

The Klaza Project: An expanding high-grade gold and silver resource in the Mount Nansen gold camp (Yukon MINFILE 1151067)

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ABSTRACT

The Klaza property is wholly owned by Rockhaven Resources Ltd. and covers an area of 25 410 ha. It is located within the Mount Nansen gold belt, an area that hosts a historical gold mine, rich placer gold deposits and key infrastructure such as road access. Rockhaven's exploration to date includes more than 78 000 m of diamond drilling, 21 000 m of excavator trenching, extensive soil geochemical surveying, and airborne and ground geophysical surveying.

Drilling at the Klaza property has identified mineralized zones and numerous subsidiary structures, which are part of an epithermal to porphyry system. The majority of these zones are hosted within a 2.5 km long and 1.8 km wide structural corridor hosted by mid-Cretaceous granitoid rocks.

The property has an inferred resource estimate of 9 421 000 tonnes containing 1,358,000 oz gold at 4.19 g/t and 26,962,000 oz silver at 89.02 g/t (Ross *et al.*, 2016b). A preliminary economic analysis, announced in March 2016, yielded encouraging results, with a pre-tax NPV_(5%) of \$150 million and 20% IRR (Ross *et al.*, 2016a).

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INTRODUCTION

The Klaza property is 100% owned by Rockhaven Resources Ltd. (www.rockhavenresources.com). It comprises 1317 mineral claims and covers an area of 25 410 ha (254.1 km²). The property lies within the Mount Nansen gold camp in southwestern Yukon, a historical mining district that can be accessed from the village of Carmacks via a 50 km government maintained road. The Klaza property covers gold-silver-lead-zinc mineralization associated with an extensive system of subparallel vein and breccia zones, which are open to extension in all directions and to depth. Copper-molybdenum-gold porphyry mineralization has also been identified on the southeastern end of the vein system in a part of the camp that has been named the Mount Nansen porphyry complex.

The mineralized zones at Klaza have been traced over strike lengths of 300 to 2500 m and have been intersected in drill core to a vertical depth of more than 500 m from surface. All of the mineralized zones begin at surface and were originally discovered in excavator trenches cut across coincident soil geochemical and geophysical anomalies. The property hosts one of the highest grade gold deposits discovered to date in Yukon that contain more than one million ounces of gold. The most updated inferred mineral resource (Table 1) for the property totals 9 421 000 t grading 4.48 g/t gold, 89.02 g/t silver, 0.75% lead, and 0.95% zinc. A preliminary economic analysis

was announced in March 2016 and yielded encouraging results, with a pre-tax NPV_(5%) of \$150 million and 20% IRR.

EXPLORATION HISTORY

Between 1899 and 2014, several operators explored on various claim groups that now lie within the Klaza property. Although strong geochemical and geophysical anomalies were identified by this work, follow-up trenching and drilling produced sporadic results, in part because of physical and technological limitations. Early bulldozer trenches rarely reached bedrock, often because of permafrost, and small diameter drill holes typically gave poor core recoveries, especially in the more fractured, mineralized intervals. The most extensive historical exploration on the property took place between 1986 and 1988 by Chevron Minerals Ltd. and BYG Natural Resources Inc. Diamond drilling, excavator trenching and stripping, soil geochemical sampling and geophysics were done during this time.

Rockhaven purchased the initial Klaza claims in late 2009 and began exploration on the property in 2010. Exploration to date by Rockhaven has included over 78 000 m of diamond drilling, 21 000 m excavator trenching, extensive soil geochemical surveys, and airborne and ground geophysical surveys including magnetics, very-low frequency electromagnetics, induced polarization and radiometrics.

Table 1. Klaza property Inferred Resource (using CIM definition standards) in Pit-Constrained and Underground (Ross et al., 2016a). The mineral resource estimation was completed by Adrienne Ross, P. Geo (of AMC Mining Consultants Ltd.) who is a Qualified Person (QP) and independent of Rockhaven, based on the criteria defined by NI 43-101 and using drilling results to September 30, 2015. ¹Near surface mineral resources are constrained by an optimized pit shell at a gold price of (US)\$1300/oz. ²Cut-off grades applied to pit-constrained and underground resources are 1.3 g/t Au EQ and 2.75 g/t Au EQ respectively. ³Gold equivalent values for the mineral resource were calculated using the following formula: Au EQ = Au + Ag/85 + Pb/3.74 + Zn/5.04 and assuming: (US)\$1300/oz Au, (US)\$20/oz Ag, (US)\$0.90/lb Pb and (US)\$0.90/lb Zn with recoveries for each metal of Au: 96%, Ag: 91%, Pb: 85% and Zn: 85%. Refer to Klaza property technical report dated January 22, 2016 for additional data.

	Tonnes	Grade					Contained Metal				
	(kt)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Au EQ ³ (g/t)	Au (koz)	Ag (koz)	Pb (klb)	Zn (klb)	Au EQ ³ (koz)
Pit-Constrained ^{1,2}	2366	5.12	94.51	0.93	1.18	6.71	389	7,190	48,258	61,475	510
Underground ²	7054	4.27	87.18	0.69	0.88	5.65	969	19,772	107,159	136,416	1,282
Total	9421	4.48	89.02	0.75	0.95	5.92	1,358	26,962	155,417	197,891	1,793

GEOLOGY

REGIONAL GEOLOGY

The oldest rocks in the area are part of the Yukon-Tanana terrane which is regionally made up of a variety of Proterozoic and Paleozoic metavolcanic, metasedimentary and metaplutonic rocks, of arc and back-arc affinities (Colpron *et al.*, 2006; Piercey *et al.*, 2006). In the Klaza area recent regional bedrock mapping (Fig. 1; Ryan *et al.*, 2016) shows the Yukon-Tanana basement rocks are mainly schist and gneiss, with sedimentary and volcanic protoliths (Snowcap assemblage, Finlayson assemblage respectively) and plutonic protoliths (Simpson Range suite). Basement rocks were intruded in the Late Triassic to Early Jurassic by weakly to unfoliated plutonic rocks (Stikine and Long Lake suites; Klöcking *et al.*, 2016). The youngest rocks in the area are unfoliated and represented by five sets of Cretaceous to Paleogene plutonic and volcanic rocks: Whitehorse suite plutons, Mount Nansen volcanic rocks, Prospector Mountain Suite plutons, Carmacks volcanic rocks and the Casino suite plutons (Fig. 1). The 79 to 72 Ma Casino suite is of particular significance because it is associated with most of the epithermal vein and porphyry deposits in the Dawson Range (e.g., Allan *et al.*, 2013).

PROPERTY GEOLOGY

Detailed mapping on the property is limited by sparse outcrop and extensive vegetation cover. The geology map of the Mount Nansen gold camp (MNGC) is shown on Figure 2, a compilation map of data collected over the last 50 years. The oldest exposed units are Snowcap assemblage schist, limestone and amphibolite that underlie the southern part of the property. A wedge of orthogneiss belonging to the Simpson Range suite is mapped in the southeastern corner of the property.

The northern and western parts of the property are mostly underlain by mid-Cretaceous Whitehorse suite granitoid, locally a coarse-grained, non-foliated rock with 30% hornblende and biotite.

Sub-aerial volcanic and volcanoclastic rocks of the Mount Nansen and Carmacks groups are common in the central part of the property. They include medium green to grey andesite flows and pyroclastic rocks with localized buff to tan rhyolitic tuff. These rocks are believed to be extrusive equivalents of the middle and Late Cretaceous intrusions, respectively.

A small quartz-rich granite to quartz monzonite stock intrudes granodiorite approximately 3 km southeast of the

Klaza mineral resource (Fig. 2). This stock is called the Mount Nansen porphyry complex and is thought to be the main heat source for hydrothermal fluids responsible for mineralization on the property. A series of northwest trending feldspar porphyry dikes emanate from the Mount Nansen porphyry complex and cut Whitehorse suite granodiorite in the area of the Klaza vein system (Fig. 2). These porphyry dikes are up to 30 m wide and consist of buff aphanitic groundmass containing up to 15% orthoclase phenocrysts (1 to 2 mm) with minor biotite and rare quartz phenocrysts. Commonly the dikes occupy the same structural zones as the mineralized veins, and they are often strongly fractured. Some veins crosscut dikes.

The monzonite-granite and feldspar porphyry dikes are scattered throughout the property and assigned to the Casino suite, which geochronological work indicates are Late Cretaceous (78.2-76.3 Ma; Mortensen *et al.*, 2016) making them younger than the Mount Nansen volcanic rocks but older than intrusions of the Prospector Mountain Suite. The porphyry dikes, are spatially, and likely genetically, related to porphyry and vein mineralization on the property.

Two main fault trends (NW and NE) are present in the MNGC (Fig. 2) and are best documented where they are delineated by trenching and drilling at the Klaza vein system. The first set strikes northwesterly and dips between 60° and 80° to the southwest. Although these faults lack strong topographic expression, they are important because they host mineralized veins and breccia zones and appear to control the distribution of porphyry dikes. The second set of faults strike northeast, almost perpendicular to the primary set, and dip subvertically.

DEPOSIT GEOLOGY

The Klaza mineral resources lie within the northern part of the MNGC, a northwest elongated structural belt that hosts more than 30 known mineral occurrences (Hart and Langdon, 1997; Fig. 2). Gold and silver-rich veins within the MNGC predominantly occur in northwest trending structures. The hydrothermal system associated with mineral occurrences in the MNGC is cored by weak porphyry copper-molybdenum centres, and transitions outwards to anastomosing sheeted veins and more distally to cohesive base and precious metal veins. The mineralizing events within the MNGC are interpreted to be related to the emplacement of the Late Cretaceous Casino suite intrusive centres.

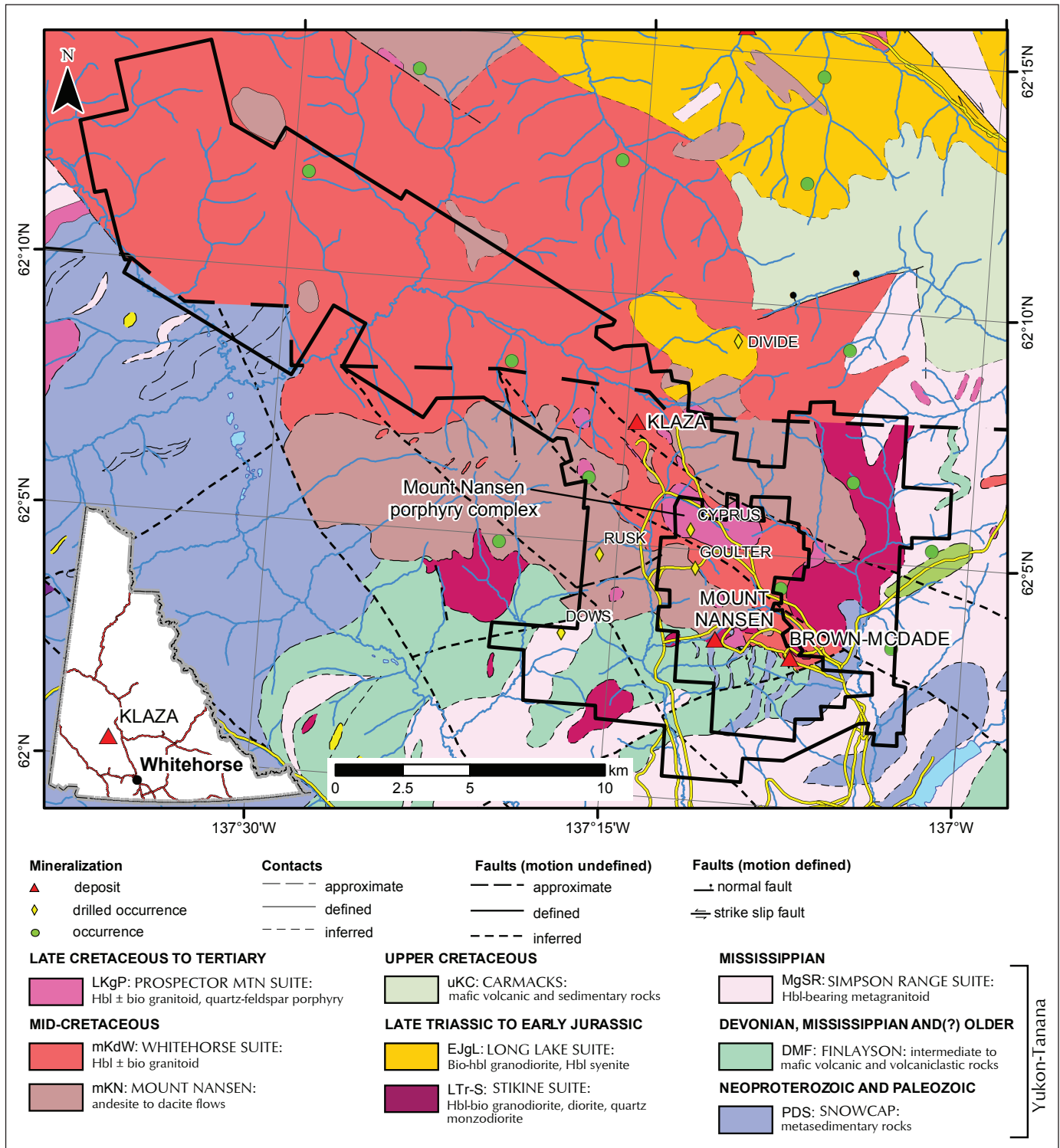


Figure 1. Simplified geology map around the Klaza property; bottom left inset shows location in Yukon. Geology north of heavy dashed line is from Yukon Geological Survey (2016), south from Ryan et al. (2016). Rockhaven Resources current property outlined in heavy, solid black line excluding the central portion which contains the Mount Nansen and Brown-McDade deposits.

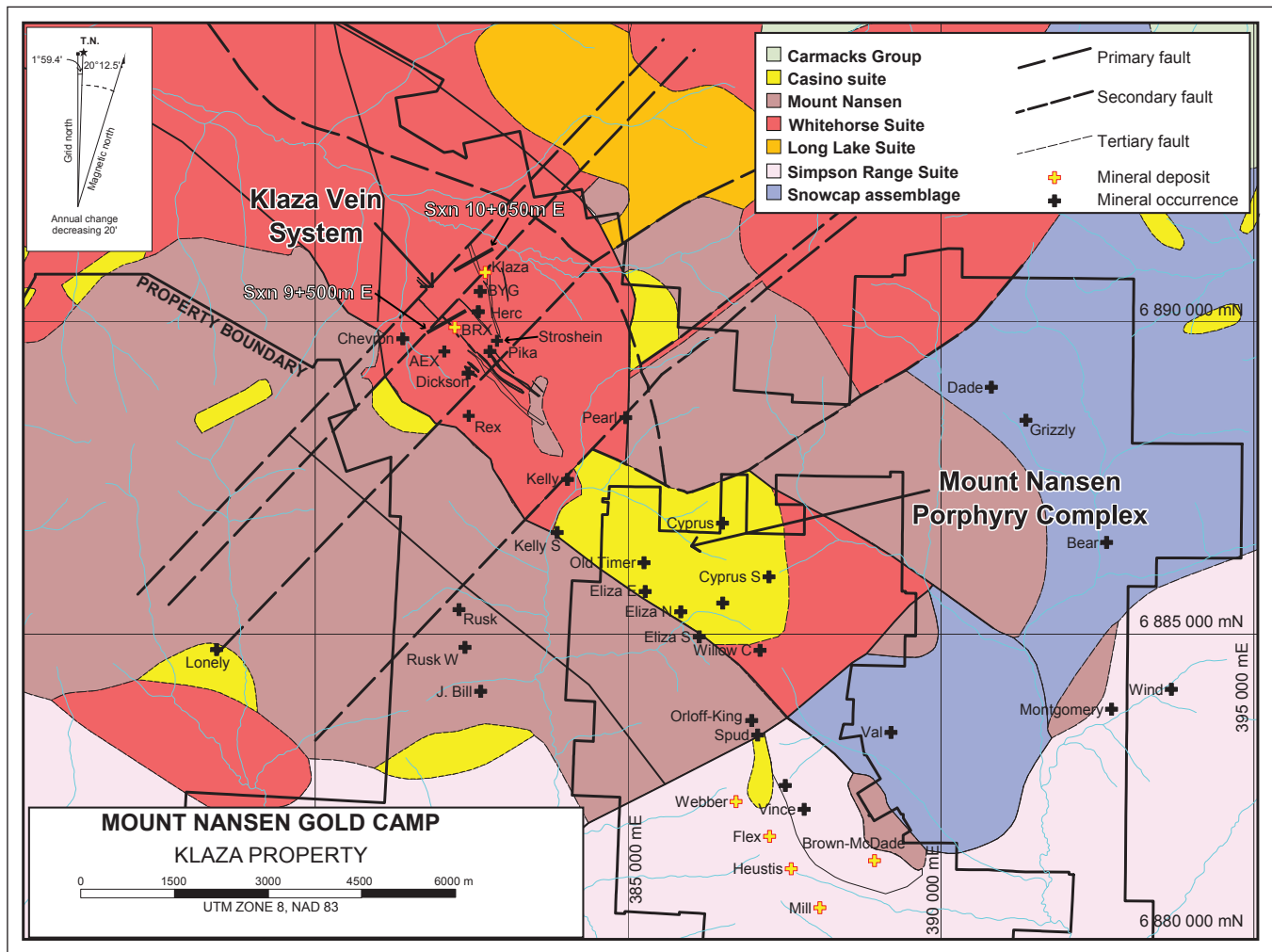


Figure 2. Property geology interpreted from regional mapping, trenching, drilling and geophysical surveys.

The majority of Rockhaven’s exploration activities have been focused on the discovery and delineation of vein mineralization, which lies in the distal part of the local hydrothermal system where copper-deficient, precious metal rich veins predominate. Eleven main, mineralized structural zones are developed northwest of the porphyry targets. The structural zones collectively form a 2 km wide corridor that cuts northwesterly through mid-Cretaceous granodiorite for a length of 4 km or more. Individual zones exhibit exceptional lateral and down-dip continuity, and all of them remain open for extension along strike and to depth. From south to north, the zones are: Rex, Dickson, AEX, Chevron, BRX, Pika, Stroshein, Herc, BYG, Klaza and Pearl (Fig. 2). Rockhaven’s exploration has focused mainly on the Klaza and BRX zones, which have been subdivided into the Western BRX, Central BRX, Eastern BRX, Western Klaza and Central Klaza sub-zones.

The current mineral resource estimate in Table 1 contains mineralization from parts of these five sub-zones.

ALTERATION AND MINERALIZATION

Four significant alteration facies are observed in drill core and trench exposures. These phases are propylitic (calcite, chlorite and sericite), argillic (montmorillonite and kaolinite), phyllic (quartz, sericite and pyrite) and potassic (biotite, K-feldspar) alteration. The alteration facies and intensities vary, based principally on the spatial relationships of each zone with respect to the primary heat source. Further controls on alteration include proximity to feldspar porphyry dikes, and presence of multiple phases of mineralization. Generally, propylitic alteration represents the most distal alteration facies, followed by weak argillic and advanced argillic alteration, then phyllic alteration and finally, the most proximal, potassic alteration.

The main mineralized structural zones in the mineral resource areas range from 1 to 100 m wide and are usually associated with feldspar porphyry dikes. Mineralization occurs within veins, sheeted veinlets and some tabular breccia bodies. Cross sections from the

Western BRX and Central Klaza zones are shown on Figure 3. The host granodiorite exhibits pervasive weak argillic alteration immediately adjacent to and up to 30 m peripherally to the mineralized bodies. Sericitization and potassic alteration are developed directly adjacent to

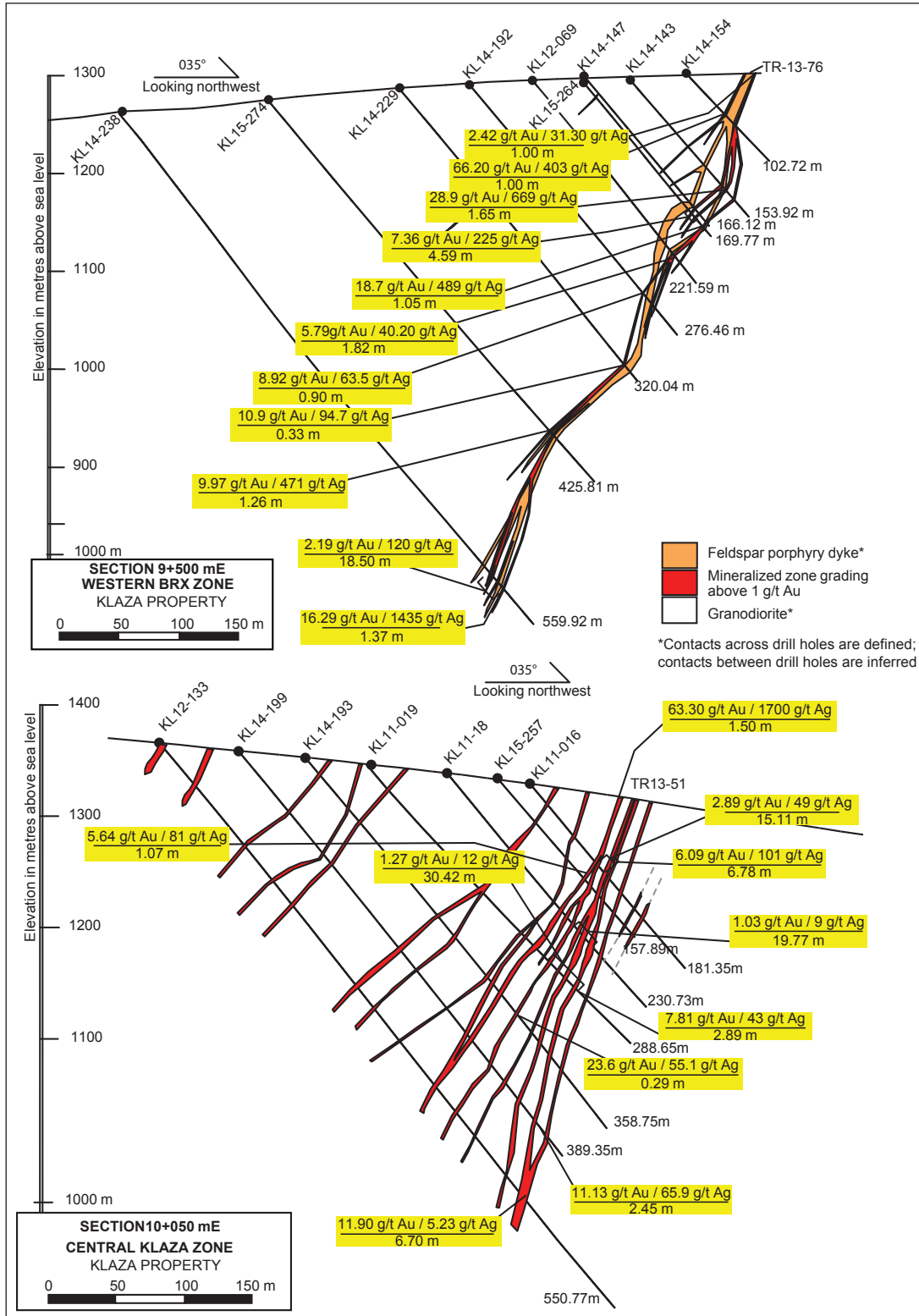
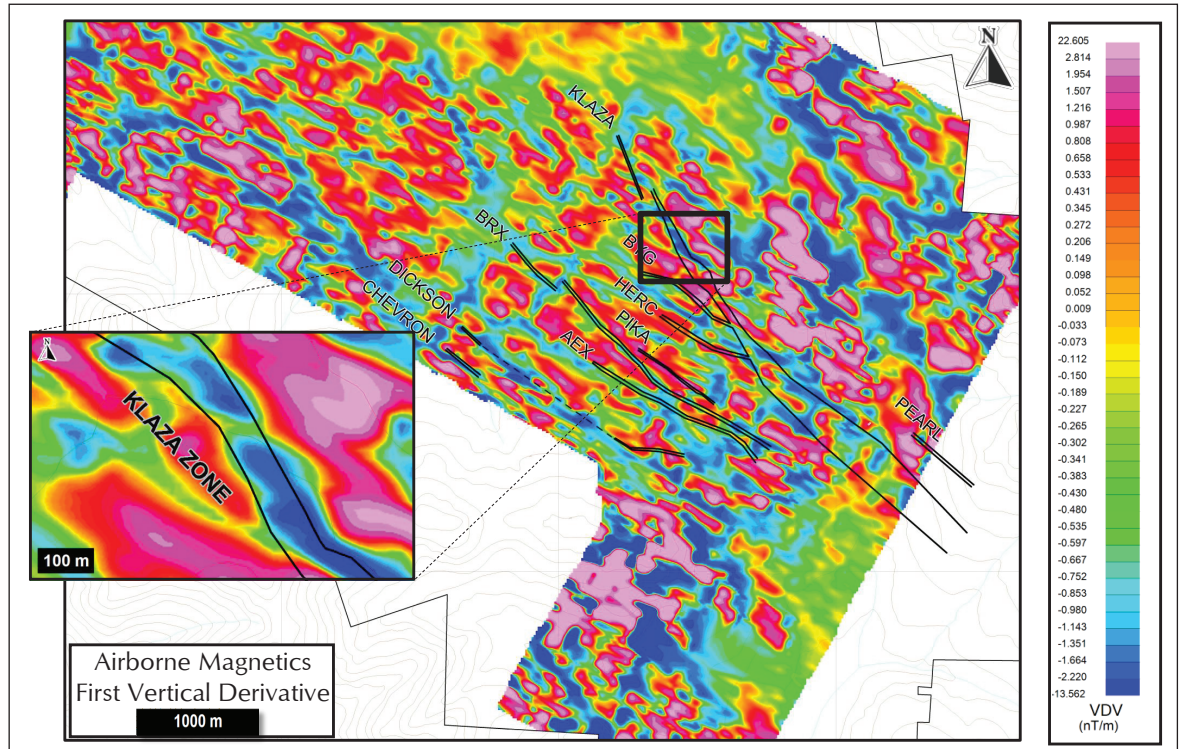


Figure 3. Cross section 9+500 mE, from the Western BRX zone (upper) and 10+500 mE from the Central Klaza zone. Section locations are shown in Figure 2.

hydrothermal channel ways. The granodiorite is magnetite-bearing except where it is destroyed around mineralized structures, and this has been used to aid exploration within this package of rocks (Fig. 4).

Figure 4. Traces of mineralized zones on the Klaza property overlain on the first vertical derivative of aeromagnetic data.



Interpretation of vein paragenesis is based on observations made from drill intersections at the Western BRX, Central BRX, Western Klaza and Central Klaza zones. The general sequence of mineralizing events for the veins is interpreted as:

- Phase I: Early barren quartz veining associated with brecciation and alteration (phyllic and argillic) of the host granodiorite.
- Phase II: Smoky quartz veining hosting disseminated to semi-massive pyrite, arsenopyrite, ± sulphosalt mineralization.
- Phase III: Carbonate veining (calcite, rhodochrosite, ankerite and siderite) accompanied by sphalerite and galena.
- Phase IV: Single to multi-stage brecciation of veins by faulting and late hydrothermal fluids.

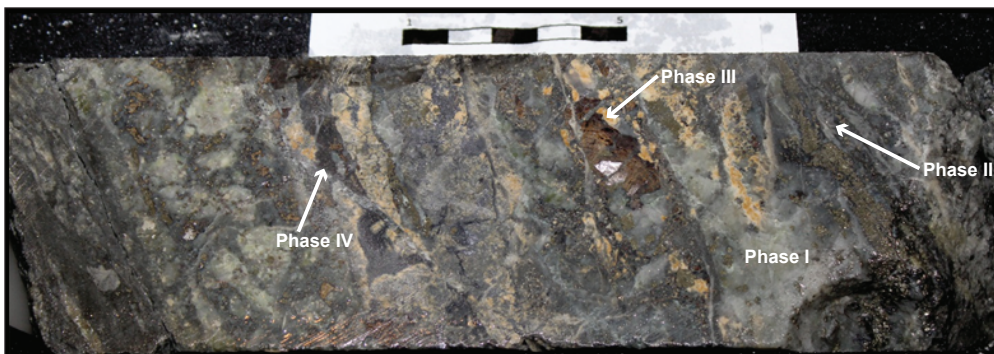


Figure 5. Diamond drill core from hole KL14-156 (114.20 m) from the Western BRX zone intersect illustrating vein phases I through IV. Sphalerite and galena are clearly seen in proximity to tan ankerite.

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