## **Kinskuch Project**

www.bigbulk.ca

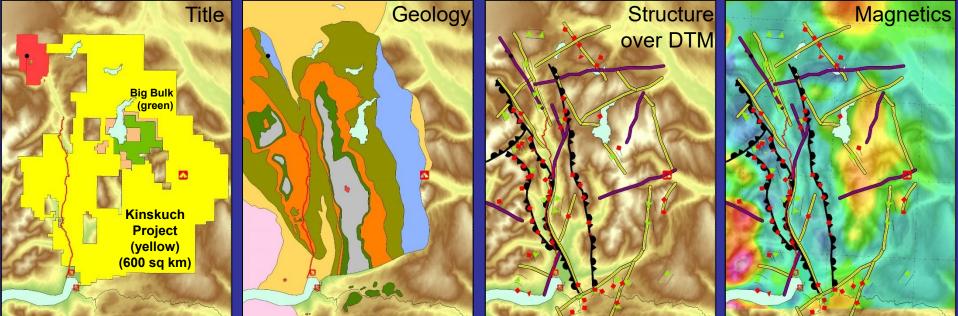
www.kinskuch.ca

## The Big Bulk - Kinskuch Gold Copper Silver Project

An Integrated Look at a First-Class Setting for Gold, Copper & Silver with First-World Levels of Country Risk

First-Class Management Available

1 March, 2016



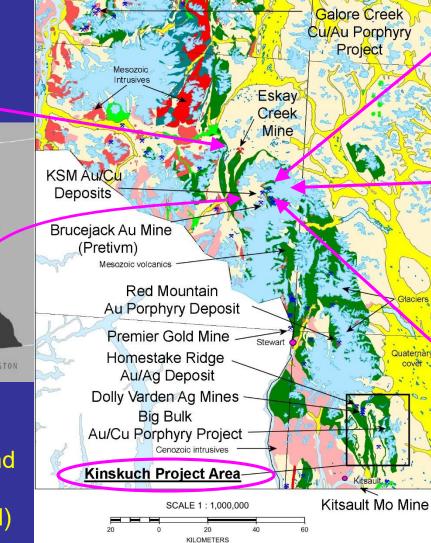
## **Kinskuch Project**

### Location and Target-Type Examples

#### Eskay Creek: 2.5 Million oz Au & 158.9 Million oz Ag (Production)



Brucejack: 13.6 Million tons @ 15.7 g/t Au Proven and Probable Reserves (6.9 Million oz of Gold)



#### Mitchell/Kerr/Sulphurets 2.7 Billion tons @ 0.55 g/t Au and 0.21% Cu (Measured + Indicated)

### Deep Kerr: 782 Million tons @ 0.33 g/t Au and 0.54% Cu (Inferrred)

### Snowfield:

Cat	Tons @ Au		Cu
	(mil)	(g/t)	(%)
Meas	s 189	0.82	0.09
Ind	1,180	0.55	0.10
Inf	833	0.34	0.06

**Residual Magnetics over DEM** 

## Title, Magnetics and Targets

Interactive online map available at: http://editor.giscloud.com/map/464394/kinskuchview1

### Kinskuch Area Mineral Title Map

#### Tenures by Owner **Dolly Varden** Kinskuch Project Other (141)Silver Airborne AllovCorp (340)Survey (2011) Homestake (26)..... Dolly Varden (56)**HiHo Silver** (21)Smyth (156)LCT Holdings Inc. (7) St David Target **Big Bulk Claims Big Bulk Target** Big Bulk **Goldstream Target KitGold Target Illiance Target Kinskuch Airborne** Survey (2011) Alice Arm Esperanza Target Kitasult kilometres Kinskuch Licence Area: 62,500 hectares; Big Bulk Licence Area: 3,025 hectares

## **Big Bulk Drill Target**

Target: U/G\* Gold-Copper Porphyry + Epithermal Gold

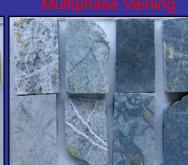
Primary Evidence: BB03-02 (below right) and other DDH intersections; surface Au/Cu sampling; surface intrusive & alteration mapping; large IP chargeability halo; coincidence of large structures.

Mining Logistics: Very good by northern BC standards.

Community Relations: Historically good.

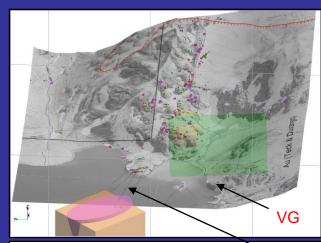
**2016 Work Program**: 3 x ~500m diamond drillholes (C\$400,000); Heliborne geophysics survey (C\$75,000); Structural mapping and lithogeochemistry of entire Lavender Peak massif (C\$125,000) = C\$600,000 total.

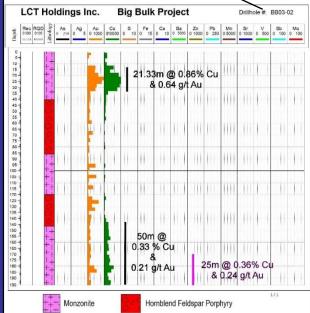






\* Tunnel access (~8 km) from Kitsault River valley, 800m below level of Kinskuch Lake.



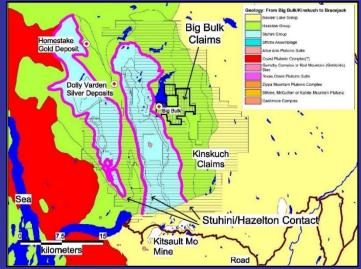


### Big Bulk: Geology

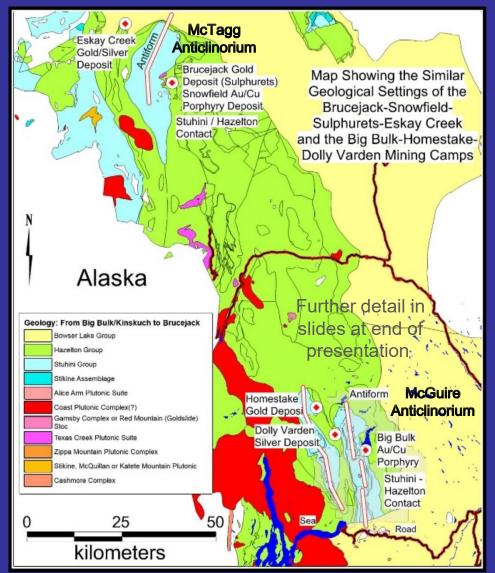
**Key Elements:** BCGS work confirms Texas Creek age intrusives < Brucejack, KSM, etc > Stuhini / Hazelton contact criss-crosses Kinskuch; Intrusives widespread in area; Last detailed mapping in 2002 by Teck. Panteleyev 2008 report likens Big Bulk to Brucejack.

**Work Required:** New detailed geological map (lithologies & alteration) of BB intrusive complex and regional map of intrusives at Kinskuch / Homestake / Dolly Varden – supported by recent airborne geophysics data.

Stuhini / Hazelton Contact (purple)



Map showing similar geological settings of Brucejack / KSM / Eskay Creek and Big Bulk / Dolly Varden / Homestake



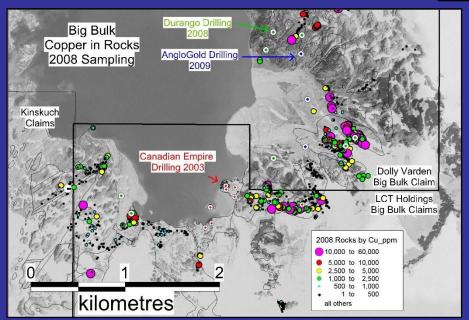
### Big Bulk: Surface Geochemistry

#### Channel Sampling in 2015

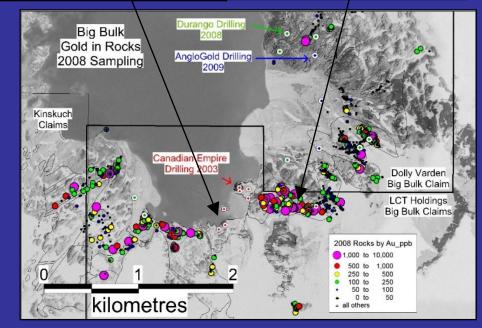
**Key Elements:** Zonation from East to West (Cu-rich to Au-rich); Cu & Au very high in talus on and around Midnight Blue (drilled intrusive 3km WSW of Big Bulk); Very high Cu/Au in rock samples 5km east of Big Bulk.

**Work Required:** Lithogeochemical sampling of all non-sampled areas – particularly outcrop around glacial retreat.

Big Bulk Copper (left), Gold (right) at surface







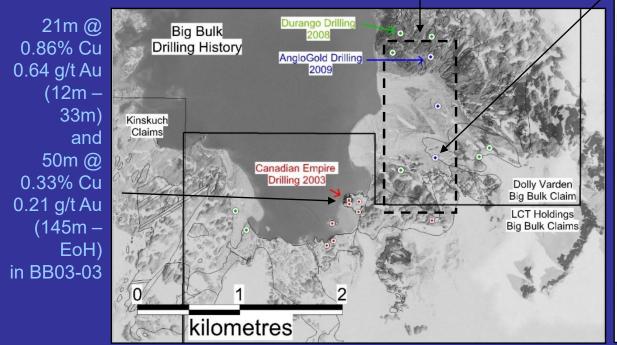
Borehole AGA04 (2009)

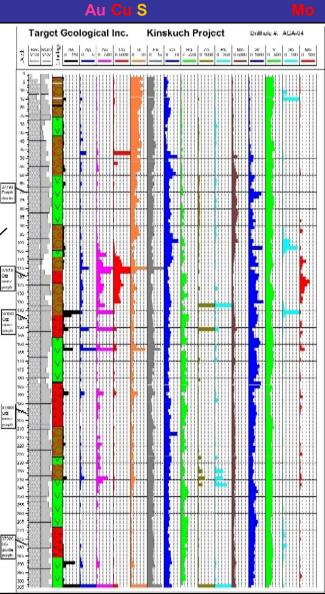
### Big Bulk: U/G Geochemistry

**Key Elements:** Best intersections in BB03-02 (below); Gold in core increases to south west; Intrusive presence increases to south west. Strong zonation of S. High Zn (sphalerite) with intrusives at Midnight Blue.

**Work Required:** Halley/Tosdal geochemical vectoring; Riedell/Proffett vein vectoring. Drill three deeper-than-200m holes around Canadian Empire's BB03-02 DDH.

Extent of IP survey shown in next slide



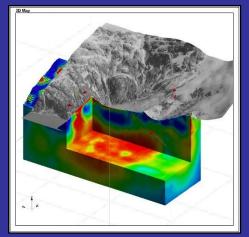


### **Big Bulk: Geophysics**

**Key Elements:** Big Bulk is on the western flank of a 20km by 10 km regional magnetic high – the likely extent of a multi-phase intrusive system. Significant chargeability and resistivity variation has been mapped within the system.

**Work Required:** (a) Heli-borne magnetic (+ Z-TEM, budget permitting) of area not already flown at 100m line spacing – it being most of the indicated intrusive complex. (b) Possible extension of 2008 IP survey to the west.

#### 3D Chargeability Model (View to South East)



Resistivity - Chargeability (100m below surface)

Ohm-m

> 1500

1400 - 1500

1300 - 1400

1200 - 1300

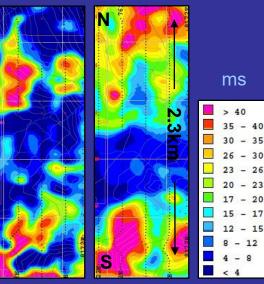
1100 - 1200

1000 - 1100

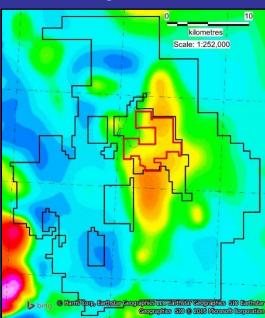
900 - 1000

800 - 900

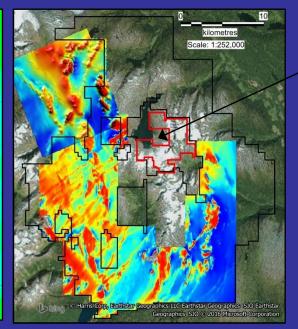
700 - 800 600 - 700 400 - 600 < 400



#### **Regional TMI**

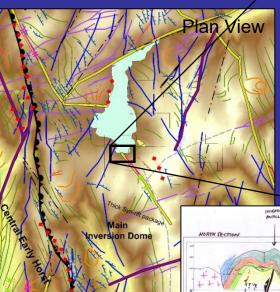


#### High Resolution TMI



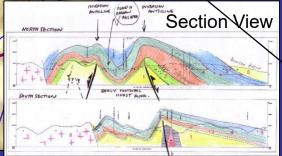
Key Elements: Rift inversion was documented in 2008 by Coller at Kinskuch and in 2014 by Nelson at Brucejack - where mesothermal Au mineralisation is post-Texas Creek age and structurally controlled. High resolution UAV-based photogrammetry for structural mapping was initiated at Big Bulk in 2015. Work Required: UAV-based photogrammetric survey of the entire Lavender Mountain massif as the basis for detailed structural mapping of the Big Bulk intrusive complex.

Major structures identified by Coller in 2008.



Visible Au on a vein surface here

Computer-recognised structural features in UAV-derived DTM



Cm-resolution colour orthophoto overlaid on \_\_\_\_\_ meter-resolution b&w orthophoto used for Coller study.

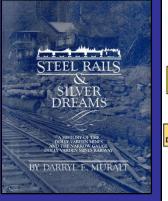
**UAV** surveying at Big Bulk



### **Big Bulk: Mining Logistics**

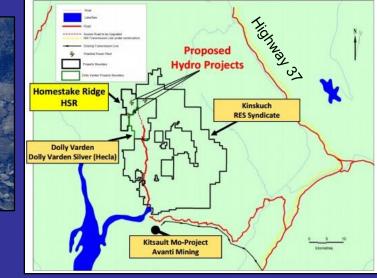
#### **Key Elements:**

- \* Vehicle access to Kinskuch boundary;
- \* Kinskuch property is alongside tidewater;
- \* Powerlines run to Kinskuch boundary;
- \* Long history of mining at Dolly Varden;
- \* Neighbour to ~\$800 million fully-permitted Kitsault Mo mine-development project;
- \* Neighbour to ~1M oz AuEq resource at Homestake Ridge;
- \* Neighbour to ~40M oz Ag resource at Dolly Varden;

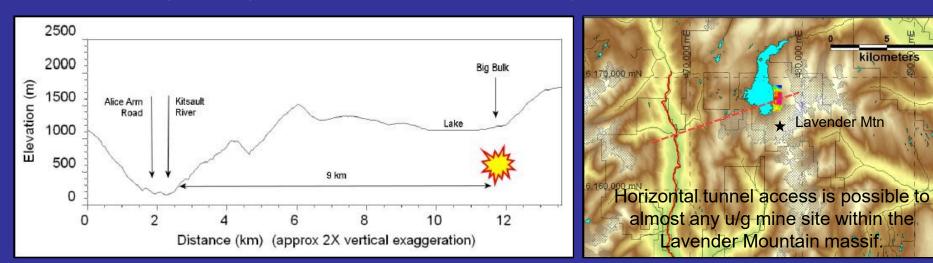


"Steel Rails and Silver Dreams", available on Amazon, documents the history of the Dolly Varden silver mines.

#### Local Infrastructure



\* Tunnel access (7 - 9 km) possible from Kitsault River valley to 800m below level of Kinskuch Lake



## **Kinskuch Project**

\* Significant glacial retreat over Big Bulk since Teck Corporation mapping in 2002 (documented with 2015 UAV-derived orthophotographs);

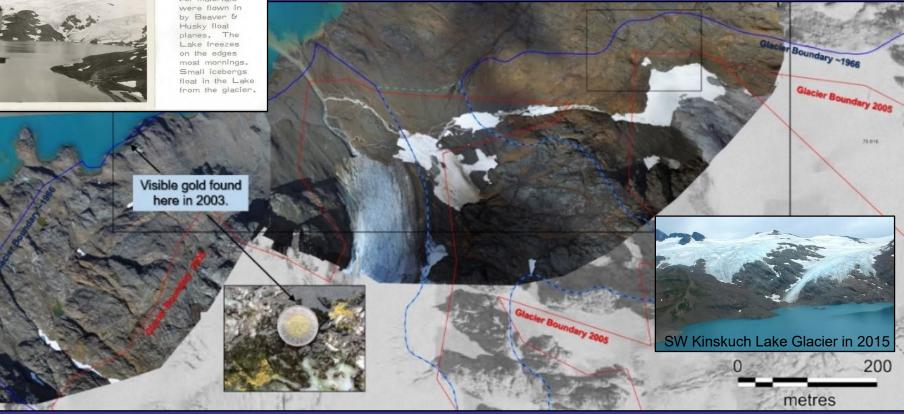


4000 ft, is in the SW corner of the Lake. materials flown in on the edges most mornings. Small icebergs

SW Kinskuch Lake Glacier in 1966

\* The same applies to glaciers over mineralisation observed in other parts of the Lavender massif, last prospected in 1991 (see next slide).

Below: 1966, 2005 and current glacier edge over Brianne Zone of the Big Bulk system (Roundup 2016 poster extract).

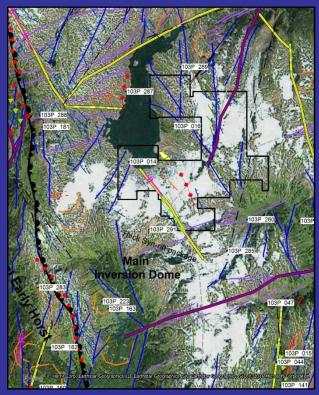


### Big Bulk: Glacial Retreat on Lavender Massif

#### Key Elements:

\* There are mineral occurrences around the Lavender Massif indicating epithermal or porphyry mineralisation on Big Bulk / Kinskuch licences, which have not been evaluated since the 1990's;
\* Significant glacial retreat will have better-exposed these targets for re-evaluation in 2016.

Google Earth image showing extent of glaciers on the Lavender Massif.



#### Example 1: Nikie Zone (1996 Assesment Report # 24747)

"The second zone is called the Nikie Zone. It is located on a bench northwest of the main glacier draining the north-western portion of the claims. The showing consists of quartz veins up to 20cm wide with chalcopyrite, malachite, native copper and visible gold.

The veins occur within and paralleling dacitic to rhyolitic dykes. Values of up to 57.80 g/t Au, 91.2 g/t Ag and 3.6% copper have been returned from the veins.

Similar veins are believed to have been found by Keewatin geologists in 1991\* across the main glacier to the south. Values of up to 73 g/t Au and 16% Cu were reported from these veins as well. This area was not looked at in the 1996 program. Although the grades are spectacular, the veins are rather narrow."

\* Confirmed in 1990 Assessment Report # 20574.

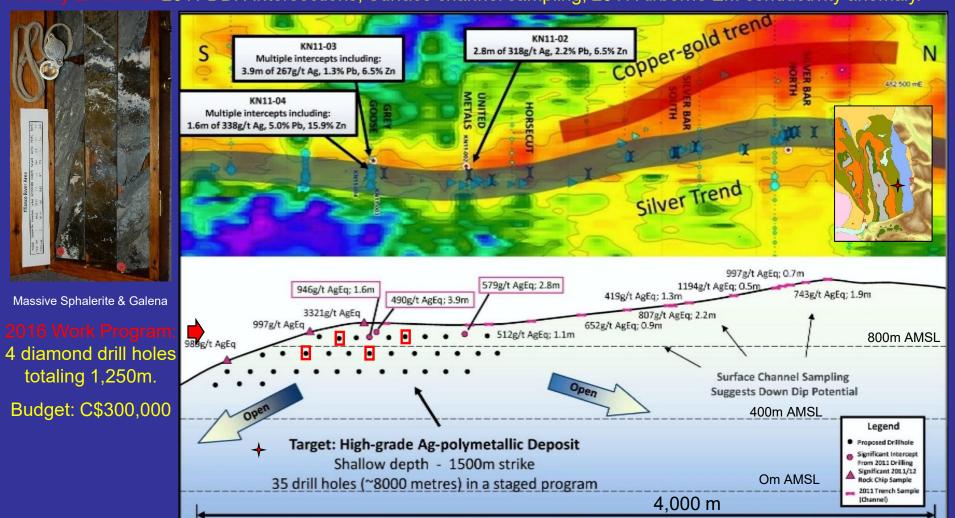
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### **Illiance Drill Target**

 Target:
 Dolly Varden / Homestake / Eskay Creek – Style Gold / Silver / Base Metals deposit

67

Primary Evidence: 2011 DDH intersections; Surface channel sampling; 2011 Airborne EM conductivity anomaly.



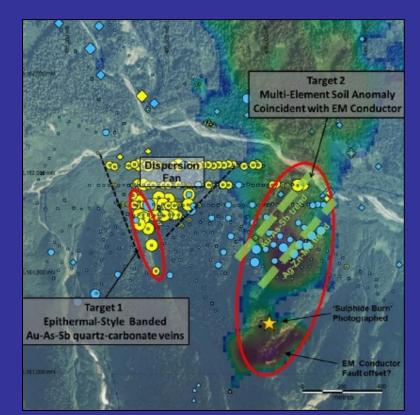
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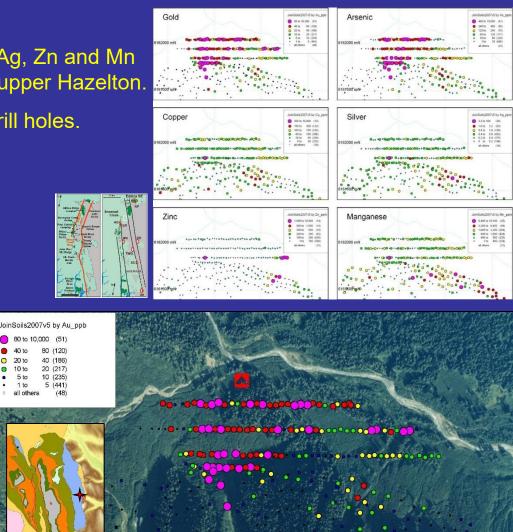
Gold Stream Drill Target

Target: Epithermal Au or Eskay Creek Au/Ag.

Evidence: 1000m by 300m zoned Au, As, Cu, Ag, Zn and Mn soil anomaly, coincident with EM conductor in upper Hazelton.

2016 (?) Work Program: 4 x 200m diamond drill holes. Budget: C\$200,000





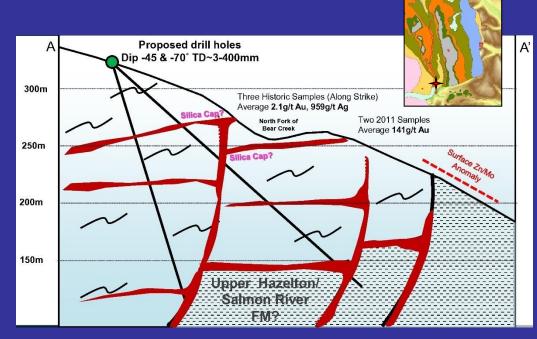
### Esperanza Drill Target

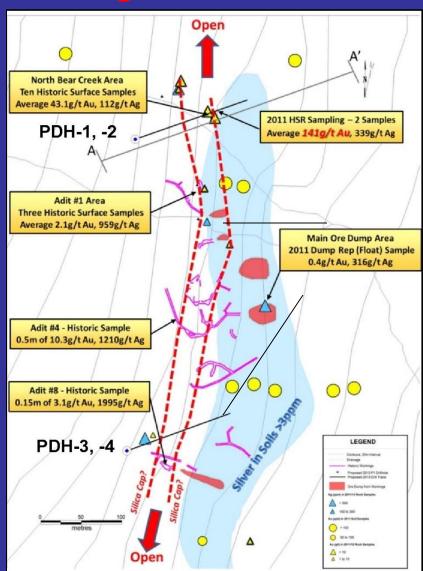
Target: Epithermal Gold or Eskay Creek Au/Ag.

**Primary Evidence**: 500m Au/Ag soil anomaly over historic u/g workings (+As-Sb-Zn-Mo) supported by Upper Hazelton EM conductor (see next slide).

Target Access: Drive from Alice Arm.

2016 Work Program (?): 4 diamond drill holes of ~250m each. Budget: C\$250,000.



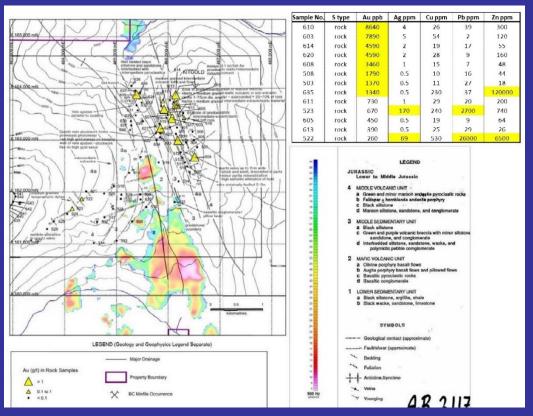


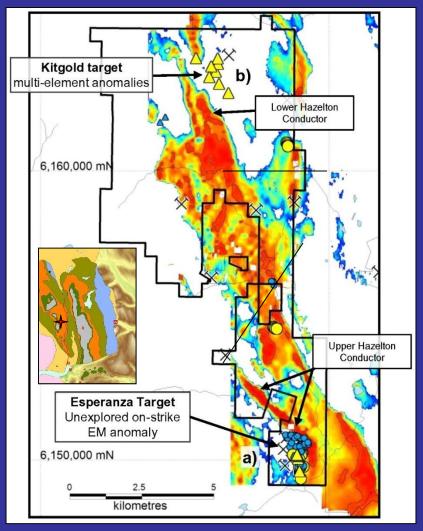
### KitGold Target

Target: Homestake Ridge / Brucejack Au-type deposit in Lower Hazelton stratigraphy.

Primary Evidence: Strong Au and multi-element rock chip anomalies alongside un-sampled EM conductor.

2016 Work Program: Surface mapping and sampling. Budget: C\$25,000.





### St David and JC Targets

Target: Porphyry Au/Cu and Skarn/Epithermal Gold.

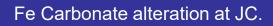
Primary Evidence: Outcrop rock-types, geochemical anomalies and significant structural features.

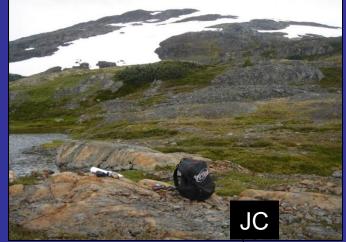
### 2016 Work Program:

Malachite at St David.

Surface mapping (+ UAV photogrammetry for structure studies) and geochemical sampling. Budget: C\$25,000.

View north to Jade Lake from St David.







Crowded Porphyry at St David.



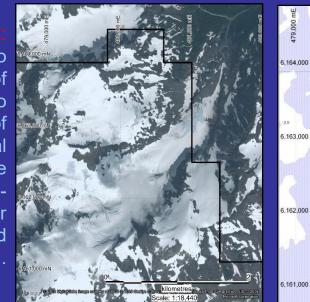


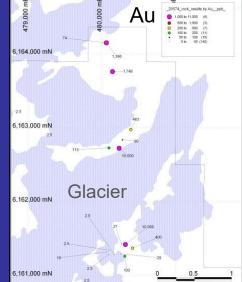
## 1991 "Hi" Copper/Gold in Rock Targets

- **Target:** Porphyry Au/Cu and Epithermal Gold. (Easy tunnel-access from deeply-incised valleys to the east.)
- Primary Evidence: Visible gossans & Au / Cu in rock anomalies.
- Exploration Logistics: Difficult (very steep; high). Need helicopter.
- **2016 Work Program**: Airborne geophysical survey (included in Big Bulk Target budget). Lithogeochemical sampling program.
- Budget: C\$25,000 (mostly helicopter time).

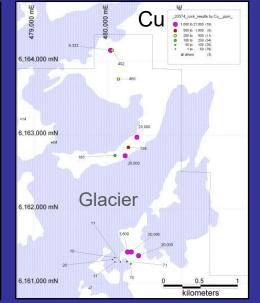
#### **Glacial Retrea**

Please refer to Slides 11 and 12 of this presentation to see evidence of significant glacial retreat in these areas during the 20 -25 years since their last ground evaluation.









#### www.bigbulk.ca

## **Kinskuch Project**

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## Summary 2016 Exploration Proposal

#### Considerations:

- Depending on funding party's preferences, the Esperanza drilling budget may be better spend on upgrading the proposed Big Bulk heli-mag survey to include Z-TEM, and over an expanded area.
- \* Depending on the funding party, RES Syndicate may consider this as a 2-Year plan.

Target	Activity	Meters	<b>C\$</b>
Big Bulk	Drilling	1,500	400,000
	Geophysics		75,000
	Geology/Geochem		125,000
	Total:		600,000
Illiance	Drilling	1250	300,000
Goldstream	Drilling	800	200,000
Esperanza	Drilling	1000	(250,000)
Kitgold	Geology/Geochem		25,000
St David / JC	Geology/Geochem		25,000
"Hi" Cu/Au	Geology/Geochem		25,000
		<u>Total:</u>	<u>1,425,000</u>
Contingency:		75,000	
Grand Total:		<u>1,500,00</u>	

Targets



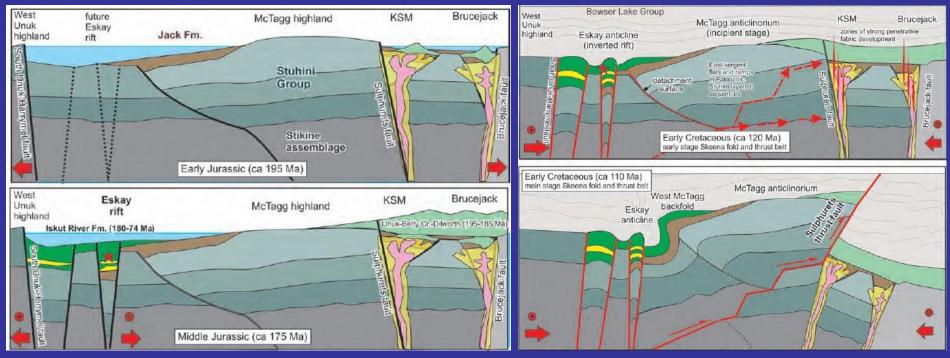
## **Kinskuch Project**

### The McTagg and McGuire Anticlinoriums: Comparative Stratigraphy and Intrusive History



### The McTagg\* Anticlinorium Structures <sup>\* Location</sup> in Slide 5

Model for the structural evolution and reactivation of the McTagg half-graben and Eskay rift. (Nelson and Kyba, 2014)

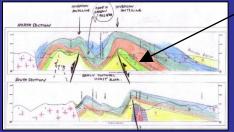


## **Kinskuch Project**

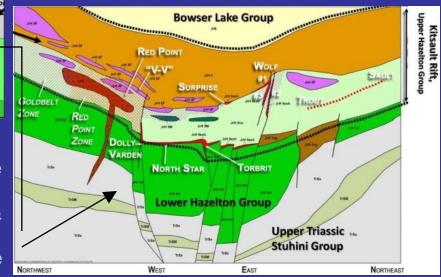
The McTagg and McGuire Anticlinoriums: Comparative Stratigraphy and Intrusive History The McGuire\* Anticlinorium Structures <sup>\* Location</sup>

Late Triassic - Early Jurassic? Early-Mid Jurassic Hazelton Group Mid-late Jurassic volcanics/sediments Caldera construction - Rifting Late rift felsic volcanics, sediments and ie: Stuhini - lower Hazelton post-rift sedimentation ie: Betty Creek Fm. ie: Salmon River Fm. - Bowser Lake Grp. Homestake Main Deposit/ Fox Zone (on-strike) Homestake North Dome Silver Deposit Target Transitional Sediments +- Domes, Felsic Dome Black Shale and Bedded/Detrito Sulphides 2 Src-py alt'n **Upper Betty Creek** Src-py alt'n EJr? Monzonit MJr syenite ? Intrusive Lower Betty Creek

Source: Homestake Resource Corporation (2014)



Coller (2008) identified inverse rifting in the McGuire Anticlinorium – present in Nelson & Kyba analysis of the McTagg (previous slide) but not in these interpretations. Structural models for the Homestake Ridge (left) and Dolly Varden (below) deposits associated with the McGuire antiform (half graben?) and the Kitsault (Eskay?) rift.



Source: Dolly Varden Silver Corporation (2014)

## **Kinskuch Project**

# nparative Stratigraphy and Intrusive History The McGuire Anticlinorium Stratigraphy\*

Source: Homestake Resource Corporation (2014)

Source: BC Geological Survey Lithological Description Mineralization (Known Deposits and Occurrences) Age (est) (Van Straaten, 2016) (Primarily from Homestake Ridge Property) Regional **Kitsault Mineral District** Gp. Homestake Kinskuch Regional Dolly Correlations Ridge Varden Project Bowser Bowser Lak Group MJr Post-rift sedimentation Quock Fm. Salmon River Formation orth Dome kay Horizo speranza Late rift, bedded fossiliferous slst/mdst, felsio domes/mafic dykes-flows, pyritic horizons. Betty Cr. Homestake Kitsault Rift Fa Hazelton Group Main rift: Sequence fines upward to a volcanic L-MJr Dolly Varden wacke; increasing mafic volcanic flows; rhyodacite flow-domes and tuffs in upper sequence Hazelton Group tty Creek Formation Main rift: polylithic coarse cobble volcaniclastic. epiclastic, wacke, ash tuff lliance Rive Dolly Vard Torbit NorthStar Main Homestake Homestake Silv Unconformity?? Jnuk R. Fm. Silbak Pren BruceJack Red Mount **Big Bulk** Initial rift - Basin fill; monolithic volcanic Development / Collapse epiclastic; hetrolith ic breccia with detrital Ur sulphides: siltstone-mudstone rip-ups Caldera Pre-rift volcanics: lower sequence of andesite volcanic and tuff; upper sequence of dacite flows, epiclastics and volcaniclastics Red Mnt outh Reef Dacite is likely a volcanic equivalent of the (SM monzonite Unconformity/structural break Stuhini Gp. UTr - LIr Stuhini Grp Pre-rift andesitic volcanics & sediments (detrita U-Pb: 219Ma) Monzonite intrusions of likely E. Jurassic age (strong src-py alteration - historic "Copper Belt")

## **Kinskuch Project**

### **Relative Sizes of Prospective "Alkalic" Terrains**

