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# Results from Seismic Surveying Identify Potential New Calderas within the Bowdens District

## HIGHLIGHTS

- **Exploration of the Bowdens district has been significantly enhanced with the completion of a major seismic surveying program.**
- **Interpretation of the 2D seismic survey has highlighted multiple new caldera structures within the Rylstone Volcanics, analogous to that which hosts the 396Moz AgEq[1] Bowdens Silver deposit.**
- **Exploration activities will now focus on the five separate calderas modelled – three within the Bowdens Caldera[2] (Bowdens Volcanic Complex), and two calderas within the Coomber Volcanic Complex (including the Coomber Prospect and to the north of Rylstone):**
    1. Bara Creek caldera is 4km by 4km and appears preserved by silicification. CRA Exploration identified a gold-copper-silver association in stream sediment samples in 1989. **Only limited historical exploration work has been completed.**
    2. Three Hills caldera is 3.5km by 3.5km and completely covered by Sydney Basin sediments. **No exploration work has been completed historically**.
    3. Coomber caldera is 3.3km by 3.3km and has silver-zinc-lead-gold mineralisation discovered by CRA Exploration in 1991. **Coomber has significant resource potential.**
    4. Armentum caldera roughly 5.6km by 4.1km and predominantly covered by Sydney Basin sediments. **No exploration work has been completed historically**.
- **The regional model is driven by multiple high-quality data sources and industry collaborations with the Mineral Systems team at NSW Mining, Exploration & Geoscience (MEG) and research through the University of NSW, to characterise mineral system and exploration vectors to the Bowdens Silver Deposit.**

[1] Bowdens' reported silver equivalent is consistent with previous reports and current resource modelling based on assumptions, calculated from prices of US$20/oz silver, US$1.50/lb zinc, US$1.00/lb lead, US$1600/oz gold and metallurgical recoveries of 85% silver + gold, 82% zinc and 83% lead estimated from test work commissioned by Silver Mines Limited. Silver equivalency updated to also include significant gold and copper credit assuming the same recovery as silver, with gold:silver price ratio of 80:1 based on the approximate price ratio: Ag Eq (g/t) = Ag (g/t) + 33.48*Pb (%) + 49.61*Zn (%) + 80*Au(g/t) + 113.08*Cu%.

[2] Silver Mines Limited (ASX:SVL) release "Seismic Survey Highlights Significant New Drill Targets" dated 15 August 2022.

## Introduction

Silver Mines Limited (ASX:SVL) ("Silver Mines" or "the Company") is pleased to announce an update on regional geology modelling with interpretation of the major 2D seismic survey completed in September 2023[3].

The seismic survey totalled nearly 96 kilometres and covered numerous areas prospective for both Bowdens Silver Deposit ("the Deposit") epithermal systems and for porphyry related systems ("Barabolar Project") (Figure 1). The Company already has extensive and high-quality exploration datasets in the area (such as magnetics, gravity, VTEM, geological mapping and Digital Elevation Models) which have been reviewed to build regional geology models for exploration targeting purposes. Two major volcanic complexes are clear and modelled – the Bowdens Volcanic Complex and the Coomber Volcanic Complex.


*Figure 1: Seismic survey lines on regional geology and prospects*.

[3] Silver Mines Limited (ASX:SVL) release "Regional Exploration and Drilling at Bowdens Silver Project" dated 29 September 2023.

During the December 2022 quarter, Bowdens Silver was awarded exploration funding of $150,000 for exploration at the Bowdens Silver Project, under the New South Wales Government New Frontiers Exploration Program. The New Frontiers Exploration Program funding is part of the NSW Government's Critical Minerals and High-Tech Metals Strategy to promote mineral exploration investment in NSW.

A total of $50,000 was awarded for the seismic survey to be completed throughout the Bowdens Caldera structure. The seismic survey was also conducted as part of the Company's on-going research and development (R&D) project. This R&D project is focused on integrating bulk-properties from geophysics (such as seismic data) along with geochemistry and metallurgical work to develop machine-learning assisted predictions of geometallurgy relevant to both in-deposit (Bowdens) and regionally.

The survey was completed under approval by the NSW Resources Regulator.

**Bowdens Volcanic Complex**

The Bowdens Volcanic Complex (Figure 2) is predominantly covered by Sydney Basin sediments but is well understood along its southern extents, where the Deposit is situated. Geological modelling by the Company suggests that the Bowdens Volcanic Complex contains no less than three separate and preserved calderas, with significant prospectivity for epithermal system discovery.

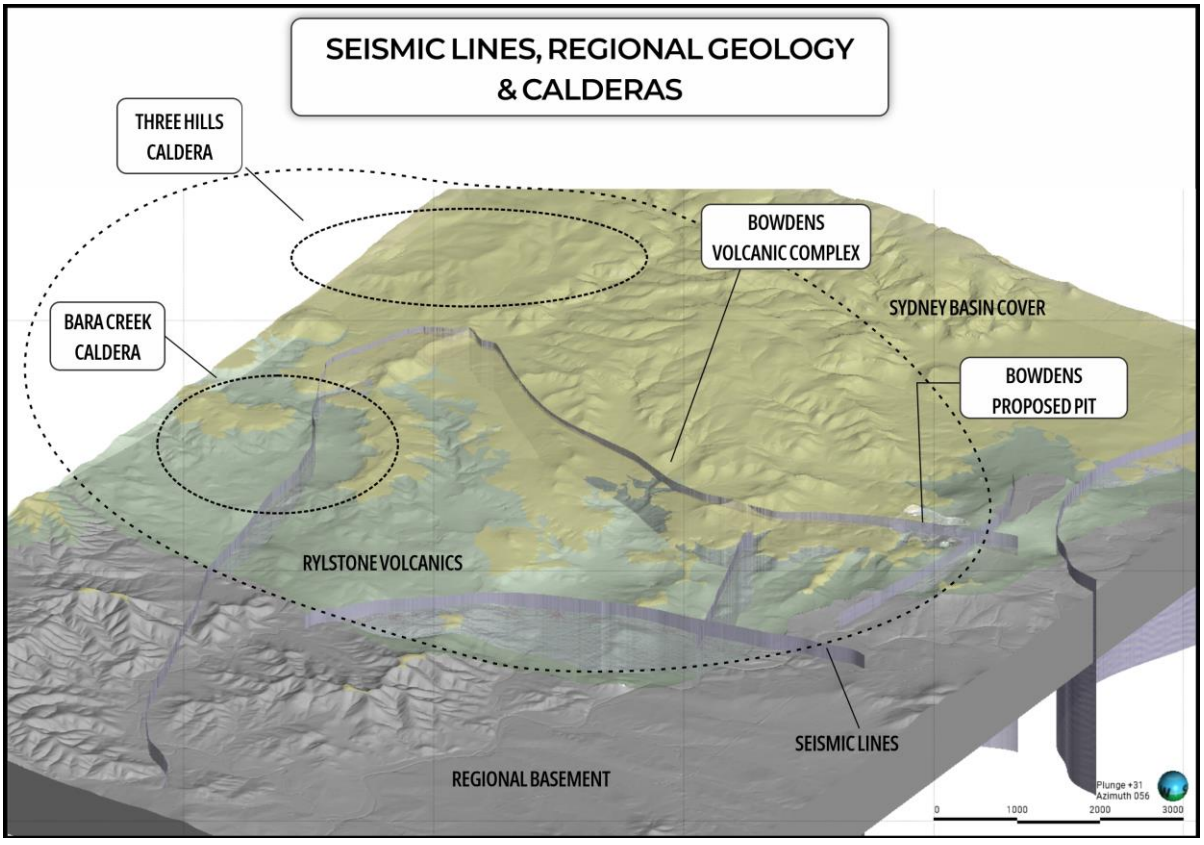


*Figure 2: View looking northeast across the Bowdens Volcanic Complex showing geology model and seismic lines.*

**Bara Creek Caldera**

The Bara Creek caldera is interpreted to have dimensions of 4 kilometres by 4 kilometres and appears to be preserved by silicification. The Prospect was initially identified by CRA Exploration in 1989 during regional stream sediment sampling of Rylstone Volcanics situated beneath coal bearing sedimentary basins (Sydney Basin). Results from this program discovered the Bowdens Silver Deposit (silver-lead-zinc and gold), while identifying the Bara Creek Prospect (gold-copper-silver and antimony, Figure 3). Limited follow up to Bara Creek suggested the area to be highly altered and veined Rylstone Volcanics, without finding a source to the anomalous stream sediment results.

Interpretation of the seismic data shows the continuation through the Bara Creek caldera of many important structures that control mineralisation at the Deposit. Initial limited geological mapping of these faults by the Company has discovered pyrite (iron sulphide) and gossanous selvages (oxidised sulphides) within quartz veins and hydrothermal breccias. The Company is awaiting assays for initial rock and soil samples to determine the geochemistry and prospectivity of the identified veins and breccias.

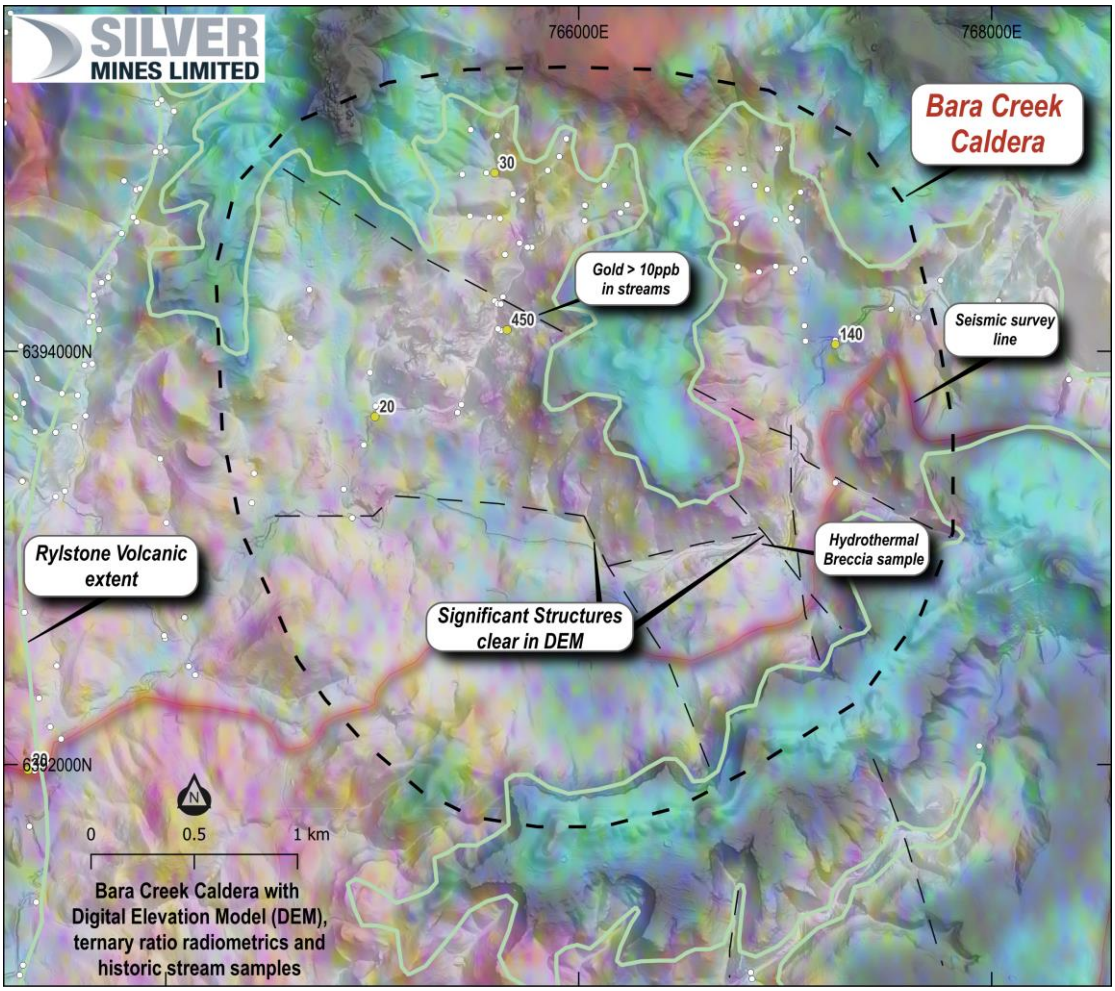


*Figure 3: Bara Creek caldera with historic stream sediment samples collected by CRA Exploration.*

## Three Hills Caldera

The Three Hills caldera is estimated to be 3.5 kilometres by 3.5 kilometres and is completely covered by Sydney Basin sediments. The caldera was not crossed by a seismic line, however multiple other datasets provide evidence for this caldera (magnetics, gravity, VTEM and DEM). The caldera is rimmed by the emplacement of younger (Mesozoic aged) intrusions that have clear magnetic responses (Figure 4) and have exposed existing large faults.

The Three Hills caldera is the most preserved structure identified from the geology model and is covered by at least 60 metres of Sydney basin sediments (data obtained from historic water bores and NSW Government coal drill holes within the area[4]).

No exploration work has been completed historically over this structure.

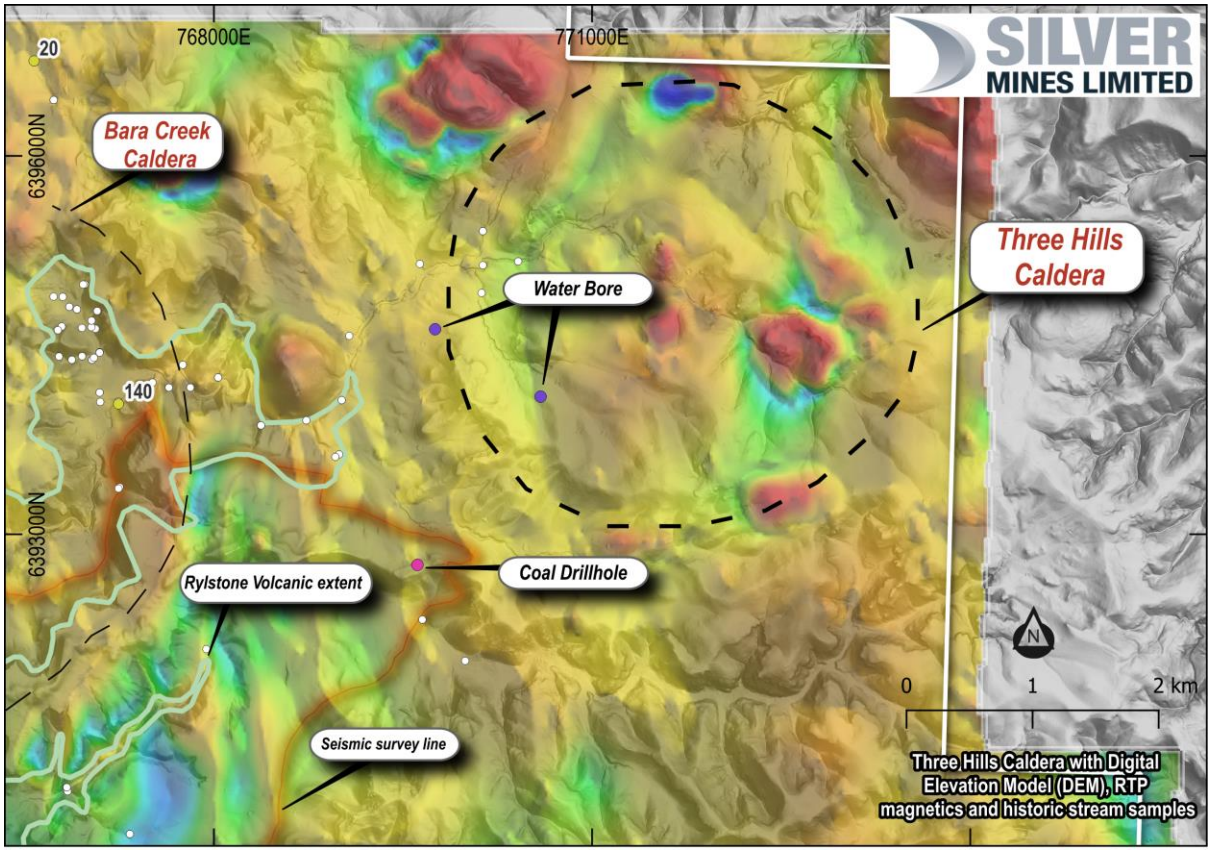


*Figure 4: Three Hills Caldera with reduced to pole (RTP) magnetics and DEM.*

[4] NSW DIGS Database – Report number: R00056142 "JDP Ulan, Gulgong area" dated 1975.

## Coomber Volcanic Complex

The Coomber Volcanic Complex (Figure 55) is approximately 22 kilometres southeast of the Bowdens Volcanic Complex and hosts the Coomber Prospect caldera. Interpretation of seismic data suggests that the extent of Rylstone Volcanics is significant with the majority of this being covered by variable thickness Sydney Basin, particularly across the Armentum Caldera. Mineralisation was discovered at the Coomber Prospect by CRA Exploration in 1992 and there has been no historic or modern exploration across the Armentum Caldera.

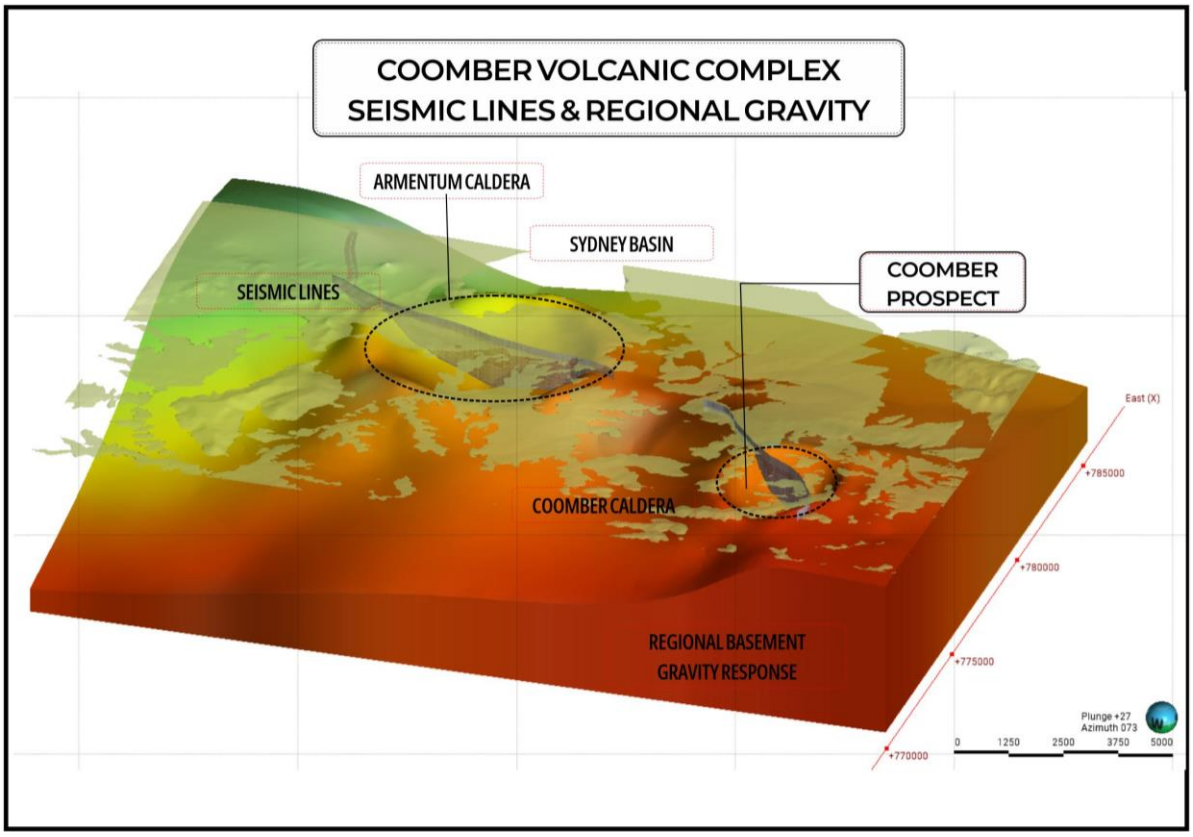


*Figure 5: View looking northeast across the Coomber Volcanic Complex and the separate Coomber and Armentum calderas.*

### Coomber Caldera

The Coomber Prospect is situated on the northwest rim of the Coomber Caldera and was discovered by CRA Exploration shortly after the discovery of the Bowdens Silver Deposit. The Coomber Caldera is interpreted to be 3.3 kilometres by 3.3 kilometres and hosts silver-zinc-lead-gold mineralisation within stringer veins and disseminations around the contact of Rylstone Volcanics with older basement rocks. The prospect has not received any modern exploration (except geological mapping) since 1997.

The Coomber Caldera is highly distinctive in seismic data (Figure 6) - which suggests a caldera with relatively steep rims of high velocity material. This could be related to extensive hydrothermal silica alteration post caldera formation. Significant faulting occurs both within and around the Coomber Caldera, which should provide further appropriate sites for deposition of sulphides and metals.

**Armentum Caldera**

The newly interpreted Armentum Caldera is to the north of the Coomber Caldera, and the largest individual caldera structure identified during modelling. It measures roughly 5.6 kilometres by 4.1 kilometres and is significantly covered by Sydney Basin sediments. Like the Three Hills Caldera, the Armentum Caldera may be rimmed by younger (Mesozoic aged) intrusions that expose large faults. The Armentum Caldera appears well defined in seismic data to have shallow edges and a more consistent depth throughout. Likewise, Sydney Basin sediment coverage appears to thin, perhaps only tens of metres, although it thickens to the north (Figure 7).

There has not been any modern or historic exploration work completed across the Armentum Caldera.

## Mineral system study collaboration with NSW Geological Survey

To characterise the Bowdens Silver Deposit mineral system, and to refine exploration vectors in the Rylstone volcanics, the Company is collaborating with the Minerals System team within the NSW Mining, Exploration and Geoscience (MEG), by submitting 6,000 metres of existing diamond drill core for technical analysis. This work is being funded by an NCRIS (National Collaborative Research Infrastructure Strategy) grant in collaboration with CSIRO and will involve Hylogger scanning of diamond drill core from within and surrounding the Bowdens Silver Deposit. This work will help to characterise mineral deposit system dynamics and distal indications of alteration and mineralisation.

Technical findings will be directly applied to prospective targets to assist with prioritising drilling around the modelled calderas that have been identified within the Bowdens district. It is anticipated that an interim hyperspectral report will be completed by end of 2024, with analytical results and interpretations to be released via Geological Survey of NSW (GSNSW) report in 2025.

## Exploration Program

The Company is currently working to expand land access to the various caldera targets identified with the aim of defining drill targets in the high-priority areas through further mapping and geochemical programs. The Company has recently completed diamond drilling activities at the Bowdens Silver Project results of which were released to the market on 18 June 2024.

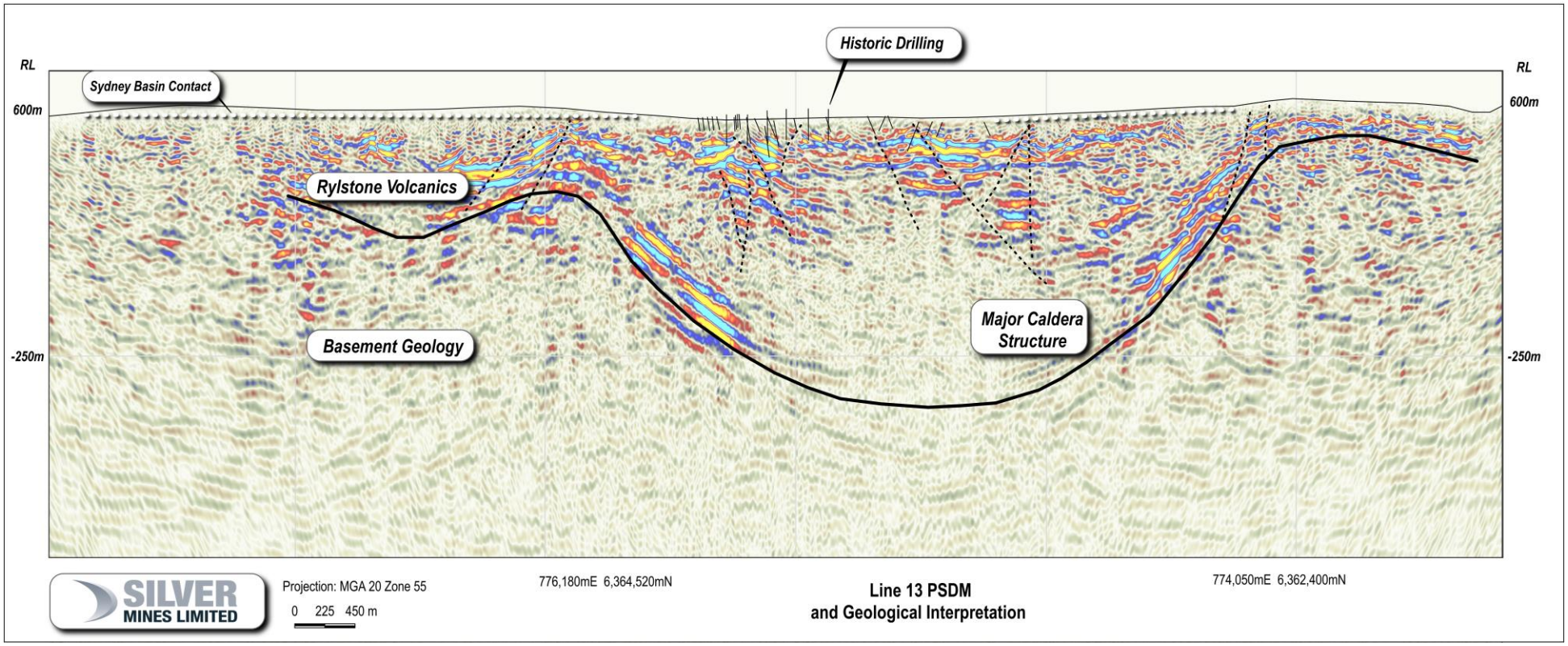


*Figure 6: Seismic Line 13 highlighting the Coomber Caldera and the location of historic drilling.*

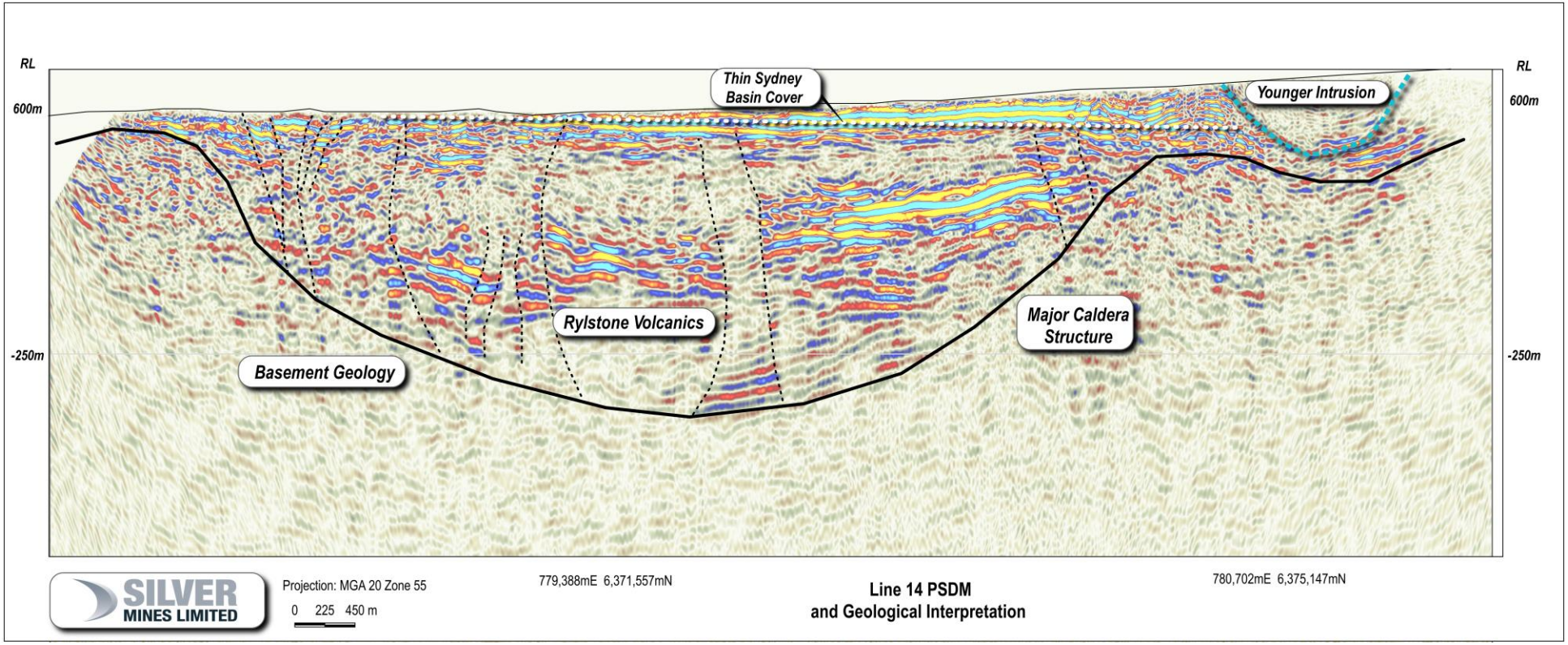


*Figure 7: Seismic Line 14 highlighting the Armentum Caldera covered by a thin veneer of Sydney Basin sediments.*

## About the Bowdens Silver Project

The Bowdens Silver Project is located in central New South Wales, approximately 26 kilometres east of Mudgee (Figure 8). The consolidated project area comprises 2,115 km$^2$ (521,000 acres) of titles covering approximately 80 kilometres of strike of the highly mineralised Rylstone Volcanics. Multiple target styles and mineral occurrences have potential throughout the district including analogues to Bowdens Silver, high-grade silver-lead-zinc epithermal and volcanogenic massive sulphide (VMS) systems and copper-gold targets.

Bowdens Silver is the largest undeveloped silver deposit in Australia with substantial resources and a considerable body of high-quality technical work completed. The projects boast outstanding logistics for mine development.

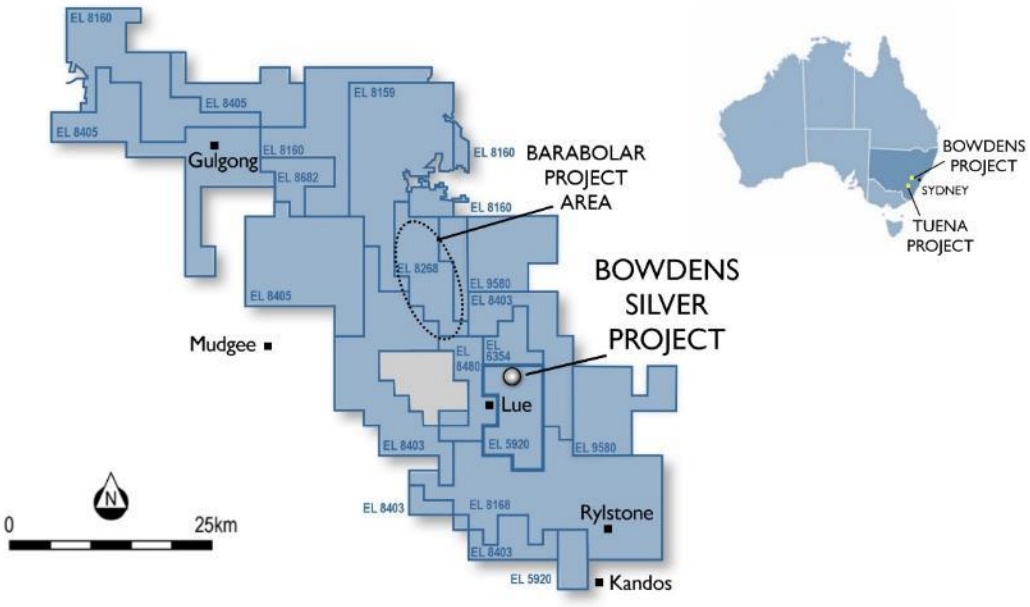


*Figure 8: Silver Mines Limited tenement holdings in the Mudgee district.*

This document has been authorised for release to the ASX by the Company's Managing Director, Mr Jonathan Battershill.

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## Competent Persons Statement

The information in this report that relates to mineral exploration from the Bowdens Silver Project is based on information compiled by the Bowdens Silver team and reviewed by Darren Holden who is an advisor to the Company. Dr Holden is a Fellow of the Australasian Institute of Mining and Metallurgy 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 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC code). Dr Holden consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

## 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 (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.* | • Stream sediment samples reported in this release are from historic data. These samples are understood to be taken from sediment traps and are sieved samples (not pan-concentrates).<br>• Rock chip samples are taken by a qualified geologist from surface outcrop for reconnaissance chemistry purposes. |
| ***Drilling techniques*** | • *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).* | • No drilling reported in this release. |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *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 drilling reported in this release. |
| ***Logging*** | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate* | • All rock samples are recorded for rock-type, mineralogy and alteration. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *Mineral Resource estimation, mining studies and metallurgical studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | |
| ***Sub-sampling techniques and sample preparation*** | • *If core, whether cut or sawn and whether quarter, half or all core were taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • No sub-sampling is undertaken in rock-chips. Rock chips are a guide for reconnaissance purpose only. |
| ***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.*<br>• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibration factors applied and their derivation, etc.*<br>• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | • The Company has sent rock samples for assay with results pending.<br>• Each rock chip will be assayed for multi-element analysis using ICP-AES technique (ME-MS61) with the entire sample pulverised and homogenised with a 25g extract taken for assay, as well as assay for gold using fire assay technique (Au-AA23) with a 30g sample taken for assay.<br>• Seismic data was collected by Oceania Geo Pty Ltd utilising a GPEG500: 500kg gravity-based weight drop energy source, with a drop height of 1 metre, and 1980 lightweight autonomous Stryde nimble nodal receivers. A total of 19,146 receiver points and 18,370 source points were acquired on a spacing of 5 metres along lines. Survey lines were acquired on roads, tracks and open farmland. Each line was rolled with a live split-spread of >500 nodes. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • No significant intersections reported. . |
| ***Location of data points*** | • *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • The rock samples and mapping position is initially surveyed using hand-held GPS with accuracy of +- 3 metres.<br>• The terrain includes steep hills and ridges with a digital elevation model derived from a combination of locally flown LIDAR and publicly available point cloud data.<br>• All samples recorded in MGA94 zone 55. |
| ***Data spacing and distribution*** | • *Data spacing for reporting of Exploration Results.*<br>• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*<br>• *Whether sample compositing has been applied.* | • Rock sampling is not sufficient to established continuity or grade. |
| ***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.*<br>• *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 mapping involves mapping of structure and location at relevant rock sample locations. This work is ongoing. |
| ***Sample security*** | • *The measures taken to ensure sample security.* | • All samples bagged on site under the supervision of the senior geologist with sample bags tied with cable ties before being driven by site personnel to the laboratory in Orange, NSW (~200 kilometres from the site). |
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | • The Competent Person regularly visits the project and reviews the sampling techniques and data. |

## 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.*<br>• *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 Bowdens Silver Resource is located wholly within Exploration Licence No 5920, held wholly by Silver Mines Limited and is located approximately 26 kilometres east of Mudgee, New South Wales.<br>• The tenement is in good standing.<br>• The project has a 2.0% Net Smelter Royalty which reduces to 1.0% after the payment of US$5 million over 100% of EL5920.<br>• The project has a 0.85% Gross Revenue Royalty over 100% of EL5920.<br>• Regional Exploration targets are located within Exploration Licence No's 6354, 8159, 8160, 8268, 8403, 8405, 8480, 8682 and 9580, which are a contiguous package surrounding the Bowdens Silver Project, 26 kilometres east of Mudgee, New South Wales.<br>• The Regional Exploration tenements are in good standing.<br>• The following royalties exist on Regional Exploration tenements:<br>  ○ 1.00% Gross Revenue Royalty over 85% of EL8405, 8160, 8159, 8168, 8268 and 6354; and<br>  ○ 1.00% Gross Revenue Royalty over 100% of EL6354, 8159, 8160, 8168, 8268, 8403, 8405, 8480 and 8682. |
| ***Exploration done by other parties*** | • *Acknowledgment and appraisal of exploration by other parties.* | • The Bowdens project was previously managed by Kingsgate Consolidated and Silver Standard Ltd and prior to that by CRA Ltd. This release includes reference to historic data from CRA, and particularly stream sediment data. |
| ***Geology*** | • *Deposit type, geological setting and style of mineralisation.* | • The Bowdens Deposit and environ are targeted for a low to intermediate sulphidation epithermal base-metal and silver system hosted in Carboniferous aged Volcanic rocks and Ordovician aged sediments and volcanics.<br>• Mineralisation includes veins, breccias and fracture fill veins within tuff and ignimbrite rocks, and semi massive veins, breccias and fracture fill in siltstone, shale and sandstone. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | • Mineralisation at Bowdens is overall shallowly dipping (~15 degrees to the north) with high-grade zones preferentially following a volcanic intrusion and major fault fracture zones. There are several vein orientations within the broader mineralised zones including some areas of stock-work veins.<br>• The mineralisation reported in this release is hosted in the Rylstone Volcanics. |
| ***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:*<br>  ○ *easting and northing of the drill hole collar;*<br>  ○ *elevation or RL (Reduced Level elevation above sea level in metres) of the drill hole collar;*<br>  ○ *dip and azimuth of the hole;*<br>  ○ *down hole length and interception depth; and*<br>  ○ *hole length.*<br>• *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 drilling reported in this release. |
| ***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.*<br>• *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.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • No assay results reported in this release. |
| ***Relationship between mineralisation widths and*** | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *If it is not known and only the down hole lengths are reported, there* | • No drilling reported in this release. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***intercept lengths*** | *should be a clear statement to this effect (e.g. '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 and 3D representations included in the body of this release. . |
| ***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.* | • The target areas are an early stage. |
| ***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 and potential deleterious or contaminating substances.* | • This report relates to regional reconnaissance and results from geophysical modelling. |
| ***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).*<br>• *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 regional reconnaissance, including soils and rock chips are required before establishing drill targeting. |