

Ref: /BSX/609/BSX088

## Major Copper, Gold and Cobalt Targets Identified in BC Cobalt Belt

### Highlights

- Results from Blackstone Minerals soil sampling program in the BC Cobalt Belt have identified **major Copper-Gold-Cobalt targets centred on the Jewel Prospect** located 1.1 km north-northeast of the Little Gem Prospect;
- The new soil anomalies are **greater than 1.5 kilometres long** and coincide with the recently announced IP survey results which indicate a **large sulfide bearing body associated with the Jewel Copper-Gold-Cobalt Prospect** (Refer Figures One, Three, Four, Five and Six);
- New surface rock chip samples taken from the **Jewel Copper-Gold-Cobalt Prospect have also delivered high grade assay results including 5.6% copper and 5.1% cobalt** (Refer Figures Two and Three);
- The Jewel prospect has never been drill tested and with the multiple large-scale IP targets coinciding with the new Cu-Au-Co soil anomalies **the Jewel Prospect is the Company's highest priority target to be drill tested at the earliest opportunity**;
- Blackstone has now completed the first ever cobalt focussed exploration field season in the Bridge River Mining Camp and the initial results indicate **the BC Cobalt Belt is rapidly emerging into a potential world class Cobalt district** (Refer Figure Seven).

Blackstone's Managing Director commented;

*"Our soil sampling program has identified a major Cu-Au-Co target at Jewel which coincides with the large IP anomaly we believe to be a substantial sulfide bearing body at depth.*

*We are eagerly anticipating the drilling of these new targets so as to better understand the primary source of the high grade Cu-Au-Co mineralisation at Jewel, Little Gem and Erebor.*

*We look forward to further results from our 2018 fieldwork program as we continue to unlock what is shaping up to be a potential world class Cobalt district located in a tier one mining jurisdiction in British Columbia (BC), Canada"*

### BLACKSTONE FAST FACTS

Shares on Issue	96.2m
Share Price	\$0.135
Market Cap	\$13m
ASX Code	BSX

### BOARD & MANAGEMENT

**Non-Exec Chairman**  
Hamish Halliday

**Managing Director**  
Scott Williamson

**Technical Director**  
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**Non-Exec Directors**  
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**Joint Company Secretaries**  
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### ADVANCING THE FOLLOWING PROJECTS

**BC Cobalt Project**  
British Columbia, Canada

**Cartier Cobalt-Nickel Project**  
Quebec, Canada

**Gold and Nickel Projects**  
Western Australia

- Silver Swan South
- Middle Creek
- Red Gate

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Blackstone Minerals Limited (ASX: BSX) is pleased to announce results from an extensive soil sampling program undertaken at the BC Cobalt Project in British Columbia (BC), Canada. The soil sampling program has identified major Copper-Gold-Cobalt targets centred on the Jewel Prospect which is located 1.1 km north-northeast of the Little Gem Prospect. The new soil anomalies are greater than 1.5 kilometres long and coincide with the recently announced IP targets which indicate a large sulfide bearing body at depth. The Copper, Gold and Cobalt soil anomalies are favourably located within a significant structural setting near the contact between the granodiorite and serpentinite (analogous geological setting to the deposits of the world class Bou-Azzer primary Cobalt district in Morocco). Blackstone has also received new surface rock chip samples returning grades of up to 5.6% copper and 5.1% copper from the Jewel Prospect (Refer Figure Two and Table One).

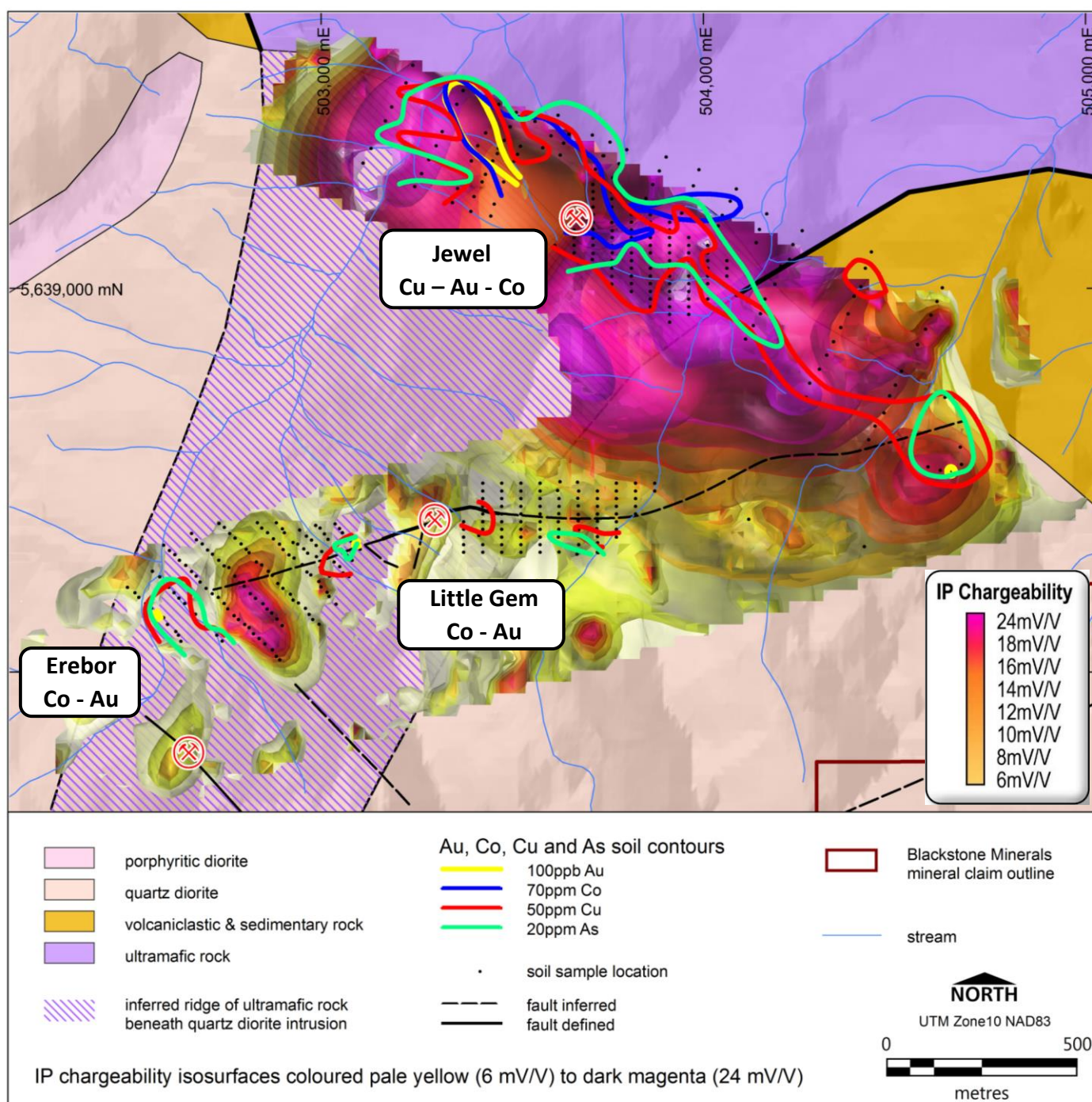
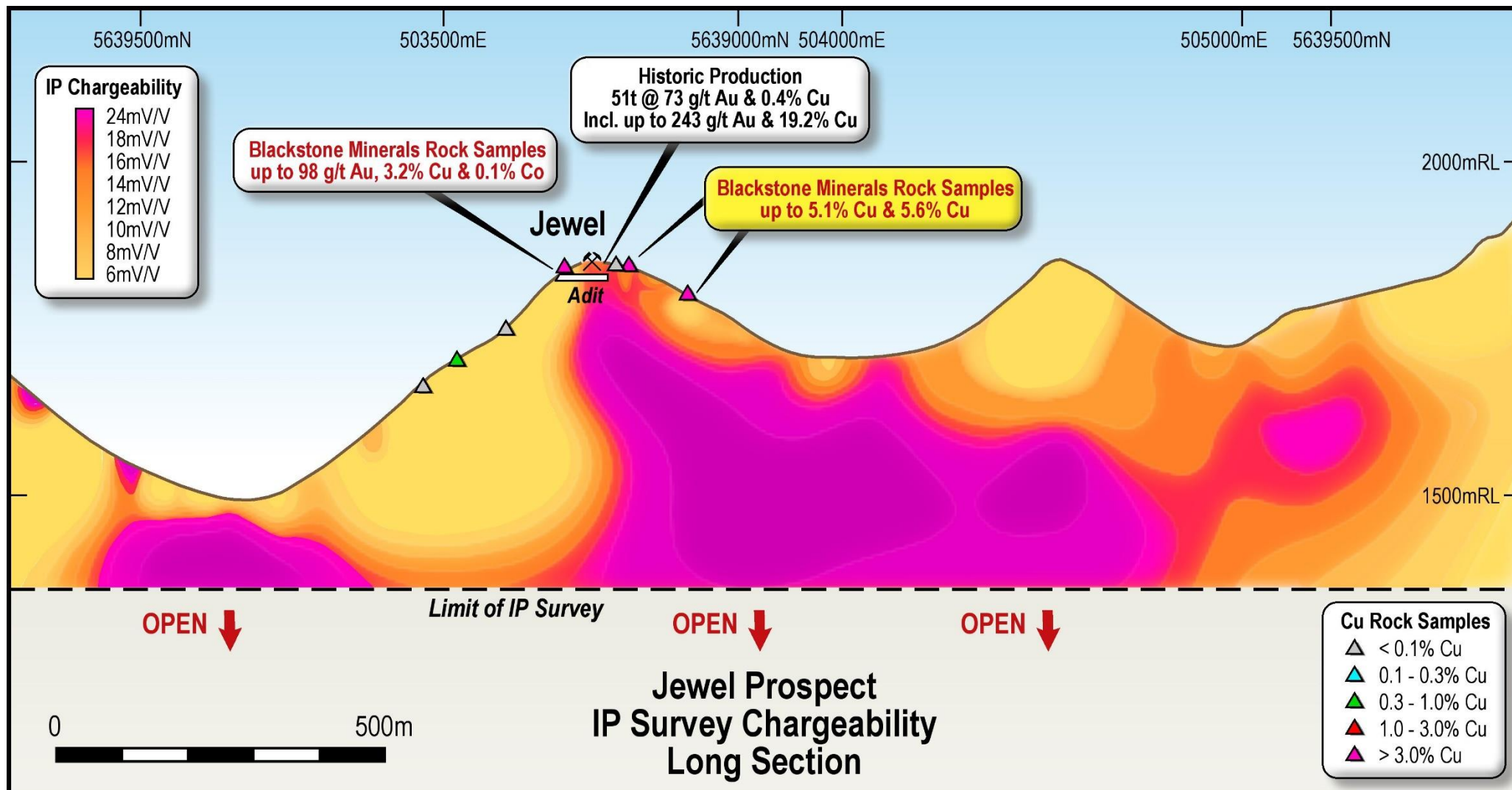


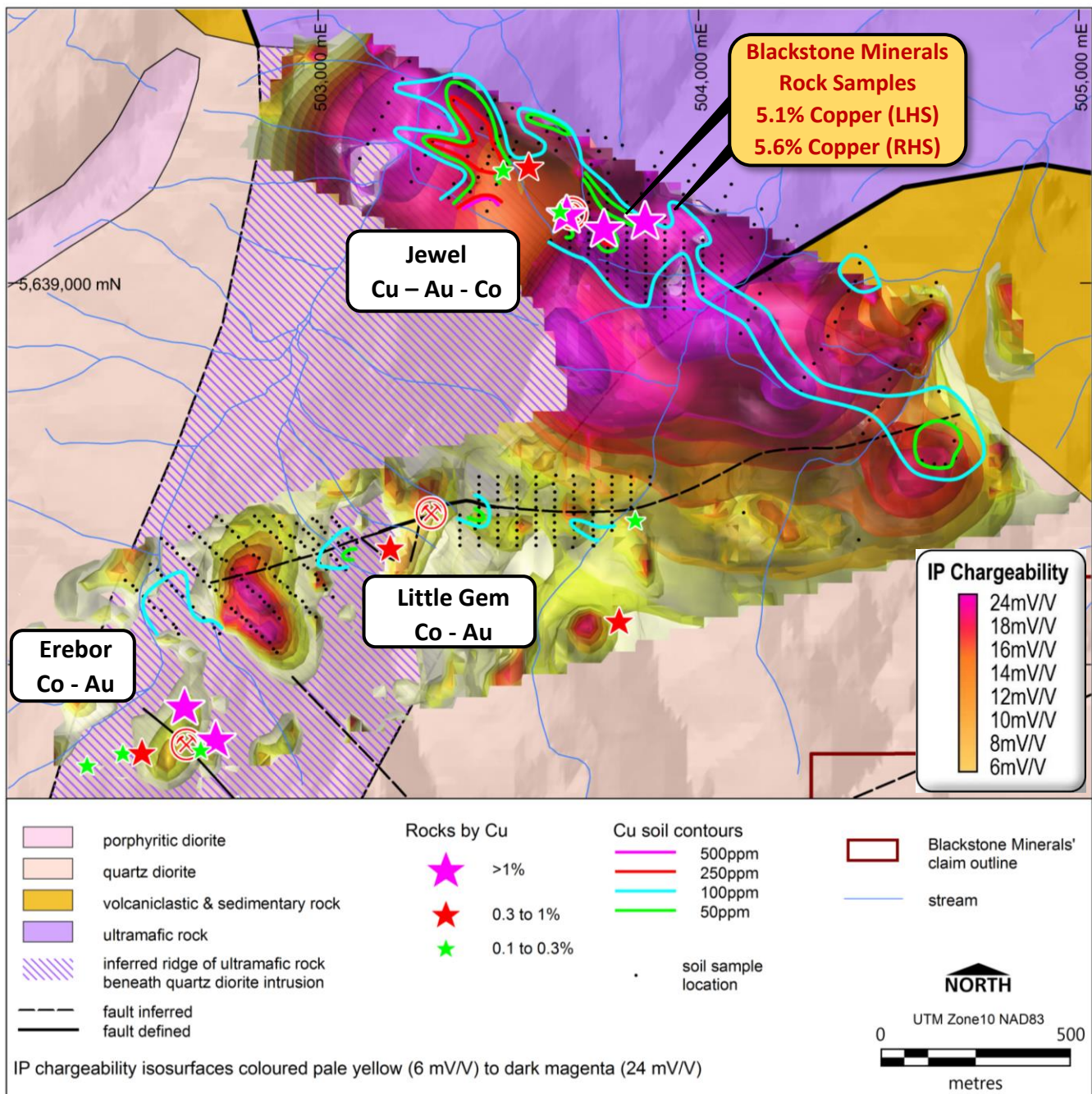
Figure One | BC Cobalt Project plan showing Copper, Gold and Cobalt soil contours and IP chargeability isosurfaces





**Figure Two | Long Section schematic of chargeability isosurfaces and surface rock samples at the Jewel Copper-Gold-Cobalt Prospect**

1. Historic production results obtained from external report by Cairnes, C.E: Geology and Mineral Deposits of Tyaughton on Lake Map-Area, British Columbia: Geological Survey of Canada. Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa, Canada and Reports of Minister of Mines, British Columbia: 1937 and 1938.
2. Refer to Table One for Blackstone Minerals Rock Samples results and ASX Announcement 6 September 2017 for previous results.



**Figure Three | BC Cobalt Project plan showing Copper soil contours, rock samples and IP chargeability isosurfaces**

The Jewel Copper-Gold-Cobalt Prospect is located 1.1 km north-northeast of the Little Gem prospect and is associated with the high grade Jewel Underground Mine with historic production of 51 tonnes mined between 1938 and 1940<sup>1</sup>. Average grades mined were **73g/t gold and 0.4% copper**<sup>1</sup> and the highest grades assayed were up to **243g/t gold<sup>1</sup> and 19.2% copper<sup>2</sup>**. These historic grades have been supported by Blackstone Minerals rock chip samples of up to **98g/t gold, 3.2% copper, 0.1% cobalt<sup>2</sup>**.

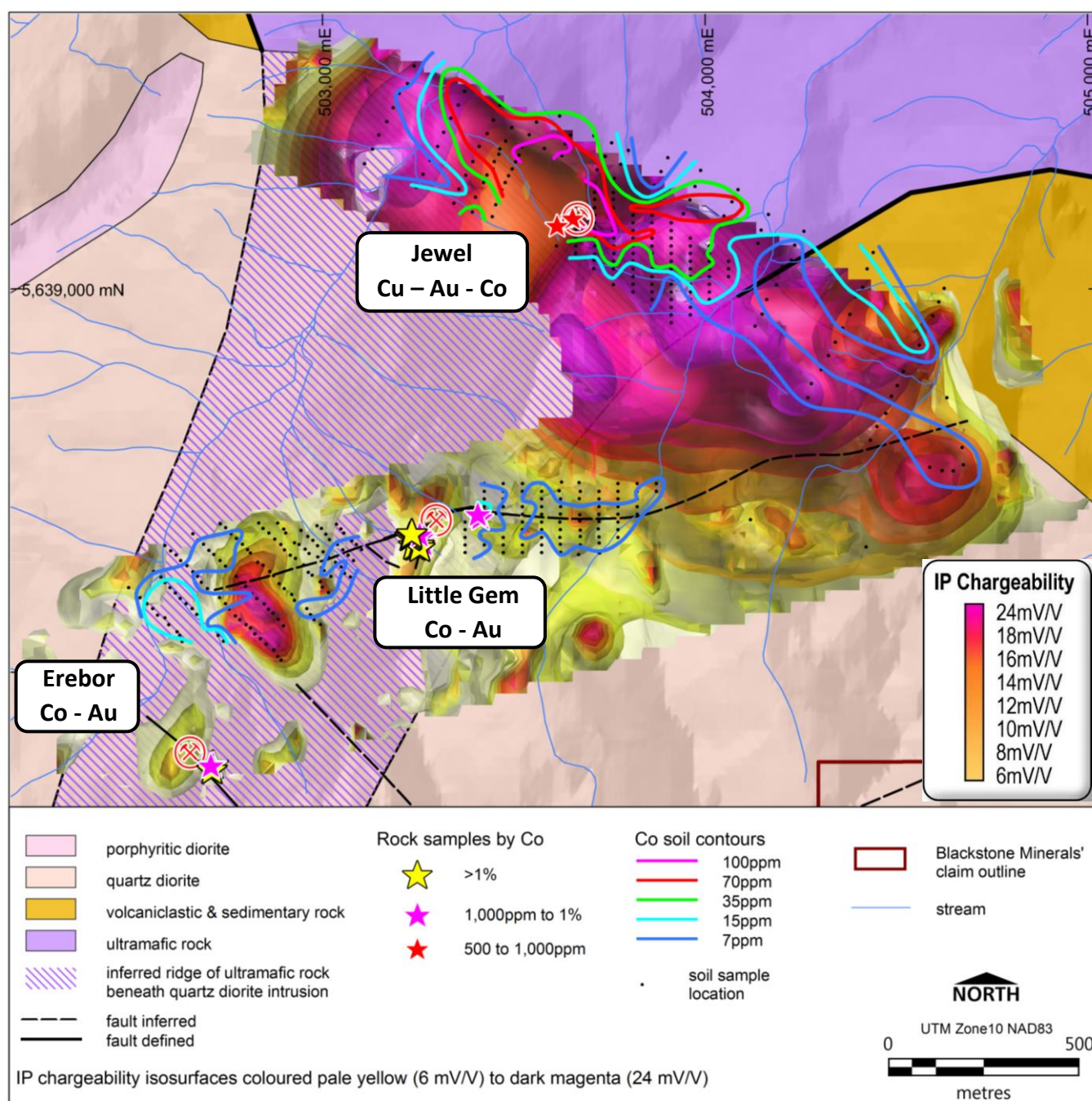
In the late-1930's the sulfide ore mined at the historic Jewel Mine was unable to be substantially beneficiated by concentration and the gold values were not high enough to make a profit by direct shipping ore "DSO" to smelters. After the small tonnage of ore was extracted at Jewel the claims lapsed and there was no further work conducted at the Jewel Copper-Gold-Cobalt Prospect until

1. Refer ASX Announcement 6 September 2017 and 2. ASX Announcement 9 October 2018



Blackstone Minerals acquired the BC Cobalt Project approximately 12 months ago. Since Blackstone acquired the Project, the Company has completed an extensive program of prospecting, stream sediment and soil sampling with the geochemical results coinciding and supporting the large-scale IP chargeability and resistivity signatures at Jewel.

Blackstone's geological model for the Jewel Mine suggests the Copper-Gold-Cobalt Prospect is favourably located within a similar geological setting to the underground mines of the world class Bou-Azzer primary Cobalt district in Morocco. The majority of the high grade underground primary Cobalt mines at Bou-Azzer are located near the contact of the serpentinised ultramafic and the quartz diorite. The Jewel Mine is favourably located within close proximity to the contact of the serpentinite and granodiorite bodies at the north of the BC Cobalt Project tenure.



**Figure Four | BC Cobalt Project plan showing Cobalt soil contours, rock samples and IP chargeability isosurfaces**



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With the recent discovery of Cobalt-Gold mineralisation at Erebor returning grades up to **2.3% cobalt, 32 g/t gold, 1.6% copper and 1.1% nickel**<sup>1</sup> combined with the multiple new large-scale IP anomalies indicating the potential source of the high grade mineralisation at Little Gem, Erebor, Jewel and Roxey the Company continues to unlock the potential for multiple deposits in a region with geology analogous to the Bou-Azzer primary Cobalt district in Morocco (>50 deposits and 75 years of Cobalt production). Further regional targets are being generated through prospecting and stream sediment sampling across the entire 335 km<sup>2</sup> of tenure with 48 km of untested strike of geology prospective for further primary Cobalt and Gold mineralisation.

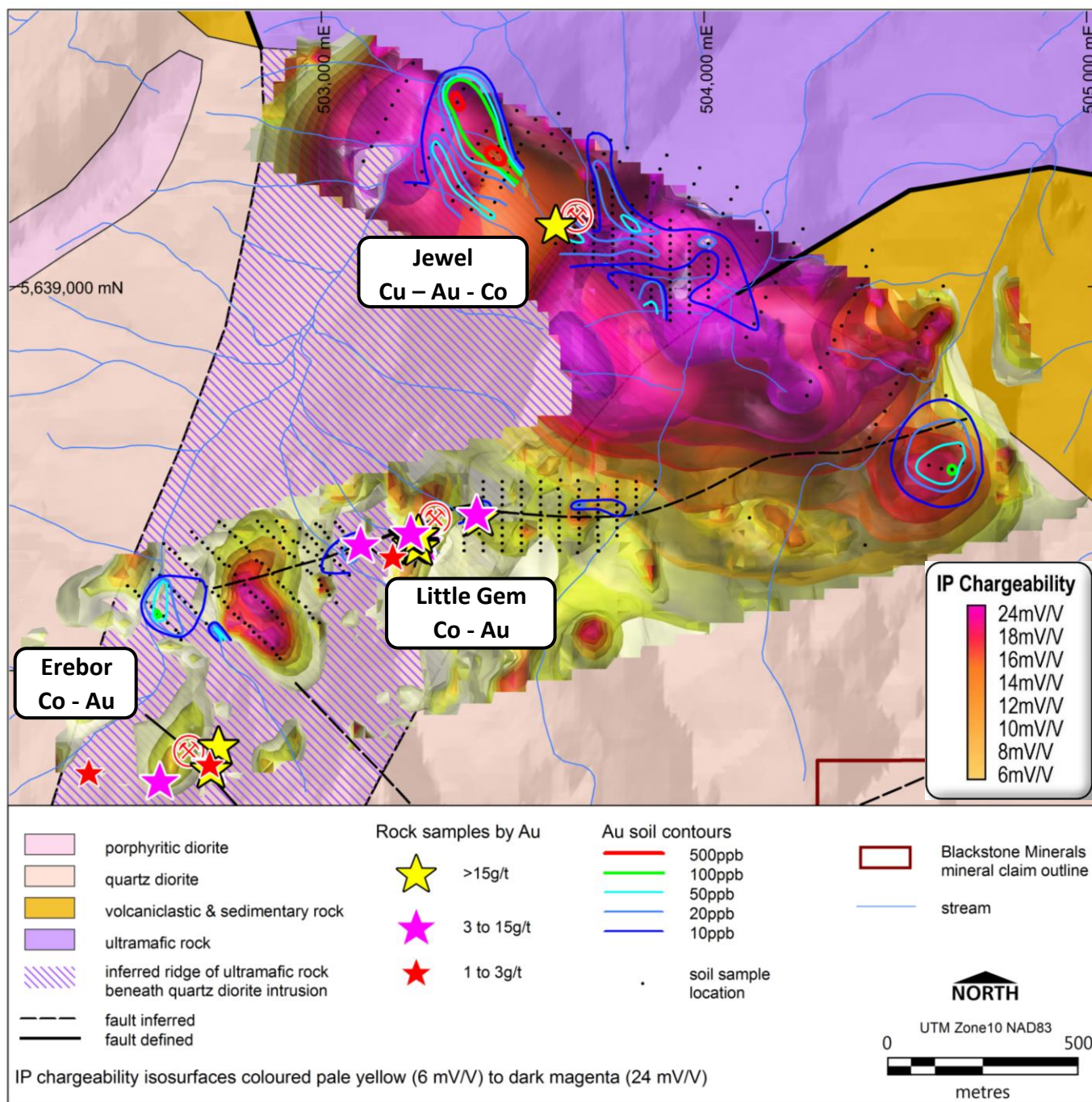


Figure Five | BC Cobalt Project plan showing Gold soil contours, rock samples and IP chargeability isosurfaces

1. Refer to ASX Announcement 9 October 2018

Blackstone has taken over 700 regional soil, rock chip and stream sediment samples throughout the entire 335 km<sup>2</sup> of tenure at the high grade BC Cobalt Project. The Company is now awaiting the regional samples to be processed over the coming months to better understand the full potential of the BC Cobalt Belt to host further Cobalt-Gold mineralisation. Blackstone is increasingly confident that the BC Cobalt Project could host a belt-scale opportunity similar to the Bou-Azzer district in Morocco which will appeal to Cobalt end-users looking for a long term supply of the key ingredient in the cathode chemistry of the Lithium Ion battery. As the regional data continues to be processed over the coming months the Company will be in a better position to understand the potential for the Bralorne district to host a world class Cobalt camp.

Blackstone has completed the initial six diamond drill holes at the Little Gem Prospect and now has assay results pending for the remaining five diamond drill holes from the maiden drilling program. Drilling to date has intersected the Little Gem structure within metres of the interpreted target. The Little Gem alteration halo is significantly larger than previously estimated, and the 2018 drilling to date has consistently intersected a broad alteration zone, highlighting potential for a major hydrothermal system at Little Gem. Significant results from the first six drill holes include:

- LGD17-001R<sup>1</sup>**      **1.1 m @ 3.0% cobalt and 44 g/t gold** within  
                             **4.3 m @ 1.0% cobalt and 15 g/t gold.**
- LGD18-002<sup>2</sup>**      **1.0 m @ 1.2% cobalt and 5 g/t gold** within  
                             **3.2 m @ 0.8% cobalt and 4 g/t gold.**
- LGD18-003<sup>3</sup>**      **0.4 m @ 1.2% copper, 5 g/t gold & 0.12% cobalt** within  
                             **1.0 m @ 0.5% copper, 4 g/t gold & 0.08% cobalt.**
- LGD18-005<sup>3</sup>**      **0.8 m @ 0.6% cobalt and 9 g/t gold** within  
                             **1.6 m @ 0.4% cobalt and 5 g/t gold.**

The BC Cobalt Project was discovered in the 1930's by prospectors identifying a pink cobalt-bloom on weathered mineralisation (Erythrite as per the Erebor discovery) that led to three adits being developed. A total of 1,268 m of drilling was completed from underground and detailed channel sampling was taken from the adits. Results from this work generated some exceptional Cobalt and Gold assays including:

- Historic drilling<sup>4</sup>**                      **1.8 m @ 2.4% cobalt & 112 g/t gold**  
   **3.3 m @ 1.4% cobalt & 12 g/t gold** and  
   **4.1 m @ 1.4% cobalt & 11 g/t gold.**
- Underground channel sampling<sup>4</sup>**      **1.8 m @ 4.4% cobalt & 73 g/t gold** and  
   **2.0 m @ 3.1% cobalt & 76 g/t gold.**
- Surface channel sampling<sup>4</sup>**              **0.4 m @ 5.7% cobalt & 1,574 g/t gold** and  
   **0.1 m @ 4.6% cobalt & 800 g/t gold.**

Little Gem is mostly underlain by granite of the Coast Plutonic Complex and ultramafic rocks on what is interpreted to be the northern extension of the Cadwallader fault zone. These are the major geological units and structures important to the mineral deposits either as the host rocks or sources of the mineralising fluids that gave rise to the Bridge River mining camp. The camp has >60 mineral localities including the Bralorne-Pioneer mining complex (**endowment of 4.4 Moz at 17 g/t Au**)<sup>4</sup>

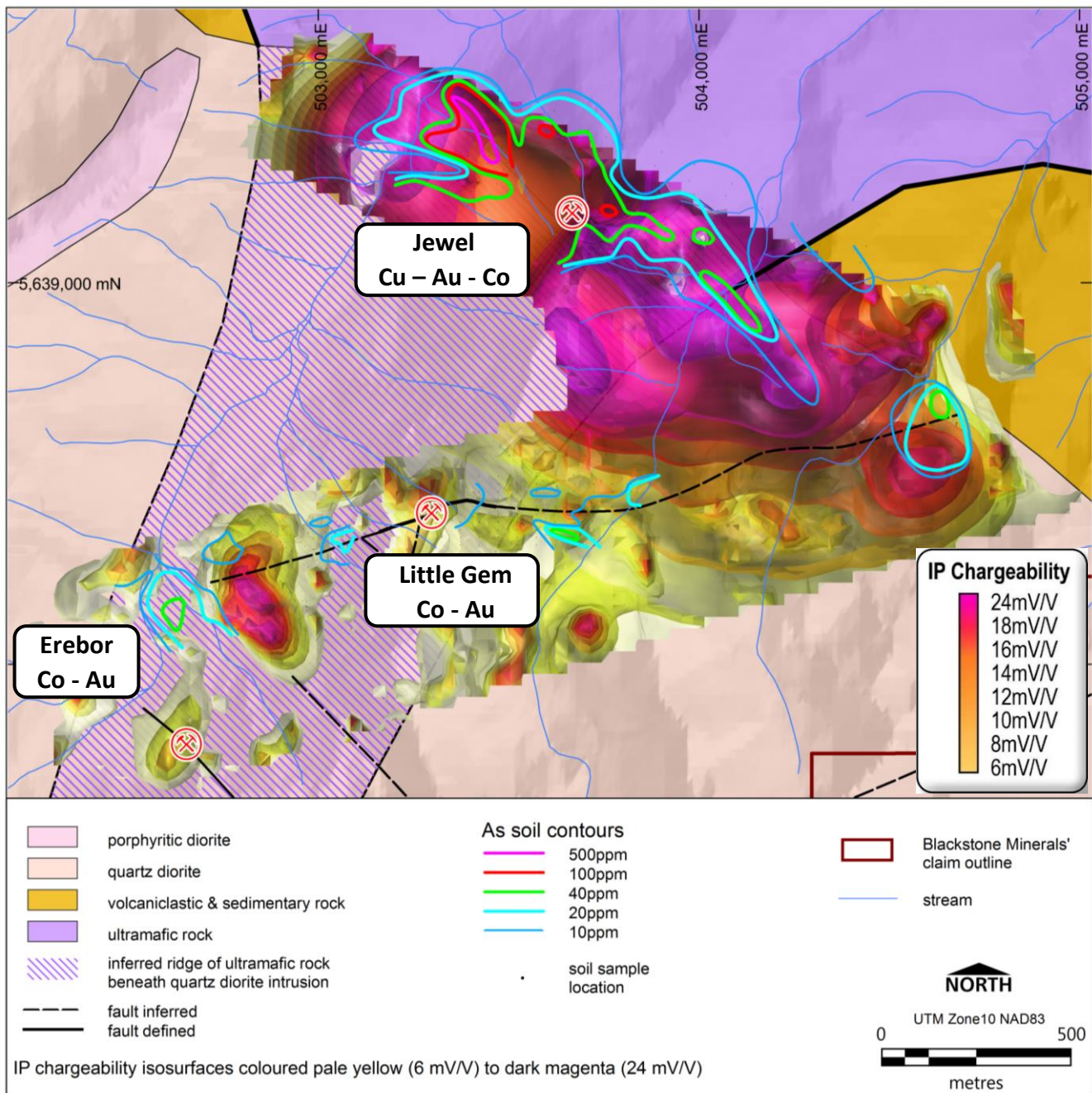
1. Refer ASX Announcement 9 January 2018 for full set of results. 2. Refer ASX Announcement 31 May 2018 for full set of results. 3. Refer ASX Announcement 31 July 2018 for full set of results. 4.

Refer ASX Announcement 26 July 2017 for full set of results



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which retains the status of the foremost gold producer in British Columbia and the sixth largest in Canada. Little Gem is only 15 km along strike to the north of the Bralorne-Pioneer mining complex.



**Figure Six | BC Cobalt Project plan showing Arsenic soil contours and IP chargeability isosurfaces**

There has been very little modern day exploration of the BC Cobalt Belt with the main activities being airborne geophysical surveys (including magnetic, radiometric and electromagnetic ("EM") surveys) in the 1970's and a further two drill holes completed in 1986. The second mineral occurrence at the BC Cobalt Project is the Jewel Copper-Gold-Cobalt Prospect which supported some gold production from 1938 to 1940 and is located only 1.1 km north-northeast of the Little Gem Mine. Since Blackstone began working on the BC Cobalt Project it has verified the mineralisation identified historically at the Little Gem Cobalt-Gold Prospect and the Jewel Gold-Copper-Cobalt Prospect and discovered a new high grade Gold-Copper Prospect named Roxey.



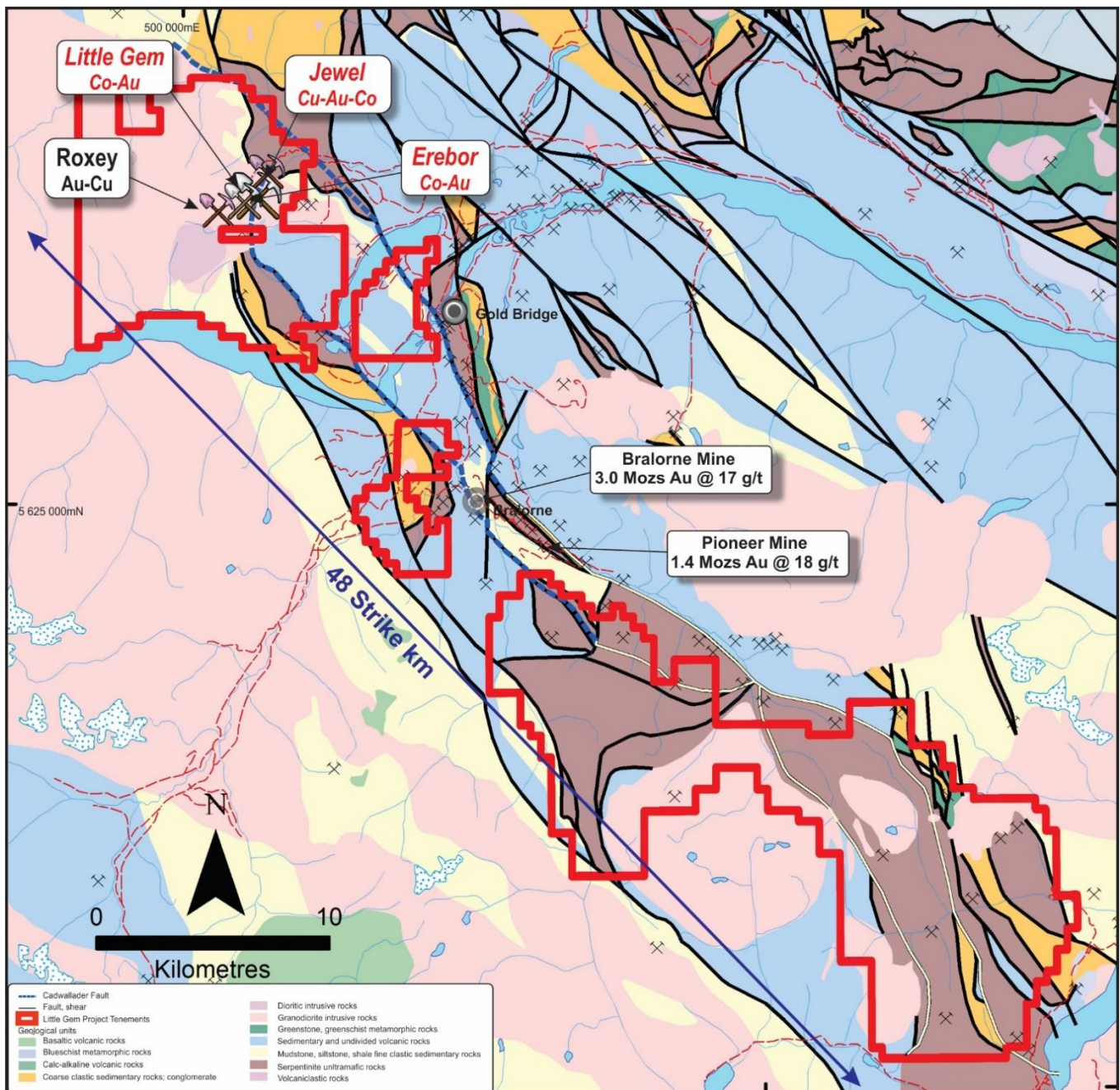


Figure Seven | BC Cobalt Project Geological Setting<sup>1 & 2</sup>

The Roxey Gold-Copper Prospect is located 1.5 km west-southwest of the Little Gem Cobalt-Gold prospect. Blackstone visually identified Roxey during the due diligence site visit and took rock chip samples within the target area which assayed up to **24 g/t gold, 1.9% copper & 24 g/t silver**<sup>1</sup>. Mineralisation at Roxey is associated with quartz-pyrite altered diorite containing chalcopyrite. Surface rock chip samples taken to verify the mineralisation at the Jewel Copper-Gold-Cobalt prospect located 1.1 km north-northeast of Little Gem, returned up to **98 g/t gold and 3.2% copper**<sup>1</sup>. These results confirm what Blackstone's recent investigation has revealed with historical samples of up to **0.6 m @ 75 g/t gold and 0.45m @ 153 g/t gold** from underground and surface channel sampling and up to **6.9 g/t gold, 19.25% copper & 137 g/t silver** from underground rock chip sampling<sup>1</sup>. Mineralisation at Jewel sits in a serpentinised ultramafic near the easterly trending/steep south dipping contact with the quartz diorite/granodiorite that hosts the Little Gem Prospect.

1. Refer ASX Announcement 6 September 2017 and 2.ASX Announcement 26 July 2017.

## Cobalt Market Commentary

Cobalt contributes up to 60% of the value of Lithium Ion Batteries which in turn accounts for greater than 50% of demand for cobalt. The lithium ion battery is projected to become the world's most significant source of power with the use in electric vehicles ("EV") being the key driver. Bloomberg forecasts 55% of vehicles sold by 2040 will be electric, currently only 1% of global sales are EVs. Consequently, cobalt demand is expected to rise at 5% compound annual growth rate ("CAGR") over the next 4 years. Cobalt's other main use at 20% is in superalloys which compliments the battery demand as high-tech industry grows.

Cobalt is expected to have a supply deficit as currently mining is only just meeting demand. The cobalt price increased significantly from US\$10/lb (US\$22,000/t) to US\$40/lb (US\$87,000/t) over the past 2 years before recently falling to US\$25/lb (US\$55,000/t) due to seasonal factors. Current prices are still well short of the 2008 high of US\$52/lb (US\$115,000/t) which was the last time cobalt was in deficit. Approximately 98% of the world's supply of cobalt comes from copper and nickel production with 15 mines representing half of the world's supply. This makes the supply stream for cobalt highly sensitive to disruptions caused by mine related issues. Currently more than 50% of the world's supply of cobalt is a by-product of copper production from the Democratic Republic of Congo (DRC).

Yours sincerely



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**Managing Director**  
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## About Blackstone

Blackstone Minerals Limited (**ASX code: BSX**) is actively exploring the high grade Little Gem Cobalt-Gold Project in British Columbia, Canada. Blackstone is the first company in over 60 years to undertake systematic exploration for Cobalt at Little Gem and within the surrounding district. Blackstone owns a large land holding with 48 km of untested strike of highly prospective geology analogous to the world class Bou-Azzer primary Cobalt district in Morocco. Blackstone is actively exploring for nickel and gold in the Eastern Goldfields and gold in the Pilbara region of Western Australia. Blackstone has a board and management team with a proven track record of mineral discovery and corporate success.

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr Andrew Radonjic, a full time employee of the company and 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 Geophysical Exploration Results is based on information compiled by Mr Barry Bourne, who is employed as a Consultant to the Company through geophysical consultancy Terra Resources Pty Ltd. Mr Bourne is a fellow of the Australian Institute of Geoscientists and a member of the Australian Society of Exploration Geophysicists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Bourne consents to the inclusion in the report of matters based on information in the form and context in which it appears.



**Table One**

BC Cobalt Project | Assays results from rock samples

Prospect	Sample	East UTM Zone10 NAD83	North UTM Zone10 NAD83	Co (ppm)	Au (g/t)	Ag (g/t)	Cu (ppm)	Ni (ppm)	Mo (ppm)	Description
Jewel	JSLG195	503860	5639172	41	0.07	7.3	56070	949	<1	malachite coated ultramafic cobble float
Jewel	SOLG024	503654	5639189	631	0.14	1	32100	1970	<1	serpentinite with malachite veinlets
Jewel	SOLG025	503613	5639170	888	98.2	3.4	498	1000	2	limonite material from mouth of Jewel adit
Jewel	SOLG049A	503487	5639300	45	0.09	0.6	1385	131	<1	dacite with disseminated pyrite and chalcopyrite
Jewel	TELG001	503752	5639152	94	0.06	2.5	50970	1461	1	malachite coated serpentinite float in old trench at Jewel workings
Jewel	V394208	503554	5639311	62	0.23	0.8	4220	108	<1	dacite dyke with malachite coatings and minor disseminated sulfide
Jewel	V394210	503636	5639192	112	0.05	<0.5	1230	91	1	dacite dyke with malachite
Erebor	JSLG047B	502714	5637765	9648	3.12	<0.5	5	1191	2	quartz diorite float with erythrite coatings, disseminated safflorite
Erebor	JSLG047C	502714	5637765	4526	1.34	0.5	4	845	4	outcrop of pink potassium feldspar alteration in tonalite, pitted surface, disseminated safflorite
Erebor	JSLG047E	502714	5637765	10160	0.82	<0.5	10	348	2	quartz diorite float with erythrite coating fractures, trace disseminated safflorite
Erebor	JSLG047F	502714	5637765	4375	0.21	<0.5	3	162	1	quartz diorite float with erythrite coating fractures, trace disseminated safflorite
Erebor	JSLG053	502578	5637721	70	10.43	0.8	430	17	2	quartz-feldspar vein float
Erebor	JSLG107	502392	5637740	67	1.69	1.6	1242	17	2	quartz-feldspar-amphibole vein float with minor pyrite and chalcopyrite
Erebor	JSLG108	502465	5637767	21	0.04	<0.5	896	16	<1	biotite+chlorite tonalite float with quartz+plagioclase+biotite+pyrite+chalcopyrite vein
Erebor	JSLG109B	502486	5637772	28	0.04	1.2	1336	34	1	amphibole tonalite float with quartz+Kfeldspar+amphibole+sulfide filling vugs

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Erebor	JSLG110A	502537	5637775	33	0.03	<0.5	1157	37	1	siliceous alteration float with very fine disseminated sulfides
Erebor	JSLG110B	502537	5637775	17	0.03	3.9	5028	12	<1	amphibole quartz diorite float with minor sulfides and trace malachite
Erebor	JSLG138	502731	5637813	8	16.7	36.8	14700	5	125	biotite quartz diorite float with minor pyrrhotite, chalcopryrite, malachite and trace molybdenite in fractures
Erebor	JSLG196	502649	5637899	10	0.84	31.9	15720	15	3	chlorite biotite quartz diorite float with quartz+pyrrhotite+chalcopryrite+malachite vein
Erebor	LFLG002	502715	5637752	6390	1.85	<0.5	11	319	4	outcrop of erythrite coated biotite quartz diorite lens with safflorite and iron carbonate alteration
Erebor	LFLG003	502711	5637752	22520	32.16	<0.5	18	11470	2354	outcrop of erythrite coated quartz diorite lens with disseminated safflorite associated with Kfeldspar+chlorite+carbonate alteration
Erebor	LFLG004	502691	5637781	6	<0.01	1	2288	3	126	tonalite float with quartz+malachite+molybdenite patches or veins
Erebor	SOLG031A	502708	5637762	5870	1.01	<0.5	3	769	6	chlorite+Kfeldspar altered amphibole biotite quartz diorite with disseminated safflorite partly weathered to erythrite
Little Gem	Bottom_of_Raise2	503244	5638335	21160	41.54	na	na	na	na	sulfarsenide float in adit
Little Gem	Cut1	503255	5638357	50700	30	na	na	na	na	sulfarsenide float from muckpile in adit
Little Gem	Cut2	503265	5638358	3320	5.03	na	na	na	na	sulfarsenide float from muckpile in adit
Little Gem	Cut3	503258	5638357	5200	13.29	na	na	na	na	muckpile sample in adit
Little Gem	Location4	503259	5638333	1890	3.19	na	na	na	na	muckpile sample in adit
Little Gem	Main1	503264	5638341	6280	3.98	na	na	na	na	muckpile sample in adit
Little Gem	Raise2	503239	5638337	30470	22.46	na	na	na	na	muckpile sample in adit
Little Gem	Raise2_Access	503252	5638339	20010	88.54	na	na	na	na	massive sulfarsenide rock chip samples from both sides of adit
Little Gem	SOLG001	503103	5638338	13	4.74	0.5	483	8	7	10m long quartz vein with coarse magnetite and chalcopryrite near margins



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Little Gem	SOLG005	503253	5638333	6470	136.5	0.9	1	23	1	irregular pods to 150 mm thick & 50 cm long of massive Co sulfarsenides
Little Gem	SOLG006	503255	5638332	16	0.27	<0.5	4	9	3	100mm thick laminated quartz + iron carbonate vein
Little Gem	SOLG006A	503255	5638332	734	4.85	<0.5	<1	47	1	biotite + quartz + iron carbonate alteration zone with disseminated sulfarsenides
Little Gem	SOLG006B	503255	5638332	47600	88.7	1.3	4	398	7	pods of massive Co sulfarsenide within biotite + quartz + iron carbonate alteration zone
Little Gem	SOLG008	503229	5638360	31200	23.5	<0.5	2	874	689	massive Co sulfarsenide mineralisation around adit portal
Little Gem	SOLG009A	503233	5638363	49400	33.9	1	3	5320	121	40 cm thick by +3 m long pod of coarse Co sulfarsenide, calcite and quartz, erythrite coatings
Little Gem	SOLG009B	503233	5638363	232	0.19	<0.5	4	25	10	quartz diorite with few % disseminated sulfide
Little Gem	SOLG010	503254	5638364	7640	55.5	<0.5	1	82	6	disseminated to massive sulfarsenide with coarse grained calcite, erythrite coatings
Little Gem	SOLG011	503287	5638372	37	0.05	<0.5	22	12	2	lam quartz + iron carbonate veins to 50 mm thick in iron carbonate altered quartz diorite
Little Gem	SOLG012	503234	5638368	25700	10.3	<0.5	5	2380	27	massive sulfarsenide lens in iron carbonate altered quartz diorite
Little Gem	SOLG021	503413	5638409	2525	19.32	<0.5	5	46	50	boulder of biotite + chlorite +sulfarsenide altered quartz diorite beneath old back-filled trenches
Little Gem	SOLG023	503450	5638404	16	0.44	<0.5	98	11	3	limonitic silicified quartz diorite
Little Gem	SOLG026	503406	5638417	6600	14.15	2.5	22	116	96	boulder of biotite altered quartz diorite with patches of chlorite + sulfarsenide
Little Gem	V394201	503190	5638311	27	0.45	2.2	3390	31	45	quartz diorite with malachite and clay on joints
Little Gem	V394202	503187	5638302	61	1.14	0.8	964	666	5	epidote + biotite altered diorite with abundant magnetite
Eastern Gem	V394233	503792	5638120	50	<0.01	1.8	3952	26	1	diorite in talus with malachite on fractures

### Appendix One

JORC Code, 2012 Edition | 'Table 1' Report

#### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The reported rock samples were collected from outcrop, historic workings and talus by Blackstone Minerals personnel. Only rock samples considered prospective for Co, Au, Ag, Cu, and Ni were collected and submitted for assay and those with significant results are reported here. Samples of up to 2.5 kg each considered representative of the mineralisation of interest were submitted to ALS Canada and MS Analytical assay laboratories in Vancouver, British Columbia.</li> <li>Approx. 440 soil samples were collected by hand auger at depths of up to 1.2 m below surface targeting the B and C horizons. Pumice was present in varying amounts in most samples. The samples were screened to &lt;2.3mm on site. Screened weight ranged from 0.3 kg to 2 kg with a mean sample weight of c. 0.7 kg. The screened samples were submitted to MS Analytical assay laboratory in Vancouver, British Columbia for analysis.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>No drilling, not applicable.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>No drilling, not applicable.</li> </ul>
Logging	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The rock and soil samples were logged by suitably qualified Blackstone Minerals geologists.</li> <li>No drilling, not applicable</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <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 sub-sampling 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 style="list-style-type: none"> <li>The rock and soil samples were not subsampled for assay.</li> <li>No drilling, not applicable.</li> </ul>



Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Only visibly mineralised rock samples collected and submitted for assay are being reported.</li> <li>The rock samples were submitted to ALS and MS Analytical in Vancouver where they were dried, crushed to 70% passing 2 mm then riffle spit to produce a 250 g subsample which was pulverised to 85% passing 75 microns. The analytical pulps were then assayed by industry standard 50 g charge lead collection fire assay with AAS finish for Au, and Co, Cu Ni and Ag by 4 acid digest including HF with ICPAES finish. Results over 1% Co were re-assayed by peroxide fusion with ICPAES finish. Results of all client assay standards were within 10% of the reference values for the metal ranges of interest.</li> <li>The soil samples submitted to MS Analytical in Vancouver where they were dried and pulverised to 85% passing 75 microns, then assayed by aqua regia digest on 40 g with ICPMS finish for 51 elements including Au. Client standards were included at a rate of approx. one standard per 25 samples and results were within acceptable tolerances for the metal ranges of interest.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <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>	<ul style="list-style-type: none"> <li>The rock assay results are compatible with the observed mineralogy. The observed mineralisation includes erythrite, a distinctive secondary mineral found in cobalt sulfarsenide deposits, and various sulfides and arsenides including pyrite, pyrrhotite, chalcopyrite, arsenopyrite, safflorite (Co arsenide) and potentially skutterudite (Ni+Co arsenide) and/or rammelsbergite (Ni arsenide).</li> <li>No drilling, not applicable.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Rock and soil sample locations were determined by handheld GPS considered accurate to <math>\pm 10</math> m. Rock samples taken from underground workings were located using working plans considered accurate to <math>\pm 50</math> m.</li> <li>All locational information (tabulation and maps) in this announcement is in UTM Zone 10 NAD83.</li> <li>Topographic control is provided by BC government 20,000 topographic map sheets and a Digital Terrain Model based on the 30 m Shuttle Radar Topographic Mission data.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Only visibly mineralized rock samples were collected, assayed and are being reported. The reported rock sample results are in no way sufficient to establish mineral resources.</li> <li>Soil sample locations are shown on the accompanying plans and were collected wherever possible on regular grids orientated to suit geological and terrain considerations. The samples were collected on lines ranging from 50 m to 200 m apart at spacings of 20 m to 50 m along the lines. The gaps in grid sampling as shown on the accompanying maps reflect difficult terrain, lack of suitable sampling media and/or contamination issues from historic workings.</li> <li>Downslope dispersion of geochemical anomalies is expected in steep terrain and the soil sample results are considered a geochemical guide to future exploration especially in conjunction with other geochemical and geophysical results and is in no way indicative of mineral resources.</li> <li>Sample compositing has not been applied.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The rock samples represent a range of geological structure orientations, sampling was of reconnaissance nature, not volumetrically representative and in no way appropriate for the establishment of mineral resources.</li> <li>The soil sampling lines were orientated wherever possible, within terrain constraints, perpendicular to the target geological trends as shown on the accompanying maps.</li> <li>No drilling, not applicable.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>The rock and soil samples reported here were collected, transported and submitted to MS Analytical by Blackstone Minerals personnel.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>The observed mineralisation is consistent with that previously reported from the Little Gem Project area (see previous BSX announcements to the ASX)</li> <li>Further exploration is planned to better define the extent of the mineralised zone(s).</li> </ul>

## 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 style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>The rock and soil sampling reported here was located within British Columbia mineral claim numbers 501174, 502808, 503409, 573344, 564599, 844114, and 796483 owned 100% by Cobalt One Energy Corporation, a wholly owned subsidiary of Blackstone Minerals Ltd.</li> <li>Standard governmental conditions apply to all of the Licences that make up the Little Gem Project.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Estella Mining, Northern Gem Mining Corporation, Anvil Resources, Gold Bridge Mining and the BC Department of Mines were the most significant previous explorers of the Little Gem prospect (refer to ASX announcement 26 July 2017 and available from <a href="http://blackstoneminerals.com.au">http://blackstoneminerals.com.au</a>)</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Little Gem Project is located within the Bralorne-Pioneer mining district (endowment of 4.4 Moz at 17 g/t Au) of the Bridge River region, British Columbia. The project area is underlain by granitoids of the Jurassic to Tertiary Coast Plutonic Complex, Permian ultramafic rocks and later Palaeozoic to Mesozoic sedimentary and volcanic rocks within what is interpreted to be the northern extension of the Cadwallader fault zone, host to the most significant gold producing mines in the Bridge River mining camp. The Little Gem deposit is the best known cobalt deposit in the district and comprises a hypothermal cobalt-sulfarsenide and gold mineralised quartz + iron carbonate + sericite + biotite + chlorite + sulfarsenide vein and alteration zone within a quartz diorite body of the Coast Plutonic Complex. Cobalt and gold mineralised shoots range in width from centimetres to a few metres, including irregular lenses of almost solid safflorite, arsenopyrite and loellingite with mainly microscopic veinlets of the native gold.</li> <li>The mineralisation reported here is associated with sulfide ± arsenide veins and alteration zones hosted by quartz diorite (Little Gem and Erebor prospects) and ultramafic rocks immediately adjacent to quartz diorite and dacitic intrusions (Jewel Prospect). Erythrite is a distinctive secondary mineral found in the weathering zone of cobalt sulfarsenide deposits including Little Gem and Erebor.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar;</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar;</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth;</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>The reported rock and soil sampling results are not volumetrically representative and in no way appropriate for the establishment of mineral resources.</li> <li>No drilling, not applicable.</li> </ul>

Criteria	Explanation	Commentary
	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <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 style="list-style-type: none"> <li>• The rock and soil samples and results were not aggregated or composited, or cut.</li> <li>• No drilling, not applicable.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• Mineralisation widths and lengths are not reported and the rock and soil sampling results are not volumetrically representative and in no way appropriate for the establishment of mineral resources.</li> <li>• No drilling, not applicable.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• Appropriate exploration plans and tables with locational information are included in this release.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Only visibly mineralised rock samples collected and submitted for assay are being reported.</li> <li>• Soil Au, Cu, Co, and As show distinct spatial coincidence as shown in the accompanying plans, and are coherently contourable 10, 20, 50, 100 and 500 ppb Au; 7, 15, 35, 70 and 100 ppm Co; 50, 100, 250 and 500 ppm Cu; 10, 20, 40, 100 and 500 ppm As. Peak soil results were 841 ppb Au, 918 ppm Cu, 113 ppm Co and 1820 ppm As.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• Appropriate exploration plans are included in the body of this release.</li> <li>• The rock and soil results presented here are at least partly coincident with previously reported IP (refer to ASX announcement 6 September 2018 and available from <a href="http://blackstoneminerals.com.au">http://blackstoneminerals.com.au</a>) chargeability anomalies as shown on the plans included in this release.</li> </ul>
Further work	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• Blackstone Minerals proposes to conduct further geological mapping, geochemical sampling and geophysics to better define the geometry and extent of the identified mineralisation.</li> <li>• Appropriate exploration target plans are included in the body of this release.</li> </ul>