

SATELLITE IMAGERY ANALYSIS IDENTIFIES FURTHER POTENTIAL EXPLORATION TARGETS AT BAYAN SPRINGS PROJECTS IN NEVADA, USA

Highlights

- High-resolution satellite imagery analysis completed over Bayan Springs Projects in Nevada.
- VNIR/SWIR imagery analysis identified spectral signatures associated with stibnite, sulfur, and illite, highlighting areas of significant exploration potential.
- Gas anomaly analysis identified hydrogen (H₂) targets with strong spatial correlations to known mineral occurrences, reinforcing their value as practical tools for target identification and further supporting the exploration model.
- Main objective of the satellite imagery analysis was to remotely sense surface features relating to geology and mineralisation.
- Project areas are prospective for both carlin-type and carbonate-replacement style with silver, antimony, and gold mineralisation.
- Bayan is planning to commence fieldwork program that will include mapping and sampling of these and multiple high-priority exploration targets identified in the desktop study conducted by Dahrouge Geological Consulting USA Ltd, subject to contractor availability, snow clearance and favourable weather conditions.

Bayan Mining and Minerals Ltd (ASX: BMM; "BMM" or "the Company") is pleased to announce that it has conducted a multispectral analysis using Sentinel visible/near-infrared (VNIR), shortwave infrared (SWIR). The analysis results have identified a substantial number of potential exploration targets. The Company contracted leading image processing expert Dr Neil Pendock from Dirt Exploration to conduct advanced analysis leveraging Sentinel-2 satellite imagery and spectral unmixing techniques.

The analysis utilised Sentinel-2 satellite imagery, which was carefully corrected for atmospheric interference and processed into a ten-band spectral stack. Advanced spectral unmixing techniques identified 16 endmembers, each correlated with mineral data from USGS libraries to ensure geological relevance and precision.

This study revealed significant spectral signatures linked to key minerals, including stibnite, sulfur, and illite. These minerals are strongly associated with known deposits in the region, underscoring the potential of this method for identifying

targets. Furthermore, elevated levels of hydrogen (H₂), carbon dioxide (CO₂), and radon (Rn) gases were detected. Hydrogen anomalies, in particular, exhibited a robust association with known mineralised zones, marking them as reliable indicators for pinpointing high-priority exploration targets.

Among the spectral highlights, Endmember 13 emerged as a critical indicator for identifying sulfide minerals, such as pyrite and arsenopyrite, which are closely linked to silver and gold mineralisation at Sun Silver's (ASX:SS1) Maverick Springs Project. Endmember 5, corresponding to stibnite, highlighted the presence of this primary antimony-bearing mineral, which is integral to the Ag-Au-Sb mineralisation observed at the Maverick Springs Project. Similarly, Endmember 6, associated with illite, provided valuable insights into alteration halos typical of precious metal deposits. Illite's spectral signature reinforces the exploration model and underscores the project's potential.

Hydrogen (H₂) targets, identified through gas anomaly analysis, further supported the exploration model. These anomalies demonstrated a clear spatial correlation with mineralised zones in the region, strengthening their role as practical tools for target identification. The prioritisation of these targets was enhanced by a comprehensive review of historical data, adjacent mineral resource information, and detailed stratigraphic interpretation.

The integration of spectral and gas anomaly data not only validates the exploration model but also highlights new areas of interest for future exploration activities, emphasising the project's strong potential for identifying additional prospective areas.

Bayan Springs North

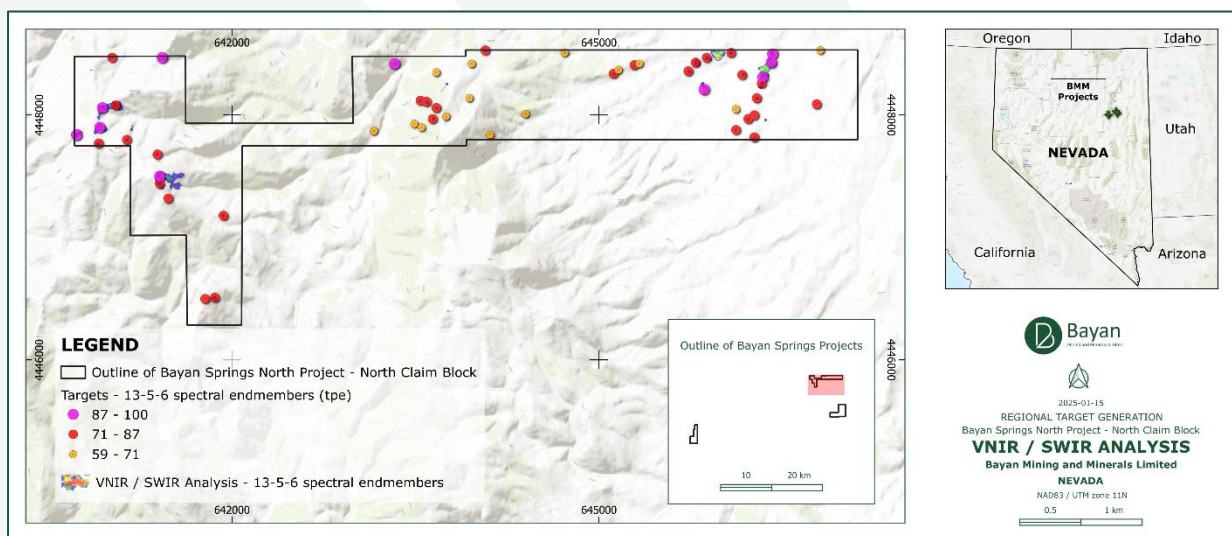


Figure 1: Bayan Springs North – Northern claim block targets defined based on pyrite, stibnite and illite spectral endmembers

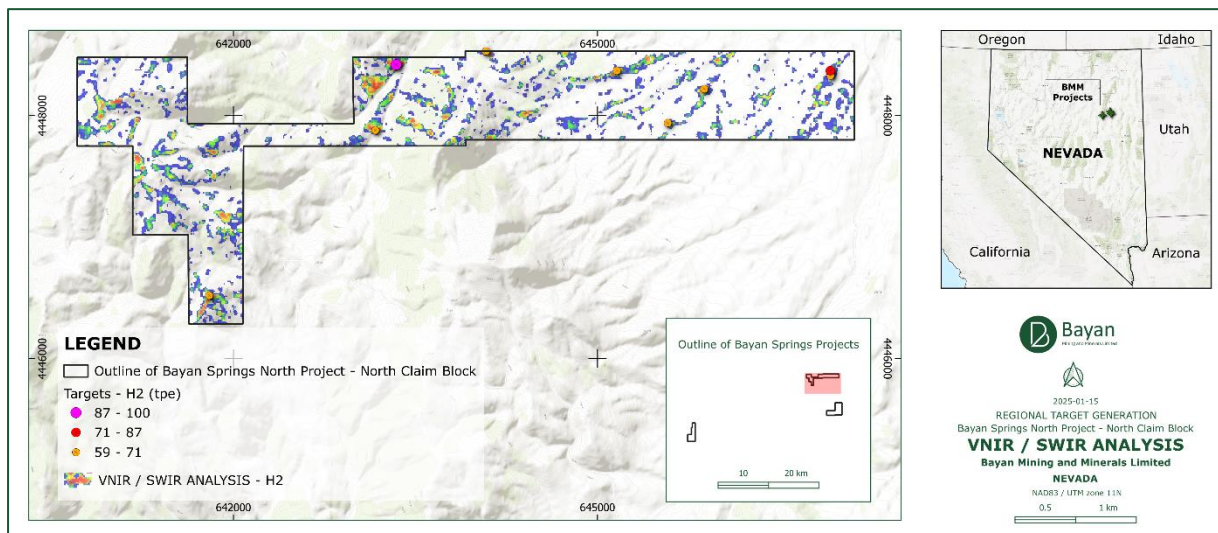


Figure 2: Bayan Springs North – Northern claim block targets defined based on H₂ spectral endmember

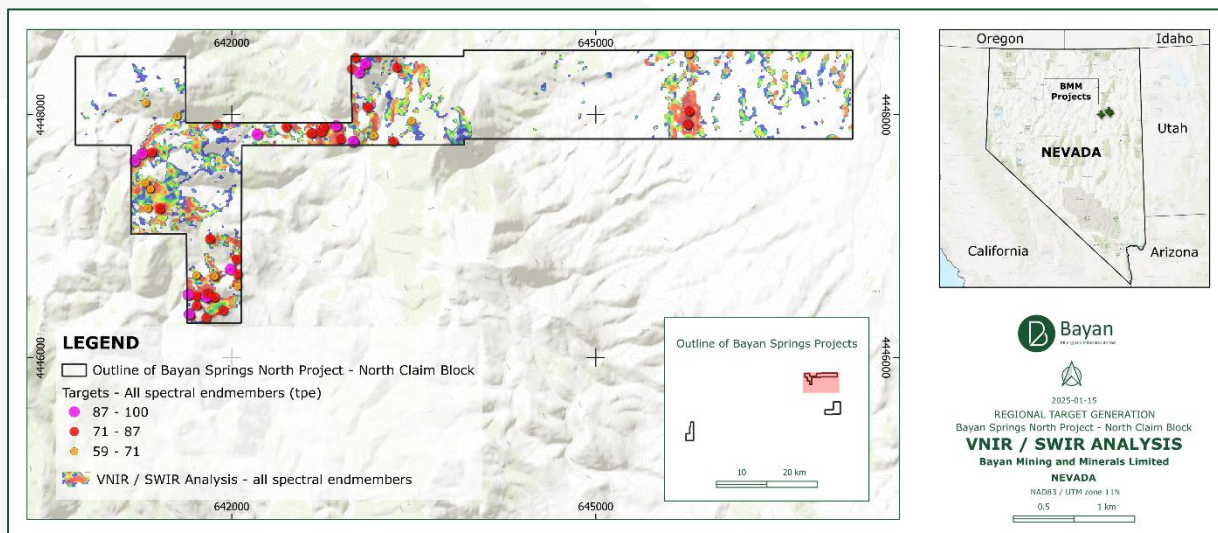


Figure 3: Bayan Springs North – Northern claim block targets defined based on all spectral endmember

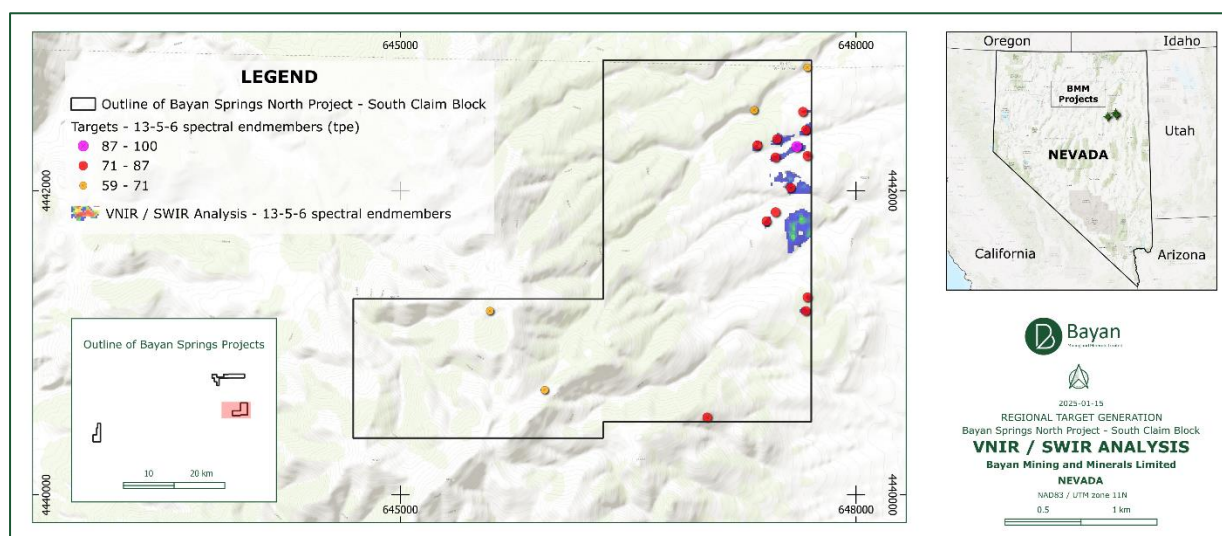


Figure 4: Bayan Springs North – Southern claim block - targets defined based on pyrite, stibnite and illite spectral endmembers

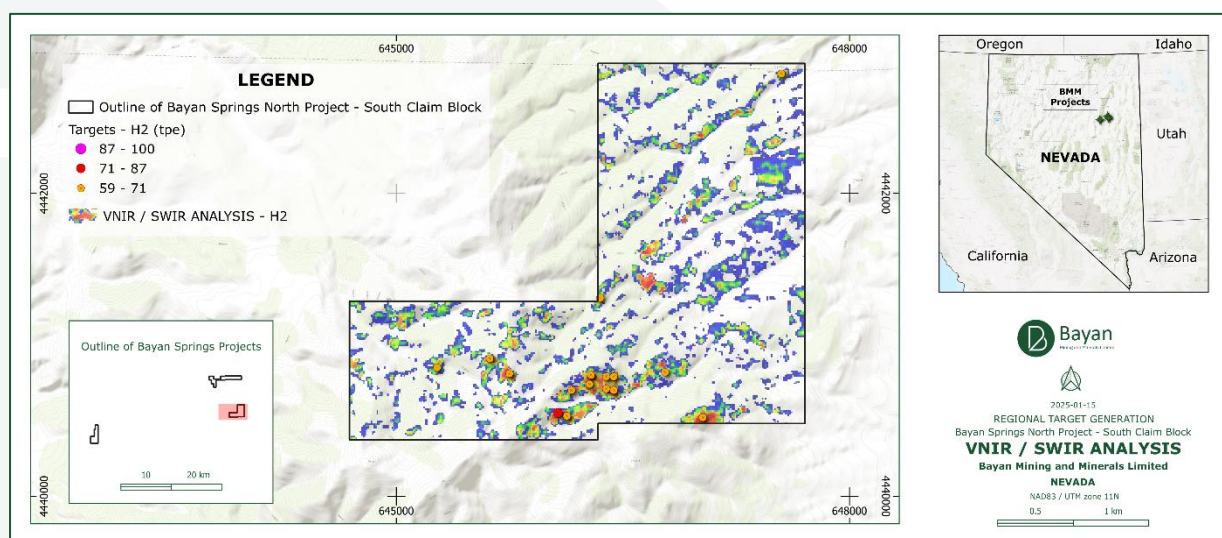


Figure 5: Bayan Springs North – Southern targets defined based on H₂ spectral endmember

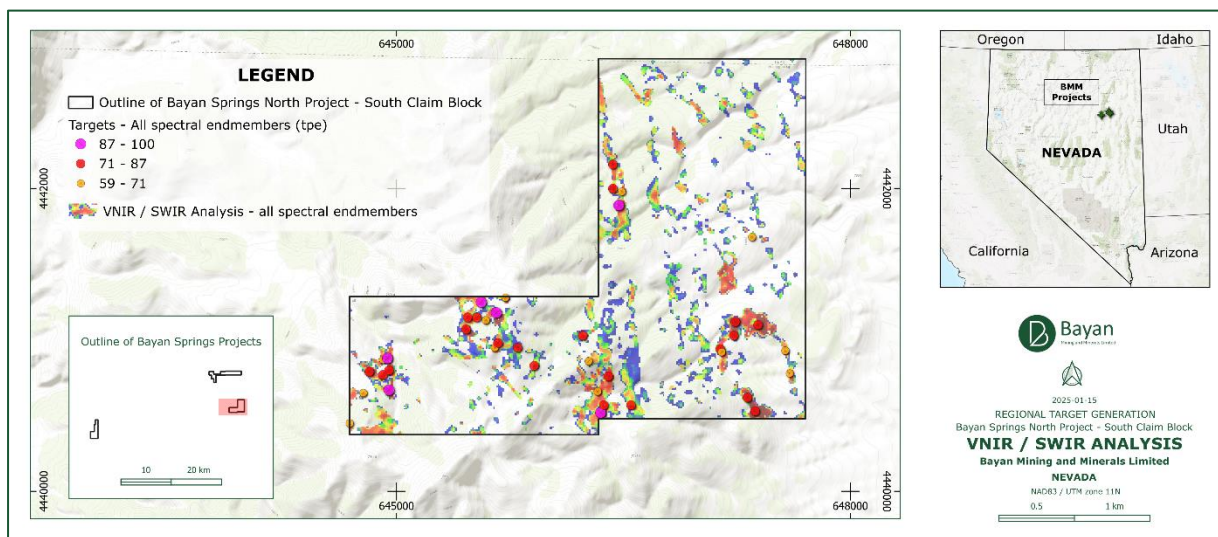


Figure 6: Bayan Springs North – Southern targets defined based on all spectral endmember

Bayan Springs South

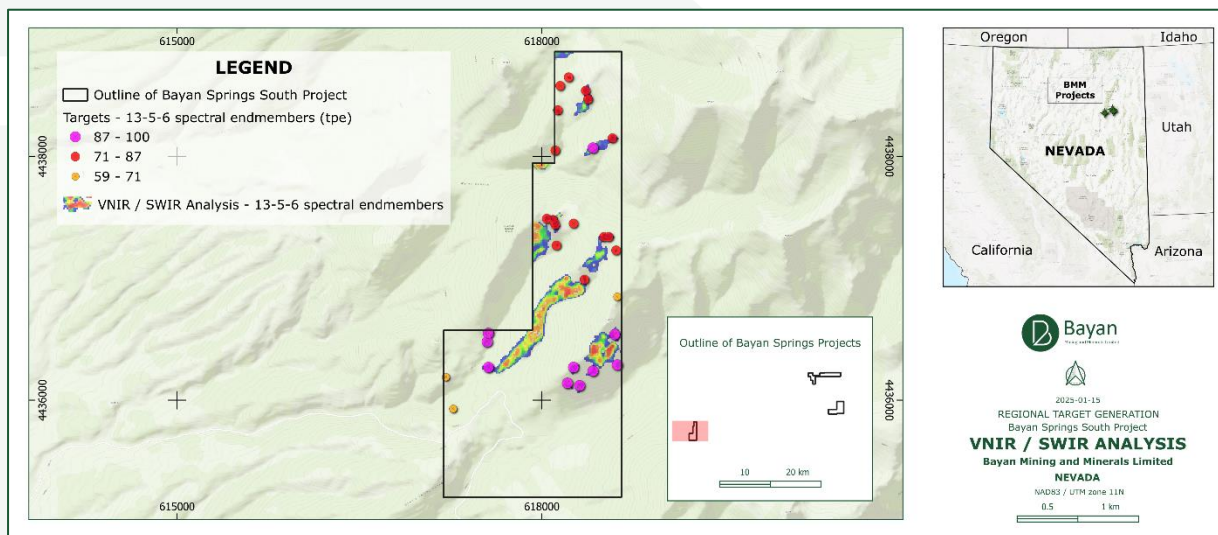


Figure 7: Bayan Springs South – targets defined based pyrite, stibnite and illite spectral endmembers

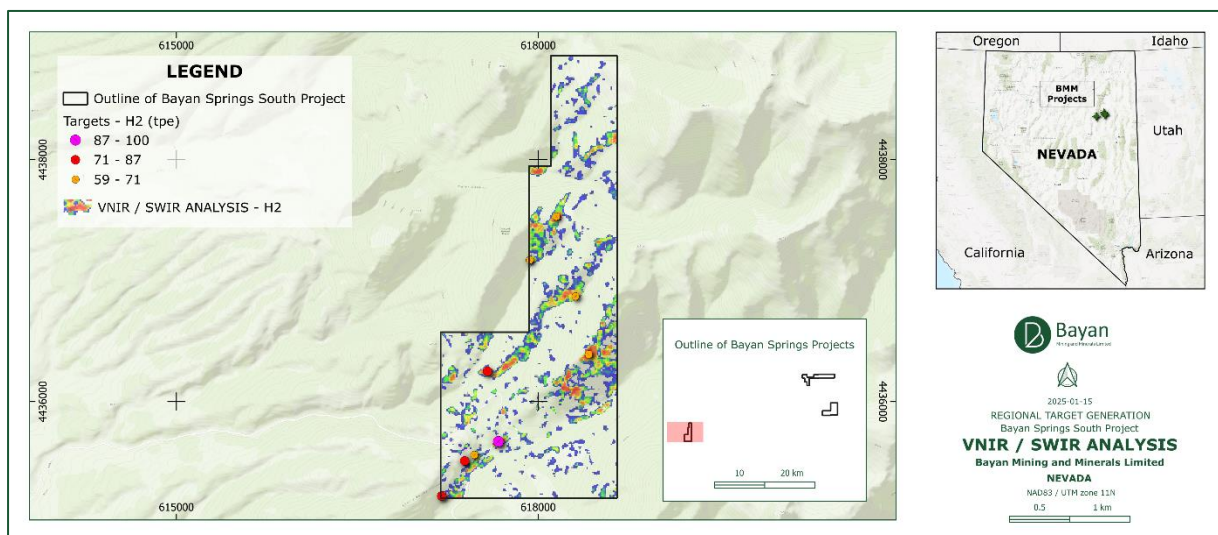


Figure 8: Bayan Springs South - targets defined based H₂ spectral endmember

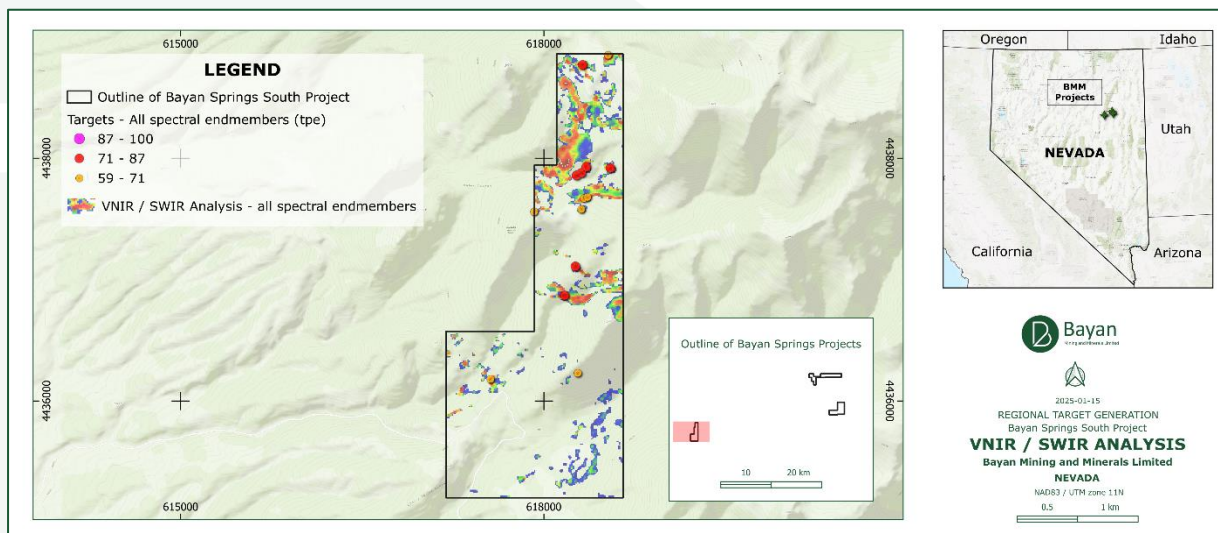


Figure 9: Bayan Springs South - targets defined based on all spectral endmember

Executive Director Fadi Diab, commented:

"This satellite imagery analysis work continues to highlight the potential of the previously announced multiple high priority exploration targets identified in the comprehensive desktop study conducted by Dahrouge Geological Consulting.

Bayan's next step is to commence a fieldwork program, including detailed mapping and sampling, to further evaluate and enhance our understanding of these prospective targets to ensure a comprehensive approach to realising the potential of these highly promising areas."

Near Term Exploration Priorities

The Company plans to initiate a fieldwork program, including mapping and sampling, contingent on contractor availability, snow clearance, and favourable weather conditions.



Figure 10: Bayan Spring Project Location Map

About Bayan Spring North Projects

The Bayan Spring North project consists of 116 lode claims covering approximately 9.7 km². It is adjacent to Sun Silver Ltd (ASX:SS1) Maverick Springs Project, which holds an inferred JORC resource of approximately 195.7 million tonnes at 67.25 g/t silver equivalent, contained 423.2 million ounces AgEq.¹

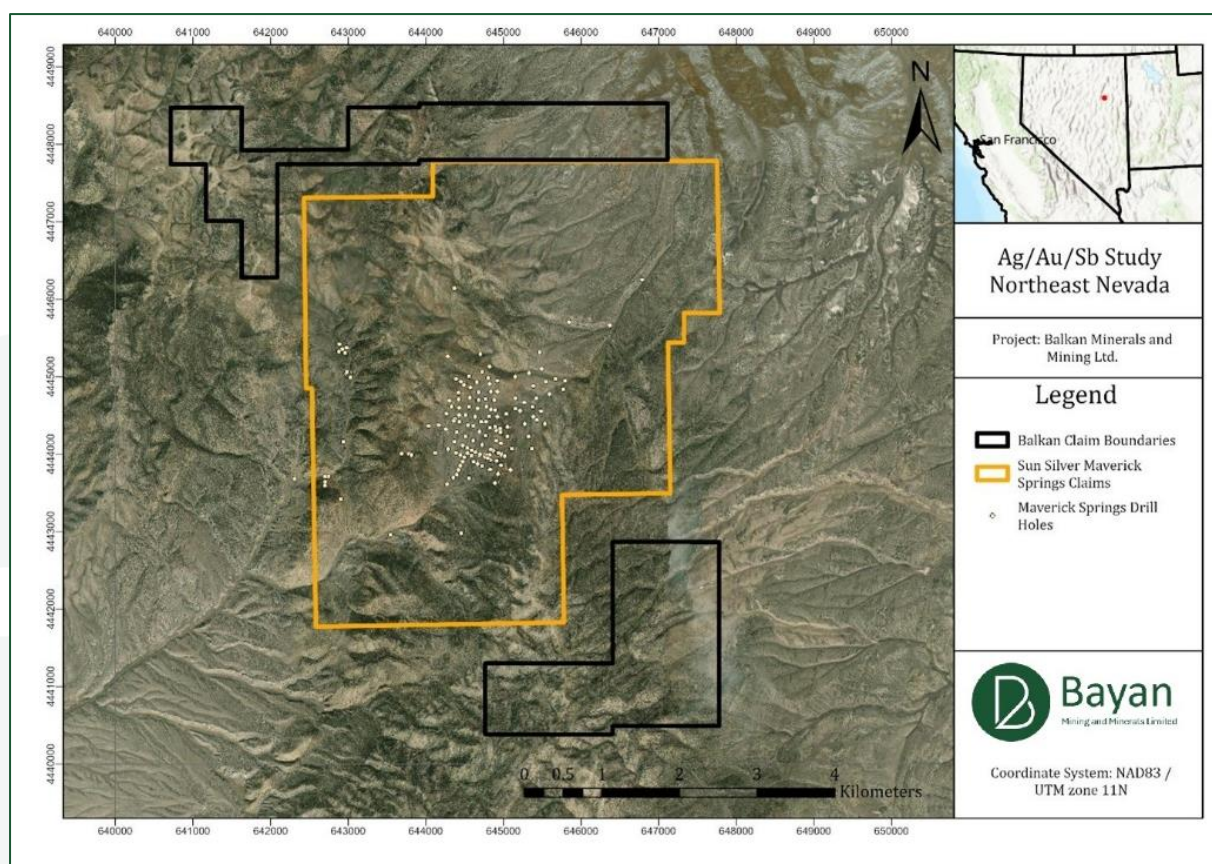


Figure 11: Maverick Springs, Sun Silver's project boundary and Known Drill Hole Locations

The project is located in the Northern Maverick Springs Range, south Elko County and north White Pine County, Nevada, USA. It is located approximately 85 km south of Elko and 105 km to the north-northwest of Ely. The Project area is accessible by paved Lamoille Highway and Harrison Pass Road to Ruby Valley from where is accessible by a well-maintained gravel road.

¹ Refer to Sun Silver Limited (ASX:SS1) ASX Announcement titled 'Maverick Springs Resource Increased by 45% to 423Moz at 67.25g/t AgEq' dated 28 August 2024.



The primary hosts for silver and gold mineralisation are the silty limestone and fine-grained calcareous clastic sediments of the Rib Hill Formation. These formations are exposed over a remarkable 40 km stretched zone, striking north north-westerly.

Felsic to intermediate intrusive centres outcropping south and north of the project area are interpreted to have acted as feeder systems for Tertiary volcanic flows, potentially influencing the migration of mineralising fluids into surrounding favourable host environment.

Regionally, the project area lies within the tectonically active Great Basin province and in proximity to the Carlin Trend, a significant structural feature that demarcates a deep-seated fault. This fault line separates thicker, stable continental crust to the east from a zone of thinned, transitional crust to the west, providing structural conduits favourable for migration, concentration and deposition of gold and silver mineralisation. Historical exploration in this geologic setting reveals structural trends and faulting that may play a role in localising mineralisation within the project area.

Locally, the project area lies within a geologically diverse region dominated by carbonate formations that record a history of continental margin sedimentation. These include limestones and dolostones of the Permian-Pennsylvanian Rib Hill Formation, limestones of the Permian Pequop Formation, and carbonate strata of the Permian Park City Group. Locally, these sedimentary units have been intruded by Jurassic and Cretaceous acidic to intermediate, biotitic igneous rocks, and subsequently overlain by Tertiary volcanic deposits, including rhyolites and Late Tertiary tuffs.

This region's combination of carbonate-rich sedimentary units and structural complexity makes it permissive for sediment-hosted gold and silver mineralisation. Carbonate rocks, especially in proximity to intrusive bodies, often provide chemically reactive settings conducive to metal deposition. The presence of deep-seated faults, proximity to the Carlin Trend, also facilitates the movement of mineralising fluids through these permeable carbonate units, increasing the likelihood of significant mineral accumulation. Collectively, these geological factors create a favourable environment for discovering substantial sediment-hosted precious metal deposits.

About Bayan Spring South Projects

The Bayan Spring South Project is located along the prolific Carlin Trend and consists of 42 lode claims covering an area of approximately 3.5 km². The Project is located east of Bellview Au-Ag-Pb Deposit² and approximately 10 kilometres north of Kinross Gold Corporation (NYSE:KGC) Bald Mountain mine, a major gold mining operation in Nevada with approximately 3.7 million ounces in Measured and Indicated Resources (See ASX Announcement dated 31 December 2023)³.

The project is situated on the southern slopes of the Ruby Mountains in northwest White Pine County, Nevada, USA, approximately 85 km south of Elko and 110 km northwest of Ely. The project area is accessible via the paved Lamoille Highway and Harrison Pass Road leading to Jiggs, with a well-maintained gravel road providing direct access to the site.

Geologically, the project is located within southern extension of the prolific Carlin trend. The broader project area is characterised by a conformable sequence of Cambrian limestones, dolomites, shales, quartzites, siltstones, and altered jasperoids, which generally dip to the SSE. These sedimentary rocks have been intruded by a Jurassic quartz-monzonite stock and associated felsic dykes. Significant pre- and post-mineral faulting has resulted in a complex structural framework influenced by intersecting NW- and NNE-trending crustal fractures.

² The Diggings 2024. <https://thediggings.com/mines/12815>

³ Kinross Gold Corporation (NYSE:KGC) 2023 Annual Mineral Reserve and Resource Statement. Kinross' mineral reserve and mineral resource estimates as of December 31, 2023, were classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") "CIM Definition Standards - For Mineral Resources and Mineral Reserves" adopted by the CIM Council (as amended, the "CIM Definition Standards") in accordance with the requirements of National Instrument 43-101 "Standards of Disclosure for Mineral Projects" ("NI 43-101"). Mineral reserve and mineral resource estimates reflect Kinross' reasonable expectation that all necessary permits and approvals will be obtained and maintained.

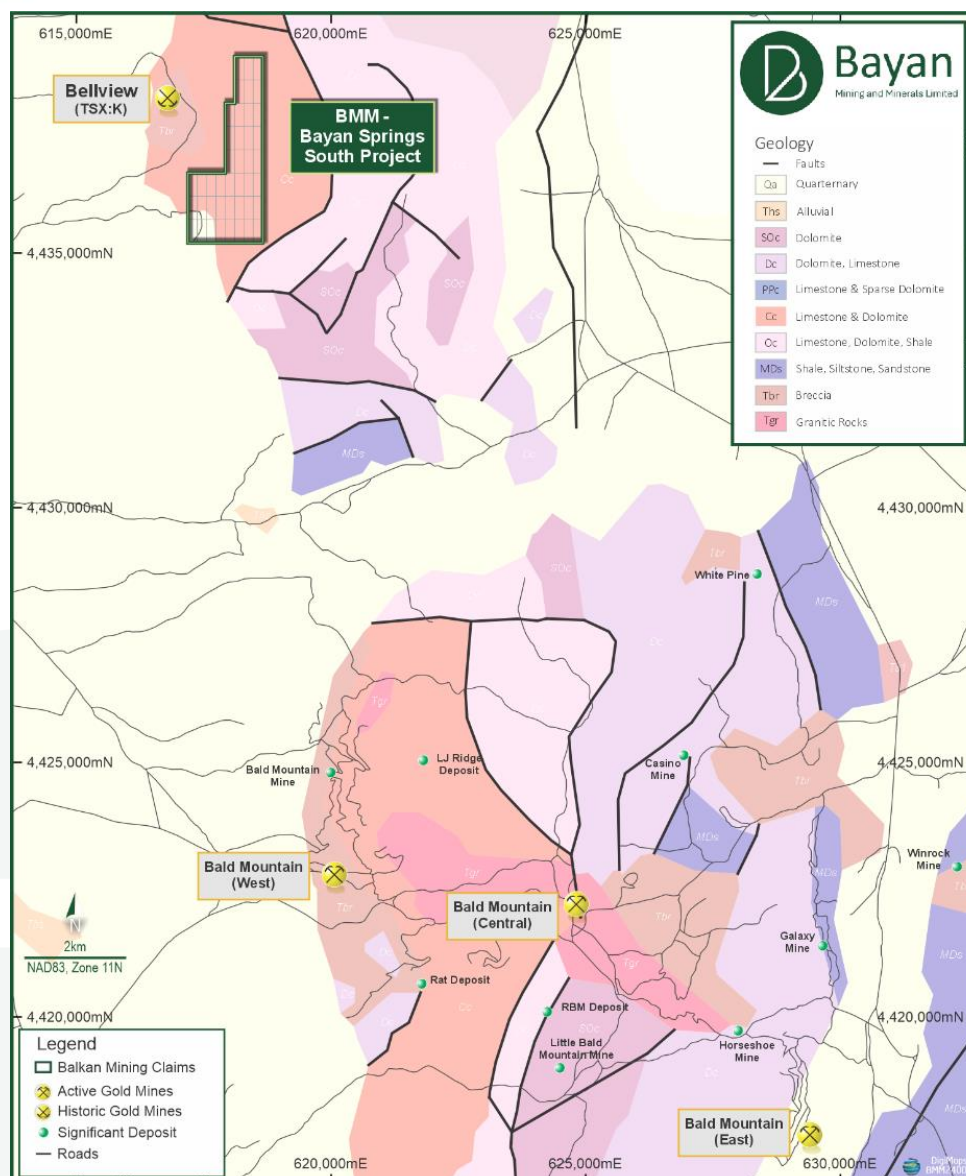


Figure 12: Bayan Springs South – Regional Geological Map

For further information, please contact:

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Authorised for release by the Board of Bayan Mining and Minerals Limited

-ENDS-

Competent Persons Statement

The information in this report that relates to Exploration Targets or Exploration Results is based on information compiled by Mr Dejan Jovanovic, a Competent Person who is a Member of the European Federation of Geologists (EurGeol). The European Federation of Geologists is a Joint Ore Reserves Committee (JORC) Code 'Recognised Professional Organisation' (RPO). An RPO is an accredited organisation to which the Competent Person under JORC Code Reporting Standards must belong to report Exploration Results, Mineral Resources, or Ore Reserves through the ASX. Mr Jovanovic is the General Manager of Exploration and is a part-time contractor of the Company. Mr Jovanovic 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 JORC 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Jovanovic 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 Persons' findings are presented have not been materially modified from the original market announcements

Forward-looking Statements

Certain statements included in this release constitute forward-looking information. Statements regarding BMM's plans with respect to its mineral properties and programs are forward-looking statements. There can be no assurance that BMM's plans for development of its mineral properties will proceed as currently expected. There can also be no assurance that BMM will be able to confirm the presence of additional mineral resources, that any mineralisation will prove to be economic or that a mine will successfully be developed on any of BMM's mineral properties. The performance of BMM may be influenced by a number of factors which are outside the control of the Company and its Directors, staff, and contractors.

These statements include, but are not limited to statements regarding future production, resources or reserves and exploration results. All such statements are subject to certain risks and uncertainties, many of which are difficult to predict and generally beyond the control of the Company, that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements.

Except for statutory liability which cannot be excluded, each of BMM, its officers, employees and advisors expressly disclaim any responsibility for the accuracy or completeness of the material contained in these forward-looking statements and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person as a consequence of any information in forward-looking statements or any error or omission. BMM undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events other than required by the Corporations Act and ASX Listing Rules. Accordingly, you should not place undue reliance on any forward-looking statement.

Proximate Statements

This announcement contains references to mineral exploration results derived by other parties either nearby or proximate to the Bayan Springs North and South Projects and includes references to topographical or geological similarities to that of the Bayan Springs North and South Projects. It is important to note that such discoveries or geological similarities do not in any way guarantee that the Company will have similar exploration successes on the Bayan Springs North and South Projects, if at all.

Appendix 1: JORC Table 1

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	- Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. - Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. - Aspects of the determination of mineralisation that are Material to the Public Report. - In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	- No sampling conducted during this stage. - Dirt Exploration interpreted potential Ag, Au and Sb targets and trends from the Sentinel-2 data products. ten spectral bands were resampled to 10 m spatial resolution to produce a ten band image stack. 16 spectral endmembers were then derived for the image as it is assumed that each 10 x 10 m parcel of ground is a nonnegative linear combination of 16 pure endmembers. 16 is an ad hoc number, chosen on the assumption that it is sufficient to explain the geological variability of the scene. - Each pixel is then expressed as a sum of 16 spectral abundances, most of which will be zero as they are estimated in such a way as to produce a sparse representation of the ten-dimensional data in 16-dimensional space. Each endmember corresponds to a geologically meaningful unit and interpretation consists of the process of interpreting these endmembers. - The Sentinel-2 scene was collected on 14 September 2024.
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	No drilling results are being reported.
Drill sample recovery	- Method of recording and assessing core and chip sample recoveries and results assessed. - Measures taken to maximise sample recovery and ensure representative nature of the samples. - Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No drilling results are being reported.
Logging	- Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. - Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. - The total length and percentage of the relevant intersections logged.	No drilling results are being reported.
Sub-sampling techniques and sample preparation	- If core, whether cut or sawn and whether quarter, half or all core taken. - If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. - For all sample types, the nature, quality and appropriateness of the sample preparation technique. - Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	No drilling results are being reported.



Bayan

Mining and Minerals Limited

ASX ANNOUNCEMENT

20 January 2025

	- Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. - Whether sample sizes are appropriate to the grain size of the material being sampled.	
Quality of assay data and laboratory tests	- The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. - For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. - Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	Neither drilling nor sampling was conducted during this stage; therefore, no assay data and laboratory tests have been reported.
Verification of sampling and assaying	- The verification of significant intersections by either independent or alternative company personnel. - The use of twinned holes. - Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. - Discuss any adjustment to assay data.	Neither drilling nor sampling was conducted during this stage.
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. - Specification of the grid system used. - Quality and adequacy of topographic control.	All the data and interpretations are tight into the NAD83 / UTM zone 11N grid system.
Data spacing and distribution	- Data spacing for reporting of Exploration Results. - 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. - Whether sample compositing has been applied.	- Neither drilling nor sampling was conducted during this stage. - The Hyperspectral program used Sentinel-2 satellite visible/near-infrared (VNIR) and shortwave infrared (SWIR) imagery for interpretation across the Bayan Springs projects. This is early-stage high level exploration data that is appropriate at this stage of the Project.
Orientation of data in relation to geological structure	- Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. - If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Neither drilling nor sampling was conducted during this stage.
Sample security	The measures taken to ensure sample security.	No sampling was conducted during this stage.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews are currently being performed.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	- Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. - The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	<u>Bayan Springs North</u> - Bayan Springs North is located in the Northern Maverick Springs Range, south Elko County and north White Pine County, Nevada, USA. It is located approximately 85 km south of Elko and 105 km to the north-northwest of Ely. The project consists of 116 NMS unpatented lode mining claims registered with the US Department of the Interior Bureau of Land Management ("BLM") with a total area of approximately 9.7 km². <u>Bayan Springs South</u> - Bayan Springs North is located in the Southern slopes of the Ruby Mountains north White Pine County, Nevada, USA. It is located approximately 85 km south of Elko and 110 km to the northwest of Ely. The project consists of 42 NMS unpatented lode mining claims registered with the US Department of the Interior Bureau of Land Management ("BLM") with a total area of approximately 3.5 km².
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	There is no documented systematic historical exploration over project areas. The only work conducted over the project areas include geological mapping by various authors Colgan et al., 2010, Hope and Coats, 1976, Coats, 1987, and Hose and Blake, 1970. Beside geological mapping data, most of the information used for area selection, target generation, and the desktop study guiding the definition of target areas has been gathered from data related to the Maverick Springs Silver Project and the Bellview Project.
Geology	Deposit type, geological setting and style of mineralisation.	<u>Bayan Springs North</u> - The project area lies within a geologically diverse region dominated by carbonate formations that record a history of continental margin sedimentation. These include limestones and dolostones of the Permian-Pennsylvanian Rib Hill Formation, limestones of the Permian Pequop Formation, and carbonate strata of the Permian Park City Group. Locally, these sedimentary units have been intruded by Jurassic and Cretaceous acidic to intermediate, biotitic igneous rocks, and subsequently overlain by Tertiary volcanic deposits, including rhyolites and Late Tertiary tuffs. - This region's combination of carbonate-rich sedimentary units and structural complexity makes it permissive for sediment-hosted gold and silver mineralisation. Carbonate rocks, especially in proximity to intrusive bodies, often provide chemically reactive settings conducive to metal deposition. The presence of deep-seated faults, proximity to the Carlin Trend, also facilitates the movement of mineralising fluids through these permeable carbonate units, increasing the likelihood of significant mineral accumulation. Collectively, these geological factors create a favourable environment for discovering substantial sediment-hosted precious metal deposits.

		<u>Bavan Springs South</u> This region, on the western slope of the Ruby Mountains, hosts much older stratigraphy which generally strikes north south and dips shallowly to moderately to the east. The project geology consists of Cambrian limestones, shales, and dolomites with outcropping of one Jurassic jasperoid breccia/dike. Based on Gray 2010, the claim block likely has north-northeast striking faults, one set with left lateral offset and the other with normal offset, north-northwest striking faults with dip slip and oblique normal offset, and east-west striking faults and shear zones. The rock shows evidence of a series of folding resulting in doubly folded strata within an anticline (Gray, 2010). Quaternary alluvium covers much of the outcropping geology in this region as a result of basin-fill from the Ruby detachment fault and creation of the Humboldt Formation moving downslope off the western Ruby Mountains.
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 drilling results are being reported.
Data aggregation methods	- In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. - Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. - The assumptions used for any reporting of metal equivalent values should be clearly stated.	No data aggregation is being used.
Relationship between mineralisation widths and intercept lengths	- These relationships are particularly important in the reporting of Exploration Results. - If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. - If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	No drilling results are being reported.
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.	Appropriate figures were included in the main body of this report.

Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	- The announcement is believed to include all representative and relevant information and is believed to be comprehensive. - The results included in this announcement require ground reconnaissance and verification.
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.	All relevant and material historical exploration data related to the project area is discussed, have been reported or referenced.
Further work	- The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). - Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Further work will include but not limited to systematic geological mapping, rock chip and soil sampling, structural interpretation, historic data compilation, and drilling to identify favourable host rocks for antimony/ silver/gold mineralisation.