Report No. 20210922_BWA

COMPETENT PERSONS JORC 2012 TECHNICAL REPORT FOR THE NKOTENG AND DEHANE MINERAL SANDS PROJECTS, CAMEROON

PREPARED FOR

BWA GROUP PLC

BY



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i. Consent of Competent Persons

Tecoma Strategies Flat 8 Newlands Flats 13-17 Mortimer Street London W1T3JD United Kingdom

Competent Person's Statement

Pursuant to the requirements of Clause 8 of the 2012 JORC code (written consent statement)

Competent Person's Report

Competent Persons JORC 2012 Technical Report for the Nkoteng and Dehane Mineral Sands Projects, dated **10th December 2021**

Released by Tecoma Strategies

I, Mathew Mullins BSc (Hons) FAusIMM, confirm that I am the Competent Person for the report and are responsible for all sections and am accepting responsibility for the report and;

- I have read and understood the requirements of the 2012 edition of the Australasian Code for the reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 Edition).
- I am a Competent Persons as defined by the JORC Code 2012 Edition, having a minimum of five years' experience that is relevant to the style of mineralisation and type of deposits described in the Report, and/or to the activity to which I accept responsibility.
- I have reviewed the report to which this Consent Statement applies
- I am a consultant working for Tecoma Strategies

And have been engaged by;

BWA Resources UK Limited

To prepare documentation for; *Nkoteng and Dehane Projects, Cameroon* on which the Report is based, for the period ending the Effective Date of 23rd November 2021.



I have disclosed to the reporting company the full nature of the relationship between Tecoma Strategies and the Company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Mineral Resources, Exploration Targets and Exploration Results.

Competent Persons Consent

I consent to the release of the Report; Competent Persons JORC 2012 Technical Report for the Nkoteng and Dehane Mineral Sands Projects, dated **10th December 2021** and this Consent Statement by the directors of BWA Resources UK Limited.

Person	Responsibility	Affiliation	Date	Signature
Mathew Mullins	Lead Author and Competent Person	Fellow of the Australasian Institute Mining and Metallurgy	10th December 2021	MMul



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1 Executive Summary

1.1 Introduction

Tecoma Strategies (hereinafter referred to as "the Consultant" or "Tecoma") were requested by Richard Battersby of BWA Resources UK Limited (hereinafter referred to as "BWA" or "the Client") to prepare a Competent Persons Report (CPR) in accordance with the JORC code 2012, for the Nkoteng 1 and Dehane 1 licences, Cameroon.

This independent study has been completed by Mr. Matt Mullins of Tecoma Strategies.

BWA holds exploration licences for Dehane, covering 132 km², and Nkoteng, covering 497 km², in Cameroon as shown in Figure 1.1. This report reviews of the status of exploration at these licences. A list of the Company's Cameroonian assets is presented in Table 1.1.

BWA Resources Cameroon and BWA Minerals Cameroon are 100% subsidiaries of BWA Resources UK Limited, a minerals exploration investment company, and have two granted and five applied mineral exploration licences in Cameroon at grassroots to early exploration (drill ready) stages of development.

The report has been compiled in accordance with the JORC code 2012 edition of the Australasian Joint Ore Reserves Committee ("the JORC code 2012") and the Note for Mining, Oil and Gas Companies ("the AIM Note"), which forms part of the AIM rules for companies.

In terms of recognised mineral industry and international standards, the BWA licences represent 'grassroots' to early-stage exploration projects, prospective for heavy mineral sands, including rutile, ilmenite, kyanite, and zircon.



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Figure 1.1: Licence Locations (Dehane-West and Nkoteng-East).



Table 1.1: List of assets held by BWA Resources UK Limited.

Asset	Licence Number/ Reference	Holder	Company Interest	Status	Expiry Date	Area km²	Comments
			Cameroon Asse	ets, material to CPR			
Nkoteng 1	637	BWA Resources Cameroon	100%	Drill ready	23/12/2022	497	See sections 9 and 10 for details of Exploration and Drilling activities and results.
Dehane 1	636	BWA Resources Cameroon	100%	Drill ready	9/03/2023	132	See sections 9 and 10 for details of Exploration and Drilling activities and results.
		Cameroo	n Assets, not mat	erial to CPR and in appli	cation		
Nkoteng 2	N/A	BWA Resources Cameroon	100%	Grassroots exploration	N/A	500	In application
Dehane 2	N/A	BWA Resources Cameroon	100%	Grassroots exploration	N/A	54	In application
Dehane 3	N/A	BWA Resources Cameroon	100%	Grassroots exploration	N/A	244	In application
Song-Loulou 1	N/A	BWA Minerals Cameroon	100%	Grassroots exploration	N/A	495	In application
Song-Loulou 2	N/A	BWA Minerals Cameroon	100%	Grassroots exploration	N/A	497	In application

1.2 Nkoteng

1.2.1 Property Description and Location

BWA Resources Cameroon Ltd (BWA) holds exploration permit no. 637 known as Nkoteng. The permit was issued by the Ministry of Mines, Industry and Technological Development (MINMIDT) by decree AR0000676/A/MINMIDT/SG/DM/SDCM on the 24th of December 2020 and is valid for rutile, ilmenite, kyanite, zircon, and other related substances. The main locality covered is that of Mbandjock (boundary marker I) as shown in Figure 1.2.



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Figure 1.2: Nkoteng licence location.

1.2.2 Accessibility, Climate, Local Resources, Infrastructure and Physiography

Access to the Nkoteng licence is by following the sealed National Road (NR) n°1 (Yaoundé-Nanga-Eboko) to Batchenga. Then from Batchenga, the north-western part of the permit is accessed by following NR n°15 and the south-eastern part by continuing along NR n°1.

Similarly, access is possible by taking the Yaoundé-Ngoundéré trans-Cameroon railway to the Mbandjock station which is inside the permit area.

Mbandjock has a four-season tropical climate. The long dry season runs from mid-November to mid-March, the short rainy season from mid-March to mid-June, the short dry season from mid-June to mid-August and the long rainy season from mid-August to mid-November.

The infrastructure inside the permit mainly concerns the industrial plantations of the "Société Sucrière du Cameroun" (SOSUCAM) and private individuals. These plantations have led to the development of economic activity due to the influx of populations. In the southern part of the permit, the construction of a hydroelectric dam is also under way.

The vegetation is dominated by savannah grassland. There are also secondary forests, gallery forests, wooded forests and fallow land.



1.2.3 Geological Setting and Mineralisation

Nkoteng is located within the Yaoundé Domain of the Pan African Belt, which is a large nappe unit that has been thrusted southward onto the Congo Craton and is characterised by low-grade to high-grade garnet bearing metamorphosed schists, gneiss and orthogneisses (Weecksteen, 1957).

The bedrock geology is dominated by embrechite gneiss, two micas gneiss, biotite anatexites and micaceous quartzites. Biotite embrechites constitute most of the formations encountered on the Nkoteng permit.

Rutile-bearing alluvium overlies the bedrock and is particularly well developed in the Sanaga River floodplain. The BWA Nkoteng licence area accommodates approximately 50 km of the river floodplain system and associated tributaries, which demonstrates and interpreted 3-5km wide floodplain and palaeo-floodplain. Rutile deposits are known in alluvial and eluvial sediments in southern and central Cameroon and are underlain by the Neoproterozoic low- to high-grade Yaounde' Group. Geochemical, thermometric, fluid inclusion and Pb isotopic studies of the rutile from alluvial and eluvial concentrates show that the rutile is derived from the degradation of metapelites, metamafic rocks and pegmatites of the nearby Yaounde' Group, either during the Pan-African metamorphism, or was inherited as detrital rutile from a ~900 Ma source (Stendal, et al 2005).

The main minerals found in the alluvial and eluvial sediments are garnet, rutile, kyanite, ilmenite and zircon.

Basement geology, the current and paleo river system erosional and depositional environment are considered favourable for heavy mineral sand deposit development.

1.2.4 History

Historically, the Nkoteng area has been known to possess rutile-bearing sand (generally of the >1mm size fraction) and has been subject to artisanal exploitation since the beginning of the 20th century. It was not until the 1970s that any significant prospecting began to take place under BRGM, when the Cameroonian Government welcomed French guidance in developing their minerals sector. The areas surrounding Akonolinga and Nanga Eboko towns, became primary exploration targets for Cameroon Rutile.

1.2.5 BWA Resources Cameroon Limited Exploration

Fifteen hand-excavated exploration pits and 38 auger holes were drilled, focused on three areas, as illustrated by Figure 9.1. Three grab samples were also taken, two of them in the same locality. The exploration was conducted immediately adjacent to the Sanaga River, and only one exploration pit tested the broader floodplain. The location of the sampling is shown in Figure 1.3. Most of the



sampling was concentrated south of the river, and of the three areas, most of the sampling was located in Zone 1, situated immediately north of the town of Mbandjok.



Figure 1.3: Nkoteng Reconnaissance Pit and Auger Selected Significant Intervals.

1.2.6 Drilling

No drilling has been completed by BWA on the property at this time. BWA intend to drill 2,500 m at Nkoteng and 1,500 m at Dehane in the first quarter of 2022.

The programme is discussed in the Planned Drilling recommendations section of this report.

1.2.7 Environmental and Social

There have been no environmental studies, permitting and social or community impact studies completed on the project to date.

1.3 Dehane

BWA Resources Cameroon Ltd (BWA) holds exploration permit no 636 known as Dehane, issued by the Ministry of Mines, Industry and Technological Development (MINMIDT) by decree AR000060/A/MINMIDT/SG/DM/SDCM on the 10th of March 2020, valid for rutile, ilmenite, kyanite, zircon, gold, and other related substances.



The permit has an area of 132 km² and covers the eastern and western banks of the Nyong River over a distance of 26 km. It is located to the west of Yaoundé, close to the coast, the port of Douala and to the deep seaport of Kribi (Figure 1.4).



Figure 1.4: Dehane licence location.

1.3.1 Accessibility, Climate, Local Resources, Infrastructure and Physiography

Access to the permit is possible either by following the National Road (RN) n°7 asphalt (Edéa-Kribi) then by taking the access roads leading to the localities of Nsahé, Dehane, Etouma, Mekwora, and Dabounga or by passing by the RN n°7 and by taking from the crossroads Ferme Suisse (of coordinates 32N 622865E 394766N), an unpaved road allowing access to the right bank of the Nyong river.

The permit area is subject to an equatorial climate, of the classical Guinean type with a predominantly maritime climate. The climate of the zone is characterized by nine months of rainy season and three months of dry season. September and October are the wettest months while December and January are the driest months. The average temperature in the region is 26°C. The average annual rainfall is 2600 mm.



The infrastructure within the permit covers an area of about 800 ha and mainly concerns the industrial plantations of the Swiss Farm and private individuals. In addition to these agricultural infrastructures, there are also schools and many other social infrastructures.

The vegetation consists of a dense primary forest forming areas of difficult access and a secondary forest strongly influenced by human activity and industrial plantations.

1.3.2 Geological Setting and Mineralisation

The Dehane licence is located to the west of Yaoundé, much closer to the coast and the port of Douala. The project area sits between the towns of Edea and Kribi and is primarily used for subsistence farming and palm and palm-oil cultivation. A bitumen highway links the two towns. The rutile deposits in Dehane are associated with the sand flats of the Nyong River flood plain.

The Dehane licence is located on the Western Cameroon Domain, which extends along the border between Nigeria and Cameroon. This domain consists of a series of medium-grade to high-grade schists and gneisses of volcanic and volcano-sedimentary origin, intruded by later-stage granitoid complexes. The Dehane area has also been a historical rutile mining area as with the other areas, however the extent of its exploitation has not translated to concentrated modern exploration.

The main minerals found in the alluvial and eluvial sediments are garnet, rutile, kyanite, ilmenite and zircon.

1.3.3 History

The Dehane area has been known for some historic small scale artisanal historical rutile mining. However, the extent of its exploitation has not translated to concentrated modern exploration.

A literature review by Ntep, 2001 discusses that in 1978, BRGM prospected the alluvium of the lower Nyong valley downstream of Dehane, concentrating at the river's outlet in the Douala coastal sedimentary basin. The purpose of the work was to test the possibility of economic concentrations of a large alluvial deposit in the area of a known rutile mineralized zone.

The study shows a deep sandy channel system, comprising a large main channel and various secondary channels. This study also shows that the bedrock was rarely reached during the sampling, which demonstrates a deeper extent of the alluvium.

Three indications of mineral concentrations were found in the secondary sandy channels with values close to 5 to 10 kg of rutile equivalent per cubic meter, Ntep, 2001. Neither AMS nor Tecoma has verified these results.



1.3.4 BWA Resources Cameroon Limited Exploration

Exploration at Dehane has comprised drilling of 30 auger holes and 10 hand dug exploration pits, for a total of 139.84 m and 171 primary samples. These samples were collected from within the current floodplain and paleo alluvial basin related to the Nyong river.

Both the auger holes and pits were hand drilled / excavated to a maximum depth of five metres, generally stopping the hole and pit when bedrock was reached or when it became unsafe to excavate further due to slope failure or water ingress.

During the Dehane sampling programme, the primary host for the mineralisation, the sands, were routinely sampled to test for heavy minerals. Furthermore, from experience from the recent Nkoteng programme, which consistently saw anomalous results from the plastic clays and saprolite horizons, it was important for BWA geologists to also sample the plastic clays routinely and saprolite from the Dehane pits and auger holes. The location of the samples within the Dehane licence area are shown in Figure 1.5.

1.3.5 Drilling

No drilling has been completed by BWA on the property at this time. BWA intend to drill 2,500 m at Nkoteng and 1,500 m at Dehane in the first quarter of 2022.

The programme is discussed in the Planned Drilling section.

1.3.6 Environmental and Social

There have been no environmental studies, permitting and social or community impact studies completed on the project to date.



Competent Persons JORC 2012 Technical Report for the Nkoteng and Dehane Mineral Sands Project, Cameroon



Figure 1.5: Dehane – samples by type and significant intersections within the Nyong floodplain.



1.4 Preliminary Mineralogical Testwork

A total of ten samples were submitted to ALS for mineral separation and percent determination of the heavy minerals from a selection of samples from Dehane and Nkoteng. Samples were collected from twin auger holes from representative locations.

The samples were split by size distribution into a +1mm fraction, 1mm to 0.053 mm, and less than 0.053 mm. The mass of each size fraction was measured, and the mass of the -0.053 fraction was also back calculated from the total mass. This back-calculated mass is similar to the measured mass.

Heavy liquid separation (HLS) analysis was undertaken on the samples to determine the proportion of the sample that is able to be separated at a density of 2.96 kg/dm³. The mass of the sinks recovered at this density were further analysed.

Ten -2mm sample rejects from Nkoteng were used for granulometric studies and visual size fraction analysis. Eleven -2mm sample rejects from Dehane were used for granulometric studies and visual size fraction analysis.

1.5 Interpretations and Conclusions

Tecoma are encouraged by the level of grade and extent of all the target minerals throughout the Nkoteng and Dehane licences.

Geological setting including observed basement geology and depositional environment are considered highly prospective for alluvial heavy mineral sands development.

Pit profiles, two new auger profiles and numerous riverbank exposures were visited and logged, where the presence of rutile, ilmenite, kyanite and zircon in hand specimens and sieved samples were observed in size and quantities of interest.

The results to date are considered positive and demonstrate the grades and thicknesses of potential economic interest over significant lateral extents, and warrant further investigation and advanced exploration work, including drill testing, mineral resource estimation leading to preliminary conceptual mining studies and economic evaluation.

1.6 Nkoteng

The 15 hand-dug pits and 38 auger holes to a depth of 4.5 m show that there is continuous close to surface TiO_2 mineralisation situated on the floodplain of the Sanaga River. The average grade of TiO_2 in the 90 samples taken is 1.03 %, with mineralisation found in the uppermost plastic clays, in the underlying sand and gravel units, and in the saprolite below these units.



Positive results for TiO2, Al2O3 and Zr were obtained from the three areas sampled, the north, central and south. The central area appears to be more positive than the northern and southern samples, but these extremities are still anomalous for HMS and show encouraging continuation of mineralisation over 15 km.

The central area was targeted more heavily after the presence of gravel and encouraging HMS mineralisation at the bottom of the hole NKO_002 was observed and suggests that the Sanaga River was deeper at this location at some point in its history and is likely either an abandoned channel or a cut meander. Tecoma are encouraged by the grade and extent of all the target minerals and are planning follow up work, to be conducted shortly.

Exploration activities, including sample collection and analysis, have been well done and in line with industry standards.

In areas where there is a higher density of sampling, variograms show statistical continuity of mineralisation.

1.7 Dehane

A total of 30 auger holes and 10 hand dug exploration pits, for a total of 139.84 m and 171 primary samples to a depth of 5.0 m show that there is continuous close to surface TiO_2 mineralisation situated on the floodplain of the Nyong River.

The average grade of TiO_2 in the 90 samples taken is 1.28 %, with the highest grade of mineralisation found in the uppermost plastic clays, and slightly lower grades in the underlying sand and gravel units, and in the saprolite below these units.

The TiO₂ grades are higher in the plastic clays (1.54 %) and organic sands (1.17 %) than in the sands (0.93 %).

Current results and interpretations suggest the mineralisation is more prospective in the north of the licence due to the presence of a Cretaceous fault which has created a waterfall. This HMS "rich zone" is located downstream of the waterfall, which sees an abrupt decrease in river water velocity due to the sudden change in topography and its load of heavy minerals is deposited.

The presence of anomalous values within the overlying clays encouraging in terms of increasing the thickness, subsequent volume and proximity to the surface of potentially economic material.

Exploration activities, completed by BWA including sample collection and analysis, have been done well and in line with industry standards.



1.8 Preliminary Mineral Separation Testwork Conclusions

Although limited at this stage, preliminary work shows a number of samples are amenable to size fractionation, in particular the main target sand and gravel units, with a significant grade of titanium oxide (rutile-ilmenite), zirconium (zircon) and aluminium oxide (kyanite) reporting to the HLS fraction.

Further sampling and detailed tests are needed to better understand mineralised material characteristics, separation properties and quantities of recoverable HMS, particularly the samples where the weight of the HLS fraction is low.

From the limited mineral separation work, the samples show a good separation between 1 mm to 0.053 mm, but a number of samples show a high clay content which can interfere with recoveries, however further work is needed to understand the mineral composition of potential mineralised horizons / various material types.

The samples are amenable to size fractionation, with a significant grade of ilmenite reporting to the HLS fraction. Further samples are needed to understand the samples where the weight of the HLS fraction is low.

The data is extremely limited first pass mineral separation testwork and whereas currently considered largely inconclusive, provides an encouraging indication that certain horizons within the profile are potentially amenable to separation and are of a suitable size fraction element composition that is extremely encouraging. Further systematic and more detailed mineral separation and mineralogical (QEMSCAN) studies are required across the prospective target areas.

The following conclusions are presented for the mineral separation test work:

- There is good grade present as rutile and ilmenite as defined by the granulometric studies throughout the various horizons and confirmed by geochemical analysis.
- There is good TiO₂ as defined by geochemical analysis.
- There is good Al₂O₃ grades as defined by geochemical analysis and granulometric studies which has identified abundant Kyanite throughout the various horizons.
- There are good grades of zircon, as defined by geochemical analysis and granulometric studies which has identified zirconium throughout the various horizons.

From the HLS and screening results, the following conclusions are made:

• Five samples returned encouraging results from the wet screening 1 mm to 0.053 mm fraction, in particular the main target sand and gravel units.



• A number of samples returned high clay content which can interfere with recoveries. However, current tests are extremely limited and further detail test work is required.

1.9 Recommendations

Tecoma recommend the following activities for both the Nkoteng and Dehane projects which should be investigated in the next phase of exploration:

- The majority of pits and auger holes completed to date have stopped in mineralisation, unable to penetrate through the target sand and gravels into bedrock saprolite due to water ingress and maximum rod depth. Deeper holes by should be drilled to ensure that the saprolite is intersected and full thickness of target units are tested.
- Only a small area of the total floodplain potential has been tested. Systematic step out drilling from current target zones to explore the wider areas of the floodplain.
- The TiO₂ grades are higher in the plastic clays (1.54 %) and saprolites (1.08 %) than in the sands (0.77 %) and gravels (0.94 %). This relationship should be carefully investigated and requires further geostatistical analysis.
- Collection of bulk density data.
- Preliminary mineral separation testwork presents a number of encouraging results, conversely has identified a number of samples with a high clay content. Further systematic detailed mineral separation and mineralogical (QEMSCAN) work is required alongside any planned of drilling or pitting.
- Size fractionation analysis shows that rutile-ilmenite is preferentially concentrated in the HLS fraction, although care should be taken in the interpretation of the results, as some samples show low weights reporting to the HLS fraction. Further sampling and testwork is needed.
- Reasonable prospects for eventual economic analysis (RPEEE) needs to be defined i.e., preliminary extraction testwork, especially of the plastic clays.
- Bulk mineralogical test work, leading to pilot plant scale tests.
- Production of a detailed topographic surface.

1.9.1 Planned Drilling

BWA intend to drill 2,500 m in Nkoteng and 1500 m in Dehane in the first quarter of 2022. In Nkoteng, the holes are planned for every 200 m (on 500 m and 1000 m grid lines) to a depth around five metres. The grid lines were set up on regular coordinate grids and cover the entire licence area at a spacing of 200 m by 500 m, as shown in Figure 1.6.



The Dehane programme planned vertical holes every 200 m (on 500 m and 1000 m grid lines) to a depth of around fifteen metres. The grid lines were set up on regular coordinate grids and cover the entire licence area at a spacing of 200 m by 500 m, as shown in Figure 1.7.



Figure 1.6: Proposed drillholes in Nkoteng by priority (purple are priority 1 and yellow are priority 2).



Figure 1.7: Proposed drillholes in Dehane by priority (purple are priority 1 and yellow are priority 2).



2 Introduction

Tecoma Strategies (hereinafter referred to as "the Consultant" or "Tecoma") were requested by Richard Battersby of BWA Resources UK Limited (hereinafter referred to as "BWA" or "the Client") to prepare a Competent Persons Report (CPR) in accordance with the JORC code 2012, for the Nkoteng 1 and Dehane 1 licences, Cameroon.

This independent study has been completed by Mr. Matt Mullins of Tecoma Strategies.

BWA Resources Cameroon and BWA Minerals Cameroon are 100% subsidiaries of BWA Resources UK Limited, a minerals exploration investment company, and have two granted and five applied mineral exploration licences in Cameroon at grassroots to early exploration (drill ready) stage of development.

BWA Resources Cameroon Limited holds exploration licences for Dehane, covering 132 km², and Nkoteng, covering 497 km², in Cameroon as shown in Figure 1.1. This report reviews of the status of exploration at these licences. A list of the Company's Cameroonian assets is shown in Table 1.1.

In terms of recognised mineral industry and international standards, the BWA licences represent 'grassroots' early-stage exploration projects, prospective for heavy mineral sands, including rutile, ilmenite, kyanite, and zircon.

Exploration and drilling programmes are being carried out by BWA Resources Cameroon Limited, with assistance, guidance, programme design and remote supervision by Addison Mining Services ("AMS"). AMS is a geological and mining consultancy based out of London and in association with the BWA technical team have provided much of the soft copy data and reports and information required for the CPR.



Competent Persons JORC 2012 Technical Report for the Nkoteng and Dehane Mineral Sands Project, Cameroon



Figure 2.1: Licence Locations (Dehane-West and Nkoteng-East).



Table 2.1: List of assets held by BWA Resources UK Limited.

Asset	Licence Number/ Reference	Holder	Company Interest	Status	Expiry Date	Area km²	Comments
			Cameroon Asse	ets, material to CPR			
Nkoteng 1	637	BWA Resources Cameroon	100%	Drill ready	23/12/2022	497	See sections 9 and 10 for details of Exploration and Drilling activities and results.
Dehane 1	636	BWA Resources Cameroon	100%	Drill ready	9/03/2023	132	See sections 9 and 10 for details of Exploration and Drilling activities and results.
		Cameroo	n Assets, not mat	terial to CPR and in appli	cation		
Nkoteng 2	N/A	BWA Resources Cameroon	100%	Grassroots exploration	N/A	500	In application
Dehane 2	N/A	BWA Resources Cameroon	100%	Grassroots exploration	N/A	54	In application
Dehane 3	N/A	BWA Resources Cameroon	100%	Grassroots exploration	N/A	244	In application
Song-Loulou 1	N/A	BWA Minerals Cameroon	100%	Grassroots exploration	N/A	495	In application
Song-Loulou 2	N/A	BWA Minerals Cameroon	100%	Grassroots exploration	N/A	497	In application

2.1 Terms of Reference

This technical report is based on findings of the Tecoma virtual site visit, desktop study, data review and data validation. All information and data used in this report has been provided by BWA or AMS unless otherwise stated. The data has been reviewed by Tecoma and deemed suitable for the study.

The scope of work for the JORC 2012 Technical Report on the project has included:

- Project data review and validation
- Competent Persons (virtual) site visit
- Analysis and interpretation of exploration data
- Initial Competent Persons project review and Note for the Record.
- Competent Persons Report(s) prepared in accordance with the JORC code 2012.
- Competent Persons Report CP consent and sign-off.



2.2 Sources of Information and Data

This technical report is based on findings of the Tecoma Strategies virtual site visit, desk study data review, data validation and verification where practical and possible.

Tecoma Strategies received the full co-operation and assistance from the Company's and AMS's personnel during the virtual site visit and in the preparation of this report.

Tecoma have reviewed information relating to the Nkoteng and Dehane Project, including relevant published and unpublished third-party information, and public domain data, a list of which is provided in Sections 3 "Reliance on Other Experts" and 27 "References" sections of this report.

2.3 Property Inspection by the Competent Person

The Competent Person has inspected the property (virtually) and assets material to this CPR in order to verify the style and presence of mineralisation under investigation and to review the exploration practices of the Company.

A Competent Person's virtual visit was made to the Nkoteng and Dehane properties in Cameroon, between the 20th and 22nd July 2021.

The findings of the Competent Person's site visits are described in the site visit section (12.1) in addition to verification activities performed by the Competent Person and the study team.

2.4 Independence of Tecoma Strategies

Tecoma Strategies is an independent geology and mining consultancy based in the United Kingdom.

Tecoma Strategies' only financial interest is the right to charge professional fees at normal commercial rates, plus normal overhead costs, for work carried out in connection with the investigations reported here. Payment of professional fees is not dependent either on project success or project financing.

2.5 Qualification of Consultants

Matthew Mullins BSc FAusIMM:

- Is the Competent Person for this study and has overall responsibility for all sections in this report. He has the necessary experience and qualifications stipulated under the JORC 2012 code to act as a Competent Person for the style of mineralisation and commodities being investigated.
- 2. Graduated with a Bachelor of Science with Honours in Geology.
- 3. Is a Fellow of the AusIMM



4. Has worked as a geologist for over 40 years, with over twenty years of mineral sands experience

2.6 Units

All units of measurement used in this report are metric unless otherwise stated. Tonnages are reported as metric tonnes ('t'), gold in g/t and ounces in Troy ounces ('oz'). Heavy mineral values for TiO_2 , AI_2O_3 and Zr are reported in percent (%). Other references to geochemical analysis are in parts per million ('ppm') or percent (%) as reported by the originating laboratories.

Data was captured and located using a Universal Transverse Mercator (UTM). The geographic coordinate reference system used by the client was WGS84, projection UTM Zone 32N ('WGS84 / UTM32N). Elevations are reported in metres above sea level.

2.7 Limitations

In the preparation of this technical report, Tecoma has utilised information provided by BWA and AMS. Tecoma has made every reasonable attempt to verify the accuracy and reliability of the data and information provided to them and to identify areas of possible error or uncertainty, to the best of its knowledge these details are in accordance with the facts and contains no omission likely to affect the success of the project. Tecoma, its directors, employees and contractors accept no liability for the omission of information or data which has not been brought to their attention or for errors in data and information which have not been possible to identify.

The business of mining and mineral exploration, development and production by their nature contain significant risks. The success of a project is dependent on many factors, including, but not limited to: resource size and grade, mining, metallurgical, geotechnical, operational, legal, environmental, marketing, metal pricing and transportation. Given the nature of the mining business many factors may be subject to change over relatively short periods of time and as such actual results may be significantly more or less favourable. Except as specifically required by law, Tecoma and its directors accept no liability for any losses arising from reliance upon the information presented in this technical report.

2.8 Material Change Statement

As of the effective date of this document, Tecoma and the company is not aware of any likely or pending adverse effect as to business, operations, properties, assets or condition, financial or any other material change, which may arise within the six months following the publication of this report.



3 Reliance on Other Experts

Tecoma has not independently verified title to the company's assets, nor has it verified the status of legal agreements with local landowners and relevant parties but has relied on information supplied by BWA in this regard. Tecoma are relying on public documents and information provided by BWA for the descriptions of title and status of the Property agreements. Tecoma has no reason to doubt that the title situation is other than that which was reported to it by the Company.

The Competent Person takes responsibility for the content of this Technical Report and believes it to be accurate and complete in all material aspects. However, Tecoma is not responsible for, nor has undertaken any due diligence regarding non-geological technical aspects relating to legal, financial, corporate agreements and environmental due diligence. In this regard Tecoma has relied upon the Company in good faith to provide any information considered relevant and material to the content of this Technical Report. The Competent Person has no reason to doubt that the Company has been forthcoming with all such relevant information.

A list of references used in this study is provided in section 27 "References" part of this report.



4 Property Description and Location

4.1 Nkoteng

BWA Resources Cameroon Limited (BWA) holds exploration permit no. 637 known as Nkoteng. The permit was issued by the Ministry of Mines, Industry and Technological Development (MINMIDT) by decree AR0000676/A/MINMIDT/SG/DM/SDCM on the 24th of December 2020 and is valid for rutile, ilmenite, kyanite, zircon, and other related substances. It is delimited by sixteen markers, equally distributed on both sides of the Sanaga river (Table 4.1 and Figure 4.1). The main locality covered is that of Mbandjock (boundary marker I). The licence certificate for Nkoteng is presented in Figure 4.2.

The Nkoteng permit straddles Ntui, Batchenga and Mbandjock subdivision in the Mbam and Kim, Lékié and Haute Sanaga division respectively in the Center region of Cameroon. The permit has an area of 497 km² and straddles the banks of the Sanaga River over a distance of some 50 km, approximately 60 km to the north-east of the capital Yaoundé with easy transport links to the port of Douala, as shown in Figure 4.1. The closest town is Mbandjock, situated on the southern side of the Sanaga River. Mbandjock has a population of about 20,000 people (2012) and has a small airport (Figure 4.1).



Figure 4.1: Nkoteng licence location.



Corner	East	North	Longitude	Latitude
1	792292.8	479941.5	11.49000	4.28150
2	792268.6	486857.3	11.49000	4.31150
3	798747.6	486880.5	11.54000	4.31150
4	798719.1	494718.7	11.54000	4.36150
5	812602.4	494770.8	12.00000	4.36150
6	812581	500304.3	12.00000	4.30150
7	821836.7	500340.7	11.57150	4.30150
8	821799.6	509563.9	11.57150	4.27150
9	832906	509609.8	11.54150	4.27150
10	832952.1	498541	11.54150	4.23300
11	827860.8	498520.3	11.45000	4.23300
12	827883.1	492986.1	11.45000	4.20150
13	822328.8	492964	11.38000	4.20150
14	822355.9	486046.6	11.38000	4.24000
15	805230.3	485981.9	11.41300	4.24000
16	805252.2	479987.6	11.41300	4.28150
17	792292.8	479941.5	11.49000	4.28150

Table 4.1: Nkoteng corner licence coordinates.



Competent Persons JORC 2012 Technical Report for the Nkoteng and Dehane Mineral Sands Project, Cameroon

Paix - Travali - Patrie	REPUBLIC OF CAMEROON Peace - Work - Fatherland	<u>Article 4.</u> - Le permis NKOTENG donne le droit exclusif à la société BWA RESOURCES CAMEROON Ltd, BP : 6184 Yaoundé, de conduire des travaux de recherche sur toute la superficie du permis.								
UNISTERE DES MINES, DE L'INDUSTRIE ET DU DEVELOPPEMENT TECHNOLOGIQUE	MINISTRY OF MINES, INDUSTRY AND TECHNOLOGICAL DEVELOPMENT	Article 5 (1) Le permis NKOTENG est constitué d'un seul bloc dont les coordonnées								
SECRETARIAT GENERAL	SECRETARIAT GENERAL	geograp	hiques sont	les suivant	05 :					
DIRECTION DES MINES	DEPARTMENT OF MINDE	ID	A	8	C	D	E	F	G	TH 1
SOUS-DIRECTION DU CADASTRE MINIE	SUB-DEPAPTMENT OF MINTER	X(m)	11°49'00"	11°49'00"	11°54'00"	11°54'00"	12°00'00"	12°00'00"	11°57′15*	11°57'15"
	CADASTI	Y(m)	04°28'15"	04°31'15"	04°31'15"	04°36'15*	04°36'15"	04°30'15"	04°30'15"	04°27'15"
ARRETE NoA 0 00 0 6 / 2	A . DEC 2010		1		_					
PORTANT INSTITUTION D'UN PERMIS DE RECHERCHE VALARIE DE		10 X(m)	11054000	3	K	L	М	N	0	P
L'ILMENITE, LE DISTHENE, LE ZIRCON	ET AUTRES SUBSTANCES CONNEXES.	Y(m)	04°27'15"	04°23'30"	04º23'30"	11°45'00" 04°20'15"	11°38'00"	11°38'00"	11º41'30"	11°41'30°
******	1	L		1	1	012025	04 20 13	04-2400	04~24'00"	04°28'15"
LE MINISTRE DES MIN ET DU DEVELOPPEMEN	IES, DE L'INDUSTRIE IT TECHNOLOGIQUE,		(2) La vingt-di	superficie Ix-sept (49)	du permis 7) kilomètr	NKOTENG res carrés.	i est réput	ée égale à	quatre ce	nt quatre-
 Nu la Loi nº 36/12 du 05 août 1996 p fendronnement; Nu la Loi nº 36/12 du 14 décembre 2016 Nu la Loi nº 2016/12 du 14 décembre 2016 Nu la Loi nº 2016/12 du 14 décembre 2016 Nu la Décret nº 2013/408 du 09 du guivernement modifié et complété par l Vu le Décret nº 2012/432 du 1º octobre Mine, de l'industrie et du Développemen Nu la Décret nº 2019/001 du 04 janvier 2019 Considérant la demande introduite en date RESOURCES CAMERCON LL, BP : 63 Considérant la lettra nº BéS2/SS(PR du 13 n permis de recherche à la société BWAR RE Article 1⁻⁵- II est attribué à la société BWAR Re Article 1⁻⁵- II est attribué à la société BWAR estartes autres subatances connexes, dans les Aron Départements de la AUUTE SANAGA et du MBA 	portant loi cadre relative à la gestion de portant Code Minier; écembre 2011 portant organisation du e doret n° 2018 / 190 du Camas 2018; 2012 portant organisation du Ministère des t Technologique; 9 portant nomination d'un Premier Ministre, portant réaméragement du Gouvernement; du 09 juille 2019 par la société BWA 64 Yaoundé; povembre 2019 parties à l'attribution d'un SOURCES CAMEROON LID; E: E: E: E: E: E: E: E: Disponse distribution d'un premis le artige, l'immente, le aircon et dissements de MEANDJOCK et NTUL, W ET KLIM, Région du CENTE.	Article les propo NKOTE 1 ⁴⁰⁰ ann - n - s - e p - s 2 ⁴⁰⁰ ann - n - s 2 ⁴⁰⁰ ann - n - s 2 ⁴⁰⁰ ann - n - s - n - n - n - n - n - n - n - n	6 La socié stitions du p VG. A cet eff ée : acherche bib omage du p tude d'imp rospection ; ansibilisation connaissan ondage méc née : rogramme inéralisation véé topogra rélèvement t écermination ssal de prélè	té BWA R programme fet, elle s'e bilographiqu érimètre di act enviro n des popul ce des flats anique de n de sondaç is éventuel phique dét des échanti de denstiz evenent d'ét	ESOURCE des trava ingage à n le ; u permis ; onnementa ations rive reconnaiss reconnaiss ge à mai es trouvér alliée des illons géoc à spécifiqu	ES CAMER La réaliser selles r les t selles sommal raines sur l par pults c ance sur le les serrée s; flats minéra himiques e e du minen s par dragu	OON Ltd, r pendant ravaux ci-a re exigibil les travaux le prospect s cibles ide s pour d alisés ; t métallurg ai identifié te dans des	BP: 618 la durée d près : le avant de terrain tion ; mitifiées. éterminer iques ; ; s zones arr	te validité tous tra a à mener ; la géom	dé a émis du permis ivaux de étrie des
Soldét de droit camerounals avec pour Gér actionaire unique BWA GROUP PLC, 50 Broad Registered number 255647 (England and walles). Article 3. Le permis NKOTENG inscrit sous le conservation melpière activité	ROON Ltd, BP: 6184 Yaoundé, est une ant M. Richard BATTERSBY, et pour Way WESTMINSTER LONDON SWIH OBL numéro 637 dans le Registre Snéclal de la	- éi tr - es - sc	sal de cono cude minéra ouvés ; stimation de ondage méci	iurgique et s ressource anique pou	u mineral : métallurg es ; r étude de	preleve sur jique des é falsabilité.	site ; schantillons	s de mine	rais évenț	uellement
renouvelable trois (03) fois au plus pour des pério	e initiale maximale de trois (20) ans. Il est des de validité de deux (02) ans chacune	<u>- ét</u>	ude de préf	aisabilité ;	¥					
ure 4.2: Nkoteng licence cer	tificate.									

4.1.1 Restricted Access

The Nkoteng licence has several areas of restricted, protected or limited access, as shown in Figure 4.3. These areas are predominately comprised of protected woodland, flood protection areas and plantations.

In the southern part of the licence, there is a DUP (Déclaration d'utilité publique) protected environmental area that encompasses approximately 10 km of the active river and prevents exploration and mining. This protected area consists of an active floodplain and neighbouring woodland zone.

The plantations are generally limited access areas and if exploration is to be carried out, access agreements and compensation would be required in order to explore and prevent or compensate any damage to crops. To date, no exploration has been carried out within these areas.

The interpreted floodplain occupies approximately 260 km² of the license area. Of this, about 36 km² are occupied by "*no-go*" areas. The protected or limited access areas are shown in Figure 4.3 and Figure 5.1.





Figure 4.3: Nkoteng licence and restricted areas.

4.2 Dehane

BWA Resources Cameroon Limited (BWA) holds exploration permit no 636 known as Dehane, issued by the Ministry of Mines, Industry and Technological Development (MINMIDT) by decree AR000060/A/MINMIDT/SG/DM/SDCM on the 10th of March 2020, valid for rutile, ilmenite, kyanite, zircon, gold, and other related substances.

It is delimited by eight markers of which, seven are located on the right bank of the Nyong River and one on the left bank (Table 4.2). The permit is less than 500m east of a forest reserve. The permit has an area of 132 km² and covers the eastern and western banks of the Nyong River over a distance of 26 km. It is located to the west of Yaoundé, close to the coast, the port of Douala and to the deep seaport of Kribi (Figure 4.4). The licence certificate for Dehane is presented in Figure 4.5.

The population of the area comprises the Bassa, Mabi, Batanga, Ngoumba, Bakoko, Bagyéli (Pygmies) ethnic groups. They are concentrated along roads and in areas of high agricultural activity.

The Nyong river is the main river which runs through the licence area. The BWA licence accommodates approximately 20 km of the prospective Nyong river floodplain system and associated tributaries.


The licence encompasses a large active river system and an even larger paleo-floodplain area, observed in satellite imagery, although this has yet to be fully ground-truthed through fieldwork. This paleo-floodplain is likely to be a significant target for exploration and covers the length of the river with an initial expected width of over 2 km in the north and increasing in the south. Other rivers of various importance in the license area are the Owoumbé, Nkoudou, Bidinga, Mbebe, Mboke, and Ongué rivers.



Figure 4.4: Dehane licence location.



Table 4.2: Dehane corner licence coordinates.

Corner	East	North	Longitude	Latitude
1	616162.3	390149.2	10.00150	3.23450
2	621716.5	390155.6	10.00150	3.23450
3	621738.7	370808.6	10.00150	3.23450
4	611554.2	370797.7	10.00150	3.23450
5	611549.4	375403.9	10.00150	3.23450
6	614326.9	375406.9	10.00150	3.23450
7	614324.9	377249.4	10.00150	3.23450
8	616176.5	377251.4	10.00150	3.23450
9	616162.3	390149.2	10.00150	3.23450





4.3 Licences in Application

BWA have two licences that have been granted and accessible, namely the Nkoteng 1 and Dehane 1 licences. BWA also has three permits that are being processed by the Presidency of the Republic of Cameroon. These permits are:

- Nkoteng 2
- Dehane 2
- Dehane 3

Two other permits, whose applications are being processed by the Ministry of Mines include:

- Song-Loulou 1
- Song-Loulou 2

The Nkoteng 1 and 2 and Song-Loulou 1 and 2 permits are contiguous and cover a combined total length of over 300 km of potential river channels. The location of all the licences (granted and in application) is shown in Figure 4.6 below. These licences in application are expected to be granted within the next 12 to 18 months.



Figure 4.6: Licences in application.



5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Nkoteng

5.1.1 Accessibility

Access to the Nkoteng licence is by following the sealed National Road (NR) n°1 (Yaoundé-Nanga-Eboko) to Batchenga. Then from Batchenga, the north-western part of the permit is accessed by following NR n°15 and the south-eastern part by continuing on NR n°1, as shown in Figure 5.1.

Similarly, access is possible by taking the Yaoundé-Ngaoundéré trans-Cameroon railway to the Mbandjock station which is inside the permit area (Figure 5.1).



Figure 5.1: Access to Nkoteng (Source: Nkoteng TOR, 2020).



5.1.2 Climate

Mbandjock has a four-season tropical climate. The long dry season runs from mid-November to mid-March, the short rainy season from mid-March to mid-June, the short dry season from mid-June to mid-August and the long rainy season from mid-August to mid-November (Figure 5.2 and Figure 5.3).

Mbandjock has an average annual temperature of 24.7°C. Over the year, the average rainfall is 1545 mm. With 12 mm, the month of January is the driest. With an average of 289 mm, the month of October has the highest rate of precipitation (Nkoteng TOR, 2020). Temperature and rainfall graphs are presented in Figure 5.2 and Figure 5.3.



Figure 5.2: Mbandjock, monthly average temperature (Source: worldweatheronline.com, 2021).



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Figure 5.3: Mbandjock, monthly average rainfall (Source: worldweatheronline.com, 2021).

5.1.3 Local Resources and Infrastructure

5.1.3.1 Population

The population encountered in the area is cosmopolitan. It is made up of several indigenous and nonindigenous ethnic groups (Nkoteng TOR, 2020).

In the locality of Mbandjock, on finds an indigenous ethnic group: Babouté and several non-indigenous ethnic groups: Badja, Mvelé, Toupouris, Guisga, Mazga, Moufous, Kara, Massa, Mousgoum, Bassa, Ewondo, Sanaga, Nanga, Etong, Manguissa, Banens, Gbaya, Bafia, Bamileké. Some foreigners come to furnish this mosaic. They include: Ivorians, French, Mauritanians, Senegalese and others (Nkoteng TOR, 2020).

The population is estimated at 30,887 inhabitants, i.e., 34 inhabitants per km² distributed in a sparse manner with the islets of groupings on both sides of Mbandjock subdivision (Nkoteng TOR, 2020).

The population of Ntui is 20,000 inhabitants of whom 10,702 are male and 9,298 females (53.51% male and 46.49% female) according to the latest census figures. It is quite cosmopolitan because of its cultural diversity. Natives consist of Sanaga, Vute, Baveuk, Mvele, Batschenga, we also find non-indigenous from different regions of the country such as Bamiléké, Bamoun, Haoussa, Yambassa, Bororos etc. (Nkoteng TOR, 2020).

According to the Communal Development Plan (September 2015), the locality of Batchenga is made up of two main groups: indigenous and non-indigenous people. As indigenous, we can mention:



Benyagda (51%); Batchenga (42%); Mvog Namnyé (2%). We also note the presence of a small proportion of non- indigenous (7%) (Nkoteng TOR, 2020).

5.1.3.2 Infrastructure

The infrastructure inside the permit mainly concerns the industrial plantations of the "Société Sucrière du Cameroun" (SOSUCAM) and private individuals. These plantations have led to the development of pole of economic activity due to the influx of populations. In the southern part of the permit, the construction of a hydroelectric dam is also under way (Figure 5.1).

5.1.4 Physiography and Vegetation

The vegetation is dominated by savannah grassland, it is in marked decline due to the extension of towns and large plantations. There are also secondary forests, gallery forests, wooded forests and fallow land.

The Sanaga River flow varies according to the seasons with a regulated average of 950 m³ at the Mbandjock level. Its long profile is characterized by waterfalls and rapids. The permit area also has a dense secondary hydrographic network whose most important (permanent) streams are Ossombo, Obagne, Meloko, Mpiem, Mekono, Mengolo, Doua, Nga, Foussen, Assamba, Aya'a, Nvini-Ngono, Nya.

The project area consists of a peneplain at an altitude of 500 to 700 m, which drops from north to south in a stepped profile. The monotony of the relief is often broken by a few isolated hills or domical features reflecting the underlying geology or the regional drainage system. The detailed topography of the project area is shown in Figure 5.4.

The Sanaga River is flanked by a broad floodplain, interpreted to extend about 2 km either side of the river (Figure 5.5). The floodplain is covered by an alluvial sequence, which has been interpreted to be up to 10 to 15 m thick. The top of the alluvial sequence is represented by plastic clays, which according to the drilling and pitting, can be from zero to four metres thick. Underlying the clays is a sandy and gravelly sequence of about one metre thick and is underlain by a saprolitic unit. The deepest auger holes extend to 4.5 m depth, and most pits and holes did not penetrate through the sands into the saprolite.

The interpreted floodplain occupies approximately 260 km² of the license area. Of this, about 36 km² are occupied by "*no-go*" or protected or limited areas, as discussed in section 4.1.1.





Figure 5.4: Detailed topography of the project area showing the no-go environmental areas.



Figure 5.5: Nkoteng View of floodplain looking NE to Senaga River



5.1.5 Hydrography

The permit area is watered by the Sanaga River, whose flow varies according to the seasons with a regulated average of 950 m³ at the Mbandjock level. Its long profile is characterized by waterfalls and rapids. The permit area also has a dense secondary hydrographic network (Figure 5.1) whose most important (permanent) streams are Ossombo, Obagne, Meloko, Mpiem, Mekono, Mengolo, Doua, Nga, Foussen, Assamba, Aya'a, Nvini-Ngono, Nya.

5.2 Dehane

5.2.1 Accessibility

Access to the permit is possible by either by following the National Road (RN) n°7 asphalt (Edéa-Kribi) then by taking the access roads leading to the localities of Nsahé, DEHANE Etouma, Mekwora, and Dabounga or by always passing by the RN n°7 and by taking from the crossroads Ferme Suisse (of coordinates 32N 622865E 394766N), an unpaved road allowing access to the right bank of the Nyong river as shown in Figure 5.6

Dehane is also accessible from the RN7 by two secondary unsealed back routes; namely a 3.5 km (624146E 386673N) track or by a 7 km (625392E 382852N) track. The access roads to Dehane are shown in Figure 5.6.



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Figure 5.6: Access roads leading to the Dehane permit (source: TOR, Dehane 2020).

5.2.2 Climate

The permit area is subject to an equatorial climate, of the classical Guinean type with a predominantly maritime climate. The climate of the zone is characterized by nine months of rainy season and three months of dry season. September and October are the wettest months while December and January



are the driest months, as illustrated in Figure 5.7 and Figure 5.8. The average temperature in the region is 26°C. The average annual rainfall is 2600 mm (Figure 5.8).



Figure 5.7: Edea, monthly average temperature (source: worldweatheronline.com, 2021).



Figure 5.8: Edea, monthly average rainfall (source: worldweatheronline.com, 2021).



5.2.3 Local Resources and Infrastructure

The population is essentially made up of the Bassa, Mabi, Batanga, Ngoumba, Bakoko, Bagyéli (Pygmies) ethnic groups. It is concentrated along roads and in areas of high agricultural activity.

The infrastructure within the permit covers an area of about 8 km² and mainly concerns the industrial plantations of the Swiss Farm and private individuals (Figure 5.10). In addition to these agricultural infrastructures, there are also schools and many other social infrastructures.

5.2.4 Physiography and Vegetation

The vegetation consists of a dense primary forest forming areas of difficult access and a secondary forest strongly influenced by human activity and industrial plantations.

Elevations range from 10 to 81 m above sea level. The flat areas adjacent to the Nyong River are about 5 km wide in the E-W direction and about 20 km long in the N-S direction. The E-W topographic section shows that the Nyong's alluvial deposits can reach a thickness that can vary between 20 and 30m.



Figure 5.9: BWA Dehane floodplain.

5.2.5 Hydrography

The permit is crossed by the main Nyong River, over a length of about 26 km. Most of the watercourses on the permit are located in the eastern Nyong watershed (Figure 5.11). Other rivers of various importance are found there, including the: Owoumbé, Nkoudou, Bidinga, Mbebe, Mboke, and Ongué.





Figure 5.10: Infrastructure within in the Dehane permit.



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Figure 5.11: Hydrographic network inside the Dehane permit (source: TOR, Dehane 2020).



6 Geological Setting and Mineralisation

6.1 Regional Geology

The geology of Cameroon is almost universally Precambrian metamorphic and igneous basement rock, formed in the Archean as part of the Congo Craton and the Central African Mobile Zone and covered in laterite, recent sediments and soils. Some parts of the country have sequences of sedimentary rocks from the Paleozoic, Mesozoic and Cenozoic as well as volcanic rock produced by the 1600-kilometre Cameroon Volcanic Line, which includes the still-active Mount Cameroon.

The basement rocks in Cameroon are divided between the Central African Mobile Zone (CAMZ) and the Congo Craton, a section of ancient, stable continental crust. The Congo Craton formed over two billion years ago in the Archean and covers much of southern Cameroon. In the south, it is referred to as the Ntem Group and contains gneiss, granite and charnockite. The CAMZ also dates to the Archean and includes mica-schist, migmatite gneiss with plagioclase and migmatites intruded by quartz, granodiorite and diorite (Geology of Cameroon, 2021).

6.2 Local Geology

6.2.1 Nkoteng Local Geology

Nkoteng is located within the Yaoundé Domain of the Pan African Belt, which is a large nappe unit that has been thrusted southward onto the Congo Craton and is characterised by low-grade to high-grade garnet bearing metamorphosed schists, gneiss and orthogneisses (Weecksteen, 1957).

The bedrock geology is dominated by embrechite gneiss, two micas gneiss, biotite anatexites and micaceous quartzites (Figure 6.1). Biotite embrechites constitute most of the formations encountered on the Nkoteng permit.

Rutile-bearing alluvium overlies the bedrock and is particularly well developed in the Sanaga River floodplain. Rutile deposits are known in alluvial and eluvial sediments in southern and central Cameroon and are underlain by the Neoproterozoic low- to high-grade Yaounde' Group. Geochemical, thermometric, fluid inclusion and Pb isotopic studies of the rutile from alluvial and eluvial concentrates show that the rutile is derived from the degradation of metapelites, metamafic rocks and pegmatites of the nearby Yaounde' Group, either during the Pan-African metamorphism, or was inherited as detrital rutile from a ~900 Ma source (Stendal, et al 2005).

Basement geology underlying and adjacent to Nkoteng, the current and paleo river system erosional and depositional environment are considered favourable for alluvial heavy mineral sand deposit development.





Figure 6.1: Bedrock geology of the Nkoteng project (source Weecksteen, 1957).

6.2.2 Dehane Local Geology

The Dehane licence is located to the west of Yaoundé, much closer to the coast and the port of Douala. The project area sits between the towns of Edea and Kribi and is primarily used for subsistence farming and palm and palm-oil cultivation. A bitumen highway links the two towns. The rutile deposits in Dehane are associated with the sand flats of the Nyong River flood plain.

The Dehane licence is located on the Western Cameroon Domain, which extends along the border between Nigeria and Cameroon, as illustrated in Figure 6.2. This domain consists of a series of medium-grade to high-grade schists and gneisses of volcanic and volcano-sedimentary origin, intruded by later-stage granitoid complexes. The Dehane area has also been a historical rutile mining area as with the other areas, however the extent of its exploitation has not translated to concentrated modern exploration.

Basement geology underlying and adjacent to Dehane, the current and paleo river system erosional and depositional environment are considered favourable for alluvial heavy mineral sand deposit development.





Figure 6.2: Bedrock geology of the Dehane project.

6.3 Mineralisation

Rutile occurs in Cameroon, mainly in the two-mica para-metamorphic formations: micaschists, gneiss and embrechites (TOR, Dehane 2020). Rutile deposits are generally exploited around the Sanaga and Nyong rivers and are alluvial flats with irregular grades, due to erratic deposition.

The main minerals found in the alluvial and eluvial sediments are garnet, rutile, kyanite, ilmenite and zircon.



7 Nkoteng and Dehane Target Deposit Type

The basic concept of heavy mineral accumulation is that because of their high specific gravity, they tend to lag or concentrate during storms, when light components are removed (Figure 7.1). The concentrated 'placer' forms and is buried and preserved during fair weather conditions when normal deposition restarts. Mineral sand deposits are technically characterised by their mode of deposition during storm conditions: alluvial or aeolian (wind). However, aeolian and marine beach placers are more closely associated than marine and river placers.

Marine beach placers are formed where wave action on sources of heavy minerals that have been eroded and transported to the coast results in the heavy minerals becoming concentrated on the beach when backwash carries some of the lighter minerals back into the sea.

Aeolian deposits occur where prevailing winds preferentially blow lighter grains inland and can lead to concentrations of heavy minerals at the front of coastal dunes, with the heavy mineral sediment often originating from eroded adjacent beach placers.

Similarly, Alluvial type mineral sands accumulate in river channels in low enough water velocity conditions that allow for the heavy minerals to be deposited, whilst remaining energetic enough to continue transporting the surrounding eroded sediment away from the site.

Mineral sand deposits are classified not just on their coastal or alluvial setting, but also as either trap placer deposit (autochthonous) or bed placer deposits (allochthonous) (Figure 7.1). Trap placer deposits occur where heavy minerals are trapped in lower levels and generally contain smaller volumes of sand with higher grade concentrations of heavy minerals; bed placer deposits are found as thicker sand beds with a more homogenous distribution of the heavy minerals.

The composition of mineral sand deposits reflects the type of rocks or provenance from which the sands containing the heavy minerals are derived (Figure 7.1). For example, granitic and gneissic source rocks principally provide ilmenite and zircon and metamorphic rocks provide ilmenite and rutile. During erosion cycles, river courses change providing different sediment loads and heavy mineral suites to the ocean. Repeated reworking of a particular deposit may also produce mineral zonation. Later weathering may enhance the value of a mineral sand deposit by leaching iron out of ilmenite. This may increase the TiO₂ content of ilmenite from 55 per cent to a maximum of about 90 per cent. The zonation of HM within deposits and individual strandlines generally follows the following trend from oldest deposited to youngest: zircon, monazite \Rightarrow ilmenite, rutile \Rightarrow garnet, leucoxene \Rightarrow staurolite, kyanite \Rightarrow quartz Leucoxene is commonly present as an alteration product after ilmenite and generally not within the original HM sediment feed.



The major known locations of mineral sands deposits are Australia, India, southern Africa and southern USA, with ilmenite deposits also being mined from hard rock deposits in Canada, Norway and China.



Figure 7.1: Modern and ancient placer deposits on a stream floodplain. Placers are gravel bars deposited by strong currents where fine-grained materials are carried away. (Source geologycafe.com).

7.1 Sierra Rutile

Sierra Rutile, based in Sierra Leone, (subsidiary of Iluka Resources), has one of the largest rutile deposits in the world and is the second largest producer in the world. It has an established operating history spanning 50 years and a project mine life of mine life well in excess of 20 years and has mining leases over a land area of 560 km². Sierra Rutile also produces smaller quantities of Ilmenite and zircon in concentrate (Sierra Rutile Corporate Overview report, February 2016).

Sierra Rutile has two mineral sands operations in Sierra Leone: Lanti and the Gangama dry mine. Sierra Rutile have a current JORC 2012 resource of approximately 900 Mt at 0.94% rutile and produced 126,021 tonnes of rutile in 2015 with an all-in Operating Cash Cost of US\$666/t (Sierra Rutile Corporate Overview report, February 2016). As presented in the company's 2014 annual report, the company has Measured and Indicated resources of 757.9 Mt, at 0.93% rutile, 0.15% Ilmenite and 0.05% Zircon. Inferred resource of 137.7 Mt at a grade of 0.94% rutile, 0.13% Ilmenite and 0.05% Zircon.



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Tacoma have been unable to verify the historic resource estimates and as such for the purpose of this technical report these are not treated as current resources in accordance with JORC (2012) or similar reporting standards. Tacoma also cautions that this information is not necessarily indicative of the mineralisation on the property that is subject of the technical report.



8 History

8.1 Nkoteng

Historically, the Nkoteng area (Akonolinga projects Lembe Licence shown in Figure 8.2) has been known to possess rutile-bearing sand (generally of the >1mm size fraction) and has been subject to artisanal exploitation since the beginning of the 20th century. It was not until the 1970s that any significant prospecting began to take place under BRGM, when the Cameroonian Government welcomed French guidance in developing their minerals sector. The areas surrounding Akonolinga and Nanga Eboko towns, became primary exploration targets for Cameroon Rutile.

According to the work completed by Cameroon Rutile, the historic BRGM reports document detailed maps, sample analyses, geological logs, metallurgical analyses, pilot plant campaigns and detailed feasibility studies. A summary of this work is given below.

BRGM carried out annual exploration and drilling across the Akonolinga region until 2002 (Figure 8.1 and Figure 8.2). Between 1978 and 1989, after a period of broad regional exploration, the majority of this activity was results driven towards the Djaa and Yo river systems, two tributaries of the Nyong river corresponding to the current Nyong Licence area. During these campaigns of the 1980s and 1990s, BRGM used three types of subsurface investigation techniques: Banka drilling, Dormer drilling and manual pitting.

The Banka drilling method was utilised for the majority of the sub-surface exploration. The Dormer method was introduced at a later stage and pitting was utilised to more accurately define the geological relationships. Drilling across the Djaa and Yo river systems was conducted using systematic drill holes located 50 m apart along each profile line. These profile lines ran orthogonally across the river channel and surrounding flats. In general, profile lines for each river exploration campaign were initially spaced rather widely to allow for the BRGM to define potential targets, with these profile spacings gradually narrowing down to 2000m, 1000m and 500m. The eventual 50m by 500m defined grid resulted in a total of 42 profile lines for 636 drill holes. However, Banka drilling was a flawed and dated technique.

The BRGM became aware that the Banka method was under-recovering alluvium and thus rutile was being lost in samples, leading to an underestimation of the grade of the deposits. Therefore, alongside the Banka drilling, 34 manual pits were excavated as a control on the Banka sampling and confirmed that lower grades and recoveries were being returned by the Banka method.

By 1983, BRGM had widened exploration to include the Mvingui and Mfoumou river systems to investigate the potential of expanding the Akonolinga resource (Figure 8.2). An initial pre-feasibility



study in 1985 quoted a Mineral Resource at that point of approximately 500,000 t of contained rutile in the Djaa, Yo and associated river systems.

Subsequent exploration programmes continued to step out into other river systems within the area, adding more Mineral Resources to the maximum figure of 2.85Mt contained rutile (Figure 8.1).

In 1988, the exploration campaign conducted up to that point on the Djaa and Yo deposits was viewed as successful enough to warrant a further pre-feasibility study. A pilot plant was constructed near Akonolinga on the lower Djaa River to allow for bulk sample testing from four locations across the Djaa and Yo rivers. This testing was mainly undertaken to give an idea of the ore treatment that would be necessary and a preliminary estimate of the investment capital this would require.

The pilot plant bulk samples produced a pre-concentrate with a grade of 60-65% TiO2. This preconcentrate was shipped to BRGM laboratories in France for metallurgical refinement, after which BRGM concluded a rutile concentrate of ~90% TiO2 was achievable. In 1991, a Feasibility Study report was released by BRGM, using only the Mineral Resource verified by the exploration campaign on the Djaa and Yo rivers, to form a short-to medium term dredging project producing approximately 30,000 tpa of contained rutile, with an average content of 95% TiO2 in the rutile.

The Djaa, Yo and other river systems had a relatively continuous tabular style of mineralised sand deposition, rather than ox bow lake style. The BRGM checked this with a close spaced drilling programme on both the Djaa and Yo.

The final document produced by BRGM detailing its exploration activities across the area covered the 1991 field season. The report defined the Mineral Resource considered attributable to the area by BRGM, including not just those resources at the Djaa and Yo river flats, but also delineated historical resources along the Mfoumou river and results from reconnaissance work that had been extended to the Sélé and Tédé rivers in the Nanga Eboko area (now Lembe licence - Figure 8.2), although the exploration at Sèlé and Tédé had not advanced beyond extensive, widely spaced (5000m x 50m) profile line drilling.

As BRGM expanded their exploration, they continued to note the similarities in the type of mineralised sand styles found in the newer areas and that of the Djaa and Yo River.



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BRGM Classification	Total Ore	Rutile			
	(Mt)	(Mt)	Grade (%)		
Measured	56	0.76	1.35		
Indicated (>1% rutile)	104	1.18	1.29		
Indicated (<1% rutile)	117	0.90	0.77		
Totals	277	2.85	1.03		
		Sour	ce: Mineral Corporation CPR		

Figure 8.1: BRGM Mineral Resource Statement.

Due to the 1991 effective date of the BRGM resource estimates, the resource estimate is considered historic and as such for the purpose of this technical report these are not treated as current resources or reserves reported in accordance with JORC 2012, CIM and NI 43-101 reporting standards. Tacoma also cautions that this information is not necessarily indicative of the size and grade of the mineralisation on the property that is subject of the technical report.



Figure 8.2: BRGM Licence Outlines.



8.2 Dehane

The Dehane area has been known for some historic small scale artisanal historical rutile mining. However, the extent of its exploitation has not translated to concentrated modern exploration.

A literature review by Ntep, 2001 discusses that in 1978, BRGM, prospected the alluvium of the lower Nyong valley downstream of Dehane, concentrating at the river's outlet in the Douala coastal sedimentary basin. The purpose of the work was to test the possibility of economic concentrations of a large alluvial deposit in the area of a known rutile mineralized zone.

The study shows a deep sandy channel system, comprising a large main channel and various secondary channels. This study also shows that the bedrock was rarely reached during the sampling, which demonstrates a deeper extent of the alluvium.

Three indications of mineral concentrations were found in the secondary sandy channels with values close to 5 to 10 kg of rutile equivalent per cubic meter, Ntep, 2001. Neither BWA nor Tecoma has verified these results.



9 BWA Resources Cameroon Limited Exploration

A total of 25 hand dug exploration pits and 68 auger holes were drilled between the Nkoteng and Dehane licences. A total of 264 primary samples were submitted to ALS for geochemical analysis.

These samples were collected from within the current floodplain and paleo alluvial basin related to the Sanaga and Nyong rivers.

9.1 Nkoteng

Fifteen hand-excavated exploration pits and 38 auger holes were drilled, focused on three areas, as illustrated by Figure 9.1. Three grab samples were also taken, two of them in the same locality. The exploration was conducted immediately adjacent to the Sanaga River, and only one exploration pit tested the broader floodplain. The location of the sampling is shown in Figure 9.1. Most of the sampling was concentrated south of the river, and of the three areas, most of the sampling was located in Zone 1, situated immediately north of the town of Mbandjok.

The exploration activity is shown in Table 9.1. All holes were drilled vertically and were logged according to the lithologies shown in Table 9.2.



Figure 9.1: Nkoteng sampling locations (source: Nkoteng TOR, 2020).



Table 9.1: Nkoteng exploration activity.

Туре	Number	Metres
Hand-dug Pits	15	43.64
Auger Holes	38	125.47
Total	53	169.11

Table 9.2: Nkoteng lithological codes and descriptions.

Lith Code	Description
S	Sand
DS	Dark sand
G	Gravel
ВХ	Breccia
SP	Saprolite
РС	Plastic clay
С	Clay
SC	Sandy clay

The boreholes showed that the rutile/ilmenite-rich sand and gravel horizon is mostly overlain by a variable thickness of clay and plastic clay. Where this is present, it was generally not sampled.

The Nkoteng pit programme encountered distinctive alluvial basal sand and gravel units, with average thicknesses of some 2.4m. Depths of up to eight metres have been stated in Archidona Minerales S.A (formally Cameroon Rutile) adjacent Nanga-Eboko (Lembe) licence, situated up-stream to the east along the Sanaga from Nkoteng.

Fourteen of the holes/pits (001, 003, 003, 006, 035, 077, 040, 042, 044, 045, 046, 049, 050, 055) penetrated into the saprolite bedrock, with the balance either stopped in the rutile bearing sand and gravel horizon, or not intersecting the target horizon.

Potential exists for increased thicknesses of prospective sand and gravel units than those encountered to date.

As part of the pitting program, Ten -2mm sample rejects were used for granulometric studies and visual size fraction analysis, with work continuing in this domain. Four sieves were used to fraction off the sample with each size fraction having a detailed description and analysis. The findings of this work are summarised in section 14.2.



Data for the boreholes and pits were imported into Leapfrog 3d visualisation software, and further checks were conducted. A surface topography was generated from Google Earth and supplied by BWA. However, there is a disconnect between some of the borehole collars when compared to the topography. It was found that very few borehole collars were coincident with the topography. The collars were surveyed by handheld GPS and a Google Earth DTM is not accurate. BWA are planning on performing a topographical survey during the drilling programme, scheduled in Q1 of 2022.

The lithologies were grouped into Plastic Clays (PC), Sand (S), Gravel (G) and Saprolite (SP) for further analysis and review. The location of the pit and auger holes is shown Figure 9.1.



Figure 9.2: Nkoteng pit and auger locations in zone 1.

The holes in the southwestern part of Zone 1 are shown in Figure 9.2. From surface, a variable thickness of plastic clay (C) overlies sand (S) and gravel (G). In boreholes NKO_035 and NKO_037 saprolite (SP) has been intersected. The plastic clays have not been sampled in this area. The sands, gravels and saprolite have been sampled, with varying degrees of mineralisation.



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Figure 9.3: Nkoteng pit and auger locations in SW zone 1, colour coded by geology and TiO_2 %, view oblique north with 10 times vertical exaggeration.

The geology and TiO_2 mineralisation are shown in Figure 9.4 and in Figure 9.5 respectively. The same geological sequence is found. Where the basal part of the clay has been sampled, such as in borehole NKO_029, TiO₂ grades have been found to be reasonable.



Figure 9.4: Nkoteng pit and auger locations in central eastern zone 1, colour coded by geology and TiO_2 %, view oblique north with 10 times vertical exaggeration.



In Figure 9.5 the plastic clays have been routinely sampled, and where sampled, TiO_2 grades have been higher than in the underlying sands and gravels. Although the extractability of the rutile from the plastic clays needs to be determined, the plastic clays should be routinely sampled. Figure 9.6 and Figure 9.7 show a graphic log for complete hole and gravel sampled only. NKO_002 is a hand dug pit and NKO_018 is an auger hole.



Figure 9.5: Nkoteng pit and auger locations in NW zone 1, colour coded by geology and $TiO_2\%$.



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Pit ID: NKO_002 Depth: 3.45 m Dip: -90 / Azi: 0 Hole Type: Hand-dug pit

BWA GROUP PLC

Depth	Lithology	Lithology	Al2O3 1 30	Al2O3%	0.1 TiO2 2.5	TiO2%	0.01 Zr 0.31	Zr%
-0m		PC		16.40		2.26		0.081
-1m		PC		24.00		1.93		0.056
-2m		G		9.26		1.14		0.093
-3.45m	00000000000000000000000000000000000000	G		6.15		0.60		0.042

Figure 9.6: NKO_002 pit with plastic clays sampled.



Pit ID: NKO_018 Depth: 4.34 m Dip: -90 / Azi: 0 Hole Type: Auger hole

BWA GROUP PLC

Depth	Lithology	Lithology	Al2O3 1 30	Al2O3%	0.1 TiO2 2.5	TiO2%	0.01 Zr 0.31	Zr%
-0m								
-1m								
		PC						
2m								
2111								
	· — — — — — —							
2								
-sm								
	12.12.12.12.12.12.							
	12.12.12.12.12.12.							
	12.12.12.12.12.12.							
	12.12.12.12.12.12.							
	12.12.12.12.12.12.12.	S		19.90		1.33		0.047
-4m	12.12.12.12.12.12.12.							
4.34m								

Figure 9.7: NKO_018 pit with plastic clays unsampled.

9.1.1 Data Quality

The primary data consists of a database comprising auger drilling (38 holes), hand-excavated pits (15 pits) and three grab samples. Figure 9.8 shows the sampling in the excavated pits.



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The whole auger sample was taken in its entirety and samples were generally between 60 – 100 cm in length and lithologically controlled.



The 15 exploration pits were hand excavated to a maximum depth of 4.4 m. A 15cm wide channel was excavated down the centre of the pit and samples were generally between 50 - 100 cm in length and lithologically controlled. In this way 40 lithologically controlled samples of approximately 5 kg each were obtained. These samples were reduced and pulverised to 250 g at Afrigeolabs and sent for analysis at ALS. Three grab samples were also taken weighing between 3 and 16 kg each.

9.1.2 Nkoteng Significant Intercepts

The significant intercepts from the pit and auger programme from Nkoteng are presented in Table 9.3. Pit and auger geochemical results for Nkoteng returned elevated values in the TiO2, Al2O3 and Zr associated element suite of interest, over significant intervals across all material types within the alluvial profile.

Table 9.3: Nkoteng significant intercepts. The results were generated using a trigger of 0.5% TiO2 with a minimum of 1 m internal waste, with final minimum composite grade of >0.8% TiO2.

Pit ID	From	То	Interval	TiO₂%	Al ₂ O ₃ %	Zr %	Geology and Commentary
NKO_001**	0.45	2.00	1.55	1.230	15.779	0.021	Plastic clays, sands and basal gravels
NKO_002**	0.00	3.45	3.45	1.537	15.488	0.071	Plastic clays and basal gravels
NKO_003**	0.00	2.55	2.55	1.380	11.831	0.113	Plastic clays and basal gravels
NKO_004**	0.00	1.75	1.75	0.802	17.220	0.056	Plastic clays and saprolite
NKO_006*	2.20	3.20	1.00	1.730	19.450	0.095	Gravels
NKO_008**	0.00	2.20	2.20	1.771	21.844	0.040	Plastic clays, sands and basal gravels
NKO_017*	2.20	3.35	1.15	1.160	9.930	0.124	Sands
NKO_018*	3.30	4.34	1.04	1.330	19.900	0.047	Sands
NKO_020*	2.52	4.27	1.75	1.638	9.610	0.173	Sands
NKO_026*	2.80	4.40	1.60	1.184	11.622	0.072	Clay and sands
NKO_028*	2.90	4.50	1.60	0.950	6.530	0.134	Sands
NKO_029*	1.70	3.35	1.65	1.045	9.648	0.115	Plastic clays and sands
NKO_035*	3.12	4.20	1.08	1.217	16.889	0.014	Sands and saprolite
NKO_037*	2.10	3.24	1.14	0.964	18.189	0.014	Sands and saprolite
NKO_039*	0.80	3.10	2.30	1.330	7.365	0.270	Sands
NKO_041*	1.55	3.76	2.21	0.908	7.401	0.067	Sands and gravels
NKO_043*	1.10	3.10	2.00	1.038	8.435	0.131	Sands
NKO_044**	2.77	4.48	1.71	1.060	17.300	0.022	Sands and saprolite
NKO_049*	0.70	1.70	1.00	0.830	13.450	0.039	Sands and saprolite
NKO_052*	1.42	2.46	1.04	1.030	3.800	0.057	Sands
NKO_054**	0.00	2.10	2.10	1.540	15.850	0.104	Plastic clays
NKO_055*	1.05	2.63	1.58	1.239	15.716	0.035	Plastic clays and saprolite

*Only basal gravel and sand unit were sampled.

**Whole pit or auger sampled, including overlying plastic clays and saprolites (Figure 9.6 and Figure 9.7).



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Figure 9.9: Nkoteng Reconnaissance Pit and Auger Selected Significant Intervals.

9.2 Dehane

Exploration at Dehane has comprised drilling of 30 auger holes and 10 hand dug exploration pits, for a total of 139.84 m and 171 primary samples. These samples were collected from within the current floodplain and paleo alluvial basin related to the Nyong river.

Both the auger holes and pits were hand drilled / excavated to a maximum depth of five metres, generally stopping the hole and pit when bedrock was reached or when it became unsafe to excavate further due to slope failure of water ingress.

Only two auger holes (DHO_037 and 038) from the Dehane programme penetrated the saprolite bedrock, with the remaining either stopped in the sand and gravel rutile-bearing mineralisation, or not intersecting the target horizon.

Potential exists for increased thicknesses of prospective sand and gravel units than those encountered to date.

The whole auger sample was taken for analysis and the 122 interval samples were generally between 50 - 120 cm in length and lithologically controlled where possible. Within the pits, a 15 cm wide channel was dug down the centre of the pit and the 49 controlled interval samples were generally between 40 - 130 cm in length, constrained by lithology where possible.



During the Dehane sampling programme, the primary host for the mineralisation, the sands, were routinely sampled to test for heavy minerals. Furthermore, from experience from the recent Nkoteng programme, which consistently saw anomalous results from the plastic clays and saprolite horizons, it was important for BWA geologists to also sample the plastic clays and saprolite routinely from the Dehane pits and auger holes. The location of the samples within the Dehane licence area are shown in Figure 9.10 and table of exploration activity is presented in Table 9.4.

Table 9.4: Dehane exploration activity.

Туре	Number	Metres
Hand-dug Pits	10	37.55
Auger Holes	30	102.29
Total	40	139.84

As part of the Dehane pitting program, eleven -2mm sample rejects were used for granulometric studies and visual size fraction analysis. Four sieves were used to fraction off the sample with each size fraction having a detailed description and analysis. The findings of this work are summarised in section 14.2.



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Figure 9.10: Dehane – samples by type and significant intersections within the Nyong floodplain.


9.2.1 Data Quality

The pits were dug vertically, and in square form. Channel samples were taken from the sidewalls and separated according to mapped lithologies. Examples of the pitting and sampling are shown in Figure 9.11.





Quality assurance and quality control measures included the insertion of external certified reference materials and field duplicates, and internal lab standards and duplicates. There were some issues with the Zr data that appeared to be under-reporting and resulted in a number of failed internal and external CRM samples. ALS were approached to review the issues and subsequently re-analysed for Zr, and the updated results show no significant additional issues. The Zr grades will be closely monitored moving forward.



9.2.2 Dehane Significant Intercepts

The significant intercepts from the pit and auger programme from Dehane is presented in Table 9.5.

Table 9.5: Dehane significant intercepts. The results were generated using a trigger of 0.5% TiO2 with a minimum of 1 m internal waste, with final minimum composite grade of >0.8% TiO2.

Pit ID	Depth	From	То	Interval	TiO₂ %	Al ₂ O ₃ %	Zr %	Geology and Commentary
DHO_015	3.90	0.00	3.90	3.90	1.47	17.59	0.07	Plastic clays and sands
DHO_016	3.86	0.00	3.86	3.86	1.60	19.25	0.08	Plastic clays and sands
DHO_017	3.65	0.00	3.65	3.65	1.28	14.26	0.08	Plastic clays and sands
DHO_018	4.00	0.00	4.00	4.00	1.76	21.25	0.09	Plastic clays and sands
DHO_019	4.00	0.00	4.00	4.00	1.48	17.80	0.08	Plastic clays and sands
DHO_020	3.60	0.00	3.60	3.60	1.56	19.23	0.06	Plastic clays and sands
DHO_021	3.70	0.00	3.70	3.70	1.51	18.39	0.07	Plastic clays and sands
DHO_022	5.00	0.00	5.00	5.00	1.51	17.19	0.11	Plastic clays and sands
DHO_023	4.55	0.00	3.10	3.10	1.82	22.38	0.06	Plastic clays and sands
DHO_024	5.00	0.00	5.00	5.00	1.40	17.30	0.06	Plastic clays and sands
DHO_025	4.37	0.00	4.37	4.37	1.49	16.43	0.06	Plastic clays and sands
DHO_026	4.60	0.00	4.60	4.60	1.39	14.73	0.06	Plastic clays and sands
DHO_027	1.00	0.00	1.00	1.00	0.81	10.20	0.13	Fine sands
DHO_028	3.40	0.00	3.40	3.40	1.21	8.52	0.06	Fine sands
DHO_029	1.00	0.00	1.00	1.00	1.23	4.04	0.10	Fine sands
DHO_030	3.60	0.00	3.60	3.60	1.27	20.79	0.07	Plastic clays and sands
DHO_031	3.30	0.00	3.30	3.30	1.69	21.15	0.06	Plastic clays and sands
DHO_032	5.00	0.00	5.00	5.00	1.43	21.92	0.05	Plastic clays and sands
DHO_033	3.19	0.00	3.19	3.19	0.92	14.19	0.16	Plastic clays and sands
DHO_034	3.05	0.00	3.05	3.05	1.72	3.68	0.14	Fine sands
DHO_035	4.30	0.00	4.30	4.30	1.06	6.14	0.06	Fine sands
DHO_036	2.25	0.00	2.25	2.25	1.44	20.06	0.05	Plastic clays and sands
DHO_037	4.00	0.00	4.00	4.00	1.17	18.99	0.06	Plastic clays and sands
DHO_038	4.00	0.00	4.00	4.00	1.31	9.07	0.08	Fine sands
DHO_039	5.00	0.00	4.80	4.80	1.72	22.00	0.06	Plastic clays and sands
DHO_040	5.00	0.00	5.00	5.00	1.55	11.76	0.08	Plastic clays and sands
DHO_041	3.20	0.00	2.32	2.32	1.06	11.79	0.05	Fine sands
DHO_042	2.20	0.00	2.20	2.20	1.16	15.01	0.04	Plastic clays and sands
DHO_044	3.33	0.00	3.33	3.33	1.80	24.59	0.04	Plastic clays and sands
DHO_045	2.87	0.00	2.87	2.87	1.38	19.04	0.04	Plastic clays and sands
DHO_046	3.50	0.00	1.20	1.20	0.95	10.37	0.05	Fine sands
DHO_047	3.60	0.00	3.60	3.60	1.38	17.14	0.05	Plastic clays and sands
DHO_048	2.80	0.00	1.60	1.60	1.20	18.92	0.03	Plastic clays and sands
DHO_049	3.00	0.00	2.30	2.30	1.47	22.80	0.04	Plastic clays and sands
DHO_050	3.00	0.00	1.00	1.00	1.53	22.30	0.03	Plastic clays and sands
DHO_051	3.50	0.00	2.40	2.40	1.79	23.09	0.06	Plastic clays and sands
DHO_052	3.60	0.00	3.60	3.60	1.20	14.73	0.04	Plastic clays and sands
DHO 053	2.50	0.00	2.50	2.50	1.01	11.47	0.03	Plastic clays and sands

*Pit and auger geochemical results for Dehane returned elevated values in the TiO₂, Al₂O₃ and Zr associated element suite of interest over significant intervals across all material types within the alluvial profile.



10 BWA Resources Cameroon Limited Drilling

No drilling has been completed by BWA on the property at this time. BWA intend to drill 2,500 m at Nkoteng and 1,000 m at Dehane in the first quarter of 2022.

The programme is discussed in the Planned Drilling Recommendations section.



11 Sample Preparation, Analysis and Security

11.1 Geochemical Sample Analysis

Both Nkoteng and Dehane samples were oven dried for 24 hours and split at Afrigeolabs in Yaoundé to around 3kg, crushed and pulverised to -75µm to produce a pulp of 250 g and sent to ALS Johannesburg for multi-element XRF analysis by method ME-XRF11bE. Gold was analysed by fire assay (FA) on a 50g charge (Au-TL44) at ALS.

Afrigeolabs is an autonomous offshoot of ALS Johannesburg. It is subject to periodic evaluations to ensure the quality of work by ALS Johannesburg. ALS Johannesburg is accredited and conforms with ISO9001:2008. Commercial laboratories ALS Johannesburg (ISO9001:2008) were used for the sample analysis. Multi-element analysis, including TiO2, Zr, Al2O3 by ME-XRF11bE were completed on all samples. Gold was analysed by fire assay (FA) on a 50g charge (Au-TL44) at ALS. Over limits samples were re-analysed using ore grade methods of determination.

Sample analytical techniques are considered in line with industry standard for this style of mineralisation. Given the expected grades, lithology and deposit type, the laboratory procedures are considered appropriate for this level of work.

11.2 Bulk Density Measurements

No bulk density is available, and density sampling and analyses should be done in the next phase of exploration. In addition, further granulometric studies should be undertaken.

11.3 Data Management

Pit and auger lithology, and additional observations were recorded by variable interval based on character similarities and lithological boundaries.

Summary interval information was recorded onto paper and later entered into Microsoft Excel database for use in Micromine, comprising of code fields to describe the geological and technical characteristics.

11.4 Tecoma Comments

Tecoma are satisfied that the methods employed for the preparation, analytical determination and data processing are satisfactory for the purpose of reporting in accordance with JORC 2012 reporting standards.



12 Data Verification

Data relating to the Nkoteng and Dehane projects was supplied by AMS and has been verified by the Competent Person. Checks included:

- Spatial plotting of geochemical samples with reference to the permit boundaries in Micromine and Leapfrog 3d visualisation software.
- Inspection of the meta data associated with samples collected.
- Analysis of assay data statistics.
- Drillhole database validation using Leapfrog software for overlapping, missing and over depth intervals.
- Comparison of original assay certificates to the Company excel spreadsheets

A topographic surface was supplied which was used to determine the relationship between the borehole collars and the topography. As mentioned previously, there appears to be a disconnect between some of the collars and the topography. A detailed topographical survey is planned to provide accurate volume and tonnage estimates.

The Competent Person has not found any errors or omission in the data material to the CPR.

12.1 Tecoma Virtual Site Visit

AMS and BWA representatives conducted a site visit on 20th to the 22nd of July 2021. During the physical site visit, numerous video calls were made to the CP, describing the area.

Numerous videos and photographs were also taken to document the site visit and refer back to at a later date.

Pit profiles, two new auger profiles and numerous riverbank exposures were visited and logged, where the presence of abundant rutile, ilmenite, kyanite and zircon in hand specimen and sieved samples were observed.

A table of the locations visited is presented in Table 12.1 and shown in Figure 12.1 and Figure 12.2 with additional images shown in Figure 12.3 to Figure 12.6.



Table 12.1: Site visit locations.

WP No	Loc No	East	North	RL	Date	Description	Pit ID
006	N001	820820.73	495238.66	473	2021/07/20	Pit NK002 - Sanaga south bank floodplain - Central Area	NK002
008	N001	820824.07	495237.57	473	2021/07/20	Pit NK002 - Sanaga south bank floodplain - Central Area	NK002
009	N001	820824.07	495237.57	473	2021/07/20	Pit NK002 - Sanaga south bank floodplain - Central Area	NK002
010	N002	820833.43	495201.42	474	2021/07/20	Pit NK002 area - Sanaga south bank floodplain - Central Area	Riverbank
011	N003	818348.35	494522.40	492	2021/07/20	Pit NK036 - Sanaga south bank floodplain - Central Area	NK036
012	D001	619324.28	386564.23	-63	2021/07/22	Nyong north bank @ Dehane Village	Riverbank
013	D002	618820.57	386401.26	-61	2021/07/22	DHO039 - Nyong north bank floodplain	DH039
014	D003	619938.73	386361.41	-55	2021/07/22	Nyong waterfall south riverbank beach	Riverbank
015	D004	619746.98	386458.92	-53	2021/07/22	Active riverbed bucket sample location	River channel
016	D005	618272.03	381652.81	-42	2021/07/22	Pit DH015 - Nyong west bank	DH015
017	D006	619104.52	389595.37	-34	2021/07/22	BWA Sign	Track



Figure 12.1: Nkoteng site visit locations and roads used.



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Figure 12.2: Dehane site visit locations and roads used.









12.2 Quality Assurance and Quality Control

Quality control monitoring is undertaken to ensure that the chemical data used are as reliable as possible to meet the objective of the exploration and resource development program. In advanced exploration projects, quality control and assurance programs are designed to ensure the high integrity of data fit for the purpose of obtaining reliable and accurate, reportable mineral resource and reserve estimates. A Summary of the QA/QC available for the Nkoteng and Dehane Projects is presented in Table 12.2 and Table 12.3 respectively. Selected charts for the major QC databases are presented in the following sections.

QC Туре	Number
CRM	5
Blank Reference Material	0
Duplicate Channels	0
Field Duplicates	5

Table 12.3: Summary of available QAQC data for the Dehane Project.

QC Туре	Number
CRM	9
Blank Reference Material	0
Duplicate Channels	0
Field Duplicates	9

12.2.1 Blanks

BWA submitted no bank samples for analysis in this programme. BWA will add blank samples to the sample stream as part of the drilling programme.



12.2.2 Certified Reference Materials

12.2.2.1 Nkoteng

BWA inserted five certified reference material (CRM) samples and five duplicates into the Nkoteng sample stream, and no issues were identified in the QC data.

Two different CRM's were used from OREAS, and were analysed five times.

- CRM 460 returned TiO2 values of 1.98 %, 2.02 % and 1.97 % respectively (Figure 12.7).
- CRM 464 returned TiO2 values of 3.02 % and 3.06 % respectively (Figure 12.8).

The Shewhart Plots of the QC samples showed no sample bias and CRMs returned within acceptable limits (Figure 12.7 and Figure 12.8).



Figure 12.7: Shewhart plot for CRM OREAS $460 - TiO_2\%$.





Figure 12.8: Shewhart plot for CRM OREAS $464 - TiO_2\%$.

12.2.2.2 Dehane

BWA inserted nine certified reference material (CRM) samples and nine duplicates into the sample stream. However, prior to raw assay data import, the Shewhart Plots of the CRM's samples showed some sample bias with the Zr, with nearly all QC samples well under-reporting for this element and two CRMs failed. ALS were approached and the Zr was reanalysed, and ALS found inconsistencies within the analysis and re-analysed the samples. However, the re-analysis showed some minor negative bias and one failed sample. Continuous monitoring is required in this area going forward. The updated Shewhart Plots are shown in Figure 12.9 for TiO₂ and Figure 12.10 for Zr.

One CRM was used from OREAS and was analysed nine times.

- CRM 460 returned TiO₂ values within acceptable limits (Figure 12.9).
- CRM 460 returned Zr values within acceptable limits after re-analysis, apart from sample P654169 (Figure 12.10).

The Shewhart Plots of the TiO_2 and Al_2O_3 QC samples showed no significant sample bias and CRMs generally returned within acceptable limits (Figure 12.9) and Zr continued to show a negative bias (Figure 12.10).





Figure 12.9: Shewhart plot for CRM OREAS $460 - TiO_2\%$.



Figure 12.10: Shewhart plot for CRM OREAS 460 – Zr%.



12.2.3 Field Duplicates

No duplicate channel samples were taken to ensure the representativeness of the samples.

Field duplicate samples were generated using the riffle splitter from the primary sample and submitted to the laboratory to monitor for repeatability.

12.2.3.1 Nkoteng

Five duplicate samples were submitted, and no errors were observed, despite the limited sample numbers. The five duplicate samples are shown in Table 12.4 below and presented as scattergrams for TiO₂ and Zr in Figure 12.11 and Figure 12.12 respectively. The duplicate assays were considered to be acceptable.

Pit ID	AI2O3 %	TiO2 %	Zr %
NKO_003	100%	98%	96%
NKO_022	102%	102%	101%
NKO_036	99%	100%	90%
NKO_046	97%	98%	133%
NKO_057	100%	100%	100%





*Figure 12.11: Scattergram for originals versus duplicates – TiO*₂%.





Figure 12.12: Scattergram for originals versus duplicates – Zr%.

12.2.3.2 Dehane

Nine duplicate samples were submitted, and no errors were observed, despite the limited sample numbers. The nine duplicate samples are shown in Table 12.5 below and presented as scattergrams for TiO₂ and Zr in Figure 12.13 and Figure 12.14 respectively. The duplicate assays were considered to be acceptable.

Pit ID	Al2O3 %	TiO2 %	Zr %
DHO_016	100%	99%	99%
DHO_021	90%	100%	99%
DHO_025	95%	100%	100%
DHO_031	100%	101%	101%
DHO_035	112%	102%	104%
DHO_040	100%	102%	102%
DHO_042	103%	101%	98%
DHO_048	100%	99%	98%
DHO_052	95%	99%	98%

Table 12.5: Dehane duplicate samples Pit ID.





Figure 12.13: Scattergram for originals versus duplicates – TiO₂%.



Figure 12.14: Scattergram for originals versus duplicates – Zr%.



12.2.4 Contamination

No details of contamination prevention have been provided. Updated procedures for the pending drilling programmes include methods for prevention of contamination.

12.2.5 Sample Security

Samples were transported from site to Yaoundé in secure polyweave bags by the BWA geologist. Samples were logged and sampled in secure facility at Afrigeolabs, Yaoundé under supervision of the BWA chief geologist and independent laboratory manager. Samples are delivered to ALS laboratory by courier in secured boxes/bags. Couriers transported the samples to ALS. The couriers were then responsible for the chain of custody. The pulps arrived in good condition at ALS Johannesburg.

Tecoma has not been reviewed the chain of custody, but it does appear as if this is in order.

12.2.6 Tecoma Comments

The nature and quantity of QC data, procedures employed, level of accuracy and precision are considered acceptable for the assigned works and current stage of exploration.

The nature and quantity of QC data for the pit and auger sampling, procedures employed, level of accuracy and precision are considered acceptable for the level of work.

Tecoma have recommended that as part of the drilling programme, a more detailed logging template is required and increased amount of metadata for improved filtering and interrogation.



13 Data Interpretation and Exploration Target

13.1 Nkoteng

13.1.1 Geological Interpretation and Modelling

No Mineral Resource Estimation has been conducted to date. Certain checks were conducted as part of this review to determine a possible geological modelling and resource estimation approach. It should be noted that only the central area of Zone 1 has sufficient data to analyse from a continuity point of view.

The geological layers appear to be sub-horizontal, with reasonably planar surfaces. The plastic clay which comprises the surface exposure is mineralised towards the base, where it has been sampled. In further exploration activities, the pits and/or holes should be sampled from surface, to ensure that a complete mineralisation profile is obtained.

Interpreted overburden (soil-clay) thickness varies from 0.0 m to 4.3 m and has mostly not been sampled at Nkoteng. The basal part of the plastic clay has been occasionally sampled and has returned consistently high TiO_2 geochemical values. Preliminary granulometric study shows that the plastic clays are made up of more than 56% of sand particles larger than 180 microns within a clay matrix, possibly explaining the presence of heavy minerals in this unit.

The clay and sandy clay horizons present a unit of potential interest, however careful investigation will need to be taken in metallurgical testwork to ensure that the heavy minerals are extractable from this unit.

The sand and gravel units underly the plastic clays, and currently average from less than a metre thick to up to four metres thick. Many of the boreholes and pits are stopped in mineralised material, and potential for increased thicknesses greater than 4m exist.

Saprolitic material underlies the sand and gravel units and is also mineralised where encountered and sampled.

The exploration programme has exposed mineralised material at the base of the plastic clays, extending through the sandy and gravelly units, and into the saprolite.

It should be noted that there are instances where sandy units are interlayered with the plastic clays (e.g., NKO_026) and where sandy and gravelly units are interlayered (e.g., NKO_033). This will complicate further analysis.

An initial lithological model was created to model the different layers, but it was decided that additional information was needed to create a credible model. This information includes the following:



- Sampling of the plastic clays from the top contact
- Consistent sampling penetration into the saprolite
- Production of an accurate topographic surface

Nevertheless, composites were thus created of the entire mineralised sequence for further analysis. It should be clearly pointed out that further work is necessary, as the heavy minerals in the plastic clays and in the saprolite may not be as amenable to extraction as in the clays and the gravels.

13.1.2 Exploratory Data Analysis

13.1.2.1 Univariate Analysis

The boreholes were composited according to the four main lithologies above. These were analysed separately, and then a single composite per hole was created. The raw data and the composites were analysed, and the results are shown below in Figure 13.1.

The review was initially conducted on the raw, un-composited, data. Histograms of the sampling interval in m, AI_2O_3 %, TiO_2 % and Zr %. The sampling interval and Zr % show a positively skewed distribution, whilst AI_2O_3 and TiO_2 are closer to symmetrical (Figure 13.1). There are no values which would be considered to be outliers.



Figure 13.1: Histograms and summary statistics of sampling interval in metres, Al₂O₃, TiO₂ & Zr%.



A more detailed investigation was undertaken per rock type group, as shown below Table 13.1. Plastic clays and the saprolite appear to be slightly higher in TiO₂ than gravel and sand units. This was a bit surprising as the higher heavy mineral concentrations were expected in the gravel and sand units. It was this assumption that led to only a few holes sampling the plastic clays. In Dehane, plastic clays were routinely sampled.

		Total	Clay	Gravel	Sand	Saprolite
Number of Samples	n	90	15	13	50	12
Thickness	m	0.65	0.87	0.70	0.58	0.59
Al ₂ O ₃	%	12.35	17.87	9.51	9.92	18.67
TiO ₂	%	1.03	1.54	0.77	0.94	1.08
Zr	%	0.07	0.07	0.05	0.08	0.02

Table 13.1: Nkoteng samples versus rock type.

13.1.2.2 Bivariate Analysis

There is a weak correlation between Al_2O_3 and TiO_2 of 0.53, but somewhat surprisingly, there is a low correlation of 0.39 between TiO_2 and Zr. These relationships are presented in the scattergrams in Figure 13.2.

There is moderate positive correlation (0.53) between TiO_2 and Al_2O_3 , weak positive correlation between TiO_2 and Zr (0.39) and weak negative correlation (-0.34) between Al_2O_3 and Zr.

An inspection of the TiO₂ to Zr graph shows that there is a general increase in one parameter as the other increases; however, the wide scatter means that the correlation coefficient is low. The heavy mineral concentrating mechanisms for these two minerals must have been slightly different, perhaps related to differences in mineral grain size.





Figure 13.2: Cross correlation between Al_2O_3 , Ti O_2 & Zr%.

13.1.3 Extreme Values and Top Cutting

No extreme values were encountered, and no top cuts were necessary.

13.1.4 Spatial Distribution and Variography

The central area of Zone 1 was chosen for further investigation, as representing the most prospective and best drilled area. The pit/hole collars are shown in Figure 13.3.

Although the composites are based on an incomplete horizon, initial indications of continuity are encouraging, as demonstrated by the omnidirectional variogram in Figure 13.4. TiO_2 % grade contours created using the inverse distance squared algorithm are shown in Figure 13.5. There is insufficient data to clearly show major grade trends, and one should remember that this shows an incomplete mineralised horizon. In places the overlying plastic clay has not been sampled, and in most holes the basal saprolite has not been reached. However, given the limited data and wide spaced nature of the sampling, the continuity is extremely encouraging.





Figure 13.3: Pit / auger collars in the central area of Nkoteng.



Figure 13.4: Omni-directional variogram for TiO₂%.





Figure 13.5: Grade contours for TiO_2 %.

13.2 Dehane

13.2.1 Geological Interpretation and Modelling

No resource estimation has been conducted to date. Certain checks were conducted as part of this review to determine a possible geological modelling and resource estimation approach.

The lithologies which have been defined are shown in Table 13.2. The geological layers appear to be sub-horizontal, with reasonably planar surfaces. The plastic clay which comprises the surface exposure is mineralised towards the base, where it has been sampled.

Code	Lithology
PC	Plastic clay
FS	Fine Sand
SOM	Sand with organic mater
MS	Medium sand
SP	Saprolite

Table	13.2:	Dehane	lithologies.
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The plastic clay has been sampled and has returned consistently high TiO₂ values.

The sand and gravel units underly the plastic clays, and average from less than a metre thick to up to four metres thick. Many of the boreholes and pits are stopped in mineralised material and as such, potential for significant increases in the thickness of prospective sand and gravel units remains. Saprolitic material underlies the sands and is also mineralised.

The exploration programme has exposed mineralised material at the base of the plastic clays, extending through the sandy and gravelly units, and into the saprolite.

Composites were thus created of the entire mineralised sequence for further analysis. It should be clearly pointed out that further work is necessary, as the heavy minerals in the plastic clays and in the saprolite may not be as amenable to extraction as in the sands and the gravels.

13.2.1.1 Exploratory Data Analysis

The boreholes were composited according to the four main lithologies above. These were analysed separately, and then a single composite per hole was created. The raw data and the composites were analysed, and the results are shown below.

The review was initially conducted on the raw, un-composited, data. Histograms of TiO₂ % for plastic clays, sand, organic sand (SOM) and saprolite are shown in Figure 13.6.

The TiO_2 distribution is bimodal, with a smaller mode at 0.7 % and a higher mode at 1.6 %. This needs to be investigated further, as there is an indication that zones or horizons of higher grade may be present in the area. An examination of the histograms for the plastic clays, for the organic sand, and for the sandy layers shows that lower TiO_2 grades are generally concentrated in the sandy horizons.

Elevated TiO₂ values are found in the plastic clays, and average 1.54 % TiO₂. This is consistent with limited observations at Nkoteng. The distribution shape is near-symmetrical, with two low grade outliers which require further investigation, resulting in a skewness coefficient of -1.20 (Figure 13.6).

 TiO_2 grades in the organic sands are also elevated, and average 1.17 % TiO_2 . The distribution is nearsymmetrical, with a low skewness coefficient of -0.27 (Figure 13.6).

The sandy units (fine and coarse sand units have been grouped for this analysis) show a mean grade of 0.93 % TiO₂. The distribution is positively skewed, with the high coefficient of 1.15 driven by three outlier values above 1.6 % TiO₂ (Figure 13.6).

The identified outliers would need to be carefully examined and treated in further analyses.





Figure 13.6: Histograms of Dehane raw samples by lithology.

13.2.1.2 Dehane Composites

13.2.1.2.1 Univariate Analysis

The samples were composited across the full thickness, with the average thickness being 3.5 m. Histogram composite averages, weighted by sample length, are presented in Table 13.3 and Figure 13.7.

		Total	Clay	Medium Sand	Fine Sand	Sand with Organic Matter	Saprolite
Number of Samples	n	171	85	20	35	29	2
Thickness	m	0.82	0.90	0.70	0.78	0.68	1.00
Al ₂ O ₃	%	14.68	20.51	5.51	7.55	12.67	12.51
TiO ₂	%	1.28	1.54	0.57	1.13	1.17	1.17
Zr	%	0.06	0.06	0.04	0.07	0.07	0.07

Table 13.3: Dehane samples versus rock type.



TiO₂ shows the same bimodal distribution as observed in the raw data, with an average value of 1.28 % TiO₂. Zr % shows a positively skewed distribution (coefficient of 1.39) and a mean value of 0.06 % Zr. Al₂O₃ is negatively skewed, with a mean value of 14.81 %, and SiO₂ is positively skewed with a mean value of 69.6 % (Figure 13.7).

 SiO_2 and Al_2O_3 are almost the mirror image of each other, most probably reflecting the clay content of the strongly clayey layers versus the more sand-dominated layers (Figure 13.7).



Figure 13.7: Histograms of Dehane sample composites.

Further analysis was done on Al_2O_3 distributions, by lithology, as shown in Figure 13.8. The total distribution is bimodal, indicating mixed populations. This is apparent when the Al_2O_3 populations are separated by lithology.

The plastic clay has a mean of 20.51 % Al_2O_3 , and a standard deviation of 4.94. The sandy units have a very different distribution shape. The distribution is positively skewed, has a mean of 6.81 and a standard deviation of 3.50. There is very little overlap between the two distributions.

The organic sand has a near-symmetrical distribution, a mean of 12.67% Al₂O₃ (half-way between the plastic clay and the sand) and a standard deviation 5.11. Further analysis is justified.





Figure 13.8: Dehane alumina distributions by lithology.

13.2.1.2.2 Bivariate Analysis

 TiO_2 , Zr, Al_2O_3 and SiO_2 were investigated for variable correlation, as shown in Figure 13.9.

 SiO_2 and Al_2O_3 are strongly positively correlated, with a near-perfect correlation coefficient of 0.99. TiO_2 and Zr are weakly positively correlated, with a correlation coefficient of 0.28. As with Nkoteng, the visual correlation appears to be good, but the statistical measure is downgraded by the presence of a few poorly correlated values (Figure 13.9).

 TiO_2 and SiO_2 are strongly negatively correlated, with a negative correlation coefficient of -0.68. The slope of the regression is quite low, however, indicating that TiO_2 decreases marginally as SiO_2 increases. This confirms the lithological analyses which shows better grades in the plastic clays (Figure 13.9).

 TiO_2 is positively correlated with Al_2O_3 with a correlation coefficient of 0.63, reflecting the increasing grades in the more aluminous plastic clays.





Figure 13.9: Dehane composite correlations.



14 Preliminary Mineralogical Testwork

Heavy mineral separation testwork, granulometric studies and visual size fraction analysis has been completed on a limited number of representative samples from the Nkoteng and Dehane projects.

Ten samples from two auger holes were submitted to ALS Perth for mineral separation and percent determination testwork, and 21 samples were sent for granulometric studies and visual size fraction analysis.

14.1 Heavy Mineral Separation Testwork

A total of ten samples from two auger holes were submitted to ALS for mineral separation and percent determination of the heavy minerals. One hole at Dehane and one hole at Nkoteng were sampled (Figure 14.1 and Figure 14.2), as presented in Table 14.1 and shown in Figure 14.3 and Figure 14.4.

Samples were collected from 'twin' auger holes of known mineralised exploration pits (Figure 14.1, Figure 14.2, Figure 14.3 and Figure 14.4). Samples for mineral separation studies were composited by lithological unit, based upon logging of the twin auger hole and by reference to exploration pit logs and analytical data. Samples were collected from twin auger holes from representative locations.



Figure 14.1: Nkoteng BWA_Dehane_Loc2e_DH039 twin auger sample profile





Figure 14.2: Nkoteng pit NK002 auger sample profile

Hole ID	Sample ID	From	То	Interval	Lithology	Weight (g)
NKO_002	P654190	0.00	0.30	0.30	С	2140
NKO_002	P654191	0.30	1.80	1.50	С	5297
NKO_002	P654192	1.80	3.00	1.20	SC	7738
NKO_002*	P654193	3.00	3.40*	0.40	SG	4323
DHO_039	P654194	0.00	0.20	0.20	С	954
DHO_039	P654195	0.20	1.85	1.65	С	3457
DHO_039	P654196	1.85	4.00	2.15	SC	4284
DHO_039	P654197	4.00	5.00	1.00	G	1967
DHO_039 *	P654198	5.00	5.50*	0.50	G	1876
DHO_060**	P654199	0.00	0.00	0.00	G	8884

Table 14.1: Dehane and Nkoteng HLS sample locations.

* Samples did not hit bedrock and is open at depth.

**Grab sample from river channel





Figure 14.3: Nkoteng sample locations.





Figure 14.4: Dehane sample locations.



Samples were dried and weighed, wet screened a split at 1mm and then heavy liquid separation performed on 100-200g of the -1/+0.053mm fraction at 2.96kg/dm³ to recover a heavy mineral concentrate.

14.1.1 Results

The ten samples have head grade chemical analyses as shown in Table 14.2 below. The samples show elevated TiO_2 % (average 1.46 %) and elevated albeit variable Al_2O_3 (average 15.34%), and elevated ZrO_2 (average 0.112%). The TiO_2 values vary from 0.48 % to 2.26 %, consistent with the values obtained from the trench sampling.

The samples were split by size distribution into a +1mm fraction, 1mm to 0.053 mm, and less than 0.053 mm. The mass of each size fraction was measured, and the mass of the -0.053 fraction was also back calculated from the total mass. This back-calculated mass is similar to the measured mass.

Heavy liquid separation (HLS) analysis was undertaken on the samples to determine the proportion of the sample that is able to be separated at a density of 2.96 kg/dm³. The mass of the sinks recovered at this density were further analysed, as presented in Table 14.3. For three of the samples, the mass recovered was insufficient for reliable analysis.

 TiO_2 grades in the HLS fraction vary from 14.1 % to 36.8 %, with an average of 20.8 %, indicating that although the mass of this fraction is variable, the rutile/ilmenite grades of the fraction are good.

Initial indications from this sample set are that the sand and gravel units are amenable to HLS extraction, and potentially the transitional clay/sand units immediately above the sands and gravel horizons based on recovery grades of TiO₂ in the sinks.



Table 14.2: Dehane and Nkoteng head assay data.

Sample ID	Al2O3(%)	As(%)	Ba(%)	CaO(%)	CI(%)	Co(%)	Cr2O3(%)	Cu(%)	Fe2O3(%)	K2O(%)	MgO(%)	Mn(%)	Na2O(%)	Ni(%)	P(%)	Pb(%)	S(%)	SiO2(%)	Sn(%)	Sr(%)	Th(%)	TiO2(%)	U(%)	V(%)	Zn(%)	ZrO2(%)
P654190	16	<0.01	0.06	0.09	<0.002	0.003	0.016	<0.001	3.13	1.37	0.19	0.02	0.14	<0.001	0.033	<0.002	0.024	68.9	0.004	0.01	0.004	2.26	<0.001	0.013	0.003	0.12
P654191	22.2	<0.01	0.06	0.05	<0.002	0.003	0.017	<0.001	5.87	1.09	0.24	<0.01	0.09	0	0.029	<0.002	0.057	57.1	0.004	0.006	0.004	2	<0.001	0.019	0.004	0.07
P654192	16.2	<0.01	0.08	0.16	<0.002	0.003	0.016	<0.001	3.65	1.56	0.18	0.01	0.28	0	0.016	<0.002	0.057	69.8	0.005	0.011	0.002	1.36	<0.001	0.012	0.004	0.11
P654193	6.18	<0.01	0.09	0.52	0.003	0.003	0.022	<0.001	1.81	1.62	0.25	0.03	0.72	<0.001	0.014	<0.002	0.005	87.9	0.004	0.018	0.002	0.72	<0.001	0.005	<0.002	0.09
P654194	21	<0.01	0.07	0.19	0.003	0.006	0.018	<0.001	8.12	1.88	0.58	0.11	0.25	0	0.11	<0.002	0.02	52.4	0.003	0.011	0.003	1.74	<0.001	0.017	0.011	0.1
P654195	22.8	<0.01	0.06	0.16	0.005	0.006	0.02	0.002	9.17	2.03	0.65	0.08	0.24	0	0.12	<0.002	0.014	51.5	0.003	0.011	0.005	1.71	0.001	0.02	0.009	0.08
P654196	21.8	<0.01	0.08	0.26	0.004	0.005	0.019	<0.001	9.29	2.22	0.71	0.12	0.28	0	0.13	<0.002	0.017	52.5	<0.002	0.014	0.005	1.68	<0.001	0.018	0.01	0.09
P654197	16.3	<0.01	0.12	0.65	0.006	0.005	0.016	<0.001	5.88	2.7	0.73	0.12	0.66	0	0.074	<0.002	0.034	59.5	0.004	0.019	0.004	1.36	0.001	0.012	0.01	0.12
P654198	4.35	<0.01	0.06	0.25	<0.002	0.003	0.022	<0.001	1.93	1.69	0.12	0.03	0.4	<0.001	0.026	<0.002	0.004	88.5	0.003	0.012	0.002	0.48	<0.001	0.004	0.002	0.06
P654199	6.59	<0.01	0.01	0.22	0.004	0.003	0.032	<0.001	2.35	0.2	0.14	0.04	0.09	<0.001	0.02	<0.002	0.005	88.5	0.005	0.002	0.004	1.3	<0.001	0.005	0.002	0.28
Ave	15.34	<0.01	0.07	0.26	<0.002	0.004	0.0198	0.002	5.12	1.636	0.379	0.06	0.315	0	0.0572	<0.002	0.0237	67.66	0.004	0.011	0.004	1.46	0.001	0.013	0.006	0.112



Table 14.3: Dehane and Nkoteng HLS results.

Sample #	Sample ID	Lith	Initial Mass (g)	Mass +1mm (g)	Mass - 1/+0.053mm (g)	Mass - 0.053mm recovered (g)	Mass - 0.053mm (g) Calc	% +1mm	% - 1/+0.053mm	% - 0.053mm	Mass split for HLS (g)	Mass Sink +2.96kg/dm3 (g)	% sink +2.96kg/dm3 in sand	% Sink +2.96kg/dm3 in original sample	AI2O3	TiO2	ZrO2
HL68173	P654190	С	500	1.6	152.4	327.4	346	0.32	30.48	69.2	95.2	1.6	1.68	0.51	13.7	36.8	5.49
HL68174	P654191	С	500	1.3	96.8	391.6	401.9	0.26	19.36	80.38	96.67	4.16	4.3	0.83	14	14.8	1.98
HL68175	P654192	SC	500	1.9	242.2	248.3	255.9	0.38	48.44	51.18	92.24	2.26	2.45	1.19	13.1	30.7	4.21
HL68176	P654193	SG	500	255.3	213.1	30.8	31.6	51.06	42.62	6.32	109.04	7.71	7.07	3.01	20.9	15.9	2.04
HL68177	P654194	С	500	5.7	85	396.7	409.3	1.14	17	81.86	84.25	0.7	0.83	0.14	15.6	25.7	2.55
HL68178	P654195	С	500	0.2	51.9	404.9	447.9	0.04	10.38	89.58	51.63	0.37	0.72	0.07	11.2	17.1	1.73
HL68179	P654196	SC	500	4	78.7	402.8	417.3	0.8	15.74	83.46	78.65	0.58	0.74	0.12	13.8	14.1	1.63
HL68180	P654197	G	500	4.7	200.9	277.5	294.4	0.94	40.18	58.88	104.3	2.72	2.61	1.05	13.2	15.2	2.09
HL68181	P654198	G	500	89	389.4	19.3	21.6	17.8	77.88	4.32	97.71	3.13	3.2	2.49	23.8	17.4	1.81
HL68182	P654199	G	500	274	223.5	2.2	2.5	54.8	44.7	0.5	109.32	12.01	10.99	4.91	25.5	20.2	4.37



14.1.2 Conclusions

Although limited at this stage, preliminary work shows a number of samples are amenable to size fractionation, in particular the sand and gravel units, with a significant grade of titanium oxide (rutile-ilmenite), zirconium (zircon) and aluminium oxide (kyanite) reporting to the HLS fraction.

Further sampling and detailed tests are needed to better understand mineralised material characteristics, separation properties and quantities of recoverable HMS, particularly the samples where the weight of the HLS fraction is low.

From the limited mineral separation work, the samples show a good separation between 1 mm to 0.053 mm, but a number of samples show a high clay content which can interfere with recoveries, however further work is needed to understand the mineral composition of potential mineralised horizons / various material types.

The data is extremely limited first pass mineral separation testwork and whereas currently considered largely inconclusive, however provides an encouraging indication that certain horizons within the profile are potentially amenable to separation and are of a suitable size fraction composition that is extremely encouraging. Further systematic and more detailed mineral separation and mineralogical (QEMSCAN) studies are required across the prospective target areas.

The following conclusions are presented for the mineral separation testwork:

- There is good grade present as rutile and ilmenite as defined by the granulometric studies throughout the various horizons and confirmed by geochemical analysis.
- There is good TiO₂ as defined by geochemical analysis.
- There is good Al₂O₃ grades as defined by geochemical analysis and granulometric studies which has identified abundant Kyanite throughout the various horizons.
- There are good grades of zircon, as defined by geochemical analysis and granulometric studies which has identified zirconium throughout the various horizons.

From the HLS and screening results, the following conclusions are made:

- Five samples returned encouraging results from the wet screening 1 mm to 0.053 mm fraction, in particular the main target sand and gravel units.
- A number of samples returned high clay content which can interfere with recoveries. However, current tests are extremely limited and further detail testwork is required.


14.2 Granulometric Studies

14.2.1 Nkoteng

Ten -2mm sample rejects from Nkoteng were used for granulometric studies and visual size fraction analysis (Figure 14.5). Four sieves were used to fraction off the sample with each size fraction having a detailed description and analysis.

Preliminary granulometric studies imply that within the sands, rutile is more abundant, within the fraction -600 to +180 μ m. Minor ilmenite was also observed, and minor HMS also observed in -180 μ m size fraction. The plastic clays contain elevated TiO₂, also within the fractions -600 to +180 μ m, although major ilmenite was also observed. Initial studies show that rutile is more prevalent than ilmenite in the plastic clays. In saprolite lithology, ilmenite is more prevalent than rutile. This can be explained by the difference in density between ilmenite and rutile. The former has a density of 4.72 while the latter has a density of 4.2.

14.2.2 Dehane

Eleven -2mm sample rejects were used for granulometric studies and visual size fraction analysis, also using four sieves to fraction off the sample.

Preliminary granulometric studies from Dehane imply that within the sands, ilmenite is more abundant within the fraction -600 to +180 μ m. Limited rutile was observed in this fraction. Initial granulometric studies suggest that within the plastic clays lithology, rutile is mostly concentrated in the grain size fraction below 180 μ m while ilmenite is observed in all grain size fractions. Within the fine sands, rutile is present in all grain size fractions but in small quantities and in the sand with organic matter horizon, rutile is very abundant in the fractions between +106 μ m and +180 μ m. Finally, in the medium size sands, rutile is abundant in the fraction between +75 μ m and +106 μ m and rare in the fractions -75 μ m and + 180 μ m (Figure 14.6).





Figure 14.5: Separation of fractions from sample N026079.





14.2.3 Conclusions

Implications of the granulometric studies are as yet not fully recognized and further testwork required going forward, although the preliminary work suggest the minerals of interest are present in encouraging amounts, occur within specific size fractions and preferred host strata. Further work is needed to understand the mineral composition of potential mineralised horizons / various material types.



15 Environmental Studies, Permitting and Social or Community Impact

Mining exploration involving operations with physical impacts on the ground are subject to a summary environmental and social impact assessment (Cf Art 5 of Order No. 00001/MINEPDED of 09 Feb. 2016).

The content of the summary environmental impact study is set by Article 4 of Decree No. 2005/0577/PM of 23 February 2005. It includes:

- The description of the environment of the site and the region
- The description of the project
- The report of the field visit
- The inventory and description of the project's impacts on the environment and the mitigation measures envisaged
- The terms of reference of the study
- Related bibliographic references.

This study is part of the ongoing exploration plan in the two exploration sites, Nkoteng and Dehane.



16 Adjacent Properties

16.1 Nkoteng

As shown in Figure 16.1, there are several neighbouring licences for the Nkoteng permit.

The licences to the east of Nkoteng (Figure 16.1) are held by Archidona Minerales S.A, a Panamanian listed company, previously owned by Rodeo Resources, then Bramlin and currently held by Victoria Oil and Gas. The history for this company is unclear. However, the licences expired in December 2020 and as yet, it is understood that no exploration work has been completed on the project.

Marimba Resources own the licence to far east of the permit block in Figure 16.1. Marimba Resources is an Oil and Gas company, and the licences expired in July 2021. No exploration work has been completed on the project, that BWA / AMS / Tecoma are aware of.



Figure 16.1: Surrounding Licences for Nkoteng (source: Cameroon Mines Department Cadastral website).

16.2 Dehane

The licence to the northeast of Dehane (Figure 16.2) is held by GeoCam Au. Their website is under construction and no other information was found; the licence has expired. The other surrounding licences are held by oil and gas companies, i.e., Sud Energie, Bocom Petroleum and some mining companies, i.e., Cameroon Mining Action, Biltmore Stones and G-Stone Resources, however, no evidence of exploration work was found online (Figure 16.2).



Competent Persons JORC 2012 Technical Report for the Nkoteng and Dehane Mineral Sands Project, Cameroon



Figure 16.2: Surrounding Licences for Dehane (source: Cameroon Mines Department Cadastral website).

16.2.1 Eramet - Akonolinga

The Akonolinga project is now owned by Eramet (September 2018) after the Cameroonian Ministry of Mines, Industry and Technological Development granted the three-year exploration permits on the rutile block of Akonolinga.

These permits will allow the Eramet teams to conduct the necessary fieldwork and feasibility studies in order to obtain a mining convention. Eramet have conducted preliminary exploration campaigns in the area and identified a strong potential for rutile.

The Akonolinga project borders the Nkoteng project and as such, the geology is very similar to that of the Nkoteng Project. It is located within the Yaoundé Domain of the Pan African Belt and is characterised by low-grade to high-grade garnet bearing metamorphosed schists, gneiss and orthogneisses. Bedrock in the Djaa and Yo river basins is underlying Precambrian garnetiferous migmatite two-mica schist and it is thought the rutile-bearing alluvium derives from this schist.

The geological sequence is typically 0.65m to 2.6 m of clayish cover followed by the 1.5 to 4.5m of mineralized sand.



16.2.2 Sierra Rutile

Sierra Rutile, based in Sierra Leone, a wholly owned subsidiary of Iluka Resources, has one of the largest rutile deposits in the world and is the second largest producer in the world. It has an established operating history spanning 50 years and a current Resource that has potential to support a mine life of over 65 years at current production rates (Sierra Rutile report, February 2016).

As presented in the company's 2014 annual report, Sierra Rutile has Measured and Indicated resources of 757.9 Mt, at 0.93% rutile, 0.15% Ilmenite and 0.05% Zircon and Inferred resources of 137.7 Mt at 0.94% rutile, 0.13% Ilmenite and 0.05% Zircon.



17 Other Relevant Data and Information

17.1 Cameroon

The following section has been modified from the Fox-Davies report for Cameroon Rutile Ltd, July 2012 with additions from other online sources such as Wikipedia.

Cameroon, a West Central African country of geographical, religious and cultural diversity, is located along the Atlantic coast between the Sahara Desert and the Congo Basin. It has an area of approximately 475,000km2. Yaoundé is Cameroon's capital and Douala is the largest city, main seaport, and main industrial and commercial centre. Cameroon has an approximate population of 24 million (UN 2017).

The modern state of Cameroon originated with French Cameroon achieving independence in 1960 to create the Republic of Cameroon. Whilst the northern regions of British Cameroon voted to join Nigeria, the largely Christian southern third of British Cameroon voted to join the Republic a year later to form the Federal Republic of Cameroon, although the formerly French and British regions each maintained substantial autonomy. As a result, it is a member of the Commonwealth and is also a signatory to the Lomé Convention, a trade and aid agreement between the European Economic Community (EEC) and 71 African, Caribbean, and Pacific (ACP) countries, first signed in February 1975 in Lomé, Togo.

Ahmadou Ahidjo became President of the federation in 1961 and outlawed all political parties but his own, the Cameroon National Union, CNU, in 1966. His successor from 1982, Paul Biya, faced popular discontent and allowed multi-party presidential elections in 1992. However, opponents claim elections have been unfair and that opposition groups' freedoms are suppressed. Biya has won each of the presidential elections since in 1997, 2004 and 2011 and his party, the Cameroon People's Democratic Movement, "CPDM", has never lost control of the National Assembly.

Transparency International, a non-governmental organization that monitors and publicizes corporate and political corruption, ranked Cameroon at 153 out of a total of 182 countries in their Corruption Perception Index (CPI) of least to most corrupt nations (CPI 2019). These high levels of corruption have historically discouraged growth in the private sector.

Cameroon is endowed with an abundance of natural resources, including in the agricultural, mining, forestry, and oil and gas sectors and for a quarter of a century following independence, Cameroon was one of the most prosperous countries in Africa. It still boasts one of the best-endowed primary commodity economies in sub-Saharan Africa.



However, the economy's high dependence on commodity exports, particularly petroleum products, engenders it vulnerable to commodity prices. The fall in prices for principal exports of petroleum, cocoa, coffee and cotton during the mid-1980s, alongside an overvalued currency, triggered a decade long recession. Real per capita gross domestic product (GDP) fell by more than 60% from 1986 to 1994. However, subsequent recovery – initiated in part by dramatic governmental economic reform to reduce the budget deficit- has seen GDP growing at an average rate of 4 % pa to take Cameroon's GDP per capita to one of the 10 highest in sub-Saharan Africa.

In terms of its commodity exports, the rising prices of oil and cocoa have particularly propelled recovery since 2005, although the oil industry is now in decline as its major fields approach maturity, although there is continued investment in exploration.

Cameroon has strong trading relationships with France, China and U.S.A.; China recently became the number one importer of Cameroonian goods, especially unprocessed timber. Regional trade, especially with Nigeria, remains under-realized. In 2017, its GDP was estimated at US\$34.8B.

17.2 Cameroon Mining Industry

Cameroon's mining industry remains under-developed with no history of commercial exploitation despite its promising mineral resources, including bauxite, cobalt, gold, iron ore, nickel, and rutile (Figure 17.1). This outlook is changing as companies have begun reacting to mineral price increases over the past decade and emerging African industries attract foreign investment.

Foreign investment is growing, with the Department of Industry, Mines and Technological Development encouraging this by continually awarding exploration licences for the exploitation of minerals, developing a competitive updated mining code including a five-year initial tax holiday and exemption of customs duties, subjecting the mining industry to the Extractive Industries Transparency Initiative to limit corruption, and stressing that 60 % of the country is still unexplored.

There is a wealth of information about oil and gas production in Cameroon, but there is very little information about current mineral exploration activities, and this will be one of the objectives of the site visit to investigate and better understand the exploration prospects and any current operations, although it is understood that there are still no operating mines in Cameroon.

The remote location of the majority of the country's mineral wealth and current projects means that dependency on road, rail and port infrastructure is, and will continue to be, high and a major cost consideration (Figure 17.1). Many of the companies are establishing their own integrated infrastructure and the Government is allocating an increasingly higher percentage of the budget to infrastructure development as outlined in its growth and employment strategy paper from 2009.



Significant projects include expanding electricity capacity to 3000 MW by investment in hydropower provision and the construction of 13 generation plants by 2030; upgrading over 3500 km of earth roads and refurbishing 2000 km of badly managed tarmac road; adding a further 3500 km of railway; and the construction of two deep seaports at Kribi and Limbe, with the Kribi port in particular dedicated to providing export facilities for bauxite, iron ore and hydro carbons (Fox-Davies, July 2012).



Figure 17.1: Cameroon Mineral Locations (Source Cameroon Mines Department).



17.3 Heavy Mineral Sands

Heavy mineral sands are defined as loose aggregates of unlithified material containing combinations of minerals with a high specific gravity, generally above 4 g/cm³, although any mineral having a higher density than quartz (>2.65 g/cm³) would technically qualify.

The most commonly occurring Heavy Minerals are: Ilmenite (FeTiO₃), Leucoxene (pseudorutile), Rutile (TiO₂), Zircon (ZrSiO₄), Monazite [(Ce,La,Nd,Th)PO₄], Xenotime (YPO₄), Kyanite (Al₂SiO₅), Sillimanite (Al₂SiO₅), Andalusite (Al₂SiO₅), Staurolite [(Fe,Mg,Zn)₂Al₉(Si,Al)₄O₂(OH)₂], Garnet [(Ca,MG,Fe,Mn)₃(Al,Fe,Cr)₂(SiO₄)₃] Chromite (FeCr₂O₄), Magnetite (Fe₃O₄), Cassiterite (SnO₂), Columbite-Tantalite (Coltan, Fe⁺⁺Ta₂O₆), Wolframite [(Fe,Mn)WO₂] and Scheelite (CaWO₄).

Zircon has historically been the most valuable component followed by rutile, leucoxene and ilmenite. The lowest cut-off grades currently mined, as a total heavy mineral (THM) concentrate from the bulk sand, is around 1% heavy minerals.

In general, these heavy minerals occur in low concentrations in a variety of igneous and metamorphic rocks, but because of their resistance to weathering and comparatively high specific gravity, they are found to accumulate in placer deposits, typically in river channels or more frequently along coastal shorelines.

17.3.1 Supply

TiO₂ pigment is a mature industry which has been developed by the chemicals industry. While North America and Europe host most plants, new plants under construction in China are starting to readdress this imbalance. Leading producers of TiO₂ minerals include: Iluka Resources (Australia), Exxaro Resources (South Africa), Rio Tinto (Australia), Kenmare Resources (Ireland/Mozambique), Bemax Resources (Australia), Consolidated Rutile (Australia) and Titanium Resources Group (UK/Sierra Leone) (information correct as of January 2020; (metalpedia.asianmetal.com and indmin.com).

In terms of feedstock mineral production, Australia, China and South Africa are leading producers of TiO₂. Since 2008/09, new African sources have come online in Mozambique and Madagascar. In terms of tonnages, ilmenite is by far the largest mined TiO₂ mineral. On average it has between 52-54% TiO₂ content and is purchased, in the main, by those that manufacturer sulphate TiO₂.

Rutile has almost double the TiO₂ content at 92-95% TiO₂ but is less abundant than ilmenite. The biggest commercially active sources are in Australia and Sierra Leone.

Zircon is commonly tied up with titanium mineral sand deposits but has very different market applications.



17.3.2 Markets

The largest market is TiO_2 's direct use as a white pigment in industrial and household paints and coatings for products such as cars. Significant quantities are also used in plastics and paper where its whiteness is still a primary reason for its use.

The majority of zircon production finds its way into ceramics, although refractories and foundry sands are also important end uses

17.4 Mineral Sands Mining and Processing

Heavy mineral sands are usually mined by open-pit methods, with either wet techniques such as dredging, or dry methods using excavators, trucks, scrapers and bulldozers.

Wet methods are generally preferred for large tonnage, low clay ore bodies and dredge mining is the most cost-efficient mining technique, although it is highly dependent on ground conditions and availability of water. Typically, in a wet mining operation, a floating dredge cuts the ore under the water surface and pumps the ore slurry to a wet concentrator floating behind the dredge (Figure 17.2).

Where ground conditions are hard and ore bodies are small, high grade and discontinuous, dry mining techniques are generally employed using earth moving equipment such as scrapers, bulldozers or front-end loaders to excavate and transport the sand to a feed preparation section (Figure 17.2).

The mining process is ideally modelled on the extraction operations utilised in Australia, where the strip mining is followed by rehabilitation of the mined areas followed by intensive re-vegetation with ecologically similar species, re-contouring of the land to its original shape, including the protection of dunes and management of groundwater resources.

The mineral sands are still only a small proportion of the total ore mined with clays, silts, sand and bedrock components. The ore must still undergo primary, mechanical screening to remove oversized material including rock and debris and then two stages of processing (Figure 17.3).

Wet concentrators are designed to produce a high grade heavy mineral concentrate and utilize gravity differentiation between the various valuable heavy minerals and clay and quartz. The resulting heavy mineral sand often contains grains coated with impurities that require attrition and scrubbing with chemical solutions. This is followed by dry ore processing using magnetic, electrostatic and gravity separation circuits to produce the final, separated products (Figure 17.3).





Dredging at Cristal Mining's Gingko Mine (Source: Earth Science Australia).

Iluka Resources' Hamilton Operation (source: ABC News).





Figure 17.3: Typical Mineral Sands Process Flowsheet (Source: Earth Science Australia).



18 Interpretations and Conclusions

Tecoma are encouraged by the level of grade and extent of all the target minerals throughout the Nkoteng and Dehane licences.

Geological setting including observed basement geology and depositional environment are considered highly prospective for alluvial heavy mineral sands development.

Pit profiles, two new auger profiles and numerous riverbank exposures were visited and logged, where the presence of rutile, ilmenite, kyanite and zircon in hand specimens and sieved samples were observed in size and quantities of interest.

The results to date are considered positive and demonstrate the potential for grades and thicknesses of potential economic interest over significant lateral extents, and warrant further investigation and advanced exploration work, including drill testing, mineral resource estimation leading to preliminary conceptual mining studies and economic evaluation.

18.1 Nkoteng

The 15 hand-dug pits and 38 auger holes to a depth of 4.5 m show that there is continuous close to surface TiO_2 mineralisation situated on the floodplain of the Sanaga River. The average grade of TiO_2 in the 90 samples taken is 1.03 %, with mineralisation found in the uppermost plastic clays, in the underlying sand and gravel units, and in the saprolite below these units.

Positive results for TiO2, Al2O3 and Zr were obtained from the three areas sampled, the north, central and south. The central area appears to be more positive than the northern and southern samples, but these extremities are still anomalous for HMS and show encouraging continuation of mineralisation over 15 km.

The central area was targeted more heavily after the presence of gravel and encouraging HMS mineralisation at the bottom of the hole NKO_002 was observed and suggests that the Sanaga River was deeper at this location at some point in its history and is likely either an abandoned channel or a cut meander. Tecoma are encouraged by the grade and extent of all the target minerals and are planning follow up work, to be conducted shortly.

Exploration activities, including sample collection and analysis, have been well done and in line with industry standards.

In areas where there is a higher density of sampling, variograms show statistical continuity of mineralisation.



18.2 Dehane

A total of 30 auger holes and 10 hand dug exploration pits, for a total of 139.84 m and 171 primary samples to a depth of 5.0 m show that there is continuous close to surface TiO₂ mineralisation situated on the floodplain of the Nyong River.

The average grade of TiO_2 in the 90 samples taken is 1.28 %, with the highest grade of mineralisation found in the uppermost plastic clays, and lower grades in the underlying sand and gravel units, and in the saprolite below these units.

The TiO₂ grades are significantly higher in the plastic clays (1.54 %) and organic sands (1.17 %) than in the sands (0.93 %).

Current results and interpretations suggest the mineralisation is more prospective in the north of the licence due to the presence of a Cretaceous fault which has created a waterfall. This HMS "rich zone" is located downstream of the waterfall, which sees an abrupt decrease in river water velocity due to the sudden change in topography and its load of heavy minerals is deposited.

The presence of anomalous values within the overlying clays encouraging in terms of increasing the thickness, subsequent volume and proximity to the surface of potentially economic material.

Exploration activities, completed by BWA including sample collection and analysis, have been done well and in line with industry standards.

18.3 Mineral Separation Testwork Conclusions

Although limited at this stage, preliminary work shows a number of samples are amenable to size fractionation, in particular the sand and gravel units, with a significant grade of titanium oxide (rutile-ilmenite), zirconium (zircon) and aluminium oxide (kyanite) reporting to the HLS fraction.

Further sampling and detailed tests are needed to better understand mineralised material characteristics, separation properties and quantities of recoverable HMS, particularly the samples where the weight of the HLS fraction is low.

From the limited mineral separation work, the samples show a good separation between 1 mm to 0.053 mm, but a number of samples show a high clay content which can interfere with recoveries, however further work is needed to understand the mineral composition of potential mineralised horizons / various material types.

The data is extremely limited first pass mineral separation testwork and whereas currently considered largely inconclusive, however provides an encouraging indication that certain horizons within the profile are potentially amenable to separation and are of a suitable size fraction composition that is



extremely encouraging. Further systematic and more detailed mineral separation and mineralogical (QEMSCAN) studies are required across the prospective target areas.

The following conclusions are presented for the mineral separation test work:

- There is good grade present as rutile and ilmenite as defined by the granulometric studies throughout the various horizons and confirmed by geochemical analysis.
- There is good TiO₂ as defined by geochemical analysis.
- There is good Al₂O₃ grades as defined by geochemical analysis and granulometric studies which has identified abundant Kyanite throughout the various horizons.
- There are good grades of zircon, as defined by geochemical analysis and granulometric studies which has identified zirconium throughout the various horizons.

From the HLS and screening results, the following conclusions are made:

- Five samples returned encouraging results from the wet screening 1 mm to 0.053 mm fraction, in particular the main target sand and gravel units.
- A number of samples returned high clay content which can interfere with recoveries. However, current tests are extremely limited and further detail test work is required.



19 Recommendations

Tecoma recommend the following activities for both the Nkoteng and Dehane projects which should be investigated in the next phase of exploration:

- The majority of pits and auger holes completed to date have stopped in mineralisation, unable to penetrate through the target sand and gravels into bedrock saprolite due to water ingress, maximum rod depth. Deeper holes by should be drilled to ensure that the saprolite is intersected and full thickness of target units are tested.
- Only a small area of the total floodplain potential has been tested. Systematic step out drilling from current target zones to explore the wider areas of the floodplain.
- The TiO₂ grades are higher in the plastic clays (1.54 %) and saprolites (1.08 %) than in the sands (0.77 %) and gravels (0.94 %). This relationship should be carefully investigated and requires further geostatistical analysis.
- Collection of bulk density data.
- Preliminary mineral separation testwork presents a number of encouraging results, conversely has identified a number of samples with a high clay content. Further systematic detailed mineral separation and mineralogical (QEMSCAN) work is required alongside any planned of drilling or pitting.
- Size fractionation analysis shows that rutile-ilmenite is preferentially concentrated in the HLS fraction, although care should be taken in the interpretation of the results, as some samples show low weights reporting to the HLS fraction. Further sampling and testwork is needed.
- Reasonable prospects for eventual economic analysis (RPEEE) needs to be defined i.e., preliminary extraction testwork, especially of the plastic clays.
- Bulk mineralogical test work, leading to pilot plant scale tests.
- Production of a detailed topographic surface.

19.1 Planned Drilling

19.1.1 Nkoteng

BWA intend to drill 2,500 m in the first quarter of 2022. The total Nkoteng programme will consist of 458 Priority 1 and 44 Priority 2 vertical holes every 200 m (on 500 m and 1000 m grid lines) to a depth around five metres. The grid lines were set up on regular coordinate grids and cover the entire licence area at a spacing of 200 m by 500 m, as shown in Figure 19.1.



The programme is divided into three areas, namely NK IND, NK INF N and NK INF S. The programme is designed to bring blocks NK INF N and NK INF S into the Inferred (or Exploration Target) category and NK IND into a potentially Indicated category, as presented in Figure 19.1 and Figure 19.2. These are further divided into priority 1 and 2 holes (Figure 19.1 and Figure 19.2). The priority 2 holes are on the periphery of the blocks and are to be drilled last assuming there are available metres left within the drilling budget.

The Inferred blocks (NK INF N and NK INF S) are located either side of the Indicated block (NK IND) and are designed to extend the defined mineralisation while the central block is to add confidence to the models (Figure 19.2). The Inferred block drillholes are on a 200 m by 1000 m grid and the Indicated block drillholes are on a 200 m by 500 m grid, targeting the prospective mineralisation identified from auger holes and pits.



Figure 19.1: Proposed drillholes in Nkoteng by priority (purple are priority 1 and yellow are priority 2).





Figure 19.2: Drillholes in Nkoteng by priority and drill blocks (purple are priority 1 and yellow are priority 2).

19.1.2 Dehane

BWA intend to drill 1500 m in the first quarter of 2022. The total Dehane programme will consist of 67 priority 1 and 20 priority 2 vertical holes every 200 m (on 500 m and 1000 m grid lines) to a depth of around fifteen metres. The grid lines were set up on regular coordinate grids and cover the entire licence area at a spacing of 200 m by 500 m, as shown in Figure 19.3.

The programme is divided into three areas, namely DH IND, DH INF N and DH INF S. The programme is designed to bring blocks DH INF N and NDHK INF S into the Inferred or more likely into the Exploration Target category and DH IND into a potentially Indicated category, as presented in Figure 19.3 and Figure 19.4. These are further divided into priority 1 and 2 holes (Figure 19.3 and Figure 19.4). The priority 2 holes are on the periphery of the blocks and are to be drilled last assuming there are available metres left within the drilling budget.

The Inferred blocks (DH INF N and DH INF S) are located either side of the Indicated block (DH IND) and are designed to extend the defined mineralisation while the central block is to add confidence to the models (Figure 19.4). The Inferred block drillholes are on a 200 m by 1000 m grid and the Indicated block drillholes are on a 200 m by 500 m grid, targeting the prospective mineralisation identified from auger holes and pits.





Figure 19.3: Proposed drillholes in Dehane by priority (purple are priority 1 and yellow are priority 2).



Figure 19.4: Drillholes in Dehane by priority and drill blocks (purple are priority 1 and yellow are priority 2).



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21 Glossary of Terms

Term/Symbol/Abbreviation	Meaning		
\$	United States Dollar unless otherwise stated		
@	At		
£	British Pounds		
0	Degrees		
%	percent		
AA	Atomic Absorption		
AAS	Atomic Absorption Spectrometry		
ALS	ALS Laboratory		
Al ₂ O ₃	Aluminium Oxide		
AMS	Addison Mining Services Ltd		
Au	Gold		
Blank	A sample containing no mineralisation of interest to test for contamination in laboratory studies		
BRGM	Bureau de Recherches Géologiques et Minié (French Geological Survey)		
BWA	BWA Resources Cameroon Limited / BWA Resources UK Limited		
ст	centimetres		
Company (the Company)	BWA Resources Cameroon Limited / BWA Resources UK Limited		
Competent Person	A person of sufficient experience and qualification to act as a Competent Person as defined by the JORC Code 2012. A Competent Person must be a Member or Fellow of The Australasian Institute of Mining and Metallurgy, or of the Australian Institute of Geoscientists, or of a 'Recognised Professional Organisation'. A Competent Person must have a minimum of five years' experience working with the style of mineralisation or type of deposit under consideration and relevant to the activity which that person is undertaking.		
СР	Competent Person		
CRIRSCO	Committee For Mineral Reserves International Reporting Standards		
CRM	Certified Reference Material, a sample of a "know" chemical concentration to within a given standard deviation		
DGPS	Differential Global Positioning System, typically sub centimetre accuracy		
DTM	Digital Terrain Model. Computerised topographic model		
DUP	Décret d'Utilité Publique (Public Utility Decree)		
Diamond Drilling	Drilling using a diamond drill bit which typical returns a solid cylinder of rock subject to ground competency		
DL	Detection Limit		
Duplicate	A Duplicate sample or sub sample taken from the same location or parent sample to test precision		



Fire Assay	Industry standard laboratory technique typically used for determination of Gold concentrations			
g	grams			
g/t	grams per tonne, interchangeable with ppm			
GPS	Global Positioning System, not differential, accuracy is typically <10m			
HMS	Heavy Mineral Sands			
ICP-MS/AES	Inductively Coupled Plasma Mass Spectrometry/Atomic Emission Spectrometry. A Laboratory technique capable of determining elemental concentrations to very low values. Typically, not suitable for gold analysis.			
Indicated Resource	An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Ore Reserve. An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. An Inferred Mineral Resource has a lower level of confidence than that applying to an uset			
	confidence than that applying to an Indicated Mineral Resource and must not be converted to an Ore Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.			
JORC	Australasian Joint Ore Reserves Committee			
JORC 2012	The JORC reporting code 2012 edition			
km	Kilometre			
LDL	Lower Detection Limit of an analytical procedure			
m	meters			
Measured Resource	A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to confirm geological and grade (or quality) continuity between points of observation where data and samples are gathered. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Ore Reserve or under certain circumstances to a Probable Ore Reserve.			



ME-XRF11bE	Analysis by Fusion/XRF			
mm	millimetres			
Over Limit	Greater than the upper detection limit of an analytical technique			
ppm	parts per million, interchangeable with g/t			
Probable Reserve	A 'Probable Ore Reserve' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve.			
Project	An exploration or mining property or collection of properties under investigation			
Proven Reserve	A 'Proved Ore Reserve' is the economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors.			
QAQC	Quality analysis and quality control, typically the appraisal of precision, accuracy and contamination in laboratory analytical procedures.			
Reserve	An 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The reference point at which Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the			
Resource	A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.			
SOP	Standard Operating Procedures			
SOSUCAM	Société Sucrière du Cameroun"			
t	tonnes			
Table 1	The JORC 2012 code table one checklist			
TiO ₂	from ilmenite, rutile, and anatase			
UDL	Upper detection limit			
QA/QC	Quality assurance/quality control			
QEMSCAN	Quantitative evaluation of minerals by scanning electron microscopy			
Zr	Zircon or Zirconium			



22 JORC 2012 Table 1

The following table presents the information required for JORC 2012 (Table 1) for the Nkoteng and Dehane Projects, Cameroon.

22.1 Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	AMS Commentary			
	 Nature and quality of sampling (e.g., cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. 	 Nkoteng samples were generated using a mixture of hand dug pits to a maximum depth of 4.4 m and auger holes to a depth of 4.5 m and three grab (scoop) samples from the active river. Dehane samples were generated using a mixture of hand dug pits to a maximum depth of 5 m and auger holes to a depth of 5 m from the active river. The locations varied between active and paleo island and riverbank channels. The sampling methods are sufficient for early-stage exploration. No handheld XRF instruments were used. 			
	 Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used 	 Sampling was supervised by the senior BWA geologist. Pit and auger samples are considered representative of the surface and are sufficient for early exploration geochemical surveys. 			
Sampling techniques	• Aspects of the determination of mineralisation that are Material to the Public Report.	 Samples were oven dried for 24 hours and split at Afrigeolabs in Yaoundé to around 3kg, crushed and pulverised to -75µm to produce a pulp of 250 g and sent to ALS Johannesburg for multi-element XRF analysis by method ME-XRF11bE. Gold was analysed by FA on a 50g charge (Au-TL44) at ALS. Afrigeolabs is an autonomous offshoot of ALS Johannesburg. It is subject to periodic evaluations to ensure the quality of work by ALS Johannesburg. ALS Johannesburg is accredited and conforms with ISO9001:2008. 			
	• In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	 At Nkoteng, 38 auger holes were hand drilled to a maximum depth of 4.5 m to obtain 50 lithologically controlled. At Dehane, 29 auger holes were hand drilled to a maximum depth of 5 m to obtain 123 lithologically controlled. Samples were of between 2-5 kg each, subsequently reduced and pulverised to 250 g at Afrigeolabs and sent for analysis at ALS. At Nkoteng, the whole auger sample was taken in its entirety and samples were generally between 60 – 100 cm in length and lithologically controlled. At Dehane, the whole auger sample was taken in its entirety and samples were generally between 50 – 120 cm in length and lithologically controlled. At Nkoteng, 15 exploration pits were hand excavated to a maximum depth of 4.4 m to obtain 40 lithologically controlled samples. At Dehane, 10 exploration pits were hand excavated to a maximum depth of 5 m to obtain 48 lithologically controlled samples. Pit samples were approximately 5 kg each, reduced and pulverised to 250 g at Afrigeolabs and sent for analysis at ALS. A 15cm wide channel was excavated down the centre of the pit and samples were generally between 50 – 100 cm in length and lithologically controlled. Three grab samples were taken at Nkoteng weighing between 3 and 16 kg. The samples will be used as a guide for further systematic exploration and to identify priority areas. 			
Drilling techniques	 Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond 	 No drilling has been completed on the project by BWA. 			



Critoria	IORC Code explanation	AMS Commentary
Cincila	tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	Aws commentary
	 Method of recording and assessing core and chip sample recoveries and results assessed. 	• N/A.
Drill sample recovery	 Measures taken to maximise sample recovery and ensure representative nature of the samples. 	• N/A.
	 Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	• N/A.
Logging	 Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. 	• N/A.
	 Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. 	Geological logging is qualitativeGranulometric studies are quantitative.
	• The total length and percentage of the relevant intersections logged.	All intersections were geologically logged.
	 If core, whether cut or sawn and whether quarter, half or all core taken. 	The whole auger hole is sampled.Channels are sampled within the hand excavated pits.
	 If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. 	 Samples were oven dried for 24 hours and riffle split at Afrigeolabs in Yaoundé to around 2-3kg. The sub sample was then crushed and pulverised to -75μm and split to produce a pulp of 250 g.
	• For all sample types, the nature, quality and appropriateness of the sample preparation technique.	 Sample collection procedures, sample size, preparation and analysis are considered appropriate for the mineralogy, deposit type and the early-stage nature of the exploration.
Sub-sampling techniques and sample	 Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. 	 Samples were visually checked by the BWA geologist to ensure split samples were representative of the bulk sample.
preparation	 Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. 	 No duplicate channel samples were taken to ensure the representativeness of the samples. Two "twin" holes were completed for the mineral separation testwork. The twin hole data has not been compared as different horizons were sampled and not intended as for verification. BWA plan twin holes in the upcoming drilling programme. Field duplicate samples were generated using the riffle splitter from the primary sample and submitted to the laboratory to monitor for repeatability. At Nkoteng, five duplicate samples were submitted, and no errors were observed, despite the limited sample numbers. At Dehane, nine duplicate samples were submitted, and no issues were observed, despite the original under-reporting. Subsequent scattergrams show no issues.



Criteria	JORC Code explanation	AMS Commentary
	 Whether sample sizes are appropriate to the grain size of the material being sampled. 	 Granulometric studies were performed, and preliminary analysis shows that samples are appropriate to the grain size of the material being sampled. More statistical work is required in this area.
	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	 Commercial laboratories ALS Johannesburg (ISO9001:2008) were used for the sample analysis. Multi-element analysis, including TiO₂, Zr, Al₂O₃ by ME-XRF11bE were completed on all samples. Gold was analysed by FA on a 50g charge (Au-TL44). Over limits samples were re-analysed using ore grade methods of determination. Sample analytical techniques are considered in line with industry standard for this style of mineralisation. Given the expected grades, lithology and deposit type, the laboratory procedures are considered appropriate for this level of work.
Quality of	• For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	 No geophysical tools, spectrometers or handheld XRF instruments were used in the exploration work.
Quality of assay data and laboratory tests	• Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	 At Nkoteng, BWA inserted five CRMs and five duplicates into the sample stream. At Dehane, BWA inserted nine CRMs and nine duplicates into the sample stream No blanks were inserted at this time. Blanks are planned for the drilling programme. No issues were identified in the Nkoteng QC data. At Dehane, Shewhart Plots of the QC samples showed some sample bias with the Zr, with samples under-reporting for this element and two CRMs failed. ALS were approached and the Zr was reanalysed, and ALS found inconsistencies and fixed the errors. The re-analysis showed no serious issues. The nature and quantity of QC data, procedures employed, level of accuracy and precision are considered acceptable for the assigned works and current stage of exploration. The quality of assay data and laboratory tests is acceptable for the exploration work for this deposit. Shewhart Plots of the QC samples showed no sample bias and CRMs returned within acceptable limits. Nelson rules of monitoring were applied. The nature and quantity of QC data for the pit and auger sampling, procedures employed, level of accuracy and precision are considered acceptable and auger sampling, procedures employed, level of accuracy and precision are considered acceptable for the pit and auger sampling.
	• The verification of significant intersections by either independent or alternative company personnel.	 The samples have not been independently verified at this stage. Tecoma completed a virtual site visit due to Covid -19 restrictions. Verification is planned for 2022.
Verification of sampling and assaying	• The use of twinned holes.	• N/A.
	 Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. 	 GPS sample coordinates in excel data and lab analytical data in .csv were imported to Micromine 3D geological modelling software. BWA samples have been verified by cross reference against original laboratory assay certificates.



Criteria	JORC Code explanation	AMS Commentary				
	• Discuss any adjustment to assay data.	 No adjustment to the analytical data was necessary. Raw analytical data remained unchanged. 				
	 Accuracy and quality of surveys used to locate drill holes (collar and down- hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. 	Samples were surveyed using a Garmin handheld GPS.				
Location of data points	• Specification of the grid system used.	 Data was captured and located using a Universal Transverse Mercator (UTM). The geographic coordinate reference system is WGS84 Zone 32N (UTM32N). Elevations are reported in metres above sea level. 				
	• Quality and adequacy of topographic control.	 There is no topographic DTM at present. A Google Earth topography was created for use as a guide, but further work is required. 				
Data spacina	• Data spacing for reporting of Exploration Results.	 At Nkoteng: Three areas have been sampled, approximately 4-5 km apart. North, central and southern zones. Maximum sample spacing in the three areas is approximately 500 m. Some additional scout holes throughout licence. Data spacing is sufficient for early phases for exploration. At Dehane: Sample spacing in the licence varies from between 2-4 km. There are some additional scout holes throughout licence. Data spacing is sufficient for early phases for exploration. 				
and distribution	 Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. 	• N/A.				
	• Whether sample compositing has been applied.	• N/A.				
Orientation of data in relation to geological structure	 Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 	• N/A.				
	 If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material. 	• N/A.				



Criteria	JORC Code explanation	AMS Commentary
Sample security	• The measures taken to ensure sample security.	 Samples were transported from site to Yaoundé in secure polyweave bags by the BWA geologist. Samples were logged and sampled in secure facility at Afrigeolabs, Yaoundé under supervision of BWA geologist and independent laboratory manager. Samples are delivered to ALS laboratory by courier in secured boxes/bags. Couriers transported the samples to ALS. The couriers were then responsible for the chain of custody. The pulps arrived in good condition at ALS Johannesburg.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	 Desk study review and audit by Principal Consultant Mr John Forkes (AMS), Mr James Hogg (AMS) and Mr Lewis Harvey (AMS) determined sampling methods are suitable for early-stage geochemical survey. The site visits did not identify any issues or concerns. The data and SOPs have been reviewed by the CP for this report, Mr Matt Mullins.



22.2 Section 2 Reporting of Exploration Results

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1	UIIPIU	IISIPU		ITTP .	DIPLEUIIIU	SPLIION	u_{1SO}	uuuu	10	THIS SPLITON	. /
	0				p						• /

Criteria	JORC Code explanation	AMS Comments
Mineral tenement and land tenure status	 Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the 	 Nkoteng: BWA has been awarded Permit No. 672, an exploration licence covering 497 km² of Central Cameroon in an area known as Nkoteng, for researching the viability of commercial exploitation of rutile sands and other minerals including gold, kyanite, ilmenite, and other related minerals. The permit is for three years and there is a requirement for a financial commitment of £260,000 in year 1 to be followed by £195,000 in each of years 2 and 3. The licence was granted on the 24th December, 2019 for a period of three years and can be renewed three times for a period of three years and can be renewed three times for a period of the Cameroonian Mining Code). Dehane: BWA has been awarded Permit No. 636, an exploration licence covering 132 km² of Central Cameroon in an area known as Dehane, for researching the viability of commercial exploitation of rutile sands and other minerals including gold, kyanite, ilmenite, and other related minerals. The permit is for three years and there is an indicated financial commitment of £275,000 in year 1 to be followed by £207,000 in each of years 2 and 3 at current exchange rates. The licence was granted on the 10th of March 2020 for a period of three years and can be renewed three times for a period of three years and can be renewed three times for a period of three years and can be renewed three times for a period of three years and can be renewed three times for a period of three years and there is an indicated financial commitment of £275,000 in year 1 to be followed by £207,000 in each of years 2 and 3 at current exchange rates. The licence was granted on the 10th of March 2020 for a period of three years and can be renewed three times for a period of three years each. (Confers article 37 of Law 2016/017 of 14 Dec 2010 on the Cameroonian Mining Code).
time knov licer	time of reporting along with any known impediments to obtaining a licence to operate in the area.	 BWA are unaware of any impediments that may affect the licences.
Exploration done by other parties	 Acknowledgment and appraisal of exploration by other parties. 	 Nkoteng: Rutile was discovered in Cameroon at the beginning of the century, but it was only exploited between 1935 and 1955. The total recorded production of rutile is approximately 15,000 tonnes, with a maximum of 3,320 tonnes in 1944; exploitation remained essentially artisanal. Historical exploration was carried out by the BRGM in 1980 and continued until 1991. On 28th February 1988, the Ministry of Mines, Water and Energy (MINMEE) and BRGM set up the Société d'Étude du Rutile d'Akonolinga (SERAK) with a capital of 460 million CFA francs held by a 100% subsidiary of BRGM (SEREM) and the State of Cameroon in proportions of 52% and 48% respectively. The evaluation of rutile resources in the Akonolinga region by SERAK has given the Djaa River some 290,000 tonnes (± 50,000 tonnes) and the YO River some 240,000 tonnes (± 40,000 tonnes). During the same period, reconnaissance was carried out on the Sélé and Tédé rivers in the Nanga Eboko region. The campaign enabled resources to be estimated at: SELE River: 723,000 tonnes of rutile; TEDE River: 175,000 tonnes of rutile. At the moment the Akonolinga area is being developed by the French mining company ERAMET which is active in the field, while the TEDE and SELE rivers in the Nanga Eboko area are under licence from Archidona. The latter company is inactive in the field. No recent data on these two areas is available. Results are not reported in accordance with JORC (2012) and have not been independently verified by either BWA or AMS. Dehane: There has been limited historical exploration carried out by BRGM during late-1990's and early 2000's as part of regional wide assessments. Data is yet to be located.



Criteria	JORC Code explanation			AMS Commen	ts	
Geology	• Deposit type, geological setting and style of mineralisation	F d C 1 V V t N V C b N	Rutile, as an impo deposits, is known Cameroon was the 1950 (16,417 t). With an estimated he world's second Vikoteng is located vhich is a large na Congo Craton and pearing metamorp Main minerals are	ortant component in a in southern Cameroor e world's third largest d potential of nearly th d-largest supply of rutil d within the Yaoundé d is characterised by d is characterised by ohosed schists, gneiss a garnet. rutile, kvanite.	alluvial or eluvial h n. producer of rutile aree million tons, C e after Sierra Leon Domain of the Par en thrusted southv low-grade to high- and orthogneisses ilmenite and zirco	heavy mineral from 1944 to Cameroon has e. 0 African Belt, vard onto the grade garnet n.
Drill hole Information	 A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. 		Collar coordinates noles are presented Easting Northing RL Depth Dip Azimuth Collar coordinates noles are presented Easting Northing RL Depth Dip Azimuth	and details of the Nk ed in the table below. 809600 489820 539 1.7 -90 0 and details of the De ed in the table below. 615248 370961 4 1 -90 0	824691 499200 568 4.52 -90 0 ehane hand dug pi 621224 389727 36 5 -90 0	ts and augers
			N/A.			
Data aggregation methods			N/A.			
	 Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. 	• •	N∕A.			



Criteria	JORC Code explanation	AMS Comments			
	• The assumptions used for any reporting of metal equivalent values should be clearly stated.	• N/A.			
	• These relationships are particularly important in the reporting of Exploration Results.	 Mineralisation is a river placer deposit, and the extents and geometry are unknown at this time. Surface sampling is very early stage and designed to confirm the presence and indication of HMS mineralisation for targeting further exploration. 			
kelationsnip between mineralisation widths and intercept lengths	 If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. 	 The auger holes and pits are vertical, and the mineralisation is assumed to sub-horizontal at this time. 			
	 If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known'). 	 The relationship between interval and true width is not yet know. However, the mineralisation is sub-horizontal and interval widths are likely a reasonable reflection of true width. 			
Diagrams	 Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	 Appropriate scaled diagrams are attached to the document. 			
Balanced reporting	 Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. 	 All available exploration data for the Nkoteng and Dehane Project has been collected and reported. The full implications for the data are unknown at this time. 			
Other substantive exploration data	 Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances. 	 No geophysical works have been completed. Limited mapping works have been completed. No additional surface sampling works have been completed. No metallurgical testing or bulk density work have been completed. Ten samples have been collected and analysed for mineral separation work (HLS). These show, in general, that ilmenite is preferentially concentrated in the HLS size fraction. 			
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	 Further work includes additional surface sampling, deep pit / trenching samples to identify drill targets. Drilling in prospective areas to delineate lateral extents. Bulk density and granulometric studies. Metallurgical and recovery testwork. 			
	 Diagrams clearly highlighting the areas of possible extensions, including the main geological 	• Further work programmes are being developed and are presented in Section 19.1.			



Criteria	JORC Code explanation	AMS Comments
	interpretations and future drilling	
	areas, provided this information is	
	not commercially sensitive	