# Black Range Minerals Ltd (BLR.ASX)

# Initiation – 3<sup>rd</sup> largest US uranium deposit on the fast track to development

#### Event:

• We initiate on Black Range Minerals Ltd (BLR.ASX) with a SPEC BUY recommendation and initial price target of \$0.07/share.

#### **Investment highlights:**

- High tonnage high grade deposit, 3rd largest in USA. BLR Is a uranium exploration company, its flagship project is the Hansen/Taylor project located in Colorado USA. The total portfolio contains JORC Resource of 90.9Mlbs  $U_3O_8$  at a high grade of 600ppm, making it the third largest uranium resource in the USA. The advanced Hansen deposit is the focus of studies and development with a 19.8Mlbs JORC resource at an exceptionally high grade of 1,270ppm (750ppm cut off). Located in Uranium friendly mining jurisdiction BLR benefits from being located in the pro uranium mining state of Colorado
- Scoping study highlights low cost, streamlined development approach. Recent Scoping Study confirms Underground Bore Hole Mining ("UBHM"), ablation and off site milling as the prefered development approach given it is the most cost effective (capex ~US\$80m, opex US\$29/lb) and more environmentally acceptable solution. Removal of on-site milling of uranium may shorten the permitting timeline and create a significant advantage in the permitting process and timetable to production.
- Indicative economics highly compelling. Our indicative economics using the scoping study results, based on a 2Mlb/pa production profile using UBHM/Ablation and off-site milling, highlights potential annualised EBITDA of \$67m and a short payback period of <2 years. We have assumed C1 cash costs of \$29/lb and a L/T realised price for the concentrate of \$63/lb.</li>
- Experienced in country management. The recent appointment of managing director Tony Simpson is also another positive development given he was formerly Chief Operations Officer at Peninsula Energy (PEN.ASX) and directly responsible for the successful exploration and permitting activities at Peninsula's Lance Uranium Project in Wyoming, USA.
- Undervalued relative to peers. BLR is trading at \$0.29/lb, a significant discount well below the ASX and TSX peer group for uranium explorers/developers average of \$1.14/lb. We believe this discount is unwarranted given size and grade of the deposit, location in a pro-uranium jurisdiction and highly experienced management team.

#### **RECOMMENDATION:**

- We initiate coverage on BLR with a SPECULATIVE BUY recommendation and a price target of \$0.07/share.
- We see BLR as a quality investment opportunity that offers exposure to the growing domestic uranium demand of the US market. We believe the company has significant upside and will re-rate on the back of positive PEA expected in 3QCY12 and commencement of permitting applications.
- Given recent corporate activity in the US evidenced by Denison Mines & Energy Fuels, we believe consolidation will be a common theme in the US uranium sector and highlight BLR as a target for corporate activity.

Rating	SPEC BUY
Previous	N/A
Price Target (A\$)	\$0.07
Previous (A\$)	N/A
Share Price (A\$)	\$0.02
52 week low - high (A\$)	\$0.02 - \$0.04
Valuation (A\$/share)	\$0.07
Methodology	In-Situ/Sum of Parts
Risk	Very High
Capital Structure	
Shares on Issue (m)	840.9
Market Cap (A\$m)	15.1
Net Debt/(Cash) (A\$m)	-3.0
EV (A\$m)	12.1
Options on issue (m)	23.6
12mth Av Daily Volume ('000)	1,531
Board and Management	
Alan Scott	Non Executive Chairman
Anthony Simpson	Managing Director
Benjamin Vallerine	Executive Director
Mike Haynes	Non Executive Director
Duncan Coutts	Director
Major Shareholders	
NZ Minerals LLC	4%
STB Minerals LLC	4%
Catalysts	
Bulk sample ablation testing	3QCY12
Preliminary Economic Assesm	nent 3QCY12
Hansen resource upgrade	3QCY12
Share Price Graph	
Share Price (Ś)	Volume



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BLR is currently advancing the high-grade Hansen/Taylor Ranch Uranium Project, located northwest of Cañon City, Colorado, USA, toward production.

# **COMPANY OVERVIEW**

- Black Range Minerals Ltd (BLR.ASX) is an ASX-listed company focused on exploration and development of uranium assets in USA. BLR is currently advancing the high-grade Hansen/Taylor Ranch Uranium Project, located northwest of Cañon City, Colorado, USA, toward production.
- The Project contains JORC Resource of 90.9 million pounds U<sub>3</sub>O<sub>8</sub> at a very robust grade of 600 ppm (250ppm cut off), making it the 3<sup>rd</sup> largest uranium resource within the USA. The Hansen deposit, which is the focus of a PEA study, is the most advanced of the deposits and hosts a JORC resource of 19.7Mlbs (750ppm cut off) at an exceptionally high grade of 1290ppm. The Hansen deposit was fully permitted in 1981 for development of a 2Mlb uranium mining operation and processing facility, however due to the correction in the uranium market in 1981 operations never eventuated.

# Figure 1: Hansen Project Location Map



Source: Black Range Minerals Ltd

- Historic feasibility studies were based on underground and open pit mining, however a recently completed Scoping Study identified Under Ground Bore Hole Mining ('UBHM') combined with ablation and off site milling as the preferred development approach. The study highlighted the proposed approach is technically feasible, the most cost effective (Capex \$80m, Opex \$29/lb) and environmentally friendly solution to fast-track permitting. (*Refer to appendix A for an overview of UBHM and Ablation Technology process*)
- In addition to the capital and operating cost benefits, the proposed use of UBHM and ablation is likely to streamline the permitting process given the approach does not involve onsite processing of uranium, and should lead to a significant advantage in the permitting process.
- A Preliminary Economic Assessment ("PEA") expected to be completed 3QCY12 will incorporate the development option of mining Hansen using UBHM and ablation and transporting the concentrate off site to a third party uranium mill for processing.
- The recent appointment of Tony Simpson as Managing Director will greatly benefit BLR in progressing all requisite permit approvals required. Tony's previous role was Chief Operations Officer at Peninsula Energy (PEN.ASX) and was directly responsible for the successful exploration and permitting activities at Peninsula's Lance Uranium Project in Wyoming, USA.
- BLR is trading at an EV/Resource of \$0.29/lb, a steep discount to the ASX & TSX peer group average of \$1.14/lb for both explorers and developers. We believe such a steep discount is

Recently completed Scoping Study identified Under Ground Bore Hole Mining ('UBHM') combined with ablation as the best development approach, with Capex \$80m, Opex \$30/lb and an environmentally friendly solution to fasttrack permitting.





unwarranted given its exceptional high grade, high tonnage resource located in a uranium friendly mining jurisdiction and we expect the stock to re-rate and trade closer to the peer group average as key permitting milestones are achieved. The cash balance (as of 31 March) is ~\$3m.

# SECURITY OF SUPPLY CRITICAL FOR US URANIUM MARKET

- Sentiment turning in the Uranium sector. 2011 was a challenging year in the uranium sector following the Fukishima power plant incident resulting in spot uranium prices dropping from \$75/lb to \$50/lb almost overnight. A flow effect led to equity valuations of uranium companies being significantly eroded and planned shutdowns and safety tests of existing and developing plants, all which has had a negative impact on uranium demand. In 2012 we believe sentiment is returning to the sector with the inventory overhang winding back as safety tests on uranium plants worldwide conclude and Japan restarting some of its reactors.
- Fundamentals highlight a supply gap. It appears the long-term fundamentals for uranium demand remain intact with current demand (~170Mlb) set to soar with 60 nuclear reactors under construction globally and an additional 163 on schedule for development. Growth is driven predominately by insatiable energy requirements of the emerging nations of China, South Korea, India and Russia which together comprise 75% of new reactor constructions. With the USA-Russia HEU deal ending in 2013 (reducing supply by ~24Mlbs p.a) and delays to large scale uranium projects such as Areava's Trekkopje (7Mlbs p.a.) and Imouraren (13Mlbs p.a.), we see lagging supply with the market being in deficit by 2013. We believe the uranium price will gradually improve to pre Fukishima levels of ~\$75/lb to reflect longer term supply and demand dynamics

# Figure 2: Nuclear Reactors Under Construction, Planned and Proposed.



Source: World Nuclear Association

• US need to generate security of domestic supply. The US consumes 55Mlbs per annum vs. domestic production of 4Mlbs. Over 20% of electricity generated in the US is by nuclear power and 23% (104) of the world's nuclear power plants are located within the US, with an additional 21 reactors proposed for construction. It is due to this imbalance of supply demand fundamentals that we believe the US will seek to generate security of long term uranium supply through increasing its domestic production. As a consequence we believe US will continue to adopt a pro uranium mining policy. This has been evidenced recently by the Nuclear Regulatory Commission (Feb 11, 2012) granting a license to build two reactors, the first granted since 1978.

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BLR is strategically positioned to sell its product to the domestic American market, a market consuming 55Mlbs of U308 per year vs. domestic production of only 4Mlbs of U308 per year.



Consolidation to be an ongoing theme in US uranium sector. Given the dynamics of the US uranium market we believe consolidation will be an ongoing theme. This is evidenced by Energy Fuels Inc (EFR.TSX) recent acquisition of the US-located uranium and milling assets of Denison Mines Corp (DML.TSX). Consideration for the DML assets was US\$108m. The transaction will position Energy Fuels as a 100% US pure play uranium producer and processor, and one of the largest holders of undeveloped resources.

# HIGH TONNAGE HIGH GRADE PROJECT, 3RD LARGEST IN USA LOCATED IN PRO MINING JURISDICTION, COLORADO USA

- The Hansen/Taylor Ranch Project is located in Colorado, USA, within the historical Tallahassee Creek Uranium District which was the focus of several uranium mining operations between 1954 and 1972.
- The project contains both the Hansen and Taylor Ranch deposits covering over 13,500 acres, with the high grade Hansen project the current focus for development. Mineral rights at the Hansen/Taylor projects are under combination of private land, Federal mining Claims and State Leases.
- BLR began exploring for uranium in Colorado in November 2006 after acquiring a 100 per cent interest in the 13,000 acre Taylor Ranch uranium project. Since acquiring the Taylor Ranch Project BLR has completed extensive exploration and drilling at the Taylor Ranch consisting of 71 drill holes for 25,000m.
- BLR owns 100% of the minerals rights for the Taylor-Boyer deposits and 24.5% of Hansen with options in place to acquire the remaining rights to the Hansen deposit. In order to exercise these options BLR is required to pay a total of US\$4m cash and issue US\$9.5m in shares to vendors, STB Minerals and NZ minerals who are currently major shareholders of BLR with 3.2% and 3.4% respectively.





Source: Black Range Minerals Ltd

• The project is well located in respect of road, power and water infrastructure given the area has established mining industry within the region which hosts AngloGold-Ashanti's

The Taylor Ranch/Hansen Project is located in Colorado, USA, within the historical Tallahassee Creek Uranium District which was the focus of several uranium mining operations between 1954 to 1972.

The Project contains JORC Code Indicated and Inferred resources of approximately 90.9 million pounds U3O8 at a very robust grade of 600ppm U3O8, making it one of the largest uranium projects within the USA.



Cripple Creek heap leach gold mine. Access to the project is by light duty roads connecting with State Highway 9 and U.S. Highway 50 about 30 miles to the southeast.

- The Hansen/Taylor Ranch project comprises 5 deposits; Noah, Hansen, North West Taylor, Boyer and Picnic Tree. The combined assets host a JORC Resource of 68.9Mt at 600ppm for 90.9Mlbs of U<sub>3</sub>O<sub>8</sub> (250ppm cut off), making it the third largest uranium project within the USA.
- These resources are located within a small portion of the extensive Tallahassee Creek Uranium District. Potential exists to discover additional uranium resources within the district. Historical drilling in the Tallahassee Creek Uranium District indicates further mineralised zones.

Category	Resource (Mt)	Grade (ppm)	Contained U <sub>3</sub> o <sub>8</sub> (Mlbs)
Indicated	28.9	620	39.7
Inferred	40.1	580	51.2
Total	69.0	600	90.9
	0010		50.5
Cut off grade of 75 Category	50ppm Resource (Mt)	Grade (ppm)	Contained U <sub>3</sub> o <sub>8</sub> (MIbs)
Cut offgrade of 75 Category Indicated	50ppm Resource (Mt) 7.7	Grade (ppm) 1210	Contained U <sub>3</sub> o <sub>8</sub> (Mlbs) 20.5
Cut off grade of 75 Category Indicated Inferred	50ppm Resource (Mt) 7.7 8.9	Grade (ppm) 1210 1190	Contained U <sub>3</sub> o <sub>8</sub> (Mlbs) 20.5 23.3

#### Figure 4: JORC Code Resource for combine Hansen/Taylor Ranch project

Source: Black Range Minerals Ltd, FSB Research

# HIGH GRADE HANSEN DEPOSIT TO BE THE FOCUS FOR DEVELOPMENT

• The Hansen deposit is the largest and technically the most advanced of the 5 deposits. Hansen hosts a 19.7Mlbs resource at an exceptionally high grade at 1270ppm using a 750ppm cut-off, making it the logical starter mine and the basis for the feasibility studies.

#### Figure 5: JORC Code resource for Hansen deposit

Cut off (ppm)	Indicated (Mlbs	Grade (ppm)	Inferred (Mlbs)	Grade (ppm)	Total (Mlbs)	Grade (ppm)
250	17.1	670	22.3	620	39.4	640
750	8.9	1290	10.8	1250	19.7	1270

Source: Black Range Minerals Ltd, FSB Research

The Hansen Uranium deposit was bought to the brink of production in 1982, all permits were in place; however production never commenced due to the collapse of the uranium price.

- Hansen was initially discovered in 1977 and fully permitted for mining by Cyprus Mines Corporation in 1981. More than 2,200 holes were drilled and three feasibility studies completed to evaluate Hansen. Cyprus concluded that the Project was economically viable; however, the Project was never brought to production due to the collapse of the uranium price. Cyprus was targeting 2Mlbs p.a production and had delineated ~33Mlbs 43101 reserves from the Hansen deposit. BLR's work to date has confirmed the historical work completed by Cyprus and is currently undertaking a revised 43101 resource report.
- Over 2200 holes had been drilled on 70m x 70m spacing at the Hansen deposit by the previous owners, with both the Hansen and Picnic tree deposits drilled to a reserve status.

The Hansen/Taylor Ranch project comprises of 5 deposits; Noah, Hansen, North West Taylor, Boyer and Picnic Tree. The combined assets host a JORC Resource of 90.9Mlbs at 600ppm making it the third largest uranium project within the USA.





Figure 6: Artist impression of the 1981 Hansen Processing Facility

Source: Black Range Minerals Ltd

 BLR's drilling program on Hansen during 2011 consisted of 11 hole diamond core (approximately 2,000 metre) with the objective of obtaining additional metallurgical, geotechnical, geological and hydrological data with a view to update the previous feasibility studies. A total of eight diamond core holes were drilled at the Hansen deposit for 1,741 metres, a further three diamond core holes for 170 metres were also completed at the Picnic Tree Deposit. While the positioning of the holes was primarily to evaluate geotechnical conditions, some impressive results were encountered, including: 6.1m at 2030ppm from 40.5m (including 4.3m at 2700ppm from 41.2m)

# SCOPING STUDY HIGHLIGHTS LOW COST, STREAMLINED DEVELOPMENT APPROACH

- Data obtained from the recent drilling in conjunction with historic data was used in a recently completed Scoping Study for considering mining methodologies for the Hansen deposit.
- The findings of the Scoping Study identified UBHM combined with ablation beneficiation as the preferred development approach. The study highlighted the proposed approach is both technically feasible and the most cost effective and environmentally friendly solution to fast-track permitting. In determining the preferred development approach, open pit, underground and UBHM with and without the use of ablation to mine the Hansen Uranium deposit were evaluated. (*Refer to appendix A for an overview of UBHM and Ablation Technology process*)
- Whilst the Scoping Study is focused solely on Hansen, management have highlighted that mining using UBHM and ablation can be applied to all the resources within the Hansen/Taylor Ranch project, as well an estimate of at least 30Mlbs of regional resources held by other exploration companies that remain uneconomic at current spot prices to mine.
- Off-site milling was selected as the preferred approach to both reduce capex (~`\$70m) and minimise the environmental impact. Without the need to build a mill, the study indicates Capex for Hansen would be under US\$80m. Figure 7 below highlights the key outcomes of the Scoping Study.

Scoping Study identified Under Ground Bore Hole Mining ('UBHM') combined with ablation as the best development approach. The study highlighted the proposed approach is both technically feasible and the most cost effective and environmentally friendly solution to fast-track permitting.



#### Figure 7: Hansen Project Scoping Study Metrics

Scoping Study Metrics	
Annual production rate U308 (Mlbs)	2.0
Estimated total recovery U308 (Mlbs)	14.0
Recovery (%)	95.0
Life of mine opex (excluding on-site milling, royalties and transport) US\$/lb	21.9
Capex (excluding on-site mill) US\$M	73.5
FSBe C1 cash costs (adjusted for milling, transport and royalties) US\$/lb	29.0

Source: Black Range Minerals Ltd, FSB Research

- We estimate C1 cash costs of (adjusting for milling, transport and royalties) which positions BLR in the bottom quartile of the industry cost curve. It compares favourably to Paladin (PDN.ASX) which at their Langer Heinrich and Kayelekera operations in Namibia are currently producing at \$33/lb; and Peninsula Energy (PEN.ASX) Lance project economics (DFS level) located in Wyoming USA highlights opex of ~ \$38/lb.
- Preliminary ablation test work has confirmed recoveries of ~95% U<sub>3</sub>0<sub>8</sub> with a mass yield of 10%. The use of ablation results in the production of a high grade high-value concentrate grading approximately 1.2% U<sub>3</sub>0<sub>8</sub> (i.e. 10x of the feed 1,270ppm). The concentrate can be readily transported to an off-site mill for processing with an operating mill within 300 miles. Off-take parties such as Cameco have already expressed interest in buying the concentrate.
- While the preferred option for processing is via off-site milling, metallurgical test work completed from samples at both the Hansen and Picnic Tree deposit has been encouraging. Work completed to date highlights the resource across both deposits is amenable to both an alkaline leach and acid leach process, with recoveries in excess of 90%. This provides BLR with the ability and flexibility to choose the most economical and environmentally friendly processing method. The following recoveries were achieved:
  - 97-98% recoveries with pressure alkaline leach; and
  - 91-96% recoveries with atmospheric acid leach.
- Our indicative economics using the scoping study results, based on a 2Mlb/pa production profile using UBHM/Ablation and off-site milling, highlights potential annualised EBITDA of \$67m and a short payback period of <2 years. We have assumed C1 cash costs of \$29/lb (adjusting for milling, transport and royalties) and a L/T realised price for the concentrate of \$63/lb (a 10% discount to our L/T uranium contract price of \$70/lb and still at a discount to the current contract price ~\$85/lb).</li>

A Preliminary Economic Assessment ("PEA") is scheduled for completion 3QCY12.

Our indicative economics based on a 2Mlb/pa production profile using a UBHM operation and processing via on offsite mill highlight EBITDA of \$70m and a payback of < 2 years



#### GEOLOGY

- The Hansen deposit is a large sandstone-type uranium deposit that is approximately 1400 metres long and 500 metres wide. Mineralisation at the Hansen deposit is hosted by a flat-lying sandstone sequence, with the high grade portion of the deposit being up to 45 metres in thickness. The depth to the mineralized zones has been found to be from 150m down to approximately 190m.
- Uranium mineralization at the Hansen Property is hosted by the Eocene age Echo Park Formation. In the vicinity of the Property, these rocks consist primarily of interbedded sandstone siltstone, claystone and conglomerate of fluvial origin.

#### Figure 8: Hansen Uranium Deposit Cross Section



The Hansen deposit is a large sandstone-type uranium deposit that is approximately 1400 meters long and 500 meters wide Mineralization at the Hansen deposit is hosted by a flat-lying sandstone sequence, with the high grade portion of the deposit being up to 45 meters in thickness.

Source: Black Range Minerals Ltd

#### **EXCLUSION OF ONSITE MILLING CHOSEN TO SIMPLIFY PERMITTING**

- BLR benefits from being located in the pro uranium mining state of Colorado which is only 1 of 5 agreement states in the USA. Being an agreement state enables the state rather than the Nuclear Regulatory Commission ("NRC") to process licences and provides the benefit of having a regulated timeframe (18 months) from when an application is lodged to when a decision is made.
- A good precedent has been set in Colorado with the granting of a commercial permit to Canadian listed Energy Fuels (EFR.TSX) at the 'Pinon Ridge' project located in the Paradox Basin, Colorado. Pinon Ridge will be the first conventional uranium mill to be built in the USA in 30 years. BLR will look to leverage off the successful model established by Energy Fuels. BLR having appointed WWC Engineering as lead consultants who also acted for Energy Fuels in achieving recent permitting approvals.
- We note that Colorado also hosts one of 5 licensed mills in the USA, the Cotter mill located in Canyon City, which is currently in the process of being rehabilitated. It's encouraging to see the regulatory bodies in Colorado have both historically and recently been receptive to uranium mining and processing.
- Uranium recovery including uranium mills, in situ recovery and heap leaching is regulated through the Colorado Department of Public Health and Environment (CDPHE). The CDPHE however does not regulate un-mined minerals containing radioactive materials, nor does it regulate uranium ore prior to receipt at a processing facility.
- In addition to the capital and operating cost benefits, the proposed use of UBHM and ablation is likely to streamline the permitting process. BLR's proposed approach does not

A good precedent has been set in Colorado with the granting of a commercial permit to Canadian listed Energy Fuels (EFR.TSX) at the 'Pinon Ridge' project located in the Paradox Basin, Colorado.

The proposed use of UBHM and ablation is likely to streamline the permitting process given the approach does not involve uranium processing or separation.



involve uranium milling onsite and hence could potentially create a significant advantage in the permitting process.

# PEA STUDY TO BE COMPLETED BY 3QCY12

- A Preliminary Economic Assessment ("PEA") expected to be completed 3QCY12 will incorporate the development option of mining Hansen using UBHM and ablation and transporting the concentrate off site to a third party uranium mill for processing into yellow cake.
- In conjunction with the revised assessment the PEA will also include a review and update of the Hansen resource with a view of upgrading a component of the Inferred Resource to Indicated.
- Pilot scale evaluation of ablation using a 1000lb bulk sample targeted for 3QCY12.
- BLR is targeting completion of permitting activities by the second quarter of 2015, with production targeted in the second quarter of 2016. We note that four quarters of baseline data collection needs to be complete before submission milestones can be reached.

# Figure 9: Project Permitting Timeline



Source: Black Range Minerals Ltd

# **EXPERIENCED IN COUNTRY MANAGEMENT**

- In early 2012 Tony Simpson was appointed as Managing Director who was previously the Chief Operations Officer at Peninsula Energy (PEN.ASX), and directly responsible for the successful exploration and permitting activities at Peninsula's Lance Uranium Project in Wyoming, USA.
- Tony's appointment along with the engagement of experienced consultants used by PEN to progress permitting and BFS studies provides us a high level of confidence in BLR progressing requisite permit approvals and completing a high quality PEA s mining studies.



# **OTHER PROJECTS**

# JONESVILLE COAL PROJECT, ALASKA, USA (BLR - 100%)

- In December 2008 the Company acquired a 100% interest in the Jonesville Coal Project, located approximately 100km northeast of Anchorage, USA. The Jonesville Coal Project hosts a JORC Measured, Indicated and Inferred resources of 130.7Mt of coal. The project includes the historic Evan Jones Coal Mine.
- The project is well located in respect of infrastructure with a fully operational rail line located some 20 kilometres southwest of the project which connects to the port of Seward approximately 300 kilometres further south.
- The Company also has the right to reprocess tailings from the historic Evan Jones Coal Mine. It has been estimated previously that around 500,000 tonnes of clean coal could be recovered from tailings reprocessing within this area. The Company will conduct its own evaluation to determine whether this may be a viable opportunity to generate some cash flow in the short term.
- BLR is considering its options for Jonesville including a possible sale or JV.





# PEER COMPARISON HIGHLIGHTS BLR IS SIGNIFICANTLY UNDERVALUED

- To determine an appropriate peer group we reviewed a number of ASX and TSX listed exploration and development uranium companies that have similar characteristics to the Hansen/Taylor Ranch project. Namely companies with a JORC resource greater than 20Mlbs and a resource grade greater than 200ppm.
- Peer group with 20Mlbs JORC resource and grade >200ppm trade at an average EV/Resource of \$1.14/lbs.
  - We have assumed 100% ownership of the Hansen project and taken into account the \$13.5m in deferred consideration payments. From this review we established the market is valuing the peer group between \$0.29/lb to \$3.83/lb with the average for the group \$1.14/lb.
  - In figure 10 below we have ranked the listed uranium explorers and developers by EV/lb and highlighted the grade of their respective projects. BLR is trading at the bottom quartile of the peer group at \$0.29/lb, well below the average.



Source: FSB Research

- In our view BLR has traded at a discount to its peers due to previous management's limited experience in permitting of a uranium project. However we believe this has now been addressed with the appointment of Tony Simpson with requisite US experience to progress a uranium project through permitting and development.
- We believe such a discount is also unwarranted given the high tonnage, grade and advanced nature of the Hansen project located in a pro-mining and uranium friendly state.
- If we were to apply the peer average EV/resource of \$1.14/lbs to BLR's total JORC resource of 90Mlbs it would imply an in-situ resource valuation of \$102m, or \$0.12/sh.
- As a comparison, Peninsula Energy (PEN.ASX), also US-based have an EV of A\$70m, 52Mlb resource (485ppm) and are targeting 2Mlbs production by 2013. BFS is complete and advanced with its permitting. PEN trades on a multiple of A\$1.36/lb demonstrating the significant re-rating available to BLR as key permitting milestones and mine studies are achieved.

As a comparison, Peninsula Energy (PEN.ASX), also USbased, EV of A\$70m, 52Mlb resource (485ppm) and are targeting 2Mlbs production by 2013, BFS is due for completion and advanced with its permitting is trading on a multiple of A\$1.36/lb.



 Canadian listed Energy Fuels (EFR.TSX) who is a US focused uranium development company also serves a relevant peer comparison. EFR recently acquired the US based uranium and milling assets of Denison Mines Corp (DML.TSX), the combined resource for EFR going forward will be 68Mlbs, of which 50Mlbs in the Measured & Indicated category, with the enlarged EV for EFR valuing its resources at US\$2.30/lb. Prior to the transaction EFR was trading on an implied US\$1.15/lb based on 44Mlbs.

# VALUATION

# Valuation - \$91.9m, \$0.071/sh (fully diluted, 100% ownership of Hansen)

- We initiate coverage on BLR with a SPECULATIVE BUY recommendation and a price target of \$0.07/sh.
- Our price target is derived using an EV/resource metric. We have applied the average EV/resource across our universe of ASX and TSX explorers and developers of \$1.14/lb and risked our valuation by 30% to reflect its early stage in permitting and mine studies. We derive an enterprise valuation for the Hansen/Taylor project of \$71.8m, or \$0.08/sh.
- We have attributed a subjective valuation of \$5m for exploration upside as well as BLR Jonesville coal project and accounted for the \$13.5m in deferred consideration payments for BLR to earn 100% of the Hansen project. Our valuation for BLR is \$91.9m, \$0.071/share.
- We will look to revisit our valuation using a DCF methodology once the PEA has been completed.

Valuation Summary	(A\$m)	P/NPV (risk)	Risked (A\$m)	Risked A\$/sh
Hansen/Taylor Ranch in-situ valuation	102.6	0.7	71.8	\$0.083
Other projects/exploration upside	5.0	1.0	5.0	\$0.006
Net cash/(debt)	3.0	1.0	3.0	\$0.003
Defered Consideration	-13.5	1.0	-13.5	-\$0.016
Corporate	-6.0	1.0	-6.0	-\$0.007
Unpaid capital	0.8	1.0	0.8	\$0.001
TOTAL	91.9		61.1	\$0.071
			Price Target	\$0.070
			Current Price	\$0.018
			Upside	289%

#### Figure 11: Valuation Summary

Source: FSB Research

# RECOMMENDATION

#### Price Target - \$0.07/sh

- We initiate coverage on BLR with a SPECULATIVE BUY recommendation and a price target of \$0.07/share.
- We see BLR as a quality investment opportunity that offers exposure to the growing domestic uranium demand of the US market. We believe the company has significant upside and will re-rate on the back of positive PEA expected in 3QCY12 and commencement of permitting applications.
- Given recent corporate activity in the US evidenced by Denison Mines & Energy Fuels, we believe consolidation will be a common theme in the US uranium sector and highlight BLR as a target for corporate activity.



# **BOARD AND KEY MANAGEMENT PERSONNEL**

#### Alan Scot (Non - Executive Chairman)

- Mr Scott is currently Managing Director and Chief Executive Officer of HiTec Energy Ltd and was formerly Managing Director and Chief Executive Officer of Aurora Gold Limited. Prior to this Mr Scott spent 22 years working with Rio Tinto Limited/CRA Limited, with involvement in joint venture management, finance, acquisitions and divestments, commercial negotiations and project engineering.
- Mr Scott qualified as an accountant and spent 13 years working with Coopers & Lybrand in Sydney, Montreal, London and Wollongong before moving into the mining industry.

#### Anthony Simpson (Managing Director)

 Mr. Simpson is a mining engineer with over 40 years industry experience. During his career he has held numerous senior management, technical and operational positions. For the past two years Mr. Simpson was employed by ASX-listed Peninsula Energy Limited as its Chief Operating Officer. In this position he was directly responsible for the successful exploration and permitting activities at Peninsula's Lance Uranium Project in Wyoming, USA.

#### **Benjamin Vallerine (Executive Director)**

- Mr Vallerine has been residing in the USA where he has been leading the Company's exploration and development activities since 2008. During this period he has developed an in depth understanding of the Company's operations.
- Mr Vallerine has more than 10 years experience in the mining industry. He graduated from the University of Tasmania with an honours degree in geology. He has been involved in numerous resource projects, targeting a variety of commodities, predominantly in Australia, Canada and the USA. He has worked for both junior and major mining companies, including Harmony Gold Mining Company Limited and Rio Tinto Limited.

#### Mike Haynes (Non - Executive Director)

- Mr Haynes has more than 17 years experience in the international mineral exploration industry. Mr Haynes graduated from the University of Western Australia with an honours degree in geology and geophysics in 1992. He held technical positions with both BHP Minerals Limited and Billiton plc. Before establishing his own successful consulting business.
- Mr Haynes has been a founding director of numerous ASX listed companies where he has been intimately involved in the identification, acquisition, financing and development of a diverse array of resources projects around the world.

#### **Duncan Coutts (Director)**

- Mr Coutts is a qualified mining engineer with more than 19 years industry experience. He holds a Bachelor of Engineering degree in Mining Engineering with honours from the Western Australian School of Mines.
- Mr Coutts has extensive operational, technical and managerial experience, particularly in underground mining operations. He was formerly the Chief Operating Officer for the Western Australian and PNG operations of Harmony Gold Australia, where he was directly responsible for operational management and project development. More recently, Mr Coutts has held positions as Chief Development Officer with ASX listed Metals X Limited.



# **KEY RISKS**

# The primary risks include:

#### **Environmental and regulatory approvals**

- BLR will be required to secure all relevant environmental and regulatory approvals for the development and operations of its Uranium projects.
- Any delays in securing approvals may affect the timing of production and the valuation of BLR accordingly.

#### Funding

- The ongoing exploration, permitting and development program will be dependent upon access to additional capital.
- This will be most likely sourced from the equity markets or a strategic partner in our view given the early stage nature of the asset and as such is dependent upon general equity market conditions and

#### **Commodity Prices**

- Despite the long term supply/dynamics for uranium appearing robust any impact to the commodity prices would impact negatively on BLR.
- Commodity prices are influenced by numerous external factors such as supply/demand economics, interest rates, global consumption expectations and speculative investors.



# **APPENDIX A**

# BOREHOLE MINING AND ABLATION TECHNOLOGY

- Borehole Mining is a remote operated method of extracting mineral resources through boreholes by means of high pressure water jets. This process can be carried-out from land surface, open pit floor, underground mine or floating platform or vessel through pre-drilled boreholes.
- The primary advantages of borehole mining is that it provides an environmentally
  protective and economically feasible approach to mining without the need for large
  infrastructure or open excavation. It also provides additional benefit of being able to scale
  production readily and selectively mine the resource bodies based on grade and how they
  can be most cost-effectively developed according to the mine plan.
- In conjunction with borehole mining BLR are also proposing the use of Ablation technology. Ablation technology is a simple, low-cost, efficient and robust technology that mechanically separates uranium from the host mineral without the use of chemicals, producing a high grade high value concentrate grading approximately 1.2% U308 concentrate(i.e. 10x of the feed 1270ppm)
- In ablation, the slurry from UBHM is ejected from two opposing injection nozzles to create a high energy impact zone. This high energy impact separates the mineralized patina (coating) of uranium from the underlying grain. The uranium bearing particles are found in the fine fractions separated in a subsequent screening process.
- As tested on material from Hansen, ablation allows approximately 90% of barren material to be separated from mineralized material prior to milling, greatly reducing the total OPEX and CAPEX costs to process mineralized material. The final product is an "ablated concentrate" which consists of approximately 10% of the original mineralized material, which can be processed with conventional milling techniques and provides flexibility in processing options.



#### Figure 12: Borehole and Ablation Process

Source: Black Range Minerals Ltd



# BLACKRANGE MINERALS LTD

The Company is currently working to identify strategic partners to assist in the development of an effective mining program, to work through the PEA analysis of the project. BLR has entered into a consulting agreement with Kinley (a bore hole mining consultant and strategic partner to provide the UBHM services) that includes a varied scope of services to assist in mine operations planning for Hansen. Discussions with Ablation Technologies are in progress to secure the use of ablation.





Source: Black Range Minerals Ltd



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