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Maiden Kwale North Dune and Bumamani Ore Reserves estimates

Key Points

- Maiden Kwale North Dune and Bumamani Ore Reserves estimates underpin the Bumamani definitive feasibility study.
- North Dune Ore Reserves estimate is 13.9Mt at an average HM grade of 2.1% for 0.29Mt of contained HM.
- Bumamani Ore Reserves estimate is 3.9Mt at an average HM grade of 2.3% for 0.09Mt of contained HM.

African mineral sands producer, **Base Resources Limited** (ASX / AIM: BSE) (**Base Resources**) is pleased to announce maiden Ore Reserves estimates for the Kwale North Dune (**2022 Kwale North Dune Ore Reserves**) and the Bumamani deposits (**2022 Bumamani Ore Reserves**) at its 100% owned and operated Kwale Operations in Kenya.

The 2022 Kwale North Dune Ore Reserves and 2022 Bumamani Ore Reserves are presented together because of the close proximity of the underlying deposits. They also underpin the definitive feasibility study (the **Bumamani DFS**) undertaken to assess their potential to extend the mine life of Kwale Operations, the outcomes of which, and the decision to proceed with project implementation, are the subject of a separate announcement released today.

The 2022 Kwale North Dune Ore Reserves are estimated to be 13.9 million tonnes (**Mt**) at an average heavy mineral (**HM**) grade of 2.1% for 0.29Mt of contained HM. The classifications of the 2022 Kwale North Dune Ore Reserves are set out in Table 1 below. Table 1 also contains an updated estimate of the Kwale North Dune Mineral Resources (**2022 Kwale North Dune Mineral Resources**) and a comparison against the Kwale North Dune Mineral Resources estimate as at 30 June 2021.

The 2022 Kwale North Dune Mineral Resources are estimated to be 171 million tonnes at an average HM grade of 1.5% for 2.6Mt of contained HM, at a 1% HM cut-off grade. This represents a decrease of 23Mt of material and 0.3Mt of contained HM compared with the previously announced Kwale North Dune Mineral Resources, which was the consequence of some low-grade material no longer being within the boundary of Prospecting Licence 2018/0119 (**PL 2018/0119**) following its automatic reduction in size upon renewal in accordance with Kenya's Mining Act of 2016 (see Figure 1)[1].

The 2022 Bumamani Ore Reserves are estimated to be 3.9Mt at an average HM grade of 2.3% for 0.09Mt of contained HM. The classifications of the 2022 Bumamani Ore Reserves are set out in Table 2 below. To allow comparison against the Bumamani Mineral Resources estimate, Table 2 also sets out that estimate which is unchanged from the last estimate as at 30 June 2021.

The 2022 Kwale North Dune Mineral Resources, 2022 Kwale North Dune Ore Reserves and 2022 Bumamani Ore Reserves are each reported in accordance with the JORC Code. Further information about the 2022 Kwale North Dune Ore Reserves and 2022 Bumamani Ore Reserves is set out in the section below and includes the information prescribed by ASX Listing Rule 5.9. This information should be read in conjunction with the applicable explanatory information provided for the purposes of Table 1 of the JORC Code, included in Appendices 1 to 3 of this announcement. Base Resources does not consider that the reduced 2022 Kwale North Dune Mineral Resources constitutes a material change for the purposes of ASX Listing Rule 5.8. The area containing the Mineral Resources no longer included in this estimate was relinquished following renewal of PL 2018/0119 and was selected by Base Resources because those Mineral Resources were assessed to have the lowest prospects of eventual economic extraction taking into account, among other things, the outcomes of the pre-feasibility study undertaken in 2021 to assess the potential to mine the whole of the Kwale North Dune and Bumamani deposits, which concluded that mining the whole of those deposits was not presently economically viable.

A glossary of key terms used in this announcement is contained on pages 57 to 58.

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[1] For further information about the previous Mineral Resources estimate for Kwale North Dune, refer to Base Resources' announcement on 19 February 2021 "Updated Kwale North Dune and maiden Bumamani Mineral Resources estimates", which is available at https://baseresources.com.au/investors/announcements/.

Table 1: Kwale North Dune Mineral Resources and Ore Reserves estimates.

	2022 Estimate as at 20 June 2022								2021 Estimate as at 30 June 2021							
						HM Assemblage								HM Assemblage		
Category	Tonnes (Mt)	HM (Mt)	HM (%)	SL (%)	OS (%)	ILM (%)	RUT (%)	ZIR (%)	Tonnes (Mt)	HM (Mt)	HM (%)	SL (%)	OS (%)	ILM (%)	RUT (%)	ZIR (%)
Kwale North Dune Mineral Resources																
Measured	106	1.6	1.5	37	1.5	40	13	5.4	119	1.8	1.5	37	1	42	13	6
Indicated	63	0.9	1.4	37	2.1	49	14	6.1	73	1.0	1.4	37	2	50	14	6
Inferred	2	0.0	1.2	37	2.9	49	15	6.5	2	0.0	1.2	37	3	50	15	7
Total	**171**	**2.6**	**1.5**	**37**	**1.8**	**44**	**13**	**5.7**	**194**	**2.9**	**1.5**	**37**	**2**	**45**	**13**	**6**
Kwale North Dune Ore Reserves																
Proved	8.3	0.17	2.1	37	0.9	50	13	6.1								
Probable	5.6	0.12	2.1	37	1.8	53	13	5.9	N/A							
Total	**13.9**	**0.29**	**2.1**	**37**	**1.2**	**51**	**13**	**6.0**								

Table subject to rounding differences, resources estimated at a 1% HM cut-off grade, Mineral Resources are reported inclusive of Ore Reserves.

Table 2: Bumamani Mineral Resources and Ore Reserves estimates.

						HM Assemblage		
Category	Tonnes (Mt)	HM (Mt)	HM (%)	SL (%)	OS (%)	ILM (%)	RUT (%)	ZIR (%)
Bumamani Mineral Resources as at 30 June 2021								
Measured	3.0	0.066	2.2	19	2.2	48	15	7.5
Indicated	2.6	0.045	1.7	23	5.2	47	16	7.7
Inferred	0.3	0.004	1.4	27	6.1	41	14	7.8
Total	**5.9**	**0.115**	**1.9**	**21**	**3.8**	**47**	**15**	**7.6**
2022 Bumamani Ore Reserves as at 20 June 2022								
Proved	2.6	0.062	2.3	19	2.2	48	16	7.5
Probable	1.3	0.029	2.2	19	5.3	48	16	7.6
Total	**3.9**	**0.091**	**2.3**	**19**	**3.2**	**48**	**16**	**7.5**

Table subject to rounding differences, resources estimated at a 1% HM cut-off grade, Mineral Resources are reported inclusive of Ore Reserves.

Further information relevant to the 2022 Kwale North Dune and Bumamani Ore Reserves estimates

The technical study that supported and preceded the Ore Reserves estimates, and from which all but one of the modifying factors were derived, was the Bumamani Pre-Feasibility Study (**Bumamani PFS**), the results of which were announced in September 2021[2]. The one modifying factor not derived from the Bumamani PFS was product prices. These were updated to reflect price forecasts immediately prior to the Ore Reserves estimation. The Ore Reserves estimates are further supported by the Bumamani DFS, the outcomes of which will be announced today and which supersedes the Bumamani PFS.

Both studies considered material exclusively from the Bumamani and Kwale North Dune Mineral Resources estimates. Therefore, both Ore Reserves estimates share common modifying factor inputs, financial modelling for confirmation of feasibility considered material from both areas jointly, and the deposits comprise a single project. The Ore Reserves estimates have only been presented separately in this announcement to allow comparison against their respective Mineral Resources estimates.

[2] Refer to Base Resources' announcements on 3 September 2021 "Bumamani PFS supports extension of Kwale mine life to mid-2024" and "Further supporting information for Bumamani PFS", available at https://baseresources.com.au/investors/announcements/.

The Competent Persons are satisfied with the appropriateness of the consideration and assessment of the Ore Reserves estimates in this manner due to their proximity to each other, the similarity of the material to be mined, and because the mining and processing will be the same for both. Following the pit optimisation stage of the Ore Reserves estimation process, additional material to that considered for the Bumamani PFS was shown to be economically extractable and was added to the scope of the Bumamani DFS. The area added is referred to as P200 and its addition resulted in greater tonnage being considered for mining and higher upfront capital cost, principally because more land would need to be acquired.

The Bumamani PFS concluded that it was economically feasible to mine higher-grade subsets of the Bumamani and Kwale North Dune deposits concurrently with the Kwale South Dune deposit. The outcomes of the Bumamani PFS are summarised in Table 3[3]. The material modifying factors derived from the Bumamani PFS are shown in Tables 4 and 5. Recoveries are slightly different to those reported for the PFS following further review of bulk sample test work after the PFS was announced. Assumed product prices for the revenue modifying factor are shown in Table 6. All currency amounts are denominated in United States Dollars (**USD**).

The estimated Ore Reserves tonnes were input into the financial model for the Bumamani DFS and financial feasibility was confirmed.

Table 3: Key Bumamani PFS Outcomes

Study Outcome	Units	Bumamani PFS (underpins Ore Reserves)
LOM extension	Months	7.5
Material mined	Million tonnes	11.4
Land acquisition	Ha	237
Upfront capex	US$m	13.6
Sustaining capex	US$m	4.2
Total capex	US$m	17.8
Rutile produced	Thousand tonnes	34
Ilmenite produced	Thousand tonnes	113
Zircon produced	Thousand tonnes	13
Study Error Band	%	+/- 30

Table 4: Operating costs derived from the Bumamani PFS

Cost centre	Units	Value
Ore – Bumamani Pit	US$/t ore	0.38
Ore – P199*	US$/t ore	0.35
Ore – P200*	US$/t ore	0.37
Slime	US$/t	0.34
Heavy mineral concentrate	US$/t	7.47
Ilmenite	US$/t	8.91
Rutile	US$/t	17.84
Zircon	US$/t	42.13
Total fixed operating cost per annum	US$m	64.3
Ad valorem Royalty	%	5

*****Pits P199 and P200 form part of the Kwale North Dune deposit

[3] For the anticipated outcomes from mining the Ore Reserves estimates, refer to the outcomes of the Bumamani DFS to be released to ASX today.

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Table 5: Bumamani PFS assumed mineral recoveries

Recoveries	Units	Value
Ilmenite - WCP	%	90.0
Rutile - WCP	%	88.9
Zircon - WCP	%	94.7
Other - WCP	%	79.5
Heavy mineral concentrate % HM	%	85.0
Ilmenite - MSP	%	101.5
Rutile - MSP	%	101.0
Zircon - MSP	%	84.5

Table 6: Assumed product prices (FOB) used for estimation of the Ore Reserves

Mineral	Units	Value
Ilmenite	US$/t	190
Rutile	US$/t	1,400
Zircon	US$/t	1,750

The criteria used for classification of both Ore Reserves estimates was the same as that applied to the Mineral Resources estimate classification, so Proved Ore Reserves comprise Measured Mineral Resources and Probable Ore Reserves comprise Indicated Mineral Resources. The criteria used for classification was primarily the drill spacing (predominantly 100m x 100m) and sample interval (predominantly 1.5m), with consideration also given to the continuity of mineral assemblage information. The ore zones exhibit spatially different classifications mainly because of differing density of mineralogical information and variography.

The mining method is hydraulic mining, which Base Titanium[4] has used successfully since 2017. It is non-selective, with hydraulic mining units (**HMU**) using high pressure water jets to sluice the entire ore face, which flows as a slurry to a sump and is then pumped, ultimately, to the wet concentrator plant (**WCP**). The mining method requires a slime content of more than 15%, and the estimated Kwale North Dune and Bumamani Mineral Resources satisfy this requirement.

Due to the geometry of the deposit and the non-selective mining method, there is no ore/waste discrimination (other than topsoil stripping) and it is not considered appropriate to add additional dilution factors. A 0.3m allowance for topsoil has been incorporated into the model and this material is excluded from Ore Reserves reporting as non-recoverable.

The WCP is typical of a mineral sands operation, using screens, spirals and cyclones to separate the heavy minerals from the quartz sand and clay.

Heavy mineral concentrate is fed to a mineral separation plant (**MSP**) which uses magnetic and electrostatic separators, classifiers and spirals to produce ilmenite, rutile and zircon products. The recoveries at each stage are provided in Table 5. Testwork undertaken on samples of the three ore zones present from two separate bulk sampling (60cm diameter drillholes) sites was undertaken which confirmed concentrator and separation plant recoveries to be comparable to those presently being achieved operationally. The location of these sample sites is shown in Figure 2.

Pit optimisation was undertaken using Datamine Studio NPVS software (**NPVS**). A Value model was first prepared and revenue and cost adjustment attributes subsequently imported into NPVS for Lerch-Grossman optimisation. Cut-off grades were not used because a value model was used to determine the pit limits. This process was applied to all of the material within the Mineral Resources (with

[4] Base Titanium Limited, being Base Resources' wholly owned Kenyan operating subsidiary.

slightly different costs dependent on location) and revealed other potentially economically extractable material that was not considered in the Bumamani PFS. Applying the assumed product prices in Table 6, this led to inclusion of P200 within the Ore Reserves estimate.

The estimation methodology comprised developing nested pit limits (as described above) by reducing the revenue in 1 per cent decrements, selection of the most appropriate pit shell by comparison of several factors (including NPV, life of mine, revenue to cost ratios and incremental cash flow), mine planning and scheduling of the selected pit shell and finally confirmation of positive economics by feeding the scheduled tonnes into the project financial model.

The assumed product prices were derived from Base Resources' internal price forecasts for the proposed period of extraction, determined based on supply/demand analysis and taking into account relevant data from independent industry consultants, TZMI, and were not materially different to TZMI's average forecast prices over the same period.

The material modifying factors impacting the deposit economics are disclosed in the Tables above. Other material modifying factors are:

- Tenure - The Company has secured the right to mine the Ore Reserves estimates, following the recent extension of Special Mining Lease 23 (**SML 23**) to incorporate those areas. The extension was effected by a formal deed of variation between Base Titanium and the Government of Kenya acting through the Ministry of Petroleum and Mining.
- Infrastructure (power, water, roads, pumps, pipes etc.) - as Kwale Operations is already an operating mine, all major infrastructure already exists – 132 kV power line and transformer yard, 8Gl water dam, water bores, export facility, processing plants, offices, maintenance workshops, laboratory and camp. The cost of additional roads, powerlines, pumps and pipelines required to service the proposed pits have been allowed for in the capital expenditure estimate.
- Landowner consent - the Resettlement Action Plan for landowners in the Bumamani Project areas has been approved by the National Environmental Management Authority (NEMA) and is currently being implemented. The socio-economic baseline study has confirmed landowner eligibility and, following an extensive consultation and negotiation process, compensation rates have been agreed. Asset valuation is underway following which, individual compensation agreements will be signed and relocation implemented.
- The key regulatory approval, in addition to the SML 23 extension, being that in respect of the Environmental and Social Impact Assessment (**ESIA**), was issued on 23 August 2021 by NEMA. The ESIA approval was issued after extensive public consultation and environmental impact assessments. An environmental management plan was also approved as part of the ESIA. The only other authorisation required to mine the Bumamani Project is that for silt trap construction as a control measure for sedimentation with no issues expected in obtaining this authorisation.

The Competent Persons believe that there are reasonable grounds to expect that the pre-requisite approvals for mining (primarily landowner consents) will be obtained within the necessary timelines.

The reference point at which the Ore Reserves estimates are defined is the in-pit feed unit(s).

Competent Persons' Statements

The information in this announcement that relates to Kwale North Dune Mineral Resources and Kwale North Dune and Bumamani Ore Reserves is based on, and fairly represents, information and supporting documentation prepared by the Competent Persons named in the table below. Each Competent Person:

- is a Member or Fellow of The Australasian Institute of Mining and Metallurgy or the Australian Institute of Geoscientists;
- has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code and as a qualified person for the purposes of the AIM Rules for Companies; and
- consents to the inclusion in this statement of matters based on their information in the form and context in which the relevant information appears.

Mr. Scott Carruthers is employed by Base Resources, holds equity securities in Base Resources, and is entitled to participate in Base Resources' long-term incentive plan and receive equity securities under that plan. Details about that plan are included in Base Resources' 2021 Annual Report.

Name	Estimate(s)	Employer
Greg Jones	2022 Kwale North Dune Mineral Resources	IHC Robbins, consultant geologist to Base Resources
Scott Carruthers	2021 Bumamani Mineral Resources, 2022 Kwale North Dune Ore Reserves and 2022 Bumamani Ore Reserves	Base Resources, full-time employee
Per Scrimshaw	2022 Kwale North Dune Ore Reserves and 2022 Bumamani Ore Reserves	Entech, consultant mining engineer to Base Resources

Further information about the Bumamani Mineral Resources estimated is contained in Base Resources' announcement on 19 February 2021 "Updated Kwale North Dune and maiden Bumamani Mineral Resources estimates", which is available at https://baseresources.com.au/investors/announcements/. Base Resources confirms that, in the case of the Bumamani Mineral Resources estimate, it is not aware of new information or data that materially affects the information included in the 19 February 2021 announcement and all material assumptions and technical parameters underpinning the estimate in the 19 February 2021 announcement continue to apply and have not materially changed.

Forward Looking Statements

Certain statements in or in connection with this announcement contain or comprise forward looking statements.

By their nature, forward looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will occur in the future and may be outside Base Resources' control. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in product prices and exchange rates and business and operational risk management. Subject to any continuing obligations under applicable law or relevant stock exchange listing rules, Base Resources undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after the date of this announcement or to reflect the occurrence of unanticipated events.

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Figure 1: Plan showing concentrations of heavy minerals at Kwale Operations.

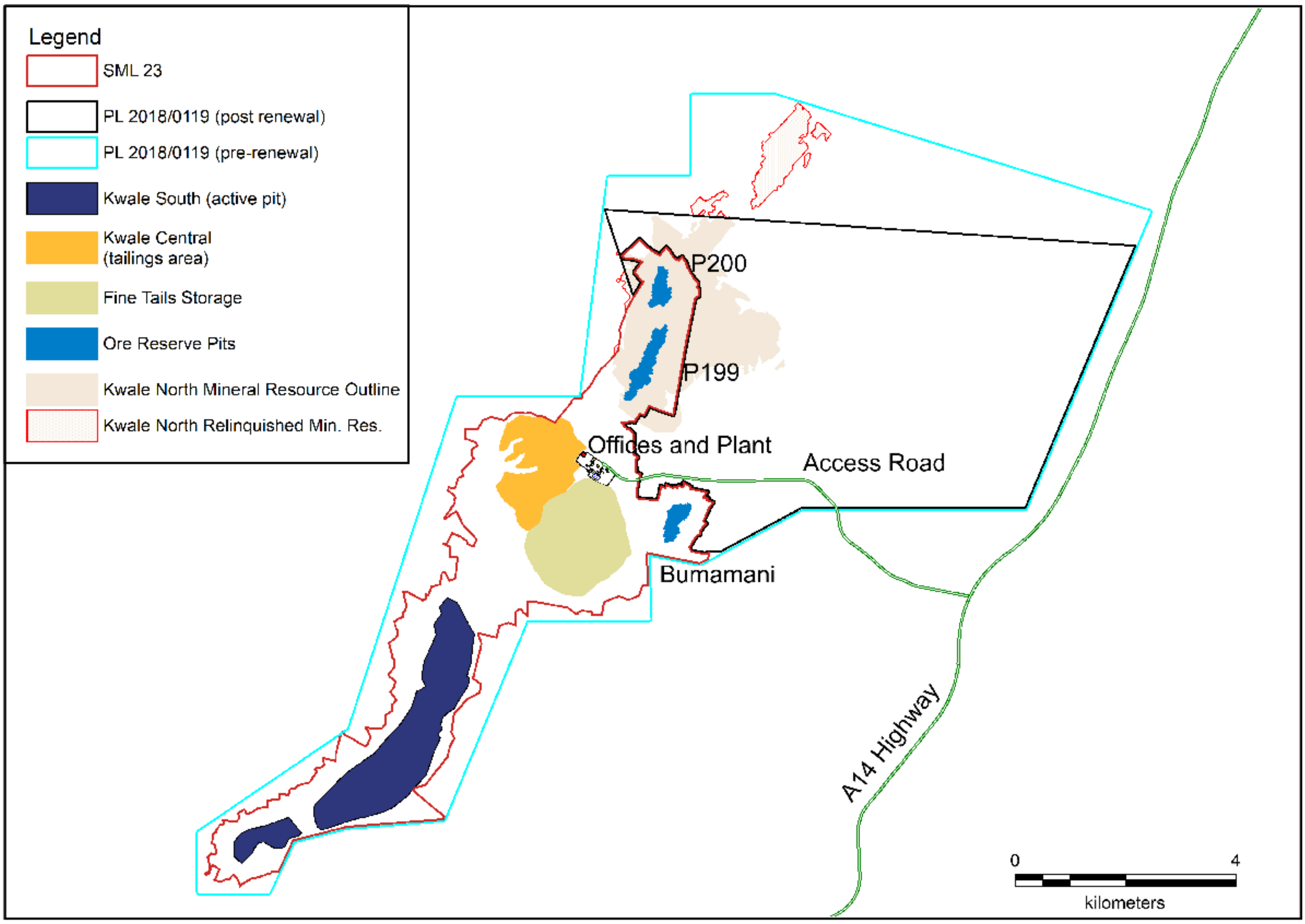

Figure 2: Bulk sample locations

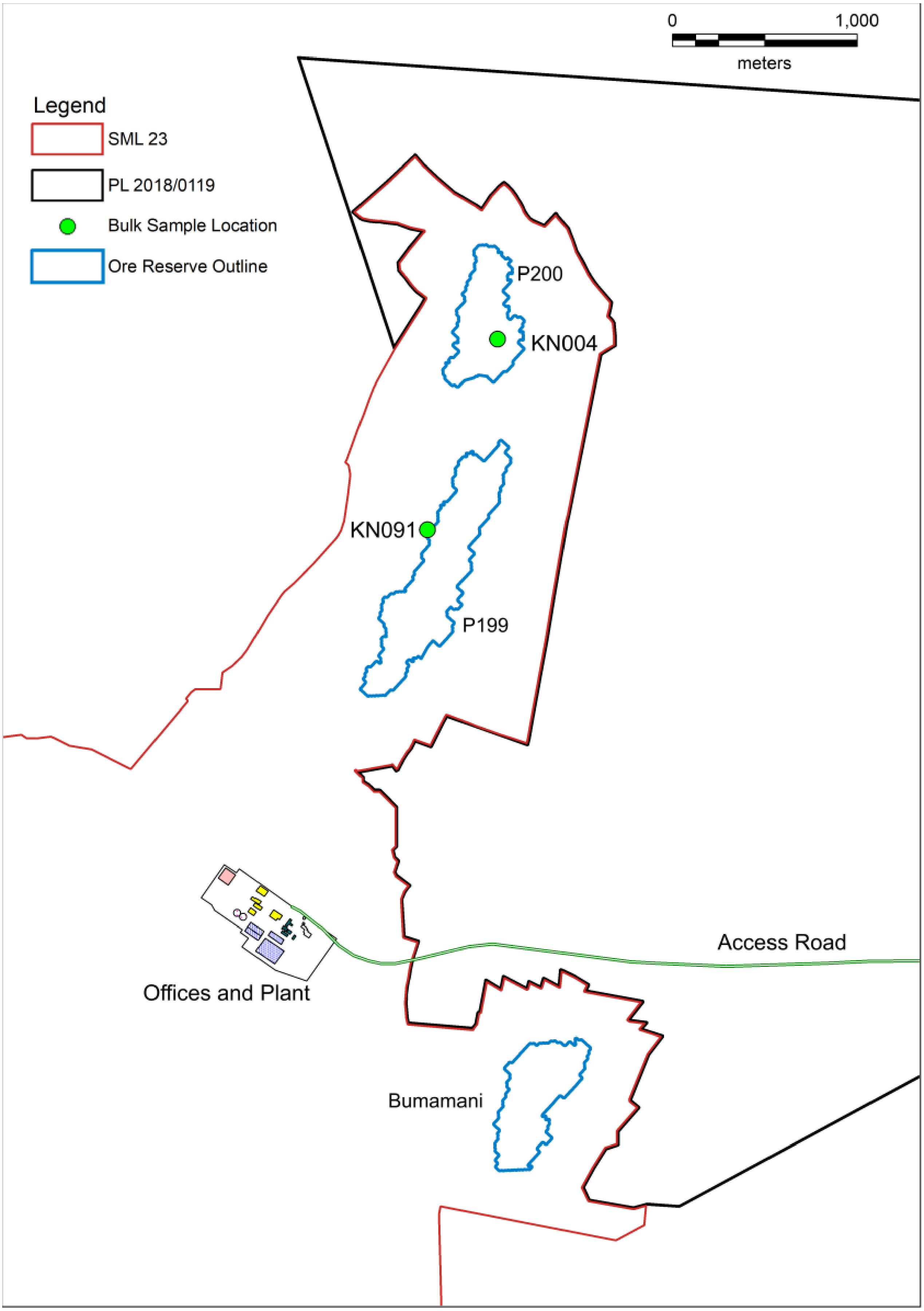

Figure 3: Wider Kwale location showing the South Dune, North Dune and Bumamani deposits, and the Kwale Central sand tails area.

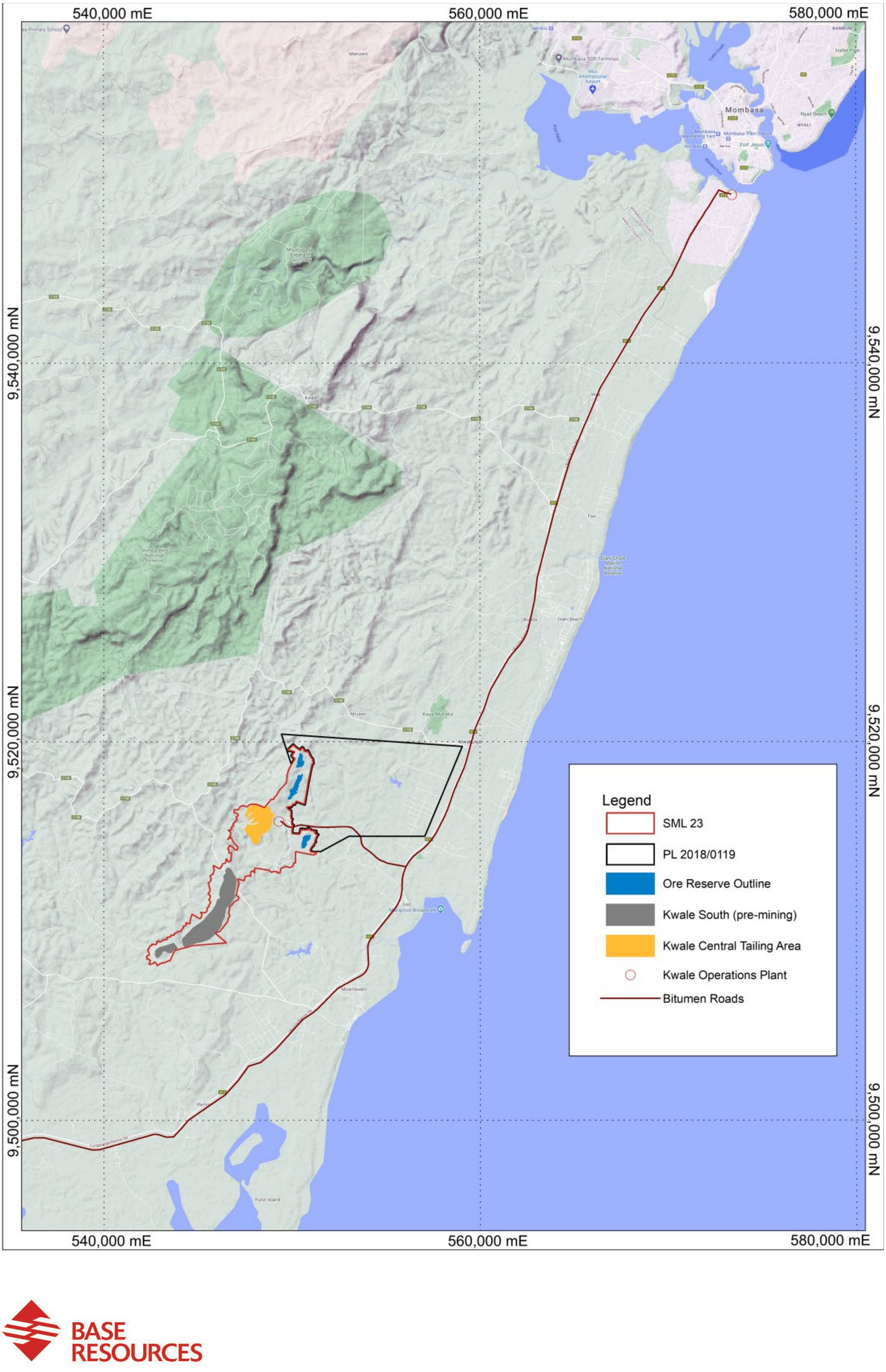

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Figure 4: Schematic cross-section of the Kwale North Dune deposit showing geology relationships between geological domains.

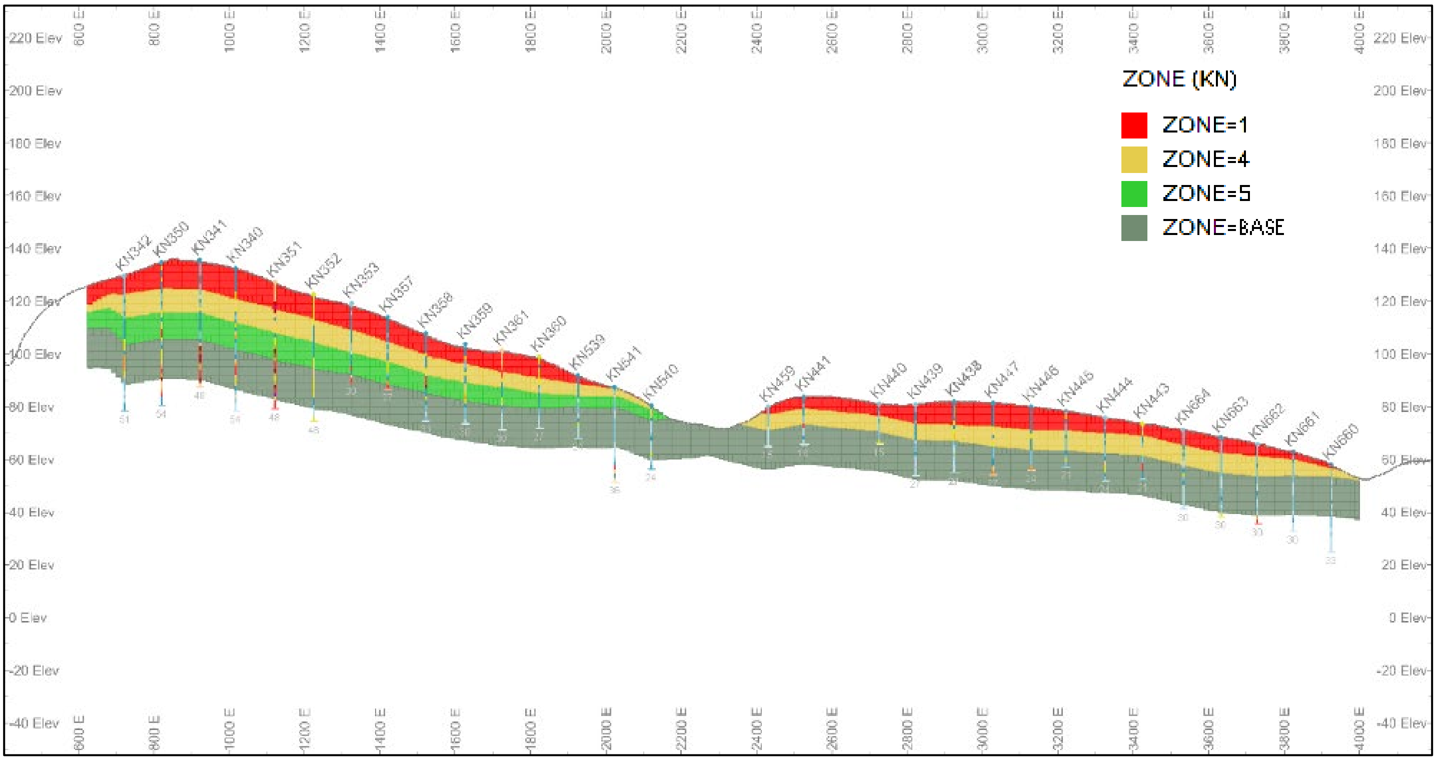


Figure 5: Map showing Kwale North Dune deposit, location of drill holes, tenure boundaries and Mineral Resources category for Ore Zone 1.

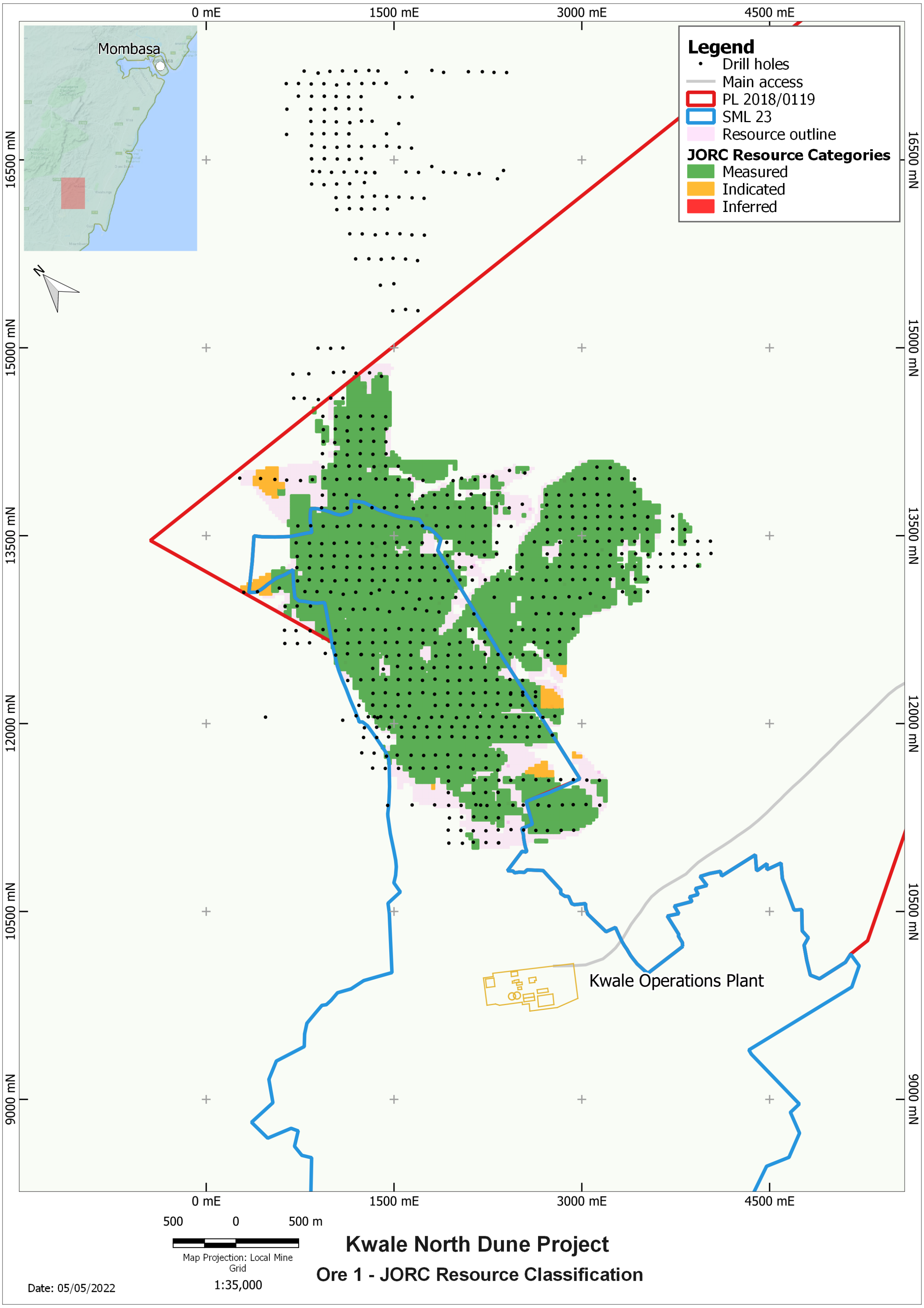


Figure 6: Oblique view of Kwale North Dune with model cells coloured on HM grade.

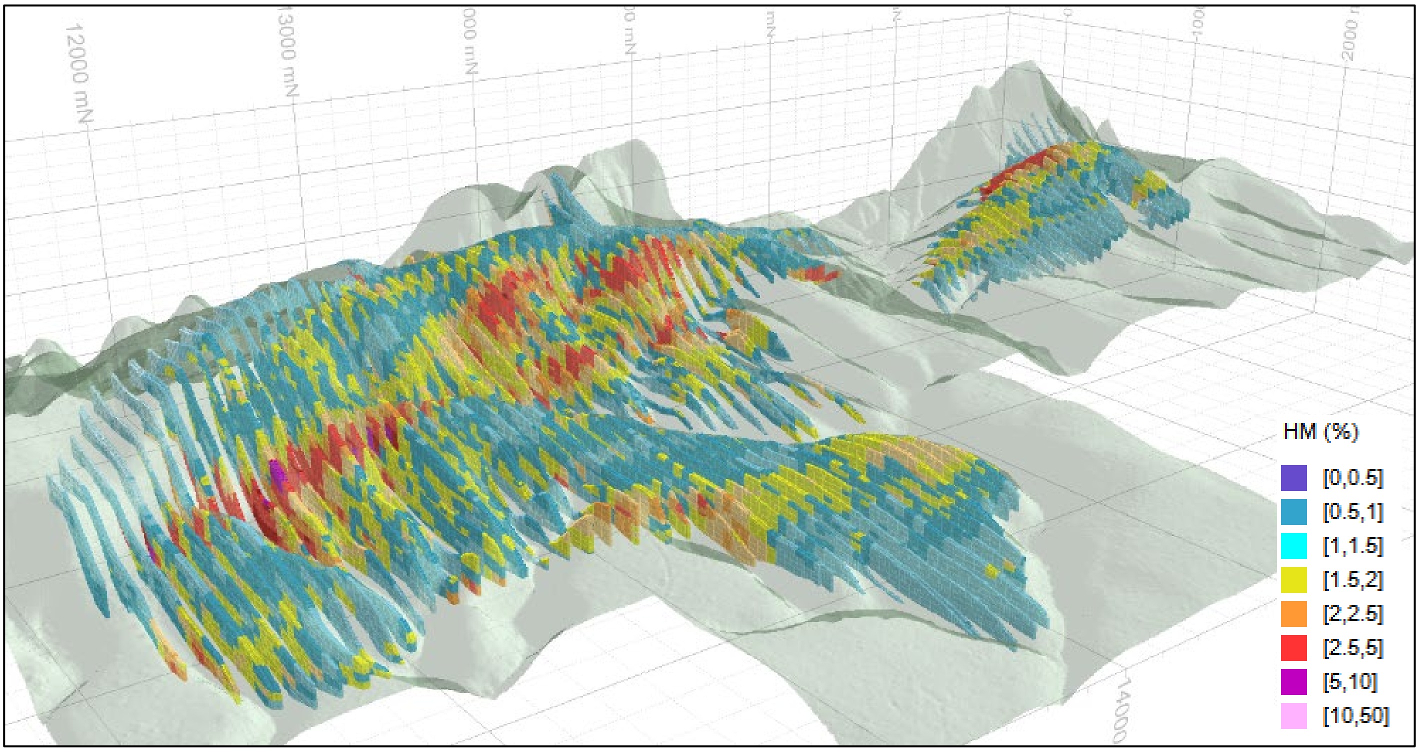


Figure 7: Map showing Kwale North Dune deposit, location of drill holes, tenure boundaries and Mineral Resources category for Ore Zone 4.

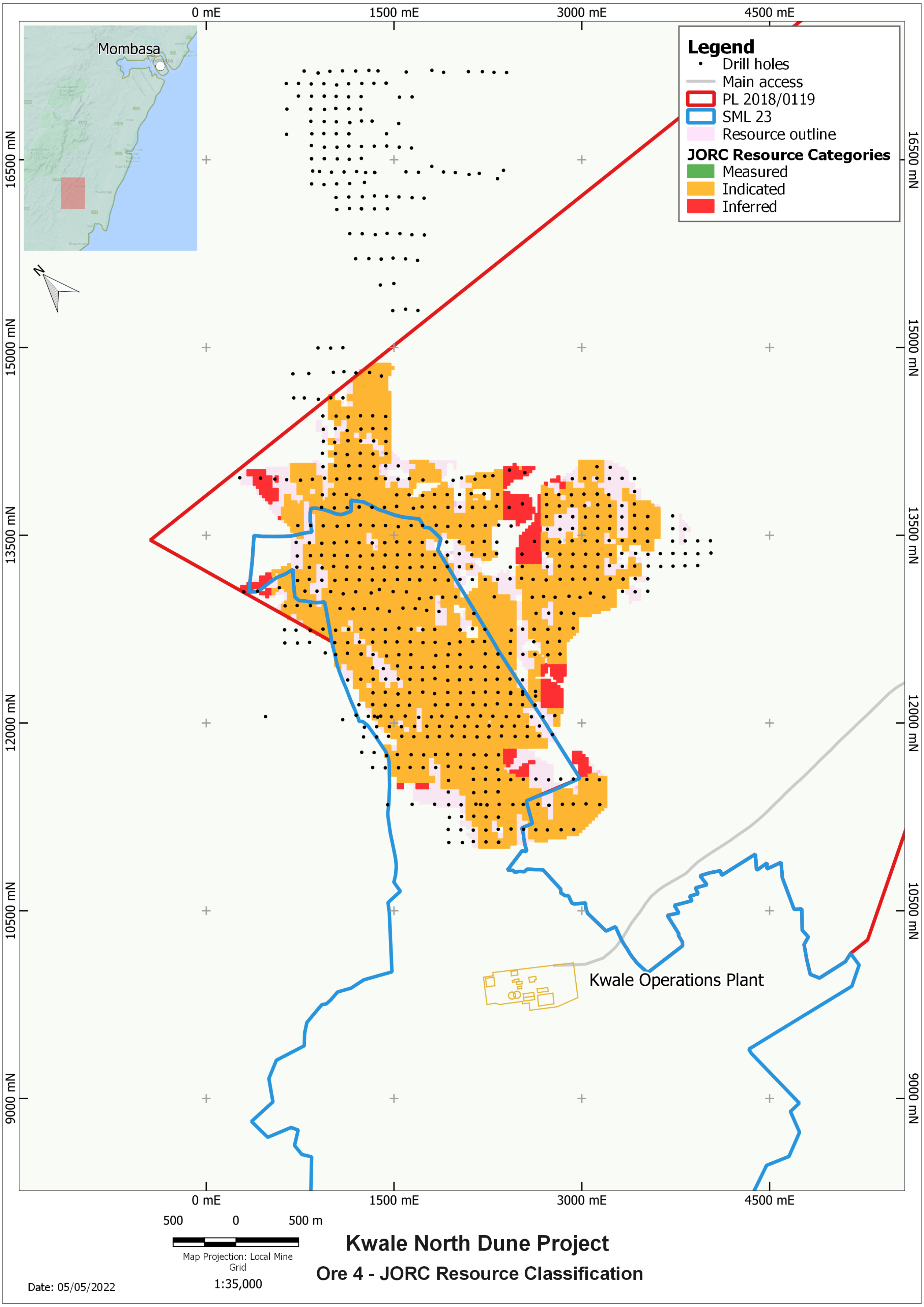


Figure 8: Map showing Kwale North Dune deposit, location of drill holes, tenure boundaries and Mineral Resources category for Ore Zone 5.

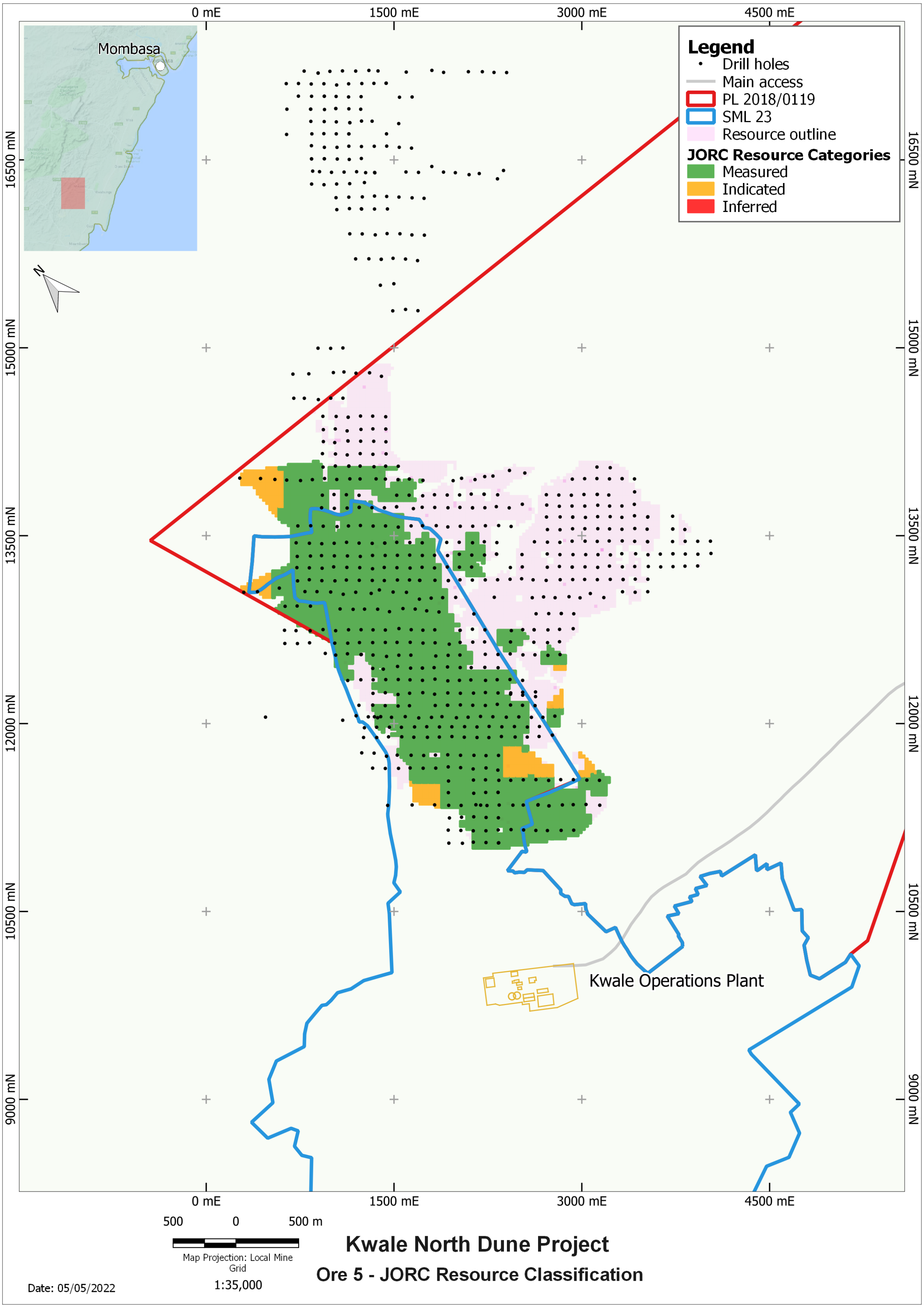


Figure 9: Schematic cross-section of the Bumamani deposit showing geology relationships between geological domains.

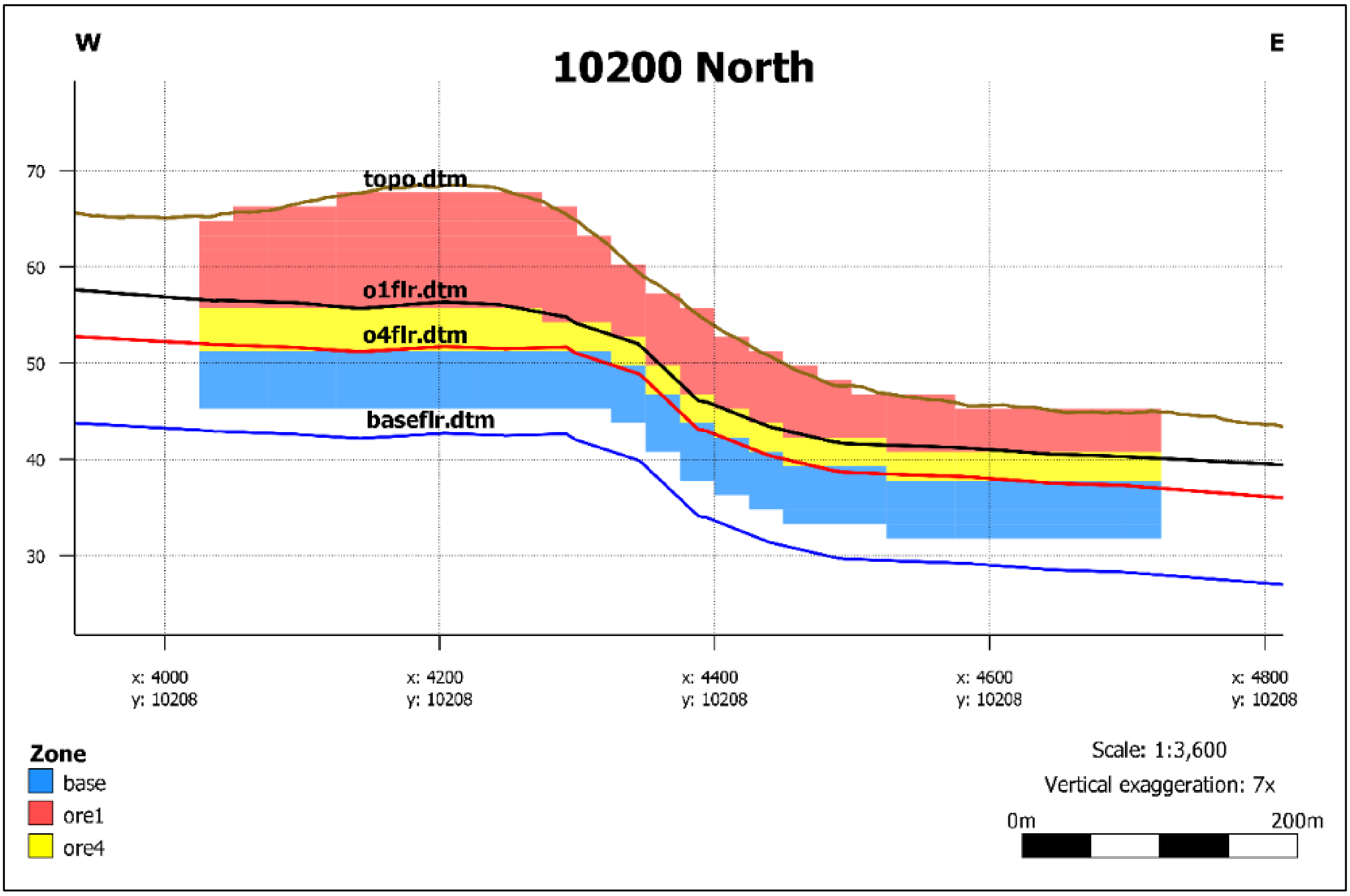


Figure 10: Map showing Bumamani deposit, location of drill holes, tenure boundaries and Mineral Resources category for Ore Zone 1.

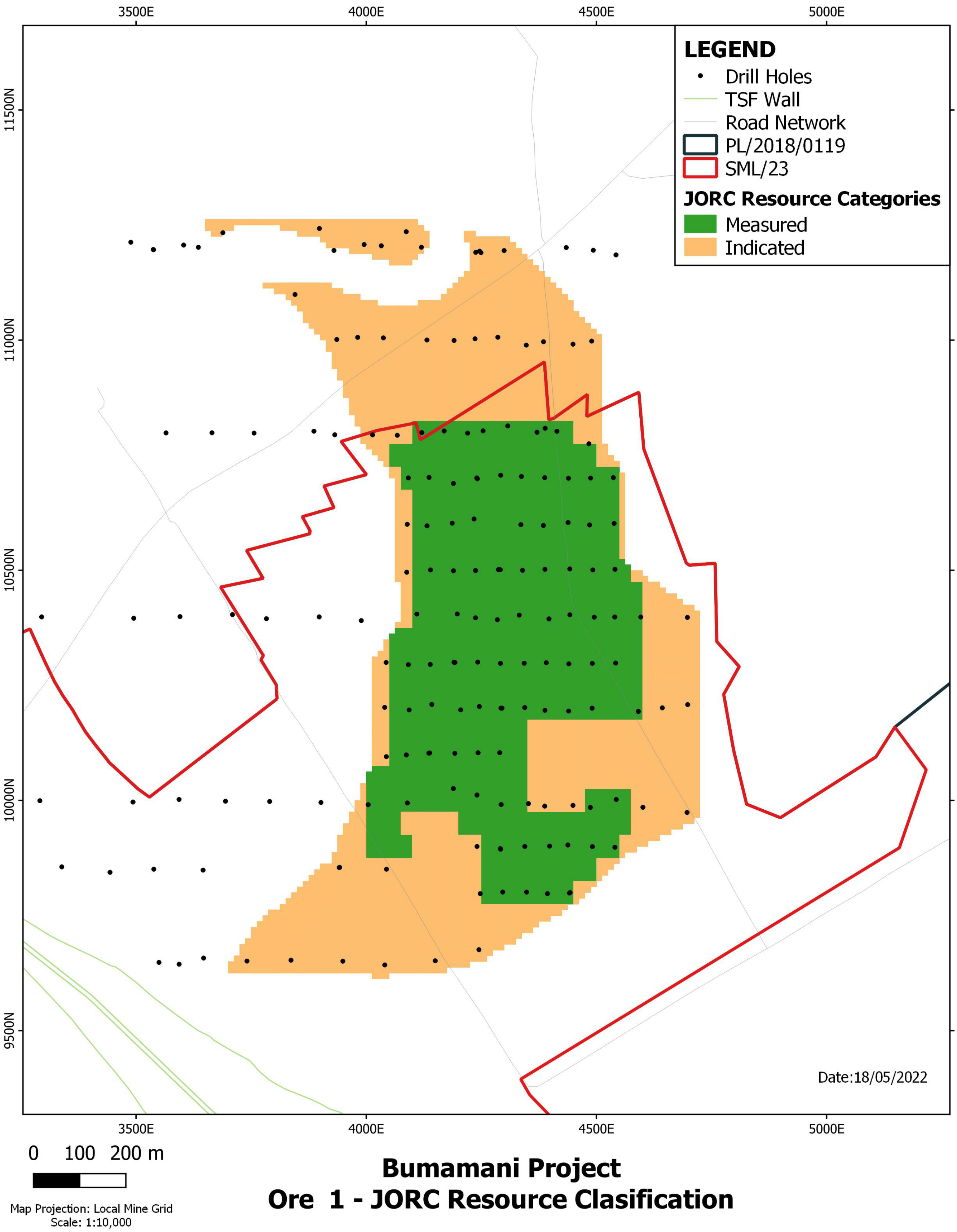


Figure 11: Map showing Bumamani deposit, location of drill holes, tenure boundaries and Mineral Resources category for Ore Zone 4.

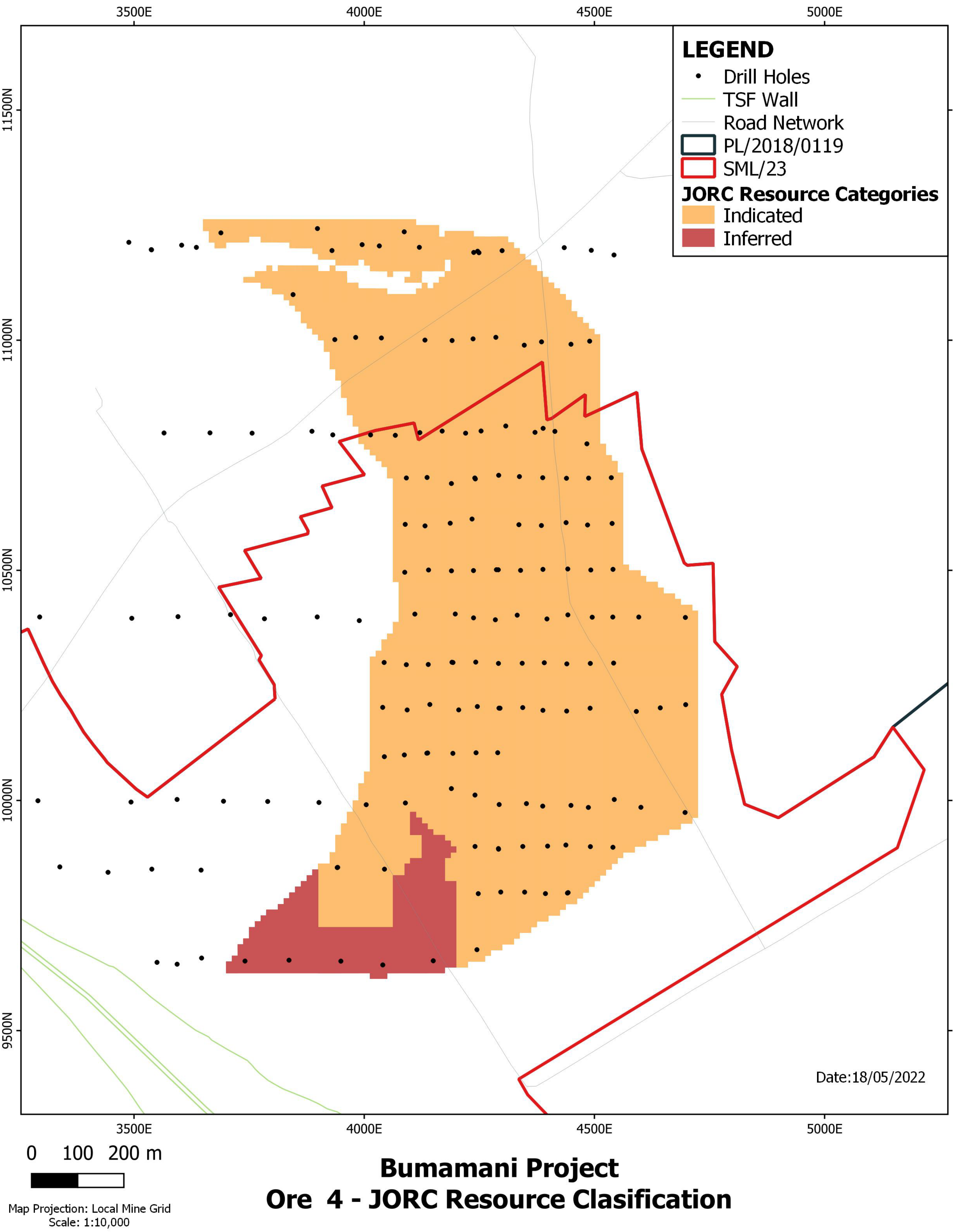
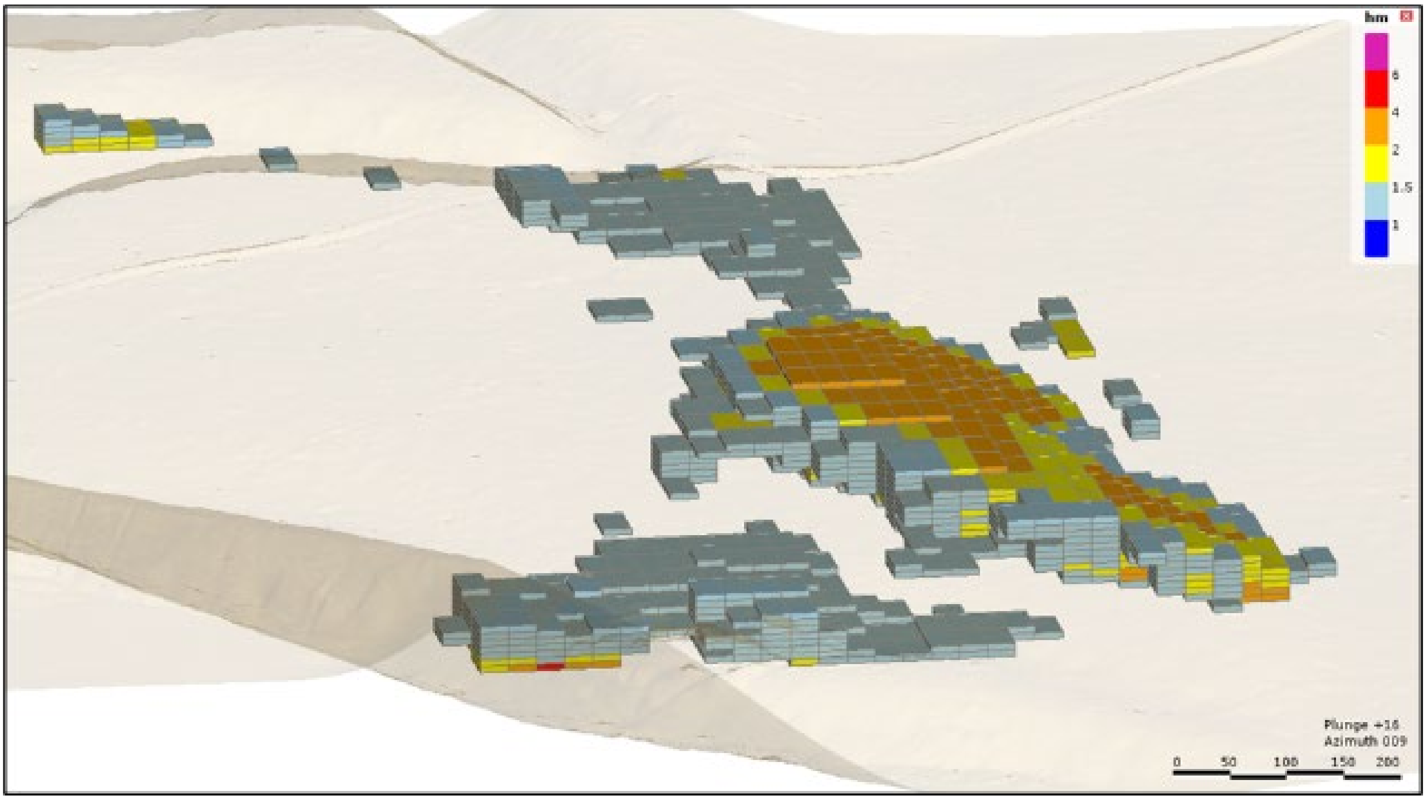


Figure 12: Bumamani deposit oblique view with model cells coloured on HM grade.



Appendix 1 – Sections 1 to 3 of Table 1 of the JORC Code for Kwale North Dune Mineral Resources estimate

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Explanation	Comment
Sampling techniques	*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.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. 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.*	Reverse circulation aircore drilling was used to collect downhole samples for the project. Of the 745 drill holes used, 21 of them (drilled between 2010 – mid 2012) utilised 3m sample intervals. The remaining 724 drill holes used 1.5m sample intervals from mid-2012 to 2019 using an on-board rotary splitter mounted beneath the rig cyclone. Sample gates were set to collect 25% of the splitter cycle, which delivered about 2.5 - 3.5kg of sample per interval on average. Duplicate samples were collected at the splitter for every 20th sample simultaneously with the original sample. A representative grab sample from the sample bags was routinely washed and panned for a visual HM content estimate.
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 tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	122 holes in the 2010, 2012/2013 campaigns were drilled with a RCAC Wallis Mantis 75 drill rig using NQ drill tooling of about 76mm in diameter. 567 holes in the 2018 campaign and the 56 holes in the 2019 campaign were drilled with a more modernised Mantis 80 drill rig, also using NQ drill bits. For the 2010 and 2012/13 campaigns, the mast was oriented vertically (90º) by sight. For the 2018/19 drilling campaign, the rig mast was orientated vertically by spirit level prior to drilling to adhere to best practice for geological boundary delineation. Drilling was recorded in geological logs as either dry or water injected, depending on ground conditions. Water injection was employed to assist with penetration through clays/rock and

Criteria	Explanation	Comment
		maintain sample quality and delivery.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *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.*	Sample condition was logged at the rig as either good, moderate or poor, with good meaning not contaminated and appropriate sample size (recovery), moderate meaning not contaminated, but sample over or under sized, and poor meaning contaminated or grossly over/undersized. Slightly damp ground conditions with approximately 36% silt/clay meant that best sample quality was found to be achieved via slow penetration with water injection to aid in the sample recovery. No relationship is believed to exist between grade and sample recovery. No bias is also believed to occur due to loss of fine material.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	Field logging was recorded for all 16,257 fixed, down-hole intervals and was conducted as drilling and sampling proceeded. Logging was based on a representative grab sample that was panned for heavy mineral estimation and host material observations. Logging codes were designed to capture observations on lithology, colour, grainsize, induration and estimated mineralisation. Any relevant comments e.g., water table, gangue HM components and stratigraphic markers were included to aid in the subsequent geological modelling. A qualitative estimate of how representative a sample was of the drilled interval was recorded by Base Titanium Limited (BTL) field geologists whilst logging. This sample condition field records whether the hole was drilled with injected water or dry and sample size (and the influence of contamination or sample loss) directs the quality assessment of each sample. Heavy mineral sinks from assayed samples were logged routinely under a reflected-light, stereoscopic microscope. This work was carried out to capture information relating to VHM content, mineralogy, HM grainsize and quality.

Criteria	Explanation	Comment
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *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.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Rotary split at the sampling cyclone on the rig. Approximately 25% of the original sample retained. Duplicate samples were collected at every 20th sample. The drill rods and cyclone were routinely cleaned between holes using pressurised water to avoid inter-hole contamination. The sample size is considered appropriate for the grain size of the material because the grade of HM is measured in per cent, and a 2.5-5kg sample contains in excess of 50 million grains of sand. The sample preparation flow sheet departed from standard mineral sand practices in one respect; the samples were not oven dried prior to de-sliming, to prevent clay minerals being baked onto the HM grains (because the HM fractions were to be used in further mineralogical test work). Instead, a separate sample was split and dried to determine moisture content, which was accounted for mathematically. Pre-soaking of the sample Sodium (Tetra) Pyrophosphate (**TSPP**) dispersant solution ensured a more efficient de-sliming process and to avoid potentially under-reporting slimes content.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *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.* *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.*	The assay process employed included a Sample Preparation stage, completed by BTL staff, followed by a heavy liquid separation (using lithium polytungstate: SG = 2.85g/cm^3), completed at Kwale Operations' site laboratory. Improvements to the sample preparation stage were made to ensure industry best practice and to deliver a high degree of confidence in the results. These included the following: • A formalised process flow was generated, posted in all sample preparation areas and used to train and monitor sample preparation staff. • Regular monitoring was completed by BTL senior staff. • Field samples were left in their bags for initial air-drying to avoid sample loss. • TSPP was introduced to decrease attrition time and improve slimes recovery. A range of attrition times (with 5% TSPP) were trialled and plotted against slimes recovery figures to determine optimum attrition time (15 minutes). • Staff were trained to use paint brushes and water spray rather than manipulate sample through slimes screen by hand to remove the potential for screen damage.

Criteria	Explanation	Comment
		• A calibration schedule was introduced for scales used in the sample preparation stage. • The introduction of ruggedized computers allowed the capture of sample preparation data digitally at inception. This greatly reduced the instance of scribe and data entry errors. • Slimes screen number recorded to isolate batches should re-assay be required due to poor adherence to procedure or to identify screen damage. • Various quality control samples were submitted routinely to assure assay quality. A total of 809 duplicate field samples, 809 lab duplicate sample preparation samples, 279 field certified standard samples, and an unspecified number of internal laboratory standards, repeats and blanks have been assayed at Kwale Operations' site laboratory.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	The Kwale North Dune deposit is a moderate to low HM grade, dunal-style accumulation that does not carry excessive mineralisation or suffer from 'nugget' effects, typical of other commodities. No external audit validation was completed for the HM analyses included in the Kwale North Dune Mineral Resources estimate. This is not considered material given the adequate performance of results from extensive QA/QC verification and on account of low HM grade variance and deposit homogeneity. A twin drill hole procedure was introduced for the 2018/19 program at a recommended rate of 5% of the total number of holes. These twins were used to quantify short-range variability in geological character and grade intersections and ideally should be placed throughout the deposit. A total of 41 twin drill holes were completed during the 2018/19 Kwale North Dune drilling program, which represents about 5.7% of the total program. The spatially well-represented twin hole paired data shows very good correlation considered material to the integrity/quality of the resource data.

Criteria	Explanation	Comment
Location of data points	*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.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	Proposed drill holes were sited on the ground using hand-held GPS. After drilling, surveyors recorded collar positions via DGPS RTK unit registered to local base stations. The accuracy of the DGPS unit is stated at 0.02m in the X, Y and Z axes. The survey Geodetic datum utilised was UTM Arc 1960, used in E. Africa. Arc 1960 references the Clark 1880 (RGS) ellipsoid and the Greenwich prime meridian. All survey data used in the Kwale North Dune Mineral Resources estimate dataset has undergone a transformation to the local mine grid from the standard UTM Zone 37S (Arc 1960). The local Grid was rotated 42.5^{o}, which aligns the average strike of the deposit with local North and is useful for both grade interpolation and mining reference during production. All drill collars were projected to the local LIDAR survey, digital terrain model, captured over the resource area in 2018/19 at a 2x2m grid spacing. This was performed prior to interpretation and model construction to eliminate any elevation disparities for the block model construction.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *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.* *Whether sample compositing has been applied.*	The drill data spacing for the 2018/19 Kwale North Dune Resources estimate drilling was nominally 100m X, 100m Y and 1.5m Z. Variations from this spacing resulted from terrain/traverse difficulties and ground access. A sample spacing of 3m, with occasional 1.5m intervals at geological contacts, was employed in the 2012/2013 drilling campaign by BTL. A 3m, down-hole block size was applied to model construction and for consistency in the interpolation processes. This spacing and distribution is considered sufficient to establish the degree of geological and mineralisation continuity appropriate for the resource estimation procedures and classifications applied. No sample compositing has been applied for HM, slimes and oversize in the interpolation processes.
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.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have*	With the geological setting being a layered dunal/fluviatile sequence, the orientation of the deposit mineralisation in general is sub-horizontal. All drill holes were orientated vertically to penetrate the sub-horizontal mineralisation orthogonally. Hole centres were spaced nominally at 100m. This cross-profiles the dune so that variation can be determined. Down hole intervals were nominated as 1.5m. This provides adequate sampling resolution to capture the distribution and variability of geology units and mineralisation

Criteria	Explanation	Comment
	introduced a sampling bias, this should be assessed and reported if material.	encountered vertically down hole. The orientation of the drilling is considered appropriate for testing the horizontal and vertical extent of mineralisation without bias.
Sample security	*The measures taken to ensure sample security.*	Sample residues from the prep stage were transferred to pallets and stored in a locked shed beside the warehouse at Kwale Operations. Residues from the Kwale Operations site laboratory were placed in labelled bags and stored in numbered boxes. Boxes were placed into a locked container beside the laboratory. Sample tables are housed on a secure, network-hosted SQL database. Administration privileges are limited to two BTL staff: Exploration Superintendent and the Business Applications Administrator. Data is backed up every 12 hours and stored in perpetuity on a secure, site backup server.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	In-house reviews were undertaken by the Base Resources' Resources Manager, Mr. Scott Carruthers who is a Competent Person under the JORC Code.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Explanation	Comment
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 time of reporting along with any known impediments to obtaining a licence to operate in the area.*	The Kwale North Dune extends across both PL 2018/0119 and SML 23, which are located in Kwale County, Kenya and held by BTL. As noted above, BTL is a wholly owned subsidiary of Base Resources Limited. The initial 88.7 km^2 Prospecting Licence was granted on 26 May 2018. It was renewed on 1 February 2022 from 25 May 2021 for a three-year term with a 50% reduction in area. The PL is in good standing with the Kenya Ministry of Petroleum & Mining at the time of reporting, with all statutory reporting and payments up to date. Local landowners are generally supportive of exploration activities with over 90% of planned holes drilled. SML 23 lies adjacent to PL 2018/0119 and covers the (now fully depleted) Kwale Central Dune deposit, the Kwale South Dune deposit (where mining is presently being carried out) and, following its recent extension, the Bumamani deposit and a portion of the estimated Kwale North Dune Mineral Resources, including the P199 and P200 pits.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	In 1996, Tiomin carried out reconnaissance surface and hand-auger sampling. Following the encouraging results obtained, mud-rotary drilling was undertaken in 1997 and 37 holes for a total of 1,824m was achieved for the North dune, at 3m sampling intervals. Prior to acquisition of the Kwale Project by Base Resources, Tiomin prepared and published a North Dune Mineral Resources estimate of 116 Mt @ 2.1% HM using a 0.5% HM cut-off grade. The current resource model omits the Tiomin data. This followed a twin drilling analysis of the Tiomin Mud Rotary holes with Base Resources' RCAC to determine relevance of historical data to the Kwale South Dune Mineral Resources estimate in 2016. A total of 18 twin-hole pairs from a geographically dispersed area within the South Dune were included for analysis. A very poor correlation in HM values between the two methods (R^2 = 0.1522) resulted from the study. It is assumed that the poor correlation would extend to the North Dune. This is expected, given the open-hole method of drilling employed by Tiomin and supports the decision to exclude Tiomin data from the current interpolation.

<table>
<tr><th>Criteria</th><th>Explanation</th><th>Comment</th></tr>
<tr><td>Geology</td><td>Deposit type, geological setting and style of mineralisation.</td><td>The North Dune is part of the extensive Kwale Dune systems comprising of reddish, windblown Magarini sand formations that overlie a sequence of mineralised clay-rich fluviatile units, which in turn overlie a Mesozoic sandstone base, known as the Mazeras formation.

These three units are separated by lateritic paleo-surfaces which signify a time-gap between the geological formations.

The Mazeras Sandstone, derived from the disintegration of the Mozambique Belt metamorphic rocks, has likely provided the supply of heavy minerals to the Magarini sand dunes and the fluviatile formations.

Exploration of the Kenyan coastline is yet to be successful in terms of mineralised paleo-strandlines related to fossil marine terraces, as these are likely buried beneath recent barren fluvial overburden or were just not developed owing to reduced energy levels from a fringing coral reef that has acted as a barrier to effective winnowing and reworking of HM deposits.</td></tr>
<tr><td>Drill hole Information</td><td>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.</td><td>Drilling by year (max, min and average depths) used for the resource model build are as follows:
2010
11 drill holes (depth: max 72m, min 24m, avg 56m).
Total 582m drilled.
2012
31 drill holes (depth: max 75m, min 18m, avg 60m).
Total 1,681.5m drilled.
2013
80 drill holes (depth: max 75m, min 27m, avg 55m).
Total 3,792m drilled.
2018
567 drill holes (depth: max 117m, min 6m, avg 45 m).
Total 20,477m drilled.
2019
56 drill holes (depth: max 30m, min 9m, avg 30m).
Total 897m drilled.
See drill hole location plan, Figure 5.</td></tr>
</table>

Criteria	Explanation	Comment
		All drill holes were drilled vertically. Exploration results are not being reported at this time.
Data aggregation methods	*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.* *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.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Exploration results are not being reported at this time. No equivalent values were used. No aggregation of short length samples used as samples were consistently 3m and 1.5m intervals.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *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 deposit sequences are sub-horizontal, and the vertically inclined holes are a fair representation of true thickness.
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.*	See Figures 3-8.
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.*	Exploration results are not being reported at this time.

Criteria	Explanation	Comment
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.*	The proprietary Minmod mineralogy technique, developed and employed by Base Resources, comprises an XRF analysis of the magnetic and non-magnetic fractions of each composite or sample, the results from which are then back-calculated to determine in-ground mineralogy. Minmod represents an improvement on the previous method (Geomod) that was not as effective at determining accessory minerals in the Kwale assemblage. Minmod has been validated by external quantitative analysis (QEMSCAN and EDX) and is considered sufficiently certified to support quoted resource confidence in this report.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Additional 100 x 100m aircore drilling to in-fill gaps and extend mineralisation in the open NW part of the deposit. Recommended 50 x 50m aircore drilling across strike primarily to improve across strike variography for Ore 4. Generation of further Ore Zone 5 QEMSCAN composites for a more confident mineralogical modelling. Detailed tests to establish accurate bulk densities.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	Explanation	Comment
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	Field data was captured in LogChief logging application and automatically validated through reference to pre-set library table configurations. Typing or logging code errors, duplication of key identifiers (e.g., HOLE_ID, SAMP_ID) and conflicts in related tables (e.g., down-hole depth) are quarantined by the software and require resolution immediately before logging can proceed. The SQL Database also has identical automated validation features. Data import is unsuccessful until these data issues are resolved. Field logging and survey data from the SQL database were imported into Datamine Discover (MapInfo) for sectional interpretation. Validation steps included a visual interrogation of collar versus geology depths, a review of hole locations against the drilling plan and a check for missing or duplicated logged fields and outliers. Any spurious or questionable entries were resolved by the supervising Geologist. At the completion of each hole, an entry was made to the hand-written drilling diary. The diary recorded the hole name, date, depth, number of samples, time of start and finish, a description of the location of the hole in relation to the last hole and other things. Such a diary provides valuable evidence if there is an error in hole naming or surveying. A geologist was employed to manage digital data capture at the sample preparation laboratory to reduce the potential for data entry error by unskilled labourers. A number of validation checks were made of sample preparation data to ensure accurate data entry and application of correct procedure by BTL staff. This included: • comparison of pre- versus post-oven weights; • comparison of split weight versus de-slimed weight; • comparison of split weight versus field sample weight; and • all sample preparation data were sorted by each individual field and outliers investigated Assay results were delivered via email in 45 sample batches from Kwale Operations' site laboratory. These were in the form of CSV text files and imported by batch number directly into the SQL

Criteria	Explanation	Comment
		database tables where pre-set algorithms converted weights to percentages and removed the moisture content. The calculated assay results were then checked manually for missing records and out of range or unrealistic values.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	Base Resources' Resources Manager, Mr. Scott Carruthers, made one site visit to review the SQL database and the geological interpretations. The Competent Person is satisfied with the integrity of the database as well as the delineation of the geological boundaries.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	The geological interpretation was undertaken by the BTL Exploration Superintendent using field logs and observations, assays, HM sachet logs, XRF oxide chemistry and mineralogy data. The oversize grades were particularly useful in determining the lateritic paleo-surfaces between the geological zones. The data spacing for the project is considered sufficient for grade and mineralogical continuity. Four mineralised geological zones and a basement zone were identified and are used as constraints in the Mineral Resources estimation. The uppermost zone at the Kwale North Dune deposit, referred to as Ore Zone 1, is a dark brown, predominantly fine grained, well sorted silty sand with very little induration. It is also characterised by a clean, high value heavy mineral assemblage. Ore Zone 4 lies below Ore Zone 1 with a clear lateritic boundary observed in the field with slightly difficult bit penetration, and in HM sink logs, exhibiting elevated iron oxides. Ore Zone 4 is lower in valuable heavy mineral content, often dominated by iron oxides and Al_2SiO_4 polymorphs (kyanite, andalusite and sillimanite). It is considered a fluvial deposit based on the difficulty of wash and the poor grain sorting. Ore Zone 5 lies below Ore Zone 4 and is separated from that zone by a lateritic paleo-surface. It is unique mineralogically due to an increased amount of almandine garnet that reports to the mag fraction, significantly increasing the magnesium, manganese, aluminium and silicon in the oxide chemistry, and this is also reflected in QEMSCAN mineralogy. For Ore Zones 1, 4 and 5, a strong correlation between the field logs, HM sink logs and XRF oxide chemistry and QEMSCAN mineralogy gives confidence to these interpretations. The grade and mineralogy continuity is abruptly truncated at the western edge by an interpreted

Criteria	Explanation	Comment
		normal fault that pushed basement material to the surface with resultant low grades and trash HM.
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The Kwale North Dune Mineral Resources estimate is approximately 4,100m along strike and about 1,200m across strike on average. The average thickness of Ore 1, Ore 4 and Ore 5 is approximately 10m, 7m and 5m, respectively.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	The Kwale North Dune Mineral Resources estimation was undertaken using Datamine Studio RM software. Inverse Distance Weighting to the power of three was used to interpolate assay grades (HM, Slimes, Oversize) from the drill hole file. Nearest Neighbour was used to interpolate the composite ID and mineralogy data. The previous 2021 Kwale North Dune Mineral Resources estimate, which was 194 Mt @ 1.5% HM using a 1.0% cut-off grade, has been updated to remove portions of the estimate stranded as a result of the reduction in size of PL 2018/0119. No mining has been undertaken. No assumptions have been made as to the recovery of by-products. The parent cell size used in the grade interpolation (50m x 50m) was half the average drill hole spacing on the X and Y axes, which was 100m x 100m. The vertical thickness of the cell was the nominal average drill sample interval i.e., 1.5m. No assumptions were made behind modelling of selected mining units. No assumptions were made about correlation behind variables. Validation was undertaken by swathe plots, population distribution analysis and visual inspection. The geological zones were used to control the resource estimate by constraining grade interpolations and reporting.

Criteria	Explanation	Comment
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The Mineral Resources estimate is on a dry tonnes basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	The economic cut-off of Kwale Operations is between 1% and 1.5% HM, and historically Kwale Operations Mineral Resources estimate reporting focuses on a 1% HM cut-off grade.
Mining factors or assumptions	*Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions* made.	It is assumed that the hydraulic mining method used at the neighbouring Kwale Operations would be used. The high slime content and generally low levels of induration in the North Dune deposit provide support for this mining method.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	The existing concentrator, modified to accommodate the increased slimes, and mineral separation plant at Kwale Operations are assumed capable of processing the material with recoveries expected to be aligned with present production.
Environmental factors or assumptions	*Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the*	Tailing disposal is likely to utilise co-disposal of fine and coarse tails together, initially into the Kwale Central Dune pit void. Once space is available, tailings would be co-disposed into the Kwale North Dune pit void.

Criteria	Explanation	Comment
	status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	A fixed dry bulk density of 1.7 (t/m^3) was assumed for the Mineral Resources estimation, based on operational experience of mining the Kwale Central Dune and South Dune deposits.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	The Mineral Resources classification for the Kwale North Dune deposit was based on drill hole spacing, sample interval and the distribution and influence of composite mineralogical samples. The classification of the Measured, Indicated, and Inferred Mineral Resources was supported by the uniform grid spacing of drilling, uncomplicated and consistent geology, relatively good continuity of mineralisation particularly along strike (and supported by the domain controlled variography), confidence in the down hole drilling data and supporting criteria as noted above. As Competent Person, IHC Robbins Geological Services Manager, Mr. Greg Jones, considers that the result appropriately reflects a reasonable view of the deposit categorisation.
Audits or reviews.	*The results of any audits or reviews of Mineral Resource estimates.*	Peer review was undertaken by Mr. Scott Carruthers, Base Resources' Resources Manager, with focus on the process and output of the geology interpretation, database integrity, whether wireframes reflect the geological interpretation, and model vs. drill hole grades. Mr. Carruthers was satisfied with these facets.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or*	Variography was undertaken to determine the drill hole support of the selected JORC classification. Validation of the model vs drill hole grades by direct observation and comparison of the results on screen.

Criteria	Explanation	Comment
	geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	The resource statement is a global estimate for the entire known extent of the Kwale North Dune deposit within the tenement area.

Appendix 2 – Sections 1 to 3 of Table 1 of the JORC Code for the Bumamani Mineral Resources estimate

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	*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.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report.* *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.*	Reverse circulation aircore drilling was used to collect downhole samples for the project. Sample sub-splits were collected at 1.5m down-hole intervals for holes drilled, using an on-board rotary splitter mounted beneath the rig cyclone. Sample gates were set to collect approximately 25% of the splitter cycle, which delivered about 2.7kg of sample per interval on average. Rig duplicate samples were collected at the splitter for every 20th sample simultaneously with the original sample. A representative grab sample from the sample bags was routinely washed and panned for lithological logging and HM grade estimate.
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 tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	40 holes in the 2017 campaign were drilled with a RCAC Wallis Mantis 80 drill rig using NQ drill tooling of about 76mm in diameter and a drilling capability of 100m. 143 holes in the 2018 campaign were similarly drilled with a Mantis 80 drill rig, also using NQ drill bits. For both drilling campaigns, the rig mast was orientated vertically by spirit level prior to drilling to adhere to best practice for geological boundary delineation. Drilling was recorded in geological logs as either dry or water injected, depending on ground conditions. Water injection was employed to assist with penetration through clays/rock and maintain sample quality and delivery.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *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.*	Sample condition was logged at the rig as either good, moderate or poor, with good meaning not contaminated and appropriate sample size (recovery), moderate meaning not contaminated, but sample over or under sized and poor meaning contaminated or grossly over/undersized. Slightly damp ground conditions with approximately 20% silt/clay meant that best sample quality was found to be achieved via slow penetration with water injection to aid in the sample recovery. No relationship is believed to exist between grade and sample recovery. No bias is also believed to occur due to loss of fine material.
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.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	Field logging was recorded for all 1,968 fixed, down-hole intervals and was conducted as drilling and sampling proceeded. Logging was based on a representative grab sample that was panned for heavy mineral estimation and host material observations. Logging codes were designed to capture observations on lithology, colour, grainsize, induration and estimated mineralisation. Any relevant comments e.g., water table, gangue HM components and stratigraphic markers were included to aid in the subsequent geological modelling.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *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.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Rotary split at the sampling cyclone on the rig. Approximately 25% of the original sample retained. Duplicate samples were collected at every 20th sample. The drill rods and cyclone were routinely cleaned between holes using pressurised water to avoid inter-hole contamination. The sample size is considered appropriate for the grain size of the material because the grade of HM is measured in per cent, and a 2.5-5kg sample contains in excess of 50 million grains of sand. The sample preparation process departed from standard mineral sand practices in one respect; the samples were not oven dried prior to de-sliming, to prevent clay minerals from baking onto the HM grains (because the HM fractions were to be used in further mineralogical test work). Instead, a separate sample was split and dried to determine moisture content, which was accounted for mathematically. Pre-soaking of the sample TSPP dispersant solution ensured a more efficient de-sliming process and to avoid potentially under-reporting slimes content.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *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.* *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.*	The assay process employed by Base Resources includes a Sample Preparation stage, completed by BTL staff, followed by a heavy liquid separation (using lithium polytungstate: SG = 2.85g/cm^3), completed at Kwale Operations' site laboratory. Recent improvements to the sample preparation stage were made to ensure industry best practice and to deliver a high degree of confidence in the results. These included the following: • A formalised process flow was generated, posted in all sample preparation areas and used to train and monitor sample preparation staff. • Regular monitoring was completed by BTL senior geology staff. • Field samples were left in their bags for initial air-drying to avoid sample loss. • TSPP was introduced to decrease attrition time and improve slimes recovery. A range of attrition times (with 5% TSPP) were trialed and plotted against slimes recovery figures to determine optimum attrition time (15 minutes). • Staff were trained to use paint brushes and water spray rather than manipulate sample through slimes screen by hand to remove the potential for screen damage. • A calibration schedule was introduced for scales used in the sample preparation stage. • Samples prepared and submitted systematically in 40 -sample batches, with each batch routinely containing QC samples – one standard, two field duplicates and two lab duplicates. • Slimes screen number recorded to isolate batches should re-assay be required due to poor adherence to procedure or to identify screen damage. • Various quality control samples were submitted routinely to assure assay quality. A total of 95 field duplicates, 95 sample prep duplicates, 47 field standard samples, 61 lab repeats, and an unspecified number of internal standards, repeats and blanks have been assayed at Kwale Operations' site laboratory.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	The Bumamani deposit is a moderate to low HM grade, dunal-style accumulation that does not carry excessive mineralisation or suffer from 'nugget' effects, typical of other commodities. An external audit validation was completed for the HM analyses included in the Bumamani Mineral Resources estimate by IHC Robbins in 2020. A total of ten twin drill holes were completed between the 2017 and 2018 drilling program, representing about 5.5% of the total drillholes. These twins were used to quantify short-range variability in geological character and grade intersections and were placed throughout the deposit. The spatially well-represented twin hole paired data shows very good correlation considered material to the integrity/quality of the resource data.
Location of data points	*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.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	Proposed drill holes were sited on the ground using hand-held GPS. After drilling, surveyors recorded collar positions via DGPS RTK unit registered to local base stations. The accuracy of the DGPS unit is stated at 0.02m in the X, Y and Z axes. The survey geodetic datum utilised was UTM Arc 1960, used in E. Africa. Arc 1960 references the Clark 1880 (RGS) ellipsoid and the Greenwich prime meridian. All survey data used in the Bumamani Mineral Resources estimate dataset has undergone a transformation to the local mine grid from the geodetic datum. The local Grid was rotated at 42.5° which aligns the average strike of the deposit with local North and is useful for both grade interpolation and mining reference during production. All drill collars were projected to the local LIDAR digital terrain model captured over the resource area in 2018 at a 2x2m grid spacing. This was performed prior to interpretation and model construction to eliminate any elevation disparities for the block model construction.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *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.* *Whether sample compositing has been applied.*	The drill data spacing from the 2017 and 2018 Bumamani Resources drilling programmes was nominally 50m X, 100m Y and 1.5m Z. Variations from this spacing resulted from terrain difficulties or ground access issues. This spacing and distribution is considered sufficient to establish the degree of geological and mineralisation continuity appropriate for the resource estimation procedures and classifications applied. A 1.5m downhole compositing has been applied for HM, slimes and oversize in the interpolation processes. This is necessary in Geovia Surpac software which cannot estimate grades directly from the drillhole database.

Criteria	JORC Code explanation	Commentary
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.* *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.*	With the geological setting being a layered dunal/fluviatile sequence, the orientation of the deposit mineralisation in general is sub-horizontal. All drill holes were orientated vertically to penetrate the sub-horizontal mineralisation orthogonally. Hole centres were spaced nominally at 50m. This cross-profiles the dune so that variation can be determined. Down hole intervals were nominated as 1.5m. This provides adequate sampling resolution to capture the distribution and variability of geology units and mineralisation encountered vertically down hole. The orientation of the drilling is considered appropriate for testing the horizontal and vertical extent of mineralisation without bias.
Sample security	*The measures taken to ensure sample security.*	Sample residues from the prep stage were transferred to pallets and stored in a locked storage facility beside the warehouse at Kwale Operations. Residues from the Kwale Operations site laboratory were placed in labelled jars and stored in numbered boxes. Boxes were placed into a locked container beside the laboratory. Sample tables are housed on a secure, network-hosted SQL database. Administration privileges are limited to two BTL staff: Exploration Superintendent and the Business Applications Administrator. Data is backed up every 12 hours and stored in perpetuity on a secure, site backup server. Data is also backed up on Maxwell GeoServices servers in Perth.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	Base Resources' Resources Manager, Mr. Scott Carruthers reviewed the Bumamani geological interpretations, wireframes and assay and mineralogy data interpolations. IHC Robbins Geological Services Manager, Mr. Greg Jones, validated the resource data and reviewed the completed block model.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
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 time of reporting along with any known impediments to obtaining a licence to operate in the area.*	The Bumamani deposit is situated within SML 23, which is located in Kwale County, Kenya and held by BTL. As noted above, BTL is a wholly owned subsidiary of Base Resources Limited. The initial 88.7 km^2 Prospecting Licence was granted on 26 May 2018. It was renewed on 1 February 2022 from 25 May 2021 for a three-year term with a 50% reduction in area. The PL is in good standing with the Kenya Ministry of Petroleum & Mining at the time of reporting, with all statutory reporting and payments up to date. Local landowners are generally supportive of exploration activities with over 90% of planned holes drilled. SML 23 lies adjacent to PL 2018/0119 and covers the (now fully depleted) Kwale Central Dune deposit, the Kwale South Dune deposit (where mining is presently being carried out) and, following its recent extension, the Bumamani deposit and a portion of the estimated Kwale North Dune Mineral Resources, including the P199 and P200 pits.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	No known prior exploration has been undertaken by other parties.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Bumamani deposit is part of the extensive coastal Plio-Pleistocene Magarini Formation, which comprises aeolian dunal sands and clay-rich fluviatile units that overlie down-faulted Jurassic and Tertiary formations. The presence of a thin, discontinuous laterite layer seen at the base of the dune sands is considered to indicate a change of climate in contradistinction to the underlying fluviatile sediments. These units are locally enriched with heavy minerals, primarily ilmenite, rutile and zircon as well as significant silicate gangue in the lower fluviatile units. The hinterland 'Mozambique Belt' metamorphic formations are considered the likely HM feed source for the Kwale deposits. Exploration along the Kenyan coastline is yet to be successful in terms of mineralised paleo-strandlines related to fossil marine terraces, perhaps due to low wave energy levels caused by the fringing reef acting as a breakwater, thus preventing effective HM winnowing and trapping.

Criteria	JORC Code explanation	Commentary

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.
		Drilling by year (max, min and average depths) used for the resource model build are as follows.
		• 2017
		  o 40 drill holes (depth: max 75m, min 12m, avg 26m).
		  o Total 1,026m drilled.
		• 2018
		  o 143 drill holes (depth: max 45m, min 6m, avg 13m).
		  o Total 1,951.5m drilled.
		See drill hole location plan, Figures 10 and 11.
		All drill holes were drilled vertically.
		All collars were projected to the LIDAR surface DTM.
		Exploration results are not being reported at this time.

Data aggregation methods	*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.* *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.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Exploration results are not being reported at this time. No bottom and top cut grades were employed. No equivalent values were used. No aggregation of short length samples used as sample interval was consistently 1.5m.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported,*	The deposit sequences are sub-horizontal, and the vertically inclined holes are a fair representation of true thickness.

Criteria	JORC Code explanation	Commentary
	there should be a clear statement to this effect (e.g., 'down hole length, true width not known').	
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.*	See Figures 9-12.
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.*	Exploration results are not being reported 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.*	The proprietary MinMod mineralogy technique, developed and employed by Base Resources, comprises an XRF analysis of the magnetic and non-magnetic fractions of each composite or sample, the results from which are then back-calculated to determine in-ground mineralogy. MinMod has been validated by external quantitative analysis (QEMSCAN and SEM EDX) and is considered sufficiently certified to support quoted resource confidence in this report.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Test pits for bulk sample mineralogy test work. Generation of more Ore4 downhole composites for MinMod mineralogy. Infill drilling to improve Mineral Resource confidence in the Indicated and Inferred areas. Drilling of the Magaoni prospect which is a northern extension of the Bumamani deposit.

Section 3 Estimation and Reporting of Mineral Resources
(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	Field data was captured in LogChief logging application and automatically validated through reference to pre-set library table configurations. Typing or logging code errors, duplication of key identifiers (e.g., HOLE_ID, SAMP_ID) and conflicts in related tables (e.g., down-hole depth) are quarantined by the software and require resolving immediately before logging can proceed. The SQL Database also has identical automated validation features. Data import is unsuccessful until these data issues are resolved. Field logging and survey data from the SQL database were imported into Geovia Surpac for database build and sectional interrogation. Validation steps included a visual interrogation of collar versus geology depths, a review of hole locations against the drilling plan and a check for missing or duplicated logged fields and outliers. Any spurious or questionable entries were resolved by the supervising Geologist. At the completion of each hole, an entry was made to the hand-written drilling diary. The diary recorded the hole name, date, depth, number of samples, time of start and finish, a description of the location of the hole in relation to the last hole and other things. Such a diary provides valuable evidence if there is an error in-hole naming or surveying. Several validation checks were made of sample preparation data to ensure accurate data entry and application of correct procedure by BTL staff. This included: • comparison of pre- versus post-oven weights; • comparison of split weight versus de-slimed weight; • comparison of split weight versus field sample weight; and • all sample preparation data were sorted by each individual field and outliers investigated. Assay results were delivered via email in 45 sample batches from the Kwale Operations site laboratory. These were in the form of CSV text files and imported by batch number directly into the SQL database tables where pre-set algorithms converted weights to percentages and removed the moisture content. The calculated assay results were then checked manually for missing records and

Criteria	JORC Code explanation	Commentary
		out of range or unrealistic values.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	Base Resources' Resources Manager Mr. Scott Carruthers, the Competent Person, has visited the site several times to review assaying, geological interpretation and resource estimation processes, which are considered appropriate.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	The geological interpretation and zoning were completed by the BTL Exploration Superintendent by considering field logs, assays, microscopic HM sink descriptions and mineralogy data. The data spacing for the project is considered sufficient for grade and mineralogical continuity. Two mineralised geological zones and a basement zone were identified and were used as constraints in the Mineral Resource estimation. The uppermost zone at Bumamani, referred to as Ore Zone 1, is a dark brown, predominantly fine grained, well sorted silty sand with very little induration. It is also characterised by clean, polished HM with minimal gangue minerals. Ore Zone 4, underlying Ore Zone 1 is a sandy-clay fluviatile unit with low-level sorting and common lateritic fragments. The HM from this zone contains more lateritic aggregates. The Basement zone is a low-grade, clay rich, fluviatile unit with a difficult to impossible washability. The HM from this zone is notably enriched in gangue silicates. For Ore Zones 1 and 4, a strong correlation between the field logs, HM sink logs and XRF oxide chemistry and QEMSCAN mineralogy gives confidence to these interpretations.
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The Bumamani Mineral Resources estimate is approximately 1,600m along strike and 500-700m across strike on average. The deposit thickness averages 10m.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	The Bumamani Mineral Resources estimation was undertaken using Geovia Surpac version 6.8 software. Inverse Distance Weighting to the power of three was used to interpolate assay grades (HM, Slimes, Oversize) from the assay composite string file. Nearest Neighbour was used to interpolate the mineralogy data from the mineralogy composite

Criteria	JORC Code explanation	Commentary
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (e.g., sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	string file. The 2021 Mineral Resources estimate for the Bumamani deposit was the maiden estimate. There is no update to this estimate. There are also no previous estimates, or mining production records prepared by Base Resources. No assumptions have been made as to the recovery of by-products. The parent cell size used in the grade interpolation was half the average drill hole spacing on the Y and X axes, which was 100m x 50m. The vertical thickness of the cell was the nominal average drill sample interval i.e., 1.5m. No assumptions were made behind modelling of selected mining units. No assumptions made about correlation between variables. Validation was undertaken by swath plots, population distribution analysis and visual inspection. The geological zones were used to control the resource estimates. Grade interpolations were controlled by ore zone.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	The Mineral Resources estimate is on a dry tonnes basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	The economic cut-off of Kwale Operations is between 1% and 1.5% HM, and historically the Kwale Operations Mineral Resources estimate reporting focuses on a 1% HM cut-off grade.
Mining factors or assumptions	*Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and*	It is assumed that the hydraulic mining method used at the neighbouring Kwale Operations would be used. Moderate slime content and generally low levels of induration provide support for this mining method.

Criteria	JORC Code explanation	Commentary
	parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	The existing concentrator and separation plant at Kwale Operations are assumed capable of processing the material with recoveries expected to be aligned with present production.
Environmental factors or assumptions	*Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	Coarse and fine tailings are intended to be co-disposed together. Initially, into the Kwale Central pit void and subsequently into the Bumamani and Kwale North Dune pit voids.
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*	A fixed dry bulk density of 1.7 (t/m^3) was assumed for the Mineral Resources estimation, based on operational experience of mining the Kwale Central Dune and South Dune deposits.

Criteria	JORC Code explanation	Commentary
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	The classification of the Indicated, and Inferred Mineral Resources was supported by the uniform grid spacing of drilling, uncomplicated and consistent geology, relatively good continuity of mineralisation particularly along strike (and supported by the domain controlled variography), confidence in the down hole drilling data and supporting criteria as noted above. As Competent Person, Base Resources' Resources Manager, Mr. Scott Carruthers, considers that the result appropriately reflects a reasonable view of the deposit categorisation.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	An internal review was undertaken by Base Resources' Resources Manager, Mr. Scott Carruthers, with focus on the process and output of the geology interpretation, database integrity, whether wireframes reflect the geological interpretation, and model vs. drillhole grades. Mr. Carruthers was satisfied with these facets. An audit and review of the Bumamani resource data and block model was undertaken by Mr. Greg Jones of IHC Robbins. Mr. Jones was satisfied with the integrity of the drilling/assay data, block model interpolated values and resource output.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the*	Variography was undertaken to determine the drill hole support of the selected JORC classification. Validation of the model vs drill hole grades by direct observation and comparison of the results on screen. The resource statement is a global estimate for the entire known extent of the Bumamani deposit within the tenement area.

Criteria	JORC Code explanation	Commentary
	procedures used. *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

Appendix 3 – Section 4 of Table 1 of the JORC Code for the 2022 Kwale North Dune and Bumamani Ore Reserves estimates

Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	*Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.*	The Kwale North Dune Mineral Resources estimate, prepared by IHC Robbins, was used as the basis for the Kwale North Dune Ore Reserves estimate. The Bumamani Mineral Resources estimate, prepared by Base Resources, was used as the basis for the Bumamani Ore Reserves estimate. Both Mineral Resources estimates are those that were publicly reported on 19 February 2021, however the Kwale North Dune estimate has been subsequently constrained to report only those Mineral Resources that remained wholly within SML 23 or PL 2018/0119.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	One of the competent persons visits frequently during the operational phase.
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	The Ore Reserves have been estimated in conjunction with a detailed feasibility study prepared for assessment of the Kwale North Dune and Bumamani project. Prior to the Bumamani DFS, an earlier pre-feasibility study was undertaken that concluded mining of a subset of the Bumamani Mineral Resources and, smaller higher-grade subsets of, the Kwale North Dune Mineral Resources concurrently with the Kwale South Ore Reserves was economically viable. The Ore Reserves will be mined in conjunction with remaining Kwale South Ore Reserves and many of the study inputs and assumptions are underpinned by operating performance established through mining experience obtained mining the Kwale Central and South Dunes. Mining operations have used HMU's exclusively since July 2018.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	Cut-off is economic by maximum cash flow method. A value model is constructed that assigns costs and revenue after application of appropriate process recoveries.

		There is no ore/waste delineation within the pit design due to the mining method employed (non-selective) and dunal mineralization.
Mining factors or assumptions	*The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).*	Mineral Resources were converted to Ore Reserves by pit optimisation as a guide for detailed mine planning. Potential pit shells were created by decreasing the revenue by 1% intervals and scheduled at a high level. These were short listed by analysis of various factors including NPV, IRR, revenue: cost ratio, marginal cashflow, product output production rates etc. The schedules for the short-listed shells were input to the project financial model and the ultimate shell for detailed mine planning and scheduling selected. Schedule physicals have then been incorporated into the Kwale Operations operating financial model and assessed against up-to-date inputs.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	Mining at Kwale North Dune and Bumamani is proposed to be undertaken solely by the HMU method. The HMU mining method has achieved all design throughput rates since commencement of operations at Kwale South. Mining will occur concurrently with mining of remaining Kwale South Ore Reserves to provide a blended feed and ensure that slime tails production does not exceed the process throughput limits.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.	The pit slopes are currently about 50 degrees in Ore 1 and Ore 4 at the Kwale South Dune. The pit optimisation used a more conservative slope angles of 35 degrees for Kwale North Dune and Bumamani.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	The Kwale North Dune Mineral Resources model used throughout the study mine planning work was rmod2a.dm. The Bumamani Mineral Resources model used throughout the study mine planning work was bum_50x25.mdl.
	The mining dilution factors used.	There is no ore/waste discrimination and sub-economic material that cannot be selectively mined is included as planned dilution in the ore feed.
	The mining recovery factors used.	Mining recovery of hardness > 2 material (that which cannot be crushed by hand) is largely discounted by raising pit floor to exclude it from design. Small amounts of this material (representing less than 2% of the pit inventory) report fully inside the pit design on a localised basis, however these have been excluded from the process feed and Ore Reserve estimate as being unrecoverable using a HMU mining method. Mining recovery makes provision for a 0.3 m topsoil profile which is excluded from reported ore material.

	Any minimum mining widths used.	The ore is scheduled to be mined in a radial extraction centred on proposed HMU sump locations. Sump locations have been estimated by considering low points in the economic mineralisation, constrained to larger mining blocks defined by watershed analysis of the lower ore surface. These larger blocks vary in dimension due to the surface undulation, however the smallest of those remaining to be mined is 7 Ha in plan area. The size of these blocks is not considered to represent any concerns with respect to minimum mining width and the proposed HMU method demonstrates the selectivity required to mine to the pit extents, even at the boundaries of the dune mineralisation where the depth of pit is low.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	No inferred material is included in the Ore Reserves estimate.
	The infrastructure requirements of the selected mining methods.	All infrastructure is in place and operational, except for some additional pump and pipe related field services, provision for which has been included in project capital cost estimates.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* *Whether the metallurgical process is well-tested technology or novel in nature.* *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* *Any assumptions or allowances made for deleterious elements.* *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	The ore is processed via screens, thickeners, and spirals, as in almost every other mineral sands operation to produce a concentrate. Concentrate is processed using magnetic and conductor separators to produce ilmenite and rutile products. The remaining material is further processed using classifiers, additional spirals and cleaned with conductor separators to produce zircon and recover additional rutile. This is not an unusual process for mineral sands but has been tailored to suit the higher-than-normal proportion of kyanite, which has similar physical properties to zircon. The plant design was based on the results of metallurgical test work conducted as part of the definitive feasibility study for the Kwale Central and South deposits. Test work on site is ongoing to find ways to improve zircon and rutile recovery. Wet Plant Recovery used is 90%, 88.9%, and 94.7% for Ilmenite, Rutile and Zircon respectively. Dry Plant Recovery used is 101.5%, 101%, and 84.5% for Ilmenite, Rutile and Zircon respectively. Plant recoveries used are supported by actual operating recoveries currently achieved by the operation.

Environmental	*The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	One of the main regulatory approvals is an Environmental and Social Impact Assessment, with the other main regulatory approval being the extension of SML 23, which is discussed below. The ESIA approval was issued on 23 August 2021 by NEMA after extensive public consultation and environmental impact assessments. An environmental management plan was also approved as part of the ESIA. The only other authorisation required is for silt trap construction as a control measure for sedimentation. There is no waste material. There are two tailings streams: sand and clay. The sand tails are clean sand having been washed in the concentrator. The clay tails are flocculated and thickened prior to pumping. There is an approved tailing storage facility, which is a dam with walls constructed from sand tails to contain the clay tails.
Infrastructure	*The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	The Kwale Operations processing plant has been in operation since 2013. All infrastructure required to service processing plant is in existence, including a 132 kV power line, an 8 Gl dam on the Mukurumudzi River and supplementary bore field for all water requirements, a camp to house operational shift workers, an 8 km bitumen access road from the highway for finished product transportation to the Likoni Export Facility and a dedicated ship loading facility.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*	Process plant and fixed site infrastructure capital has been expended and is sunk. An additional US$34.8M of capital expenditure has been estimated to develop the Kwale North Dune and Bumamani project areas. Of this, US$28.1M is required for pre-development expenditure associated with earthworks, additional HMU and field services (pipe and pumping related) and land acquisition costs, with the remainder provision for sustaining capital. A 12.5% contingency has been applied to capital estimates, excluding those associated with land acquisition. Land acquisition costs represent the majority of the capital estimated at US$15.4M.
	The methodology used to estimate operating costs.	Operating costs were collated and supplied by the site operations team based on current operating budget costs informed by operating experience mining with the HMU method at Kwale South dune.
	Allowances made for the content of deleterious elements.	Deleterious minerals kyanite and monazite are present. A large section of the plant is devoted to separating kyanite from zircon. Monazite is present in small amounts and it is mixed with the slime tails and disposed of.
	The source of exchange rates used in the study.	All Revenue and Costs inputs are in USD.
	Derivation of transportation charges.	The cost of transportation from the plant to the port is in accordance with the transport contract.

	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. *The allowances made for royalties payable, both Government and private.*	A royalty of 5% has been assumed to be payable to the Government of Kenya.
Revenue factors	*The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	Product price forecasts are based on Base Resources' internal price assumptions over the period for which Kwale North Dune and Bumamani Ore Reserves are projected to be mined. Straight line product prices have been used for mine planning studies (optimization, value modelling) and a variable price deck used for final economic modelling.
Market assessment	*The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* *A customer and competitor analysis along with the identification of likely market windows for the product.* *Price and volume forecasts and the basis for these forecasts.* *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	Ilmenite and rutile are primarily used as feedstock to produce titanium dioxide (TiO_2) pigment, with a small percentage also used in the production of titanium metal and fluxes for welding rods and wire. TiO_2 is the most widely used white pigment because of its non-toxicity, brightness, and very high refractive index. It is an essential component of consumer products such as paint, plastics, and paper. Pigment demand is therefore the major driver of ilmenite and rutile pricing. Zircon has a range of end-uses, the predominant of which is in the production of ceramic tiles, accounting for more than 50% of global zircon consumption. Milled zircon enables ceramic tile manufacturers to achieve brilliant opacity, whiteness and brightness in their products. Zircon's unique properties include heat and wear resistance, stability, opacity, hardness and strength, making it sought after for other applications such as refractories, foundries and specialty chemicals. As the suite of mineral sands products is typically linked to lifestyle consumer products and construction activity, demand for mineral sands products is closely aligned with growth in global GDP. Swings in demand cycles may see demand deviate from GDP growth over short periods due to changes in supply chain inventory levels but the long-term average growth rate is closely correlated with global GDP growth. Base Resources performs its own internal assessment of the market and also subscribes to the various market outlook and commentaries provided by TZMI and other independent sources.

		Market conditions for all products are forecast to remain tight until at least 2025 due to a lack of major new supply coming into the mineral sands market (most major new projects are not now scheduled to commence output until after 2024). The rutile price is expected to continue to increase through until the end of 2024 due to the forecast of an ongoing deficit of high-grade feedstock in the market. Prices for ilmenite and zircon are forecast to remain firm or increase through to the end of 2023 and then ease as the market becomes more balanced. Base Resources has a number of long-term existing customers for its products from the Kwale operation who will continue to buy products in accordance with existing operations. No change in specification will occur between the existing Kwale South Dune and the products produced from the Bumamani project.
Economic	*The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	As an operating mine with sunk construction cost, optimisation inputs are based on actual operating costs, design and mine plan, together with Base Resources' internal price forecasts. Economic analysis has been conducted by incorporating the additional Kwale North Dune and Bumamani Ore Reserves into the Kwale Operations life of mine financial model and comparing to the current mine plan that assumes only Kwale South Dune mining. The variance in these two models is the basis for the assessment of the incremental economic benefit derived from the additional Kwale North Dune and Bumamani Ore Reserves. Economic analysis is based on discounted operating cash flows (at 10% discount rate) and sensitivities have been conducted on product revenues, operating, capital and land acquisition costs. The project returns a positive operating NPV under the range of sensitivity factors assessed and is projected to remain cash positive to revenues 29% lower than the study base-case assumptions.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate.*	Base Resources operates a comprehensive Stakeholder Engagement Plan in concert with a Community Development Plan. Close liaison with stakeholders is maintained through the operation of a series of liaison committees representing those affected by Kwale Operations' activities.
Other	*To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* *Any identified material naturally occurring risks.* *The status of material legal agreements and marketing arrangements.*	The material legal instruments/agreements relating to Kwale Operations are SML 23 and BTL's Investment Agreement with the Government of Kenya. Both legal documents remain in force and effect. SML 23 was recently extended to include the entirety of the estimated Ore Reserves. The extension was effected by a formal deed of variation to SML 23 between BTL and the Government of Kenya acting through the Ministry of Petroleum and Mining.

	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	The Resettlement Action Plan for landowners in the Bumamani Project areas has been approved by NEMA and is currently being implemented. The socio-economic baseline study has confirmed landowner eligibility and, following an extensive consultation and negotiation process, compensation rates have been agreed. Asset valuation is underway following which, individual compensation agreements will be signed and relocation implemented.
Classification	*The basis for the classification of the Ore Reserves into varying confidence categories.*	Based on the geological resource estimation categories: Measured = Proved, Indicated = Probable, Inferred = excluded from Ore Reserves estimation.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The classification appropriately reflects the Competent Person's view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Probable Ore Reserves have been derived from Measured Mineral Resources.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	No audit or review of this Ore Reserves estimate has been undertaken.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.*	There are no assumptions used in this Ore Reserves estimate that differ from current operating practice at the Kwale South Dune and hence subject to a greater degree of uncertainty. The statement refers to global estimates. Mining rates for the calendar year to 31 December 2021 match annual feed scheduled in the study so there is a high degree of confidence that currently scheduled rates are within the operating capacity of the existing mine and process plant resources. As a maiden Ore Reserves estimation there is currently no operating production data from the Kwale North Dune and Bumamani deposits with which to undertake production reconciliation.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to	

	technical and economic evaluation. Documentation should include assumptions made and the procedures used.	
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	

Glossary

Assemblage	The relative proportion of valuable heavy mineral components of ilmenite, rutile, zircon and, where applicable, leucoxene.
Competent Person	The JORC Code requires that 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.
Cut-off grade	The lowest grade of mineralised material that is thought to be economically mineable and available. Typically used by Base Resources to define which material is reported in a Mineral Resource estimate.
DTM	Digital Terrain Model.
Grade	A physical or chemical measurement of the characteristics of the material of interest. In this context, the grade is always a percentage and the characteristics are heavy mineral, oversize, slime and the various product minerals (ilmenite, rutile etc).
Heavy mineral	In mineral sands, minerals with a specific gravity greater than 2.85 t/m^3.
ILM	Ilmenite, a valuable heavy mineral.
Indicated Resource or Indicated	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.
Inferred Resource or Inferred	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.
Inverse distance weighting	A statistical interpolation method whereby the influence of data points within a defined neighbourhood around an interpolated point decreases as a function of distance.
JORC Code	The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition, as published by the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia.
Lerch-Grossman optimisation	A process developed by messrs Lerch and Grossman that determines on a financial basis which Mineral Resource model cells are ore and which are not by application of modifying factors.
LIDAR survey	LIDAR is a remote sensing technology that measures distance by illuminating a target with a laser and analysing the reflected light to produce a DTM.
Measured Resource or Measured	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.
Mineral Resources	Mineral Resources are 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.
Minmod	A company developed mineralogy modelling technique, it comprises an XRF analysis of the magnetic and non-magnetic fractions of each composite or sample, the results from which are then back-calculated to determine in-ground mineralogy.

NPVS	CAE NPV Scheduler software, a software package that performs the Lerch Grossman optimisation
NQ	Specification of drilling rods (and bits) with an outer diameter of 76mm.
Ore Reserves	Ore Reserves are the economically mineable part of Measured and/or Indicated Mineral Resources.
OS	Oversize material.
Probable Reserve or Probable	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.
Proved Reserve or Proved	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.
QEMSCAN	An acronym for Quantitative Evaluation of Materials by Scanning Electron Microscopy, an integrated automated mineralogy and petrography solution providing quantitative analysis of minerals and rocks.
QQ plot	Quantile plot. Used to graphically compare data distributions.
RCAC	Reverse circulation air core.
RL	Reduced Level is denoted as 'RL'. National survey departments of each country determine RL's of significantly important locations or points. RL is used to describe the relative vertical position of drill collars.
RTK	Real time kinematic DGPS uses a base station GPS at a known point that communicates via radio with a roving unit so that the random position error introduced by the satellite owners may be corrected in real time.
RUT	Rutile, a valuable heavy mineral.
SEM, SEM EDX	A Scanning Electron Microscope is a type of electron microscope that produces images of a sample or minerals by scanning the surface with a focused beam of electrons. EDX is short for energy dispersive X-ray and is commonly used in conjunction with SEM.
SL	Slimes, being a waste product from the processing of mineral sands.
Variography	A geostatistical method that investigates the spatial variability and dependence of grade within a deposit. This may also include a directional analysis.
XRF analysis or XRF	A spectroscopic method used to determine the chemical composition of a material through analysis of secondary X-ray emissions, generated by excitation of a sample with primary X-rays that are characteristic of a particular element.
ZIR	Zircon, a valuable heavy mineral.

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This release has been authorised by Base Resources' Disclosure Committee.

About Base Resources

Base Resources is an Australian based, African focused, mineral sands producer and developer with a track record of project delivery and operational performance. The company operates the established Kwale Operations in Kenya and is developing the Toliara Project in Madagascar. Base Resources is an ASX and AIM listed company. Further details about Base Resources are available at www.baseresources.com.au.

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