1.8 BILLION TONNE JORC RESOURCE CONFIRMS KASIYA AS THE LARGEST RUTILE DEPOSIT EVER DISCOVERED

JORC MINERAL RESOURCE ESTIMATE UPDATE

1.8 Billion Tonnes @ 1.01% Rutile (Ind. + Inf.)

18 Million Tonnes Contained Rutile

- **Updated mineral resource estimate (MRE) confirms Kasiya as the world's largest rutile deposit and second largest graphite deposit**
- **Contained rutile at the Kasiya mega-deposit now stands at 18 Mt – tripling the previous MRE**
- **Contained flake graphite by-product now stands at 23 Mt**
- **High global resource grade @ 1.64% RutEq.*** (recovered rutile + recovered graphite)
- **662 Mt (37%) of the total MRE reports to the Indicated category with remainder in Inferred category**
- **Scoping Study to be updated to reflect the substantial MRE scale increase to examine the impact of higher grades, increased production volumes and increased mine-life**

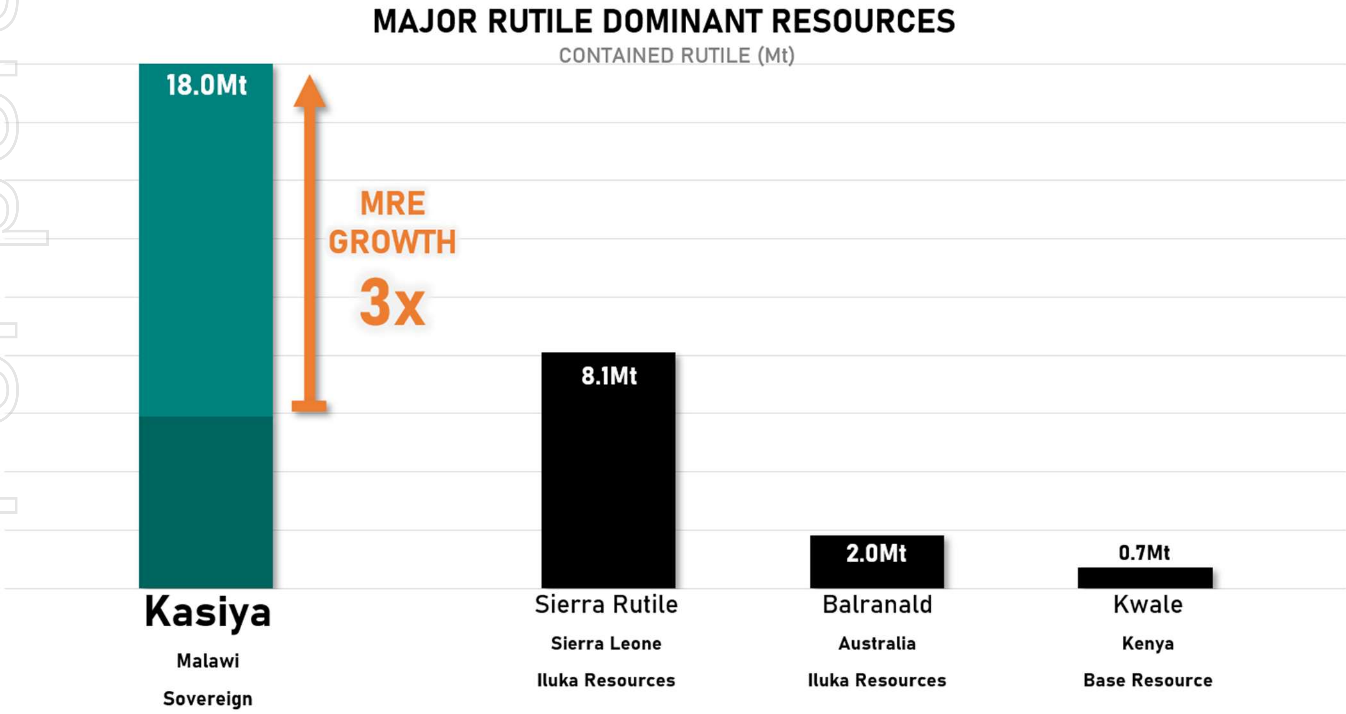

Figure 1: Major rutile dominant resources (Sources: refer to Appendix 1)

*Formula: Rutile Grade x Recovery (97%) x Rutile Price (US$1,346/t) + Graphite Grade x Recovery (62%) x Graphite Price (US$1,085/t) / Rutile Price (US$1,346/t). All assumptions taken from the Company's 2021 Scoping Study released 16 December 2021

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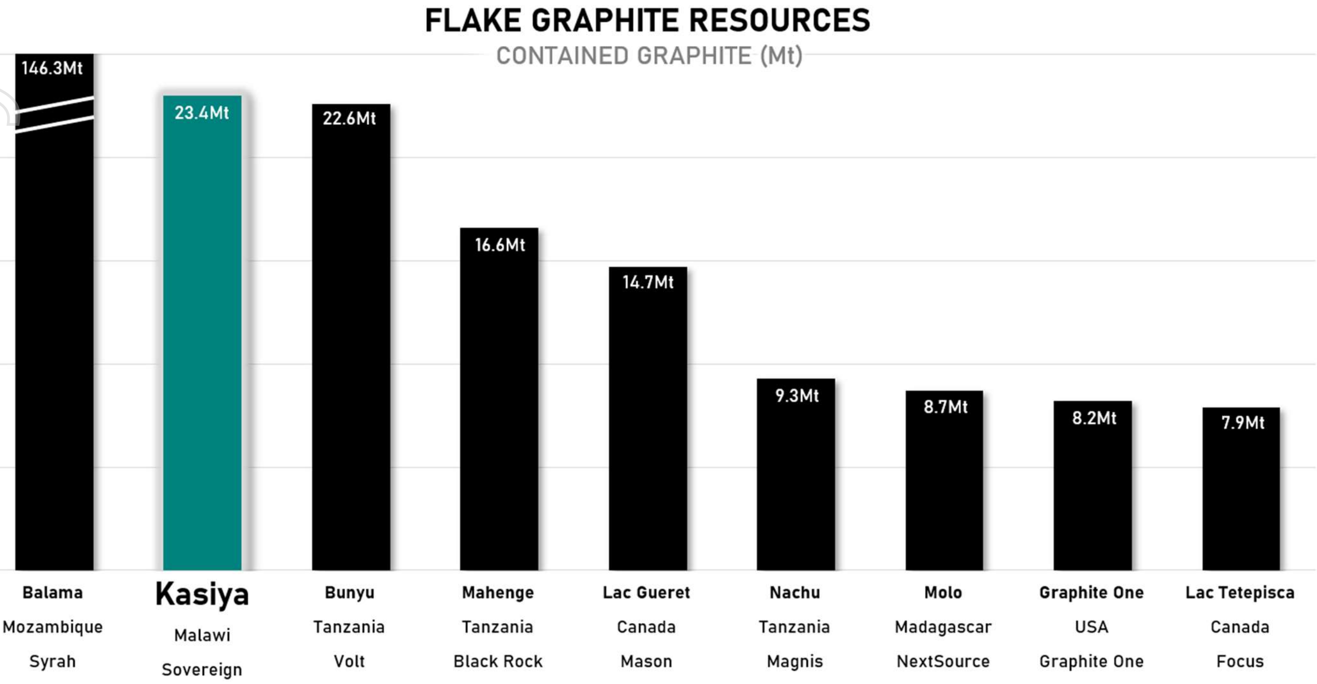

Figure 2: Major listed global flake graphite resources
(Sources: refer to Appendix 1)

Table 1: Kasiya Mineral Resource Estimate at 0.7% Rutile Cut-off

Mineral Resource Category	Material Tonnes (millions)	Rutile (%)	Rutile Tonnes (millions)	TGC (%)	TGC Tonnes (millions)	RutEq. Grade* (%)
Indicated	662	1.05%	6.9	1.43%	9.5	1.73%
Inferred	1,113	0.99%	11.0	1.26%	14.0	1.59%
Total	**1,775**	**1.01%**	**18.0**	**1.32%**	**23.4**	**1.64%**

* RutEq. Formula: Rutile Grade x Recovery (97%) x Rutile Price (US$1,346/t) + Graphite Grade x Recovery (62%) x Graphite Price (US$1,085/t) / Rutile Price (US$1,346/t). All assumptions taken from the Company's 2021 Scoping Study released 16 December 2021 ** Any minor summation errors are due to rounding

Sovereign's Managing Director Dr Julian Stephens commented: *"It is a really remarkable achievement by our team to have made the largest natural rutile discovery ever in just two years since initial identification. The JORC MRE of this scale and grade is clearly highly strategic, Tier 1 and of global significance in a market where natural rutile is in extreme supply deficit.*

The step-change in scale will now allow us to examine potentially higher-grade throughput, increased production levels and a longer mine life in the upcoming Scoping Study update. The Company is targeting a large-scale, low carbon-footprint and environmentally sustainable natural rutile and graphite operation which will also positively impact the environmental footprint of titanium pigment and other industries, and provide a significant contribution to the economy of Malawi."

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KASIYA – THE LARGEST RUTILE DEPOSIT IN THE WORLD

Sovereign Metals Limited (ASX:SVM; AIM:SVML) (**the Company** or **Sovereign**) is pleased to announce its updated Mineral Resource Estimate (**MRE**) for Kasiya confirming it as a Tier 1 natural rutile deposit and a potential major source of low CO_2 footprint critical minerals natural rutile and graphite.

The updated MRE now places Kasiya as the largest rutile deposit in the world with more than double the contained rutile as its nearest rutile peer, Sierra Rutile (Tables 1, 2 & 3, Figure 1). Additionally, the graphite by-product MRE at Kasiya places it as the second largest flake graphite deposit in the world.

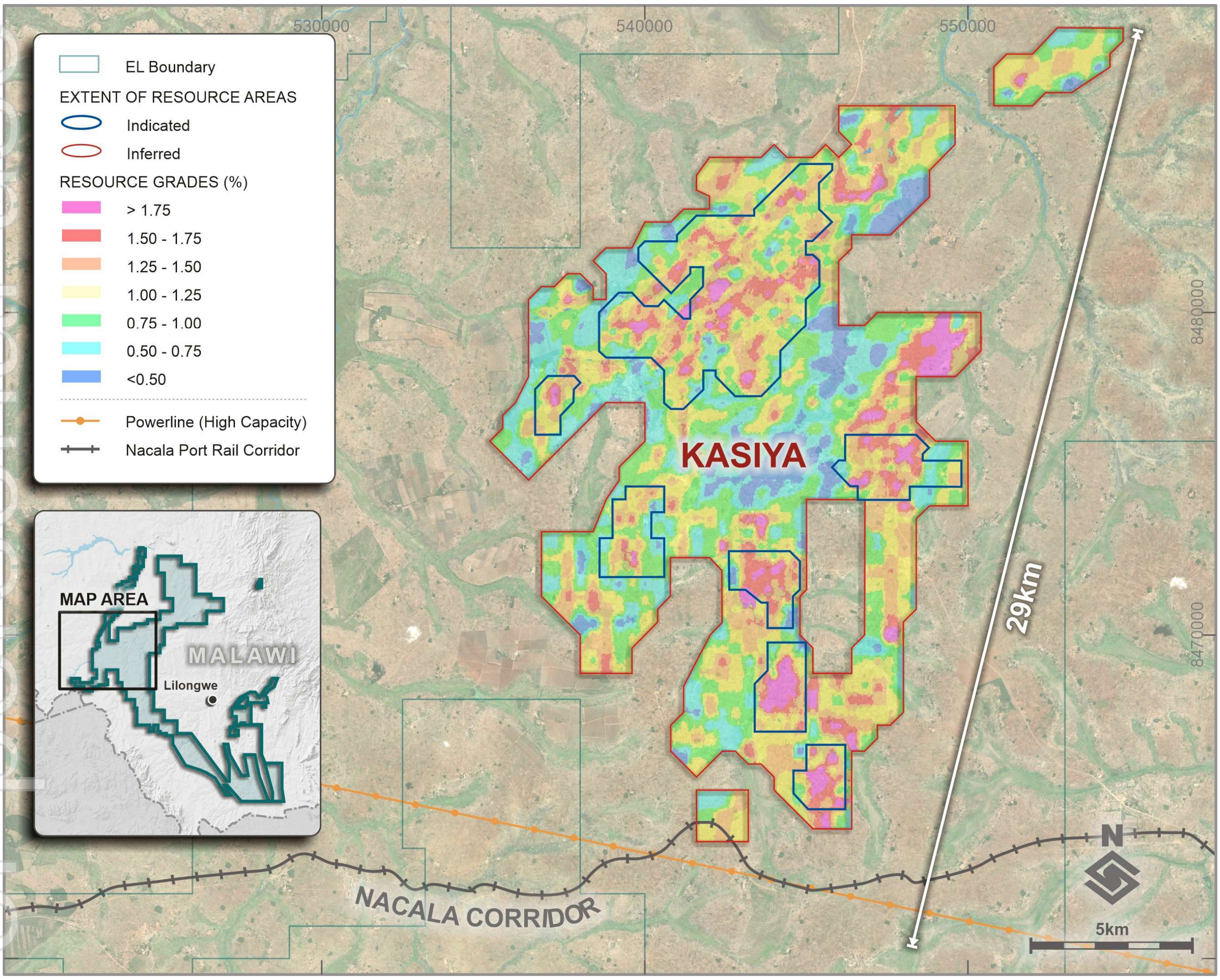

Figure 3: Kasiya map showing rutile grades in the uppermost part of the block

The MRE has broad zones of very high-grade rutile which occurs contiguously across a very large area of over 180km^2 (Figure 3). Rutile mineralisation lies in laterally extensive, near surface, flat "blanket" style bodies in areas where the weathering profile is preserved and not significantly eroded.

Overall, the new MRE shows a number of new large, but generally discrete high grade rutile zones, particularly in the southern parts and eastern parts of the resource area. The discovery and delineation of these new high grade mineralised zones has been the dominant factor in the tripling of the resource base.

A Total of 662 Mt (37%) of the total MRE reports to the Indicated category @ 1.05% rutile and 1.43% TGC, with a recovered grade of 1.73% RutEq.

The deposit is expansive with high-grade rutile mineralisation commonly grading 1.2% to 2.0% in the top 3-5m from surface. Moderate grade mineralisation generally grading 0.5% to 1.2% rutile commonly extends from 5m to end of hole where it remains open at depths >10m in numerous drill-defined, N to NE-striking zones.

Graphite is generally depleted near surface in the top 3-5m with grades commonly in the 0.1% to 0.5% total graphitic carbon (**TGC**) range. Graphite grades generally increase with depth to about 8m, then remain constant ranging from 1% to 8% TGC. A number of higher-grade graphite zones at depth have been identified which are generally associated with higher grade rutile at surface. Some of these zones have graphite grades at depth >8m in the 4% to 8% TGC range and represent very significant coarse flake graphite tonnages.

The highlighted cut-off of 0.70% presents 1.8 billion tonnes at a rutile grade of 1.01% with high-grade components providing over 352 Mt at a rutile grade of 1.44% at a 1.20% cut-off (Table 2). The overall recovered rutile equivalent grade for the MRE at the global 0.7% cut-off is 1.64% RutEq. (Table 1).

Table 2: Kasiya Total Indicated + Inferred Mineral Resource Estimate at various rutile cut-offs

Cut-off (rutile)	Resource (Mt)	Rutile Grade (%)	Contained Rutile (Mt)	Graphite Grade (%)	Contained Graphite (Mt)
0.40%	2,825	0.84%	23.8	1.26%	35.5
0.50%	2,503	0.89%	22.4	1.30%	32.5
0.60%	2,155	0.95%	20.4	1.33%	28.6
0.70%	**1,775**	**1.01%**	**18.0**	**1.32%**	**23.4**
0.80%	1,391	1.09%	15.1	1.24%	17.3
0.90%	1,024	1.17%	12.0	1.09%	11.2
1.00%	727	1.26%	9.2	0.92%	6.7
1.10%	516	1.35%	7.0	0.76%	3.9
1.20%	352	1.44%	5.1	0.55%	1.9
1.30%	241	1.53%	3.7	0.46%	1.1
1.40%	165	1.62%	2.7	0.43%	0.7

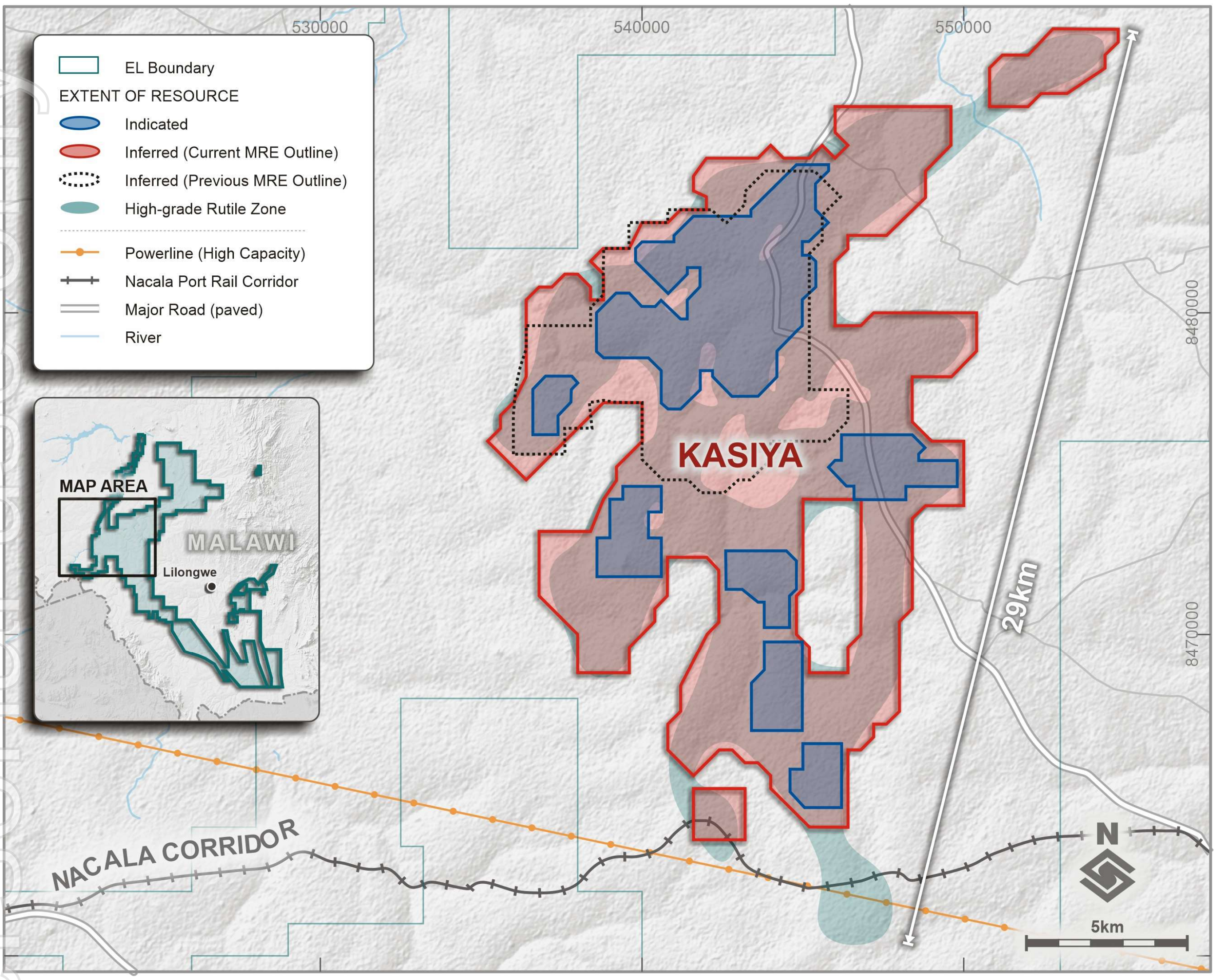

Figure 4: Kasiya MRE footprint showing the Indicated and Inferred areas zones

Figure 5: Core drilling at Kasiya

GLOBAL SIGNIFICANCE - RUTILE

Natural rutile is a genuinely scarce commodity, with no other known large rutile dominant deposits being discovered in over half a century. Kasiya is now shown to be the largest single rutile deposit in the world (Table 3), with central Malawi now hosting the largest known rutile province in the world.

Current sources of natural rutile are in decline as several operations' reserves are depleting concurrently with declining ore grades. These include Iluka Resources' (Iluka) Sierra Rutile and Base Resources' Kwale operations in Sierra Leone and Kenya respectively. Additionally, there are limited new deposits forecast to come online, meaning supplies of natural rutile are likely to remain in extreme structural deficit.

Table 3: Summary of major rutile dominant resources[1]

Company	Project	Resource (Mt)	In-situ Grade Rutile (%)	In-situ Grade Ilmenite (%)	In-situ Grade Zircon (%)	TGC (%)	Contained Rutile (Mt)
Sovereign Metals	**Kasiya**	**1,775**	**1.01%**	**-**	**-**	**1.32%**	**18.0**
Iluka Resources	Sierra Rutile	752	1.10%	0.90%	0.10%	-	8.1
Iluka Resources	Balranald [2]	53	3.68%	19.34%	3.38%	-	2.0
Base Resources	Kwale	194	0.37%	1.31%	0.17%	-	0.7

Sources: Refer to Appendix 1

Notes:

1. Projects selected with rutile contributing over 30% of the in-situ value
2. The Balranald Project is being investigated for underground mining by Iluka

As demonstrated in the December 2021 initial Scoping Study, the Kasiya operation will primarily employ conventional hydro-mining to produce a slurry that is pumped to a Wet Concentration Plant (**WCP**) where the material is sized. A Heavy Mineral Concentrate (**HMC**) is produced via processing the sand fraction through a series of gravity spirals. The HMC is transferred to the dry Mineral Separation Plant (**MSP**) where premium quality rutile is produced via electrostatic and magnetic separation. Test work has been very successful and has resulted in conventional flowsheets proving highly efficient for producing premium quality rutile and graphite products.

World-class rutile product chemical specifications are reported at 95.0% to 97.2% TiO_2 with low impurities and stand-out metallurgical recoveries ranging from 94% to 100%. For the Scoping Study and rutile equivalent (RutEq.) grade calculation, a product grade of 96% TiO_2 and recovery of 97% are assumed for rutile.

Figure 6: Photomicrograph of high purity rutile product 97.2% TiO_2

GRAPHITE – A VALUABLE BY-PRODUCT

The 23.4 Mt of contained graphite in the Kasiya MRE now places it as the second largest flake graphite deposit in the world (Table 4).

Table 4: Summary of major flake graphite resources

Company[1]	Project	Resource (Mt)	TGC Grade (%)	Contained Graphite (Mt)
Syrah Resources	Balama	1,421	10.3%	146.3
Sovereign Metals	**Kasiya**	**1,775**	**1.3%**	**23.4**
Volt Resources	Bunyu	461	4.9%	22.6
Black Rock Mining	Mahenge	213	7.8%	16.6
Mason Graphite	Lac Gueret	83	17.6%	14.7
Magnis Energy	Nachu	174	5.4%	9.3
NextSource Materials	Molo	141	6.1%	8.7
Graphite One	Graphite One	103	8.0%	8.2
Focus Graphite	Lac Tetepisca	74	10.6%	7.9

Sources: Refer to Appendix 1

Graphite rich mineral pre-concentrate will be produced from the light fraction of the gravity spiral tails and processed in a separate graphite flotation plant to produce a high-quality flake graphite by-product. Because graphite will be a by-product from rutile production, it will have a very low production cost compared to graphite-only projects, as shown in the initial Kasiya Scoping Study.

A very coarse-flake and high-grade graphite product at 96% TGC can be produced via this simple flowsheet. This product has over 60% in the large to super-jumbo fractions (+180µm) with overall graphite recovery from the raw sample to product of 62%.

As well as being very coarse flake, the Kasiya graphite is also highly crystalline and of high purity. These are both important features required for use in lithium-ion battery anodes. The high crystallinity means that the graphite will have high electrical conductivity – a key requirement. High purity means the material will be easier to upgrade to 99.95% TGC, the minimum requirement for lithium-ion battery anodes.

NEXT STEPS

The updated MRE confirms Kasiya as a Tier 1 mineral project, being the largest deposit of natural rutile in the world and the second largest flake graphite deposit in the world. The strong economics of the project were confirmed in the initial Scoping Study based on the previous resource estimate which was released in December 2021.

Sovereign is rapidly continuing its work programs with the following near and medium-term targets and developments:

- An updated Scoping Study is targeted for completion Q2 2022 to build on the 2021 Scoping Study. This will be driven by the significant increase in the MRE, providing the opportunity to assess higher grade throughput, increased production rates and longer mine life.
- Initial Pre-feasibility Study (**PFS**) activities are commencing and include metallurgical programs and hydrogeological studies. Other study elements will commence shortly with major technical consultant site visits commencing in April. The PFS is targeted for completion in early 2023.
- Drilling programs are planned to continue, testing depth and lateral extensions at Kasiya. These include:
  - An air-core drilling rig is set to be mobilise to Kasiya in mid-May, with a planned 300 hole/10,000m program with the aim of deepening the better high-grade areas in order to add to the next MRE upgrade
  - Continued infill and step-out hand-auger drilling expand the overall mineralised footprint with drill teams to mobilise in April
- The Company continues to work with potential offtakers and strategic partners in the pigment, welding and titanium metal industries to secure further agreements regarding future offtakes.
- Continued strong focus on ESG and sustainability - initial ESIA activities to commence shortly including environmental and community baseline surveys, which will inform the upcoming PFS, with continued focus on developing low carbon-footprint operations taking advantage of renewable power supply and soft-friable saprolite mineralisation to produce natural rutile and graphite with far lower Global Warming Potential than alternative products.

Figure 7: Hand-auger drilling at Kasiya

KASIYA MRE TECHNICAL DETAILS

The Kasiya MRE has been prepared by independent consultants, Placer Consulting Pty Ltd (**Placer**) and is reported in accordance with the JORC Code (2012 Edition).

Rutile mineralisation lies in laterally extensive, near surface, flat "blanket" style bodies in areas where the weathering profile is preserved and not significantly eroded. The high-grade zones appear to be geologically continuous with limited variability along and across strike. The mineralisation style is illustrated best in Figures 8, 9 & 10 below.

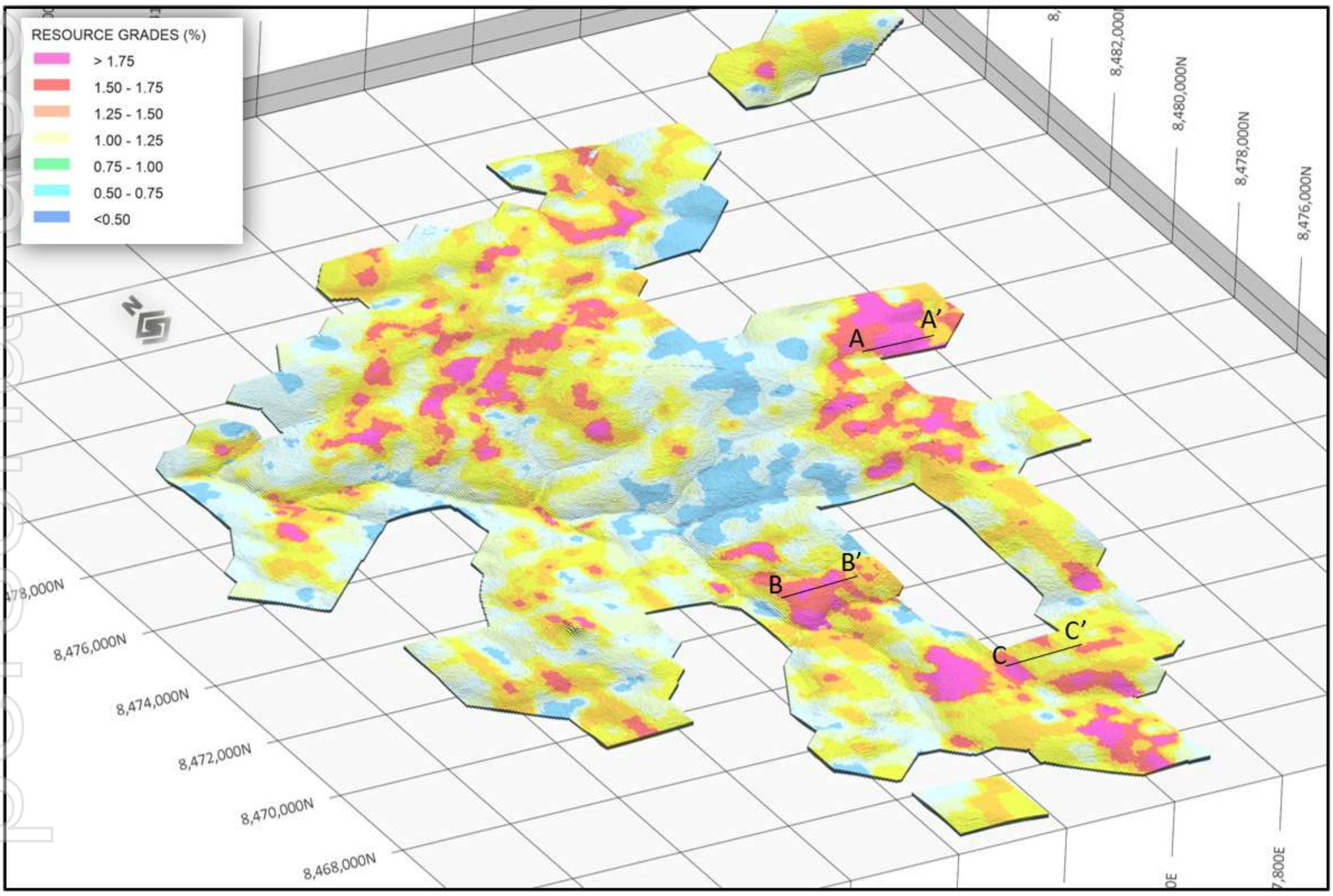

Figure 8: Oblique plan view looking NE over MRE block model with rutile grades shown.

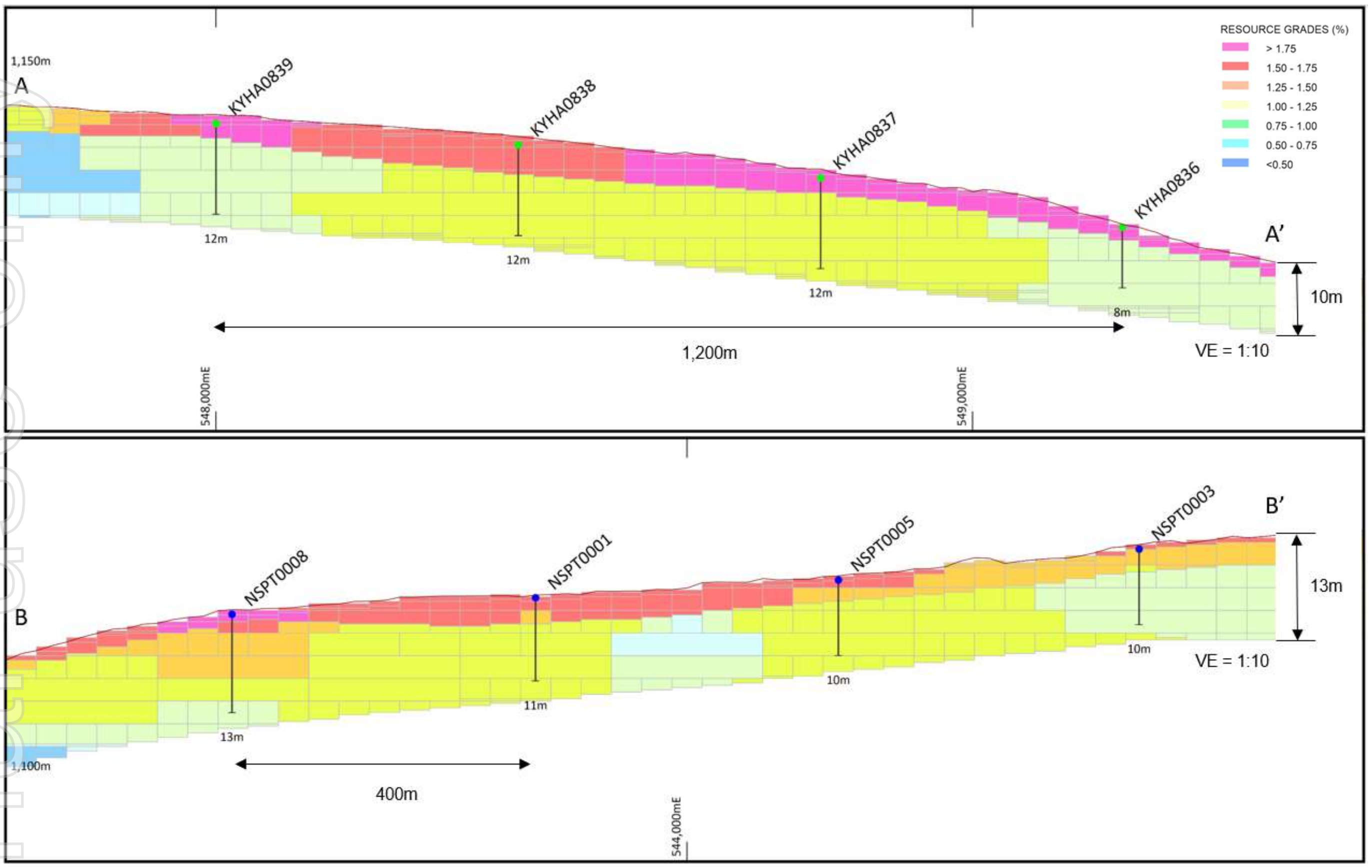

Figure 9: A-A' & B-B' cross-sections from new mineralised zones in the east and southern parts of the MRE block model showing colouring by rutile grade with legend.

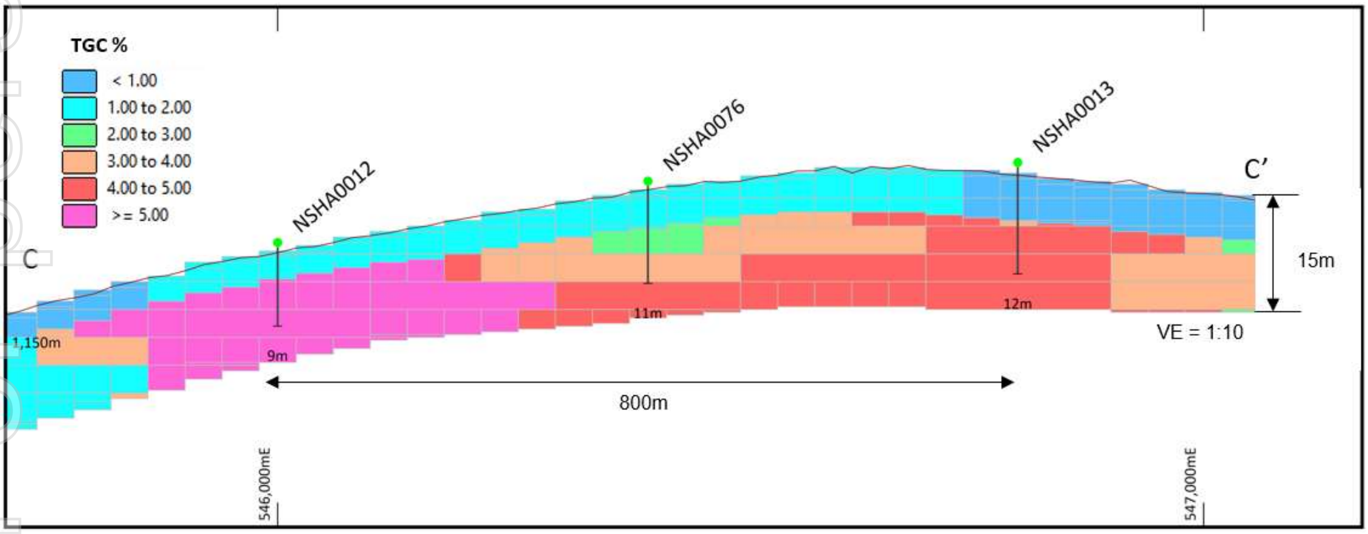

Figure 10. C-C' cross-section from the southern part of the MRE block model in a higher-grade graphite zone showing colouring by graphite grade (TGC).

SUMMARY OF RESOURCE ESTIMATE REPORTING CRITERA

As per ASX Listing Rule 5.8 and the 2012 JORC reporting guidelines, a summary of the material information used to estimate the MRE is detailed below.

Geology

Regional Geology

The greater part of Malawi is underlain by crystalline Precambrian to lower Paleozoic rocks referred to as the Malawi Basement Complex. In some parts these rocks have been overlain unconformably by sedimentary and volcanic rocks ranging in age from Permo-triassic to Quaternary. The Basement complex has undergone a prolonged structural and metamorphic history dominated by uplift and faulting resulting in the formation of the Malawi Rift Valley.

Kasiya is located on the Lilongwe Plain which is underlain by the Basement Complex paragneisses and orthogneisses which are part of the Mozambique Belt. The bulk of the gneisses are semi-pelitic but there are bands of psammitic and calcareous rocks that have been metamorphosed under high pressure and temperature conditions to granulite facies. Interspersed within the paragneiss units are lesser orthogneisses, often cropping-out as conspicuous tors, as well as amphibolites, pegmatites and minor mafic to ultramafic intrusions. Foliation and banding in the gneisses have a broad north-south strike over the general area. Thick residual soils and pedolith with some alluvium overlie the gneisses and include sandy, lateritic and dambo types.

Figure 11: Drone photo above the Kasiya Deposit showing the open flat terrain

Project Geology

Sovereign's tenure covers 1,892km^2 over an area to the north, west and south of Malawi's capital city covering the Lilongwe Plain. The topography is generally flat to gently undulating and the underlying geology is dominated by paragneiss with pelitic, psammitic and calcareous units.

A particular paragneiss unit is rich in rutile and graphite and is the primary source of both of these minerals in the area. This area was deeply weathered during the Tertiary and rutile concentrated in the upper part of the weathering profile forming residual placers, such as the Kasiya Deposit. Once this material is incised and eroded, it is transported and deposited into wide, regional braided river systems forming alluvial heavy mineral placers such as the Bua Channel.

Kasiya Deposit Geology

The high-grade rutile deposit at Kasiya is best described as a residual placer, or otherwise known as eluvial heavy mineral deposit. It is formed by weathering of the primary host rock and concentration in place of heavy minerals, as opposed to the high-energy transport and concentration of heavy minerals in a traditional placer.

The presence of abundant kyanite and graphite in the host material suggest a meta-sedimentary protolith. The protolith likely started with a 0.5-1.5Ga basin that also experienced consistent influx of titanium minerals.

These sedimentary rocks were subject to granulite facies metamorphism under reduced conditions in the Pan-African Orogeny at circa 0.5-0.6Ga. The reduced environment, relatively high titanium content and low iron content, resulted in rutile being the most stable titanium mineral under these conditions. Slow exhumation and cooling then resulted in crystallisation of paragneisses containing coarse rutile and graphite.

The final and most important stage of enrichment came as tropical weathering during the Tertiary depleted the top ~10m of physically and chemically mobile minerals. This caused significant volume loss and concurrent concentration of heavy resistate minerals including rutile and kyanite.

Rutile mineralisation lies in laterally extensive, near surface, flat "blanket" style bodies in areas where the weathering profile is preserved. The Kasiya deposit continues to confirm widespread, high-grade mineralisation commonly grading 1.2% to 2.0% rutile in the top 3-5m from surface. Moderate grade mineralisation generally grading 0.5% to 1.2% rutile commonly extends from 5m to end of hole where it remains open at depths >10m in numerous drill-defined, NE and N striking zones.

Graphite generally occurs in broad association with rutile. However, it is depleted in the top 3-5m and therefore can often show an inverse grade relationship with rutile in the near-surface zones. At depths generally greater than 5m, graphite is not depleted, and rutile is not particularly enriched, so a more consistent grade relationship exists.

Metallurgical results show that a very coarse-flake graphite by-product can be recovered from rutile gravity-separation tails.

Drilling Techniques

Spiral hand-auger **(HA)** drilling and Push-tube core (**PT**) drilling has been used extensively at the Kasiya Deposit by Sovereign to define mineralisation and to obtain quantitative rutile and graphite (**TGC**) assay information.

A total of 1,205 HA holes for 11,360m were drilled at the Kasiya Rutile Deposit to obtain samples for quantitative determination of recoverable rutile and TGC.

Figure 12: Hand-auger drill sampling and geological logging at Kasiya.

An initial 30 PT core holes, for 359.4m, were drilled at the Kasiya Rutile Deposit to obtain samples for validation of hand auger drilling results and for bulk density test work.

Figure 13: Core drilling in action at Kasiya

The subsequent infill drilling programme, designed to support the resource estimate update, was completed by push tube coring. A total of 234 core holes for 2,368.5m are included in the updated MRE.

The drilling programs to date show a mineralised envelope, defined nominally by >0.5% rutile, of approximately 187km^2 with numerous areas of high-grade rutile defined.

HA drilling was executed by Sovereign field teams using a manually operated enclosed-flight Spiral Auger (SP / SOS) system produced by Dormer Engineering in Queensland, Australia. The HA bits are 62mm and 75mm in diameter with 1m long steel rods. Each 1m of drill advance is withdrawn and the contents of the auger flight removed into bags and set aside. An additional 1m steel rod is attached and the open hole is re-entered to drill the next metre. This is repeated until the drill hole is terminated often due to the water table being reached, and more rarely due to bit refusal (2% of the resource HA drill database). The auger bits and flights are cleaned between each metre of sampling to avoid contamination.

PT drilling is undertaken using a drop hammer Dando Terrier MK1 and a drop hammer DL650. The drilling generated 1m runs of 83mm PQ core in the first 2m and then transitioned to 72mm core for the remainder of the hole. Core drilling is oriented vertically by spirit level.

The HA collars are spaced at nominally 400m along the 400m spaced drill-lines with the push-tube holes similarly spaced at an offset, infill grid. The resultant 200m by 200m drill spacing (to the strike orientation of the deposit) is deemed to adequately define the mineralisation in the MRE.

There is no apparent bias arising from the orientation of the drill holes, with respect to the orientation of the deposit.

The PT twin and density sample holes are selectively placed throughout the deposit to ensure a broad geographical and lithological coverage for the analysis.

Placer has reviewed SOPs for HA and PT drilling and found them to be fit for purpose and support the resource classifications as applied to the MRE.

Sampling Techniques

HA samples are obtained at 1m intervals generating on average approximately 2.5kg of drill sample. HA samples are manually removed from the auger bit and sample recovery is visually assessed in the field. As samples become wet at the water table and recovery per metre declines, the drill hole is terminated.

HA samples are collected in 1m increments. Each 1m sample is sun dried, logged, weighed and pXRF analysed. HA samples are composited based on regolith boundaries and sample chemistry, generated by hand-held XRF analysis. Each 1m of sample is dried and riffle-split to generate a total sample weight of 3kg for analysis, generally at 2 - 5m intervals (average 2.8m for the total resource drill database). This primary sample is then split again to provide a 1.5kg sample for both rutile and graphite analyses.

PT samples are predominantly HQ. Half core 1m samples are sun dried, logged, weighed and pXRF analysed. Samples are then composited over 2m intervals. An equal mass is taken from each contributing metre to generate a 1.5kg composite sample. Individual recoveries of core samples are recorded on a quantitative basis. Core recovery is >95%.

This sampling and compositing method is considered appropriate and reliable based on accepted industry practice.

Figure 14: Drill samples prepared for logging

Sample analysis methodology

Rutile

Heavy mineral concentrates (**HMC**) are generated onsite via wet-tabling. Heavy Liquid Separation (**HLS**) was trialled at Diamantina Laboratories in Perth but was superseded by wet table separation on account of substantial near-density, gangue material reporting to the HM sink.

The Malawi onsite laboratory sample preparation methods are considered quantitative to the point where a wet-tabled HMC is generated.

The HMC is then subject to magnetic separation at Allied Mineral Laboratories Perth (**AML**) in Perth by Carpco magnet @ 16,800G (2.9Amps) into a magnetic (**M**) and non-magnetic (**NM**) fraction.

The NM fractions are sent to either ALS Perth or Intertek Perth for quantitative XRF analysis. Intertek samples received the standard mineral sands suite FB1/XRF72. ALS Samples received XRF_MS.

QEMSCAN of the NM fraction shows dominantly clean and liberated rutile grains and confirms rutile is the only titanium species in the NM fraction. Recovered rutile is therefore defined and reported here as: TiO2 recovered in the +45 to -600um range to the NM concentrate fraction as a % of the total primary, dry, raw sample mass divided by 95% (to represent an approximation of final product specifications). i.e recoverable rutile within the whole sample.

Graphite

A split of each raw sample is dissolved in dilute hydrochloric acid to liberate carbonate carbon. The solution is filtered using a filter paper and the collected residue is then dried to 425°C in a muffle oven to drive off organic carbon. The dried sample is then combusted in an Eltra CS-800 induction furnace infra-red CS analyser to yield total graphitic or elemental carbon (TGC).

QAQC

Accuracy monitoring is achieved through submission of certified reference materials (**CRM's**). Sovereign uses internal and externally sourced wet screening reference material inserted into samples batches at a rate of 1 in 20. The externally sourced, certified standard reference material for HM and Slimes assessment is provided by Placer Consulting.

ALS and Intertek both use internal CRMs and duplicates on XRF and TGC analyses. Sovereign also inserts CRMs into all sample batches at a rate of 1 in 20.

An external laboratory raw sample check duplicate is sent to laboratories in Perth, Australia as an external check of the full workflow. These duplicates are produced at a rate of 1 in 20.

Analysis of sample duplicates is undertaken by standard geostatistical methodologies (Scatter, Pair Difference and QQ Plots) to test for bias and to ensure that sample splitting is representative. Standards determine assay accuracy performance, monitored on control charts, where failure (beyond 3SD from the mean) may trigger re-assay of the affected batch.

Precision and accuracy assessment has been completed on all alternate workflow methodologies and a consistent method has been decided, in consultation with Placer Resource Geologists. Examination of the QA/QC sample data indicates satisfactory performance of field sampling protocols and assay laboratories providing acceptable levels of precision and accuracy. Rutile determination by alternate methods showed no observable bias.

Acceptable levels of accuracy and precision are displayed in geostatistical analyses to support the resource classifications as applied to the estimate.

Figures 15 & 16: Sovereign staff members working the Company's laboratory in Lilongwe

Classification

The HA collars are spaced at nominally 400m along the 400m spaced drill-lines with the PT holes similarly spaced at an offset, infill grid. The resultant 200m by 200m drill spacing (to the strike orientation of the deposit) is deemed to adequately define the mineralisation in the MRE.

The PT twin and density sample holes are selectively placed throughout the deposit to ensure a broad geographical and lithological spread for the analysis.

Variography and kriging neighbourhood analysis completed using Supervisor software informs the optimal drill and sample spacing for the MRE. Based on these results and the experience of the Competent Person, the data spacing and distribution is considered adequate for the definition of mineralisation and adequate for the MRE.

For the latest MRE, a regional trend analysis was performed for all drilling across Kasiya, designed to supplement and extend previous variography analysis completed using Datamine Supervisor software. The trend analysis involved the following key steps:

1. Generating intercepts files (no bottom cut applied) as follows:

   a) SOIL+FERP (~upper domain)

   b) MOTT+PSAP+SAPL (~lower domain)

2. Gridding RUT95 intercept XY collar points for both zones using Micromine with multiple interpolation methods.

3. Variogram Mapping (using Micromine) to investigate interpreted trend orientations against semi-variance.

Drilling methods applied to define the Kasiya Deposit (HA and PT) are not able to retrieve reliable samples below the water table. Mineralisation remains open and a substantial resource is anticipated beneath current drill depths.

High grade sample results are constrained tightly by the search and estimation parameters applied to the interpolation. High grades are expected to be contiguous upon application of closer-spaced drilling.

Regolith stratigraphy is uniform and rutile and graphite mineralisation is broadly consistent across the Kasiya Deposit. Open-hole drilling and infill core drilling techniques have been expertly applied and data collection procedures, density assessments, QA protocols and interpretations conform to industry best practice.

Assay, mineralogical determinations and metallurgical test work conform to industry best practice and demonstrate a rigorous assessment of product and procedure. These and the development of a conventional processing flowsheet and marketability studies support the classification of the Kasiya Resource.

Estimation Methodology

Datamine Studio RM, Micromine and Supervisor software are used for the data analysis, variography, geological interpretation and resource estimation with key fields being interpolated into the volume model using the Inverse Distance weighting (power 2) method. Dynamic Anisotropy search ellipses, informed by variography, kriging neighbourhood analysis and gridding of rutile abundance, were used to search for data during the interpolation. Suitable limitations on the number of samples and the impact of those samples, was maintained.

Interpolation was constrained by hard boundaries (domains) that result from the geological interpretation. The construction of an upper (Soil/Ferp) domain reduces the dilution of resource grade from the underlying, less mineralised (Mott/Sap) domain. A Topsoil horizon has been defined at 0.3m thickness throughout the Indicated Resource area to support anticipated ore reserve calculation and mining studies. Topsoil is disclosed separately but remains in the MRE in recognition of advanced investigations by SVM on synthetic topsoil generation for rehabilitation.

The average parent cell size used is equivalent to the average drill hole spacing within the Indicated Resource (200m*200m). Cell size in the Z-axis was established to cater for the composite sample spacing and definition of the Topsoil domain. This resulted in a parent cell size of 200m x 200m x 3m for the volume model with 5 sub-cell splits available in the X and Y axes and 10 in the Z axis to smooth topographical and lithological transitions.

Both parent and sub-cell interpolations were completed and reconciled spatially against each other. The parent cell and sub cell interpolations produced near identical global tonnages and grades. The sub-cell interpolation was seen to provide a better graduation of informing drill hole data through intermediate model cells and to conform more sympathetically to the geological interpretation. In this instance, the sub-cell interpolation was applied to the MRE.

The resource model has been volumetrically constrained generally as a buffer of one parent cell dimension. That is: A 200m buffered model boundary around drilling in the XY plan. Vertically the model is constrained by both the topography DTM and a 'basement' wireframe that seeks to buffer 'effective depth' drilling depths by 2.7m (a little less than the average sample interval for the drill database). This 'basement' surface does not represent the base of mineralisation, which is anticipated to be deeper within the weathered profile, at the saprolite/saprock horizon.

Extreme grade values were not identified by statistical analysis, nor were they anticipated in this style of deposit. No top cut is applied to the resource estimation.

Validation of grade interpolations was done visually in Datamine by loading model and drill hole files and annotating, colouring and using filtering to check for the appropriateness of interpolations.

Statistical distributions were prepared for model zones from both drill holes and the model to compare the effectiveness of the interpolation. Model-drilling reconciliation was performed by generating swath plots to measure drilling support against interpolation performance in all three primary orientations. The resource model has effectively averaged informing drill hole data and is considered suitable to support the resource classifications as applied to the estimate.

Density is calculated by the measurements of wet and dry weights using core from geographically and lithologically diverse sample sites throughout the project. This methodology delivers an accurate density result that is interpolated in the MRE for each host material type.

Density data are interpolated into the resource estimate by geological domain. An average density of 1.39 t/m³ for the soil (**SOIL**) domain, 1.60 t/m³ for the ferruginous pedolith (**FERP**) domain, 1.65 t/m³ for the mottled (**MOTT**) domain, 1.68 t/m³ for the pallid saprolite (PSAP) domain, 1.63 t/m³ for the saprolite (**SAPL**) domain, and 1.93 t/m³ for the laterite **(LAT**) domain were calculated. Density data are interpolated into the resource estimate by the nearest neighbour method.

Cut-off Grades

All results reported are of a length-weighted average of in-situ grades. The resource is reported at a range of bottom cut-off grades in recognition that optimisation and financial assessment is outstanding.

A nominal bottom cut of 0.7% rutile is offered, based on preliminary assessment of resource product value and anticipated cost of operations. No graphite top or bottom cuts are applied.

Mining and Metallurgy Factors

Hydro-mining has been determined as the optimal method of mining for the Kasiya Rutile deposit. The material is loose, soft, fine and friable with no cemented sand or dense clay layers rendering it amenable to hydro-mining. It is considered that the strip ratio would be zero or near zero.

Dilution is considered to be minimal as mineralisation commonly occurs from surface and mineralisation is generally gradational with few sharp boundaries.

Recovery parameters have not been factored into the estimate. However, the valuable minerals are readily separable due to their SG differential and are expected to have a high recovery through the proposed conventional wet concentration plant, as demonstrated by metallurgical test work.

Sovereign have announced three sets of metallurgical results to the market (24 June 2019, 9 September 2020 and 7 December 2021), relating to the Company's ability to produce a high-grade rutile product with a high recovery via simple conventional processing methods. Sovereign engaged AML to conduct the metallurgical test work and develop a flowsheet for plant design considerations. The work has shown a premium quality rutile product ranging from 95.0% to 97.2% TiO_2 with low impurities could be produced with recoveries of about 94% to 100% and with favourable product sizing at d50 of 118µm (97.2% product).

Gravity separation was effective at concentrating graphite to a "light mineral pre-concentrate" due to its low specific gravity (~2.2 t/m³) at circa 6.3% TGC.

A program at SGS Lakefield in Canada was undertaken in order to confirm that the graphite gravity pre-concentrate can be upgraded into a coarse flake graphite by-product via a conventional graphite flotation flowsheet.

The test-work was extremely successful, and a very coarse-flake graphite concentrate at 96.3% TGC was produced. Greater than 60% of the graphite concentrate is in the large to super-jumbo fractions, suggesting a high combined basket value. The overall graphite recovery from the raw sample to product was 62%.

MRE TABLES

Table 5: Indicated MRE at various rutile cut-offs

Cut-off (rutile)	Resource (Mt)	Rutile Grade (%)	Contained Rutile (Mt)	Graphite Grade (%)	Contained Graphite (Mt)
0.40%	924	0.91	8.4	1.39	12.9
0.50%	854	0.95	8.1	1.42	12.1
0.60%	768	0.99	7.6	1.44	11.1
0.70%	662	1.05	6.9	1.43	9.5
0.80%	534	1.12	6.0	1.36	7.2
0.90%	416	1.20	5.0	1.24	5.1
1.00%	314	1.28	4.0	1.06	3.3
1.10%	228	1.36	3.1	0.85	1.9
1.20%	158	1.46	2.3	0.63	1.0
1.30%	113	1.54	1.7	0.52	0.6
1.40%	82	1.62	1.3	0.47	0.4

Table 6: Inferred MRE at various rutile cut-offs

Cut-off (rutile)	Resource (Mt)	Rutile Grade (%)	Contained Rutile (Mt)	Graphite Grade (%)	Contained Graphite (Mt)
0.40%	1,901	0.81	15.4	1.19	22.6
0.50%	1,649	0.86	14.2	1.23	20.4
0.60%	1,388	0.92	12.8	1.26	17.5
0.70%	1,113	0.99	11.0	1.26	14.0
0.80%	856	1.06	9.1	1.18	10.1
0.90%	608	1.15	7.0	0.99	6.0
1.00%	413	1.25	5.1	0.81	3.4
1.10%	288	1.34	3.8	0.69	2.0
1.20%	194	1.43	2.8	0.49	1.0
1.30%	128	1.52	2.0	0.41	0.5
1.40%	83	1.61	1.3	0.38	0.3

Table 7: Inferred & Indicated MRE at various rutile cut-offs

Cut-off (rutile)	Resource (Mt)	Rutile Grade (%)	Contained Rutile (Mt)	Graphite Grade (%)	Contained Graphite (Mt)
0.40%	2,825	0.84%	23.8	1.26%	35.5
0.50%	2,503	0.89%	22.4	1.30%	32.5
0.60%	2,155	0.95%	20.4	1.33%	28.6
0.70%	1,775	1.01%	18.0	1.32%	23.4
0.80%	1,391	1.09%	15.1	1.24%	17.3
0.90%	1,024	1.17%	12.0	1.09%	11.2
1.00%	727	1.26%	9.2	0.92%	6.7
1.10%	516	1.35%	7.0	0.76%	3.9
1.20%	352	1.44%	5.1	0.55%	1.9
1.30%	241	1.53%	3.7	0.46%	1.1
1.40%	165	1.62%	2.7	0.43%	0.7

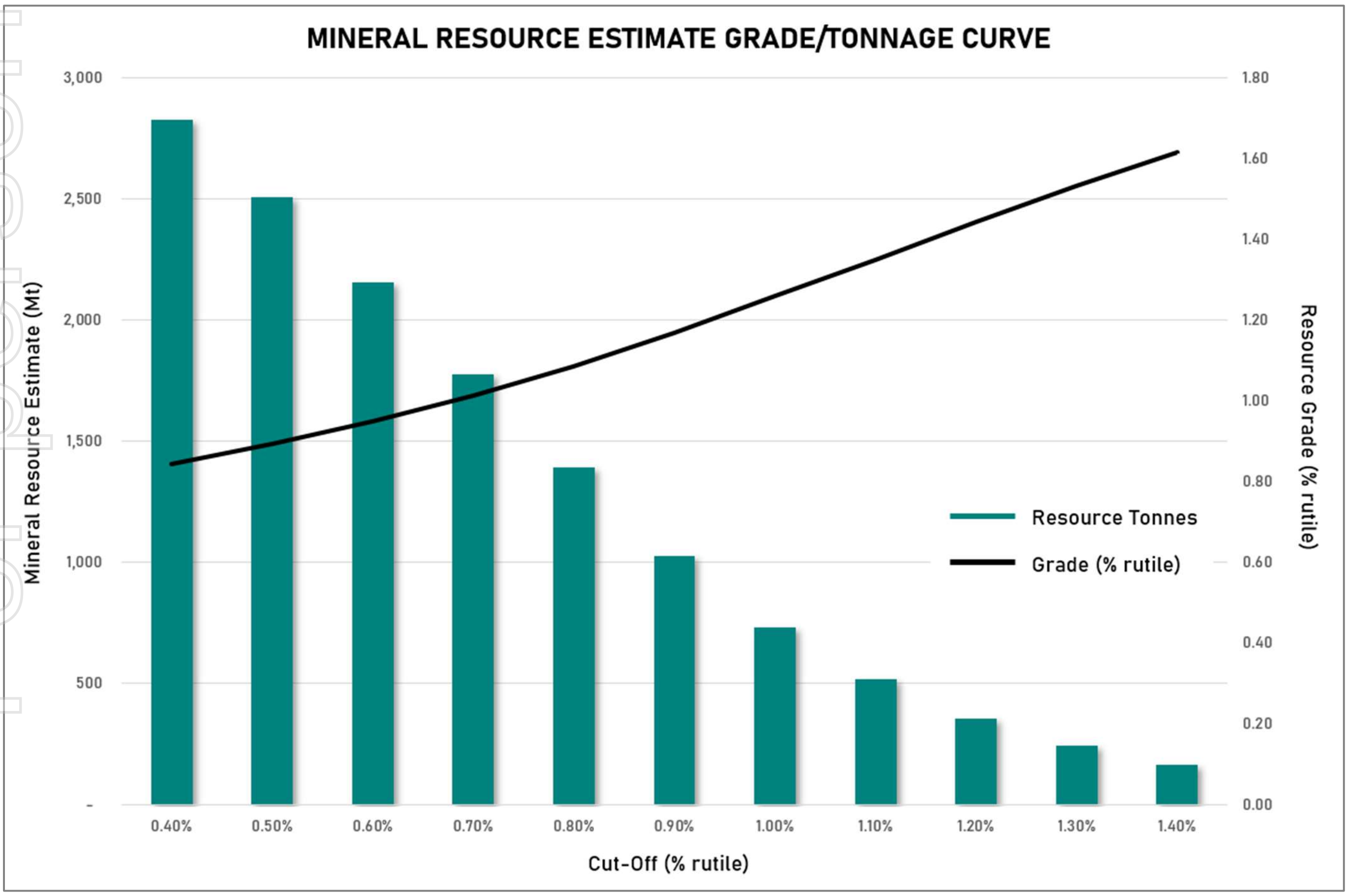

Figure 17: Grade Cut-off versus Tonnage Curve.

Forward Looking Statement

This release may include forward-looking statements, which may be identified by words such as "expects", "anticipates", "believes", "projects", "plans", and similar expressions. These forward-looking statements are based on Sovereign's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Sovereign, which could cause actual results to differ materially from such statements. There can be no assurance that forward-looking statements will prove to be correct. Sovereign makes no undertaking to subsequently update or revise the forward-looking statements made in this release, to reflect the circumstances or events after the date of that release.

Competent Persons Statement

The information in this announcement that relates to Mineral Resources is based on, and fairly represents, information compiled by Mr Richard Stockwell, a Competent Person, who is a fellow of the Australian Institute of Geoscientists (AIG). Mr Stockwell is a principal of Placer Consulting Pty Ltd, an independent consulting company. Mr Stockwell has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Stockwell consents to the inclusion of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to Exploration Results is based on information, and fairly represents, compiled by Mr Samuel Moyle, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy (AusIMM). Mr Moyle is the Exploration Manager of Sovereign Metals Limited and a holder of ordinary shares, unlisted options and performance rights in Sovereign. Mr Moyle has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Moyle consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to Metallurgical test-work Results - Rutile & Graphite is extracted from the announcement dated 24 June 2019, 9 September 2020 and 7 December 2021. The announcement is available to view on www.sovereignmetals.com.au. Sovereign confirms that a) it is not aware of any new information or data that materially affects the information included in the announcement; b) all material assumptions included in the announcement continue to apply and have not materially changed; and c) the form and context in which the relevant Competent Persons' findings are presented in this report have not been materially changed from the announcement.

This ASX Announcement has been approved and authorised for release by the Company's Managing Director, Dr Julian Stephens.

APPENDIX 1 – PEER SOURCE INFORMATION

Figure 1 & Table 3

Company	Project	Source
Iluka Resources	Sierra Rutile	Iluka Resources Limited's 2021 Annual Report (released on ASX 24/02/2022)
Iluka Resources	Balranald	Iluka Resources Limited Annual Ore Reserve and Resources as at 31 December 2021: https://iluka.com/CMSPages/GetFile.aspx?guid=213396d8-1630-49ff-8d1b-fe4b1ee71e7e
Base Resources	Kwale	Updated Kwale North Dune and maiden Bumamani Mineral Resource Estimate (released on ASX 19/02/2021)

Figure 2 & Table 4

Company	Project	Source
Syrah Resources	Balama	Syrah Resources Limited's 2021 Annual Report (released on ASX 24/02/2022)
Volt Resources	Bunyu	Volt Resources Limited's 2021 Annual Report (released on ASX 29/09/2021)
Black Rock Mining	Mahenge	ASX Announcement: Black Rock Mining confirms 25% increase in Measured Mineral Resource, now the largest in class globally (released 3/02/2022)
Mason Graphite	Lac Gueret	Mason Graphite's Corporate Presentation released July 2021
Magnis Energy	Nachu	Magnis' Corporate Presentation released February 2022
NextSource Materials	Molo	https://www.nextsourcematerials.com/graphite/molo-graphite-project/
Graphite One	Graphite One	https://www.graphiteoneinc.com/graphite-one-increases-tonnage-grade-and-contained-graphite-of-measured-and-indicated-and-inferred-resources-in-updated-mineral-resource-estimate/
Focus Graphite	Lac Tetepisca	https://focusgraphite.com/focus-graphite-reports-major-maiden-mineral-resource-estimate-at-lac-tetepisca-quebec/

APPENDIX 2 – JORC CODE, 2012 EDITION – TABLE 1

SECTION 1 - SAMPLING TECHNIQUES AND DATA

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.*	HA samples are composited based on regolith boundaries and sample chemistry generated by hand-held XRF. Each 1m of sample is dried and riffle-split to generate a total sample weight of 3kg for analysis, generally at 2 - 5m intervals. This primary sample is then split again to create a 3kg composite to provide a 1.5kg sample for both rutile and graphite analyses. Infill PT core drilling is sampled routinely at 2m intervals by compositing dried and riffle-split half core. A consistent, 1.5kg sample is generated for both the rutile and graphite determination.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Drilling and sampling activities are supervised by a suitably qualified company geologist who is present at all times. All drill samples are geologically logged by the geologist at the drill site/core yard. Each sample is sun dried and homogenised. Sub-samples are carefully riffle split to ensure representivity. The 1.5kg composite samples are then processed. An equivalent mass is taken from each sample to make up the composite. A calibration schedule is in place for laboratory scales, sieves and field XRF equipment. Placer Consulting Pty Ltd (**Placer**) Resource Geologists have reviewed Standard Operating Procedures (**SOPs**) for the collection and processing of drill samples and found them to be fit for purpose and support the resource classifications as applied to the Mineral Resource Estimate (**MRE**). The primary composite sample is considered representative for this style of rutile mineralisation.
	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.	Logged mineralogy percentages, lithology/regolith information and TiO_2% obtained from handheld XRF are used to determine compositing intervals. Care is taken to ensure that only samples with similar geological characteristics are composited together
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).*	A total of 1,205 HA holes for 11,360m were drilled at the Kasiya Rutile Deposit to obtain samples for quantitative determination of recoverable rutile and Total Graphitic Carbon (**TGC**). An initial 30 PT core holes, for 359.4m, were drilled at the Kasiya Rutile Deposit to obtain samples for validation of HA drilling results and for bulk density test work. The subsequent infill drilling programme, designed to support the resource estimate update, was completed by PT coring. A total of 234 core holes for 2,368.5m were included in the updated MRE. Placer has reviewed SOPs for HA and PT drilling and found them to be fit for purpose and support the resource classifications as applied to the MRE. Sample handling and preparation techniques are consistent for PT and coring samples. Two similar designs of HA drilling equipment are employed. HA drilling with 75mm diameter enclosed spiral bits (**SOS**) with 1m long steel rods and with 62mm diameter open spiral bits (**SP**) with 1m long steel rods. Drilling is oriented vertically by eye. Each 1m of drill sample is collected into separate sample bags and set aside. The auger bits and flights are cleaned between each metre of sampling to avoid contamination. Core-drilling is undertaken using a drop hammer, Dando Terrier MK1. The drilling generated 1m runs of 83mm PQ core in the first 2m and then transitioned to 72mm core for the remainder of the hole. Core drilling is oriented vertically by spirit level.

Criteria	JORC Code explanation	Commentary
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Samples are assessed visually for recoveries. The configuration of drilling and nature of materials encountered results in negligible sample loss or contamination. HA and PT drilling is ceased when recoveries become poor once the water table has been reached. Water table and recovery information is included in lithological logs. Core drilling samples are actively assessed by the driller and geologist onsite for recoveries and contamination.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	The Company's trained geologists supervise drilling on a 1 team 1 geologist basis and are responsible for monitoring all aspects of the drilling and sampling process. For PT drilling, core is extruded into core trays; slough is actively removed by the driller at the drilling rig and core recovery and quality is recorded by the geologist.
	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.	No relationship is believed to exist between grade and sample recovery. The high percentage of silt and absence of hydraulic inflow from groundwater at this deposit results in a sample size that is well within the expected size range. No bias related to preferential loss or gain of different materials is observed.
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.*	Geologically, data is collected in detail, sufficient to aid in Mineral Resource estimation. All individual 1m auger intervals are geologically logged, recording relevant data to a set template using company codes. A small representative sample is collected for each 1m interval and placed in appropriately labelled chip trays for future reference. All individual 1m core intervals are geologically logged, recording relevant data to a set template using company codes. Half core remains in the trays and is securely stored in the company warehouse.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging includes lithological features and estimates of basic mineralogy. Logging is generally qualitative. The core is photographed dry, after logging and sampling is completed.
	The total length and percentage of the relevant intersection logged	100% of samples are geologically logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Due to the soft nature of the material, core samples are carefully cut in half by hand tools.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Auger and core hole samples are dried, riffle split and composited. Samples are collected and homogenised prior to splitting to ensure sample representivity. ~1.5kg composite samples are processed. An equivalent mass is taken from each primary sample to make up the composite. The primary composite sample is considered representative for this style of mineralisation and is consistent with industry standard practice.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Techniques for sample preparation are detailed on SOP documents verified by Placer Resource Geologists. Sample preparation is recorded on a standard flow sheet and detailed QA/QC is undertaken on all samples. Sample preparation techniques and QA/QC protocols are appropriate for mineral determination and support the resource classifications as stated.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	The sampling equipment is cleaned after each sub-sample is taken. Field duplicate, laboratory replicate and standard sample geostatistical analysis is employed to manage sample precision and analysis accuracy.
	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.	Sample size analysis is completed to verify sampling accuracy. Field duplicates are collected for precision analysis of riffle splitting. SOPs consider sample representivity. Results indicate a sufficient level of precision for the resource classification.

Criteria	JORC Code explanation	Commentary
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample size is considered appropriate for the material sampled.
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.*	<u>Rutile</u> The Malawi onsite laboratory sample preparation methods are considered quantitative to the point where a heavy mineral concentrate (**HMC**) is generated. Final results generated are for recovered rutile i.e, the % mass of the sample that is rutile that can be recovered to the non-magnetic component of a HMC. Heavy liquid separation (**HLS**) of the HM is no longer required and a HM result is not reported in the updated MRE. The HMC prepared via wet-table, gravity separation at the Lilongwe Laboratory provides an ideal sample for subsequent magnetic separation and XRF. All 4,738 samples (not incl. QA) included in the MRE update received the following workflow undertaken on-site in Malawi; • Dry sample in oven for 1 hour at 105℃ • Soak in water and lightly agitate • Wet screen at 5mm, 600µm and 45µm to remove oversize and slimes material • Dry +45µm -600mm (sand fraction) in oven for 1 hour at 105℃ 3,787 of the 4,738 samples received the following workflow undertaken on-site in Malawi • Pass +45µm -600mm (sand fraction) across wet table to generate a HMC. • Dry HMC in oven for 30 minutes at 105℃ Bag HMC fraction and send to Perth, Australia for quantitative chemical and mineralogical determination. 951 of the 4,738 sample received the following workflow undertaken at Perth based Laboratories (superseded). • Split ~150g of sand fraction for HLS using Tetrabromoethane (**TBE**, SG 2.96g/cc) as the liquid heavy media to generate HMC. Work undertaken at Diamantina Laboratories. All of the 4,738 samples received the final workflow undertaken at Perth based Laboratories. • Magnetic separation of the HMC by Carpco magnet @ 16,800G (2.9Amps) into a magnetic (**M**) and non-magnetic (**NM**) fraction. Work undertaken at Allied Mineral Laboratories (**AML**) in Perth. • The NM fractions were sent to either ALS Perth or Intertek Perth for quantitative XRF analysis. Intertek samples received the standard mineral sands suite FB1/XRF72. ALS Samples received XRF_MS. <u>Graphite</u> 4,589 Samples processed at Intertek-Genalysis Perth via method C72/CSA. A portion of each test sample is dissolved in dilute hydrochloric acid to liberate carbonate carbon. The solution is filtered using a filter paper and the collected residue is the dried to 425°C in a muffle oven to drive off organic carbon. The dried sample is then combusted in a Carbon/ Sulphur analyser to yield total graphitic or TGC. An Eltra CS-800 induction furnace infra-red CS analyser is then used to determine the remaining carbon which is reported as TGC as a percentage.
	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.	Acceptable levels of accuracy and precision have been established. No handheld XRF methods are used for quantitative determination.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicate, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Sovereign uses internal and externally sourced wet screening reference material inserted into samples batches at a rate of 1 in 20. The externally sourced, certified standard reference material for HM and Slimes assessment is provided by Placer Consulting.

Criteria	JORC Code explanation	Commentary
		An external laboratory raw sample duplicate is sent to laboratories in Perth, Australia as an external check of the full workflow. These duplicates are produced at a rate of 1 in 20. Accuracy monitoring is achieved through submission of certified reference materials (**CRM's**). ALS and Intertek both use internal CRMs and duplicates on XRF analyses. Sovereign also inserts CRMs into the sample batches at a rate of 1 in 20. Three Rutile CRMs are used by Sovereign and range from 35% - 95% TiO_2. Three Graphite CRM's are used by Sovereign and range from 3% – 25% TGC. Analysis of sample duplicates is undertaken by standard geostatistical methodologies (Scatter, Pair Difference and QQ Plots) to test for bias and to ensure that sample splitting is representative. Standards determine assay accuracy performance, monitored on control charts, where failure (beyond 3SD from the mean) may trigger re-assay of the affected batch. Examination of the QA/QC sample data indicates satisfactory performance of field sampling protocols and assay laboratories providing acceptable levels of precision and accuracy. Acceptable levels of accuracy and precision are displayed in geostatistical analyses to support the resource classifications as applied to the estimate.
Verification of sampling & assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Results are reviewed in cross-section using Datamine Studio RM software and any spurious results are investigated. The deposit type and consistency of mineralisation leaves little room for unexplained variance. Extreme high grades are not encountered.
	The use of twinned holes.	Twinned holes are drilled across a geographically dispersed area to determine short-range geological and assay field variability for the resource estimation. Twin drilling is applied at a rate of 1 in 20 routine holes. Twin paired data (HA v HA & PT v PT) represents <1% of the drill database included in the updated MRE. Substantial comparative data between different drilling types and test pit results are also available but not referenced in the MRE. Additional twin drilling data are recommended (~5% of the drill database). Of the twins reviewed, acceptable levels of precision are displayed in the geostatistical analysis to support the resource classifications as applied to the estimate.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data is collected initially on paper logging sheets and codified to the Company's templates. This data is hand entered to spreadsheets and validated by Company geologists. This data is then imported to a Microsoft Access Database and validated automatically and manually. A transition to electronic field and laboratory data capture is well advanced.
	Discuss any adjustment to assay data.	Assay data adjustments are made to convert laboratory collected weights to assay field percentages and to account for moisture. QEMSCAN of the NM fraction shows dominantly clean and liberated rutile grains and confirms rutile is the only titanium species in the NM fraction. Recovered rutile is therefore defined and reported here as: TiO_2 recovered in the +45 to -600um range to the NM concentrate fraction as a % of the total primary, dry, raw sample mass divided by 95% (to represent an approximation of final product specifications). i.e recoverable rutile within the whole sample.
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.*	A Trimble R2 Differential GPS is used to pick up the HA collars. Daily capture at a registered reference marker ensures equipment remains in calibration. No downhole surveying of HA holes is completed. Given the vertical nature and shallow depths of the HA holes, drill hole deviation is not considered to significantly affect the downhole location of samples.
	Specification of the grid system used.	WGS84 UTM Zone 36 South.
	Quality and adequacy of topographic control.	The digital terrane model (**DTM**) was generated by wireframing a 20m-by-20m lidar drone survey point array, commissioned by SVM in March 2022. Major cultural features were removed from the survey points file prior to generating the topographical wireframe for resource model construction. The ultra-high resolution 3D drone aerial survey was executed utilising a RTK GPS equipped Zenith aircraft with accuracy of <10cm ground sampling distance (GSD). The DTM is suitable for the classification of the resources as stated.
Data spacing & distribution	*Data spacing for reporting of Exploration Results.*	The HA collars are spaced at nominally 400m along the 400m spaced drill-lines with the PT holes similarly spaced at an offset, infill grid. The resultant 200m-by-200m drill spacing (to the strike orientation of the deposit) is deemed to adequately define the mineralisation in the MRE.

Criteria	JORC Code explanation	Commentary
		The PT twin and density sample holes are selectively placed throughout the deposit to ensure a broad geographical and lithological spread for the analysis.
	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.	The drill spacing and distribution is considered to be sufficient to establish a degree of geological and grade continuity appropriate for the Mineral Resource estimation. Kriging neighbourhood analysis completed using Supervisor software informs the optimal drill and sample spacing for the MRE. Based on these results and the experience of the Competent Person, the data spacing and distribution is considered adequate for the definition of mineralisation and adequate for mineral resource estimation.
	Whether sample compositing has been applied.	Individual 1m auger intervals have been composited, based on lithology, at 2 – 5m sample intervals for the 1205 auger holes. Core holes have been sampled at a regular 2m interval to provide greater control on mineralisation for the Indicated Resource. The DH Compositing tool was utilised in Supervisor software to define the optimal sample compositing length. A 2m interval is applied to the MRE.
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*	Sample orientation is vertical and approximately perpendicular to the orientation of the mineralisation, which results in true thickness estimates, limited by the sampling interval as applied. Drilling and sampling are carried out on a regular square grid. There is no apparent bias arising from the orientation of the drill holes with respect to the orientation of the deposit.
	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.	There is no apparent bias arising from the orientation of the drill holes with respect to the orientation of the deposit.
Sample security	*The measures taken to ensure sample security*	Samples are stored in secure storage from the time of drilling, through gathering, compositing and analysis. The samples are sealed as soon as site preparation is complete. A reputable international transport company with shipment tracking enables a chain of custody to be maintained while the samples move from Malawi to Australia. Samples are again securely stored once they arrive and are processed at Australian laboratories. A reputable domestic courier company manages the movement of samples within Perth, Australia. At each point of the sample workflow the samples are inspected by a company representative to monitor sample condition. Each laboratory confirms the integrity of the samples upon receipt.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data*	The CP Richard Stockwell has reviewed and advised on all stages of data collection, sample processing, QA protocol and mineral resource estimation. Methods employed are considered industry best-practice. Perth Laboratory visits have been completed by Mr Stockwell. Field and in-country lab visits are were precluded by Covid 19 travel restrictions. In these cases, audit is completed by SOP review, site visits by an experienced senior geologist from South Africa and collection of photographs and video during operations. Sovereign Metals Managing Director Julian Stephens and Exploration Manager Samuel Moyle have been onsite in Malawi numerous times since the discovery of the Kasiya Deposit. Site audit by the CP is anticipated in May 2022.

SECTION 2 - REPORTING OF EXPLORATION RESULTS

Criteria	Explanation	Commentary
Mineral tenement & 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 environment settings.*	The Company owns 100% of the following Exploration Licences (**ELs**), Retention Licences (**RLs**), Mining Licence Applications (**AMLs**) and Licence Applications (**APLs**) under the Mines and Minerals Act 2019, held in the Company's wholly-owned, Malawi-registered subsidiaries: AML0088 (Malingunde Mining Licence application), APL031, EL0609, EL0492, EL0528, EL0545, EL0561, EL0582 and RL0012 A 5% royalty is payable to the government upon mining and a 2% of net profit royalty is payable to the original project vendor. No significant native vegetation or reserves exist in the area. The region is intensively cultivated for agricultural crops.
	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 tenements are in good standing and no known impediments to exploration or mining exist.
Exploration done by other parties	*Acknowledgement and appraisal of exploration by other parties.*	Sovereign Metals Ltd is a first-mover in the discovery and definition of residual rutile and graphite resources in Malawi. No other parties are, or have been, involved in exploration.
Geology	*Deposit type, geological setting and style of mineralisation*	The rutile deposit type is considered a residual placer formed by the intense weathering of rutile-rich basement paragneisses and variable enrichment by elluvial processes. Rutile occurs in a mostly topographically flat area west of Malawi's capital, known as the Lilongwe Plain, where a deep tropical weathering profile is preserved. A typical profile from top to base is generally soil ("SOIL" 0-1m) ferruginous pedolith ("FERP", 1-4m), mottled zone ("MOTT", 4-7m), pallid saprolite ("PSAP", 7-9m), saprolite ("SAPL", 9-25m), saprock ("SAPR", 25-35m) and fresh rock ("FRESH" >35m). The low-grade graphite mineralisation occurs as multiple bands of graphite gneisses, hosted within a broader Proterozoic paragneiss package. In the Kasiya areas specifically, the preserved weathering profile hosts significant vertical thicknesses, from near surface, of graphite mineralisation.
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 northings 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; and hole length*	All intercepts relating to the Kasiya Deposit have been included in public releases during each phase of exploration and in this report. Releases included all collar and composite data and these can be viewed on the Company website. There are no further drill hole results that are considered material to the understanding of the exploration results. Identification of the broad zone of mineralisation is made via multiple intersections of drill holes and to list them all would not give the reader any further clarification of the distribution of mineralisation throughout the deposit.
	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	No information has been excluded.
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.*	All results reported are of a length-weighted average of in-situ grades. The resource is reported at a range of bottom cut-off grades in recognition that optimisation and financial assessment is outstanding. A nominal bottom cut of 0.7% rutile is offered, based on preliminary assessment of resource product value and anticipated cost of operations.
	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.	No data aggregation was required.

Criteria	Explanation	Commentary
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	**Rutile Equivalent (RutEq)** *Formula*: Rutile Grade x Recovery (97%) x Rutile Price (US$1,346/t) + Graphite Grade x Recovery (62%) x Graphite Price (US$1,085/t) / Rutile Price (US$1,346/t). ***Commodity Prices:*** Rutile price: US$1,346/t Graphite price: US$1,085/t ***Metallurgical Recovery:*** Rutile Recovery: 97% Graphite Recovery: 62% All assumptions taken from the Company's 2021 Scoping Study released 16 December 2021. The Modifying Factors included in the JORC Code were assessed as part of the Scoping Study, including mining, processing, infrastructure, economic, marketing, legal, environmental, social and government factors. The Company has received advice from appropriate experts when assessing each Modifying Factor. Following an assessment of the results of the Scoping Study, the Company has formed the view that the next stage of feasibility studies is justified for Kasiya. Feasibility Studies will provide the Company with far more comprehensive assessment of a range of options for the technical and economic viability of Kasiya which by international standards should be sufficient detail for project development financers to base an investment decision.
Relationship between mineralisation widths & intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	The mineralisation has been released by weathering of the underlying, layered gneissic bedrock that broadly trends NE-SW at Kasiya North and N-S at Kasiya South. It lies in a laterally extensive superficial blanket with high-grade zones reflecting the broad bedrock strike orientation of ~045° in the North of Kasiya and 360° in the South of Kasiya.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	The mineralisation is laterally extensive where the entire weathering profile is preserved and not significantly eroded. Minor removal of the mineralised profile has occurred in alluvial channels. These areas are adequately defined by the drilling pattern and topographical control for the resource estimate.
	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').	Downhole widths approximate true widths limited to the sample intervals applied. Mineralisation remains open at depth and in areas coincident with high-rutile grade lithologies in basement rocks, is increasing with depth. Graphite results are approximate true width as defined by the sample interval and typically increase with depth.
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 the drill collar locations and appropriate sectional views.*	Refer to figures in this report and in previous releases. These are accessible on the Company's webpage.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high-grades and/or widths should be practiced to avoid misleading reporting of exploration results.*	All results are included in this report and in previous releases. These are accessible on the Company's webpage.
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.*	Limited lateritic duricrust has been variably developed at Kasiya, as is customary in tropical highland areas subjected to seasonal wet/dry cycles. Lithological logs record drilling refusal in 30 HA holes, or just over 2% of the drill database, No drilling refusal was recorded from PT drilling. Slimes (-45 um) averages 48wt% in the Indicated Resource at a 0.7% rutile bottom cut. Separation test work conducted at AML demonstrates the success in applying a contemporary mineral sands flowsheet in treating this material and achieving excellent rutile recovery. Sample quality (representivity) is established by geostatistical analysis of comparable sample intervals. Rutile has been determined, by QEMSCAN, to be the major TiO_2-bearing mineral at and around several rutile prospects within Sovereign's ground package. The

Criteria	Explanation	Commentary
		Company continues to examine areas within the large tenement package for rutile and graphite by-product mineralisation.
Further work	The nature and scale of planned further work (e.g. test for lateral extensions or depth extensions or large-scale step-out drilling).	Assessment of resource depth, guided by existing results over high-grade basement lithologies is required. Potentially, a substantial resource increase could be achieved without increasing the disturbance footprint. Further metallurgical assessment is recommended to characterise rutile quality and establish whether any chemical variability is inherent across the deposit. Resource-infill drilling should continue with closed-hole techniques, such as coring or reverse circulation with samples honouring lithological boundaries. HA drilling remains as an effective means of determining anomalism in regional exploration programmes. Additional twin drilling is recommended. CP audit (by Placer/RGS) to ensure establishment of industry best practice to drilling, sampling and analysis procedures.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to diagrams in the body of this report and in previous releases. These are accessible on the Company's webpage.

SECTION 3 - ESTIMATION AND REPORTING OF MINERAL RESOURCES

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 are manually entered into database tables according to SOP's and conforming to company field names and classifications. These are then migrated to a MaxGeo, Datashed5 database with validation and quarantine capability. Relevant tables from the database are exported to csv format and forwarded to Placer for independent review.
	Data validation procedures used.	Validation of the primary data include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, missing and mis-matched (to Lithology) collars. Statistical, out-of-range, distribution, error and missing data validation is completed by Placer on data sets before being compiled into a de-surveyed drill hole file and interrogated in 3D using Datamine Studio RM software. All questions relating to the input data are forwarded to the client for review and resolution prior to resource estimation.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	The CP (Richard Stockwell) was unable to visit the site due to international travel restrictions imposed by the Australian Government. Visits were completed to Perth laboratories. There are no issues observed that might be considered material to the Mineral Resource under consideration.
	If no site visits have been undertaken indicate why this is the case.	The Australian and Western Australian Governments have restricted unnecessary international travel due to the global Covid19 pandemic. The restrictions have been in place since the discovery of the Kasiya Rutile Deposit in early 2020. The company has endeavoured to increase its site photography and drone footage library to satisfy the competent person that best practice procedures are being employed in country. Site audit by the CP is anticipated in May 2022.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	There is a high degree of repeatability and uniformity in the geological character of the Kasiya Deposit demonstrated by lithological logging of drill core and HA samples. Satellite imagery and airborne geophysical data provided guidance for interpreting the strike continuity of the deposit. Drill hole intercept logging and assay results (HA and core), stratigraphic interpretations from drill core and geological logs of HA drill data have formed the basis for the geological interpretation. The drilling exclusively targeted the SOIL, FERP, MOTT and SAPL weathering horizons, with no sampling of the SAPR and below the upper level of the fresh rock (**FRESH**) domain.

Criteria	JORC Code explanation	Commentary
	Nature of the data used and of any assumptions made.	No assumptions were made.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	No alternative interpretations on mineral resource estimation are offered.
	The use of geology in guiding and controlling Mineral Resource estimation.	The mineral resource is constrained by the drill array plus one interval in each of the X, Y and Z axes. The topographical DTM constrains the vertical extent of the resource. Rutile, enriched at surface by deflation and elluvial processes, is constrained internally by a hard boundary at the base of the SOIL and FERP horizons that overly the (generally less-mineralised) MOTT and SAPL horizons. In this way, continuity of rutile, observed in surface drilling results, is honoured between drill lines rather than being diluted by averaging with underlying, lower-grade material. The base to mineralisation is arbitrarily designated at effective drill depth plus one (average sample width) interval in the Z orientation. The effective drill depth is where HA drilling intersects the static water table, rather than being a true depth to un-mineralised basement. Deeper drilling has shown rutile enrichment persists to bedrock and a material resource increase is anticipated upon application of suitable drilling methods to target depth extensions to the Kasiya/Nsaru Deposit. A base to mineralisation of BOH plus 2.7m (-2.7 RL) is retained for this estimate despite a slightly more generous 2.8m average sample interval recorded in the updated resource database. This basement horizon is interpreted on 200m north sections and accounts for artifacts of ineffective drilling terminating in soil or ferp horizons. It is applied consistently to both Indicated and Inferred resource areas.
	The factors affecting continuity both of grade and geology.	Rutile grade is generally concentrated in surface regolith horizons. Deposit stratigraphy and weathering is consistent along and across strike. Rutile grade is oriented at 45 degrees at Kasiya North and 360 degrees at Kasiya South, which mimics the underlying basement source rocks and residual topography. Rutile varies across strike as a result of the layering of mineralised and non-mineralised basement rocks.
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 Kasiya mineralised footprint strikes NE – SW and currently occupies an area of about 187km^2 Due to drilling methodology, basement, or the floor to the mineralisation, has not been intersected. Average drilling depth is about 10m, and mineralisation remains open in most of these holes.
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.*	Datamine Studio RM and Supervisor software is used for the resource estimation with key fields being interpolated into the volume model using the Inverse Distance weighting (power 2) method. Dynamic Anisotropy search ellipses, informed by variography, kriging neighbourhood analysis and gridding of rutile results were used to search for data during the interpolation. Suitable limitations on the number of samples and the impact of those samples, was maintained. Extreme grade values were not identified by statistical analysis, nor were they anticipated in this style of deposit. No top cut is applied to the resource estimation. Interpolation was constrained by hard boundaries (domains) that result from the geological interpretation.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	This is the third MRE for the Kasiya Deposit and the first to report the now coincident southern and eastern extensions to Kasiya (previously named Nsaru). Pilot plant-scale test work has been completed and results support the view of the Competent Person that an economic deposit of readily separable, high-quality rutile is anticipated from the Kasiya Deposit. The recovery of a coarse-flake graphite by-product was achieved by the test work.
	The assumptions made regarding recovery of by-products.	A graphite by-product was modelled as recoverable TGC.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	No significant deleterious elements are identified. A selection of assay, magnetic separation and XRF results are modelled and are reported.

Criteria	JORC Code explanation	Commentary
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	The average parent cell size used is equivalent to the average drill hole spacing within the Indicated Resource (200m*200m). Cell size in the Z-axis is established to cater for the composite sample spacing and definition of the Topsoil domain. This resulted in a parent cell size of 200m x 200m x 3m for the volume model with 5 sub-cell splits available in the X and Y axes and 10 in the Z axis to smooth topographical and lithological transitions. A sub-cell interpolation was applied to the MRE to better reflect the geological interpretation and ensure a reasonable graduation of informing data through intermediate cell areas. A Topsoil horizon has been defined at 0.3m thickness throughout the Indicated Resource area to support anticipated ore reserve calculation and mining studies. Topsoil is disclosed separately but remains in the MRE in recognition of advanced investigations by SVM on synthetic topsoil generation for rehabilitation.
	Any assumptions behind modelling of selective mining units.	No assumptions were made regarding the modelling of selective mining units. The resource is reported at an Indicated level of confidence and is suitable for optimisation and the calculation of a Probable Reserve.
	Any assumptions about correlation between variables.	No assumptions were made regarding the correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.	Interpolation was constrained by hard boundaries (domains) that result from the geological interpretation.
	Discussion of basis for using or not using grade cutting or capping.	Extreme grade values were not identified by statistical analysis, nor were they anticipated in this style of deposit. No top cut is applied to the resource estimation.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of grade interpolations was done visually In Datamine by loading model and drill hole files and annotating, colouring and using filtering to check for the appropriateness of interpolations. Statistical distributions were prepared for model zones from both drill holes and the model to compare the effectiveness of the interpolation. Distributions of section line averages (swath plots) for drill holes and models were also prepared for each zone and orientation for comparison purposes. The resource model has effectively averaged informing drill hole data and is considered suitable to support the resource classifications as applied to the estimate.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages are estimated on a dry basis. No moisture content is factored.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	The resource is reported at a range of bottom cut-off grades in recognition that optimisation and financial assessment is outstanding. A nominal bottom cut of 0.7% rutile is offered, based on preliminary assessment of resource value and anticipated operational cost.
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.*	Hydro-mining has been determined as the optimal method of mining for the Kasiya Rutile deposit. The materials competence is loose, soft, fine and friable with no cemented sand or dense clay layers rendering it amenable to hydro-mining. It is considered that the strip ratio would be zero or near zero. Dilution is considered to be minimal as mineralisation commonly occurs from surface and mineralisation is generally gradational with few sharp boundaries. Recovery parameters have not been factored into the estimate. However, the valuable minerals are readily separable due to their SG differential and are expected to have a high recovery through the proposed, conventional wet concentration plant.
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,*	Sovereign have announced three sets of metallurgical results to the market (24 June 2019, 9 September 2020 and 7 December 2021), relating to the company's ability to produce a high-grade rutile product with a high recovery via simple conventional processing methods. Sovereign engaged AML to conduct the metallurgical test work and develop a flowsheet for plant design considerations. An initial sighter metallurgical test-work program was undertaken in June 2019 on a 180kg sample of saprolite-hosted rutile from an area representative of the style of mineralisation at the Wofiira prospect. This test work focused on generating saleable product specifications and demonstrated that a high-quality commercial

Criteria	JORC Code explanation	Commentary
	this should be reported with an explanation of the basis of the metallurgical assumptions made.	Rutile product can be produced using conventional mineral sands processing methods. The recovered, in-situ rutile grade was 1.16% produced in a +38µm to -250µm size fraction with a produced rutile product grade of 96.0% TiO_2. A follow-up test work program was then commissioned on a mineralised sample of approximately 1,000kg composited from a number of drill holes across the Kasiya deposit. The sample had a head grade of 0.96% recoverable rutile. The test-work focussed on producing a rutile product. The test work was based on the flowsheet previously developed with AML with minor improvements. The work showed a premium quality rutile product of 96.3% TiO_2 with low impurities could again be produced with favourable product sizing at d50 of 145µm. Recoveries were about 98%. A scoping study test work program was then undertaken on a 1,600kg mineralised sample to confirm and improve on the previous bulk metallurgy program completed in late 2020. Results again confirmed premium grade rutile can be produced via a simple and conventional process flow sheet and are consistent with previous results. World-class product chemical specifications are reported at 95.0% to 97.2% TiO2 with low impurities and stand-out metallurgical recoveries ranging from 94% to 100%. The product characteristics are considered by the Competent Person (industrial minerals) to be favourable for product marketability. The Competent Person recommends additional variability testing to investigate different geological and weathering domains and to improve confidence in product quality across the deposit. This work is anticipated as the project moves forward into higher-confidence resource classifications to identify discrete mineral populations, where they exist, and assist in accurate mining and product assumptions during optimisations and feasibility study.
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.*	A large portion of the Mineral Resource is confined to the SOIL, FERP and MOTT weathering domains, and any sulphide minerals have been oxidised in the geological past. Therefore, acid mine-drainage is not anticipated to be a significant risk when mining from the oxidised domain. No major water courses run through the resource area. The Kasiya deposit is located within a farming area and has villages located along the strike of the deposit. Sovereign holds regular discussions with local landholders and community groups to keep them well informed of the status and future planned directions of the project. Sovereign has benefited from maintaining good relations with landowners and enjoys strong support from the community at large. Kasiya is in a sub-equatorial region of Malawi and is subject to heavy seasonal rainfall, with rapid growth of vegetation in season. Substantial vegetation or nature reserve is absent in the area.
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.*	Density was calculated from 310 full core samples taken from geographically and lithologically-diverse sites across the deposit. Density measured using wet-bulk and dry-bulk density immersion method performed by Sovereign in Malawi and calculations verified by Placer Consulting. Density data was loaded into an Excel file, which was flagged against weathering horizons and mineralisation domains.
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	All bulk density determinations were completed by the wet-bulk and dry-bulk density, water-immersion method.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	An average density of 1.65 t/m^3 was determined for the total weathering profile. This incorporates and average density of 1.39 t/m^3 for the SOIL domain, 1.60 t/m^3 for the FERP domain, 1.65 t/m^3 for the MOTT domain, 1.68 t/m^3 for the PSAP domain, 1.63 t/m^3 for the SAPL domain, and 1.93 t/m^3 for the LAT domain. Density data are interpolated into the resource estimate by the nearest neighbour method.

Criteria	JORC Code explanation	Commentary
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	Classification of the MRE is at an Indicated and Inferred category. Minor regions of unclassified material occur in sparsely drilled, typically extraneous regions of the resource area. These are excluded from the resource inventory.
	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).	All available data were assessed and the competent person's relative confidence in the data was used to assist in the classification of the Mineral Resource.
	Whether the result appropriately reflects the Competent Person's view of the deposit	Results appropriately reflects a reasonable and conservative view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	The Competent Person, Richard Stockwell undertook an audit of the resource estimate, and found it to be suitable for classification at an Indicated and Inferred category.
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.*	Substantial additional resource material is expected to occur below the effective depth of drilling (water table). High grade sample results are constrained tightly by search and estimation parameters, which are likely to be contiguous upon application of closer-spaced drilling. A high-degree of uniformity exists in the broad and contiguous lithological and grade character of the deposit. Open-hole drilling and infill core drilling technique has been expertly applied and data collection procedures, density assessments, QA protocols and interpretations conform to industry best practice with few exceptions. Assay, mineralogical determinations and metallurgical test work conform to industry best practice and demonstrate a rigorous assessment of product and procedure. The development of a conventional processing flowsheet and marketability studies support the classification of the Kasiya Resource.
	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.	The estimate is global.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No production data are available to reconcile model results.