NI 43-101 Technical Report

Mineral Resource Estimate Update On The Kona Gold Deposit

Cote d'Ivoire

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Important Notice and Forward Looking Statements

This notice is an integral component of the 2021 Kona Resource Update and should be read in its entirety and must accompany every copy made of this report. This resource update for Kona complies with the Canadian National Instrument 43-101 - Standards of Disclosure for Mineral Projects

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1 SUMMARY

This Technical Report was prepared by Centamin Plc (Centamin) on a Mineral Resource estimate for the Kona deposit under National Instrument 43-101 – Standards of Disclosure for Mining Projects (NI 43-101). The Kona deposit forms part of Centamin's Archean-Birimian Contact (ABC) Project.

1.1 Property Description and Ownership

The Kona deposit is the most advanced prospect in Centamin's ABC Project, which 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 Centamin's Doropo Project (Bounkani region, north-eastern Cote d'Ivoire), and 540 km north-west of the capital city of Abidjan.

The Kona permit is registered as PR 658 (Permis de Recherche de Kona) and covers an area of 382.9km^2. It was granted by presidential decree in November 2016 for four years and can after that be renewed twice for a further three years at each subsequent renewal, before going to an exceptional renewal request for a further period of 2 years.

The Kona resource is centred on about UTM 678,300mE and 967,200mN. The Kona permit forms part of Centamin's larger permit called ABC (Archaean-Birimian Contact Project) which also includes the Farako Nafana permit, located further north, and the Windou permit, located to the south of Kona as well as several other permits that are under application. The Kona permit is 100% owned by Centamin Cote d'Ivoire SARL, which is a 100% owned Ivoirian subsidiary of Centamin.

1.2 Geology and Mineralisation

The Kona permit is located along the main Archean-Birimian cratonic suture zone, which is expressed in western Ivory Coast as the Sassandra Fault Zone.

The Kona permit includes approximately 25 km strike length of Archean-Birimian Contact (ABC). Permit scale mapping and rock chip sampling in 2017 highlighted the Lolosso structure, a mineralised structure which bisects the Kona permit in a north-south orientation. This structure is technically located in the Archean domain, however, it is interpreted by Centamin to be a western splay from the major transcurrent Sassandra Fault, where a narrow keel of later Birimian volcano-sediments is entrapped within earlier Archean thrusted granite and gneissic sheets. This unit of Birimian volcano- sediments is the host of the mineralisation in the project area.

Two main areas, namely Kona South and Kona Central have been drill tested to date, following up on permit scale mapping and rock chip sampling. Drilling for resource definition focused on Kona South because mineralisation shows a more obvious continuity.

At Kona South the gold is hosted almost entirely in the north-south striking psammite unit, dipping approximately 70° to the west. This unit is sandwiched between a calc-silicate unit to the west (hanging wall) and a paragneiss unit to the east (footwall). A further mafic volcanic unit abuts the hanging wall calc- silicate to the west, completing the Birimian inlier stratigraphy.

Gold mineralisation has a close spatial relationship with arsenopyrite to the extent that the presence of arsenopyrite normally indicates the presence of gold. The 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; however, quartz veining is rare to non-existent and does not appear to be an important control to mineralization at Kona.

1.3 Status of Exploration, Development and Operations

Centamin began exploration on the Kona permit in March 2017. Prior to Centamin's work, limited regional scale exploration had been carried out by Newmont Mining Corporation. Centamin's exploration campaign has included reconnaissance mapping and systematic rock chip sampling, auger sampling, ground geophysical survey, an airborne Magnetic and Radiometric survey as well as reverse circulation (RC) and diamond drilling. All the exploration work was conducted by Centamin personnel, or under their direct management, when carried out by contractors.

A field camp was setup in the middle of the prospective area, within the permit area. All field work was conducted from this camp.

1.4 Drilling, Sampling and Analysis

The working drill database dated 31st June 2021 focuses on drilling undertaken by Centamin since 2017. The database consists of a total of 356 RC drill holes (47,697 m) and 32 diamond drill holes (9,646.55 m) that were completed as part of the exploration efforts used in support of the Inferred Mineral Resource estimate.

Kona South consists of 179 RC and diamond holes for 28,395.5 m drilled over a 1.5km strike length while Kona Central is defined by 209 holes for 28,948.05 m drilled over a 1.6km strike length.

The average core recovery is 96% for holes completed within the Kona Project. The average recovery in oxide is 81%, 91% in transitional and 99% in fresh. There does not appear to be a direct relationship between core recovery and gold grade for Kona South and Kona Central with a recovery of 98% within the mineralisation.

Centamin has a set geological legend for the Company and Project area, and uses this for trench, core, drill chip and surface mapping. Logging definitions and standards are regularly reviewed for appropriateness for project areas with logging and sampling conducted on 1 m intervals.

Drill collars for exploration drill holes are surveyed by GEDES International S.A.R.L. Surveyors (Geo-Engineering Design and Surveying) using a differential GPS, which has an accuracy of ± 10 cm.

Drill holes (RC and DDH) are surveyed at 12 m then 30 m intervals downhole, using a Reflex Ezy-Gyro downhole survey tool.

Most of the drill holes at Kona are drilled at -55 to -60° to the east (Magnetic: 95 degrees) to intersect the main mineralized zone at a high angle. The mineralisation strikes approximately north–south, is steeply dipping 70–80° to the west, and plunges shallowly to the north. In general, true thickness is 80% of the sampled length.

In the opinion of the Qualified Persons, the quantity and quality of the lithological, collar and downhole survey data collected in the exploration and infill drill programs completed are sufficient to support Mineral Resource estimation.

The standard sample length for diamond core and RC samples is 1 m. However, this may be adjusted as appropriate for lithological contacts, structures, or alteration boundaries. For the duration of the Project, the primary laboratory is Bureau Veritas Mineral Laboratory (BVML), Abidjan. The laboratory is formally accredited. The main analytical method used for the samples sent for gold assay is fire assay. Certified reference materials (CRMs), duplicates and blanks are inserted at regular intervals in the sample chain to monitor laboratory performance.

For density determinations, the water immersion bulk density method is used 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.

Sample security measures practiced includes moving of RC samples and core from the drill site to the Kona Camp and then transported to Abidjan by BVML staff on a regular basis using industry-standard procedures. The Qualified Persons are of the opinion that core and sample storage is secure because the Kona Camp is a guarded and restricted access site.

The Qualified Persons recommend that additional soils and trenching be conducted to define targets for additional drilling. Additional drilling is also required on a 50x25m and 25x25m drill spacing at known targets to bring Inferred Resources into Indicated and Measured for pit optimisation and economic analysis. There will also be a need to drill targets defined by new soils results. Diamond drilling is then recommended to twin RC drilling for quality control (QC) analysis and to define controls on mineralisation. An outline of activities and costs are shown in Section 26 - Recommendations.

1.5 Data Verification

Centamin has implemented an Acquire - Geological Informational Management System for managing all the point, drill hole and sampling data. The data is then reviewed for the Mineral Resource estimate by the Senior and Group Exploration Manager and Mineral Resource Manager who are of the opinion that the data verification procedures undertaken adequately support the geological interpretations and the analytical and database quality, and therefore support the use of the data in Mineral Resource estimation.

Data collection methods and quality assurance / quality control (QA/QC) procedures for density data have been reviewed and are considered appropriate for use in the estimation of resources.

The Kona database contains surface diamond, RC and auger drill holes. A number of site visits have been conducted by the Qualified Persons as recently as September 2021. Field and database checks were conducted, and no significant errors were identified and that the majority of resource data within the Structured Query Language (SQL) database was in good order.

The Qualified Persons considered the Kona wireframes and database to be adequate for Mineral Resource estimation.

1.6 Mineral Processing and Metallurgical Testing

Only limited metallurgical test work has been conducted on the Kona mineralisation. A fresh sample composite of the Kona South resource was analysed by ALS Metallurgy Services (Perth) in August 2018, for which a summary of the results can be seen in Table 1.1. These results indicate the Kona South material is hard, abrasive and non-refractory with an 88.9% overall Gravity-CIL gold recovery at P80 passing 75 µm.

Table 1.1: Summary of ALS Metallurgy test work

SUMMARY OF RESULTS	
Testwork Parameter	Kona - Lolosso
SMC DWi (kWh/m^3)	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_{80} 75 µm	88.9
Overall Au Extraction (%) via Flotation @ P_{80} 106 µm, Leaching of Flotation Tail, and Leaching of Flotation Concentrate re-ground to P_{100} 63 µm	85.4
Overall Au Extraction (%) via Flotation @ P_{80} 106 µm, Leaching of Flotation Tail, and Leaching of Flotation Concentrate re-ground to P_{80} 10 µm	87.2

The mineralisation of Kona Central is analogous to Kona South and therefore its metallurgical response is anticipated to be similar. Notwithstanding, a metallurgical testwork programme will be developed and conducted for Kona Central to confirm this.

The Qualified Persons recommend additional metallurgical testwork on Kona South to optimise metal recoveries and develop a process flowsheet. The Qualified Persons also recommend commensurate metallurgical testwork is completed for the Kona Central resource. This work should be undertaken on representative new diamond drill core and on individual drill core samples/composites. The samples should be selected to represent near, medium and long term aspects of the mine plan from all rock horizons.

1.7 Mineral Resource Estimates

An Indicated and Inferred Mineral Resource for the Kona South deposit was previously estimated in 2018. The non-linear estimation technique of Multiple Indicator Kriging (MIK) was performed by H&S Consulting using GS3 software and reported as a NI43-101 in March 2019.

In 2021, the gold concentrations were estimated by Local Uniform Conditioning (LUC) using Isatis Mining software. The LUC estimation method is one of several non-linear methods developed which can be used to provide local (SMU scale) grade and tonnage estimates.

Centamin provided Cube Consulting (Cube) with a series of wireframe solids representing the interpreted zones of elevated gold grades. Cube used these wireframes as the basis to create a new series of wireframe solids that encompassed recent drilling information and were suitable for LUC estimation. These changes were made to include peripheral mineralisation and produce zones of reasonably consistent thickness. These wireframe solids were created to encompass coherent zones of gold mineralisation elevated above background values. This nominally resulted in a lower gold grade boundary of about 0.20 g/t. The interpreted wireframes generally conformed to the geologically logged psammite units.

Cube also created a series of wireframe surfaces for each deposit representing the base of transported material, the base of saprolite and the top of fresh rock using drill hole logging information.

Mineralisation at Kona is relatively coherent compared to many gold deposits and shows good continuity along strike (approximately North-South) and down-dip directions and less continuity in the direction perpendicular to these.

The drilling at Kona includes areas that have been drilled on a nominal 50x50 m grid pattern. Most intervals have been sampled on 1 m intervals. Samples were composited to 1 m intervals whilst honouring the mineralised domain wireframes and with a minimum composite length of 0.12 m and a maximum of 1.07 m. The panel block dimensions were 20 m along strike, 20 m across strike and 5 m vertically. The along strike dimension is approximately half the nominal drill hole spacing (preferable for LUC estimation). The vertical dimension was chosen to enable robust panel estimation and the application of LUC SMU assumptions.

The search criteria used to estimate gold concentrations can be seen in Table 1.2 and consist of two search passes with progressively increasing search radii and/or decreasing data requirements. The search ellipsoids for each domain are rotated according to the local orientation of the mineralised domains. Discretisation of blocks is based on 3 x 3 x 3 (east, north and vertical, respectively) points.

Table 1.2: Search criteria

Deposit	Domain	Pass 1	Pass 2	Anisotropy	Anisotropy	Min	Max
Kona South	1001	120 m	300 m	2.0 / 4.8	2.0 / 4.6	10/7	18/18
	1002	120 m	400 m	2.0 / 4.8	1.1 / 1.6	10/5	18/18
	1003	80 m	400 m	1.0 / 5.3	1.0 / 2.0	10/5	18/18
	1004	100 m	200 m	1.0 / 4.0	1.0 / 3.3	10/7	18/18
	1005	40 m	120 m	1.0 / 2.0	1.0 / 2.0	8/6	18/18
Kona Central	2000 indicator (0.25)	100m	250 m	1.0 / 2.0	1.0 / 2.5	7/5	15/15
	2000 mineralised	75 m	200 m	1.4 / 7.5	1.3 / 5.0	10/6	19/19
	2000 waste	75 m	300 m	1.4 / 7.5	1.4 / 4.3	10/6	18/18

LUC allows for block support correction by means of a variance adjustment to account for the change from sample size support to the size of the minimum Selective Mining Unit (SMU) to produce SMU block sized estimates of recoverable resources. This process requires an assumed grade control drill spacing and the assumed size of the minimum SMU. The variance adjustment factors were estimated from the gold metal variogram models assuming a minimum SMU of 5 by 5 by 2.5 metres (across strike, along strike, vertical) with high quality grade control sampling on a 5 by 5 by 2.5 metre pattern (across strike, along strike, vertical). Assignments of dry bulk density are based on a total of 2,028 density measurements taken from drill (primarily fresh) core at the Kona deposit. 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.

The resource classification is based on a number of material risk factors, the most significant being the current drill spacing which at between 40 and 50 m is considered by the Qualified Persons insufficient to robustly characterise the local metal content. The reported Mineral Resource has been classified as Inferred. This Mineral Resource consists of the volume estimated by LUC and has been limited to a depth of 250 m below surface.

The Mineral Resources at Kona South at a cut-off of 0.5 g/t gold form coherent zones with a strike length of around 1.2 km north south and a plan width of 100 m. The upper limit of the mineralisation occurs at surface and the reported resources are limited to a maximum depth of 250 m below surface. The resource forms five tabular bodies between 50 and 140 m thick, which dip around 70° to the west.

The Mineral Resources at Kona Central at a cut-off of 0.5 g/t gold form coherent zones with a strike length of around 1.8 km north south and a plan width of 200 m. The upper limit of the mineralisation occurs at surface and the reported resources are limited to a maximum depth of 250 m below surface. The resources form a tabular body between 50 and 200 m thick, which dip around 80° to the west.

The Mineral Resource estimates are reported at a gold cut-off grade of 0.5 g/t by weathering domain in Table 1.3.

Table 1.3: Estimates by deposit and weathering domain at 0.5 g/t Au cut-off

Deposit	Oxidation	Indicated			Inferred		
		Tonnes (Mt)	Au (g/t)	Au (Moz)	Tonnes (Mt)	Au (g/t)	Au (Moz)
Kona South	**Transported**	0.0	0.00	0.00	0.1	1.2	0.0
	Oxidised	0.0	0.00	0.00	1.0	1.0	0.03
	Transitional	0.0	0.00	0.00	1.0	1.0	0.03
	Fresh	0.0	0.00	0.00	29.0	1.1	0.99
Kona Central	**Transported**	0.0	0.00	0.00	0.1	0.85	0.00
	Oxidised	0.0	0.00	0.00	0.4	0.86	0.01
	Transitional	0.0	0.00	0.00	0.9	0.81	0.02
	Fresh	0.0	0.00	0.00	40.0	0.84	1.08
	Total	**0.0**	**0.00**	**0.00**	**72**	**0.9**	**2.16**

1. *Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.*
2. *The Kona Resource estimate comprises two (2) deposits –Kona South &Kona Central.*
3. *Drill spacing is a nominal 50 x 50 x 1 metre spacing.*
4. *Reverse Circulation (RC) and Diamond (DDH) drilling only has been used for the estimation.*
5. *The grade estimation has been undertaken using Ordinary Kriging (OK) and Localised Uniform Conditioning (LUC) methodologies*
6. *At Kona Central a categorical Indicator Kriging (at a 0.25 g/t Au threshold) has been used to define internal ore and waste domains.*
7. *The grade estimate has been classified as Inferred in accordance with the CIM 2014 guidelines.*
8. *The Updated Mineral Resource has been reported at an economic cut-off grade of 0.5g/t, 250m below surface and within 100 metres of the nearest sample.*
9. *This Updated Mineral Resources Estimate was prepared by Mr. Patrick Adams of Cube Consulting Pty Ltd who represents the Qualified Person for the estimate.*
10. *This Updated Mineral Resources Estimate is not expected to be materially affected by environmental, permitting, legal title, taxation, socio-political, marketing or other relevant issues.*

The Qualified Persons recommends additional Resource drilling be conducted to convert Inferred Mineral Resources to Indicated and Measured with infill on 25 m spacing. Associated costs have been outlined in Section 26 - Recommendations.

1.8 Conclusions

Cube is of the opinion that the Mineral Resource estimates are suitable for public reporting and are a fair representation of the in-situ gold concentration and contained metal for the Kona Project.

1.9 Recommendations

Centamin has during 2021 carried out extensive soil sampling programmes across the entire surface area of all three ABC Project permits – Farako Nafana, Kona and Windou. Additional gold in soil anomalies have been outlined and are in process of being followed-up by closer spaced soil sampling grids. The next phase of work will involve mechanical trenching of these new soil anomalies and eventually RC drill testing. The objective is to understand the regional potential of the 3 permit areas.

Further drilling at Kona to grow the resource base and along the Lolosso structure may be undertaken on completion of a Scoping Study of the Kona prospects.

In addition to the planned exploration described above the Qualified Persons recommend the following:

- More density test work is required for the weathered portions of the Kona deposit to generate reliable density data. This is likely to require wax coating samples prior to density measurement. Centamin currently operate wax sealed density test work on weathered drill core at their Doropo Project, located in the north-east of Cote d’Ivoire.

2 INTRODUCTION

Centamin plc (Centamin) commissioned Cube Consulting Pty Ltd (Cube) to update the Mineral Resource estimate of the Kona deposit. The Kona South and Kona Central deposits are the most advanced prospects in Centamin's ABC Project, which is located in the Kabadougou Region of the Denguélé District, in the northwest of Cote D'Ivoire. The ABC Project permit occurs approximately 600 km west of Centamin's Doropo Project and 540 km north-west of the capital city of Abidjan.

The gold concentrations were estimated by recoverable Local Uniform Conditioning (LUC) using Isatis geostatistical software.

The drill hole and QAQC data that underpin the resource estimates were collected by Centamin between late 2017 and December 10, 2020, and all relevant data was provided to Cube. Cube has conducted sufficient checks to feel confident in the quality and veracity of the data provided. The analyses of the data and the information relating to the resource estimates were generated by Centamin and Cube. Information contained in Chapters 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 23, 24, 25 and 26 of this report were provided by Centamin.

Mr Mike Millad of Cube visited the Kona permit area for two full days in September 2021. This visit was led by Mr Craig Barker, Mineral Resource Manager of Centamin. During this visit, Cube viewed selected drill core and discussed the geological framework and mineralisation controls; toured the ABC Project Camp facility; visited outcrops and checked several drill collar positions, recorded azimuth/inclinations and discussed data capture, storage and management. No RC or diamond drilling was occurring at the time of the site visit, although Mr Millad did observe RC drilling and sample handling protocols at the Doropo Project, Centamin's other exploration project in Cote D'Ivoire, where procedures are the same.

Cube selected several diamond and RC drill holes to cross-check the geological logs against the drill core and chip trays and to better understand the geology and reliability of the logs. Cube spoke to many of the key personnel including senior and junior geologists and the database administrator. The location of five (5) drill hole collar locations was checked against the database records using a handheld GPS.

In September 2021 Mr Mike Millad and Mr Craig Barker visited the Bureau Veritas Laboratory in Abidjan to observe sample preparation and fire assaying procedures.

3 RELIANCE ON OTHER EXPERTS

The Qualified Persons' opinion contained herein is based on information collected by Centamin. Cube is reliant upon the information and data provided by Centamin. Information included in Sections 4, 5, 6, 7, 8, 9, 10, 11, 13, 23 and 26 is largely based on information provided to Cube by Centamin. Cube has provided information for Sections 1.7 and 14, and, where possible, independently verified the data provided and completed a site visit to review physical evidence for the deposit.

Cube has not performed an independent verification of land title and tenure as summarized in Section 4 of this report. Cube did not verify the legality of any underlying agreement(s) that may exist concerning the permits or other agreement(s) between third parties but have relied on information provided by Centamin for land title issues.

The costs associated with the recommended work in Section 26 of this report were estimated by Centamin. Cube has not independently verified these predicted expenses.

The information relating to land title, tenure, the predicted costs of the recommended work and the metallurgical test work were used from the Kona South Maiden Resource NI43-101 lodged on SEDAR on the 29th of March 2019.

Centamin is unaware of any litigations potentially affecting the ABC Project.

4 PROPERTY DESCRIPTION AND LOCATION

The Kona permit is located in the north-west of Cote d'Ivoire, in the Kabadougou region, 540 km north-west of the economic capital Abidjan and 80 km south of the city Odienne as indicated in Figure 4.1 (permit outlined in red).

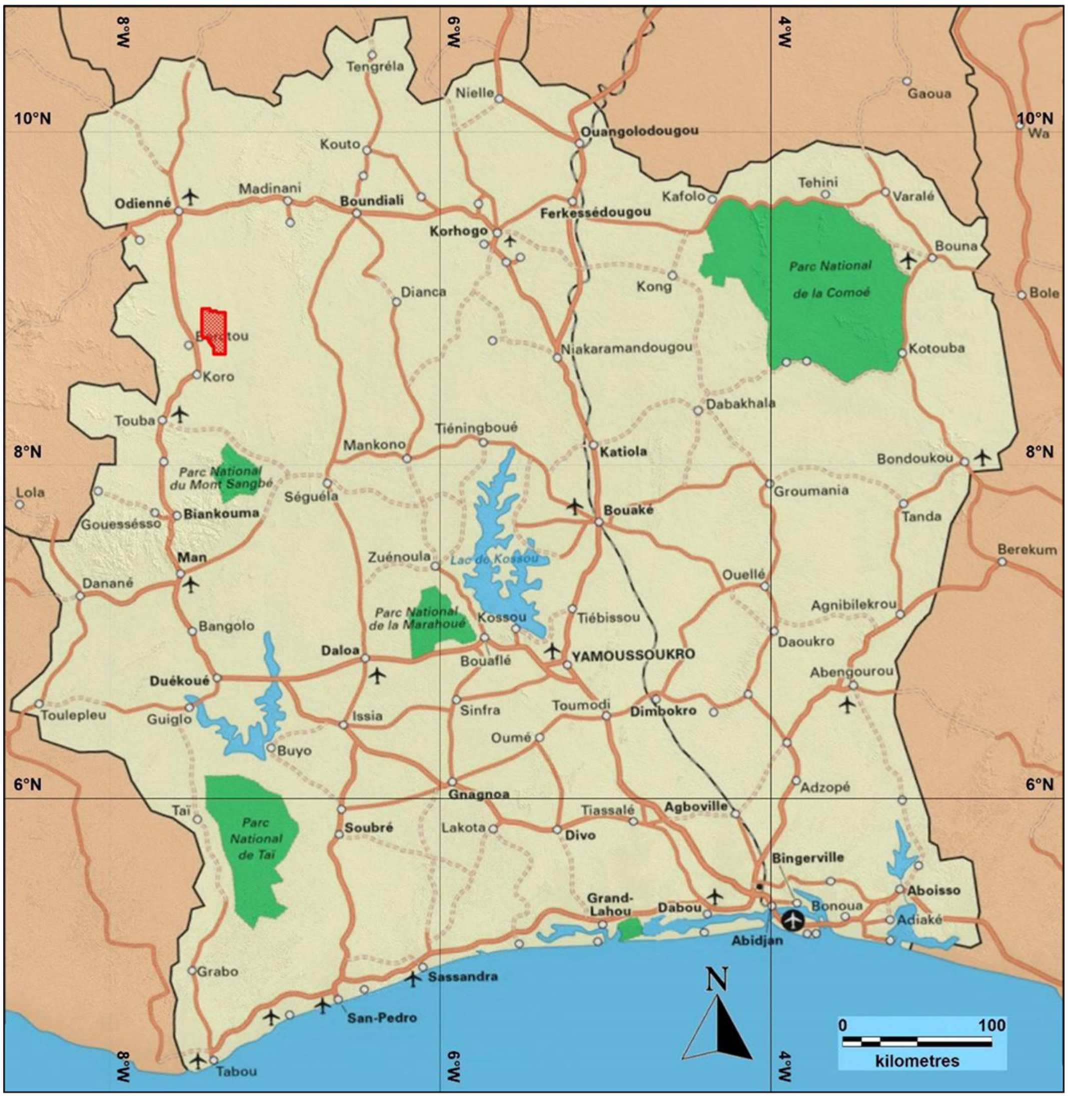

Figure 4.1: Location of the Kona permit – map of Cote d'Ivoire

The Kona permit is 382.9 km^2 in area and utilising the Universal Transverse Mercator (UTM) projection coordinate system is WGS84, zone 29 north.

The Kona South and Central resources are centred on about UTM 678,300mE and 967,200mN, otherwise Latitude8°44'47'' N and Longitude 7°22'45'' W.

The Kona permit is part of a larger Centamin Project called the Archaean-Birimian Contact (ABC) Project which also currently includes the Farako Nafana permit, located further north, the Windou permit located to the south as well as several permits that are under application. The Kona permit is 100% owned by Centamin Cote d'Ivoire SARL, which is a 100% owned Ivoirian subsidiary of Centamin.

The Kona permit is registered as PR 658 (Permis de Recherche deKona); it was granted by presidential decree in November 2016 for four years and can after that be renewed twice for three years, before going to exceptional request. A summary of the Kona permit details can be seen in Table 4.1.

The presidential decree sets thresholds of minimum expenditure per annum per area and restrictions on the type of work conducted to maintain the rights on the permits. The total expenditures, the work conducted, and the results are summarized in bi-annual and annual reporting to the Direction of Mines. Regular field visits are conducted by the Mines Department to monitor progress and compliance.

The exploration activities, including drilling, need no other specific permitting in the field other than the consent of local communities and agreed rates of crop compensation. Crop compensation is paid, according to the guidelines set out by the Ministry of Agriculture, directly to the landowners.

Table 4.1: Summary of the Exploration Permits – as of January 2019

Permit name	Permit ID	Surface (km^2)	Status	Company	Date of grant	Expiry date
Kona	PR 658	382.9	Granted	Centamin Cote d'Ivoire S.A.R.L.	30/11/2016	29/11/2020

Centamin submitted an application for the first renewal of the Kona permit for a further period of three years. The renewal request of the permit was sent to the Ministry of Mines on the 25/09/2020. However, due to Covid-19 restrictions, the technical team of the Ministry of Mines (DGMG) could not conduct the necessary site visit to assess the environmental and social impact of Centamin's exploration works on the permit in 2020. This visit occurred during June 2021 and the permit is expected to be re-validated in November 2021.

Centamin is not aware of any risks or environmental liabilities that could adversely affect or result in the loss of ownership of the Resources or loss of the permits, in part or in whole.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The area is characterised by a relatively flat to subdued relief, with gentle hill slopes separated by a well-developed, dendritic drainage basin. The permit relief trends NNW-SSE with the key N-S Kona Ridge central to the Sein and Boa catchments. The Sein River represents the closest major tributary of the Sassandra catchment, running NNW-SSE along the eastern boundary of the permit. West of the Sein is the main Kona Ridge, a low continuous line of hills, underpinned by the N-S silica spine of the main mineralised Lolosso Trend. The west side of the permit is dominated by the Boa River basin. Elevations on the Kona permit range from about 325 m on the south-east side to about 440 m along the main central ridge.

External to the permit, the relief rises to form mesas at over 200 m above the average elevations. These prominent buttes and ridges are often supported by doleritic sills to the west and south, and gneissic keels, up-thrust in the east, inboard of the main Sassandra cratonic contact.

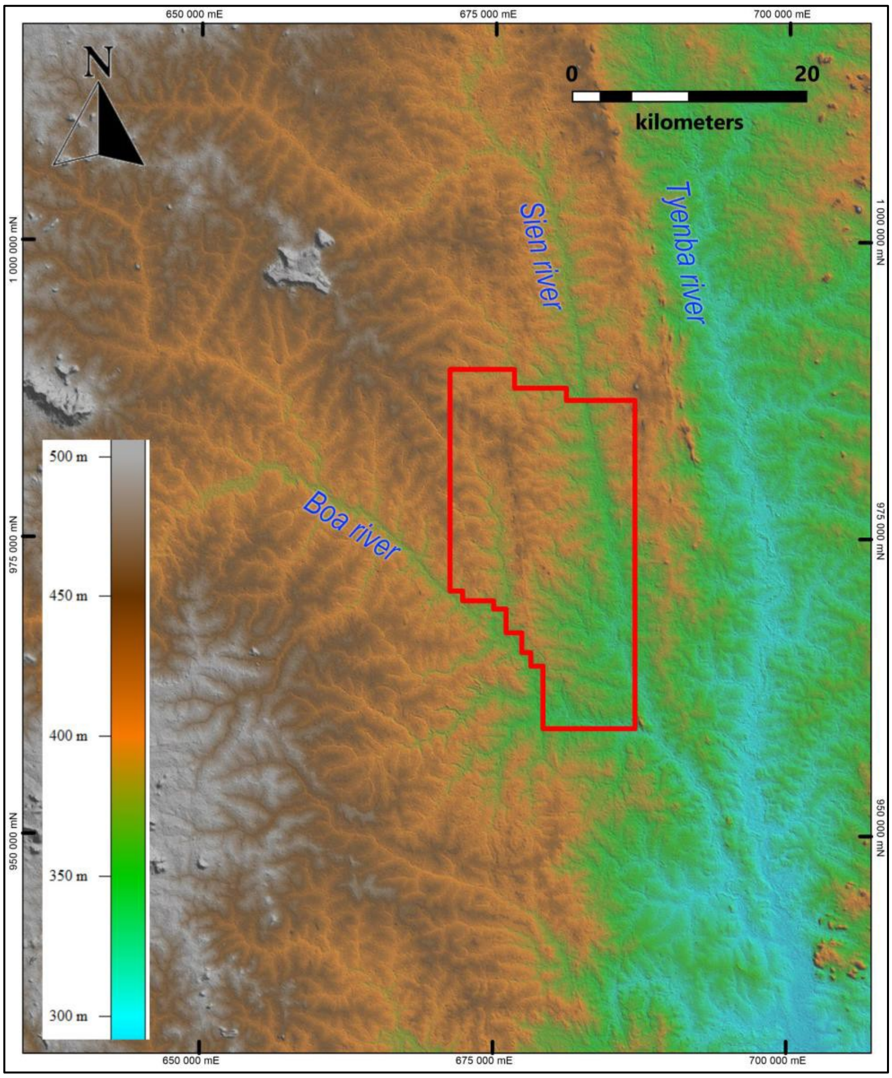

Figure 5.1: Elevations over the Kona permit – SRTM data

(From Centamin - Micromine, March 2019)

The climate is classified as "Sudanese-type", with two distinct seasons, a rainy season and a dry season. The rainy season extends from April to October, with average annual rainfall of 1,385 mm. The dry season extends from October to April and peaks from December to February with a hot dry, dusty wind, coming from the Sahara regions, referred to as the Harmattan, which reduces visibility and increases respiratory illnesses. The average annual temperature is 25.5°C.

The vegetation is characterised by a mosaic of large tracts of secondary forest interspersed with windows of savannah grassland. The Kona permit is bound on its northern and south-western sides by protected forests zones. Outside the protected zones, the local communities are largely exploiting the ground, opening the forest to plant for cocoa, bananas, cashew trees and other seasonal crops. South of the permit area, Sucrivoire, which is a subsidiary of the SIFCA group, exploits a large sugar cane plantation.

The Kona permit is located adjacent to the A7, the main national sealed road that joins Odienne 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 in 16 km (located almost in the middle of the permit) – the drive between Abidjan to Kona takes about 13 hours.

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

Within the permit, a good network of dirt tracks criss-cross the main Kona Hills allowing easy access to all areas.

The permit hosts four main villages: Kona, Moya, Tindirima and Mamouroudougou, all populated by the same ethnic group, the Malinke. Other Ethnic groups, such as the Mossi (coming from Burkina Faso) and Fula are present in scattered hamlets or are nomadic, driving their cattle through the district.

Agriculture and subsistence farming are the main industries, and the local labour force is unskilled. The power is supplied to local communities by the national power grid.

The local mobile phone network coverage is poor, but a regional fibre-optic branch runs along the main A7 sealed highway and may offer options to direct client supply.

Water is abundant and non-seasonal, from both surface drainage and sub-surface aquifers.

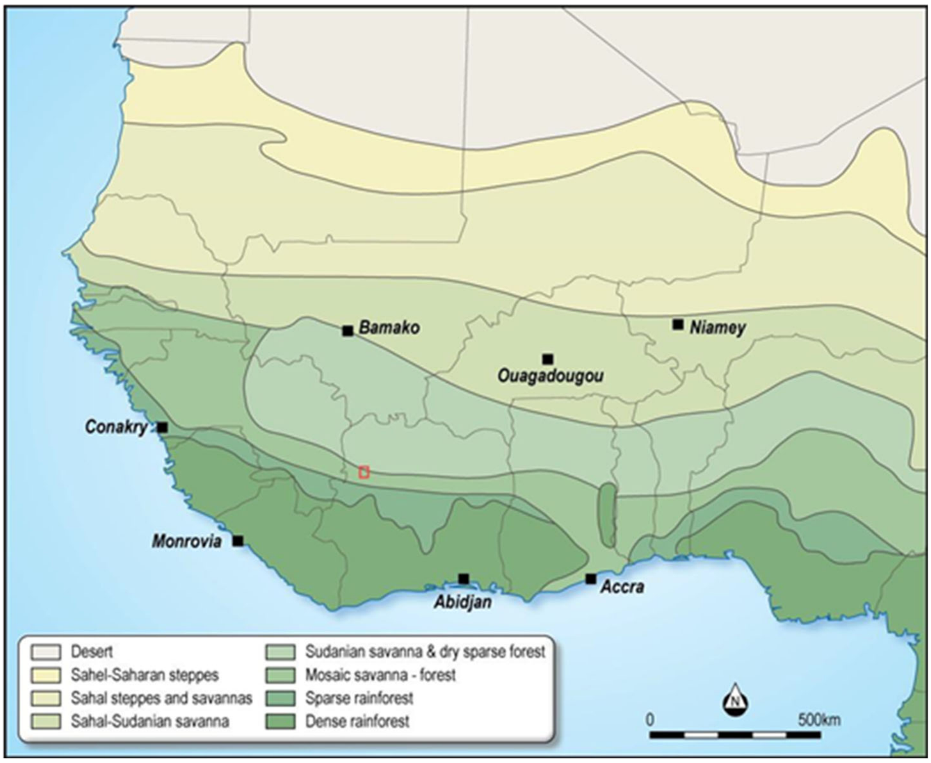

Figure 5.2: Main vegetation zones in West Africa

(From Centamin - Micromine, March 2019)

Figure 5.3: Photograph showing a typical landscape on the Kona permit

(From Centamin Archives, 2019)

6 HISTORY

Centamin applied for the Kona exploration permit in December 2015, the permit was granted in November 2016 by presidential decree and field work commenced March 2017.

The Kona area, west of the main Sassandra fault-drainage system, was traditionally considered of low prospectively for gold based on early BRGM mapping and interpretations. The official geological maps are poorly detailed and documented.

Newmont are believed to be the first exploration company to explore the area in 2010. They conducted regional drainage sampling, mapping and prospecting across the entire district. Their work highlighted the Kona area as one of their highest ranked targets.

Local exploration companies, including Golden Oriole and Sani Resources, applied for exploration permits on the back of the Newmont reconnaissance licences but never raised the finance to conduct any significant work and subsequently had their permits revoked. Centamin acquired the exploration permits from the government in 2015 to 2016.

The 2018Kona South Mineral Resource is the first defined in the area. There is no evidence of any illegal artisanal mining in the permit area.

7 GEOLOGICAL SETTING AND MINERALISATION

7.1 Regional Scale Geology

The West African craton covers a surface area of 4.5M km^2, extending from the northern parts of Mauritania in the north, to the southernmost West African countries of Liberia, Cote d'Ivoire and Ghana in the south. It crops out in two major areas, the Reguibat shield in the north and the Leo-Man shield in the south, as shown in Figure 7.1. The Leo-Man shield includes the major gold producing provinces in Ghana, Burkina Faso, Southern Mali, Guinea and Cote d'Ivoire.

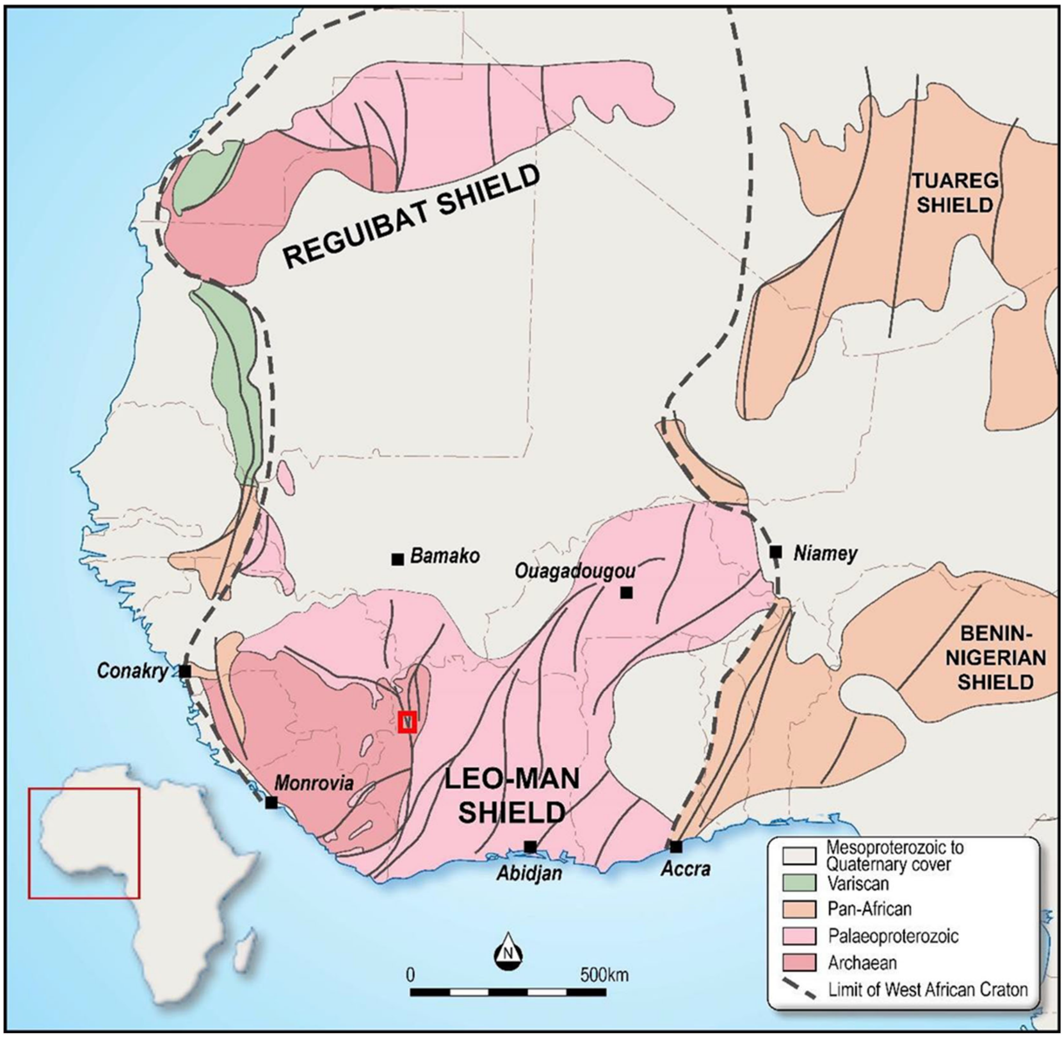

Figure 7.1: Map of West African Craton

(From Centamin, March 2019)

In the Leo-Man shield, shown in Figure 7.2, Paleoproterozoic rocks, known as the "Birimian domain" are tectonically juxtaposed against the Archaean basement along the Sassandra suture. The gold deposits largely lie within the Birimian domain, which covers about 85% of Cote d'Ivoire.

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, trondhjémite and granodiorite (TTG orthogneiss suite, Tonalite-Trondhjemite-Granodiorite). Later stages of alkaline and calc-alkaline granitic plutons intrude this rock package.

The bulk of the mafic dyke swarms which crosscut the Birimian are Jurassic in age and relate to the opening of the Atlantic and the break-up of Pangaea.

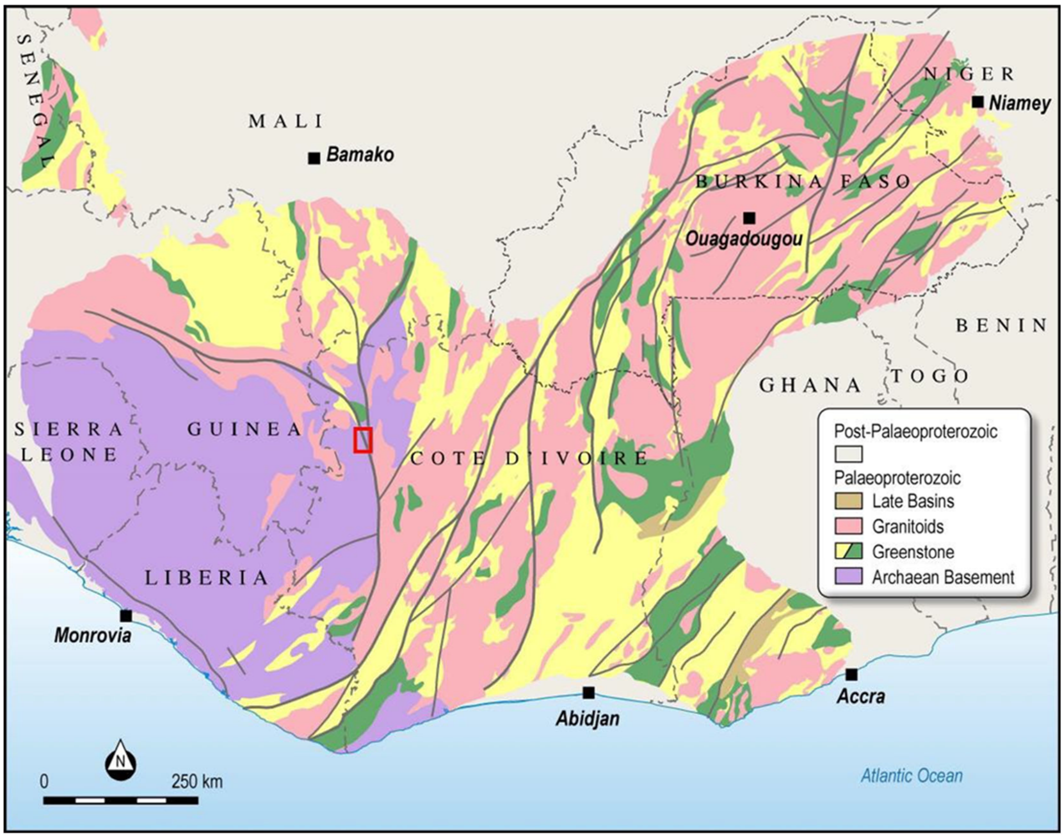

Figure 7.2: Geology of the Leo-Man Shield – from the BRGM interpretations. Location of ABC Prospect Area highlighted in red (From Centamin, March 2019)

7.2 Project Scale Geology

The ABC Project is located along the main Archean-Birimian cratonic suture zone, which is expressed in western Ivory Coast as the Sassandra Fault Zone.

The 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 structure which bisects the Kona permit in a north-south orientation. This structure is technically located in the Archean domain, however, it is interpreted by Centamin 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 thrusted granite and gneissic sheets. This unit of Birimian volcano-sediments is the host of the mineralisation in the project area.

Outcrop in the area is limited due to tropical regolith. The main Kona resource, however, sits on 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.

Two main areas, namely Kona South and Kona Central have been drill tested to date, following up on permit scale mapping and rock chip sampling: the southern zone and the central zone. Drilling for resource definition focused on the southern zone because it shows a more obvious continuity, however further drilling is planned to better understand the mineralisation at Kona Central. Figure 7.3 presents a map showing the location of the Kona South and Kona Central deposits. Other areas of geochemical interest have been identified within the project area and remain targets for future exploration.

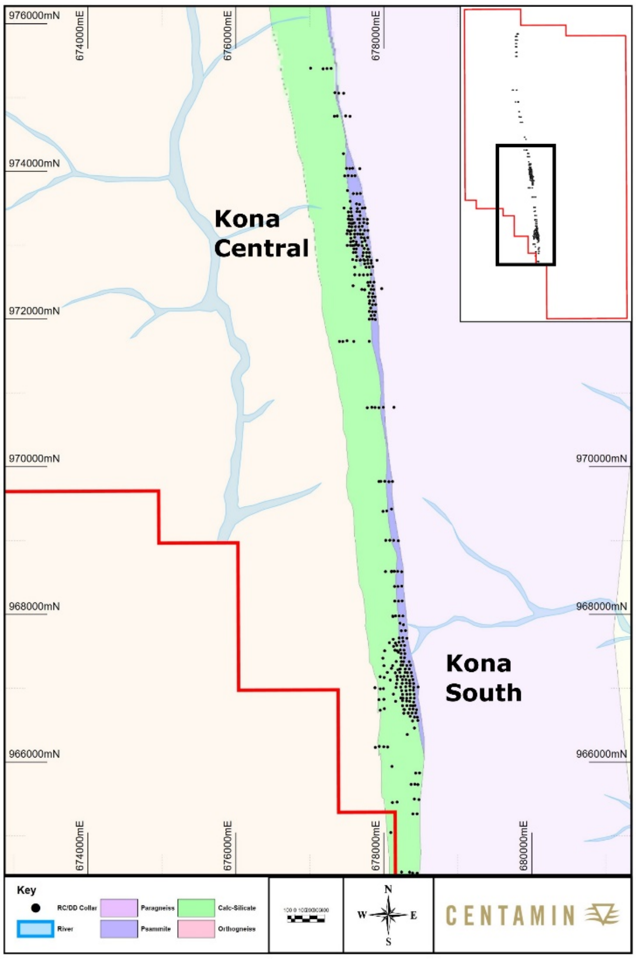

Figure 7.3: Map showing location of Kona South and Kona Central

(From Centamin - Micromine, October 2021)

7.3 Kona South

The Kona South deposit represents 50% of the resource ounces presented in this report. At Kona South, the gold is hosted almost entirely in the north-south striking psammite unit, dipping approx. 70° to the west. This unit is sandwiched between a calc- silicate unit to the west (hanging wall) and a paragneiss unit to the east (footwall). A further mafic volcanic unit abuts the hanging wall calc-silicate to the west, completing the Birimian inlier stratigraphy. The Archean granitic domain is located just 500 m to the west of the Kona South mineralized zone, which sits on the eastern footwall of the inlier thrust. The psammite unit has an average true thickness of 100 m and is often complexly interlayered with the calc-silicate lithologies, forming a depositionally interleaved contact between the two.

The psammite and calc-silicate units are interpreted to have been deposited in a shallow marine shelf paleo-environment.

The psammite unit is a fine to medium grained, moderately well sorted dark sedimentary rock, with a feldspathic to arkosic composition. The principal minerals observed in thin section are quartz, feldspar and biotite, as well as epidote and amphibole as minor accessory minerals. Photographs of drill core intersections of the psammite unit are shown in Figure 7.4.

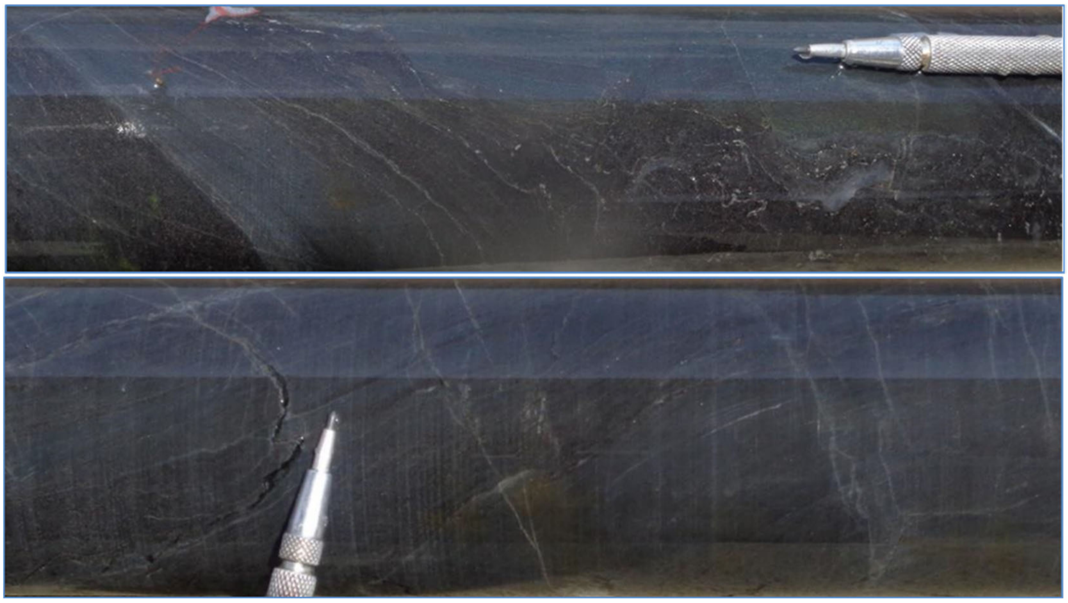

Figure 7.4: Photographs of psammitic unit

(From KNDD0001: Downhole depths from top to bottom: 128.7m (1.21 g/t Au), 114.2m (1.23 g/t Au))

The calc-silicate unit contains a fine greenish coloured banding, which alternates 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. Photographs of drill core intersections of the calc-silicate unit are shown in Figure 7.5.

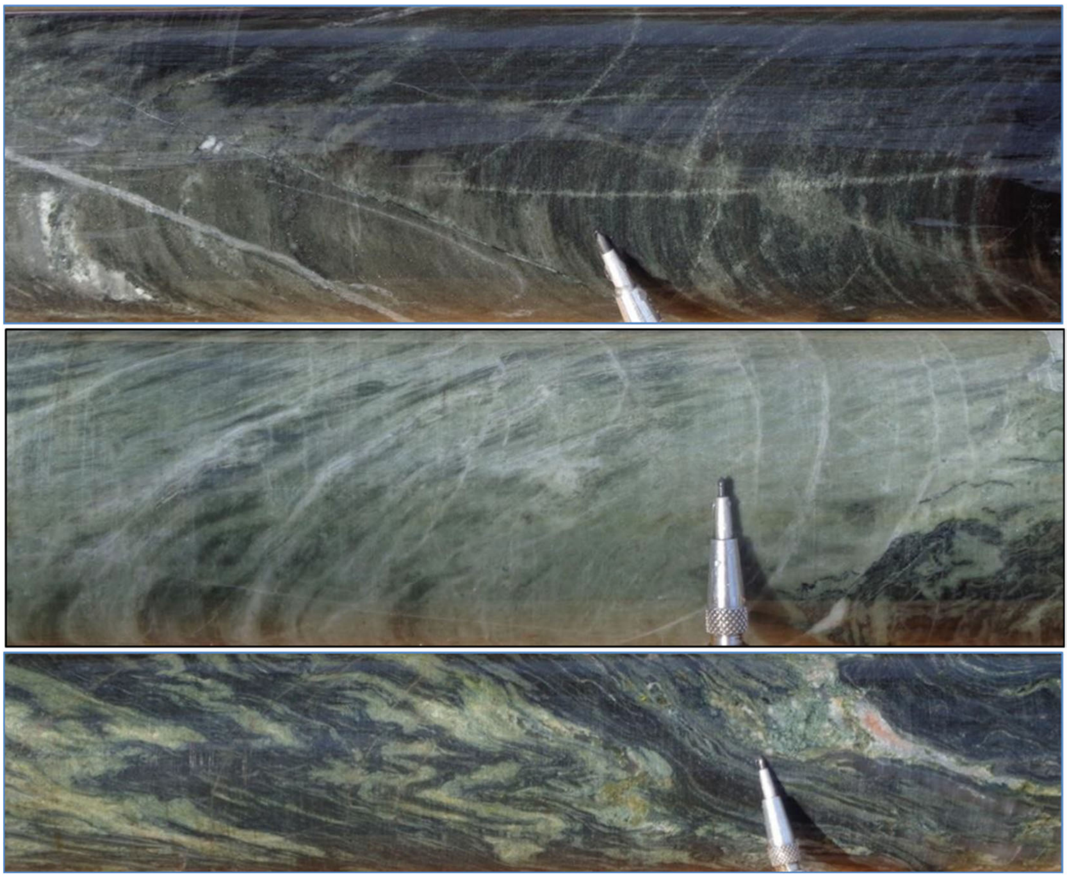

Figure 7.5: Photographs of calc-silicate unit

(From KNDD0001: Downhole depths from top to bottom: 23.4 m, 27.8 m, 36.5 m)

The paragneiss unit is interpreted to be formed from the partial melting and migmatisation of the psammite and calc-silicate sediments. Evidence of progressive partial melting can be observed throughout the volcano-sedimentary units, which becomes more intense and more developed closer to the footwall paragneiss contact. The paragneiss unit is therefore interpreted to be the result of almost complete melting of the volcano-sedimentary units, with an irregular, assimilation zone observed between the two. The composition of this unit is therefore almost identical to that of the sediments and is mostly composed of feldspar, quartz and biotite, overprinted with large phenocrysts of tourmaline. A photograph of a drill core intersection of the paragneiss unit is shown in Figure 7.6.

Figure 7.6: Photograph of paragneiss unit

(From KNDD0001: 245 m)

Foliation and mesoscale folding can be observed throughout the area. This is more obvious within the calc-silicate unit and is represented by the alternated banding of green and black minerals, which are often folded. Foliation can also be observed within the psammite but 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. Foliation is generally striking north-south and dipping 70° to the west.

Gold mineralisation has a close spatial relationship with arsenopyrite to the extent that the presence of arsenopyrite normally indicates the presence of gold. The 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; however, quartz veining is rare to non-existent and does not appear to be an important control to mineralization at Kona South. Example photographs of intervals with high gold grades and visible arsenopyrite are shown in Figure 7.7 and Figure 7.8.

Figure 7.7: Photograph of abundant, foliation controlled, coarse grained arsenopyrite

(From KNDD0001: 176.4m (2.23 g/t Au))

Figure 7.8: Photograph of disseminated coarse grained arsenopyrite

(From KNDD0001: 129.8m (4.24 g/t Au)

In the main resource area, the average thickness of the mineralisation is approximately 100 m, with well-developed mineralisation occurring for a strike length of approximately 1.0 km. Grades in this area are very consistent, both along strike and down-dip, with higher grades normally located in close proximity to the calc-silicate hanging wall contact. The mineralised lodes strike approximately north-south, dipping 70° to the west and appear still open in all directions, with the deepest drilling to date proving that well developed mineralisation still occurs in excess of 220 m below surface.

7.4 Kona Central

Kona Central lies 3.7 km to the north along strike from Kona South and represents the remaining ounces of the total resources defined at Kona. The geology in this area also consists of a psammite unit, which hosts the majority of the mineralisation, and a paragneiss footwall. The calc-silicate lithology is very rare in this area and not often observed, probably due to limited drill testing on the western extent of the mineralisation. The psammite unit is much wider in this area, averaging 200 m in true width and also dipping approximately 70° to the west. It is also observed as outcrop in some areas.

The mineralisation in Kona Central is much wider than Kona South, but with lower average grade. The style of mineralisation in Kona Central is the same as Kona South, with a spatial association to arsenopyrite and silicification within psammitic stratigraphy.

This area of mineralisation has a current strike length of 1.6 km and is open in all directions. Drill section spacing's vary between 50 m to 100 m.

8 DEPOSIT TYPES

The West African Leo-Man shield hosts several world-class gold deposits, that all lie within the Birimian rocks. Major deep-seated structures, crustal scale shear zones, are used as channel ways for mineralizing fluids.

Gold mineralisation occurs as various styles:

- discrete quartz veins (planar, anastomosing), shear zone hosted,
- disseminated, shear zone hosted,
- disseminated, breccia hosted (more brittle like deformation),
- intrusion related,
- skarn hosted,
- porphyry hosted, including copper-gold,
- paleo-placer conglomerates,
- supergene,
- IOCG.

The Sassandra shear system is a major cratonic suture and a dominant regional feature of the Birimian geology of western Ivory Coast. Regional target generation by Centamin identified the ABC Project and the Kona permit in particular as a potential setting for a large scale gold endowment.

The trap site at Kona South and Central – and by extension in the Kona permit – is unusual for West African styles of mineralisation because to date no obvious direct local structural control on grade has been identified. Resource grade mineralisation seems to be rheologically controlled within the more competent psammitic units but at a broad micro-ingress scale unrelated to local faults or shears. The hanging wall and footwall margins to the main stratigraphic units form potential targets for future drilling. The key elements for the Kona-style trap site are:

- Simple litho-stratigraphy consisting of only two main units, a calc-silicate bearing and a clastic unit.
- Progressive and rapid increase in partial melting in the form of migmatite development in the structural footwall;
- Lack of clear shear elements and related veining;
- Local domains of pervasive silica alteration;
- Bands of disseminated arsenopyrite that tend to have diffuse boundaries and that correlates with higher gold grades;
- High degree of continuity in the mineralised position.

Figure 8.1 illustrates the time dependent evolution of permeability within the deforming psammitic host.

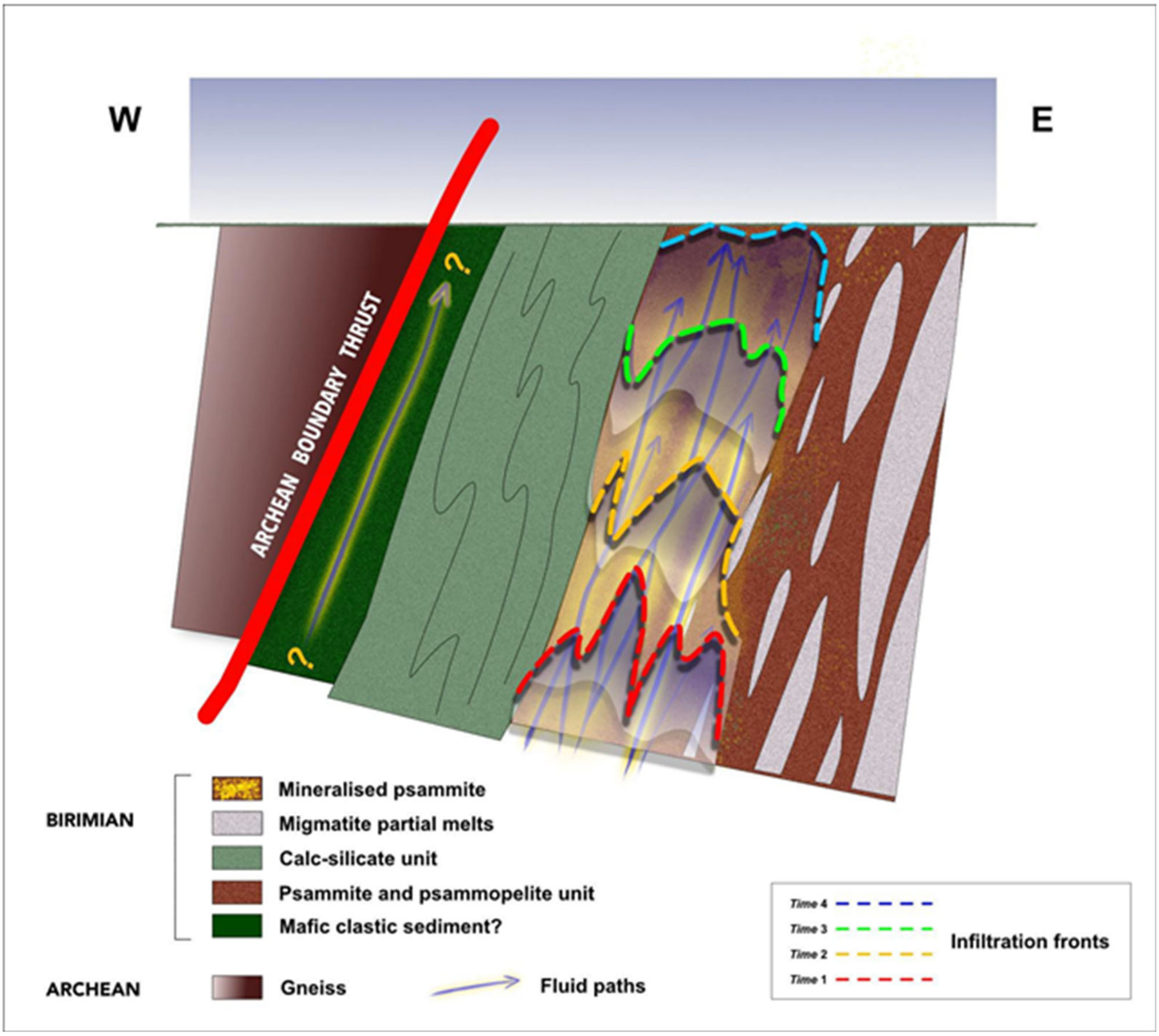

Figure 8.1: Schematic cartoon illustrating the time dependent evolution of permeability within the deforming psammitic host. (Note that lateral fluid movement is also likely)

(From Renaissance Geology, June 2018)

A working interpretation foresees hydrothermal fluids accessing the depositional sites via an infiltration mechanism, exploiting grain boundaries during the development and evolution of the foliation. This is supported by the high aspect ratio of arsenopyrite grains and aggregates and their contribution to the definition of the foliation. Grain shapes, foliation parallel alteration fabrics and the observable uniformity of grade across the units, support ingress and deposition along with primary crystallisation under restrictions of local finite permeability conditions during the hydrothermal event. This interpretation is considered by Centamin to be a work in progress.

There is deeper grade potential within the plumbing architecture below these diffuse, high level distal trap site lodes. Kona is a big system with good potential for structural grade enhancement along and within its extensive regional fluid permeability layer.

9 EXPLORATION

Exploration activities on Kona permit started in March 2017 and have included reconnaissance mapping and systematic rock chip sampling, auger sampling, ground geophysical survey, RC and diamond core drilling. All the exploration work was conducted by Centamin personnel, or under their direct management, when carried out by contractors.

A field camp was setup in the middle of the prospective area, within the permit area. All field work was conducted from this camp.

9.1 Coordinates, Survey Controls and Topographic Surveys

The default coordinate system used on the Project is based on the UTM coordinates, Zone 29 North in the World Geodetic System (WGS) 84. The Shuttle Radar Topography Mission (SRTM) digital data is used as the topographic reference for all the exploration work carried out to date. For the purpose of the resource work, a topographical ground survey was completed at the end of 2018, to produce a detailed DTM surface.

GEDES International S.A.R.L. Surveyors (Geo-Engineering Design and Surveying), an accredited CDI survey company, conducts all resource surveys including control monuments, topography and drilling collar pick up.

All drill hole collars (including RC and diamond collars) are surveyed using differential GPS unless accuracy is deemed to be low due to issues such as poor satellite coverage or abundant vegetation cover. In these cases, a total station is used to record the location of the collars. All other programs including soil samples, rock samples, auger collars, trenches, aircore collars are located using hand- held GPS units.

The collar elevations are linked to the EGM2008 geoid system (similar to the Mean Sea Level in the area).

9.2 Geological reconnaissance, mapping

The first geological reconnaissance mapping and prospecting quickly identified the main Lolosso Corridor relief and prospectivity. Several mapping campaigns have been completed since March 2017 to support the various exploration and drilling programs.

The current geological map of the Lolosso corridor has integrated field mapping, litho-factored multi-element geochemistry from rocks and auger samples and the Gradient Array Induced Polarisation imagery interpretations. The current geological map of the Kona permit area can be seen in Figure 9.1.

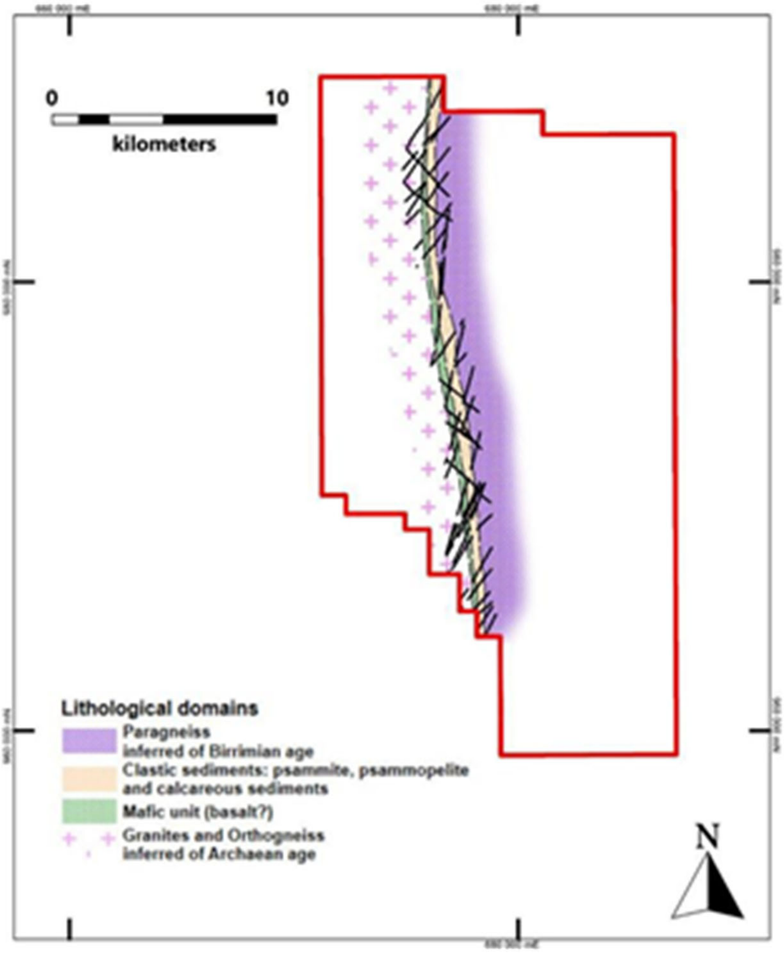

Figure 9.1: Geological map of the Kona permit area

(From Centamin - Micromine, March 2019)

9.3 Rock Chip Sampling

Silicified outcrops are reasonably abundant along the Lolosso corridor. A systematic rock sampling program was carried out in 2017, to fully characterise the surface expression of the mineralisation. The samples were collected as “point samples”, representative rock chipping composited over about 1 m2 panels, when possible but nominally on a 10 m grid. Other samples were collected as point chips or float samples and logged in the database.

The reference grid was on a 25 metre spacing minimum between sampling points, to generate a representative grid. A total of 788 rock samples were collected in 2017 and 205 rock samples in 2019/20; the results and locations of which are shown in Figure 9.2. Some areas between outcrops required to be sampled by shallow pitting.

All samples were analysed using a standard 50g gold fire assay with an AAS finish at Bureau Veritas Laboratories in Abidjan. Multi-element analyses were conducted by four-acid digest with ICP-AES and ICP-MS finish at the ACME Laboratories in Vancouver.

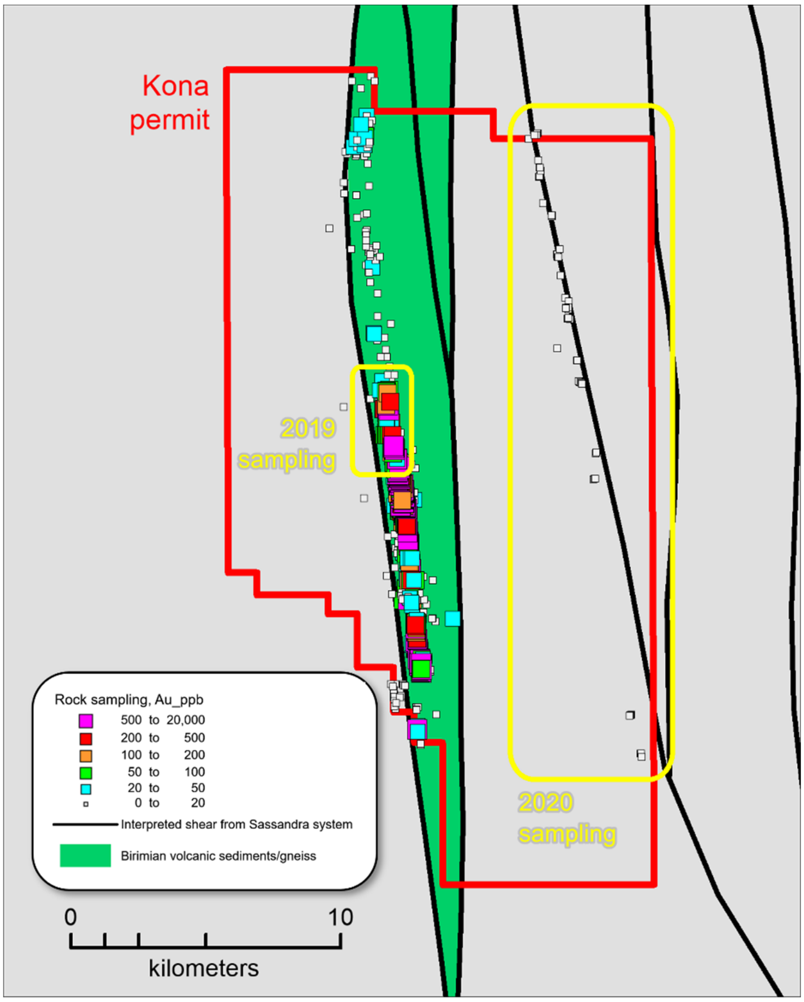

Figure 9.2: Map showing rock chip sampling over the Kona permit area

(From Centamin - Micromine, October 2021)

9.4 Auger drilling

Auger drilling is used extensively along the Lolosso corridor where, due to silicification, the surface regolith is generally thin. Augering has proved a good direct interface technique in deeper profiles and has shown to adequately represent the characteristics of the underlying rocks.

A first-pass grid was conducted on a 500 by 50 metre grid, which have been infilled to 100 by 50 metre grids in in follow-up areas.

As with rock chips, all samples were analysed using a standard 50 g gold fire assay with an AAS finish at Bureau Veritas Laboratories in Abidjan. Multi-element analyses were by four-acid digest with ICP-AES and ICP-MS finish at the ACME Laboratories in Vancouver.

A total of 2,843 samples were collected at the end of 2020, from 22,219 metres drilled. Figure 9.3 illustrates the location and results of auger sampling programs.

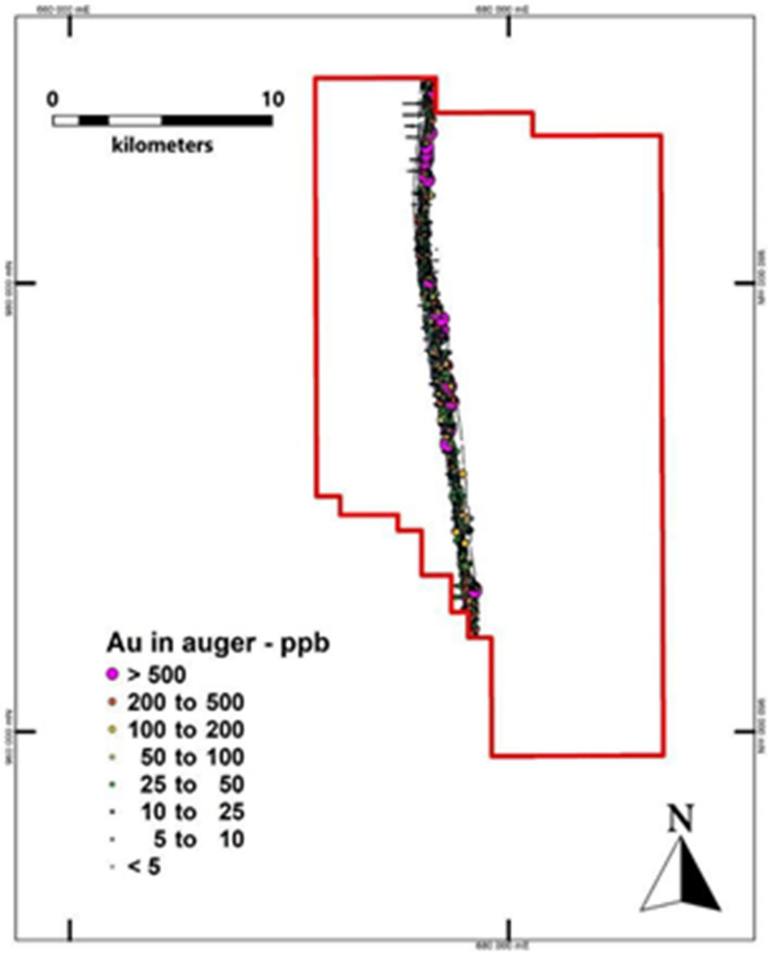

Figure 9.3: Location and results of auger sampling programs

(From Centamin - Micromine, March 2019)

9.5 Gradient Array Induced Polarisation survey

Following up on the first rock sample gold results, ground Gradient Array Induced Polarisation (GAIP) geophysical surveys were started on the southern part of the corridor in the middle of 2017 and extended in several campaigns until completing the entire Lolosso strike in mid-2018.

The GAIP surveys were conducted by SAGAX Afrique, a geophysical consultancy group in West Africa. The data was processed by Resource Potentials Pty Ltd. (Perth). The data was acquired using an approximate 1 x 1 km survey grid area with 50 m spaced survey lines oriented in an E-W direction, using 25 m receiver dipole spacing and 25 m station spacing moves. Transmitter electrodes were located approximately 500 m outside of the survey grid area edges in an E-W direction.

A total of 841 km of lines where surveyed, to complete the full grid. A full set of images were generated, for conductivity, resistivity and chargeability.

GAIP maps the bedrock geology and structure extremely well along the corridor. Figure 9.4 illustrates the chargeability and resistivity using ground IP imagery.

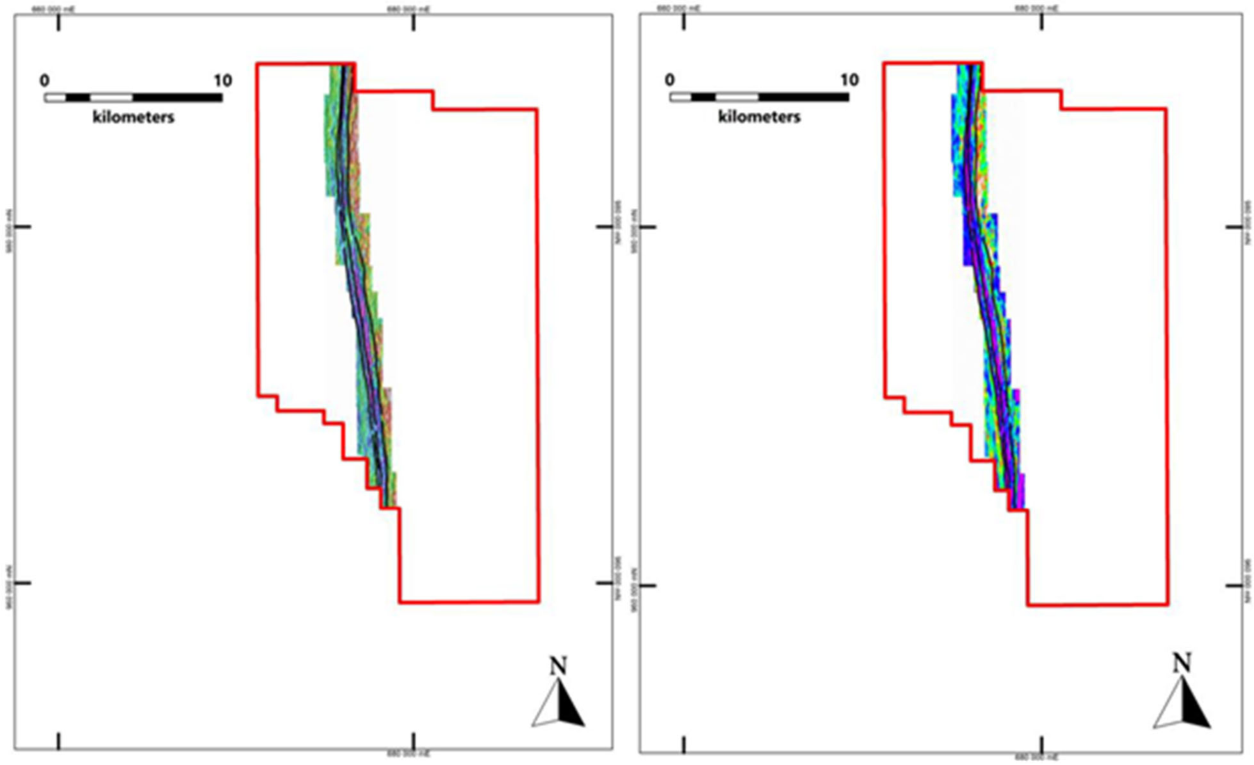

Figure 9.4: Ground IP imagery (Left: Chargeability, Right: Resistivity)

(From Centamin - Micromine, March 2019)

10 DRILLING

Drilling programs started at the end of 2017. All the procedures applied have been specifically adapted to the Project from the experience previously gained by the team on previous projects and respect the highest standards applied in the industry.

All the drilling to date was completed by the same drilling company, a reputable contractor who respects the best industry practices, Foremi, the Ivoirian subsidiary of Foraco SAS. The drill rigs are well maintained, and the maintenance crew is responsive. All the staff, from the drillers to the offsiders, are well trained and operate smoothly. The drill rigs used on the Project are TM136 (diamond drilling), HV2000 truck mounted (shallow RC drilling and quick exploration holes), Schramm T685 (deep RC drilling and resource drilling in general).

The drilling programs are planned to use on-site interpretations, which are based on previous exploration programs, surface geochemistry, aircore or other previous drilling, geophysical imageries and on conceptual interpretations.

The drill sites are marked by handheld GPS, prepared by hand clearing or dozer depending on the areas. By default, infill lines are cleared by dozer. The drill pad sizes are set by the needs from the drilling contractor.

Downhole surveys are taken every 30 m down hole, the first one being at 12 m depth (after two RC rods drilled), with single shot Relfex EZ SHOT system. Every survey is validated at the rig site by the geologist before being entered in the database. The geologist measures the hole orientation at surface using a compass, which is used as the collar downhole survey value.

The location of all drill collars is initially surveyed by the geologist using a handheld GPS, to rapidly enter the data into the database. Regular surveying campaigns are conducted by an independent surveyor company (GEDES International) to accurately pick up collar coordinates with either the Total Station or differential GPS.

After completion of a drill hole, the drill site is cleaned of any rubbish and contaminated soil (from oil spill, gasoil spill) is removed. A concrete block of approximatively 40 cm x 40 cm x 20 cm is set around the PVC casing for future reference.

The database is stored under the Acquire system, directly managed on site.

10.1 Reverse Circulation drilling

The first RC drilling program was completed in October-November 2017. The first pass results from Kona South and Central warranted resource follow-up in 2018. RC drilling continued throughout 2018, 2019 and 2020 to extend the Kona resources.

The drilling is dominantly dry and the moisture content (dry, moist or wet) of the bulk sample has been recorded since the end of 2016. For resource definition drilling, the drilling stops when the water table is reached, and the air pressure cannot keep the samples dry. The hole may then be continued by diamond drilling if the targeted mineralisation has not been intersected yet.

The RC drilling uses hammer bits of nominally 5 ¼, 5 ½ and 5 ¾ inch diameter. The bit sizes used by depth and by hole is recorded in the acQuire database. The number of RC drill holes completed in Kona South and Kona Central is shown in Table 10.1.

10.2 Diamond drilling

A first campaign of diamond drilling was completed in March-April 2018, to improve the understanding of the lithologies in the area and establish logging standards for on-going lithologies, structures and mineralisation styles. Further diamond drilling was carried out for resource definition at Kona South in 2018 and 2020 and Kona Central in 2020.

Diamond drilling usually utilises HQ size core barrels in 3 metres runs (shorter if the ground is very broken). PQ size is used to drill through the transported and saprolitic levels, as pre-collars – depths average about 10 metres. As soon as the rock is reached, HQ size drill bits are used. Some of the deepest parts of holes have been completed in NQ size drilling, when the HQ could not be continued due to broken zones intersected.

Diamond core is photographed both wet and dry before being halved with a diamond saw.

The number of RC and diamond drill holes completed in Kona South and Kona Central are shown in Table 10.1.

Table 10.1: Drill Holes by drill types

Prospect	Hole Type	No Hole	Total Metres
Kona South	DD	23	7,104.50
	RC	156	21,291.00
Kona Central	DD	9	2,542.05
	RC	200	26,406.00
Total		388	57,343.55

10.3 Sample Recovery and Grade

The relationship between drill hole recovery and assay grade was investigated with the use of a series of conditional expectation plots. In grade-recovery analysis, the main concern is higher grades associated with lower recoveries, which may indicate an upgrading of samples due to the preferential loss of gangue material. This would lead to biased sampling, resulting in an over-estimation of resources. A lesser concern is lower grades associated with lower recoveries, which may indicate a preferential loss of gold, resulting in an under-estimation of resources.

10.3.1 Diamond Drill Holes

All the 7,557 core assays from the Kona South and Kona Central had entries of recovery recorded. Figure 10.1 shows a conditional expectation plot of the gold grade of diamond drill core assays against recovery. Overall, the recovery of diamond drill core is high but there does appear to be a slight decrease of recovery associated with lower-grade gold mineralisation. This issue was investigated, and it was found that the low recoveries are generally limited to a depth of around 30 m.

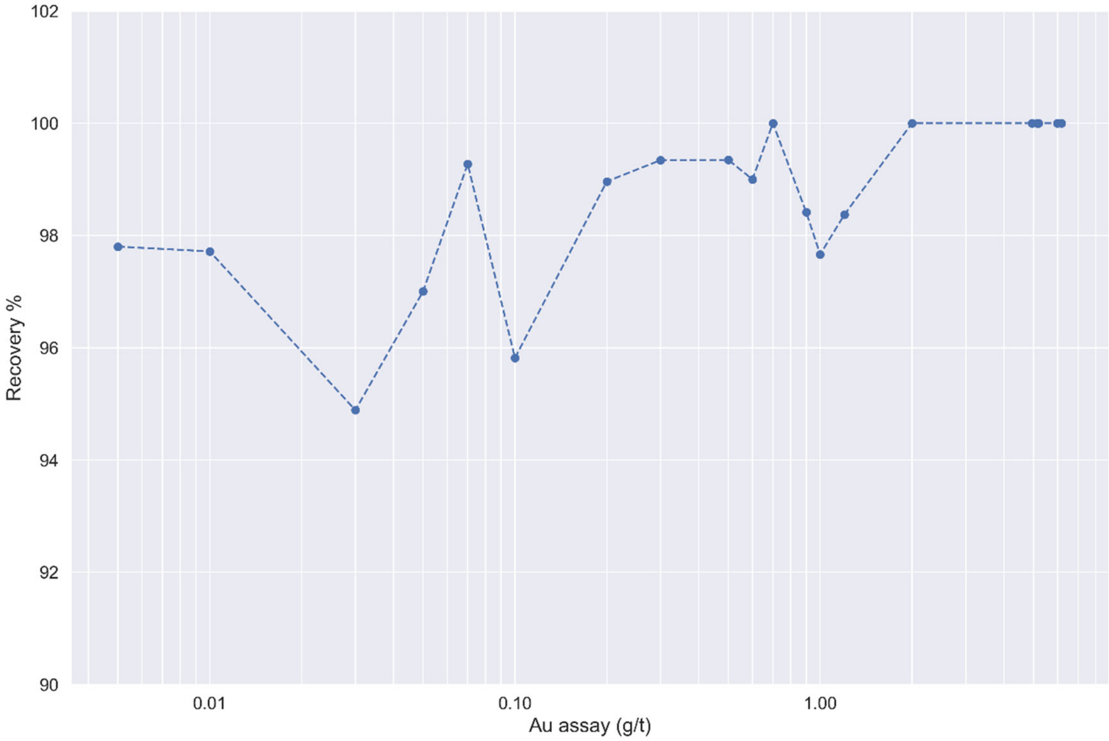

Figure 10.1: Conditional expectation plot of diamond drill hole recovery and gold grade (From Centamin using matplotlib, October 2021).

10.3.2 RC Drill Holes

From the total of 47,562 RC assays from Kona South and Kona Central, 47,464 intervals (99.7%) had records of the weight of the recovered interval. Centamin calculated the expected weight of the interval using the drill diameter data and the average density for each weathering domain to calculate the recovery. Figure 10.2 shows a conditional expectation plot of the gold grade of RC drill assays against recovery. There is virtually no discernible relationship between gold grade and recovery.

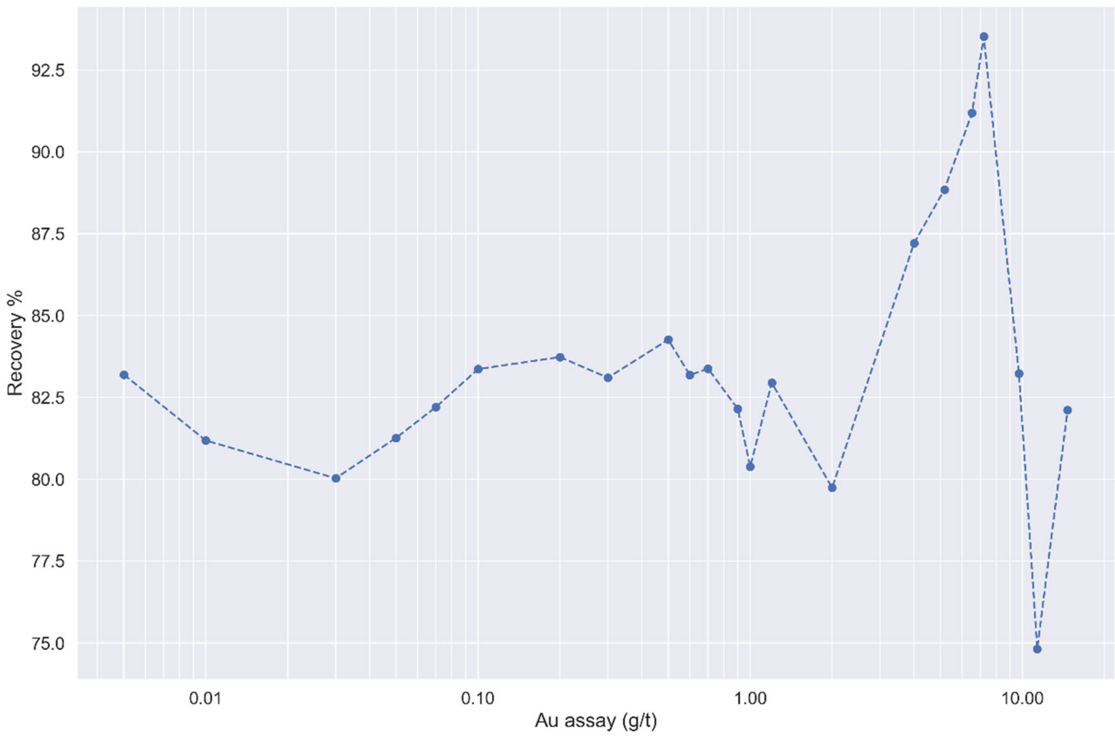

Figure 10.2: Conditional expectation plot of RC hole recovery and gold grade

(From Centamin using minplotlib, October 2021)

The relationship between recovery and grade was also assessed on an individual hole basis for 50 random drill holes through a series of downhole plots. No significant relationships were identified.

10.4 Twin Holes

Centamin has not drilled any dedicated RC-DD twin holes, however there are three shallow RC drill holes at Kona South that are very close to DD holes. The DD holes were drilled because the RC holes collapsed. Figure 10.3 shows a downhole plot of the gold grades for each of the drill hole pairs. The RC gold grade agree well with the DD grades. This indicates that the short-range grade continuity at Kona South is high compared to many other gold deposits.

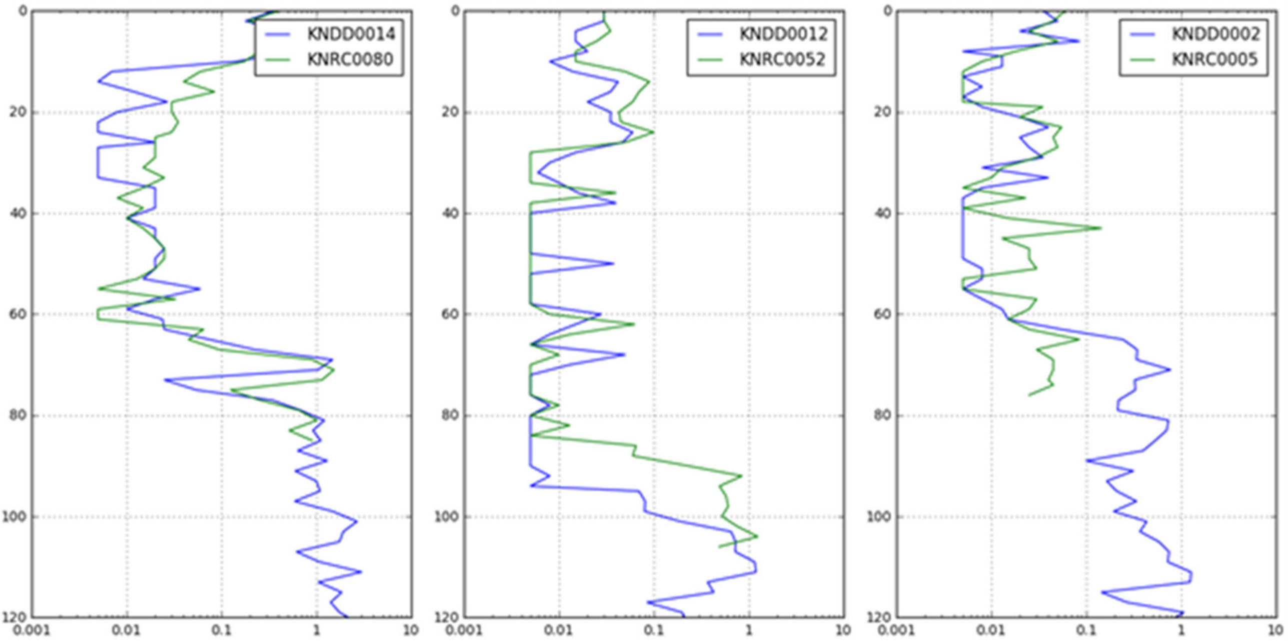

Figure 10.3: Comparison of gold grades between RC and Diamond drill holes

10.5 Wet RC Samples

RC drilling in wet conditions can sometimes cause problems with sample recovery and can lead to downhole smearing. Centamin plotted the downhole gold assay and recovery data along with an indicator to identify moist or wet intervals for each of the 162 RC drill holes that had over 10 m of intervals logged as moist or wet. Each plot was assessed with eye to identifying differences between the wet and dry sampling. No obvious pattern or downhole smearing was observed.

10.6 Drill Hole Coverage of Kona South

It is considered by the Qualified Persons that a drill plan and representative examples of drill sections through Kona South are more informative than a tabulation of mineralised intercepts. A map showing all the drilling covering Kona South and the location of subsequent cross-sections can be seen in Figure 10.4. The cross-sections of the Kona South deposit can be seen in Figure 10.5 through to Figure 10.8.

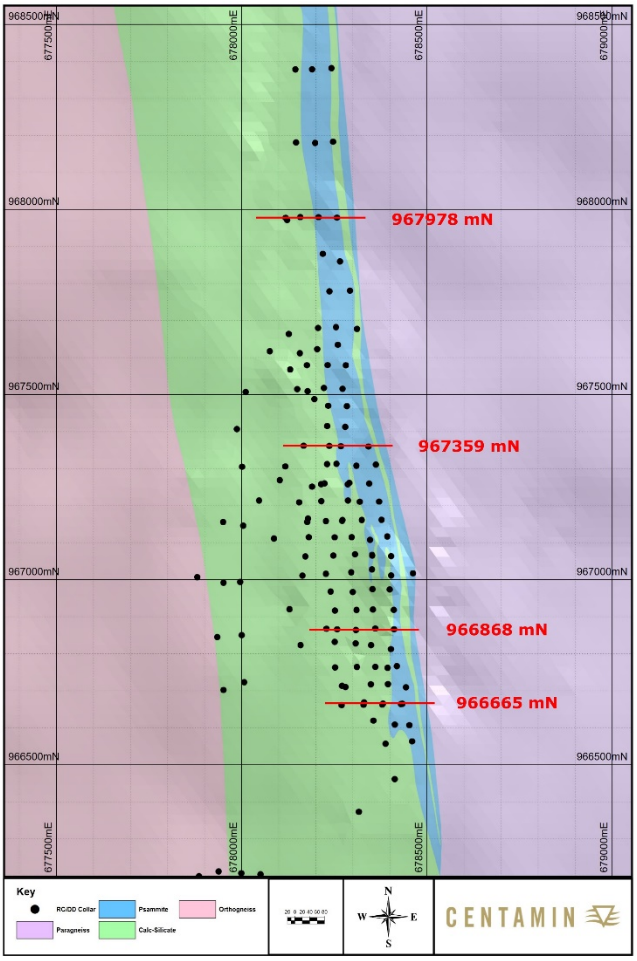

Figure 10.4: Map of Kona South drilling and geology

(From Centamin - Micromine, October2021)

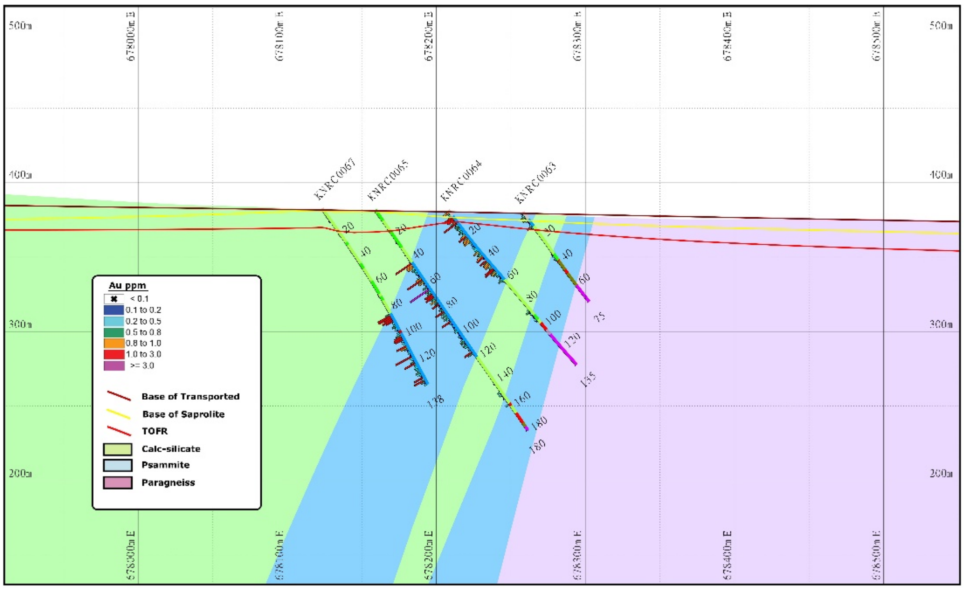

Figure 10.5: Drill section 967,978

(From - Micromine Centamin, October2021)

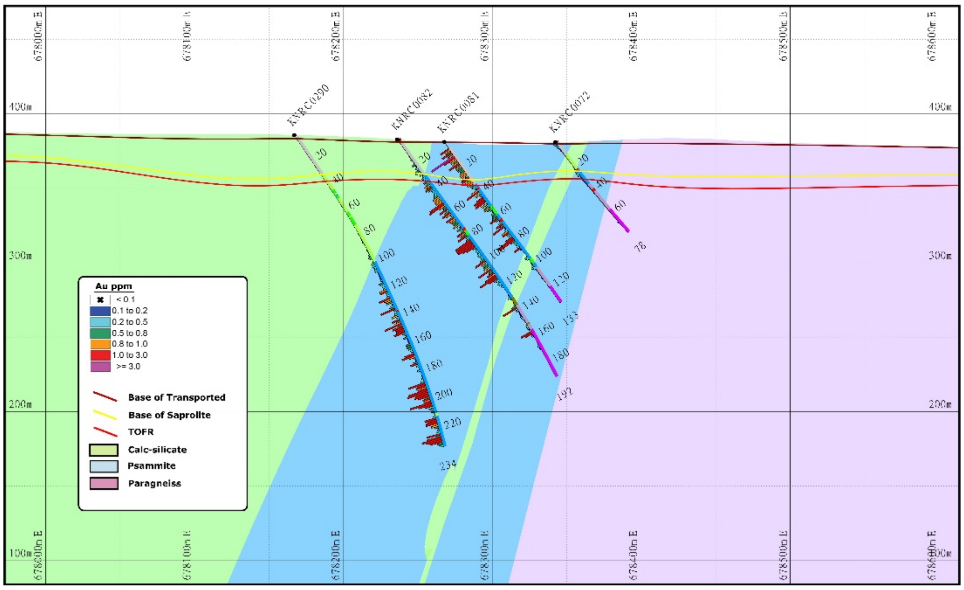

Figure 10.6: Drill section 967,359

(From Centamin - Micromine, October 2021)

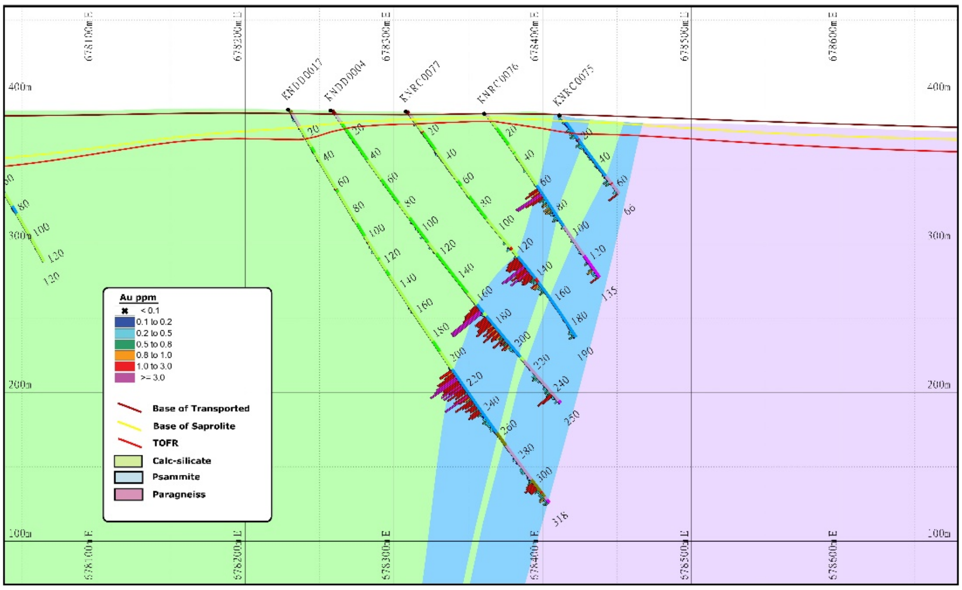

Figure 10.7: Drill section 966,868

(From Centamin - Micromine, October 2021)

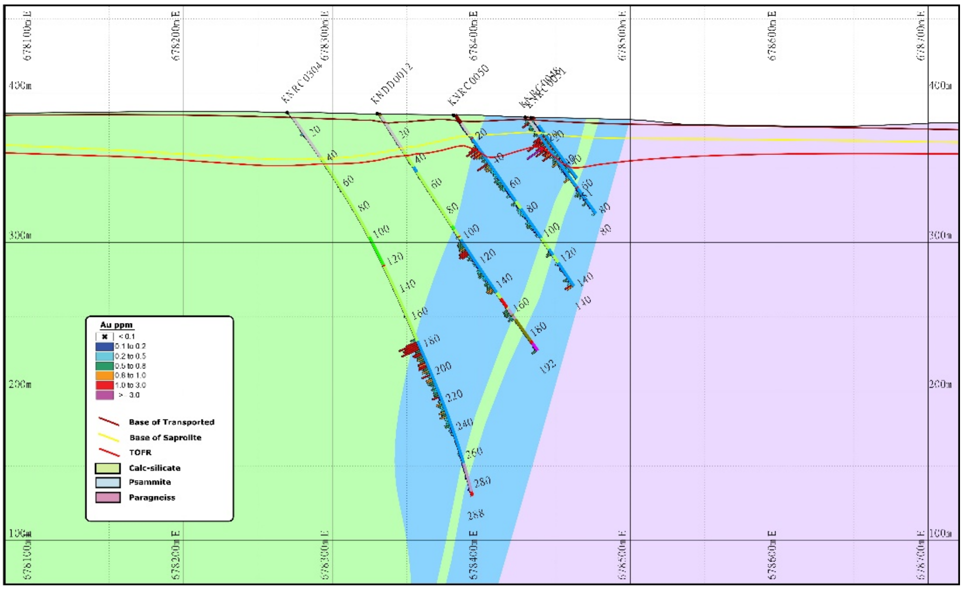

Figure 10.8: Drill section 966,665

(From Centamin - Micromine, October 2021)

10.7 Drill Hole Coverage of Kona Central

It is considered by the Qualified Persons that a drill plan and representative examples of drill sections through Kona Central are more informative than a tabulation of mineralised intercepts. A map showing all the drilling covering Kona Central and the location of subsequent cross-sections can be seen in Figure 10.9. The cross-sections of the Kona South deposit can be seen in Figure 10.10 and Figure 10.11.

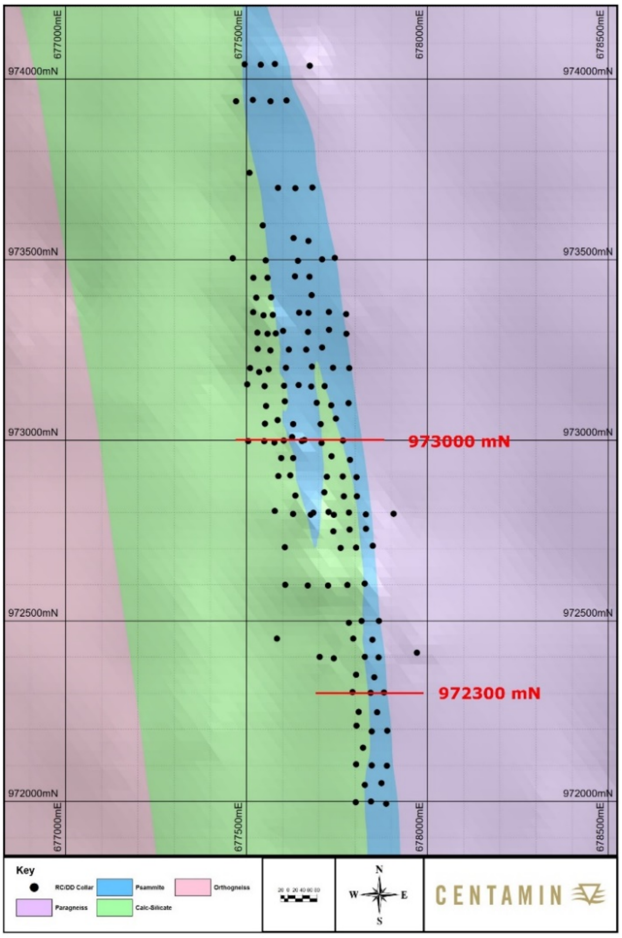

Figure 10.9: Map of Kona Central drilling and geology

(From Centamin - Micromine, October 2021)

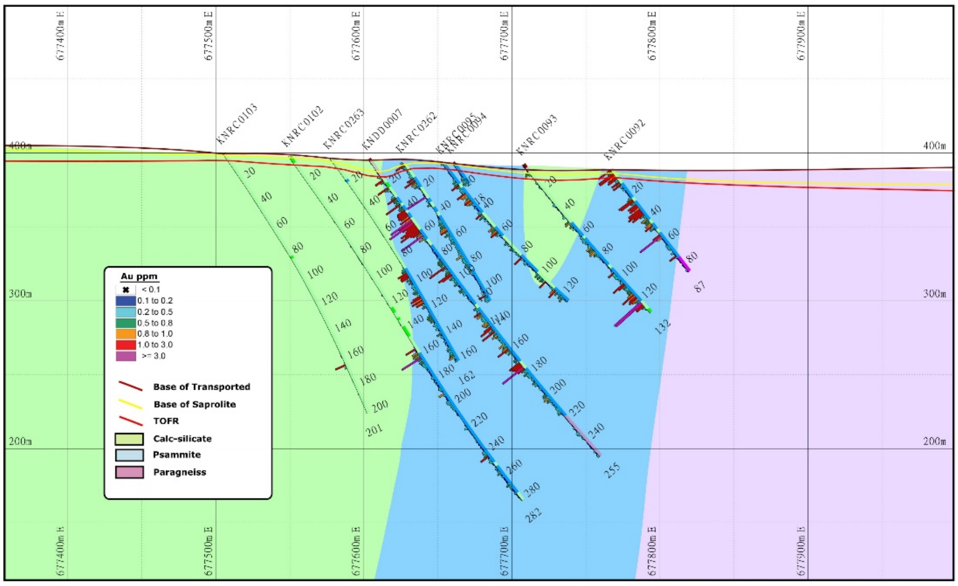

Figure 10.10: Drill section 973,000

(From Centamin - Micromine, October 2021)

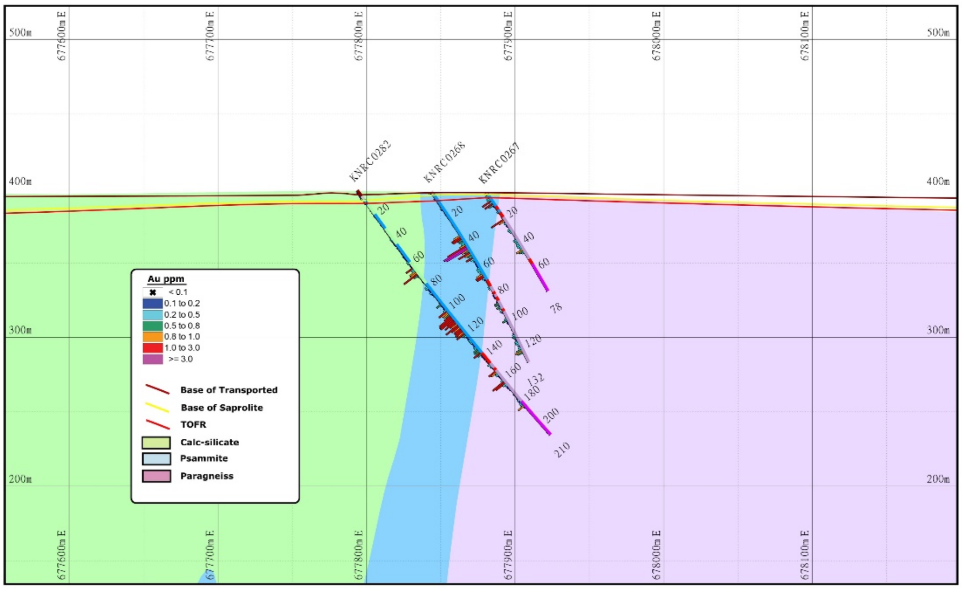

Figure 10.11: Drill section 972,300

(From Centamin - Micromine, October 2021)

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

Bureau Veritas Minerals Laboratory (BVML) in Abidjan, Côte d'Ivoire, was the only analytical laboratory used for gold fire assaying on the ABC Project. The BVML head office is in Paris, France, and is independent of Centamin.

BVML Abidjan, Côte d'Ivoire, is in the process of ISO17025 accreditation (general requirements for the competence of testing and calibration laboratories). Currently the laboratory uses the same protocols and procedures as the accredited parent laboratories in Vancouver, Canada and Australia. BVML also falls under the Bureau Veritas group's certificates listed below:

- ISO9001 certificate
- ISO14001 certificate
- IFIA certificate
- OHSAS 18001 Certificate

11.1 Reverse Circulation Sampling Methods

During the RC drilling, samples are collected from the cyclone attached to the drill rig at 1 m intervals in large plastic bags. Each individual sample is weighed and then run through multi-stage riffle splitter until the sample is reduced to approximately 5 kg in weight. The sample is then passed through a 3-tier splitter so that the final sample weighs between 2 and 3 kg which goes to the laboratory. Small plastic bags are used to bag the samples. A sample number is written on the outside of the bag with black marker and a stub from a sample ticket is stapled to the top of the bag. Field duplicate samples are taken as another split of the original RC sample that followed the same sampling methodology as the primary sample. The final stubs of the sample tickets are stored at the site office in Feremandougou. The sample bags that go to the laboratory are weighed and stored in poly woven bags containing 10 to 15 samples each. At the end of every day, Centamin personnel transport these samples back to the processing area at the Kona camp. The batch of samples are collected by a laboratory truck from the exploration camp once a week.

The sample reject from the riffle splitter is returned to the original plastic bag and marked with the hole number and the downhole metre range of the sample. These samples are held in reserve for around four to six months at the drill site in case further resampling is required.

QAQC procedures consist of the insertion of either a CRM, a blank sample or a field duplicate every 10th sample. Field duplicates are taken as another split of the original RC sample that followed the same sampling methodology as the primary sample. Blanks and standards are inserted once the samples are returned to the processing area to increase efficiency and reduce error.

11.2 Diamond Core Sampling Methods

Core is oriented and placed in plastic core trays at the drill site. Rock Quality Designation (RQD) and core recovery are measured at the rig and core trays returned by Centamin personnel to the processing facility.

Once logged, the core is placed in a cradle and cut with a core saw. The cut is made to the left of the orientation line and both halves returned to the core tray. The right side of the core is then sampled and put in a calico bag. Sample intervals are at the discretion of the logging geologist but are regularly at 1 m intervals. The sample number is written on the outside of the bag and a sample ticket stub placed in the bag with the sample. The core trays with the remaining half-core are then moved to the core storage area.

QAQC procedures consist of the insertion of either a CRM, a blank sample or a non-certified spike (previous RC samples with grade) every 10th sample. No sample duplicates of core have been taken.

The Qualified Persons conclude that the sample preparation procedures are regularly checked and follow industry standard practices.

11.3 Chain of Custody and Transport

All RC samples and core trays are transported by Centamin personnel between the drill sites and the sample processing facility. The processing area consists of an open logging area for core trays and a covered sample handling area for the staging of the RC and DD samples for transport. The sample processing area is in the main compound of the Kona Camp. The compound is completely fenced and under 24-hour security.

The core is laid out, logged and sampled by Centamin personnel. After RC and core samples are prepared, they are placed in sealed rice sacks in groups of 10 – 15 samples per sack.

Samples are transported to Abidjan by a BVML truck directly to the lab facility. A sample submission form accompanies each shipment of samples. An email copy of the submission form is also sent to the laboratory. Once the samples are received by BVML, the sample submission is stamped, signed and dated then emailed to Centamin and stored on the site server.

All pulp rejects are returned by BVML transport to Centamin's Doropo office, located in the north-east of Cote d'Ivoire, and stored in locked shipping containers.

The Qualified Persons conclude that the chain of custody and transport of samples is robust and follows industry standard practices.

11.4 Sample Preparation and Analysis

After samples are received at BVML, they are sorted and weighed. RC and DD samples both followed the same preparation path.

11.4.1 Sample Preparation by laboratory:

Samples are dried for 12 hours at 105°C after which they are crushed in a jaw crusher until 70 percent passes 2 mm. The sample is then passed through a riffle splitter until approximately 1 kg in weight and pulverized using an LM2 until 85 percent passes 75 microns. A 250 g sample of the pulp is then placed in a pulp packet in preparation for final analyses.

11.4.2 Samples Analyses at Laboratory:

A standard fire assay for gold (FA450) was performed by BVML. A 50 g sub-sample is taken from the pulverised material, mixed with flux and then fired. The resultant lead button is then transformed to a prill using cupellation. The prill is then dissolved in Aqua Regia solution and the resultant liquor read by AAS with a detection limit of 0.01 g/t Au. This is considered to be a total assaying technique.

Internal laboratory QAQC analyses consists of:

- a size analysis at 2mm after crushing for one in every 30 samples
- coarse duplicate was taken at 1 in 50 samples
- size analysis at 75 microns after pulverising 1 in every 20 samples

- pulp repeat approximately one in 25 samples

The Qualified Persons considers the sample preparation, security, and analytical procedures to be at least industry standard and adequate for the style of mineralisation at the Kona deposits.

11.5 Quality Assurance and Quality Control sampling

Centamin has adopted a reasonably stringent Quality Assurance and Quality Control (QAQC) program with the use of Certified Reference Materials (CRMs), blanks, RC field duplicates and 'spike' samples. Centamin routinely monitors QAQC sample results when assay results are returned from the laboratory. Any concerns or questions are immediately raised with the laboratory.

Centamin has conducted inter-laboratory cross-checks to verify the results from Bureau Veritas. A total of 407 umpire samples were sent to SGS Ouagadougou in October 2020 covering drilling from October 2017 to the present. Results returned a correlation coefficient between the two datasets of 0.96 with the precision pairs analysis returning 95% of pairs within 20% as indicated in Table 11.1.

Table 11.1: Summary statistics of umpire sampling at the ABC Project

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

Quality control procedures employed by Centamin include industry standard drill core and RC sample processing techniques discussed in Section 10.

For RC drill holes either a CRM, a blank sample or a field duplicate are inserted every 10th drill hole sample. For diamond drill core either a CRM, a blank or a spike sample are inserted every 10th drill hole sample.

Drilling at the Kona deposit includes prospects that are outside the area assessed by the current resource estimate. Sample dispatch does not differentiate between the Kona prospects, so the following sections include QAQC results from the surrounding prospects.

11.6 Certified Reference Materials

Centamin routinely inserts a CRM nominally every 30th drill hole sample. A total of 16 different CRMs has been used to verify the Bureau Veritas gold assays. All were sourced from Ore Research & Exploration Pty Ltd (OREAS), and they range in grade from 0.214 to 8.73g/t. OREAS is considered to produce high quality CRMs that are suitable for use on the ABC Project. The Qualified Persons recommends that low grade CRMs at around 0.1 and 0.2 g/t are added to the list of CRMs to verify the marginal gold mineralisation.

Centamin compares the expected and assayed CRM values at the time that the assays are imported into the database. Centamin has reported to CUBE that a batch will fail if any one of the following criteria are 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 are investigated thoroughly by reviewing photos 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 are requested for re-assay by the 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.

Error! Reference source not found. shows a Shewart control chart of all 1981 CRM assays from the ABC Project and includes data from batches that were re-assayed due to suspicious CRM assays. The y axis shows the relative difference from the expected CRM value. Relative difference values over 100% indicate that the assay value is higher than the expected value. The x axis in this graph is ordered by the expected CRM value and then the assay date as this is believed to produce a more readable graph. The vast majority of CRM assays performed well within acceptable limits.

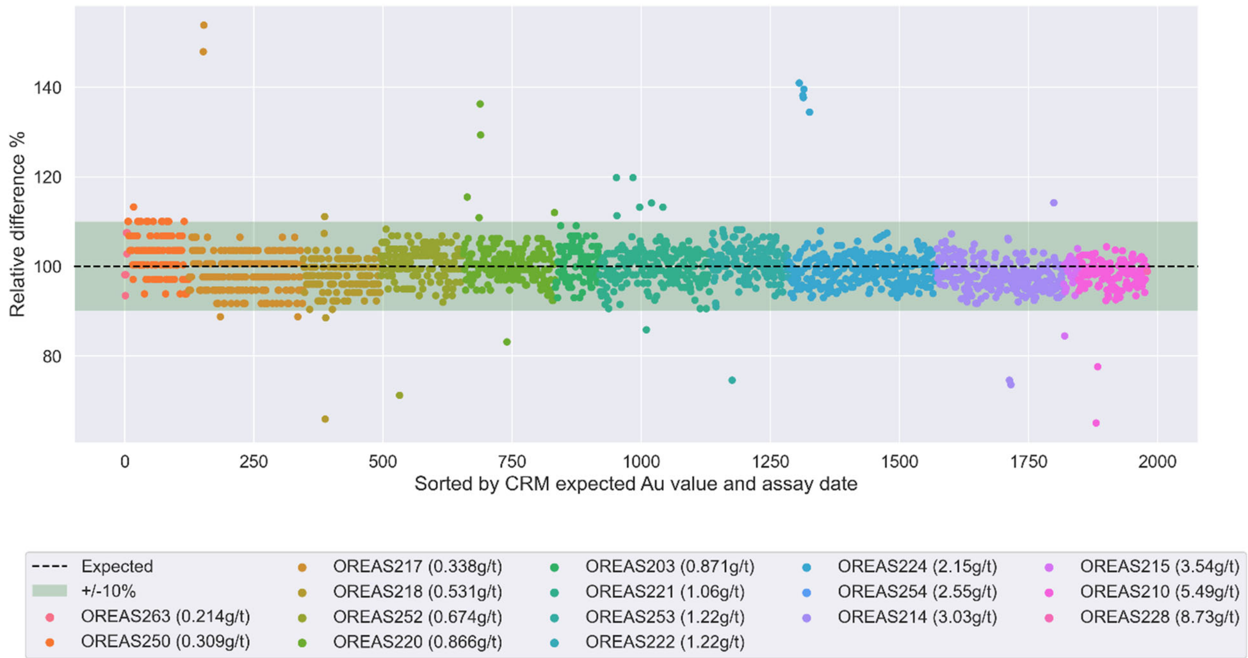

Figure 11.1: All CRM assays

(Centamin using matplotlib, October 2021)

Table 11.2Table 11.1 shows a summary of all the CRM assays from the estimated deposits. The accuracy for all the CRMs is within tolerable limits. The bias is calculated as the mean of the difference between expected and reported values for each CRM divided by each CRM's expected value.

Table 11.2: Summary of Certified Reference Material samples

# assays	CRM	Au expected (g/t)	Au mean (g/t)	Bias	Au min (g/t)	Au max (g/t)
6	OREAS263	0.21	0.22	1.3	0.2	0.23

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

11.7 RC Field Duplicates

Centamin routinely inserts a RC field duplicate every 30 RC samples. Field duplicates are used to check sampling precision or repeatability and ensure that the sub-sampling technique is not biasing results.

Primary samples are collected on 1 m intervals and riffle split to produce the one-sixteenth sub-sample for primary analysis and a 15/16 reject. Field duplicate samples are produced by riffle splitting the reject material.

Centamin produced Percentage Half Difference (PHD) plots and summary statistics of field duplicates from each of the deposits. PHD=|x-y|/(x+y), where x is the original value and y is the duplicate.

Figure 11.2 and Figure 11.3 shows a PHD plot of all the RC field duplicates from the Kona South and Kona Central deposits. The repeatability of gold duplicate grades is reasonable and shows no significant bias although some scatter is apparent. Table 11.3 and Table 11.4 shows a summary of the RC duplicate pair statistics. No significant bias is evident for the RC field duplicates.

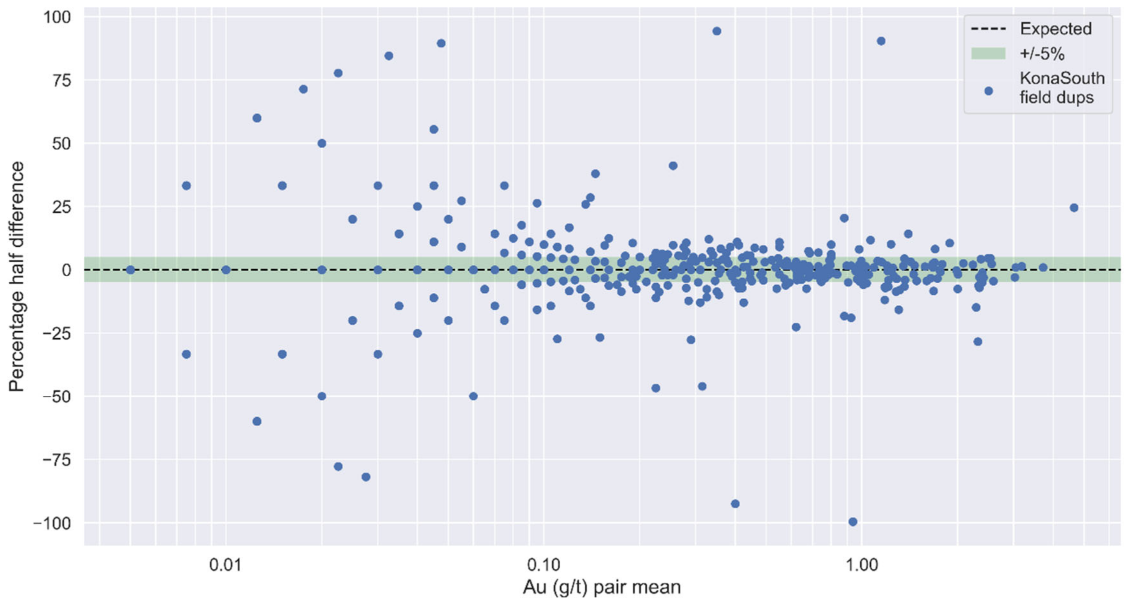

Figure 11.2: Percentage half difference plot of RC field duplicates (Kona South)

(Centamin using matplotlib, October 2021)

Table 11.3: RC field duplicate summary statistics (Kona South)

Statistic	Original	Field duplicate	Differences
mean	0.306	0.31	0.004
min	0.005	0.005	0
max	5.8	3.68	2.12

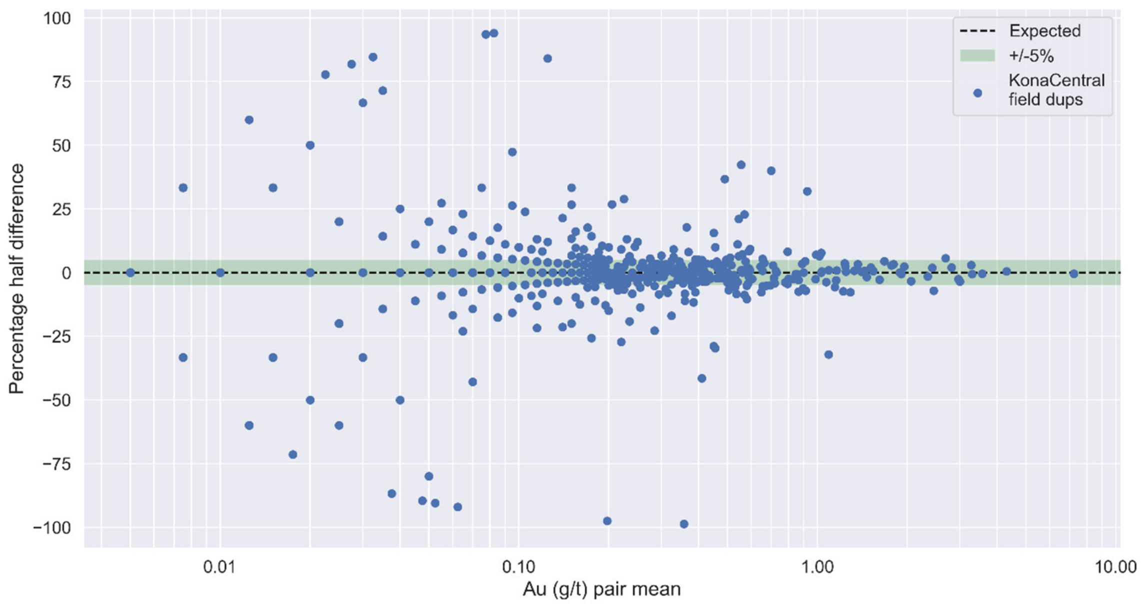

Figure 11.3: Percentage half difference plot of RC field duplicates (Kona Central)

(Centamin using matplotlib, October 2021)

Table 11.4: RC field duplicate summary statistics (Kona Central)

Statistic	Original	Duplicate	Difference
mean	0.242	0.242	0
min	0.005	0.005	0
max	7.210	7.270	0.06

11.8 Blanks

Centamin routinely inserts a blank sample for every 30 samples from drill holes. Blanks are used to check for contamination within the laboratory sample preparation procedure. Centamin uses blanks produced from RC intervals that have been assayed and shown to be barren and a long way from mineralised intervals. In total, Centamin has submitted 2,670 blank samples, which are shown in Figure 11.4. All but six (6) of the 2,670 blank assays returned values that are below 0.1 g/t gold, which is ten times the detection limit. The Qualified Persons consider that the blank samples indicate that contamination between samples is not significant.

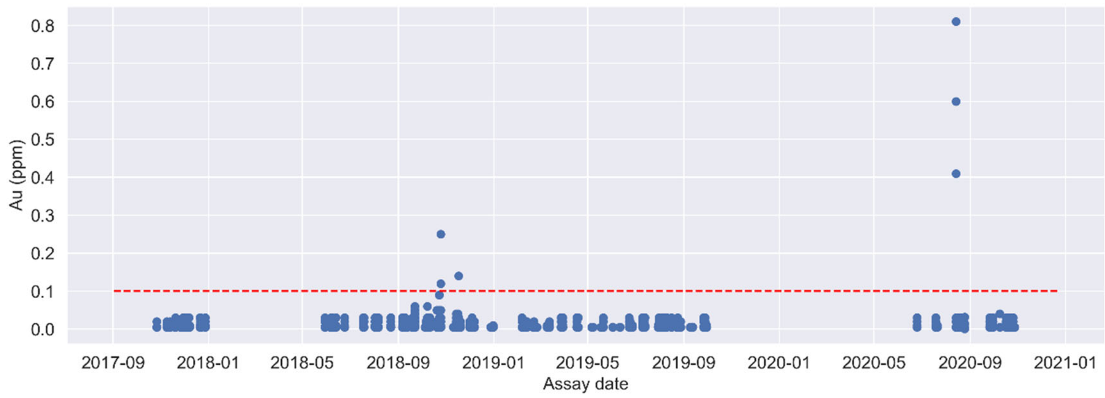

Figure 11.4: Blank samples

(Centamin using matplotlib, October 2021)

12 DATA VERIFICATION

CUBE has conducted several checks in addition to the routine data verification conducted by Centamin to verify the data veracity and data quality. The steps taken are summarised below. Cube considers that sufficient verification of the data that underpin the resource estimates has been carried out. Cube has not independently checked the information presented in this report regarding project history, metallurgical test work or exploration licence.

In conclusion, Cube is of the opinion that the quality of the data at least meets industry standard and is suitable to form the basis of the resource estimates presented in this report.

12.1 Data Verification by Centamin

The exploration database has been maintained on site in acQuire since the beginning of the project. Field data is collected on paper and transcribed to excel spreadsheets by field geologists and a dedicated data entry person. Spreadsheets are then imported to acQuire by a dedicated database manager.

Data is internally validated by acquire as it is entered and ensures:

- Collar, survey, assay and geology end of hole depths are compatible
- No overlapping intervals are allowed
- No repeat sample identification numbers can occur within the database
- Laboratory assays are loaded to the correct sample identification number
- All analytical results are stored in the database as reported by the laboratory. Assay values below detection are converted to half detection limit for reporting and modelling purposes
- All logged codes adhere to the accepted libraries.

12.2 Site visits

Mr Howard Bills of Centamin plc visited the ABC Project in January 2021 to observe and review the exploration and drilling works carried out on the projects to date; visited the individual prospects where resources have been delineated; inspected drill core and RC chips stored at the project sites; discussed with Centamin plc’s on-site project geological team the logging, sampling and geological data collection procedures carried out during the exploration process; methods used and reviewed the use of geological data in the understanding of the mineralised systems at the ABC Project.

While onsite no drill rigs were operating at the time of the visit, the site and samples were well maintained, sampling and data collection procedures were in place and well understood and appear to have been carried out to standard industry practice. Core and chip samples were reviewed, and the geological understanding of the deposits was sound.

Mr Mike Millad of Cube and Mr Craig Barker of Centamin plc visited the ABC Project and Kona camp for two full-day in September 2021. During the visit, they viewed selected RC and diamond drill core, discussed the geological framework and controls on mineralisation, toured the Kona Camp facilities, viewed the outcrops for Kona South and Central, checked five (5) drill collar locations, dips and azimuth and discussed sample handling and QAQC process and procedures, which were found to be industry standard.

The examination of the drill core and discussions around geology and controls on mineralisation highlighted the clear progression from banded calc-silicate rocks in the hanging wall to the silicified psammitic rocks hosting the mineralisation and then into the foot wall paragneissic rocks. The mineralised zone is generally planar and believed to be coincident with the steeply dipping psammite lithology, which is also the locus of shearing.

Some calc-silicate, mineralised psammite and paragneiss outcrops were visited in the field. The silicified and mineralised psammite unit is generally highly resistant to weathering, standing out as linear ridges, and also appears to be preferentially mineralised in areas where it has suffered tectonic thickening/shortening due to drag folding.

No RC or diamond drilling was occurring at the time but drilling practices are reported to be the same as those at Centamin's Doropo deposits which were visited by Mr. Millad and Mr. Barker also in 2021. Cube also selected several diamond and RC drill holes to cross-check the geological assay logs against the drill core and chip trays and to better understand the geology and reliability of the logs. Cube spoke to many of the key personnel including senior and junior geologists and the database administrator.

12.3 Database audit

Cube checked that the drill hole database was internally consistent. Validation included checking that no assays, downhole surveys, density measurements or geological logs occur beyond the end of hole depth and that all drilled intervals have been geologically logged. The minimum and maximum values of assays, density measurements and downhole survey measurements were checked to ensure values are within expected ranges. Further checks included testing for duplicate samples and overlapping sampling or logging intervals. Cube found the data to be of consistently good quality, owing largely to the fact that Centamin continuously conducts its own validation internally.

12.3.1 Collar location check

In September 2021 the location of 5 drill hole collar locations was checked by Cube against the database records using a GPS-enabled iPhone 12 Max running the "Coordinates" and "Clino" apps. The collar locations contained in the database are surveyed using either a Differential GPS or Total Station, both of which are significantly more accurate than an iPhone 12 MAX. All Easting and Northing coordinates were found to be within acceptable limits accept one. The large difference in coordinates for hole KNRC0349 could be due to the fact that a rainstorm was in progress during the Kona field visit. The dip readings recorded by the iPhone were generally steeper than those recorded in the database as indicated in Table 12.1 below.

Table 12.1: Cube collar survey and azimuth/inclination checks for selected drill holes at the ABC Project

Hole ID	Area	Cube Site Check				Centamin/Ampella Database				Distance Difference (m)
		UTM X	UTM Y (m)	Azimuth	Dip	UTM X (m)	UTM Y (m)	Azimuth	Dip	
KNRC0009	SouthKona	678,305.0	967,069.0	93	61	678,305.8	967,068.4	88.0	54.7	1.0
KNRC0010	SouthKona	678,403.2	967,012.4	89	61	678,403.2	967,011.3	91.6	54.3	1.1
KNRC0006	SouthKona	678,403.4	967,064.3	78	67	678,403.1	967,063.7	89.8	53.4	0.7
KNRC0349	CentralKona	677,779.0	972,829.3	92	68	677,805.0	972,845.0	93.0	55.0	30.4
KNRC0256	CentralKona	677,771.3	972,898.8	90	62	677,766.0	972,900.0	90.6	54.6	5.4

Cube is satisfied that all relevant observations, knowledge and documentation have been made or received during the ABC Project site visit in order to inform and enable a Mineral Resource Estimate and associated Qualified Person sign-off.

12.3.2 Laboratory visit

In January 2021, Mr Howard Bills from Centamin plc visited BVML in Abidjan, in order to inspect the sample preparation laboratory and the fire assaying processes and procedures. The laboratory has been used by Centamin for routine drill sample analysis throughout the exploration process at the ABC Project. No significant concerns were flagged.

In September 2021 Mr Mike Millad from Cube and Mr Craig Barker from Centamin plc visited BVML in Abidjan to observe sample preparation and fire assaying procedures. Both found the laboratory to be overwhelmed with samples, slightly untidy and dusty, possible evidence of contamination (e.g., hand prints on exposed samples in trays) while improvements in workflow were suggested and taken onboard by BVML.

A site preparation laboratory will be setup for future drilling programs as is being done at Doropo, Centamin's other project in Cote d'Ivoire.

RC and diamond samples from the ABC Project had not been submitted during 2021 so have no impact the Mineral Resource estimate reported.

In Centamin's opinion, the sample preparation is well documented and appropriate for the drilling undertaken. The sample security protocols are good as all samples are delivered directly from the field camp to BVML by BMVL transport and staff.

The actual insertion rates of QA/QC samples are at insertion rates outlined in Centamin procedures. The procedure is deemed to be in line with industry best practices.

The duplicate analysis for Kona has shown there to be little to no bias in the reported results. Blank samples returned no failures. The blank pass rate can be deemed as good.

The CRM results are deemed as good, with no areas of concern being identified. Umpire sampling has been completed as per the 2018 recommendations by H&S Consulting.

Overall, the QA/QC results returned are acceptable. In Centamin's opinion, there are no issues outlined in the sample preparation and analysis, and that the resulting data is suitable for use within a Mineral Resource estimate.

The field duplicate to normal sample ratio will be reviewed with an intention to increase the insertion rate to match that of other QA/QC sampling done at other Centamin projects and in a particular order and within the mineralised zone.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

This report presents the updated Mineral Resource estimate of the Kona South and Kona Central deposits. Only limited metallurgical test work has been conducted on the Kona South mineralisation. A composite sample of fresh Kona South Resource material was analysed by ALS Metallurgy Services (Perth) in August 2018, for which a summary of the results can be seen in Table 13.1.

Table 13.1: Summary of ALS Metallurgy test work

SUMMARY OF RESULTS	
Testwork Parameter	Kona - Lolosso
SMC DWi (kWh/m³)	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_{80} 75 µm	88.9
Overall Au Extraction (%) via Flotation @ P_{80} 106 µm, Leaching of Flotation Tail, and Leaching of Flotation Concentrate re-ground to P_{100} 63 µm	85.4
Overall Au Extraction (%) via Flotation @ P_{80} 106 µm, Leaching of Flotation Tail, and Leaching of Flotation Concentrate re-ground to P_{80} 10 µm	87.2

These results indicate the Kona South Fresh material is hard, abrasive and non-refractory with an 88.9% overall Gravity-CIL recovery at P80 passing 75 µm.

ALS Metallurgy Services also conducted a QEMSCAN analysis on a panned concentrate sample from Kona South (Liu, 2018). The ALS Metallurgy Services report indicates the gold deportment in the panned concentrate is primarily free and structurally hosted within micro-fractured arsenopyrite.

A summary of the Kona South QEMSCAN panned concentrate mineralogy received from Centamin is detailed below:

- Native gold (with silver content typically <10%) is the only gold-bearing phase detected.
- Arsenopyrite makes up 4.77% by mass and has a P80 of 67 µm.
- Loellingite makes up 1.14% by mass and has a P80 of 67 µm.
- Minor amounts of pyrrhotite (1.91% by mass with a P80 of 44 µm) and pyrite (0.32% by mass with a P80 of 93 µm) were also detected.
- Most of the remaining 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 composed of plagioclase, quartz, and biotite.

Figure 13.1 shows details of the mineralogy of the panned concentrate sample.

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
TOTAL	100

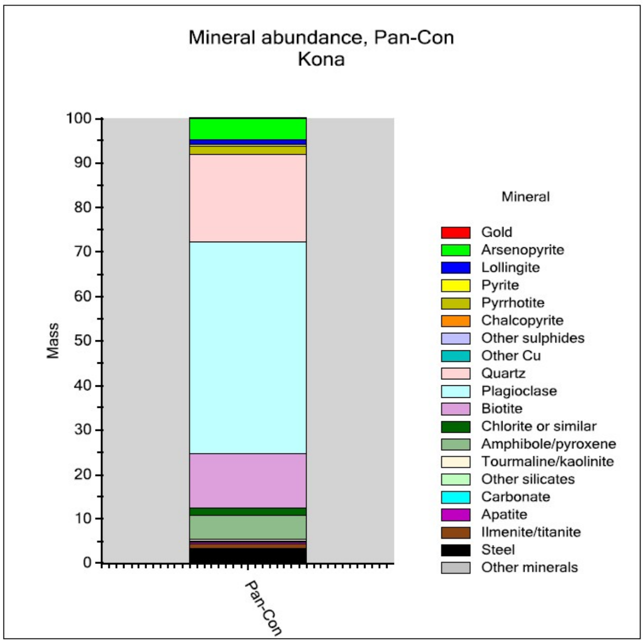

Figure 13.1:Kona South QEMSCAN panned concentrate mineral abundances

(From ALS Laboratory Report - Liu, 2018)

More comprehensive and detailed metallurgical testwork will be conducted to investigate the Mineral Resource-type variability at Kona South. Although no Metallurgical testwork has been conducted on the Kona Central deposit, the mineralisation and gold association are analogous to Kona South and therefore it is anticipated that the metallurgical testwork response will be similar. Notwithstanding, metallurgical testwork will be conducted on representative samples from Kona Central to demonstrate the metallurgical response for this part of the Mineral Resource.

14 MINERAL RESOURCE ESTIMATES

14.1 Summary

The estimation of the Mineral Resources of the project was undertaken during November and December 2020 following the receipt of assaying from the 2020 drilling campaign.

14.1.1 In-situ Mineral Resources

Project Mineral Resources are reported above a 0.5 g/t gold cut-off to a total depth of 250 m below topography as at 31st July 2021.

Table 14.1: ABC Project reported Mineral Resource as at 31st July 2021

ABC Project	Resource Classification	Tonnage (Mt)	Grade (g/t gold)	Contained gold metal (Moz)
Kona South	Inferred	31	1.05	1.05
Kona Central	Inferred	41	0.84	1.11
Total	Inferred	72	0.93	2.16

14.2 Data Sources

The Mineral Resource estimate has been based on all available drill hole data at the data cut-off date of 8th November 2020. There has been no new drilling data on the project since the data cut-off date. The drill data consists of DD and RC drilling conducted by Centamin between October 2017 and October 2020. Sample data from both drill types has been used in this estimate.

14.3 Drilling Database

14.3.1 Local Grid Conversion

Drill hole collars are located in Universal Transverse Mercator (UTM), Datum WGS 84, Zone 29 - Northern Hemisphere co-ordinates.

14.3.2 Database Compilation

Drill hole data has been supplied by Centamin in the form of twelve Microsoft csv text files. An Access database base ("ABC_estimation_2020_11_171.accdb") was compiled in November2020 for use in the Mineral Resource estimate.

Table 14.2: List of drill hole data files supplied by Centamin

File name	Summary contents
ABC_DH_Assay.csv	55,242 records of gold assay results DD and RC for 57,343.55 m
ABC_DH_AssayME.csv	7,556 records of multi-element assay results from half core DD sampling for 7,474.86 m
ABC_DH_Collar.csv	388 records of collar location data for 57,343.55 m of drilling
ABC_DH_GEOTECH.csv	574 records of rock quality (RDM) on DD for 1,694.8 m logged
ABC_DH_Litho.csv	9,751 records of lithological logging on diamond and RC drilling for 57,434.55 m
ABC_DH_Min.csv	12,577 records of mineralised logging for 57,434.55 m logged
ABC_DH_RECRQD.csv	4,777 records of RQD, SRC and fracture frequency on DD for 9,643.02 m logged
ABC_DH_Sampling.csv	55,238 records of sample number, sample type and weight for DD and RC for 57,339.55 m
ABC_DH_SG.csv	2028 records of density estimates (weight in water/dry weight method)
ABC_DH_StrucSRK.csv	1,206 records of alpha/beta structural measurements on DD by Centamin's consultants SRK
ABC_DH_Structure.csv	2,241 records of structural logging on DD by Centamin geologists
ABC_DH_Survey.csv	2,538 records of down hole survey data for DD and RC drilling

The relevant tables and fields of the compiled Access database is summarised in Table 14.3.

Table 14.3: Compiled Access Database Summary Table

	Records	Fields	Description
S_ABC_DH_Assay	55,242	Hole_id	Hole identifier
		Project	Project name
		Samp_id	Sample identifier
		Depth_from	Sample start depth
		Depth_to	Sample end depth
		Sample_type	Sample description – Half Core/RC
		Au_ppm	Assay gold result
		Despatchno	Dispatch identifier
		Returndate	Receipt date
		date	Dispatch date
S_ABC_DH_Collar	388	Hole_id	Hole identifier
		Project	Project name
		X	Easting co-ordinate
		Y	Northing co-ordinate
		Z	Elevation
		Max_depth	Maximum depth of hole
		Best_gridname	Grid location geoid
		Drillingtype	Drill method DD/RC
		Startdate	Hole start date
		Enddate	Hole completion date
		Drillrig1	Drill rig identifier
S_ABC_DH_Litho	9,751	Hole_id	Hole identifier
		Project	Project name
		Depth_from	Sample start depth
		Depth_to	Sample end depth
		Colour1	Sample colour

	Records	Fields	Description
		WI	Weathering intensity
		Lith1	Lithological description code
		Grainsize	Grain size
		Foliationint	Foliation intensity
		Qz_style	Quartz occurrence style
		Qz_pct	Quartz percent
		Loggedby	Geologist identifier
		loggeddate	Date of logging
S_ABC_DH_SG	2,028	Hole_id	Hole identifier
		Project	Project name
		Depth_from	Sample start depth
		Depth_to	Sample end depth
		Samp_id	Sample identifier
		Sample_type	Sample description
		Lith1	Lithological description code
		Alteration	Alteration logged
		Oxidation	Oxidation state logged
		WI_d	Weathering intensity logged
		SGCalBest	In situ bulk density calculated
		WtDry_g	Weight in air
		WtWet_g	Weight in water
S_ABC_DH_Survey	2,538	Hole_id	Hole identifier
		Project	Project name
		Depth	Depth of reading
		Azi_local	Azimuth WGS84
		Dip	Dip of drill hole

	Records	Fields	Description
		SurveyType	Type of measurement equipment
		azimuth	Azimuth WSG84 Zone 29

14.3.3 Treatment of Below Detection and Null Samples

Assay determination data has a lower detection limit of 0.01 g/t gold, results returned with a below detection limit have been assigned a value of 0.005 g/t gold for this estimate. Blank assay (not assayed intervals) intervals have been left as blank.

14.4 Geology and Mineralisation Models

14.4.1 Topography and Overburden Surfaces

A topographical surface ("surface abc_2020.dtm") was supplied by Centamin. The surface covers the entire project area as shown in Figure 14.1.

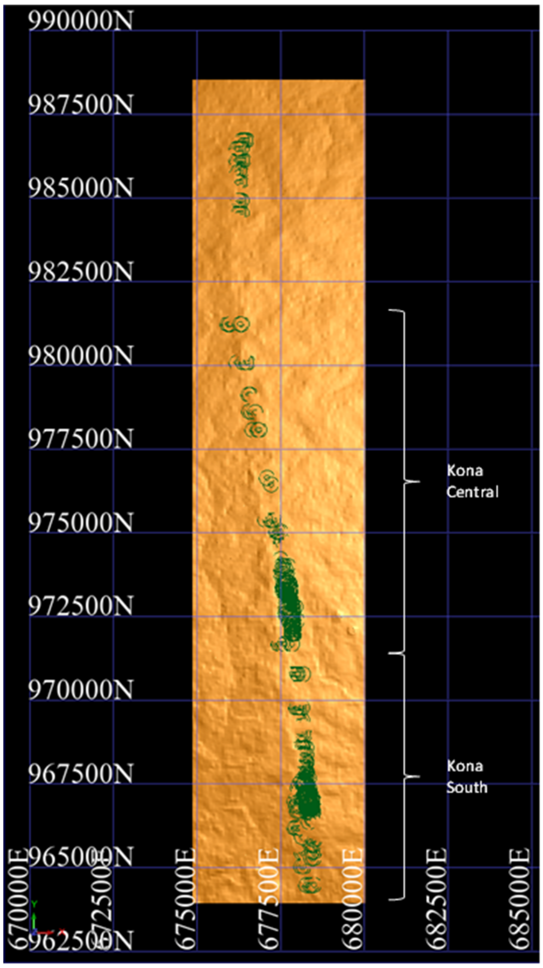

Figure 14.1: Plan of topography with prospect drill collars

(Cube Consulting – Surpac, October 2021)

14.4.2 Weathering Surfaces

Centamin supplied a single file "kona_weatheringsurfaces.dtm" including base of transported, base of completely oxidised, and top of fresh for the two prospects Kona South and Kona Central covering the 2019 drill tested portions of the project area as shown in Figure 14.2. Cube have modified these surfaces and split them out by weathering state to ensure complete coverage of the block model extents. The final surfaces used are detailed in Table 14.4.

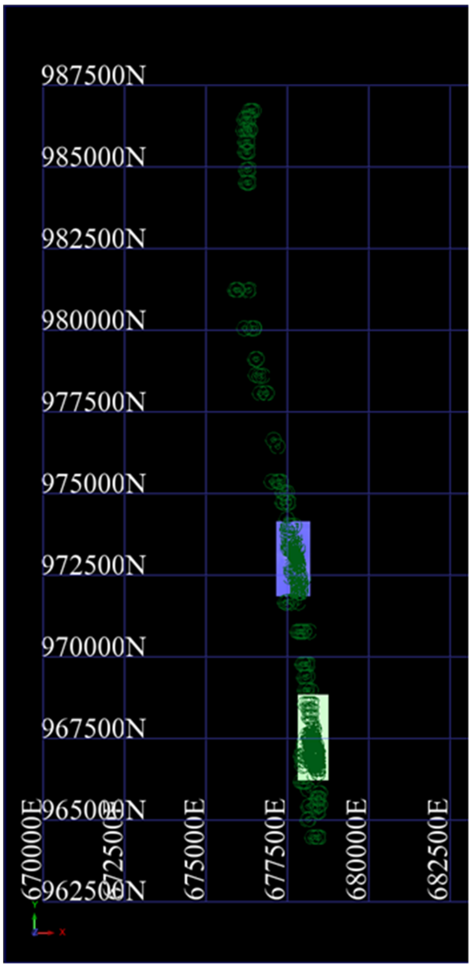

Figure 14.2: Centamin supplied combined weathering surfaces

(Cube Consulting – Surpac, October 2021)

Table 14.4: Weathering state surface DTM files

DTM file	description
KONA_WEATHERING_BOFTRANSPORTED.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

Geological and Structural Interpretations

As described in Section 8 the trap site at the project is unusual for West African styles of mineralisation because to date no obvious direct local structural control on grade has been identified. Resource grade mineralisation seems to be rheologically controlled within the more competent psammitic units but at a broad micro-ingress scale unrelated to local faults or shears. Centamin provided geological interpretations as 3D DTM files based on the geological logging of drill holes and surface mapping. These interpretations provide a consistent elongated corridor of psammitic units within which the bulk of mineralisation is located.

14.4.3 Mineralisation Interpretations

Mineralisation interpretations have made use of the geological models provided by generally limiting mineralisation volume to the psammitic units. A review of interpreted mineralised domain wireframes provided by Centamin and the Log probability plot of the raw data indicates a 0.2g/t Au low threshold (Figure 14.3) is suitable for defining zones of mineralisation. “Economic” compositing (in LeapFrog®) at a cut off of 0.2g/t Au with maximum consecutive waste (less than 0.2g/t Au) of 2m, a maximum included waste of 6m and a minimum mining width of 4m were used to define the mineralised intercepts. Solid models were interpreted using vein modelling of the coded intercepts. This strategy resulted in 5 domains (1001 to 1005 shown in Figure 14-4) in the Kona South prospect. Within the Kona Central prospect, the “economic” compositing process resulted in numerous domains of dubious continuity requiring weak deterministic assumptions regarding which connects to which. Cube have adopted a bulk mineralisation approach at Kona Central using a single solid model (2000 as in Figure 14.3) encapsulating all the coded “economic” intercepts. This approach used by previous consultants has the advantage of not enforcing a continuity assumption on the mineralisation, inherently providing a lower risk approach to the estimate.

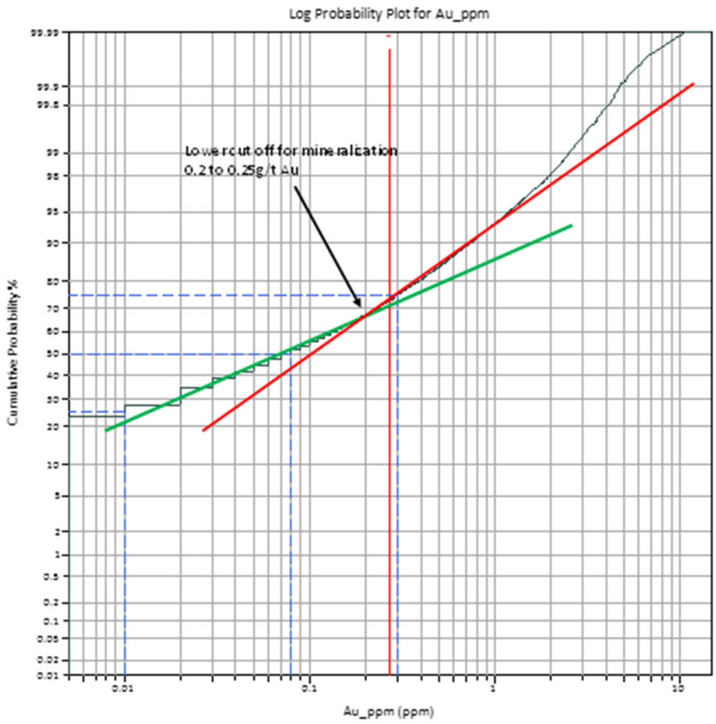

Figure 14.3: Log probability plot all RC and DD assay sample data showing grade threshold for mineralised zone definition at 0.2g/t Au.

14.5 Domain Coding and Compositing

14.5.1 Kona South:

The drilling at Kona South extends over 3km strike length and is generally on 40 m x 40 m spacing, increasing to 500 m x 50 m at the northern margins. The dataset contains 179 drill holes, including 7,104.5 m of DD core sampled and 21,291 m of RC drilling sampled. Five mineralised lodes were interpreted, and they are designated domains 1001 to 1005. The lodes strike N350 with a steep dip of 70° towards the west and are concordant with geologically logged psammite units. The largest domain 1002 has a strike length of 2,946m. The remaining major lodes (1001, 1003, 1004) extend for up to 1,400 m with the minor domain 1005 having a limited extent of 100 m (Figure 14.4). Major domain interpretations have been allowed a maximum extension down dip of 400 m to 0 m RL.

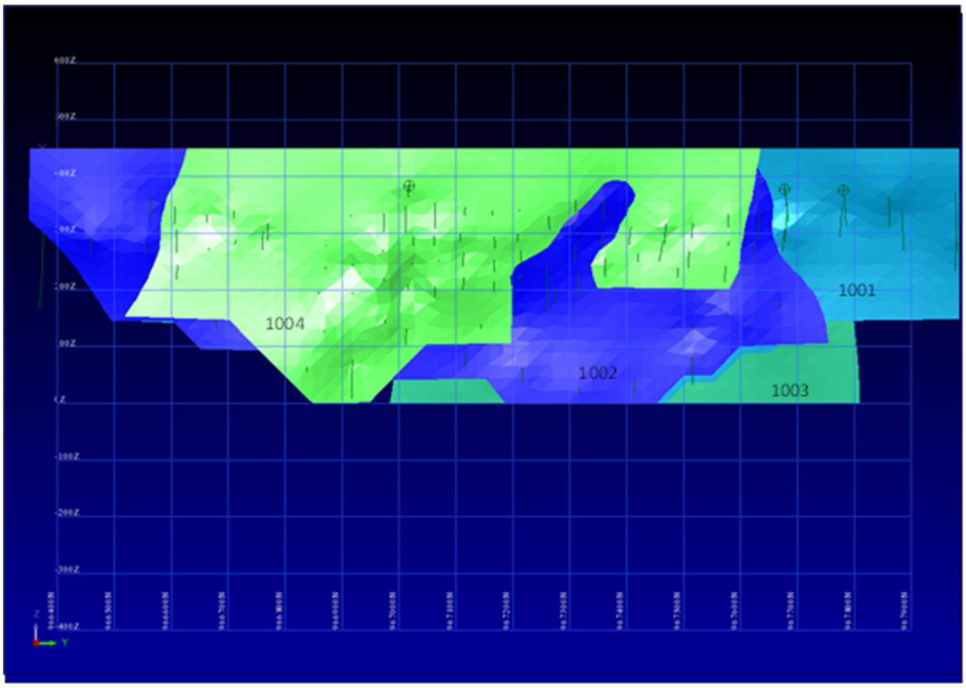

Figure 14.4: Kona South Long Section View - interpreted mineralised lodes with drillholes and domains labelled

(Cube Consulting – Surpac, October 2021)

14.5.2 Kona Central:

The drilling at Kona Central extends over 3.7km strike length in the area estimated and is generally on 40 m x 40 m spacing, increasing to 200 m x 50 m at the margins north and south. The dataset contains 209 drill holes, including 2,542.05 m of DD core sampled and 26,406 m of RC drilling sampled. As can be seen in Figure 14.5 this includes drilling north of 975000 m N not considered close spaced enough to warrant resource modelling. Numerous lodes were initially identified using the economic cut off methodology. Interpretation of these intercepts to form coherent solid volumes proved difficult and involved significant assumptions of continuity section to section which Cube considered would conditionally bias the estimate. As a solution a single domain was interpreted (2000) which encapsulated all possible domain interpretations and interleaving waste intercepts. The bulk domain strikes N350 with a steep dip of 80° towards the west and is contained within several geologically logged psammitic rock units. The domain has a strike length of 2.4 km (Figure 14-5). The domain interpretation has been allowed a maximum extension down dip of 400 m to 0 m RL.

The combined waste and mineralised nature of the bulked domain 2000 required a sub domaining approach to establish consistent zones with suitable statistical properties for robust estimation under Ordinary Kriging the selected methodology to under pin the Uniform Conditioning approach. This sub-domaining has been estimated using an indicator kriging to define mineralised and un-mineralised lodes.

The mineralised/waste indicator threshold applied was 0.25 g/t, although this does not correspond to any obvious population break discernible in the population as the domain is rather diffusive. The value of 0.25 g/t was applied based on the style and inferred intensity of alteration. An estimate of the indicator (at block size 10 x 10 x 2.5 m) and a selection of estimated blocks at greater than or equal to 0.5 defined the mineralised volume. Those with an estimated indicator of less than 0.5 defined the waste volume. Using these block model defined mineralised and waste volumes the composite data was split into mineralised and waste composites.

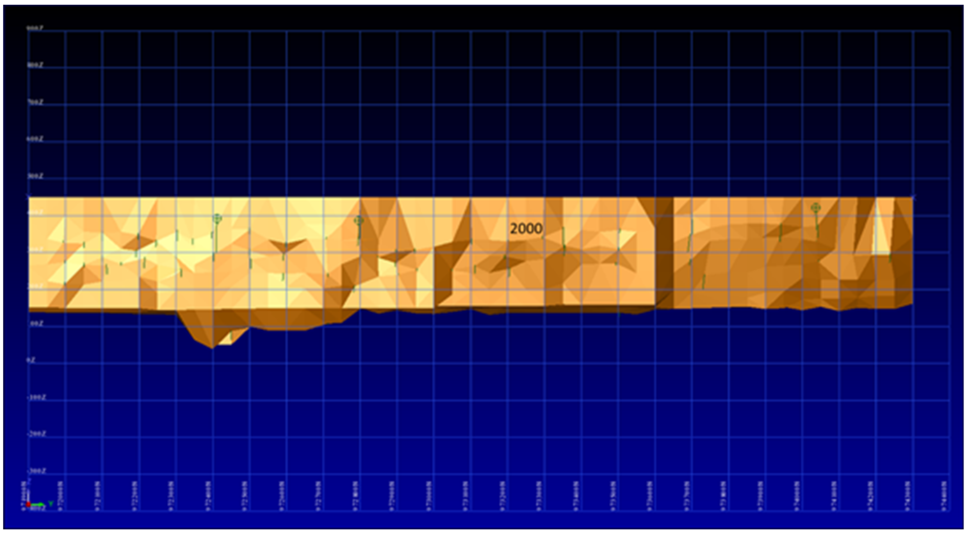

Figure 14.5: Kona Central Long Section View - interpreted mineralised domain with drillholes (Cube Consulting – Surpac, October 2021)

For the estimates 1 m down hole composites were selected to provide equal sample support. Domain codes were added to the estimation database, allowing the extraction of assay data by domain code. Sample and 1m downhole composite data have been extracted. The sample data within all mineralised interpretations shows the average sampling interval is 0.998 m with a minimum of 0.05 m and a maximum of 4.3 m.

14.6 Statistical Analysis and Grade Capping

The exploratory data analysis (EDA) was performed on length composited gold values within each domain. There are five domains in the Kona South prospect (1001 to 1005) and one domain (2000) in the Kona Central prospect.

Capping outliers was applied, when necessary, identified by the analysis of the log-probability plots and population distributions. Only two domains have been capped both at 7g/t Au (1001 and 1002). Statistics by domain are displayed in Table 14.5.

Table 14.5: Domain statistics capped 1m downhole Au composite data

Domain	Count	Mean	Min	Max	STD	CV
1001	2112	0.987	0.006	7	0.96	0.97
1002	2751	0.805	0.005	7	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	0.04	3.38	0.611	0.93
2000 mineralised	6319	0.670	0.005	14.66	0.744	1.11
2000 waste	9592	0.213	0.005	2.3	0.264	1.24

Further high-grade limitation has been used during the estimation using grade threshold limits beyond which this higher-grade data was capped for use in the interpolation as detailed in the estimation parameter summary Table 14.9 in Section 14.10.

14.7 Variography Analysis

The variographic analysis was performed 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.

Experimental variograms are poorly structured due to the wide drill spacing and for the semi-major direction, it was impossible 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. The direction of maximum continuity was selected as down dip, as there is not enough data to assess for a plunge component.

Experimental and modelled variograms in three directions of continuity and downhole for the main domains (1001, 1002 and 2000 - indicator) are displayed in Figure 14.6 to Figure 14.8.

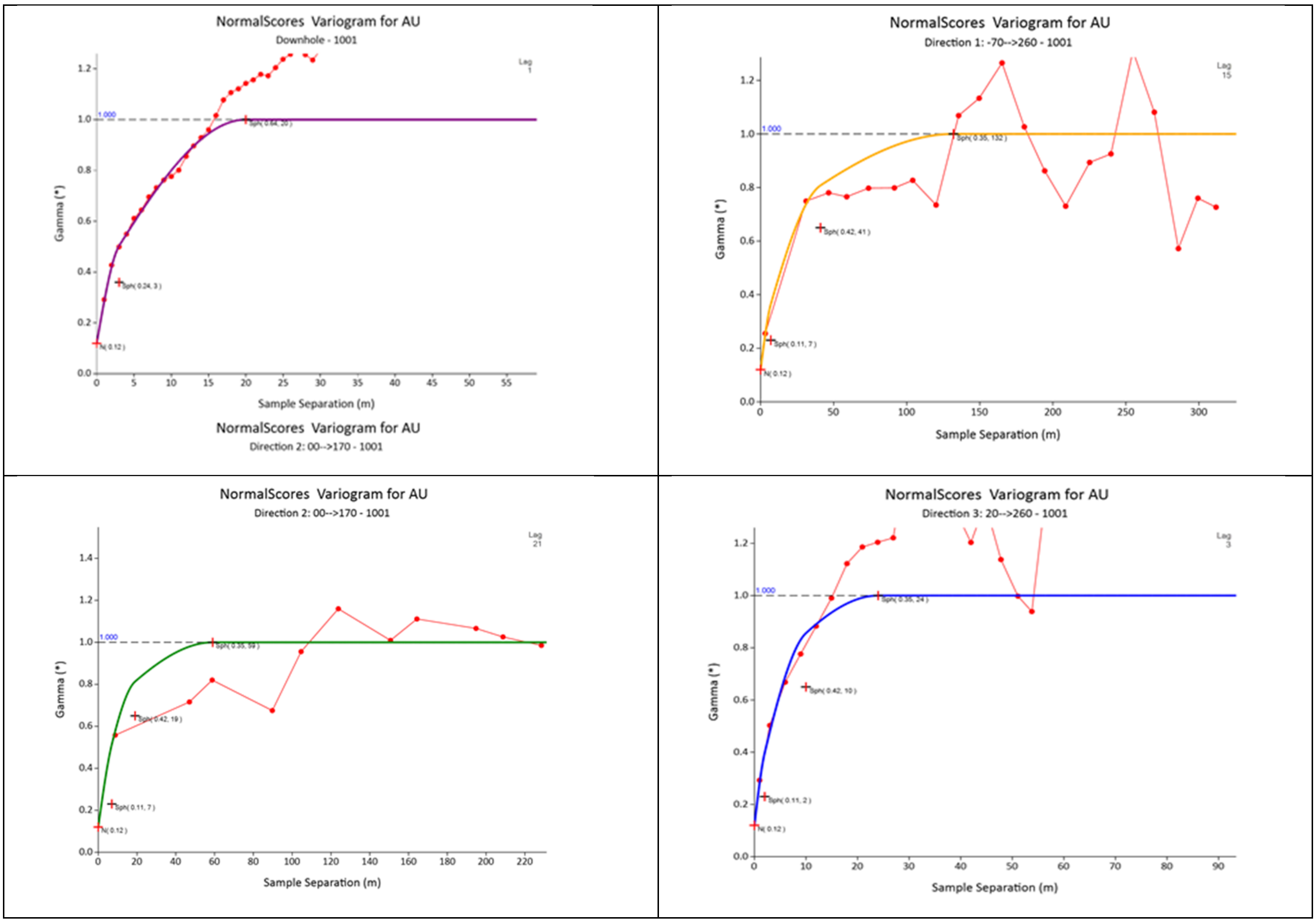

Figure 14.6: Domain 1001 experimental and modelled variograms in the three direction of continuity and downhole.

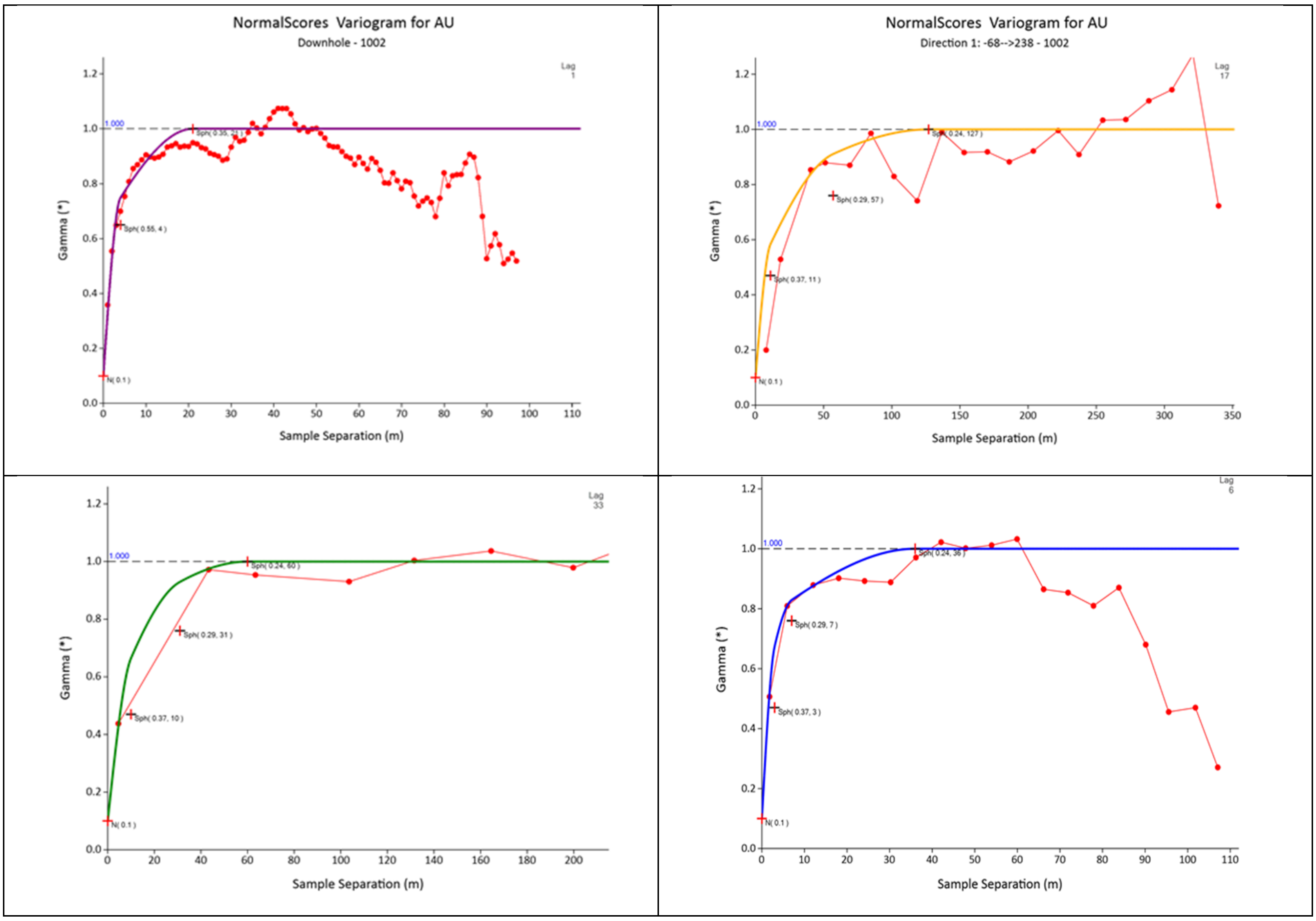

Figure 14.7: Domain 1002 experimental and modelled variograms in the three direction of continuity and downhole.

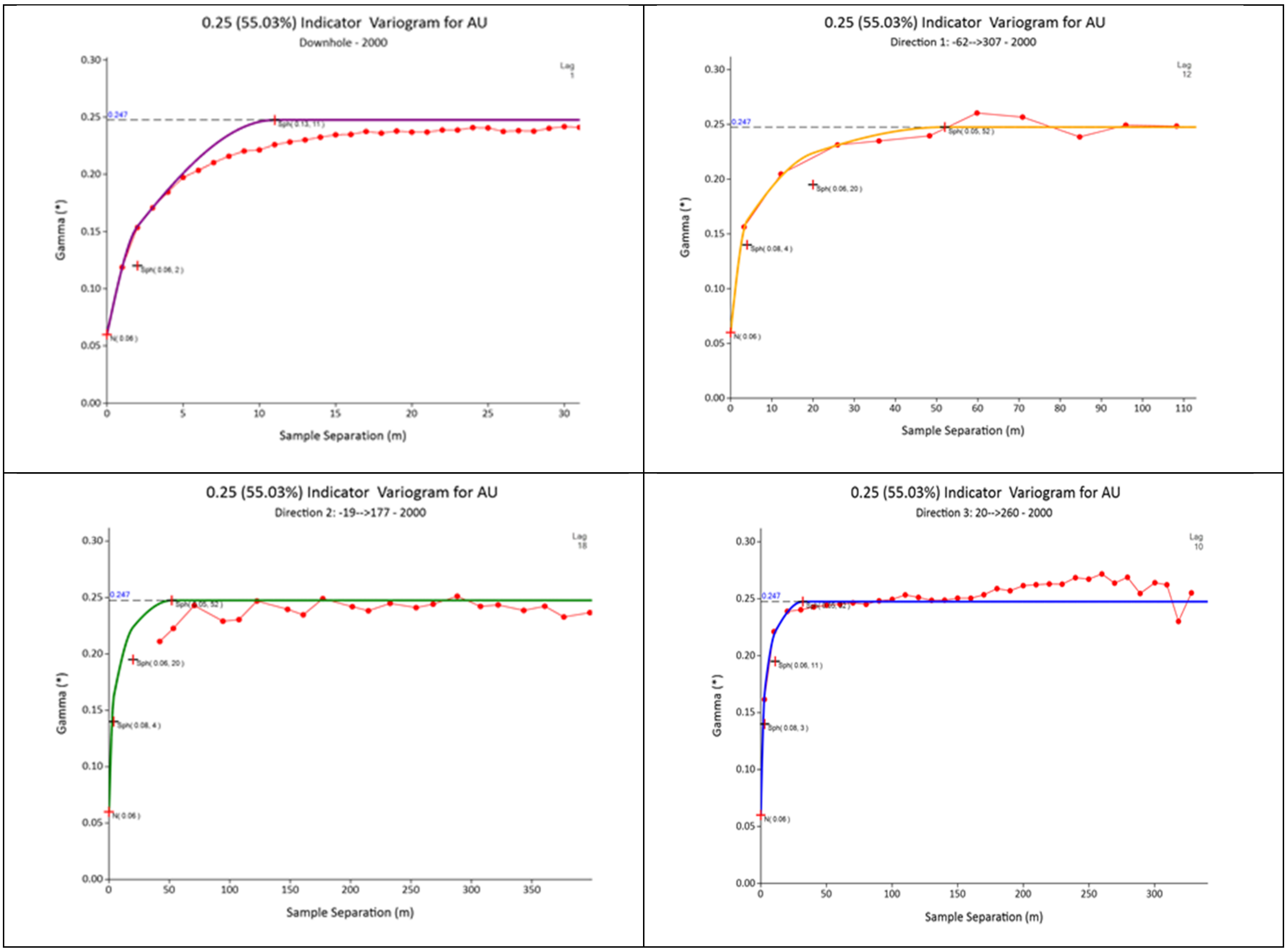

Figure 14.8: Domain 2000 indicator experimental and modelled variograms in the three direction of continuity and downhole

14.8 Block Model Design

A block model "abc_10dec2020.mdl" was defined in Surpac Mining Software and flagged by domain. The order of the flagging was 1005, 1003, 1004, 1001, 1002 and 2000. Design parameters of the block model are summarised in Table 14.6. Coordinates represent the position of block centroids in the UTM WGS84 coordinate system.

Table 14.6: Block model parameters.

	Y	X	Z
Min	966,300.00	677,200.00	-100
Max	974,320.00	678,800.00	500
Extent	401.00	80.00	120
Discretisation	3.00	3.00	3
Parent	20.00	20.00	5
SMU	5.00	5.00	2.5
Sub-block	1.25	1.25	0.625

The recommended choice of panel size is dependent on the drill spacing which is 40m x 40m on average, and a rule of thumb is to use dimensions close to half the drill spacing. A sub-blocking regime of 1.25 x 1.25 x 0.625 has been used to provide sufficient volume definition during flagging of domains from wireframes.

Block model attributes are summarised in Table 14.7.

Table 14.7: Block model attributes.

Attribute	Type	Decimals	Backgrounds	Description
au_luc	Real	3	-99	temp au luc
au_ok	Real	3	-99	temps au ok
au_ppm	Real	3	-99	au_ppm final grade
au_ppm_dns	Real	3	-99	final estimation distance nearest sample
au_ppm_ind	Real	3	-99	au final with indicator 2000
au_ppm_ke	Real	3	-99	final estimation kriging efficiency
au_ppm_kv	Real	3	-99	final estimation kriging variance
au_ppm_nos	Real	-	-99	final estimation number of samples
au_ppm_sor	Real	3	-99	final estimation slope of regression
density	Float	2	2.8	insitu bulk density
domain	Real	0	-99	domain
luc_area	Real	-	0	luc area
oxidation	Integer	-	4	Rock weathering state - Fresh 4; saprolite 3; oxide 2; transported 1; air 0

The estimation of insitu bulk density by lithology was considered for the fresh portions as a significant number of determinations have been made, 1,955 in fresh rock. Cube decided that the coverage of these determinations was limited and that an assignment would provide valuable correlation to the previous estimate for the comparison required at this time. The block model was flagged by oxidation state using the surfaces listed in Table 14.4 and subsequently assigned the insitu bulk density as detailed in Table 14.8.

Table 14.8: Block Oxidation State and Density assignment.

Oxidation	BM Code	Surface	Condition	Assigned Density
Fresh	4	CUBE_INFILL_TOFR_ALL.DTM	below	2.8
Saprolite	3	CUBE_INFILL_TOFR_ALL.DTM	Above and	
		CUBE_INFILL_BOCO_ALL.DTM	below	2.73
Fully oxidised	2	CUBE_INFILL_BOCO_ALL.DTM	Above and	
		KONA_WEATHERING_BOFTRANSPORTED.DTM	below	2.05
Transported	1	KONA_WEATHERING_BOFTRANSPORTED.DTM	Above and	
		ABC_2020.DTM3	below	2.01
Fresh	4	KONA_WEATHERING_TOPOFRESH.DTM	below	2.8
Saprolite	3	KONA_WEATHERING_TOPOFRESH.DTM	Above and	
		KONA_WEATHERING_BOCO.DTM	below	2.73
Fully oxidised	2	KONA_WEATHERING_BOCO.DTM	Above and	
		KONA_WEATHERING_BOFTRANSPORTED.DTM	below	2.05
Transported	1	KONA_WEATHERING_BOFTRANSPORTED.DTM	Above and	
		ABC_2020.DTM	below	2.01
Air	0	ABC_2020.DTM	Above	0

14.9 Estimation Methodology

The estimation was undertaken in Isatis Mining Software® and used a combination of linear and non-linear methods.

For domains 1001 to 1005, an Ordinary Kriging (OK) on panel (20 x 20 x 5 m) was estimated followed by a Uniform Conditioning (UC) and localisation on SMU support (LUC). The LUC assumed SMU size used was 5 x 5 x 2.5 m.

For domain 2000, an indicator kriging was first performed to separate mineralised from waste blocks and 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 followed by a Uniform Conditioning and localisation on SMU support (LUC). The LUC assumed SMU size used was 5 x 5 x 2.5 m.

LUC and UC require specific constraints and assumptions, listed below:

- The grade architecture must be diffusive, i.e., the transition from low grade to high grade is continuous and gradual.
- The variable of interest (g/t gold) must be bi-Gaussian.
- Domain must be sufficiently informed and the variograms well structured.

The grade architecture can be tested by plotting the ratio of the cross-variogram over the simple variogram of different thresholds (usually the 10th percentiles). When this ratio is constant, this means the threshold "i" is not spatially correlated with the threshold "i+1" and the grade architecture is more mosaic. If this ratio shows some structured variograms, one can assume the grade architecture to be diffusive. In the case of the Kona deposits, the diffusivity test was performed for each domain and showed a diffusive grade architecture. An example is given for domain 1001 in Figure 14.9.

Figure 14.9: Ratio of the cross-variograms over the simple variograms of the 10th percentile bin indicator for domain 1001 showing good structure until the 90th percentile

Uniform conditioning requires the transformation of the grade variable to Gaussian space. To be allowed to do so and ensure reliable results, the variable must be bi-gaussian. A simple way to verify this is to draw a h-scatter plot: this must look like an ellipse, or to calculate the ratio of the square root of the variogram over the first order variogram (madogram): this must be a constant. This hypothesis is verified for each domain. An example is displayed in Figure 14.10.

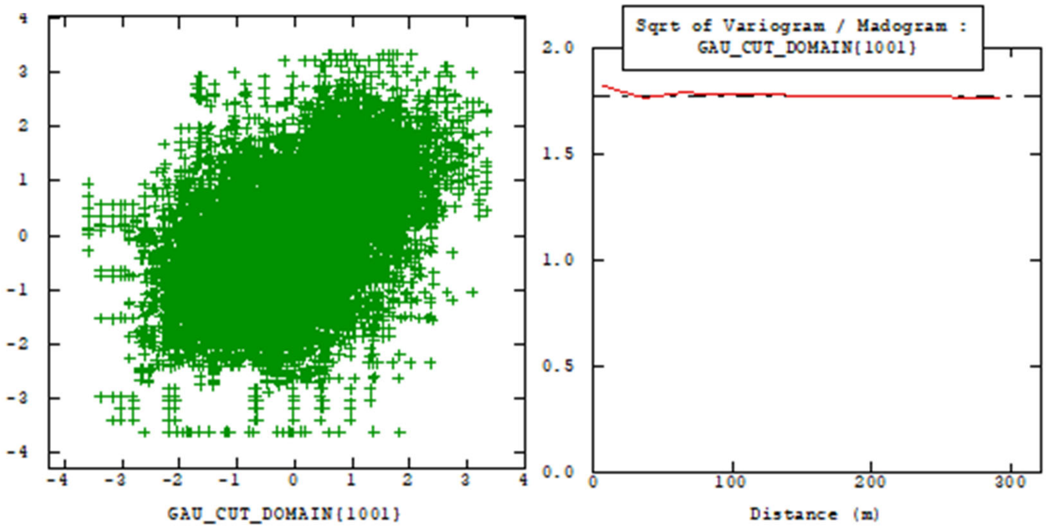

Figure 14.10: Bi-Gaussianity test for domain 1001: h-scatter plot (left) and square root of the variogram over the madogram (right).

The last hypothesis to ensure reliable results of an LUC estimate relies on the robustness of the variograms, these must be well structured. In the case of the ABC Project, the variogram models lack structures as the drill spacing is too wide. While LUC is a preferred method to reproduce variability at local scale, it does not replace drilling and results are only robust in the areas sufficiently drilled within the experimental variogram ranges. In this case, the ranges of the variograms are less than the drill spacing which potentially creates geometric artefacts in the LUC and impacts the robustness of the estimates.

To minimize this artefact, the LUC was limited to within the best-informed areas of estimation domains. Panel estimates only were provided in less informed areas. Within the block model the attribute luc_area has been flagged with domain number where LUC estimation has been reliably completed. Figure 14.11 shows the regions of Kona South flagged as luc_area greater than 0 where LUC estimation has been undertaken and Figure 14.12 shows the luc_area flagged as 2000 where LUC has been undertaken within Kona Central.

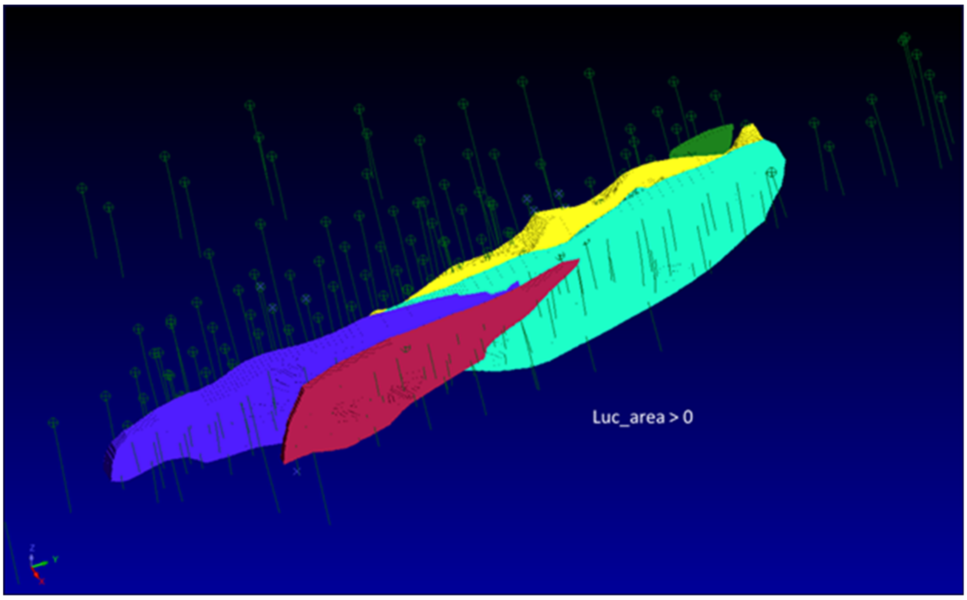

Figure 14.11: Oblique View looking North-west Luc_area greater than 0 Kona South.

(Cube Consulting – Surpac, October 2021)

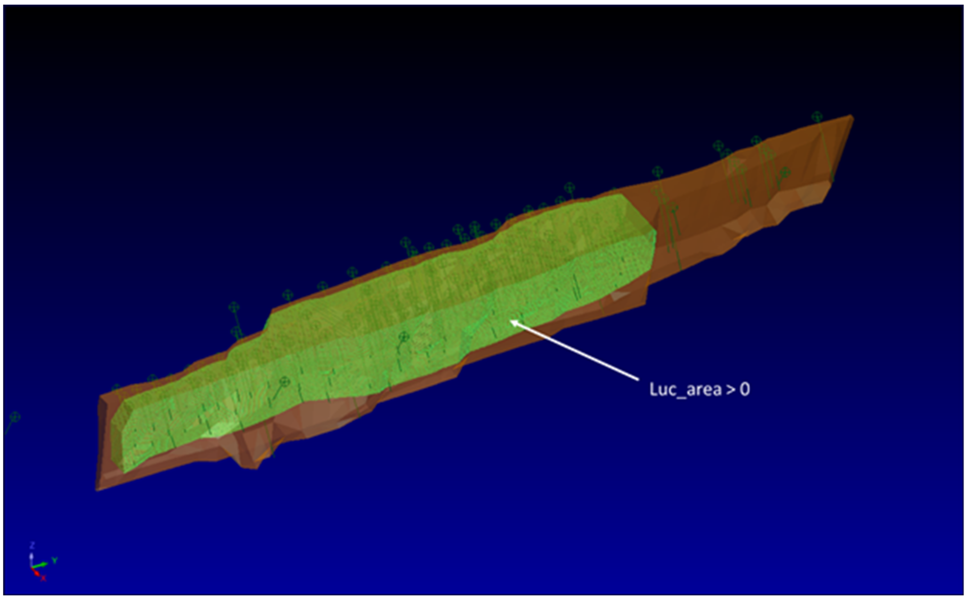

Figure 14.12: Oblique View looking North-west Luc area greater than 0 within domain 2000 wireframeKona Central.

(Cube Consulting – Surpac, October 2021)

Even within the best-informed areas, the LUC results tend to lack sensible geological local variability and infill drilling is strongly recommended.

14.10 Panel Estimation parameters

A QKNA was performed on the main domains (1001, 1002 and 2000) to define the optimal estimation neighbourhood. Those have then been reviewed and selected to provide the best estimate on panel support both locally and globally. All panel estimation parameters are detailed in Table 14.9.

Table 14.9: Panel Block Estimation Parameter Summary.

Domain Code	1001	1002	1003	1004	1005	IND_AU_2000	AU_ORE{2000}	AU_WASTE{200
# Structures	3	3	2	3	2	3	3	2
C0	0.12	0.10	0.20	0.19	0.20	0.06	0.18	0.16
C1	0.11	0.37	0.25	0.25	0.25	0.08	0.42	0.35
a1	7.00	18.00	14.00	4.00	2.00	4.00	23.00	12.00
C2	0.42	0.29	0.55	0.16	0.55	0.06	0.40	0.49
a2	19.00	31.00	74.00	29.00	18.00	20.00	74.00	70.00
C3	0.35	0.24	0.00	0.40	0.00	0.05	0.00	0.00
a3	125.00	127.00	0.00	93.00	0.00	52.00	0.00	0.00
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		13.29		1.63		
Rotation convention (Isatis, Surpac, Datamine...)	isatis	isatis	isatis	isatis	isatis	isatis	isatis	isatis
Azimuth	170.00	240.00	170.00	170.00	170.00	170.00	170.00	170.00
Dip	70.00	70.00	60.00	70.00	60.00	70.00	70.00	70.00
Plunge	90.00	80.00	80.00	100.00	80.00	110.00	50.00	40.00
Method	ELLIPSOID	ELLIPSOID	ELLIPSOID	ELLIPSOID	ELLIPSOID	ELLIPSOID	ELLIPSOID	ELLIPSOID
Estimation Block Size (x,y,z)	20, 20, 5	20, 20, 5	20, 20, 5	20, 20, 5	20, 20, 5	10, 10, 2.5	20, 20, 5	20, 20, 5
Estimation Block Size X	20	20	20	20	20	10	20	20
Estimation Block Size Y	20	20	20	20	20	10	20	20
Estimation Block Size Z	5	5	5	5	5	2.5	5	5
Disc Point X	3	3	3	3	3	5	3	3
Disc Point Y	3	3	3	3	3	5	3	3
Disc Point Z	3	3	3	3	3	5	3	3
Grade Dependent Parameters	N	N	N	N	N	Y	N	N
Threshold Max						0		
Search Limitation						60		
Pass 1	Y	Y	Y	Y	Y	Y	Y	Y
Min	10	10	10	10	8	7	10	10
Max	18	18	18	18	18	15	19	18
Max Search	120	120	80	100	40	100	75	75
Major/Semi	2.0	2.0	1.0	1.0	1.0	1.0	1.4	1.4
Major/Minor	4.8	4.8	5.3	4.0	2.0	2.0	7.5	7.5
Run Pass 2	Y	Y	Y	Y	Y	Y	Y	Y
Max Search	300	400	400	200	120	250	200	300
Major/Semi	2.0	1.1	1.0	1.0	1.0	1.0	1.3	1.4
Major/Minor	4.6	1.6	2.0	3.3	2.0	2.5	5.0	4.3
Min	7	5	5	7	6	5	6	6
Max	18	18	18	18	18	15	19	18
Grade Dependent Parameters	Y	Y	Y	N	Y	Y	Y	N
Threshold Max	3.5	3.7	3		3.5	0	5.5	
Search Limitation	20	20	20		20	60	20	

All rotation angles are defined in the Isatis Geologic plane (Azimuth, Dip, Plunge).

Domains 1001, 1002,1003, 2000 (Indicator) and 2000 mineralised have used grade dependent parameters whereby composite data above the nominated threshold have been used in limited search distances. For example, in domain 1001 composites greater than 3.5 g/t Au have been capped to 3.5 g/t au for estimation only within blocks located 20m or more from the composite data. The impact of this type of limitation is to further reduce the influence of isolated higher-grade data, reducing the risk of grade smearing of outlier grades.

14.11 Uniform Conditioning and Localised Uniform Conditioning Estimation

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

Both UC and LUC modelling has been validated against the OK panel estimates and each other using average domain statistics (Table 14.10) and grade tonnage curve comparisons (Figure 14.13to Figure 14.18). These validations show a consistent and expected outcome for the UC and LUC modelling processes.

Table 14.10: Panel Block Grade Estimation Validation to UC and LUC Summary

Estimate	**1001**	**1002**	**1003**	**1004**	**1005**	**2000**	**2000_ORE**	**2000_WASTE**
LUC	0.885	0.610	0.602	0.479	0.622	0.367	0.652	0.211
OK	0.882	0.609	0.600	0.476	0.622	0.367	0.652	0.212
UC	0.882	0.609	0.600	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%

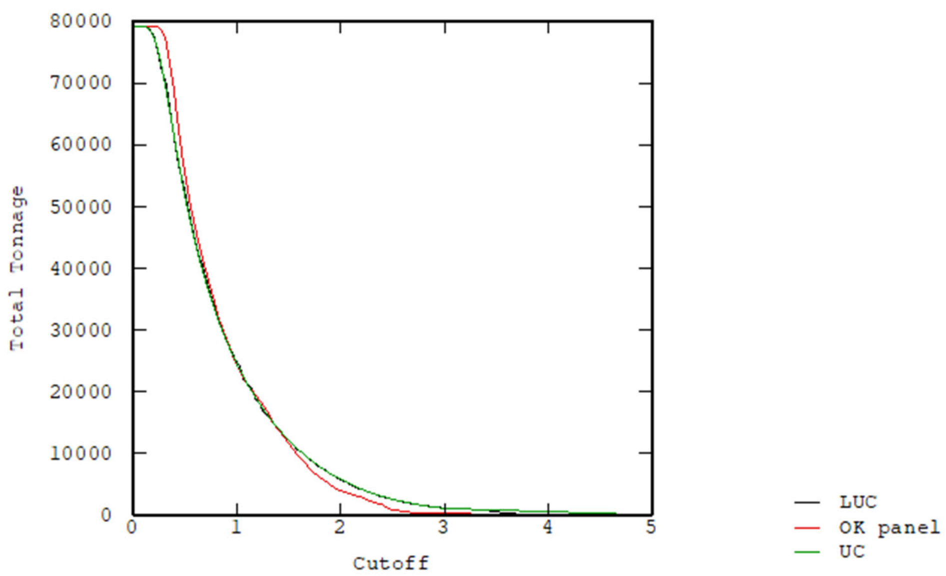

Figure 14.13: Grade Tonnage Curves luc area > 0 Domain 1001

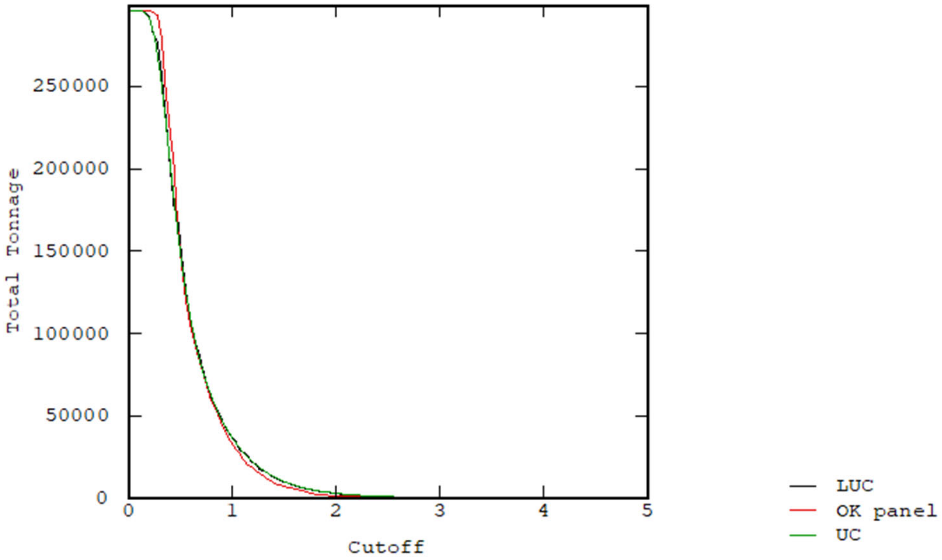

Figure 14.14: Grade Tonnage Curves luc_area > 0 Domain 1002

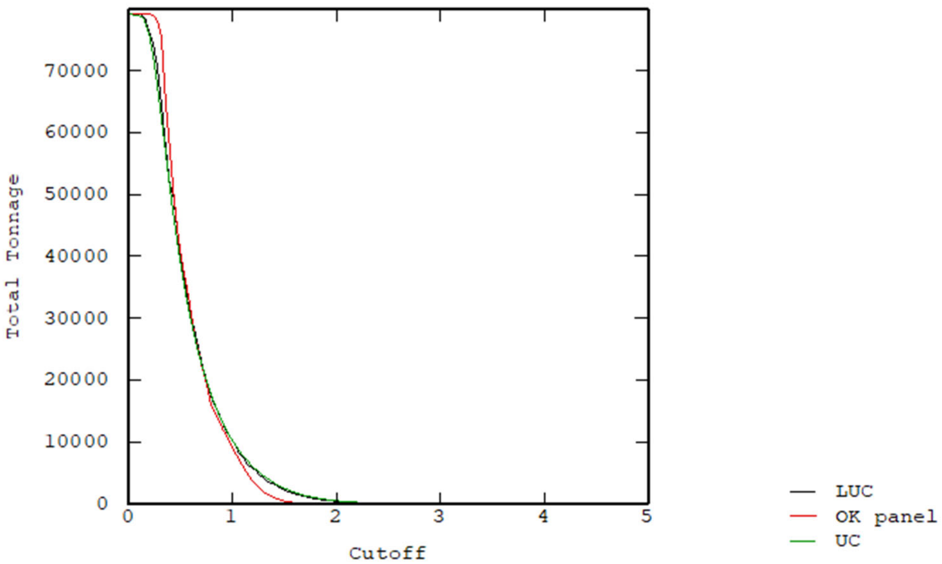

Figure 14.15: Grade Tonnage Curves luc_area > 0 Domain 1003

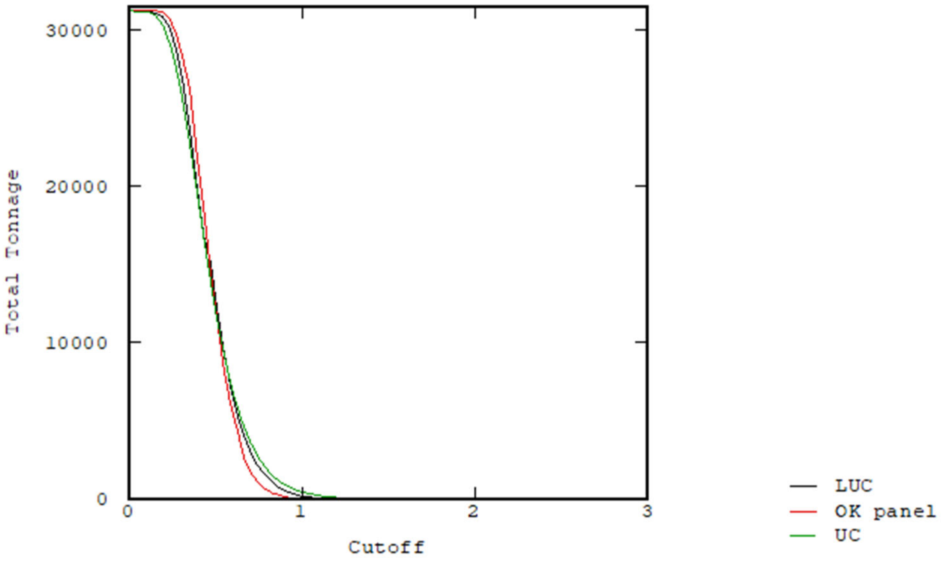

Figure 14.16: Grade Tonnage Curves luc_area > 0 Domain 1004

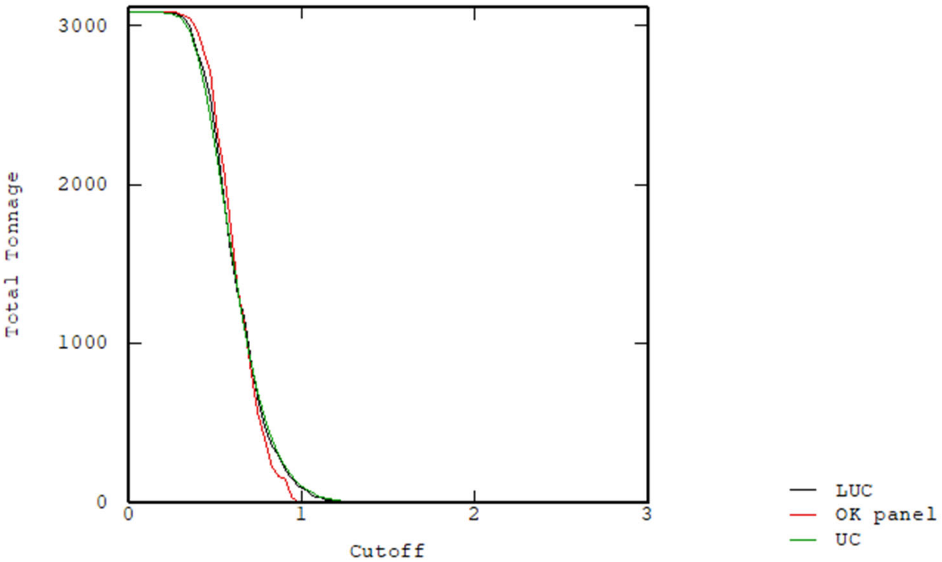

Figure 14.17: Grade Tonnage Curves luc_area > 0 Domain 1005

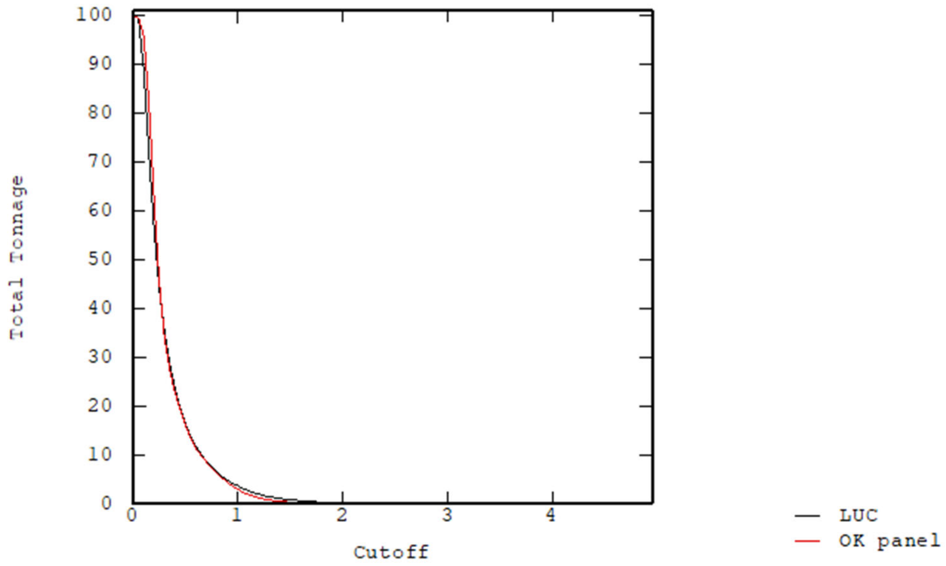

Figure 14.18: Grade Tonnage Curves luc_area > 0 Domain 2000 Mineralised

14.12 Block Model Validation

Validation was performed both locally and globally for each domain and each sub-domain type (Domain 2000) via careful analysis of the statistics of the estimated values against the input datasets, visual cross-section checks and swath plots. Table 14.11 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 14.11: 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

Comparison statistics demonstrate a tolerable correlation of composite to estimated block grade with a very close correlation to the moving average window composite grade within the well sampled portions of domains. Swath plots displaying estimated panel Au grade against raw and declustered capped composite Au grades for the largest three domains 1001, 1002 and 2000 (recombined) are displayed in Figure 14.19 to Figure 14.21.

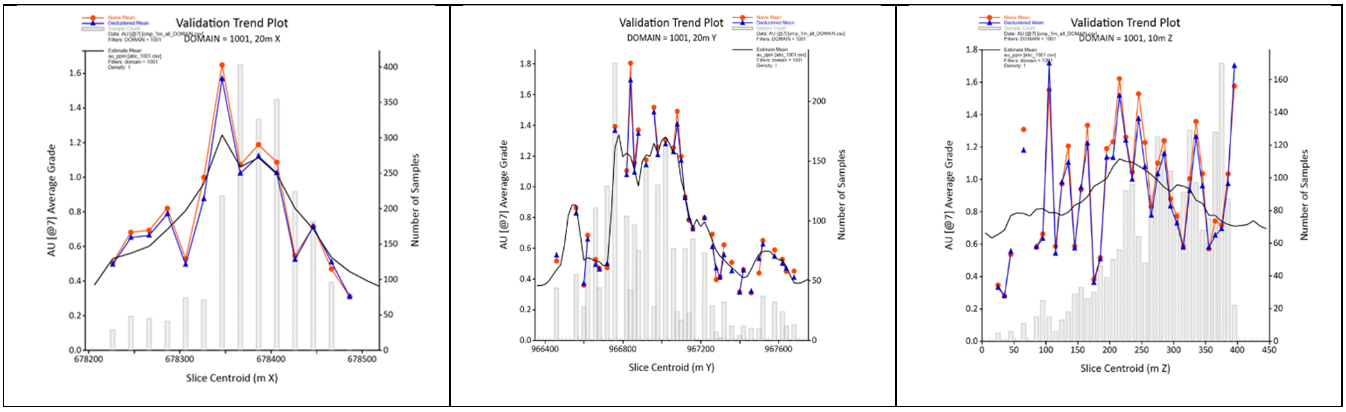

Figure 14.19: Swath plots in Easting, Northing and RL of the naïve (red) and declustered (blue) gold composite values against the estimated value (black), domain 1001.

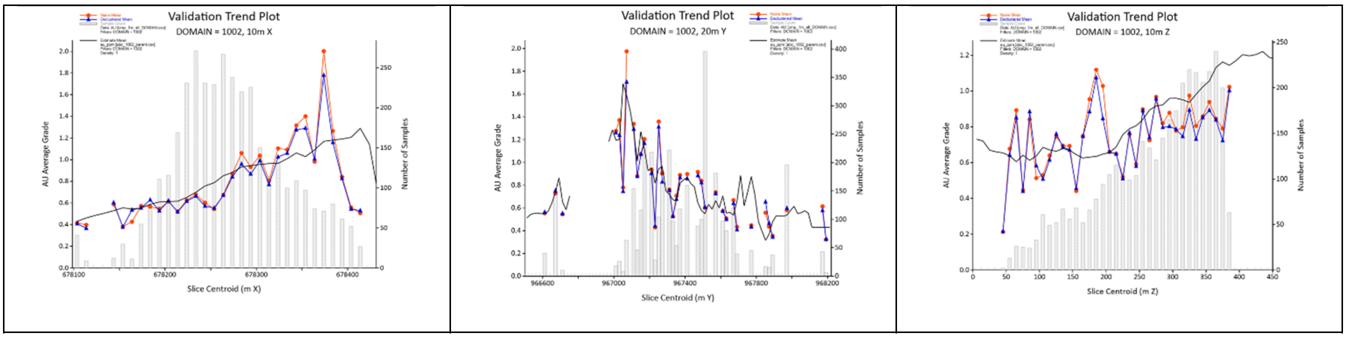

Figure 14.20: Swath plots in Easting, Northing and RL of the naïve (red) and declustered (blue) gold composite values against the estimated value (black), domain 1002.

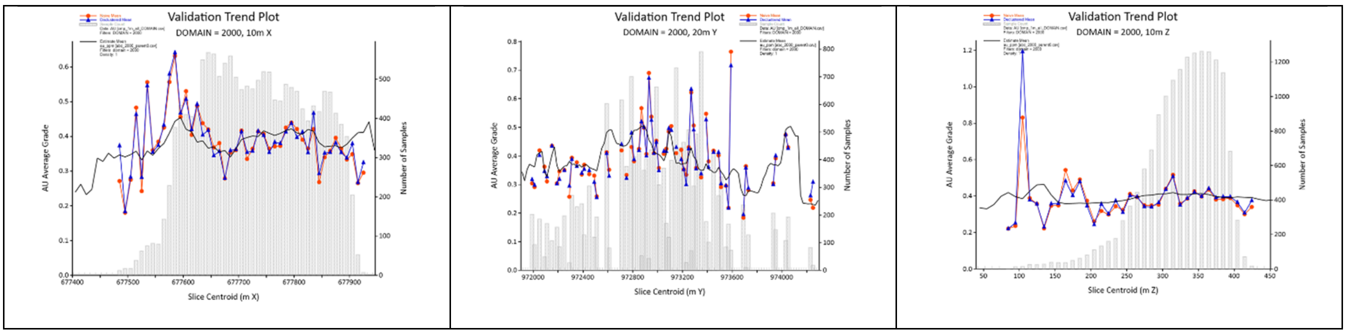

Figure 14.21: Swath plots in Easting, Northing and RL of the naïve (red) and declustered (blue) gold composite values against the estimated value (black), domain 2000.

Swath plots display the smoothing characteristics of the OK estimations and confirm that the OK estimates follow the composite grade trends in three dimensions.

A comparison of the updated Mineral Resources Estimates (MRE) reported for the Kona South (Domain 2000) prospect to those previously reported by Osborn March 2019 is shown in Table 14.12 Summary of the March 2019 Inferred MRE Kona South (Osborn March 2019)

Classification	Mt	Grade	Koz gold
Inferred	16.0	0.90	462
TOTAL	**16.0**	**0.90**	**462**

Table 14.13 to Table 14.15.

Table 14.12 Summary of the March 2019 Inferred MRE Kona South (Osborn March 2019)

Classification	Mt	Grade	Koz gold
Inferred	16.0	0.90	462
TOTAL	**16.0**	**0.90**	**462**

Table 14.13 Summary of the March 2019 Indicated MRE Kona South (Osborn March 2019)

Classification	Mt	Grade	Koz gold
Indicated	19.6	1.03	649
TOTAL	**19.6**	**1.03**	**649**

Table 14.14 Summary of the July 2021 Inferred MRE Kona South (Domain 2000)

Classification	Mt	Grade g/t Au	Koz gold
Inferred	31	1.05	1,045
TOTAL	**31**	**1.05**	**1,045**

Table 14.15 Summary of the July 2021 Indicated MRE Kona South (Domain 2000)

Classification	Mt	Grade g/t Au	Koz gold
Indicated	-	-	-
TOTAL	**-**	**-**	**-**

The differences of 13% less tonnes, 8% increased grade for 6% less metal is considered by the Qualified Persons to be well within expected variation considering the extra drilling data available and the different estimation methodology used.

14.13 Mineral Resource Statement

The classification of the project resources has considered a number of risk items during the process. These risk items include 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 current Mineral Resource has been classified as Inferred which represents a material change from the previously reported Mineral Resource estimate (Osborn March 2019) which contained approximately 20 Mt of Indicated Mineral Resources. The Qualified Persons agree in principle with statements in Osborn March 2019 that the quality and veracity of the supporting data are of industry standard and sufficient to allow the classification of Mineral Resources and that geological controls and continuity are reasonably well understood and modelled. The Qualified Persons do not consider the current sample spacing (drill hole geometry) sufficient to support confidence in the mineralised volume or the grade continuity. 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. These factors will in the Qualified Persons' opinion result in material changes in the local metal content with increased drilling density and better definition of local spatial gold grade characteristics.

The July 2021 Mineral Resource has been classified and reported above a lower gold cut off of 0.5 g/t Au to a maximum depth of 250 m below topographical surface in Table 14.16.

Table 14.16: Summary of the July 2021 MRE Kona Central and South

Prospect	Classification	Mt	Grade g/t Au	Koz gold
Kona South	Inferred	31	1.05	1,045
Kona Central	Inferred	41	0.84	1,111
TOTAL	**Inferred**	**72**	**0.93**	**2,156**

1. *Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability.*
2. *The ABC Project Resource estimate comprises two (2) deposits –Kona South &Kona Central.*
3. *Drill spacing is a nominal 50 x 50 x 1 metre spacing.*
4. *Reverse Circulation (RC) and Diamond (DDH) drilling only has been used for the estimation.*
5. *The grade estimation has been undertaken using Ordinary Kriging (OK) and Localised Uniform Conditioning (LUC) methodologies*
6. *AtKona Central a categorical Indicator Kriging (at a 0.25 g/t Au threshold) has been used to define internal ore and waste domains.*
7. *The grade estimate has been classified as Inferred in accordance with the CIM 2014 guidelines.*
8. *The Updated Mineral Resource has been reported at an economic cut-off grade of 0.5g/t, 250m below surface and within 100 metres of the nearest sample.*
9. *This Updated Mineral Resources Estimate was prepared by Mr. Patrick Adams of Cube Consulting Pty Ltd who represents the Qualified Person for the estimate.*
10. *This Updated Mineral Resources Estimate is not expected to be materially affected by environmental, permitting, legal title, taxation, socio-political, marketing or other relevant issues.*

The reporting of Mineral Resources has been limited to portions of domains estimated by LUC and limited to a maximum depth below surface of 250 m.

The classification appropriately reflects the Qualified Person's view of the project.

15 MINERAL RESERVE ESTIMATES

15.1 Mineral Reserve Estimates

A Mineral Reserve has not been estimated for the Project as part of this Mineral Resource update report. The Mineral Resource update includes only Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves.

15.2 Mining Methods

The Inferred Mineral Resources used in this report are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the Mineral Reserves will be realized.

23 ADJACENT PROPERTIES

The closest exploration permit to the Kona permit is another Centamin 100% owned exploration permit Farako Nafana, which hosts the northern strike extension of the same Lolosso corridor. The Farako Nafana permit area lies about 50 km north of the Kona permit area. The exploration work on this permit is at an early grassroots stage, with only mapping and soils sampling results reported.

24 OTHER RELEVANT DATA AND INFORMATION

It is considered that all relevant information and explanations have been provided in the body of this report to make it understandable and not misleading.

25 INTERPRETATION AND CONCLUSIONS

CUBE is of the opinion that the Mineral Resource estimates are suitable for public reporting and are a fair representation of the in-situ gold concentration and contained metal for the Kona Project.

26 RECOMMENDATIONS

The Kona permit is part of Centamin's ABC Project which includes Kona, Farako Nafana and Windou permits, as well as applications for permits covering Zandougou, Windou, Gbemanzo, Gouramba, Boa and Gbande.

Centamin plans to continue exploration on the Kona permit with work focused towards growing the

resources and the generation of resource quality drill targets.

Centamin has during 2021 carried out extensive soil sampling programmes across the entire surface area of all three ABC Project permits – Farako Nafana, Kona and Windou. Additional gold in soil anomalies have been outlined and are in process of being followed-up by closer spaced soil sampling grids. The next phase of work will involve mechanical trenching of these new soil anomalies and eventually RC drill testing.

The objective is to understand the regional potential of the 3 permit areas.

Further drilling at Kona to grow the resource base and along the Lolosso structure may be undertaken on completion of a Scoping Study of the Kona prospects.

In addition to the planned exploration described above Cube recommends the following:

- Optimisation analysis to determine the economic viability of the project. The cost is expected to be approximately USD$25,000.
- Additional infill drilling within the economic framework of the optimisation study in order to improve the confidence of the Mineral Resource. It is expected that this will cost approximately USD$4.5M
- Diamond drilling is then recommended to twin RC drilling for QC analysis and defined controls on mineralisation. It is expected that this will cost approximately USD$50,000.
- More density test work is required for the weathered portions of the Kona South and Kona Central deposits to generate reliable density data. This is likely to require wax coating samples prior to density measurement. Centamin currently operate wax sealed density test work on weathered drill core at their Doropo Project, located in the northeast of Cote d'Ivoire. This cost of this work is expected to be in the order of USD$2,500.
- Additional metallurgical testwork is recommended on Kona South to optimize metal recoveries and develop the process flowsheet. Metallurgical testwork is required for the Kona Central resource as this has not been tested to date. The testwork should be undertaken on new diamond drill core and individual drill core samples/composites selected to represent near, medium and long term aspects of the mine plan from all rock horizons. The estimated budget for testwork is USD$75,000. The testwork will include (but not be limited to):
    - Chemical composition of the Mineral Resource
    - Comminution characteristics
    - Flotation response
    - Gravity gold presence
    - Cyanide leach extractions for whole-of-ore and flotation concentrates
    - Investigation of gold deportment in feed and residues by mineralogical analysis and diagnostic leach testwork

  - Optimisation response testwork

- The metallurgical testwork will be performed in sufficient detail to ensure that both the Kona South and Kona Central deposits are at similar levels of confidence.

27 REFERENCES

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28 EFFECTIVE DATE AND SIGNATURE PAGE

This report titled "NI 43-101 Technical Report Mineral Resource Estimate Update On The Kona Gold Deposit Cote d'Ivoire" with an effective date of July 31, 2021, was prepared and signed by the following authors:

Dated at London, United Kingdom

November 10, 2021

Mr John Howard Bills, B.Sc. Geo., M.Sc. Min. Expl.

Group Exploration Manager – Centamin PLC

Dated at Perth, Australia

November 10, 2021

Mr Craig Barker, B.Sc., Geol.

Group Mineral Resource Manager – Centamin PLC

Dated at Perth, Australia

November 10, 2021

Mr Patrick Adams, B.Sc. Geostats.

Principal Geologist – Cube Consulting Pty Ltd

APPENDIX 1 QUALIFIED PERSONS CERTIFICATES

Certificate of Qualified Person

I, Craig Lawrence Barker, BSc Geology, Post Grad. Dip. (Geology), MAIG, do hereby certify that:

1) I am the Group Mineral Resource Manager for Centamin since September 2020. This certificate applies to the technical report titled "NI 43-101 Mineral Resource Estimate Update on the Kona Gold Deposit, Cote d'Ivoire (the "Technical Report") dated November 10, 2021" with an effective date of July 31, 2021 and a signing date of November 10, 2021.
2) I graduated with a Bachelor of Science in Geology from the University of Adelaide (1994) and a Post Graduate Diploma in Geology from the University of Western Australia (1998).
3) I am a Member of the Australian Institute of Geoscientists (#3141).
4) I have worked as a Geologist for a total of 24 years since graduating from university and have worked at gold mines in Australia, Africa, Laos, Bulgaria, Cambodia, Mongolia, DRC and Tanzania in both production and exploration geology positions. I have held senior management roles since 2012.
5) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6) I have visited the Kona Project in September 2021 and have inspected the core and reviewed all data collection and sampling procedures.
7) I am a co-author of the technical report entitled "Mineral Resource Estimate Update on the Kona Gold Deposit, Cote d'Ivoire". I am responsible for Sections 1, 2, 3, 5, 11, 12, 13, 15, 23, 24, 26, 27 and 28 and jointly responsible with Mr John Howard Bills for Sections 4, 6, 7, 8, 9, 10, 25 of the Technical Report.
8) I am not independent of the issuer applying the test set out in Section 3 of NI 43-101 since I am a full-time employee at Centamin plc.
9) Other than as indicated, I have had no prior involvement with the Kona Project. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith.
10) As of the effective date of this report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
11) I consent to the filing of the Kona Mineral Resource Update with any regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Effective Date: July 31, 2021

Signed Date: November 10, 2021

Craig Barker

Group Mineral Resource Manager – Centamin PLC

Certificate of Qualified Person

I, John Howard Bills, BSc Geology, MSc Mineral Exploration, do hereby certify that:

1) I am the Group Head of Exploration for Centamin since June 2020. This certificate applies to the technical report titled "NI 43-101 Mineral Resource Estimate Update on the Kona Gold Deposit, Cote d'Ivoire (the "Technical Report") dated November 10, 2021." with an effective date of July 31, 2021 and a signing date of November 10, 2021.
2) I graduated with a Bachelor of Science in Geology from Kingston University, UK (1978) and an MSc in Mineral Exploration from the Imperial College London (1983).
3) I am a Fellow of the Geological Society of London, a Chartered and European Geologist.
4) I have worked as a Geologist for a total of 40 years since graduating from university and have worked on gold exploration projects and gold mines in 8 sub-Saharan Africa countries, Thailand, Indonesia and Venezuela. I have held senior positions managing exploration projects since 1990.
5) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6) I have visited the Kona Project in January 2021 and have inspected the core and reviewed all data collection and sampling procedures.
7) I am a co-author of the technical report entitled "Mineral Resource Estimate Update on the Kona Gold Deposit, Cote d'Ivoire". I am jointly responsible with Mr Craig Lawrence Barker for Sections 4, 6, 7, 8, 9, 10, and 25 of the Technical Report.
8) I am not independent of the issuer applying the test set out in Section 3 of NI 43-101 since I am a full-time employee at Centamin plc.
9) Other than as indicated, I have had no prior involvement with the Kona Project. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith.
10) As of the effective date of this report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
11) I consent to the filing of the Kona Mineral Resource Update with any regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Effective Date: July 31, 2021

Signed Date: November 10, 2021

Howard Bills – Group Head of Exploration – Centamin PLC

CERTIFICATE OF QUALIFIED PERSON

Technical Report on the Mineral Resource Update on the Kona Gold Deposit, Cote d'Ivoire, effective date July 31, 2021

I, Patrick John Adams BSc, Grad Cert Geostats, FAusIMM., do hereby certify that:

a) I am a Director of Cube Consulting Pty Ltd located in Perth WA.

b) This certificate applies to the Technical Report titled "Technical Report on the Mineral Resource Update on the ABC Kona Gold Deposit, Cote d'Iviore, effective date July 31, 2021"

c) I graduated with a degree BSc in Computer Science/Geology in 1982 from the University of NSW, Sydney Australia. I am a Fellow of the Australasian Institute of Mining and Metallurgy. I have worked as a geologist for 34 years since my graduation from university. My relevant work experience for the purpose of the Technical Report is 5 years as a Mine Geologist, 29 years as a Consultant Resource Geologist.

d) I have not visited the Kona Gold Project.

e) I am responsible for the preparation of Sections 1.7 and 14 of the Technical Report.

f) I am independent of Centamin Plc as described in Section 1.5 of NI 43-101.

g) I have not had any prior involvement with the Kona Gold Project.

h) I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101. I have read NI 43-101 and the Technical Report has been prepared in compliance therewith.

i) As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this November 10, 2021

Patrick J. Adams, BSc, FAusIMM

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CONSENT of AUTHOR

To: Centamin Plc.

And To: British Columbia Securities Commission
Alberta Securities Commission
Saskatchewan Financial Services Commission
Manitoba Securities Commission
Ontario Securities Commission
New Brunswick Securities Commission
Nova Scotia Securities Commission
Prince Edward Island Securities Office
Securities Commission of Newfoundland and Labrador
Toronto Stock Exchange

Consent of Qualified Person

Reference is made to that technical report entitled, **“Technical Report Mineral Resource Estimate Update on the Kona Gold Deposit, Cote d’Ivoire”** dated effective July 31, 2021, prepared for Centamin Plc (the “Company”) of which I am one of the co-authors.

Permission is granted to the Company for the filing of the Technical Report with the applicable securities regulatory authorities, the Toronto Stock Exchange and any other regulatory authority having jurisdiction over the Company, and any publication by them, including electronic publication in the public company files on their website accessible by the public, of the Technical Report.

Dated this November 10, 2021

Patrick J. Adams, BSc, FAusIMM

Cube Consulting Pty Ltd