ASX ANNOUNCEMENT ASX code: **GED**

11 June 2021

ABENAB VANADIUM MINING STUDY DELIVERS POSITIVE OUTCOMES

Potential for viable operation based on mining high-grade resources

- **Mining Study completed on the Abenab Project examining mining methods and costs to establish potential viability of a new high-grade Vanadium-Lead-Zinc operation**
- **Key outcomes of the Mining Study, based on high-level input parameters, include:**
  - **Focus on underground mining of the higher-grade portions of the Mineral Resource[1]**
  - **Targeted initial production rate of 14,500 tonnes per month - 174,000 tonnes per annum**
  - **Mining cost at the above production rate in the order of US$44/t**
  - **Mining break-even cut-off grade of 1% V_2O_5 equivalent (EqV) (approximately 0.7% V_2O_5)**
  - **Mineral Resource available to mine at above mining cut-off grade of 873,000 tonnes at an average grade of 1.6% V_2O_5 Equivalent (EqV) (approximately 1.2% V_2O_5)**
- **Previous Phase 1 testwork confirmed a 30X upgrade was achievable using simple gravity concentration[3]. A Phase 2 processing study is now underway examining potential for production of Vanadium Pentoxide (V_2O_5) as well as Lead, Zinc and potentially Copper**
- **Indications of a potentially viable base-case mining operation opens up significant exploration potential to extend the high-grade Vanadium (+ Lead, Zinc) resources at depth**

Golden Deeps Limited ("Golden Deeps" or "Company") is pleased to announce the completion of a mining study (the Mining Study) on the Abenab high-grade Vanadium-Lead-Zinc Project in the Otavi Mountain Land (OML) of Namibia (Figure 1).

The Mining Study was carried out by Bara Consulting, a highly regarded mining consultancy based in South Africa, with the aim of providing an understanding of likely mining scenarios, costs and cut-off grades to guide further development and processing studies and aid decision making during the current and ongoing exploration programs.

The study has established that there is potential for a viable underground mining operation focused on the higher-grade portions of the current Mineral Resource[1] at a targeted production rate of 14,500 tonnes per month (tpm) or 174,000 tonnes per annum (tpa) of high-grade Vanadium ore.

Mining costs based on mechanised cut and fill methodology are estimated to be in the order of US$44/t at the above production rate and, with high-level processing cost assumptions, leads to an effective Run of Mine (ROM) break-even cut-off grade of 1% V_2O_5 equivalent (EqV – see Appendix 1, Table 1) (approximately 0.7% V_2O_5).

The Mineral Resource available to mine at the above ROM cut-off grade is 873,000 tonnes at an average grade of 1.6% EqV (approximately 1% V_2O_5). Mining recovery assuming planned ore-loss in the production cycle is in the order of 724,000 tonnes at 1.5% EqV (approximately 1% V_2O_5).

Access was modelled based on extending the existing shaft for different production rates as well as establishing a new decline from surface (and maintaining the existing shaft for ventilation). The difference in cost and timeframe to refurbish and extend the shaft for a 14,500 tpm production rate versus establishing a new decline is not substantial, and the decline option is favoured due to flexibility of production rate should additional ore-sources be brought into production.

The available resource for mining is based on a grade – tonnage versus cut-off grade calculation at the assumed production rate and mining and processing cost inputs (see Appendix 1, Table 2). There is a significant opportunity to increase the mineable resource as a sub-set of what is currently defined through reducing input cost assumptions and increasing recovery. If this is achieved the tonnage increases exponentially below a cut-off grade of 0.5% EqV (approximately 0.35% V_2O_5), as the large volume of lower grade resource becomes accessible and bulk-tonnage mining methods can be introduced – increasing the mining rate and reducing costs.

In addition, further exploration success, delineating additional resources, would increase the mineable resource inventory and extend mine-life as well as provide an opportunity for increased mining volumes if tonnes per vertical metre at the shallower levels is improved.

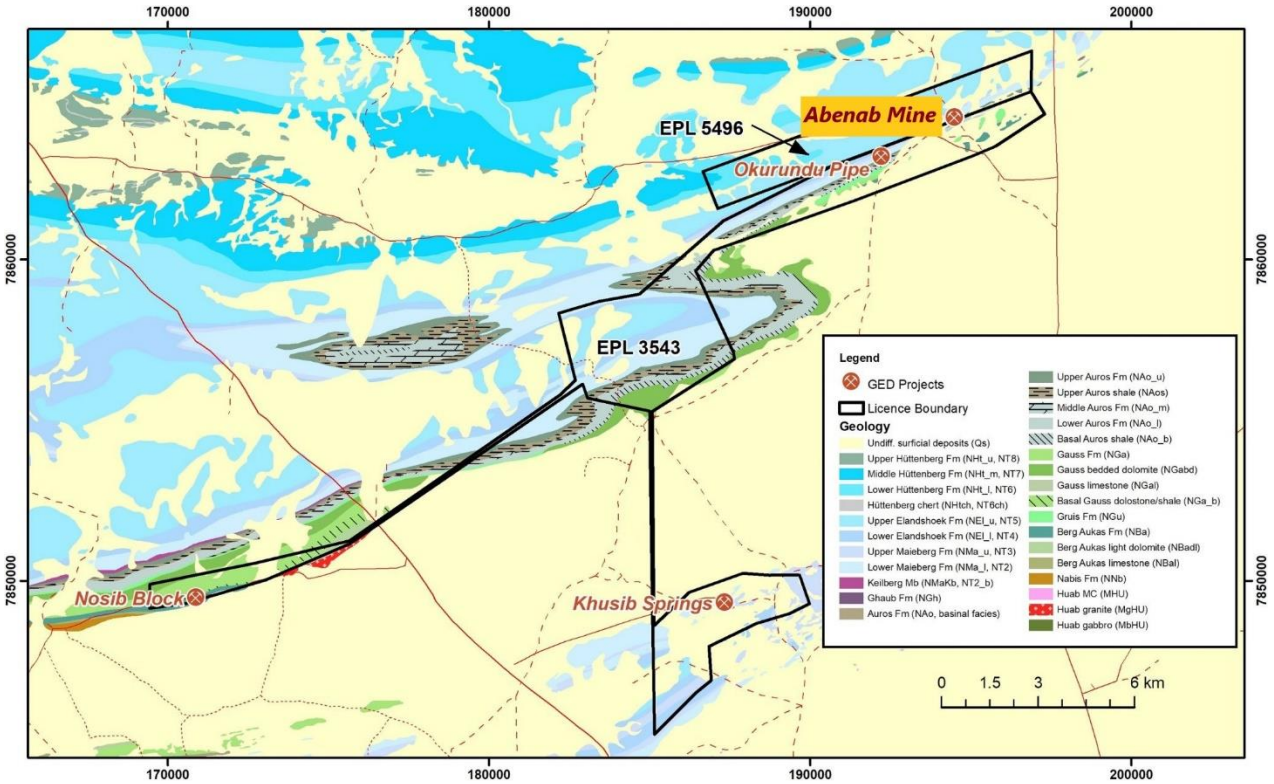

Figure 1: Location plan of the Abenab Project on EPL3543 and EPL5496, northeast Namibia

Other opportunities presented by the Mining Study include:

- The introduction of cemented backfill would improve the percentage extraction of payable material from the deposit.
- The improvement of processing recovery would have the following positive effects:
  - Reduction in the unit production cost for the saleable product.
  - Increase in product production volumes for the same mine production rate resulting in increased revenue.
  - Reduction in the cut-off grade making lower grade areas of the deposit payable resulting in an increased mineral resource available for mining.
  - The possibility of producing and selling concentrate instead of V_2O_5 product and the impact of this different production costs and selling price should be investigated.

- Evaluation of other sources of material - low grade stock-piled material at surface which have not been included in the evaluation.

Processing Studies in progress:

Previous testwork on the high-grade underground resource material by Avonlea Minerals Ltd in 2012[2], through gravity separation, produced a high concentrate grade of 21% V_2O_5, 14% Zn and 53% Pb. Further, Phase 1, testwork by Golden Deeps on the Abenab mineralisation by specialist metallurgical testwork company, Mintek, in South Africa, was completed on remnant low-grade mineralised material from historic surface stockpiles (much lower grade than the high-grade underground resource material). This work confirmed that low-grade mineralisation could also be substantially concentrated through simple gravity separation methods from material grading 0.30% V_2O_5, 1.29% Pb and 1.14% Zn to an approximate 30 times upgrade of 8.9 % V_2O_5, 30.5% Pb, 8.95% Zn[3].

Concentrate from the Mintek testwork was provided to Core Resources ("Core"), in Brisbane, for Phase 2, downstream processing testwork to develop flow-sheet options for the generation of high-value Vanadium Pentoxide (V_2O_5) as well as Lead and Zinc (and potentially Copper) products. Preliminary results of this sighter testwork have demonstrated favourable leach recoveries of >90% for Vanadium and Zinc with the majority of the Lead reporting to the residue.

Ongoing work will examine differential precipitation of V_2O_5 and recovery of Zinc from the leach solution, as well as extraction of Lead from the leach residue. Continued testwork is also examining options for reducing acid-consumption and minimising operating costs.

The outcomes of this testwork will guide development of an optimal processing flow-sheet, with the upside opportunity of establishing stand-alone mining and processing operations at Abenab to produce Vanadium, Zinc, Lead and possibly Copper.

Outstanding Exploration Potential identified:

A previous Geological Review and Target Generation report by Shango Solutions of South Africa ("Shango") highlighted the potential for extensions and repeats of the Abenab high-grade breccia mineralisation down-dip of the mined area and the current resource.

The base metal 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 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 faults has been observed in drill-core to have deformed and offset the sulphide mineralisation. These faults may have also acted as conduits for the secondary Vanadium mineralisation. The current high-grade resource is terminated against such a fault at depth and there exists significant exploration potential to locate the offset extension to the sulphide orebody at depth to the south and down dip of this structure (see interpreted cross section Figure 2).

Based on the positive outcomes of the Mining Study and initial processing testwork the Company is currently re-evaluating and modelling the potential to locate extensions to the high-grade Vanadium and base metal sulphide mineralisation both within the vicinity of the current resources and at depth.

Plans for further drill-targeting will be developed based on the outcomes of this work.

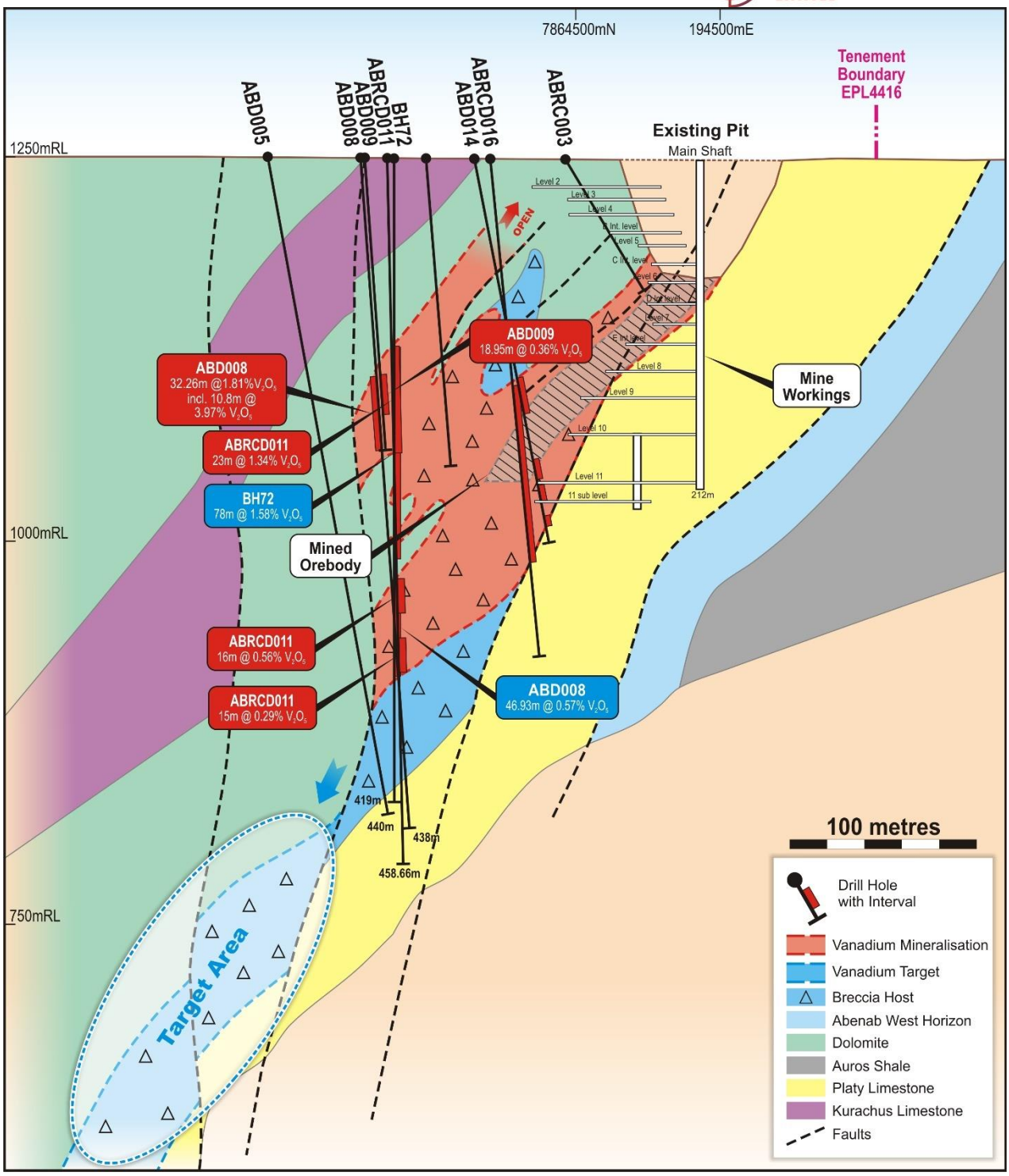

Figure 1: Cross section through Abenab breccia showing high-grade mineralisation and potential at depth

Next steps:

Next steps include:

i) Completion of the Phase 2 processing study examining flow-sheet options and costs for production of V_2O_5, Zn, Pb and potentially Cu to value add relative to production of concentrate only.

ii) Re-evaluation of mining cut-off grade assumptions based on the processing study outcomes with the potential to increase resource available for mining.

iii) Re-interpretation and generation of exploration targets for extensions/repeats of the high-grade mineralisation and other resource growth opportunities for further drilling,

Based on the integration of mining and processing study outcomes, as well as further exploration success, the Company will consider a pre-feasibility study (PFS) to establish a stand-alone mining and processing operation to produce high-value Vanadium product as well as lead, zinc and potentially copper. The world market outlook is currently very strong for Vanadium and Copper due to the growth in demand for "Battery Metals" for the electric vehicle (EV) market and other renewable technologies.

The Company is advancing other exciting exploration targets in the Otavi Mountain Land (OML) tenements including recent drilling of the Khusib Springs high-grade copper-silver targets and the Nosib Block high-grade copper-vanadium lode, that is along strike to the west of Abenab.

About the Abenab High-Grade Vanadium – Lead – Zinc Project

The Abenab Vanadium-Lead-Zinc Project covers a 35km strike-length of the prospective Abenab mineralised trend and is located on existing Exploration Prospecting Licences held in the Otavi Mountain Land (OML), north east Namibia, an area roughly bounded by a triangle linking the towns of Tsumeb, Grootfontein and Otavi. The region is a globally significant base metal province with major historical production from several mines including the now closed Tsumeb, Kombat and Berg Aukas deposits.

The region is well served by sealed roads, rail to port, high voltage power, telephone lines and water, and is close to major towns and mining processing facilities.

Golden Deeps has two Exclusive Prospecting Licences (EPLs - EPL5496 and 3543) that include the Abenab Mine as well as the Khusib Springs and Nosib Prospects - that have recently been drilled and are awaiting results. Another three EPL (EPL5232, 5233 and 5234) are located to the southeast of Abenab.

There are three recognised base metal trends with extensive strike lengths located within the tenement package, namely the Abenab, Khusib, and Pavian Trends.

The Abenab and Abenab West (formerly known as Christiana) deposits have only been tested over short strike lengths, with significant exploration upside available to the Company.

The Abenab Project contains an Inferred Mineral Resource of 2.80Mt @ 0.66% V_2O_5 (vanadium pentoxide), 2.35% Pb (lead), 0.94% Zn (zinc) at a 0.2% V_2O_5 cut-off[1].

The Project comprises three key areas – the surface mineralisation and tailings (from previous production), the existing previously producing open cut mine and potential underground workings.

GED has completed a Mining Study (this release) and is advancing a Phase 2 processing study designed to demonstrate the viability of producing V_2O_5, Zn and Pb from an initial concentrate. Previous testwork has demonstrated that a 30-times concentrate upgrade can be produced from simple gravity concentration of primary ore[2,3].

Exploration potential has been identified to significantly grow the high-grade resource base through exploration in the immediate vicinity of the current resource and by testing for the offset extension to the deposit at depth.

References

[1] *Golden Deeps Ltd ASX release 31 January 2019: Golden Deeps confirms major Resource Upgrade at Abenab Vanadium project*

[2] *Avonlea Minerals Limited (ASX:AVZ) ASX release 8 March 2012: Positive Vanadium Gravity Separation Test Work.*

[3] *Golden Deeps Ltd ASX release 22 August 2019: Pathway to Production Secured through 30x Increase in Vanadium Concentrate Grade from Existing Abenab Stockpiles*

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 Mining Study:

- *The Mining Study referred to in this announcement, in conjunction with the phase 2 processing study, in progress, have been undertaken at a high-level to determine the potential viability of an underground mine and processing facility to be constructed on-site at the Abenab Vanadium Project. The results should not be considered to determine a cash-flow or production forecast.*
- *The Mining Study is a preliminary technical and economic study to provide guidance on the potential operating viability of the Abenab Vanadium Project. In accordance with the ASX Listing rules, the Company advises it is based on low-level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further evaluation work including completion of the processing study, infill drilling and additional studies to pre-feasibility level would be required to provide any assurance of an economic development case.*
- *The recoverable component of the estimated resource available to mine should not be considered a viable production target as 100% of the Mineral Resource that forms the basis of this estimation is in the Inferred Mineral Resource category. There is a lower level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work (including infill drilling) will result in the determination of Indicated Mineral Resources or that the mineable resource target will convert to a viable production target and ore reserves.*

Cautionary Statement regarding Forward-Looking information

This document contains forward-looking statements concerning Golden Deeps. 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 has been reviewed, compiled and fairly represented by Mr Jonathon Dugdale. Mr Dugdale is a consultant to Golden Deeps Limited 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 resource estimate stated in this release was compiled by Mr Manie Swart of Shango Solutions and announced to the ASX on January 31, 2019. Mr Swart is a Member of the South African Council for Natural Scientific Professions and a full-time employee of Shango Solutions. Mr Swart has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that is being undertaken

to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

The information in this report that relates to Mining has been reviewed, compiled and fairly represented by Mr Andrew Pooley, a Competent Person who is a Fellow of the Southern African Institute of Mining and Metallurgy. Mr Pooley is employed by Bara Consulting and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee ('JORC') Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Pooley consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Metallurgy has been reviewed, compiled and fairly represented by Mr Rodrigo Ventura, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Ventura is employed by Core Resources and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee ('JORC') Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Ventura consents to the inclusion in the report of the matters based on his 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 Person's findings are presented have not been materially modified from the original market announcements.

Appendix 1: Excerpts and Key Tables from the Mining Study

Equivalent V_2O_5 Calculation

In order to determine how much of the resource can be profitably mined the revenue from a unit of ore and the cost to mine that unit of ore have to be estimated. When a resource contains multiple metals such as this, one approach to estimating the revenue per block is to pick the main revenue generating mineral, in this case V_20_5, and to convert all the other recoverable minerals in the ore to an equivalent grade of V_2O_5.

The conversion to equivalent V_2O_5 grade must take into account the plant recovery and sales price (net of sales costs) of each mineral. The prices used in the calculation were based on prices obtained by Bara at the time of completing the work. Zn and Pb prices were sourced from the website www.*kitco.com* , while the price for V_2O_5 was obtained from www.vanadiumprice.com . The saleable vanadium product is assumed to be Vanadium pentoxide (98% pure), for which the listed price was US$7.90 per lb.

Table 1 below shows the grades, process and recoveries used in the conversion of the poly metallic information into an equivalent V_2O_5 grade.

Table 1 - Equivalent V_2O_5 Calculation

Metal	Average grade (%)	Metal prices ($/t)	Overall Recovery (%)	Factor
V	1.23%	17 380	61.6%	1.000
Zn	1.00%	2807	54.4%	0.143
Pb	3.02%	1949	61.6%	0.112

Using the factors calculated above the equation for calculating the equivalent V_2O_5 grade is:

*EqV = V2O5_pct + (0.143*Zn%) + (0.112*Pb%)*

The block model was then analysed to determine the quantity of material above a series of cut-off grades to determine a grade versus tonnage curve using Equivalent V_2O_5 grade (EqV).

Mining Study – Cut-off grade and Mineable Resource estimation Tables:

Table Error! No text of specified style in document. - **Grade and Tonnage Versus Cut-Off Grade (Equivalent V_2O_5)**		
Cut Off	**Mass**	**Grade**
0	252,794,859	0.165
0.1	163,523,734	0.227
0.2	77,477,143	0.312
0.3	28,204,612	0.427
0.4	10,762,123	0.57
0.5	3,539,873	0.86
0.6	1,776,991	1.17
0.7	1,356,142	1.34
0.8	1,139,593	1.45
0.9	996,820	1.54
1	933,192	1.58
1.1	873,281	1.61
1.2	836,200	1.63
1.3	749,549	1.68
1.4	645,777	1.73
1.5	515,139	1.8
1.6	347,481	1.92
1.7	239,122	2.04
1.8	178,068	2.14
1.9	143,244	2.21
2	121,227	2.26
2.1	91,315	2.32
2.2	61,292	2.41
2.3	43,507	2.47
2.4	22,051	2.59
2.5	11,587	2.73

Table 3 – Cut-Off Grade Mineable Resource Estimate				
Production rate (tpm)	**10,000**	**14,500**	**20,000**	**25,000**
V_20_5 price (US$/t)	17380	17380	17380	17380
Mining cost (US$/t mined)	48	44	41	40
Processing cost (US$/t milled)	76.12	66.12	60.02	56.80
Total operating cost (US$/t milled)	124	110	101	97
Recovered breakeven %	0.7%	0.6%	0.6%	0.6%
Plant recovery	61.6%	61.6%	61.6%	61.6%
RoM breakeven	1.2%	1.0%	0.9%	0.9%
Mining dilution	10%	10%	10%	10%
In-situ breakeven (EqV%)	1.3%	1.1%	1.0%	1.0%
Mineable resource (tonnes)	749,549	873,281	933,192	933,192
Mineable resource (grade)	1.68	1.61	1.58	1.58
Mining inventory (tonnes)	620,998	723,509	773,145	773,145
Mining Inventory (grade)	1.56	1.49	1.46	1.46

Appendix 2
JORC 2012 Edition - Section 1 Sampling Techniques and Data

No further exploration results reported. The Mineral Resource that forms the basis of the Mining Study was reported by Golden Deeps Ltd in the ASX release dated 31 January 2019 with accompanying JORC Table Section 1.

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.*	• The mining Study was 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 both expire on 6th July 2022. • There are no material issues or environmental constraints known to Golden Deeps 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 in 2019[1]
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 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.

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.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length,*	• 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 mineralisation as shown on Figure 2, a cross section through the Abenab ore-body.

	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.*	• Figure 1 shows the location of the Abenab deposit with regional geology and tenement locations. • Figure 2 is a representative cross section through the Abenab deposit.
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. • Figure 2 shows the area of possible extensions to the Abenab mineralisation at depth that may be targeted with further diamond drilling.