Golden Deeps CEO, Jon Dugdale, Presentation at the Society of Economic Geology (SEG) 2024, Sustainable Mineral Exploration and Development, International Conference, Windhoek, Namibia

Nosib Polymetallic Mineral Deposit, Otavi Mountain Land, Namibia – New Deposit Type or Variation on a Theme?

Golden Deeps Limited (**"Golden Deeps"** or **"the Company"**) is pleased to present Golden Deeps CEO, Jon Dugdale's Presentation to the Society of Economic Geology (SEG) 2024, Sustainable Mineral Exploration and Development, International Conference, in Windhoek, Namibia on 30 September 2024.

The presentation follows below.

GOLDEN DEEPS LIMITED

Huab Energy Pty Ltd

SEG 2024: New Discoveries and Developments II, 30th September 2024

Nosib Polymetallic Mineral Deposit, Otavi Mountain Land, Namibia – New Deposit Type or Variation on a Theme?

Authors: *Mr Jonathon (Jon) Dugdale; Dr Allison Dugdale, Mr Elvis Akawa*

Disclaimer and Declarations

Overview

This presentation has been prepared by Golden Deeps Ltd (GED) CEO, Jon Dugdale, and is a Presentation at the Society of Economic Geology (SEG) 2024, Sustainable Mineral Exploration and Development, International Conference, Windhoek, Namibia titled Nosib Polymetallic Mineral Deposit, Otavi Mountain Land, Namibia – New Deposit Type or Variation on a Theme? The presentation references the Company's exploration and development activities, with particular reference to the exploration programs in Namibia at the Nosib Prospect.

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Competent Person Declaration

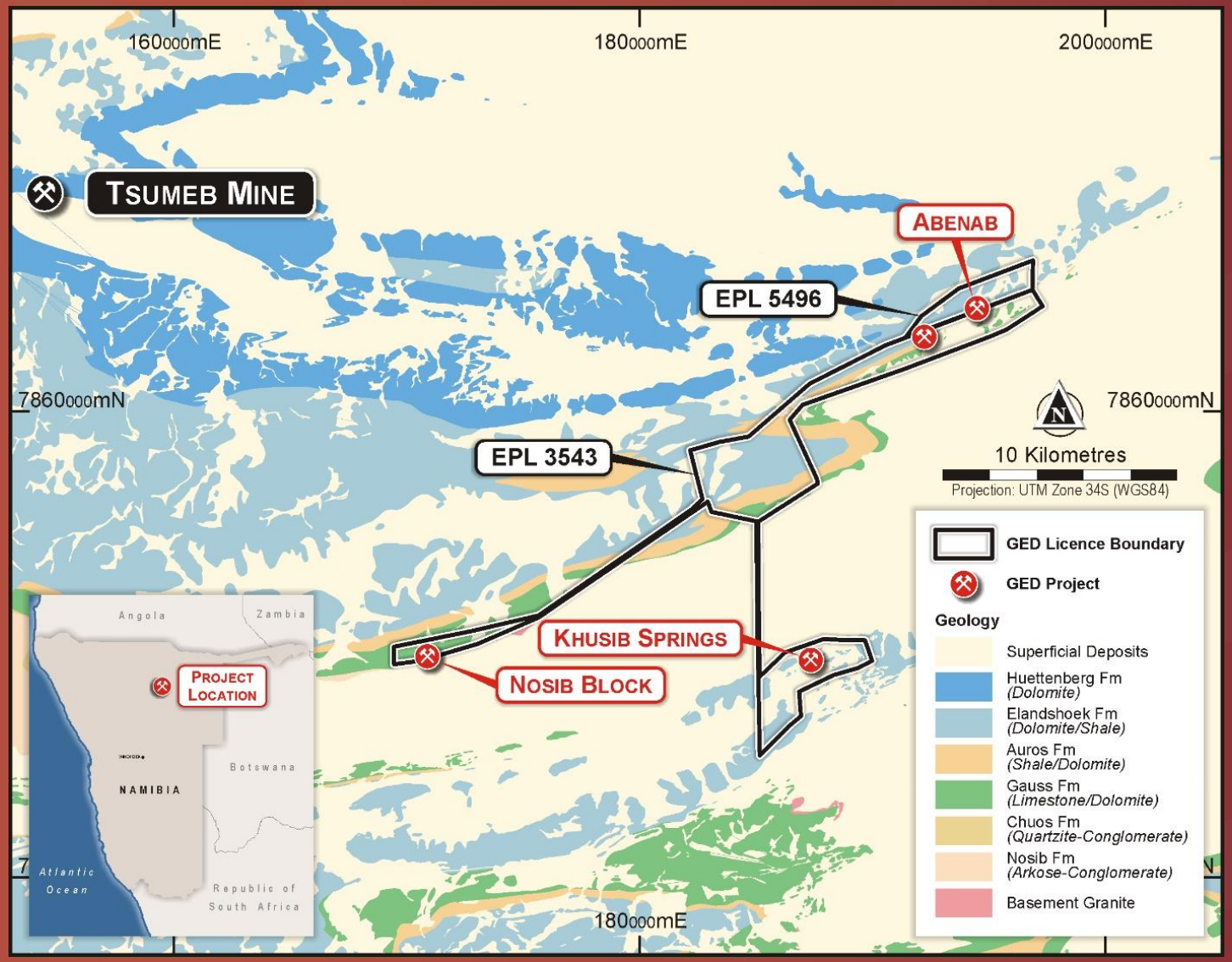
The information in this report that relates to exploration results has been reviewed, compiled and fairly represented by Mr Jonathon Dugdale. Mr Dugdale is the CEO and a consultant to Golden Deeps Limited and a Fellow of the Australian Institute of Mining and Metallurgy (FAusIMM). Mr Dugdale has sufficient experience, including over 36 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 presentation of the matters based on this information in the form and context in which it appears.

Resource Estimate

Reference to Mineral Resource estimates in this presentation which were released by Golden Deeps Ltd to the ASX on 25 June 2024: "New Mineral Resources for Otavi V-Cu-Pb-Zn-Ag Deposits". Mr Jon Dugdale, a consultant to GED and who is a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM), has reviewed the information provided in this presentation and considers that it is an accurate representation of the data and studies for the Abenab Project. Mr Dugdale has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

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

Nosib Polymetallic Mineral Deposit – Location and Regional Geological Setting



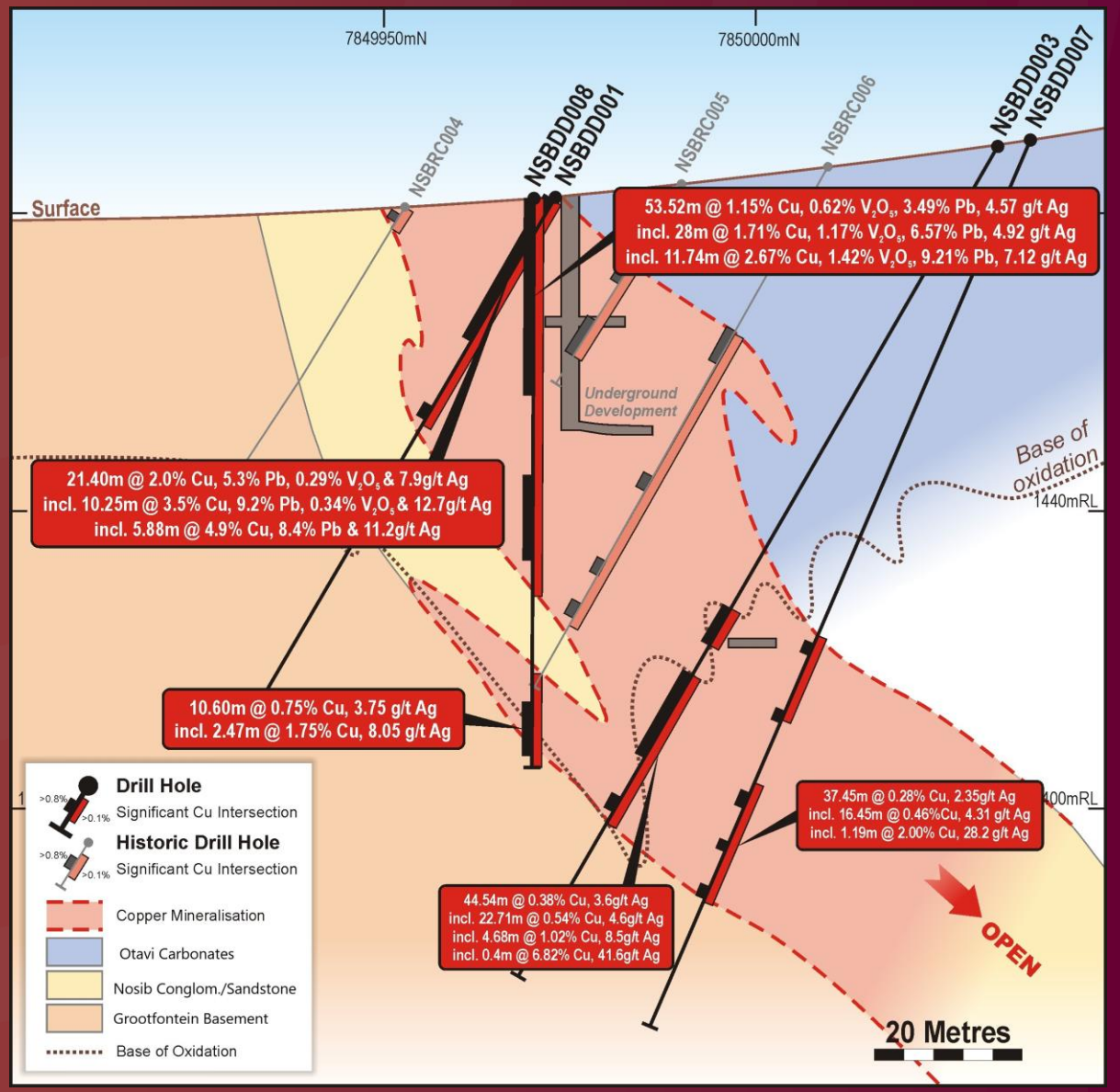
Golden Deeps/Huab Energy – OML licences with location of Nosib, Abenab & Khusib Springs deposits, and Tsumeb

- Nosib (Block) deposit is located in the Otavi Mountain Land (OML) of Northern Namibia and was drill-discovered by Golden Deeps Ltd subsidiary Huab Energy Pty Ltd
- The OML is host to a number of major critical metals deposits including the world-class Tsumeb Deposit which produced over *30 Mt @ 4.3% Cu, 10% Pb, 3.5% Zn, 95 g/t Ag*[1]
- The sulphide deposits of the OML are sediment-hosted within stratigraphic units of the Neoproterozoic Damara Supergroup, including the basal Nosib Group, the middle Otavi Group (carbonates) and the uppermost Mulden Group[2].
- **The majority of deposits, including Tsumeb, are hosted by carbonate units in the Otavi Group**. The Tsumeb sulphide orebody is hosted by a collapse breccia which transgresses the carbonate stratigraphy and is considered related to high-temperature basinal brines and extensional fault structures[3].
- **By contrast, Nosib (sulphide) deposit occurs within the basal Nosib Group, and is stratiform and hosted by conglomerate and feldspathic quartzite**.
- This presentation of petrographic and microgeochemical analysis, shows the nature and relative timing of the Nosib mineralisation – a new deposit type? or variation on a theme?

[1] *Tsumeb, Namibia. PorterGeo Database: www.portergeo.com.au/database/mineinfo.asp?mineid=mn290*
[2] *Kamona, A.F. & Gunzal, A., 2007. Stratigraphy and Base Metal Mineralisation in the OML, Nth Namibia – a review and regional interpretation*
[3] *Priano and Joubert, 1993. An overview of carbonate-hosted mineral deposits in the Otavi Mountain Land, Namibia: Implications for ore genesis*

Nosib Polymetallic Mineral Deposit – Deposit Description

- The Nosib discovery is a stratiform polymetallic deposit hosted by conglomerate/diamictite and feldspathic sandstone of the Nosib Group, the basal unit of the Damara Supergroup.
- The drill-defined Nosib deposit includes a supergene-vanadate oxide zone of vanadium-copper-lead-zinc-mineralization, which has overprinted primary stratiform copper-silver sulphide mineralisation.
- The deposit has been drilled over a strike-length of 250m and to a depth of 100m below surface. The upper part of the deposit is overprinted by vanadate-oxide mineralization, which transitions to stratiform sulphide mineralisation zone at approximately 60m to 80m below surface.
- The sulphide zone is open at depth and to the west, down plunge, where intersections such as NSBDD0017[4]: 44.22m @ 0.6% CuEq* (0.50% Cu, 3.2 g/t Ag) included a massive sulphide zone of 0.49m @ 10.3% Cu, 56.9 g/t Ag, which is increasing in grade and open to the west/at depth.
- The stratiform sulphide mineralisation comprises chalcopyrite, chalcocite, bornite and tennantite. Sulphide morphology includes disseminated to matrix, as well as semi-massive sulphide patches which are both conformable and cross-cutting bedding.
- Samples from NSBDD003 & NSBDD0017 were selected for petrography and micro-geochemical analysis to determine sulphide paragenesis.



[4] *Golden Deeps Ltd ASX 12 December 2023: New Results up to 10.3% Copper Triple Extent of Nosib Deposit.*

Nosib Polymetallic Mineral Deposit – Petrographic/Mineralogical Study

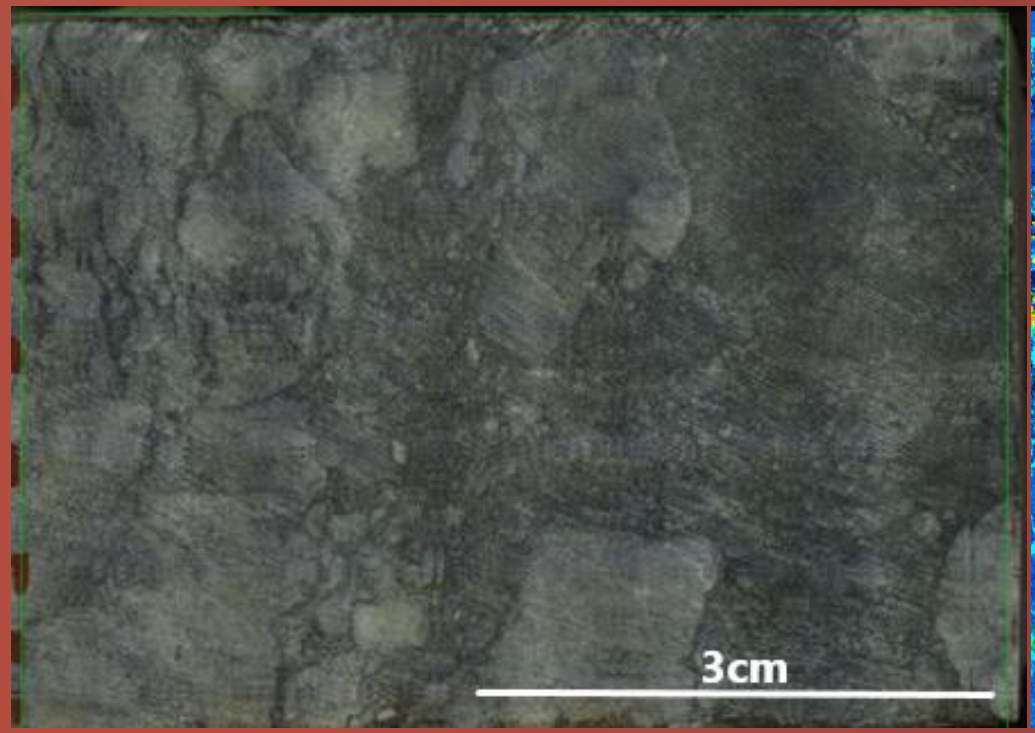
- A mineralogical and microgeochmical study was conducted on five half-core diamond drilling samples from the Nosib Cu-Pb-V-Ag deposit. The aim was to determine the bulk mineralogical composition and the distribution of sulphides and elements, and to determine the paragenesis of the sulphide mineralisation.
- Mintek, in Randburg, South Africa, carried out micro-X-ray fluorescence (micro-XRF) to investigate the distribution of mineralisation (incl. Cu, Pb, V, Ag) and other elements. Areas of interest were further investigated using Scanning Electron Microscopy (SEM), X-ray diffraction, and chemical assays *(Golden Deeps, SEM, Chemistry and QXRD Report Final, Mintek, September 2024).*
- Samples taken from selected drillholes through the deposit are tabulated below, with drill-core interval assays:

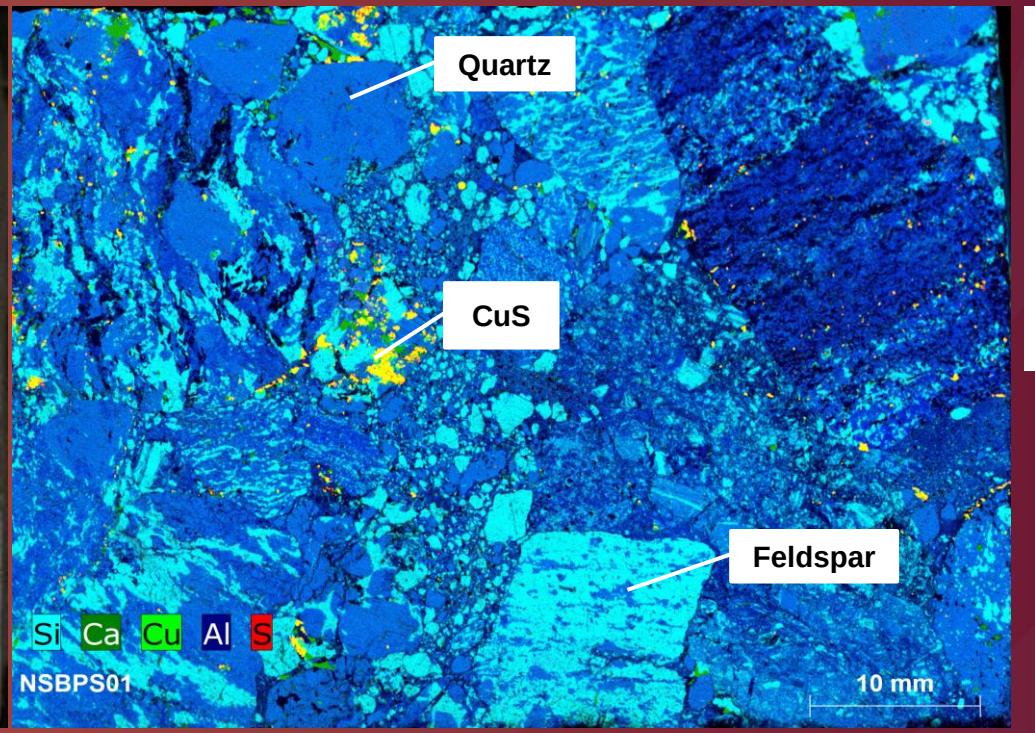
Sample No.	Hole_id	m_From	m_To	Comment	Cu%	Pb%	V%	Ag g/t
NSBPS01	NSBDD003	72.92	72.98	Coarse conglomerate/diamictite with fine disseminated sulphides	0.423	0.0124	0.0057	4.63
NSBPS02	NSBDD003	83.05	83.11	Medium to coarse-grained sandstone with disseminated sulphides	0.606	0.0023	0.0056	4.01
NSBPS03	NSBDD003	92.28	92.33	Fine chloritic sandstone with finely disseminated copper sulphides	0.263	0.0015	0.0021	2.97
NSBPS08	NSBDD017	64.98	65.03	Strong copper mineralisation associated with veining	10.341	0.0079	0.0016	56.93
NSBPS09	NSBDD017	72.02	72.07	Feldspathic quartzite with disseminated Cu-sulphides and malachite	0.206	0.0004	0.0005	1.89
NSBPS10	NSBDD020	43.73	43.78	Shear with malachite parallel to foliation	3.789	0.0020	0.0034	32.26

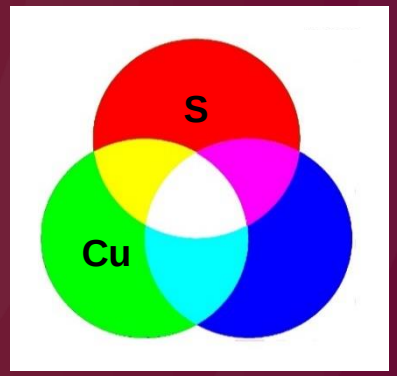
NSBDD003	72.90	73.10	Coarse diamictite with fine disseminated sulphides

[4] *Golden Deeps Ltd ASX 12 December 2023: New Results up to 10.3% Copper Triple Extent of Nosib Deposit.*

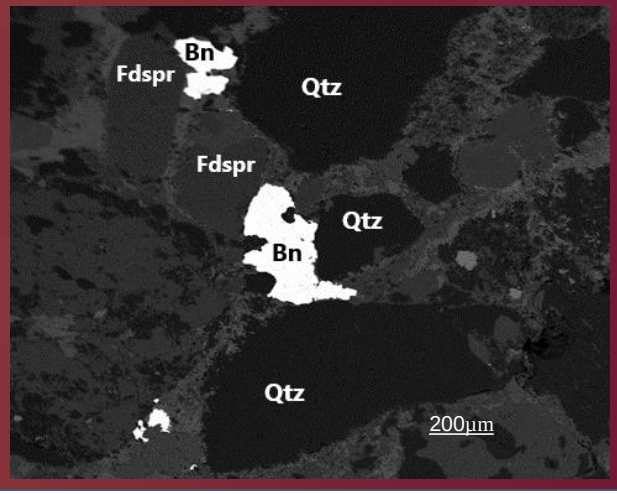
Nosib Polymetallic Mineral Deposit – NSBP01 (NSBDD003 72.92 to 72.98m)



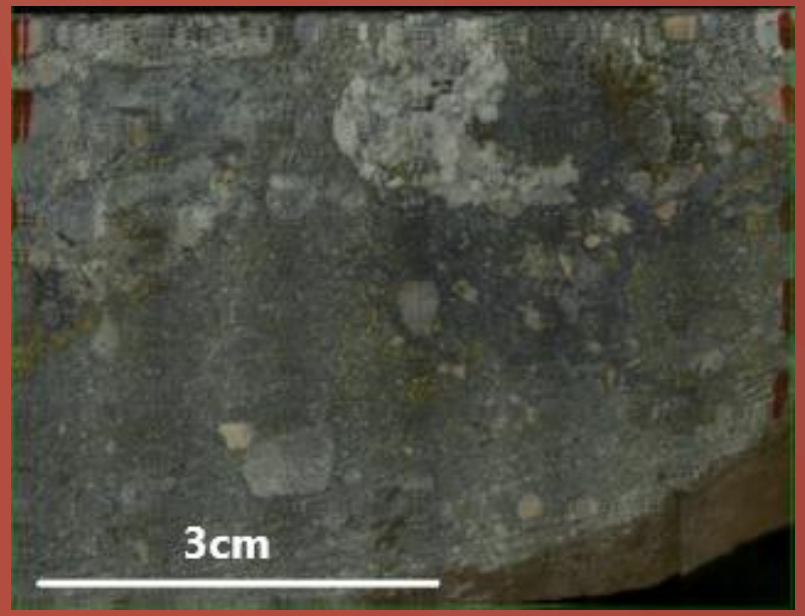


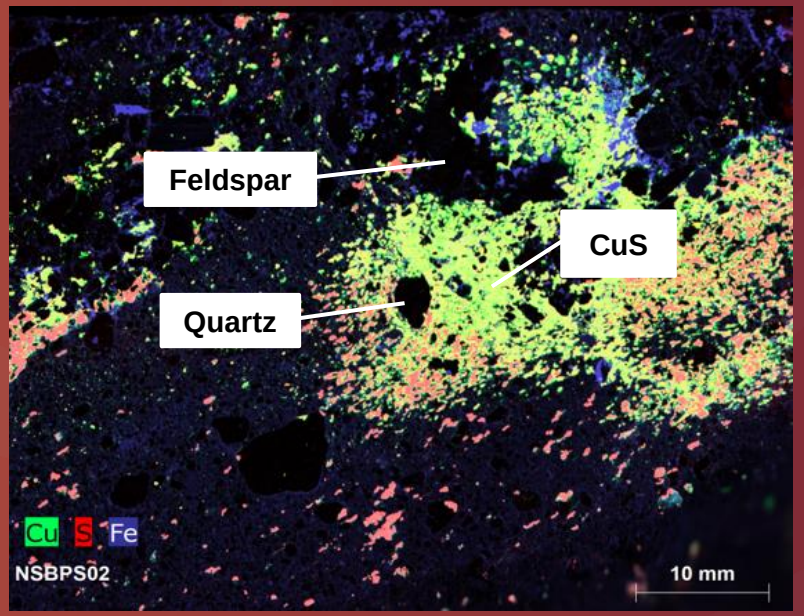


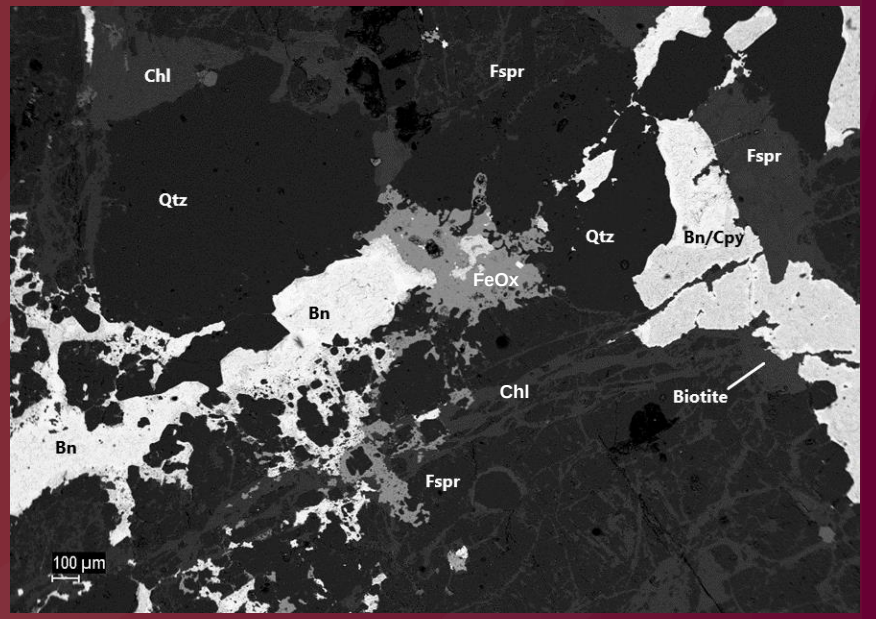
- NSBDD003, 72.95m – coarse, poorly sorted feldspar-quartz conglomerate, drill-core image and micro-XRF scan.
- Micro-XRF scan shows semi-rounded quartz, feldspar and lithic fragments in a matrix of angular fragments (including carbonate) and some oxide (e.g. ilmenite) grains and mica.
- Copper sulphides have been deposited along grain boundaries, in fractures and across an apparent fabric (cleavage?).
- SEM scan shows bornite has overgrown quartz and feldspar grains (see image ➔).



Nosib Polymetallic Mineral Deposit – NSBP02 (NSBDD003 83.05 to 83.11m)

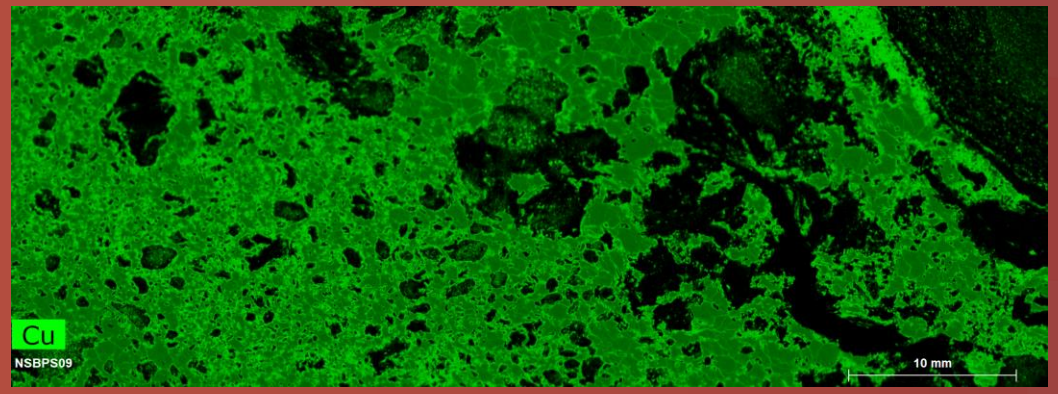


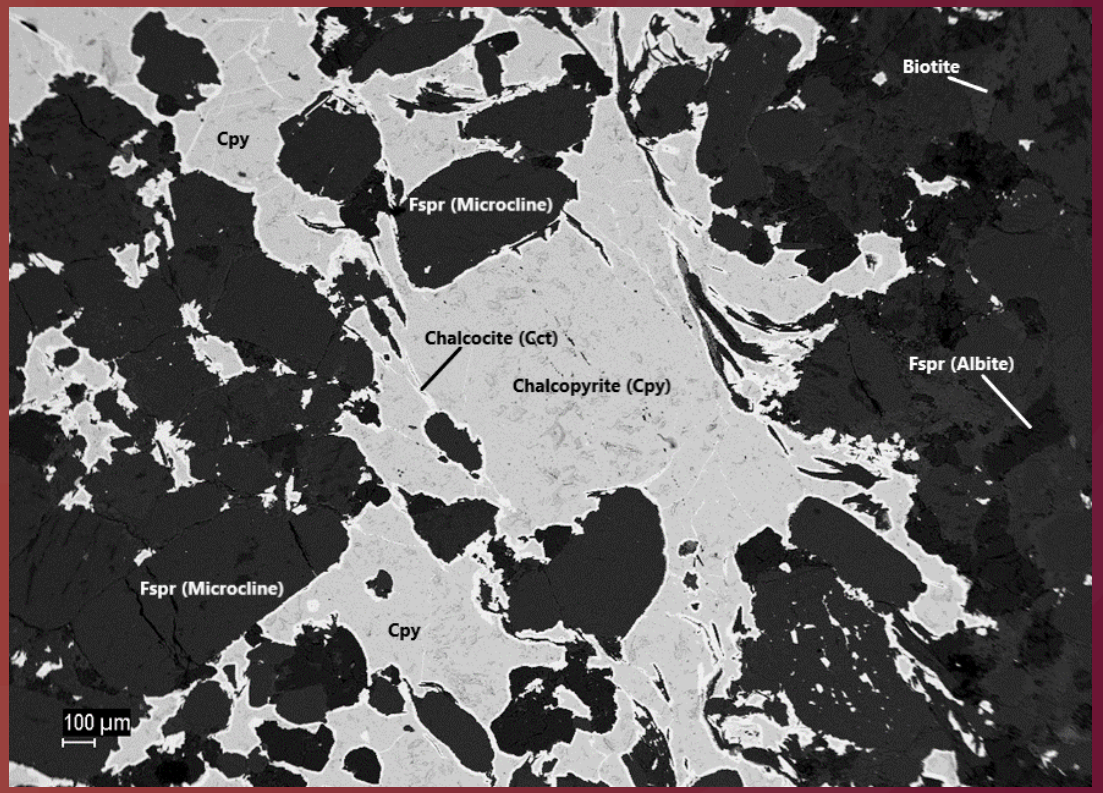




- NSBDD003, 73.1m – coarse, poorly sorted feldspar-quartz conglomerate / diamictite image, micro-XRF scan and SEM image.
- Micro-XRF scan shows semi-rounded quartz, feldspar and lithic fragments in finer grained matrix of quartz, feldspar and some oxide grains (ilmentite, titanite) and mica (see biotite on SEM image).
- Textures show copper sulphide patches have overgrown detrital grains and replaced the matrix – also following cleavage in micro-XRF scan.
- SEM scan shows that the bornite and chalcopyrite have overgrown quartz and feldspar grains, deposited in fractures and transect cleavage.
- The SEM scan also shows secondary chlorite and biotite (alteration?) along grain boundaries and in cleavage – overprinted by copper sulphides.

Nosib Polymetallic Mineral Deposit – NSBP08 (NSBDD017 64.98 to 65.03m)





- NSBDD017 – Feldspathic conglomerate / diamictite 65m
- Micro-XRF scan shows matrix to semi-massive copper-sulphide mineralisation which has replaced the matrix and enclosed lithic fragments and grains.
- No significant deformation of grains or sulphides indicates no sulphide re-mobilisation.

- SEM scan above shows:
  - chalcopyrite (rimmed by chalcocite) which has enclosed feldspar grains (microcline and albite)
  - sulphides on intergranular and large grain boundaries, and,
  - sulphides in cleavage and in fractures in feldspar grains.

Nosib Polymetallic Mineral Deposit – Conclusions re Sulphide Paragenesis

- The Nosib sulphide deposit differs from OML carbonate hosted sulphide deposits. Collapse breccias are absent and sulphides are stratabound and display disseminated to semi-massive / matrix hosted sulphide morphology within the host conglomerate / feldspathic sandstone.

- Kamona and Gunzel (2006)[2] interpret the copper mineralisation at the Nosib deposit to be syngentic, and that it may be related to volcanic processes of ore formation during early rifting events.

- Micro-XRF scans and SEM on drillcore through the Nosib sulphide mineralisation shows that disseminated, matrix and massive sulphide mineralisation occurs along grain boundaries, in cleavage and in fractures in the conglomerate/feldspathic sandstone.

- **SEM scans show clear replacement textures and sulphides which are euhedral, undeformed and enclose rounded feldspar and quartz grains and lithic fragments. Sulphides also cross-cut cleavage defined by biotite/chlorite.**

- Key conclusions from these observations are:
  - **The host conglomerate/diamictite - feldspathic sandstone has been mineralised post deformation and cleavage development.**
  - **Copper-sulphides have been deposited by hydrothermal fluids** which have utilised cleavage induced porosity and intergrain boundaries.
  - **The sulphide mineralisation at Nosib deposit is late-tectonic and hydrothermal in origin** - a similar genetic model to Tsumeb and Khusib Springs[5] (late-tectonic hot, saline hydrothermal fluids), but hosted by a different, non-carbonate, (conglomerate/diamictite) host rock.

- *Similarities exist with the Neoproterozoic, stratiform, diamictite hosted Kamoa-Kakula giant copper deposits of the CACB (Ivanhoe Mines)[6]*

- **Nosib sulphide deposit is thus a variation on a theme *and* a new deposit setting - under-explored in the Otavi region.**

[5] *Melcher, F. E., Oberthur, T., & Rammlmair, D., 2005. Geochemical and mineralogical distribution of germanium in the Khusib Springs Cu-Zn-Pb-Ag sulphide deposit, Otavi Mountain Land, Namibia.*
[6] *Orewin Independent Mining Consultants, March 2020, Kamora-Kakula Project 2020 Resource Update*

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