

## SIX FURTHER SIGNIFICANT RUTILE TARGETS IDENTIFIED

**Sovereign Metals Limited** (“the Company” or “Sovereign”) is pleased to report that a regional soil sampling program has identified six new areas of rutile at surface. Hand auger drilling at these new targets is underway to determine recoverable grades and potential dimensions of rutile mineralisation hosted within soft, free-dig saprolite.

### HIGHLIGHTS

- ❖ **Six new zones of rutile mineralisation** have been identified in western parts of Sovereign’s large >4,000km<sup>2</sup> ground holding in Malawi
- ❖ Soil sampling at ~10km line spacing has identified rutile mineralisation in soil lines with along-line **widths of up to ~2.2km**
- ❖ All zones of rutile mineralisation identified in the soils remain **open laterally in both directions** with the orientation of mineralised zones still to be determined
- ❖ Initial hand auger drilling has shown **significant visual rutile** hosted in soft saprolite material beneath the soil anomalies
- ❖ Samples with substantial visual rutile mineralisation have been sent to Australian laboratories for independent quantitative analysis

### Ongoing work programs:

- ❖ Continued hand auger program across the six high priority targets to test the extension of the rutile mineralisation
- ❖ Ongoing regional soil sampling in order to identify further priority targets
- ❖ Continued metallurgical test-work designed to optimise the metallurgical flowsheet and further validate commercial rutile product specifications

### Sovereign’s Managing Director Dr Julian Stephens commented:

*“The prospectivity of our large ground-holding in Malawi continues to evolve with these soil sampling results showing very widespread rutile at surface in numerous areas. Initial hand auger drilling shows significant visual mineralisation in the underlying saprolite and validates the soil sampling technique. We are rapidly advancing our numerous rutile prospects and expect to be in a position to commence deeper aircore drilling in the coming months.”*

### ENQUIRIES

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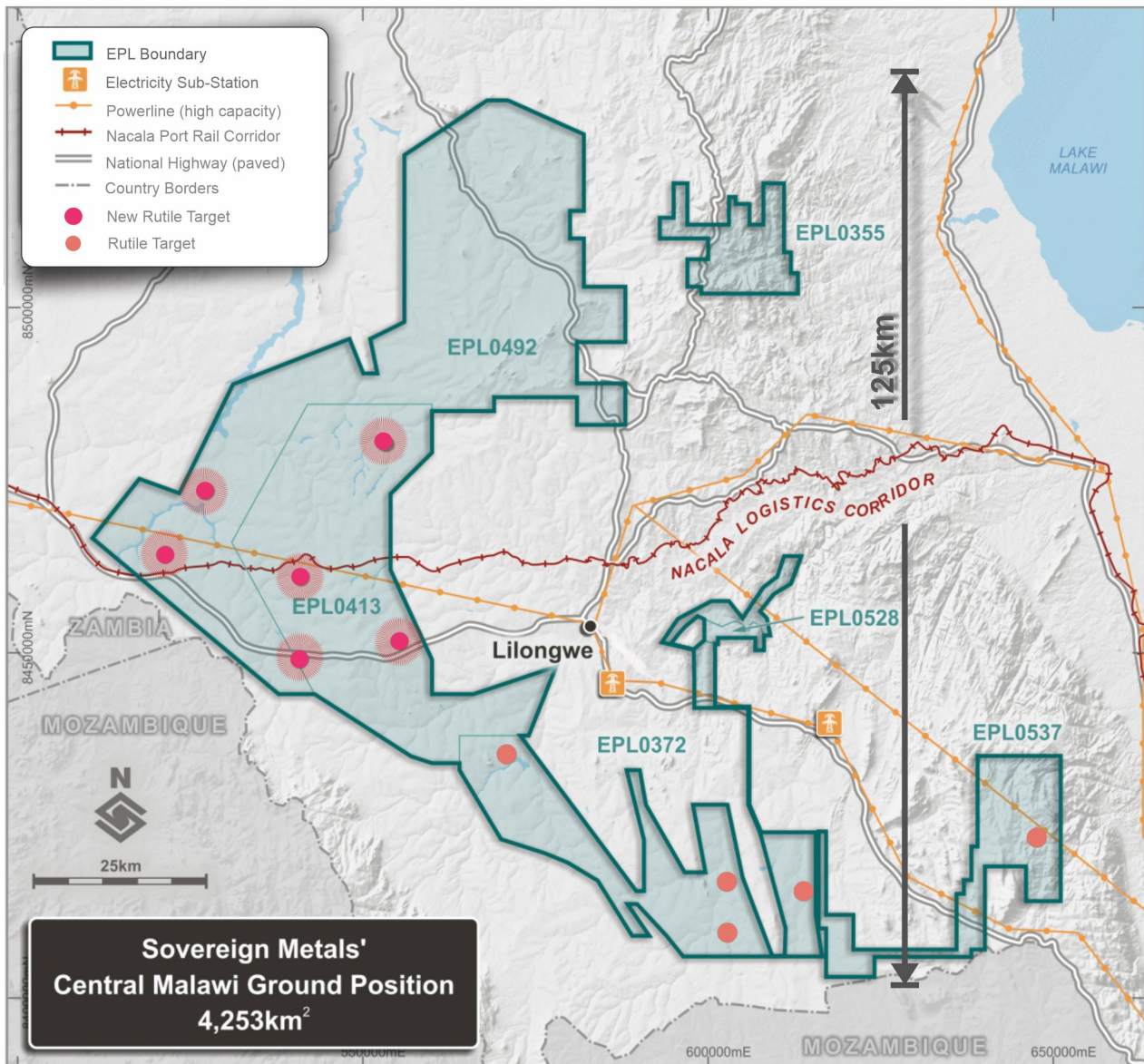
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**SOIL SAMPLING RESULTS**

As part of Sovereign’s previously announced accelerated rutile strategy, intensive exploration and metallurgical work was commenced to further assess the potential scale and grade of rutile mineralisation across Sovereign’s large ground holding in Malawi. Additionally, the recoverability and specifications of a commercial rutile product will be further assessed following on from the previous high-purity rutile product produced.

A key component of the exploration strategy was an extensive regional soil sampling program in order to identify new areas of rutile mineralisation. The program utilised on-site wet-tabling, magnetic separation and hand-held XRF analysis to identify recoverable rutile mineralisation to a semi-quantitative level. As Sovereign controls a very large and strategic ground holding, this systematic soil sampling technique was determined to be the most efficient method to identify priority targets.

An initial program focusing on the western areas of the Company’s large ground position has identified six new zones of rutile mineralisation (see Figure 1). The program involved 649 soil samples taken on notionally ~10km spaced lines at ~200m sample spacing.



**Figure 1: Project map showing newly identified rutile mineralisation zones discovered by soil sampling**

Semi-quantitative results have to date shown these six new zones of surface rutile have along-line widths ranging of up to ~2.2km with strike length and true orientation of rutile mineralisation still to be determined. All rutile mineralisation zones identified in the soils remain open laterally in both directions.

Soil sampling over large regional areas is ongoing in order to identify further priority targets.

## INITIAL DRILLING

Initial hand auger drilling of 35 holes in total over the six targets is now complete. Hole depth was up to 17m and averaged 10m. All hand auger samples were processed through the on-site laboratory to determine which samples are likely to have potentially economic grades of recoverable rutile. Samples deemed to have significant recoverable rutile mineralisation have been air freighted to a globally recognised Australian-based independent laboratory for quantitative mineralogical determination.

Further hand-auger drilling across the six newly identified targets continues in order to test the extents of the rutile mineralisation.

## IN-COUNTRY LABORATORY

Since discovering rutile mineralisation in 2018, Sovereign has been developing its on-site processing capabilities in order to be able to achieve semi-quantitative rutile results in real time. The on-site laboratory facilities include:

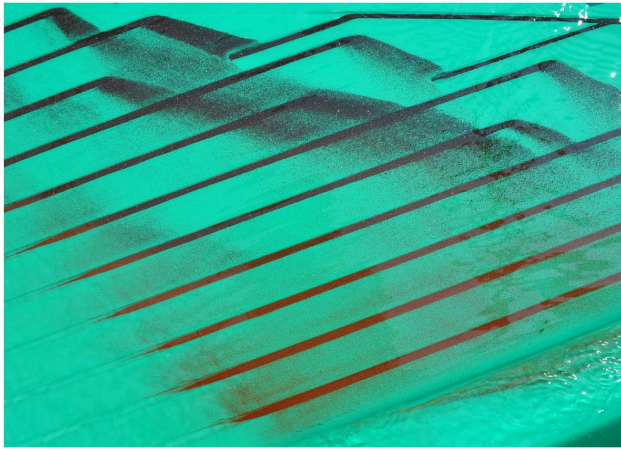
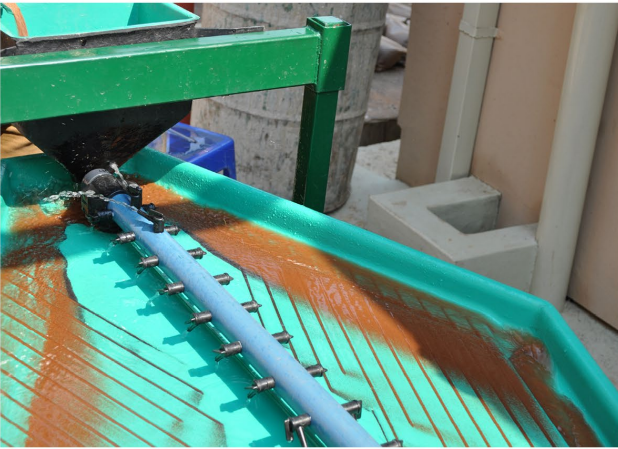
- Hand-held XRF for establishing TiO<sub>2</sub> content in raw samples and heavy mineral fractions
- Desliming stations with a combined ~30 sample per day throughput capacity
- A fully-equipped wet table for producing heavy mineral concentrates (HMCs)
- High quality weighing and screening equipment
- Laboratory magnets for separating the magnetic (ilmenite and iron oxides) and non-magnetic (rutile) fractions of the HMCs
- High quality stereo-microscope for visual verification of rutile in the non-magnetic HMC fractions

## ONGOING METALLURGICAL TEST-WORK

In parallel with the exploration activities, the Company has continued bench-scale metallurgical test-work on larger samples of 200 – 300kg. This test-work is aimed at assessing the recoverability and specification of commercial rutile product, and to optimise and validate the metallurgical flowsheet.







*Figures above: Laboratory activities in Malawi*

## **Competent Persons' Statements**

*The information in this report that relates to Exploration Results is based on information compiled by Dr Julian Stephens, a Competent Person who is a member of the Australian Institute of Geoscientists (AIG). Dr Stephens is the Managing Director of Sovereign Metals Limited and a holder of ordinary shares and unlisted options in Sovereign Metals Limited. Dr Stephens 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'. Dr Stephens consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

## **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.*





**Appendix 1: JORC Code, 2012 Edition – Table 1**

**SECTION 1 - SAMPLING TECHNIQUES AND DATA**

Criteria	JORC Code explanation	Soil Sampling Commentary
<b>Sampling Techniques</b>	<i>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.</i>	649 soil samples in total were taken across the tenement package. Samples were collected on a notional ~10km by ~200m spacing using regional roughly E-W rail and road transport routes. ~2 kg of raw material was collected between 30-50cm below surface targeting the B-horizon.  Raw samples were analysed by hand-held XRF. 136 Samples with high TiO <sub>2</sub> % were identified for further rutile test work through the onsite laboratory.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	The selected 136 samples were passed through a standard Jones 50:50 riffle splitter for retention of a library sample of approximately 1.5kg mass and generation of a main sample of 500g. The main sample and library samples are considered representative for this style of rutile mineralisation.
	<i>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.</i>	Weathering, lithological information and TiO <sub>2</sub> % obtained from handheld XRF were used to determine samples for rutile processing.
<b>Drilling Techniques</b>	<i>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).</i>	No drilling is reported.
<b>Drill Sample Recovery</b>	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	No drilling is reported.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	No drilling is reported.
	<i>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.</i>	No drilling is reported.
<b>Logging</b>	<i>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.</i>	A brief field description was recorded including colour, density, moisture, soil type and depth.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i>	Logging is generally qualitative.
	<i>The total length and percentage of the relevant intersection logged</i>	100% of samples are geologically logged.
<b>Sub-sampling techniques and sample preparation</b>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	Not applicable – No core drilling completed.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	513 of the soil samples were not split. 136 selected samples with high TiO <sub>2</sub> % were passed through a standard Jones 50:50 riffle splitter for generation of a 500g sample for rutile processing. The remaining sample was retained for potential future processing. 632 samples were recorded as DRY, 13 were recorded as DAMP and 4 recorded as WET. Of the 136 selected for splitting, all were DRY.

Criteria	JORC Code explanation	Soil Sampling Commentary
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	Use of the Jones splitter is deemed appropriate given the generally dry nature of the soil samples.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	The splitter was cleaned after each sample.
	<i>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.</i>	Duplicate samples have not been taken at this early stage of exploration.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	The sample size is considered appropriate for the material sampled.
<b>Quality of assay data and laboratory tests</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	<p>The Malawi onsite laboratory results are considered to be semi-quantitative only and not suitable for reporting quantitative rutile grades.</p> <p>The following workflow for the samples was undertaken on-site;</p> <ul style="list-style-type: none"> <li>• Dry sample in oven for 1 hour at 105°C</li> <li>• Soak in water and lightly agitate</li> <li>• Wet screen at 5mm, 600mm and 45µm to remove oversize and slimes material</li> <li>• Dry +5mm, +600m and +45µm fractions in oven for 1 hour at 105°C</li> <li>• Pass 45µm -600mm fraction across wet table twice to generate a heavy mineral concentrate (HMC)</li> <li>• Dry all fractions in oven for 1 hour at 105°C</li> <li>• Multi stage manual magnetic separation to produce a non-magnetic and magnetic fraction</li> <li>• Hand pan of the non-magnetic fraction</li> <li>• XRF analysis of the non-magnetic fraction by a portable hand-held instrument</li> </ul> <p>Weights are recorded at each stage.</p>
	<i>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.</i>	<p>Acceptable levels of accuracy and precision have been established. SVM uses a Thermo Fisher Niton™ XL3t XRF Analyzer calibrated specifically to the site material.</p> <p>XRF results are considered semi-quantitative.</p>
	<i>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.</i>	Internal standards were used by SVM. The overall quality of QA/QC is considered to be good.
<b>Verification of sampling &amp; assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Significant rutile results were verified by alternative company personnel.
	<i>The use of twinned holes.</i>	No drilling is reported and no duplicate soil samples were taken.
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	All data was collected initially on paper logging sheets and codified to the Company's templates. This data was hand entered to spreadsheets and validated by Company geologists. This data was then imported to a Microsoft Access Database then validated automatically and manually.
	<i>Discuss any adjustment to assay data.</i>	No assay adjustment has occurred.
<b>Location of data points</b>	<i>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.</i>	A Garmin 64s hand held GPS was used to locate and record all of the soil locations.
	<i>Specification of the grid system used.</i>	WGS84 UTM Zone 36 South.
	<i>Quality and adequacy of topographic control.</i>	A hand-held GPS Device was considered adequate for the program.
<b>Data spacing &amp; distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	Soils were collected on a notional 200m spacing along regional lines to provide indicative date.

Criteria	JORC Code explanation	Soil Sampling Commentary
	<i>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.</i>	Not applicable, no Mineral Resource or Ore Reserve estimations are covered by new data in this report.
	<i>Whether sample compositing has been applied.</i>	No sample compositing has been applied.
<b>Orientation of data in relation to geological structure</b>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known considering the deposit type</i>	No bias attributable to orientation of sampling has been identified.
	<i>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.</i>	No bias attributable to orientation of drilling has been identified.
<b>Sample security</b>	<i>The measures taken to ensure sample security</i>	Samples were stored in secure storage from the time of collection, through to gathering for processing.
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data</i>	It is considered by the Company that industry best practice methods have been employed at all stages of the exploration.

**SECTION 2 - REPORTING OF EXPLORATION RESULTS**

Criteria	Explanation	Commentary
<b>Mineral tenement &amp; land tenure status</b>	<i>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.</i>	The Company owns 100% of 7 Exclusive Prospecting Licences (EPLs) in Malawi. EPL0355 renewed in 2019 for 2 years, EPL0372 renewed in 2018 for 2 years and EPL0413 renewed in 2017 for 2 years. EPL0492 and EPL0528 were granted in 2018 for an initial period of three years (renewable). EPL0537 and EPL0545 were granted in 2019 for an initial period of three years (renewable).
	<i>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.</i>	The tenements are in good standing and no known impediments to exploration or mining exist.
<b>Exploration done by other parties</b>	<i>Acknowledgement and appraisal of exploration by other parties.</i>	No other parties were involved in exploration.
<b>Geology</b>	<i>Deposit type, geological setting and style of mineralisation</i>	The rutile deposit type could be termed a residual placer formed by the intense weathering of rutile-rich basement paragneisses.  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).
<b>Drill hole information</b>	<i>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</i>	No drilling is reported.  Soil results are considered indicative and semi-quantitative only, and hence individual results are not reported.
	<i>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</i>	The actual results are excluded because they are semi-quantitative only.



Criteria	Explanation	Commentary
	<i>Competent Person should clearly explain why this is the case</i>	
<b>Data aggregation methods</b>	<i>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.</i>	No averages or cut-offs were applied.
	<i>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.</i>	No drilling is reported.
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	No metal equivalents are applied
<b>Relationship between mineralisation widths &amp; intercept lengths</b>	<i>These relationships are particularly important in the reporting of Exploration Results.</i>	No metal equivalents are applied
	<i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	The exact geometry of the mineralisation is unknown at this stage.
	<i>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').</i>	No drilling is reported hence this is not applicable.
<b>Diagrams</b>	<i>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.</i>	Refer to figures in the body of this report.
<b>Balanced reporting</b>	<i>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.</i>	The actual results are excluded because they are semi-quantitative only and hence comprehensive reporting of all results is neither practicable nor warranted.
<b>Other substantive exploration data</b>	<i>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.</i>	Rutile has been determined to be the major TiO <sub>2</sub> -bearing mineral at and around several rutile prospects and within the Malingunde graphite deposit area through mineralogy and sighter metallurgy test-work reported in 2018 and 2019. The company continues to examine all areas within the large tenement package for rutile mineralisation.
<b>Further work</b>	<i>The nature and scale of planned further work (e.g. test for lateral extensions or depth extensions or large-scale step-out drilling).</i>	Commencement of additional mineralogical and metallurgical test-work on samples from each of the significant mineralised areas to assess mineralogy, recoverable rutile percentages, improve recovered rutile grades, determine the potential to produce other mineral by-products and further develop the flowsheet.  Further analyses of historical drill samples to expand areas of known rutile mineralisation.  Regional hand-auger drilling to attempt to delineate an initial rutile resource, if warranted, and further understand the regional distribution of rutile.