

ASX ANNOUNCEMENT

23 July 2021

ASX: BSX

## Quarterly Report for the Period **Ending 30 June 2021**

### Highlights

#### Ta Khoa Nickel - Copper - PGE Project

##### Upstream Business Unit (UBU)

- Blackstone reported significant nickel copper and Platinum Group Element (PGE) results at the King Snake Massive Sulfide Vein (MSV) Prospect including strike extensions (refer ASX announcements released on 13 May 2021 & 1 June 2021)
- The Taipan discovery zone (at the Ta Cuong Prospect) returned significant results for nickel, copper, cobalt and PGEs across 35.25m of continuous mineralisation (refer ASX announcement 13 May 2021)
- Results from infill drilling at Ban Chang MSV continued to support resource estimations (refer ASX announcement 13 May 2021)
- Each of Ban Chang, King Snake and Ta Cuong are intended to be incorporated into the Upstream Business Unit Pre-Feasibility Study (UBU PFS)

##### Downstream Business Unit (DBU)

- Blackstone commences Green Hydrogen Study as it aims to develop a zero-carbon operation at its Ta Khoa Nickel-Copper-PGE Project in Vietnam (refer ASX announcement 17 July 2021)
- Downstream Processing test-work achieves excellent recoveries of Palladium, Platinum and Rhodium PGEs using a conventional flowsheet (refer ASX announcement 27 May 2021)
- Pre-Feasibility Study advanced for the development of a Downstream Refinery in Northern Vietnam, scheduled for release on 26 July 2021 (DBU PFS)

##### Corporate

- Blackstone completed the spinout of non-core gold assets into new Codrus Minerals Limited (ASX: CDR) ("Codrus"), successfully raising \$8m in a well subscribed Initial Public Offering (IPO).
- Appointment of Alison Gaines as Independent Non-Executive Director
- Cash balance as at 30 June 2021 of A\$14m

Blackstone Minerals' Managing Director Scott Williamson said:

*"The June quarter marked significant progress towards delivering the PFS for the Company's planned Downstream Refinery in Northern Vietnam. The PFS will outline a clear pathway to building a globally significant downstream nickel refinery to produce NCM811 precursor to deliver into the burgeoning EV revolution."*

*"The prospect of Blackstone's vertically integrated strategy is strengthened by the success being achieved on the ground at the Ta Khoa Ni-Cu- PGE Project. We continue to intersect excellent MSV results at Ban Chang, King Snake and Ta Cuong which are intended for inclusion in the Upstream Business Unit PFS to be announced later in the year."*

### Ta Khoa Project Snapshot

Blackstone Minerals Ltd (ASX: BSX / OTCQB: BLSTF / FRA: B9S) is focused on building an integrated upstream and downstream processing business in Vietnam that produces NCM Precursor products for Asia's growing Lithium-ion battery industry (refer Figure 1).

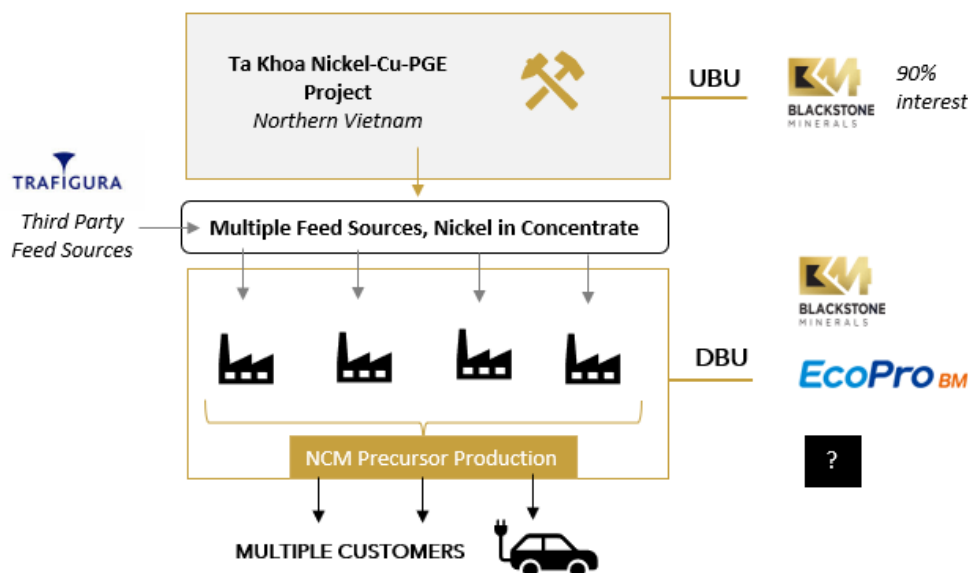


Figure 1 -Ta Khoa Project Snapshot

The Company owns a 90% interest in the Ta Khoa Nickel-Cu-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. 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 Sulfide (DSS) ore body and the construction of one downstream refinery. The Company is now advancing the Ta Khoa Project through two separate PFS studies for the Upstream Business Unit (UBU) and Downstream Business Unit (DBU).

The DBU PFS will consider expanded downstream refinery capacity, for which feedstock will be met from the Ta Khoa Nickel - Cu - PGE mine as well as third party concentrate. The UBU PFS will contemplate the option to mine several higher grade MSV deposits, which has the potential to reduce initial upfront capital requirements by enabling the Company to restart the existing Ban Phuc Concentrator (450ktpa).

By combining the Company's existing mineral inventory (Ban Phuc DSS), exploration potential presented by high priority targets such as Ban Chang and King Snake and the ability to source third party concentrate, Blackstone will be able to increase the scale of its downstream business to meet the rising demand for downstream nickel products.

### Ta Khoa Upstream Business Unit

The UBU PFS being targeted for delivery in Q3/Q4 2021 will report on the following:

- Incorporating high-grade MSV deposits into the mine plan, as a result of ongoing exploration success at multiple prospects including Ban Chang, King Snake and Ta Cuong (refer Figure 2);
- The restart and possible expansion of the existing 450ktpa concentrator, which will be supported by the inclusion of higher-grade feed into the mine plan. This has the potential to improve project NPV through deferral of significant upfront capital, mine life extension, and lower technical risks; and
- Drill out and appropriate analysis and mine sequencing of large, DSS orebodies including Ban Phuc and Ban Khoa.

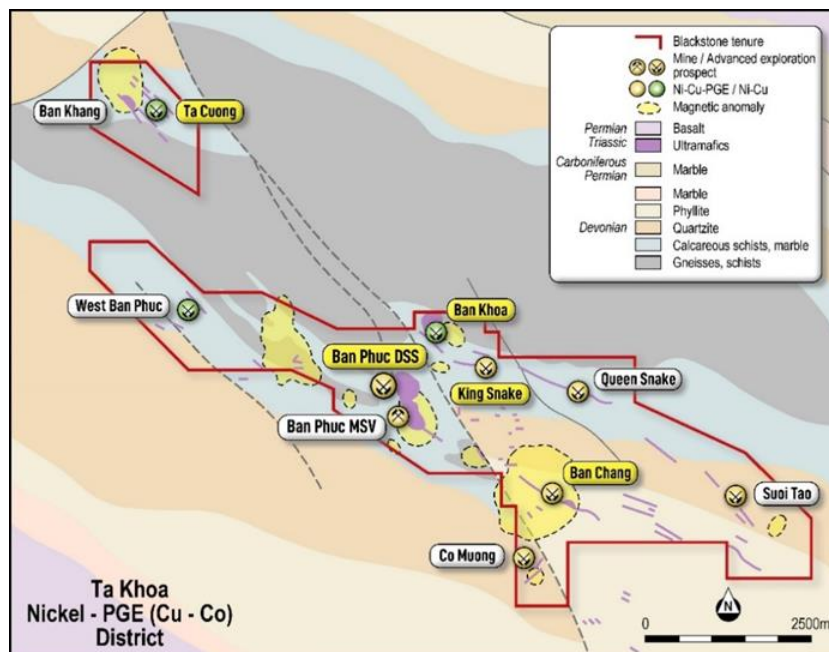


Figure 2 - Ta Khoa Nickel - PGE (Cu-Co) district

## Drilling of Massive Sulfide Vein (MSV) prospects

### King Snake

King Snake is a MSV prospect, located 1.5km north-east of the processing facility (refer Figure 2). At King Snake, MSV and high-grade brecciated Ni-Cu-Co-PGE sulfides and gossans are associated with tremolite-altered mafic-ultramafic rocks.

Blackstone's drilling at King Snake has focussed on Electro-magnetic (EM) targets which extend down plunge to the west of historic drilling. Assay results indicate greater thickness of sulfide mineralisation down plunge of historic drilling (refer Figure 3).

Excellent results received from during the quarter, targeting resource extensions, confirming King Snake's potential to add to the Company's MSV mining inventory and support the restart of the existing 450ktpa concentrator.

Significant intercepts reported at King Snake during the quarter included:

KS20-03 incl.	5.55m @ 1.35% Ni, 0.45% Cu, 0.05% Co & 1.28g/t PGE <sup>1</sup> from 204.00m 1.19m @ 3.56% Ni, 0.98% Cu, 0.13% Co & 3.10g/t PGE <sup>1</sup> from 205.38m
KS21-04 incl.	10.45m @ 0.32% Ni, 0.22% Cu, 0.02% Co & 0.33g/t PGE <sup>1</sup> from 194.00m 0.63m @ 3.77% Ni, 2.11% Cu, 0.15% Co & 2.33g/t PGE <sup>1</sup> from 202.80m
KS21-06 incl.	3.13m @ 1.23% Ni, 0.75% Cu, 0.04% Co & 2.03g/t PGE <sup>1</sup> from 184.87m 1.12m @ 2.19% Ni, 0.93% Cu, 0.07% Co & 2.72g/t PGE <sup>1</sup> from 185.18m
KS21-10 incl.	2.62m @ 1.54% Ni, 2.01% Cu, 0.06% Co & 5.16g/t PGE <sup>1</sup> from 254.08m 0.62m @ 3.00% Ni, 0.84% Cu, 0.11% Co & 3.36g/t PGE <sup>1</sup> from 254.08m
KS21-11 incl.	2.92m @ 0.90% Ni, 0.54% Cu, 0.04% Co & 1.60g/t PGE <sup>1</sup> from 267.63m 1.67m @ 1.33% Ni, 0.67% Cu, 0.05% Co & 1.17g/t PGE <sup>1</sup> from 267.63m
KS21-12 incl.	1.90m @ 1.00% Ni, 0.27% Cu, 0.04% Co & 1.48g/t PGE <sup>1</sup> from 349.90m 0.85m @ 1.45% Ni, 0.41% Cu, 0.05% Co & 1.91g/t PGE <sup>1</sup> from 349.90m
KS21-13 incl.	1.12m @ 0.48% Ni, 0.20% Cu, 0.02% Co & 0.71g/t PGE <sup>1</sup> from 243.58m 0.32m @ 1.09% Ni, 0.45% Cu, 0.04% Co & 0.93g/t PGE <sup>1</sup> from 243.58m

Highlights from the ongoing exploration program at King Snake include:

- New intersections KS21-11 and KS21-12 together with historic drill results have defined a strike length of ~900m
- Recent step-out drilling has extended mineralisation down plunge west of historic drilling. During the quarter Blackstone mobilised its in-house geophysics crew at King Snake to perform Downhole Electro-magnetic (DHEM) surveys.
- DHEM surveys will inform infill drilling at the King Snake prospect as well as potentially identifying new sulfide targets at depth.

<sup>1</sup> Platinum (Pt) + Palladium (Pd) + Gold (Au)



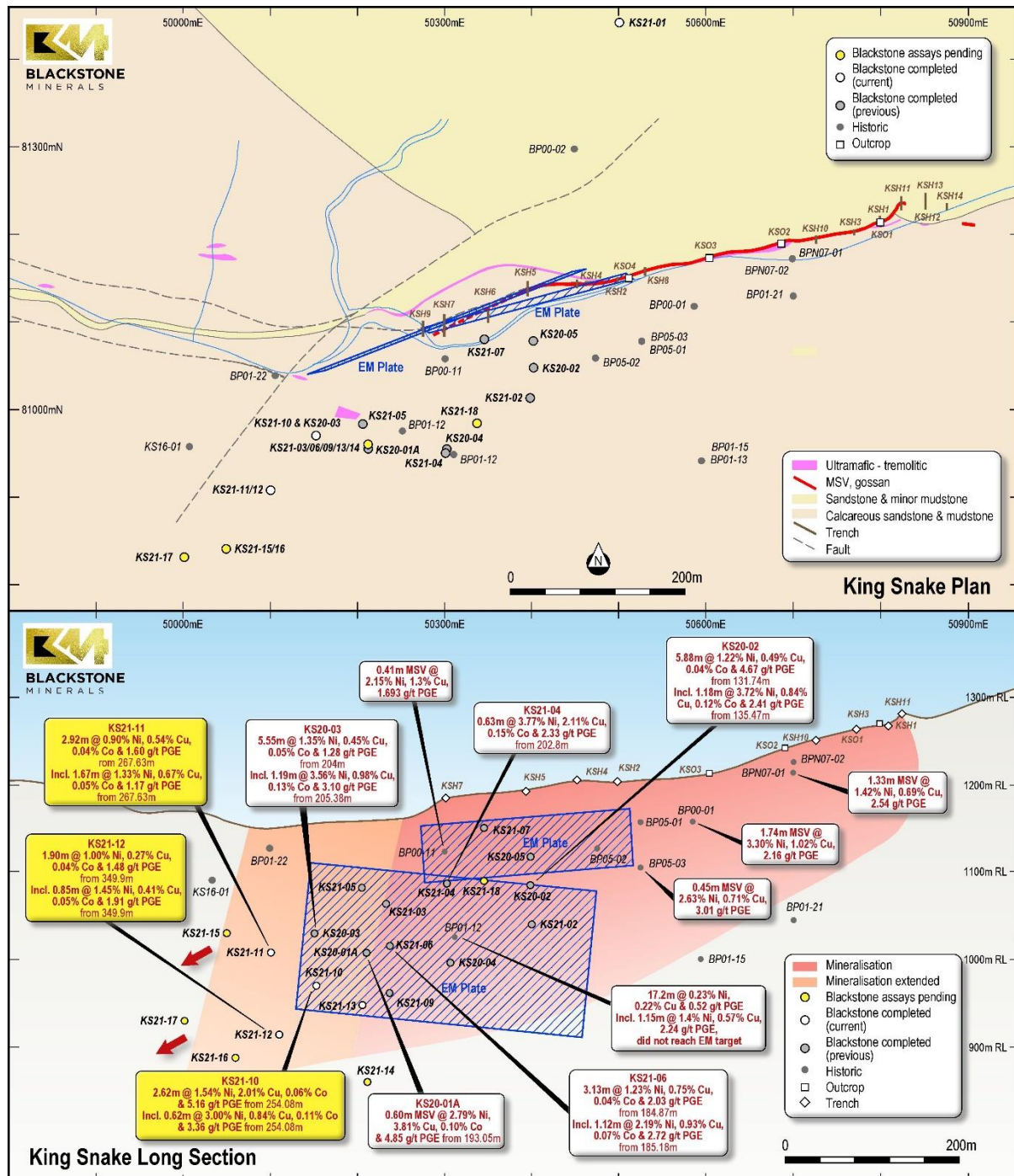


Figure 3. King Snake Plan View and Long Section showing new and historic drill holes

## Taipan Discovery Zone - Ta Cuong

Ta Cuong is a Nickel-PGE-Cu-Co MSV prospect located 6km along strike from the recently operating Ban Phuc MSV nickel mine and existing processing centre zone (refer Figure 2). The prospect is associated with the Ban Khang intrusive complex and is proximal to a major regional fault zone which also transects the Ban Phuc, King Snake and Ban Chang MSV.

The Taipan Discovery hole TC21-03 (refer Figures 4 & 5) returned significant assays for nickel, copper, cobalt and platinum group elements (PGEs) across 35.25m of continuous mineralisation, with a result of:

TC21-03 35.25m @ 0.90% Ni, 0.60% Cu, 0.05% Co & 0.50g/t PGE<sup>1</sup> from 18.35m incl.  
20.40m @ 1.35% Ni, 0.80% Cu, 0.07% Co & 0.72g/t PGE<sup>1</sup> from 27.00m

<sup>1</sup> Platinum (Pt) + Palladium (Pd) + Gold (Au)

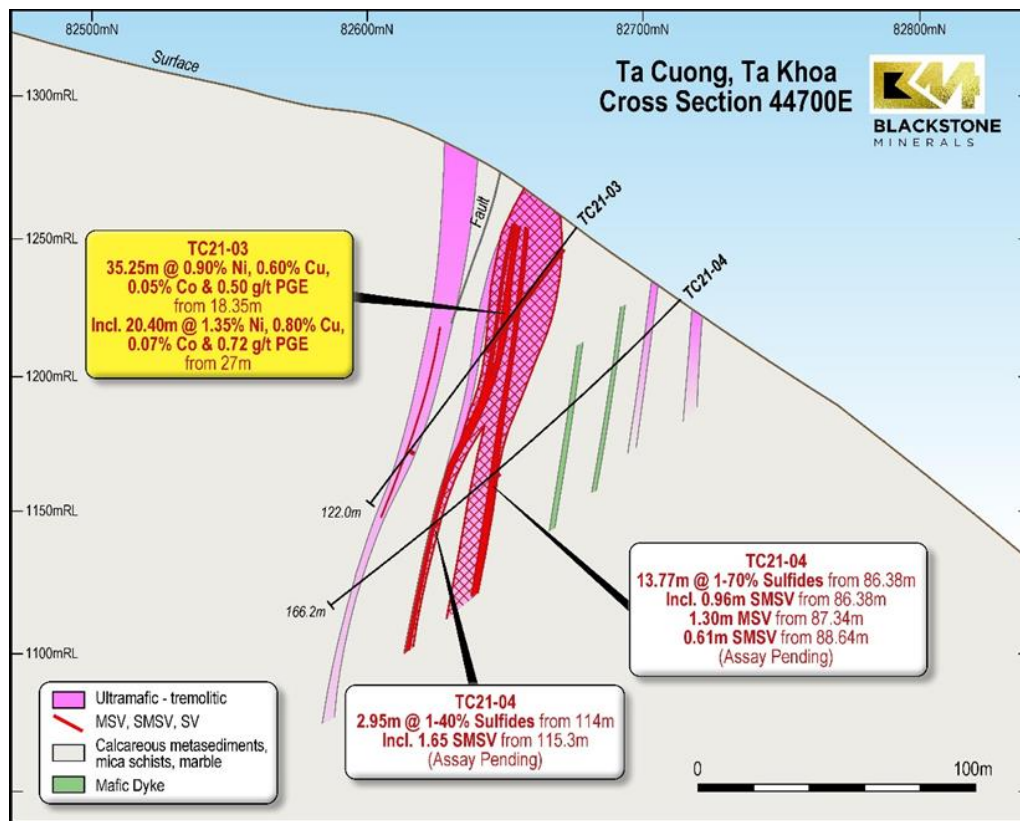


Figure 4. Taipan Discovery Hole

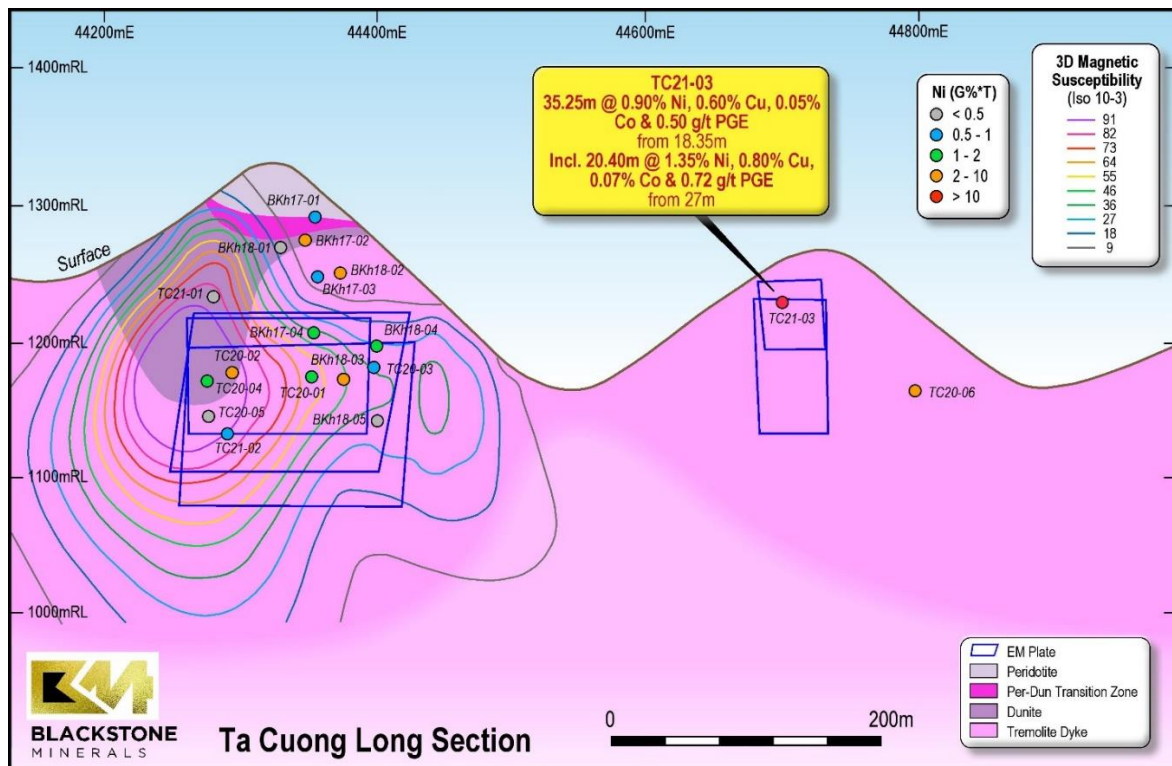


Figure 5. Ta Cuong Long Section

## Ban Chang

Ban Chang is located 2.5km south-east of the existing processing facility and the Ban Phuc deposit adjacent to the Chim Van – Co Muong fault system. The prospect geology consists of a tremolitic dyke swarm within phyllites, sericite schists and quartzites of the Devonian Ban Cai Formation (refer Figure 1).

The known mineralization style is mainly veins and lenses of massive sulfide as well as DSS hosted within tremolite dykes. The dyke swarm is approximately 900m long and varies between 5m and 60m wide. The dykes and massive sulfide are interpreted to be hosted within a splay (and subsidiary structures) off the major regional Chim Van – Co Muong fault system.

Drilling during the quarter was primarily focussed on infill to support ongoing resource estimations and mining studies. Significant assays reported at Ban Chang include:

BC21-09 incl.	18.28m @ 0.44% Ni, 0.41% Cu, 0.03% Co & 0.31g/t PGE <sup>1</sup> from 64.72m 5.65m @ 1.07% Ni, 0.53% Cu, 0.06% Co & 0.51g/t PGE <sup>1</sup> from 68.75m
BC21-10 incl.	15.30m @ 0.72% Ni, 0.45% Cu, 0.04% Co & 0.36g/t PGE <sup>1</sup> from 42.30m 5.01m @ 1.67% Ni, 1.01% Cu, 0.09% Co & 0.95g/t PGE <sup>1</sup> from 50.62m
BC21-11 incl.	12.55m @ 0.57% Ni, 0.42% Cu, 0.03% Co & 0.38g/t PGE <sup>1</sup> from 43.10m 3.10m @ 1.16% Ni, 0.95% Cu, 0.06% Co & 0.67g/t PGE <sup>1</sup> from 46.90m
BC 21-12 incl.	19.27m @ 0.35% Ni, 0.23% Cu, 0.02% Co & 0.16g/t PGE <sup>1</sup> from 23.73m 3.75m @ 1.02% Ni, 0.67% Cu, 0.06% Co & 0.43g/t PGE <sup>1</sup> from 37.00m

<sup>1</sup> Platinum (Pt) + Palladium (Pd) + Gold (Au)

## Ta Khoa Downstream Business Unit

### Downstream Processing Testwork

Preliminary hydrometallurgical test work completed by Simulus Engineers on DBU PFS Pressure Oxidation (POX) residues has demonstrated excellent recoveries of Platinum Group Elements (PGEs) including palladium, platinum and rhodium using a conventional flowsheet (refer Table 1 and Figure 6).

- Concentrate residue samples have been tested and determined to be amenable to chlorination leaching.
- The Blackstone DBU hydrometallurgical process enables economic PGE recovery from concentrates with PGE concentrations below typical payability limits, due to low losses in the POX process.

PGE	Concentrate Head Grade (g/t)	30 min	60 min	180 min	360min
Palladium	3.32	75%	88%	91%	94%
Platinum	2.38	9%	35%	60%	80%
Rhodium	0.33	39%	68%	72%	81%

Table 1. Preliminary PGE Recoverability Results



Table 1 Notes:

1. Sample name TAKH-0052-D01S
2. Test Conditions: 75°C, 18% Solids,

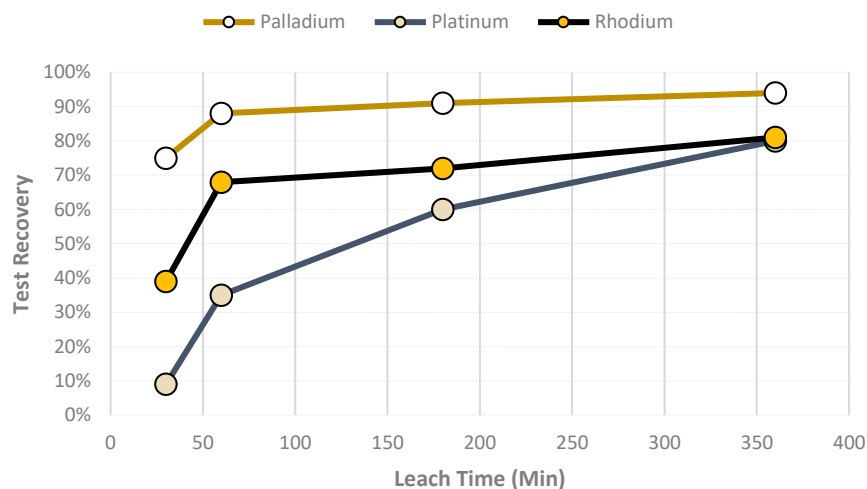


Figure 6 - Leach Time Vs Recovery

## Green Hydrogen Study

As part of its commitment to producing green nickel™, Blackstone announced a study to consider “green” hydrogen production at Ta Khoa.

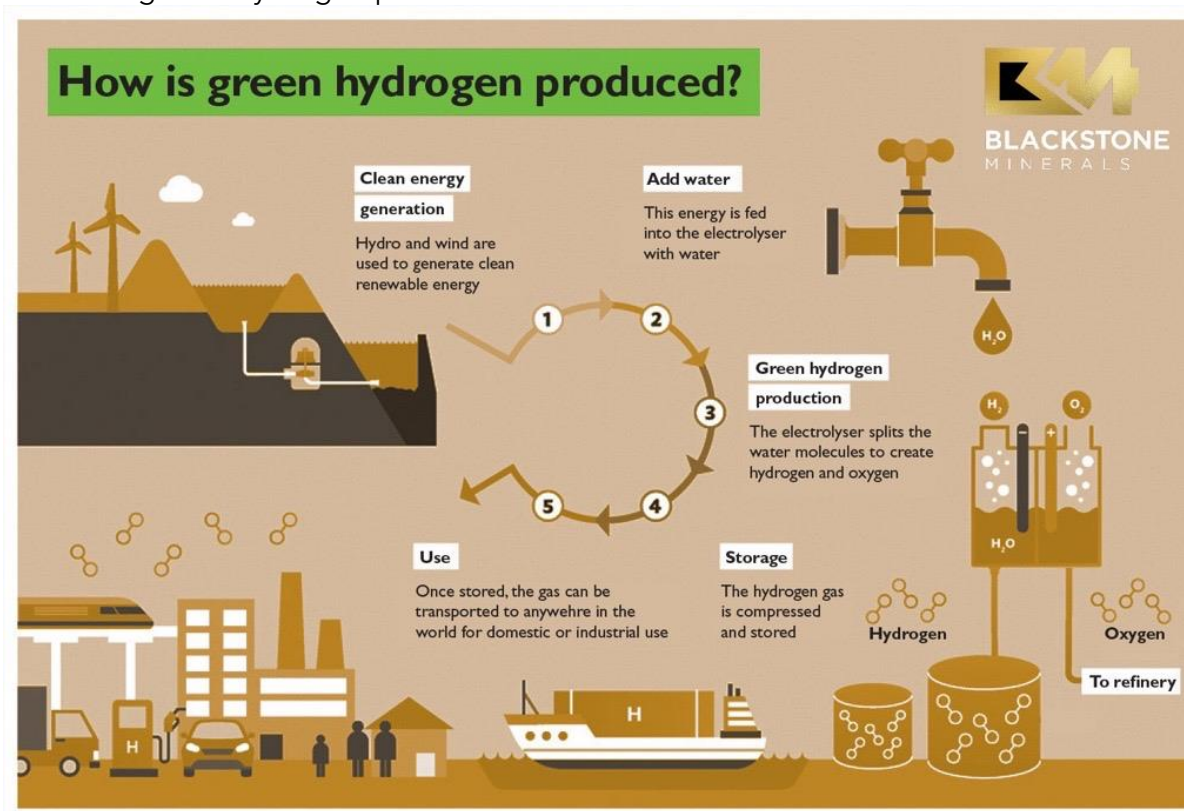


Figure 7: How is Green Hydrogen Produced?

Source: Adapted from Hydro Tasmania



The Company's current Pre-Feasibility Study (PFS) requires the use of oxygen in the downstream processing plant. Typically, the oxygen is produced by a conventional cryogenic oxygen plant with nitrogen as a by-product. However, the Company will investigate producing oxygen via the electrolysis of water, which will produce "green" hydrogen as by-product through the utilising of abundant renewable hydroelectric power and water available at Ta Khoa (Green Hydrogen Study).

The Green Hydrogen Study will include:

- An investigation into emerging green hydrogen technologies and their potential application at Ta Khoa
- A trade-off assessment of the economic (capital cost and operating cost) and environmental benefits of each option
- Assessment of the potential for downstream business to tap into renewable hydroelectric power and water sources.

The opportunity to produce a green hydrogen by-product at Ta Khoa strengthens Blackstone's aim to develop a zero-carbon mining operation and downstream processing facility at Ta Khoa (refer Figure 7).

The following key points outline how the green hydrogen concept fits into the Company's strategy:

- Oxygen is required as an input into the POX process and the Company believes that water electrolysis with hydrogen as a by-product may be an economic and sustainable option.
- Green hydrogen for use in hydrogen fuel cells, is growing in favour as an alternate, complimentary technology to battery electric vehicles;
  - The Company intends to use this by-product hydrogen as a fuel for its own concentrate haulage road fleet
  - As new hydrogen fuel cell mining fleet becomes commercially proven, the Company will also look to integrate hydrogen fuel cell vehicles into its mining fleet.
- The Green Hydrogen Study will also assess the potential to offset the Downstream Business Unit (DBU) refinery operating costs through the sale of Green Hydrogen.

Should this study yield positive economics, Blackstone will look to include Green Hydrogen into the Ta Khoa base case, and consider options to commercialise production for sale to third parties given the abundance of hydroelectric power and clean water in the north of Vietnam.

### Corporate

As announced last quarter, Blackstone announced the decision to spin out several non-core gold assets into a new IPO, Codrus and seek a listing on the Australian Securities Exchange

(ASX). Codrus highly prospective portfolio of gold assets includes the Bull Run Project, Silver Swan South Project, Red Gate Project, and Middle Creek Project.

Blackstone appointed Shannan Bamforth as Managing Director of Codrus on 3 May 2021. Mr Bamforth is a geologist with more than 20 years' experience in the resources industry with a focus on base metals and gold. He has worked in exploration, operations and corporate roles in Australia, Africa, China, and Indonesia. Mr Bamforth joined Codrus from Sandfire Resources, where he has been working in the role of General Manager Geology since 2010.

Codrus lodged a Prospectus for its IPO on 6 May 2021, which opened to offers on 14 May. It successfully completed an \$8m IPO and was admitted to the ASX on 23 June 2021.

Blackstone retains 46% of the equity in Codrus under escrowed for two years.

The Company also announced the appointment of Alison Gaines as an Independent Non-Executive Director during the Quarter.

As at 30 June 2021, the Company had approximately \$14m cash on hand, following payments of:

- \$3,824,000 on exploration activities (refer to Item 1.2(a) of Appendix 5B), relating to relating to exploration and studies costs at its Ta Khoa Nickel-Copper-PGE Project. Full details of exploration activity during the quarter are set out in this report (ASX Listing Rule 5.3.1);
- No substantive costs incurred on mining and development activities during the quarter (ASX Listing Rule 5.3.2); and
- \$182,000 of payments made to related parties or their associates (refer to Item 6.1 of Appendix 5B) including (ASX Listing Rule 5.3.5):
  - Directors' fees, salaries, superannuation, and consulting fees of \$132,000; and
  - Office recharges including rent and share service charges of \$50,000 to related entities of which the directors directly do not receive a financial benefit and are on an arm's length basis.

The Company is also pleased to announce it has agreed with Acuity Capital to extend the expiry date of its Controlled Placement Agreement ("CPA") to 31 July 2023.

As previously announced, the CPA was initially established with an expiry date of 31 July 2021 (see announcements on 16 August 2019, 31 July 2020 & 28 August 2020).

Also as previously announced, the Company has utilised the CPA to raise a total of \$3,160,000 (see announcements on 12 June 2020 and 21 August 2020 for further details).

Please note there is no requirement on Blackstone to utilise the CPA and there were no fees or costs associated with the extension of the CPA. Further, no additional security has been provided or required in relation to the CPA extension.

Authorised on behalf of the Board of Blackstone Minerals Limited

Ends.

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### 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 Pre-Feasibility Study (PFS) by mid-2021 and 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, planned for 2024. 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.

**Appendix One| Tenements****Mining tenements held at the end of June 2021 quarter**

<b>Project</b>	<b>Location</b>	<b>Tenement</b>	<b>Interest at June 2021</b>
Gold Bridge	British Columbia, Canada	501174, 502808	100%
	British Columbia, Canada	503409, 564599	100%
	British Columbia, Canada	573344, 796483	100%
	British Columbia, Canada	844114, 1020030	100%
	British Columbia, Canada	1047915, 1055449	100%
	British Columbia, Canada	1046246, 1046253	100%
	British Columbia, Canada	1050797, 1052563	100%
	British Columbia, Canada	1052564, 1052989	100%
	British Columbia, Canada	1052990, 1052991	100%
	British Columbia, Canada	1052992, 1052993	100%
	British Columbia, Canada	1055836, 1055837	100%
	British Columbia, Canada	1055838, 1055839	100%
	British Columbia, Canada	1055840, 1055859	100%
	British Columbia, Canada	1055860, 1055861	100%
	British Columbia, Canada	1055862, 1055863	100%
	British Columbia, Canada	1055864, 1052630	100%
	British Columbia, Canada	1052893, 1065892	100%
	British Columbia, Canada	1066580, 1066581	100%
Ta Khoa	Vietnam	ML 1211/GPKT-BTNMT	90%
		and 522 G/P	90%
Cartier	Quebec, Canada	2459824, 2459825	100%
	Quebec, Canada	2459826, 2459827	100%
	Quebec, Canada	2459828, 2459829	100%
	Quebec, Canada	2463107, 2463108	100%
	Quebec, Canada	2463109, 2463110	100%
	Quebec, Canada	2463111, 2463112	100%
	Quebec, Canada	2463113, 2463114	100%
	Quebec, Canada	2463115	100%

## Mining tenements acquired and disposed during the June 2021 quarter

Project	Location	Tenement	Interest at beginning of Quarter	Interest at end of Quarter <sup>2</sup>
<b>Mining tenements transferred <sup>2</sup></b>				
Bull Run (Record Mine)	Oregon, USA	152073, 152074	0% <sup>1</sup>	0%
	Oregon, USA	152076, 152077	0% <sup>1</sup>	0%
	Oregon, USA	152078, 152627	0% <sup>1</sup>	0%
	Oregon, USA	17242 - 17246	0% <sup>1</sup>	0%
	Oregon, USA	176469 - 176514	100%	0%
	Oregon, USA	178405 - 178437	100%	0%
Silver Swan South	Western Australia	P27/2191 - P27/2196, E27/545	100%	0%
Red Gate	Western Australia	E31/1096	100%	0%
Middle Creek	Western Australia	P46/1900 - P46/1912	95%	0%
		P46/1914 - P46/1920, P46/1924	95%	0%
			100%	0%
<b>Mining tenements acquired</b>				
Nil				

1. Held via option agreement to acquire up to 100% of these tenements.

2. Transferred to Codrus Minerals Limited (ASX:CDR) during the quarter.

## Beneficial percentage interests in joint venture agreements at the end of the quarter

Project	Location	Tenement	Interest at end of quarter
Nil			

## Beneficial percentage interests in farm-in or farm-out agreements acquired or disposed of during the quarter

Project	Location	Tenement	Interest at beginning of quarter	Interest at end of quarter
<b>Mining tenements relinquished</b>				
Nil				
<b>Mining tenements acquired</b>				
Nil				