ASX RELEASE

ASX: MRC

28 April 2023

ANNUAL MINERAL RESOURCES AND ORE RESERVES STATEMENT

Heavy Mineral Sands Projects – South Africa

- **At 31 December 2022, MRC's total Mineral Resources of heavy mineral sands contained a combined estimate of 562 million tonnes at 6.6% THM, containing 37 million tonnes in situ heavy mineral.**
- **Updated Tormin Ore Reserve of 60.3 million tonnes[1] at 3.7% VHM[2] (14.7% THM[3]) containing 2.21 million tonnes of heavy mineral.**

Graphite Projects – Australia and Norway

- **At 31 December 2022, MRC's total Mineral Resources of graphite contained 9.78 million tonnes at 14.3% Total Graphitic Carbon ("TGC"), containing 1.39 million tonnes of graphite.**
- **Total Group Ore Reserves of graphite contained 4.84 million tonnes at 14.3% TGC, containing 0.69 million tonnes of graphite.**

Mineral Commodities Ltd (ASX: MRC) ("**the Company**" or "**MRC**") is pleased to report its annual Mineral Resource and Ore Reserve Estimates as at 31 December 2022 pursuant to ASX Listing Rule 5.20 and 5.21. Summary of total Resource and Reserve estimates are set out below and full details of the Resource/Reserve estimates including JORC Code Table 1, can be found in the attached Annual Report.

Interim Chief Executive Officer Adam Bick commented: "*The 2022 Annual Mineral Resource and Ore Reserve Statement of the Company indicates an excellent portfolio of world-class Mineral Sands and Graphite deposits supporting our growth strategy. Furthermore, the recently announced Updated Ore Reserve for the Tormin Inland Strand, both within and outside the Expanded Mining Right, will underpin the long term profitability of Tormin and significantly enhances the asset value of our Heavy Minerals division.*"

[1] Refer ASX Announcement entitled 'Significant Ore Reserve Increase for Tormin Inland Strands' dated 5 April 2023.
[2] VHM includes all currently sold minerals (zircon, rutile, ilmenite, magnetite, and garnet) that report as sink during heavy liquid separation at SG of 2.96 (bromoform) after desliming, within the 45 µm to 1mm size fraction as a percentage of the total material.
[3] THM includes all minerals that report as sink during heavy liquid separation at SG of 2.96 (bromoform) after desliming, within the 45 micron to 1mm size fraction as a percentage of the total material.

Group Mineral Resources

As at 31 December 2022, Group Mineral Resources included:

- **562 million tonnes at 6.6% THM including 37 million tonnes of in situ heavy mineral across its Tormin Mineral Sands Operation and Xolobeni Mineral Sands Project.**

- **9.78 million tonnes at 14.3% TGC and contained 1.39 million tonnes of graphite across its Munglinup Graphite Project and Skaland Graphite Operation.**

There has been no material movement of heavy mineral resources compared with the estimate at the same time last year. Graphite resources have decreased by 0.01 million tonnes compared with the estimate at the same time last year due to depletion at the Skaland Graphite Operation. Mineral Resources are reported inclusive of Ore Reserves. The Group Mineral Resources estimates for the FY 2022 are set out in Tables 1 and 2.

Table 1 - Total Mineral Resources of Heavy Mineral Sand at 31 December 2022

Project	Category	Resource (Mt)	THM (%)	In Situ THM (Mt)	Zircon (%HM)	Garnet (%HM)	Ilmenite (%HM)	Rutile (%HM)	Anatase (%HM)	Magnetite (%HM)
Tormin Beaches	Indicated	1.86	10.3	0.19	2.5	43.1	5.4	1.3	0.1	0.6
	Inferred	0.19	10.1	0.02	2.3	48.9	5.0	1.2	0.1	0.7
	Total	**2.05**	**10.3**	**0.21**	**2.5**	**43.6**	**5.4**	**1.3**	**0.1**	**0.7**
Northern Beaches	Indicated	1.49	17.2	0.26	2.6	49.6	6.8	1.3	0.1	0.6
	Inferred	0.23	6.9	0.02	2.2	41.7	4.5	1.3	0.0	0.8
	Total	**1.72**	**15.8**	**0.27**	**2.6**	**48.6**	**6.5**	**1.3**	**0.1**	**0.6**
Western Strandline	Measured	32.7	19.21	6.2	1.82	12.49	7.91	1.09	0.21	0.52
	Indicated	39.7	9.48	3.7	1.05	14.77	3.80	0.84	0.21	0.74
	Inferred	119.2	6.93	8.2	2.60	10.68	18.04	1.44	0.29	0.43
	Stockpile	1.6	12.84	0.2	4.21	18.85	25.78	1.95	0.39	0.78
	Total	**193.2**	**9.58**	**18.5**	**2.16**	**11.89**	**13.46**	**1.26**	**0.25**	**0.51**
Eastern Strandline	Indicated	1.9	5.34	0.1	6.12	15.71	35.44	7.73	0.92	0.89
	Inferred	17.5	3.13	0.5	6.35	14.39	36.74	6.09	1.19	0.51
	Total	**19.5**	**3.36**	**0.6**	**6.32**	**14.52**	**36.60**	**6.25**	**1.16**	**0.57**
Xolobeni	Measured	224	5.7	12.76			54.5			
	Indicated	104	4.1	4.26			53.7			
	Inferred	18	2.3	0.41			69.4			
	Total	**346.0**	**5.0**	**17.3**			**54**			
Grand Total		**562.0**	**6.6**	**37**			**39**			

- Mineral assemblage reported as in situ percentage of THM content.
- Tonnes and grades numbers may not compute due to rounding.
- 2% THM cut-off grade used for Tormin Beaches, Northern Beaches and Western and Eastern Strandline.
- 1% THM cut-off grade used for Xolobeni.

Table 2 - Total Mineral Resources of Graphite at 31 December 2022

Project	Category	Resource (Mt)	Total Graphitic Carbon (%)	Contained Graphite (Mt)
Munglinup	Indicated	4.49	13.1	0.58
	Inferred	3.50	11.0	0.38
	Total	**7.99**	**12.2**	**0.97**
Skaland	Measured	0.06	30.2	0.02
	Indicated	0.68	25.2	0.17
	Inferred	1.05	22.0	0.23
	Total	**1.79**	**23.5**	**0.42**
Grand Total		**9.78**	**14.3**	**1.39**

- Tonnes and grade numbers may not compute due to rounding.
- 10% TGC cut-off grade used for Skaland.
- 5% TGC cut-off grade used for Munglinup.

Group Ore Reserves

As at 31 December 2022, Group Ore Reserves included:

- **60.3 million tonnes at 3.7% VHM (14.7% THM) containing 2.21 million tonnes of heavy mineral at the Tormin Western Strandline[1].**

- **4.84 million tonnes at 14.3% TGC and contained 0.69 million tonnes of graphite across its Munglinup Graphite Project and Skaland Graphite Operation.**

This represents an increase of approximately 0.65 million tonnes of heavy mineral reserves and a reduction of 0.04 million tonnes of graphite reserves compared with the estimate at the same time last year. The reduction in graphite reserves is due to mining depletion. The Group Ore Reserves estimates for the FY 2022 are set out in Tables 3 and 4.

Table 3 - Total Ore Reserves of Heavy Mineral Sands at 31 December 2022

Project	Category	Reserve (Mt)	Total VHM (%)	Contained VHM (Mt)
Western Strandline	Proven	21.5	5.4	1.17
	Probable	38.8	2.7	1.05
	Total	**60.3**	**3.7**	**2.21**
Grand Total		**60.3**	**3.7**	**2.21**

- Tonnes and grade numbers may not compute due to rounding.
- The economic cut-off is defined as positive cash flow grade per tonne.
- Ore Reserves are a sub-set of Mineral Resources.

Table 4 - Total Ore Reserves of Graphite at 31 December 2022

Project	Category	Reserves (Mt)	Total Graphitic Carbon (%)	Contained Graphite (Mt)
Munglinup	Proven			
	Probable	4.24	12.8	0.54
	Total	**4.24**	**12.8**	**0.54**
Skaland	Proven	0.05	27.8	0.01
	Probable	0.55	24.6	0.14
	Total	**0.60**	**24.8**	**0.15**
Grand Total		**4.84**	**14.3**	**0.69**

- Tonnes and grade numbers may not compute due to rounding.
- Ore Reserve uses a variable cut-off grade.
- Ore Reserves are a sub-set of Mineral Resources.

Refer to appendix of this release for the explanatory note for the annual updates of Mineral Resources and Ore Reserves.

ENDS

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About Mineral Commodities Ltd

Mineral Commodities Ltd is a global mining and development company with a primary focus on the production of high-grade Mineral Sands and Natural Flake Graphite from operations in South Africa and Norway.

The Company is a leading producer of zircon, rutile, garnet, magnetite, and ilmenite concentrates through its Tormin Mineral Sands Operation, located on the Western Cape of South Africa.

The Company owns and operates the Skaland Graphite Operation in Norway, the world's highest-grade operating flake graphite mine and is the only producer in Europe. The planned development of the Munglinup Graphite Project, located in Western Australia,

builds on the Skaland acquisition and is a further step toward an integrated, downstream value-adding strategy which aims to capitalise on the fast-growing demand for sustainably manufactured lithium-ion batteries.

In April 2022, the Company released its Five-Year Strategic Plan 2022-2026[4] to delineate and implement its aspiration to become a leading vertically integrated diversified producer of graphitic anode materials and value added mineral products with a commitment to operate with a focus on the Environment, Sustainability and Governance.

Cautionary Statement

This announcement contains forward-looking statements. Any forward-looking statements reflect management's current beliefs based on information currently available to management and are based on what management believes to be reasonable assumptions. It should be noted that various factors may cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements.

These forward-looking statements are not a guarantee of future performance and involve unknown risks and uncertainties, many of which are beyond MRC's control. This may cause actual results and developments to differ materially from those expressed or implied. These risks include but are not limited to, economic conditions, stock market fluctuations, commodity demand and price movements, access to infrastructure, timing of approvals, regulatory risks, operational risks, reliance on key personnel, Ore Reserve and Mineral Resource estimates, native title, foreign currency fluctuations, exploration risks, mining development, construction, and commissioning risk.

Forward-looking statements in this announcement apply only at the date of issue and are subject to any continuing obligations under applicable law or regulations, MRC does not undertake to publicly update or revise any of the forward-looking statements in this announcement or to advise of any change in events, conditions, or circumstances on which any such statement is based. Readers are cautioned not to place undue reliance on any forward-looking statements contained in this announcement.

Mineral Resource and Ore Reserve Governance

Mineral Resources and where applicable, Ore Reserves, are estimated by suitably qualified persons in accordance with the JORC Code and the ASX Listing Rules, using industry standard techniques. Mineral Resource estimates and supporting documentation are reviewed by external Competent Persons. Any amendments to the Mineral Resources and Ore Reserves Statement to be included in the Annual Report are reviewed by suitably qualified Competent Persons.

[4] Refer ASX Announcement entitled 'MRC Unveils Five Year Strategic Plan 2022-2026' dated 29 April 2022.

Competent Person's Statement

The Annual Mineral Resources and Ore Reserve Statement and Explanatory Notes have been compiled by Mr. Daniel Hastings, who is a member of the Australian Institute of Mining and Metallurgy ("AusIMM") and the Australian Institute of Geoscientists ("AIG"). Mr. Hastings is a full-time employee of Quantified Strategies Pty Ltd. He has sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person in accordance with the JORC Code (2012). Mr. Hastings consents to inclusion in the report of the matters based on this information in the form and context in which it appears.

Table 5 is a listing of the names of the Competent Persons (as defined by the JORC Code 2012) who are taking responsibility for reporting results and estimates. This Competent Person listing includes details of professional memberships, professional roles, and the reporting activities for which each person is accepting responsibility for the accuracy and veracity of MRC's estimates. Individual Competent Persons Statements can be found in the various appropriate ASX releases concerning each Mineral Resource and Ore Reserve. For completeness, JORC, Table 1 for each updated Mineral Resource and Ore Reserve reported in this release have been attached in the appendix.

Table 5 – Listing of Competent Persons and Responsibilities

Activity	Competent Person	Professional Affiliation	MRC Relationship	Activity Responsible
Mineral Resources	Allen Maynard	MAusIMM / MAIG	Principal Al Maynard & Associates	Xolobeni HMS
	Daniel Hastings	MAusIMM / MAIG	Principal Quantified Strategies	Skaland Graphite
	Chris De-Vitry	MAusIMM	Principal Manna Hill GeoConsulting	Tormin and Northern Beaches, Inland Strands HMS, Munglinup Graphite
Ore Reserves	Eero Tommila	MIMMM	Principal Mining Engineer – Skaland Graphite AS	Skaland Graphite
	Daniel Hastings	MAusIMM / MAIG	Principal Quantified Strategies	Munglinup Graphite, Inland Strand HMS

- MAusIMM = Member of Australasian Institute of Mining and Metallurgy and MAIG = Member of Australian Institute of Geoscientists
- MIMMM = Member of the Institute of Materials, Minerals, and Mining, a Recognised Professional Organisation (RPO).
- Information in this report that relates to Mineral Resources or Ore Reserves is based on the information compiled by the relevant Competent Persons listed.

The information in this report that relates to Mineral Resources and Ore Reserves is based on information compiled by the Competent Persons named in the table above. All Competent Persons have sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activity which they are is undertaking to qualify as a Competent Person in accordance with the JORC Code (2012). Each Competent Person consents to inclusion in the report of the matters based on this information in the form and context in which it appears.

THE 2022 ANNUAL REPORT OF THE MINERAL RESOURCES AND ORE RESERVES STATEMENT

Overview

Mineral Commodities Ltd (ASX: MRC) ("**the Company**" or "**MRC**") is a diversified mining group executing two complementary business strategies focused on the production of heavy mineral sands and natural flake graphite concentrates from two high grade mines and one shovel ready development project. In addition, the Company intends to construct an Active Anode Material Plant ("AAMP") in Norway to become a vertically integrated producer of natural graphite battery anode material to capitalise on the fast-growing demand for sustainably manufactured lithium-ion batteries.

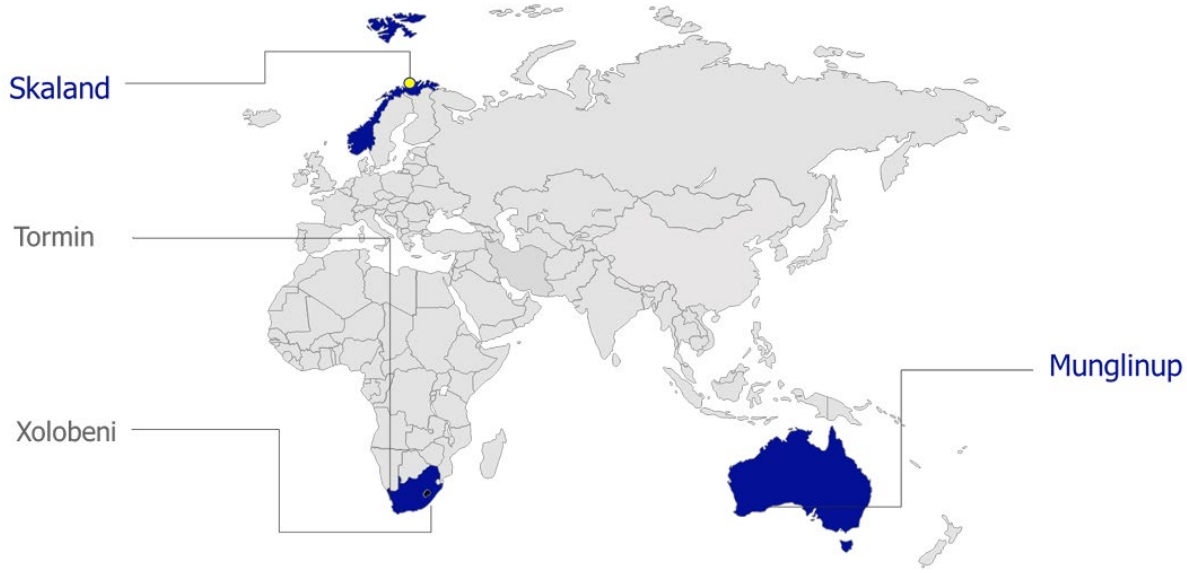


Figure 1 – Location of MRC's Global Operations and Projects

Mineral Sands

MRC and its empowerment partner, Blue Bantry Investments 255 (Pty) Ltd, operate the Tormin Mineral Sands Operation in the Western Cape province of South Africa which is held by the Company's 50% owned South African subsidiary, Mineral Sands Resources (Pty) Ltd (**MSR**). MRC intends to increase its ownership interest in MSR from 50% to 69%[5]. Tormin supplies circa 25% of the world's demand for garnet sands and is one of the top

[5] Refer ASX Announcement entitled 'MRC to Increase Ownership Interest in Tormin' dated 12 April 2023.

ten independent zircon and titanium feedstock suppliers. MRC is expanding mining and processing operations at Tormin under the Expanded Amended Mining Right ("162&163 EMR").

The objective of MRC's mineral sands strategy is to adopt a phased development program from the Inland Strand and Beach deposits to improve flexibility, optionality, and revenue capacity from Tormin.

Figure 2 – Location of MRC's Mineral Sands Operations and Projects

Tormin Mineral Sands

Situated approximately 360 kilometres north of Cape Town on the west coast of South Africa and owned by the Company's 50% owned South African subsidiary, MSR.

Tormin is a high-grade placer beach mineral sands deposit hosting naturally occurring zircon, ilmenite, rutile, magnetite, and garnet. As an active placer beach deposit, Tormin is unique due to the rate that mining areas are naturally replenished by storm and oceanic wave action and the speed that the mineralisation actively replenishes. The nature of the resource replenishment is typical of modern-day beach placer deposits found along the West Coast of South Africa and India's South-eastern Tamil Nadu coast.

The Company first commenced commercial mining at Tormin in 2014 over a 12 kilometre zone of beach area ("Tormin Beaches") directly in front of the existing processing

infrastructure. Mining rights to the Tormin Beaches were renewed in 2019, and the permits allow the Company to continue mining operations for a further 10 years, until 2029.

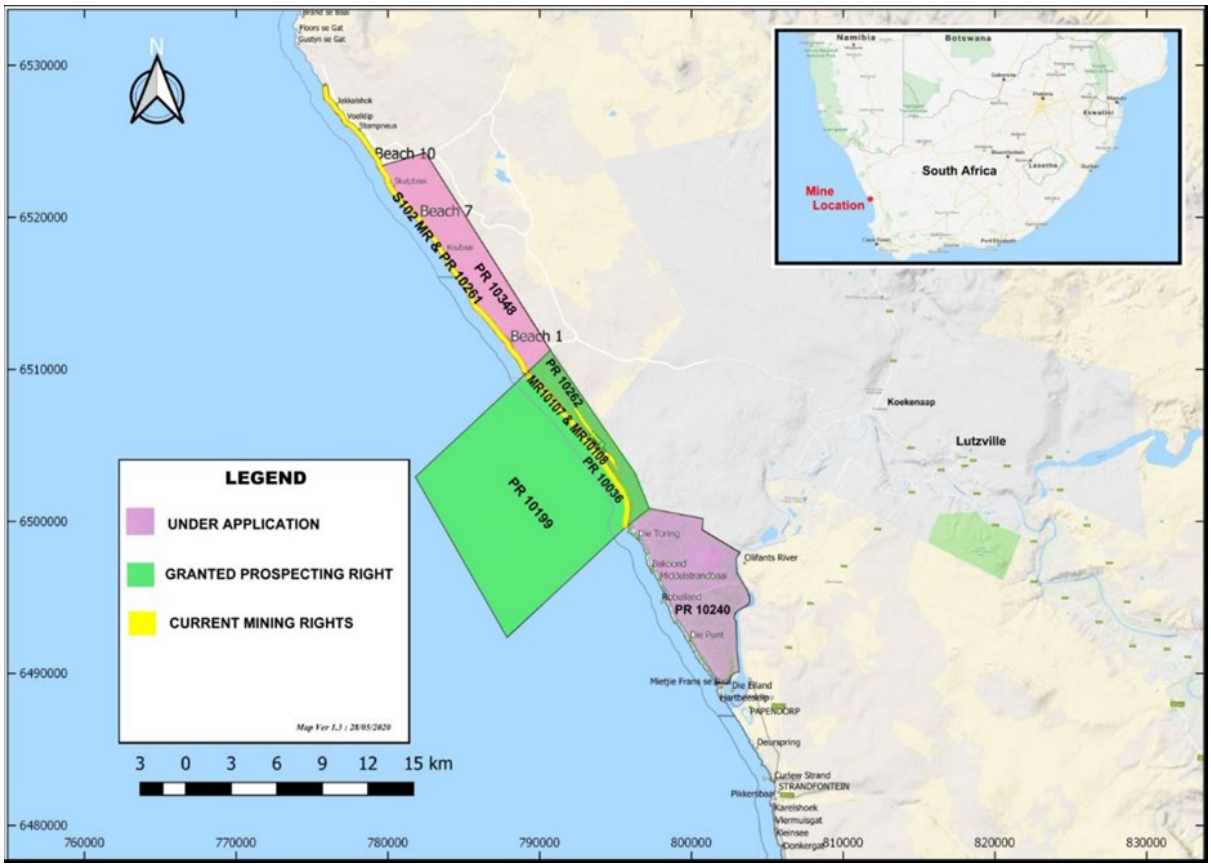


Figure 3 – Geographical location of the Company's tenements in the Western Cape province of South Africa

Since operations commenced at Tormin beaches, the Group has mined over six times the 2013 initial Indicated Resource of 2.7 million tonnes at an average head grade of 30% THM over the life of mining. Mining has now been ongoing for nine years and as at 31 December 2022, a total of 17 million tonnes of material has been processed. The tonnage processed is more than the declared resource tonnage which is indicative of the replenishing nature of the resource replenishment function of the placer style beach deposit - where resource blocks are mined more than once.

In December 2022, resource drilling was completed at the Tormin Beaches for the annual resource update. A total of 378 holes (960m) were drilled in all mining ramps on a nominal 50m x 20m grid to sample the mineral resource. Total Mineral Resource for the Tormin Beaches is estimated at 2.05 million tonnes at 10.3% THM in the Indicated and Inferred categories using a 2% cut-off (Table 1). The Tormin Beaches Mineral Resource estimate JORC Table 1 is in Appendix 1 per the JORC Code (2012).

The Northern Beaches incorporate ten beaches directly north of and adjoining the Tormin Beaches. The areas unite semi-continuous tenements approximately 23.5 kilometres in length, covering an area of 398 hectares of beach sands prospective for zircon, rutile,

ilmenite, garnet, and magnetite. Like the Tormin Beaches, this deposit is located on an active placer beach undergoing continuous replenishment from oceanic storm and wave activity. The heavy minerals in the beach are constantly replenished by the transport of new sediment from deeper waters, much of which has been derived from the erosion of deposits accumulated in the elevated historic beach terraces onto the present beach.

Figure 4 – Overview of mining operation and primary concentrator at beach 10 of the Northern Beaches

For the annual mineral resource report, a total of 235 holes (557m) were drilled at beaches 1, 2, 4, 5, 7, 9 and 10 on a nominal 50m x 20m grid. Total Mineral Resource for the Northern Beaches is estimated at 1.72 million tonnes at 15.8% THM in the category of Indicated and Inferred using a 2% cut-off (Table 1). The Northern Beaches Mineral Resource estimate JORC Table 1 is in Appendix 2 per the JORC Code (2012).

The Inland Strand mining areas granted under the Expanded Mining Right (162&163 EMR) in mid-2020 include two areas approximately 5.6 kilometres in total length, covering 75 hectares of high-grade mineralisation adjacent to the existing mining operations on the Company owned farm, Geelwal Karoo 262. The Inland Strand Mining Right areas are part of the Inland Strand Prospecting Right 10262, which incorporates an area approximately 12 kilometres in length, covering 1,741 hectares.

The JORC Mineral Resource of Western Strandline was estimated in December 2021 at 193.2 million tonnes at 9.5% THM for 18.5 Mt of contained Heavy Mineral using a 2% cut-

off[6]. No material change to the Mineral Resource was made during the year and the same Mineral Resource was reported on December 2022 (Table 1).

Mining commenced in the Western Strandline in September 2020 with 1.6Mt mined from the Southern pit and stockpiled by the end of 2021 but not processed. This material was depleted from the mineral resources and reported as a stockpile. No additional mining was undertaken in 2022 of the Western Strandline.

Figure 5 – Mining carried out in the Southern Pit of Western Strandline

Moreover, a maiden Mineral Resource of Eastern Strandline is estimated at 19.5 million tonnes at 3.3% THM in the categories of Indicated and Inferred using a 2% THM cut-off grade. This maiden Mineral Resource (Table 1) demonstrates the prospectivity of the inland strandline areas and underscores the Company's strategy of growing the resources for mineral processing expansion.

The Inland Strands deposit presents a significant mineral sands asset for the Company which offers material extension of mine life. The opportunity to develop and mine the Western Strandline is an important turning point for the Company in realising the value of the world-class Tormin Mineral Sands Operation.

The Company cumulatively holds a continuous inland prospecting tenure granted, and/or under application, of approximately 41.4km in length and covering approximately 6,634 hectares. Two Prospecting Rights under application, both adjoining PR10262 on the Company owned farm, Geelwal Karoo 262 are highly prospective for the continuation of Western and Eastern Strandlines:

- De Punt (PR10240), which adjoins immediately to the south and covers an area of approximately 4,495 hectares. In November 2021, MSR received confirmation that the appeal against granting of an Integrated Environmental Authorisation ("IEA") was dismissed; and
- Klipvley Karoo (PR10348), immediately to the north, covers an area approximately 16km in length and 3,970 hectares.

[6] Refer ASX Announcement entitled 'Significant Increase in Tormin's Mineral Resources' dated 7 December 2021.

Xolobeni Mineral Sands

The Xolobeni Mineral Sands Project is located in the Eastern Cape province of South Africa, approximately 300km north of East London and 200km south of Durban. Mineral resource is estimated at 346 million tonnes at 5% THM, with 54% ilmenite in THM[7]. The Xolobeni project is currently subject to a Department of Mineral Resources ("DMR") mandated moratorium in South Africa. Any potential development timetable is unknown and subject to the outcome of this moratorium. No exploration or production activity has been carried out at Xolobeni during the year and mineral resource remain consistent with that reported for the period ending 31 December 2020.

Graphite

MRC is investing in a vertically integrated downstream value adding strategy targeting the production of low CO_2 emission, environmentally friendly anode material from both Skaland and Munglinup natural flake concentrates. The Company is targeting the development of anode production from a dedicated Active Anode Materials Plant ("AAMP") in Norway.

Skaland Graphite Operation

Skaland is the largest flake graphite producer in Europe and the fourth-largest producer globally outside of China. Skaland is presently one of the world's highest-grade operating flake graphite mines with mill feed grade averaging around 24% Carbon. Skaland accounts for around 2% of global annual natural flake graphite production. The operation is held by Skaland Graphite AS, in which the Company holds a 90% interest.

In November 2021, an updated Mineral Resources Estimate and the first JORC compliant Ore Reserve Statement at Trælen was reported[8]. The Updated Mineral Resource of 1.84 million tonnes at 23.6% TGC in the Measured, Indicated, and Inferred categories for 434 kt of contained graphite using a 10% cut-off. Only depletion has been accounted for in the December 2022 Mineral Resource (Table 2).

A Maiden Ore Reserve was also reported in November 2021 and was estimated at 0.64 million tonnes at 24.8% TGC in the category of proven and probable containing 159 kt of contained graphite by using 10% TGC cut-off grade (Table 4).

In 2021 a mining contractor was engaged for the down-dip development at Trælen to access downdip ore at Trælen beneath the already mined out up-dip resources of the deposit. The decline will also provide a platform for additional drilling in 2023 to convert deeper inferred resources and target expansion of the resource base.

The Life of Mine ("LOM") planning has identified 640kt of ore down-dip between +5m and 115m, with additional resources in and above the current workings and below -115m. The

[7] This information was prepared and first disclosed under the JORC Code (2004). It has not been updated since to comply with the JORC Code (2012) on the basis that the information has not materially changed since it was last reported

[8] Refer ASX Announcement entitled 'Trælen Maiden Ore Reserve' dated 16 November 2021.

Mine planning provides 13 years of mining at a 10ktpa concentrate production rate. The Trælen graphite deposit is open at depth and plausible side lenses exist to support further expansion. It is noteworthy that the operations at 10ktpa have been considered as a base case and the Company is evaluating an increase of the production capacity to 16ktpa by mid 2023.

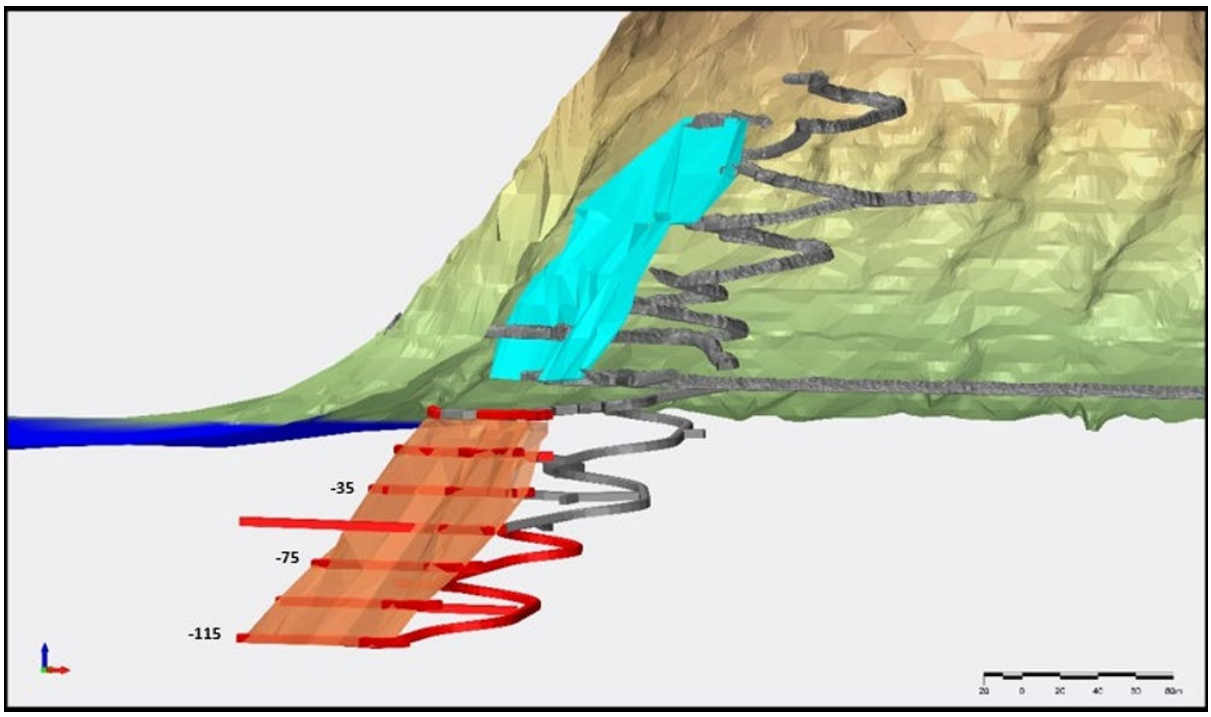


Figure 6 – Long section of underground development design, existing development, and mine (grey) and underdevelopment/ planned mine (red)

Munglinup Graphite

The Munglinup Graphite Project is located 105km west of Esperance along South Coast Highway and 85km from Ravensthorpe. MRC's wholly owned subsidiary, MRC Graphite Pty Ltd (**MRCG**), entered into a joint venture agreement with Gold Terrace Pty Ltd (**Gold Terrace**), to farm-in to the Munglinup Graphite Project with an initial 51% interest in the Project.

The Definitive Feasibility Study (**DFS**) of the project and Ore Reserve estimation was completed in January 2020[9]. A Mineral Resource of 7.99 million tonnes at 12.2% TGC in the category of Indicated and Inferred using a 5% cut-off was reported (Table 2) and Ore Reserves were estimated at 4.24Mt @ 12.8% TGC (Table 4).

The Mineral Resource and Ore Reserve of Munglinup remain unchanged since 2020.

The project is on a mining lease granted to 2031 and within a gazetted mining reserve. The Munglinup LOM exceeds 14 years, based on LOM processing throughput of approximately

[9] Refer ASX Announcement entitled 'Robust Munglinup DFS Results Allow MRC to Move to 90% Ownership' dated 8 January 2020.

450kt per annum, producing an average graphite concentrate production of 52kt per annum. The environmental permits are the only remaining approvals required before commissioning the Project.

Appendix 1 – Tormin Mineral Resources

A summary of annual mineral resource and ore reserve and JORC Table 1 is provided below for the Tormin Beaches, Northern Beaches, Western Strandline and Eastern Strandline.

Beach Geology and Geological Interpretation

The Tormin and Northern Beaches deposits are located on the western coastal plain of South Africa. It is a heavy mineral sand deposit located on an active placer beach strandline undergoing continuous erosion, deposition and replenishment from oceanic storm and wave activity. The Western and Eastern Strandlines are older palaeo-beach deposits located inland from the beach deposits. The western coastal plain of South Africa embraces a significant resource of detrital heavy minerals by world standards.

The heavy mineral sand deposits occur in an active beach environment as well as in older palaeo-beach raised strandlines. Being a placer beach sand deposits, there is no geological structure either relevant or applicable. The Neogene deposits are host to the commercially important diamondiferous and valuable heavy mineral sands ("HMS") including zircon, rutile, anatase, ilmenite, garnet, and magnetite.

Criteria Used for Classification

Mineral Resources
This spacing and the available data are sufficient for Indicated resources. 2D polylines were drawn around all the 50m x 20m drilling extending about half the drill spacing outside the drilled area and classified this as Indicated. Everything outside these polygon's were classified as Inferred even when extrapolation distances are occasionally up to several hundred meters. The sand has been visually identified as potentially minable (grade dependant) by the geological staff.

Ore Reserves
Measured and Indicated Mineral Resources were used to form the basis of the Ore Reserve Estimate in accordance with the JORC Code 2012. All the Mineral Resources intersected by the open pit mine design, are contained within the EMR and all Measured Resources were classed as Proved Ore Reserves. Measured Resources outside of the EMR and the Indicated portion of the Mineral Resources were classed as Probable Ore Reserve after considering mining, metallurgical, social, environmental, and financial aspects of the project.

There are no Inferred Resources included in the Ore Reserve statement.

Drilling Techniques and Hole Spacing

Drilling on the beaches is via auger holes up to 4m deep. Samples are mostly 1m long (first drill rod with the drill bit is 2.5m long and subsequent rods are 2m in length) however, 0.5m long samples occasionally occur. The target drilling pattern is 20m across strike and 50m along strike. Typically, there are two to four holes drilled across strike. Generally, THM content is lower towards the beach and increases landwards. The drilling program was designed on a 50m x 20m grid to delineate a JORC Code (2012) Mineral Resource Estimate for the Tormin and Northern Beaches.

A total of 613 vertical drillholes (1,517m) spaced out on a regular 50m x 20m grid were drilled by a hydraulic auger over the Tormin and Northern beaches. The auger drill rods were 90mm in diameter and 2m long.

Sampling and Sub-sampling Techniques

For the beach samples, generally being wet/moist, are dried at the laboratory then screened at +2mm. A sample split is taken from an 8 way rotary splitter. Homogenisation also occurs during this splitting stage. Lab duplicate samples are split for the Tormin mine laboratory QA/QC checks. Control samples in the form of internal reference standards are run daily.

Inland strand samples are taken over 1m down the hole intervals as determined by 1m marks on the rig mast. Drill samples were riffle split into approximately 3kg samples to be assayed. All samples were dry. Field duplicate samples were riffled for the Tormin mine laboratory and external QA/QC checks for every 25th sample. Lab duplicate samples were split for the Tormin mine laboratory and for external QA/QC checks.

Sample Analysis Method

All samples were analysed at the Company's onsite HLS lab using TBE with Panalytical Aeris XRD machines (the Rietveld method after HLS) in an automated mode setup for mineral assays, and industrial laboratory XRF (Panalytical Epsilon 3 ED) for zircon content. The Company completes its own internal QA/QC using certified reference material and blank samples at the rate of approximately 1 in 50 samples and sends every 20th sample to third party external laboratories. QEMSCAN test work by SGS was used for determination of the heavy mineral assemblage.

Estimation Methodology – Inland Strands

The Mineral Resource estimation involved the use of drillhole and geology/topography to construct three-dimensional wireframes to define mineralised domains using Micromine software. Domains were snapped to the nearest true intersection from sampling. Data was extrapolated between data points and approximately half of the drill spacing beyond. Ordinary kriging was used as the primary estimator for the THM and Valuable Heavy Minerals values. A block size of 50x12.5x1m reflects the geometry of the mineralised domains and drillhole

spacing. Then a measured Bulk Density for each lithology layer was applied to the model. Areas with drilling spaced at 125x25m were generally classified as Measured Resources and 250x20m were generally classified as Indicated Resources. Drilling up to 500x100m has been generally classified as Inferred Resources.

The Micromine block model was sub-blocked to 4x4x1m to aid the selection of blocks within this perimeter for the Ore Reserve estimation. Whittle 4X, MinePlan and COMET software were used for pit optimisation and mine planning. A practical mining void shape with consideration of geotechnical parameters for floor and pit slopes, processing recoveries, and economics was developed for the selected pit shells using a revenue factor of 1, and a new block model generated with ore and waste flagged accordingly. This block model was divided into stages based on value for use in schedule optimisation. No minimum mining widths were used as the geometry of the deposit is tabular. Due to the cashflow grades of the deposit showing a cashflow positive mineralised halo around the high grade areas and bedrock being a definable boundary for mineralisation that is able to be mined to, mining recovery has been incorporated into schedule through block / bench aggregation.

Mineral Resources Cut-off grade

A 2% THM cut-off grade is based on the economic criteria established by the ongoing mining operations, and it was applied to any mineralised exploration intersections and final resource reporting, as this is the current minimum grade where there is a reasonable expectation for eventual extraction. The 2% cut-off grade is based on grade-tonnage curves with respect to THM and VHM.

The Mineral Resource is reported to a 2% THM cut-off grade in accordance with JORC Code 2012. This updated Ore Reserve is based on a value model that assigns mining and processing recoveries, costs, and revenue to the geological model. This value model follows the entire mining process from soil stripping to final rehabilitation. An economic optimisation is applied to determine the cashflow grade of each block to every destination. Material is then characterised as being either cashflow positive or cashflow negative. Material is designated as ore where the cashflow grade ($/t) is positive.

Mining Method and Mining Assumptions

Typical open-pit mining is undertaken utilising excavators and articulated dump trucks. The pits generally only remain open during low tide, except where beach conditions allow the construction of protective bunding. There is no stripping as mining starts at the surface and natural replenishment of the resource takes place as the open pits fill with HMS material generated from tidal action and wave energy dynamics. Metallurgical factors are derived from the processing data generated from seven years of profitable mining at Tormin Beaches. As the mine is an ongoing profitable concern, there are no doubts about the metallurgical suitability of the mined material.

The thickness and continuous nature of the mineralisation at the Western Strandline supports conventional open-pit mining with excavators and articulated dump trucks. The Company believes there are no mining factors that affect the assumption that the deposit has reasonable prospects for economic mining.

Pit shells were developed with Whittle 4X using pseudoflow and a variable cashflow cut-off grade estimated in the block model. The optimisation shells selected comprised open pits, initially targeting the higher value areas earlier in the mining plan. The initial Western Strandline pits have been optimised on the Measured and Indicated material in the south and north pits within the Expanded Mining Rights area. These initial pits have not changed from the previous mine plan due to currently being constrained by the Extended Mining Rights.

Firstly, topsoil is removed using a dozer. The topsoil stockpiles will not exceed two metres in height and will be seeded with a cover crop to stabilise them and to avoid airborne dust and material loss given mineralisation occurs near the surface. Excavators and trucks will be used for initial limited overburden stripping where required to open mining zones and in areas where voids for tailings storage need to be established in advance. Once suitable tailings areas are available, the exposed ore will primarily use a D9 dozer or equivalent to push material to a loading area for excavators and trucks to haul to the ROM and stockpiles.

Ore hauled from the mining pit is stockpiled for subsequent processing. A front end loader feeds stockpiled ore to the Primary Concentration Circuit (**PCP**). Oversize material is removed from the ore feed by a scrubber trommel circuit and then fed to a crusher before re-joining the circuit.

The mining schedule is based on Measured and Indicated Mineral Resources with detailed mine designs and mining fleet requirements determined by qualified engineers and mining contractors. The results from geotechnical and hydrogeological studies carried out at the Tormin Inland Strands (including drilling, logging, in-pit slope stability analysis, in situ permeability testing and laboratory test works, also 2D resistivity survey and water boreholes monitoring) have been included in the Western Strandline mine design.

The rehabilitation management plan and standard operating procedures have been prepared and will be implemented as required. Backfilled tailings will be profiled to mimic original topography prior to the replacement of topsoil for rehabilitation and reseeding.

JORC TABLE 1
Tormin Beaches
Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g 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 (eg submarine nodules) may warrant disclosure of detailed information.*	• The current resource is based on 378 auger holes, representing 960m of vertical drilling. • Holes are 1-4m deep with samples taken from surface to end of hole. The end of hole is generally 1) Bedrock which is normally a clayey schist, 2) White pebbly and clayey sand locally called a channel clay unit or 3) Poorly mineralised gravelly sand which is mined by diamond mining contractors. Up to 20cm of the above material (points 1 to 3) are included as dilution. Occasionally a hole is stopped early due to e.g., intersecting a boulder. • Samples are mostly 1m in length (about 6.6 kg) with the occasional 0.5m sample. • For sampling a plastic tarpaulin is laid on the ground to collect the sample and the sample is removed from the auger which is brushed clean • The whole sample is bagged, closed with cable tie, and sent to the Tormin laboratory. The sample cannot be split at the rig because it generally contains high moisture content. • At the laboratory samples are oven-dried whole, screened (2mm) and split for assaying. There are no slimes in the beach sand. • 200g of sample is split (8 way rotary splitter) to use for heavy liquid separation (HLS) using Bromoform with density range between 2.92 and 2.96g/ml to define total heavy mineral (THM) content. • Mineralisation and grade test work are completed according to mine standards within Tormin mine site laboratory. XRF, HLS and XRD.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc) and details (eg 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).*	• Hydraulic augers, produced by Christie Engineering in Australia, were used to obtain samples. Auger drilling is an acceptable drilling method for shallow beach Heavy Mineral deposits like Tormin. • The auger is 90mm dimeter and drilling is open hole. • The first drill rod is 2.5m long and subsequent rods are 2m long. • All holes were drilled vertically.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample*	• Given the drilling method combined with drilling sand there is potential for caving (caving was not visually observed) and downhole contamination. This could be assessed by measuring sample recovery (drying

Criteria	JORC Code Explanation	Commentary
	recovery and ensure representative nature of the samples. *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	and weighing whole sample) and by drilling twin holes.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	• Each hole was logged by a geologist on pre- printed log sheets. • They key logging information is the presence of 1) Bedrock which is normally a clayey schist, 2) White pebbly and clayey sand locally called a channel clay unit or 3) Poorly mineralised gravelly sand.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Samples generally being wet/moist are dried at the laboratory then screened at +2mm. • A sample split is taken from an 8 way rotary splitter. Homogenisation also occurs during this splitting stage. • Lab duplicate samples are split for the Tormin mine laboratory QA/QC checks. Control samples in the form of internal reference standards are run daily. • Further work is required to demonstrate that the sub-sampling approach is appropriate.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and*	• All sample analyses were undertaken by the Tormin mine laboratory. • No geophysical, portable XRF, etc. instruments were used. • The mine owns and operates an HLS lab with Panalytical Aeris XRD machines (the Rietveld method after HLS) in an automated mode setup and industrial laboratory XRF (Panalytical Epsilon 3 ED) for zircon content.

Criteria	JORC Code Explanation	Commentary
	model, reading times, calibrations factors applied and their derivation, etc. *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The Tormin mine laboratory completes its own internal QA/QC using standard reference material at the rate of approximately 1 in 40 and sends every 20th sample to an external laboratory. • External sampling checks for XRD have been undertaken by XRD Analytical and Consulting. • External laboratory results are problematic with some extremely different results which may be due to sample mix-ups. This requires further investigation. • No CRM's or blanks were inserted.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	• All sample preparation was undertaken by trained staff, supervised by chemists and the laboratory manager. • No twin holes have been drilled for this estimate. Drilling twin holes would be worthwhile. • The drillhole logs have been converted to electronically stored formats and stored in a database provided by Maxwell Geoservices (Webshed). This database is hosted on an offsite server supplied by Maxwell Geoservices and managed by their trained database staff. • No adjustment to assay data results was made outside the standard XRD and XRF calibration software being used.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used. Quality and adequacy of topographic control.*	• Hole collar locations were determined with DGPS, accurate to within centimeters. • Down hole surveys for very shallow vertical holes are not required. • WGS 84 datum and UTM/zone 34S coordinate system is used. • Topographical control is highly problematic due to constant changes in surface levels after daily high tides and storm events.
Data spacing and distribution	*Data spacing for reporting of exploration results.* *Whether the data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	• Target drillhole spacing is 50m x 20m, subject to beach access due to tides. • Provided there are no significant issues with data quality, density etc. a 50m x 20m drill spacing is sufficient to classify the resource as Measured.

Criteria	JORC Code Explanation	Commentary
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Geological structure is neither relevant nor applicable to an active placer beach sand deposit. • Vertical drilling intersects sub-horizontal strata. • Orientation of the drillholes will not result in sampling bias.
Sample security	*The measures taken to ensure sample security.*	• All sample bag numbers were logged against the drillhole by the site geologist. Bagged samples were labelled, zip-tied and transported to the laboratory.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• No external audits of sampling or the laboratory have occurred recently

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The resource is owned by Mineral Sands Resources (Pty) Ltd, a subsidiary of ASX listed Mineral Commodities Ltd (ASX: MRC). • The resource is being mined under two active mining rights 30/5/2/2/2/10107 & 10108. • The mining rights were renewed in August 2019 for an additional 10 years, up to 22nd of August 2029.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• The general area has been investigated and mined for heavy mineral deposits as far back as the 1930s (Haughton, 1931). Subsequent geological surveys and exploration programs investigated the distribution, mineralogy and economic potential of the HMS along the coastline of Geelwal Karoo (Toerien & Groeneveld 1957, Abele 1989, Swart 1990, Barnes 1998) and Trans Hex 1989-1991). • A Definitive Feasibility Study on the deposit was done in 2006 by K'Enyuka and a Bankable Feasibility Study review by HBH consultants.

Criteria	JORC Code Explanation	Commentary
Geology	*Deposit type, geological setting and style of mineralisation.*	• Deposit is a heavy mineral sand deposit located on an active placer beach strandline undergoing continues erosion, deposition and replenishment from oceanic storm and wave activity.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* *Easting and northing of the drill hole collar* *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* *dip and azimuth of the hole* *down hole length and interception depth* *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• The minimum hole length is 1m and the maximum 4m. • Drilling is generally between low-tide and high-tide marks. • East collar ranges – 219,954mE to 226,547mE. • North collar ranges – 6,501,624mN to 6,509,394mN.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Exploration results are not being reported.
Relationship between mineralisation widths and	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the*	• Mineralisation is enriched sedimentary layers semi-parallel to the bedrock contact and beach slope angle.

Criteria	JORC Code Explanation	Commentary
intercept lengths	*mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Mineralisation is essentially flat laying, and as such, vertical drillholes represent true width. • Mineralisation from surface to bedrock is mined with no vertical selectivity. • In plan view blocks estimated to be above 2% THM content are mined.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Significant intersections are not being reported. • Maps, sections and plan view are provided in the resource report.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Exploration results are not being reported.
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• The resource is progressively lowering in grade and volume as replenishment has been slower than the mining rate.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Offshore sampling to determine the source of grade replenishment is planned.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code Explanation	Commentary
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	• The data was plotted and plots were as expected, with no misplots or extraneous data found. Maximum and minimum values and average values were all within the norm. • Data is stored in an offsite database hosted by Maxwell Geoservices.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• The previous Competent Person was a full-time employee of Mineral Commodities Ltd. However, the new Competent Person as of 2022 has not had sufficient time to visit site. A site visit is planned for 2023.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	• Deposit is a heavy mineral sand deposit located on an active placer beach strandline undergoing continues erosion, deposition and replenishment from oceanic storm and wave activity. • Samples were collected for resource calculation purposes. • The deposit is vertically constrained by topography and the base of drilling. Topography is surveyed at or close to the time of drilling and the base of the domain is assumed to be the end of hole depths. • The deposit is constrained shoreward by the low water mark with a 10m standoff and landward by a 10m standoff from cliffs and dunes. • Grade continuity is influenced by wave action and hence is best parallel to the beachfront. • Some sorting of the heavy minerals occurs based on density i.e., minerals with similar density tend to be spatially associated.
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 deposit has a strike length along the coastline of approximately 10,000m with individual beaches generally separated by rocky headlands/rocky beaches which cannot be mined. • The deposits have an average width from the cliffs to within the surf zone of 60m. The mining width varies from 20-60m and averages about 35m. • The deposit is developed from surface to a maximum depth of 4m. The deposit occurs from the surface down.
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*	• Leapfrog, MinePlan and Isatis. Neo software were used to domain and estimate each of the valuable heavy minerals as well as the THM. Meshes were created from the topographic surveys (upper surfaces) and the base of drillholes (lower surfaces). The topographic surveys are restricted to the mineable area and therefore domains do

Criteria	JORC Code Explanation	Commentary
	maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen, include a description of computer software and parameters used. *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	not extend outside this. • No internal domaining of the beach sands is practical or applicable. • Eight beaches have been modelled. • Of the eight modelled beaches only beach seven had minor outlier restrictions applied. • Ordinary Kriging was used as the primary estimator which is suitable for the beach sands given that the mineralisation is diffusive in nature (this still needs to be verified via the relevant statistical tests). • Kriging by its nature will smooth the estimates however, there is no vertical mining selectivity (besides stopping at the base of beach sands) and horizontal selectivity is somewhat limited. • Discretization of 4 x 4 x 1 which relates to a parent block size of 10m x 10m x 1m. Sub-blocking is down to 5m x 5m x 1m. The parent block size is about half the across strike drill spacing and 1/5th the along strike spacing. • Searches are horizontal with maximum continuity parallel to each beach (500m x 100m x 16m). Minimum of 6 samples and a maximum of 16 for kriging. Typical drill spacing is 50m x 20m however, extrapolation can be up to several hundred meters. In all estimated areas mineable beach is present (providing THM is greater than 2%). • The search for a given beach is identical for each variable. This is to maintain the correlations between variables. • There are no deleterious variables. The THM content excludes slimes and oversize because these fractions will not be recovered during processing. All estimated variables form part of the THM fraction, which is recoverable. However, the estimates of the individual variables are in situ and not necessarily 100% recoverable. This is because the grade variables are estimated via XRD not magnetic and gravity selection. • Check estimates were made for all variables and beaches. These estimates were nearest neighbor and inverse distance squared. • All estimates were validated against the check estimates and input data both visually and statistically.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The resource tonnages are estimated on a dry basis. Sand is wet and fully saturated when mined out, but it is free draining when stockpiled.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Reported resource is based on a 2% THM cut-off grade because this is the current minimum grade for which there is a reasonable expectation for eventual economic extraction.

Criteria	JORC Code Explanation	Commentary
		• 2% cut-off grade was based on grade- tonnage curves with respect to THM and VHM assemblage. Also taken into account were current and anticipated plant performance. • The proportion of the VHM within the THM varies and a cut-off based on VHM would be more accurate. MRC plan to move to a VHM cut-off for external reporting of resources.
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.*	• The dynamic beach environment results in a cyclic process of deposition on and erosion of the beach surface. Historical studies by Trans Hex have found a weighted average change over 9 months of up to ~9% loss or up to ~7% increase. This variability is also evident in the replenishment rate and grade of material observed. • Opencast mining. The pits generally only remain open during low tide, except where beach conditions allow larger, more stable protective bunding to be constructed. • There is no stripping as mining starts at the surface. • Natural replenishment of the resource is taking place as the open pits are filled with HMS material from the surf zone during the next high tide. • In general, it appears that replenishment is mostly associated with winter storms when the sea brings sand from the nearshore and offshore areas. Replenishment is also a function of time and the number of sea storm events. Given enough time between mining events, the resource is still replenishing, although the long-term trend is a significant lowering in grade. • The overall lowering of the beach surface (due to mining) has resulted in the faster movement of large volumes of material between the beach and the surf zone than before mining started. • Since mining commenced in 2014 some mining blocks have been mined up to 30 times.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made*	• Metallurgical factors have been taken from the current processing plant. • After seven years of mining in the Tormin Beaches, the mine is an ongoing profitable concern.

Criteria	JORC Code Explanation	Commentary
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 greenfield 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.*	• There is a 10m stability buffer zone between the coastal cliffs and the beach where no mining is allowed. • All mining voids get naturally filled with beach sand material during high tide and there is therefore no rehabilitation liability in this regard. • Tailings get dumped onto the beach where they are distributed and settled along the coastline under natural wave and sea current action. There are no pollutants introduced with the tailings and the material is inert.
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• The bulk density is based on a calculation of the specific gravity of the silica and heavy mineral content fractions of each sample. It is therefore not fixed and fluctuates between • 1.66 and 2.19 as per the formula: SG=1.65+(0.009 x HM). • Bulk density measurements (compacted and uncompacted) are conducted for approximately every 20th sample by the internal laboratory. However, densities do not necessarily represent in situ density. • Density should be measured by excavating a known volume, drying the sample and weighing it. THM content should also be measured so density can be calculated.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution*	• The Mineral Resources have been classified as Indicated, and Inferred categories, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code). • No deleterious minerals are known. • Drillhole spacing: • Areas with drillhole spacing at the target spacing of 50m x 20m have been classified as Indicated. • All other areas classified as Inferred.

Criteria	JORC Code Explanation	Commentary
	of the data). *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The resource has been classified based on the data available at what is effectively a "snapshot" in time with surveying, drilling and sampling occurring over a short time period of several months. As soon as the deposit is surveyed and sampled it will be changing due to tides/storm activity either removing or adding resource. Overall, the resource is expected to replenish (VHM increase) over time providing mining is paused. The Competent Person considers it essential that every time the resource is presented externally a footnote describing the dynamic nature of the resource be included. • The author is confident that all relevant factors have been considered and the classification reflects his views.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	• The resource has not been internally or externally reviewed.
Discussion of relative accuracy/ confidence	*Where appropriate, a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	• Accuracy/ confidence of the resource has not been assessed via methods such as estimation variance or conditional simulation studies. A simple estimation variance study would be worthwhile however the greatest uncertainty is still the dynamic nature of tides adding ore removing resource over time. • Resource replenishment after mining is continuously monitored and is relatively predictable.

JORC TABLE 1
Northern Beaches
Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g 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 (eg submarine nodules) may warrant disclosure of detailed information.*	• The current resource is based on 235 auger holes, representing 557m of vertical drilling. • Holes are 1-4m deep with samples taken from surface to end of hole. The end of hole is generally 1) Bedrock which is normally a weathered gneiss, 2) Poorly mineralised gravelly sand which is mined by diamond mining contractors or 3) mid-Proterozoic Namaqua Natal Metamorphic Complex. Up to 20cm of the above material (points 1 to 3) can be included as dilution. Occasionally a hole is stopped early due to e.g., intersecting a boulder. • Samples are mostly 1m in length (about 6.6 kg) with the occasional 0.5m sample. • For sampling a plastic tarpaulin is laid on the ground to collect the sample and the sample is removed from the auger which is brushed clean • The whole sample is bagged, closed with cable tie, and sent to the Tormin laboratory. The sample cannot be split at the rig because it generally contains high moisture content. • At the laboratory samples are oven-dried whole, screened (2mm) and split for assaying. There are no slimes in the beach sand. • 200g of sample is split (8 way rotary splitter) to use for heavy liquid separation (HLS) using Bromoform with density range between 2.92 and 2.96g/ml to define total heavy mineral (THM) content. • Mineralisation and grade test work are completed according to mine standards within Tormin mine site laboratory. XRF, HLS and XRD.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc) and details (eg 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).*	• Hydraulic augers, produced by Christie Engineering in Australia, were used to obtain samples. Auger drilling is an acceptable drilling method for shallow beach Heavy Mineral deposits like Tormin. • The auger is 90mm dimeter and drilling is open hole. • The first drill rod is 2.5m long and subsequent rods are 2m long. • All holes were drilled vertically.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample*	• Given the drilling method combined with drilling sand there is potential for caving (caving was not visually observed) and downhole contamination. This could be assessed by measuring sample recovery (drying

Criteria	JORC Code Explanation	Commentary
	recovery and ensure representative nature of the samples. *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	and weighing complete sample) and by drilling twin holes.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	• Each hole was logged by a geologist on pre- printed log sheets. • They key information is 1) Bedrock which is normally a weathered gneiss, 2) Poorly mineralised gravelly sand which is mined by diamond mining contractors or 3) mid-Proterozoic Namaqua Natal Metamorphic Complex.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Samples generally being wet/moist are dried at the laboratory then screened at +2mm. • A sample split is taken from an 8 way rotary splitter. Homogenisation also occurs during this splitting stage. • Lab duplicate samples are split for the Tormin mine laboratory QA/QC checks. Control samples in the form of internal reference standards are run daily. • Further work is required to demonstrate that the sub-sampling approach is appropriate.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	• All sample analyses were undertaken by the Tormin mine laboratory. • No geophysical, portable XRF, etc. instruments were used. • The mine owns and operates an HLS lab with Panalytical Aeris XRD machines (the Rietveld method after HLS) in an automated mode setup and industrial laboratory XRF (Panalytical Epsilon 3 ED) for zircon content. • The Tormin mine laboratory completes its own internal QA/QC using standard reference material at the rate of approximately 1 in 40 and sends every

Criteria	JORC Code Explanation	Commentary
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	20th sample to an external laboratory. • External sampling checks for XRD have been undertaken by XRD Analytical and Consulting. • External laboratory results are problematic with some extremely different results which may be due to sample mix-ups. This requires further investigation. • No CRM's or blanks were inserted.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	• All sample preparation was undertaken by trained staff, supervised by chemists and the laboratory manager. • No twin holes have been drilled for this estimate. Twin holes would be worthwhile drilling. • The drillhole logs have been converted to electronically stored formats and stored in a database provided by Maxwell Geoservices (Webshed). This database is hosted on an offsite server supplied by Maxwell Geoservices and managed by their trained database staff. • No adjustment to assay data results was made outside the standard XRD and XRF calibration software being used.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used. Quality and adequacy of topographic control.*	• Hole collar locations were determined with DGPS, accurate to within centimetres. • Down hole surveys for very shallow vertical holes are not required. • WGS 84 datum and UTM/zone 34S coordinate system is used. • Topographical control is highly problematic due to constant changes in surface levels after daily high tides and storm events.
Data spacing and distribution	*Data spacing for reporting of exploration results.* *Whether the data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	• Target drillhole spacing is 50m x 20m, subject to beach access due to tides. • Provided there are no significant issues with data quality, density etc. a 50m x 20m drill spacing is sufficient to classify the resource as Measured.

Criteria	JORC Code Explanation	Commentary
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Geological structure is neither relevant nor applicable to an active placer beach sand deposit. • Vertical drilling intersects sub-horizontal strata. • Orientation of the drillholes will not result in sampling bias.
Sample security	*The measures taken to ensure sample security.*	• All sample bag numbers were logged against the drillhole by the site geologist. Bagged samples were labelled, zip-tied and transported to the laboratory.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• No external audits of sampling or the laboratory have occurred recently.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The area has a granted Prospecting Right (WC 30/5/1/1/2/10261PR) owned by Mineral Sands Resources (Pty) Ltd, a subsidiary of ASX listed Mineral Commodities Ltd (ASX: MRC). • This Prospecting Right incorporates a semi-continuous tenement approximately 23km in length, covering an area of 398 hectares of beach sands, between the high-water mark and the low-water mark of the coastal beaches' areas adjacent to neighbouring farms (Graauwduinen 152, remainder of Waterbak and portions of farm Klipvley Karookop 153). • The Prospecting Right was granted, executed, and registered with the South African Department of Mineral Resources and Energy ("DMRE") in January 2020. • Expanded Mining Right (162&163EM) encompassing the Northern Beaches and Inland Strand expansion project was approved by the Department of Mineral Resources - South Africa on 30 June 2020.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• The general area has been investigated and mined for heavy mineral deposits as far back as the 1930s (Haughton, 1931). Subsequent geological surveys and exploration programs investigated the distribution, mineralogy, and economic potential of the heavy mineral sands along the coastline of Geelwal Karoo (Toerien & Groeneveld 1957, Abele

Criteria	JORC Code Explanation	Commentary
		1989, Swart 1990, • Barnes 1998) and Trans Hex 1989-1991). • The feasibility study produced by Trans Hex in June 1992 included a defined Inferred mineral resource (non JORC).
Geology	*Deposit type, geological setting and style of mineralisation.*	• Deposit is a heavy mineral sand deposit located on an active placer beach strandline undergoing continues erosion, deposition and replenishment from oceanic storm and wave activity.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* *Easting and northing of the drill hole collar* *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* *dip and azimuth of the hole* *down hole length and interception depth* *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• The minimum hole depth is 1m and the maximum depth 4m. • Drilling is generally between low-tide and high-tide marks. • East collar ranges – 777,551mE to 782,488mE. • North collar ranges – 6,519,350mN to 6,526,091mN.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any*	• Exploration results are not being reported.

Criteria	JORC Code Explanation	Commentary
	reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Mineralisation is enriched sedimentary layers semi-parallel to the bedrock contact and beach slope angle. • Mineralisation is essentially flat laying, and as such, vertical drillholes represent true width. • Mineralisation from surface to bedrock is mined with no vertical selectivity. • In plan view blocks estimated to be above 2% THM content are mined.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Significant intersections are not being reported. • Maps, sections and plan view are provided in the resource report.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Exploration results are not being reported.
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• The resource is progressively lowering in grade and volume as replenishment has been slower than the mining rate.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Offshore sampling to determine the source of grade replenishment is planned.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code Explanation	Commentary
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	• The data was plotted, and plots were as expected with no misplots or extraneous data found. Maximum and minimum values and average values were all within the norm. • Data is stored in an offsite database hosted by Maxwell Geoservices.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• The previous Competent Person was a full-time employee of Mineral Commodities Ltd. However, the new Competent Person as of 2022 has not had sufficient time to visit site. A site visit is planned for 2023.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	• Deposit is a heavy mineral sand deposit located on an active placer beach strandline undergoing continues erosion, deposition and replenishment from oceanic storm and wave activity. • The deposit is vertically constrained by topography and the base of drilling. Topography is surveyed at or close to the time of drilling and the base of the domain is assumed to be the end of hole depths. • Most of the deposit is constrained shoreward by the low water mark with a 10m standoff and landward by a 10m standoff from cliffs and dunes. The exception to this is 680k of resource from Beach 10 which is located under dunes. • Grade continuity is influenced by wave action and hence is best parallel to the beachfront. • Some sorting of the heavy minerals occurs based on density i.e., minerals with similar density tend to be spatially associated.
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 deposit has a strike length along the coastline of approximately 10,850m with individual beaches generally separated by rocky headlands/rocky beaches which cannot be mined. • The deposit has an average width from the dunes to within the surf zone of 150m. It is developed from surface to a maximum depth of 4m and the average resource thickness is approximately 2.5m. The deposit occurs from the surface down.
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*	• Leapfrog, MinePlan and Isatis. Neo software were used to domain and estimate each of the valuable heavy minerals as well as the THM. Meshes were created from the topographic surveys (upper surfaces) and the base of drillholes (lower surfaces). The topographic surveys are restricted to the mineable area and therefore domains do

Criteria	JORC Code Explanation	Commentary
	maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen, include a description of computer software and parameters used. *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	not extend outside this. • No internal domaining of the beach sands is practical or applicable. • Seven beaches have been modelled. • Of the seven beaches only beaches four and nine have outlier restrictions and these restrictions have had minimal impact. • Ordinary Kriging was used as the primary estimator which is suitable for the beach sands given that the mineralisation is diffusive in nature (this still needs to be verified via the relevant statistics). • Kriging by its nature will smooth the estimates however, there is no vertical mining selectivity (besides stopping at the base of beach sand) and horizontal selectivity is somewhat limited. • Discretization of 4 x 4 x 1 which relates to a parent block size of 10m x 10m x 1m. Sub-blocking is down to 5m x 5m x 1m. The parent block size is about half the across strike drill spacing and 1/5th the along strike spacing. • Searches are horizontal with maximum continuity parallel to each beach (500m x 100m x 16m). Kriging used a minimum of 6 samples and a maximum of 16. Typical drill spacing is 50m x 20m however, extrapolation can be up to several hundred meters. In all estimated areas mineable beach is present (providing THM is greater than 2%). • The search for a given beach is identical for each variable. This is to maintain the correlations between variables. • There are no deleterious variables. The THM content excludes slimes and oversize because these fractions will not be recovered during processing. All estimated variables form part of the THM fraction, which is recoverable. However, the estimates of the individual variables are in situ and not necessarily 100% recoverable. This is because the grade variables are estimated via XRD not magnetic and gravity separation. • Check estimates were made for all variables and beaches. These estimates were nearest neighbor and inverse distance squared. • All estimates were validated against the check estimates and input data both visually and statistically.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The resource tonnages are estimated on a dry basis. Mined material is wet and fully saturated when mined out, but it is free draining when stockpiled.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Reported resource is based on a 2% THM cut-off grade because this is the current minimum grade for which there is a reasonable expectation for eventual economic extraction.

Criteria	JORC Code Explanation	Commentary
		• The proportion of the VHM within the THM varies and a cut-off based on VHM would be more accurate. MRC plan to move to a VHM cut-off for external reporting of resources.
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.*	• The dynamic beach environment results in a cyclic process of deposition on and erosion of the beach surface. Historical studies by Trans Hex have found a weighted average change over 9 months of up to ~9% loss or up to ~7% increase. This variability is also evident in the replenishment rate and grade of material observed. • Opencast mining. The pits generally only remain open during low tide, except where beach conditions allow larger, more stable protective bunding to be constructed. • There is no stripping as mining starts at the surface. • Natural replenishment of the resource is taking place as the open pits are filled with HMS material from the surf zone during the next high tide. • In general, it appears that replenishment is mostly associated with winter storms when the sea brings sand from the nearshore and offshore areas. Replenishment is also a function of time and the number of sea storm events. Given enough time between mining events, the resource is still replenishing, although the long-term trend is a significant lowering in grade. • The overall lowering of the beach surface (due to mining) has resulted in the faster movement of large volumes of material between the beach and the surf zone than before mining started.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made*	• Metallurgical factors have been taken from the current processing plant. • The Northern Beaches have been successfully mined and the valuable minerals recovered. There are no doubts about the metallurgical suitability of the Northern Beaches material.
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*	• For most of the resource there are no environmental factors likely to stop mining. There is a 10m stability buffer zone between the coastal cliffs (sand dunes) and the beach where no mining is allowed. The exception to this is 680k of resource from Beach 10 which is located under

Criteria	JORC Code Explanation	Commentary
	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 greenfield 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.	dunes. Pending results from environmental studies an application will be made with the mines department to be able to mine this material. • Currently all mining voids get naturally filled with beach sand material during high tide and therefore there is no rehabilitation liability in this regard. • Tailings get dumped onto the beach where they are distributed and settled along the coastline under natural wave and sea current action. There are no pollutants introduced with the tailings and the material is inert.
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• The bulk density is based on a calculation of the specific gravity of the silica and heavy mineral content fractions of each sample. It is therefore not fixed and fluctuates between • 1.66 and 2.19 as per the formula: SG=1.65+(0.009 x HM). • Bulk density measurements (compacted and uncompacted) are conducted for approximately every 20th sample by the internal laboratory. However, these measurements do not necessarily represent in situ density. • Density should be measured by excavating a known volume, drying the sample and weighing it. THM content should also be measured so density can be calculated.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Mineral Resources have been classified as Indicated, and Inferred categories, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code). • No deleterious minerals are known. • Drillhole spacing: ○ Areas with drillhole spacing at the target spacing of 50m x 20m have been classified as Indicated. ○ All other areas classified as Inferred. • The resource has been classified based on the data available at what is effectively a "snapshot" in time with surveying, drilling and sampling occurring over a short time period of several months. As soon as the deposit is surveyed and sampled it will be changing due to

Criteria	JORC Code Explanation	Commentary
		tides/storm activity either removing or adding resource. Overall, the resource is expected to replenish (VHM increase) over time providing mining is paused. The Competent Person considers it essential that every time the resource is presented externally that a footnote describing the dynamic nature of the resource be included. • The author is confident that all relevant factors have been considered and the classification reflects his views.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	• The resource has not been internally or externally reviewed.
Discussion of relative accuracy/ confidence	*Where appropriate, a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	• Accuracy/ confidence of the resource has not been assessed via methods such as estimation variance or conditional simulation studies. A simple estimation variance study would be worthwhile however the greatest uncertainty is still the dynamic nature of tides adding ore removing resource over time. • Resource replenishment after mining is continuously monitored and is relatively predictable.

JORC TABLE 1
Western Strandline
Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g 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 (eg submarine nodules) may warrant disclosure of detailed information.*	• The current resource database consists of 507 aircore holes and 2 sonic holes, representing 13,251m of vertical drilling, and their analytical data. • Sample taken from surface to bedrock. • Mineralogical studies and grade testwork undertaken according to mine control standards within Tormin mine site laboratory. • Sampled exclusively by vertical holes. • One-metre air core drill samples from a cyclone were collected in 20-25kg plastic bags. • Each bag was riffle split into two pre-numbered calico bags of ~5kg each and the remainder of the samples collected in a large plastic bag. • 5kg samples were submitted directly to the Tormin mine laboratory to be analysed for oversize, slimes, and heavy minerals. • The laboratory sample was dried, de-slimed (removal of -45 micron fraction) and screen (+2mm oversize). • 200g of sample split to use for heavy liquid separation using Bromoform with density range between 2.92 and 2.96g/ml to define THM content.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc) and details (eg 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).*	• Air core drilling was used. Air core drilling is considered a standard industry drilling method for HMS mineralisation. • 78mm and 85mm drill bits and rods were used. • Two sonic holes by wide barrel (137mm) drilled. • All holes were drilled vertically.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether sample bias may have*	• Metric samples from aircore drill were taken and riffled down to a representative sample for heavy liquid separation and XRD. • No sample loss or cavitation were experienced. Dry samples may lose some of their slimes fraction due to blowing out of sampling equipment, however HM are not affected. • Sample recovery was excellent.

Criteria	JORC Code Explanation	Commentary
	occurred due to preferential loss/gain of fine/coarse material.	• The aircore and sonic drilling provide high quality samples from the face of the drill hole.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	• Each hole was logged by a geologist on pre-printed log sheets, transcribed to excel and transferred to a cloud hosted geological database • Geological and lithological observations per depth were recorded together with field sections and hand drawn down-the-hole logs. • Special attention was given to heavy minerals intersected as a guide to potential marine strandlines and marine diamond deposits. • Percentage HMS was recorded from visual observations as well as the magnetic content of each metre by handheld pen magnet. • Marine gravels and contact with basement bedrock recorded as maximum depth of mineralisation. • Each 1m sample was washed and sieved to obtain a representative sample stored in numbered chip trays.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Sampling over 1m down the hole intervals as determined by 1m marks on the rig mast. • Drill samples were riffle split into approximately 3kg samples to be assayed. • All samples were dry. • Technicians undertaking the splitting were supervised by mine site geologists to ensure sampling quality. • The sample sizes were considered suitable, based on industry practices of mineral sand exploration. • Field duplicate samples were riffled for the Tormin mine laboratory and external QA/QC checks for every 25th sample • Lab duplicate samples were split for the Tormin mine laboratory and for external QA/QC checks.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation,*	• All sample analyses were undertaken by the Tormin mine laboratory. • The mine owns and operates a state of the art heavy liquid separation (HLS) lab using bromoform with density range between 2.92 and 2.96g/ml with Panalytical XRD machines (the Rietveld method after HLS in an automated mode setup). All grades reported are from XRD results on heavy liquid sink. • Industrial laboratory XRF machines (Panalytical Epsilon 3 ED) are used by Tormin mine as a grade verification check on the XRD zircon content.

Criteria	JORC Code Explanation	Commentary
	etc. *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The Tormin mine laboratory completes its own internal QA/QC using Certified Reference Material ("CRM") at the rate of approximately 1 in 50 and sending every 25th sample to the external labs for independent check analysis. • 271 field duplicates plus 80 blank samples, and 56 CRMs were included into the sample stream and submitted to the lab. • The CRMs, blank and duplicate sample results are within accepted limits. • External sampling checks for XRD have been done by XRD Analytical and Consulting (398 samples) and UIS Analytical Services (20 samples) and for XRF in Mintek and UIS Analytical Services (10 samples each), accredited laboratories in Pretoria and Johannesburg. Also,10 samples have been assayed in Mintek and UIS Analytical Services by ICP-MS for trace elements and REEs. • The adopted QA/QC protocols are appropriate for the Mineral Resource and public reporting and QA/QC system returning acceptable results. • QEMSCAN testwork on 18 composite samples by SGS, ALS and SJT MetMin was used for verification of the mineral assemblage and the component mineralogy as well as grain size distribution and HMS particle size. • Additionally, optical microscopy grain counting was used to confirm heavy mineral assemblage on 4 composite samples. • No geophysical tools or handheld instruments were utilised in the sample analysis.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	• All sampling was undertaken by mine site personnel overseen by a qualified and experienced mine geologist and independent consultants. • All sample preparation was carried out by qualified staff, supervised by chemists and the laboratory manager. • The lab results and logging have been reviewed by external consultants to MSR as well as internally by MRC's exploration manager. • 10 twinned holes were drilled in different fence lines to assess stationarity. • 48 holes (1,192m) from historical drilling were verified and included into the resource model. • The drillhole logs have been converted to electronically stored formats and stored in a database provided by Maxgeo (DataShed). This database is hosted on an offsite server supplied by Maxgeo and managed by their trained database

Criteria	JORC Code Explanation	Commentary
		staff. • No adjustments to assay data results were made outside the standard XRD and XRF calibration software being used.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used. Quality and adequacy of topographic control.*	• Hole collars were surveyed by DGPS accurate to within +/- 100 millimeters by mine surveyors. • Down hole surveys for shallow vertical air core holes are not required. • WGS 84 datum and UTM/ zone 34S coordinate system is used.
Data spacing and distribution	*Data spacing for reporting of exploration results.* *Whether the data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	• Systematic grade spacing used in the drilling program was 250m x 20m containing 30 fence lines. • Each drillhole is spaced 20m apart along each drill line perpendicular to the strandline inferred strike. • The above-mentioned drill fence line is 250m apart along the strandline strike. • infill fence lines with 500m x 25m and 250m x 25m grade were drilled between the primary lines. • 16 holes from historical drilling were verified and included in the resource model. • 10 twinned holes were drilled in different fence lines.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Vertical drilling to intersect sub-horizontal strata. • Orientation of the drillholes will not result in sampling bias.
Sample security	*The measures taken to ensure sample security.*	• Sampling was carried out using pre-printed calico bags to prevent mislabeling. • All sample bag numbers were logged against the drillhole by the site geologist. • Three samples per metre drilled were produced. The reject was stored securely in a bag farm for reference, one for external QA/QC use and one was sent directly to the mine lab at the end of each day's drilling into a secure area. • The Tormin mine laboratory inspected the submitted samples and did not report any missing, nor any error of the samples against the sample lists. • Where external laboratories were used, their chain of custody controls for shipping and sample submission

Criteria	JORC Code Explanation	Commentary
		were used.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• The lab results and logging have been reviewed by external consultants to MSR and internally as part of normal validation processes by MRC.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The area has a granted prospecting right (WC 30/5/1/1/2/10262 PR) in the name of Mineral Sands Resources (Pty) Ltd, a subsidiary of ASX listed Mineral Commodities Ltd (ASX: MRC). • This Prospecting Right (Inland Strand) incorporates an area approximately 12km in length covering 1,741 hectares of coastal area adjacent to the existing beach mining operations on the Company-owned farm Geelwal Karoo 262. • 162 and 163 Expanded Mining Right (WC 30/5/1/2/2/10108 MR) encompassing the Northern Beaches and Inland Strandline expansion project was approved by the Department of Mineral Resources - South Africa on 30 June 2020. • MSR has been operating successfully in the region for more than 8 years to date.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• The general area has been investigated and mined for heavy mineral deposits as far back as the 1930s (Haughton, 1931). Subsequent geological surveys and exploration programs investigated the distribution, mineralogy, and economic potential of the heavy mineral sands along the coastline of Geelwal Karoo (Toerien & Groeneveld 1957, Abele 1989, Swart 1990, Barnes • 1998) and Trans Hex 1989-1991). • De Beers drilled 9 fence lines across the property and bulk sampled the area in the 1960s. • During 1999, Trans Hex conducted additional onshore drilling of strandlines and identified the inland raised beach deposits containing heavy minerals. Trans Hex subsequently bulk sampled the material by digging several trenches in 1999-2000. • Geelwal Karoo Diamante conducted small diameter forum drilling to a depth of 40m between 2000 and 2002, with a total of 42 drillholes. • Extensive work, including mining of the inshore

Criteria	JORC Code Explanation	Commentary
		strandlines along the coast, was undertaken by Namakwa Diamond Company in 2003-2005. This work also identified the presence of the Inland Strand.
Geology	*Deposit type, geological setting and style of mineralisation.*	• The western coastal plain of South Africa contains a significant resource of detrital heavy minerals by world standards. • The heavy mineral sand deposits occur in a current active beach environment (eg Tormin mine) as well as in older palaeo-beach raised strandlines found inland (inland strandlines) eg Tronox Namakwa Sands. • Apart from the mid-Jurassic, Cretaceous and Tertiary (Paleogene) sediments along the coast, numerous small fossiliferous, marine, and terrestrial deposits of Neogene age outcrop along the coastal zone. • The onshore mineral sands are marine palaeo-terraces “Inland Strands”, aeolian sands and fluvial sediments. These targets were formed during Miocene, Pliocene, and Quaternary/Pleistocene coastal transgression (sea move inland) and regression cycles. • The lithological units of the Western Strandline can be described as below: o Aeolian Sand – non mineralised o Red Aeolian Sand – mineralised o Silcrete Duricrust/ Dorbank o Orange Feldspathic Sand – non mineralised o Orange Feldspathic Sand – mineralised • Dorbank – mineralised • Strandline – mineralised • Base pebble beds – mineralised • Schist basement • For purposes of estimation, the lithology has been grouped into the following: • Red Aeolian Sand • Silcrete Duricrust / Dorbank • Orange Feldspathic Sand • Main Strandline Mineralisation • Secondary Perched Strandline Mineralisation • Gravel • Basement Schist • The orebody hosts mineralisation in all geological units/layers except for the schist basement.

Criteria	JORC Code Explanation	Commentary
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* *Easting and northing of the drill hole collar* *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* *dip and azimuth of the hole* *down hole length and interception depth* *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• The minimum hole length is 5m, maximum 60m and average depth of drilling is 24metres. • East collar ranges – 220,261mE to 227,375mE. • North collar ranges – 6,500,851mN to 6,510,977mN. • Height collar ranges- 34.25m to 95.84m. • Azimuth ranges/dip ranges – vertical drilling.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not relevant. • No grade cutting of HM values were undertaken. • No metal equivalents were used for reporting of Mineral Resources.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the*	• Not relevant. • The strandline mineralisation is sub-horizontal in nature and the air core drilling intercepts are vertical. • Thickness of intercept reported is therefore true thickness of the mineralisation.

Criteria	JORC Code Explanation	Commentary
	down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Maps, sections and plan views are provided in the main body of the report and previous market releases.
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.*	• Statistics of drillhole grades used during the Mineral Resource Estimate are contained in the main body of the report. • This report provides the total information available to date and is considered to represent a balanced report.
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.*	• Historical drill data is not reported as it is classified as historical foreign estimates that are non-JORC compliant. • Aeromagnetic geophysical data has been used for drilling target delineations. • Only 48 holes (1,192m) from historical drilling were verified and included into the resource model. This is an increase from the previous model, as new drilling has confirmed logging and assays from more of the historical dataset.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further drilling is planned to increase Measured/Indicated resources over the Western Strandline.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code Explanation	Commentary
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	• The data was plotted, and plots were as expected with no mis-plots or extraneous data found. Maximum and minimum values and average values were all within the norm. Duplicate values were confirmed as such. The coordinates were confirmed as being WGS84 UTM zone 34S. • Data is stored in an offsite database hosted by Maxgeo.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• The previous Competent Person was a full-time employee of Mineral Commodities Ltd. However, the new Competent Person as of 2022 has not had sufficient time to visit site. • A site visit is planned for 2023.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	• The deposit is a classic inland strandline mineral sands deposit with no doubt as to its genesis. • The grain size characteristics are interpreted to support an offshore depositional setting, closer to the shoreline position. • Samples were collected for resource estimation purposes. • The geology/topography of the deposit has been used to constrain the resource envelope. The data was partitioned into areas (subsets) based on geology/topography. The base of the deposit is defined by the underlying bedrock, the landward side by barren land and sand dunes.
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 total deposit, inside MSR controlled Prospecting Rights, has a strike length of approximately 12,125m and an average width (including low grade halo) of 380m. High grade strandline core of the deposit averages approximately 200m width, along the entire strike length. It is developed from surface to a maximum depth of 49m and the average resource thickness is approximately 21m (including low grade halo). The deposit occurs from the surface down.
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.*	• Micromine software was used to domain and estimate each of the valuable heavy minerals and THM. Domains were snapped to the nearest true intersection from sampling. • Samples were generally 1.0m in length however there were some 4m long field composites. The entire data set was composited down to 1m. • Outlier values were cut based on local analysis for each lithology. Only THM percentage was required to be top cut for the low grade Dorbank and RAS lithologies (cut to 30% and 15% respectively), and the only constituent mineral requiring a top cut was Garnet within the RAS (cut to 10%).

Criteria	JORC Code Explanation	Commentary
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• Data was extrapolated between data points and approximately half of the drill spacing beyond. Data points are nominally 125m x 25m to 250m x 25m. There are generally between 2-15 drill holes per line (average 7 holes). • Ordinary Kriging was used as the primary estimator. Each variable was estimated separately, using variograms created for each lithology. • An anisotropic search was used, with the variable ratios of direction of greatest continuity: Across the continuity: depth (STRAND 1:0.4:0.04, LGSANDS 4:0.4:0.08). A maximum search distance of 500m was used for the STRAND unit, and 750m for LGSAND units. Octant searching was used, with a maximum points per sector of between 5 and 12. The minimum points to estimate a block were 5. These neighborhood parameters were all confirmed using Quantitative Kriging Neighborhood Analysis. • This is a resource estimate and mining parameters are not used beyond normal global parameters of grades, dimensions, and accessibility. • An in-depth validation process was used to test the robustness of the modelled data, including visual checks, check estimates (NN), swath plots and detailed statistical comparisons. • The results of the validation of the block model show acceptable correlation of the input data to the estimated grades. • Maiden Mineral Resources have been previously estimated for the Western Strandline in August 2020.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The resource tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Final reported resources were based on a 2% THM cut-off grade for blocks as this is the current minimum grade where there is a reasonable expectation for eventual extraction. • 2% cut off grade was based on grade-tonnage curves with respect to THM and VHM assemblage. Also considered was current and anticipated plant performance, and other similarly sized deposits in the region. • A VHM cut-off for resources would be more accurate than a THM cut-off. This is because the proportion of VHM within the THM varies. MSR plan to transition from a THM cut-off

Criteria	JORC Code Explanation	Commentary
		to a VHM cut-off for external reporting of resources.
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.*	• The resource is considered as dry mining feed and mineralisation can be any depth or width. Dry mining techniques are preferred in situations involving high grades. • Mining is through conventional open pit methods. • The thickness and continuous nature of the mineralisation supports a non-selective bulk mining method. • The Company believes there are no mining factors which affect the assumption that the deposit has reasonable prospects for economic mining.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Metallurgical recovery is similar to other mineral sand operations. • Metallurgical parameters have been taken from the metallurgical tests, and metallurgical testwork results support the recovery. The VHM mineral assemblage, low slimes and oversize are fit for an economic extraction. • Historical and current mining and processing operations confirm that the metallurgical parameters used and testwork underpinning the metallurgical assumptions are appropriate. • The most recent studies are: • 2020 Tormin Expansion projects-implementation strategy by MinSol Engineering, and • 2021 Pre-feasibility study report for Inland Strandline expansion by MinSol Engineering. • To date, the Company considers there are no metallurgical factors which are likely to significantly affect the assumption that the deposit has reasonable prospects of eventual economic extraction.
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,*	• There are no environmental factors likely to affect the assumption that the deposit has reasonable prospects for economic extraction. • The local vegetation environment generally consists of strandveld plant communities. Topsoil stripped from the mining operations will be stockpiled for later use during rehabilitation. Slimes content is moderate (<10%) and tailings generated in the processing plant will be pumped back into the open pits as part of the rehabilitation strategy. Any excess water will be recovered and recycled in the process.

Criteria	JORC Code Explanation	Commentary
	particularly for a greenfield 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.	• There are no significant pollutants introduced with the tailings and the material is inert, however further studies for tailing and slime waste classification are ongoing.
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• The bulk density is based on a calculation of the specific gravity of the silica and heavy mineral content fractions of each sample. It is therefore not fixed and fluctuates between 1.68 and 2.1 as per the formula: SG=1.68+(0.0095 x THM). • The use of a bulk density algorithm is a standard industry practice for the estimation of mineral sands resources. There is uncertainty that the SG formula is sufficiently accurate to support Measured resources. MSR plan to generate a dataset of actual density measurements for comparison against the calculated density.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Mineral Resources have been classified as Measured, Indicated, and Inferred Categories, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves ("JORC Code (2012)"). • A range of criteria has been considered in determining this classification including, Geological continuity and Drillhole spacing: • Areas with aircore drilling spaced at 125x25m have been generally classified Measured; • Areas with aircore drilling spaced at 250x20m have been generally classified Indicated; and • Areas outside this has been classified as Inferred. Broadly spaced scoping drilling in the south, coupled with other widely spaced historic data, gives some confidence in the continuity of mineralisation up to 100m from the main high grade strandline core, providing the search criteria are met. •

Criteria	JORC Code Explanation	Commentary
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	• The Mineral Resource has been reviewed internally as part of normal validation processes by MRC. • Wardell Armstrong International ("WAI") conducted a review of the Mineral Resource Estimate and no material issues were identified. Mr Ché Osmond (CGeol) and Richard Ellis (CGeol) (WAI) undertook an audit of the Mineral Resource estimate as an independent technical review. • The current Competent Person was not involved in the preparation of the resource estimate. A desktop review was completed before accepting responsibility as the Competent Person. The current estimate and resource classification is considered defendable. There is some uncertainty that a Measured resource classification is appropriate however, this needs to be investigated with more work, i.e., • Detailed examination of twin holes to verify the reliability of drilling. • Comparing calculated density to actual density measurements. • Sending sample splits for verification of the quantitative XRD at an alternative laboratory. This could involve an approach such as – Gravity Separation of the THM followed by magnetic separation. The magnetic and non-magnetic THM fractions then undergo various density separations followed by XRF analysis of the fractions to determine the mineral assemblage and mineral quality. The quantitative XRF could also be compared against QEMSCAN. • 4. Complete a simple 2D kriging estimation variance study to verify that the current drill hole spacings used for resource classification are appropriate.
Discussion of relative accuracy/ confidence	*Where appropriate, a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages,*	• Slope of regression from kriging was considered in classification. • No significant production has occurred from the deposit. Since September 2020 when mining commenced in the Western Strandline, a total of 1.9Mt has been mined from the South pit, with all material being stockpiled. 100kt was used for testwork purposes in the March quarter of 2021. This material was depleted from the updated mineral resource and reported as a stockpile.

Criteria	JORC Code Explanation	Commentary
	which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	

Section 4 Estimation and Reporting of Ore Reserves

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

Criteria	JORC Code Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	*Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• This Ore Reserve is based on the Measured and Indicated portion of the updated Mineral Resource at Tormin Western Strandline released on 7 December 2021. • The Mineral Resource model is a 3D block model reported at 2%THM cut-off grade. • Mineral Resources are reported inclusive of Ore Reserves.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• A site visit was undertaken in the first week of February 2023. • All aspects of the operation were reviewed over a period of 5 days including mining operations at both Tormin and Northern Beaches, previously mined pits in the southern section of the Western Inland Strand and clearing / grubbing works being undertaken at the northern area of the Extended Mining Rights. • The waste dumps and ROM stockpiles were examined along with product stockpiles and a review of the new processing route for Inland Strand material completed. • A review of the on-site laboratory was undertaken including the entire process workflow from receipt of samples to release of final approved results. Sample points along the current operations workflow were also visited. • The field office at De Punt exploration area was visited and sampling procedures reviewed with the contract geologist and exploration technicians. The recent drilling sites at De Punt were also examined. • Discussions with the consulting geotechnical group were held on site in person and the proposed pit slope parameter set discussed along with review of the performance of the current pit slopes. • Review of tenue, permitting and permitting processes and environmental requires were discussed on site with the Environment Manager and General Manager.
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to*	• This study is assessed as being at a Pre-Feasibility Study level to support the Ore Reserve. • The Pre-Feasibility Study evaluated geology and

Criteria	JORC Code Explanation	Commentary
	Ore Reserves. *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	resource, mining, metallurgy, process plant and tailings, infrastructure and logistics, environment, human resources, marketing, implementation plan and schedule, capital and operating costs, financial assessment and other activities/issues that could impact the proposed operation as contained in the PFS report. • Processing costs and input costs (in particular diesel and transport costs) were reviewed post PFS and adjusted to current long term projections post COVID 19 impacts. • Modifying factors accurate to the study level have been applied. The resulting mine plan is technically achievable and economically viable.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	• A value model was developed that assigns mining and processing recoveries, costs, and revenue to the geological model. This value model follows the entire mining process from topsoil stripping to final rehabilitation. • A cashflow grade model was written in python as a cash flow script to generate at a block level all of the required attributes to calculate the cash flow grades for the proposed processing permutation for subsequent use in pit optimisation and strategic mine schedule optimisation. • Blocks where the cash flow grade per tonne is positive are designated as potential ore and negative blocks are designated potential waste.
Mining factors or assumptions	*The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* *The mining dilution factors used.* *The mining recovery factors used.* *Any minimum mining widths used.* *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* *The infrastructure requirements of the selected mining methods.*	• Mining dilution was not specifically input as the updated cashflow grades show that the mineralisation is extensive above the bedrock. With a LOM strip ratio of 0.19:1, this bulk mining operation does not require a great deal of selectivity in mining. Additionally, the block sizes used in the Mineral Resource estimation are large enough that dilution is included as part of the estimation process. • All the selected pit shells did not have detailed pit designs created due to the shallow nature of the pits and the extent of cashflow positive material. Pits within the EMR have detailed designs. These pits account for 9 years' worth of mining at current rates. Pits will be detailed for construction as required. • Inferred Mineral Resources were considered as waste. • The deposits will be mined in multiple stages in a conventional open pit operation and will utilise conventional load-haul mining methods. Each panel will be mined using 70 tonne class excavators and 45 tonne articulated trucks. • A minimum mining width for pits of 30m is based on the use of CAT 745 class trucks. • Geotechnical assessment and recommendations

Criteria	JORC Code Explanation	Commentary
		provided by Middindi Consulting and MLB Consulting. Pit slopes assumed as 45 and 75 degrees depends on material types. • Hydrogeological studies have been carried out by the Australian Environmental & Mining Co (AEMCO) and Geohydrological impact assessment completed by Geohydrological and Spatial Solutions International (GEOSS). • Ore to be excavated from open pits with an average depth of 15m and maximum depth of 30m. Ore is hauled directly to the processing plant by the Articulated trucks. • Haul road widths designed to 15m (as approved in the Environmental Management Plan) for dual lane traffic and 11.5m for single lane, based on the use of CAT 745 Articulated trucks, with ramp gradients to be limited to 1:10 (10%). • The high-grade nature of the deposit results in pit optimisation shell sizes increasing incrementally with revenue factor. • Access to the area is straightforward and roads are available within Tormin mining area. • The topography is smooth (about 3 degrees), and it is anticipated that no significant issues associated with mining are likely. • Infrastructure requirements for the selected mining method are minimal. Current workshops and operating spaces have been defined. ROM stockpiles (fingers) will be constructed to manage the feed blend. • The LOM average strip ratio is approximately 0.19:1 (Waste: Ore). • Based on the block model, the total mined mine waste volumes are expected to be approximately 11.3 million tonnes over the life of mine.
Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* *Whether the metallurgical process is well-tested technology or novel in nature.* *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* *Any assumptions or allowances made for deleterious elements.*	• The metallurgical process proposed comprises conventional gravity separation of heavy minerals using spirals. Metallurgical recovery is similar to other mineral sand operations. • Metallurgical parameters have been taken from the metallurgical tests by Nagrom, Haver & Boecker and Delchem, and metallurgical testwork results support the recovery. The VHM mineral assemblage, low slimes and oversize are fit for an economic extraction. • Key design criteria used for the current Ore reserve are below:

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.
For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</td><td>
<table>
<tr><th>Description</th><th>Overall Recovery (%)</th></tr>
<tr><td>Zircon</td><td>77</td></tr>
<tr><td>Rutile</td><td>50</td></tr>
<tr><td>Ilmenite</td><td>78</td></tr>
<tr><td>Garnet</td><td>80</td></tr>
<tr><td>Magnetite</td><td>57</td></tr>
</table>

The Ore Reserve estimation has been based on the recoveries and processes outlined from metallurgical testwork.
100kt of ore was processed in the MSR's Tormin processing plant in the March quarter of 2021 prior to plant upgrades and installation of new equipment. This test material and its subsequent plant performance was used to inform the recovery parameters used for the optimisation.
Additionally, production has now commenced on the Inland Strand material and current process plant performance to date is in line with metallurgical inputs used in modelling. Refer ASX announcement entitled 'Commissioning complete for Inland Strands Ore' dated 27 March 2023.

</td></tr>
<tr><td>Environmental</td><td>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</td><td>

Significant environmental assessment work has been undertaken. The deposit lies entirely within prospecting right (WC 30/5/1/1/2/10262 PR) and 36% of the Ore Reserve is within the 162 & 163 Expanded Mining Right.
Environmental impact assessment has been completed by SRK Consulting as an independent environmental consultant and environmental approvals have been granted for the 162 & 163 EMR.
Ecology, fauna, and flora studies were undertaken as part of the baseline assessment report to grant Integrated Environmental Authorisation (IEA) by the Ministry of Environment, Forestry and Fisheries.
MSR implements dust suppression measures to reduce dust emissions from haul roads. A watercart continuously applies seawater to all internal haul roads (freshwater applied to external haul roads) as required, including the DR2225 public gravel road to Koekenaap. MSR will continue to implement dust suppression measures on haul roads.
MSR has engaged GroundTruth to undertake a Biodiversity Management Plan (BMP).
Environmental studies to support additional mining rights on prospecting right (WC 30/5/1/1/2/10262 PR) outside the 162 & 163 Expanded Mining Right are in progress.

</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
Infrastructure	*The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	• Access to Tormin Mine is from Koekenaap via Robeiland and De Punt, or from Koekenaap via Kommandokraal and Schaapvlei. The gravel road extending the length of Farm Geelwal Karoo 262 is maintained by MSR and provides access to the processing plant. • The Company owns Geelwal Karoo Farm 262. • Diesel powered generator sets (gensets) are currently used at Tormin Mine to provide power to the Mine. Power is generated by 3 x 1250kVA gensets plus 1 standby unit with an installed power capacity of 3.75MVA. The gensets are containerised and located adjacent to the SCP and GSP. • MSR has made an application to Eskom to provide power from the national grid to replace the current gensets and, more importantly, provide a cost-effective power supply option for the expansion plant and MSP. The future 10MVA power requirement is to utilise the adjacent wind energy facility. In this event, a 22kV underground powerline of approximately 4km will be installed from the Sere wind farm substation to a new MSR substation. CVG Consulting Engineers has been engaged for detailed engineering work for this project. • Obsideo Consulting designed the tailing and water management plan to suit the Inland Strand processing plant requirements. • MSR utilises water from two sources, namely seawater for processing activities from the seawater intake located on the coast and fresh water for domestic purposes, the latter transported by truck to site from Lutzville. The current daily seawater intake rate is approximately 7.2 ml/d. Seawater is pumped from the seawater intake station located on the beach via a booster pump station to the aquaculture dam. Make-up water is pumped from the aquaculture dam to the process water dam which is located at the GSP/SCP. Process water from the SCP and GSP is discharged into the secondary process water dam for settling. The water is then recirculated back to the main process water storage dam for further use in processing. Excess water from beach ore processing is returned to the sea whilst excess water from inland ore is recovered via the thickener and dewatering screen and recirculated. • The average tailings production is approximately 80% of ROM. Total anticipated tailings from inland mining, including slimes, will be approximately 0.7Mtpa for stage 1. Tailings will have a (seawater) moisture content of ~ 55% with the aim of extracting 100 % of free flowing (decant) water after settlement. • Tailings will be pumped as a slurry from the processing plant and backfilled in the mine void. Tailings, including

Criteria	JORC Code Explanation	Commentary
		filtered slimes, from the processing plant will be pumped separately to the mining void for co-disposal. The tailings and filtered slimes will be allowed to settle in the containment cells. Clean water will be decanted from the containment cells and recycled to the processing plant for reuse in processing. Davies Lynn & Partners has been engaged for technical inputs and design of waste storage facilities for tailings management. • 3D- Dig software used for tailing deposition planning and simulate Co- disposal into backfill and its long-term impact. • Backfilled tailings will be covered with returned (dry) overburden. • A rehabilitation management plan and standard operation procedure has been prepared by Enviroworks. • Rehabilitation will be undertaken as soon as the mining path allows. Backfilled tailings and returned overburden will be profiled to mimic original topography as closely as possible before topsoil is replaced for rehabilitation and reseeding, where required.
Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.* *The methodology used to estimate operating costs.* *Allowances made for the content of deleterious elements.* *The source of exchange rates used in the study.* *Derivation of transportation charges.* *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* *The allowances made for royalties payable, both Government and private.*	• MinSol Engineering and Obsideo Consulting prepared a preliminary capital cost estimate for the Western Strandline Project based on Association for the Advancement of Cost Engineering cost estimation guidelines. • The Project included engineering, design, procurement, and construction of a 1.2Mtpa (base case, stage1) wet processing facility, using conventional crushing, scrubbing and gravity separation technology. Much of the processing plan and infrastructure required for the processing operation was already owned by MRC, with only minor modifications or upgrades required. • Front end scrubbing and crushing along with a new thickener and filters have been installed on site and commissioned. Refer ASX announcement entitled 'Commissioning complete for Inland Strands Ore' dated 27 March 2023. • The expansion stage has been considered for a 2.4Mtpa mining operation (stage2). • The operating cost estimate for the operation includes all costs associated with processing, infrastructure, and site-based general and administration costs. • The operating cost inputs have been derived from site actuals and budget forecasts. • The mining operating cost estimates have been prepared by MRC, with input from the mining contractor. • Royalties have been calculated at 5% of sales revenue

Criteria	JORC Code Explanation	Commentary
		payable to the government of South Africa. • All amounts have been modelled in US dollars with foreign estimated inflows/outflows converted to US dollars at an average exchange rate of USD/ZAR 17.0 and USD/AUD 1.5 used reflects long term exchange forecasts.
Revenue factors	*The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• Revenue from the Project is derived from the sale of heavy mineral concentrates. • The price assumptions are based on contracted sales agreements. • Transport and treatment charges as well as other administration charges incurred on site are all based upon actual costs being incurred mining at Tormin site. • Revenue estimates are based on independent market pricing and life-of-mine concentrate production. • Forecast prices for heavy mineral products (2023-2028) were incorporated into the model. • Revenue estimates are base case only and do not include any process expansion options or downstream additions to the process flow route.
Market assessment	*The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* *A customer and competitor analysis along with the identification of likely market windows for the product.* *Price and volume forecasts and the basis for these forecasts.* *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	• The conditions of the global economy are key drivers for the mineral sand industry and its products. There is a clear correlation between economic welfare and consumption of titanium, garnet, and zircon feedstock. Demand for mineral sands products has historically been closely linked to growth in global GDP, which has grown at close to 3% per annum. • Global demand for titanium feedstock is dominated by the TiO2 pigment end use. By 2025, TZMI estimates that global demand for titanium feedstock will reach 8.7 million tonnes titanium dioxide (TiO2), which corresponds to a compound annual growth rate of 2.6%. • Ilmenite and Zircon pricing has seen a significant uplift over the last few years. Zircon and Ilmenite prices continue to rise in 2023. • China remains the largest importer of zircon concentrate, accounting for 99% of global demand. • The price range of industrial garnet is based on the application, quality, quantity purchased, source and type. There are no terminal markets for garnet and no reliable published prices for products. Products are sold through negotiations between buyer and seller. US$154 per tonne has been considered as the long term base price for garnet concentrate. • MRC supplies circa 25% of the world's demand for garnet sands and is one of the top ten independent zircon and titanium feedstock suppliers.

Criteria	JORC Code Explanation	Commentary
		• MRC has offtake agreements in place for garnet and existing customers for ilmenite and zircon products from its Tormin mineral sands mine. Product samples produced from the Project PFS test work indicate the product quality will meet customer requirements and have been assessed as such by potential customers. • Price assumptions are cross referenced against TZMI assumptions over the coming years.
Economic	*The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• Macro-economic assumptions used in the economic analysis of the Western Inland Strand Ore Reserve including foreign exchange and discount rates have been internally generated by MRC and benchmarked against external sources where applicable. • Sensitivity analysis was undertaken on key economic assumptions such as costs and price to ensure the reserves are robust. Changes in product prices and costs have the potential to increase or decrease the total Ore Reserve. Cashflows from the optimized Ore Reserve on current assumptions produce a financially viable project.
Social	*The status of agreements with key stakeholders and matters leading to social licence to operate.*	• MSR has been operating at Tormin since 2014. The local community is generally familiar with the characteristics of mining, processing and product transport at Tormin, and there are other resource extraction operations within the district. Stakeholder consultation conducted to date has identified that the majority of the community is supportive of the Project. • MSR is one of the most important workplaces in the area, and it is an important part of the local economy of the district. • Expansion of the processing plant will result in securing long term employment that contributes to the local and regional economies. • Important social programs will be continued and extended as a result of the extended mine life. MSR's strong investment in the social and economic upliftment of Historically Disadvantaged South Africans ("HDSA") and the ongoing support of its Black Economic Empowerment ("BEE") partners in the Tormin Mineral Sands Operation will continue to grow under the proposed mine expansion. • The implementation of the 2019-2023 Social and Labour Plan (Generation 3) is nearing its end where an amount of ZA38.8 million was committed to programs such as local enterprise development, education and infrastructure projects and initiatives. • MSR is currently in the process of generating the Generation 4 SLP with new commitments for the 2024 – 2029 period.

Criteria	JORC Code Explanation	Commentary
Other	*To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* *Any identified material naturally occurring risks.* *The status of material legal agreements and marketing arrangements.* *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre- Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	• MSR has been operating successfully in the region for more than 9 years to date. • Prospecting right (PR) 10262 was granted in January 2020 and there is a Mining Right (162&163EMR) in place, granted on 30 June 2020 which covers a significant part of the Ore Reserve. All mineral permits associated with the Ore Reserves Estimate are in good standing. • The company is planning to lodge an MR application over the 10262 Prospecting Right outside of the current Extended Mining Right (EMR). There is a reasonable expectation that the new MR will be issued well within the timeframe required for mining of reserve areas outside of the current EMR. • Other than the satisfactory completing of a new, updated Mineral Resource, there are no other known unresolved matters that are dependent on a third party that may materially impact the future exploitation of the reserve.
Classification	*The basis for the classification of the Ore Reserves into varying confidence categories.* *Whether the result appropriately reflects the Competent Person's view of the deposit.* *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• The Mineral Resource classifies all mineralisation at Western Strandline as Measured, Indicated, and Inferred and 100% of this updated Ore Reserve has been derived from Measured and Indicated Mineral Resources. • The Ore Reserve includes Proven and Probable classifications. • Measured Mineral Resources within the EMR have been converted to Proven Ore Reserves. Measured Mineral Resources outside of the EMR have been converted to Probable Ore Reserves to reflect the current mining permitting status of being under application. • All Indicated Mineral Resources have been converted to Probable Ore Reserves. • Proven material accounts for 36% of the Ore Reserve, Probable material accounts for 64% of the Ore Reserve. • The classification reflects the Competent Person's view of the deposit and impact of current modifying factors. • Pit optimisations and the proposed mining schedule are cognisant of the Mineral Resource classification.

Criteria	JORC Code Explanation	Commentary
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	• The Ore Reserve methodology and estimates has been reviewed internally to Quantified Strategies Pty Ltd by Principal Consultants as part of normal validation processes required by MRC. • Capital and operating costs has been reviewed and approved by MRC.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• This is an update of the current Ore Reserve Estimate under the guidelines of the JORC Code (2012). • The Ore Reserve has been peer reviewed internally and the Competent Person is confident that it is an accurate estimate of the Ore Reserve. • The mining and processing methods selected are typical for mineral sands and have been demonstrated in various other mineral sand operations. They are considered a low risk of impacting the Ore Reserves. • To date, approximately 1.8Mt of ore has been mined from the Southern pit and stockpiled on the ROM (high grade) and in a Low Grade Stockpile. The ROM stockpiled ore indicates an excellent reconciliation with the Mineral Resource and Ore Reserve and is currently being processed. Ore performance is thus far in line with current modelling. • There was previously a degree of uncertainty regarding geotechnical characterisation and the proposed pit slope parameter set. The geotechnical pit slope assumptions used in mining of the southern pits as per the proposed pit slope set have shown excellent stability and will be used going forward, notwithstanding any adjustments that may need to be made in the field due to variation in material characterisation. • The PFS upon which the previous maiden Ore Reserve was based provides a higher degree of confidence in the modifying factors than usual. Over eight years' profitable mining at Tormin gives confidence that the operation costs and product price expectations are realistic Modifying factors used in this updated Ore reserve have been modified from the PFS using actuals and reconciled data to be more accurate. • All costs used in the optimisation and Ore Reserve process are supported by an extended operational history and actual results from MSR operation.

JORC TABLE 1
Eastern Strandline
Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g 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 (eg submarine nodules) may warrant disclosure of detailed information.*	• The current resource database for the Eastern Strandline consists of 120 aircore holes, representing 4,132 m of vertical drilling. • Samples taken from surface to bedrock. • Mineralogical studies and grade testwork undertaken according to mine control standards within Tormin mine site laboratory. • One-metre air core drill samples from a cyclone were collected in 20-25kg plastic bags. • Each bag was riffle split into two pre-numbered calico bags of ~3kg each and the remainder of the samples collected in a large plastic bag. • 3kg samples were submitted directly to the Tormin mine laboratory to be analysed for oversize, slimes and heavy minerals. • The laboratory sample was dried, de-slimed (removal of -45 micron fraction) and screened (+2mm oversize). • 200g of sample split to use for heavy liquid separation using Bromoform with density range between 2.92 and 2.96g/ml to define Total Heavy Mineral (THM) content.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc) and details (eg 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).*	• Air core drilling was by Wallis drilling (Mantis 80 rig). Air core drilling is considered a standard industry drilling method for Heavy Mineral Sand HMS mineralisation. • 85mm drill bits and rods were used. • All holes were drilled vertically and because they are relatively short holes, downhole surveying was not considered necessary.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade*	• Metric samples from aircore drill were taken and riffled down to a representative sample for heavy liquid separation and XRD/XRF. • No sample loss or cavitation were experienced. Dry samples may lose some of their slimes fraction due to blowing out of sampling equipment, however HM are not affected. • Sample recovery needs to be statistically assessed.

Criteria	JORC Code Explanation	Commentary
	and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	• Each hole was logged by a geologist on pre-printed log sheets. • Geological and lithological observations per depth were recorded together with field sections and hand drawn down-the-hole logs. • Special attention was given to heavy minerals intersected as a guide to potential marine strandlines and marine diamond deposits. • Percentage HMS was recorded from visual observations as well as the magnetic content of each metre by handheld pen magnet. • Marine gravels and contact with basement bedrock recorded as maximum depth of mineralisation. • Each 1m sample was washed and sieved to obtain a representative sample stored in numbered chip trays.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Sampling over 1m down the hole intervals as determined by 1m marks on the rig mast. • Drill samples were riffle split into approximately 3kg samples to be assayed. • All samples were dry. • Technicians undertaking the splitting were supervised by mine site geologists to ensure sampling quality. • The sample sizes were considered suitable based on industry practices of mineral sand exploration. This, however, should be demonstrated with the appropriate sampling studies. • Field duplicate samples were riffled for the Tormin mine laboratory and external QA/QC checks for every 25th sample. • Lab duplicate samples were split for the Tormin mine laboratory and for external QA/QC checks (1 in 50). Splitting is from a 1 in 8 rotary splitter.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	• All sample analyses were undertaken by the Tormin mine laboratory. • The mine owns and operates a state of the art heavy liquid separation (HLS) lab using TBE with density range between 2.92 and 2.96g/ml with Panalytical XRD machines (the Rietveld method after HLS in an automated mode setup). All grades reported are from XRD results on heavy liquid sink. • Industrial laboratory XRF machines (Panalytical Epsilon 3 ED) are used by Tormin mine as a grade verification check on the XRD zircon content. • The Tormin mine laboratory completes its own internal

Criteria	JORC Code Explanation	Commentary
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	QA/QC using Certified Reference Material ("CRM") at the rate of approximately 1 in 50 and sending every 25th sample to the external labs. • 36 field duplicates plus 11 blank samples, and 20 CRMs were included into the sample stream and submitted to the lab. • The CRMs, blank and duplicate sample results are within accepted limits. • External sampling checks for XRD have been done by XRD Analytical and Consulting (15 samples) in Pretoria • The adopted QA/QC protocols are appropriate for the Mineral Resource and public reporting and QA/QC system returning acceptable results. • QEMSCAN testwork by SJT MetMin was used for verification of the mineral assemblage and the component mineralogy. Automated-SEM by QEMSCAN analyses was used to determine the bulk modal mineralogical composition, mineralogical calculated chemical composition, particle characteristics and particle size distribution of each sample. The mineralogical composition and mineral phases identified in this study were similar to those identified by XRD at MSR's internal laboratory. • No geophysical tools or handheld instruments were utilised in the sample analysis.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	• All sampling was undertaken by mine site personnel overseen by a qualified and experienced mine geologist and independent consultants. • All sample preparation was carried out by trained staff, supervised by chemists and the laboratory manager. • The lab results and logging have been reviewed by external consultants to MSR as well as internally by MRC's exploration manager. • 12 holes (316m) from historical drilling were verified and included into the resource model. • The drillhole logs have been converted to electronically stored formats and stored in a database provided by Maxgeo (DataShed). This database is hosted on an offsite server supplied by Maxgeo and managed by their trained database staff. • No adjustments to assay data results were made outside the standard XRD and XRF calibration software being used.

Criteria	JORC Code Explanation	Commentary
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used. Quality and adequacy of topographic control.*	• Hole collars were surveyed by DGPS accurate to within centimetres by mine surveyors. • Down hole surveys for shallow vertical air core holes are not required. • WGS 84 datum and UTM/ zone 34S coordinate system is used.
Data spacing and distribution	*Data spacing for reporting of exploration results.* *Whether the data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	• Systematic grade spacing used in the drilling program was initially 1000m x 20m containing 9 fence lines. • Each drillhole is spaced 20m apart along each drill line perpendicular to the strandline inferred strike. • 11 infill fence lines with 500mx 25m and 250mx 25m grade were drilled between the primary lines. • 12 holes from historical drilling were verified and included into the resource model.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Vertical drilling to intersect sub-horizontal strata. • Orientation of the drillholes will not result in sampling bias.
Sample security	*The measures taken to ensure sample security.*	• Sampling was carried out using pre-printed calico bags to prevent mislabelling. Reject sample was temporarily stored in plastic bags. • All sample bag numbers were logged against the drillhole by the site geologist. • Three samples per metre drilled were produced. The reject was temporarily stored in a plastic bag for reference. Two samples were collected in prenumbered calico bags for external QA/QC and one were sent directly to the mine lab at the end of each day's drilling in a secure area. • The Tormin mine laboratory inspected the submitted samples and did not report any missing, nor any error of the samples against the sample lists. • Where external laboratories were used, their chain of custody controls for shipping and sample submission were used.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• The lab results and logging have been reviewed by external consultants to MSR and internally as part of normal validation processes by MRC.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The area has a granted prospecting right (WC 30/5/1/1/2/10262 PR) in the name of Mineral Sands Resources (Pty) Ltd, a subsidiary of ASX listed Mineral Commodities Ltd (ASX: MRC). • This Prospecting Right (Inland Strand) incorporates an area approximately 12km in length covering 1,741 hectares of coastal area adjacent to the existing beach mining operations on the Company-owned farm Geelwal Karoo 262.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• The general area has been investigated and mined for heavy mineral deposits as far back as the 1930s (Haughton, 1931). Subsequent geological surveys and exploration programs investigated the distribution, mineralogy and economic potential of the heavy mineral sands along the coastline of Geelwal Karoo (Toerien & Groeneveld 1957, Abele 1989, Swart 1990, Barnes 1998) and Trans Hex 1989-1991). • De Beers drilled 9 fence lines across the property and bulk sampled the area in the 1960s. • During 1999, Trans Hex conducted additional onshore drilling of strandlines and identified the inland raised beach deposits containing heavy minerals. Trans Hex subsequently bulk sampled the material by digging several trenches in 1999-2000. • Geelwal Karoo Diamante conducted small diameter drilling to a depth of 40m between 2000 and 2002, with a total of 42 drillholes. • Extensive work, including mining of the inshore strandlines along the coast, was undertaken by Namakwa Diamond Company in 2003-2005. This work also identified the presence of the inland strands.
Geology	*Deposit type, geological setting and style of mineralisation.*	• The western coastal plain of South Africa contains a significant resource of detrital heavy minerals by world standards. • The heavy mineral sand deposits occur in a current active beach environment (e.g., Tormin Beaches and Northern Beaches) as well as in older palaeo-beach raised strandlines found inland (inland strandlines) e.g., Tronox Namakwa Sands. • Apart from the mid-Jurassic, Cretaceous and Tertiary (Paleogene) sediments along the coast, numerous

Criteria	JORC Code Explanation	Commentary
		small fossiliferous, marine and terrestrial deposits of Neogene age outcrop along the coastal zone. • The onshore mineral sands are marine palaeo-terraces "Inland Strands", aeolian sands and fluvial sediments. These targets were formed during Miocene, Pliocene and Quaternary/Pleistocene coastal transgression (sea move inland) and regression cycles. • The lithological units of the Eastern Strandline can be described as below: a. Orange Feldspathic Sand – non mineralized; b. Orange Feldspathic Sand – mineralized; c. Strandline – mineralized; d. Base pebble beds – mineralized; and e. Schist basement. • For purposes of estimation, the lithology has been grouped into Orange Feldspathic Sand, Strandline mineralisation, Gravel and Schist basement. • The orebody hosts mineralisation in all geological units/layers except for the schist basement.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* *Easting and northing of the drill hole collar* *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* *dip and azimuth of the hole* *down hole length and interception depth* *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• The minimum hole length is 6m, maximum 120m and average depth of drilling 34.4m. • East collar ranges – 220,767mE to 227,835mE. • North collar ranges – 6,501,1522mN to 6,511,251mN. • Height collar ranges- 49.88m to 125.26m. • Azimuth ranges/dip ranges – vertical drilling.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be*	• Not relevant. • No grade cutting of HM values were undertaken. • No metal equivalents were used for reporting of Mineral Resources.

Criteria	JORC Code Explanation	Commentary
	stated. *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Not relevant. • The strandline mineralisation is sub-horizontal in nature and the air core drilling intercepts are vertical. • Thickness of intercept reported is therefore true thickness of the mineralisation.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Maps, sections and plan views are provided in the main body of the resource report.
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.*	• Statistics of drillhole grades used during the Mineral Resource Estimate are contained in the main body of the report. • This report provides the total information available to date and is considered to represent a balanced report.
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*	• Aeromagnetic geophysical data has been used for drilling target delineations. • Only 12 holes (316m) from historical drilling were verified and included into the resource model.

Criteria	JORC Code Explanation	Commentary
	substances.	
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further drilling is planned to produce a Measured/Indicated resource over the Eastern Strandline.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code Explanation	Commentary
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	• The data was plotted and plots whereas expected with no mis- plots or extraneous data found. Maximum and minimum values and average values were all within the norm. Duplicate values were confirmed as such. The coordinates were confirmed as being WGS84 UTM zone 34S. • Data is stored in an offsite database hosted by Maxgeo.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• The previous Competent Person was a full-time employee of Mineral Commodities Ltd. However, the new Competent Person as of 2022 has not had sufficient time to visit site. A site visit is planned for 2023.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	• The deposit is a classic inland strandline mineral sands deposit with no doubt as to its genesis. • The grain size characteristics are interpreted to support an offshore depositional setting, closer to the shoreline position. • Samples were collected for resource estimation purposes. • The geology/topography of the deposit has been used to constrain the resource envelope. The data was partitioned into areas (subsets) based on geology/topography. The base of the deposit is defined by the underlying bedrock, the landward side by barren land and sand dunes.

Criteria	JORC Code Explanation	Commentary
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 total deposit, inside MSR controlled Prospecting Rights, has a strike length along the coastline of approximately 7,400m and an average width of 60m, ranging from over 100m wide in the south to 30m wide in the north. The resource area includes northern part in 4.4km length and southern part in 3km length. It is developed from surface to a maximum depth of 72m and the average resource thickness is approximately 40m. The deposit occurs from the surface down.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen, include a description of computer software and parameters used.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the*	• Micromine software was used to domain and estimate each of the valuable heavy minerals. Domains were snapped to the nearest true intersection from sampling. • Assays were all generally 1.0m, with some assayed field composited to 4m in length, and so the entire data set was composited to 1m. • No Outliers were present, as such no outlier restriction or top cutting was required. • Data was extrapolated between data points and approximately half of the drill spacing beyond. Data points are nominally 250 x 20m to 500 x 20m for Indicated and 1000m x 20m for Inferred. There are generally between 2-11 drill holes per line. • Ordinary kriging was used as the primary estimator. Each variable was estimated separately, using variograms created for the Western Strandline resource, which is similar in population. • An anisotropic search was used, with the variable ratios of direction of greatest continuity: Across the continuity: depth. 1:0.4:0. A maximum search distance of 1,000m was used to ensure the resource was filling with estimated data. Tight sample numbers were used to reduce the smearing effects of using a large search. Octant searching was used, with maximum points per sector of 4. Minimum points to estimate a block were 4. • This is a resource estimate and mining parameters are not used beyond normal global parameters of grades, dimensions, and accessibility. • An in-depth validation process was used to test the robustness of the modelled data, including visual checks, check estimates (inverse distance and nearest neighbor), swath plots and detailed statistical comparisons. • Mineral Resources have not been previously estimated for the Eastern Strandline.

Criteria	JORC Code Explanation	Commentary
	checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The resource tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Final report was based on a 2% THM cut off grade for blocks as this is the current minimum grade where there is a reasonable expectation for eventual extraction. • 2% cut off grade was based on grade-tonnage curves with respect to THM and VHM assemblage with the grade distribution along the length of the orebody. Also taken into account was current processing plant performance and other similarly deposits in the region.
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.*	• The resource is considered as dry mining feed and mineralisation can be any depth or width. Dry mining techniques are preferred in situations involving high grades. • Mining would be through conventional open pit methods. • The thickness and continuous nature of the mineralisation, supports a bulk mining method. • The Company believes there are no mining factors which affect the assumption that the deposit has reasonable prospects for eventual economic mining.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made*	• Metallurgical recovery is similar to other mineral sand operations. • Metallurgical parameters have been taken from the metallurgical tests, and metallurgical test work results support the recovery. • To date, the Company considers there are no metallurgical factors which are likely to significantly affect the assumption that the deposit has reasonable prospects of eventual economic extraction.

Criteria	JORC Code Explanation	Commentary
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 greenfield 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.*	• There are no environmental factors likely to affect the assumption that the deposit has reasonable prospects for eventual economic extraction. • The local vegetation environment generally consists of strandveld plant communities. Topsoil stripped from the mining operations will be stockpiled for later use during rehabilitation. • Slime is low (~8%) and tailings generated in the processing plant will be pumped back into the open pits as part of the rehabilitation strategy. Any excess water will be recovered and recycled to the process. • There are no pollutants introduced with the tailings and the material is inert.
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• The bulk density is based on a calculation of the specific gravity of the silica and heavy mineral content fractions of each sample. It is therefore not fixed and fluctuates between 1.56 and 2.1 as per the formula: SG=1.68+(0.0095 x THM). • The use of a bulk density algorithm is a standard industry practice for the estimation of mineral sands resource.

Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*
	Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution
		• The Mineral Resources have been classified as Indicated, and Inferred Categories, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves ("JORC Code (2012)").
		• A range of criteria has been considered in determining this classification including:
		  • Geological continuity
		  • Drillhole spacing:
		  • Areas with aircore drilling spaced at between 200m x 20m and 400m x 20m have been

Criteria	JORC Code Explanation	Commentary
	of the data). *Whether the result appropriately reflects the Competent Person's view of the deposit.*	generally classified Indicated. • Areas with aircore drilling spaced at greater than 400m x 20m have been generally classified as inferred. • No Mineralisation has been classified as Measured. • Slope of regression of the kriging estimate – this is a measure of the robustness of the estimate: • Where there is a cluster of blocks with slope between 0.7 and 0.85, even if other criteria have been met for higher classification, the resource has been classified as Indicated. • Where there is a cluster of blocks where slope is less than 0.7, even if other criteria have been met for higher classification, the resource has been classified as Inferred. • The results of the validation of the block model show acceptable correlation of the input data to the estimated grades. • The Competent Person is confident that all relevant factors have been considered and the results reflect his views.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	• The Mineral Resource has been reviewed internally as part of normal validation processes by MRC. • This is considered to be a maiden Mineral Resource Estimate under the guidelines of the JORC Code (2012).
Discussion of relative accuracy/ confidence	*Where appropriate, a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	• Geostatistical studies regarding relative accuracy have not been made. • The size of the Eastern Strandline is modest in term of both HM tonnes and HM grade, but it represents a mining project due to an existing mineral sand operation in Tormin. • The southern half of the deposit does remain open to the south potentially opening extension opportunities for the deposit. • The estimate is appropriate for input into long term planning studies. • No production has occurred from the deposit.

Appendix 2 – Skaland Mineral Resources and Ore Reserves

The Skaland Graphite Operation is located in northern Norway on the island of Senja, with Tromsø the nearest major town, with a population of around 65,000, 70km to the northeast.

Graphite was first discovered in the area in 1870 and production started in 1917. Skaland is understood to be the largest flake graphite producer in Europe and is presently the world's highest-grade operating flake graphite mine. Skaland Graphite AS formerly extracted graphite ore from the Skaland mine which is located directly alongside the existing processing and port infrastructure. Since 2007, ore to the plant has been sourced from the nearby Trælen Graphite Mine.

In October 2019, the Company completed the acquisition of Skaland Graphite AS and secured permitting tenure for a further 10 years. After completing the acquisition of Skaland, the Company has moved quickly to undertake a re-evaluation of the mineral resources in the Trælen Graphite Mine by re-logging, re-sampling and re-assaying of drilling core, to build a 3D block model of the deposit. No previous JORC resource estimation had been undertaken for the Skaland or Trælen deposits. A maiden JORC Code (2012) compliant resource of 1.78 million tonnes at 22% TGC, using a 10% cut-off, in the categories of Indicated and Inferred containing 397 kt of graphite was reported in March 20202 for the Trælen deposit.

Geology and Geological Interpretation

The Trælen deposit lies on the northern tip of the Skaland peninsula and consists of two main and related lithological units. The tectono-stratigraphically lower unit is a banded gneiss with alternating biotite rich and granitic bands (locally termed "Trælen Gneiss") and an upper unit that consists of amphibolitic gneiss. These are heterogeneous hornblende gneisses with graphite horizons, possibly metamorphic greywacke, and calciferous rocks. Both units contain granitic orthogneisses, possibly due to the partial melting of the surrounding rocks. The graphite found in the upper unit is assumed to be primarily syngenetic and later exposed to tectonic activity leading to its present textural, mineralogical, geochemical, and geometric characteristics. The mineralised horizon is isoclinally folded and the thickest, most continuous mineralisation occurs as lens shaped bodies oriented parallel to the main fold axis. This horizon contains the most economically interesting instances of graphite at Trælen and can vary between centimetres and up to 25m thick. There are minor exploration targets to the south and west of the current Trælen Deposit, representing either a further fold of the same horizon or a second mineralised horizon.

The rocks in the area have been exposed to at least three phases of folding and deformation with the last folding phase responsible at Trælen with a fold axis dipping 30 to 90 degrees towards the west–northwest. The existence of hypersthene, signs of partial melting, migmatisation and the occurrences of course grained flaky graphite all indicate high temperature metamorphism. The thicker, domainable zones of the graphite mineralisation are named the Boye North Shoot, Boye South Shoot (termed for their relative positions to each other), the VLF or Northeast Shoot and an unnamed second northeast shoot ("NE2"). The

Northeast Shoot was named as such due to occupying a location to the northeast of the mine workings, where it was identified at the 85mRL and above.

Drilling Techniques and Hole Spacing

A total of 17 infill diamond holes were drilled in the previous program by an underground rig - Diamec Smart 6, with a core diameter of 47.6mm NQ2. The program was designed to provide sufficient geological and assay data to allow for an update to the JORC Mineral Resource. It targeted inferred resources in the deeper sections of the Boye North Shoot (100 shoot) and the Boye South Shoot (200 shoot). Previously, two types of drilling have been conducted at Trælen, diamond drillholes (both from surface and underground) and shorter rotary probe (sludge) boreholes, all drilled from underground, which was included a total of 133 holes have been drilled, 93 diamond holes and 40 probe holes. The total metres drilled is 16,540m, comprised of 15,531m diamond drilling (average 167m, minimum 36m, maximum 435m) and 1,009m of probe drilling.

Sampling and Sub-Sampling Techniques

All significant graphite bearing intersections in the diamond core have been sampled by splitting the core longitudinally, with the mineralised zone sampled every metre except for the boundaries, where a longer or shorter interval was taken. Sample Analysis Method All collected samples have been assayed at the ALS laboratory in Sweden (ALS Scandinavia) to complete the preparation and assaying. Samples submitted to the ALS have been analysed for Total Graphitic Carbon ("TGC"), Total Carbon ("TC"), Total Sulphur ("TS") by LECO furnace and infrared spectroscopy. In addition, duplicates, blanks and CRMs have been inserted randomly for at least every 20 samples for QA/QC purposes. In general, all QA/QC indicated good to moderately good performance.

Estimation Methodology and Resource Classification

The Mineral Resource estimation involved the use of drillhole and geological mapping data to construct three dimensional wireframes to define the mineralised domains. Samples were selected inside these wireframes, coded and composited. Boundaries were treated as hard with statistical and geostatistical analysis conducted on the composites identified in individual domains. Grades were estimated into a geological block model representing each mineralised domain. The TGC Grade estimation was carried out by Ordinary kriging using Dynamic Anisotropy based on a structural trend model for the main lode, where data density allowed for robust variography modelling, and inverse distance for the other, more minor lodes. Flake size estimation was completed using the inverse distance for all lodes.

Zones of the Trælen deposit in close proximity to mining have been drilled to 40x20m spacing, closer in places due to the nature of fan drilling, which is considered to be sufficient for classification of an Indicated Resource. Where recent mining development has taken place, with underground face mapping and sampling, the high geological confidence has allowed for some Measured resources to be defined.

Cut-Off Grades

A 10% TGC cut-off grade, based on the economic criteria established by the ongoing Skaland operations, was applied to any mineralised exploration intersections and final resource reporting.

Mining and Metallurgical Methods and Parameters

The mining in down-dip ore is essentially a mirror of the up-dip mining. Mining is being conducted by the long hole open stoping in a top-down sequence and targeting resources between levels +5m to -115m (below sea level). The level height is 20m with ore extraction from the bottom of each level.

Material Assumptions

The Trælen Graphite Mine has been in operation since 2007. Development of a decline to access down-dip resources commenced in June 2021 and completed in 2022. The current operations demonstrate that the mine planning underpinning the Ore Reserve is technically achievable and economically viable. Material assumptions applied for the Trælen maiden Ore Reserve include:

- Capital and operation costs as derived from the Company's long-term estimates.
- Graphite prices based on MRC's price forecasting protocols were used for the optimisation.
- Ore dilution in the mining operation and metallurgical performance adapted to reflect the Skaland operation.
- Geotechnical design and hydrogeological factors.

Criteria Used for Classification

Mineral Resources have been released in accordance with the JORC Code (2012) and independently peer reviewed by Wardell Armstrong International Ltd. Measured and Indicated Mineral Resources were used to form the basis of the Ore Reserves according to the JORC Code (2012). Micromine software was used for the mine planning. All the Mineral Resources intersected by the mine design, and classified as Measured, were classed as Proved Ore Reserve, and Indicated portion of the Mineral Resources as Proved Ore Reserve after consideration of the mining, metallurgical, and financial aspects of the project. There are no Inferred Resources included in the Ore Reserve statement.

Mining Method and Mining Assumptions

Mining is conducted by long hole open stoping in a top-down sequence and targeting resources between levels +5m to -115m (below sea level). The level height is 20m with ore extraction from the bottom of each level.

A 15m crown pillar has been left in place between the existing (up-dip) mining void and the down-dip development. The existing up-dip mining voids will be filled with mine waste from the down-dip development, eliminating waste deposition outside Trælen. The mining concept is essentially a mirror of the up-dip mining, changing from the bottom-up to top-down progress. The decline will be the main access to the production levels.

Combined geotechnical, bathymetry and hydrological assessment also indicates a low risk of seawater ingress into the below sea level development.

JORC TABLE 1
Skaland Graphite
Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code Explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g 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 (eg submarine nodules) may warrant disclosure of detailed information.*	• The current resource update is based on 17 aircore holes, representing 2,929m, and 415 analysed samples. This data, added to database of maiden Mineral Resource Estimate reported on 12 March 2020, consists of 133 holes, 93 diamond holes and 40 probe holes, representing 15,531m of drilling and 1,245 analysed drill samples. • Diamond drilling mineralised zones were sampled every metre except for boundaries, where a longer or shorter interval was taken. Unmineralised core was not sampled unless zone of unmineralised host rock around the mineralisation that sampled in a few holes. • The sampling method is by core saw half core sampling of diamond drill core. • Pre-numbered calico bags used for samples ~4kg each. • Samples were submitted directly to ALS laboratory to be analysed for TGC, TC and TS.

Criteria	JORC Code Explanation	Commentary
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Banka, sonic, etc) and details (eg 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).*	• Epiroc underground rig - Diamec Smart 6 has been used. All diamond drilling is NQ sized. • The core diameter is approximately 47mm. • Diamond drillholes drilled from underground have been downhole surveyed by electronic multi-shot survey tools at intervals of 3.0m. • Azimuths were measured for each hole.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• No sample loss or cavitation was experienced. • Sample recovery was very good. • A sampling bias has not been determined.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	• Each hole was logged by a geologist on pre-printed log sheets. • Geological and lithological observations per depth were recorded together with field sections and hand drawn down-the-hole logs. • Special attention was given to graphite intersected. • All diamond drillholes have been photographed in both dry and wet states.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• All Diamond core has been split longitudinally with a core saw and half core sampled. • Duplicates have been sampled sporadically using the remaining half of the core. • Samples was sent to the ALS laboratory in Sweden (ALS Scandinavia) to complete the preparation and assaying. • ALS Scandinavia ("ALS") prepares the sample by crushing, weighing, drying, fine crushing the entire sample to >70% passing 2mm, rotary splitting to 250g using a Boyd Rotary Splitter and finally pulverising the split to >85% passing 75µm. • The sample sizes are considered appropriate for the type of mineralisation under consideration.

Criteria	JORC Code Explanation	Commentary
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• All samples were resubmitted to ALS to analyse both TC and TGC as well as TS by LECO furnace and infrared spectroscopy. • In addition to the standard assays, duplicates, blanks and standard reference material ("CRM") has been inserted every 20 samples. • 5 samples have been assayed for 48 rock forming elements using HF-HNO3-HClO4 acid digestion, HCl leach and a combination of ICP-MS and ICP-AES. This was done on a selection of graphite bearing and non-graphite bearing samples to help identify general rock chemistry and impurities. • The CRM, blank and duplicate sample results are within accepted limits. • No geophysical tools or handheld instruments were utilised in the sample analysis.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	• TGC values are reasonably consistent, but the integer representing logged flake size can vary on a short scale. • No specific twinned holes have been drilled. However, closely spaced drillholes were reviewed for short scale variability. • The drillhole logs have been converted to electronically stored formats and stored in a database provided by Maxgeo (DataShed). This database is hosted on an offsite server supplied by Maxgeo and managed by their trained database staff.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	• Diamond drillholes have been surveyed using routine underground surveying methods (including Leica Total Station). • The project lies in UTM zone 33. • Downhole surveys were done for the underground diamond drillholes, and these have typically been surveyed every 3m. • Underground surveys are accurate for collar positions.
Data spacing and distribution	*Data spacing for reporting of exploration results.* *Whether the data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has*	• Drillholes were located in two underground drilling platforms with drilling done in fan type arrangement. • Spacing becomes variable due to the fanned nature of the holes. • 20x20m is appropriate for the size and shape of the mineralisation. • Through the main graphite zones, nominal 1m sampling has been applied where appropriate and

Criteria	JORC Code Explanation	Commentary
	been applied.	sampled to geological boundaries elsewhere.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The drillhole orientation is considered appropriate with the drillholes being drilled as close to perpendicular to the interpreted strike of the geological units and graphite mineralisation as possible. • Drill spacing and orientation are close to perpendicular in the center of the mineralised domains and becomes more oblique as the drillholes target down-dip.
Sample security	*The measures taken to ensure sample security.*	• All sample bag numbers were logged against the drillhole by the site geologist. Bagged samples were labelled, zip-tied and transported to the laboratory. • External laboratories have significant chain of command documents due to shipping the samples internationally.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• No external audits of sampling or the laboratory have occurred recently. • The lab results and logging have been reviewed externally by a consultant to Skaland Graphite AS and internally as part of normal validation processes by MRC.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• According to the Norwegian Minerals Act, graphite is owned by the landowner. • The Trælen Mine lies on cadastral numbers (property numbers) 5421-306/1, 5421-306/2, and 5421-307/1. An agreement with the local landowner is in place and covers access (5421-306/1and 5421-306/2) and mining (5421-307/1). • All licenses, permits and rights are granted in the name of Skaland Graphite AS, a subsidiary of ASX listed Mineral Commodities Ltd (ASX: MRC). • Skaland Graphite AS also owns three properties (5421-310/13, 5421-310/108 and 5421-310/164) which cover the current process plant, an old residence, an access road and the old Skaland Mine site. Skaland Graphite AS also owns 5421-310/1/28 and 5421-310/13/5 which comprise the wharf and hardstand area and have been leased back to the

Criteria	JORC Code Explanation	Commentary
		Berg Municipality. • Skaland Graphite AS has also leased 5421-310/1/19, 5421-310/1/24 and 5421-310/1/27on which the current main office building and car park are located. • The Skaland Graphite AS operating license for the Trælen Mine was renewed on 28 May 2019 for a duration of 10 years. • The Company was granted permission to increase Production to 16,000t of graphite concentrate per year, and the discharge of 40,000t of tailings to sea per year. The license issued on 28 June 2019 replaced the previous production license of 24 January 2002 and discharge permit of 25 July 2019. • To the knowledge of Competent Person, all licenses and permits are in good standing with no known impediments.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• Exploration dates back to 1870 when graphite was first discovered in the area. • The Geological Survey of Norway has conducted extensive regional-scale exploration including geochemistry and geophysical surveys. • Six drillholes were completed in 1985, followed by a Pre-Feasibility Study of the Trælen deposit conducted in 1998. • In 2001 an additional drilling program was undertaken that comprised 15 drillholes for a total length of 2,103m. All holes intersected high grade graphite in the Boye-vein and 5 holes also intersected high grade graphite in the VLF-vein, which indicated a significant addition to the 1998 estimation. • In 2002, based on a total of 35 drillholes, two ruler shaped mineralised bodies, or veins, were drill indicated and a Mineral Resource evaluation completed to estimate the contained tonnes and carbon in graphite grade. • By 2017, a total of 101 drillholes had been completed and comprised 40 probe holes for a total of 1,009m and 61 diamond holes for a total of 7,506m.
Geology	*Deposit type, geological setting and style of mineralisation.*	• The Trælen deposit lies on the northern tip of the Skaland peninsula and consists of two main and related lithological units. The tectono-stratigraphically lower unit is a banded gneiss with alternating biotite rich and granitic bands (locally termed "Trælen Gneiss") and an upper unit that consists of amphibolitic gneiss. These are heterogeneous hornblende gneisses with graphite horizons, possibly metamorphic greywacke, and calciferous rocks. Both units contain granitic

Criteria	JORC Code Explanation	Commentary
		orthogneisses, possibly a result of partial melting of the surrounding rocks. Quartz diorites and different types of pegmatites occur as well, forming discontinuous intrusions. • The graphite found in the upper unit is assumed to be primarily syngenetic and later exposed to tectonic activity leading to its present textural, mineralogical, geochemical, and geometric characteristics. • The mineralised horizon is isoclinally folded and the thickest, most continuous mineralisation occurs as lens shaped bodies oriented parallel to the main fold axis. This horizon contains the most economically interesting instances of graphite at Trælen and can vary between centimeters and up to 25m thick. There is minor graphite found in faults and along shears. There are minor exploration targets to the south and west of the current Trælen Deposit, which may represent either a further fold of the same horizon, or a second mineralised horizon. • The rocks in the area have been exposed to at least three phases of folding and deformations. D1 developed the main foliation, D2 is responsible for the majority of the large scale folding structures in the region and D3 which is the last folding phase responsible at Trælen for the folds with a fold axis dipping 30 to 90 degrees towards west-northwest.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* *Easting and northing of the drill hole collar* *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* *dip and azimuth of the hole* *down hole length and interception depth* *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• 133 diamond drill holes have been drilled for this updated mineral resource. • Diamond drillholes = 15,531m (average 172m, min 98m, max 231m). • East collar ranges – 12,659mE to 12,706mE. • North collar ranges – 1,281,490mN to 1,281,503mN. • Collar elevation ranges – 23mRL to 25mRL. • Azimuth ranges – the strike of the mineralised zones ranges from 290° to 85°. Drill sections are orientated perpendicular to the general strike of the mineralised zones. • Dip ranges – the dip of the mineralised zones ranges from 55° to 75°. Drillholes are generally inclined to intersect perpendicular to the mineralisation.
Data aggregation	*In reporting Exploration Results, weighting averaging techniques,*	• No individual Exploration Results are reported.

Criteria	JORC Code Explanation	Commentary
methods	*maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No (high-grade) top cutting was used during the Mineral Resource estimation process. A statistical review of the assay data is outlined in the main body of the resource report. • No metal equivalent equations were used during the Mineral Resource estimation procedure or reporting. • Samples were composited to 1.0m lengths during the Mineral Resource estimation procedure to ensure a consistent level of support during the estimation process.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• The strike of the mineralised zones ranges from 290° to 85°. Drill sections are orientated perpendicular to the general strike of the mineralised zones where possible. • The dip of the mineralised zones ranges from 55° to 75°. Drillholes are generally inclined to intersect the mineralisation at appropriate angles to limit sampling bias. • Any reported mineralisation intercepts are downhole widths and not true widths, which are unknown at this time.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Significant intersections are not being reported. • Maps, sections and plan view are provided in the resource report.
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.*	• Statistics of drillhole grades used during the Mineral Resource estimate are contained in the resource report. • This report provides the total information available to date and is considered to represent a balanced report.
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*	• A substantial amount of work has been completed at the Project by historic explorers dating back to 1870. Work has included geophysical surveys, soil sampling, diamond and probe drilling. • A Pre-Feasibility Study for the Trælen deposit was prepared in 1998 following the drilling of 6 drillholes in 1985.

Criteria	JORC Code Explanation	Commentary
	test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Significant geophysical studies have been done by NGU.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further drilling is planned for 2023 to unlock further resources and reserves.

Section 3 Estimation and Reporting of Mineral Resources

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

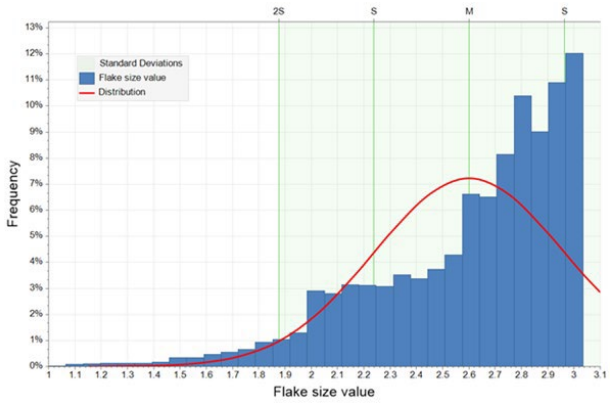
Criteria	JORC Code Explanation	Commentary
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	• Data is stored in an offsite database hosted by Maxwell Geoservices. • Visual validation of results against logs and in a spatial context has been undertaken. • Any discrepancies or errors were either corrected or the results rejected. • Downhole survey was checked for significant deviation. No issues were identified. • Assays were checked for anomalies between geology and TC, and TGC grade. No anomalies were identified. Drill cores with no sample assays were inserted with zero grade.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person is currently a full-time employee of Quantified Strategies Pty Ltd. • No site visits were undertaken for this resource estimate. The Competent Person did visit the project previously, undertaking due diligence for the Skaland acquisition and is familiar with the site and resource conditions.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral*	• Confidence in the interpretation of the Trælen stratigraphy is considered to be high given domain interpretation was completed with a consideration for geological logging, geochemical data and surrounding holes. • Graphite is distinct geochemically and visually compared to the host rocks and is defined using lithological logging. • Domaining fits well with previous geological investigations of the overall architecture of the mineralisation. • Major faulting may cause a break in domains to the east of

Criteria	JORC Code Explanation	Commentary
	Resource estimation. *The factors affecting continuity both of grade and geology.*	the main mineralised zones, but lack of data around this fault has made it difficult to confidently interpret its effect. • Domaining has been done manually, and as such, no major interpretation artefacts exist. • Wireframe solids and surfaces of the Domains act as hard boundaries during estimation for the mineralisation.

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 mineralised shoots consist of four 2-20m wide moderately plunging shoots, folded around a moderately plunging double anticline system.
		• 100 Shoot:
		  • Length: 725m
		  • Width: 80-160m
		  • Depth to surface: +330m to -250m below sea level, from 0m to 75m inside mountain
		• 200 Shoot:
		  • Length: 190m
		  • Width: 55m
		  • Depth to surface: +140m to -130m below sea level, from 10m to 50m inside mountain
		• 300 Shoot:
		  • Length: 310m
		  • Width: 30m
		  • Depth to surface: +140m to -60m below sea level, from 100m to 130m inside mountain
		• 400 Shoot:
		  • Length: 268m
		  • Width: 50m
		• Depth to surface: +140m to -150m below sea level, from 20m to 100m inside mountain

Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen, include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such*	• Ordinary kriging using a structural trend model was used for estimation of the folded 100 Shoot, while inverse distance was used for estimation of the other, minor shoots where variography was not able to be robustly modelled. • 1m composites were used for the estimation. • No top-cuts were applied as outlier analysis indicated any high assay values were part of a normal distribution, and as such were not outliers. • Parent block size was 8mx4mx2m, with sub-blocking down to a quarter of this to reflect domain boundaries closely. Estimate was applied to all blocks. Block size was based around the dimensions of the ore body, and drillhole spacing that was between 5m and 50m. • Domain boundaries were treated as hard during estimation. • Anisotropic search distances were used for the minor lodes,

Criteria	JORC Code Explanation	Commentary

	data.
	The assumptions made regarding recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
	Any assumptions behind modelling of selective mining units.
	Any assumptions about correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.
	Discussion of basis for using or not using grade cutting or capping.
	
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.
		with directions of major and semi major axes based on domain wireframe orientations.
		• Micromine software was used.
		• The nearest neighbour estimate was run as a check and validated well against the OK/ID2 model. The previous estimate was also used as a check.
		• No byproducts are present.
		• No deleterious elements have been estimated.
		• The estimate was visually checked against raw assays.
		• Discretisation of 3x3x3.
		• Maximum search distance of 150m.
		• Maximum composite points per block – 10.
		• Minimum points per block – 3.
		• Octant searching was used.
		• Validation of the final resource has been carried out in a number of ways, including:
		  • Visual validation - comparing block model estimated grade against drillhole by section.
		  • Statistical validation - comparing statistically by domain, wireframe and block model grades versus sample and composite grades.
		  • Swath plots - graphical display of the grade distribution to compare the grade within these bands of the composite samples and the block estimated grades.
		  • Reconciliation - compare the estimated Mineral Resource inside the north and south stope outlines against production records.
		• All modes of validation have produced acceptable results.
		• Flake size estimation was completed using inverse distance for all lodes. Flake size estimation code, 1= Fine, 2=Medium, 3=Coarse has been used and more than 90% of blocks have a flake size code with overall mean of 2.6 indicating a reasonable level of consistency.
		 
		
		• The Mineral Resource has not been updated this year. The

Criteria	JORC Code Explanation	Commentary
		reported Mineral resource has been estimated by depletion methodology for 2022.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• The resource tonnages are estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The current reported resource was declared at a cut-off grade of 10%, based on the economic criteria established by the ongoing mining Skaland operations.
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.*	• Currently, mining is conducted by long hole open stopping in a top-down sequence and targeting resources between levels +5m to -115m (below sea level). • The level height is 20m with ore extraction from the bottom of each level. • It is assumed due to geotechnical considerations no mining may take place within 10m of the mountainside. • Down-dip development waste is backfill into the current mining void which will allow safe access to further up-dip resources and eliminate mine waste disposal outside the Trælen mountain.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made*	• Metallurgical factors have been taken from the current processing plant. • Any changes that MRC undertake have not been quantified or assumed to change the product specifications.
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*	• All necessary environmental permits required to operate the mine and process plant are in place. • Any changes that MRC undertake have not been quantified or assumed to change the product specifications.

Criteria	JORC Code Explanation	Commentary
	environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfield 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.	
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• In December 2019, a bulk density of 2.72 has been measured from 12 samples, weighed dry then wet to determine the density (Archimedes principle). • No wax coating was used to seal the sample. Visual inspection of the core indicates little loss of material due to vugs or other void spaces. • In August 2021, 17 samples were sent to ALS for specific gravity measurement (OA-GRA08), 8 samples from host rock (Amphibolite & Gneiss), resulted specific gravity of 2.9 and 9 samples from graphite reported specific gravity of 2.67.

Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*
	Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).
	Whether the result appropriately reflects the Competent Person's view of the deposit.
		• This release is based on the updated Mineral Resource for Traelen graphite mine. The Maiden JORC Mineral Resources was reported on 12 March 2020.
		• The Mineral Resources have been classified in the Measured, Indicated and Inferred Categories, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code).
		• A range of criteria has been considered in determining this classification including:
		  • Geological continuity
		  • Data quality
		  • Drillhole spacing
		  • Modelling techniques
		  • Estimation properties including search strategy, number of informing data, average distance of data from blocks and estimation output from the

Criteria	JORC Code Explanation	Commentary
		interpolation • Measured resources have been classified as such only where there is recent mining development, with supporting geological face mapping and sampling. • Indicated resources are typically supported by a drillhole spacing of between 20mx20m and up to 40mx40m. • Inferred resources for drillhole spacing in excess of 40mx40m. • Drillhole spacing greater than 100mx100m is considered to be unclassified. • Where geological complexity is greater, around folds etc, inferred classification has been used. • The results of the validation of the block model show acceptable correlation of the input data to the estimated grades. • The Mineral Resource Classification has been reviewed by and reflects the views of the Competent Person.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	• The Mineral Resource has been reviewed internally as part of normal validation processes by MRC. • Wardell Armstrong International ("WAI") conducted a review of the Mineral Resource Estimate and no material issues were identified. Mr Ché Osmond (CGeol) and Mr Richard Ellis (CGeol) (WAI) undertook an audit of the Mineral Resource estimate as an independent technical review. • The current Competent Person was not involved in the preparation of the resource estimate. A desktop review was completed before accepting responsibility as the Competent Person. The current estimate and resource classification is considered defendable. There is some uncertainty around several assumptions and applications that need to be investigated with more work, i.e., • 1. Undertaking of twin holes to verify the reliability of drilling. • 2. Comparing calculated density to actual density measurements and application across the model. • 3. Additional QA/QC samples, consistent assaying of TGC and additional density measurements. • 4. Complete a simple 2D kriging estimation variance study to verify that the current drill hole spacings used for resource classification are appropriate.
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*	• Calculated accuracy and confidence in the Mineral Resource Estimate are not explicitly stated. However, relative accuracy is reflected in the Resource classification, based on statistical analysis, and comparing the output of the results from the interpolation techniques with the mean statistical grades lying within the individual domains. • The Indicated and Inferred Mineral Resource Estimates are considered to represent a local estimate as there is reasonable confidence in the location of mineralisation.

Criteria	JORC Code Explanation	Commentary
	confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	• The Trælen deposit has been mined continuously for the past 15 years and, during this time, the high-grade nature of the mineralisation has been proven. • Globally the estimation is considered reasonable, while lack of data in general will lead to short scale variability and local estimation accuracy may be low. • Production data from the mine has not been well documented, but where it is available, grade estimations from this estimate reconcile well with production data.

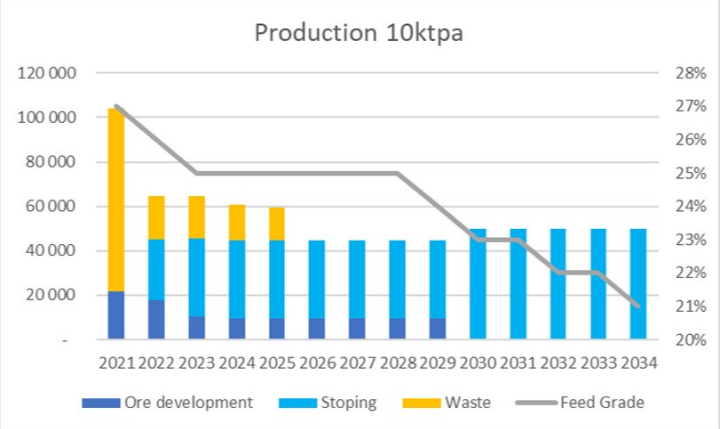
Section 4 Estimation and Reporting of Ore Reserves

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

Criteria	JORC Code Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	*Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• This Ore Reserve is based on the updated Measured and Indicated portion of the current reported Mineral Resource at Trælen graphite mine. • The Mineral Resource model is a 3D block model reported at 10%TGC cut-off grade. • Mineral Resources are reported inclusive of Ore Reserves.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person is currently principal mine engineer and a fulltime employee of Skaland Graphite SA.
Study status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	• The Trælen graphite mine is operational with down-dip development commenced in June 2021. Current operations demonstrate that the mine planning underpinning this Ore Reserve is technically achievable and economically viable. • Current financial model of operation at level of feasibility study (FS) has been used and all geology and resource, mining, metallurgy, process plant and tailings, infrastructure and logistics, environment, human resources, marketing, capital and operating costs, financial assessment factors have been reviewed against the current operational achievements, or in the case of a robust data set based on actual results achieved.

Criteria	JORC Code Explanation	Commentary
		• Appropriate modifying factors have been applied in the estimation of Ore Reserve. The resulting mine plan is technically achievable and economically viable.
Cut-off parameters	*The basis of the cut-off grade(s) or quality parameters applied.*	• A value model was developed that assigns mining and processing recoveries, costs, and revenue to the geological model. This value model follows the entire mining process from development to final rehabilitation. • A cost/value model was formulated in Micromine optimisation software from a simplified cash flow script to generate at a block level of all the required attributes to calculate the cash flow grades for the proposed processing permutations for subsequent use in optimisation and strategic mine schedule optimisation. • The basis for the application of the TGC cut-off grade is a simplified variable cash flow per tonne. This approach provides the most mathematically efficient inputs to solve the objective function, as used consistently in the optimisation models developed, which is to maximise the real, pre-tax NPV. • Blocks where the cash flow per tonne is positive are designated ore and negative blocks are designated waste.

Mining factors or assumptions	*The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).*
	The mining dilution factors used.
	The mining recovery factors used.
	Any minimum mining widths used.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.
	The infrastructure requirements of the selected mining methods.
		• Currently, mining is conducted by long hole open stoping in a topdown sequence and targeting resources between levels +5m to 115m (below sea level).
		• The level height is 20m with ore extraction from the bottom of each level.
		• It is assumed due to geotechnical considerations no mining may take place within 10m of the mountainside. A 15m crown pillar has been left in place between the existing ("up-dip") mining void and the downdip development.
		• Down-dip development waste is backfilled into the existing mining void, which will allow safe access to further up-dip resources and eliminate mine waste disposal outside the Trælen mountain.
		  • The decline is designed with the following principles:
		  • Minimum distance to the ore 40m
		  • Minimum turn radius 20m, 25m preferred
		  • To minimise the amount of development
		  • Maximise the number of straight sections for easier development and driving
		  • Inclination of 1:7
		• Long hole drill, face drilling rig (Jumbo), scaler, underground truck and wheel loaders are used for underground mining operation.
		• Mining recovery of 90% is applied for stopes.
		• Mining dilution was assumed to be 10% due to the mining method used and complexity of the deposit.

Criteria	JORC Code Explanation	Commentary
		• Inferred Mineral Resources were considered as waste. • Annual material movement is planned to be limited to 0.1Mt per annum.  • Geotechnical and hydrogeology assessment and recommendations provided by DTM Group. • Based on the block model, the total mine waste rock volumes are expected to be approximately 15,000 tonnes over a 13 year LOM. This equates to 54,000m3 of gray rock at an average in-situ bulk density of 2.9. • Ventilation of the mine is planned to be done by using fresh air shafts to bring fresh air to workings. The dirty exhaust air will go out via the decline and empty stopes. No exhaust fan or shaft is planned. Ventilation survey carried out by DTM Group.

Metallurgical factors or assumptions	*The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.*
	Whether the metallurgical process is well-tested technology or novel in nature.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.
	Any assumptions or allowances made for deleterious elements.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.
		• Metallurgical factors have been taken from the current processing plant.
		• Skaland Graphite SA is processing the ore by conventional metallurgical techniques include crushing, grinding, floatation, screening and drying to produce graphite concentrate of various flake size.
		• The processing plant has a recovery of >91% of the graphite in the feed which has a concentrate grade of 90% TGC.
		• The product fraction size is summarised in the below:
		  • Flake (+250 microns)
		  • Medium (+150 to -250 microns)
		  • Fine (+75 to -150 microns), and
		  • Powder (-75 microns)
		• The average product size distribution (PSD) is summarised in the below:

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</td><td>
<table>
<tr><th>Product Category</th><th>% of Production</th><th>Product Grade (%C)</th></tr>
<tr><td>Flake</td><td>26.2</td><td>97.9</td></tr>
<tr><td>Medium</td><td>8.4</td><td>95.5</td></tr>
<tr><td>Fine-Medium</td><td>28.4</td><td>91.8</td></tr>
<tr><td>Powder</td><td>35</td><td>84.9</td></tr>
<tr><td>Specials</td><td>2</td><td>90</td></tr>
</table>
The Company has plan for expansion of Production from 10 ktpa to 16 ktpa by 2023.
</td></tr>
<tr><td>Environmental</td><td>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</td><td>

Significant environmental assessment work has been undertaken. The environmental permits are based on the discharge of 40,000t of tailings to sea per year from the County Governor of Troms and Finnmark and all environmental permits required to operate the mine and process plant are in place.
From the mine, the wastewater is filtered before it goes to the sea. Samples of the water are taken every second month to control of solid density.
The waste rocks (grey rock) from the mine can be deposited through a hole in the mountain and down the mountain wall. It can be deposited until it reaches the sea. This looks like the natural scree slopes that are everywhere in Trælen mountain.
The tailings from the flotation circuit are sent to a thickener within the processing building for water recovery. The thickener underflow is relatively dilute, at around 180m from the shoreline and at least at 30m depth. Tailings must contain no more than 120g/l of solid density to be sure that the tailings are deposited close to the point of deposit. The limit values for components with requirements to be measured are:

<table>
<tr><th>Component</th><th>Short Time Limit (g/day)</th><th>Long Time Limit (g/year)</th></tr>
<tr><td>Zn</td><td>4.11</td><td>1,500</td></tr>
<tr><td>Ni</td><td>14.25</td><td>5,200</td></tr>
<tr><td>Cu</td><td>2.74</td><td>1,000</td></tr>
<tr><td>Cr</td><td>1.37</td><td>500</td></tr>
</table>

The Company has conducted testwork to optimise the Production of tailings to support expansion, targeting the Production of high volume/low sulphides/low metals tails and a smaller volume of high S/high metals tailings. These streams would then be disposed separately.
NIVA, as an independent environmental consultant, has done testing on the impact the tailing from the plant has on the fjord. They recommended to discharge the tailings

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</table>

Criteria	JORC Code Explanation	Commentary
		point in deeper level. • In 2021, NTNU did testing on the tailings to evaluate implementation of a method in the process to extract most of the harmful components from the tailings. • In the processing plant, there is some dust emission into air from the chimney and from the main ventilation exhaust. It must be <5g/m2. The latest assessment was done in August 2021 and it was below the limit. • Noise zone maps are prepared for all relevant operations to be sure that the people living around the operation are not negatively disturbed. • General wastes are sorting into appropriate containers and are delivered to environmental or recycle stations.
Infrastructure	*The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	• All the infrastructure requirements for the project already exist at the Skaland site. • The Skaland Project, and Trælen deposit, are located on the Island of Senja but can be reached from the mainland via the 862 and 86 paved highway via a bridge spanning the Gisundet strait to the town of Finnsnes. To access the Trælen deposit, a graded road of some 7.5km was constructed around the northern coastline of the peninsula. • Graphite ore is trucked from the Trælen deposit to the Skaland processing plant. The Project is accessible, and operational, throughout the year and is not impacted by climatic conditions. • There is a well-established local community supporting the operation along with good quality infrastructure. • The Skaland process plant is located adjacent to its own dedicated (ice-free) quay that allows the graphite concentrate to be shipped throughout the year. The port has an ISPS status, code NOSAA-0001. A small amount of concentrate is transported by truck to customers within Europe. • The mine is connected to a 22kV network. The processing plant is connected to the national grid with a 22 kV line to three main transformers, 1600 kA, 1000 kA and 500 kA. • Skaland Graphite AS utilises water from two sources, the Trælen mine and from the mountains. There is a natural pond with 175,000m3 of water storage capacity. Process water comes mainly from the thickener overflow and from the concentrate filter. • Propene is used for drying graphite. Tank volume is 87.4m3 and the tank is taken care of by gas supplier. The gas tank is buried to ground for external fire protection.

Criteria	JORC Code Explanation	Commentary

Costs	*The derivation of, or assumptions made, regarding projected capital costs in the study.*
	The methodology used to estimate operating costs.
	Allowances made for the content of deleterious elements.
	The source of exchange rates used in the study.
	Derivation of transportation charges.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.
	The allowances made for royalties payable, both Government and private.
		• Capital and operating underground development and stoping costs are based on existing mining and supply contracts and were used to convert the Trælen Mineral Resources to Ore Reserves. Project to date mining of Trælen has established the technical feasibility and profitable extraction of the mineralised lodes by underground method.
		• The capital infrastructure, mining, associated equipment, and processing plant are in place. All the processing plant and infrastructure required for the processing operation is already owned by MRC, with only minor modifications or upgrades required.
		• The operating cost estimate for the Project includes all costs associated with processing, infrastructure, and site-based general and administration costs.
		• The operating cost estimate has been prepared to an accuracy of ±10%.
		• Industry standards, quotations from vendors or information from the operating cost database and information from the process design criteria underlie the basis of the estimate.
		• The operating costs have been compiled by Skaland Graphite AS and MRC from a variety of sources and additional consultants including:
		  • Budget quotations received from suppliers
		  • Operating cost database
		  • Wages and salaries, general and administration costs
		  • First principal estimates based on typical operating data
		• Royalties have been calculated at NOK14.6 per tonne of product sold payable to the landowners.
		• NOK2.03 per tonne mine out ore is payable to the Norwegian Directorate of Mining as a rehabilitation cost.
		• All amounts have been modelled in US dollars with foreign estimated inflows/outflows converted to US dollars at an average exchange rate forecast for the relevant transaction year. The forecast exchange rate of USD/NOK 8.4 and USD/AUD 1.3 used reflects long term exchange forecasts with an accuracy of ±10%.

Revenue factors	*The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• The Trælen Ore Reserve estimate will produce a revenue stream from sale of graphite concentrate. Revenue from the Project is derived from the sale of graphite concentrates in different size fractions. • The price assumptions are based on contracted sales agreements. Forecast prices for each flake size were provided by Benchmark Mineral Intelligence. • Revenue estimates are based on independent market pricing and life-of-mine concentrate production of 10,000tpa. • Transport and treatment charges as well as other administration charges incurred on site are all based upon

Criteria	JORC Code Explanation	Commentary
		actual costs being incurred mining the Trælen ore lodes. • There are no by-products, co-products, or deleterious elements in the concentrate. • Forecast prices for graphite concentrate products (2021-2027) were incorporated into the model. • Revenue estimates are base case only.

Market assessment	*The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.*
	A customer and competitor analysis along with the identification of likely market windows for the product.
	Price and volume forecasts and the basis for these forecasts.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.
		• Skaland is the largest flake graphite producer in Europe and the fourth-largest producer globally outside of China. Skaland is presently one of the world's highest-grade operating flake graphite mines with mill feed grade averaging around 25%C. Skaland accounts for around 2% of global annual natural flake graphite production.
		• Production of Natural Graphite, including all three forms of it (Amorphous, Flake, Vein) is 0.95 million tpa. China, with 60% share, is the biggest producer and seller.
		• The refractory market still has the biggest share in graphite consumption and graphite mainly goes into Magnesia Carbon bricks for iron and steel production. It is estimated that around 0.5kg of natural graphite is consumed per tonne of steel, besides the given market share of 28%. It is estimated that refractories consume 600,000 tonnes of graphite every year.
		• Current demand for natural flake graphite is estimated at approximately 750,000 tonnes per annum with approximately 26% of total graphite demand attributed to the lithium-ion battery market. Independent market research forecasts that the lithium-ion battery market will grow at an annual rate of 16% to 2023 for approximately 696,000 tonnes of lithium-ion batteries (or 51% of the total annual demand). By 2030, the annual demand for graphite for lithium-ion batteries is projected at 2.9M tonnes, or 80% of the total projected annual demand of 3.6M tonnes. Natural flake graphite demand from 2015 to 2040 for all end uses is forecast to grow at an average of over 12% per year, though this is dominated by lithium-ion battery demand. Primarily because of projected increases in demand for natural flake graphite in lithium-ion batteries, the graphite market is projected to be in undersupply from 2020, with the supply deficit growing as projected lithium-ion battery demand ramps up.
		• Based on MRC's market approach, the focus is:
		  ◦ Possible value additions to our product, producing high purity graphite, developing expandable Production etc.
		  ◦ Specialty product markets, targeting Alkaline batteries, Lubricants, Powder Metallurgy, Conductive additives, etc.
		  ◦ Diversified and customer specific products, closely engaging with customers and developing the right products for the customers' requirements.
		  ◦ Total value proposition: packaging, logistics, offering short delivery times, fast response times, consistent quality etc.

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>

MRC has existing customers for graphite products from its Skaland operation.

<table>
<tr><th>Product</th><th>Price (US$/t)</th></tr>
<tr><td>Flake</td><td>$1,010</td></tr>
<tr><td>Medium</td><td>$800</td></tr>
<tr><td>Fine-Medium</td><td>$680</td></tr>
<tr><td>Powder</td><td>$510</td></tr>
<tr><td>Specials</td><td>$770</td></tr>
<tr><td>Micronised</td><td>$2,400</td></tr>
</table>

Price assumptions are cross referenced against Benchmark Mineral Intelligence assumptions over the coming years.

</td></tr>
<tr><td>Economic</td><td>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.
NPV ranges and sensitivity to variations in the significant assumptions and inputs.</td><td>

Economic analysis was carried out using established site costs for mining, geology, processing and administration.
A discount rate of 7% (real) was applied, reflecting the weighted average cost of capital expected from debt funding the project.
Sensitivities to existing unit costs, principally of underground mining, were carried out to establish the viability of the Trælen Ore Reserves. An undiscounted and uninflated cashflow model was used to evaluate the economic return of the mine plan underlying the Ore Reserves.
As an ongoing operation, monthly cost review is undertaken along with geological reconciliation to analyse conformance to the expectations that form the basis of the Ore Reserve estimation.
Sensitivities of the NPV to changes in key assumptions have been analysed. These were run on the following key model assumptions: graphite recovery, exchange rate, discount rate, operating costs, and capital costs. In each case, the sensitivities run was regarded as a possible downside scenario and a possible upside scenario based on the historic experience of mining projects.
All cashflows have been prepared in real terms, assuming 2021 dollars, with no inflation of graphite concentrate prices.

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<tr><td>Social</td><td>The status of agreements with key stakeholders and matters leading to social licence to operate.</td><td>

Skaland Graphite has been running on and off since 1918 and it has been a part of the local community. The local community is familiar with the characteristics of mining, processing and product transport, as other resource extraction operations occur within the district. Stakeholder consultation conducted to date has identified that most of the community is supportive of the Project.
In earlier years, Skaland Graphite assisted workers and their families to get a place to live. Many of the older people in the area have either worked at the mine or had

</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
		someone in their family that worked in Skaland operations. Currently, 35 people work directly in the operation and a lot of families live in Skaland because some of them work at Skaland Graphite AS. • Together with the fishing industry, Skaland Graphite AS is the most important workplace in the area, and it is an important part of the local economy of the district.
Other	*To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* *Any identified material naturally occurring risks.* *The status of material legal agreements and marketing arrangements.* *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre- Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	• The Skaland operations are not new, all regulatory approvals have been granted, no economic evaluation or justification is required. • The stated Ore Reserve estimate is not materially affected by any known environmental, permitting, legal, title, taxation, socioeconomic, marketing, political or other relevant issues, to the best knowledge of the authors. There is no known mining, metallurgical, infrastructure, or other factors that materially affect this Ore Reserve estimate, at this time.
Classification	*The basis for the classification of the Ore Reserves into varying confidence categories.* *Whether the result appropriately reflects the Competent Person's view of the deposit.* *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• The Mineral Resource classifies all mineralisation at Trælen as Measured, Indicated, and Inferred and 100% of the maiden Ore Reserve has been derived from Measured and Indicated Mineral Resources. • The classification reflects the Competent Person's view of the deposit. • Optimisations and the proposed mining schedule are cognisant of the Mineral Resource classification.
Audits or reviews	*The results of any audits or reviews of Ore Reserve estimates.*	• The Ore Reserve methodology and estimates has been reviewed internally as part of normal validation processes by MRC.

Criteria	JORC Code Explanation	Commentary
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• This is considered to be a maiden Ore Reserve Estimate under the guidelines of the JORC Code (2012) since this is the first reserve estimate completed in this project. • The Ore Reserve has been peer reviewed internally and the Competent Person is confident that it is an accurate estimate of the Deflector Reserve. • The mining and processing methods selected are typical for graphite and have been demonstrated in various other operations. They are considered a low risk of impacting the Ore Reserves. • There is a degree of uncertainty regarding hydrogeological models. Further hydrogeological study and geotechnical work is recommended. • All costs used in the optimisation and Ore Reserve process are supported by an extended operational history and actual results from the Skaland operation.