ASX ANNOUNCEMENT **ASX: GED**

12 January 2023

EXCEPTIONALLY HIGH-GRADE BATTERY METAL CONCENTRATES PRODUCED FROM ABENAB TESTWORK

- ***Results represent a critical step towards producing high-value vanadium with zinc, lead and copper products for renewable energy storage and EV batteries***

- **Gravity testwork on a bulk sample of the Abenab vanadium-zinc-lead resource in Namibia has produced exceptionally high-grade vanadium-zinc-lead (descloizite) concentrate grades of:**
  - **15.6% V_2O_5, 11.2% Zn, 38.2% Pb and 0.8% Cu**
- **The high-grade concentrate sample represents an 18 times upgrade of the representative drill-core composite sample - above the targeted upgrade factor of 15 times[1] - and matching the historical Abenab vanadium concentrate production grades which were the highest in the world[0].**
- **High-grade composite sample generated for Phase 2 hydrometallurgical testwork designed to optimise recovery of high-value vanadium product precursors for Vanadium Redox Flow Batteries (VRFBs) for renewable energy storage, as well as zinc, lead and copper by-products.**
- **Metallurgical testwork on bulk-samples of high-grade copper-vanadium-lead mineralisation grading 1.8% V_2O_5, 4% Cu and 7% Pb from the neighbouring Nosib discovery is in progress[2]. Mineralogical work indicates the dominant ore mineral is mottramite, a copper-rich end-member of the descloizite (vanadate) group that is expected to respond well to gravity concentration.**
- **Optimisation work in progress on an updated resource model for the Abenab deposit and a maiden resource model for the Nosib copper-vanadium-lead-silver discovery, which will in turn enable finalisation of an important overall resource upgrade for the Company's Otavi Mountain Land projects in northern Namibia.**
- **Flowsheet to be developed from the gravity concentrate and Phase 2 hydrometallurgical testwork will be applied to the new resource models to produce an integrated mining and two-stage processing development and production plan for the Abenab and Nosib deposits[2].**

Golden Deeps CEO Jon Dugdale said:

"The outstanding vanadium plus zinc, lead and copper concentrate grades produced from testwork on the Abenab deposit represent a major breakthrough for the Company.

"The testwork results open the door to replicating the process for the Nosib discovery and then completing downstream hydrometallurgical testwork to produce high-value battery metals products for the rapidly growing renewable energy battery storage industries globally.

"The results will also feed directly into our integrated mine development and processing study – a key stepping-stone towards realising our goal of developing production from the Company's near-surface, high-grade, vanadium with copper, lead, zinc and silver deposits in the Otavi Mountain Land of northern Namibia."

Abenab Vanadium-Zinc-Lead Project Concentrate Testwork:

Golden Deeps Limited (ASX:GED) is pleased to announce it has **generated an exceptionally high-grade vanadium with zinc, lead and copper concentrate sample** through gravity testwork on the Company's Abenab Project, located in Namibia's highly-prospective Otavi Mountain Land (see location, Figure 1).

The testwork produced an exceptionally high-grade descloizite ($(Pb, Zn)_2(OH)VO_4$) **concentrate grading:**

15.6% V_2O_5, 11.2% Zn, 38.2% Pb and 0.8% Cu

This represents an **18 times (x) upgrade** of the representative drill-core composite sample, that had an assay head grade of **0.9% V_2O_5, 2.1% Pb and 0.7% Zn** (see table below).

Element	V_2O_5%	Pb%	Zn%	Cu%
Gravity Concentrate	**15.6**	**38.2**	**11.2**	**0.8**
Drillcore Composite	0.9	2.1	0.7	0.05
Upgrade Factor	18	19	16	17

This upgrade factor is above the targeted multiple of 15x and concentrate grades are **similar to historical concentrate production grades from the Abenab Mine, which was known as the world's richest and largest known deposit of vanadate ore, producing 176kt of very high-grade 16% V_2O_5, 13% Zn, 42% Pb concentrate** from the 1920s to the 1950s[0] (see Image 2).

The gravity concentrate testwork was conducted at Nagrom Mineral Processing Laboratories in Perth and initially included grinding sighter tests that indicated an optimal grind size of 0.5mm, followed by rougher spiral gravity concentration. Losses in the spiral concentration stage led to re-constitution of the feed and a repeat of the concentrate work using entirely wet-table gravity concentration with improved separation efficiency. This process recovered a final aggregated (6 cuts - see Image 1) concentrate mass of **1.44kg** at **15.6% V_2O_5, 11.2% Zn, 38.2% Pb & 0.8% Cu.** The mass was lower than initially targeted due to losses within the original spiral circuit and the resultant high-proportion of slimes generated from the rework. Further testwork on a larger bulk sample will focus on optimising higher recoveries, targeting >80%.

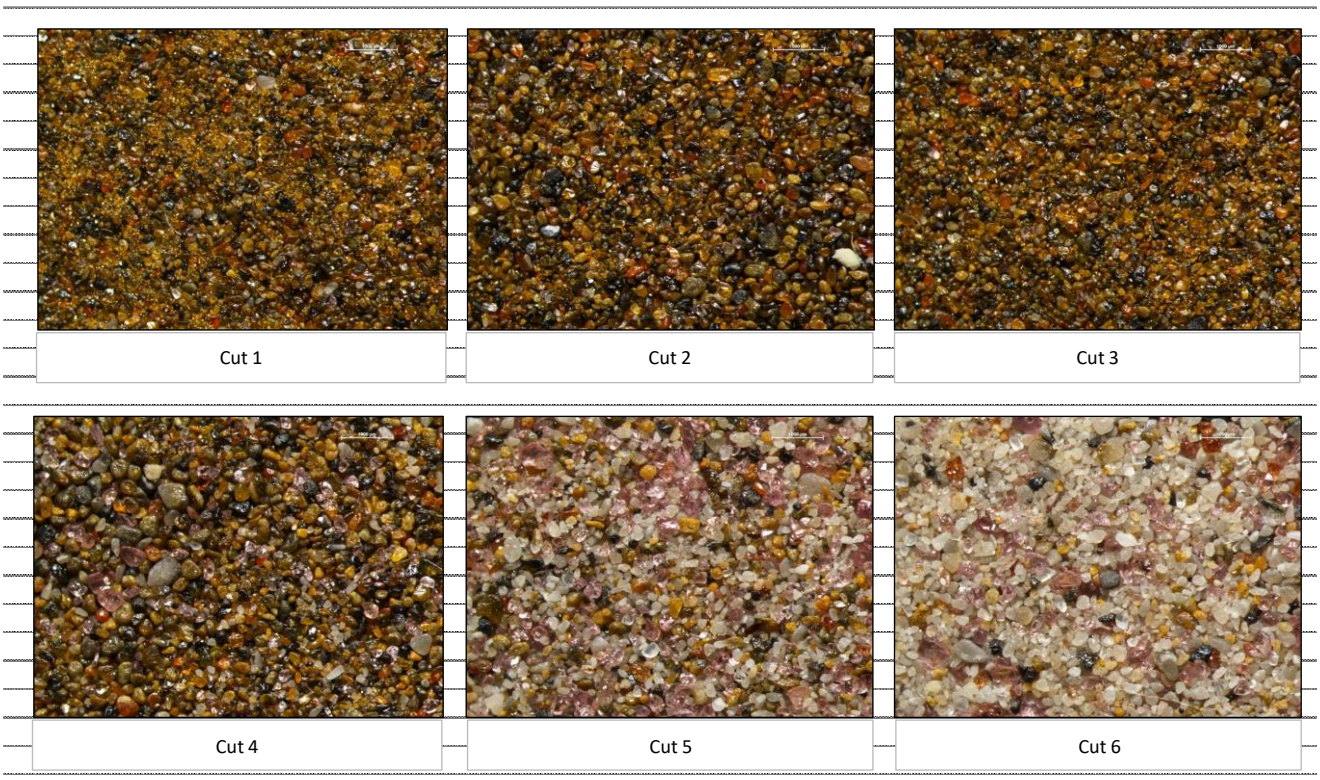

Image 1: Gravity concentration wet-table "cuts" showing dark descloizite, combined to generate final composite

The final concentrate sample is being held by the Company prior to approximately 1kg of the sample being despatched for down-stream hydrometallurgical testwork. The Phase 2 testwork is designed to further develop the flowsheet for hydrometallurgical processing the high-grade vanadium, lead, zinc and copper concentrate to produce high-value vanadium products, as well as recovering zinc, lead and potentially copper by-products. Earlier Phase 1 hydrometallurgical testwork demonstrated **vanadium extraction rates of up to 95% and high extraction of lead, zinc and copper from a lower grade concentrate feed generated from surface stockpiles and tailings[1].**

The outcomes of both the gravity concentrate testwork and the downstream hydrometallurgical testwork will provide processing cost inputs (capital and operating) to be integrated with a new resource model for the Abenab deposit (in preparation by Shango Solutions), and an upgraded mining study (by Bara Consulting), to produce a **scoping study for staged mining, gravity concentration and downstream processing of the high-grade Abenab high-grade V-Zn-Pb resource[2]**.

Image 2: Abenab Vanadium (lead-zinc) mine. Historically the "world's richest" vanadate concentrate producer[0].

Nosib Copper-Vanadium-Lead Project Testwork:

The discovery of high-grade copper, vanadium and lead mineralisation at the Nosib Block (Nosib) Project, located 20km to the southwest of Abenab (see Figure 1), presents the opportunity to develop an **integrated mining and two-stage processing project for both the Abenab and Nosib deposits[2].**

Samples of diamond drill-core from NSBDD008[3] at Nosib with other previous intersections (e.g. NSBDD002[4]) and material from a recent bulk sample excavated from the top of the Nosib supergene mineralisation[2] (see Image 3 below) were aggregated to produce bulk samples for the gravity concentration testwork based on the flow-sheet developed for the Abenab resource material.

The samples were aggregated into two bulk samples as follows:

i) Drill core sample of ~140kg grading 1% V (1.8% V_2O_5), 4.1% Cu, 7% Pb, 0.1% Zn

ii) Aggregate surface samples ~150kg 1% V, (1.8% V_2O_5), 4.3% Cu, 7.3% Pb, 0.1% Zn

Image 3: Nosib Project bulk sample excavation for metallurgical testwork (geologist and CEO for scale).

Initial mineralogical work on the Nosib samples to determine the "ore" mineralogy of the deposit, using wet-table separates, confirmed the V, Pb, Cu (+/- Zn) phase in the samples is almost entirely in the mineral mottramite. Mottramite is a copper-lead vanadate mineral, composition: $PbCu(VO_4)(OH)$, and is part of the descloizite vanadate group. **Mottramite has a high specific gravity and is likely to respond to gravity concentration similarly to the mineralisation at Abenab** which is predominantly descloizite, a lead-zinc vanadate, composition: $(Pb, Zn)_2(OH)VO_4$.

Wet table gravity concentration testwork has now commenced on the two, separate, bulk samples for the Nosib deposit. This work is designed to generate >5kg of concentrate, targeting a 10-15 times upgrade of vanadium, lead and copper.

Following generation of concentrate from the Nosib gravity testwork, the concentrate sample will undergo hydrometallurgical leach testwork, based on the results of the Abenab program. This work will be designed to determine vanadium leach rates and recoveries to high-value vanadium products as well as copper, lead, zinc and silver by-products.

The results of the initial metallurgical testwork will provide cost information for open pit optimisation work on a preliminary Mineral Resource model generated by Shango Solutions, based in South Africa.

The open-pit optimisation is being carried out by Bara Consulting and is close to finalisation, which will allow finalisation of the maiden Mineral Resource estimate for the Nosib deposit.

This optimisation will also provide initial mining production targets for the Scoping Study, to be integrated with the results of the Abenab testwork and mining studies to generate an integrated mining and two-stage processing development and production plan for the Abenab and Nosib deposits[2].

About the Golden Deeps Otavi Mountain Land Projects and Programs:

The Company's key projects in the world-class Otavi Mountain Land Copper District (OMLCD) of Namibia are located on two Exclusive Prospecting Licences (EPLs) - EPL5496 and EPL3543 (see location, Figure 1).

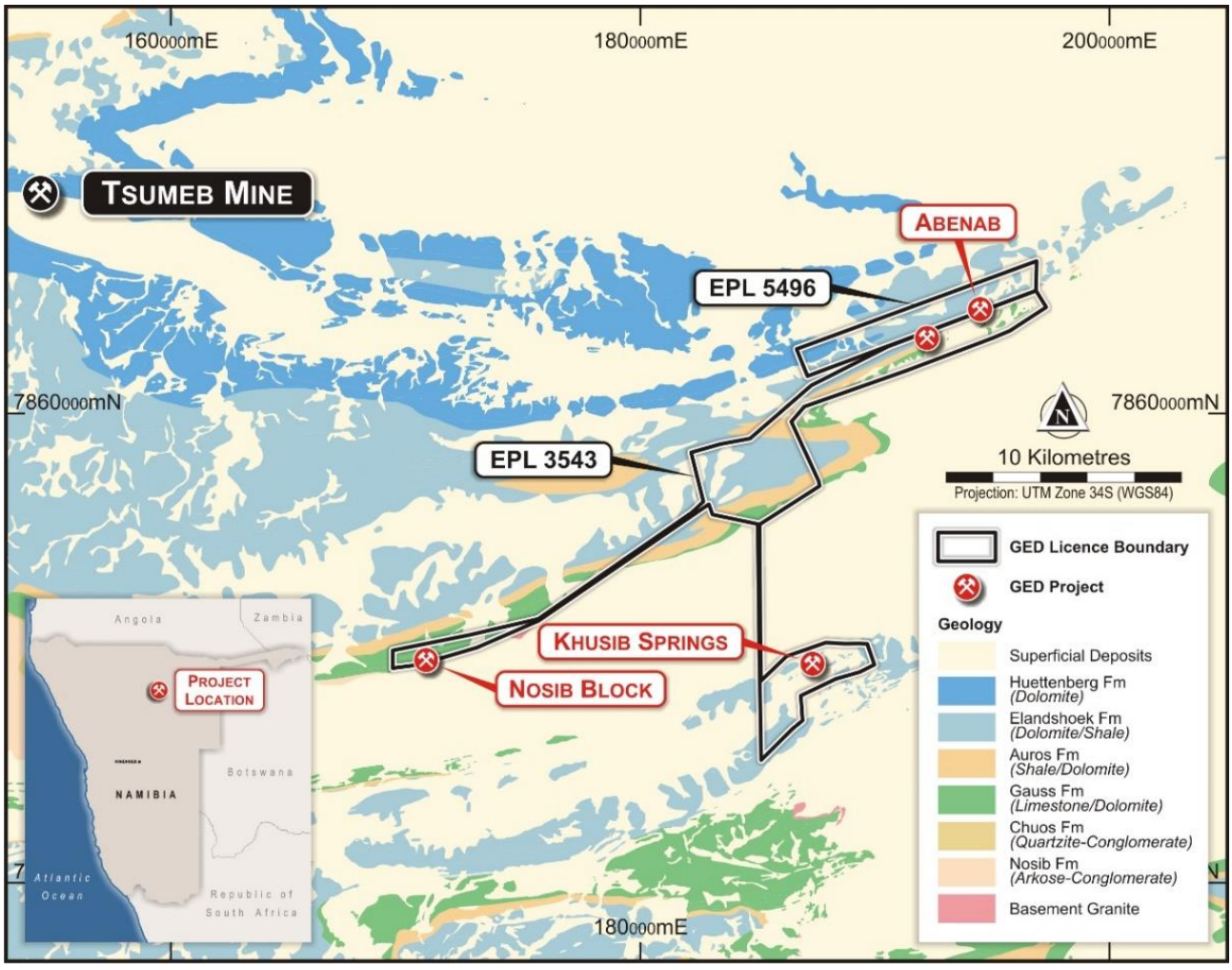

Figure 1: OMLCD Tenements and geology with location of Khusib Springs and other key projects.

The OMLCD includes major historic mines such as the **Tsumeb** deposit that historically produced **30Mt of ore grading 4.3% Cu, 10% Pb and 3.5% Zn[5]** from 1905 to 1996 (Figure 1).

The Company's key projects are the **Abenab** high-grade vanadium-zinc-lead resource; the **Nosib** high-grade vanadium-copper-lead-silver discovery and the **Khusib Springs** high-grade copper-silver deposit, where the Company recently announced a 90m intersection of copper-silver mineralisation[6] (see Figure 1).

At the **Abenab Project** the Company has a Mineral Resource estimate of an Inferred **2.80Mt @ 0.66% V_2O_5, 2.35% Pb, 0.94% Zn at a 0.2% V_2O_5 cut-off[7]**. The resource model for the deposit is currently being updated to include information from the 2019 diamond drilling program by the Company and new processing cost information from the latest testwork, as summarised in this release.

The **Nosib Project** is a new discovery that has produced a number of exceptional, thick and high-grade, vanadium-copper-lead-silver RC and diamond drilling intersections over the last 12 months[3,4]. Mineral Resource modelling and estimation is being carried out by Shango Solutions[2], focussed on the supergene vanadium-copper-lead-silver zone at Nosib.

Key operating and capital cost information will be derived from the metallurgical testwork in progress, on both projects, for input to the **integrated mine development and processing study** ("the Study")[2] **on the Company's near surface, high-grade, vanadium with copper, lead, zinc and silver deposits in the OMLCD.**

References

[0] Golden Deeps Ltd ASX: 04 March 2021. Mining Study Commenced on Abenab Vanadium Resource.
[1] Golden Deeps Ltd ASX: 21 March 2022. Outstanding Vanadium Extraction of up to 95% from Abenab.
[2] Golden Deeps Ltd, ASX: 21 June 2022. Major Study on High-Grade Vanadium Cu-Pb-Zn-Ag Development.
[3] Golden Deeps Ltd ASX: 04 April 2022 Exceptional Copper-Vanadium Intersection at Nosib.
[4] Golden Deeps Ltd ASX:, 02 Dec. 2021. Another Exceptional Copper-Vanadium Intersections at Nosib.
[5] Tsumeb, Namibia. PorterGeo Database: www.portergeo.com.au/database/mineinfo.asp?mineid=mn290.
[6] Golden Deeps Ltd ASX: 07 December 2022. Exceptional 90m Intersection of Copper-Silver at Khusib.
[7] Golden Deeps Ltd ASX: 31 January 2019. Major Resource Upgrade at Abenab Vanadium Project.

This announcement was authorised for release by the Board of Directors.

*****ENDS*****

For further information, please refer to the Company's website or contact:

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Cautionary Statement regarding Forward-Looking information

This document contains forward-looking statements concerning Golden Deeps Ltd. Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward-looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes.

Forward looking statements in this document are based on the company's beliefs, opinions and estimates of Golden Deeps Ltd as of the dates the forward-looking statements are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

Competent Person Statement

The information in this report that relates to exploration results, mineral resources and metallurgical information has been reviewed, compiled and fairly represented by Mr Jonathon Dugdale. Mr Dugdale is the Chief Executive Officer of Golden Deeps Ltd and a Fellow of the Australian Institute of Mining and Metallurgy ('FAusIMM'). Mr Dugdale has sufficient experience, including over 34 years' experience in exploration, resource evaluation, mine geology and finance, relevant to the style of mineralisation and type of deposits under consideration to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee ('JORC') Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves. Mr Dugdale consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements. The Company confirms that the form and context in which the Competent Persons findings are presented have not been materially modified from the original market announcements.

Appendix 1
JORC 2012 Edition - Section 1 Sampling Techniques and Data

No further exploration results reported. The JORC 2012 Mineral Resource that forms the basis of the previous Mining Study on the Abenab deposit was reported by Golden Deeps Ltd in the ASX release dated 31 January 2019 with accompanying JORC Table Section 1. An updated JORC 2012 Mineral Resource estimate is in preparation.

JORC 2012 Edition - Section 2 Reporting of Exploration Results

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.*	• This release is on metallurgical test results completed on the Abenab Vanadium Project located on Golden Deeps Limited (Huab Energy Ltd) EPL3543 and EPL5496 located near the town of Grootfontein in northeast Namibia. • EPL3543 and EPL5496 were due for renewal on 6th July 2022. Renewal applications were submitted in April 2022 and renewal is expected in the near future. Mining lease applications are planned to ensure security of tenure longer term. • There are no material issues or environmental constraints known to Golden Deeps Ltd which may be deemed an impediment to the continuity of EPL3543 or EPL5496.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Abenab Vanadium prospect was primarily drilled by Avonlea Resources Ltd with further drilling by Golden Deeps Ltd in 2019[4,5].
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Abenab mineralisation is situated on the faulted contact between laminated grey limestone and grey dolomite. The ore bodies, which are cylindrical, spiral downwards to a depth of at least 425 m, are hosted by a pipe-like mass of cemented brecciated country rock. The base metal (Pb-Zn +/- Cu) mineralisation at Abenab is interpreted to have formed due to introduction of hydrothermal fluids along regional deep-seated thrust plane discontinuities during orogenesis and reverse

Criteria	JORC Code explanation	Commentary
		faulting. The introduction of Vanadium is ascribed to later, supergene, processes where Vanadium minerals were precipitated within the sulphide-mineralised breccia under oxidising conditions from circulating groundwaters. Significant normal faulting has been observed in drill-core to have deformed and offset the sulphide mineralisation, but have also acted as conduits for the secondary Vanadium mineralisation.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and 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.*	• No new exploration results in this ASX announcement. • Metallurgical composite samples of Abenab material were generated from 2019 diamond drilling intersections described in the GED ASX release of 14 August 2019: Phase 1 Drilling Complete - High-Grade Vanadium Intersected and the GED ASX release of 17 September 2019: 7.8% V_2O_5 Intersected at Abenab Project (ABRCD011 results).
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No new exploration results in this ASX announcement. • Details of 2019 drilling intersections referred to in this release are included in the GED ASX release of 14 August 2019: Phase 1 Drilling Complete - High-Grade Vanadium Intersected and the GED ASX release of 17 September 2019: 7.8% V_2O_5 Intersected at Abenab Project (ABRCD011 results).
Relationship between mineralisation	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole*	• No new exploration results in this ASX announcement. • The orientation of drillholes with respect to mineralisation varies from orthogonal to a low angle to the

Criteria	JORC Code explanation	Commentary
widths and intercept lengths	*angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	mineralisation as shown on Figure 1, a cross section through the Abenab mineralisation and resource.
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.*	• Figure 1 shows the location of the Abenab deposit with regional geology and tenement locations.
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.*	• No new exploration results in this ASX announcement.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• No new exploration results in this ASX announcement.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The Company is currently reviewing the previous exploration targeting report by Shango Solutions and evaluating targets for deeper extensions of the Abenab deposit prior to planning deeper diamond drilling. • Further drilling may also be proposed to further define the Abenab Mineral Resource, subject to the results of the current Mineral Resource estimation process.