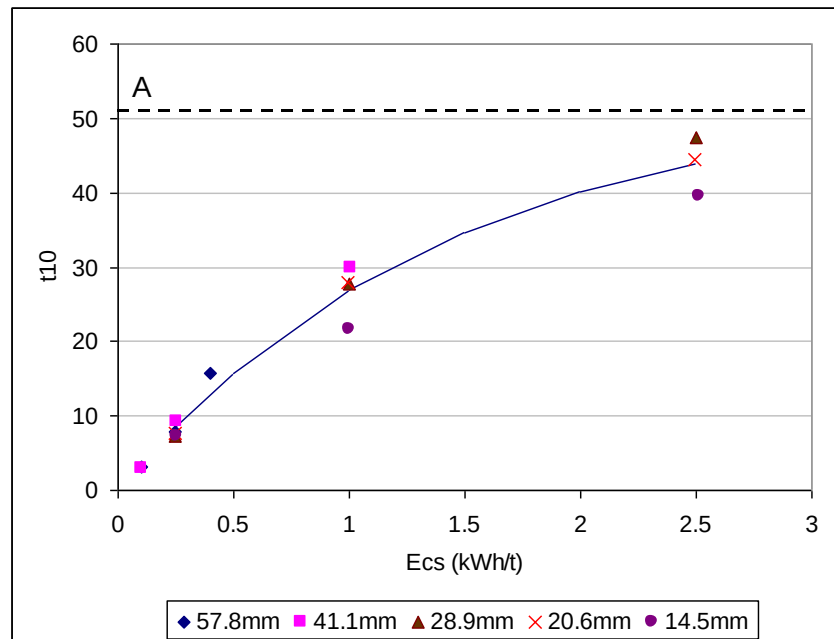
The specific comminution energy ( $E_{cs}$ ) has the units kWh/t and is the energy applied during impact breakage. As the impact energy is varied, so does the  $t_{10}$  value vary in response. Higher impact energies produce higher values of  $t_{10}$ , which of course means products with finer size distributions.

The equation describing the relationship between the  $t_{10}$  and  $E_{cs}$  is given below.

$$t_{10} = A(1 - e^{-b.E_{cs}}) \quad \text{Equation 1}$$

As can be seen from this equation, there are two rock breakage parameters  $A$  and  $b$  that relate the  $t_{10}$  (size distribution index) to the applied specific energy ( $E_{cs}$ ). These parameters are ore specific and are normally determined from a full JK Drop-Weight test.

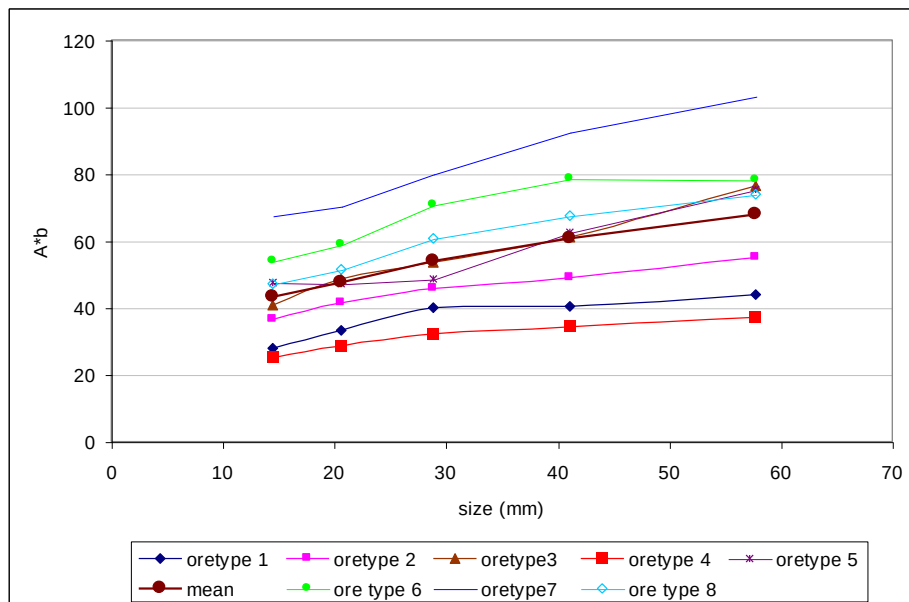
A typical plot of  $t_{10}$  vs  $E_{cs}$  from a JK Drop-Weight test is shown in App Figure 5. The relationship is characterised by the two-parameter equation above, where  $t_{10}$  is the dependent variable.



**App Figure 5 - Typical  $t_{10}$  v  $E_{cs}$  Plot**

The  $t_{10}$  can be thought of as a “fineness index” with larger values of  $t_{10}$  indicating a finer product size distribution. The value of parameter  $A$  is the limiting value of  $t_{10}$ . This limit indicates that at higher energies, little additional size reduction occurs as the  $E_{cs}$  is increased beyond a certain value.  $A*b$  is the slope of the curve at ‘zero’ input energy and is generally regarded as an indication of the strength of the rock, lower values indicating a higher strength.

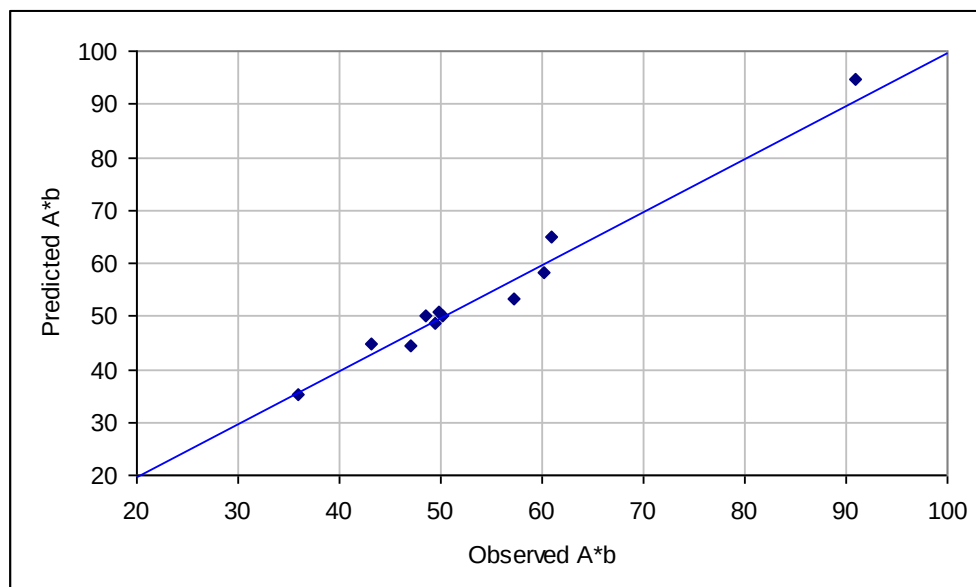
The SMC Test® is used to estimate the JK rock breakage parameters  $A$  and  $b$  by utilizing the fact that there is usually a pronounced (and ore specific) trend to decreasing rock strength with increasing particle size. This trend is illustrated in App Figure 6 which shows a plot of  $A*b$  versus particle size for a number of different rock types.



**App Figure 6 - Size Dependence of  $A*b$  for a Range of Ore Types**

In the case of a conventional JK Drop-Weight test these values are effectively averaged and a mean value of  $A$  and  $b$  is reported. The SMC Test® uses a single size and makes use of relationships such as that shown in App Figure 6 to predict the  $A$  and  $b$  of the particle size that has the same value as the mean for a full JK Drop-Weight test.

An example of this is illustrated in App Figure 7, where the observed values of the product  $A*b$  are plotted against those predicted using the DWi. Each of the data points in App Figure 7 is a result from a different ore type within an orebody.



**App Figure 7 - Predicted v Observed  $A*b$**

The  $A$  and  $b$  parameters are used with Equation 1 and relationships such as illustrated in App Figure 6 to generate a matrix of  $E_{cs}$  values for a specific range of



$t_{10}$  values and particle sizes. This matrix is used in crusher modelling to predict the power requirement of the crusher given a feed and a product size specification (Napier-Munn et al (1996)).

The  $A$  and  $b$  parameters are also used in AG/SAG mill models, such as those in JKSimMet, for predicting how the rock will break inside the mill. From this description the models can predict what the throughput, power draw and product size distribution will be (Napier-Munn et al (1996)). Modelling also enables a detailed flowsheet to be built up of the comminution circuit response to changes in ore type. It also allows optimisation strategies to be developed to overcome any deleterious changes in circuit performance predicted from differences in ore type. These strategies can include both changes to how mills are operated (eg ball load, speed etc) and changes to feed size distribution through modification of blasting practices and primary crusher operation (mine-to-mill).

## B 3 Power-Based Equations

### B 3.1 General

The  $DW_i$ ,  $M_{ia}$ ,  $M_{ih}$  and  $M_{ic}$  parameters are used in so-called power-based equations which predict the specific energy of the associated comminution machines. The approach divides comminution equipment into three categories:

- Tumbling mills, eg AG, SAG, rod and ball mills
- Conventional reciprocating crushers, eg jaw, gyratory and cone
- HPGRs

Tumbling mills are described using 2 indices:  $M_{ia}$  and  $M_{ib}$

Crushers have one index:  $M_{ic}$

HPGRs have one index:  $M_{ih}$

For tumbling mills the 2 indices relate to "coarse" and "fine" ore properties plus an efficiency factor which represents the influence of a pebble crusher in AG/SAG mill circuits. "Coarse" in this case is defined as spanning the size range from a P80 of 750 microns up to the P80 of the product of the last stage of crushing or HPGR size reduction prior to grinding. "Fine" covers the size range from a P80 of 750 microns down to P80 sizes typically reached by conventional ball milling, ie about 45 microns. The choice of 750 microns as the division between "coarse" and "fine" particle sizes was determined during the development of the technique and was found to give the best overall results across the range of plants in SMCT's data base. Implicit in the approach is that distributions are parallel and linear in log-log space.

The work index covering grinding in tumbling mills of coarse sizes is labelled  $M_{ia}$ . The work index covering grinding of fine particles is labelled  $M_{ib}$  (Morrell, 2008).  $M_{ia}$  values are provided as a standard output from a SMC Test® (Morrell, 2004a) whilst  $M_{ib}$  values can be determined using the data generated by a conventional Bond ball mill work index test ( $M_{ib}$  is NOT the Bond ball work index).  $M_{ic}$  and  $M_{ih}$  values are also provided as a standard output from a SMC Test® (Morrell, 2009).

The general size reduction equation is as follows (Morrell, 2004b):

$$W_i = M_i \cdot 4(x_2^{f(x_2)} - x_1^{f(x_1)}) \quad \text{Equation 3}$$

where

$M_i$  = Work index related to the breakage property of an ore (kWh/tonne); for grinding from the product of the final stage of crushing to a P80 of 750 microns (coarse particles) the index is labelled  $M_{ia}$  and for size reduction from 750 microns to the final product P80 normally reached by conventional ball mills (fine particles) it is labelled  $M_{ib}$ . For conventional crushing  $M_{ic}$  is used and for HPGRs  $M_{ih}$  is used.

$$\begin{aligned} W_i &= \text{Specific comminution (kWh/tonne)} \\ x_2 &= 80\% \text{ passing size for the product (microns)} \\ x_1 &= 80\% \text{ passing size for the feed (microns)} \\ f(x_j) &= -(0.295 + x_j/1000000) \quad (\text{Morrell, 2006}) \end{aligned} \quad \text{Equation 4}$$

For tumbling mills the specific comminution energy ( $W_i$ ) relates to the power at the pinion or for gearless drives - the motor output. For HPGRs it is the energy inputted to the rolls, whilst for conventional crushers  $W_i$  relates to the specific energy as determined using the motor input power less the no-load power.

### B 3.2 Specific Energy Determination for Comminution Circuits

The total specific energy ( $W_T$ ) to reduce primary crusher product to final product size is given by:

$$W_T = W_a + W_b + W_c + W_h + W_s \quad \text{Equation 5}$$

where

$$\begin{aligned} W_a &= \text{specific energy to grind coarser particles in tumbling mills} \\ W_b &= \text{specific energy to grind finer particles in tumbling mills} \\ W_c &= \text{specific energy for conventional crushing} \\ W_h &= \text{specific energy for HPGRs} \\ W_s &= \text{specific energy correction for size distribution} \end{aligned}$$

Clearly only the  $W$  values associated with the relevant equipment in the circuit being studied are included in Equation 5.

#### B 3.2.1 Tumbling mills

For coarse particle grinding in tumbling mills Equation 3 is written as:

$$W_a = K_1 M_{ia} \cdot 4(x_2^{f(x_2)} - x_1^{f(x_1)}) \quad \text{Equation 6}$$

where

$$\begin{aligned} K_1 &= 1.0 \text{ for all circuits that do not contain a recycle pebble crusher and } 0.95 \text{ where circuits do have a pebble crusher} \\ x_1 &= \text{P}_{80} \text{ in microns of the product of the last stage of crushing before grinding} \\ x_2 &= 750 \text{ microns} \\ M_{ia} &= \text{Coarse ore work index and is provided directly by SMC Test®} \end{aligned}$$

For fine particle grinding Equation 3 is written as:

$$W_b = M_{ib} \cdot 4(x_3^{f(x_3)} - x_2^{f(x_2)}) \quad \text{Equation 7}$$

where

$x_2$  = 750 microns

$x_3$  = P<sub>80</sub> of final grind in microns

$M_{ib}$  = Provided by data from the standard Bond ball work index test using the following equation (Morrell, 2006):

$$M_{ib} = 18.18 / P_1^{0.295} (Gbp) (p_{80}^{f(p_{80})} - f_{80}^{f(f_{80})}) \quad \text{Equation 8}$$

where

$M_{ib}$  = fine ore work index (kWh/tonne)

$P_1$  = closing screen size in microns

$Gbp$  = net grams of screen undersize per mill revolution

$p_{80}$  = 80% passing size of the product in microns

$f_{80}$  = 80% passing size of the feed in microns

Note that the Bond ball work index test should be carried out with a closing screen size which gives a final product P80 similar to that intended for the full scale circuit.

### B 3.2.2 Conventional Crushers and HPGR

Equation 3 for conventional crushers is written as:

$$W_c = S_c K_2 M_{ic} \cdot 4(x_2^{f(x_2)} - x_1^{f(x_1)}) \quad \text{Equation 9}$$

where

$S_c$  = coarse ore hardness parameter which is used in primary and secondary crushing situations. It is defined by Equation 10 with  $K_s$  set to 55.

$K_2$  = 1.0 for all crushers operating in closed circuit with a classifying screen. If the crusher is in open circuit, eg pebble crusher in a AG/SAG circuit,  $K_2$  takes the value of 1.19.

$x_1$  = P<sub>80</sub> in microns of the circuit feed

$x_2$  = P<sub>80</sub> in microns of the circuit product

$M_{ic}$  = Crushing ore work index and is provided directly by SMC Test®

The coarse ore hardness parameter ( $S$ ) makes allowance for the decrease in ore hardness that becomes significant in relatively coarse crushing applications such as primary and secondary cone/gyratory circuits. In tertiary and pebble crushing circuits it is normally not necessary and takes the value of unity. In full scale HPGR circuits where feed sizes tend to be higher than used in laboratory and pilot scale machines the parameter has also been found to improve predictive accuracy. The parameter is defined by Equation 10.

$$S = K_s (x_1 \cdot x_2)^{-0.2} \quad \text{Equation 10}$$

where

$K_s$  = machine-specific constant that takes the value of 55 for conventional crushers and 35 in the case of HPGRs

$x_1$  = P<sub>80</sub> in microns of the circuit feed  
 $x_2$  = P<sub>80</sub> in microns of the circuit product

Equation 3 for HPGR's crushers is written as:

$$W_h = S_h K_3 M_{ih} \cdot 4(x_2^{f(x_2)} - x_1^{f(x_1)}) \quad \text{Equation 11}$$

where

$S_h$  = coarse ore harness parameter as defined by Equation 10 and with  $K_s$  set to 35  
 $K_3$  = 1.0 for all HPGRs operating in closed circuit with a classifying screen. If the HPGR is in open circuit,  $K_3$  takes the value of 1.19.  
 $x_1$  = P<sub>80</sub> in microns of the circuit feed  
 $x_2$  = P<sub>80</sub> in microns of the circuit product  
 $M_{ih}$  = HPGR ore work index and is provided directly by SMC Test®

### B 3.2.3 Specific Energy Correction for Size Distribution (Ws)

Implicit in the approach described in this appendix is that the feed and product size distributions are parallel and linear in log-log space. Where they are not, allowances (corrections) need to be made. By and large, such corrections are most likely to be necessary (or are large enough to be warranted) when evaluating circuits in which closed circuit secondary/tertiary crushing is followed by ball milling. This is because such crushing circuits tend to produce a product size distribution which is relatively steep when compared to the ball mill circuit cyclone overflow. This is illustrated in App Figure 8, which shows measured distributions from an open and closed crusher circuit as well as a ball mill cyclone overflow. The closed circuit crusher distribution can be seen to be relatively steep compared with the open circuit crusher distribution and ball mill cyclone overflow. Also the open circuit distribution more closely follows the gradient of the cyclone overflow. If a ball mill circuit were to be fed two distributions, each with same P<sub>80</sub> but with the open and closed circuit gradients in App Figure 8, the closed circuit distribution would require more energy to grind to the final P<sub>80</sub>. How much more energy is required is difficult to determine. However, for the purposes of this approach it has been assumed that the additional specific energy for ball milling is the same as the difference in specific energy between open and closed crushing to reach the nominated ball mill feed size. This assumes that a crusher would provide this energy. However, in this situation the ball mill has to supply this energy and it has a different (higher) work index than the crusher (ie the ball mill is less energy efficient than a crusher and has to input more energy to do the same amount of size reduction). Hence from Equation 9, to crush to the ball mill circuit feed size ( $x_2$ ) in open circuit requires specific energy equivalent to:

$$W_c = 1.19 * M_{ic} \cdot 4(x_2^{f(x_2)} - x_1^{f(x_1)}) \quad \text{Equation 12}$$

For closed circuit crushing the specific energy is:

$$W_c = 1 * M_{ic} \cdot 4(x_2^{f(x_2)} - x_1^{f(x_1)}) \quad \text{Equation 13}$$

The difference between the two (Equation 12 and Equation 13) has to be provided by the milling circuit with an allowance for the fact that the ball mill, with its lower

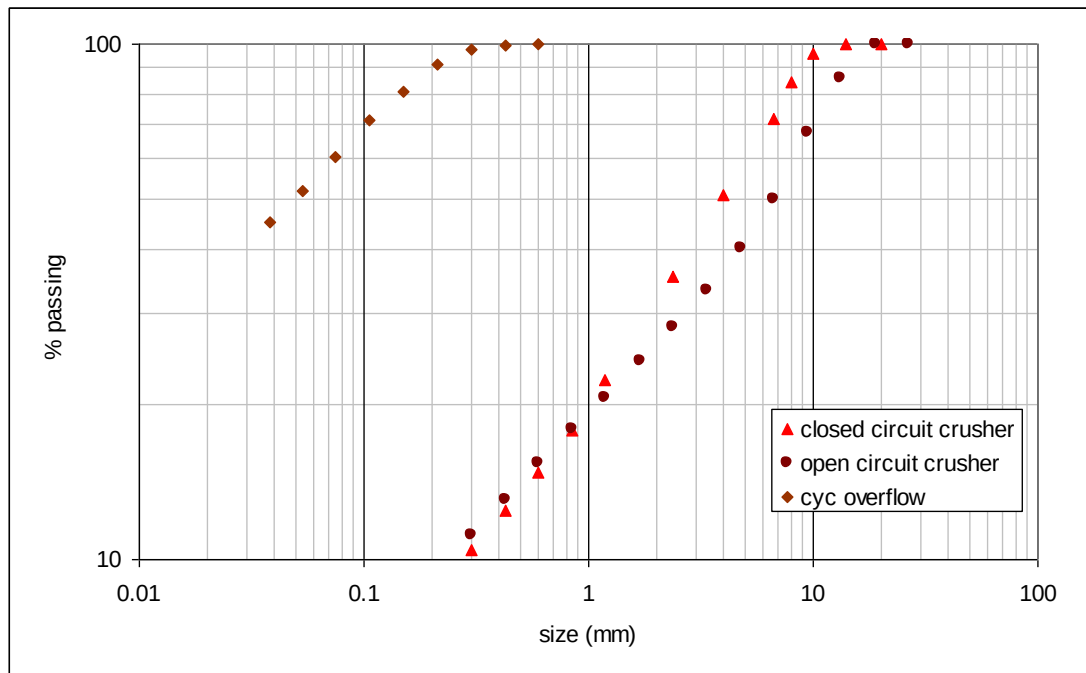
energy efficiency, has to provide it and not the crusher. This is what is referred to in Equation 5 as  $W_s$  and for the above example is therefore represented by:

$$W_s = 0.19 * M_{ia} \cdot 4(x_2^{f(x_2)} - x_1^{f(x_1)}) \quad \text{Equation 14}$$

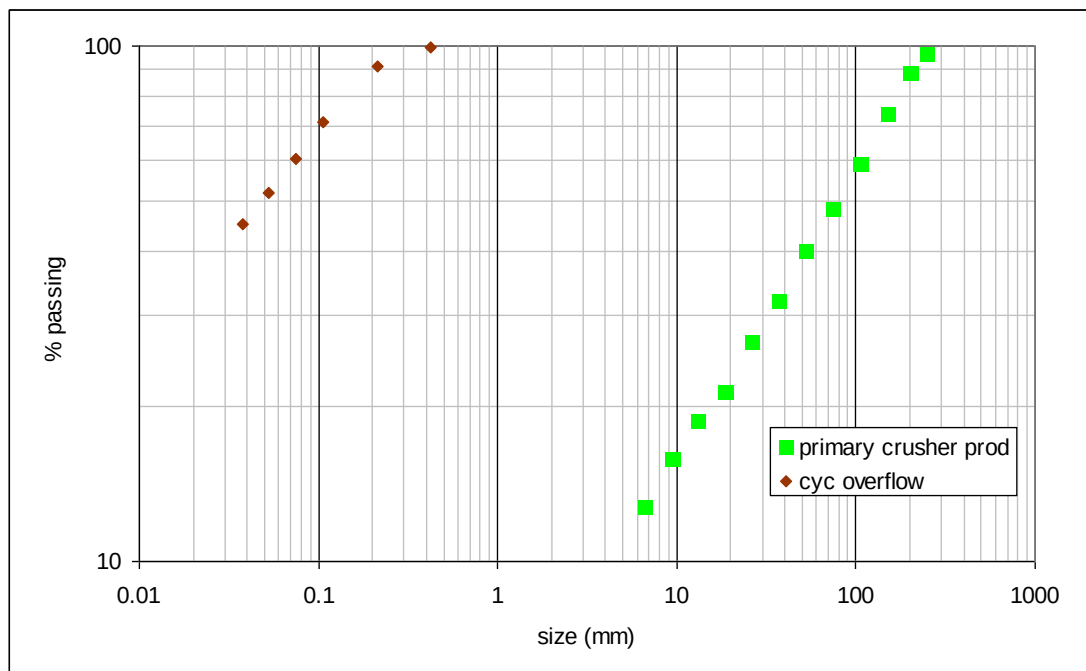
Note that in Equation 14  $M_{ic}$  has been replaced with  $M_{ia}$ , the coarse particle tumbling mill grinding work index.

In AG/SAG based circuits the need for  $W_s$  appears to be unnecessary as App Figure 9 illustrates. Primary crusher feeds often have the shape shown in App Figure 9 and this has a very similar gradient to typical ball mill cyclone overflows. A similar situation appears to apply with HPGR product size distributions, as illustrated in App Figure 10. Interestingly SMCT's data show that for HPGRs, closed circuit operation appears to require a lower specific energy to reach the same P80 as in open circuit, even though the distributions for open and closed circuit look to have almost identical gradients. Closer examination of the distributions in fact shows that in closed circuit the final product tends to have slightly less very fine material, which may account for the different energy requirements between the two modes of operation. It is also possible that recycled material in closed circuit is inherently weaker than new feed, as it has already passed through the HPGR previously and may have sustained micro-cracking. A reduction in the Bond ball mill work index as measured by testing HPGR products compared it to the Bond ball mill work index of HPGR feed has been noticed in many cases in the laboratory (see next section) and hence there is no reason to expect the same phenomenon would not affect the recycled HPGR screen oversize.

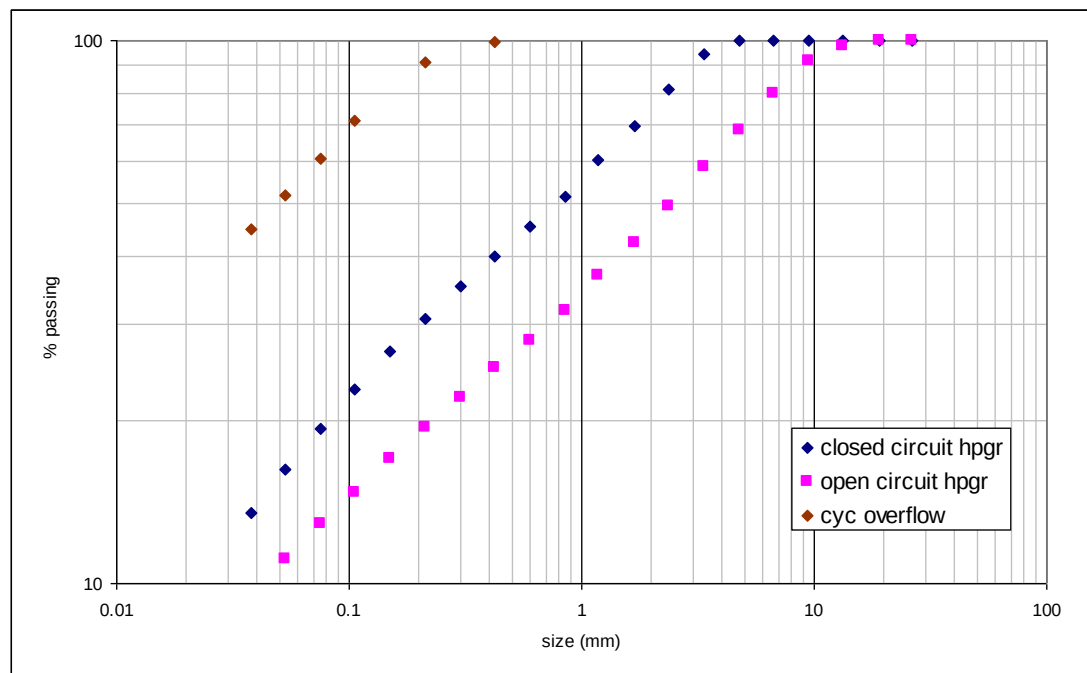
It follows from the above arguments that in HPGR circuits, which are typically fed with material from closed circuit secondary crushers, a similar feed size distribution correction should also be applied. However, as the secondary crushing circuit uses such a relatively small amount of energy compared to the rest of the circuit (as it crushes to a relatively coarse size) the magnitude of size distribution correction is very small indeed – much smaller than the error associated with the technique - and hence may be omitted in calculations.



**App Figure 8 – Examples of Open and Closed Circuit Crushing Distributions Compared with a Typical Ball Mill Cyclone Overflow Distribution**



**App Figure 9 – Example of a Typical Primary Crusher (Open and Circuit) Product Distribution Compared with a Typical Ball Mill Cyclone Overflow Distribution**



**App Figure 10 – Examples of Open and Closed Circuit HPGR Distributions Compared with a Typical Ball Mill Cyclone Overflow Distribution**

### B 3.2.4 Weakening of HPGR Products

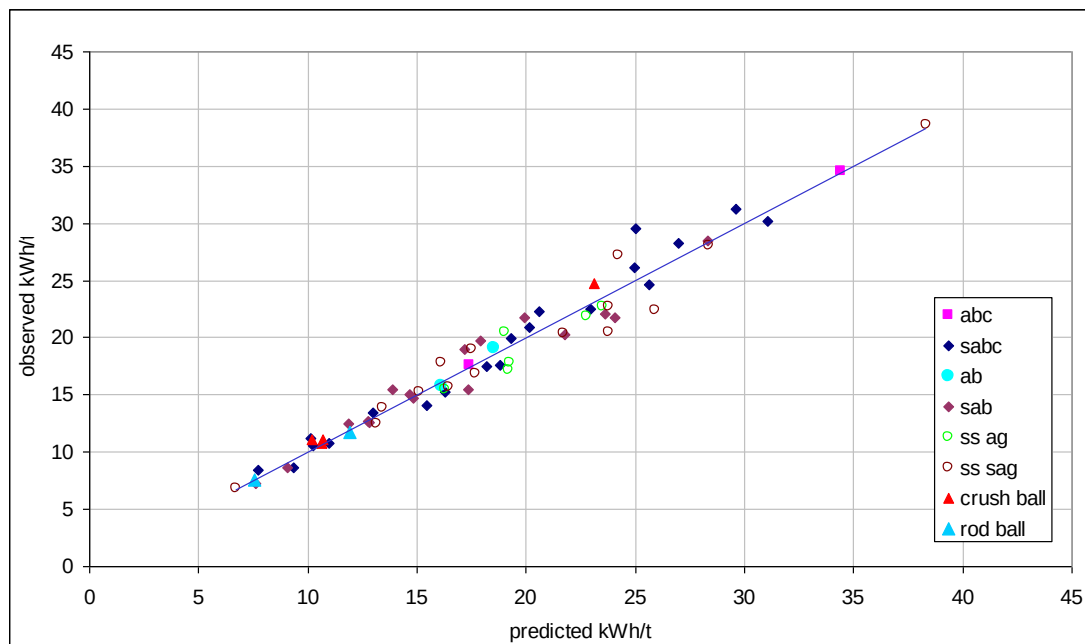
As mentioned in the previous section, laboratory experiments have been reported by various researchers in which the Bond ball work index of HPGR products is less than that of the feed. The amount of this reduction appears to vary with both material type and the pressing force used. Observed reductions in the Bond ball work index have typically been in the range 0-10%. In the approach described in this appendix no allowance has been made for such weakening. However, if HPGR products are available which can be used to conduct Bond ball work index tests on then  $M_{ib}$  values obtained from such tests can be used in Equation 7. Alternatively the  $M_{ib}$  values from Bond ball mill work index tests on HPGR feed material can be reduced by an amount that the user thinks is appropriate. Until more data become available from full scale HPGR/ball mill circuits it is suggested that, in the absence of Bond ball mill work index data on HPGR products, the  $M_{ib}$  results from HPGR feed material are reduced by no more than 5% to allow for the effects of micro-cracking.

## B 3.3 Validation

### B 3.3.1 Tumbling Mill Circuits

The approach described in the previous section was applied to over 120 industrial data sets. The results are shown in App Figure 11. In all cases, the specific energy relates to the tumbling mills contributing to size reduction from the product of the final stage of crushing to the final grind. Data are presented in terms of equivalent specific energy at the pinion. In determining what these values were on each of the plants in the data base it was assumed that power at the pinion was 93.5% of the measured gross (motor input) power, this figure being typical of what is normally

accepted as being reasonable to represent losses across the motor and gearbox. For gearless drives (so-called wrap-around motors) a figure of 97% was used.



**App Figure 11 – Observed vs Predicted Tumbling Mill Specific Energy**

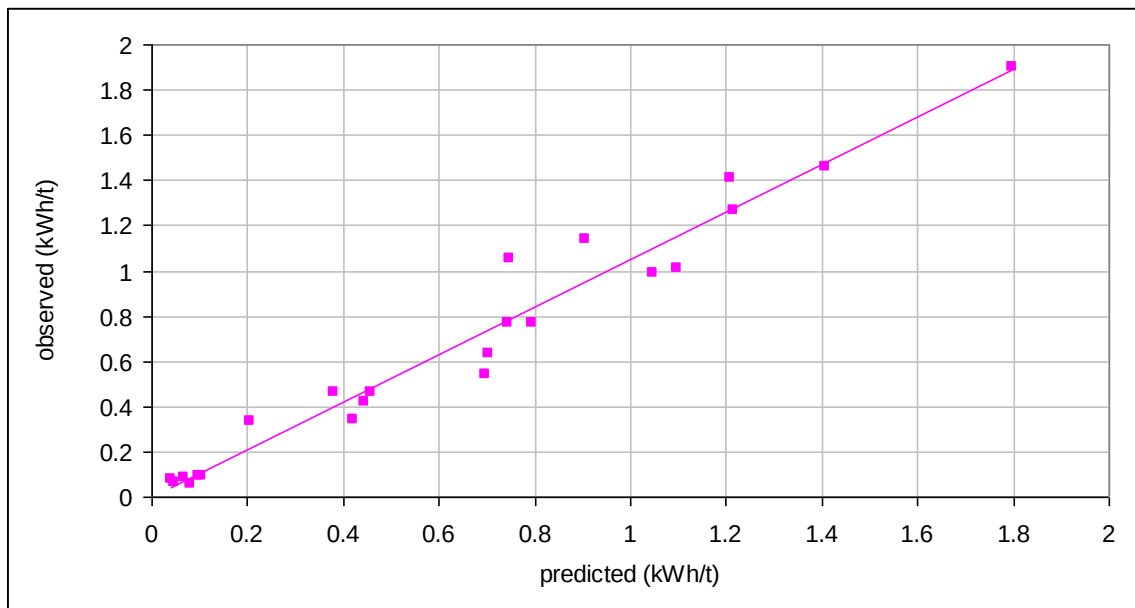
### **B 3.3.2 Conventional Crushers**

Validation used 12 different crushing circuits (25 data sets), including secondary, tertiary and pebble crushers in AG/SAG circuits. Observed vs predicted specific energies are given in App Figure 12. The observed specific energies were calculated from the crusher throughput and the net power draw of the crusher as defined by:

$$\text{Net Power} = \text{Motor Input Power} - \text{No Load Power} \quad \text{Equation 15}$$

No-load power tends to be relatively high in conventional crushers and hence net power is significantly lower than the motor input power. From examination of the 25 crusher data sets the motor input power was found to be on average 20% higher than the net power.

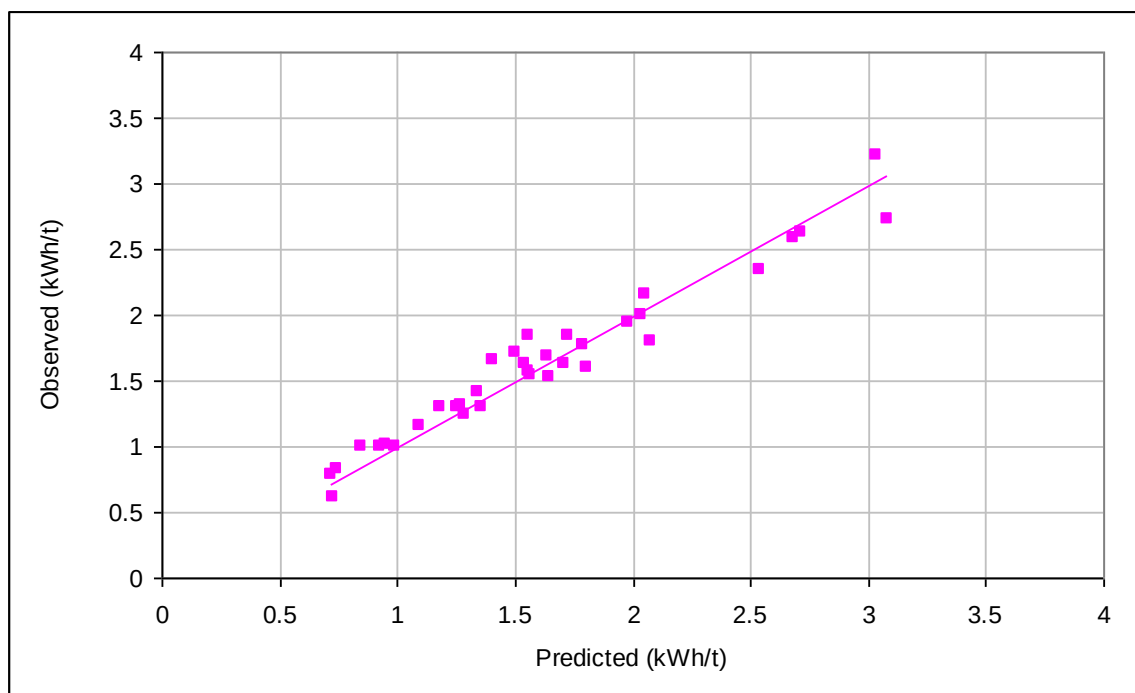




**App Figure 12 – Observed vs Predicted Conventional Crusher Specific Energy**

### **B 3.3.3 HPGRs**

Validation for HPGRs used data from 19 different circuits (36 data sets) including laboratory, pilot and industrial scale equipment. Observed vs predicted specific energies are given in App Figure 13. The data relate to HPGRs operating with specific grinding forces typically in the range 2.5-3.5 N/mm<sup>2</sup>. The observed specific energies relate to power delivered by the roll drive shafts. Motor input power for full scale machines is expected to be 8-10% higher.



**App Figure 13 – Observed vs Predicted HPGR Specific Energy**

## B 4 WORKED EXAMPLES

A SMC Test® and Bond ball work index test were carried out on a representative ore sample. The following results were obtained:

SMC Test®:

$$M_{ia} = 19.4 \text{ kWh/t}$$

$$M_{ic} = 7.2 \text{ kWh/t}$$

$$M_{ih} = 13.9 \text{ kWh/t}$$

Bond test carried out with a 150 micron closing screen:

$$M_{ib} = 18.8 \text{ kWh/t}$$

Three circuits are to be evaluated:

- SABC
- HPGR/ball mill
- Conventional crushing/ball mill

The overall specific grinding energy to reduce a primary crusher product with a  $P_{80}$  of 100 mm to a final product  $P_{80}$  of 106  $\mu\text{m}$  needs to be estimated.

### B 4.1 SABC Circuit

Coarse particle tumbling mill specific energy:

$$\begin{aligned} W_a &= 0.95 * 19.4 * 4 * \left( 750^{-(0.295+750/1000000)} - 100000^{-(0.295+100000/1000000)} \right) \\ &= 9.6 \text{ kWh/t} \end{aligned}$$

Fine particle tumbling mill specific energy:

$$\begin{aligned} W_b &= 18.8 * 4 * \left( 106^{-(0.295+106/1000000)} - 750^{-(0.295+750/1000000)} \right) \\ &= 8.4 \text{ kWh/t} \end{aligned}$$

Pebble crusher specific energy:

In this circuit, it is assumed that the pebble crusher feed  $P_{80}$  is 52.5mm. As a rule of thumb this value can be estimated by assuming that it is 0.75 of the nominal pebble port aperture (in this case the pebble port aperture is 70mm). The pebble crusher is set to give a product  $P_{80}$  of 12mm. The pebble crusher feed rate is expected to be 25% of new feed tph.

$$\begin{aligned} W_c &= 1.19 * 7.2 * 4 * \left( 12000^{-(0.295+12000/1000000)} - 52500^{-(0.295+52500/1000000)} \right) \\ &= 1.12 \text{ kWh/t when expressed in terms of the crusher feed rate} \\ &= 1.12 * 0.25 \text{ kWh/t when expressed in terms of the SABC circuit new} \\ \text{feed rate} &= 0.3 \text{ kWh/t of SAG mill circuit new feed} \end{aligned}$$

Total net comminution specific energy:

$$\begin{aligned} W_T &= 9.6 + 8.4 + 0.3 \quad \text{kWh/t} \\ &= 18.3 \text{ kWh/t} \end{aligned}$$

#### B 4.2 HPGR/Ball Milling Circuit

In this circuit primary crusher product is reduced to a HPGR circuit feed  $P_{80}$  of 35 mm by closed circuit secondary crushing. The HPGR is also in closed circuit and reduces the 35 mm feed to a circuit product  $P_{80}$  of 4 mm. This is then fed to a closed circuit ball mill which takes the grind down to a  $P_{80}$  of 106  $\mu\text{m}$ .

Secondary crushing specific energy:

$$\begin{aligned} W_c &= 1 * 55 * (35000 * 100000)^{-0.2} * 7.2 * 4 * (35000^{-(0.295+35000/1000000)} - 100000^{-(0.295+100000/1000000)}) \\ &= 0.4 \text{ kWh/t} \end{aligned}$$

HPGR specific energy:

$$\begin{aligned} W_h &= 1 * 35 * (4000 * 35000)^{-0.2} * 13.9 * 4 * (4000^{-(0.295+4000/1000000)} - 35000^{-(0.295+35000/1000000)}) \\ &= 2.4 \text{ kWh/t} \end{aligned}$$

Coarse particle tumbling mill specific energy:

$$\begin{aligned} W_a &= 1 * 19.4 * 4 * (750^{-(0.295+750/1000000)} - 4000^{-(0.295+4000/1000000)}) \\ &= 4.5 \text{ kWh/t} \end{aligned}$$

Fine particle tumbling mill specific energy:

$$\begin{aligned} W_b &= 18.8 * 4 * (106^{-(0.295+106/1000000)} - 750^{-(0.295+750/1000000)}) \\ &= 8.4 \text{ kWh/t} \end{aligned}$$

Total net comminution specific energy:

$$\begin{aligned} W_T &= 4.5 + 8.4 + 0.4 + 2.4 \quad \text{kWh/t} \\ &= 15.7 \text{ kWh/t} \end{aligned}$$

#### B 4.3 Conventional Crushing/Ball Milling Circuit

In this circuit primary crusher product is reduced in size to  $P_{80}$  of 6.5 mm via a secondary/tertiary crushing circuit (closed). This is then fed to a closed circuit ball mill which grinds to a  $P_{80}$  of 106  $\mu\text{m}$ .

Secondary/tertiary crushing specific energy:

$$W_c = 1 * 7.2 * 4 * (6500^{-(0.295+6500/1000000)} - 100000^{-(0.295+100000/1000000)})$$

$$= 1.7 \text{ kWh/t}$$

Coarse particle tumbling mill specific energy :

$$W_a = 1 * 19.4 * 4 * \left( 750^{-\left( \frac{0.295+750}{1000000} \right)} - 6500^{-\left( \frac{0.295+6500}{1000000} \right)} \right)$$

$$= 5.5 \text{ kWh/t}$$

Fine particle tumbling mill specific energy:

$$W_b = 18.8 * 4 * \left( 106^{-\left( \frac{0.295+106}{1000000} \right)} - 750^{-\left( \frac{0.295+750}{1000000} \right)} \right)$$

$$= 8.4 \text{ kWh/t}$$

Size distribution correction;

$$W_s = 0.19 * 19.4 * 4 * \left( 6500^{-\left( \frac{0.295+6500}{1000000} \right)} - 100000^{-\left( \frac{0.295+100000}{1000000} \right)} \right)$$

$$= 0.9 \text{ kWh/t}$$

Total net comminution specific energy:

$$W_T = 5.5 + 8.4 + 1.7 + 0.9 \text{ kWh/t}$$

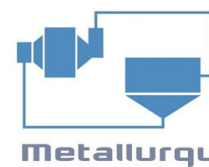
$$= 16.5 \text{ kWh/t}$$

## **APPENDIX II**

### **Bond Abrasion Index Determination Details and Results**



## BOND ABRASION INDEX DETERMINATION



|           |                        |
|-----------|------------------------|
| PROJECT   | A19126                 |
| CLIENT    | Centamin Cote d'Ivoire |
| SAMPLE ID | KONA                   |
| DATE      | SEP-2018               |

### SIZE ANALYSIS : ABRASION INDEX PRODUCT

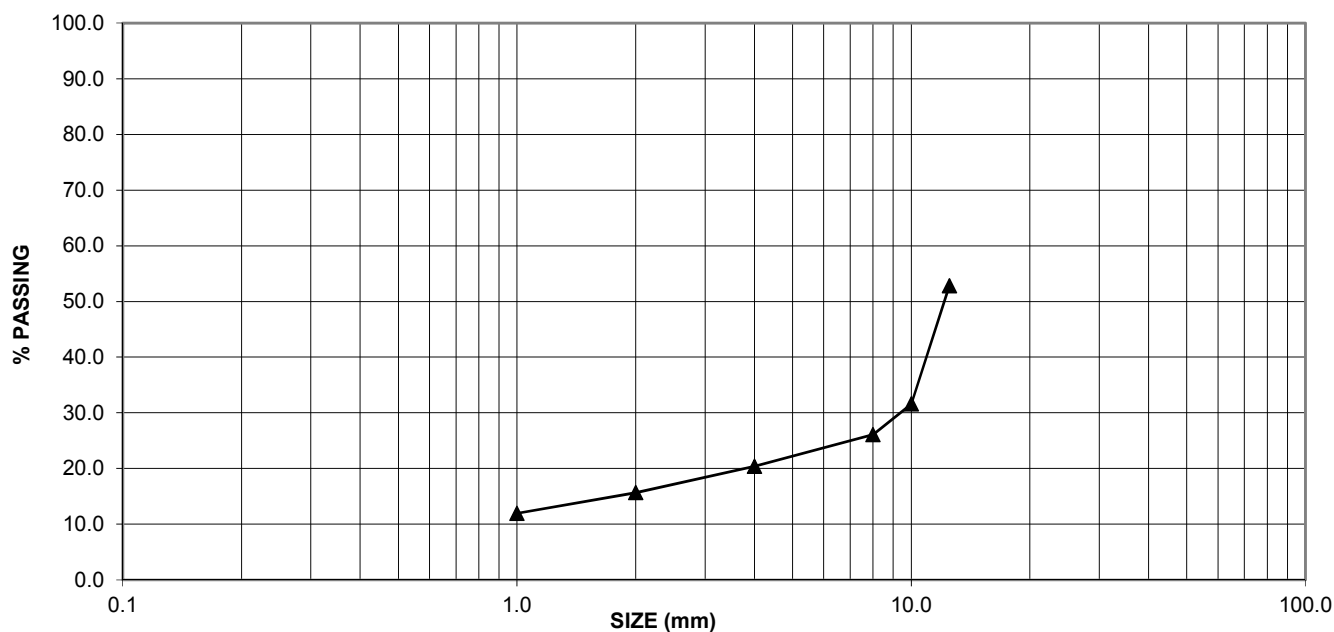
| Operation | Size<br>(mm) | Weight<br>(g) | Weight<br>(%) | Weight<br>% < |
|-----------|--------------|---------------|---------------|---------------|
| Screening | 12.5         | 753.8         | 47.2          | 52.8          |
|           | 10.0         | 338.3         | 21.2          | 31.6          |
|           | 8.0          | 88.5          | 5.5           | 26.0          |
|           | 4.0          | 91.0          | 5.7           | 20.3          |
|           | 2.0          | 75.3          | 4.7           | 15.6          |
|           | 1.0          | 59.0          | 3.7           | 11.9          |
|           | -1.0         | 190.5         | 11.9          |               |
| Total     |              | 1596.4        | 100.00        |               |

PADDLE WEIGHT BEFORE TEST (g) : 90.0806

PADDLE WEIGHT AFTER TEST (g) : 89.8220

BOND ABRASION INDEX (Ai) : 0.2586

### BOND ABRASION PRODUCT SIZE ANALYSIS



## **APPENDIX III**

### **Bond Rod Mill Work Index Determination Details and Results**

**BOND ROD MILL CLOSED CIRCUIT GRINDABILITY : 1180 MICROMETERS**

|                 |                        |
|-----------------|------------------------|
| PROJECT No      | A19126                 |
| CLIENT          | Centamin Cote d'Ivoire |
| SAMPLE IDENTITY | KONA                   |
| DATE            | SEP-2018               |

| PERIOD | REVS OF MILL | WT OF 1250 mls (g) | WT OF NEW FEED (g) | WT OF O/SIZE (g)* | WT OF U/SIZE (g)* | NET WT OF U/SIZE (g)* | NET WT OF U/SIZE PER REV (g) | CIRC'TING LOAD (%) | WT OF FRESH FEED ADDED TO NEXT CYCLE (g) | WT OF U/SIZE IN FEED TO NEXT CYCLE (g) |
|--------|--------------|--------------------|--------------------|-------------------|-------------------|-----------------------|------------------------------|--------------------|------------------------------------------|----------------------------------------|
| 1      | 200          | 2135.7             | 2135.7             | 1369.9            | 765.8             | 583.9                 | 2.919                        | 179                | 765.8                                    | 65.2                                   |
| 2      | 343          | 2135.7             | 765.8              | 986.6             | 1149.1            | 1083.9                | 3.160                        | 86                 | 1149.1                                   | 97.9                                   |
| 3      | 307          | 2135.7             | 1149.1             | 1031.3            | 1104.4            | 1006.5                | 3.279                        | 93                 | 1104.4                                   | 94.1                                   |
| 4      | 297          | 2135.7             | 1104.4             | 1067.9            | 1067.8            | 973.7                 | 3.279                        | 100                | 1067.8                                   | 90.9                                   |
| 5      | 298          | 2135.7             | 1067.8             | 1067.9            | 1067.8            | 976.9                 | 3.278                        | 100                | 1067.8                                   | 90.9                                   |

Note : \* = Ex grinding mill

|                               |                            |
|-------------------------------|----------------------------|
| PRODUCT IN THE FEED           | 8.52 (%)                   |
| BULK DENSITY                  | 1.7086 (t/m <sup>3</sup> ) |
| IDEAL POTENTIAL PRODUCT       | 1067.9 (g)                 |
| AVERAGE EQUILIBRIUM CIRC LOAD | 100 (%)                    |
| AVERAGE PRODUCT               | 3.278 (g/rev)              |
| 80 % PASSING FEED SIZE        | 10807 (µm)                 |
| 80 % PASSING PRODUCT SIZE     | 825 (µm)                   |

**BOND ROD MILL WORK INDEX ( Kilowatt hours / dry tonne ) : 25.4**



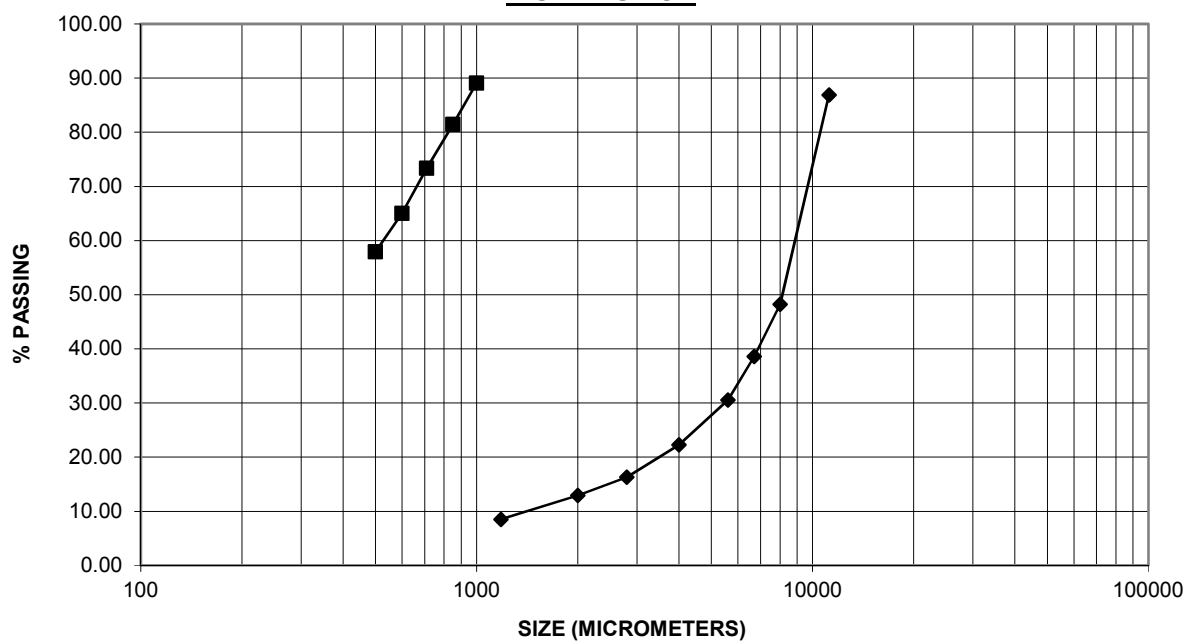


## BOND ROD MILL GRINDABILITY TEST FEED AND PRODUCT SIZINGS

| FEED TO PERIOD No. 1 |            |              |             |
|----------------------|------------|--------------|-------------|
| Size (mm)            | Weight (g) | Retained (%) | Passing (%) |
| 12.500               | 0.0        | 0.00         | 100.00      |
| 11.200               | 111.0      | 13.11        | 86.89       |
| 10.000               | 177.9      | 21.02        | 65.87       |
| 8.000                | 149.2      | 17.63        | 48.24       |
| 6.700                | 81.6       | 9.64         | 38.60       |
| 5.600                | 68.3       | 8.07         | 30.53       |
| 4.000                | 69.7       | 8.23         | 22.29       |
| 2.800                | 50.9       | 6.01         | 16.28       |
| 2.000                | 28.3       | 3.34         | 12.94       |
| 1.180                | 37.4       | 4.42         | 8.52        |
| -1.180               | 72.1       | 8.52         | 0.00        |
| TOTAL                | 846.4      | 100.00       |             |
| F 80 (µm) :          |            | 10807        |             |

| EQUILIBRIUM PRODUCTS |            |              |             |
|----------------------|------------|--------------|-------------|
| Size (mm)            | Weight (g) | Retained (%) | Passing (%) |
| 1.000                | 116.6      | 10.92        | 89.08       |
| 0.850                | 81.8       | 7.66         | 81.42       |
| 0.710                | 86.5       | 8.10         | 73.32       |
| 0.600                | 88.7       | 8.31         | 65.01       |
| 0.500                | 75.9       | 7.11         | 57.91       |
| -0.500               | 618.4      | 57.91        |             |
| TOTAL                | 1067.9     | 100.00       |             |
| P 80 (µm) :          |            | 825          |             |

### BOND ROD MILL GRINDABILITY : FEED & PRODUCT SIZE DISTRIBUTION



## **APPENDIX IV**

### **Bond Ball Mill Work Index Determination Details and Results**

**BOND BALL MILL CLOSED CIRCUIT GRINDABILITY :      106 MICROMETERS**

|                        |                               |
|------------------------|-------------------------------|
| <b>PROJECT No</b>      | <b>A19126</b>                 |
| <b>CLIENT</b>          | <b>Centamin Cote d'Ivoire</b> |
| <b>SAMPLE IDENTITY</b> | <b>KONA</b>                   |
| <b>DATE</b>            | <b>SEP-2018</b>               |

| PERIOD | REVS OF MILL | WT OF 700 mls (g) | WT OF NEW FEED (g) | WT OF O/SIZE (g)* | WT OF U/SIZE (g)* | NET WT OF U/SIZE (g)* | NET WT OF U/SIZE PER REV (g) | CIRC'TING LOAD (%) | WT OF FRESH FEED ADDED TO NEXT CYCLE (g) | WT OF U/SIZE IN FEED TO NEXT CYCLE (g) |
|--------|--------------|-------------------|--------------------|-------------------|-------------------|-----------------------|------------------------------|--------------------|------------------------------------------|----------------------------------------|
| 1      | 200          | 1292.9            | 1292.9             | 1039.6            | 253.3             | 145.4                 | 0.7272                       | 410                | 253.3                                    | 21.1                                   |
| 2      | 479          | 1292.9            | 253.3              | 909.3             | 383.6             | 362.5                 | 0.7567                       | 237                | 383.6                                    | 32.0                                   |
| 3      | 446          | 1292.9            | 383.6              | 890.0             | 402.9             | 370.9                 | 0.8316                       | 221                | 402.9                                    | 33.6                                   |
| 3      | 409          | 1292.9            | 402.9              | 905.2             | 387.7             | 354.1                 | 0.8657                       | 233                | 387.7                                    | 32.3                                   |
| 3      | 385          | 1292.9            | 387.7              | 923.5             | 369.4             | 337.1                 | 0.8755                       | 250                | 369.4                                    | 30.8                                   |
| 5      | 387          | 1292.9            | 369.4              | 923.5             | 369.4             | 338.6                 | 0.8749                       | 250                | 369.4                                    | 30.8                                   |

Note : \* = Ex grinding mill

|                                      |                                 |
|--------------------------------------|---------------------------------|
| <b>PRODUCT IN THE FEED</b>           | <b>8.34 (%)</b>                 |
| <b>BULK DENSITY</b>                  | <b>1.8470 (t/m<sup>3</sup>)</b> |
| <b>IDEAL POTENTIAL PRODUCT</b>       | <b>369.4 (g)</b>                |
| <b>AVERAGE EQUILIBRIUM CIRC LOAD</b> | <b>250 (%)</b>                  |
| <b>AVERAGE PRODUCT</b>               | <b>0.875 (g/rev)</b>            |
| <b>80 % PASSING FEED SIZE</b>        | <b>2718 (µm)</b>                |
| <b>80 % PASSING PRODUCT SIZE</b>     | <b>79 (µm)</b>                  |

**BOND BALL MILL WORK INDEX ( Kilowatt hours / dry tonne ) :      20.0**

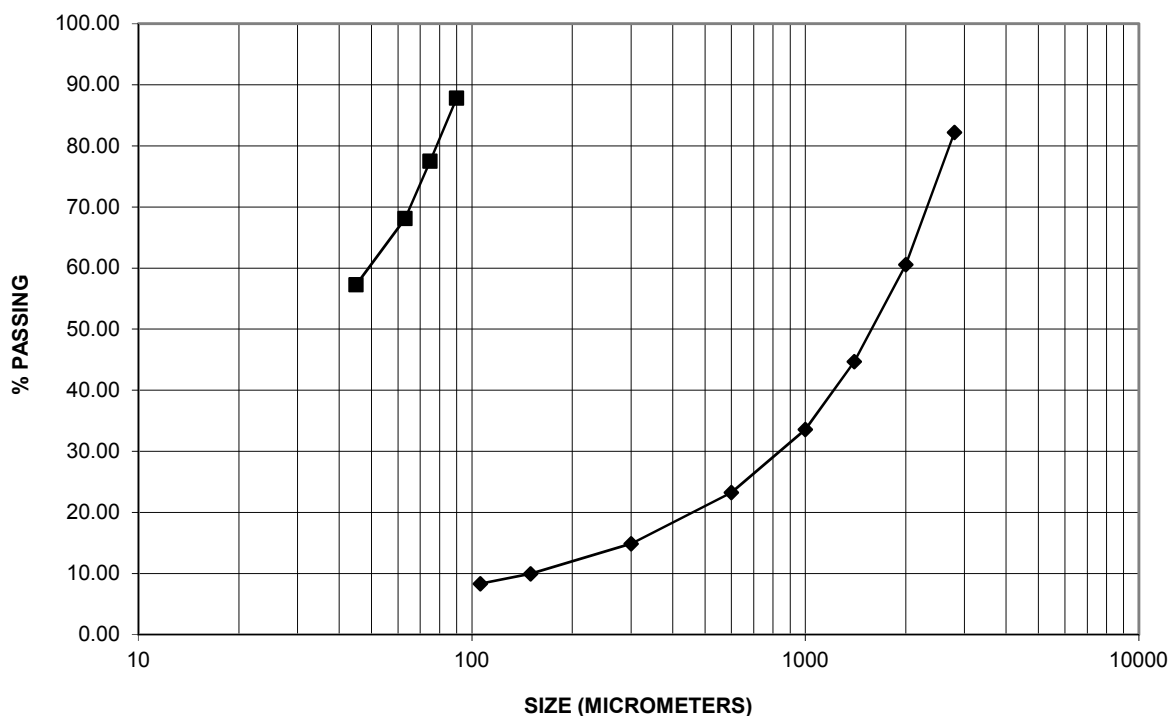


**A19126**  
**Centamin Cote d'Ivoire**

| FEED TO PERIOD No. 1 |            |              |             |
|----------------------|------------|--------------|-------------|
| Size (mm)            | Weight (g) | Retained (%) | Passing (%) |
| 3.150                | 61.1       | 7.45         | 92.55       |
| 2.800                | 84.7       | 10.33        | 82.22       |
| 2.000                | 177.7      | 21.67        | 60.54       |
| 1.400                | 129.9      | 15.84        | 44.70       |
| 1.000                | 91.2       | 11.12        | 33.58       |
| 0.600                | 84.8       | 10.34        | 23.23       |
| 0.300                | 68.7       | 8.38         | 14.86       |
| 0.150                | 40.5       | 4.94         | 9.92        |
| 0.106                | 12.9       | 1.57         | 8.34        |
| -0.106               | 68.4       | 8.34         |             |
| TOTAL                | 819.9      | 100.00       |             |
| P 80 (μm) : 2718     |            |              |             |

| EQUILIBRIUM PRODUCTS |            |              |             |
|----------------------|------------|--------------|-------------|
| Size (mm)            | Weight (g) | Retained (%) | Passing (%) |
| 0.106                |            | 0.00         | 100.00      |
| 0.090                | 45.1       | 12.21        | 87.79       |
| 0.075                | 38.2       | 10.34        | 77.45       |
| 0.063                | 34.5       | 9.34         | 68.11       |
| 0.045                | 40.1       | 10.86        | 57.26       |
| -0.045               | 211.5      | 57.26        |             |
| TOTAL                | 369.4      | 100.00       |             |
| P 80 (μm) : 79       |            |              |             |

**BOND BALL MILL GRINDABILITY : FEED & PRODUCT SIZE DISTRIBUTION**



## **APPENDIX V**

### **Comprehensive Head Assays**



|                   |                           |
|-------------------|---------------------------|
| PROJECT:          | A19126                    |
| CLIENT:           | Centamin Cote d'Ivoire    |
| SAMPLE:           | KONA                      |
| TEST DESCRIPTION: | COMPREHENSIVE HEAD ASSAYS |
| DATE:             | JUL-2018                  |



| Analyte    | Units | KONA |
|------------|-------|------|
| Ag         | ppm   | <2   |
| Al         | %     | 8.12 |
| As         | ppm   | 1680 |
| Au-1       | g/t   | 1.82 |
| Au-2       | g/t   | 1.98 |
| Ba         | ppm   | 600  |
| Be         | ppm   | <5   |
| Bi         | ppm   | <10  |
| C-total    | %     | 0.21 |
| C-organic  | %     | 0.21 |
| Ca         | %     | 1.50 |
| Cd         | ppm   | <5   |
| Co         | ppm   | 20   |
| Cr         | ppm   | 140  |
| Cu         | ppm   | 48   |
| Fe         | %     | 4.40 |
| Hg         | ppm   | <0.1 |
| K          | %     | 1.20 |
| Li         | ppm   | 95   |
| Mg         | %     | 1.52 |
| Mn         | ppm   | 440  |
| Mo         | ppm   | <5   |
| Na         | %     | 3.78 |
| Ni         | ppm   | 50   |
| P          | ppm   | 700  |
| Pb         | ppm   | <5   |
| S-total    | %     | 0.46 |
| S-sulphide | %     | 0.26 |
| Sb         | ppm   | 0.7  |
| SiO2       | %     | 67.2 |
| Sr         | ppm   | 234  |
| Te         | ppm   | 0.6  |
| Ti         | ppm   | 3600 |
| V          | ppm   | 94   |
| Y          | ppm   | <100 |
| Zn         | ppm   | 62   |

## **APPENDIX VI**

### **Mineralogical Analysis**

#### **Report MIN3412**



## **Quantitative Automated Mineralogical Analysis**

conducted on

**One gold sample (Kona)**

from the

**Kona-Lolosso Project**

for

**Centamin Cote D'Ivoire**



**A19126**  
**Mineralogy Report MIN3412**

**August 2018**

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The results contained in this report relate only to the sample(s) submitted for testing.  
ALS Metallurgy accepts no responsibility for the representativeness of the sample(s) submitted





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# SUMMARY

## Bulk mineralogy

In the Pan-Con fraction, arsenopyrite makes up 4.77 % by mass and has a  $P_{80}$  of 67  $\mu\text{m}$ . 77.1 % of the arsenopyrite is classified as 'well liberated' and 16.9 % as 'high grade middlings'. The unliberated portion is mainly locked with silicates and lollingite.

Lollingite makes up 1.14 % by mass in the Pan-Con and has a  $P_{80}$  of 67  $\mu\text{m}$ . Approximately half of the lollingite is classified as 'well liberated' and another 23.8 % as 'high grade middlings'. The unliberated portion is mainly locked with arsenopyrite.

Minor amounts of pyrrhotite (1.91 % by mass with a  $P_{80}$  of 44  $\mu\text{m}$ ) and pyrite (0.32 % by mass with a  $P_{80}$  of 93  $\mu\text{m}$ ) were also detected in the Pan-Con fraction. Both are not well liberated, and mostly associated with silicates, rather than with arsenopyrite or lollingite.

Most of the remaining sample mass in the Pan-Con is contributed by silicates, i.e. plagioclase (47.6 %), quartz (19.6 %), biotite (12.2 %) and amphibole/pyroxene (5.22 %).

The K-Tail fraction is mainly made up of plagioclase, quartz and biotite.

## Gold mineralogy

Native gold (with silver content typically < 10 %) is the only gold-bearing phase detected.

A total of nine native gold grains were detected.

One gold grain is well liberated and is about 20  $\mu\text{m}$  in size. This gold grain hosts nearly two thirds of the total gold mass detected.

One gold grain occurs in a binary arsenopyrite-lollingite particle. It is near 10  $\mu\text{m}$  in size and exposed. Another three gold grains are enclosed in arsenopyrite-rich particles. These grains range in size from 1 to 5  $\mu\text{m}$ , with one grain associated with lollingite.

The remaining four gold grains occur in silicate-rich particles, with one exposed and the other three enclosed. These grains range in size from 2 to 10  $\mu\text{m}$ , and one of them is associated with arsenopyrite.

Note: Gold grains smaller than 1  $\mu\text{m}$  and solid solution gold in sulphides/arsenides are not detectable by QEMSCAN, and hence not included in the report.

# INTRODUCTION

## Samples received

One gold sample was submitted for quantitative mineralogical analysis by QEMSCAN (quantitative evaluation of minerals by scanning electron microscopy) and XRD (X-ray diffraction).

The sample was separated into gravity concentrate (i.e. 'Pan-Con') and gravity tail (i.e. 'K-Tail') fractions using a Knelson concentrator and hand-panning before being submitted for mineralogy. The Pan-Con fraction was analysed by QEMSCAN and the K-Tail by XRD.

The details for the received samples, measurement parameters, assay results are shown below.

| Sample name | Au/Au_rpt1 (g/t)* | Gravity fractions | Weight distribution (Wt.%) | Measurement mode | QEMSCAN pixel spacing (µm) | Block code |
|-------------|-------------------|-------------------|----------------------------|------------------|----------------------------|------------|
| Kona        | 1.82/1.98         | Pan-Con           | 2.85                       | FS/TMS           | 6/1                        | MIN3412A1A |
|             |                   | K-Tail            | 97.15                      | XRD              | --                         | --         |

## Sample preparation

The Pan-Con fraction was riffle split to produce one sub-sample of suitable size for making QEMSCAN polished section. The sub-sample was mixed with size-graded, high purity graphite to ensure particle separation and discourage density segregation. The sample-graphite mixture was then set into a mould using a two-part epoxy resin, producing a representative sub-sample of randomly orientated particles. After curing, the resin block was cut back to expose a fresh surface and progressively ground and fine-polished. Passing QA/QC checks, the section was then carbon coated for electron beam conductivity and presented to the QEMSCAN for analysis.

## Method of analysis

### QEMSCAN-FS

The block was analysed using QEMSCAN, Field Scan (FS) mode at 6 µm pixel spacing.

### QEMSCAN-TMS and SEM-EDS

Bright phase search for minerals with high atomic density and strong electron backscatter response, including gold-rich mineral phases, was undertaken using the Trace Mineral Search (TMS) analysis for the block. Spot analysis of all identified grains was undertaken by standard-less quantification using Energy Dispersive Spectrometry (EDS). The particles measured during the TMS scan were mapped with 1 µm spacing.

### XRD

One sub-sample from K-Tail was pressed into a back-packed sample holder to minimize preferred orientation of the particles. Powder X-ray diffraction (XRD) was used to analyse the sample and a combination of matrix flushing and reference intensity ratio (RIR) derived constants was used in the quantification of the minerals identified in the sample.

The XRD traces were collected under the following instrument conditions:

| <b>XRD</b>               | <b>Panalytical Empyrean</b>           |
|--------------------------|---------------------------------------|
| <b>Radiation</b>         | <b>Co K<math>\alpha</math> 1.789</b>  |
| <b>Generator</b>         | <b>40 kV 40 mA</b>                    |
| <b>Angular Range</b>     | <b>5° to 77° 2<math>\theta</math></b> |
| <b>Time/Step</b>         | <b>120 s</b>                          |
| <b>Step Size</b>         | <b>0.0131° 2<math>\theta</math></b>   |
| <b>Divergence Slit</b>   | <b>0.5 °</b>                          |
| <b>Anti-Scatter Slit</b> | <b>7.5 mm</b>                         |
| <b>Slit Type</b>         | <b>Fixed</b>                          |
| <b>Detector</b>          | <b>Pixel in linear mode</b>           |
| <b>Rotation Speed</b>    | <b>60 rpm</b>                         |

**Requested by**

Brett Kay (ALS Metallurgy)

**Reported by**

Jiamin Liu and Qinglin Meng (ALS Metallurgy Mineralogy)

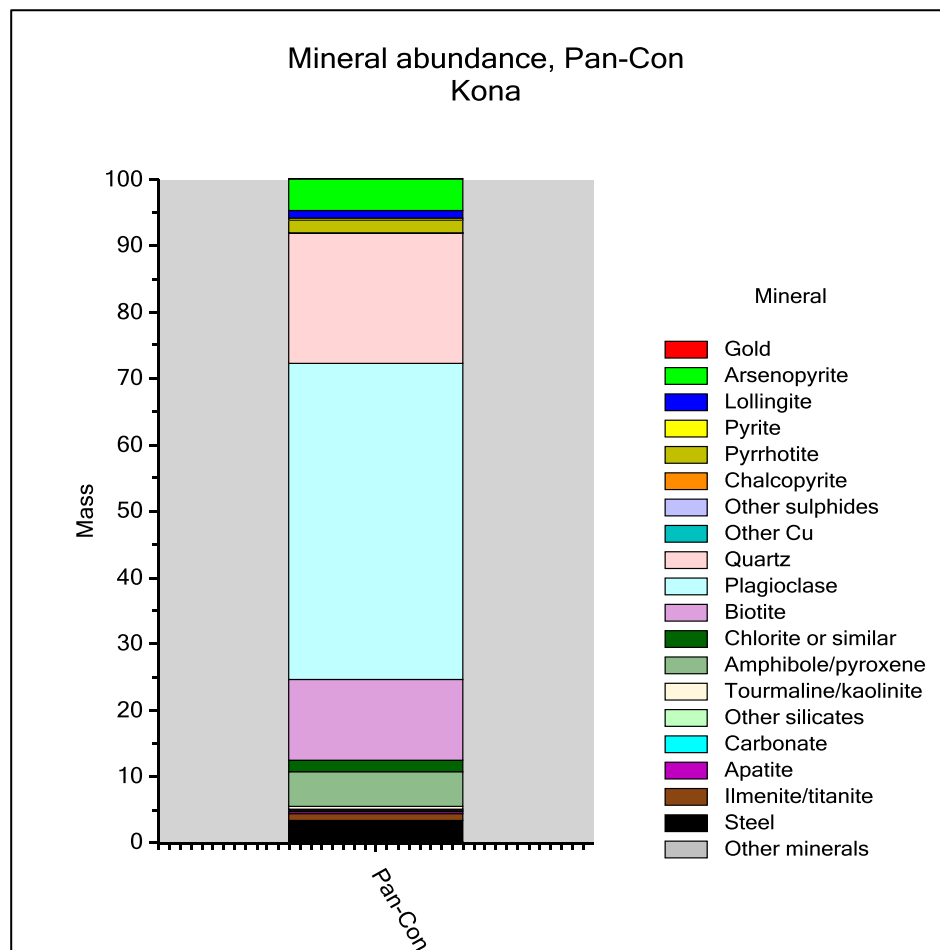
## MINERAL GROUPING

| Mineral groupings    |                              | Details                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gold                 | Combined sulphides/arsenides | Native gold, essentially gold-silver alloy with silver content less than 8 %.                                                                                                                                                                                                                                                                                                                                                                    |
| Arsenopyrite         |                              | FeAsS                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Lollingite           |                              | FeAs <sub>2</sub> . Also spelled as 'Loellingite' or 'Löllingite'.                                                                                                                                                                                                                                                                                                                                                                               |
| Pyrite               |                              | FeS <sub>2</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Pyrrhotite           |                              | Fe <sub>1-x</sub> S                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Chalcopyrite         |                              | CuFeS <sub>2</sub>                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Other sulphides      |                              | Mainly sphalerite ((Zn,Fe)S). Also includes trace amount of Bi-telluride.                                                                                                                                                                                                                                                                                                                                                                        |
| Other Cu             |                              | Includes one native Cu grain (about 10 µm in size). Also includes some poorly classified analysis points, with elemental Cu/Si and occasionally Al/K/Cl. These mixed analysis points are possibly Cu silicate phases (i.e. chrysocolla (Cu <sub>2-x</sub> Al <sub>x</sub> (H <sub>2-x</sub> Si <sub>2</sub> O <sub>5</sub> )(OH) <sub>4</sub> · nH <sub>2</sub> O), or fine intergrowths between native Cu and silicates (e.g. quartz or micas). |
| Quartz               | Combined silicates           | SiO <sub>2</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Plagioclase          |                              | Combined albite (NaAlSi <sub>3</sub> O <sub>8</sub> ) and intermediate plagioclase ((Na,Ca)AlSi <sub>3</sub> O <sub>8</sub> ). Also includes a minor amount of K-feldspar.                                                                                                                                                                                                                                                                       |
| Biotite              |                              | Mainly annite/biotite/phlogopite (K(Mg,Fe) <sub>3</sub> AlSi <sub>3</sub> O <sub>10</sub> (OH,F) <sub>2</sub> ). May include trace amounts of muscovite (KAl <sub>3</sub> Si <sub>3</sub> O <sub>10</sub> (OH,F) <sub>2</sub> ) and illite (K,H <sub>3</sub> O)(Al,Mg,Fe) <sub>2</sub> (Si,Al) <sub>4</sub> O <sub>10</sub> ((OH) <sub>2</sub> (H <sub>2</sub> O)).                                                                              |
| Chlorite or similar  |                              | (Mg,Fe,Al) <sub>12</sub> (Si,Al) <sub>8</sub> O <sub>20</sub> (OH) <sub>16</sub> . May include trace amount of garnet ((Fe,Mg,Mn) <sub>3</sub> Al <sub>2</sub> (SiO <sub>4</sub> ) <sub>3</sub> ).                                                                                                                                                                                                                                               |
| Amphibole/pyroxene   |                              | Mainly hornblende group amphibole (Ca <sub>2</sub> (Mg,Fe) <sub>5</sub> (Si,Al) <sub>8</sub> O <sub>22</sub> (OH) <sub>2</sub> ), with minor amounts of Mg-Fe amphibole ((Mg,Fe) <sub>7</sub> Si <sub>8</sub> O <sub>22</sub> (OH) <sub>2</sub> ), orthopyroxene (Mg,Fe) <sub>2</sub> Si <sub>2</sub> O <sub>6</sub> and trace amount of talc (Mg <sub>3</sub> Si <sub>4</sub> O <sub>10</sub> (OH) <sub>2</sub> ).                              |
| Tourmaline/kaolinite |                              | Combined Fe-(Mg)-Al-rich tourmaline (dravite-schorl, Na(Fe,Mg) <sub>3</sub> Al <sub>6</sub> (BO <sub>3</sub> ) <sub>3</sub> Si <sub>6</sub> O <sub>18</sub> (OH) <sub>4</sub> ) and kaolinite ((Al,Fe) <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> (OH) <sub>4</sub> ). The exact species is impossible to confirm by QEMSCAN due to the elemental peak overlaps of these two minerals.                                                          |
| Other silicates      |                              | Traces of other silicate minerals that are not included in the list above.                                                                                                                                                                                                                                                                                                                                                                       |
| Carbonates           |                              | Mainly calcite (CaCO <sub>3</sub> ). Also includes trace amount of dolomite-ankerite (CaMg(CO <sub>3</sub> ) <sub>2</sub> ) and Mg-siderite ((Fe,Mg)CO <sub>3</sub> ).                                                                                                                                                                                                                                                                           |
| Apatite              |                              | Ca <sub>5</sub> (PO <sub>4</sub> ) <sub>3</sub> (OH,F,Cl). Also includes several grains of monazite (Ce-phosphate).                                                                                                                                                                                                                                                                                                                              |
| Ilmenite/titanite    |                              | Mainly ilmenite (FeTiO <sub>3</sub> ) with minor titanite (sphene, CaTiSiO <sub>5</sub> ).                                                                                                                                                                                                                                                                                                                                                       |
| Steel                |                              | Fe-Cr-Ni contamination from the comminution stage                                                                                                                                                                                                                                                                                                                                                                                                |
| Other minerals       |                              | Various other trace minerals.                                                                                                                                                                                                                                                                                                                                                                                                                    |

# MINERAL ABUNDANCE

The data for mineral abundance is derived from QEMSCAN FS analysis.

| Mineral group        | Kona       |
|----------------------|------------|
|                      | Pan-Con    |
|                      | Mass%      |
| Gold                 | < 0.01     |
| Arsenopyrite         | 4.77       |
| Lollingite           | 1.14       |
| Pyrite               | 0.32       |
| Pyrrhotite           | 1.91       |
| Chalcopyrite         | 0.04       |
| Other sulphides      | 0.01       |
| Other Cu             | 0.02       |
| Quartz               | 19.6       |
| Plagioclase          | 47.6       |
| Biotite              | 12.2       |
| Chlorite or similar  | 1.73       |
| Amphibole/pyroxene   | 5.22       |
| Tourmaline/kaolinite | 0.42       |
| Other silicates      | 0.17       |
| Carbonate            | 0.18       |
| Apatite              | 0.31       |
| Ilmenite/titanite    | 1.03       |
| Steel                | 3.20       |
| Other minerals       | 0.09       |
| <b>TOTAL</b>         | <b>100</b> |



## MINERAL ABUNDANCE - GRAVITY TAIL

*The data for the mineral abundance of the Gravity tails is derived from XRD analysis*

The quantitative results shown in the table below have been normalised to 100 % and the values shown represent the relative proportion of the crystalline material in the sample. Totals greater or smaller than 100 % are due to rounding errors.

Results in the table preceded by an asterisk indicate normally a larger than usual uncertainty in regard to the quantity of the phase reported; for some of the minor and trace phases it might also indicate an uncertainty in regard of the phase itself, or both.

| Mineral group                 | Sample 1 |
|-------------------------------|----------|
|                               | K Tail   |
|                               | Mass %   |
| Pyrrhotite                    | 1        |
| Clay mineral                  | 2        |
| Chlorite                      | 4        |
| Kaolinite                     | < 1      |
| Annite - biotite - phlogopite | 12       |
| Muscovite - illite            | < 1      |
| Calcic and sodic amphibole    | 4        |
| Cummingtonite - grunerite     | 2        |
| Sodic and calcic plagioclase  | 50       |
| Alpha quartz                  | 24       |

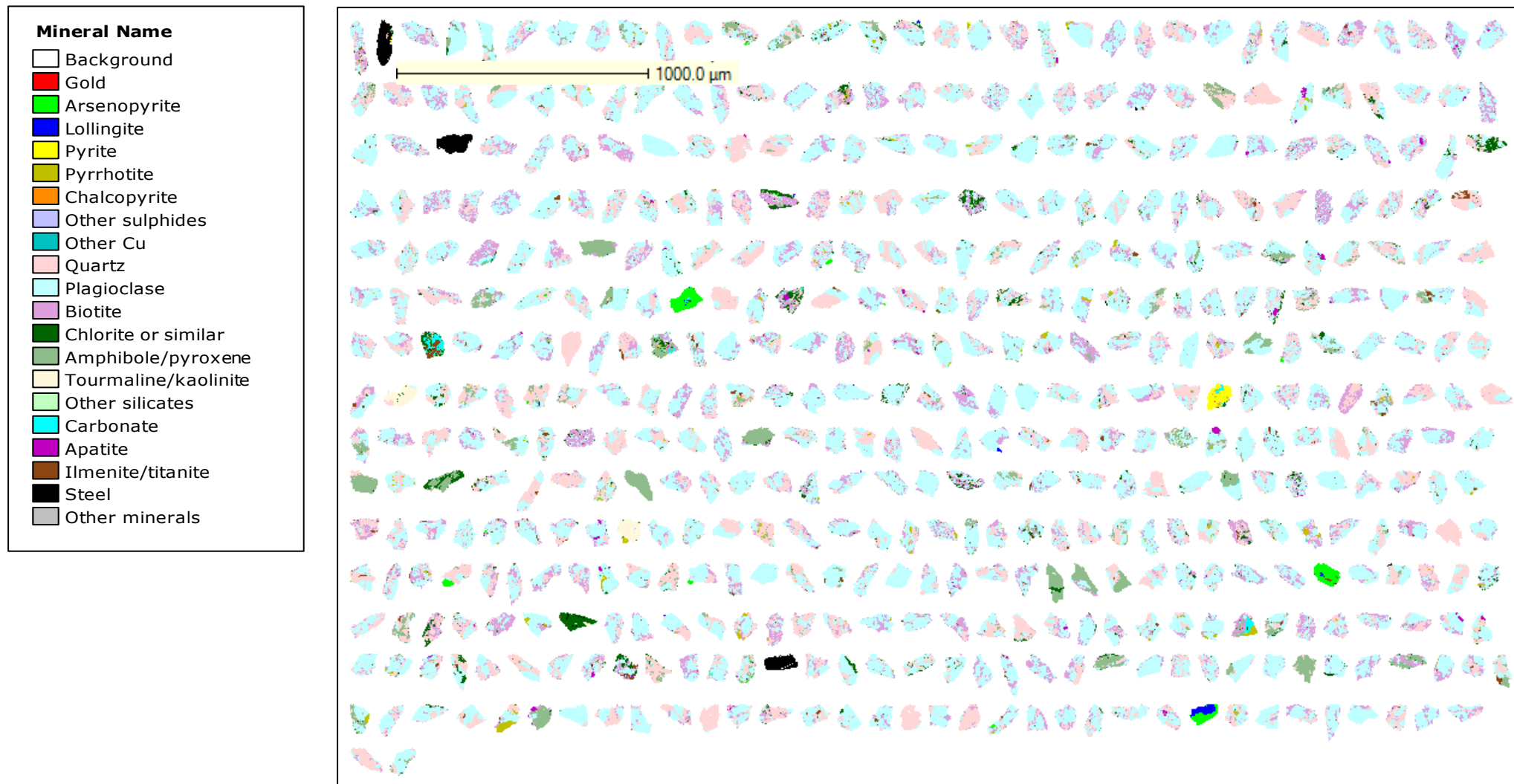
**Additional comments from XRD analysis mainly include as follows:**

- Traces of arsenopyrite might be present.
- Some amorphous material is most likely present.

## PARTICLE IMAGES

The data for particle images is derived from QEMSCAN FS analysis. Refer to scale bar for the actual size of particles.

*Randomly selected coarse particles measured by Field Scan in Kona, Pan-Con*

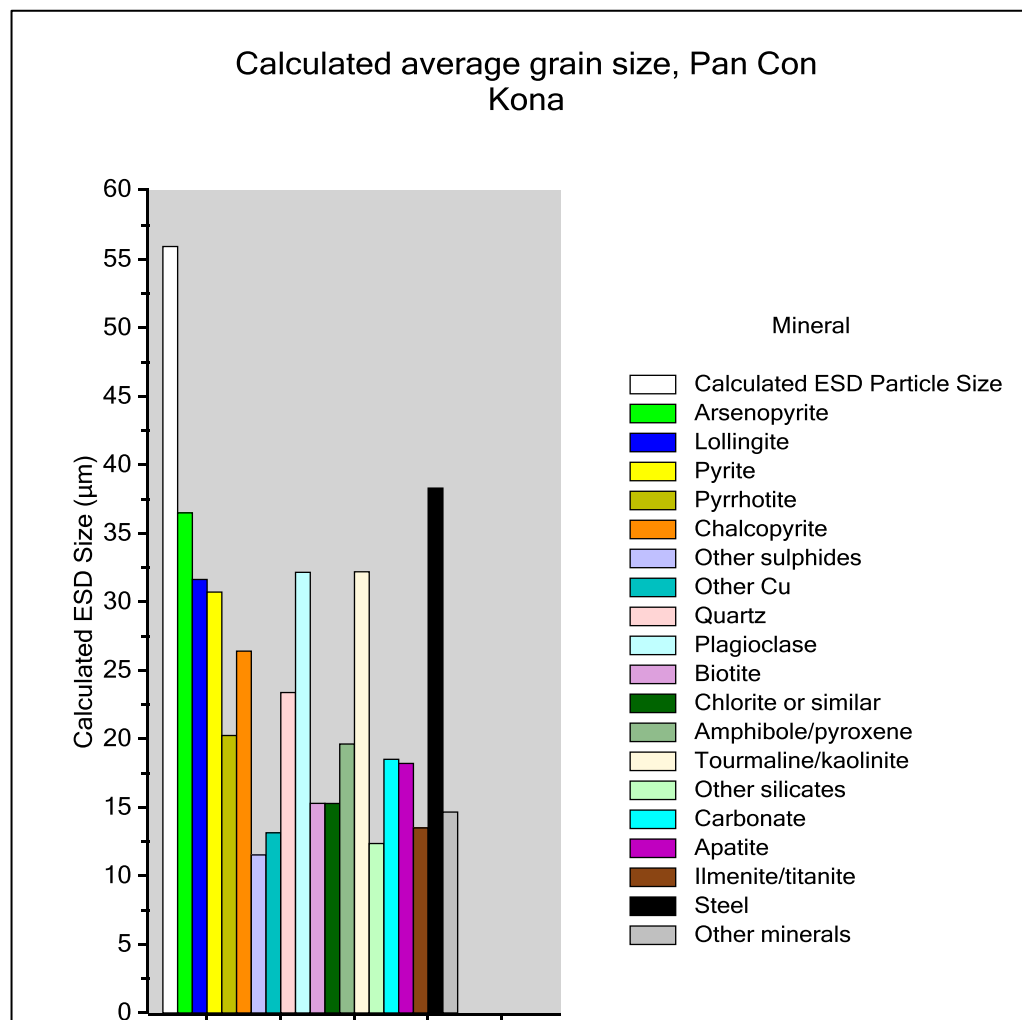




## CALCULATED AVERAGE GRAIN SIZE

The data for average particle/grain size is derived from QEMSCAN FS analysis.

| Mineral group              | Kona                    |
|----------------------------|-------------------------|
|                            | Pan-Con                 |
| Average particle size (µm) | 56                      |
|                            | Average grain size (µm) |
| Arsenopyrite               | 36                      |
| Lollingite                 | 32                      |
| Pyrite                     | 31                      |
| Pyrrhotite                 | 20                      |
| Chalcopyrite               | 26                      |
| Other sulphides            | 12                      |
| Other Cu                   | 13                      |
| Quartz                     | 23                      |
| Plagioclase                | 32                      |
| Biotite                    | 15                      |
| Chlorite or similar        | 15                      |
| Amphibole/pyroxene         | 20                      |
| Tourmaline/kaolinite       | 32                      |
| Other silicates            | 12                      |
| Carbonate                  | 18                      |
| Apatite                    | 18                      |
| Ilmenite/titanite          | 13                      |
| Steel                      | 38                      |
| Other minerals             | 15                      |



## CALCULATED PARTICLE AND GRAIN SIZE DISTRIBUTION

The data for calculated particle and grain size distribution is derived from QEMSCAN FS analysis.

| Particle/Grain size<br>(µm)   |     | Kona Pan-Con                    |              |            |            |        |                                 |
|-------------------------------|-----|---------------------------------|--------------|------------|------------|--------|---------------------------------|
|                               |     | Cumulative sample/mineral mass% |              |            |            |        |                                 |
|                               |     | Sample                          | Arsenopyrite | Lollingite | Pyrrhotite | Pyrite | Combined<br>sulphides/arsenides |
| 425 - 600                     | 600 | 100.0                           | 100.0        | 100.0      | 100.0      | 100.0  | 100.0                           |
| 300 - 425                     | 425 | 99.4                            | 100.0        | 100.0      | 100.0      | 100.0  | 100.0                           |
| 212 - 300                     | 300 | 99.4                            | 100.0        | 100.0      | 100.0      | 100.0  | 100.0                           |
| 150 - 212                     | 212 | 98.1                            | 100.0        | 100.0      | 100.0      | 100.0  | 100.0                           |
| 106 - 150                     | 150 | 92.3                            | 100.0        | 100.0      | 100.0      | 84.3   | 99.4                            |
| 75 - 106                      | 106 | 76.3                            | 96.6         | 97.7       | 100.0      | 81.7   | 96.2                            |
| 53 - 75                       | 75  | 53.6                            | 89.4         | 87.1       | 97.7       | 77.7   | 89.0                            |
| 38 - 53                       | 53  | 32.3                            | 64.4         | 68.5       | 88.5       | 53.9   | 67.9                            |
| 27 - 38                       | 38  | 17.6                            | 40.2         | 48.4       | 74.7       | 36.5   | 45.8                            |
| 20 - 27                       | 27  | 8.55                            | 19.1         | 26.4       | 55.6       | 28.5   | 26.2                            |
| 15 - 20                       | 20  | 3.33                            | 7.53         | 13.1       | 35.2       | 18.9   | 13.1                            |
| 10 - 15                       | 15  | 1.40                            | 3.47         | 6.84       | 21.5       | 14.8   | 7.13                            |
| < 10                          | 10  | 0.60                            | 1.38         | 4.08       | 12.6       | 9.41   | 3.74                            |
| Cumulative passing sizes (µm) |     |                                 |              |            |            |        |                                 |
| P <sub>80</sub>               |     | 116                             | 67           | 67         | 44         | 93     | 66                              |
| P <sub>50</sub>               |     | 71                              | 44           | 39         | 25         | 50     | 41                              |
| P <sub>20</sub>               |     | 40                              | 27           | 24         | 14         | 21     | 24                              |

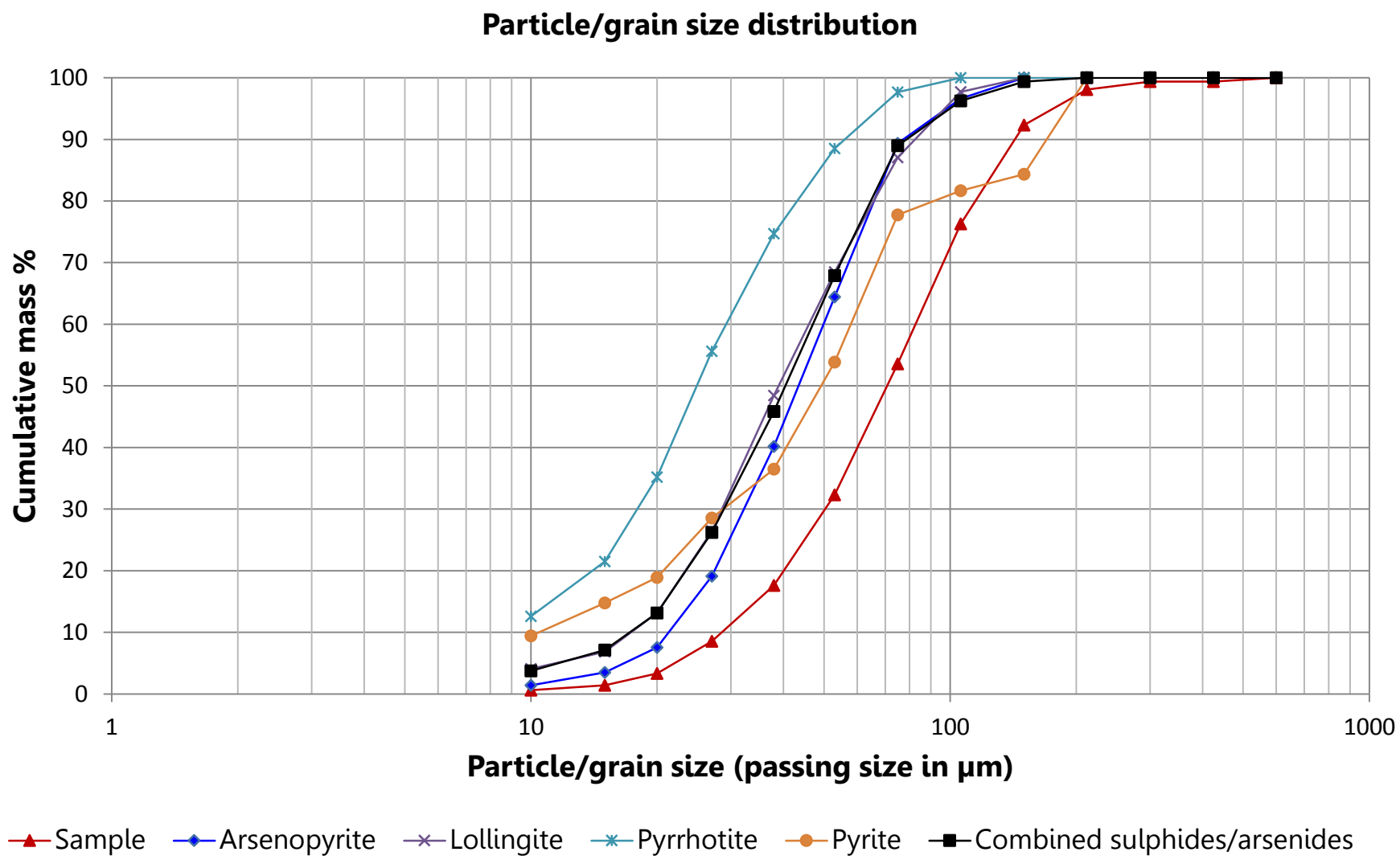


**Image grid showing particle size distribution**

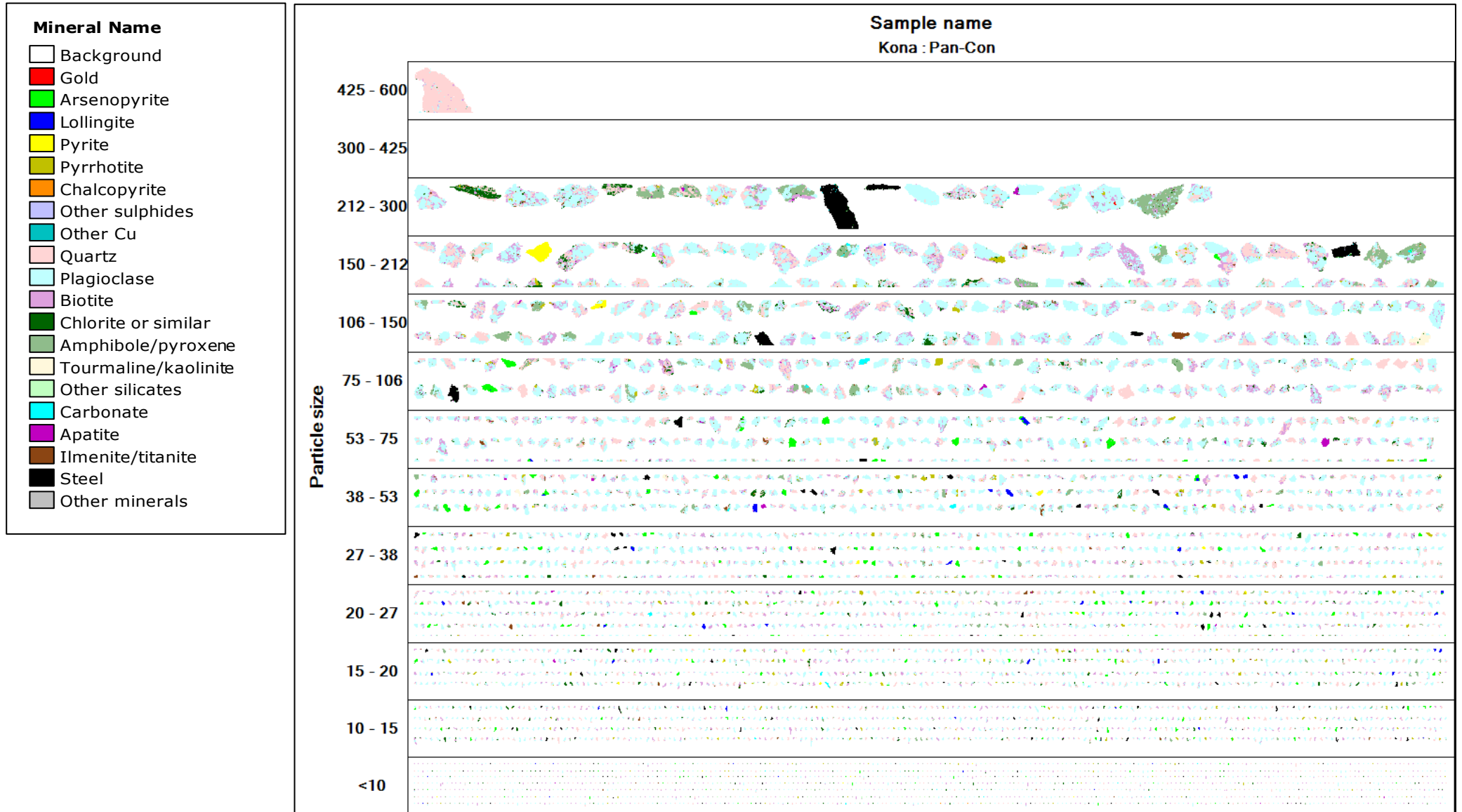


*Image grid showing arsenopyrite grain size distribution*

| Mineral Name                                                                     |                      |
|----------------------------------------------------------------------------------|----------------------|
|  | Background           |
|  | Gold                 |
|  | Arsenopyrite         |
|  | Lollingite           |
|  | Pyrite               |
|  | Pyrrhotite           |
|  | Chalcopyrite         |
|  | Other sulphides      |
|  | Other Cu             |
|  | Quartz               |
|  | Plagioclase          |
|  | Biotite              |
|  | Chlorite or similar  |
|  | Amphibole/pyroxene   |
|  | Tourmaline/kaolinite |
|  | Other silicates      |
|  | Carbonate            |
|  | Apatite              |
|  | Ilmenite/titanite    |
|  | Steel                |
|  | Other minerals       |

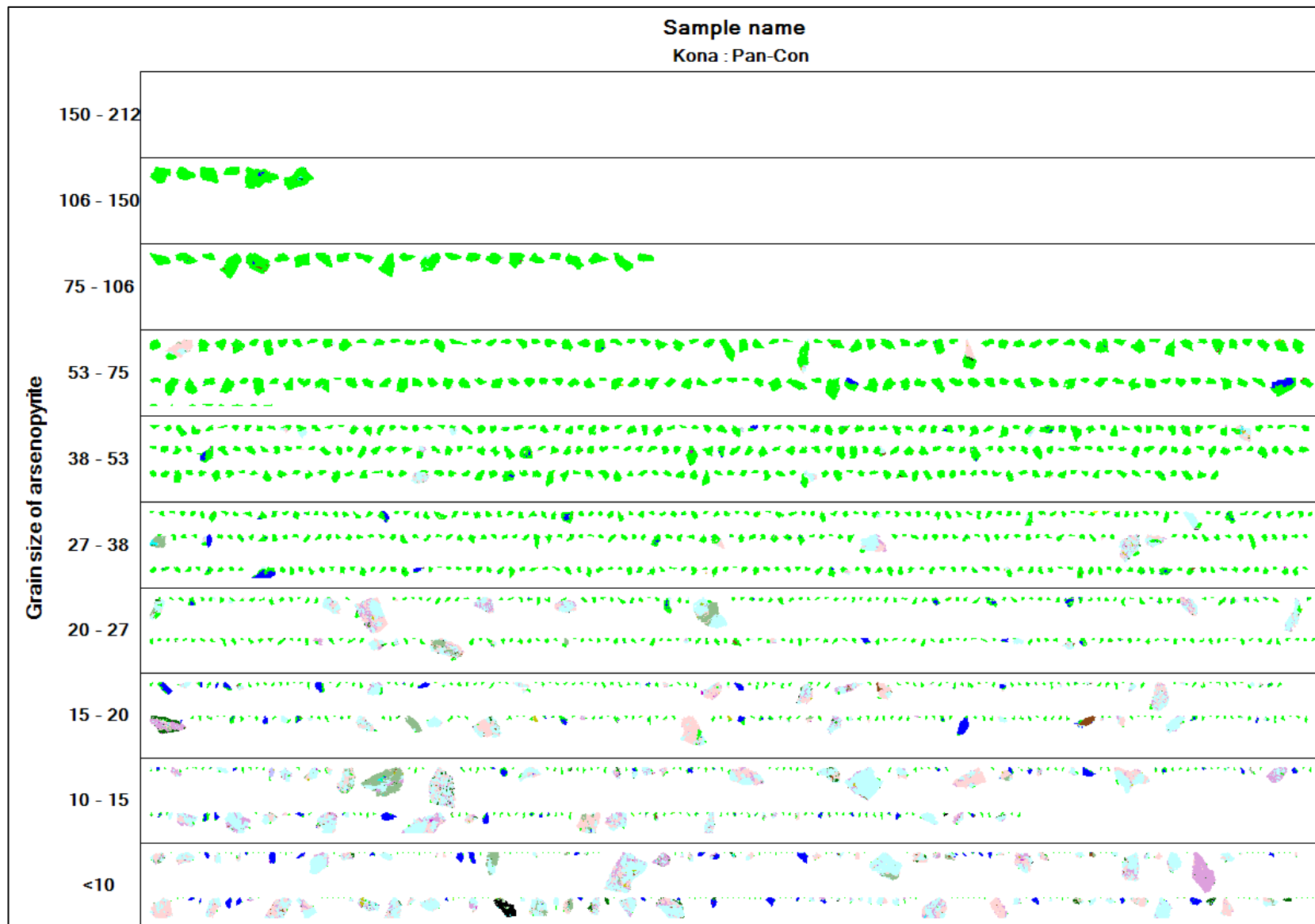


**Image grid showing lollingite grain size distribution**

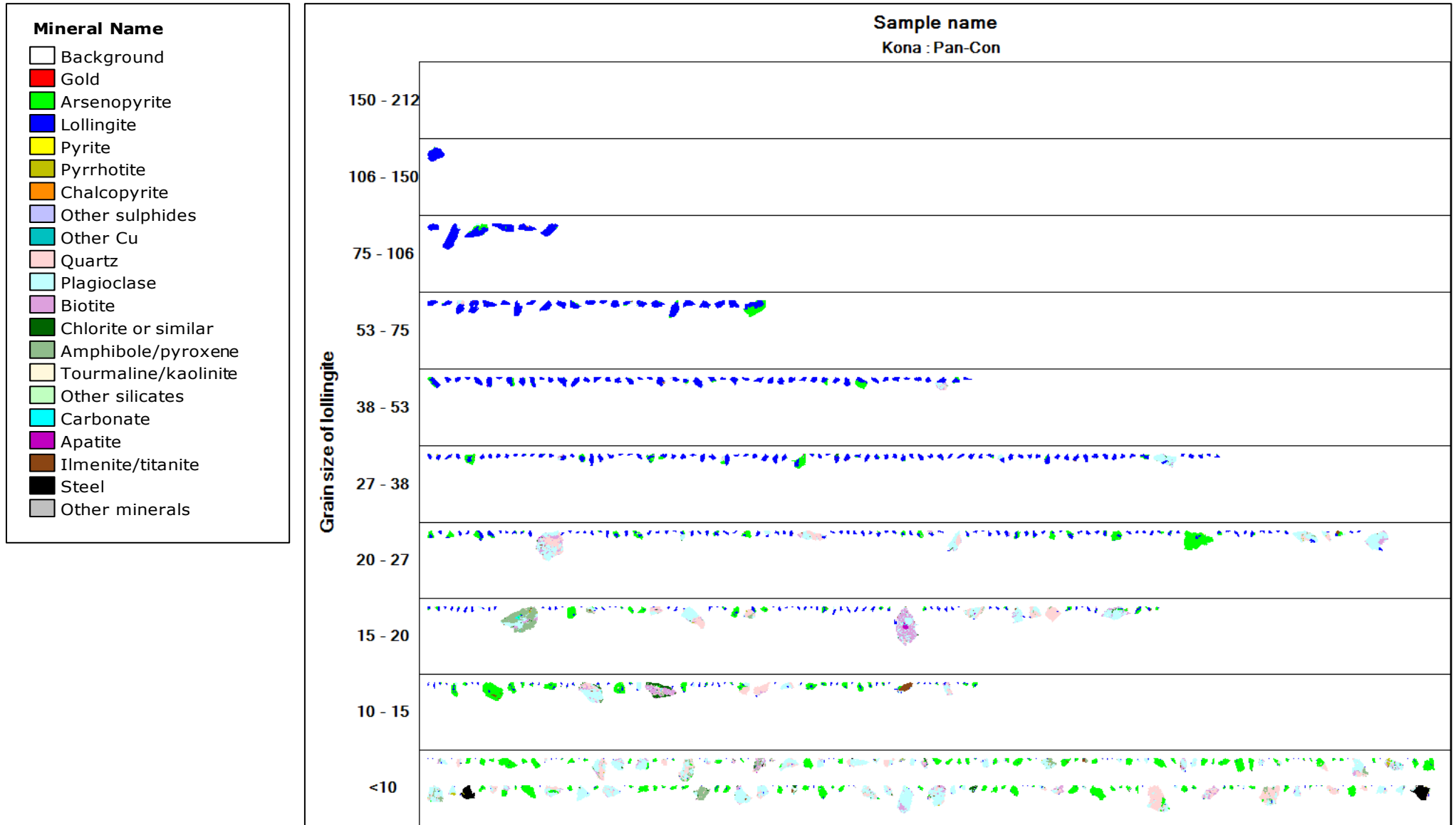


*Image grid showing pyrrhotite grain size distribution*

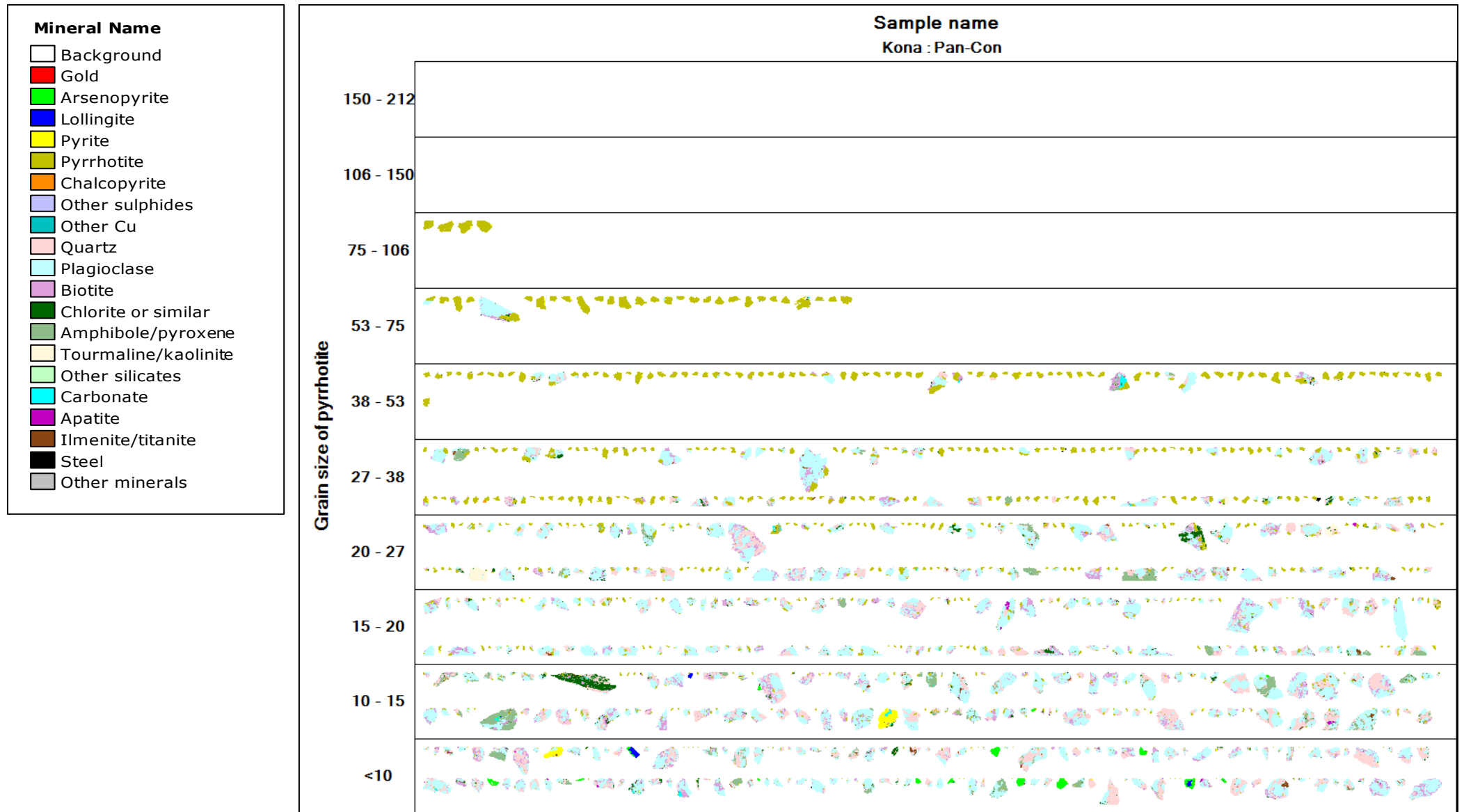


*Image grid showing pyrite grain size distribution*

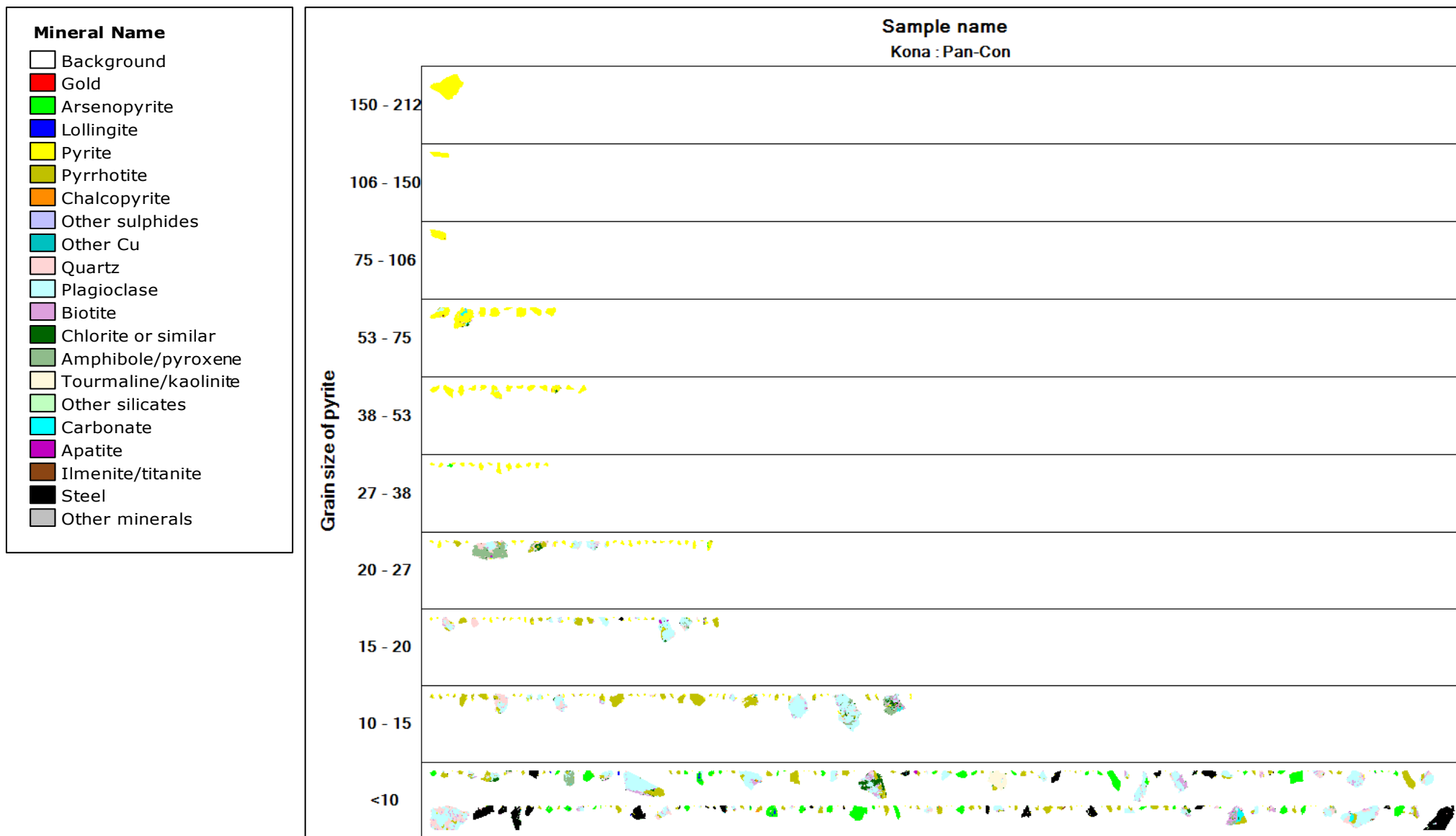
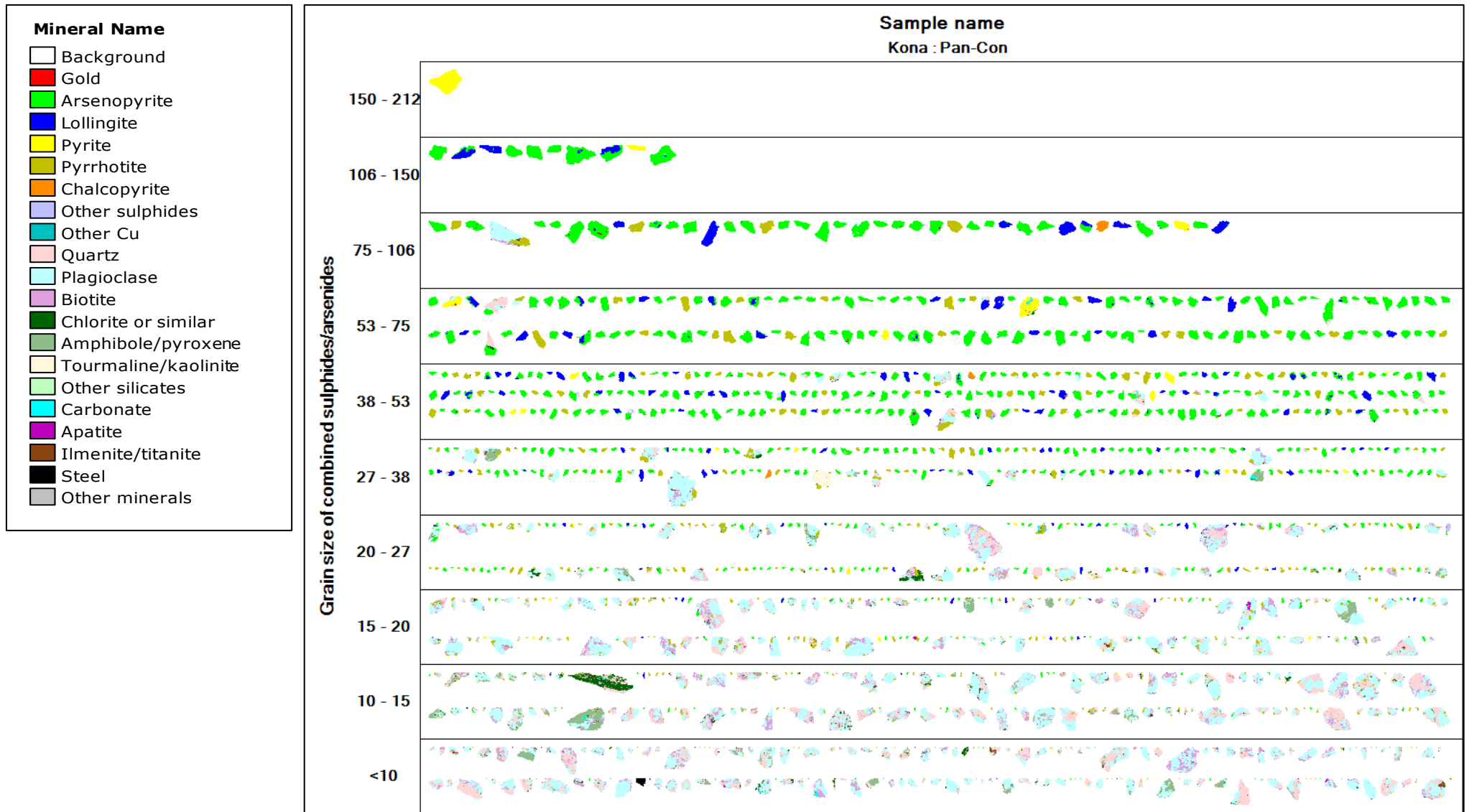




*Image grid showing combined sulphides/arsenides grain size distribution*



# MINERAL LIBERATION

The data for mineral liberation is derived from QEMSCAN FS analysis.

| Liberation classes by surface area % |           | Kona Pan-Con  |            |            |        |                              |
|--------------------------------------|-----------|---------------|------------|------------|--------|------------------------------|
|                                      |           | Mineral mass% |            |            |        |                              |
|                                      |           | Arsenopyrite  | Lollingite | Pyrrhotite | Pyrite | Combined sulphides/arsenides |
| Well liberated                       | > 90 %    | 77.1          | 54.9       | 36.3       | 62.1   | 74.6                         |
| High grade middlings                 | 60 - 90 % | 16.9          | 23.8       | 16.1       | 20.9   | 10.8                         |
| Medium grade middlings               | 30 - 60 % | 3.30          | 10.2       | 7.79       | 5.08   | 3.57                         |
| Low grade middlings                  | 10 - 30 % | 1.56          | 5.02       | 15.8       | 5.79   | 4.71                         |
| Locked                               | < 10 %    | 1.11          | 6.08       | 24.1       | 6.18   | 6.33                         |
| TOTAL                                |           | 100           | 100        | 100        | 100    | 100                          |

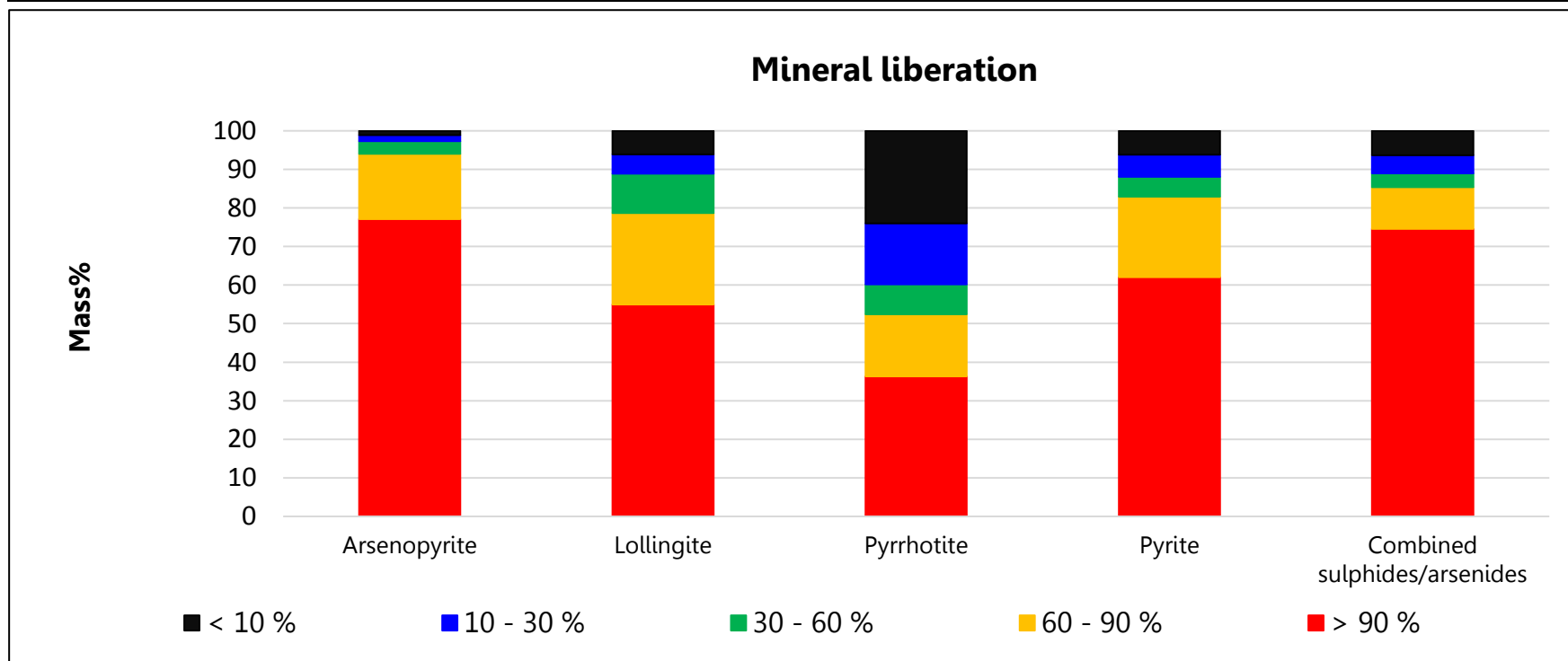
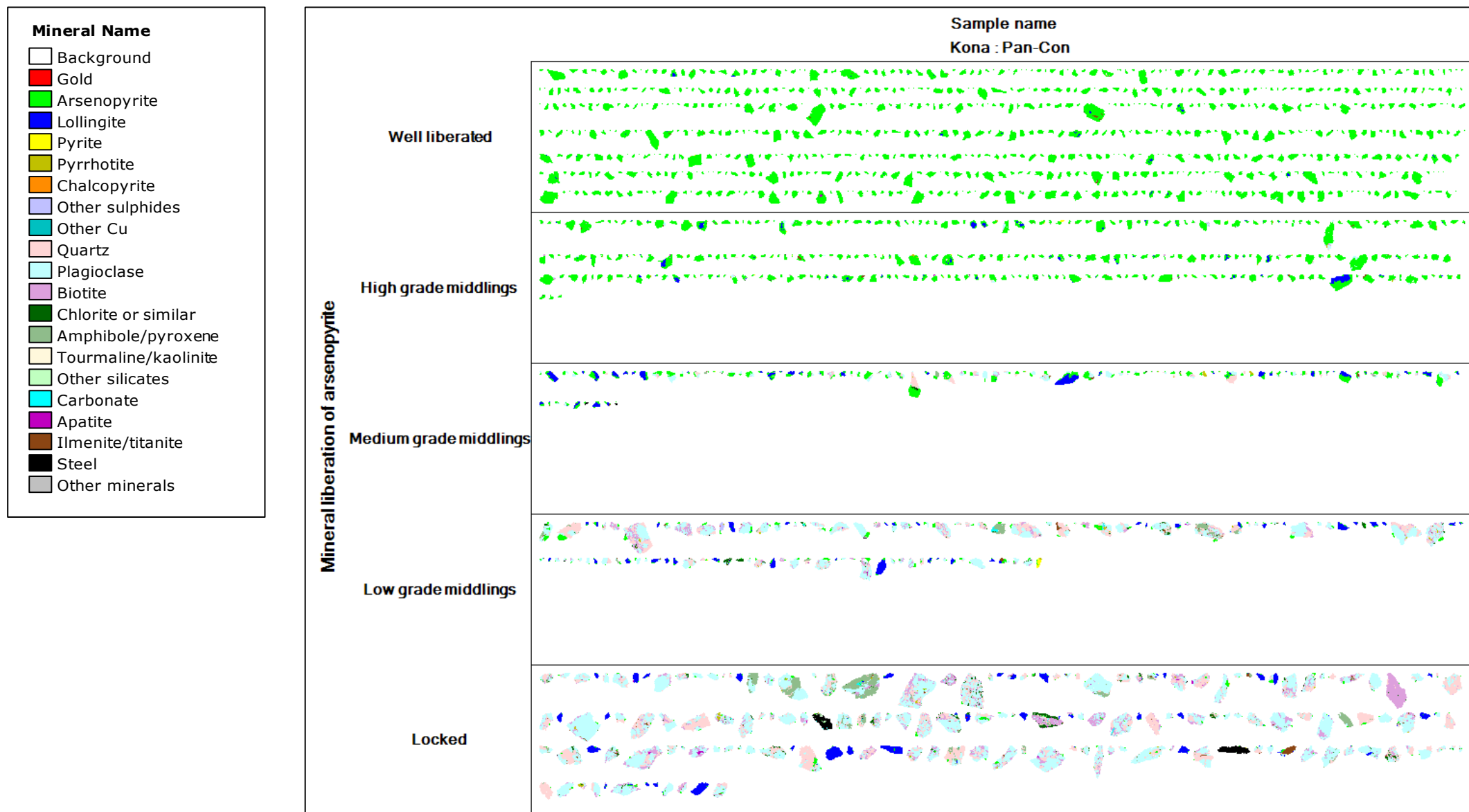


**Image grid showing arsenopyrite liberation**



**Mineral Name**

-  Background
-  Gold
-  Arsenopyrite
-  Lollingite
-  Pyrite
-  Pyrrhotite
-  Chalcopyrite
-  Other sulphides
-  Other Cu
-  Quartz
-  Plagioclase
-  Biotite
-  Chlorite or similar
-  Amphibole/pyroxene
-  Tourmaline/kaolinite
-  Other silicates
-  Carbonate
-  Apatite
-  Ilmenite/titanite
-  Steel
-  Other minerals

**Image grid showing lollingite liberation**

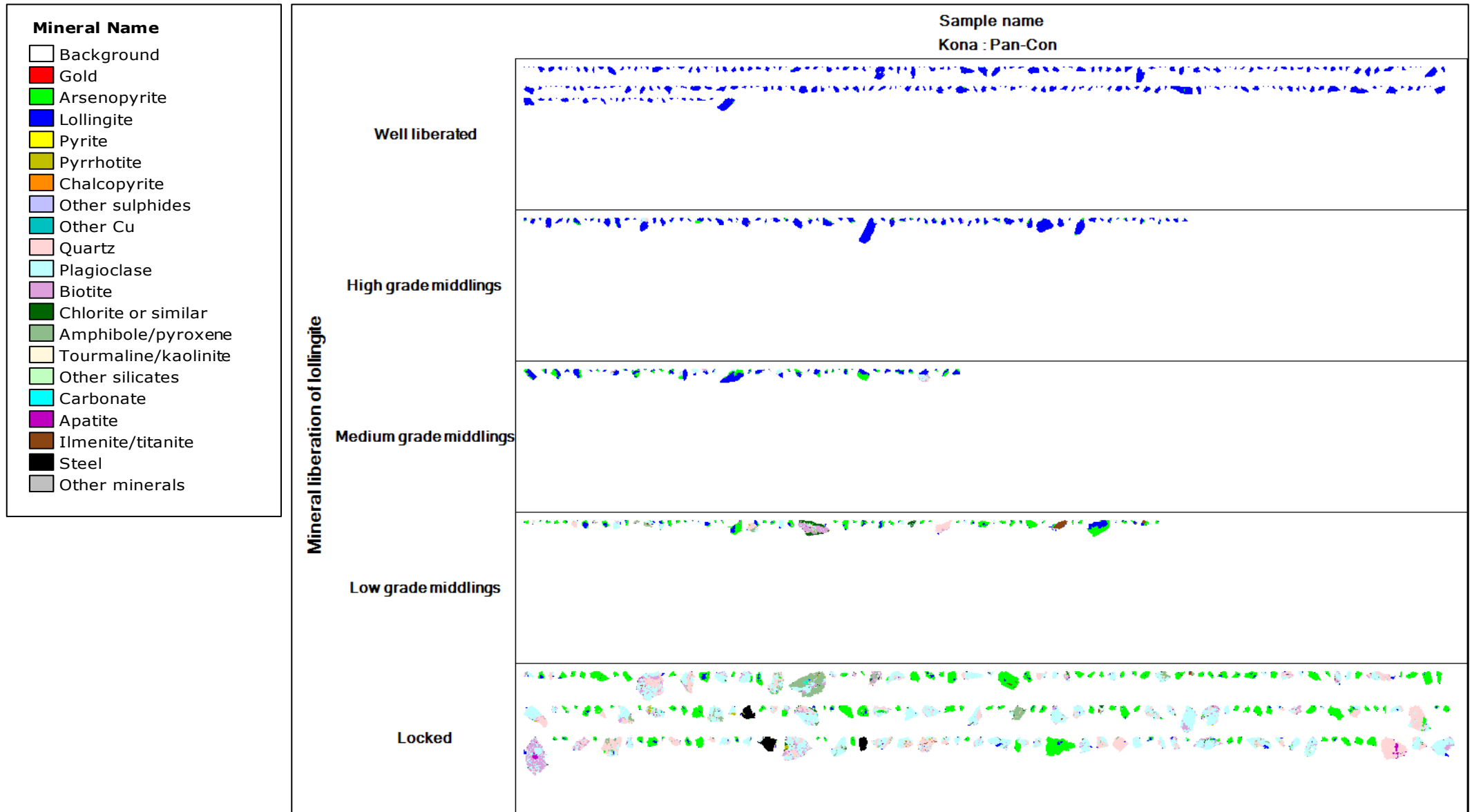


**Image grid showing pyrrhotite liberation**

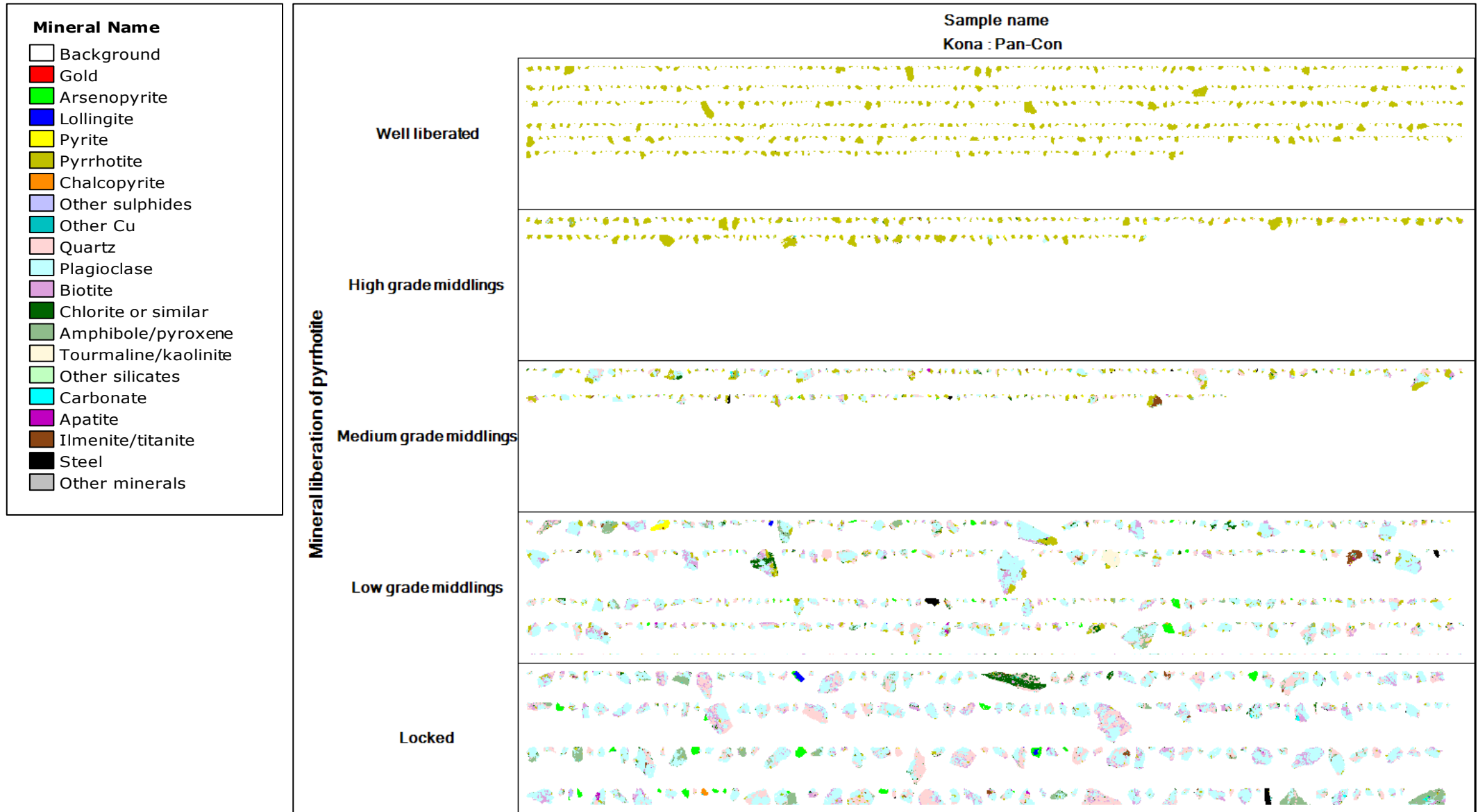
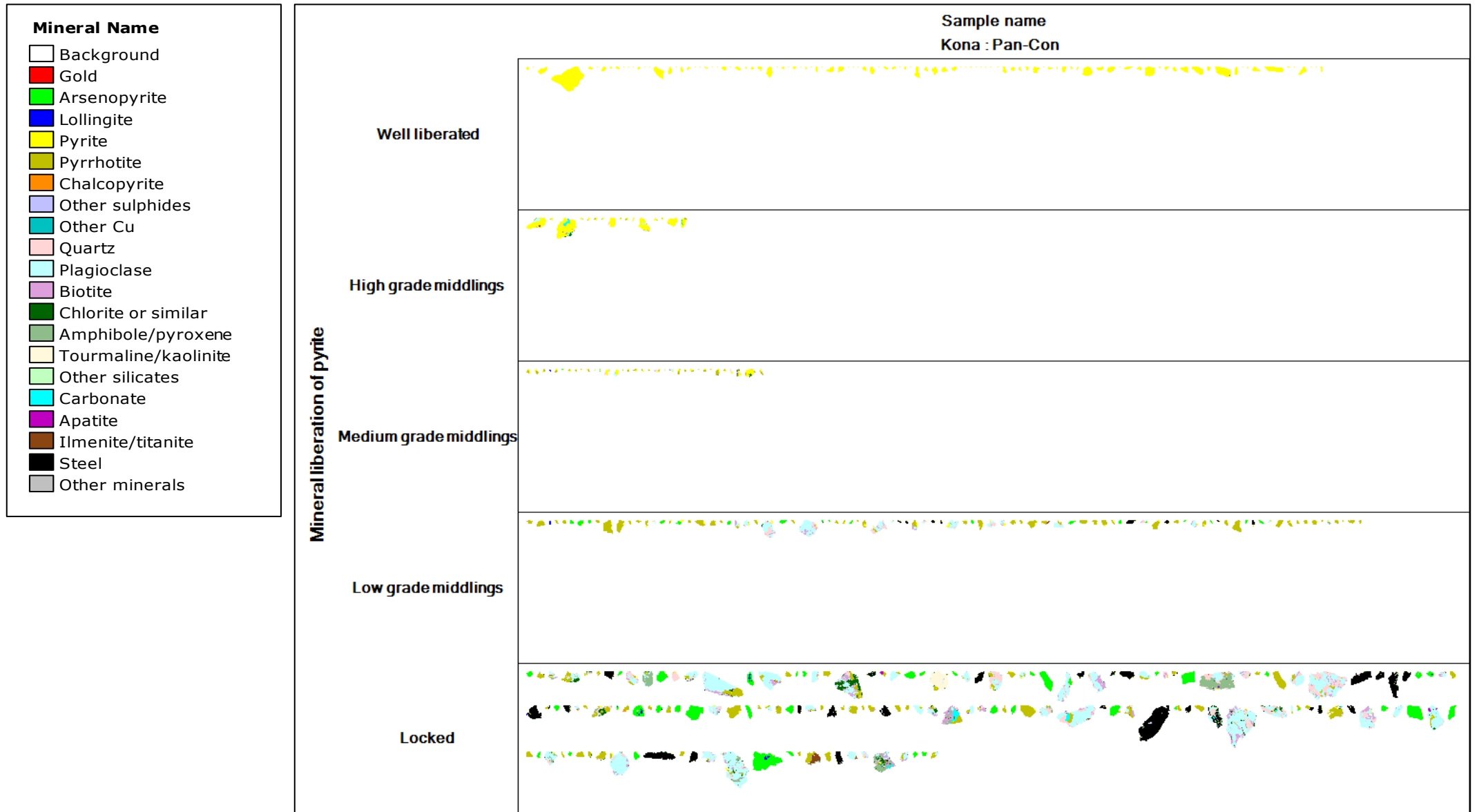


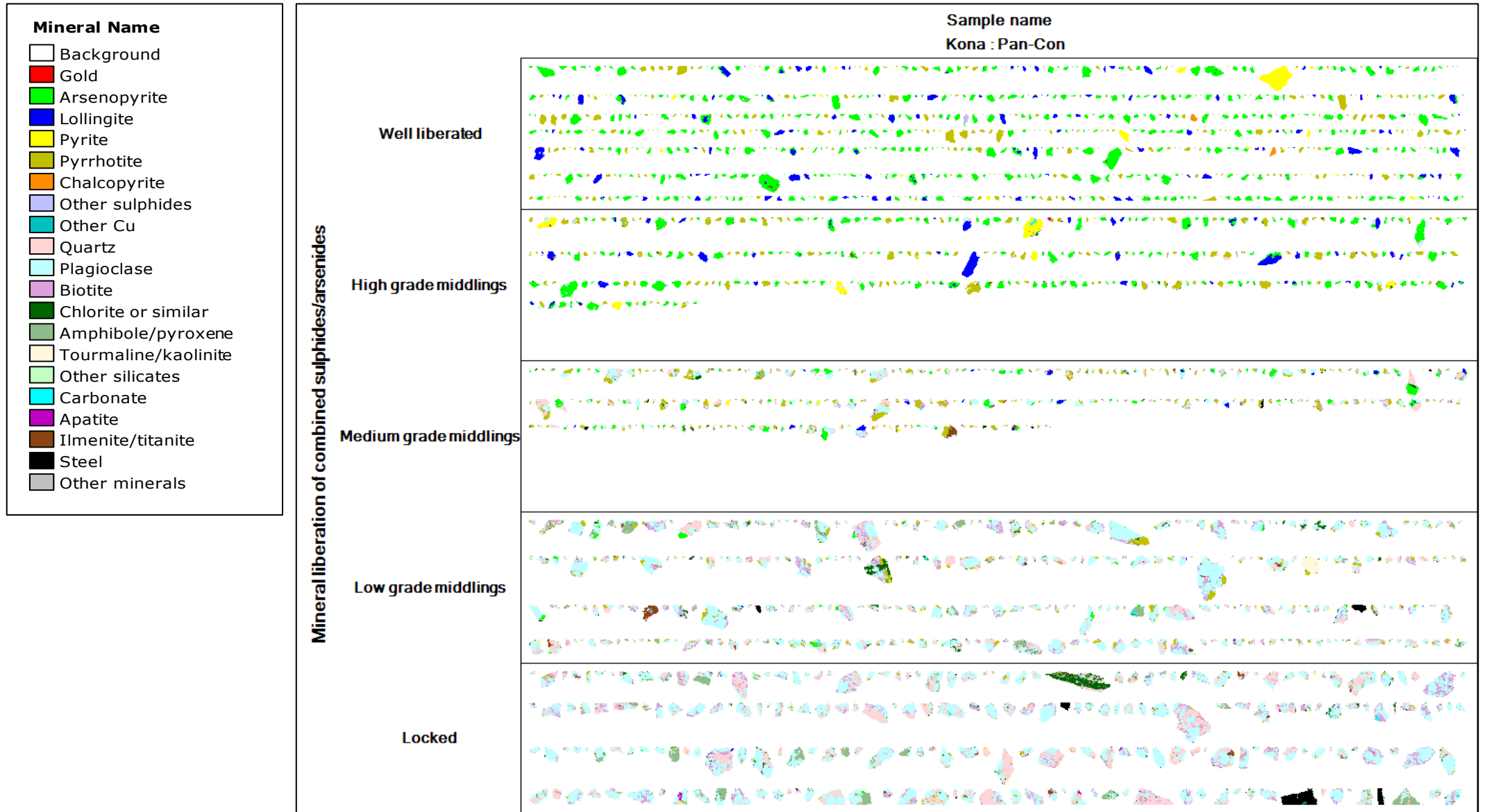
*Image grid showing pyrite liberation*



**Mineral Name**

- Background
- Gold
- Arsenopyrite
- Lollingite
- Pyrite
- Pyrrhotite
- Chalcopyrite
- Other sulphides
- Other Cu
- Quartz
- Plagioclase
- Biotite
- Chlorite or similar
- Amphibole/pyroxene
- Tourmaline/kaolinite
- Other silicates
- Carbonate
- Apatite
- Ilmenite/titanite
- Steel
- Other minerals

*Image grid showing combined sulphides/arsenides liberation*



**Mineral Name**

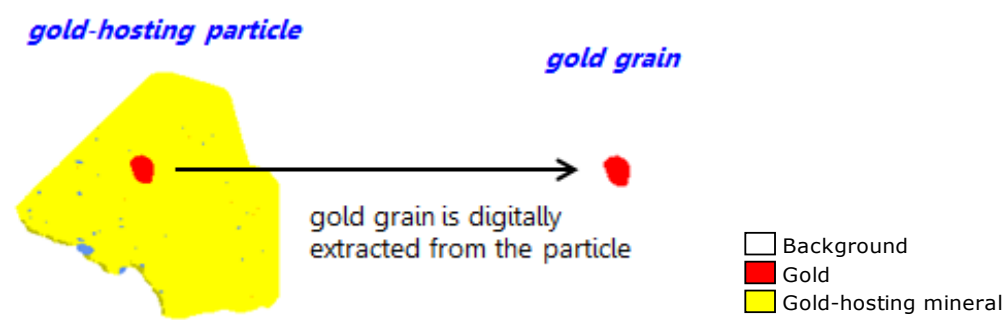
- Background
- Gold
- Arsenopyrite
- Lollingite
- Pyrite
- Pyrrhotite
- Chalcopyrite
- Other sulphides
- Other Cu
- Quartz
- Plagioclase
- Biotite
- Chlorite or similar
- Amphibole/pyroxene
- Tourmaline/kaolinite
- Other silicates
- Carbonate
- Apatite
- Ilmenite/titanite
- Steel
- Other minerals

# GOLD GRAIN SIZE DISTRIBUTION

The data for gold grain size distribution is derived from QEMSCAN TMS analysis.

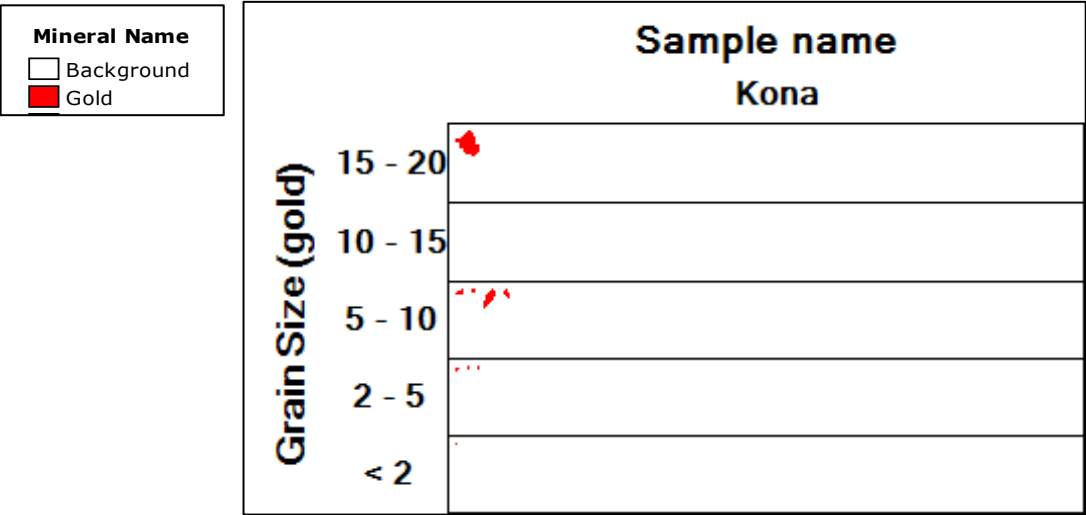
**Note:** The gold grain size distribution was calculated based on gold grains detected by TMS analysis in a single block of each fraction. The data is indicative at best.

For the calculation of grain sizes, the gold-bearing grains are digitally extracted from the gold-hosting particles, as illustrated below.



| Grain size classes (µm) | Kona               |            |
|-------------------------|--------------------|------------|
|                         | Pan-Con            |            |
|                         | Gold grain numbers | Gold mass% |
| 15 - 20                 | 1                  | 63.1       |
| 10 - 15                 | --                 | --         |
| 5 - 10                  | 4                  | 32.1       |
| 2 - 5                   | 3                  | 4.5        |
| < 2                     | 1                  | 0.2        |
| TOTAL                   | 9                  | 100        |

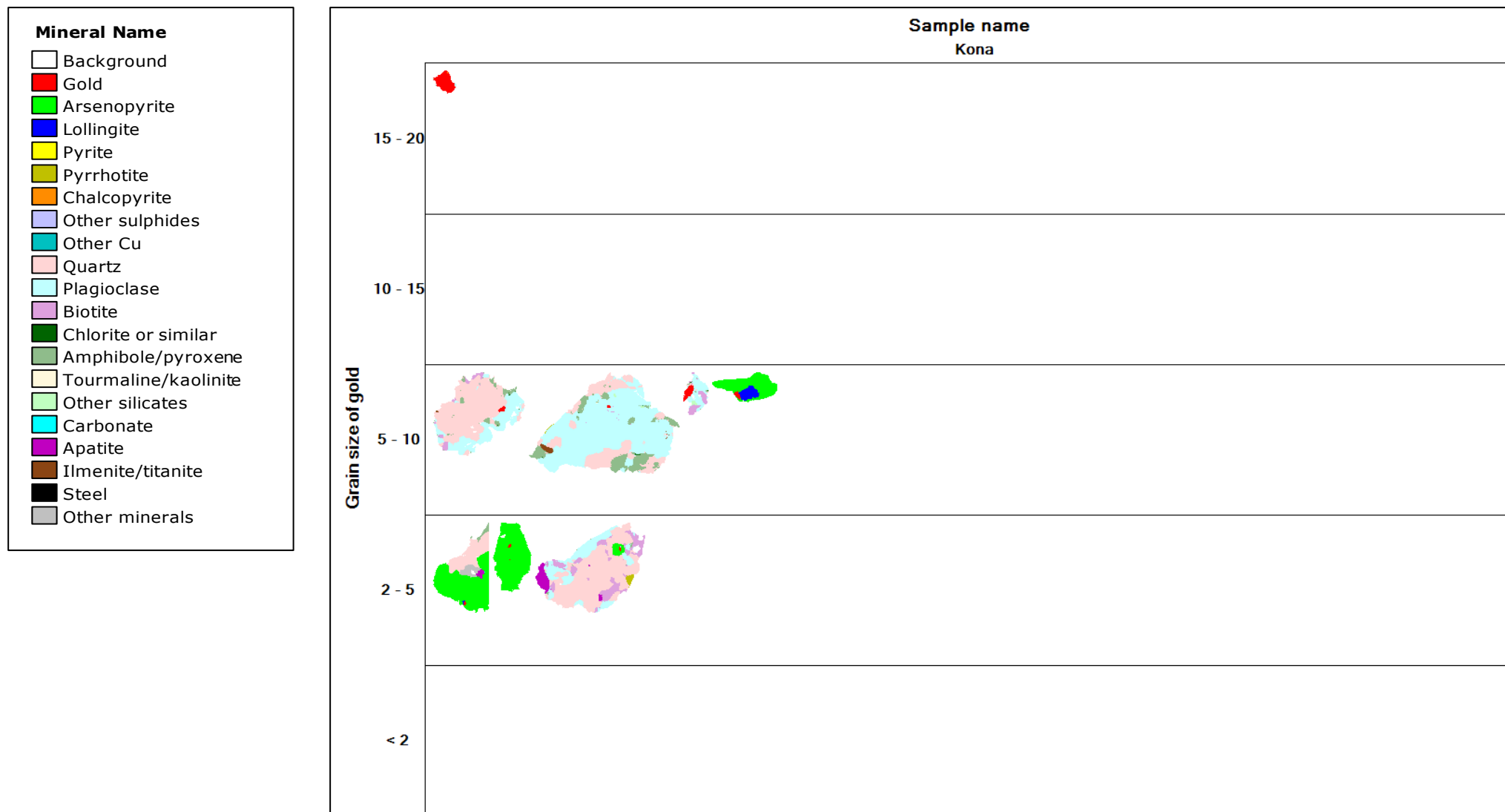
Image grid showing the distribution of gold grains, with gold digitally extracted from the hosting minerals





### Image grid showing the distribution of gold grains between size classes

(for the image grid below, the gold grains have not been extracted and therefore do not correspond exactly with the tabular data presented above. The image grids have been included to provide an overview of the host minerals distribution within gold grain size classes)



# GOLD EXPOSURE

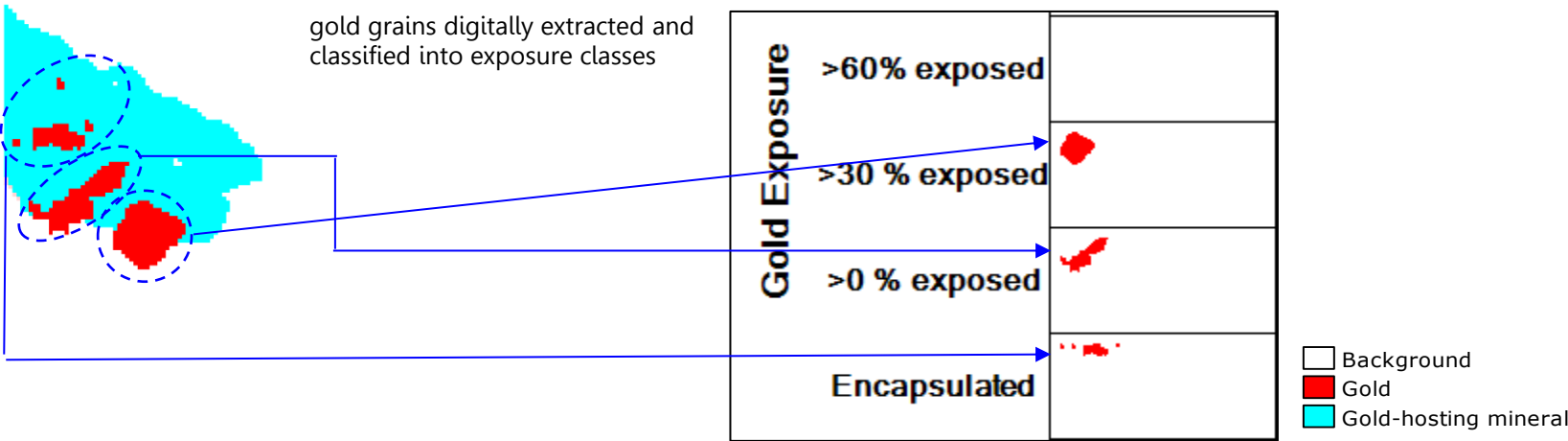
The data for gold exposure is derived from QEMSCAN TMS analysis.

The data is based on the limited gold-bearing particles detected by TMS analysis and is indicative only. It may be significantly influenced by the relatively large mass of coarser grains (nugget effect).

| Gold exposure classes            |            | Definition                                       |
|----------------------------------|------------|--------------------------------------------------|
| > 90 surface area% being exposed | > 90 % Exp | Gold grains with > 90 surface area% exposed      |
| > 60 surface area% being exposed | > 60 % Exp | Gold grains with > 60 surface area% exposed      |
| > 30 surface area% being exposed | > 30 % Exp | Gold grains with > 30 surface area% exposed      |
| > 0 surface area% being exposed  | > 0 % Exp  | Gold grains with > 0 surface area% exposed       |
| Encapsulated                     | Enc        | Gold grains fully encapsulated in host particles |

For the calculation of gold exposure, the gold grains are digitally extracted from the gold-hosting particles, as illustrated below.

gold-hosting particle



| Gold exposure classes | Central Composite  |            |
|-----------------------|--------------------|------------|
|                       | Pan-Con            |            |
|                       | Gold grain numbers | Gold mass% |
| > 90 % Exp            | --                 | --         |
| > 60 % Exp            | 1                  | 63.2       |
| > 30 % Exp            | 1                  | 18.5       |
| > 0 % Exp             | 1                  | 5.9        |
| Enc                   | 6                  | 12.4       |
| <b>TOTAL</b>          | <b>9</b>           | <b>100</b> |

| Mineral Name                        |            |
|-------------------------------------|------------|
| <input type="checkbox"/>            | Background |
| <input checked="" type="checkbox"/> | Gold       |

*Image grid showing the distribution of gold grains between exposure categories, with gold digitally extracted from the hosting minerals*

| Sample name    |                                                                                      |
|----------------|--------------------------------------------------------------------------------------|
| Kona           |                                                                                      |
| > 90 % exposed |                                                                                      |
| > 60% exposed  |   |
| > 30% exposed  |   |
| > 0% exposed   |   |
| Encapsulated   |  |

## GOLD LOCKING

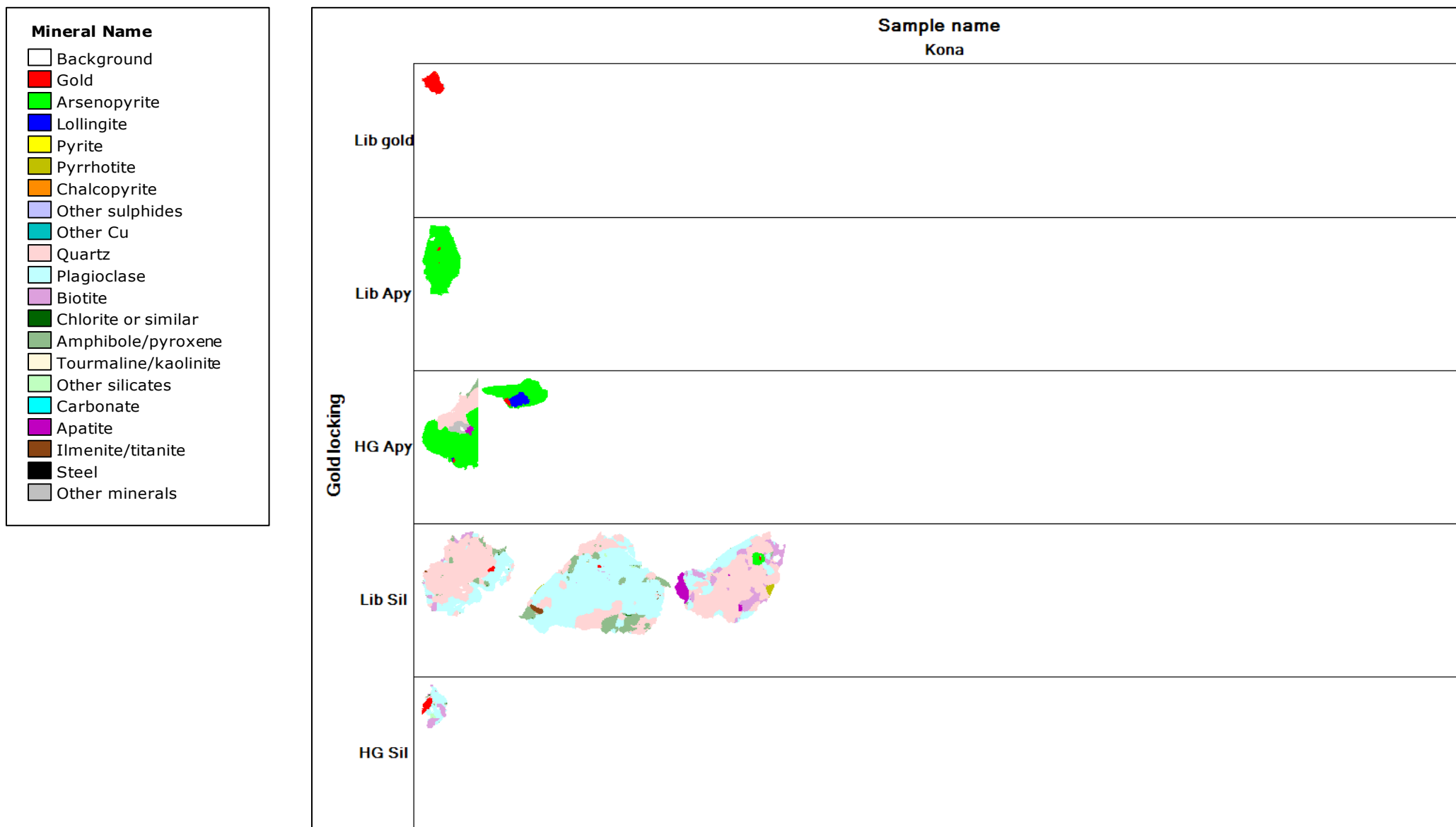
The data for gold locking is derived from QEMSCAN TMS analysis.

Locking data reflects the major minerals that the gold-hosting particle is comprised of (not necessarily adjacent to gold). The data is based on the limited gold-bearing particles detected by TMS analysis and is indicative only.

| Gold locking classes | Definition<br>(Particles are filtered from the top down and can only fall into one category) |
|----------------------|----------------------------------------------------------------------------------------------|
| Lib gold             | Particles having gold > 90 area%                                                             |
| Lib Apy              | Particles having arsenopyrite > 90 area%                                                     |
| HG Apy               | Particles having arsenopyrite > 60 area%                                                     |
| Lib Sil              | Particles having combined silicates > 90 area%                                               |
| HG Sil               | Particles having combined silicates > 60 area%                                               |

| Gold locking classes | Central Composite     |                    |            |
|----------------------|-----------------------|--------------------|------------|
|                      | Pan-Con               |                    |            |
|                      | Gold particle numbers | Gold grain numbers | Gold mass% |
| Lib gold             | 1                     | 1                  | 63.1       |
| Lib Apy              | 1                     | 2                  | 1.9        |
| HG Apy               | 2                     | 2                  | 7.7        |
| Lib Sil              | 3                     | 3                  | 8.7        |
| HG Sil               | 1                     | 1                  | 18.6       |
| <b>TOTAL</b>         | <b>8</b>              | <b>9</b>           | <b>100</b> |

*Image grid showing the distribution of gold grains between locking categories*



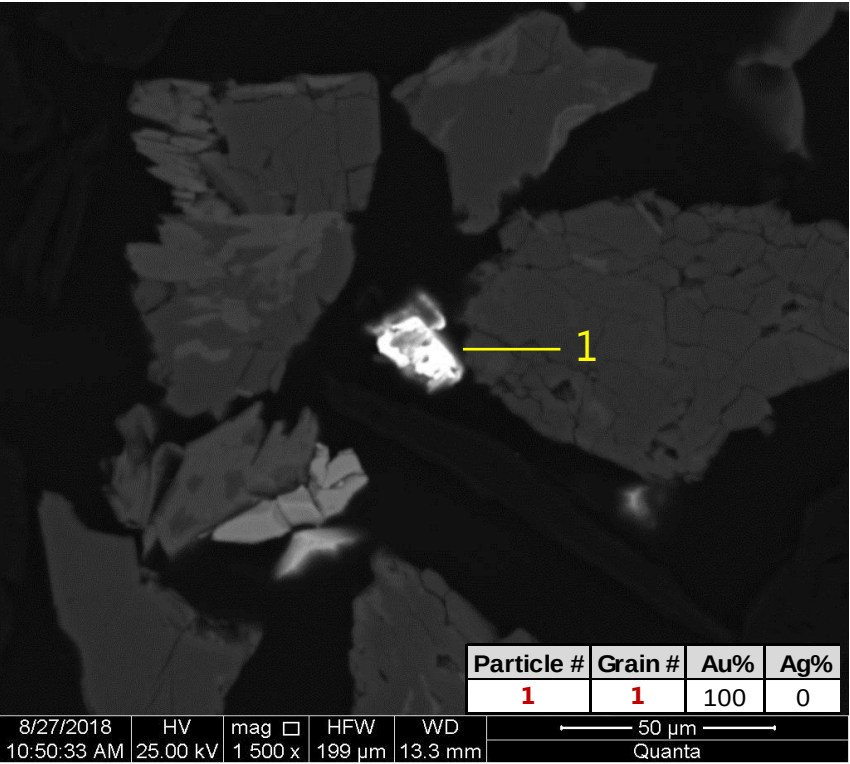
## BSE IMAGES OF SELECTED GOLD GRAINS DETECTED, KONA PAN-CON

*Data for selected gold grains detected in Kona, Pan-Con*

| Sample name   | Host particle |                         | Gold grain |              |             | Phase composition<br>(normalised %, host response excluded) |    |
|---------------|---------------|-------------------------|------------|--------------|-------------|-------------------------------------------------------------|----|
|               | Particle No.  | Host mineral            | Grain No.  | Gold mineral | Liberation* | Au                                                          | Ag |
| Kona, Pan-Con | <b>1</b>      | --                      | <b>1</b>   | Native gold  | Lib         | 100                                                         | 0  |
|               | <b>2</b>      | Silicates               | <b>2</b>   | Native gold  | Exp         | 98                                                          | 2  |
|               | <b>3</b>      | Arsenopyrite/lollingite | <b>3</b>   | Native gold  | Exp         | 100                                                         | 0  |
|               | <b>4</b>      | Silicates               | <b>4</b>   | Native gold  | Enc         | 100                                                         | 0  |
|               | <b>5</b>      | Arsenopyrite            | <b>5</b>   | Native gold  | Enc         | 95                                                          | 5  |
|               | <b>6</b>      | Silicates               | <b>6</b>   | Native gold  | Enc         | 100                                                         | 0  |
|               | <b>7</b>      | Arsenopyrite/silicates  | <b>7</b>   | Native gold  | Enc         | 95                                                          | 5  |
|               | <b>8</b>      | Silicates/arsenopyrite  | <b>8</b>   | Native gold  | Enc         | 92                                                          | 8  |

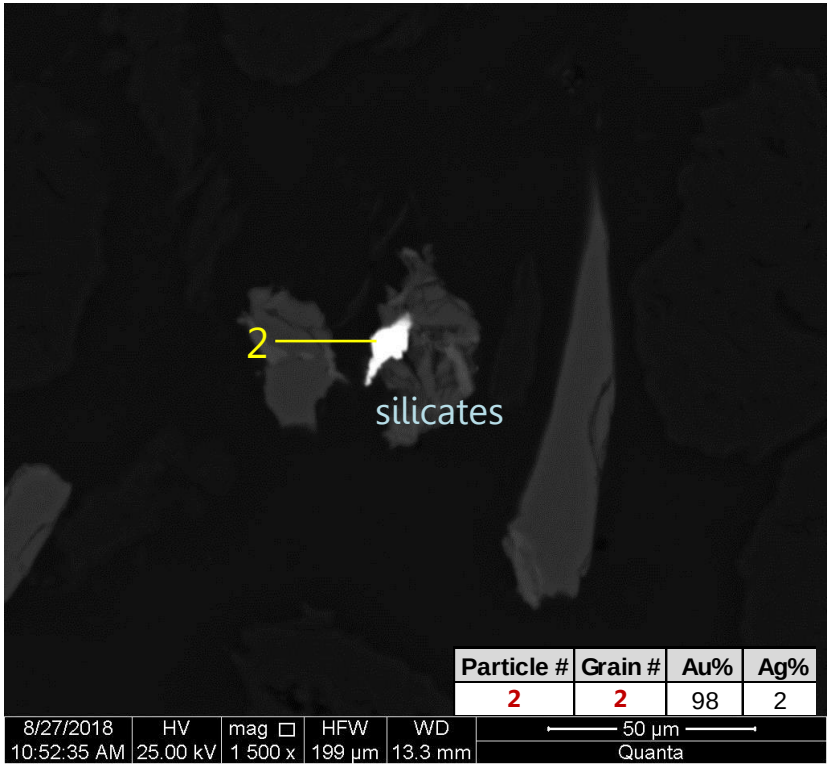
\* **Liberation category definitions:** Lib - Liberated (> 90 % surface area of gold grain is exposed), Exp- Exposed (> 0 % surface area of gold grain is exposed at the surface of the hosting particles), Enc-Encapsulated (gold grain without any surface exposure).

Kona, Pan-Con, Particle 1, Au 1

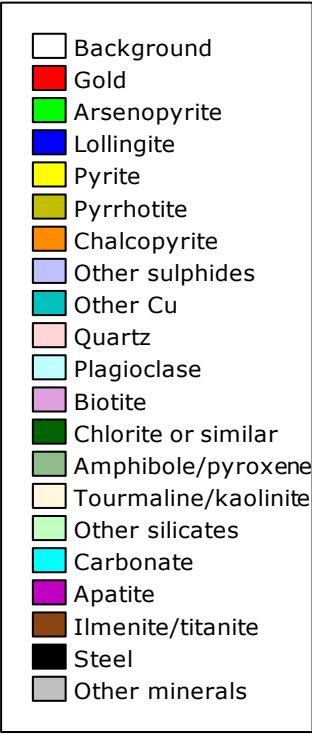
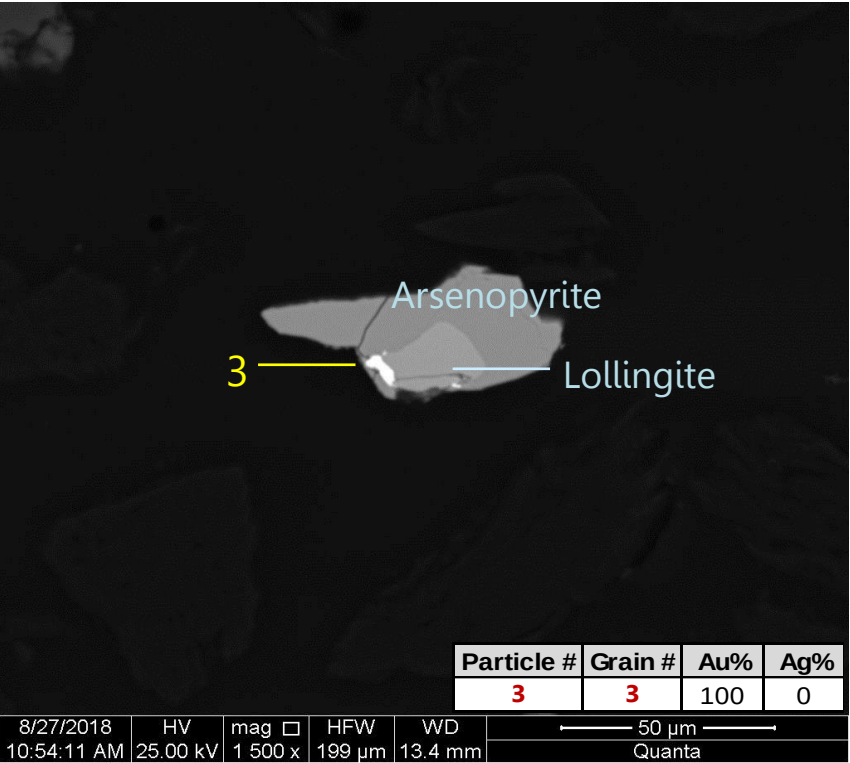


- Background
- Gold
- Arsenopyrite
- Lollingite
- Pyrite
- Pyrrhotite
- Chalcopyrite
- Other sulphides
- Other Cu
- Quartz
- Plagioclase
- Biotite
- Chlorite or similar
- Amphibole/pyroxene
- Tourmaline/kaolinite
- Other silicates
- Carbonate
- Apatite
- Ilmenite/titanite
- Steel
- Other minerals

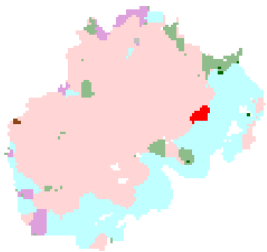
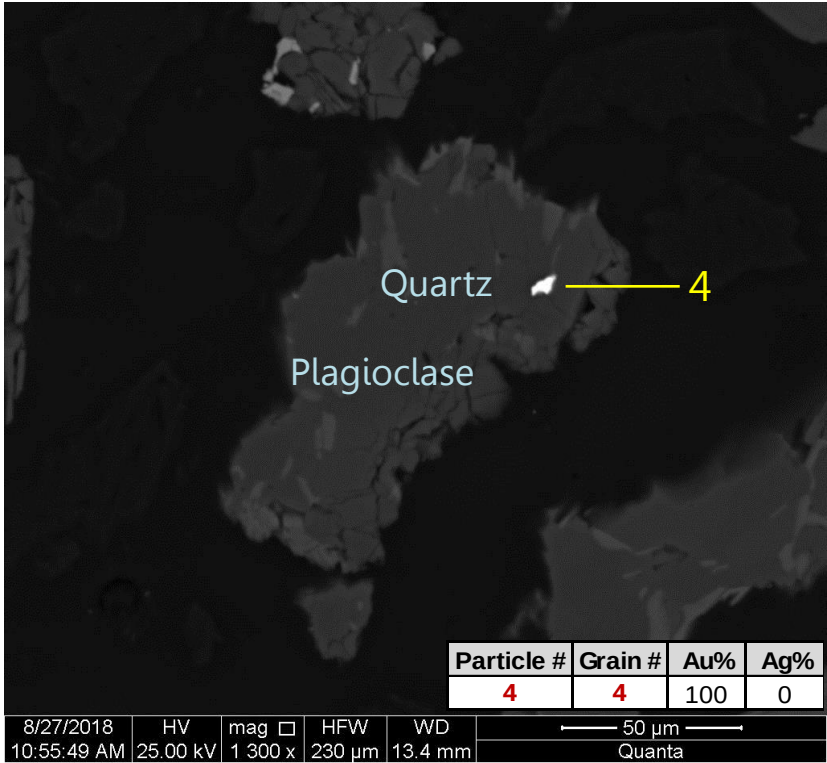
Kona, Pan-Con, Particle 2, Au 2



Kona, Pan-Con, Particle 3, Au 3

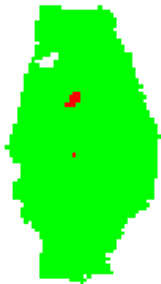
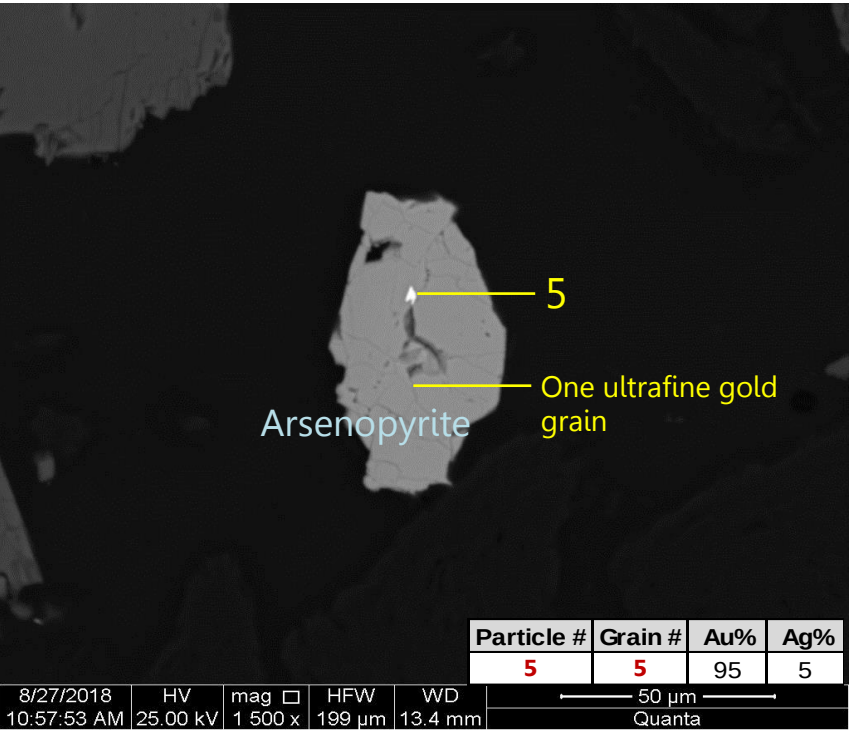


Kona, Pan-Con, Particle 4, Au 4

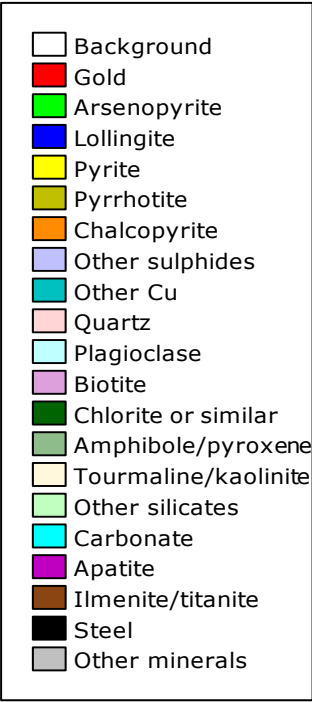
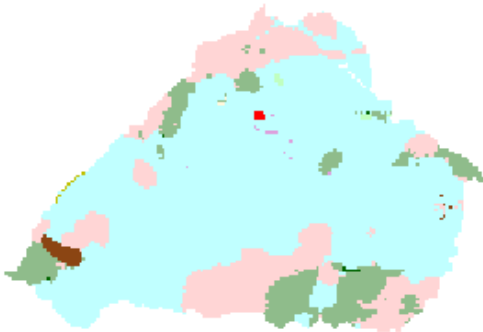
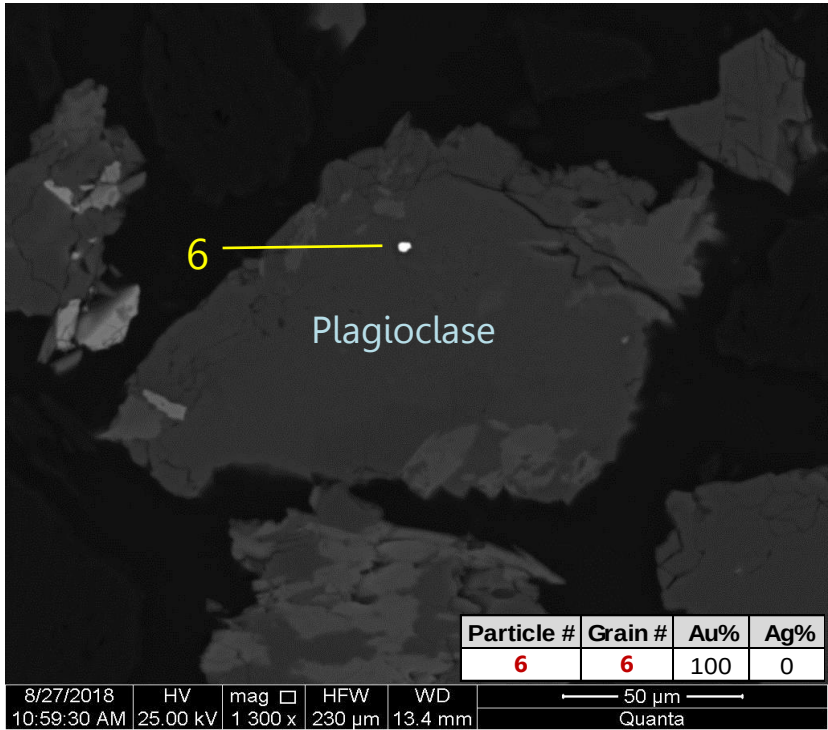




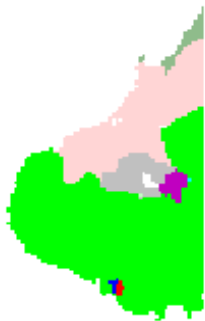
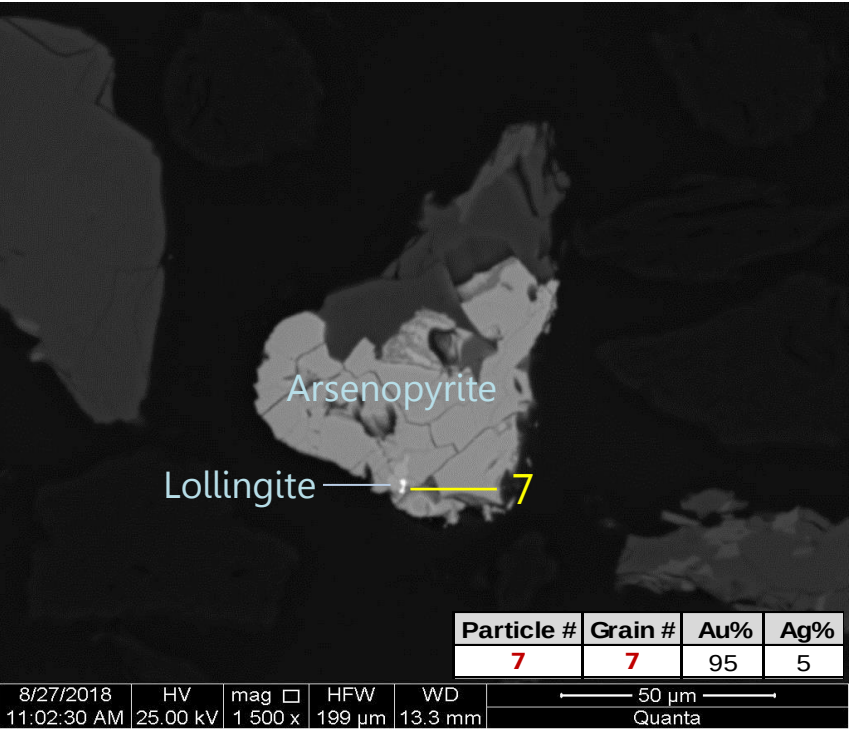
Kona, Pan-Con, Particle 5, Au 5



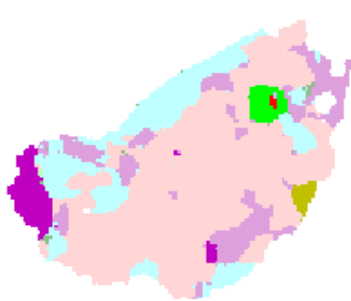
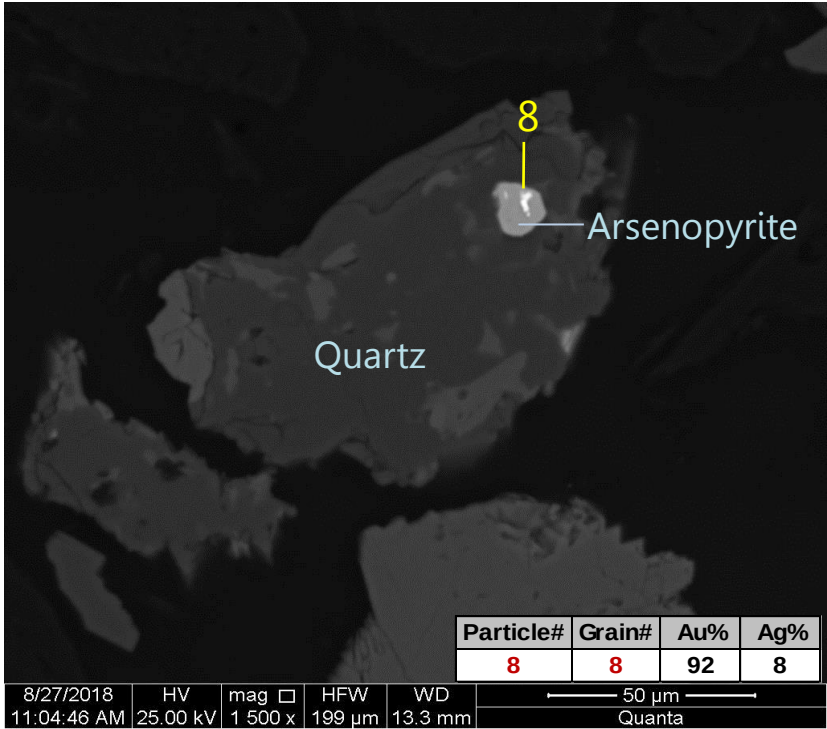
Kona, Pan-Con, Particle 6, Au 6



Kona, Pan-Con, Particle 7, Au 7



Kona, Pan-Con, Particle 8, Au 8



# Glossary of Terms

## Assay reconciliation

Assay reconciliation uses chemical assay data and compares them with QEMSCAN calculated elemental values. This approach is limited in its accuracy due to the fact that standardised or average densities and compositions are used for the mineral phases found, that might not correspond to the actual density and chemical composition of the phases present.

QEMSCAN elemental data should be considered indicative only as it is furthermore affected by:

- (i) Low elemental values in the mineral lattice - these elements may fall below the QEMSCAN elemental peak detection limit and/or below EDS limits of detection and not be detected.
- (ii) Elements found in low abundance minerals have higher error (function of particle statistics).
- (iii) Elemental data collected from coarse particles generally has a higher degree of error (function of particle statistics and representativity).

## Association

Mineral Association is a measure of spatial relationships in terms of shared grain boundaries and is essentially a measure of adjacency. The data represent normalised pixel transition numbers (grain contacts) created during the particle scans. A high association with background indicates significant surface exposure and/or liberation.

## Back scattered electron (BSE) image

The backscattered electron images (BSE) represent a series of grey-scales varying from black to white with increasing average mineral density.

## Bulk mineral analysis (BMA)

Bulk Mineral Analysis (BMA) is a one dimensional line scan method. Each block is scanned in the X direction, with the Y direction line spacing being set such that each particle is intersected approximately once. The entire block is scanned producing an extremely high statistical population with the random alignment of the particles ensuring appropriate sampling. This is a good analysis method for low grade species, as the intercept statistics are higher, but will only provide mineral abundance information with some accuracy.

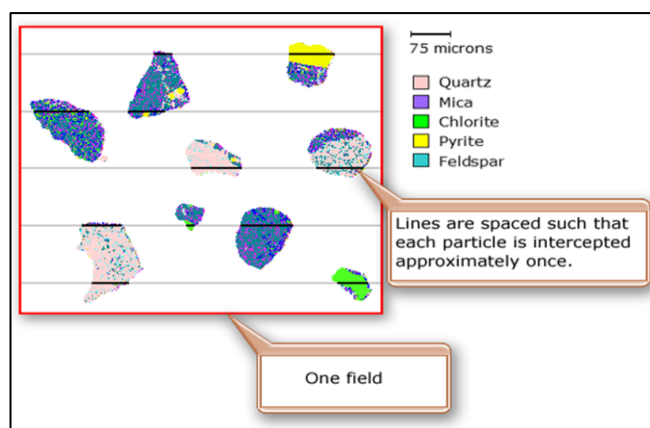


**Figure 1 The line scan method used in BMA**

MIN3412 (A19126)

### Calculated average particle and grain size

Average particle and mineral grain size data are estimated from QEMSCAN image analysis based on the premise that the area of a grain in a two dimensional plane section is representative of the volume of that grain (Delesse's Principle, see Stereology). Grain size is calculated by using the diameter of a sphere (ESD) with the same surface-area as the measured grain. Although the data is based on a large number of random cross-sections through randomly oriented particles, both particle and grain sizes will be underestimated to some extent as illustrated in the figure below. Line A-B represents the polished surface in side view. The red lines represent the maximum diameter of the spheres. A random section through grains is much more likely to intersect grains at a point other than the maximum (red), thus resulting in an underestimation of the average grain sizes. The resolution is limited by the beam size and pixel spacing used to measure the samples. Results should be considered indicative only.

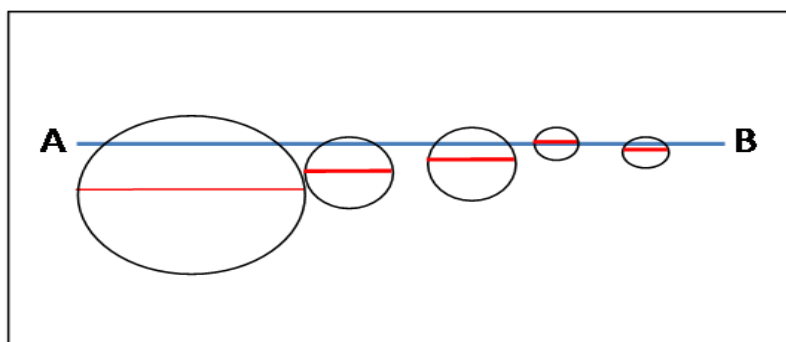


**Figure 2** Line of section A-B through spherical grains showing there is a high probability of intersecting a cross section of a diameter less than the maximum (shown in red)

### Calculated grain size distribution

The calculated grain size distribution is presented as cumulative curves. The cumulative weight percentage of grains less than a given grain size for each size fraction is plotted against the logarithm of the particle size. The shape of each curve illustrates the distribution of grain sizes within each fraction. The relative position of each curve illustrates the relative grain size between samples with grain size decreasing towards the uppermost curves as shown by the hollow arrow in the figure below. For example the uppermost, black curve in the graph below shows that 80 mass % (P80) of the sample is less than 66  $\mu\text{m}$ . The lowermost, blue curve in the graph below shows that 80 mass % (P80) of the sample is less than 313  $\mu\text{m}$ .

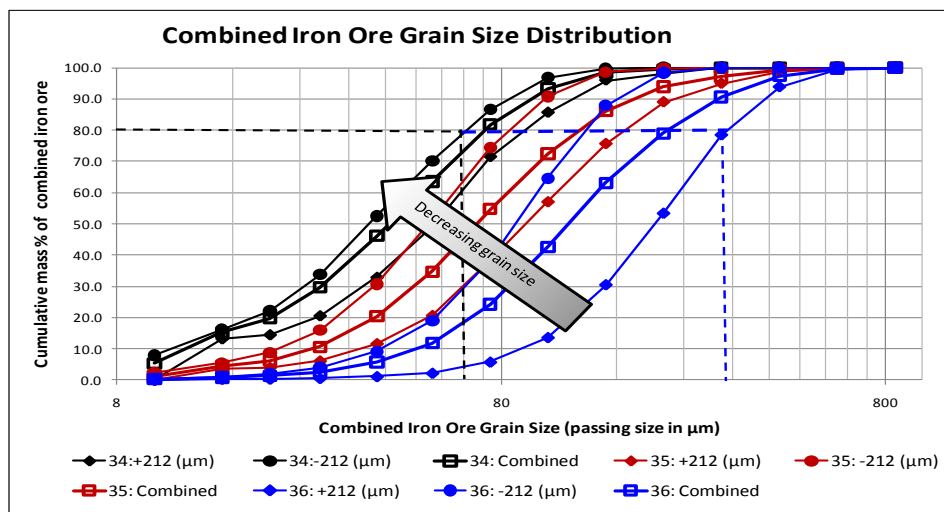


**Figure 3** Cumulative grain size distribution curve

## Deportment

Elemental deportment data quantify the average distribution of specific elements among minerals. Average chemical compositions and densities are assigned to each mineral phase to calculate deportment from image analysis area measurements. Data should be considered indicative only owing to Energy Dispersive Spectrometry (EDS) detection limits; phase variability; intricate textures; instrument resolution limits and non-stoichiometric mineral compositions. A larger uncertainty is present for elements with low abundance.

## Exposure

Exposure data quantify the proportion of specific minerals that are in contact with resin (i.e. exposed at the particle surface). The measured particles have been subdivided according to the definitions below.

| Exposure Class         | Definitions                                                           |
|------------------------|-----------------------------------------------------------------------|
| <b>Exposed</b>         | >90 % of the target mineral is exposed at the surface of the particle |
| <b>60 % - 90 % Exp</b> | Between 61 % and 90 % of the target mineral is exposed                |
| <b>31 % - 60 % Exp</b> | Between 31 % and 60 % of the target mineral is exposed                |
| <b>1 % - 30 % Exp</b>  | Between 1 % and 30 % of the target mineral is exposed                 |
| <b>Encapsulated</b>    | The target mineral shows zero exposure                                |

## Field scan (FS) mode

The Field Scan mode allows full mapping of particles larger than the field of view (FOV) of the microscope at the given magnification. The sample surface is split into a series of grids, each representing a FOV. Every point in each field is then mapped at a user-defined pixel spacing to produce a full image of the field. Each field is measured with a minor overlap to facilitate digital stitching into a single composite image. This image may then be 'granulated' to separate particles from resin, if necessary.

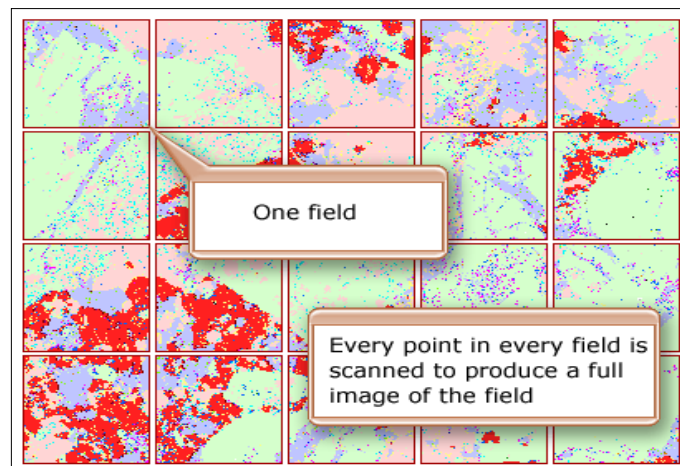


**Figure 4 Field scan (FS) mode of analysis**

## Grain

Refers to an individual mineral **grain**, as opposed to a **particle** which is an aggregate of mineral grains.

According to the QEMSCAN data, the "size" of the **particle** below is about 250  $\mu\text{m}$ . It is made up of a large number of **grains** which are individually smaller than the combined particle, i.e. quartz, muscovite, pyrite and chalcopyrite



The QEMSCAN data indicates that the average **grain** size of the quartz in this particle is about 100  $\mu\text{m}$ , that of muscovite is about 50  $\mu\text{m}$ .

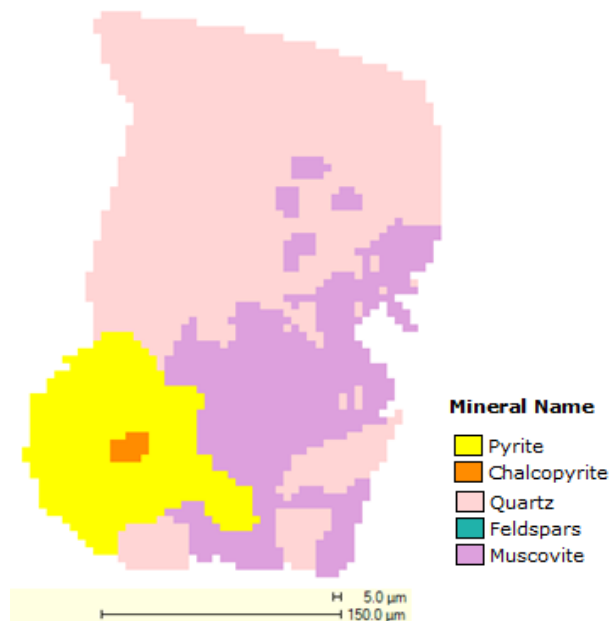


**Figure 5 Mineral map of a 'particle', an aggregate of mineral 'grains'**

### Grain size

See **Grain** and **Calculated average particle and grain size**

### Liberation

Mineral liberation examines the mineral composition on a particle by particle basis. It quantifies the degree of liberation (i.e. free versus composite particles) of the mineral of interest, calculated according to one of two methods, using area% or surface area% that the target mineral occupies within the particle.

Liberation data from 2D image analysis has an inherent stereological bias. The figure below illustrates the stereological bias for a two-phase system. A section through a composite particle with simple texture has a finite probability of sampling only one phase, leading to a systematic overestimation of mineral liberation. The extent of stereological bias depends on the texture of the ore. Samples containing mineral grains of a size comparable to the particle show the most bias. The schematic below demonstrates a variety of mineralogical textures. When many of the particles are composite and the texture is simple (as shown below), stereological bias is an important consideration.

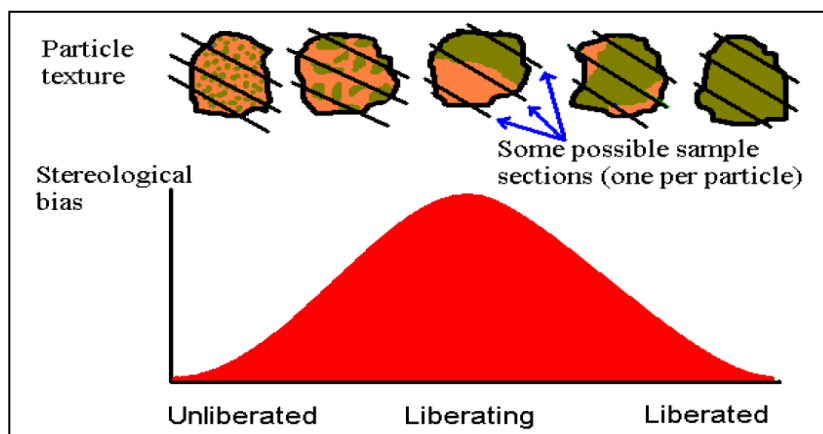


**Figure 5 Schematic of stereological error in grade estimation by single sectioning of particles. The magnitude of stereological bias is shown as a function of particle texture, with sections (straight lines) through liberated and composite particles of similar size**

### Locking

Locking characteristics describe the associations of minerals (not necessarily adjacent minerals) within a particle.

| Liberation Class            | Definitions                                                                               |
|-----------------------------|-------------------------------------------------------------------------------------------|
| <b>Fully liberated</b>      | Target mineral comprises 100 % by (area% or surface area%) of the particle                |
| <b>Well liberated</b>       | Target mineral comprises between 90 and 100 % by (area% or surface area%) of the particle |
| <b>High Grade Middlings</b> | Target mineral comprises between 60 and 90 % by (area% or surface area%) of the particle  |
| <b>High Grade Middlings</b> | Target mineral comprises between 30 and 60 % by (area% or surface area%) of the particle  |
| <b>Locked/Encapsulated</b>  | Target mineral comprises between 0 and 30 % by (area% or surface area%) of the particle   |

### Mineral abundance

Mineral provides the weight % of each mineral within the sample analysed. It is calculated from area measurements and uses average mineral densities that have been assigned to each of the minerals in the database.

### Mineral groupings

QEMSCAN analysis generates an extensive list of mineral species. This is simplified using X-ray diffraction and semi-quantitative EDS microanalyses.

### Mode of measurement

Five different modes of measurement are available on the QEMSCAN:

1. The Particle Mineralogical Analysis mode (PMA)
2. Field Scan (FS)
3. Specific Mineral Search (SMS)/Trace Mineral Search (TMS)
4. Bulk Mineral Analysis mode (BMA)

### Particle

An aggregate of mineral **grains**.

### Particle images

False colour images of mapped mineral distributions.

A random selection of particles have been presented, ordered by size.

Please note different size fractions have been analysed at different magnifications. Please refer to scale bars.

### Particle mineralogical analysis mode (PMA)

PMA is a two dimensional analysis methodology in which the entire area of every particle falling within the measurement constraints is analysed. This allows for detailed characterisation of samples with particle size up to about 1 mm. During a PMA, the instrument conducts a Back Scatter Electron (BSE) scan to detect particles in the field. Detected particles are then measured. This mode of measurement produces particle images. A statistically robust, randomly selected sub-population of usually more than 3000 particles is analysed during a standard PMA.

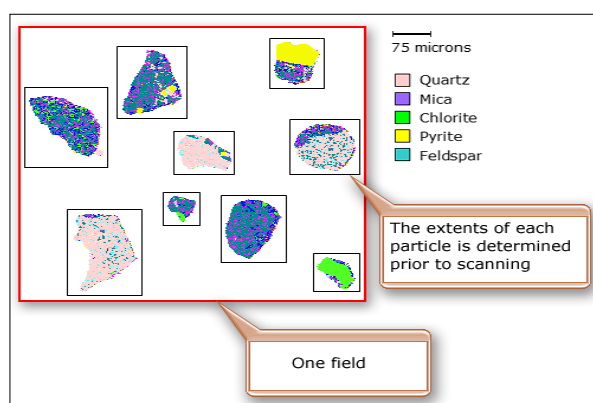


**Figure 6 Particle mineralogical analysis (PMA) mode**

### QEMSCAN

#### **History**

QEMSCAN evolved from QEM\*SEM, which is the Quantitative Evaluation of Materials using a SEM (Scanning Electron Microscope). It was developed by CSIRO in 1979. QEMSCAN® is the fully automated QEM\*SEM based analysis system developed in the 1990s. QEMSCAN is the fastest and most productive microscope analysis system in the world. QEMSCAN instruments are capable of achieving 200,000 counts/ second, utilising digital pulse processors and light element x-ray EDS (Energy Dispersive Spectrum) detectors.

#### **Measurement**

QEMSCAN measures particles or sections by collecting individual EDX spectra (chemical information) and BSE value (average atomic number contrast) at every point (pixel) on a grid. Each point is then characterised as a mineral phase by referencing to a mineral compositional database (**Species Identification Protocol or SIP**). 100 – 200 individual points can be measured per second. The length of time for a full measurement will depend on the data quality required and the spatial resolution that the measurement is performed at.

Greyscale BSE images provide qualitative compositional maps, **particle images**, which together with the chemical information is used. By QEMSCAN to positively identify the mineral/ phase present and to accurately determine grain and particle boundaries.



QEMSCAN uses both the backscattered electron and energy dispersive X-ray signals to create digital images where each pixel corresponds to a mineral species.

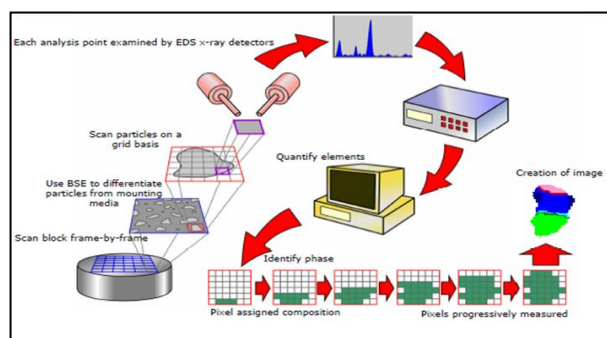


**Figure 7 QEMSCAN component configuration**

### **SIP (Species identification protocol)**

A Species Identification Protocol, or SIP, is an extensive list of minerals the QEMSCAN refers to when analysing particles. There are a number of SIPs, each tailored towards specific mineral groupings or deposits. A SIP needs to be present before measurements can be made. The selected SIP should be suited to the samples being analysed. Where the optimal SIP is uncertain, one developed for samples of a similar nature will be used and adapted.

Data reduction involves the classification of the particle analysis into various user specified mineral/chemical categories and size intervals. The classification categories are defined based on elemental X-ray intensities (X-ray counts), intensity ratios and stoichiometric criteria.

### **Size by size chemical assay**

Chemical assay results supplied to Mineralogy. Assay reconciliation is presented below comparing the QEMSCAN calculated elemental assay (black text) with the measured chemical assay (grey text).

### **Specific mineral search (SMS) / trace mineral search (TMS)**

Specific Mineral Search/ Trace Mineral Search is based on the PMA measurement mode, but only analyses a pre-set sub-population of the particles present. It is based on the premise that the phases of primary interest (i.e. target phases) have a specific backscatter electron intensity (BSE brightness). This enables each block to be scanned for particles containing phases with the selected BSE brightness range, and only those of interest are fully analysed. As the entire block is scanned, this also produces the highest possible statistical population for a trace phase. The information obtained from a SMS/TMS measurement is similar to that from PMA measurement, but relates only to the sub-population analysed. This is a particularly good analysis method for determining losses of sulphides and precious metal phases to silicate-rich tails.

This mode is recommended for good statistics on the phases of interest in low/trace grade samples. It is faster than a PMA scan when grade is low and only target particles are of interest.

When a SMS is conducted, a BSE image of the field is created, this image is analysed to locate particles containing particles of BSE brightness in the range selected – other particles are ignored. The entire target particle is mapped, with x-rays being collected from each pixel on the particle - the resulting map identifies host minerals as well as the target minerals.

When only trace amounts of target minerals are present, creating BSE images of every field can be time consuming and fruitless as many fields will not contain the target phase. A TMS, or Trace Mineral Search, utilizes special hardware which continuously monitors BSE intensity and compares that signal to a preset BSE intensity threshold. If the target phase BSE is greater than the threshold, the location of the target phase within the field is recorded. After the BSE scan, fields containing the target phase are subjected to a Specific Mineral Search, while the remaining fields are ignored.

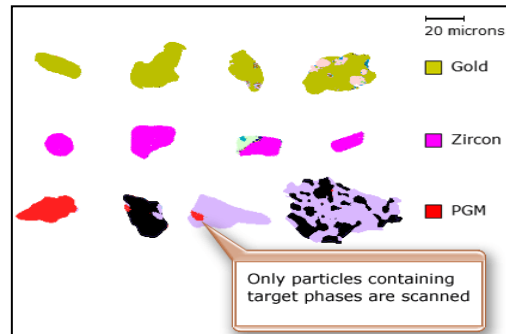


**Figure 8 SMS (specific mineral search)/ TMS (trace mineral search) mode**

## Stereology

Stereology is based on Delesse's principle that the area of a mineral in a plane section provides an estimate of its volume percentage, assuming a set of randomly oriented grains in a homogenous sample. The shapes of minerals seen in a microscope image are planar sections of individual solid grains and the three dimensional extent of each grain cannot be directly measured. Stereology allows the extrapolation of quantitative 2D information from microscope images to an estimate of its percentage of volume in the solid. Stereology is the cornerstone of Automated Mineral Analysis (AMA) using QEMSCAN. The correct application of stereological principles and three dimensional sampling is vital to producing statistically valid data that is representative of the sample being analysed.

## Trace mineral search (TMS)

See **Specific mineral search (SMS) / trace mineral search (TMS)**

## X-ray diffraction (XRD)

The three-dimensional structure of non-amorphous materials, such as minerals, is defined by regular, repeating planes of atoms that form a crystal lattice. When a focused X-ray beam interacts with these planes of atoms, part of the beam is transmitted, part is absorbed by the sample, part is refracted and scattered, and part is diffracted. Diffraction of an X-ray beam by a crystalline solid is analogous to diffraction of light by droplets of water, producing the familiar rainbow. X-rays are diffracted by each mineral differently, depending on what atoms make up the crystal lattice and how these atoms are arranged. An XRD pattern of a sample is the summation of diffraction patterns from each phase in that sample. This allows the identification of phases in the sample from their XRD patterns.

Because each crystalline material has a characteristic atomic structure, it will diffract X-rays in a unique characteristic pattern. The set of peaks produced for a particular phase can be used as a 'fingerprint' to identify it. A phase is a specific form of a particular mineral or other pure, crystalline material. Multiple phases can exist in the one sample simultaneously. The amount of each phase in a mixture will relate to how strong its signal

Peaks found on the spectra must have a high enough signal to be discriminated from the background noise. In addition, it is necessary to have secondary peaks that are used to confirm the primary peak as belonging to the particular mineral species in question. As a result, there are practical limitations to the minimum detectability of minerals in the sample. Some minerals may simply be reported as having trace amounts.

XRD provides a fast and reliable tool for routine mineral identification. XRD is particularly useful for identifying fine-grained minerals and mixtures or intergrowths of minerals, which may not lend themselves to analysis by other techniques.

The important result is which minerals are present, with less emphasis on quantity of each mineral. If the sample is a mixture, XRD data can be analyzed to determine the proportion of the different minerals present. Other information obtained can include the degree of crystallinity of the minerals present, possible deviations of the minerals from their ideal compositions (presence of element substitutions and solid solutions), the structural state of the minerals (which can be used to deduce temperatures and pressures of formation), and the degree of hydration for minerals that contain water in their structure.

## **APPENDIX VII**

### **Gravity/Cyanide Leach Testwork Details and Results**



|          |                        |
|----------|------------------------|
| PROJECT: | A19126                 |
| CLIENT:  | CENTAMIN COTE D'IVOIRE |
| SAMPLE:  | KONA                   |
| TEST ID: | BK11664                |
| GRIND:   | P80: 75 $\mu$ m        |
| DATE:    | AUG-2018               |

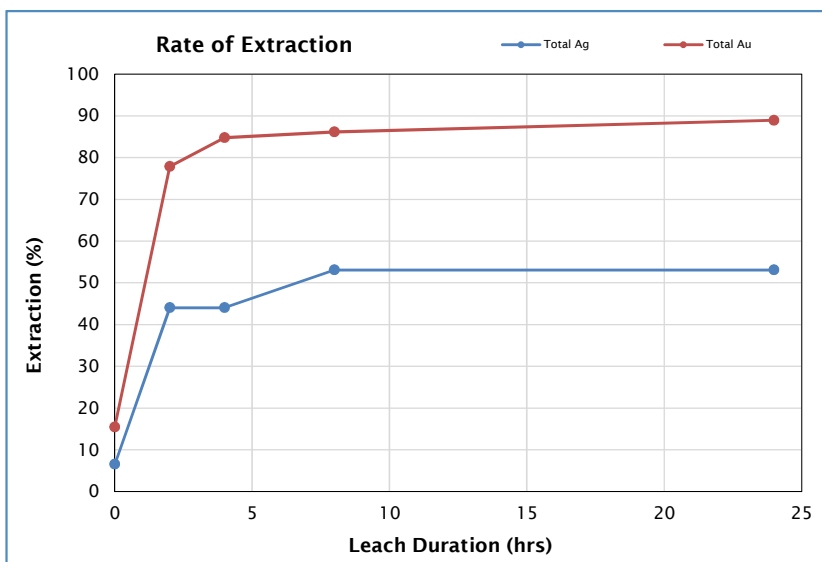


### GRAVITY/CYANIDE LEACH TESTWORK

| Time<br>(hrs) | Additions  |               |             |             | Solution Data |      |             |              |  |              | Extraction (%) |  |       |      |      |    |
|---------------|------------|---------------|-------------|-------------|---------------|------|-------------|--------------|--|--------------|----------------|--|-------|------|------|----|
|               | Ore<br>(g) | Water<br>(mL) | NaCN<br>(g) | Lime<br>(g) | DO<br>(mg/L)  | pH   | NaCN<br>(%) | Ag<br>(mg/L) |  | Au<br>(mg/L) | Total          |  | Leach |      |      |    |
|               |            |               |             |             |               |      |             |              |  |              | Ag             |  | Au    | Ag   |      | Au |
|               | 1000       | 1500          | 0.75        | 0.17        |               | 8.4  |             |              |  |              |                |  |       |      |      |    |
| 0             |            |               |             |             | 8.5           | 10.5 | 0.050       | 0.00         |  | 0.000        | 6.6            |  | 15.5  | 0.0  | 0.0  |    |
| 2             |            | 1470          |             |             | 28.3          | 10.2 | 0.043       | 0.08         |  | 0.845        | 44.1           |  | 77.9  | 40.2 | 73.8 |    |
| 4             |            | 1440          |             |             | 19.3          | 10.1 | 0.043       | 0.08         |  | 0.940        | 44.1           |  | 84.7  | 40.2 | 81.9 |    |
| 8             |            | 1410          |             |             | 25.4          | 10.1 | 0.040       | 0.10         |  | 0.960        | 53.1           |  | 86.2  | 49.8 | 83.6 |    |
| 24            |            | 1410          |             |             | 24.6          | 10.0 | 0.038       | 0.10         |  | 1.000        | 53.1           |  | 88.9  | 49.8 | 86.9 |    |
| TOTAL         |            |               | 0.75        | 0.17        |               |      |             |              |  |              |                |  |       |      |      |    |

### EXTRACTION CALCULATIONS

| Product                | Quantity | Gold           |                    |               | Silver         |                    |               |
|------------------------|----------|----------------|--------------------|---------------|----------------|--------------------|---------------|
|                        |          | Assay<br>(ppm) | Mass<br>( $\mu$ g) | Dist'n<br>(%) | Assay<br>(ppm) | Mass<br>( $\mu$ g) | Dist'n<br>(%) |
| Solids (g)             | 1000.0   | 0.23           | 225                | 11.1          | <0.3           | 150                | 46.9          |
| Solution (mls)         | 1410.0   | 1.00           | 1410               | 69.4          | 0.10           | 141                | 44.1          |
| Solution samples (mls) | 90.0     | 0.92           | 82                 | 4.1           | 0.09           | 8                  | 2.4           |
| Gravity (Hg Amalgam)   |          |                | 315                | 15.5          |                | 21                 | 6.6           |
| Total Extraction       |          |                |                    | 88.9          |                |                    | 53.1          |
| Total                  |          |                | 2032               | 100.0         |                | 320                | 100.0         |
| Calculated Head        |          | 2.03           |                    |               | 0.3            |                    |               |
| Assay Head             |          | 1.82/1.98      |                    |               | <2             |                    |               |



### Comments

1. NaCN addition : 0.75 (kg/t)
2. NaCN consumption : 0.18 (kg/t)
3. Lime consumption : 0.17 (kg/t)
4. Perth tap water SG : 1.00
5. Water mass to leach : 1500 (g)
6. Test conducted in bottle-roll
7. 30mL solution samples removed at each monitoring interval
8. Carbonaceous material observed floating on slurry surface

## **APPENDIX VIII**

### **Bulk Flotation Testwork Details and Results**

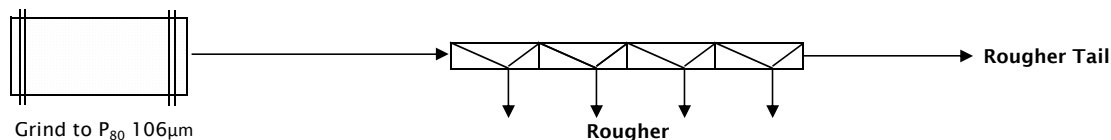


|          |                        |
|----------|------------------------|
| PROJECT: | A19126                 |
| CLIENT:  | Centamin Cote d'Ivoire |
| SAMPLE:  | KONA                   |
| TEST ID: | BKF980                 |
| GRIND:   | P80: 106 µm            |
| DATE:    | AUG-2018               |



## BULK ROUGHER FLOTATION TESTWORK

### FLWSHEET



|                            |         | Cond  | Con 1 | Con 2 | Con 3 | Con 4 | Con 5 | Tail | Total |
|----------------------------|---------|-------|-------|-------|-------|-------|-------|------|-------|
| Conditioning Time          | (mins)  | 3     | 1     | 1     | 1     | 1     |       |      | 7     |
| CuSO <sub>4</sub> Addition | (g/t)   | 25    |       |       |       |       |       |      | 25    |
| PAX Addition               | (g/t)   | 50    | 25    | 15    | 10    | 10    |       |      | 110   |
| Frother (H27)              | (drops) | 25    | 5     | 5     | 6     | 6     |       |      | 47    |
| pH                         |         | 8.70  | 8.50  | 8.60  | 8.50  | 8.40  | 8.30  |      |       |
| Eh (Ag/AgCl)               | (mV)    | +157  | -71   | -72   | -86   | -83   | -84   |      |       |
| Float Time                 | (mins)  | 4     | 4     | 8     | 8     | 6     |       |      | 30    |
| Mass                       | (g)     | 660.1 | 451.4 | 638.4 | 522.1 | 526.2 | 48202 |      | 51000 |

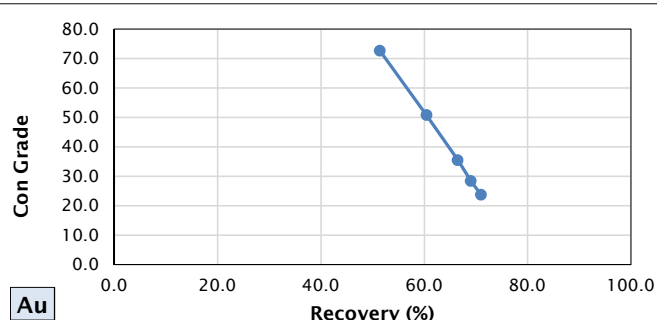
### RESULTS

| Product           | Mass (g)     | Assays      |             |                      |              |  |  |  |  |  |  |
|-------------------|--------------|-------------|-------------|----------------------|--------------|--|--|--|--|--|--|
|                   |              | Au (g/t)    | S (%)       | S <sub>2</sub> - (%) | Ag (ppm)     |  |  |  |  |  |  |
| Rougher Con 1     | 660.1        | 72.6        | 12.3        | 12.0                 | 5.1          |  |  |  |  |  |  |
| Rougher Con 2     | 451.4        | 18.6        | 7.56        | 7.10                 | 1.2          |  |  |  |  |  |  |
| Rougher Con 3     | 638.4        | 8.80        | 4.52        | 4.28                 | 0.6          |  |  |  |  |  |  |
| Rougher Con 4     | 522.1        | 4.52        | 2.56        | 2.12                 | 0.3          |  |  |  |  |  |  |
| Rougher Con 5     | 526.2        | 3.47        | 1.56        | 1.24                 | 0.3          |  |  |  |  |  |  |
| Rougher Tail      | 48202        | 0.56        | 0.14        | 0.06                 | <0.3         |  |  |  |  |  |  |
| <b>TOTAL</b>      | <b>51000</b> | <b>1.83</b> | <b>0.46</b> | <b>0.36</b>          | <b>0.2</b>   |  |  |  |  |  |  |
| <b>ASSAY HEAD</b> |              | <b>1.90</b> | <b>0.46</b> | <b>0.26</b>          | <b>&lt;2</b> |  |  |  |  |  |  |

| Product       | Mass       | Distribution (%) |            |                  |  |  |  |  |  |  |  |
|---------------|------------|------------------|------------|------------------|--|--|--|--|--|--|--|
|               |            | Au               | S          | S <sub>2</sub> - |  |  |  |  |  |  |  |
| Rougher Con 1 | 1.3        | 51.5             | 34.8       | 42.8             |  |  |  |  |  |  |  |
| Rougher Con 2 | 0.9        | 9.0              | 14.6       | 17.3             |  |  |  |  |  |  |  |
| Rougher Con 3 | 1.3        | 6.0              | 12.4       | 14.8             |  |  |  |  |  |  |  |
| Rougher Con 4 | 1.0        | 2.5              | 5.7        | 6.0              |  |  |  |  |  |  |  |
| Rougher Con 5 | 1.0        | 2.0              | 3.5        | 3.5              |  |  |  |  |  |  |  |
| Rougher Tail  | 94.5       | 29.0             | 28.9       | 15.6             |  |  |  |  |  |  |  |
| <b>TOTAL</b>  | <b>100</b> | <b>100</b>       | <b>100</b> | <b>100</b>       |  |  |  |  |  |  |  |

### CUMULATIVE CONCENTRATE GRADE/RECOVERY

| Product         | Mass (%) | Grade |                  | Recovery |                  |
|-----------------|----------|-------|------------------|----------|------------------|
|                 |          | Au    | S <sub>2</sub> - | Au       | S <sub>2</sub> - |
| Rougher Con 1   | 1.3      | 72.6  | 12.0             | 51.5     | 42.8             |
| Rougher Con 1-2 | 2.2      | 50.7  | 10.0             | 60.5     | 60.1             |
| Rougher Con 1-3 | 3.4      | 35.4  | 7.92             | 66.5     | 74.9             |
| Rougher Con 1-4 | 4.5      | 28.3  | 6.59             | 69.1     | 80.9             |
| Rougher Con 1-5 | 5.5      | 23.6  | 5.58             | 71.0     | 84.4             |



## **APPENDIX IX**

### **Cyanide Leach Testwork Bulk Flotation Concentrate Details and Results**





|         |                        |
|---------|------------------------|
| PROJECT | A19126                 |
| CLIENT  | Centamin Cote d'Ivoire |
| TEST No | BK11725                |
| SAMPLE  | KONA [ex-BKF980]       |
| GRIND   | P100 : 63 µm           |
| WATER   | Perth Tap Water        |
| DATE    | AUG-2018               |



### CIL CYANIDATION TIME LEACH TESTWORK ON FLOTATION CONCENTRATE: OXYGEN-SPARGED

| TIME<br>(Hours) | ADDITIONS     |               |                              |             |             | SOLUTION DATA   |      |             |                             |             |             | PREG. CARBON |             |             | Ag<br>Extrn. | Au<br>Extrn  |
|-----------------|---------------|---------------|------------------------------|-------------|-------------|-----------------|------|-------------|-----------------------------|-------------|-------------|--------------|-------------|-------------|--------------|--------------|
|                 | Solids<br>(g) | Water<br>(mL) | Carbon<br>Haycarb<br>Yao (g) | NaCN<br>(g) | Lime<br>(g) | Oxygen<br>(ppm) | pH   | NaCN<br>(%) | Solution<br>Samples<br>(mL) | Ag<br>(ppm) | Au<br>(ppm) | Wt<br>(g)    | Ag<br>(ppm) | Au<br>(ppm) | Total<br>(%) | Total<br>(%) |
|                 | 200.0         | 800.0         |                              |             |             |                 | 8.1  |             |                             |             |             |              |             |             |              |              |
| 0               |               | 800.0         | 26.3                         | 2.00        | 0.19        | 9.6             | 10.7 | 0.250       |                             | 0.00        | 0.00        |              | 0           | 0           | 0.00         | 0.00         |
| 2               |               | 770.0         |                              |             |             | 17.7            | 10.7 | 0.225       | 30                          | <0.02       | 0.140       | 5.59         | 20          | 153         | 91.54        | 95.33        |
| 4               |               | 740.0         |                              |             |             | 27.9            | 10.9 | 0.210       | 30                          | <0.02       | 0.030       | 5.58         | 20          | 156         | 91.54        | 94.82        |
| 8               |               | 710.0         |                              |             |             | 18.8            | 11.0 | 0.195       | 30                          | <0.02       | 0.005       | 5.62         | 18          | 156         | 86.26        | 94.39        |
| 24              |               | 710.0         |                              |             |             | 20.7            | 11.3 | 0.158       |                             | <0.02       | <0.005      | 9.59         | 20          | 159         | 89.59        | 95.01        |
| Total           |               |               |                              | 2.00        | 0.19        |                 |      |             |                             |             |             | 26.38        |             |             |              |              |

### GOLD EXTRACTION CALCULATIONS

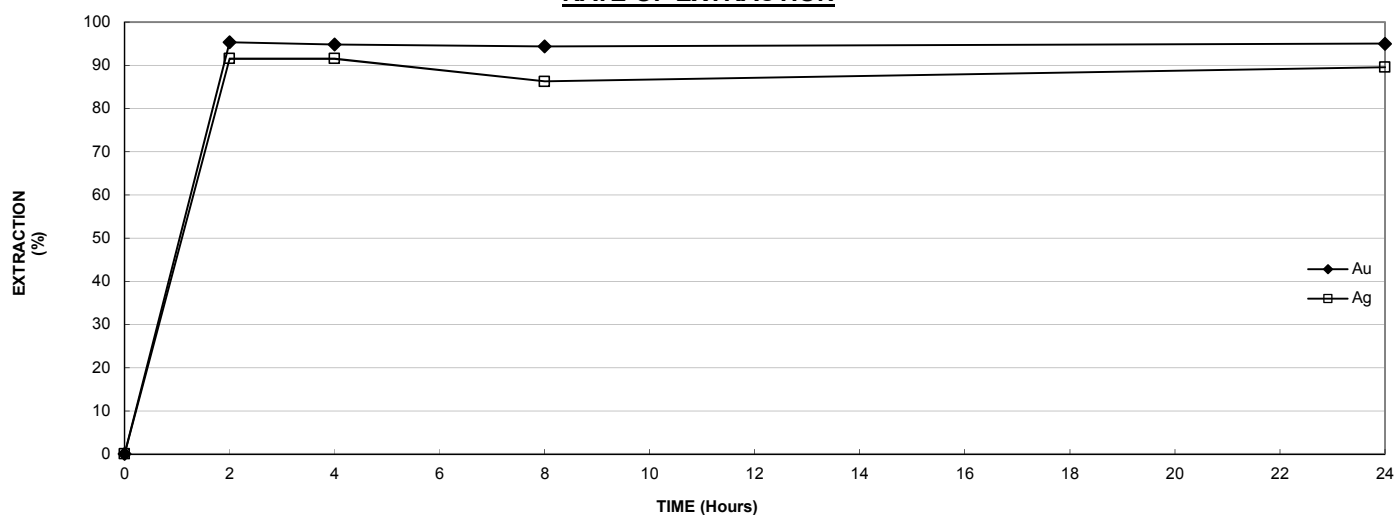
| Product                 | Quantity | GOLD           |               |               | SILVER         |               |               |
|-------------------------|----------|----------------|---------------|---------------|----------------|---------------|---------------|
|                         |          | Assay<br>(ppm) | Total<br>(µg) | Dist'n<br>(%) | Assay<br>(ppm) | Total<br>(µg) | Dist'n<br>(%) |
| Solids (g)              | 200.0    | 1.09           | 217           | 4.99          | 0.3            | 60            | 10.41         |
| Solution (mL)           | 710.0    | <0.005         | 2             | 0.04          | <0.02          | 0             | 0.00          |
| Sol. samples (mL) *     |          |                | 5.3           | 0.12          |                | 0.0           | 0.00          |
| Intermediate Carbon     |          |                | 2602          | 59.81         |                | 325           | 56.31         |
| Final Carbon            | 9.6      | 159            | 1525          | 35.04         | 20             | 192           | 33.28         |
| <b>Total Extraction</b> |          |                |               | <b>95.01</b>  |                |               | <b>89.59</b>  |
| Total                   |          |                | 4351          | 100.00        |                | 576           | 100.00        |
| Calculated Grade        |          | 21.8           |               |               | 2.9            |               |               |
| Assay Grade             |          | 23.6           |               |               | 1.6            |               |               |

### COMMENTS :

1. NaCN Addition : 10.0 (Kg/t)
2. NaCN Consumption : 3.45 (Kg/t)
3. Lime Consumption : 0.95 (Kg/t)
4. Perth Water Used : 1.000 (SG)
5. Water weight to leach : 800.0 (g)
6. Grind Size P 100 : 63 (µm)
7. 30 mL solution samples were removed at each sampling period.
8. Leach test conducted in leach bottle with roll agitation.
9. Duplicate leach residue Au assays : 1.07 (g/t)  
1.10 (g/t)

\* : Intermediate solution samples removed during the test.

### RATE OF EXTRACTION





|         |                        |
|---------|------------------------|
| PROJECT | A19126                 |
| CLIENT  | Centamin Cote d'Ivoire |
| TEST No | BK11726                |
| SAMPLE  | KONA [ex-BKF980]       |
| GRIND   | P80 : 10 µm            |
| WATER   | Perth Tap Water        |
| DATE    | AUG-2018               |



### CIL CYANIDATION TIME LEACH TESTWORK ON FLOTATION CONCENTRATE: OXYGEN-SPARGED

| TIME<br>(Hours) | ADDITIONS     |               |                              |             |             | SOLUTION DATA   |      |             |                             |             |             | PREG. CARBON |             |             | Ag<br>Extrn.<br>Total | Au<br>Extrn<br>Total |
|-----------------|---------------|---------------|------------------------------|-------------|-------------|-----------------|------|-------------|-----------------------------|-------------|-------------|--------------|-------------|-------------|-----------------------|----------------------|
|                 | Solids<br>(g) | Water<br>(mL) | Carbon<br>Haycarb<br>Yao (g) | NaCN<br>(g) | Lime<br>(g) | Oxygen<br>(ppm) | pH   | NaCN<br>(%) | Solution<br>Samples<br>(mL) | Ag<br>(ppm) | Au<br>(ppm) | Wt<br>(g)    | Ag<br>(ppm) | Au<br>(ppm) | (%)                   | (%)                  |
|                 | 200.0         | 800.0         |                              |             |             |                 | 8.1  |             |                             |             |             |              |             |             |                       |                      |
| 0               |               | 800.0         | 26.3                         | 2.00        | 0.23        | 6.08            | 10.5 | 0.250       |                             | 0.00        | 0.00        |              | 0           | 0           | 0.00                  | 0.00                 |
| 2               |               | 770.0         |                              |             |             | 18.3            | 10.4 | 0.210       | 30                          | <0.02       | 0.090       | 5.54         | 8           | 144         | 42.39                 | 85.55                |
| 4               |               | 740.0         |                              |             |             | 21.8            | 10.7 | 0.188       | 30                          | <0.02       | 0.015       | 6.55         | 14          | 174         | 67.51                 | 98.10                |
| 8               |               | 710.0         |                              |             |             | 22.4            | 10.6 | 0.160       | 30                          | <0.02       | 0.010       | 5.37         | 14          | 174         | 67.51                 | 98.02                |
| 24              |               | 710.0         |                              |             |             | 20.7            | 10.5 | 0.088       |                             | <0.02       | <0.005      | 8.97         | 12          | 171         | 63.92                 | 97.31                |
| Total           |               |               |                              | 2.00        | 0.23        |                 |      |             |                             |             |             | 26.43        |             |             |                       |                      |

### GOLD EXTRACTION CALCULATIONS

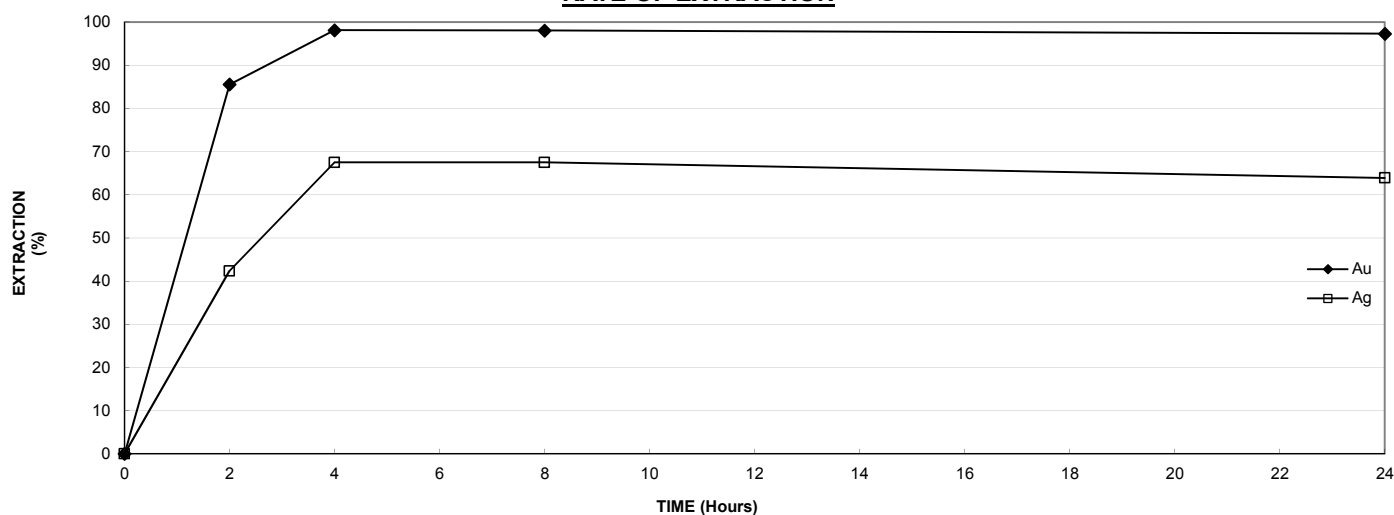
| Product                 | Quantity | GOLD           |               |               | SILVER         |               |               |
|-------------------------|----------|----------------|---------------|---------------|----------------|---------------|---------------|
|                         |          | Assay<br>(ppm) | Total<br>(µg) | Dist'n<br>(%) | Assay<br>(ppm) | Total<br>(µg) | Dist'n<br>(%) |
| Solids (g)              | 200.0    | 0.61           | 122           | 2.69          | 0.9            | 180           | 36.08         |
| Solution (mL)           | 710.0    | <0.005         | 2             | 0.04          | <0.02          | 0             | 0.00          |
| Sol. samples (mL) *     |          |                | 3.5           | 0.08          |                | 0.0           | 0.00          |
| Intermediate Carbon     |          |                | 2872          | 63.35         |                | 211           | 42.34         |
| Final Carbon            | 9.0      | 171            | 1534          | 33.84         | 12             | 108           | 21.58         |
| <b>Total Extraction</b> |          |                |               | <b>97.31</b>  |                |               | <b>63.92</b>  |
| Total                   |          |                | 4533          | 100.00        |                | 499           | 100.00        |
| Calculated Grade        |          | 22.7           |               |               | 2.5            |               |               |
| Assay Grade             |          | 23.6           |               |               | 1.6            |               |               |

### COMMENTS :

1. NaCN Addition : 10.0 (Kg/t)
2. NaCN Consumption : 6.04 (Kg/t)
3. Lime Consumption : 1.15 (Kg/t)
4. Perth Water Used : 1.000 (SG)
5. Water weight to leach : 800.0 (g)
6. Grind Size P 80 : 10 (µm)
7. 30 mL solution samples were removed at each sampling period.
8. Leach test conducted in leach bottle with roll agitation.
9. Duplicate leach residue Au assays : 0.60 (g/t)  
0.62 (g/t)

\* : Intermediate solution samples removed during the test.

### RATE OF EXTRACTION



## **APPENDIX X**

### **Cyanide Leach Testwork**

#### **Bulk Flotation Tail**

#### **Details and Results**



|          |                                 |
|----------|---------------------------------|
| PROJECT: | A19126                          |
| CLIENT:  | Centamin Cote d'Ivoire          |
| SAMPLE:  | KONA [FLOTATION TAIL ex-BKF980] |
| TEST ID: | BK11724                         |
| GRIND:   | P80: 106 $\mu$ m                |
| DATE:    | AUG-2018                        |

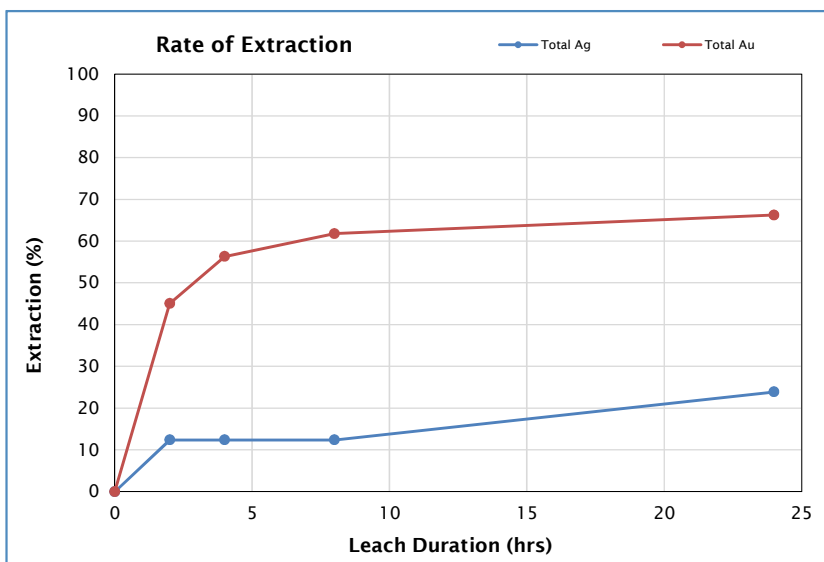


### CYANIDE LEACH TESTWORK ON BULK FLOTATION TAIL

| Time<br>(hrs) | Additions  |               |             |             | Solution Data |      |             |              |  |              | Extraction (%) |  |      |  |  |  |
|---------------|------------|---------------|-------------|-------------|---------------|------|-------------|--------------|--|--------------|----------------|--|------|--|--|--|
|               | Ore<br>(g) | Water<br>(mL) | NaCN<br>(g) | Lime<br>(g) | DO<br>(mg/L)  | pH   | NaCN<br>(%) | Ag<br>(mg/L) |  | Au<br>(mg/L) | Total          |  |      |  |  |  |
|               | 1000       | 1222.2        |             |             |               | 8.0  |             |              |  |              |                |  |      |  |  |  |
| 0             |            |               | 0.61        | 0.35        | 9.3           | 10.6 | 0.050       | 0.00         |  | 0.000        | 0.0            |  | 0.0  |  |  |  |
| 2             |            | 1192          |             |             | 22.0          | 10.7 | 0.045       | 0.02         |  | 0.235        | 12.4           |  | 45.1 |  |  |  |
| 4             |            | 1162          |             |             | 33.7          | 10.6 | 0.045       | 0.02         |  | 0.295        | 12.4           |  | 56.3 |  |  |  |
| 8             |            | 1132          |             |             | 35.4          | 10.6 | 0.045       | 0.02         |  | 0.325        | 12.4           |  | 61.8 |  |  |  |
| 24            |            | 1132          |             |             | 35.0          | 10.7 | 0.045       | 0.04         |  | 0.350        | 23.9           |  | 66.2 |  |  |  |
| TOTAL         |            |               | 0.61        | 0.35        |               |      |             |              |  |              |                |  |      |  |  |  |

### EXTRACTION CALCULATIONS

| Product                | Quantity | Gold           |                    |               | Silver         |                    |               |
|------------------------|----------|----------------|--------------------|---------------|----------------|--------------------|---------------|
|                        |          | Assay<br>(ppm) | Mass<br>( $\mu$ g) | Dist'n<br>(%) | Assay<br>(ppm) | Mass<br>( $\mu$ g) | Dist'n<br>(%) |
| Solids (g)             | 1000.0   | 0.22           | 215                | 33.8          | <0.3           | 150                | 76.1          |
| Solution (mls)         | 1132.2   | 0.35           | 396                | 62.2          | 0.04           | 45                 | 23.0          |
| Solution samples (mls) | 90.0     | 0.29           | 26                 | 4.0           | 0.02           | 2                  | 0.9           |
| Total Extraction       |          |                |                    | 66.2          |                |                    | 23.9          |
| Total                  |          |                | 637                | 100.0         |                | 197                | 100.0         |
| Calculated Head        |          | 0.64           |                    |               | 0.2            |                    |               |
| Assay Head             |          | 0.56           |                    |               | <0.3           |                    |               |



### Comments

1. NaCN addition : 0.61 (kg/t)
2. NaCN consumption : 0.06 (kg/t)
3. Lime consumption : 0.35 (kg/t)
4. Perth tap water SG : 1.00
5. Water mass to leach : 1222 (g)
6. Test conducted in bottle-roll
7. 30mL solution samples removed at each monitoring interval

## **Appendix B: Section 6 Process Plant**



## Resolute Mining Limited

### ABC Project

#### PROCESS FLOW DIAGRAM

##### ABC Project

Scoping Study

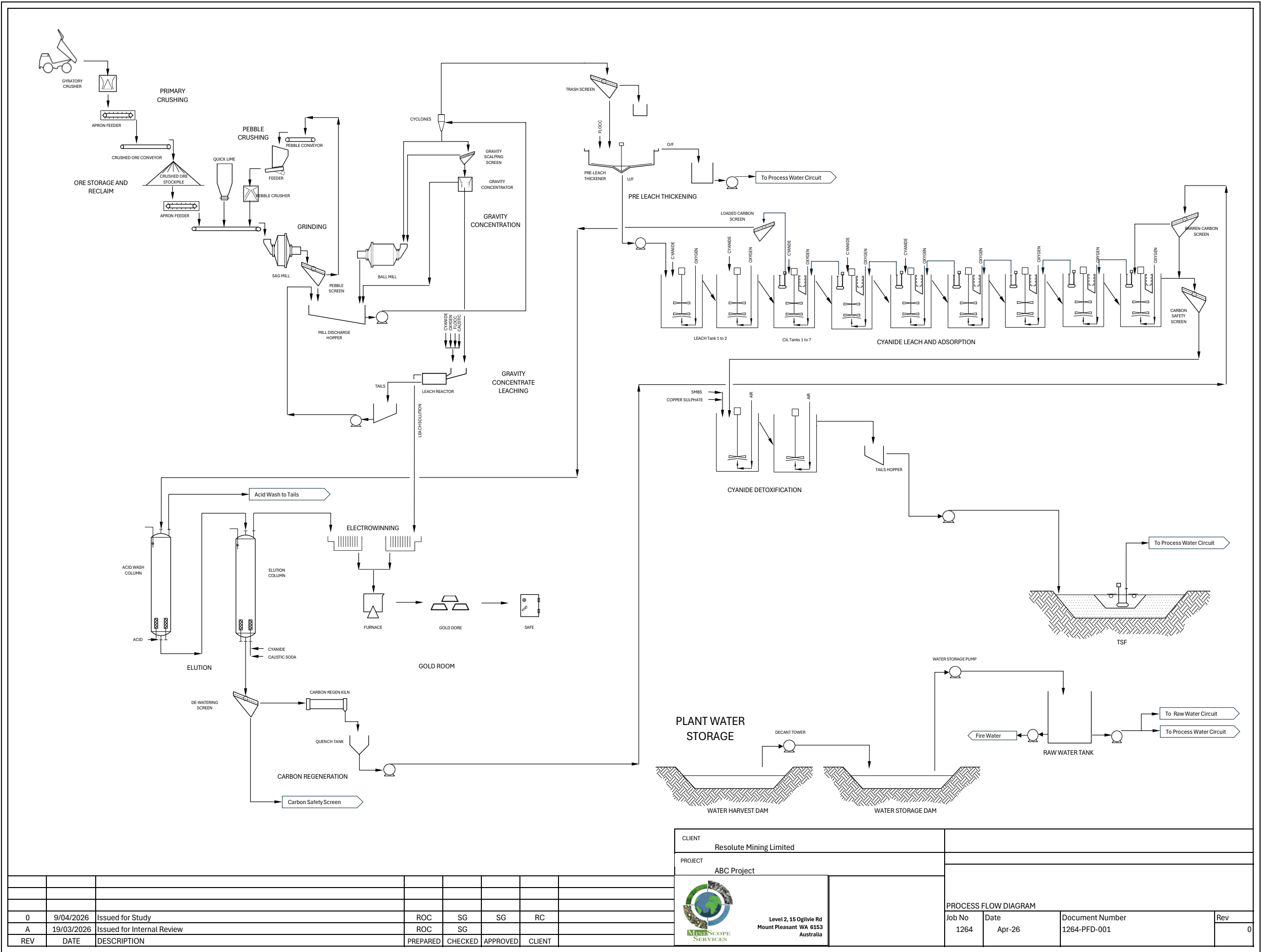
1264

1264-PFD-001

Apr-26

Revision 0

| REV | DATE       | DESCRIPTION                | PREPARED | CHECKED | APPROVED | CLIENT |
|-----|------------|----------------------------|----------|---------|----------|--------|
| A   | 19/03/2026 | Issued for Internal Review | ROC      | SG      |          |        |
| 0   | 9/04/2026  | Issued for Study           | ROC      | SG      | SG       | RC     |
|     |            |                            |          |         |          |        |





# Resolute Mining Limited

## ABC Project

### PROCESS DESIGN CRITERIA

#### ABC Project

#### Scoping Study

1264

1264-PDC-001

May-26

Revision 0

| REV | DATE       | DESCRIPTION                | PREPARED | CHECKED | APPROVED | CLIENT |
|-----|------------|----------------------------|----------|---------|----------|--------|
| A   | 10/03/2026 | Issued for Internal Review | ROC      | EW      |          |        |
| B   | 22/04/2026 | Issued for Internal Review | EW       | SG      | SG       |        |
| 0   | 11/05/2026 | Issued for Study           | EW       | SG      | GR       | RC     |



## PREAMBLE

### 1.0 DISCLAIMER

Any grade, recovery or similar data stated herein is used for design purposes only and is not a statement of predicted plant performance.

### 2.0 SOURCE

The criteria upon which the process plant has been designed are summarised in this document. Process plant design criteria are summarised within this document. More detailed process data derived from these criteria, and used as the basis for engineering, are provided in the Process Mass Balance and Process Flow Diagrams.

The following source codes are used to indicate the origin category of each information item appearing in the Process Design Criteria.

| SOURCE OF INFORMATION AND DATA                       | SOURCE       |
|------------------------------------------------------|--------------|
| Client advice/correspondence                         | Client       |
| Agreement between client and MineScope               | Agreed       |
| Design parameters derived from testwork              | Testwork     |
| MineScope recommendation/historical database         | MineScope    |
| Consultants reports or data                          | Consultant   |
| Standard industry / operating practice               | Industry     |
| Calculated data                                      | Calculation  |
| Vendor recommendation or data                        | Vendor       |
| Engineering handbook, regulatory standards and codes | Code         |
| Assumed or estimated data                            | Assumption   |
| Data derived from mass balance data                  | Mass Balance |
| Data not confirmed                                   | TBC          |

### 3.0 REFERENCES

Where applicable, the reference document number for specific design criteria are referred to in the body of the Process Design Criteria. These documents can be found in the References Table.

### 4.0 ABBREVIATIONS

| DESCRIPTION                | SYMBOL / UNIT     | DESCRIPTION                  | SYMBOL / UNIT      |
|----------------------------|-------------------|------------------------------|--------------------|
| atmosphere (101.3 kPa)     | Atm               | metres above sea level       | masl               |
| average                    | ave               | metres per second            | m/s                |
| bed volume                 | BV                | microns                      | µm                 |
| cubic metres               | m <sup>3</sup>    | milligrams                   | mg                 |
| cubic metres per hour      | m <sup>3</sup> /h | milligrams per litre         | mg/L               |
| days                       | d                 | minimum                      | Min.               |
| days per year              | d/y               | minute                       | min                |
| decibel                    | dB                | normal cubic meters          | Nm <sup>3</sup>    |
| degrees Celsius            | °C                | normal cubic meters per hour | Nm <sup>3</sup> /h |
| degrees                    | deg               | parts per billion            | ppb                |
| diameter                   | dia               | parts per million            | ppm                |
| free air delivery          | FAD               | run of mine                  | ROM                |
| front-end loader (wheeled) | FEL               | second (time)                | s                  |
| grams per litre            | g/L               | specific gravity             | SG                 |
| grams per tonne            | g/t               | tonnes (metric)              | t                  |
| hectare                    | ha                | tonnes per cubic meter       | t/m <sup>3</sup>   |
| hour                       | h                 | tonnes per hour              | t/h                |
| hours per day              | h/d               | tonnes per year              | t/y                |
| kilograms                  | kg                | total dissolved solids       | TDS                |
| kilogram per cubic metre   | kg/m <sup>3</sup> | volume                       | vol                |
| kilogram per hour          | kg/h              | volume per volume            | v/v                |
| kilopascals                | kPa               | volume percent               | % v/v              |
| kilowatt-hour              | kWh               | weight (mass)                | wt                 |
| kilowatt-hour per tonne    | kWh/t             | weight (mass) percent        | % w/w              |
| life of mine               | LOM               | weight per mass              | w/w                |
| maximum                    | Max.              | weight per volume            | w/v                |
| megawatt                   | MW                | year(s)                      | y                  |

The measurement systems and nomenclature used in the Process Design Criteria are outlined as follows:

- Metric units are used throughout, unless otherwise specified
- A period, not a comma, is used as the decimal marker.
- A comma is used to separate groups of three integers
- Reference conditions for gas volumes are typically 0°C and 101.325 kPa, at a molar (ideal) gas volume of 22.414 m<sup>3</sup>/(kg.mol) unless specified differently. Volume is shown as "m3 (normal)" or abbreviated to "Nm3".
- Gas volumes quoted for site conditions or atmosphere are abbreviated to "FAD m<sup>3</sup>"

## FACILITY AND AREA CODES

The processing facility is defined by the following facility and area codes

| AREA | DESCRIPTION                   |
|------|-------------------------------|
| 1.0  | SITE INFORMATION              |
| 2.0  | ORE AND WATER CHARACTERISTICS |
| 3.0  | PRODUCTION SCHEDULE           |
| 4.0  | CRUSHING                      |
| 5.0  | COARSE ORE STORAGE            |
| 6.0  | GRINDING                      |
| 7.0  | PEBBLE CRUSHING               |
| 8.0  | GRAVITY                       |
| 9.0  | LEACHING                      |
| 10.0 | ADSORPTION & REGEN            |
| 11.0 | ELUTION                       |
| 12.0 | ELECTROWINNING                |
| 13.0 | CARBON REGENERATION           |
| 14.0 | GOLDROOM                      |
| 15.0 | DETOX                         |
| 16.0 | TAILINGS                      |
| 17.0 | REAGENTS                      |
| 18.0 | AIR SERVICES                  |
| 19.0 | WATER SERVICES                |

## PDC REFERENCES

| REFERENCE # | DOCUMENT NAME                                           | DESCRIPTION                                                                                            |
|-------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 1           | A19126 ALS Metallurgical Testwork Report, Oct 2018      | Metallurgical testwork conducted upon a composite from the Lolosso Structure - Kona Exploration Permit |
| 2           | 2326-FPDC-001 Rev C Doropo Gold Project FS PDC Nov 2025 | Lycopodium Process Design Criteria Doropo Gold Project                                                 |
| 3           | 1264-CALC-004 Milling Sizing 7Mtpa                      | Milling Sizing Calculations                                                                            |
| 4           | 1264-MBL-001 ABC Scoping Study                          | ABC Scoping Study Mass and Water Balance                                                               |
| 5           | 1264-CALC-005 Detox                                     | Cyanide Destruction Calculations                                                                       |
| 6           | 1264-CAL-006 Gravity Electrowinning                     | Gravity Electrowinning Calculations                                                                    |
| 7           | 1264-CAL-007 Elution Electrowinning                     | Elution Electrowinning Calculations                                                                    |
| 8           |                                                         |                                                                                                        |
| 9           |                                                         |                                                                                                        |
| 10          |                                                         |                                                                                                        |
| 11          |                                                         |                                                                                                        |
| 12          |                                                         |                                                                                                        |
| 13          |                                                         |                                                                                                        |
| 14          |                                                         |                                                                                                        |
| 15          |                                                         |                                                                                                        |
| 16          |                                                         |                                                                                                        |
| 17          |                                                         |                                                                                                        |
| 18          |                                                         |                                                                                                        |
| 19          |                                                         |                                                                                                        |
| 20          |                                                         |                                                                                                        |

| AREA                                     | PARAMETER                             | UNITS            | Design                                     | SOURCE      | REFERENCE # | REV |
|------------------------------------------|---------------------------------------|------------------|--------------------------------------------|-------------|-------------|-----|
| <b>1.0 SITE INFORMATION</b>              |                                       |                  |                                            |             |             |     |
| <b>1.1</b>                               | <b>Project Location</b>               |                  |                                            |             |             |     |
|                                          | Country                               | -                | Cote d'Ivoire                              | Client      |             | A   |
|                                          | Province/State                        | -                | Kabadougou Region of the Denguélé District | Client      |             | A   |
|                                          | Latitude                              | -                | 8° 44' 47" N                               | Client      |             | A   |
|                                          | Longitude                             | -                | 7° 22' 45" W                               | Client      |             | A   |
| <b>1.2</b>                               | <b>Elevation</b>                      |                  |                                            |             |             |     |
|                                          | Plant site above sea level            | mASL             | 500 - 800                                  | Assumption  |             | A   |
| <b>1.3</b>                               | <b>Climatic Data</b>                  |                  |                                            |             |             |     |
|                                          | Rainfall - annual                     | mm/y             | 1,385                                      | Client      |             | A   |
|                                          | Temperature                           |                  |                                            |             |             |     |
|                                          | Average annual high temperature       | °C               | 25.5                                       | Client      |             | A   |
|                                          | Average annual low temperature        | °C               | 22.5                                       | Assumption  |             | A   |
|                                          | Highest temperature recorded          | °C               | 47.9                                       | Assumption  |             | A   |
|                                          | Lowest temperature recorded           | °C               | 18                                         | Assumption  |             | A   |
| <b>2.0 ORE AND WATER CHARACTERISTICS</b> |                                       |                  |                                            |             |             |     |
| <b>2.1</b>                               | <b>ROM Ore Characteristics</b>        |                  |                                            |             |             |     |
|                                          | Design Feed Blend                     |                  | Kona                                       | Client      |             | A   |
|                                          | Specific Gravity                      |                  |                                            |             |             |     |
|                                          | Testwork                              | t/m <sup>3</sup> | 2.74                                       | Testwork    | 1           | A   |
|                                          | Design                                | t/m <sup>3</sup> | 2.74                                       | Assumption  |             | A   |
|                                          | Bulk Density                          |                  |                                            |             |             |     |
|                                          | Compacted                             | t/m <sup>3</sup> | 1.90                                       | Assumption  |             | A   |
|                                          | Uncompacted                           | t/m <sup>3</sup> | 1.60                                       | Assumption  | 2           | A   |
|                                          | Moisture                              | %                | 5                                          | Assumption  | 2           | A   |
| <b>2.2</b>                               | <b>Crushed Ore Characteristics</b>    |                  |                                            |             |             |     |
|                                          | Bulk Density, for volume calculations | t/m <sup>3</sup> | 1.70                                       | Assumption  |             | A   |
|                                          | Angle of repose                       | deg              | 37                                         | Assumption  | 2           | A   |
|                                          | Angle of drawdown                     | deg              | 60                                         | Assumption  | 2           | A   |
| <b>2.3</b>                               | <b>Comminution Characteristics</b>    |                  |                                            |             |             |     |
|                                          | Bond Rod Mill Work Index (LS 1180µm)  |                  |                                            |             |             |     |
|                                          | Testwork                              | kWh/t            | 25.4                                       | Testwork    | 1           | A   |
|                                          | Design                                | kWh/t            | 25.4                                       | MineScope   |             | A   |
|                                          | Bond Ball Mill Work Index (LS 106µm)  |                  |                                            |             |             |     |
|                                          | Testwork                              | kWh/t            | 20.0                                       | Testwork    | 1           | A   |
|                                          | Design                                | kWh/t            | 20.0                                       | MineScope   |             | A   |
|                                          | Axb                                   |                  |                                            |             |             |     |
|                                          | Testwork                              | kWh/t            | 25.1                                       | Testwork    | 1           | A   |
|                                          | Design                                | kWh/t            | 25.1                                       | MineScope   |             | A   |
|                                          | Abrasion Index                        |                  |                                            |             |             |     |
|                                          | Testwork                              | -                | 0.2586                                     | Testwork    | 1           | A   |
|                                          | Design                                | -                | 0.26                                       | MineScope   |             | A   |
| <b>2.4</b>                               | <b>Head Grades</b>                    |                  |                                            |             |             |     |
|                                          | Design                                |                  |                                            |             |             |     |
|                                          | Au                                    | g/t              | 1.20                                       | MineScope   |             | A   |
| <b>2.5</b>                               | <b>Water</b>                          |                  |                                            |             |             |     |
|                                          | Liquid SG                             | t/m <sup>3</sup> | 1.00                                       | Assumption  |             | A   |
| <b>2.5</b>                               | <b>Gold Recoveries</b>                |                  |                                            |             |             |     |
|                                          | Gravity Recovery                      |                  |                                            |             |             |     |
|                                          | Testwork                              | % Au             | 15.5                                       | Testwork    | 1           | A   |
|                                          | Design                                | % Au             | 15.5                                       | Assumption  |             | A   |
|                                          | CIL Leach                             |                  |                                            |             |             |     |
|                                          | Testwork                              | % Au             | 73.4                                       | Testwork    | 1           | A   |
|                                          | Design                                | % Au             | 73.4                                       | Assumption  |             | A   |
|                                          | Total Plant Recovery                  |                  |                                            |             |             |     |
|                                          | Testwork                              | % Au             | 88.9                                       | Calculation |             | A   |
|                                          | Design                                | % Au             | 88.9                                       | Assumption  |             | A   |
| <b>3.0 PRODUCTION SCHEDULE</b>           |                                       |                  |                                            |             |             |     |
| <b>3.1</b>                               | <b>General</b>                        |                  |                                            |             |             |     |
|                                          | Annual Treatment Rate                 | t/y              | 7,000,000                                  | Client      |             | A   |
|                                          | Operating Schedule                    | d/y              | 365                                        | Industry    |             | A   |
| <b>3.2</b>                               | <b>Crushing</b>                       |                  |                                            |             |             |     |
|                                          | Operating days per year               | d/y              | 365                                        | Industry    |             | A   |
|                                          | Operating days per week               | d/w              | 7                                          | Industry    |             | A   |
|                                          | Circuit availability                  | %                | 75                                         | Industry    |             | A   |
|                                          | Operating hours per year              | h/y              | 6,570                                      | Calculation |             | A   |
|                                          | Throughput rate                       | t/h              | 1,065                                      | Calculation |             | A   |
| <b>3.3</b>                               | <b>Grinding</b>                       |                  |                                            |             |             |     |
|                                          | Operating days per year               | d/y              | 365                                        | Industry    |             | A   |
|                                          | Operating days per week               | d/w              | 7                                          | Industry    |             | A   |
|                                          | Circuit availability                  | %                | 91.3                                       | Industry    |             | A   |
|                                          | Operating hours per year              | h/y              | 8,000                                      | Calculation |             | A   |
|                                          | Throughput rate - dry                 | t/h              | 875                                        | Calculation |             | A   |

| AREA                   | PARAMETER                                            | UNITS                               | Design                | SOURCE      | REFERENCE # | REV |
|------------------------|------------------------------------------------------|-------------------------------------|-----------------------|-------------|-------------|-----|
| 3.4                    | <b>Gravity Tailings CIL Operation</b>                |                                     |                       |             |             |     |
|                        | Operating days per year                              | d/y                                 | 365                   | Industry    |             | A   |
|                        | Shift per day                                        | -                                   | 2                     | Industry    |             | A   |
|                        | Hours per shift                                      | h                                   | 12                    | Industry    |             | A   |
|                        | Operating availability                               | %                                   | 91.3                  | Industry    |             | A   |
|                        | Operating hours per year                             | h/y                                 | 8,000                 | Calculation |             | A   |
|                        | Feed rate                                            | t/h                                 | 875                   | Calculation |             | A   |
| 4.0 CRUSHING           |                                                      |                                     |                       |             |             |     |
| 4.1                    | <b>Crushing Circuit</b>                              |                                     |                       |             |             |     |
|                        | Crusher feed rate                                    | Average t/h                         | 1,065                 | Calculation |             | A   |
|                        |                                                      | Maximum t/h                         | 1,279                 | Calculation |             | A   |
|                        | Catch-up capacity                                    | %                                   | 20                    | MineScope   |             | A   |
|                        | ROM feed size, maximum                               | mm                                  | 1,250                 | Assumption  | 2           | A   |
| 4.2                    | <b>Dump Pocket</b>                                   |                                     |                       |             |             |     |
|                        | Dump pocket size                                     | # trucks                            | 2                     | Industry    |             | A   |
|                        | Truck Size                                           | t                                   | 100                   | Assumption  |             | A   |
|                        |                                                      |                                     | Cat 777 or equivalent | Assumption  |             | A   |
|                        | <b>Primary Crusher</b>                               |                                     |                       |             |             |     |
|                        | Type                                                 | -                                   | Gyratory              | Assumption  |             | A   |
|                        | Model                                                | -                                   | Metso 50-65 MK-111 LS | Vendor      |             | A   |
|                        | Feed Opening                                         | mm                                  | 1270                  | Vendor      |             | A   |
|                        | Motor Size                                           | kW                                  | 450                   | Vendor      |             | A   |
|                        | Crusher closed side setting                          | mm                                  | 140                   | Vendor      |             | A   |
|                        | Product size, P80                                    | mm                                  | 117                   | Vendor      |             | A   |
| 5.0 COARSE ORE STORAGE |                                                      |                                     |                       |             |             |     |
| 5.1                    | <b>Coarse Ore Storage</b>                            |                                     |                       |             |             |     |
|                        | Type                                                 | -                                   | Coarse Ore Stockpile  | Assumption  |             | A   |
|                        | Bulk density                                         | t/m <sup>3</sup>                    | 1.70                  | Assumption  |             | A   |
|                        | Residence time - live                                | h                                   | 16                    | Assumption  |             | A   |
|                        | Live capacity                                        | dry t                               | 14,001                | Calculation |             | A   |
|                        |                                                      | m <sup>3</sup>                      | 8,236                 | Calculation |             | A   |
|                        | Portion of stockpile that is live                    | %                                   | 25                    | Assumption  |             | A   |
|                        | Total capacity                                       | m <sup>3</sup>                      | 32,943                | Calculation |             | A   |
|                        | Total capacity                                       | dry t                               | 56,003                | Calculation |             | A   |
|                        | Residence time - total                               | h                                   | 64                    | Calculation |             | A   |
|                        | Stockpile height                                     | m                                   | 26                    | Calculation |             | A   |
| 5.2                    | <b>Reclaim Feeders</b>                               |                                     |                       |             |             |     |
|                        | Number                                               | -                                   | 3                     | Assumption  |             | A   |
|                        | Type                                                 | -                                   | Apron                 | Assumption  |             | A   |
|                        | Capacity per feeder                                  | t/h                                 | 875                   | Calculation |             | A   |
| 6.0 GRINDING           |                                                      |                                     |                       |             |             |     |
| 6.1                    | <b>Circuit Parameters</b>                            |                                     |                       |             |             |     |
|                        | Circuit configuration                                | -                                   | SABC                  | Assumption  |             | A   |
|                        | New throughput - dry                                 | t/h                                 | 875                   | Calculation |             | A   |
|                        | Bulk density                                         | t/m <sup>3</sup>                    | 1.70                  | Assumption  |             | A   |
|                        | Grinding circuit F <sub>80</sub>                     | mm                                  | 117                   | Vendor      |             | A   |
|                        | Grinding circuit P <sub>80</sub>                     | µm                                  | 75                    | Testwork    | 1           | A   |
|                        | SAG mill specific energy                             | kWh/t                               | 15.08                 | Calculation | 3           | A   |
|                        | Ball mill specific energy                            | kWh/t                               | 15.10                 | Calculation | 3           | A   |
|                        | Pebble crusher specific energy , pebble crusher feed | kWh/t                               | 1.16                  | Calculation | 3           | A   |
|                        | Total specific energy                                | kWh/t                               | 30.4                  | Calculation |             | A   |
| 6.2                    | <b>Primary Mill</b>                                  |                                     |                       |             |             |     |
|                        | Type                                                 | -                                   | SAG                   | Assumption  |             | A   |
|                        | New feed rate                                        | t/h                                 | 875                   | Calculation |             | A   |
|                        | Mill diameter (inside shell)                         | m                                   | 11.13                 | Calculation | 3           | A   |
|                        | Effective grinding length (EGL)                      | m                                   | 6.10                  | Calculation | 3           | A   |
|                        | L:D ratio                                            | -                                   | 0.55                  | Calculation |             | A   |
|                        | Mill speed - duty                                    | %Nc                                 | 75                    | Calculation | 3           | A   |
|                        | Mill speed - maximum                                 | %Nc                                 | 80                    | Assumption  | 3           | A   |
|                        | Discharge density                                    | %                                   | 70                    | Assumption  |             | A   |
|                        | Discharge configuration                              | -                                   | Grate                 | Assumption  |             | A   |
|                        | Grinding ball diameter                               | mm                                  | 125                   | Assumption  |             | A   |
|                        | Ball charge - duty                                   | % vol                               | 12.5                  | Calculation | 3           | A   |
|                        | Ball charge - maximum                                | % vol                               | 18                    | Calculation | 3           | A   |
|                        | Total load - duty                                    | % vol                               | 26                    | Calculation | 3           | A   |
|                        | Total load - maximum                                 | % vol                               | 35                    | Calculation | 3           | A   |
|                        | Required pinion power                                | duty kW                             | 13,265                | Calculation | 3           | A   |
|                        |                                                      | maximum kW                          | 15,345                | Calculation | 3           | A   |
|                        | Installed motor power                                | power kW                            | 16,000                | MineScope   |             | A   |
|                        | Trommel screening rate                               | m <sup>3</sup> /h/m <sup>2</sup> OA | 125                   | MineScope   |             | A   |
|                        | Mass split to pebble crusher                         | design % w/w                        | 17                    | Assumption  |             | A   |

| AREA                       | PARAMETER                                    | UNITS                            | Design                                 | SOURCE      | REFERENCE # | REV |
|----------------------------|----------------------------------------------|----------------------------------|----------------------------------------|-------------|-------------|-----|
| 6.3                        | <b>Secondary Mill</b>                        |                                  |                                        |             |             |     |
|                            | Type                                         | -                                | Ball Mill                              | Assumption  |             | A   |
|                            | Mill diameter (inside shell)                 | m                                | 7.77                                   | Calculation | 3           | A   |
|                            | Effective grinding length                    | m                                | 11.89                                  | Calculation | 3           | A   |
|                            | L:D ratio                                    | -                                | 1.53                                   | Calculation |             | A   |
|                            | Discharge type                               | -                                | Overflow                               | Assumption  |             | A   |
|                            | Discharge density                            | % w/w                            | 70                                     | Assumption  |             | A   |
|                            | Grinding ball diameter                       | mm                               | 65                                     | Assumption  |             | A   |
|                            | Ball charge - duty                           | % vol                            | 32                                     | Calculation | 3           | A   |
|                            | Ball charge - maximum                        | % vol                            | 38                                     | Calculation | 3           | A   |
|                            | Required pinion power - duty                 | kW                               | 14,172                                 | Calculation | 3           | A   |
|                            | Required pinion power - maximum              | kW                               | 15,994                                 | Calculation | 3           | A   |
|                            | Installed motor power                        | kW                               | 16,500                                 | MineScope   |             | A   |
| 6.4                        | <b>Classification</b>                        |                                  |                                        |             |             |     |
|                            | Circulating load (CUF/COF)                   | %                                | 250                                    | Assumption  |             | A   |
|                            | Feed rate - dry solids                       | t/h                              | 3,063                                  | Calculation |             | A   |
|                            | Slurry feed rate                             | m <sup>3</sup> /h                | 2,916                                  | Calculation | 4           | A   |
|                            | Target cyclone overflow density              | % w/w                            | 45                                     | Assumption  |             | A   |
|                            | Target cyclone overflow P <sub>80</sub>      | µm                               | 75                                     | Testwork    | 1           | A   |
|                            | Cyclone underflow density                    | % w/w                            | 75                                     | Assumption  |             | A   |
|                            | Type                                         | -                                | Hydrocyclones                          | Industry    |             | A   |
|                            | Model                                        | -                                | 400CVX-111 or equivalent               | Assumption  |             | A   |
|                            | Diameter                                     | mm                               | 400                                    | Assumption  |             | A   |
|                            | Vortex Finder                                | mm                               | 100                                    | Assumption  |             | A   |
|                            | Spigot                                       | mm                               | 70                                     | Assumption  |             | A   |
|                            | Number - Duty                                | #                                | 16                                     | Calculation |             | A   |
|                            | Number - Standby                             | #                                | 4                                      | Calculation |             | A   |
|                            | Number - Total                               | #                                | 20                                     | Calculation |             | A   |
|                            | Operating pressure                           | kPa                              | 100                                    | Assumption  |             | A   |
|                            | Throughput per cyclone                       | t/h                              | 191                                    | Calculation |             | A   |
|                            |                                              | m <sup>3</sup> /h                | 182                                    | Calculation |             | A   |
| <b>7.0 PEBBLE CRUSHING</b> |                                              |                                  |                                        |             |             |     |
| 7.1                        | <b>Feed Bin</b>                              |                                  |                                        |             |             |     |
|                            | Residence time                               | h                                | 0.17                                   | Assumption  |             | A   |
|                            | Capacity per bin                             | t                                | 24.8                                   | Calculation |             | A   |
| 7.2                        | <b>Pebble Crusher</b>                        |                                  |                                        |             |             |     |
|                            | Type                                         | -                                | Cone Crusher                           | Assumption  |             | A   |
|                            | Number                                       | -                                | 1                                      | MineScope   |             | A   |
|                            | Model                                        | -                                | HP800e                                 | Vendor      |             | A   |
|                            | Installed motor power per crusher            | kW                               | 600                                    | Vendor      |             | A   |
|                            | Closed side setting                          | mm                               | 12                                     | Vendor      |             | A   |
|                            | Crusher P <sub>80</sub> - duty               | mm                               | 11                                     | Vendor      |             | A   |
| <b>8.0 GRAVITY</b>         |                                              |                                  |                                        |             |             |     |
| 8.1                        | <b>Circuit Recovery</b>                      |                                  |                                        |             |             |     |
|                            | Total Gravity Gold Recovery                  | %                                | 15.5                                   | Testwork    | 1           | A   |
| 8.2                        | <b>Gravity Circuit Parameters</b>            |                                  |                                        |             |             |     |
|                            | Portion of CUF to Gravity Circuit            | %                                | 25.0                                   | Assumption  |             | A   |
| 8.3                        | <b>Gravity Screen</b>                        |                                  |                                        |             |             |     |
|                            | Feed Density after Dilution                  | % w/w                            | 65                                     | MineScope   |             | A   |
|                            | Total slurry feed to screens                 | m <sup>3</sup> /h                | 494                                    | Calculation | 4           | A   |
|                            | Type                                         | -                                | horizontal vibrating                   | Industry    |             | A   |
|                            | Number                                       | -                                | 2                                      | MineScope   |             | A   |
|                            | Screen width                                 | m                                | 1.5                                    | MineScope   |             | A   |
|                            | Screen length                                | m                                | 4.0                                    | Calculation |             | A   |
|                            | Screen aperture                              | mm                               | 3.6                                    | Assumption  |             | A   |
|                            | Screen flux rate                             | m <sup>3</sup> /h/m <sup>2</sup> | 50                                     | Assumption  |             | A   |
|                            | Mass split to oversize                       | %w/w                             | 10                                     | Assumption  |             | A   |
|                            | Total spray water                            | m <sup>3</sup> /h                | 40                                     | Assumption  |             | A   |
| 8.4                        | <b>Gravity Concentrator</b>                  |                                  |                                        |             |             |     |
|                            | Type                                         | -                                | Batch Centrifugal Gravity Concentrator | Industry    |             | A   |
|                            | Total solids feed                            | t/h                              | 492                                    | Calculation | 4           | A   |
|                            | Total slurry feed                            | m <sup>3</sup> /h                | 464                                    | Calculation | 4           | A   |
|                            | Number                                       | -                                | 2                                      | MineScope   |             | A   |
|                            | Model                                        | -                                | KC-QS40                                | MineScope   |             | A   |
|                            | Maximum feed rate per unit - dry             | t/h                              | 250                                    | Vendor      |             | A   |
|                            | Maximum total volumetric throughput per unit | m <sup>3</sup> /h                | 340                                    | Vendor      |             | A   |
|                            | Fluidising water per unit                    | m <sup>3</sup> /h                | 57                                     | Vendor      |             | A   |
|                            | Cycle time                                   | min                              | 40                                     | Assumption  |             | A   |
|                            | Cycles per day                               | #/d                              | 36                                     | Calculation |             | A   |
|                            | Concentrate mass per cycle                   | kg                               | 52                                     | Vendor      |             | A   |
|                            | Concentrate mass per day                     | kg/day                           | 3,744                                  | Calculation |             | A   |
|                            | Total gravity concentrate recovered per day  | kg/day                           | 3,744                                  | Calculation |             | A   |
|                            | Total gravity gold recovered per day         | g/day                            | 3,906                                  | Calculation |             | A   |
|                            | Grade of concentrate                         | g/t Au                           | 1,043                                  | Calculation |             | A   |

| AREA                | PARAMETER                                                | UNITS                            | Design           | SOURCE      | REFERENCE # | REV |
|---------------------|----------------------------------------------------------|----------------------------------|------------------|-------------|-------------|-----|
| 8.5                 | <b>Intensive Cyanide Leach</b>                           |                                  |                  |             |             |     |
|                     | Batches per day per unit                                 | #/d                              | 1                | Vendor      |             | A   |
|                     | Type                                                     | -                                | Acacia           | MineScope   |             | A   |
|                     | Number                                                   | -                                | 1                | Industry    |             | A   |
|                     | Model                                                    | -                                | CS3000           | MineScope   |             | A   |
|                     | Maximum feed per batch                                   | kg/batch                         | 4,500            | Vendor      |             | A   |
|                     | Cycle time                                               | h                                | 24               | Vendor      |             | A   |
|                     | Leach recovery                                           | %                                | 98               | Vendor      |             | A   |
|                     | Pregnant solution volume per batch                       | m <sup>3</sup>                   | 8.0              | Vendor      |             | A   |
|                     | Pregnant solution grade                                  | ppm Au                           | 479              | Calculation |             | A   |
|                     | NaCN dose per batch                                      | kg/batch                         | 138              | Vendor      |             | A   |
|                     | NaOH dose per batch                                      | kg/batch                         | 18               | Vendor      |             | A   |
|                     | Water required per batch                                 | m <sup>3</sup> /batch            | 6.5              | Vendor      |             | A   |
| 8.6                 | <b>Gravity Electrowinning</b>                            |                                  |                  |             |             |     |
|                     | Pregnant solution grade - nominal                        | ppm Au                           | 479              | Calculation |             | A   |
|                     | Pregnant solution grade - design                         | ppm Au                           | 1,500            | MineScope   |             | A   |
|                     | Type                                                     | -                                | Clean in place   | Assumption  |             | A   |
|                     | Number of batches per day                                | #/d                              | 1                | Assumption  |             | A   |
|                     | Barren solution assay                                    | Au ppm                           | <5               | Assumption  |             | A   |
|                     | Electrowinning time                                      | h                                | 10               | Calculation | 6           | A   |
|                     | Number of cells                                          | #                                | 1                | Calculation | 6           | A   |
|                     | Model                                                    | -                                | 1000 x 1000 - 12 | Calculation | 6           | A   |
|                     | Number of cathodes                                       | #                                | 12               | Calculation | 6           | A   |
|                     | Number of rectifiers                                     | #                                | 1                | Calculation | 6           | A   |
|                     | Rectifier                                                | A                                | 3,000            | Calculation | 6           | A   |
| <b>9.0 LEACHING</b> |                                                          |                                  |                  |             |             |     |
| 9.1                 | <b>Trash Screen</b>                                      |                                  |                  |             |             |     |
|                     | Type                                                     | -                                | Vibrating        | Industry    |             | A   |
|                     | Number                                                   | -                                | 2                | Assumption  |             | A   |
|                     | Screen flux rate - maximum                               | m <sup>3</sup> /h/m <sup>2</sup> | 50               | MineScope   |             | A   |
|                     | Screen spray water - per screen                          | m <sup>3</sup> /h                | 20               | Assumption  |             | A   |
|                     | Total Feed rate - slurry                                 | m <sup>3</sup> /h                | 1,409            | Calculation | 4           | A   |
|                     | Total screen area required - minimum per screen          | m <sup>2</sup>                   | 17.1             | Calculation |             | A   |
|                     | Screen aperture                                          | mm                               | 0.63             | Assumption  |             | A   |
|                     | Screen width - selected                                  | m                                | 3.05             | Assumption  |             | A   |
|                     | Screen length - required                                 | m                                | 5.61             | Calculation |             | A   |
|                     | Screen length - selected                                 | m                                | 6.10             | MineScope   |             | A   |
| 9.2                 | <b>Pre-leach Thickener</b>                               |                                  |                  |             |             |     |
|                     | Type                                                     | -                                | High rate        | Assumption  |             | A   |
|                     | Feed rate - dry                                          | t/h                              | 875              | Calculation |             | A   |
|                     | Feed rate - slurry                                       | m <sup>3</sup> /h                | 1496             | Calculation | 4           | A   |
|                     | Thickener flux rate                                      | t/h/m <sup>2</sup>               | 1.00             | Assumption  |             | A   |
|                     | Thickener diameter                                       | m                                | 37               | Calculation |             | A   |
|                     |                                                          | required                         |                  |             |             |     |
|                     |                                                          | selected                         |                  |             |             |     |
|                     | Underflow % solids                                       | % w/w                            | 50.0             | MineScope   |             | A   |
|                     | Underflow feed rate - slurry                             | t/h                              | 1750             | Calculation |             | A   |
|                     |                                                          | m <sup>3</sup> /h                | 1194             | Calculation |             | A   |
|                     | Overflow feed rate                                       | m <sup>3</sup> /h                | 302              | Calculation |             | A   |
|                     | Overflow clarity                                         | ppm                              | 100              | Assumption  |             | A   |
| 9.3                 | <b>Circuit Parameters</b>                                |                                  |                  |             |             |     |
|                     | Feed rate - dry solids                                   | t/h                              | 875              | Calculation |             | A   |
|                     | Feed % solids                                            | %w/w                             | 50.0             | MineScope   |             | A   |
|                     | Feed rate - slurry                                       | t/h                              | 1750             | Calculation | 4           | A   |
|                     | Feed rate - slurry                                       | m <sup>3</sup> /h                | 1194             | Calculation | 4           | A   |
|                     | Gold in plant feed                                       | g Au/h                           | 1050             | Calculation |             | A   |
|                     | Gold recovered - leach and adsorption (after gravity)    | g Au/h                           | 771              | Calculation |             | A   |
|                     | Total gold recovery - leach & adsorption (after gravity) | % Au                             | 73.4             | Testwork    | 1           | A   |
|                     | Gold recovered - leach and adsorption (no gravity)       | g Au/h                           | 933              | Calculation |             | A   |
|                     | Total gold recovery - leach & adsorption (no gravity)    | % Au                             | 88.9             | Assumption  |             | A   |
| 9.4                 | <b>Leach Tanks</b>                                       |                                  |                  |             |             |     |
|                     | Feed rate - slurry                                       | m <sup>3</sup> /h                | 1194             | Calculation |             | A   |
|                     | Gas holdup - liquid O <sub>2</sub>                       | %                                | 0                | Assumption  |             | A   |
|                     | pH                                                       | -                                | 10.5             | Testwork    | 1           | A   |
|                     | NaCN consumption                                         | kg/t                             | 0.18             | Testwork    | 1           | A   |
|                     | Lime consumption                                         | kg/t                             | 0.17             | Testwork    | 1           | A   |
|                     | Oxygen consumption @ 100%                                | Nm <sup>3</sup> /t               | 0.04             | Assumption  | 2           | A   |
|                     | Total Leach & Adsorption Residence time - minimum        | h                                | 24               | Testwork    | 1           | A   |
|                     | Number of leach tanks                                    |                                  | 2                | Assumption  |             | A   |
|                     | Live volume of tank required - each                      | m <sup>3</sup>                   | 3,185            | Calculation |             | A   |
|                     | Live volume of tank selected - each                      | m <sup>3</sup>                   | 3,200            | MineScope   |             | A   |
|                     | Leach residence time                                     | h                                | 5.4              | Calculation |             | A   |

| AREA                                      | PARAMETER                           | UNITS                            | Design                           | SOURCE      | REFERENCE # | REV |
|-------------------------------------------|-------------------------------------|----------------------------------|----------------------------------|-------------|-------------|-----|
| <b>10.0 ADSORPTION &amp; REGEN</b>        |                                     |                                  |                                  |             |             |     |
| <b>10.1 Adsorption</b>                    | System                              | -                                | CIP                              | Industry    |             | A   |
|                                           | Feed rate - slurry                  | m <sup>3</sup> /hr               | 1194                             | Calculation |             | A   |
|                                           | Gas holdup - liquid O <sub>2</sub>  | %                                | 0                                | Assumption  |             | A   |
|                                           | Number of tanks                     | -                                | 7                                | Assumption  |             | A   |
|                                           | Live volume of tank required - each | m <sup>3</sup>                   | 3,185                            | Calculation |             | A   |
|                                           | Live volume of tank selected - each | m <sup>3</sup>                   | 3,200                            | MineScope   |             | A   |
|                                           | Adsorption residence time           | h                                | 18.8                             | Calculation |             | A   |
|                                           | Total residence time                | h                                | 24.1                             | Calculation |             | A   |
|                                           | Carbon concentration                | g/L                              | 10                               | Industry    | 2           | A   |
|                                           | Carbon movements - average          | t/h                              | 0.42                             | Calculation |             | A   |
|                                           | Loaded carbon grade (after gravity) | g/t                              | 1,850                            | Calculation |             | A   |
|                                           | Loaded carbon grade (no gravity)    | g/t                              | 2,240                            | Calculation |             | A   |
|                                           | Design carbon grade                 | g/t                              | 2,500                            | MineScope   |             | A   |
|                                           | Carbon advance method               | -                                | recessed impellor pump           | Industry    |             | A   |
|                                           | Loaded carbon recovery method       | -                                | recessed impellor pump           | Industry    |             | A   |
|                                           | Loaded carbon transfer time         | h                                | 4                                | Industry    |             | A   |
|                                           | Pumping rate                        | m <sup>3</sup> /h                | 250                              | Calculation |             | A   |
| <b>10.2 Intertank Carbon Screens</b>      | Screen type                         | -                                | Mechanically Swept Pumped Screen | Industry    |             | A   |
|                                           | Maximum screen flux                 | m <sup>3</sup> /h/m <sup>2</sup> | 75                               | Assumption  |             | A   |
|                                           | Aperture                            | mm                               | 0.8                              | Industry    |             | A   |
|                                           | Screen area - minimum               | m <sup>2</sup>                   | 15.9                             | Calculation |             | A   |
|                                           | Screen area - selected              | m <sup>2</sup>                   | 16.0                             | MineScope   |             | A   |
|                                           | Make                                | -                                | Kemix or equivalent              | MineScope   |             | A   |
|                                           | Model                               | -                                | MPS 16,000P or equivalent        | MineScope   |             | A   |
| <b>10.3 Loaded Carbon Recovery Screen</b> | Feed duration                       | h                                | 4                                | Industry    |             | A   |
|                                           | Carbon tonnes per strip per column  | t/strip                          | 10                               | MineScope   |             | A   |
|                                           | Number of screens                   | -                                | 1                                | Industry    |             | A   |
|                                           | Spray water - per screen            | m <sup>3</sup> /h                | 5                                | Assumption  |             | A   |
|                                           | Feed rate - slurry + spray water    | m <sup>3</sup> /h                | 255                              | Calculation |             | A   |
|                                           | Screen type                         | -                                | Horizontal Vibrating             | Industry    |             | A   |
|                                           | Maximum screen flux                 | m <sup>3</sup> /h/m <sup>2</sup> | 35                               | Assumption  |             | A   |
|                                           | Aperture                            | mm                               | 0.8                              | Industry    |             | A   |
|                                           | Screen area - minimum               | m <sup>2</sup>                   | 7.3                              | Calculation |             | A   |
|                                           | Screen area - selected              | m <sup>2</sup>                   | 8.0                              | MineScope   |             | A   |
|                                           | Screen width                        | m                                | 2.0                              | MineScope   |             | A   |
|                                           | Screen length                       | m                                | 4.0                              | Calculation |             | A   |
| <b>10.4 Carbon Safety Screen</b>          | Spray water                         | m <sup>3</sup> /h                | 20                               | Assumption  |             | A   |
|                                           | Feed rate - slurry + spray water    | m <sup>3</sup> /h                | 1,214                            | Calculation |             | A   |
|                                           | Screen type                         | -                                | Horizontal Vibrating             | Industry    |             | A   |
|                                           | Maximum screen flux                 | m <sup>3</sup> /h/m <sup>2</sup> | 50                               | Assumption  |             | A   |
|                                           | Aperture                            | mm                               | 1                                | Industry    |             | A   |
|                                           | Screen area - minimum               | m <sup>2</sup>                   | 24.3                             | Calculation |             | A   |
|                                           | Screen area - selected              | m <sup>2</sup>                   | 25.0                             | MineScope   |             | A   |
|                                           | Screen width                        | m                                | 3.6                              | MineScope   |             | A   |
|                                           | Screen length                       | m                                | 6.9                              | Calculation |             | A   |
| <b>11.0 ELUTION</b>                       |                                     |                                  |                                  |             |             |     |
| <b>11.1 Circuit Parameters</b>            | System                              | -                                | Split AARL                       | MineScope   |             | A   |
|                                           | Number of columns                   | -                                | 1                                | Industry    |             | A   |
|                                           | Carbon tonnes per strip per column  | t/strip                          | 10                               | MineScope   |             | A   |
|                                           | Strips per week - total             | #/week                           | 7                                | Assumption  |             | A   |
|                                           | Carbon movements - average          | t/day                            | 10                               | Calculation |             | A   |
|                                           | Design carbon loading to elution    | Au g/t                           | 2,500                            | Assumption  |             | A   |
|                                           | Dry carbon bulk density             | t/m <sup>3</sup>                 | 0.47                             | Industry    | 2           | A   |
|                                           | Carbon bed volumes per column       | m <sup>3</sup>                   | 21.28                            | Calculation |             | A   |
|                                           | Barren carbon grade                 | g/t                              | 50                               | Assumption  |             | A   |
| <b>11.2 Acid Wash Column</b>              | Type                                | -                                | Column                           | Industry    |             | A   |
|                                           | Capacity                            | t                                | 10                               | MineScope   |             | A   |
|                                           |                                     | m <sup>3</sup>                   | 21                               | Calculation |             | A   |
|                                           | Number                              | -                                | 1                                | Industry    |             | A   |
|                                           | Temperature                         | °C                               | Ambient                          | Assumption  |             | A   |
|                                           | Pressure                            | kPa                              | Atmospheric                      | Assumption  |             | A   |
|                                           | Materials of Construction           | -                                | Rubber lined mild steel          | Industry    |             | A   |
| <b>11.3 Elution Column</b>                | Total column capacity - required    | t                                | 10                               | MineScope   |             | A   |
|                                           | Number of columns                   | -                                | 1                                | Assumption  |             | A   |
|                                           | Column capacity - selected          | t                                | 10                               | Assumption  |             | A   |
|                                           |                                     | m <sup>3</sup>                   | 21                               | Calculation |             | A   |
|                                           | Temperature                         | °C                               | 150                              | Assumption  |             | A   |
|                                           | Pressure                            | kPa                              | 350                              | Assumption  |             | A   |
|                                           | Materials of Construction           | -                                | Stainless steel                  | Industry    |             | A   |
| <b>11.4 Elution Heater</b>                | Type                                | -                                | Diesel                           | Industry    | 2           | A   |
|                                           | Number                              | -                                | 1                                | Assumption  |             | A   |
|                                           | Power                               | kW/t carbon                      | 320                              | Industry    | 2           | A   |
|                                           |                                     | kW                               | 3,200                            | Calculation |             | A   |



| AREA  | PARAMETER                            | UNITS                 | Design                     | SOURCE      | REFERENCE # | REV |
|-------|--------------------------------------|-----------------------|----------------------------|-------------|-------------|-----|
| 11.5  | <b>Acid Soak</b>                     |                       |                            |             |             |     |
|       | Cycle time                           | min                   | 30                         | Industry    |             | A   |
|       | Dilute acid solution flowrate        | BV/h                  | 2                          | Industry    |             | A   |
|       |                                      | m <sup>3</sup> /h     | 42.6                       | Calculation |             | A   |
|       | Dilute acid strength (HCl)           | %w/v                  | 3                          | Industry    |             | A   |
|       |                                      | kg/m <sup>3</sup>     | 30                         | Calculation |             | A   |
|       | Neat acid strength (HCl)             | %w/w                  | 32                         | Industry    |             | A   |
|       | Neat acid SG (HCl)                   | t/m <sup>3</sup>      | 1.16                       | Industry    |             | A   |
|       | Neat acid (HCl) flowrate             | m <sup>3</sup> /h     | 3.4                        | Calculation |             | A   |
|       | Water flowrate                       | m <sup>3</sup> /h     | 39.1                       | Calculation |             | A   |
|       | Neat acid (HCl) required per strip   | m <sup>3</sup> /strip | 1.7                        | Calculation |             | A   |
|       | Water required per strip             | m <sup>3</sup> /strip | 19.6                       | Calculation |             | A   |
|       | Temperature                          | °C                    | Ambient                    | Industry    |             | A   |
|       | Destination                          | -                     | Final Tailings             | MineScope   |             | A   |
| 11.6  | <b>Acid Water Rinse</b>              |                       |                            |             |             |     |
|       | Cycle time                           | min                   | 120                        | Industry    |             | A   |
|       | Water flowrate                       | BV/h                  | 2                          | Industry    |             | A   |
|       |                                      | m <sup>3</sup> /h     | 42.6                       | Calculation |             | A   |
|       | Water required per strip             | m <sup>3</sup> /strip | 85.1                       | Calculation |             | A   |
|       | Temperature                          | °C                    | Ambient                    | Industry    |             | A   |
|       | Destination                          | -                     | Final Tailings             | MineScope   |             | A   |
|       | Carbon transfer to elution           | min                   | 60                         | Industry    | 2           | A   |
|       | Carbon transferred                   | m <sup>3</sup>        | 21.3                       | Calculation |             | A   |
|       | Carbon transfer water                | BV                    | 2                          | Industry    | 2           | A   |
|       |                                      | m <sup>3</sup>        | 42.6                       | Calculation |             | A   |
|       |                                      |                       |                            |             |             |     |
|       |                                      |                       |                            |             |             |     |
|       |                                      |                       |                            |             |             |     |
| 11.7  | <b>Elution Preheat</b>               |                       |                            |             |             |     |
|       | Cycle time                           | min                   | 30                         | Industry    |             | A   |
|       | Solution flowrate                    | BV/h                  | 2                          | Industry    |             | A   |
|       |                                      | m <sup>3</sup> /h     | 42.6                       | Calculation |             | A   |
|       | Temperature                          | °C                    | 95                         | Industry    | 2           | A   |
|       | Dilute NaCN strength                 | %w/v                  | 2                          | Industry    | 2           | A   |
|       |                                      | kg/m <sup>3</sup>     | 20                         | Calculation |             | A   |
|       | Neat NaCN strength                   | %w/v                  | 20                         | Industry    |             | A   |
|       | Neat NaCN SG                         | t/m <sup>3</sup>      | 1.19                       | Industry    |             | A   |
|       | Neat NaCN flowrate                   | m <sup>3</sup> /h     | 3.58                       | Calculation |             | A   |
|       | Neat NaCN required per strip         | m <sup>3</sup> /strip | 1.79                       | Calculation |             | A   |
|       | Dilute NaOH strength                 | %w/v                  | 3                          | Industry    | 2           | A   |
|       |                                      | kg/m <sup>3</sup>     | 30                         | Calculation |             | A   |
|       | Neat NaOH strength                   | %w/v                  | 20                         | Industry    |             | A   |
|       | Neat NaOH SG                         | t/m <sup>3</sup>      | 1.5                        | Industry    |             | A   |
|       | Neat NaOH flowrate                   | m <sup>3</sup> /h     | 4.26                       | Calculation |             | A   |
|       | Neat NaOH required per strip         | m <sup>3</sup> /strip | 2.13                       | Calculation |             | A   |
|       | Fresh water makeup flowrate          | m <sup>3</sup> /h     | 34.7                       | Calculation |             | A   |
|       | Fresh water makeup per strip         | m <sup>3</sup> /strip | 17.4                       | Calculation |             | A   |
|       | Total eluate volume per strip        | m <sup>3</sup>        | 21.3                       | Calculation |             | A   |
|       | Destination                          | -                     | Pregnant Solution Tank     | Industry    |             | A   |
|       |                                      |                       |                            |             |             |     |
|       |                                      |                       |                            |             |             |     |
| 11.8  | <b>Elution - Recycle</b>             |                       |                            |             |             |     |
|       | Cycle time                           | min                   | 90                         | Industry    |             | A   |
|       | Solution flowrate                    | BV/h                  | 2                          | Industry    |             | A   |
|       |                                      | m <sup>3</sup> /h     | 43                         | Calculation |             | A   |
|       | Total volume                         | m <sup>3</sup>        | 64                         | Calculation |             | A   |
|       | Temperature                          | °C                    | 140                        | Industry    | 2           | A   |
|       | Destination                          | -                     | Pregnant Solution Tank     | Industry    |             | A   |
|       |                                      |                       |                            |             |             |     |
| 11.90 | <b>Elution - Fresh Water Elution</b> |                       |                            |             |             |     |
|       | Cycle time                           | min                   | 90                         | Industry    |             | A   |
|       | Solution flowrate                    | BV/h                  | 2                          | Industry    |             | A   |
|       |                                      | m <sup>3</sup> /h     | 43                         | Calculation |             | A   |
|       | Total volume - fresh water           | m <sup>3</sup>        | 64                         | Calculation |             | A   |
|       | Temperature                          | °C                    | 120                        | Industry    |             | A   |
|       | Destination                          | -                     | Intermediate Solution Tank | Industry    |             | A   |
| 11.91 | <b>Elution - Carbon Cooling</b>      |                       |                            |             |             |     |
|       | Cycle time                           | min                   | 30                         | Industry    |             | A   |
|       | Solution flowrate                    | BV/h                  | 2                          | Industry    |             | A   |
|       |                                      | m <sup>3</sup> /h     | 43                         | Calculation |             | A   |
|       | Total volume - fresh water           | m <sup>3</sup>        | 21                         | Calculation |             | A   |
|       | Cool down temperature target         | °C                    | 70                         | Industry    | 2           | A   |
|       | Destination                          | -                     | Intermediate Solution Tank | Industry    |             | A   |
| 11.92 | <b>Carbon Transfer to Regen</b>      |                       |                            |             |             |     |
|       | Transfer method                      | -                     | Eduction                   | Industry    |             | A   |
|       | Cycle time                           | min                   | 60                         | Industry    |             | A   |
|       | Carbon transfer concentration        | g/L                   | 200                        | Industry    |             | A   |
|       | Total carbon                         | t                     | 10                         | MineScope   |             | A   |
|       |                                      | m <sup>3</sup>        | 21.3                       | Calculation |             | A   |
|       | Transfer total volume                | m <sup>3</sup>        | 50                         | Calculation |             | A   |
|       | Transfer flowrate                    | m <sup>3</sup> /h     | 50                         | Calculation |             | A   |
| 11.93 | <b>Pregnant Solution Tank</b>        |                       |                            |             |             |     |
|       | Number                               | -                     | 2                          | Calculation | 7           | A   |
|       | Live volume required per tank        | BV                    | 3                          | Industry    |             | A   |
|       |                                      | m <sup>3</sup>        | 64                         | Calculation |             | A   |
|       | Design pregnant liquor grade         | ppm                   | 384                        | Calculation |             | A   |

| AREA                            | PARAMETER                         | UNITS              | Design                      | SOURCE      | REFERENCE # | REV |
|---------------------------------|-----------------------------------|--------------------|-----------------------------|-------------|-------------|-----|
| 11.94                           | <b>Intermediate Solution Tank</b> |                    |                             |             |             |     |
|                                 | Number                            | -                  | 1                           | Industry    |             | A   |
|                                 | Live volume required per tank     | m <sup>3</sup>     | 85.1                        | Calculation |             | A   |
| 11.95                           | <b>Lean Solution Tank</b>         |                    |                             |             |             |     |
|                                 | Number                            | -                  | 1                           | Industry    |             | A   |
|                                 | Live volume required per tank     | m <sup>3</sup>     | 128                         | Calculation |             | A   |
| <b>12.0 ELECTROWINNING</b>      |                                   |                    |                             |             |             |     |
| 12.1                            | <b>Elution Electrowinning</b>     |                    |                             |             |             |     |
|                                 | Type                              | -                  | clean in place              | Industry    |             | A   |
|                                 | Number of batches per day         | #/d                | 1                           | Assumption  |             | A   |
|                                 | Barren solution assay             | Au ppm             | <5                          | Assumption  |             | A   |
|                                 | Electrowinning time               | h                  | 12                          | Calculation | 7           | A   |
|                                 | Total number of cells             | #                  | 2                           | Calculation | 7           | A   |
|                                 | Model                             | -                  | 1000 x 1000 - 20            | Calculation | 7           | A   |
|                                 | Number of cathodes                | #                  | 20                          | Calculation | 7           | A   |
|                                 | Number of rectifiers              | #                  | 2                           | Calculation | 7           | A   |
|                                 | Rectifier per cell                | A                  | 3,400                       | Calculation | 7           | A   |
| <b>13.0 CARBON REGENERATION</b> |                                   |                    |                             |             |             |     |
| 13.1                            | <b>Dewatering Screen</b>          |                    |                             |             |             |     |
|                                 | Type                              | -                  | Vibrating screen            | Industry    |             | A   |
|                                 | Number                            | -                  | 1                           | Industry    |             | A   |
|                                 | Total feed to screen              | m <sup>3</sup> /h  | 50                          | Calculation |             | A   |
|                                 | Solids feed rate to screen        | t/h                | 10                          | Calculation |             | A   |
|                                 | Aperture                          | mm                 | 1.0                         | Industry    |             | A   |
|                                 | Maximum screen flux               | t/h/m <sup>2</sup> | 5                           | Assumption  |             | A   |
|                                 | Minimum screen area required      | m <sup>2</sup>     | 0.50                        | Calculation |             | A   |
|                                 | Screen width                      | m                  | 1.00                        | Assumption  |             | A   |
|                                 | Screen length                     | m                  | 2.00                        | Calculation |             | A   |
| 13.2                            | <b>Regeneration Kiln</b>          |                    |                             |             |             |     |
|                                 | Number                            | -                  | 1                           | Industry    |             | A   |
|                                 | Feed hopper capacity per kiln     | t                  | 12                          | Assumption  |             | A   |
|                                 | Make                              | -                  | Ansac or equivalent         | MineScope   |             | A   |
|                                 | Model                             | -                  | HK510                       | MineScope   |             | A   |
|                                 | Type                              | -                  | Diesel fired horizontal     | Industry    |             | A   |
|                                 | Throughput per kiln               | kg/h               | 200                         | Calculation |             | A   |
|                                 | Minimum Capacity                  | kg/h               | 100                         | Vendor      |             | A   |
|                                 | Maximum Capacity                  | kg/h               | 200                         | Vendor      |             | A   |
|                                 | Cycle time per batch              | h                  | 50                          | Calculation |             | A   |
|                                 | Residence time                    | min                | 20                          | Vendor      |             | A   |
|                                 | Design operating temperature      | °C                 | 650 - 800                   | Vendor      |             | A   |
|                                 | Kiln tube dimensions              | m dia x m          | 0.51 x 4                    | Vendor      |             | A   |
| 13.3                            | <b>Quench Tank</b>                |                    |                             |             |             |     |
|                                 | Number                            | -                  | 1                           | Industry    |             | A   |
|                                 | Cycle time                        | min                | 60                          | Assumption  |             | A   |
|                                 | Carbon transfer concentration     | g/L                | 100                         | Assumption  |             | A   |
|                                 | Total carbon                      | t                  | 10                          | MineScope   |             | A   |
|                                 |                                   | m <sup>3</sup>     | 21.3                        | Calculation |             | A   |
|                                 | Transfer total volume             | m <sup>3</sup>     | 100                         | Calculation |             | A   |
|                                 | Transfer flowrate                 | m <sup>3</sup> /h  | 100                         | Calculation |             | A   |
|                                 | Quench tank volume per kiln       | m <sup>3</sup>     | 100                         | Calculation |             | A   |
|                                 |                                   | t                  | 10                          | Calculation |             | A   |
| <b>14.0 GOLDROOM</b>            |                                   |                    |                             |             |             |     |
| 14.1                            | <b>Calcine Oven</b>               |                    |                             |             |             |     |
|                                 | Number                            | -                  | 1                           | MineScope   |             | A   |
|                                 | Design drying temperature         | °C                 | 900                         | Industry    |             | A   |
|                                 | Number of trays                   | #                  | 8                           | MineScope   |             | A   |
|                                 | Tray dimensions                   | mm                 | 800 x 800                   | MineScope   |             | A   |
| 14.2                            | <b>Smelting</b>                   |                    |                             |             |             |     |
|                                 | Furnace Type                      | -                  | Diesel fired                | Industry    |             | A   |
|                                 | Crucible Capacity                 | kg                 | 400                         | Assumption  |             | A   |
|                                 | Model                             | -                  | Ansac TA200LP or equivalent | Assumption  |             | A   |

| AREA                            | PARAMETER                                                       | UNITS                                                | Design                         | SOURCE      | REFERENCE # | REV |
|---------------------------------|-----------------------------------------------------------------|------------------------------------------------------|--------------------------------|-------------|-------------|-----|
| <b>15.0 DETOX</b>               |                                                                 |                                                      |                                |             |             |     |
| <b>15.1 Cyanide Destruction</b> |                                                                 |                                                      |                                |             |             |     |
|                                 | Method                                                          | -                                                    | SMBS/CuSO <sub>4</sub> /Oxygen | Industry    | 2           | A   |
|                                 | Number of Tanks                                                 | #                                                    | 2                              | Industry    |             | A   |
|                                 | Ore Feed Rate, dry solids                                       | dry tph                                              | 875                            | Calculation |             | A   |
|                                 | Detox Solution Flowrate                                         | m <sup>3</sup> /h                                    | 875                            | Calculation | 4           | A   |
|                                 | Feed CyanideWAD Concentration - Design                          | g CNWAD/m <sup>3</sup>                               | 150                            | Assumption  | 2           | A   |
|                                 | Discharge Cyanide Concentration - Design                        | g CNWAD/m <sup>3</sup>                               | 50                             | Assumption  | 2           | A   |
|                                 | Detox Feed CNwad                                                | kg CNWAD/h                                           | 131                            | Calculation | 5           | A   |
|                                 | Detox Tail CNwad                                                | kg CNWAD/h                                           | 43.8                           | Calculation | 5           | A   |
|                                 | Cyanide Load CNwad                                              | kg CNWAD/h                                           | 87.5                           | Calculation | 5           | A   |
|                                 | SO <sub>2</sub> Consumption                                     | g SO <sub>2</sub> /g CNWAD                           | 3.5                            | Assumption  | 2           | A   |
|                                 | SO <sub>2</sub> Required                                        | kg SO <sub>2</sub> /h                                | 306                            | Calculation | 5           | A   |
|                                 | SMBS Required                                                   | t Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> /h   | 0.5                            | Calculation | 5           | A   |
|                                 |                                                                 | t Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> /day | 10.9                           | Calculation | 5           | A   |
|                                 |                                                                 | kg/t mill feed                                       | 0.5                            | Calculation | 5           | A   |
|                                 | NaOH Consumption                                                | mol NaOH:mol SMBS                                    | 2                              | Industry    |             | A   |
|                                 |                                                                 | mol NaOH:mol Cu <sup>+2</sup>                        | 2                              | Industry    |             | A   |
|                                 | Total kg NaOH/t mill feed                                       |                                                      | 0.28                           | Calculation | 5           | A   |
|                                 | Existing Cu <sup>+2</sup> in Detox Feed                         | g Cu/m <sup>3</sup>                                  | 4                              | Assumption  | 2           | A   |
|                                 | Existing Fe <sup>+3</sup> in Detox Feed                         | g Fe/m <sup>3</sup>                                  | 2                              | Assumption  | 2           | A   |
|                                 | Chosen Copper Excess                                            | g Cu/m <sup>3</sup>                                  | 50                             | Assumption  | 2           | A   |
|                                 | Total Cu <sup>+2</sup> Required                                 | kg Cu/h                                              | 44.2                           | Calculation | 5           | A   |
|                                 | Stoichiometric Ratio                                            | O <sub>2</sub> :CNWAD                                | 1.5                            | Assumption  |             | A   |
|                                 | Stoichiometric Ratio                                            | O <sub>2</sub> :Cu <sup>+1</sup>                     | 0.5                            | Assumption  |             | A   |
|                                 | Stoichiometric Ratio                                            | SO <sub>2</sub> :CNWAD                               | 1.0                            | Assumption  |             | A   |
|                                 | Stoichiometric Ratio                                            | O <sub>2</sub> :SO <sub>2</sub>                      | 1.5                            | Assumption  |             | A   |
|                                 | Total O <sub>2</sub> Required for CNWAD                         | kg O <sub>2</sub> /h                                 | 161                            | Calculation | 5           | A   |
|                                 | Total O <sub>2</sub> Required for Cu <sup>+1</sup>              | kg O <sub>2</sub> /h                                 | 0.9                            | Calculation | 5           | A   |
|                                 | Detox Tank 1 (O <sub>2</sub> ) residence time                   | min                                                  | 60                             | Assumption  |             | A   |
|                                 | Detox Tank 2 (air) residence time                               | min                                                  | 30                             | Assumption  |             | A   |
|                                 | O <sub>2</sub> Supplied by Liquid Oxygen (100% O <sub>2</sub> ) | kg O <sub>2</sub> /h                                 | 153                            | Calculation | 5           | A   |
|                                 | O <sub>2</sub> Supplied by Air (100% O <sub>2</sub> )           | kg O <sub>2</sub> /h                                 | 76.6                           | Calculation | 5           | A   |
|                                 | Liquid oxygen purity                                            | % w/w                                                | 90                             | Industry    |             | A   |
|                                 | Oxygen sparge efficiency                                        | %                                                    | 75                             | Assumption  |             | A   |
|                                 | Liquid O <sub>2</sub> Required                                  | kg liq. O <sub>2</sub> /h                            | 227                            | Calculation | 5           | A   |
|                                 |                                                                 | Nm <sup>3</sup> liq. O <sub>2</sub> /h               | 159                            | Calculation | 5           | A   |
|                                 | Oxygen in Air                                                   | % w/w                                                | 21                             | Assumption  |             | A   |
|                                 | Air sparge efficiency                                           | %                                                    | 15                             | Assumption  |             | A   |
|                                 | Air density                                                     | kg/m <sup>3</sup>                                    | 1.185                          | Industry    |             | A   |
|                                 | Air Required                                                    | kg air/h                                             | 2,431                          | Calculation | 5           | A   |
|                                 |                                                                 | Nm <sup>3</sup> air/h                                | 2,051                          | Calculation | 5           | A   |
| <b>16.0 TAILINGS</b>            |                                                                 |                                                      |                                |             |             |     |
| <b>16.1 Final Tailings</b>      |                                                                 |                                                      |                                |             |             |     |
|                                 | Destination                                                     | -                                                    | TSF                            | Client      |             | A   |
|                                 | Feed rate - dry                                                 | t/h                                                  | 875                            | Calculation |             | A   |
|                                 | Slurry % solids                                                 | % w/w                                                | 50                             | Calculation |             | A   |
|                                 | Slurry feed rate                                                | t/h                                                  | 1750                           | Calculation | 4           | A   |
|                                 |                                                                 | m <sup>3</sup> /h                                    | 1195                           | Calculation | 4           | A   |
|                                 | Portion of decant return water                                  | %                                                    | 40                             | Assumption  | 2           | A   |
|                                 | Decant return water                                             | m <sup>3</sup> /h                                    | 350                            | Calculation |             | A   |
| <b>17.0 REAGENTS</b>            |                                                                 |                                                      |                                |             |             |     |
| <b>17.1 Lime</b>                |                                                                 |                                                      |                                |             |             |     |
|                                 | Type                                                            | -                                                    | Quick lime                     | Industry    |             | A   |
|                                 | Storage method                                                  | -                                                    | Lime silo                      | Industry    |             | A   |
|                                 | Capacity                                                        | t                                                    | 50                             | Assumption  |             | C   |
|                                 |                                                                 | days                                                 | 14                             | Calculation |             | C   |
|                                 | Delivery point                                                  | -                                                    | SAG mill feed conveyor         | Industry    |             | A   |
|                                 | Addition rate, plant feed basis                                 |                                                      |                                |             |             |     |
|                                 | Leaching                                                        | nominal                                              | kg/t                           | 0.17        | Testwork    | 1   |
|                                 |                                                                 | design                                               | kg/t                           | 1.00        | Assumption  | A   |
|                                 |                                                                 |                                                      | kg/h                           | 875         | Calculation | A   |
|                                 | Lime Silo                                                       |                                                      | days                           | 12          | Assumption  | A   |
|                                 |                                                                 |                                                      | t                              | 252         | Calculation | A   |
|                                 |                                                                 | selected size                                        | t                              | 250         | MineScope   | A   |

| AREA | PARAMETER                                | UNITS                     | Design       | SOURCE      | REFERENCE # | REV |
|------|------------------------------------------|---------------------------|--------------|-------------|-------------|-----|
| 17.2 | <b>Sodium Cyanide</b>                    |                           |              |             |             |     |
|      | Reagent Type                             |                           | NaCN         |             |             |     |
|      | Form                                     |                           | Briquettes   | Industry    |             | A   |
|      | Packaging                                | Type                      | Bulka bags   |             |             | A   |
|      |                                          | Size                      | 1            | Assumption  |             | A   |
|      | Mixing tank                              |                           |              |             |             |     |
|      | Bags per mix                             | #                         | 10           | MineScope   |             | A   |
|      | Volume                                   | minimum live              | 40           | Calculation |             | A   |
|      |                                          | selected                  | 45           | MineScope   |             | A   |
|      | Number of mixes per day                  | #                         | 1.0          | Calculation |             | A   |
|      | Storage tank                             |                           |              |             |             |     |
|      | Capacity                                 | no.of live mix volumes    | 1.5          | MineScope   |             | A   |
|      | Volume                                   | minimum                   | 60           | Calculation |             | A   |
|      |                                          | selected                  | 60           | MineScope   |             | A   |
|      | Neat NaCN strength                       | %w/v                      | 20           | Industry    | 2           | A   |
|      | Neat NaCN SG                             | t/m <sup>3</sup>          | 1.19         | Industry    |             | A   |
|      | Addition rate, plant feed or batch basis |                           |              |             |             |     |
|      | Leaching                                 | kg/t                      | 0.46         | Testwork    | 1           | A   |
|      |                                          | kg/h                      | 405          | Calculation |             | A   |
|      |                                          | t/d                       | 9.7          | Calculation |             | A   |
|      |                                          | t/a                       | 3,239        | Calculation |             | A   |
|      | Elution                                  | kg/batch                  | 426          | Calculation |             | A   |
|      | ILR                                      | kg/batch                  | 138          | Vendor      |             | A   |
|      | Total                                    | t/a                       | 3,444        | Vendor      |             | A   |
|      | Nominal consumption at neat strength     | m <sup>3</sup> /hr        | 1.81         | Calculation |             | A   |
|      | Design consumption at neat strength      | m <sup>3</sup> /h         | 3.62         | Calculation |             | A   |
|      | Ringmain flow factor                     | -                         | 2            | Assumption  |             | A   |
|      | Cyanide ringmain pumps - required        | m <sup>3</sup> /h         | 7.2          | Calculation |             | A   |
|      | Bulk storage of supplied reagent         |                           |              |             |             |     |
|      | Storage capacity                         | days                      | 30.0         | Assumption  |             | A   |
|      |                                          | t                         | 292          | Calculation |             | A   |
|      |                                          | bags                      | 300          | MineScope   |             | A   |
| 17.3 | <b>Hydrochloric Acid</b>                 |                           |              |             |             |     |
|      | Type                                     | -                         | IBC          | Industry    |             | A   |
|      | Delivery Volume                          | m <sup>3</sup>            | 1            | Assumption  |             | A   |
|      | Storage Volume                           | m <sup>3</sup>            | 30           | MineScope   |             | A   |
|      |                                          | days                      | 5.1          | Calculation |             | A   |
|      | Neat acid strength (HCl)                 | %w/v                      | 32           | Industry    |             | A   |
|      | Neat acid SG (HCl)                       | t/m <sup>3</sup>          | 1.16         | Industry    |             | A   |
|      | Addition rate, plant feed or batch basis |                           |              |             |             |     |
|      | Acid wash column                         | t/batch                   | 1.99         | Calculation |             | A   |
|      |                                          | t/a                       | 726          | Calculation |             | A   |
|      | Nominal consumption at neat strength     | L/h                       | 245          | Calculation |             | A   |
|      | Design consumption at neat strength      | L/h                       | 489          | Calculation |             | A   |
| 17.4 | <b>Sodium Hydroxide</b>                  |                           |              |             |             |     |
|      | Type                                     | -                         | Solid Pearls | Industry    |             | A   |
|      | Delivery Form                            | -                         | Bulka bags   | Industry    |             | A   |
|      | Delivery Size                            | t                         | 1            | Assumption  |             | A   |
|      | Mixing tank                              |                           |              |             |             |     |
|      | Bags per mix                             | #                         | 6            | MineScope   |             | A   |
|      | Volume                                   | minimum live              | 30           | Calculation |             | A   |
|      |                                          | selected                  | 35           | MineScope   |             | A   |
|      | Number of mixes per day                  | #                         | 1.0          | Calculation |             | A   |
|      | Storage tank                             |                           |              |             |             |     |
|      | Capacity                                 | no.of live mix volumes    | 1.5          | MineScope   |             | A   |
|      | Volume                                   | minimum                   | 45           | Calculation |             | A   |
|      |                                          | selected                  | 50           | MineScope   |             | A   |
|      | Neat NaOH strength                       | %w/v                      | 20           | Industry    | 2           | A   |
|      | Neat NaOH SG                             | t/m <sup>3</sup>          | 1.50         | Industry    |             | A   |
|      | Addition rate, plant feed or batch basis |                           |              |             |             |     |
|      | Elution                                  | t/batch                   | 0.64         | Calculation |             | A   |
|      | ILR                                      | kg/batch                  | 18           | Vendor      |             | A   |
|      | Detox                                    | Total kg NaOH/t mill feed | 0.28         | Calculation | 5           | A   |
|      | Total                                    | t/a                       | 2,214        | Calculation |             | A   |
|      | Nominal consumption at neat strength     | m <sup>3</sup> /h         | 0.92         | Calculation |             | A   |
|      | Design consumption at neat strength      | m <sup>3</sup> /h         | 1.85         | Calculation |             | A   |
|      | Ringmain flow factor                     | -                         | 3.00         | Assumption  |             | A   |
|      | Caustic ringmain pumps - required        | m <sup>3</sup> /h         | 5.5          | Calculation |             | A   |

| AREA | PARAMETER                                     | UNITS                                               | Design                           | SOURCE      | REFERENCE # | REV |
|------|-----------------------------------------------|-----------------------------------------------------|----------------------------------|-------------|-------------|-----|
| 17.5 | <b>Flocculant</b>                             |                                                     |                                  |             |             |     |
|      | Type                                          | -                                                   | Bulk powder                      | Industry    |             | A   |
|      | Flocculant                                    | -                                                   | BASF Magnafloc 155 or equivalent | Assumption  |             | A   |
|      | Addition rate, preleach thickener feed basis  | g/t                                                 | 25                               | Assumption  |             | A   |
|      |                                               | kg/h                                                | 21.9                             | Calculation |             | A   |
|      |                                               | t/a                                                 | 175                              | Calculation |             | A   |
|      | Mixed concentration - flocculant storage tank | %w/v                                                | 0.25                             | Assumption  |             | A   |
|      |                                               | kg/m <sup>3</sup>                                   | 2.5                              | Calculation |             | A   |
|      | Fresh water required                          | m <sup>3</sup> /h                                   | 8.8                              | Calculation |             | A   |
|      | Final diluted concentration - thickener feed  | %w/v                                                | 0.025                            | Assumption  |             | A   |
|      |                                               | kg/m <sup>3</sup>                                   | 0.250                            | Calculation |             | A   |
|      | Process water required                        | m <sup>3</sup> /h                                   | 78.8                             | Calculation |             | A   |
|      | Delivery Size                                 | -                                                   | 20kg bags                        | Assumption  |             | A   |
|      | Number of mixes per day                       | #                                                   | 2                                | MineScope   |             | A   |
|      | Number of bags per mix                        | #                                                   | 10                               | MineScope   |             | A   |
|      | Mixing tank live volume                       | m <sup>3</sup>                                      | 80                               | Calculation |             | A   |
|      | Storage tank live volume                      | m <sup>3</sup>                                      | 160                              | Calculation |             | A   |
|      | Equivalent residence time                     | hr                                                  | 18.3                             | Calculation |             | A   |
|      | Time to transfer one mix                      | hr                                                  | 1                                | Assumption  |             | A   |
|      | Flocculant transfer pump                      | m <sup>3</sup> /h                                   | 80.0                             | Calculation |             | A   |
|      | Flocculant dosing pumps - nominal             | m <sup>3</sup> /h                                   | 8.8                              | Calculation |             | A   |
|      | Flocculant dosing pumps - design              | m <sup>3</sup> /h                                   | 17.5                             | Calculation |             | A   |
| 17.6 | <b>Sodium Metabisulphite (SMBS)</b>           |                                                     |                                  |             |             |     |
|      | Type                                          | -                                                   | Bulk powder                      | Industry    |             | A   |
|      | Delivery Size                                 | -                                                   | 1t bulka bags                    | Industry    |             | A   |
|      | Supply Concentration                          | Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> % w/w | 100                              | Industry    | 2           | A   |
|      | SMBS required                                 | 100% kg/t mill feed                                 | 0.5                              | Calculation | 5           | A   |
|      |                                               | 100% kg                                             | 454.5                            | 0           |             | A   |
|      | Mixed Solution Concentration                  | Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> % w/v | 20                               | Industry    | 2           | A   |
|      |                                               | kg/m <sup>3</sup>                                   | 200                              | Calculation |             | A   |
|      | Nominal flowrate                              | m <sup>3</sup> /h                                   | 2.3                              | Calculation |             | A   |
|      | Design flowrate                               | m <sup>3</sup> /h                                   | 4.5                              | Calculation |             | A   |
|      | Number of bags per mix                        | #                                                   | 5                                | MineScope   |             | A   |
|      | Number of mixes per day                       | #                                                   | 1                                | MineScope   |             | A   |
|      | Mixing Tank - live volume required            | m <sup>3</sup>                                      | 25                               | Calculation |             | A   |
|      | Mixing Tank - live volume selected            | m <sup>3</sup>                                      | 30                               | MineScope   |             | A   |
|      | Storage Tank - residence time                 | h                                                   | 24                               | Assumption  | 2           | A   |
|      | Storage Tank - live volume required           | m <sup>3</sup>                                      | 55                               | Calculation |             | A   |
|      | Storage Tank - live volume selected           | m <sup>3</sup>                                      | 60                               | MineScope   |             | A   |
| 17.7 | <b>Copper Sulphate Pentahydrate</b>           |                                                     |                                  |             |             |     |
|      | Type                                          | -                                                   | Bulk powder                      | Industry    |             | A   |
|      | Delivery Size                                 | -                                                   | 1t bulka bags                    | Industry    |             | A   |
|      | Supply Concentration                          | CuSO <sub>4</sub> .5H <sub>2</sub> O % w/w          | 98                               | Industry    | 2           | A   |
|      | Total Cu <sup>+2</sup> Required               | 100% kg Cu/h                                        | 44.2                             | Calculation | 5           | A   |
|      |                                               | 100% t                                              | 354                              | Calculation |             | A   |
|      | Mixed Solution Concentration                  | CuSO <sub>4</sub> .5H <sub>2</sub> O % w/v          | 20                               | Industry    | 2           | A   |
|      |                                               | kg/m <sup>3</sup>                                   | 200                              | Calculation |             | A   |
|      | Nominal flowrate                              | m <sup>3</sup> /h                                   | 2                                | Calculation |             | A   |
|      | Design flowrate                               | m <sup>3</sup> /h                                   | 4                                | Calculation |             | A   |
|      | Number of bags per mix                        | #                                                   | 5                                | MineScope   |             | A   |
|      | Number of mixes per day                       | #                                                   | 1                                | MineScope   |             | A   |
|      | Mixing Tank - live volume required            | m <sup>3</sup>                                      | 25                               | Calculation |             | A   |
|      | Mixing Tank - live volume selected            | m <sup>3</sup>                                      | 30                               | MineScope   |             | A   |
|      | Storage Tank - residence time                 | h                                                   | 24                               | Assumption  | 2           | A   |
|      | Storage Tank - live volume required           | m <sup>3</sup>                                      | 43                               | Calculation |             | A   |
|      | Storage Tank - live volume selected           | m <sup>3</sup>                                      | 50                               | MineScope   |             | A   |
| 17.8 | <b>SAG Mill Grinding Media</b>                |                                                     |                                  |             |             |     |
|      | Type                                          | -                                                   | Forged steel                     | Industry    |             | A   |
|      | Media diameter                                | mm                                                  |                                  |             |             |     |
|      | Consumption rate                              | kg/t mill feed                                      | 0.589                            | Assumption  |             | A   |
| 17.9 | <b>Ball Mill Grinding Media</b>               |                                                     |                                  |             |             |     |
|      | Type                                          | -                                                   | Forged steel                     | Industry    |             | A   |
|      | Media diameter                                | mm                                                  |                                  |             |             |     |
|      | Consumption rate                              | kg/t mill feed                                      | 0.424                            | Assumption  |             | A   |
| 18.0 | <b>Antiscalant</b>                            |                                                     |                                  |             |             |     |
|      | Type                                          | -                                                   | TBC                              |             |             |     |
|      | Addition rate                                 |                                                     |                                  |             |             |     |
|      | Total                                         | mL/min                                              | 0.07                             | Assumption  |             | A   |
| 18.1 | <b>Activated Carbon</b>                       |                                                     |                                  |             |             |     |
|      | Total consumption based on plant feed         | kg/t                                                | 0.02                             | Assumption  |             | A   |
|      |                                               | t/a                                                 | 170                              | Calculation |             | A   |
|      |                                               |                                                     |                                  |             |             |     |
| 18.1 | <b>Diesel</b>                                 |                                                     |                                  |             |             |     |
|      | Total consumption based on plant feed         | L/t                                                 | 0.40                             | Assumption  | 2           | A   |
|      |                                               | kL/a                                                | 2,769                            | Calculation |             | A   |

| AREA                                 | PARAMETER                                                                   | UNITS                        | Design                                                       | SOURCE      | REFERENCE # | REV |
|--------------------------------------|-----------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------|-------------|-------------|-----|
| <b>18.0 AIR SERVICES</b>             |                                                                             |                              |                                                              |             |             |     |
| <b>18.2 Oxygen Plant</b>             | Type                                                                        | -                            | PSA                                                          | Industry    |             | A   |
|                                      | Purity                                                                      | %                            | 90                                                           | Industry    | 2           | A   |
|                                      | Density - oxygen gas @ NTP                                                  | kg/m <sup>3</sup>            | 1.428                                                        | Industry    |             | A   |
|                                      | Required O <sub>2</sub> consumption (gas) - leaching (100% O <sub>2</sub> ) | Nm <sup>3</sup> /t mill feed | 0.04                                                         | Assumption  | 2           | A   |
|                                      |                                                                             | Nm <sup>3</sup> /h           | 35                                                           | Calculation |             | A   |
|                                      |                                                                             | kg/h                         | 50                                                           | Calculation |             | A   |
|                                      | Required O <sub>2</sub> consumption - detox (100% O <sub>2</sub> )          | kg/h                         | 153                                                          | Calculation | 5           | A   |
|                                      | Total O <sub>2</sub> consumption (100% O <sub>2</sub> )                     | t/d                          | 4.5                                                          | Calculation |             | A   |
|                                      |                                                                             | t/a                          | 1,625                                                        | Calculation |             | A   |
|                                      | Total O <sub>2</sub> consumption (90% O <sub>2</sub> )                      | t/d                          | 4.9                                                          | Calculation |             | A   |
|                                      |                                                                             | t/a                          | 1,805                                                        | Calculation |             | A   |
|                                      | Oxygen sparge efficiency                                                    | %                            | 75                                                           | Industry    |             | A   |
|                                      | Total O <sub>2</sub> consumption                                            | t/d                          | 6.6                                                          | Calculation |             | A   |
|                                      |                                                                             | t/a                          | 2,407                                                        | Calculation |             | A   |
|                                      | Density - liquid oxygen                                                     | t/m <sup>3</sup>             | 1.141                                                        | Industry    |             | A   |
|                                      | New storage vessel                                                          | t                            | 198                                                          | Calculation |             | A   |
|                                      |                                                                             | m <sup>3</sup>               | 173                                                          | Calculation |             | A   |
|                                      |                                                                             | d                            | 30.0                                                         | MineScope   |             | A   |
| <b>18.3 Plant and Instrument Air</b> | Compressor type                                                             | -                            | Rotary screw                                                 | Industry    |             | A   |
|                                      | Number of compressors                                                       | -                            | 3                                                            | Industry    |             | A   |
|                                      | Configuration                                                               | -                            | duty/duty/standby                                            | Industry    |             | A   |
|                                      | Capacity                                                                    | m <sup>3</sup> /h FAD        | 630                                                          | Industry    |             | A   |
|                                      | Motor                                                                       | kW                           | 60                                                           | Industry    |             | A   |
|                                      | Pressure                                                                    | kPa                          | 750                                                          | Industry    |             | A   |
| <b>19.0 WATER SERVICES</b>           |                                                                             |                              |                                                              |             |             |     |
| <b>19.1 Raw Water</b>                | Source                                                                      | -                            | Borefields                                                   |             |             |     |
|                                      | Total plant demand - nominal                                                | m <sup>3</sup> /hr           | 503                                                          | Calculation | 4           | A   |
|                                      | Total plant demand - design                                                 | m <sup>3</sup> /hr           | 923                                                          | Calculation | 4           | A   |
|                                      | Pumping configuration                                                       | -                            | duty/standby                                                 | Industry    |             | A   |
| <b>19.2 Fresh Water</b>              | Source                                                                      | -                            | Water Treatment Plant                                        | Assumption  |             | A   |
|                                      | Total plant demand - nominal                                                | m <sup>3</sup> /hr           | 59                                                           | Calculation | 4           | A   |
|                                      | Total plant demand - design                                                 | m <sup>3</sup> /hr           | 71                                                           | Calculation | 4           | A   |
|                                      | Pumping configuration                                                       | -                            | duty/standby                                                 | Industry    |             | A   |
| <b>19.3 Process Water</b>            | Source                                                                      | -                            | Preleach Thickener Overflow, Decant Return, Raw Water Makeup | Industry    |             | A   |
|                                      | Total plant demand - nominal                                                | m <sup>3</sup> /hr           | 939                                                          | Calculation | 4           | A   |
|                                      | Total plant demand - design                                                 | m <sup>3</sup> /hr           | 1127                                                         | Calculation | 4           | A   |
|                                      | Pumping configuration                                                       | -                            | duty/standby                                                 | Industry    |             | A   |



## Resolute Mining Limited

### ABC Project

**Process Mass & Water Balance**  
**ABC Project**  
Scoping Study  
1264

1264-MBL-001  
May-26  
Revision B

| REV | DATE       | DESCRIPTION                | PREPARED | CHECKED | APPROVED | CLIENT |
|-----|------------|----------------------------|----------|---------|----------|--------|
| A   | 23/03/2026 | Issued for Internal Review | EW       | SG      | SG       | RC     |
| B   | 15/04/2026 | Issued for Internal Review | EW       | SG      | SG       |        |
| 0   | 11/05/2026 | Issued for Study           | EW       | SG      | GR       |        |
|     |            |                            |          |         |          |        |

**PROCESS MASS BALANCE - INPUTS**

| AREA            | PARAMETER                         | UNIT              | DESIGN | SOURCE                  | REFERENCE # | REV |
|-----------------|-----------------------------------|-------------------|--------|-------------------------|-------------|-----|
| <b>General</b>  |                                   |                   |        |                         |             |     |
|                 | Plant design capacity             | Mt/y              | 7.00   | Process Design Criteria | 1           | A   |
|                 | Moisture content                  | % w/w             | 5.00   | Process Design Criteria | 1           | A   |
|                 | Ore SG                            | t/m <sup>3</sup>  | 2.74   | Process Design Criteria | 1           | A   |
|                 | Fresh Water SG                    | t/m <sup>3</sup>  | 1.00   | Process Design Criteria | 1           | A   |
|                 | Raw Water SG                      | t/m <sup>3</sup>  | 1.00   | Process Design Criteria | 1           | A   |
|                 | Process Water SG                  | t/m <sup>3</sup>  | 1.00   | Process Design Criteria | 1           | A   |
|                 | Head grade                        | Au g/t            | 1.20   | Process Design Criteria | 1           | A   |
| <b>Crushing</b> |                                   |                   |        |                         |             |     |
|                 | Utilisation                       | %                 | 75.0   | Process Design Criteria | 1           | A   |
|                 | Operating hours per year          | h/y               | 6,570  | Calculation             |             | A   |
|                 | Solids throughput (dry)           | t/h               | 1,065  | Calculation             |             | A   |
|                 | Spray water to primary crusher    | m <sup>3</sup> /h | 15     | Estimation              |             | A   |
|                 | Spray water to stockpile conveyor | m <sup>3</sup> /h | 20     | Estimation              |             | A   |
| <b>Grinding</b> |                                   |                   |        |                         |             |     |
|                 | Utilisation                       | %                 | 91.3   | Process Design Criteria | 1           | A   |
|                 | Operating hours per year          | h/y               | 8,000  | Calculation             |             | A   |
|                 | Solids throughput (dry)           | t/h               | 875    | Calculation             |             | A   |
| <b>SAG Mill</b> |                                   |                   |        |                         |             |     |
|                 | SAG mill discharge pulp density   | % w/w             | 70.0   | Assumption              |             | A   |
|                 | SAG mill trommel spray water      | m <sup>3</sup> /h | 20.0   | Assumption              |             | A   |



| AREA                             | PARAMETER                                 | UNIT              | DESIGN | SOURCE                  | REFERENCE # | REV |
|----------------------------------|-------------------------------------------|-------------------|--------|-------------------------|-------------|-----|
| <b>Pebble Crusher</b>            |                                           |                   |        |                         |             |     |
|                                  | Pebble recycle rate (% of new mill feed)  | %                 | 17.0   | Process Design Criteria | 1           | A   |
|                                  | Pebble moisture content                   | % w/w             | 6.0    | Assumption              |             | A   |
|                                  | Pebble crusher spray water                | m <sup>3</sup> /h | 0.0    | Assumption              |             | A   |
| <b>Ball Mill</b>                 |                                           |                   |        |                         |             |     |
|                                  | Ball mill discharge pulp density          | % w/w             | 70.0   | Process Design Criteria | 1           | A   |
|                                  | Ball mill trommel spray water             | m <sup>3</sup> /h | 40.0   | Assumption              |             | A   |
| <b>Classification (cyclones)</b> |                                           |                   |        |                         |             |     |
|                                  | Circulating load                          | %                 | 250    | Process Design Criteria | 1           | A   |
|                                  | Cyclone underflow density                 | % w/w             | 75.0   | Process Design Criteria | 1           | A   |
|                                  | Cyclone overflow density                  | % w/w             | 45.0   | Process Design Criteria | 1           | A   |
| <b>Gravity Circuit</b>           |                                           |                   |        |                         |             |     |
|                                  | Gravity Gold Recovery                     | %                 | 15.5   | Process Design Criteria | 1           | A   |
|                                  | Portion of CUF to Gravity Circuit         | %                 | 25     | Process Design Criteria | 1           | A   |
|                                  | Gravity screen spray water - total        | m <sup>3</sup> /h | 40     | Process Design Criteria | 1           | A   |
|                                  | Gravity screen feed density               | %w/w              | 65     | Process Design Criteria | 1           | A   |
|                                  | Mass split to gravity screen oversize     | %w/w              | 10     | Process Design Criteria | 1           | A   |
|                                  | Gravity screen oversize % moisture        | %                 | 15     | Assumption              |             | A   |
|                                  | Number of knelson concentrators           | #                 | 2      | Process Design Criteria | 1           | A   |
|                                  | Fluidising water per knelson concentrator | m <sup>3</sup> /h | 57     | Process Design Criteria | 1           | A   |
|                                  | Cycle time                                | min               | 40     | Process Design Criteria | 1           | A   |
|                                  | Concentrate mass per cycle                | kg                | 52     | Process Design Criteria | 1           | A   |
|                                  | Concentrate density (dewatered)           | %w/w              | 90     | Assumption              |             | A   |

| AREA                           | PARAMETER                               | UNIT                  | DESIGN | SOURCE                  | REFERENCE # | REV |
|--------------------------------|-----------------------------------------|-----------------------|--------|-------------------------|-------------|-----|
| <b>Intensive Cyanide Leach</b> |                                         |                       |        |                         |             |     |
|                                | Batches per day per unit                | #/d                   | 1      | Process Design Criteria | 1           | A   |
|                                | Cycle time                              | h                     | 24     | Process Design Criteria | 1           | A   |
|                                | Leach recovery                          | %                     | 98     | Process Design Criteria | 1           | A   |
|                                | Pregnant solution volume per batch      | m <sup>3</sup>        | 8      | Process Design Criteria | 1           | A   |
|                                | NaCN dose per batch                     | kg/batch              | 138    | Process Design Criteria | 1           | A   |
|                                | Neat NaCN strength                      | %w/w                  | 20     | Process Design Criteria | 1           | A   |
|                                | Neat NaCN SG                            | t/m <sup>3</sup>      | 1.19   | Process Design Criteria | 1           | A   |
|                                | NaOH dose per batch                     | kg/batch              | 18     | Process Design Criteria | 1           | A   |
|                                | Neat NaOH strength                      | %w/w                  | 20     | Process Design Criteria | 1           | A   |
|                                | Neat NaOH SG                            | t/m <sup>3</sup>      | 1.50   | Process Design Criteria | 1           | A   |
|                                | Total fresh water required per batch    | m <sup>3</sup> /batch | 6.5    | Process Design Criteria | 1           | A   |
| <b>Trash Screen</b>            |                                         |                       |        |                         |             |     |
|                                | Trash Screen Spray Water                | m <sup>3</sup> /h     | 20     | Process Design Criteria | 1           | A   |
| <b>Pre-Leach Thickener</b>     |                                         |                       |        |                         |             |     |
|                                | Underflow slurry density                | % w/w                 | 50     | Process Design Criteria | 1           | A   |
|                                | Flocculant dose, thickener feed basis   | g/t                   | 25     | Process Design Criteria | 1           | A   |
|                                | Flocculant - mixed concentration        | %w/v                  | 0.250  | Process Design Criteria | 1           | A   |
|                                | Flocculant - diluted for thickener feed | %w/v                  | 0.0250 | Process Design Criteria | 1           | A   |
| <b>Leaching</b>                |                                         |                       |        |                         |             |     |
|                                | Leach Feed Density                      | % w/w                 | 50     | Process Design Criteria | 1           | A   |
|                                | Gold Recovery                           | %                     | 73.4   | Process Design Criteria | 1           | A   |
| <b>Decant Return</b>           |                                         |                       |        |                         |             |     |
|                                | % water recovered from final tailings   | %                     | 40     | Process Design Criteria | 1           | A   |

| AREA                                   | PARAMETER                               | UNIT              | DESIGN | SOURCE                  | REFERENCE # | REV |
|----------------------------------------|-----------------------------------------|-------------------|--------|-------------------------|-------------|-----|
| <b>Fresh/Scheme Water Requirements</b> |                                         |                   |        |                         |             |     |
|                                        | Total gland water required              | m <sup>3</sup> /h | 20     | Assumption              |             | A   |
|                                        | SMBS Mixing                             | m <sup>3</sup> /h | 1.04   | Process Design Criteria | 1           | A   |
|                                        | Copper Sulphate Mixing                  | m <sup>3</sup> /h | 1.04   | Process Design Criteria | 1           | A   |
|                                        | Elution & regen water required          | m <sup>3</sup> /h | 18.4   | Process Design Criteria | 1           | A   |
|                                        | Gravity Concentrate Leaching            | m <sup>3</sup> /h | 0.3    | Process Design Criteria | 1           | A   |
|                                        | Fire water/potable water/safety showers | m <sup>3</sup> /h | 9      | Assumption              |             | A   |
| <b>Additional Raw Water Users</b>      |                                         |                   |        |                         |             |     |
|                                        | Loaded carbon recovery screen sprays    | m <sup>3</sup> /h | 5      | Process Design Criteria | 1           | A   |
|                                        | Carbon safety screen sprays             | m <sup>3</sup> /h | 20     | Process Design Criteria | 1           | A   |

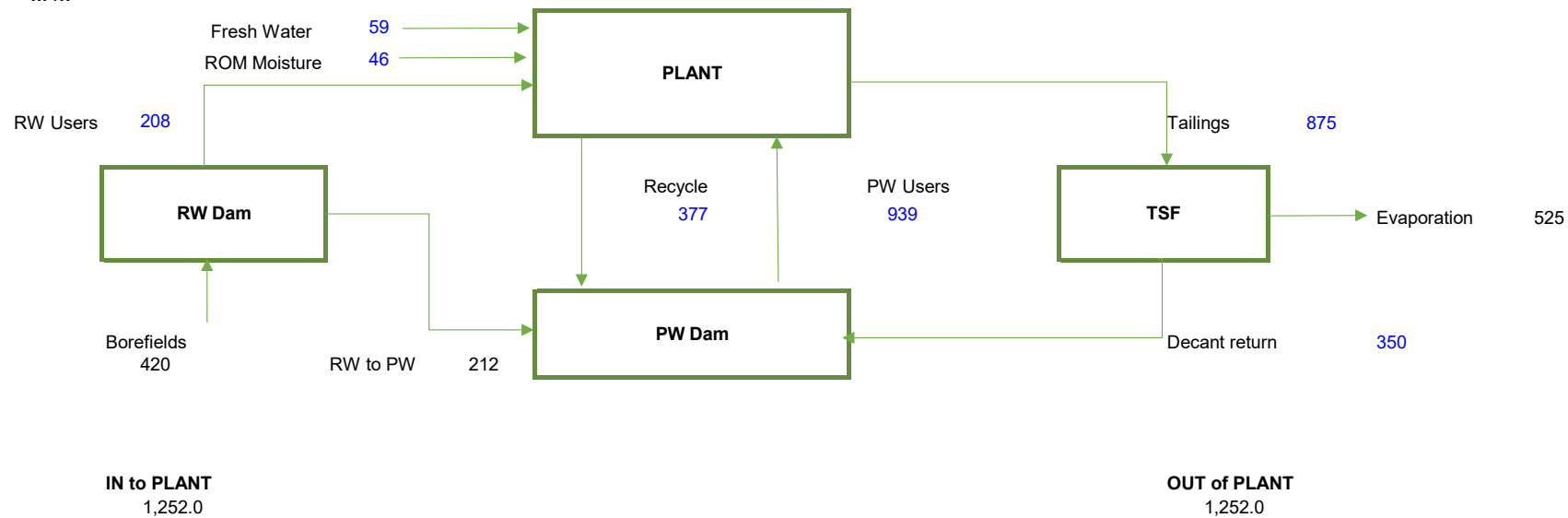
## MASS AND WATER BALANCE REFERENCES

| REFERENCE # | DOCUMENT NAME | DESCRIPTION                  |
|-------------|---------------|------------------------------|
| 1           | 1264-PDC-001  | 1264 Process Design Criteria |
| 2           |               |                              |
| 3           |               |                              |
| 4           |               |                              |
| 5           |               |                              |
| 6           |               |                              |
| 7           |               |                              |
| 8           |               |                              |
| 9           |               |                              |
| 10          |               |                              |

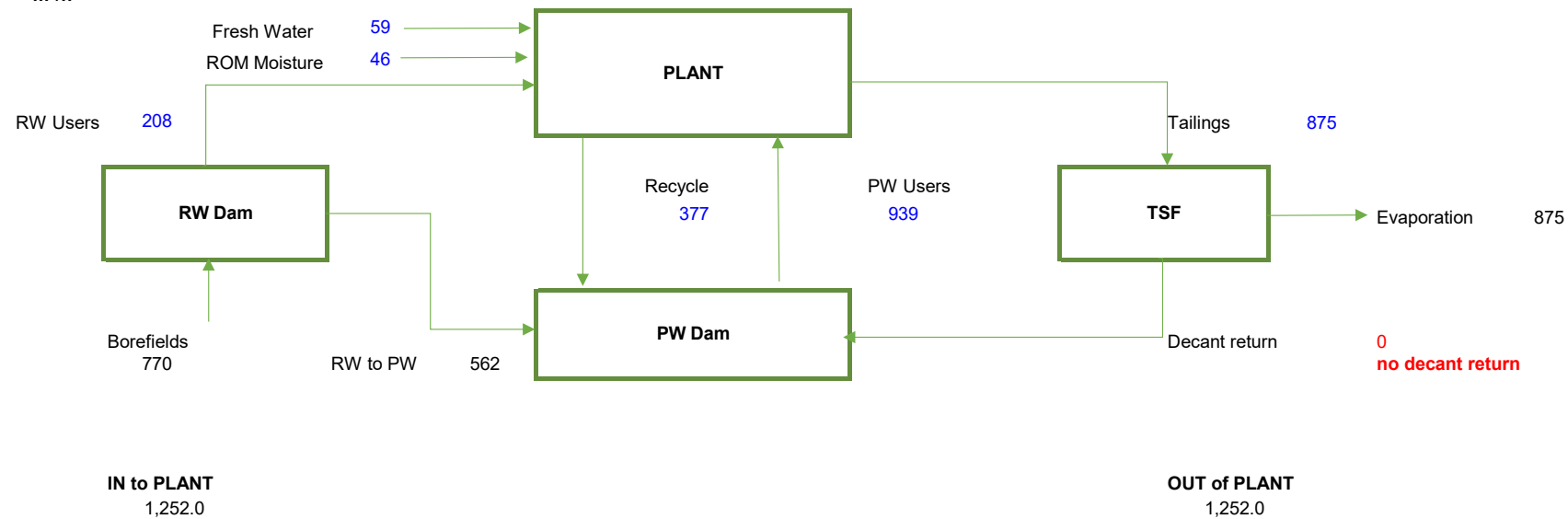
| STREAM             | STREAM NAME/DESCRIPTION            | TYPE   | SOLIDS |      |       | SOLUTION |      |       | SLURRY / BULK Flow |      |       |      | GOLD  |       |       |
|--------------------|------------------------------------|--------|--------|------|-------|----------|------|-------|--------------------|------|-------|------|-------|-------|-------|
|                    |                                    |        | t/h    | SG   | m³/h  | t/h      | SG   | m³/h  | t/h                | SG   | m³/h  | %w/w | g/t   | g/h   | Rec % |
| CRUSHING           |                                    |        |        |      |       |          |      |       |                    |      |       |      |       |       |       |
| 001                | Primary Crusher Feed               | Bulk   | 1,065  | 2.74 | 389   | 56.1     | 1.00 | 56.1  | 1,122              | 2.52 | 445   | 95.0 |       |       |       |
| 002                | Primary Crusher Spray Water        | RW     |        |      |       | 15.0     | 1.00 | 15.0  | 15.0               | 1.00 | 15.0  | 0.00 |       |       |       |
| 003                | Stockpile Feed Spray Water         | RW     |        |      |       | 20.0     | 1.00 | 20.0  | 20.0               | 1.00 | 20.0  | 0.00 |       |       |       |
| 004                | Stockpile Feed                     | Bulk   | 1,065  | 2.74 | 389   | 91.1     | 1.00 | 91.1  | 1,157              | 2.41 | 480   | 92.1 |       |       |       |
| 005                | Pebble Crusher Spray Water         | RW     |        |      |       | 0.00     | 1.00 | 0.00  | 0.00               |      | 0.00  |      |       |       |       |
| 006                | Pebble Crusher Product             | Bulk   | 149    | 2.74 | 54.3  | 9.49     | 1.00 | 9.49  | 158                | 2.48 | 63.8  | 94.0 |       |       |       |
| 007                | Stockpile Reclaim                  | Bulk   | 875    | 2.74 | 319   | 74.8     | 1.00 | 74.8  | 950                | 2.41 | 394   | 92.1 | 1.20  | 1,050 | 100.0 |
| GRINDING & GRAVITY |                                    |        |        |      |       |          |      |       |                    |      |       |      |       |       |       |
| 008                | SAG Mill Feed                      | Bulk   | 1,024  | 2.74 | 374   | 84.3     | 1.00 | 84.3  | 1,108              | 2.42 | 458   | 92.4 | 1.20  | 1,229 | 117   |
| 009                | SAG Mill Feed Water                | PW     |        |      |       | 354      | 1.00 | 354   | 354                | 1.00 | 354   | 0.00 |       |       |       |
| 010                | SAG Mill Discharge                 | Slurry | 1,024  | 2.74 | 374   | 439      | 1.00 | 439   | 1,463              | 1.80 | 812   | 70.0 | 1.20  | 1,229 | 117   |
| 011                | SAG Trommel Spray Water            | PW     |        |      |       | 20.0     | 1.00 | 20.0  | 20.0               | 1.00 | 20.0  | 0.00 |       |       |       |
| 012                | SAG Trommel Undersize              | Slurry | 875    | 2.74 | 319   | 449      | 1.00 | 449   | 1,324              | 1.72 | 769   | 66.1 | 1.20  | 1,050 | 100.0 |
| 013                | SAG Trommel Oversize               | Bulk   | 149    | 2.74 | 54.3  | 9.49     | 1.00 | 9.49  | 158                | 2.48 | 63.8  | 94.0 | 1.20  | 179   | 17.0  |
| 014                | Pebble Crusher Feed                | Bulk   | 149    | 2.74 | 54.3  | 9.49     | 1.00 | 9.49  | 158                | 2.48 | 63.8  | 94.0 | 1.20  | 179   | 17.0  |
| 015                | Cyclone Feed Hopper Water Addition | PW     |        |      |       | 183      | 1.00 | 183   | 183                | 1.00 | 183   | 0.00 |       |       |       |
| 016                | Cyclone Feed                       | Slurry | 3,063  | 2.74 | 1,118 | 1,799    | 1.00 | 1,799 | 4,861              | 1.67 | 2,916 | 63.0 | 1.02  | 3,117 | 297   |
| 017                | Cyclone Overflow                   | Slurry | 875    | 2.74 | 319   | 1,069    | 1.00 | 1,069 | 1,944              | 1.40 | 1,389 | 45.0 | 1.02  | 891   | 84.8  |
| 018                | Cyclone Underflow                  | Slurry | 2,188  | 2.74 | 798   | 729      | 1.00 | 729   | 2,917              | 1.91 | 1,528 | 75.0 | 1.02  | 2,226 | 212   |
| 019                | Gravity Circuit Feed               | Slurry | 547    | 2.74 | 200   | 182      | 1.00 | 182   | 729                | 1.91 | 382   | 75.0 | 1.02  | 557   | 53.0  |
| 020                | Gravity Screen Feed Water          | PW     |        |      |       | 72.2     | 1.00 | 72.2  | 72.2               | 1.00 | 72.2  | 0.00 |       |       |       |
| 021                | Gravity Screen Sprays              | RW     |        |      |       | 40.0     | 1.00 | 40.0  | 40.0               | 1.00 | 40.0  | 0.00 |       |       |       |
| 022                | Gravity Screen Total Feed          | Slurry | 547    | 2.74 | 200   | 294      | 1.00 | 294   | 841                | 1.70 | 494   | 65.0 | 1.02  | 557   | 53.0  |
| 023                | Gravity Screen Oversize            | Slurry | 54.7   | 2.74 | 20.0  | 9.65     | 1.00 | 9.65  | 64.3               | 2.17 | 29.6  | 85.0 | 1.02  | 55.7  | 5.30  |
| 024                | Gravity Screen Undersize           | Slurry | 492    | 2.74 | 180   | 285      | 1.00 | 285   | 777                | 1.67 | 464   | 63.3 | 1.02  | 501   | 47.7  |
| 025                | Fluidisation Water                 | RW     |        |      |       | 114      | 1.00 | 114   | 114                | 1.00 | 114   | 0.00 |       |       |       |
| 026                | Gravity Concentrate                | Slurry | 0.16   | 2.74 | 0.06  | 0.02     | 1.00 | 0.02  | 0.17               | 2.33 | 0.07  | 90.0 | 1,043 | 163   | 15.5  |
| 027                | Gravity Tailings                   | Slurry | 492    | 2.74 | 180   | 399      | 1.00 | 399   | 891                | 1.54 | 578   | 55.2 | 0.69  | 338   | 32.2  |
| 028                | Ball Mill Feed                     | Slurry | 1,695  | 2.74 | 619   | 557      | 1.00 | 557   | 2,252              | 1.92 | 1,175 | 75.3 | 1.02  | 1,725 | 164   |
| 029                | Ball Mill Feed Water               | PW     |        |      |       | 170      | 1.00 | 170   | 170                | 1.00 | 170   | 0.00 |       |       |       |
| 030                | Ball Mill Discharge                | Slurry | 1,695  | 2.74 | 619   | 727      | 1.00 | 727   | 2,422              | 1.80 | 1,345 | 70.0 | 1.02  | 1,725 | 164   |
| 031                | Ball Mill Trommel Spray Water      | PW     |        |      |       | 40.0     | 1.00 | 40.0  | 40.0               | 1.00 | 40.0  | 0.00 |       |       |       |
| 032                | Ball Mill Trommel Undersize        | Slurry | 1,695  | 2.74 | 619   | 767      | 1.00 | 767   | 2,462              | 1.78 | 1,385 | 68.9 | 1.02  | 1,725 | 164   |

| STREAM                  | STREAM NAME/DESCRIPTION        | TYPE   | SOLIDS |      |      | SOLUTION |      |       | SLURRY / BULK Flow |      |       |      | GOLD  |      |       |
|-------------------------|--------------------------------|--------|--------|------|------|----------|------|-------|--------------------|------|-------|------|-------|------|-------|
|                         |                                |        | t/h    | SG   | m³/h | t/h      | SG   | m³/h  | t/h                | SG   | m³/h  | %w/w | g/t   | g/h  | Rec % |
| INTENSIVE CYANIDE LEACH |                                |        |        |      |      |          |      |       |                    |      |       |      |       |      |       |
| 033                     | ILR Feed                       | Slurry | 0.16   | 2.74 | 0.06 | 0.02     | 1.00 | 0.02  | 0.17               | 2.33 | 0.07  | 90.0 | 1,043 | 163  | 15.5  |
| 034                     | ILR NaCN                       | FW     |        |      |      | 0.69     | 1.19 | 0.58  | 0.69               | 1.19 | 0.58  | 0.00 |       |      |       |
| 035                     | ILR NaOH                       | FW     |        |      |      | 0.09     | 1.50 | 0.06  | 0.09               | 1.50 | 0.06  | 0.00 |       |      |       |
| 036                     | ILR Total Water                | FW     |        |      |      | 0.27     | 1.00 | 0.27  | 0.27               | 1.00 | 0.27  | 0.00 |       |      |       |
| 037                     | ILR Pregnant Solution          | Bulk   |        |      |      | 0.33     | 1.00 | 0.33  | 0.33               | 1.00 | 0.33  | 0.00 |       | 159  | 15.2  |
| 038                     | ILR Tailings                   | Slurry | 0.16   | 2.74 | 0.06 | 0.73     | 1.23 | 0.59  | 0.89               | 1.37 | 0.65  | 17.6 | 20.9  | 3.26 | 0.31  |
| CARBON IN LEACH         |                                |        |        |      |      |          |      |       |                    |      |       |      |       |      |       |
| 039                     | Trash Screen Feed              | Slurry | 875    | 2.74 | 319  | 1,069    | 1.00 | 1,069 | 1,944              | 1.40 | 1,389 | 45.0 | 1.02  | 891  | 84.8  |
| 040                     | Trash Screen Spray Water       | PW     |        |      |      | 20.0     | 1.00 | 20.0  | 20.0               | 1.00 | 20.0  | 0.00 |       |      |       |
| 041                     | Trash Screen Undersize         | Slurry | 875    | 2.74 | 319  | 1,089    | 1.00 | 1,089 | 1,964              | 1.39 | 1,409 | 44.5 | 1.02  | 891  | 84.8  |
| 042                     | Pre-Leach Thickener New Feed   | Slurry | 875    | 2.74 | 319  | 1,089    | 1.00 | 1,089 | 1,964              | 1.39 | 1,409 | 44.5 | 1.02  | 891  | 84.8  |
| 043                     | Mixed Flocculant to Thickener  | FW     |        |      |      | 8.75     | 1.00 | 8.75  | 8.75               | 1.00 | 8.75  | 0.00 |       |      |       |
| 044                     | Flocculant Dilution Water      | PW     |        |      |      | 78.8     | 1.00 | 78.8  | 78.8               | 1.00 | 78.8  | 0.00 |       |      |       |
| 045                     | Total Pre-Leach Thickener Feed | Slurry | 875    | 2.74 | 319  | 1,177    | 1.00 | 1,177 | 2,052              | 1.37 | 1,496 | 42.6 |       |      |       |
| 046                     | Pre-Leach Thickener Underflow  | Slurry | 875    | 2.74 | 319  | 875      | 1.00 | 875   | 1,750              | 1.47 | 1,194 | 50.0 | 1.02  | 891  | 84.8  |
| 047                     | Pre-Leach Thickener Overflow   | Slurry |        |      |      | 302      | 1.00 | 302   | 302                | 1.00 | 302   | 0.00 |       |      |       |
| 048                     | CIL Feed                       | Slurry | 875    | 2.74 | 319  | 875      | 1.00 | 875   | 1,750              | 1.47 | 1,195 | 50.0 | 1.02  | 891  | 84.8  |
| 049                     | CIL Dore Extracted             | Bulk   |        |      |      |          |      |       |                    |      |       |      |       | 654  | 62.3  |
| 050                     | CIL Tailings                   | Slurry | 875    | 2.74 | 319  | 875      | 1.00 | 875   | 1,750              | 1.47 | 1,195 | 50.0 | 0.27  | 237  | 22.6  |

Water units  $\text{m}^3/\text{h}$



Water units  $\text{m}^3/\text{h}$







## Resolute Mining

### ABC Project Scoping Study

#### MECHANICAL EQUIPMENT LIST

##### ABC Project

##### Scoping Study

1264

1264-MEL-001

May-26

Revision 0

| REV | DATE       | DESCRIPTION                | PREPARED | CHECKED | APPROVED | CLIENT |
|-----|------------|----------------------------|----------|---------|----------|--------|
| A   | 25/03/2026 | Issued for Internal Review | EW       | SG      |          |        |
| B   | 1/05/2026  | Issued for Internal Review | EW/AB    | SG      | GR       | RC     |
| 0   | 11/05/2026 | Issued for Study           | EW       | SG      | GR       | RC     |

| Tagging |      |        | Equipment Data   |                                     |                                                                                                          |                    |               |                |                    |
|---------|------|--------|------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                      | Equipment Specification                                                                                  | Model              | Vendor        | Duty / Standby | Installed Power kW |
| 315     | CR   | 101    | 315-CR-101       | PRIMARY CRUSHER                     | Metso superior 5065 MK-111 LS gyratory crusher, CSS 150mm. Includes ancillaries.                         | 5065 MK-111 LS     | Metso         | Duty           | 450                |
| 315     | CV   | 102    | 315-CV-102       | COS FEED CONVEYOR                   | 1065 dry tph nominal, 1279 dry tph design, 1200mm wide, 140m long                                        |                    |               | Duty           | 280                |
| 315     | FE   | 101    | 315-FE-101       | APRON FEEDER                        | 1065 dry tph nominal, 1279 dry tph design                                                                |                    |               | Duty           | 100                |
| 315     | CV   | 101    | 315-CV-101       | CRUSHED ORE CONVEYOR                | 1065 dry tph nominal, 1279 dry tph design, 1200mm wide, length 40m                                       |                    |               | Duty           | 37                 |
| 315     | BK   | 101    | 315-BK-101       | ROCK BREAKER                        |                                                                                                          |                    |               | Duty           | 30                 |
| 315     | MA   | 101    | 315-MA-101       | CRUSHED ORE TRAMP MAGNET            | Self-cleaning, cross-belt tramp magnet                                                                   |                    |               | Duty           | 25.5               |
| 315     | PU   | 101    | 315-PU-101       | CRUSHING AREA DRIVE-IN SUMP PUMP    |                                                                                                          |                    |               | Duty           | 22                 |
| 315     | WE   | 101    | 315-WE-101       | COS FEED CONVEYOR WEIGHTOMETER      |                                                                                                          |                    |               | Duty           | 0.2                |
| 325     | FE   | 102    | 325-FE-102       | COS RECLAIM FEEDER 1                | 875 dry t/h apron feeder, includes impact bed                                                            |                    |               | Duty           | 75                 |
| 325     | FE   | 103    | 325-FE-103       | COS RECLAIM FEEDER 2                | 875 dry t/h apron feeder                                                                                 |                    |               | Duty           | 75                 |
| 325     | FE   | 104    | 325-FE-104       | COS RECLAIM FEEDER 3                | 875 dry t/h apron feeder                                                                                 |                    |               | Duty           | 75                 |
| 325     | FA   | 101    | 325-FA-101       | RECLAIM TUNNEL VENTILATION FAN      |                                                                                                          |                    |               | Duty           | 15                 |
| 325     | PU   | 101    | 325-PU-101       | RECLAIM TUNNEL SUMP PUMP            | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 325     | SK   | 101    | 325-SK-101       | COARSE ORE STOCKPILE                | Live residence time of 16hrs (equiv. to 14,000 dry t or 8,236m3). Stockpile height of 26m.               |                    |               | Duty           | 0                  |
| 325     | PK   | 101    | 325-PK-101       | STOCKPILE DUST SPRAY MANIFOLD       |                                                                                                          |                    |               | Duty           | 0                  |
| 325     | DC   | 101    | 325-DC-101       | RECLAIM TUNNEL DUST COLLECTOR       |                                                                                                          |                    |               | Duty           | 22                 |
| 325     | DC   | 102    | 325-DC-102       | LIME SILO DUST COLLECTOR            |                                                                                                          |                    |               | Duty           | 22                 |
| 325     | PU   | 103    | 325-PU-103       | RECLAIM AREA SUMP PUMP              | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 325     | PU   | 104    | 325-PU-104       | RECLAIM TUNNEL SUMP PUMP            | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 325     | PU   | 102    | 325-PU-102       | LIME AREA SUMP PUMP                 | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 325     | AT   | 101    | 325-AT-101       | LIME SILO ACTIVATOR                 | included in lime silo package                                                                            |                    |               | Duty           | 1.1                |
| 325     | SL   | 101    | 325-SL-101       | LIME SILO                           | 250t live capacity                                                                                       |                    |               | Duty           | 0                  |
| 325     | VV   | 101    | 325-VV-101       | LIME ROTARY VALVE                   | included in lime silo package                                                                            |                    |               | Duty           | 0                  |
| 325     | HP   | 102    | 325-HP-102       | LIME TRANSFER HOPPER                |                                                                                                          |                    |               | Duty           | 0                  |
| 325     | HT   | 101    | 325-HT-101       | LIME TRANSFER LOADING HOIST         |                                                                                                          |                    |               | Duty           | 5.5                |
| 325     | PK   | 102    | 325-PK-102       | SAG BALL CHARGER                    |                                                                                                          |                    |               | Duty           | 5.5                |
| 325     | HP   | 101    | 325-HP-101       | SAG BALL LOADING HOPPER             | 125mm forged steel balls                                                                                 |                    |               | Duty           | 0                  |
| 325     | WE   | 101    | 325-WE-101       | SAG MILL FEED CONVEYOR WEIGHTOMETER |                                                                                                          |                    |               | Duty           | 0.2                |
| 328     | ML   | 101    | 328-ML-101       | SAG MILL                            | SAG Mill with grate D/C and trommel, 11.13m dia x 6.10m EGL, 16,000kW motor                              |                    |               | Duty           | 16,000             |
| 328     | XM   | 101    | 328-XM-101       | SAG MILL ANCILLARIES                | Inching drive, lube oil pumps, heaters, cooling system                                                   |                    |               | Duty           | 300                |
| 328     | CV   | 101    | 328-CV-101       | SAG MILL FEED CONVEYOR              | 875 dry t/h, 1200mm wide, 100m long                                                                      |                    |               | Duty           | 150                |
| 328     | CI   | 101    | 328-CI-101       | REFRIDGERATIVE CHILLER SYSTEM       | For SAG and Ball Mill, 1050L/min, includes chiller, heat exchangers, pumps, instrumentation and controls |                    |               | Duty           | 280                |
| 328     | PU   | 103    | 328-PU-103       | CHILLED WATER PUMP 1                | included in package                                                                                      |                    |               | Duty           | 30                 |
| 328     | LH   | 101    | 328-LH-101       | MILL LINER HANDLER                  | 7 axis, 2.5 t                                                                                            |                    |               | Duty           | 55                 |
| 328     | PU   | 102    | 328-PU-102       | SAG MILL SUMP PUMP                  | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 328     | XM   | 102    | 328-XM-102       | BOLT REMOVAL TOOL                   |                                                                                                          |                    |               | Duty           | 22                 |
| 328     | PU   | 104    | 328-PU-104       | CHILLED WATER PUMP 2                | included in package                                                                                      |                    |               | Standby        | 30                 |
| 328     | CH   | 101    | 328-CH-101       | SAG MILL FEED CHUTE                 |                                                                                                          |                    |               | Duty           | 0                  |
| 328     | TK   | 101    | 328-TK-101       | CHILLED WATER TANK                  | included in package                                                                                      |                    |               | Duty           | 0                  |
| 329     | PU   | 101    | 329-PU-101       | CYCLONE FEED PUMP 1                 | 2,916 m3/h nominal duty point, 3,500m3/h design duty point, centrifugal slurry pump, 30m TDH             | Warman 20/18-AH    | Weir Minerals | Duty           | 700                |
| 329     | HT   | 101    | 329-HT-101       | CYCLONE DAVIT CRANE                 | 2t                                                                                                       |                    |               | Duty           | 8.2                |
| 329     | PU   | 102    | 329-PU-102       | CYCLONE FEED PUMP 2                 | 2,916 m3/h nominal duty point, 3,500m3/h design duty point, centrifugal slurry pump, 30m TDH             | Warman 20/18-AH    | Weir Minerals | Standby        | 700                |
| 329     | HP   | 101    | 329-HP-101       | CYCLONE FEED HOPPER                 |                                                                                                          |                    |               | Duty           | 0                  |
| 329     | CY   | 101    | 329-CY-101       | CYCLONES                            | 400CVX-111 Cavex hydrocyclones. 400mm dia, 100mm VF, 75mm spigot. Cluster of 20; 16 duty, 4 standby.     | 400CVX-111         | Weir Minerals | Duty           | 0                  |

| Tagging |      |        | Equipment Data   |                                        |                                                                                    |                    |               |                |                    |
|---------|------|--------|------------------|----------------------------------------|------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                         | Equipment Specification                                                            | Model              | Vendor        | Duty / Standby | Installed Power kW |
| 331     | ML   | 101    | 331-ML-101       | BALL MILL                              | Ball mill overflow type with trommel, 7.77m dia x 11.89m EGL, 16,500kW motor       |                    |               | Duty           | 16,500             |
| 331     | XM   | 101    | 331-XM-101       | BALL MILL ANCILLARIES                  | Inching drive, lube oil pumps, heaters, cooling system                             |                    |               | Duty           | 200                |
| 331     | HT   | 101    | 331-HT-101       | BALL LOADING HOIST                     | 65mm forged steel balls, 3t                                                        |                    |               | Duty           | 45                 |
| 331     | PU   | 101    | 331-PU-101       | BALL MILL SUMP PUMP                    | GPS vertical sump pump. 1500mm depth.                                              | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 331     | CH   | 101    | 331-CH-101       | BALL MILL FEED CHUTE                   |                                                                                    |                    |               | Duty           | 0                  |
| 331     | HP   | 101    | 331-HP-101       | BALL LOADING HOPPER                    | 65mm forged steel balls                                                            |                    |               | Duty           | 0                  |
| 333     | GC   | 101    | 333-GC-101       | GRAVITY CONCENTRATOR 1                 | Knelson KC-QS40 gravity concentrator, 56 kW motor plus filters                     | KC-QS40            | FLSmidth      | Duty           | 56                 |
| 333     | GC   | 102    | 333-GC-102       | GRAVITY CONCENTRATOR 2                 | Knelson KC-QS40 gravity concentrator, 56 kW motor plus filters                     | KC-QS40            | FLSmidth      | Duty           | 56                 |
| 333     | SC   | 101    | 333-SC-101       | GRAVITY SCREEN 1                       | 1.5m x 4m horizontal vibrating screen with 3.6mm aperture.                         |                    |               | Duty           | 5.5                |
| 333     | SC   | 102    | 333-SC-102       | GRAVITY SCREEN 2                       | 1.5m x 4m horizontal vibrating screen with 3.6mm aperture.                         |                    |               | Duty           | 5.5                |
| 334     | CR   | 101    | 334-CR-101       | PEBBLE CRUSHER                         | Metso HP800e cone crusher, sh fine, 12mm CSS. Includes ancillaries                 | HP800e             | Metso         | Duty           | 600                |
| 334     | XM   | 101    | 334-XM-101       | PEBBLE CRUSHER ANCILLARIES             | Lube oil pumps and hydraulic pumps                                                 |                    |               | Duty           | 55                 |
| 334     | CV   | 101    | 334-CV-101       | PEBBLE CRUSHER CONVEYOR                | 149 dry t/h, 800mm wide, 60m long                                                  |                    |               | Duty           | 30                 |
| 334     | MA   | 101    | 334-MA-101       | PEBBLE CRUSHER TRAMP MAGNET            | Self-cleaning, cross-belt tramp magnet                                             |                    |               | Duty           | 15                 |
| 334     | FE   | 101    | 334-FE-101       | PEBBLE CRUSHER FEEDER                  | 149 dry t/h                                                                        |                    |               | Duty           | 5.5                |
| 334     | WE   | 101    | 334-WE-101       | PEBBLE CRUSHER CONVEYOR WEIGHTOMETER   |                                                                                    |                    |               | Duty           | 0.2                |
| 334     | MD   | 101    | 334-MD-101       | PEBBLE CRUSHER CONVEYOR METAL DETECTOR |                                                                                    |                    |               | Duty           | 0.06               |
| 334     | BN   | 101    | 334-BN-101       | PEBBLE CRUSHER BIN                     | 25t capacity, mild steel construction, bisalloy lined.                             |                    |               | Duty           | 0                  |
| 345     | PU   | 103    | 345-PU-103       | PRELEACH THICKENER UNDERFLOW PUMP 1    | 1,194m3/h nominal duty point, 1,433m3/h design duty point, 50%w/w density, TDH 25m | Warman 12/10 AH    | Weir Minerals | Duty           | 300                |
| 345     | AG   | 101    | 345-AG-101       | LEACH TANK AGITATOR 1                  | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | AG   | 102    | 345-AG-102       | LEACH TANK AGITATOR 2                  | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | AG   | 103    | 345-AG-103       | ADSORPTION TANK 1 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | AG   | 104    | 345-AG-104       | ADSORPTION TANK 2 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | AG   | 105    | 345-AG-105       | ADSORPTION TANK 3 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | AG   | 106    | 345-AG-106       | ADSORPTION TANK 4 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | AG   | 107    | 345-AG-107       | ADSORPTION TANK 5 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | AG   | 108    | 345-AG-108       | ADSORPTION TANK 6 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | AG   | 109    | 345-AG-109       | ADSORPTION TANK 7 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                |
| 345     | SC   | 111    | 345-SC-111       | CARBON SAFETY SCREEN                   | Horizontal vibrating screen, 25m2, 6.9m x 3.6m, 1.0mm aperture                     |                    |               | Duty           | 45                 |
| 345     | PU   | 106    | 345-PU-106       | ADSORPTION TANK 2 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 |
| 345     | PU   | 107    | 345-PU-107       | ADSORPTION TANK 3 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 |
| 345     | PU   | 108    | 345-PU-108       | ADSORPTION TANK 4 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 |
| 345     | PU   | 109    | 345-PU-109       | ADSORPTION TANK 5 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 |
| 345     | PU   | 110    | 345-PU-110       | ADSORPTION TANK 6 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 |
| 345     | PU   | 111    | 345-PU-111       | ADSORPTION TANK 7 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 |
| 345     | PU   | 101    | 345-PU-101       | PRELEACH THICKENER OVERFLOW PUMP 1     | 302m3/h nominal duty point, 363m3/h design point                                   | Warman 150WBH      | Weir Minerals | Duty           | 22                 |
| 345     | SC   | 110    | 345-SC-110       | LOADED CARBON SCREEN                   | Horizontal vibrating screen, 8m2, 4m x 2m, 0.8mm aperture                          |                    |               | Duty           | 22                 |
| 345     | TH   | 101    | 345-TH-101       | PRELEACH THICKENER                     | 38m dia high rate thickener                                                        |                    |               | Duty           | 22                 |

| Tagging |      |        | Equipment Data   |                                     |                                                                                                                                                 |                    |               |                |                    |
|---------|------|--------|------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                      | Equipment Specification                                                                                                                         | Model              | Vendor        | Duty / Standby | Installed Power kW |
| 345     | SC   | 101    | 345-SC-101       | TRASH SCREEN 1                      | 3.05 x 6.10m horizontal vibrating screen with 0.63mm aperture.                                                                                  |                    |               | Duty           | 6.9                |
| 345     | SC   | 102    | 345-SC-102       | TRASH SCREEN 2                      | 3.05 x 6.10m horizontal vibrating screen with 0.63mm aperture.                                                                                  |                    |               | Duty           | 6.9                |
| 345     | PU   | 116    | 345-PU-116       | PRE-LEACH THICKENER SUMP PUMP 1     | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 345     | PU   | 112    | 345-PU-112       | CIL SUMP PUMP 1                     | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 345     | PU   | 113    | 345-PU-113       | CIL SUMP PUMP 2                     | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 345     | PU   | 114    | 345-PU-114       | CIL SUMP PUMP 3                     | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 345     | PU   | 115    | 345-PU-115       | CIL SUMP PUMP 4                     | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |
| 345     | CN   | 101    | 345-CN-101       | CIL OVERHEAD CRANE                  | 25t electric overhead gantry crane                                                                                                              |                    |               | Duty           | 45                 |
| 345     | PU   | 104    | 345-PU-104       | PRELEACH THICKENER UNDERFLOW PUMP 2 | 1,194m3/h nominal duty point, 1,433m3/h design duty point, 50%w/w density, TDH 25m                                                              | Warman 12/10 AH    | Weir Minerals | Standby        | 300                |
| 345     | PU   | 102    | 345-PU-102       | PRELEACH THICKENER OVERFLOW PUMP 2  | 302m3/h nominal duty point, 363m3/h design point                                                                                                | Warman 150WBH      | Weir Minerals | Standby        | 22                 |
| 345     | TK   | 101    | 345-TK-101       | PRELEACH THICKENER OVERFLOW TANK    |                                                                                                                                                 |                    |               | Duty           | 0                  |
| 345     | TK   | 102    | 345-TK-102       | LEACH TANK 1                        | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | TK   | 103    | 345-TK-103       | LEACH TANK 2                        | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | TK   | 104    | 345-TK-104       | ADSORPTION TANK 1                   | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | TK   | 105    | 345-TK-105       | ADSORPTION TANK 2                   | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | TK   | 106    | 345-TK-106       | ADSORPTION TANK 3                   | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | TK   | 107    | 345-TK-107       | ADSORPTION TANK 4                   | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | TK   | 108    | 345-TK-108       | ADSORPTION TANK 5                   | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | TK   | 109    | 345-TK-109       | ADSORPTION TANK 6                   | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | TK   | 110    | 345-TK-110       | ADSORPTION TANK 7                   | 3,200m3 live capacity.                                                                                                                          |                    |               | Duty           | 0                  |
| 345     | SC   | 103    | 345-SC-103       | ADSORPTION TANK 1 INTERTANK SCREEN  | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  |
| 345     | SC   | 104    | 345-SC-104       | ADSORPTION TANK 2 INTERTANK SCREEN  | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  |
| 345     | SC   | 105    | 345-SC-105       | ADSORPTION TANK 3 INTERTANK SCREEN  | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  |
| 345     | SC   | 106    | 345-SC-106       | ADSORPTION TANK 4 INTERTANK SCREEN  | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  |
| 345     | SC   | 107    | 345-SC-107       | ADSORPTION TANK 5 INTERTANK SCREEN  | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  |
| 345     | SC   | 108    | 345-SC-108       | ADSORPTION TANK 6 INTERTANK SCREEN  | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  |
| 345     | SC   | 109    | 345-SC-109       | ADSORPTION TANK 7 INTERTANK SCREEN  | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  |
| 355     | PK   | 101    | 355-PK-101       | LEACH REACTOR PACKAGE               | vendor supply, includes concentrate hopper, Acacia CS3000 leach reactor, all piping and instrumentation, tailings transfer pump, solution pump. | CS3000             | Consep        | Duty           | 56.5               |
| 355     | PU   | 113    | 355-PU-113       | LEACH REACTOR SUMP PUMP             | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 355     | PU   | 114    | 355-PU-114       | LOADED CARBON PUMP                  | Vertical recessed impellor pump. 255m3/h nominal duty point.                                                                                    |                    |               | Duty           | 30                 |
| 355     | HE   | 101    | 355-HE-101       | ELUTION HEATER                      | Gas fired heater, 3,200kW. Required temperature of 150 degrees C.                                                                               |                    |               | Duty           | 0                  |
| 355     | CL   | 102    | 355-CL-102       | ELUTION ELECTROWINNING CELL 1       | 1000 x 1000 - 20 electrowinning cell, clean in place, 20 cathodes, 3,400A rectifier.                                                            | 1000 x 1000 - 20   | Consep        | Duty           | 50                 |
| 355     | CL   | 103    | 355-CL-103       | ELUTION ELECTROWINNING CELL 2       | 1000 x 1000 - 20 electrowinning cell, clean in place, 20 cathodes, 3,400A rectifier.                                                            | 1000 x 1000 - 20   | Consep        | Duty           | 50                 |
| 355     | FA   | 102    | 355-FA-102       | FURNACE EXHAUST FAN                 | Stainless steel furnace hood and exhaust fan                                                                                                    |                    |               | Duty           | 4                  |
| 355     | ST   | 101    | 355-ST-101       | FUME STACK 1                        |                                                                                                                                                 |                    |               | Duty           | 0                  |
| 355     | ST   | 102    | 355-ST-102       | FUME STACK 2                        |                                                                                                                                                 |                    |               | Duty           | 0                  |
| 355     | CL   | 101    | 355-CL-101       | GRAVITY ELECTROWINNING CELL         | 1000 x 1000 - 12 cathodes electrowinning cell, clean in place, 3,000A rectifier                                                                 | 1000 x 1000 -12    | Consep        | Duty           | 30                 |

| Tagging |      |        | Equipment Data   |                                  |                                                                                                                                                                                                                              |                    |               |                |                    |
|---------|------|--------|------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                   | Equipment Specification                                                                                                                                                                                                      | Model              | Vendor        | Duty / Standby | Installed Power kW |
| 355     | PU   | 111    | 355-PU-111       | BARREN CARBON PUMP               | 100m3/h nominal duty point                                                                                                                                                                                                   |                    |               | Duty           | 22                 |
| 355     | FA   | 101    | 355-FA-101       | ELECTROWINNING CELLS EXHAUST FAN | Centrifugal fan                                                                                                                                                                                                              |                    |               | Duty           | 22                 |
| 355     | OV   | 101    | 355-OV-101       | CALCINE OVEN 1                   | 900 degrees C, 8 trays @ 800mm x 800mm                                                                                                                                                                                       |                    |               | Duty           | 37                 |
| 355     | OV   | 102    | 355-OV-102       | CALCINE OVEN 2                   | 900 degrees C, 8 trays @ 800mm x 800mm                                                                                                                                                                                       |                    |               | Duty           | 37                 |
| 355     | FA   | 103    | 355-FA-103       | GOLDROOM VENTILATION FAN 1       |                                                                                                                                                                                                                              |                    |               | Duty           | 2.2                |
| 355     | FA   | 104    | 355-FA-104       | GOLDROOM VENTILATION FAN 2       |                                                                                                                                                                                                                              |                    |               | Duty           | 2.2                |
| 355     | FA   | 105    | 355-FA-105       | GOLDROOM VENTILATION FAN 3       |                                                                                                                                                                                                                              |                    |               | Duty           | 2.2                |
| 355     | PU   | 102    | 355-PU-102       | ELUTION HEATER PUMP 1            | Centrifugal pump                                                                                                                                                                                                             |                    |               | Duty           | 15                 |
| 355     | PU   | 101    | 355-PU-101       | GRAVITY ELECTROWINNING PUMP      | 8m3/h nominal flow, 10.5m3/h designflow. Centrifugal pump.                                                                                                                                                                   |                    |               | Duty           | 7.5                |
| 355     | PK   | 102    | 355-PK-102       | MISC. GOLDROOM EQUIPMENT         | Anode lifting frame, anode holding rack, HP cathode wash spray, pouring moulds, flux scale, goldroom mixer, dore balance, prill balance                                                                                      |                    |               | Duty           | 2                  |
| 355     | SC   | 101    | 355-SC-101       | CARBON DEWATERING SCREEN         | Vibrating screen, 2.0m x 1.0m with 1.0mm aperture                                                                                                                                                                            |                    |               | Duty           | 4                  |
| 355     | PU   | 104    | 355-PU-104       | ELUTION SUMP PUMP                | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 355     | PU   | 105    | 355-PU-105       | ELUTION PUMP                     | Helical rotor pump, 42.6m3/h                                                                                                                                                                                                 |                    |               | Duty           | 11                 |
| 355     | PU   | 106    | 355-PU-106       | ELECTROLYTE PUMP 1               | Vertical multistage pump, 42.6m3/h                                                                                                                                                                                           |                    |               | Duty           | 11                 |
| 355     | PU   | 107    | 355-PU-107       | ELECTROLYTE PUMP 2               | Vertical multistage pump, 42.6m3/h                                                                                                                                                                                           |                    |               | Duty           | 11                 |
| 355     | PU   | 112    | 355-PU-112       | CARBON REGEN SUMP PUMP           | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 355     | PU   | 110    | 355-PU-110       | GOLD ROOM SUMP PUMP              | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 355     | CT   | 101    | 355-CT-101       | GOLD ROOM CRANE                  |                                                                                                                                                                                                                              |                    |               | Duty           | 10                 |
| 355     | KL   | 101    | 355-KL-101       | CARBON REGEN KILN                | 12t feed hopper, diesel fired horizontal regen kiln, Ansac HK150, 200kg/h maximum capacity, 650-800 degrees C, 0.51m dia x 4m kiln tubes                                                                                     |                    |               | Duty           | 0.55               |
| 355     | FU   | 101    | 355-FU-101       | FURNACE                          | Diesel fired, 400kg crucible, Ansac TA200LP                                                                                                                                                                                  |                    |               | Duty           | 30                 |
| 355     | PU   | 103    | 355-PU-103       | ELUTION HEATER PUMP 2            | Centrifugal pump                                                                                                                                                                                                             |                    |               | Standby        | 15                 |
| 355     | TK   | 101    | 355-TK-101       | GRAVITY ELECTROWINNING TANK      |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 355     | CM   | 101    | 355-CM-101       | ACID WASH COLUMN                 | 10t acid wash column, 7 strips per week, rubber lined mild steel, 21.28m3 carbon capacity                                                                                                                                    |                    |               | Duty           | 0                  |
| 355     | CM   | 102    | 355-CM-102       | ELUTION COLUMN                   | 10t elution column, split AARL, 7 strips per week, stainless steel, 21.28m3 carbon capacity                                                                                                                                  |                    |               | Duty           | 0                  |
| 355     | FL   | 101    | 355-FL-101       | ELUATE FILTERS                   | 42.6m3/h nominal duty point                                                                                                                                                                                                  |                    |               | Duty           | 0                  |
| 355     | HX   | 101    | 355-HX-101       | RECOVERY HEAT EXCHANGER          | 42.6m3/h nominal duty point                                                                                                                                                                                                  |                    |               | Duty           | 0                  |
| 355     | HX   | 102    | 355-HX-102       | PRIMARY HEAT EXCHANGER           | 42.6m3/h nominal duty point                                                                                                                                                                                                  |                    |               | Duty           | 0                  |
| 355     | TK   | 102    | 355-TK-102       | INTERMEDIATE SOLUTION TANK       |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 355     | TK   | 104    | 355-TK-104       | ELUTION WATER TANK               |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 355     | TK   | 105    | 355-TK-105       | PREGNANT SOLUTION TANK 1         |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 355     | TK   | 106    | 355-TK-106       | PREGNANT SOLUTION TANK 2         |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 355     | TK   | 107    | 355-TK-107       | LEAN SOLUTION TANK               |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 355     | FL   | 102    | 355-FL-102       | SLUDGE FILTER                    | with vacuum pump                                                                                                                                                                                                             |                    |               | Duty           | 2.2                |
| 355     | SF   | 101    | 355-SF-101       | VAULT DOOR                       |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 355     | SF   | 102    | 355-SF-102       | GOLD SAFE                        |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 355     | TK   | 103    | 355-TK-103       | CARBON QUENCH TANK               |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  |
| 365     | PU   | 104    | 365-PU-104       | FLOCCULANT TRANSFER PUMP         | 80m3/h, helical rotor pump.                                                                                                                                                                                                  |                    |               | Duty           | 15                 |
| 365     | PU   | 124    | 365-PU-124       | CYANIDE TRANSFER PUMP            | 90m3/h                                                                                                                                                                                                                       |                    |               | Duty           | 11                 |
| 365     | PU   | 125    | 365-PU-125       | CAUSTIC TRANSFER PUMP            | 90m3/h                                                                                                                                                                                                                       |                    |               | Duty           | 11                 |
| 365     | PK   | 101    | 365-PK-101       | FLOCCULANT MIXING PACKAGE        | Vendor supply, 525kg/day nominal, 630kg/day design, includes flocculant hopper, hoist, feeder, blower, wetting head and piping, mixing tank (80m3 live capacity) with agitator, transfer pump. Nominal 175t/y, design 250t/y |                    |               | Duty           | 15                 |
| 365     | PU   | 101    | 365-PU-101       | CYANIDE RINGMAIN PUMP 1          | 7.2m3/h required. Centrifugal solution pump.                                                                                                                                                                                 |                    |               | Duty           | 7.5                |



| Tagging |      |        | Equipment Data   |                                      |                                                                                  |                    |               |                |                    |
|---------|------|--------|------------------|--------------------------------------|----------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                       | Equipment Specification                                                          | Model              | Vendor        | Duty / Standby | Installed Power kW |
| 365     | PU   | 105    | 365-PU-105       | FLOCCULANT DOSING PUMP 1             | 17.5m3/h design, 8.8m3/h nominal, helical rotor pump.                            |                    |               | Duty           | 7.5                |
| 365     | AG   | 103    | 365-AG-103       | CYANIDE MIXING TANK AGITATOR         | 45m3 live capacity                                                               |                    |               | Duty           | 5.5                |
| 365     | AG   | 104    | 365-AG-104       | CAUSTIC MIXING TANK AGITATOR         | 35m3 live capacity.                                                              |                    |               | Duty           | 5.5                |
| 365     | PU   | 108    | 365-PU-108       | CAUSTIC RINGMAIN PUMP 1              | 5.5m3/h required. Centrifugal solution pump.                                     |                    |               | Duty           | 3.7                |
| 365     | PU   | 103    | 365-PU-103       | CYANIDE SUMP PUMP                    | GPS vertical sump pump. 1500mm depth.                                            | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 365     | PU   | 107    | 365-PU-107       | FLOCCULANT SUMP PUMP                 | GPS vertical sump pump. 1500mm depth.                                            | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 365     | PU   | 110    | 365-PU-110       | CAUSTIC SUMP PUMP                    | GPS vertical sump pump. 1500mm depth.                                            | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 365     | PU   | 113    | 365-PU-113       | ACID SUMP PUMP                       | GPS vertical sump pump. 1500mm depth.                                            | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 365     | PU   | 117    | 365-PU-117       | ANTISCALANT SUMP PUMP                | GPS vertical sump pump. 1500mm depth.                                            | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 365     | PU   | 120    | 365-PU-120       | SMBS SUMP PUMP                       | GPS vertical sump pump. 1500mm depth.                                            | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 365     | PU   | 123    | 365-PU-123       | COPPER SULPHATE SUMP PUMP            | GPS vertical sump pump. 1500mm depth.                                            | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 |
| 365     | PU   | 126    | 365-PU-126       | MSA DIESEL SUPPLY PUMP               |                                                                                  |                    |               | Duty           | 11                 |
| 365     | PU   | 127    | 365-PU-127       | PLANT DIESEL SUPPLY PUMP             |                                                                                  |                    |               | Duty           | 11                 |
| 365     | PU   | 111    | 365-PU-111       | ACID DOSING PUMP 1                   | 489L/h design duty point, 245L/h nominal flowrate (neat), digital metering pump. |                    |               | Duty           | 1.1                |
| 365     | AG   | 101    | 365-AG-101       | SMBS MIXING TANK AGITATOR            | 30m3 live capacity.                                                              |                    |               | Duty           | 5.5                |
| 365     | AG   | 102    | 365-AG-102       | COPPER SULPHATE MIXING TANK AGITATOR | 30m3 live capacity.                                                              |                    |               | Duty           | 5.5                |
| 365     | PU   | 114    | 365-PU-114       | ANTISCALANT DOSING PUMP 1            | 4.2mL/h nominal duty point, digital metering pump.                               |                    |               | Duty           | 0.25               |
| 365     | PU   | 115    | 365-PU-115       | ANTISCALANT DOSING PUMP 2            | 4.2mL/h nominal duty point, digital metering pump.                               |                    |               | Duty           | 0.25               |
| 365     | PU   | 116    | 365-PU-116       | ANTISCALANT DOSING PUMP 3            | 4.2mL/h nominal duty point, digital metering pump.                               |                    |               | Duty           | 0.25               |
| 365     | PU   | 118    | 365-PU-118       | SMBS DOSING PUMP 1                   | 4.5m3/h design, 2.3m3/h nominal, horizontal recessed impeller pump.              |                    |               | Duty           | 1.5                |
| 365     | PU   | 121    | 365-PU-121       | COPPER SULPHATE DOSING PUMP 1        | 4m3/h design, 2m3/h nominal, horizontal recessed impeller pump.                  |                    |               | Duty           | 1.5                |
| 365     | PU   | 102    | 365-PU-102       | CYANIDE RINGMAIN PUMP 2              | 7.2m3/h required. Centrifugal solution pump.                                     |                    |               | Standby        | 7.5                |
| 365     | PU   | 106    | 365-PU-106       | FLOCCULANT DOSING PUMP 2             | 17.5m3/h design, 8.8m3/h nominal, helical rotor pump.                            |                    |               | Standby        | 7.5                |
| 365     | PU   | 109    | 365-PU-109       | CAUSTIC RINGMAIN PUMP 2              | 5.5m3/h required. Centrifugal solution pump.                                     |                    |               | Standby        | 3.7                |
| 365     | PU   | 119    | 365-PU-119       | SMBS DOSING PUMP 2                   | 4.5m3/h design, 2.3m3/h nominal, horizontal recessed impeller pump.              |                    |               | Standby        | 1.5                |
| 365     | PU   | 122    | 365-PU-122       | COPPER SULPHATE DOSING PUMP 2        | 4m3/h design, 2m3/h nominal, horizontal recessed impeller pump.                  |                    |               | Standby        | 1.5                |
| 365     | PU   | 128    | 365-PU-128       | COPPER SULPHATE TRANSFER PUMP        | 4m3/h design, 2m3/h nominal, horizontal recessed impeller pump.                  |                    |               | Duty           | 5.5                |
| 365     | PU   | 112    | 365-PU-112       | ACID DOSING PUMP 2                   | 489L/h design duty point, 245L/h nominal flowrate (neat), digital metering pump. |                    |               | Standby        | 1.1                |
| 365     | HT   | 101    | 365-HT-101       | CYANIDE HOIST                        |                                                                                  |                    |               | Duty           | 5.5                |
| 365     | TK   | 107    | 365-TK-107       | CYANIDE MIXING TANK                  |                                                                                  |                    |               | Duty           | 0                  |
| 365     | TK   | 101    | 365-TK-101       | CYANIDE STORAGE TANK                 |                                                                                  |                    |               | Duty           | 0                  |
| 365     | TK   | 102    | 365-TK-102       | FLOCCULANT STORAGE TANK              | 160m3 live capacity, 18.3 hours residence time                                   |                    |               | Duty           | 0                  |
| 365     | HT   | 102    | 365-HT-102       | CAUSTIC HOIST & LIFTING FRAME        |                                                                                  |                    |               | Duty           | 5.5                |
| 365     | TK   | 108    | 365-TK-108       | CAUSTIC MIXING TANK                  |                                                                                  |                    |               | Duty           | 0                  |
| 365     | TK   | 103    | 365-TK-103       | CAUSTIC STORAGE TANK                 |                                                                                  |                    |               | Duty           | 0                  |
| 365     | TK   | 104    | 365-TK-104       | ACID STORAGE TANK                    | 30m3 poly tank                                                                   |                    |               | Duty           | 0                  |
| 365     | PU   | 129    | 365-PU-129       | SMBS TRANSFER PUMP                   | 4.5m3/h design, 2.3m3/h nominal, horizontal recessed impeller pump.              |                    |               | Standby        | 1.5                |
| 365     | HT   | 104    | 365-HT-104       | SMBS HOIST                           |                                                                                  |                    |               | Duty           | 5.5                |
| 365     | TK   | 105    | 365-TK-105       | SMBS MIXING TANK                     |                                                                                  |                    |               | Duty           | 0                  |
| 365     | FA   | 101    | 365-FA-101       | SMBS TANK VENTILATION FAN            |                                                                                  |                    |               | Duty           | 2.2                |
| 365     | TK   | 100    | 365-TK-100       | SMBS STORAGE TANK                    |                                                                                  |                    |               | Duty           | 0                  |
| 365     | HT   | 103    | 365-HT-103       | COPPER SULPHATE HOIST                |                                                                                  |                    |               | Duty           | 5.5                |
| 365     | TK   | 106    | 365-TK-106       | COPPER SULPHATE MIXING TANK          |                                                                                  |                    |               | Duty           | 0                  |
| 365     | TK   | 110    | 365-TK-110       | COPPER SULPHATE STORAGE TANK         |                                                                                  |                    |               | Duty           | 0                  |
| 365     | TK   | 109    | 365-TK-109       | DIESEL STORAGE TANK                  |                                                                                  |                    |               | Duty           | 0                  |

| Tagging |      |        | Equipment Data   |                                |                                                                                                                                                                                  |                    |               |                |                    |
|---------|------|--------|------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                 | Equipment Specification                                                                                                                                                          | Model              | Vendor        | Duty / Standby | Installed Power kW |
| 395     | PU   | 103    | 395-PU-103       | RAW WATER PUMP 1               | 923m3/h design duty point (no decant return), 503m3/h nominal flow, centrifugal solution pump, 55mm TDH.                                                                         |                    |               | Duty           | 280                |
| 395     | PU   | 105    | 395-PU-105       | LP PROCESS WATER PUMP 1        | 1127m3/h design duty point, 939m3/h nominal flow, centrifugal slurry pump, 30m TDH.                                                                                              |                    |               | Duty           | 280                |
| 395     | PU   | 126    | 395-PU-126       | HP PROCESS WATER PUMP 1        | 500m3/h design duty point, centrifugal slurry pump, 70m TDH.                                                                                                                     |                    |               | Duty           | 130                |
| 395     | PU   | 101    | 395-PU-101       | FRESH WATER PUMP 1             | 71m3/h design duty point, 59m3/h nominal flow, centrifugal solution pump, 60m TDH                                                                                                |                    |               | Duty           | 37                 |
| 395     | PU   | 107    | 395-PU-107       | GLAND WATER PUMP 1             | 20m3/h nominal, 24m3/h designm centrifugal multi-stage, 75m TDH                                                                                                                  |                    |               | Duty           | 22                 |
| 395     | PK   | 101    | 395-PK-101       | POTABLE WATER TREATMENT PLANT  | RO plant and UV steriliser                                                                                                                                                       |                    |               | Duty           | 20                 |
| 395     | PU   | 129    | 395-PU-129       | FIRE WATER PUMP (ELECTRIC)     | included in fire water package                                                                                                                                                   |                    |               | Duty           | 45                 |
| 395     | PK   | 102    | 395-PK-102       | FRESH WATER TREATMENT PLANT    | Filtered Water Treatment Plant including filters, chemical dosing, UV sterilisation, motors, instrumentation, controls all containerised, 100m3/h. Also includes feed pumps (2). |                    |               | Duty           | 82                 |
| 395     | PU   | 109    | 395-PU-109       | POTABLE WATER PUMP 1           | 9m3/hr nominal, 11m3/h design, centrifugal multi-stage, TDH 65m                                                                                                                  |                    |               | Duty           | 3                  |
| 395     | PU   | 128    | 395-PU-128       | FIRE WATER JOCKEY PUMP         | Fire water package                                                                                                                                                               |                    |               | Duty           | 22                 |
| 395     | PU   | 104    | 395-PU-104       | RAW WATER PUMP 2               | 923m3/h design duty point (no decant return), 503m3/h nominal flow, centrifugal solution pump, 55mm TDH.                                                                         |                    |               | Standby        | 280                |
| 395     | PU   | 111    | 395-PU-111       | WATER STORAGE DAM SEEPAGE PUMP |                                                                                                                                                                                  |                    |               | Duty           | 22                 |
| 395     | PU   | 112    | 395-PU-112       | WATER STORAGE DECANT PUMP 1    |                                                                                                                                                                                  |                    |               | Duty           | 75                 |
| 395     | PU   | 113    | 395-PU-113       | WATER STORAGE DECANT PUMP 2    |                                                                                                                                                                                  |                    |               | Standby        | 75                 |
| 610     | PU   | 114    | 610-PU-114       | WATER HARVEST DECANT PUMP 1    |                                                                                                                                                                                  |                    |               | Duty           | 355                |
| 610     | PU   | 115    | 610-PU-115       | WATER HARVEST DECANT PUMP 2    |                                                                                                                                                                                  |                    |               | Standby        | 355                |
| 395     | PU   | 106    | 395-PU-106       | LP PROCESS WATER PUMP 2        | 1127m3/h design duty point, 939m3/h nominal flow, centrifugal slurry pump, 30m TDH.                                                                                              |                    |               | Standby        | 280                |
| 395     | PU   | 127    | 395-PU-127       | HP PROCESS WATER PUMP 2        | 500m3/h design duty point, centrifugal slurry pump, 70m TDH.                                                                                                                     |                    |               | Standby        | 130                |
| 395     | PU   | 102    | 395-PU-102       | FRESH WATER PUMP 2             | 71m3/h design duty point, 59m3/h nominal flow, centrifugal solution pump, 60m TDH                                                                                                |                    |               | Standby        | 37                 |
| 395     | PU   | 108    | 395-PU-108       | GLAND WATER PUMP 2             | 20m3/h nominal, 24m3/h designm centrifugal multi-stage, 75m TDH                                                                                                                  |                    |               | Standby        | 22                 |
| 395     | PU   | 110    | 395-PU-110       | POTABLE WATER PUMP 2           | 9m3/hr nominal, 11m3/h design, centrifugal multi-stage, TDH                                                                                                                      |                    |               | Standby        | 3                  |
| 395     | TK   | 101    | 395-TK-101       | FRESH WATER TANK               | 426m3 live capacity (6 hrs residence time)                                                                                                                                       |                    |               | Duty           | 0                  |
| 395     | TK   | 103    | 395-TK-103       | RAW WATER TANK                 |                                                                                                                                                                                  |                    |               | Duty           | 0                  |
| 395     | DM   | 102    | 395-DM-102       | PROCESS WATER DAM              |                                                                                                                                                                                  |                    |               | Duty           | 0                  |
| 395     | TK   | 102    | 395-TK-102       | POTABLE WATER TANK             |                                                                                                                                                                                  |                    |               | Duty           | 0                  |
| 395     | PU   | 130    | 395-PU-130       | FIRE WATER PUMP (DIESEL)       | included in fire water package                                                                                                                                                   |                    |               | Duty           | 0                  |
| 395     | PK   | 103    | 395-PK-103       | COOLING WATER SYSTEM           | includes chilled water pumps (2), refrigerative chiller, heat exchanger, cooling water pump                                                                                      |                    |               | Duty           | 15                 |
| 410     | PU   | 101    | 410-PU-101       | FINAL TAILINGS PUMP 1          | 1195m3/h nominal duty point, 1434m3/h design, heavy duty centrifugal pump, TDH 65m                                                                                               | Warman 10/8 AH     | Weir Minerals | Duty           | 250                |
| 410     | AG   | 101    | 410-AG-101       | CYANIDE DETOX TANK 1 AGITATOR  |                                                                                                                                                                                  |                    |               | Duty           | 220                |
| 410     | AG   | 102    | 410-AG-102       | CYANIDE DETOX TANK 2 AGITATOR  |                                                                                                                                                                                  |                    |               | Duty           | 150                |
| 620     | PU   | 104    | 620-PU-104       | DECANT RETURN PUMP 1           | 350m3/h nominal flow, 420m3/h design, submersible pump                                                                                                                           |                    |               | Duty           | 45                 |
| 620     | PU   | 105    | 620-PU-105       | DECANT RETURN PUMP 2           | 350m3/h nominal flow, 420m3/h design, submersible pump                                                                                                                           |                    |               | Standby        | 45                 |
| 620     | PU   | 106    | 620-PU-106       | TSF UNDERDRAINAGE PUMP         |                                                                                                                                                                                  |                    |               | Duty           | 11                 |
| 620     | PU   | 107    | 620-PU-107       | TSF SEEPAGE PUMP               |                                                                                                                                                                                  |                    |               | Duty           | 22                 |
| 620     | PU   | 108    | 620-PU-108       | TSF MONITORING BORES PUMPS     |                                                                                                                                                                                  |                    |               | Duty           | 11                 |
| 410     | PU   | 103    | 410-PU-103       | FINAL TALINGS SUMP PUMP        | GPS vertical sump pump. 1500mm depth.                                                                                                                                            | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 |

| Tagging |      |        | Equipment Data   |                                    |                                                                                    |                |               |                |                    |
|---------|------|--------|------------------|------------------------------------|------------------------------------------------------------------------------------|----------------|---------------|----------------|--------------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                     | Equipment Specification                                                            | Model          | Vendor        | Duty / Standby | Installed Power kW |
| 410     | PU   | 102    | 410-PU-102       | FINAL TAILINGS PUMP 2              | 1195m3/h nominal duty point, 1434m3/h design, heavy duty centrifugal pump, TDH 65m | Warman 10/8 AH | Weir Minerals | Standby        | 250                |
| 410     | TK   | 101    | 410-TK-101       | CYANIDE DETOX TANK 1               | 60 minutes, 875m3 live capacity                                                    |                |               | Duty           | 0                  |
| 410     | TK   | 102    | 410-TK-102       | CYANIDE DETOX TANK 2               | 30 minutes, 438m3 live capacity                                                    |                |               | Duty           | 0                  |
| 410     | SA   | 101    | 410-SA-101       | CIL TAILINGS SAMPLER               |                                                                                    |                |               | Duty           | 5                  |
| 410     | SA   | 102    | 410-SA-102       | WAD CYANIDE ANALYSER               |                                                                                    |                |               | Duty           | 5                  |
| 410     | HP   | 101    | 410-HP-101       | FINAL TAILINGS HOPPER              |                                                                                    |                |               | Duty           | 0                  |
| 425     | PK   | 101    | 425-PK-101       | PSA OXYGEN PLANT                   | 90% purity, 6.6t/d nominal consumption (90% purity and 75% sparge efficiency)      |                |               | Duty           | 250                |
| 425     | CP   | 101    | 425-CP-101       | AIR COMPRESSOR 1                   | 630 m3/h, 60kW motor, 750kPa                                                       |                |               | Duty           | 60                 |
| 425     | CP   | 102    | 425-CP-102       | AIR COMPRESSOR 2                   | 630 m3/h, 60kW motor, 750kPa                                                       |                |               | Duty           | 60                 |
| 425     | DR   | 101    | 425-DR-101       | AIR COMPRESSOR 1 DRYER             |                                                                                    |                |               | Duty           | 5.5                |
| 425     | DR   | 102    | 425-DR-102       | AIR COMPRESSOR 2 DRYER             |                                                                                    |                |               | Duty           | 5.5                |
| 425     | CP   | 103    | 425-CP-103       | AIR COMPRESSOR 3                   | 630 m3/h, 60kW motor, 750kPa                                                       |                |               | Standby        | 60                 |
| 425     | DR   | 103    | 425-DR-103       | AIR COMPRESSOR 3 DRYER             |                                                                                    |                |               | Standby        | 5.5                |
| 425     | FL   | 101    | 425-FL-101       | DRYER INLET FILTER 1               |                                                                                    |                |               | Duty           | 0                  |
| 425     | FL   | 102    | 425-FL-102       | DRYER INLET FILTER 2               |                                                                                    |                |               | Duty           | 0                  |
| 425     | FL   | 103    | 425-FL-103       | DRYER INLET FILTER 3               |                                                                                    |                |               | Duty           | 0                  |
| 425     | FL   | 104    | 425-FL-104       | DRYER OUTLET FILTER 1              |                                                                                    |                |               | Duty           | 0                  |
| 425     | FL   | 105    | 425-FL-105       | DRYER OUTLET FILTER 2              |                                                                                    |                |               | Duty           | 0                  |
| 425     | FL   | 106    | 425-FL-106       | DRYER OUTLET FILTER 3              |                                                                                    |                |               | Duty           | 0                  |
| 425     | AR   | 101    | 425-AR-101       | PLANT AIR RECEIVER 1               |                                                                                    |                |               | Duty           | 0                  |
| 425     | AR   | 102    | 425-AR-102       | PLANT AIR RECEIVER 2               |                                                                                    |                |               | Duty           | 0                  |
| 425     | AR   | 103    | 425-AR-103       | INSTRUMENT AIR RECEIVER            |                                                                                    |                |               | Duty           | 0                  |
| 510     |      |        |                  | WATER SUPPLY & TREATMENT INC. CAMP | Allowance                                                                          |                |               | Duty           | 1620               |
| 520     |      |        |                  | PLANT BUILDINGS & WORKSHOPS        | Allowance                                                                          |                |               | Duty           | 1235               |
| 530     |      |        |                  | MINING FACILITIES                  | Allowance                                                                          |                |               | Duty           | 412                |





## Resolute Mining

### ABC Project Scoping Study

#### ELECTRICAL EQUIPMENT LIST

**ABC Project**  
Scoping Study  
1264

1264-EEL-001  
May-26  
Revision 0

| REV | DATE       | DESCRIPTION                | PREPARED | CHECKED | APPROVED | CLIENT |
|-----|------------|----------------------------|----------|---------|----------|--------|
| A   | 25/03/2026 | Issued for Internal Review | EW       | SG      |          |        |
| B   | 1/05/2026  | Issued for Internal Review | EW/AB    | SG      | GR       | RC     |
| 0   | 11/05/2026 | Issued for Study           | EW       | SG      | GR       | RC     |

| Tagging |      |        | Equipment Data   |                                     |                                                                                                          |                    |               |                | Power              |             |                   |               |                |
|---------|------|--------|------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|-------------|-------------------|---------------|----------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                      | Equipment Specification                                                                                  | Model              | Vendor        | Duty / Standby | Installed Power kW | Load Factor | Absorbed Power kW | Demand Factor | Drawn Power kW |
| 315     | CR   | 101    | 315-CR-101       | PRIMARY CRUSHER                     | Metso superior 5065 MK-111 LS gyratory crusher, CSS 150mm. Includes ancillaries.                         | 5065 MK-111 LS     | Metso         | Duty           | 450                | 0.70        | 315               | 1.00          | 315.0          |
| 315     | CV   | 102    | 315-CV-102       | COS FEED CONVEYOR                   | 1065 dry tph nominal, 1279 dry tph design, 1200mm wide, 140m long                                        |                    |               | Duty           | 280                | 0.90        | 252.00            | 1.00          | 252.0          |
| 315     | FE   | 101    | 315-FE-101       | APRON FEEDER                        | 1065 dry tph nominal, 1279 dry tph design                                                                |                    |               | Duty           | 100                | 0.85        | 85.00             | 1.00          | 85.0           |
| 315     | CV   | 101    | 315-CV-101       | CRUSHED ORE CONVEYOR                | 1065 dry tph nominal, 1279 dry tph design, 1200mm wide, length 40m                                       |                    |               | Duty           | 37                 | 0.90        | 33.30             | 1.00          | 33.3           |
| 315     | BK   | 101    | 315-BK-101       | ROCK BREAKER                        |                                                                                                          |                    |               | Duty           | 30                 | 0.80        | 24.00             | 1.00          | 24.0           |
| 315     | MA   | 101    | 315-MA-101       | CRUSHED ORE TRAMP MAGNET            | Self-cleaning, cross-belt tramp magnet                                                                   |                    |               | Duty           | 25.5               | 0.80        | 20.40             | 1.00          | 20.4           |
| 315     | PU   | 101    | 315-PU-101       | CRUSHING AREA DRIVE-IN SUMP PUMP    |                                                                                                          |                    |               | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 315     | WE   | 101    | 315-WE-101       | COS FEED CONVEYOR WEIGHTOMETER      |                                                                                                          |                    |               | Duty           | 0.2                | 0.80        | 0.16              | 1.00          | 0.2            |
| 325     | FE   | 102    | 325-FE-102       | COS RECLAIM FEEDER 1                | 875 dry t/h apron feeder, includes impact bed                                                            |                    |               | Duty           | 75                 | 0.85        | 63.75             | 1.00          | 63.8           |
| 325     | FE   | 103    | 325-FE-103       | COS RECLAIM FEEDER 2                | 875 dry t/h apron feeder                                                                                 |                    |               | Duty           | 75                 | 0.85        | 63.75             | 1.00          | 63.8           |
| 325     | FE   | 104    | 325-FE-104       | COS RECLAIM FEEDER 3                | 875 dry t/h apron feeder                                                                                 |                    |               | Duty           | 75                 | 0.85        | 63.75             | 1.00          | 63.8           |
| 325     | FA   | 101    | 325-FA-101       | RECLAIM TUNNEL VENTILATION FAN      |                                                                                                          |                    |               | Duty           | 15                 | 0.80        | 12.00             | 0.99          | 11.9           |
| 325     | PU   | 101    | 325-PU-101       | RECLAIM TUNNEL SUMP PUMP            | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 325     | SK   | 101    | 325-SK-101       | COARSE ORE STOCKPILE                | Live residence time of 16hrs (equiv. to 14,000 dry t or 8,236m3). Stockpile height of 26m.               |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 325     | PK   | 101    | 325-PK-101       | STOCKPILE DUST SPRAY MANIFOLD       |                                                                                                          |                    |               | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 325     | DC   | 101    | 325-DC-101       | RECLAIM TUNNEL DUST COLLECTOR       |                                                                                                          |                    |               | Duty           | 22                 | 0.80        | 17.60             | 1.00          | 17.6           |
| 325     | DC   | 102    | 325-DC-102       | LIME SILO DUST COLLECTOR            |                                                                                                          |                    |               | Duty           | 22                 | 0.80        | 17.60             | 1.00          | 17.6           |
| 325     | PU   | 103    | 325-PU-103       | RECLAIM AREA SUMP PUMP              | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 325     | PU   | 104    | 325-PU-104       | RECLAIM TUNNEL SUMP PUMP            | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 325     | PU   | 102    | 325-PU-102       | LIME AREA SUMP PUMP                 | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 325     | AT   | 101    | 325-AT-101       | LIME SILO ACTIVATOR                 | included in lime silo package                                                                            |                    |               | Duty           | 1.1                | 0.80        | 0.88              | 1.00          | 0.9            |
| 325     | SL   | 101    | 325-SL-101       | LIME SILO                           | 250t live capacity                                                                                       |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.91          | 0.0            |
| 325     | VV   | 101    | 325-VV-101       | LIME ROTARY VALVE                   | included in lime silo package                                                                            |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.91          | 0.0            |
| 325     | HP   | 102    | 325-HP-102       | LIME TRANSFER HOPPER                |                                                                                                          |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 325     | HT   | 101    | 325-HT-101       | LIME TRANSFER LOADING HOIST         |                                                                                                          |                    |               | Duty           | 5.5                | 0.80        | 4.40              | 1.00          | 4.4            |
| 325     | PK   | 102    | 325-PK-102       | SAG BALL CHARGER                    |                                                                                                          |                    |               | Duty           | 5.5                | 0.80        | 4.40              | 0.25          | 1.1            |
| 325     | HP   | 101    | 325-HP-101       | SAG BALL LOADING HOPPER             | 125mm forged steel balls                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 325     | WE   | 101    | 325-WE-101       | SAG MILL FEED CONVEYOR WEIGHTOMETER |                                                                                                          |                    |               | Duty           | 0.2                | 0.80        | 0.16              | 1.00          | 0.2            |
| 328     | ML   | 101    | 328-ML-101       | SAG MILL                            | SAG Mill with grate D/C and trommel, 11.13m dia x 6.10m EGL, 16,000kW motor                              |                    |               | Duty           | 16,000             | 0.85        | 13,675            | 1.00          | 13675.0        |
| 328     | XM   | 101    | 328-XM-101       | SAG MILL ANCILLARIES                | Inching drive, lube oil pumps, heaters, cooling system                                                   |                    |               | Duty           | 300                | 0.80        | 240.00            | 1.00          | 240.0          |
| 328     | CV   | 101    | 328-CV-101       | SAG MILL FEED CONVEYOR              | 875 dry t/h, 1200mm wide, 100m long                                                                      |                    |               | Duty           | 150                | 0.90        | 135.00            | 1.00          | 135.0          |
| 328     | CI   | 101    | 328-CI-101       | REFRIDGERATIVE CHILLER SYSTEM       | For SAG and Ball Mill, 1050L/min, includes chiller, heat exchangers, pumps, instrumentation and controls |                    |               | Duty           | 280                | 0.90        | 252.00            | 0.10          | 25.2           |
| 328     | PU   | 103    | 328-PU-103       | CHILLED WATER PUMP 1                | included in package                                                                                      |                    |               | Duty           | 30                 | 0.85        | 25.50             | 0.10          | 2.6            |
| 328     | LH   | 101    | 328-LH-101       | MILL LINER HANDLER                  | 7 axis, 2.5 t                                                                                            |                    |               | Duty           | 55                 | 0.80        | 44.00             | 0.05          | 2.2            |
| 328     | PU   | 102    | 328-PU-102       | SAG MILL SUMP PUMP                  | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 328     | XM   | 102    | 328-XM-102       | BOLT REMOVAL TOOL                   |                                                                                                          |                    |               | Duty           | 22                 | 0.80        | 17.60             | 0.05          | 0.9            |
| 328     | PU   | 104    | 328-PU-104       | CHILLED WATER PUMP 2                | included in package                                                                                      |                    |               | Standby        | 30                 | 0.85        | 0.00              | 0.10          | 0.0            |
| 328     | CH   | 101    | 328-CH-101       | SAG MILL FEED CHUTE                 |                                                                                                          |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 328     | TK   | 101    | 328-TK-101       | CHILLED WATER TANK                  | included in package                                                                                      |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 329     | PU   | 101    | 329-PU-101       | CYCLONE FEED PUMP 1                 | 2,916 m3/h nominal duty point, 3,500m3/h design duty point, centrifugal slurry pump, 30m TDH             | Warman 20/18-AH    | Weir Minerals | Duty           | 700                | 0.85        | 595.00            | 1.00          | 595.0          |
| 329     | HT   | 101    | 329-HT-101       | CYCLONE DAVIT CRANE                 | 2t                                                                                                       |                    |               | Duty           | 8.2                | 0.80        | 6.56              | 1.00          | 6.6            |
| 329     | PU   | 102    | 329-PU-102       | CYCLONE FEED PUMP 2                 | 2,916 m3/h nominal duty point, 3,500m3/h design duty point, centrifugal slurry pump, 30m TDH             | Warman 20/18-AH    | Weir Minerals | Standby        | 700                | 0.85        | 0.00              | 1.00          | 0.0            |
| 329     | HP   | 101    | 329-HP-101       | CYCLONE FEED HOPPER                 |                                                                                                          |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 329     | CY   | 101    | 329-CY-101       | CYCLONES                            | 400CVX-111 Cavex hydrocyclones. 400mm dia, 100mm VF, 75mm spigot. Cluster of 20; 16 duty, 4 standby.     | 400CVX-111         | Weir Minerals | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 331     | ML   | 101    | 331-ML-101       | BALL MILL                           | Ball mill overflow type with trommel, 7.77m dia x 11.89m EGL, 16,500kW motor                             |                    |               | Duty           | 16,500             | 0.89        | 14,610            | 1.00          | 14610.0        |
| 331     | XM   | 101    | 331-XM-101       | BALL MILL ANCILLARIES               | Inching drive, lube oil pumps, heaters, cooling system                                                   |                    |               | Duty           | 200                | 0.80        | 160.00            | 1.00          | 160.0          |
| 331     | HT   | 101    | 331-HT-101       | BALL LOADING HOIST                  | 65mm forged steel balls, 3t                                                                              |                    |               | Duty           | 45                 | 0.80        | 36.00             | 0.05          | 1.8            |
| 331     | PU   | 101    | 331-PU-101       | BALL MILL SUMP PUMP                 | GPS vertical sump pump. 1500mm depth.                                                                    | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 331     | CH   | 101    | 331-CH-101       | BALL MILL FEED CHUTE                |                                                                                                          |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 331     | HP   | 101    | 331-HP-101       | BALL LOADING HOPPER                 | 65mm forged steel balls                                                                                  |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 333     | GC   | 101    | 333-GC-101       | GRAVITY CONCENTRATOR 1              | Knelson KC-QS40 gravity concentrator, 56 kW motor plus filters                                           | KC-QS40            | FLSmidth      | Duty           | 56                 | 0.80        | 44.80             | 1.00          | 44.8           |
| 333     | GC   | 102    | 333-GC-102       | GRAVITY CONCENTRATOR 2              | Knelson KC-QS40 gravity concentrator, 56 kW motor plus filters                                           | KC-QS40            | FLSmidth      | Duty           | 56                 | 0.80        | 44.80             | 1.00          | 44.8           |
| 333     | SC   | 101    | 333-SC-101       | GRAVITY SCREEN 1                    | 1.5m x 4m horizontal vibrating screen with 3.6mm aperture.                                               |                    |               | Duty           | 5.5                | 0.85        | 4.68              | 1.00          | 4.7            |

| Tagging |      |        | Equipment Data   |                                        |                                                                                    |                    |               | Power          |                    |             |                   |               |                |
|---------|------|--------|------------------|----------------------------------------|------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|-------------|-------------------|---------------|----------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                         | Equipment Specification                                                            | Model              | Vendor        | Duty / Standby | Installed Power kW | Load Factor | Absorbed Power kW | Demand Factor | Drawn Power kW |
| 333     | SC   | 102    | 333-SC-102       | GRAVITY SCREEN 2                       | 1.5m x 4m horizontal vibrating screen with 3.6mm aperture.                         |                    |               | Duty           | 5.5                | 0.85        | 4.68              | 1.00          | 4.7            |
| 334     | CR   | 101    | 334-CR-101       | PEBBLE CRUSHER                         | Metso HP800e cone crusher, sh fine, 12mm CSS. Includes ancilliaries                | HP800e             | Metso         | Duty           | 600                | 0.86        | 516               | 1.00          | 516.0          |
| 334     | XM   | 101    | 334-XM-101       | PEBBLE CRUSHER ANCILLARIES             | Lube oil pumps and hydraulic pumps                                                 |                    |               | Duty           | 55                 | 0.80        | 44.00             | 1.00          | 44.0           |
| 334     | CV   | 101    | 334-CV-101       | PEBBLE CRUSHER CONVEYOR                | 149 dry t/h, 800mm wide, 60m long                                                  |                    |               | Duty           | 30                 | 0.90        | 27.00             | 1.00          | 27.0           |
| 334     | MA   | 101    | 334-MA-101       | PEBBLE CRUSHER TRAMP MAGNET            | Self-cleaning, cross-belt tramp magnet                                             |                    |               | Duty           | 15                 | 0.80        | 12.00             | 1.00          | 12.0           |
| 334     | FE   | 101    | 334-FE-101       | PEBBLE CRUSHER FEEDER                  | 149 dry t/h                                                                        |                    |               | Duty           | 5.5                | 0.85        | 4.68              | 1.00          | 4.7            |
| 334     | WE   | 101    | 334-WE-101       | PEBBLE CRUSHER CONVEYOR WEIGHTOMETER   |                                                                                    |                    |               | Duty           | 0.2                | 0.80        | 0.16              | 1.00          | 0.2            |
| 334     | MD   | 101    | 334-MD-101       | PEBBLE CRUSHER CONVEYOR METAL DETECTOR |                                                                                    |                    |               | Duty           | 0.06               | 0.80        | 0.05              | 1.00          | 0.0            |
| 334     | BN   | 101    | 334-BN-101       | PEBBLE CRUSHER BIN                     | 25t capacity, mild steel construction, bisalloy lined.                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | PU   | 103    | 345-PU-103       | PRELEACH THICKENER UNDERFLOW PUMP 1    | 1,194m3/h nominal duty point, 1,433m3/h design duty point, 50%w/w density, TDH 25m | Warman 12/10 AH    | Weir Minerals | Duty           | 300                | 0.85        | 255.00            | 1.00          | 255.0          |
| 345     | AG   | 101    | 345-AG-101       | LEACH TANK AGITATOR 1                  | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | AG   | 102    | 345-AG-102       | LEACH TANK AGITATOR 2                  | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | AG   | 103    | 345-AG-103       | ADSORPTION TANK 1 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | AG   | 104    | 345-AG-104       | ADSORPTION TANK 2 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | AG   | 105    | 345-AG-105       | ADSORPTION TANK 3 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | AG   | 106    | 345-AG-106       | ADSORPTION TANK 4 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | AG   | 107    | 345-AG-107       | ADSORPTION TANK 5 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | AG   | 108    | 345-AG-108       | ADSORPTION TANK 6 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | AG   | 109    | 345-AG-109       | ADSORPTION TANK 7 AGITATOR             | 185kW                                                                              |                    |               | Duty           | 185                | 0.90        | 166.50            | 0.99          | 164.8          |
| 345     | SC   | 111    | 345-SC-111       | CARBON SAFETY SCREEN                   | Horizontal vibrating screen, 25m2, 6.9m x 3.6m, 1.0mm aperture                     |                    |               | Duty           | 45                 | 0.85        | 38.25             | 1.00          | 38.3           |
| 345     | PU   | 106    | 345-PU-106       | ADSORPTION TANK 2 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 | 0.85        | 25.50             | 1.00          | 25.5           |
| 345     | PU   | 107    | 345-PU-107       | ADSORPTION TANK 3 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 | 0.85        | 25.50             | 1.00          | 25.5           |
| 345     | PU   | 108    | 345-PU-108       | ADSORPTION TANK 4 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 | 0.85        | 25.50             | 1.00          | 25.5           |
| 345     | PU   | 109    | 345-PU-109       | ADSORPTION TANK 5 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 | 0.85        | 25.50             | 1.00          | 25.5           |
| 345     | PU   | 110    | 345-PU-110       | ADSORPTION TANK 6 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 | 0.85        | 25.50             | 1.00          | 25.5           |
| 345     | PU   | 111    | 345-PU-111       | ADSORPTION TANK 7 ADVANCE PUMP         | Vertical recessed impellor pump. Average carbon movement 10 t/day (0.42 t/h)       |                    |               | Duty           | 30                 | 0.85        | 25.50             | 1.00          | 25.5           |
| 345     | PU   | 101    | 345-PU-101       | PRELEACH THICKENER OVERFLOW PUMP 1     | 302m3/h nominal duty point, 363m3/h design point                                   | Warman 150WBH      | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 1.00          | 18.7           |
| 345     | SC   | 110    | 345-SC-110       | LOADED CARBON SCREEN                   | Horizontal vibrating screen, 8m2, 4m x 2m, 0.8mm aperture                          |                    |               | Duty           | 22                 | 0.85        | 18.70             | 1.00          | 18.7           |
| 345     | TH   | 101    | 345-TH-101       | PRELEACH THICKENER                     | 38m dia high rate thickener                                                        |                    |               | Duty           | 22                 | 0.80        | 17.60             | 1.00          | 17.6           |
| 345     | SC   | 101    | 345-SC-101       | TRASH SCREEN 1                         | 3.05 x 6.10m horizontal vibrating screen with 0.63mm aperture.                     |                    |               | Duty           | 6.9                | 0.85        | 5.87              | 1.00          | 5.9            |
| 345     | SC   | 102    | 345-SC-102       | TRASH SCREEN 2                         | 3.05 x 6.10m horizontal vibrating screen with 0.63mm aperture.                     |                    |               | Duty           | 6.9                | 0.85        | 5.87              | 1.00          | 5.9            |
| 345     | PU   | 116    | 345-PU-116       | PRE-LEACH THICKENER SUMP PUMP 1        | GPS vertical sump pump. 1500mm depth.                                              | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 345     | PU   | 112    | 345-PU-112       | CIL SUMP PUMP 1                        | GPS vertical sump pump. 1500mm depth.                                              | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 345     | PU   | 113    | 345-PU-113       | CIL SUMP PUMP 2                        | GPS vertical sump pump. 1500mm depth.                                              | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 345     | PU   | 114    | 345-PU-114       | CIL SUMP PUMP 3                        | GPS vertical sump pump. 1500mm depth.                                              | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 345     | PU   | 115    | 345-PU-115       | CIL SUMP PUMP 4                        | GPS vertical sump pump. 1500mm depth.                                              | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 345     | CN   | 101    | 345-CN-101       | CIL OVERHEAD CRANE                     | 25t electric overhead gantry crane                                                 |                    |               | Duty           | 45                 | 0.80        | 36.00             | 0.05          | 1.8            |
| 345     | PU   | 104    | 345-PU-104       | PRELEACH THICKENER UNDERFLOW PUMP 2    | 1,194m3/h nominal duty point, 1,433m3/h design duty point, 50%w/w density, TDH 25m | Warman 12/10 AH    | Weir Minerals | Standby        | 300                | 0.85        | 0.00              | 1.00          | 0.0            |
| 345     | PU   | 102    | 345-PU-102       | PRELEACH THICKENER OVERFLOW PUMP 2     | 302m3/h nominal duty point, 363m3/h design point                                   | Warman 150WBH      | Weir Minerals | Standby        | 22                 | 0.85        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 101    | 345-TK-101       | PRELEACH THICKENER OVERFLOW TANK       |                                                                                    |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 102    | 345-TK-102       | LEACH TANK 1                           | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 103    | 345-TK-103       | LEACH TANK 2                           | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 104    | 345-TK-104       | ADSORPTION TANK 1                      | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 105    | 345-TK-105       | ADSORPTION TANK 2                      | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 106    | 345-TK-106       | ADSORPTION TANK 3                      | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 107    | 345-TK-107       | ADSORPTION TANK 4                      | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 108    | 345-TK-108       | ADSORPTION TANK 5                      | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 109    | 345-TK-109       | ADSORPTION TANK 6                      | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | TK   | 110    | 345-TK-110       | ADSORPTION TANK 7                      | 3,200m3 live capacity.                                                             |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 345     | SC   | 103    | 345-SC-103       | ADSORPTION TANK 1 INTERTANK SCREEN     | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                       |                    |               | Duty           | 0                  | 0.85        | 0.00              | 1.00          | 0.0            |
| 345     | SC   | 104    | 345-SC-104       | ADSORPTION TANK 2 INTERTANK SCREEN     | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                       |                    |               | Duty           | 0                  | 0.85        | 0.00              | 1.00          | 0.0            |

| Tagging |      |        | Equipment Data   |                                    |                                                                                                                                                 |                    |               | Power          |                    |             |                   |               |                |
|---------|------|--------|------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|-------------|-------------------|---------------|----------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                     | Equipment Specification                                                                                                                         | Model              | Vendor        | Duty / Standby | Installed Power kW | Load Factor | Absorbed Power kW | Demand Factor | Drawn Power kW |
| 345     | SC   | 105    | 345-SC-105       | ADSORPTION TANK 3 INTERTANK SCREEN | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  | 0.85        | 0.00              | 1.00          | 0.0            |
| 345     | SC   | 106    | 345-SC-106       | ADSORPTION TANK 4 INTERTANK SCREEN | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  | 0.85        | 0.00              | 1.00          | 0.0            |
| 345     | SC   | 107    | 345-SC-107       | ADSORPTION TANK 5 INTERTANK SCREEN | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  | 0.85        | 0.00              | 1.00          | 0.0            |
| 345     | SC   | 108    | 345-SC-108       | ADSORPTION TANK 6 INTERTANK SCREEN | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  | 0.85        | 0.00              | 1.00          | 0.0            |
| 345     | SC   | 109    | 345-SC-109       | ADSORPTION TANK 7 INTERTANK SCREEN | Mechanically swept pumped screen, 0.8mm aperture, 16m2 area.                                                                                    |                    |               | Duty           | 0                  | 0.85        | 0.00              | 1.00          | 0.0            |
| 355     | PK   | 101    | 355-PK-101       | LEACH REACTOR PACKAGE              | Vendor supply, includes concentrate hopper, Atacia CS3000 leach reactor, all piping and instrumentation, tailings transfer pump, solution pump. | CS3000             | Consep        | Duty           | 56.5               | 0.80        | 45.20             | 1.00          | 45.2           |
| 355     | PU   | 113    | 355-PU-113       | LEACH REACTOR SUMP PUMP            | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 355     | PU   | 114    | 355-PU-114       | LOADED CARBON PUMP                 | Vertical recessed impellor pump. 255m3/h nominal duty point.                                                                                    |                    |               | Duty           | 30                 | 0.85        | 25.50             | 1.00          | 25.5           |
| 355     | HE   | 101    | 355-HE-101       | ELUTION HEATER                     | Gas fired heater, 3,200kW. Required temperature of 150 degrees C.                                                                               |                    |               | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 355     | CL   | 102    | 355-CL-102       | ELUTION ELECTROWINNING CELL 1      | 1000 x 1000 - 20 electrowinning cell, clean in place, 20 cathodes, 3,400A rectifier.                                                            | 1000 x 1000 - 20   | Consep        | Duty           | 50                 | 0.80        | 40.00             | 1.00          | 40.0           |
| 355     | CL   | 103    | 355-CL-103       | ELUTION ELECTROWINNING CELL 2      | 1000 x 1000 - 20 electrowinning cell, clean in place, 20 cathodes, 3,400A rectifier.                                                            | 1000 x 1000 - 20   | Consep        | Duty           | 50                 | 0.80        | 40.00             | 1.00          | 40.0           |
| 355     | FA   | 102    | 355-FA-102       | FURNACE EXHAUST FAN                | Stainless steel furnace hood and exhaust fan                                                                                                    |                    |               | Duty           | 4                  | 0.80        | 3.20              | 1.00          | 3.2            |
| 355     | ST   | 101    | 355-ST-101       | FUME STACK 1                       |                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 355     | ST   | 102    | 355-ST-102       | FUME STACK 2                       |                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 355     | CL   | 101    | 355-CL-101       | GRAVITY ELECTROWINNING CELL        | 1000 x 1000 - 12 cathodes electrowinning cell, clean in place, 3,000A rectifier                                                                 | 1000 x 1000 -12    | Consep        | Duty           | 30                 | 0.80        | 24.00             | 1.00          | 24.0           |
| 355     | PU   | 111    | 355-PU-111       | BARREN CARBON PUMP                 | 100m3/h nominal duty point                                                                                                                      |                    |               | Duty           | 22                 | 0.85        | 18.70             | 1.00          | 18.7           |
| 355     | FA   | 101    | 355-FA-101       | ELECTROWINNING CELLS EXHAUST FAN   | Centrifugal fan                                                                                                                                 |                    |               | Duty           | 22                 | 0.80        | 17.60             | 1.00          | 17.6           |
| 355     | OV   | 101    | 355-OV-101       | CALCINE OVEN 1                     | 900 degrees C, 8 trays @ 800mm x 800mm                                                                                                          |                    |               | Duty           | 37                 | 0.80        | 29.60             | 1.00          | 29.6           |
| 355     | OV   | 102    | 355-OV-102       | CALCINE OVEN 2                     | 900 degrees C, 8 trays @ 800mm x 800mm                                                                                                          |                    |               | Duty           | 37                 | 0.80        | 29.60             | 1.00          | 29.6           |
| 355     | FA   | 103    | 355-FA-103       | GOLDROOM VENTILATION FAN 1         |                                                                                                                                                 |                    |               | Duty           | 2.2                | 0.80        | 1.76              | 1.00          | 1.8            |
| 355     | FA   | 104    | 355-FA-104       | GOLDROOM VENTILATION FAN 2         |                                                                                                                                                 |                    |               | Duty           | 2.2                | 0.80        | 1.76              | 1.00          | 1.8            |
| 355     | FA   | 105    | 355-FA-105       | GOLDROOM VENTILATION FAN 3         |                                                                                                                                                 |                    |               | Duty           | 2.2                | 0.80        | 1.76              | 1.00          | 1.8            |
| 355     | PU   | 102    | 355-PU-102       | ELUTION HEATER PUMP 1              | Centrifugal pump                                                                                                                                |                    |               | Duty           | 15                 | 0.85        | 12.75             | 1.00          | 12.8           |
| 355     | PU   | 101    | 355-PU-101       | GRAVITY ELECTROWINNING PUMP        | 8m3/h nominal flow, 10.5m3/h designflow. Centrifugal pump.                                                                                      |                    |               | Duty           | 7.5                | 0.85        | 6.38              | 1.00          | 6.4            |
| 355     | PK   | 102    | 355-PK-102       | MISC. GOLDROOM EQUIPMENT           | Anode lifting frame, anode holding rack, HP cathode wash spray, pouring moulds, flux scale, goldroom mixer, dore balance, prill balance         |                    |               | Duty           | 2                  | 0.80        | 1.60              | 1.00          | 1.6            |
| 355     | SC   | 101    | 355-SC-101       | CARBON DEWATERING SCREEN           | Vibrating screen, 2.0m x 1.0m with 1.0mm aperture                                                                                               |                    |               | Duty           | 4                  | 0.85        | 3.40              | 1.00          | 3.4            |
| 355     | PU   | 104    | 355-PU-104       | ELUTION SUMP PUMP                  | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 355     | PU   | 105    | 355-PU-105       | ELUTION PUMP                       | Helical rotor pump, 42.6m3/h                                                                                                                    |                    |               | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 355     | PU   | 106    | 355-PU-106       | ELECTROLYTE PUMP 1                 | Vertical multistage pump, 42.6m3/h                                                                                                              |                    |               | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 355     | PU   | 107    | 355-PU-107       | ELECTROLYTE PUMP 2                 | Vertical multistage pump, 42.6m3/h                                                                                                              |                    |               | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 355     | PU   | 112    | 355-PU-112       | CARBON REGEN SUMP PUMP             | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 355     | PU   | 110    | 355-PU-110       | GOLD ROOM SUMP PUMP                | GPS vertical sump pump. 1500mm depth.                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 355     | CT   | 101    | 355-CT-101       | GOLD ROOM CRANE                    |                                                                                                                                                 |                    |               | Duty           | 10                 | 0.80        | 8.00              | 0.05          | 0.4            |
| 355     | KL   | 101    | 355-KL-101       | CARBON REGEN KILN                  | 12t feed hopper, diesel fired horizontal regen kiln, Ansac HK150, 200kg/h maximum capacity, 650-800 degrees C, 0.51m dia x 4m kiln tubes        |                    |               | Duty           | 0.55               | 0.80        | 0.44              | 1.00          | 0.4            |
| 355     | FU   | 101    | 355-FU-101       | FURNACE                            | Diesel fired, 400kg crucible, Ansac TA200LP                                                                                                     |                    |               | Duty           | 30                 | 0.00        | 0.00              | 1.00          | 0.0            |
| 355     | PU   | 103    | 355-PU-103       | ELUTION HEATER PUMP 2              | Centrifugal pump                                                                                                                                |                    |               | Standby        | 15                 | 0.85        | 0.00              | 1.00          | 0.0            |
| 355     | TK   | 101    | 355-TK-101       | GRAVITY ELECTROWINNING TANK        |                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 355     | CM   | 101    | 355-CM-101       | ACID WASH COLUMN                   | 10t acid wash column, 7 strips per week, rubber lined mild steel, 21.28m3 carbon capacity                                                       |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 355     | CM   | 102    | 355-CM-102       | ELUTION COLUMN                     | 10t elution column, split AARL, 7 strips per week, stainless steel, 21.28m3 carbon capacity                                                     |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 355     | FL   | 101    | 355-FL-101       | ELUATE FILTERS                     | 42.6m3/h nominal duty point                                                                                                                     |                    |               | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 355     | HX   | 101    | 355-HX-101       | RECOVERY HEAT EXCHANGER            | 42.6m3/h nominal duty point                                                                                                                     |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 355     | HX   | 102    | 355-HX-102       | PRIMARY HEAT EXCHANGER             | 42.6m3/h nominal duty point                                                                                                                     |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 355     | TK   | 102    | 355-TK-102       | INTERMEDIATE SOLUTION TANK         |                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 355     | TK   | 104    | 355-TK-104       | ELUTION WATER TANK                 |                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 355     | TK   | 105    | 355-TK-105       | PREGNANT SOLUTION TANK 1           |                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 355     | TK   | 106    | 355-TK-106       | PREGNANT SOLUTION TANK 2           |                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |

| Tagging |      |        | Equipment Data   |                                      |                                                                                                                                                                                                                              |                    |               | Power          |                    |             |                   |               |                |
|---------|------|--------|------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|-------------|-------------------|---------------|----------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                       | Equipment Specification                                                                                                                                                                                                      | Model              | Vendor        | Duty / Standby | Installed Power kW | Load Factor | Absorbed Power kW | Demand Factor | Drawn Power kW |
| 355     | TK   | 107    | 355-TK-107       | LEAN SOLUTION TANK                   |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 355     | FL   | 102    | 355-FL-102       | SLUDGE FILTER                        | with vacuum pump                                                                                                                                                                                                             |                    |               | Duty           | 2.2                | 0.80        | 1.76              | 1.00          | 1.8            |
| 355     | SF   | 101    | 355-SF-101       | VAULT DOOR                           |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.99          | 0.0            |
| 355     | SF   | 102    | 355-SF-102       | GOLD SAFE                            |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.99          | 0.0            |
| 355     | TK   | 103    | 355-TK-103       | CARBON QUENCH TANK                   |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 365     | PU   | 104    | 365-PU-104       | FLOCCULANT TRANSFER PUMP             | 80m3/h, helical rotor pump.                                                                                                                                                                                                  |                    |               | Duty           | 15                 | 0.85        | 12.75             | 0.10          | 1.3            |
| 365     | PU   | 124    | 365-PU-124       | CYANIDE TRANSFER PUMP                | 90m3/h                                                                                                                                                                                                                       |                    |               | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PU   | 125    | 365-PU-125       | CAUSTIC TRANSFER PUMP                | 90m3/h                                                                                                                                                                                                                       |                    |               | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PK   | 101    | 365-PK-101       | FLOCCULANT MIXING PACKAGE            | Vendor supply, 525kg/day nominal, 630kg/day design, includes flocculant hopper, hoist, feeder, blower, wetting head and piping, mixing tank (80m3 live capacity) with agitator, transfer pump. Nominal 175t/y, design 250t/y |                    |               | Duty           | 15                 | 0.80        | 12.00             | 1.00          | 12.0           |
| 365     | PU   | 101    | 365-PU-101       | CYANIDE RINGMAIN PUMP 1              | 7.2m3/h required. Centrifugal solution pump.                                                                                                                                                                                 |                    |               | Duty           | 7.5                | 0.85        | 6.38              | 1.00          | 6.4            |
| 365     | PU   | 105    | 365-PU-105       | FLOCCULANT DOSING PUMP 1             | 17.5m3/h design, 8.8m3/h nominal, helical rotor pump.                                                                                                                                                                        |                    |               | Duty           | 7.5                | 0.85        | 6.38              | 1.00          | 6.4            |
| 365     | AG   | 103    | 365-AG-103       | CYANIDE MIXING TANK AGITATOR         | 45m3 live capacity                                                                                                                                                                                                           |                    |               | Duty           | 5.5                | 0.90        | 4.95              | 0.25          | 1.2            |
| 365     | AG   | 104    | 365-AG-104       | CAUSTIC MIXING TANK AGITATOR         | 35m3 live capacity.                                                                                                                                                                                                          |                    |               | Duty           | 5.5                | 0.90        | 4.95              | 0.25          | 1.2            |
| 365     | PU   | 108    | 365-PU-108       | CAUSTIC RINGMAIN PUMP 1              | 5.5m3/h required. Centrifugal solution pump.                                                                                                                                                                                 |                    |               | Duty           | 3.7                | 0.85        | 3.15              | 1.00          | 3.1            |
| 365     | PU   | 103    | 365-PU-103       | CYANIDE SUMP PUMP                    | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PU   | 107    | 365-PU-107       | FLOCCULANT SUMP PUMP                 | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PU   | 110    | 365-PU-110       | CAUSTIC SUMP PUMP                    | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PU   | 113    | 365-PU-113       | ACID SUMP PUMP                       | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PU   | 117    | 365-PU-117       | ANTISCALANT SUMP PUMP                | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PU   | 120    | 365-PU-120       | SMBS SUMP PUMP                       | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PU   | 123    | 365-PU-123       | COPPER SULPHATE SUMP PUMP            | GPS vertical sump pump. 1500mm depth.                                                                                                                                                                                        | Warman 65VDH - GPS | Weir Minerals | Duty           | 11                 | 0.85        | 9.35              | 0.10          | 0.9            |
| 365     | PU   | 126    | 365-PU-126       | MSA DIESEL SUPPLY PUMP               |                                                                                                                                                                                                                              |                    |               | Duty           | 11                 | 0.85        | 9.35              | 1.00          | 9.4            |
| 365     | PU   | 127    | 365-PU-127       | PLANT DIESEL SUPPLY PUMP             |                                                                                                                                                                                                                              |                    |               | Duty           | 11                 | 0.85        | 9.35              | 1.00          | 9.4            |
| 365     | PU   | 111    | 365-PU-111       | ACID DOSING PUMP 1                   | 489L/h design duty point, 245L/h nominal flowrate (neat), digital metering pump.                                                                                                                                             |                    |               | Duty           | 1.1                | 0.85        | 0.94              | 1.00          | 0.9            |
| 365     | AG   | 101    | 365-AG-101       | SMBS MIXING TANK AGITATOR            | 30m3 live capacity.                                                                                                                                                                                                          |                    |               | Duty           | 5.5                | 0.90        | 4.95              | 0.25          | 1.2            |
| 365     | AG   | 102    | 365-AG-102       | COPPER SULPHATE MIXING TANK AGITATOR | 30m3 live capacity.                                                                                                                                                                                                          |                    |               | Duty           | 5.5                | 0.90        | 4.95              | 0.25          | 1.2            |
| 365     | PU   | 114    | 365-PU-114       | ANTISCALANT DOSING PUMP 1            | 4.2mL/h nominal duty point, digital metering pump.                                                                                                                                                                           |                    |               | Duty           | 0.25               | 0.85        | 0.21              | 1.00          | 0.2            |
| 365     | PU   | 115    | 365-PU-115       | ANTISCALANT DOSING PUMP 2            | 4.2mL/h nominal duty point, digital metering pump.                                                                                                                                                                           |                    |               | Duty           | 0.25               | 0.85        | 0.21              | 1.00          | 0.2            |
| 365     | PU   | 116    | 365-PU-116       | ANTISCALANT DOSING PUMP 3            | 4.2mL/h nominal duty point, digital metering pump.                                                                                                                                                                           |                    |               | Duty           | 0.25               | 0.85        | 0.21              | 1.00          | 0.2            |
| 365     | PU   | 118    | 365-PU-118       | SMBS DOSING PUMP 1                   | 4.5m3/h design, 2.3m3/h nominal, horizontal recessed impeller pump.                                                                                                                                                          |                    |               | Duty           | 1.5                | 0.85        | 1.28              | 1.00          | 1.3            |
| 365     | PU   | 121    | 365-PU-121       | COPPER SULPHATE DOSING PUMP 1        | 4m3/h design, 2m3/h nominal, horizontal recessed impeller pump.                                                                                                                                                              |                    |               | Duty           | 1.5                | 0.85        | 1.28              | 1.00          | 1.3            |
| 365     | PU   | 102    | 365-PU-102       | CYANIDE RINGMAIN PUMP 2              | 7.2m3/h required. Centrifugal solution pump.                                                                                                                                                                                 |                    |               | Standby        | 7.5                | 0.85        | 0.00              | 1.00          | 0.0            |
| 365     | PU   | 106    | 365-PU-106       | FLOCCULANT DOSING PUMP 2             | 17.5m3/h design, 8.8m3/h nominal, helical rotor pump.                                                                                                                                                                        |                    |               | Standby        | 7.5                | 0.85        | 0.00              | 1.00          | 0.0            |
| 365     | PU   | 109    | 365-PU-109       | CAUSTIC RINGMAIN PUMP 2              | 5.5m3/h required. Centrifugal solution pump.                                                                                                                                                                                 |                    |               | Standby        | 3.7                | 0.85        | 0.00              | 1.00          | 0.0            |
| 365     | PU   | 119    | 365-PU-119       | SMBS DOSING PUMP 2                   | 4.5m3/h design, 2.3m3/h nominal, horizontal recessed impeller pump.                                                                                                                                                          |                    |               | Standby        | 1.5                | 0.85        | 0.00              | 1.00          | 0.0            |
| 365     | PU   | 122    | 365-PU-122       | COPPER SULPHATE DOSING PUMP 2        | 4m3/h design, 2m3/h nominal, horizontal recessed impeller pump.                                                                                                                                                              |                    |               | Standby        | 1.5                | 0.85        | 0.00              | 1.00          | 0.0            |
| 365     | PU   | 128    | 365-PU-128       | COPPER SULPHATE TRANSFER PUMP        | 4m3/h design, 2m3/h nominal, horizontal recessed impeller pump.                                                                                                                                                              |                    |               | Duty           | 5.5                | 0.85        | 4.68              | 0.10          | 0.5            |
| 365     | PU   | 112    | 365-PU-112       | ACID DOSING PUMP 2                   | 489L/h design duty point, 245L/h nominal flowrate (neat), digital metering pump.                                                                                                                                             |                    |               | Standby        | 1.1                | 0.85        | 0.00              | 1.00          | 0.0            |
| 365     | HT   | 101    | 365-HT-101       | CYANIDE HOIST                        |                                                                                                                                                                                                                              |                    |               | Duty           | 5.5                | 0.80        | 4.40              | 0.05          | 0.2            |
| 365     | TK   | 107    | 365-TK-107       | CYANIDE MIXING TANK                  |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 365     | TK   | 101    | 365-TK-101       | CYANIDE STORAGE TANK                 |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 365     | TK   | 102    | 365-TK-102       | FLOCCULANT STORAGE TANK              | 160m3 live capacity, 18.3 hours residence time                                                                                                                                                                               |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 365     | HT   | 102    | 365-HT-102       | CAUSTIC HOIST & LIFTING FRAME        |                                                                                                                                                                                                                              |                    |               | Duty           | 5.5                | 0.80        | 4.40              | 0.05          | 0.2            |
| 365     | TK   | 108    | 365-TK-108       | CAUSTIC MIXING TANK                  |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 365     | TK   | 103    | 365-TK-103       | CAUSTIC STORAGE TANK                 |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 365     | TK   | 104    | 365-TK-104       | ACID STORAGE TANK                    | 30m3 poly tank                                                                                                                                                                                                               |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 365     | PU   | 129    | 365-PU-129       | SMBS TRANSFER PUMP                   | 4.5m3/h design, 2.3m3/h nominal, horizontal recessed impeller pump.                                                                                                                                                          |                    |               | Standby        | 1.5                | 0.85        | 0.00              | 0.10          | 0.0            |
| 365     | HT   | 104    | 365-HT-104       | SMBS HOIST                           |                                                                                                                                                                                                                              |                    |               | Duty           | 5.5                | 0.80        | 4.40              | 0.05          | 0.2            |
| 365     | TK   | 105    | 365-TK-105       | SMBS MIXING TANK                     |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 365     | FA   | 101    | 365-FA-101       | SMBS TANK VENTILATION FAN            |                                                                                                                                                                                                                              |                    |               | Duty           | 2.2                | 0.80        | 1.76              | 1.00          | 1.8            |
| 365     | TK   | 100    | 365-TK-100       | SMBS STORAGE TANK                    |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 365     | HT   | 103    | 365-HT-103       | COPPER SULPHATE HOIST                |                                                                                                                                                                                                                              |                    |               | Duty           | 5.5                | 0.80        | 4.40              | 0.05          | 0.2            |
| 365     | TK   | 106    | 365-TK-106       | COPPER SULPHATE MIXING TANK          |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 365     | TK   | 110    | 365-TK-110       | COPPER SULPHATE STORAGE TANK         |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |
| 365     | TK   | 109    | 365-TK-109       | DIESEL STORAGE TANK                  |                                                                                                                                                                                                                              |                    |               | Duty           | 0                  | 0.00        | 0.00              | 0.10          | 0.0            |



| Tagging |      |        | Equipment Data   |                                |                                                                                                                                                                                 |                    |               | Power          |                    |             |                   |               |                |
|---------|------|--------|------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|--------------------|-------------|-------------------|---------------|----------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                 | Equipment Specification                                                                                                                                                         | Model              | Vendor        | Duty / Standby | Installed Power kW | Load Factor | Absorbed Power kW | Demand Factor | Drawn Power kW |
| 395     | PU   | 103    | 395-PU-103       | RAW WATER PUMP 1               | 923m3/h design duty point (no decant return), 503m3/h nominal flow, centrifugal solution pump, 55mm TDH.                                                                        |                    |               | Duty           | 280                | 0.85        | 238.00            | 1.00          | 238.0          |
| 395     | PU   | 105    | 395-PU-105       | LP PROCESS WATER PUMP 1        | 1127m3/h design duty point, 939m3/h nominal flow, centrifugal slurry pump, 30m TDH.                                                                                             |                    |               | Duty           | 280                | 0.85        | 238.00            | 1.00          | 238.0          |
| 395     | PU   | 126    | 395-PU-126       | HP PROCESS WATER PUMP 1        | 500m3/h design duty point, centrifugal slurry pump, 70m TDH.                                                                                                                    |                    |               | Duty           | 130                | 0.85        | 110.50            | 1.00          | 110.5          |
| 395     | PU   | 101    | 395-PU-101       | FRESH WATER PUMP 1             | 71m3/h design duty point, 59m3/h nominal flow, centrifugal solution pump, 60m TDH                                                                                               |                    |               | Duty           | 37                 | 0.85        | 31.45             | 1.00          | 31.5           |
| 395     | PU   | 107    | 395-PU-107       | GLAND WATER PUMP 1             | 20m3/h nominal, 24m3/h designm centrifugal multi-stage, 75m TDH                                                                                                                 |                    |               | Duty           | 22                 | 0.85        | 18.70             | 1.00          | 18.7           |
| 395     | PK   | 101    | 395-PK-101       | POTABLE WATER TREATMENT PLANT  | RO plant and UV steriliser                                                                                                                                                      |                    |               | Duty           | 20                 | 0.80        | 16.00             | 1.00          | 16.0           |
| 395     | PU   | 129    | 395-PU-129       | FIRE WATER PUMP (ELECTRIC)     | included in fire water package                                                                                                                                                  |                    |               | Duty           | 45                 | 0.10        | 4.50              | 1.00          | 4.5            |
| 395     | PK   | 102    | 395-PK-102       | FRESH WATER TREATMENT PLANT    | Filtered Water Treatment Plant including filters, chemical dosing, UV sterlisation, motors, instrumentation, controls all containerised, 100m3/h. Also includes feed pumps (2). |                    |               | Duty           | 82                 | 0.80        | 65.60             | 0.10          | 6.6            |
| 395     | PU   | 109    | 395-PU-109       | POTABLE WATER PUMP 1           | 9m3/hr nominal, 11m3/h design, centrifugal multi-stage, TDH 65m                                                                                                                 |                    |               | Duty           | 3                  | 0.85        | 2.55              | 1.00          | 2.6            |
| 395     | PU   | 128    | 395-PU-128       | FIRE WATER JOCKEY PUMP         | Fire water package                                                                                                                                                              |                    |               | Duty           | 22                 | 0.10        | 2.20              | 1.00          | 2.2            |
| 395     | PU   | 104    | 395-PU-104       | RAW WATER PUMP 2               | 923m3/h design duty point (no decant return), 503m3/h nominal flow, centrifugal solution pump, 55mm TDH.                                                                        |                    |               | Standby        | 280                | 0.85        | 0.00              | 1.00          | 0.0            |
| 395     | PU   | 111    | 395-PU-111       | WATER STORAGE DAM SEEPAGE PUMP |                                                                                                                                                                                 |                    |               | Duty           | 22                 | 0.85        | 18.70             | 1.00          | 18.7           |
| 395     | PU   | 112    | 395-PU-112       | WATER STORAGE DECANT PUMP 1    |                                                                                                                                                                                 |                    |               | Duty           | 75                 | 0.85        | 63.75             | 1.00          | 63.8           |
| 395     | PU   | 113    | 395-PU-113       | WATER STORAGE DECANT PUMP 2    |                                                                                                                                                                                 |                    |               | Standby        | 75                 | 0.85        | 0.00              | 1.00          | 0.0            |
| 610     | PU   | 114    | 610-PU-114       | WATER HARVEST DECANT PUMP 1    |                                                                                                                                                                                 |                    |               | Duty           | 355                | 0.85        | 301.75            | 1.00          | 301.8          |
| 610     | PU   | 115    | 610-PU-115       | WATER HARVEST DECANT PUMP 2    |                                                                                                                                                                                 |                    |               | Standby        | 355                | 0.85        | 0.00              | 1.00          | 0.0            |
| 395     | PU   | 106    | 395-PU-106       | LP PROCESS WATER PUMP 2        | 1127m3/h design duty point, 939m3/h nominal flow, centrifugal slurry pump, 30m TDH.                                                                                             |                    |               | Standby        | 280                | 0.85        | 0.00              | 1.00          | 0.0            |
| 395     | PU   | 127    | 395-PU-127       | HP PROCESS WATER PUMP 2        | 500m3/h design duty point, centrifugal slurry pump, 70m TDH.                                                                                                                    |                    |               | Standby        | 130                | 0.85        | 0.00              | 1.00          | 0.0            |
| 395     | PU   | 102    | 395-PU-102       | FRESH WATER PUMP 2             | 71m3/h design duty point, 59m3/h nominal flow, centrifugal solution pump, 60m TDH                                                                                               |                    |               | Standby        | 37                 | 0.85        | 0.00              | 1.00          | 0.0            |
| 395     | PU   | 108    | 395-PU-108       | GLAND WATER PUMP 2             | 20m3/h nominal, 24m3/h designm centrifugal multi-stage, 75m TDH                                                                                                                 |                    |               | Standby        | 22                 | 0.85        | 0.00              | 1.00          | 0.0            |
| 395     | PU   | 110    | 395-PU-110       | POTABLE WATER PUMP 2           | 9m3/hr nominal, 11m3/h design, centrifugal multi-stage, TDH                                                                                                                     |                    |               | Standby        | 3                  | 0.85        | 0.00              | 1.00          | 0.0            |
| 395     | TK   | 101    | 395-TK-101       | FRESH WATER TANK               | 426m3 live capacity (6 hrs residence time)                                                                                                                                      |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 395     | TK   | 103    | 395-TK-103       | RAW WATER TANK                 |                                                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 395     | DM   | 102    | 395-DM-102       | PROCESS WATER DAM              |                                                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 395     | TK   | 102    | 395-TK-102       | POTABLE WATER TANK             |                                                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 395     | PU   | 130    | 395-PU-130       | FIRE WATER PUMP (DIESEL)       | included in fire water package                                                                                                                                                  |                    |               | Duty           | 0                  | 0.10        | 0.00              | 1.00          | 0.0            |
| 395     | PK   | 103    | 395-PK-103       | COOLING WATER SYSTEM           | includes chilled water pumps (2), refrigerative chiller, heat exchanger, cooling water pump                                                                                     |                    |               | Duty           | 15                 | 0.80        | 12.00             | 1.00          | 12.0           |
| 410     | PU   | 101    | 410-PU-101       | FINAL TAILINGS PUMP 1          | 1195m3/h nominal duty point, 1434m3/h design, heavy duty centrifugal pump, TDH 65m                                                                                              | Warman 10/8 AH     | Weir Minerals | Duty           | 250                | 0.85        | 212.50            | 1.00          | 212.5          |
| 410     | AG   | 101    | 410-AG-101       | CYANIDE DETOX TANK 1 AGITATOR  |                                                                                                                                                                                 |                    |               | Duty           | 220                | 0.90        | 198.00            | 1.00          | 198.0          |
| 410     | AG   | 102    | 410-AG-102       | CYANIDE DETOX TANK 2 AGITATOR  |                                                                                                                                                                                 |                    |               | Duty           | 150                | 0.90        | 135.00            | 1.00          | 135.0          |
| 620     | PU   | 104    | 620-PU-104       | DECANT RETURN PUMP 1           | 350m3/h nominal flow, 420m3/h design, submersible pump                                                                                                                          |                    |               | Duty           | 45                 | 0.85        | 38.25             | 1.00          | 38.3           |
| 620     | PU   | 105    | 620-PU-105       | DECANT RETURN PUMP 2           | 350m3/h nominal flow, 420m3/h design, submersible pump                                                                                                                          |                    |               | Standby        | 45                 | 0.85        | 0.00              | 1.00          | 0.0            |
| 620     | PU   | 106    | 620-PU-106       | TSF UNDERDRAINAGE PUMP         |                                                                                                                                                                                 |                    |               | Duty           | 11                 | 0.85        | 9.35              | 1.00          | 9.4            |
| 620     | PU   | 107    | 620-PU-107       | TSF SEEPAGE PUMP               |                                                                                                                                                                                 |                    |               | Duty           | 22                 | 0.85        | 18.70             | 1.00          | 18.7           |
| 620     | PU   | 108    | 620-PU-108       | TSF MONITORING BORES PUMPS     |                                                                                                                                                                                 |                    |               | Duty           | 11                 | 0.85        | 9.35              | 1.00          | 9.4            |
| 410     | PU   | 103    | 410-PU-103       | FINAL TALINGS SUMP PUMP        | GPS vertical sump pump. 1500mm depth.                                                                                                                                           | Warman 65VDH - GPS | Weir Minerals | Duty           | 22                 | 0.85        | 18.70             | 0.10          | 1.9            |
| 410     | PU   | 102    | 410-PU-102       | FINAL TAILINGS PUMP 2          | 1195m3/h nominal duty point, 1434m3/h design, heavy duty centrifugal pump, TDH 65m                                                                                              | Warman 10/8 AH     | Weir Minerals | Standby        | 250                | 0.85        | 0.00              | 1.00          | 0.0            |
| 410     | TK   | 101    | 410-TK-101       | CYANIDE DETOX TANK 1           | 60 minutes, 875m3 live capacity                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 410     | TK   | 102    | 410-TK-102       | CYANIDE DETOX TANK 2           | 30 minutes, 438m3 live capacity                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 410     | SA   | 101    | 410-SA-101       | CIL TAILINGS SAMPLER           |                                                                                                                                                                                 |                    |               | Duty           | 5                  | 0.80        | 4.00              | 0.25          | 1.0            |
| 410     | SA   | 102    | 410-SA-102       | WAD CYANIDE ANALYSER           |                                                                                                                                                                                 |                    |               | Duty           | 5                  | 0.80        | 4.00              | 1.00          | 4.0            |
| 410     | HP   | 101    | 410-HP-101       | FINAL TAILINGS HOPPER          |                                                                                                                                                                                 |                    |               | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 425     | PK   | 101    | 425-PK-101       | PSA OXYGEN PLANT               | 90% purity, 6.6t/d nominal consumption (90% purity and 75% sparge efficiency)                                                                                                   |                    |               | Duty           | 250                | 0.80        | 200               | 1.00          | 200            |
| 425     | CP   | 101    | 425-CP-101       | AIR COMPRESSOR 1               | 630 m3/h, 60kW motor, 750kPa                                                                                                                                                    |                    |               | Duty           | 60                 | 0.80        | 48.00             | 1.00          | 48.0           |
| 425     | CP   | 102    | 425-CP-102       | AIR COMPRESSOR 2               | 630 m3/h, 60kW motor, 750kPa                                                                                                                                                    |                    |               | Duty           | 60                 | 0.80        | 48.00             | 1.00          | 48.0           |
| 425     | DR   | 101    | 425-DR-101       | AIR COMPRESSOR 1 DRYER         |                                                                                                                                                                                 |                    |               | Duty           | 5.5                | 0.80        | 4.40              | 1.00          | 4.4            |
| 425     | DR   | 102    | 425-DR-102       | AIR COMPRESSOR 2 DRYER         |                                                                                                                                                                                 |                    |               | Duty           | 5.5                | 0.80        | 4.40              | 1.00          | 4.4            |

| Tagging |      |        | Equipment Data   |                                    |                              |       |        |                | Power              |             |                   |               |                |
|---------|------|--------|------------------|------------------------------------|------------------------------|-------|--------|----------------|--------------------|-------------|-------------------|---------------|----------------|
| WBS     | Type | Number | Equipment Number | Equipment Name                     | Equipment Specification      | Model | Vendor | Duty / Standby | Installed Power kW | Load Factor | Absorbed Power kW | Demand Factor | Drawn Power kW |
| 425     | CP   | 103    | 425-CP-103       | AIR COMPRESSOR 3                   | 630 m3/h, 60kW motor, 750kPa |       |        | Standby        | 60                 | 0.80        | 0.00              | 1.00          | 0.0            |
| 425     | DR   | 103    | 425-DR-103       | AIR COMPRESSOR 3 DRYER             |                              |       |        | Standby        | 5.5                | 0.80        | 0.00              | 1.00          | 0.0            |
| 425     | FL   | 101    | 425-FL-101       | DRYER INLET FILTER 1               |                              |       |        | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 425     | FL   | 102    | 425-FL-102       | DRYER INLET FILTER 2               |                              |       |        | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 425     | FL   | 103    | 425-FL-103       | DRYER INLET FILTER 3               |                              |       |        | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 425     | FL   | 104    | 425-FL-104       | DRYER OUTLET FILTER 1              |                              |       |        | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 425     | FL   | 105    | 425-FL-105       | DRYER OUTLET FILTER 2              |                              |       |        | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 425     | FL   | 106    | 425-FL-106       | DRYER OUTLET FILTER 3              |                              |       |        | Duty           | 0                  | 0.80        | 0.00              | 1.00          | 0.0            |
| 425     | AR   | 101    | 425-AR-101       | PLANT AIR RECEIVER 1               |                              |       |        | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 425     | AR   | 102    | 425-AR-102       | PLANT AIR RECEIVER 2               |                              |       |        | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 425     | AR   | 103    | 425-AR-103       | INSTRUMENT AIR RECEIVER            |                              |       |        | Duty           | 0                  | 0.00        | 0.00              | 1.00          | 0.0            |
| 510     |      |        |                  | WATER SUPPLY & TREATMENT INC. CAMP | Allowance                    |       |        | Duty           | 1620               |             | 705               | 1.00          | 705            |
| 520     |      |        |                  | PLANT BUILDINGS & WORKSHOPS        | Allowance                    |       |        | Duty           | 1235               |             | 968               | 1.00          | 968            |
| 530     |      |        |                  | MINING FACILITIES                  | Allowance                    |       |        | Duty           | 412                |             | 225               | 1.00          | 225            |

## **Appendix C: Section 9 Permitting Requirements**



| MEMORANDUM |                                                                      |
|------------|----------------------------------------------------------------------|
| TO:        | Rob Cicchini, Bruce Mowat, Andrew Murray                             |
| OF:        | <b>Resolute Mining</b>                                               |
| FROM:      | MineScope Services                                                   |
| SUBJECT:   | <b>ESG Technical Review: Review of Project ABC Forward Work Plan</b> |
| DATE:      | 30 April 2026                                                        |
| CC:        | Michael Davis, Graham Rigo                                           |
| REV:       | B                                                                    |

## 1.0 Introduction

Resolute Mining is currently investigating the requirements to bring Project ABC, located in the northwest of Côte d'Ivoire, into production.

This summary note outlines the strategy for the project's permitting, as well as key environmental and social requirements related to the project. The strategy will ensure that both host country requirements, as well as International Best Practice Standards ("IBPS") requirements, including *inter alia* the Equator Principles ("EP") and the International Finance Corporation ("IFC") Performance Standards ("PSs"), are adhered to as part of the Pre-Feasibility Study ("PFS").

## 2.0 Environmental and Social Impact Assessment / Management Plan

A comprehensive Environmental and Social Impact Assessment (“ESIA”) and Environmental and Social Management Plan (“ESMP”) will need to be undertaken for the project, in compliance with key regulatory requirements. Specifically, the ESIA / ESMP must conform to the 2014 Mining Code, the implementing Decree No. 2014-397, and the 2023 Environmental Code, which is further supported by several other decrees, such as Decree No. 96-894 – which specifies requirements regarding social and environmental impacts.

In addition, the ESIA / ESMP must conform to the EPs and the IFC PSs to ensure alignment with IBPS. To ensure this, it is required that seasonal data be collected, resulting in an estimated timeline of 12 – 18 months.

Specialist studies required for a typical ESIA / ESMP include the following:

### 2.1 Ambient Air Quality

Air quality monitoring will need to be undertaken, including dust fall-out rates, as well as particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>). Following the collection of these data, a detailed ambient air quality specialist study, including modelling, is required to meet the IBPSs. To ensure that adequate seasonal baseline data are collected, it is recommended that 12 months of data be collected before undertaking the necessary modelling, compiling the impact assessment, and developing the management and monitoring plan.

### 2.2 GHGs and Climate Adaptation

A comprehensive Greenhouse Gas (“GHG”) quantification must be undertaken by a suitably qualified expert in consultation with the PFS engineering team.

Provision must be made for the climate specialist to review relevant components of the Feasibility Study to incorporate climate adaptation measures into the design. Following this, a climate adaptation plan must be developed as a stand-alone report for practicable implementation by the client as part of the Environmental and Social Management System.

### 2.3 Pedology, Land Use and Land Capability

A comprehensive pedology (soils), land use, and land capability study is to be undertaken in line with relevant IBPSs across the project area. Sample collection, export and analysis at an accredited laboratory will need to be completed, and a baseline report will be developed. This will inform the pedology, land use and land capability impact assessment and management plan. This study will, in turn, inform other baseline studies, as well as the conceptual rehabilitation and closure plan.

### 2.4 Hydrology, Hydrogeology and Geochemistry

Baseline hydrological (surface water) and hydrogeological (groundwater) data will need to be collected. This will include water quality samples collected across seasonal variation. Typically, surface water samples are to be collected monthly, while groundwater samples are to be collected quarterly, over a period of ~ 12 months. Samples need to be analysed by an accredited laboratory. Should it be required, the hydrogeology study may require a network of hydrogeological monitoring boreholes to be drilled, based on the recommendation of the specialist.

The ESIA will rely on geochemical analysis undertaken by the broader project team and incorporated into contaminant transport modelling, utilising both water sampling analysis and geochemical results. Depending on the geology, an ecotoxicology study may be required to inform relevant environmental and social management plans.

Flow rates will need to be determined both with respect to ground and surface water across the project site and surrounds. To ensure conformance with IBPS, it is required that seasonal data be collected to inform the hydrological and hydrogeological flow models.

Detailed impact assessments and management plans will be developed for each of these elements. Furthermore, a comprehensive stormwater management plan and a water balance will need to be developed in consultation with the engineering team.

## 2.5 Biodiversity

Several specialist scientists' input will be required, including terrestrial botany and habitat assessment, terrestrial mammals, aquatic biodiversity, avifauna, and herpetofauna, amongst others. In line with IFC PS 6, the scope must include:

- Determining the project's area of influence,
- Evaluating protected areas surrounding the project's area of influence,
- Conducting multi-season field surveys,
- Habitat condition and integrity assessment, as well as habitat classification and mapping,
- Species identification, including Species of Conservation Concern ("SCC") and endemic species,
- Identification of the spatial extent of Critical Habitat triggers,
- Conducting an integrated ecosystem services assessment, and
- Compiling comprehensive biodiversity baseline reports, undertaking an impact assessment, and developing a Biodiversity Management Plan ("BMP") and/or a Biodiversity Action Plan (BAP), depending on the sensitivity of biodiversity present within the project area, as well as an ongoing biodiversity monitoring plan. Furthermore, based on the specialist studies, there is a potential need to incorporate a biodiversity offset into the BAP.

## 2.6 Noise, Blasting and Vibration

An ambient noise baseline study, noise propagation modelling and noise management plan are required to be undertaken. Fieldwork will be required to collect relevant data at potentially sensitive receptors within the project area. This will be followed by noise modelling, an impact assessment, and the development of an appropriate noise management plan.

A comprehensive blasting and vibration study, including relevant modelling, impact assessment, and a management plan, must be undertaken as part of the ESIA.

## 2.7 Traffic Management Plan

A traffic impact assessment, including baseline traffic counts across the project site, will need to be undertaken. The study will evaluate project-related traffic impacts along existing and future routes, and a subsequent impact assessment and management plan is to be developed.

## 2.8 Waste Management Plan

A comprehensive waste management plan will need to be developed. This will include compiling a waste inventory in consultation with the engineering team and must include both mineral and non-mineral waste.

Depending on in-country infrastructure, it may be required to include the development of a general landfill site and, potentially, a hazardous waste landfill site in this scope of work.

The waste management plan must furthermore include a Cyanide Management Plan, aligned with the International Cyanide Management Code.

## 2.9 Conceptual Mine Rehabilitation and Closure

A conceptual Mine Rehabilitation and Closure Plan (“MRCP”) must be developed as part of the ESIA / ESMP. This will include the financial quantification of rehabilitation and closure costs to be provided for.

## 2.10 Social Studies

To ensure conformance to IBPSs, it is required that the social, socio-economic and community health and safety baseline studies be undertaken, including:

- Comprehensive social, socio-economic, and community health and safety baseline studies with respect to project-affected people,
- In line with IBPs, a Human Rights due diligence is to be undertaken,
- A Stakeholder Engagement Plan (“SEP”) will need to be developed and implemented, both as part of the legislated ESIA process, and in respect of ongoing consultation throughout the project life cycle,
- From the data provided, it appears that both physical and economic displacement will be relevant to the project. Therefore, comprehensive household surveys will need to be conducted of households that will be physically resettled, and economic displacement will need to be quantified. In consultation with the relevant authorities and communities, a Resettlement Action Plan (“RAP”), as well as a Livelihood Restoration Plan (LRP), will need to be developed and implemented,
- Should Artisanal and Small-Scale Miners (“ASM”s) be present in the project area and are likely to be economically displaced by the project, a comprehensive ASM survey will need to be undertaken. An ASM management plan will need to be developed to restore their economic displacement,
- An Influx Management Plan (“IMP”) is to be developed and implemented,
- Based on the above studies, a social, socio-economic and community health and safety impact assessment will be required, which will inform the relevant management plans, and
- Furthermore, these studies will inform the development of a high-level Corporate Social Investment (“CSI”) programme.

## 2.11 ESIA / ESMP Approvals Process

The specialist studies will be utilised to compile a detailed ESIA / ESMP for submission to the relevant authorities, conforming both with Ivorian legal requirements, as well as IBPS. The lead agency is the National Environment Agency (“ANDE”).

Stakeholder consultation as part of the approval process will follow the legislated process and will include consultation with relevant government departments, traditional authorities, and project-affected communities.

It is estimated that the approvals process will take approximately three (3) months following submission.

Two key risks are potentially associated with the ESIA process:

- Non-approval resulting from non-conformance to host country requirements, and
- Non-compliance with IBPS results in reduced access to capital from lenders.

These risks must be managed by ensuring that the ESIA scope is appropriate and comprehensive, and that an appropriately qualified and experienced team be appointed to conduct the ESIA process. To ensure compliance with both local and international requirements, it is recommended that the ESIA team comprise an international consultancy familiar with IBPS requirements, as well as a local consultancy to lead the host country processes.

Due to the long lead times associated with several of the specialist studies, the ESIA process must commence as early as possible to avoid project delays.

### 3.0 Other Permits

The ESIA / ESMP forms the base approval to secure a mining licence and is therefore foundational to the project.

Several other permits may need to be obtained for the project, including:

- Water use licences for water abstraction and the discharge of effluents,
- Waste management authorisations, including relating to general, hazardous and mining waste materials,
- Air emissions and pollution control authorisations,
- Land use and land occupation authorisations,
- Protected area clearance (if applicable, where critical habitats are identified), and
- Community development plan approval.

## 4.0 PFS / DFS

Environmental and social considerations must be incorporated into the PFS and, when relevant, the Definitive Feasibility Study (“DFS”). The environmental and social team will be required to work in collaboration with the engineering teams to ensure that the operation is designed / developed to meet host-country and IBPS requirements.

The financial requirements for the ESMP’s implementation must be quantified, and adequate capital and operating expenditure must be provided to support it over the life of the project.



## 5.0 ESG Systems Implementation

Beyond the permitting process, the project will be required to develop and implement an appropriate Environmental, Social and Governance (“ESG”) Management System to ensure ongoing compliance with legal requirements and with corporate and IBPS requirements. The ESG Management System must incorporate the findings of the ESIA / ESMP, and must effectively address day-to-day, and long-term ESG risk management requirements and controls.

This aspect is becoming increasingly important to lenders, and its development and implementation will likely form part of contractual obligations with lenders through the Environmental and Social Action Plan (“ESAP”).

While Resolute can leverage its existing ESG Management Systems, it must be ensured that it is adequately tailored to the operation’s context, risk materiality, and risk profile, and that sufficient time is allowed for this body of work to be undertaken as part of the project’s operational readiness phase.

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## 6.0 High Level Project Schedule

A high-level project schedule is provided overleaf.

| Project ABC High-Level Environmental & Social Schedule                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Study Phase<br>Month |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    | Approvals Phase<br>Month |    |    |    |    |    |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|--------------------------|----|----|----|----|----|---------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1                    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18                       | 19 | 20 | 21 | 22 | 23 |         |
| <b>Ambient Air Quality</b><br>Monitoring equipment installation<br>Monitoring / sample collection<br>Laboratory analysis<br>Modelling<br>Report compilation                                                                                                                                                                                                                                                                                                                                                                |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>GHGs and Climate Change</b><br>Data collection from engineering team<br>GHG quantification<br>Climate adaptation strategy development<br>Report compilation                                                                                                                                                                                                                                                                                                                                                             |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Pedology, Land Use and Land Capability</b><br>Obtain satellite imagery / conduct GIS analysis<br>Field surveys / sample collection<br>Laboratory analysis<br>Mapping and modelling<br>Report compilation                                                                                                                                                                                                                                                                                                                |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Hydrology, Hydrogeology and Geochemistry</b> <sup>(1)(2)</sup><br>Surface water flow data collection (seasonal)<br>Surface water flow modelling<br>Surface water quality field surveys / sample collection<br>Groundwater quality field surveys / sample collection<br>Laboratory analysis<br>Groundwater pump testing (seasonal)<br>Groundwater flow / contaminant transport modelling<br>Ecotoxicology study (if needed)<br>Water balance development<br>Stormwater management plan development<br>Report compilation |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Biodiversity</b><br>Biodiversity field surveys (seasonal)<br>Sample exportation and laboratory analysis<br>Ecosystem good and services<br>Report compilation<br>If needed, development of BAP, potentially including biodiversity offset                                                                                                                                                                                                                                                                                |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Noise, Blasting and Vibration</b><br>Ambient noise monitoring (seasonal)<br>Noise modelling<br>Blasting / vibration data collection, analysis and modelling<br>Report compilation                                                                                                                                                                                                                                                                                                                                       |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Traffic Impact Assessment</b><br>Field surveys and data collection<br>Report compilation                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Waste Management Plan</b> <sup>(3)</sup><br>Data collection, waste inventory development<br>Landfill design, including site visit<br>Waste management plan compilation<br>Cyanide management plan compilation                                                                                                                                                                                                                                                                                                           |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Conceptual Mine Rehabilitation and Closure Plan</b><br>Data collection and data synthesis from other specialists<br>Conceptual rehab and closure plan development<br>Financial obligation quantification<br>Report compilation                                                                                                                                                                                                                                                                                          |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Social Studies</b><br>SEP development / implementation / ongoing stakeholder consultation<br>Social studies field work<br>Human rights due diligence<br>Integration of bio-physical studies' findings into social considerations<br>Report compilation<br>CSI programme development and implementation                                                                                                                                                                                                                  |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Resettlement and Livelihood Restoration</b> <sup>(4)</sup><br>Development / implementation of influx management plan<br>Household surveys<br>ASM survey<br>RAP development<br>Livelihood restoration plan development (including ASM)<br>Report compilation                                                                                                                                                                                                                                                             |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>ESIA / ESMP Compilation</b><br>Synthesis of specialist's baseline reports<br>Development of integrated impact assessment<br>Development of integrated ESMP                                                                                                                                                                                                                                                                                                                                                              |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>ESIA / ESMP Approvals Process</b><br>Submission to authorities / public disclosure<br>Authority and public consultation<br>Address comments / amendments<br>Approval (assumed timeframe)                                                                                                                                                                                                                                                                                                                                |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>Other Permits</b> <sup>(5)</sup><br>Permit application<br>Authority review / negotiation<br>Permit approvals                                                                                                                                                                                                                                                                                                                                                                                                            |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    |         |
| <b>ESG Systems Development and Implementation</b><br>Base ESG systems development<br>Refinement based on approved ESIA / ESMP / other permits<br>Ongoing implementation as part of operational readiness phase and beyond                                                                                                                                                                                                                                                                                                  |                      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |                          |    |    |    |    |    | Ongoing |

<sup>(1)</sup> Schedule assumes that geochemical data is available.

<sup>(2)</sup> Schedule excludes drilling of groundwater monitoring boreholes.

<sup>(3)</sup> Schedule excludes TSF / WRD design. These are to be provided by the engineering team.

<sup>(4)</sup> RAP / LRLP implementation not included. Allow 18 - 24 months, including confirmatory survey in operational readiness phase (i.e., post ESIA / ESMP approval).

<sup>(5)</sup> Note that permits such as land clearance, drilling, etc. may be required at commencement of site-based activities.

## **Appendix D: Section 12 Capital Cost Estimate**



# Resolute Mining Limited

## ABC Project Scoping Study

### CAPITAL COST ESTIMATE

#### ABC Project

Scoping Study

1264-CPX-001

May 2026

Revision 0

| REV | DATE       | DESCRIPTION                | PREPARED | CHECKED | APPROVED | CLIENT |
|-----|------------|----------------------------|----------|---------|----------|--------|
| A   | 23/03/2026 | Issued for Internal Review | AB       | SG      |          |        |
| B   | 1/05/2026  | Issued for Client Review   | SG       | GR      | MD       |        |
| C   | 6/05/2026  | Reissued for Client Review | EW       | GR      | MD       | RC     |
| 0   | 11/05/2026 | Issued for Study           | EW       | GR      | MD       | RC     |

**ABC Project Scoping Study**  
**CAPITAL COST ESTIMATE - WBS LVL 1**

1264-CPX-001 Rev\_0  
11/05/2026

| WBS | Description               | Cost Estimate<br>US\$ 2Q26 | Cost Estimate<br>US\$M 2Q26 | Comments |
|-----|---------------------------|----------------------------|-----------------------------|----------|
| 100 | Mining                    | 43,584,000                 | 43.6                        |          |
| 200 | Process Plant             | 139,065,000                | 139.1                       |          |
| 300 | Reagents & Plant Services | 38,870,000                 | 38.9                        |          |
| 400 | Infrastructure            | 131,458,000                | 131.5                       |          |
| 500 | Construction Indirects    | 64,282,000                 | 64.3                        |          |
| 600 | Project Indirects         | 37,957,000                 | 38.0                        |          |
| 700 | Owners Costs              | 77,299,000                 | 77.3                        |          |
|     | <b>Project Total</b>      | <b>532,515,000</b>         | <b>532.5</b>                |          |
| 900 | Provision - Contingency   | 115,130,000                | 115.1                       |          |
|     | <b>Grand Total</b>        | <b>647,645,000</b>         | <b>647.6</b>                |          |

**ABC Project Scoping Study**  
**CAPITAL COST ESTIMATE - WBS LVL 2**

1264-CPX-001 Rev\_0  
11/05/2026

| WBS        | Description                                | Cost Estimate<br>US\$ 2Q26 | Cost Estimate<br>US\$M 2Q26 | Comments                     |
|------------|--------------------------------------------|----------------------------|-----------------------------|------------------------------|
| <b>100</b> | <b>Mining</b>                              | <b>43,584,000</b>          | <b>43.6</b>                 |                              |
|            | Grade Control                              | 1,334,000                  | 1.3                         |                              |
|            | Pre-Production Mining                      | 32,500,000                 | 32.5                        |                              |
|            | Site Establishment                         | 5,450,000                  | 5.5                         |                              |
|            | Mobilisation                               | 4,300,000                  | 4.3                         |                              |
| <b>200</b> | <b>Process Plant</b>                       | <b>139,065,000</b>         | <b>139.1</b>                |                              |
|            | Primary Crushing                           | 25,595,000                 | 25.6                        |                              |
|            | Ore Storage and Reclaim                    | 12,043,000                 | 12.0                        |                              |
|            | SAG Milling                                | 32,427,000                 | 32.4                        |                              |
|            | Classification                             | 2,207,000                  | 2.2                         |                              |
|            | Ball Milling                               | 21,765,000                 | 21.8                        |                              |
|            | Gravity                                    | 2,231,000                  | 2.2                         |                              |
|            | Pebble Crushing                            | 4,592,000                  | 4.6                         |                              |
|            | Preleach & CIL                             | 27,333,000                 | 27.3                        |                              |
|            | Gold Recovery & Carbon Regeneration        | 7,291,000                  | 7.3                         |                              |
|            | Cyanide Destruct & Tailings                | 3,581,000                  | 3.6                         |                              |
| <b>300</b> | <b>Reagents &amp; Plant Services</b>       | <b>38,870,000</b>          | <b>38.9</b>                 |                              |
|            | Reagents                                   | 2,711,000                  | 2.7                         |                              |
|            |                                            | 5,574,000                  | 5.6                         |                              |
|            | Air Services                               | 4,066,000                  | 4.1                         |                              |
|            | Plant Services                             | 3,339,000                  | 3.3                         |                              |
|            | Electrical Services                        | 23,180,000                 | 23.2                        |                              |
| <b>400</b> | <b>Infrastructure</b>                      | <b>131,458,000</b>         | <b>131.5</b>                |                              |
|            | Site Earthworks                            | 15,963,000                 | 16.0                        | including internal roads     |
|            | Site Access Roads                          | 5,137,000                  | 5.1                         |                              |
|            | Power Supply                               | 38,983,000                 | 39.0                        |                              |
|            | Tailings Disposal                          | 31,697,000                 | 31.7                        |                              |
|            | Raw Water Supply                           | 5,265,000                  | 5.3                         |                              |
|            | Water Management                           | 1,562,000                  | 1.6                         |                              |
|            | Communications                             | 500,000                    | 0.5                         |                              |
|            | Helipad                                    | 352,000                    | 0.4                         |                              |
|            | Waste Disposal & Landfill                  | 424,000                    | 0.4                         |                              |
|            | Laboratory                                 | 526,000                    | 0.5                         | excludes building            |
|            | Accommodation                              | 20,702,000                 | 20.7                        |                              |
|            | Buildings                                  | 10,347,000                 | 10.3                        | includes laboratory building |
| <b>500</b> | <b>Construction Indirects</b>              | <b>64,282,000</b>          | <b>64.3</b>                 |                              |
|            | Construction Distributables - Contractors  | 40,452,000                 | 40.5                        |                              |
|            | Site Construction Distributables - General | 3,376,000                  | 3.4                         |                              |
|            | Site Construction Facilities               | 2,192,000                  | 2.2                         |                              |
|            | Site Construction Facilities Other         | 46,000                     | 0.0                         |                              |
|            | Construction Operations                    | 6,573,000                  | 6.6                         |                              |
|            | Construction Accommodation                 | 11,643,000                 | 11.6                        |                              |
| <b>600</b> | <b>Project Indirects</b>                   | <b>37,957,000</b>          | <b>38.0</b>                 |                              |
|            | EPCM                                       | 32,511,000                 | 32.5                        |                              |
|            | Vendor Representatives                     | 4,681,000                  | 4.7                         |                              |
|            | Third Party Consultants                    | 765,000                    | 0.8                         |                              |
| <b>700</b> | <b>Owners Costs</b>                        | <b>77,299,000</b>          | <b>77.3</b>                 |                              |
|            | Owners Costs - General                     | 26,242,000                 | 26.2                        |                              |
|            | Plant & Admin Pre-Production               | 13,332,000                 | 13.3                        |                              |
|            | Admin Pre-Production Other                 | 4,520,000                  | 4.5                         |                              |
|            | Mining Pre-Production                      | 3,390,000                  | 3.4                         |                              |
|            | Spare Parts                                | 6,914,000                  | 6.9                         |                              |
|            | Community                                  | 18,800,000                 | 18.8                        |                              |
|            | Plant Mobile Equipment                     | 4,101,000                  | 4.1                         |                              |
|            | <b>Project Total</b>                       | <b>532,515,000</b>         | <b>532.5</b>                |                              |
| <b>900</b> | <b>Provision - Contingency</b>             | <b>115,130,000</b>         | <b>115.1</b>                |                              |
|            | <b>Grand Total</b>                         | <b>647,645,000</b>         | <b>647.6</b>                |                              |

**ABC Project Scoping Study**  
**CONTINGENCY**

1264-CPX-001 Rev\_0  
11/05/2026

| WBS | Description               | Cost Estimate<br>US\$ 2Q26 | Cost Estimate<br>US\$M 2Q26 | Contingency<br>% | Comments |
|-----|---------------------------|----------------------------|-----------------------------|------------------|----------|
| 100 | Mining                    | 43,584,000                 | 43.6                        | 10.0             |          |
| 200 | Process Plant             | 139,065,000                | 139.1                       | 30.0             |          |
| 300 | Reagents & Plant Services | 38,870,000                 | 38.9                        | 30.0             |          |
| 400 | Infrastructure            | 131,458,000                | 131.5                       | 30.0             |          |
| 500 | Construction Indirects    | 64,282,000                 | 64.3                        | 10.0             |          |
| 600 | Project Indirects         | 37,957,000                 | 38.0                        | 10.0             |          |
| 700 | Owners Costs              | 77,299,000                 | 77.3                        | 10.0             |          |
|     | <b>Project Total</b>      | <b>532,515,000</b>         | <b>532.5</b>                |                  |          |
| 900 | Provision - Contingency   | 115,130,000                | 115.1                       | 21.6             |          |
|     | <b>Grand Total</b>        | <b>647,645,000</b>         | <b>647.6</b>                |                  |          |



**ABC Project Scoping Study**  
**CAPITAL COST ESTIMATE**

1264-CPX-001 Rev\_0  
11/05/2026

**Owner's Costs**

| Description                                   | Total      | Comments                 |
|-----------------------------------------------|------------|--------------------------|
| Owners Project Mng't Team Labour              | 17,108,191 | Doropo DFS               |
| Project Insurance                             | 584,242    | Factored from Doropo DFS |
| Specialist Consultants                        | 2,516,556  | Doropo DFS               |
| Owners Costs General                          | 2,705,375  | Doropo DFS               |
| Owners Office Costs                           | 1,279,100  | Doropo DFS               |
| Owners IT/Software                            | 968,600    | Doropo DFS               |
| HSES                                          | 1,079,750  | Doropo DFS               |
| Plant Preproduction Labour                    | 3,560,681  | Doropo DFS               |
| Admin Preproduction Labour and G & A Expenses | 1,586,282  | Doropo DFS               |
| Opening Stocks                                | 5,273,715  | Doropo DFS               |
| First Fills                                   | 2,910,948  | Doropo DFS               |
| Operation and Insurance Spares                | 6,914,374  | Doropo DFS               |
| Small Tools & Maint Equipment                 | 415,953    | Doropo DFS               |
| Training                                      | 170,000    | Doropo DFS               |
| Information Technology                        | 177,000    | Doropo DFS               |
| Security                                      | 3,757,527  | Doropo DFS               |
| Land Acquisition                              | 14,575,000 | Resolute Advised         |
| ESG Management - Construction                 | 2,297,500  | Resolute Advised         |
| OHS Management - Construction                 | 1,927,500  | Resolute Advised         |
| Light Vehicles                                | 2,088,608  | Doropo DFS               |
| Cranes                                        | 572,909    | Doropo DFS               |
| Forklifts                                     | 568,317    | Doropo DFS               |
| Trucks                                        | 218,000    | Doropo DFS               |
| Boom & Scissor Lifts                          | 63,200     | Doropo DFS               |
| Other Plant Mobile Equipment                  | 590,390    | Doropo DFS               |

|                              |                   |  |
|------------------------------|-------------------|--|
| Owners Costs - General       | 26,241,814        |  |
| Plant & Admin Pre-Production | 13,331,626        |  |
| Admin Pre-Production Other   | 4,520,480         |  |
| Mining Pre-Production        | 3,390,000         |  |
| Spare Parts                  | 6,914,374         |  |
| Community                    | 18,800,000        |  |
| Plant Mobile Equipment       | 4,101,424         |  |
| <b>Total</b>                 | <b>77,299,718</b> |  |

## **Appendix E: Section 13 Operating Cost Estimate**



## Resolute Mining

### ABC Project Scoping Study

#### OPERATING COST ESTIMATE

1264

1264-OPX-001

May-26

Revision 1

| REV | DATE       | DESCRIPTION                | PREPARED | CHECKED | APPROVED | CLIENT |
|-----|------------|----------------------------|----------|---------|----------|--------|
| A   | 23/04/2026 | Issued for Internal Review | JPK      | SG      |          |        |
| B   | 1/05/2026  | Issued for Client Review   | JPK      | SG      | GR       |        |
| C   | 6/05/2026  | Issued for Client Review   | JPK      | SG      | GR       |        |
| 0   | 11/05/2026 | Issued for Study           | EW       | GR      | MD       |        |
| 1   | 11/05/2026 | Issued for Study           | EW       | GR      | MD       | RC     |

**INPUT**
**Operating Parameters**

| Item                 | Units | Fresh     | Oxide / Trans | Reference   |
|----------------------|-------|-----------|---------------|-------------|
| Annual Throughput    | t/y   | 7,000,000 | 7,000,000     | Calculation |
| Plant Utilisation    | %     | 91.3      | 91.3          | Industry    |
| Plant Operating Time | h/y   | 8,000     | 8,000         | Calculation |
| CIL Throughput       | t/y   | 352,800   | 352,800       | Calculation |

**General Parameters**

| Item        | Units    | Unit Rate | Reference |
|-------------|----------|-----------|-----------|
| Power Price | US\$/kWh | 0.131     | Client    |

**Labour On-Costs**

| Item          | Units | Unit Rate | Reference |
|---------------|-------|-----------|-----------|
| Total On-Cost | %     | 55        | Doropo    |

**SITE OPERATING COST ESTIMATE SUMMARY**

Plant Feed                      t/y                      7,000,000                      Both Oxide and Fresh Ore  
Currency                      US\$

| Cost Area                                                           | Oxide / Transitional Ore |              | Fresh Ore     |              |
|---------------------------------------------------------------------|--------------------------|--------------|---------------|--------------|
|                                                                     | Cost (\$M/y)             | Cost (\$/t)  | Cost (\$M/y)  | Cost (\$/t)  |
| <b>Mining</b>                                                       |                          |              |               |              |
| Owner's Team Labour                                                 | 1.70                     | 0.24         | 1.70          | 0.24         |
| Contract Mining                                                     | 71.56                    | 10.22        | 71.56         | 10.22        |
| Stockpile Rehandle                                                  | 1.72                     | 0.25         | 1.72          | 0.25         |
| ROM Reclaim                                                         | 3.10                     | 0.44         | 3.10          | 0.44         |
| Grade Control                                                       | 3.34                     | 0.48         | 3.34          | 0.48         |
| <b>Subtotal</b>                                                     | <b>81.42</b>             | <b>11.63</b> | <b>81.42</b>  | <b>11.63</b> |
| <b>Process Plant, Reagents, Plant Services &amp; Infrastructure</b> |                          |              |               |              |
| Labour                                                              | 4.65                     | 0.66         | 4.65          | 0.66         |
| Power                                                               | 28.64                    | 4.09         | 39.22         | 5.60         |
| Maintenance Materials                                               | 6.74                     | 0.96         | 8.03          | 1.15         |
| Reagents & Consumables                                              | 33.87                    | 4.84         | 39.72         | 5.67         |
| Miscellaneous                                                       | 3.13                     | 0.45         | 3.13          | 0.45         |
| <b>Subtotal</b>                                                     | <b>77.03</b>             | <b>11.00</b> | <b>94.75</b>  | <b>13.54</b> |
| <b>General and Administration</b>                                   |                          |              |               |              |
| Labour                                                              | 5.88                     | 0.84         | 5.88          | 0.84         |
| Miscellaneous                                                       | 4.18                     | 0.60         | 4.18          | 0.60         |
| <b>Subtotal</b>                                                     | <b>10.06</b>             | <b>1.44</b>  | <b>10.06</b>  | <b>1.44</b>  |
| <b>Total</b>                                                        | <b>168.51</b>            | <b>24.07</b> | <b>186.22</b> | <b>26.60</b> |

**PROCESSING PLANT OPERATING COST ESTIMATE SUMMARY**

Plant Feed                      t/y                      7,000,000                      7,000,000  
Currency                      US\$

| Item                   | Unit  | Oxide / Transitional | Fresh        |
|------------------------|-------|----------------------|--------------|
| Labour                 | M\$/y | 4.65                 | 4.65         |
| Power                  | M\$/y | 28.64                | 39.22        |
| Maintenance Materials  | M\$/y | 6.74                 | 8.03         |
| Reagents & Consumables | M\$/y | 33.87                | 39.72        |
| Miscellaneous          | M\$/y | 3.13                 | 3.13         |
| <b>Total</b>           |       | <b>77.03</b>         | <b>94.75</b> |
| Labour                 | \$/t  | 0.66                 | 0.66         |
| Power                  | \$/t  | 4.09                 | 5.60         |
| Maintenance Materials  | \$/t  | 0.96                 | 1.15         |
| Reagents & Consumables | \$/t  | 4.84                 | 5.67         |
| Miscellaneous          | \$/t  | 0.45                 | 0.45         |
| <b>Total</b>           |       | <b>11.00</b>         | <b>13.54</b> |

**LABOUR**
**Relevant to Oxide and Fresh**

| Role                                         | No of Employees | Accom Type | Base Wage (US\$/y)                   | Overhead Costs (US\$/person) | Total Annual Labour Costs (US\$) |
|----------------------------------------------|-----------------|------------|--------------------------------------|------------------------------|----------------------------------|
| <b>MINING</b>                                |                 |            |                                      |                              |                                  |
| <b>Owner's Team</b>                          |                 |            |                                      |                              |                                  |
| Mine Manager                                 | 1               | Camp       | 250,000                              | 137,500                      | 388,000                          |
| Principal Mining Engineer                    | 1               | Camp       | 150,000                              | 82,500                       | 233,000                          |
| Mining Engineer / Planner                    | 4               | Camp       | 120,000                              | 66,000                       | 744,000                          |
| Mine Geologist                               | 2               | Camp       | 96,500                               | 53,075                       | 299,000                          |
| Mine Admin Staff                             | 4               | Villages   | 5,000                                | 2,750                        | 31,000                           |
| <b>Contract Mining</b>                       |                 |            |                                      |                              |                                  |
| Contractors (Camp)                           | 150             | Camp       | included under contract mining costs |                              |                                  |
| Contractors (Village)                        | 16              | Villages   | included under contract mining costs |                              |                                  |
| <b>Mining Total</b>                          | <b>178</b>      |            |                                      |                              | <b>1,695,000</b>                 |
| <b>ADMINISTRATION</b>                        |                 |            |                                      |                              |                                  |
| General Manager                              | 1               | Camp       | 350,000                              | 192,500                      | 543,000                          |
| Executive Assistant                          | 1               | Camp       | 31,830                               | 17,507                       | 49,000                           |
| HR Manager                                   | 1               | Camp       | 125,000                              | 68,750                       | 194,000                          |
| HR Officer                                   | 2               | Camp       | 31,830                               | 17,507                       | 99,000                           |
| HR Assistant                                 | 2               | Camp       | 10,610                               | 5,836                        | 33,000                           |
| Payroll Supervisor                           | 1               | Camp       | 37,140                               | 20,427                       | 58,000                           |
| Payroll Assistant                            | 2               | Villages   | 15,920                               | 8,756                        | 49,000                           |
| Administration Supt.                         | 1               | Camp       | 84,880                               | 46,684                       | 132,000                          |
| Secretary / Receptionist                     | 2               | Camp       | 15,920                               | 8,756                        | 49,000                           |
| Admin Assistant                              | 4               | Villages   | 10,610                               | 5,836                        | 66,000                           |
| Admin Driver (Contractor)                    | 3               | Villages   |                                      |                              |                                  |
| Finance & Admin Manager / Finance Controller | 1               | Camp       | 125,000                              | 68,750                       | 194,000                          |
| Senior Legal / Tax Advisors                  | 2               | Camp       | 84,800                               | 46,640                       | 263,000                          |
| Accounts Supt.                               | 2               | Camp       | 84,880                               | 46,684                       | 263,000                          |
| Accountant Senior                            | 3               | Camp       | 42,440                               | 23,342                       | 197,000                          |
| Accountant                                   | 3               | Camp       | 15,920                               | 8,756                        | 74,000                           |
| IT Officer Supt.                             | 1               | Camp       | 84,880                               | 46,684                       | 132,000                          |
| IT Officer                                   | 2               | Camp       | 21,220                               | 11,671                       | 66,000                           |
| Supply Supt.                                 | 1               | Camp       | 84,880                               | 46,684                       | 132,000                          |
| Purchasing Officer                           | 3               | Camp       | 29,710                               | 16,341                       | 138,000                          |
| Store Person Senior                          | 2               | Camp       | 37,140                               | 20,427                       | 115,000                          |
| Store Person                                 | 4               | Villages   | 10,610                               | 5,836                        | 66,000                           |
| Logistics Supt                               | 1               | Camp       | 84,800                               | 46,640                       | 131,000                          |
| Expedite Person Senior / Logistician         | 1               | Camp       | 37,140                               | 20,427                       | 58,000                           |
| ESG Manager (*)                              | 1               | Camp       | *included under Doropo Project       |                              |                                  |
| ESG Superintendent (*)                       | 2               | Camp       | *included under Doropo Project       |                              |                                  |
| ESG Coordinator (*)                          | 3               | Camp       | *included under Doropo Project       |                              |                                  |
| ESG Supervisor (*)                           | 3               | Camp       | *included under Doropo Project       |                              |                                  |
| ESG Officer (*)                              | 5               | Camp       | *included under Doropo Project       |                              |                                  |
| ESG Technician (*)                           | 5               | Villages   | *included under Doropo Project       |                              |                                  |
| ESG Casual Labour (*)                        | 5               | Villages   | *included under Doropo Project       |                              |                                  |
| Camp Manager (Contractor)                    | 1               | Camp       | included under camp contract costs   |                              |                                  |
| Camp Supervisor (Contractor)                 | 2               | Camp       | included under camp contract costs   |                              |                                  |
| Chef (Contractor)                            | 4               | Camp       | included under camp contract costs   |                              |                                  |
| Kitchen Staff (Contractor)                   | 18              | Villages   | included under camp contract costs   |                              |                                  |
| Laundry Staff (Contractor)                   | 12              | Villages   | included under camp contract costs   |                              |                                  |
| Cleaner (Contractor)                         | 18              | Villages   | included under camp contract costs   |                              |                                  |
| Camp Driver (Contractor)                     | 3               | Villages   | included under camp contract costs   |                              |                                  |

## LABOUR

### Relevant to Oxide and Fresh

| Role                                     | No of Employees | Accom Type | Base Wage (US\$/y)                       | Overhead Costs (US\$/person) | Total Annual Labour Costs (US\$) |
|------------------------------------------|-----------------|------------|------------------------------------------|------------------------------|----------------------------------|
| Security Manager                         | 1               | Camp       | 125,000                                  | 68,750                       | 194,000                          |
| Security Supt Site                       | 1               | Camp       | 58,000                                   | 31,900                       | 90,000                           |
| Security Supt CID                        | 1               | Camp       | 58,000                                   | 31,900                       | 90,000                           |
| Security Supervisor                      | 6               | Camp       | 53,050                                   | 29,178                       | 493,000                          |
| Security Sergeant                        | 20              | Camp       | 12,740                                   | 7,007                        | 395,000                          |
| Security Guard                           | 80              | Camp       | 7,000                                    | 3,850                        | 868,000                          |
| Doctor                                   | 2               | Camp       | 64,000                                   | 35,200                       | 198,000                          |
| Nurse                                    | 2               | Camp       | 19,100                                   | 10,505                       | 59,000                           |
| OHS Manager (*)                          | 1               | Camp       | *included under Doropo Project           |                              |                                  |
| OHS Superintendent (*)                   | 2               | Camp       | *included under Doropo Project           |                              |                                  |
| OHS Coordinator (*)                      | 3               | Camp       | *included under Doropo Project           |                              |                                  |
| OHS Supervisor (*)                       | 3               | Camp       | *included under Doropo Project           |                              |                                  |
| OHS Officer (*)                          | 5               | Camp       | *included under Doropo Project           |                              |                                  |
| OHS Technician                           | 5               | Villages   | 25,000                                   | 13,750                       | 194,000                          |
| OHS Casual labour                        | 5               | Villages   | 15,000                                   | 8,250                        | 116,000                          |
| Training Supervisor                      | 1               | Camp       | 53,050                                   | 29,178                       | 82,000                           |
| <b>Administration Total</b>              | <b>266</b>      |            |                                          |                              | <b>5,880,000</b>                 |
| <b>PLANT OPERATIONS</b>                  |                 |            |                                          |                              |                                  |
| Plant Manager                            | 1               | Camp       | 225,000                                  | 123,750                      | 349,000                          |
| Metallurgist Senior                      | 1               | Camp       | 175,000                                  | 96,250                       | 271,000                          |
| Metallurgist                             | 3               | Camp       | 74,270                                   | 40,849                       | 345,000                          |
| Senior Metallurgical Technician          | 3               | Camp       | 31,830                                   | 17,507                       | 148,000                          |
| Metallurgical Technician                 | 3               | Camp       | 10,610                                   | 5,836                        | 49,000                           |
| General Foreman                          | 1               | Camp       | 125,000                                  | 68,750                       | 194,000                          |
| Metallurgical Clerk                      | 1               | Villages   | 10,610                                   | 5,836                        | 16,000                           |
| Shift Supervisor                         | 3               | Camp       | 31,830                                   | 17,507                       | 148,000                          |
| Shift Lead Operator                      | 3               | Camp       | 15,920                                   | 8,756                        | 74,000                           |
| Shift Operator                           | 18              | Villages   | 10,610                                   | 5,836                        | 296,000                          |
| Goldroom Supervisor                      | 2               | Camp       | 125,000                                  | 68,750                       | 388,000                          |
| Goldroom Operator                        | 2               | Villages   | 10,610                                   | 5,836                        | 33,000                           |
| Day Crew Supervisor                      | 1               | Camp       | 21,220                                   | 11,671                       | 33,000                           |
| Reagents / TSF Operator                  | 6               | Camp       | 10,610                                   | 5,836                        | 99,000                           |
| Day Crew Operator                        | 12              | Villages   | 10,610                                   | 5,836                        | 197,000                          |
| Assay Laboratory Manager (Contractor)    | 1               | Camp       | included under laboratory contract costs |                              |                                  |
| Assay Laboratory Supervisor (Contractor) | 3               | Camp       | included under laboratory contract costs |                              |                                  |
| Assay Laboratory Technician (Contractor) | 18              | Villages   | included under laboratory contract costs |                              |                                  |
| <b>Plant Operations Total</b>            | <b>82</b>       |            |                                          |                              | <b>2,640,000</b>                 |



**LABOUR**
**Relevant to Oxide and Fresh**

| Role                           | No of Employees | Accom Type | Base Wage (US\$/y) | Overhead Costs (US\$/person) | Total Annual Labour Costs (US\$) |
|--------------------------------|-----------------|------------|--------------------|------------------------------|----------------------------------|
| <b>PLANT MAINTENANCE</b>       |                 |            |                    |                              |                                  |
| Maintenance Supt.              | 1               | Camp       | 175,000            | 96,250                       | 271,000                          |
| Maintenance Planner            | 2               | Camp       | 42,440             | 23,342                       | 132,000                          |
| Maintenance Clerk              | 2               | Camp       | 13,270             | 7,299                        | 41,000                           |
| Maintenance Supervisor Senior  | 1               | Camp       | 150,000            | 82,500                       | 233,000                          |
| Maintenance Supervisor         | 1               | Camp       | 31,830             | 17,507                       | 49,000                           |
| Fitter Leading Hand            | 2               | Camp       | 28,000             | 15,400                       | 87,000                           |
| Fitter Senior                  | 3               | Camp       | 21,220             | 11,671                       | 99,000                           |
| Fitter                         | 13              | Camp       | 10,610             | 5,836                        | 214,000                          |
| Boilermaker Leading Hand       | 2               | Camp       | 31,830             | 17,507                       | 99,000                           |
| Boilermaker                    | 13              | Camp       | 10,610             | 5,836                        | 214,000                          |
| Instrument Tech Leading Hand   | 1               | Camp       | 31,830             | 17,507                       | 49,000                           |
| Instrument Tech                | 3               | Camp       | 10,610             | 5,836                        | 49,000                           |
| Electrical Leading Hand        | 1               | Camp       | 31,830             | 17,507                       | 49,000                           |
| Electrician Senior             | 3               | Camp       | 21,220             | 11,671                       | 99,000                           |
| Electrician                    | 6               | Camp       | 10,610             | 5,836                        | 99,000                           |
| Mechanics                      | 4               | Villages   | 10,610             | 5,836                        | 66,000                           |
| Trade Assistant                | 16              | Villages   | 6,370              | 3,504                        | 158,000                          |
| <b>Plant Maintenance Total</b> | <b>74</b>       |            |                    |                              | <b>2,008,000</b>                 |
| <b>Processing Plant Total</b>  | <b>156</b>      |            |                    |                              | <b>4,648,000</b>                 |
| <b>ABC Project Grand Total</b> | <b>600</b>      |            |                    |                              | <b>12,223,000</b>                |

**POWER**
**Fresh**

|                      |          |       |
|----------------------|----------|-------|
| Plant Operating Time | h/y      | 8,000 |
| Power Price          | US\$/kWh | 0.13  |

**Processing Equipment**

| WBS          | Plant Area                            | Installed Power (kW) | Consumed Power (kW) | Annual Power Required (kWh/y) | Annual Cost (US\$/y) |
|--------------|---------------------------------------|----------------------|---------------------|-------------------------------|----------------------|
| 315          | Primary Crushing                      | 945                  | 732                 | 5,853,840                     | 767,000              |
| 325          | Ore Storage and Reclaim               | 373                  | 251                 | 2,011,320                     | 263,000              |
| 328          | SAG Milling                           | 16,889               | 14,083              | 112,661,600                   | 14,759,000           |
| 329          | Classification                        | 1,408                | 602                 | 4,812,480                     | 630,000              |
| 331          | Ball Milling                          | 16,756               | 14,773              | 118,181,880                   | 15,482,000           |
| 333          | Gravity                               | 123                  | 99                  | 791,600                       | 104,000              |
| 334          | Pebble Crushing                       | 706                  | 604                 | 4,831,064                     | 633,000              |
| 345          | Preleach & CIL                        | 2,747                | 2,008               | 16,061,160                    | 2,104,000            |
| 355          | Gold Recovery & Carbon Regeneration   | 508                  | 312                 | 2,495,600                     | 327,000              |
| 365          | Reagents                              | 251                  | 68                  | 547,720                       | 72,000               |
| 395          | Water Services                        | 1,860                | 763                 | 6,103,280                     | 800,000              |
| 410          | Cyanide Destruct & Tailings           | 902                  | 552                 | 4,418,960                     | 579,000              |
| 425          | Air Services                          | 447                  | 305                 | 2,438,400                     | 319,000              |
| 510          | Water Supply and Treatment (inc Camp) | 1,620                | 705                 | 5,638,834                     | 739,000              |
| 520          | Plant Buildings and Workshops         | 1,235                | 968                 | 7,743,607                     | 1,014,000            |
| 530          | Mining Facilities                     | 412                  | 225                 | 1,801,294                     | 236,000              |
| 610          | Raw Water Supply                      | 710                  | 302                 | 2,414,000                     | 316,000              |
| 620          | TSF/Return Water                      | 134                  | 76                  | 605,200                       | 79,000               |
| <b>Total</b> |                                       | <b>48,025</b>        | <b>37,426</b>       | <b>299,411,839</b>            | <b>39,223,000</b>    |

**Oxide / Transitional**

|                      |     |       |
|----------------------|-----|-------|
| Plant Operating Time | h/y | 8,000 |
| Power Price          | 0   | 0.13  |

**Processing Equipment**

| WBS          | Plant Area                            | Installed Power (kW) | Consumed Power (kW) | Annual Power Required (kWh/y) | Annual Cost (US\$/y) |
|--------------|---------------------------------------|----------------------|---------------------|-------------------------------|----------------------|
| 315          | Primary Crushing                      | 945                  | 732                 | 5,853,840                     | 767,000              |
| 325          | Ore Storage and Reclaim               | 373                  | 251                 | 2,011,320                     | 263,000              |
| 328          | SAG Milling                           | 16,889               | 9,154               | 73,230,040                    | 9,593,000            |
| 329          | Classification                        | 1,408                | 602                 | 4,812,480                     | 630,000              |
| 331          | Ball Milling                          | 16,756               | 9,602               | 76,818,222                    | 10,063,000           |
| 333          | Gravity                               | 123                  | 99                  | 791,600                       | 104,000              |
| 334          | Pebble Crushing                       | 706                  | 604                 | 4,831,064                     | 633,000              |
| 345          | Preleach & CIL                        | 2,747                | 2,008               | 16,061,160                    | 2,104,000            |
| 355          | Gold Recovery & Carbon Regeneration   | 508                  | 312                 | 2,495,600                     | 327,000              |
| 365          | Reagents                              | 251                  | 68                  | 547,720                       | 72,000               |
| 395          | Water Services                        | 1,860                | 763                 | 6,103,280                     | 800,000              |
| 410          | Cyanide Destruct & Tailings           | 902                  | 552                 | 4,418,960                     | 579,000              |
| 425          | Air Services                          | 447                  | 305                 | 2,438,400                     | 319,000              |
| 510          | Water Supply and Treatment (inc Camp) | 1,620                | 705                 | 5,638,834                     | 739,000              |
| 520          | Plant Buildings and Workshops         | 1,235                | 968                 | 7,743,607                     | 1,014,000            |
| 530          | Mining Facilities                     | 412                  | 225                 | 1,801,294                     | 236,000              |
| 610          | Raw Water Supply                      | 710                  | 302                 | 2,414,000                     | 316,000              |
| 620          | TSF/Return Water                      | 134                  | 76                  | 605,200                       | 79,000               |
| <b>Total</b> |                                       | <b>48,025</b>        | <b>27,327</b>       | <b>218,616,621</b>            | <b>28,638,000</b>    |

**MAINTENANCE MATERIALS**
**Fresh**

| WBS          | Plant Area                            | Direct Capital Cost<br>(US\$) | Maint Materials Factor<br>(%) | Maintenance Materials<br>(US\$/y) |
|--------------|---------------------------------------|-------------------------------|-------------------------------|-----------------------------------|
| 315          | Primary Crushing                      | 25,595,000                    | 5.0                           | 1,280,000                         |
| 325          | Ore Storage and Reclaim               | 12,043,000                    | 5.0                           | 602,000                           |
| 328          | SAG Milling                           | 32,427,000                    | 5.0                           | 1,621,000                         |
| 329          | Classification                        | 2,207,000                     | 5.0                           | 110,000                           |
| 331          | Ball Milling                          | 21,765,000                    | 5.0                           | 1,088,000                         |
| 333          | Gravity                               | 2,231,000                     | 5.0                           | 112,000                           |
| 334          | Pebble Crushing                       | 4,592,000                     | 5.0                           | 230,000                           |
| 345          | Preleach & CIL                        | 27,333,000                    | 5.0                           | 1,367,000                         |
| 355          | Gold Recovery & Carbon Regeneration   | 7,291,000                     | 2.5                           | 182,000                           |
| 365          | Reagents                              | 2,711,000                     | 2.5                           | 68,000                            |
| 395          | Water Services                        | 5,574,000                     | 2.5                           | 139,000                           |
| 410          | Cyanide Destruct & Tailings           | 3,581,000                     | 2.5                           | 90,000                            |
| 425          | Air Services                          | 4,066,000                     | 2.5                           | 102,000                           |
| 510          | Water Supply and Treatment (inc Camp) | 1,562,000                     | 2.0                           | 31,000                            |
| 520          | Plant Buildings and Workshops         | 26,519,000                    | 1.0                           | 265,000                           |
| 610          | Raw Water Supply                      | 5,265,000                     | 2.0                           | 105,000                           |
| 620          | TSF/Return Water                      | 31,697,000                    | 2.0                           | 634,000                           |
| <b>Total</b> |                                       | <b>216,459,000</b>            |                               | <b>8,026,000</b>                  |

**Oxide / Transitional**

| WBS          | Plant Area                            | Direct Capital Cost<br>(US\$) | Maint Materials Factor<br>(%) | Maintenance Materials<br>(US\$/y) |
|--------------|---------------------------------------|-------------------------------|-------------------------------|-----------------------------------|
| 315          | Primary Crushing                      | 25,595,000                    | 4.0                           | 1,024,000                         |
| 325          | Ore Storage and Reclaim               | 12,043,000                    | 4.0                           | 482,000                           |
| 328          | SAG Milling                           | 32,427,000                    | 4.0                           | 1,297,000                         |
| 329          | Classification                        | 2,207,000                     | 4.0                           | 88,000                            |
| 331          | Ball Milling                          | 21,765,000                    | 4.0                           | 871,000                           |
| 333          | Gravity                               | 2,231,000                     | 4.0                           | 89,000                            |
| 334          | Pebble Crushing                       | 4,592,000                     | 4.0                           | 184,000                           |
| 345          | Preleach & CIL                        | 27,333,000                    | 4.0                           | 1,093,000                         |
| 355          | Gold Recovery & Carbon Regeneration   | 7,291,000                     | 2.5                           | 182,000                           |
| 365          | Reagents                              | 2,711,000                     | 2.5                           | 68,000                            |
| 395          | Water Services                        | 5,574,000                     | 2.5                           | 139,000                           |
| 410          | Cyanide Destruct & Tailings           | 3,581,000                     | 2.5                           | 90,000                            |
| 425          | Air Services                          | 4,066,000                     | 2.5                           | 102,000                           |
| 510          | Water Supply and Treatment (inc Camp) | 1,562,000                     | 2.0                           | 31,000                            |
| 520          | Plant Buildings and Workshops         | 26,519,000                    | 1.0                           | 265,000                           |
| 610          | Raw Water Supply                      | 5,265,000                     | 2.0                           | 105,000                           |
| 620          | TSF/Return Water                      | 31,697,000                    | 2.0                           | 634,000                           |
| <b>Total</b> |                                       | <b>216,459,000</b>            |                               | <b>6,744,000</b>                  |

## REAGENTS & CONSUMABLES

### Fresh

Plant Feed (t/y) 7,000,000  
CIL Feed (t/y) 352,800

| Item                                      | Consumption | Consumption Basis | Annual Usage (t/y) | Unit Cost (US\$/t) | Cost per Year (US\$/y) |
|-------------------------------------------|-------------|-------------------|--------------------|--------------------|------------------------|
| <b>Reagents</b>                           |             |                   |                    |                    |                        |
| Quicklime                                 | 0.84        | kg/t              | 5,880              | 372                | 2,187,000              |
| Sodium Cyanide                            | 0.40        | kg/t              | 2,800              | 2,523              | 7,064,000              |
| Sodium Hydroxide                          | 0.07        | kg/t              | 490                | 974                | 477,000                |
| Hydrochloric Acid                         | 0.04        | kg/t              | 280                | 524                | 147,000                |
| Carbon                                    | 20.00       | g/t               | 140                | 4,360              | 610,000                |
| SMBS                                      | 0.55        | kg/t              | 3,850              | 651                | 2,506,000              |
| Copper Sulphate                           | 0.24        | kg/t              | 1,680              | 3,769              | 6,332,000              |
| Borax                                     | 2,019       | kg/yr             | 2.0                | 2,532              | 5,000                  |
| Silica                                    | 505         | kg/yr             | 0.5                | 1,027              | 1,000                  |
| Nitre                                     | 337         | kg/yr             | 0.3                | 2,425              | 1,000                  |
| Soda Ash                                  | 337         | kg/yr             | 0.3                | 1,189              | 1,000                  |
| Antiscalant - Decant Return Water         | 12,678      | kg/yr             | 12.7               | 3,263              | 41,000                 |
| Antiscalant - Elution                     | 701         | kg/yr             | 0.7                | 4,893              | 3,000                  |
| Sulphamic Acid                            | 100         | kg/week           | 5                  | 1,027              | 5,000                  |
| Flocculant                                | 0.05        | kg/t              | 350                | 2,371              | 830,000                |
| Coagulant                                 | 0.04        | kg/t              | 280                | 1,834              | 514,000                |
| <b>Total</b>                              |             |                   |                    |                    | <b>20,724,000</b>      |
| <b>Operating Consumables</b>              |             |                   |                    |                    |                        |
| Stainless Steel Stocking                  | 1,584       | kg/yr             | 1.6                | 730                | 1,000                  |
| Crucibles                                 | 35          | /yr               | 35                 | 1,340              | 47,000                 |
| Diesel - Total                            |             | L/y               | 3,111,800          | 1.20               | 3,734,000              |
| Lubricants                                |             |                   |                    | 20,000             | 20,000                 |
| Plant Operating Tools & Equipment         |             |                   |                    | 10,000             | 10,000                 |
| Gold Room Tools & Equipment               |             |                   |                    | 10,000             | 10,000                 |
| Potable Water                             | 1.0         | Assumption        | 8,000              | 7.973              | 64,000                 |
| <b>Total</b>                              |             |                   |                    |                    | <b>3,886,000</b>       |
| <b>Maintenance Consumables</b>            |             |                   |                    |                    |                        |
| Primary Gyratory Crusher - Mantle Liners  | 7           | set/yr            | 7                  | 70,000             | 490,000                |
| Primary Gyratory Crusher - Concave Liners | 2.3         | set/yr            | 2.3                | 200,000            | 467,000                |
| SAG Mill - Lifters/Liners                 | 1.5         | set/yr            | 1.5                | 1,653,280          | 2,480,000              |
| SAG Mill - Grinding Media                 | 0.43        | kg/t              | 3,010              | 1,302              | 3,919,000              |
| Ball Mill - Lifters/Liners                | 1           | set/yr            | 1                  | 1,459,473          | 1,459,000              |
| Ball Mill - Grinding Media                | 0.73        | kg/t              | 5,110              | 1,214              | 6,204,000              |
| Pebble Crusher - Mantle                   | 8.67        | set/yr            | 8.67               | 5,000              | 43,000                 |
| Pebble Crusher - Concave                  | 8.67        | set/yr            | 8.67               | 5,000              | 43,000                 |
| <b>Total</b>                              |             |                   |                    |                    | <b>15,105,000</b>      |
| <b>Reagents and Consumables Total</b>     |             |                   |                    |                    | <b>39,715,000</b>      |

**Oxide / Transitional**

Plant Feed (t/y) 7,000,000  
CIL Feed (t/y) 352,800

| Item                                      | Consumption | Consumption Basis | Annual Usage (t/y) | Unit Cost (US\$/t) | Cost per Year (US\$/y) |
|-------------------------------------------|-------------|-------------------|--------------------|--------------------|------------------------|
| <b>Reagents</b>                           |             |                   |                    |                    |                        |
| Quicklime                                 | 0.84        | kg/t              | 5,880              | 372                | 2,187,000              |
| Sodium Cyanide                            | 0.40        | kg/t              | 2,800              | 2,523              | 7,064,000              |
| Sodium Hydroxide                          | 0.07        | kg/t              | 490                | 974                | 477,000                |
| Hydrochloric Acid                         | 0.04        | kg/t              | 280                | 524                | 147,000                |
| Carbon                                    | 20.00       | g/t               | 140                | 4,360              | 610,000                |
| SMBS                                      | 0.55        | kg/t              | 3,850              | 651                | 2,506,000              |
| Copper Sulphate                           | 0.24        | kg/t              | 1,680              | 3,769              | 6,332,000              |
| Borax                                     | 2,019       | kg/yr             | 2.0                | 2,532              | 5,000                  |
| Silica                                    | 505         | kg/yr             | 0.5                | 1,027              | 1,000                  |
| Nitre                                     | 337         | kg/yr             | 0.3                | 2,425              | 1,000                  |
| Soda Ash                                  | 337         | kg/yr             | 0.3                | 1,189              | 1,000                  |
| Antiscalant - Decant Return Water         | 12,678      | kg/yr             | 12.7               | 3,263              | 41,000                 |
| Antiscalant - Elution                     | 701         | kg/yr             | 0.7                | 4,893              | 3,000                  |
| Sulphamic Acid                            | 100         | kg/week           | 5                  | 1,027              | 5,000                  |
| Flocculant                                | 0.050       | kg/t              | 350                | 2,371              | 830,000                |
| Coagulant                                 | 0.040       | kg/t              | 280                | 1,834              | 514,000                |
| <b>Total</b>                              |             |                   |                    |                    | <b>20,724,000</b>      |
| <b>Operating Consumables</b>              |             |                   |                    |                    |                        |
| Stainless Steel Stocking                  | 1,584       | kg/yr             | 1.6                | 730.00             | 1,000                  |
| Crucibles                                 | 35          | /yr               | 35                 | 1,340.00           | 47,000                 |
| Diesel - Total                            |             | L/y               | 3,111,800          | 1.20               | 3,734,000              |
| Lubricants                                |             |                   |                    | 20,000             | 20,000                 |
| Plant Operating Tools & Equipment         |             |                   |                    | 10,000             | 10,000                 |
| Gold Room Tools & Equipment               |             |                   |                    | 10,000             | 10,000                 |
| Potable Water                             | 1.0         | Assumption        | 8,000              | 7.973              | 64,000                 |
| <b>Total</b>                              |             |                   |                    |                    | <b>3,886,000</b>       |
| <b>Maintenance Consumables</b>            |             |                   |                    |                    |                        |
| Primary Gyratory Crusher - Mantle Liners  | 7           | set/yr            | 7                  | 70,000             | 490,000                |
| Primary Gyratory Crusher - Concave Liners | 2.3         | set/yr            | 2.3                | 200,000            | 467,000                |
| SAG Mill - Lifters/Liners                 | 1.5         | set/yr            | 2                  | 1,653,280          | 2,480,000              |
| SAG Mill - Grinding Media                 | 0.280       | kg/t              | 1,957              | 1,302              | 1,656,000              |
| Ball Mill - Lifters/Liners                | 1           | set/yr            | 1                  | 1,459,473          | 1,459,000              |
| Ball Mill - Grinding Media                | 0.475       | kg/t              | 3,322              | 1,214              | 2,621,000              |
| Pebble Crusher - Mantle                   | 8.67        | set/yr            | 8.67               | 5,000              | 43,000                 |
| Pebble Crusher - Concave                  | 8.67        | set/yr            | 8.67               | 5,000              | 43,000                 |
| <b>Total</b>                              |             |                   |                    |                    | <b>9,259,000</b>       |
| <b>Reagents and Consumables Total</b>     |             |                   |                    |                    | <b>33,869,000</b>      |

**MISCELLANEOUS**

| Item                         | Units |             | Cost per Unit (US\$)   |                       | Cost per Year (US\$/y) | Reference |
|------------------------------|-------|-------------|------------------------|-----------------------|------------------------|-----------|
|                              |       |             |                        |                       |                        |           |
| Laboratory Costs             | Units |             | Cost per Unit (US\$)   |                       | Cost per Year (US\$/y) | Reference |
| Fixed Lab Costs              | \$/y  |             | 917,904                |                       | 918,000                | Doropo    |
| Process assays               | \$/y  |             | 980,000                |                       | 980,000                | Doropo    |
| External met. testwork       | \$/y  |             | 50,000                 |                       | 50,000                 | Assumed   |
| <b>Subtotal</b>              |       |             |                        |                       | <b>1,948,000</b>       |           |
|                              |       |             |                        |                       |                        |           |
| Consultants                  | Units | Days / year | Cost per Unit (US\$)   | Fixed Expenses        | Cost per Year (US\$/y) | Reference |
| Crushers                     | \$/y  | 10          | 1,750                  | 7,500                 | 25,000                 | Doropo    |
| Mills                        | \$/y  | 30          | 2,250                  | 12,500                | 80,000                 | Doropo    |
| Thickeners                   | \$/y  | 7           | 2,250                  | 12,500                | 28,000                 | Doropo    |
| Regeneration Kiln/Furnace    | \$/y  | 10          | 1,750                  | 7,500                 | 25,000                 | Doropo    |
| Elution Heater               | \$/y  | 10          | 1,750                  | 7,500                 | 25,000                 | Doropo    |
| Air Compressors/Blowers      | \$/y  | 5           | 1,750                  | 7,500                 | 16,000                 | Doropo    |
| ILR                          | \$/y  | 14          | 1,750                  | 7,500                 | 32,000                 | Doropo    |
| Gravity Concentrators        | \$/y  | 7           | 2,250                  | 12,500                | 28,000                 | Doropo    |
| HV System                    | \$/y  | 21          | 2,250                  | 12,500                | 60,000                 | Doropo    |
| Laboratory                   | \$/y  | 0           |                        |                       | 76,000                 | Doropo    |
| VSDs                         | \$/y  | 14          | 2,250                  | 12,500                | 44,000                 | Doropo    |
| PSA Oxygen Plant             | \$/y  | 7           | 2,250                  | 12,500                | 28,000                 | Doropo    |
| Water Treatment Plant        | \$/y  | 10          | 2,250                  | 12,500                | 35,000                 | Doropo    |
| Sewage Treatment Plant       | \$/y  | 4           | 1,750                  | 7,500                 | 15,000                 | Doropo    |
| Filter Water Treatment Plant | \$/y  | 10          | 2,250                  | 12,500                | 35,000                 | Doropo    |
| Others (Allowance)           | \$/y  | 20          | 1,750                  | 7,500                 | 43,000                 | Doropo    |
| Travel Time (average)        | \$/y  | 2           | 2,017                  | 16                    | 65,000                 | Doropo    |
| <b>Subtotal</b>              |       |             |                        |                       | <b>660,000</b>         |           |
|                              |       |             |                        |                       |                        |           |
| Mobile Equipment             | Units | Number      | Lease / year / vehicle | Mtce / year / vehicle | Cost per Year (\$/y)   | Reference |
| Light Vehicles               | \$/y  | 23          |                        | 6,000                 | 138,000                | Doropo    |
| Medium & Heavy Vehicles      | \$/y  | 21          |                        | 17,000                | 357,000                | Doropo    |
| Generators and other Plant   | \$/y  | 15          |                        | 2,000                 | 30,000                 | Doropo    |
| <b>Subtotal</b>              |       |             |                        |                       | <b>525,000</b>         |           |
|                              |       |             |                        |                       |                        |           |
| <b>Total</b>                 |       |             |                        |                       | <b>3,133,000</b>       |           |

### GENERAL & ADMINISTRATION COST SUMMARY

Plant Feed                      t/y                      7,000,000                      Both Oxide and Fresh Ore  
Currency                      US\$

| Item                              | Oxide / Transitional Ore |             | Fresh Ore    |             |
|-----------------------------------|--------------------------|-------------|--------------|-------------|
|                                   | Cost (\$M/y)             | Cost (\$/t) | Cost (\$M/y) | Cost (\$/t) |
| <b>General and Administration</b> |                          |             |              |             |
| Labour                            | 5.88                     | 0.84        | 5.88         | 0.84        |
| Abidjan Office                    | 0.00                     | 0.00        | 0.00         | 0.00        |
| ABC Site Office                   | 0.56                     | 0.08        | 0.56         | 0.08        |
| Insurances                        | 0.40                     | 0.06        | 0.40         | 0.06        |
| Financial                         | 0.00                     | 0.00        | 0.00         | 0.00        |
| Government Charges                | 0.14                     | 0.02        | 0.14         | 0.02        |
| HR Administration                 | 0.28                     | 0.04        | 0.28         | 0.04        |
| Contracts                         | 1.65                     | 0.24        | 1.65         | 0.24        |
| Community Relations               | 0.17                     | 0.02        | 0.17         | 0.02        |
| OHS&E                             | 0.30                     | 0.04        | 0.30         | 0.04        |
| Transport                         | 0.49                     | 0.07        | 0.49         | 0.07        |
| Miscellaneous                     | 0.19                     | 0.03        | 0.19         | 0.03        |
| <b>Subtotal</b>                   | <b>10.06</b>             | <b>1.44</b> | <b>10.06</b> | <b>1.44</b> |