

ASX ANNOUNCEMENT

5 October 2021

# Blackstone to work with Vietnamese Government to Identify New Nickel Opportunities

Blackstone Minerals Limited ("Blackstone" or the "Company") is pleased to announce that the Company will collaborate with the Vietnamese Government to identify new nickel opportunities outside of the Company's current Ta Khoa Ni-Cu-PGE district tenement holdings in Northern Vietnam.

Blackstone's 90% owned subsidiary Ban Phuc Nickel Mines (BPNM) will work in collaboration with the General Department of Geology & Minerals of Vietnam (GDGMV), initially conducting new geophysics exploration to advance the Chim Van target, a highly prospective nickel target, located approximately 10km from the Company's large Ban Phuc open pit deposit (refer Figure 1 & 2).

Highlights of the Chim Van joint exploration exercise include:

- BPNM to cooperate with GDGMV on the exploration of the highly prospective Chim Van project
- BPNM to provide technical expertise and equipment to support GDGMV's effort at demonstrating the prospectivity of the target
- Following work completed by GDGMV, BPNM intends to apply for exploration license over the project
- The project is located ~10km from the Ban Phuc Nickel Mine
- Chim Van features a large magnetic anomaly which may reflect the presence of an ultramafic-mafic intrusion an order of magnitude larger than the Ban Phuc ultramafic intrusion



Figure 1. Chim Van magnetic anomaly juxtaposed against the Ban Phuc Deposit (Long section projection - to scale)



Figure 2. Electro Magnetic plan view of Ta Khoa district and adjacent Chim Van target (Ni and Cu grades noted have been taken by Portable XRF)

Historical geological mapping and sampling indicates the presence of Ni and Cu mineralised mafic-ultramafic dykes in the Chim Van area with gossan samples returning up to 1.13% Ni and 0.37% Cu (portable XRF analyses). Preliminary geophysical, geological and geochemical interpretation suggests the presence of an extensive mafic-ultramafic dyke swarm adjacent to the Chim Van magnetic anomaly of similar style to the nearby Ban Phuc - Ban Chang, Ban Khoa - King Snake and Ta Cuong intrusive centres.

Blackstone Minerals' Managing Director Scott Williamson commented:

"Blackstone is delighted to be working closely with the GDGMV to define the geological potential of the Chim Van target. The Chim Van target is located in close proximity to the existing Ta Khoa footprint and would leverage the Company's current development plans, which includes the construction of a large concentrator adjacent to the significant existing mineral resource at Ban Phuc."

"The development of the Ta Khoa Downstream Refinery will be underpinned by Blackstone's strategy to secure supply. The Chim Van target, albeit in the early phases of discovery, is an example of the growth opportunities in and around the Ta Khoa district, and in Northern Vietnam more broadly that the Company is working on diligently to secure. We look forward to future cooperation with the GDGMV and updating our shareholders of the outcomes of our initial exploration programs in due course."

Authorised by the Managing Director on behalf of the Board of Blackstone Minerals Limited.

For more information, please contact

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# **About Blackstone**

Blackstone Minerals Ltd (ASX: BSX / OTCQX: BLSTF / FRA: B9S) is focused on building an integrated upstream and downstream battery metals processing business in Vietnam that produces Nickel: Cobalt: Manganese (NCM) Precursor products for Asia's growing Lithium-ion battery industry (refer Figure 3)



The Company owns a 90% interest in the Ta Khoa Nickel-Copper-PGE Project. The Ta Khoa Project is located 160km west of Hanoi in the Son La Province of Vietnam and includes an existing modern nickel mine built to Australian standards which is currently under care and maintenance (refer Figure 4). The Ban Phuc nickel mine successfully operated as a mechanised underground nickel mine from 2013 to 2016.

In October 2020, the Company completed a Scoping Study which investigated mining the Ban Phuc Disseminated nickel sulfide ore body (upstream) and the construction of a 200kpta downstream refinery (refer to ASX announcement of 14 October 2020, including for the full details of the Company's Mineral Resource Estimate at Ban Phuc).

Building on the outcomes of the Scoping Study, the Company has since completed a technically and economically robust Pre-feasibility Study for its Downstream Business Unit (DBU) which sees expanded downstream capacity. This is based on the Ta Khoa refinery being designed to process 400ktpa of nickel concentrate, supplied from the Ta Khoa Nickel - Cu - PGE mine as well as third party concentrate.

The Company is continuing to advance a PFS for the UBU. The UBU PFS will contemplate the option to mine several higher-grade massive sulfide vein (MSV) deposits, which has the potential to reduce initial upfront capital requirements for the UBU by enabling the Company to restart the existing Ban Phuc Concentrator (450ktpa). By combining the Company's existing mineral inventory (Ban Phuc Disseminated Sulfide -DSS), exploration potential presented by high priority targets such as King Snake, King Snake, Ta Cuong and Ban Khoa, and the ability to source third party concentrate, Blackstone will be able to increase the scale of its downstream business to cater to the rising demand for downstream nickel products.



Figure 4. Ta Khoa Nickel-Cu-PGE Project Location

## **Competent Person Statement**

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr Andrew Radonjic, a Director and Technical Consultant of the company, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Andrew Radonjic has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking 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'. Mr Andrew Radonjic 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 Mineral Resource Estimation in respect of the Ta Khoa Nickel Project is based on information compiled by BM Geological Services (BMGS) under the supervision of Andrew Bewsher, a director of BMGS and Member of the Australian Institute of Geoscientists with over 21 years of experience in the mining and exploration industry in Australia and Vietnam in a multitude of commodities including nickel, copper and precious metals. Mr Bewsher has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'. Mr Bewsher consents to the inclusion of the Mineral Resource Estimate in this report on that information in the form and context in which it appears.

The Company confirms that all material assumptions and parameters underpinning the Mineral Resource Estimates as reported within the Scoping Study in market announcement dated 14 October 2020 continue to apply and have not materially changed, and that it is not aware of any new information or data that materially affects the information that has been included in this announcement.

## **Forward Looking Statements**

This report contains certain forward-looking statements. The words "expect", "forecast", "should", "projected", "could", "may", "predict", "plan", "will" and other similar expressions are intended to identify forward looking statements. Indications of, and guidance on, future earnings, cash flow costs and financial position and performance are also forward-looking statements. Forward looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. Forward looking statements may be affected by a range of variables that could cause actual results or trends to differ materially. These variations, if materially adverse, may affect the timing or the feasibility of the development of the Ta Khoa Nickel Project.

The project development schedule assumes the completion for the Downstream Business Unit of a Definitive Feasibility Study (DFS) by mid-2022. A PFS & DFS for the Upstream Business Unit is assumed to be completed in 2021 and 2022 respectively. Development approvals and investment permits will be sought from the relevant Vietnamese authorities concurrent to studies being completed. Delays in any one of these key activities could result in a delay to the commencement of construction (planned for early 2023). This could lead on to a delay to first production, currently planned for 2024. It is expected that the Company's stakeholder and community engagement programs will reduce the risk of project delays. Please note these dates are indicative only.

The JORC-compliant Mineral Resource estimate forms the basis for the Scoping Study in the market announcement dated 14 October 2020. Over the life of mine considered in the Scoping Study, 83% of the processed Mineral Resource originates from Indicated Mineral Resources and 17% from Inferred Mineral Resources; 76% of the processed Mineral Resource during the payback period will be from Indicated Mineral Resources. The viability of the development scenario envisaged in the Scoping Study therefore does not depend on Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised. The Inferred Mineral Resources are not the determining factors in project viability. Please refer to the Cautionary Statement in the Scoping Study market announcement dated 14 October 2020.

# Appendix One

JORC Code, 2012 Edition | 'Table 1' Report

# **Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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.</li> <li>Measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>An outcrop of gossanous ultramafic dyke rock was identified during reconnaissance geological mapping and prospecting in 2012</li> <li>The gossanous nature of the rock is believed to indicate the former presence of Ni and Cu sulfides, and the presence of significant Ni and Cu in the gossan was confirmed using a Niton XL3 Portable XRF device.</li> </ul>
Drilling techniques	<ul> <li>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).</li> </ul>	<ul> <li>No drilling has been undertaken to date.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>No drilling has been undertaken to date.</li> </ul>
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>Reconnaissance geological mapping information was recorded.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>No specific sample preparation or sub-sampling of the field sample was carried out.</li> </ul>

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	<ul> <li>Niton XL3 factory default settings were used and the results are considered consistent with the observed mineralogy.</li> <li>Assay standards were not used.</li> </ul>
Verification of sampling and	The verification of significant intersections by either independent or alternative company personnel.	<ul> <li>Laboratory analysis has not been conducted.</li> </ul>
assaying	<ul> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	• The Niton XL3 was used in factory default setting and the data reported not adjusted in any way.
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Coordinates of the sample location were recorded by handheld GPS in UTM Zone 48N WGS84.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>The data is of reconnaissance nature and not sufficient in any way to establish mineral resources.</li> <li>The reported portable XRF result is not a composite.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>Orientation and extent of the ultramafic dykes hosting the gossanous outcrop remains poorly constrained but interpretation of magnetic imagery and regional geological understanding suggests the presence of a northwest striking mafic-ultramafic dyke swarm.</li> <li>No drilling, not applicable.</li> </ul>
Sample security	• The measures taken to ensure sample security.	The sample was transported to the BPNM site office and core vard
		where it was tested by Niton XL3 by BPNM personnel.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	<ul> <li>No audits or reviews have been undertaken with respect to the</li> </ul>
		sampling and analysis protocols.

# Section 2 Reporting of Exploration Results

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

Criteria	Explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>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.</li> <li>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.</li> </ul>	• The sample was taken outside the Company's current tenure in an area subject to an exploration collaboration between BPNM and the General Department of Geology and Minerals of Vietnam (GDGMV) with the expectation that should the results prove positive for Ni sulfide exploration that the ground will be available to the Company for application.
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>The copper and nickel mineralisation at the nearby Ban Phuc deposit was likely recognised during the French colonial era, and the first significant work on the Ban Phuc deposits was by the Vietnamese Geological Survey in the 1959- 1963 period. The next significant exploration activity within the broader Ta Khoa Dome was conducted by Asian Mineral Resources during the 1996-2018 period when airborne geophysics and reconnaissance surface prospecting highlighted prospectivity of the Chim Van area for Ni-Cu sulfides</li> </ul>
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul> <li>The late Permian Ta Khoa nickel- copper-sulfide deposits and prospects are excellent examples of the globally well-known and economically exploited magmatic nickel - copper sulfide deposits. The identified nickel and copper sulfide mineralisation within the Ta Khoa Dome include disseminated, net texture and massive sulfide types. The disseminated and net textured mineralisation occurs within olivine cumulates, while the massive sulfide veins typically occur in the adjacent metasedimentary wallrocks associated with mafic-ultramafic dykes. A summary of the target mineralisation styles can be found in Wang et al 2018, A synthesis of magmatic Ni-Cu-(PGE) sulfide deposits in the ~260 Ma Emeishan large igneous province, SW China and northern Vietnam, Journal of Asian Earth Sciences 154.</li> </ul>
Drill hole Information	CA summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:	<ul> <li>The gossan location (427140mE 2349740mN UTM 48N WGS84) was recorded by handheld GPS nominally accurate to c. 20m.</li> <li>There is no drilling in the target area, not application.</li> </ul>

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Criteria	Explanation	Commentary
	<ul> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth;</li> <li>hole length.</li> <li>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.</li> </ul>	
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>The reported Niton XL3 portable XRF result was not aggregated, factored or weighted in anyway.</li> <li>Metal equivalents are not used.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>Thickness and orientation of identified mineralisation is not known at this reconnaissance surface sampling stage.</li> <li>No drilling, not applicable</li> </ul>
Diagrams	<ul> <li>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.</li> </ul>	<ul> <li>An appropriate exploration plan and geophysical section are included in the body of this release.</li> </ul>
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.	<ul> <li>The reported gossan sample was identified during the course of reconnaissance mapping and prospecting for Ni sulfide mineralisation in 2012. Only a single gossan outcrop was identified and tested by portable XRF.</li> </ul>
Other substantive exploration data	<ul> <li>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.</li> </ul>	<ul> <li>The magnetic imagery and inversion section shown in this announcement was produced from the data from a heliborne magnetic and electromagnetic survey flown by High-Sense Geophysics Ltd in 1999 for Asian Mineral Resources. Equipment operated during the survey included a five-frequency Aerodat Hawk electromagnetic system, a high sensitivity caesium vapour magnetometer, a Global Positioning System, and a radar altimeter. Coverage and data were considered to be of good quality, well within standard High-Sense Geophysics survey specifications. Survey parameters are as follows:</li> <li>Traverse Line spacing: 200 m</li> <li>Control Line spacing: 8,000- 10,000 m</li> <li>Total survey: 4108.5 line km</li> </ul>

Criteria	Explanation	Commentary
		<ul> <li>Nominal Terrain clearance: EM bird height - 30 m</li> <li>Magnetometer sensor - 30 m</li> <li>Navigation: Global Positioning System</li> <li>Traverse Line direction: N20°E</li> <li>Control Line direction: N70°W</li> <li>Measurement interval: 0.1 s</li> <li>Airspeed (nominal): 120 km/h</li> <li>Measurements at (nominal): 3.5 m</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Blackstone Minerals proposes to conduct further exploration activities under a collaboration agreement with the General Department of Geology &amp; Minerals of Vietnam (GDGMV).</li> <li>An appropriate exploration program is in progress with the GDGMV.</li> </ul>

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