

# Miocene Caldera hosted mineralisation in the Western Tethyan in Slovakia - Implications for the Pacific Rim.

14th October 2021

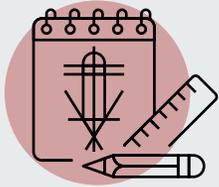
The Society of Resource Geology  
International Symposium of the Society of Resource Geology

'Gold Exploration in the Circum-Pacific'

J Beckton - Prospech Limited - [www.prospech.com](http://www.prospech.com)

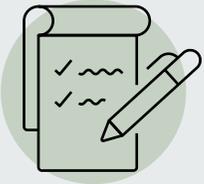


# Concept – Exploration Targets to Resources



## Scale

Region with ~1,000 year mining history



## Derisked

Recorded production: 120 Moz Ag and 2.4 Moz Au

Tenure next to modern production

Data of known multiple epithermal gold/silver deposits in projects 170+ km<sup>2</sup>



## Location

Slovakia, EU & Eurozone

On the Tethyan Belt

Past treasury of the Austro-Hungarian Empire



## Importance of two stage mineralisation

Telescoping of later Horst Graben faults over earlier Detachment Fault

Detachment Fault mined at Rozalia for 10gt/Au head grade



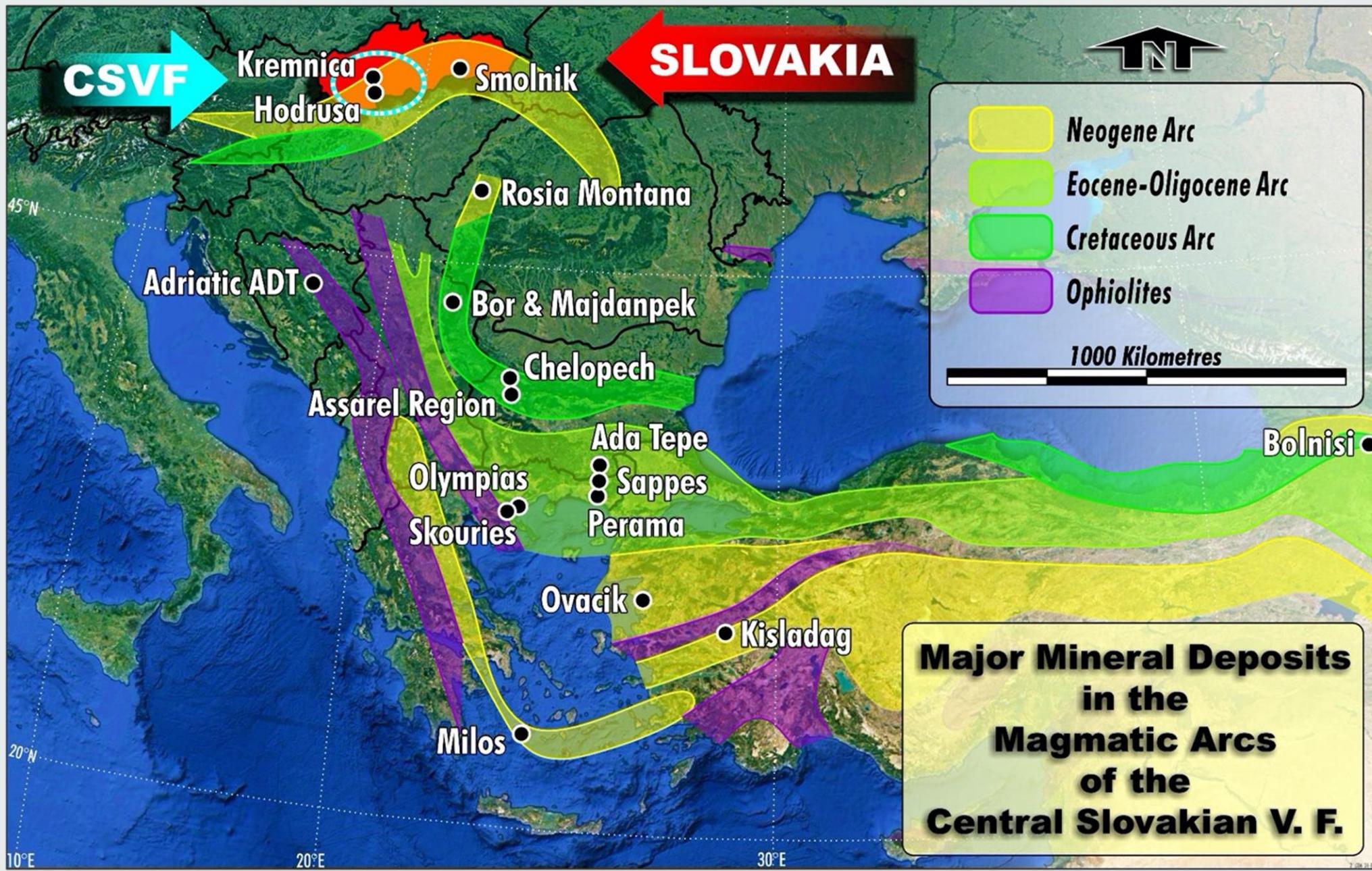
## Operations Low Tech – High Value

Schopfer Underground drilling – Portable in house diamond drilling easier to permit

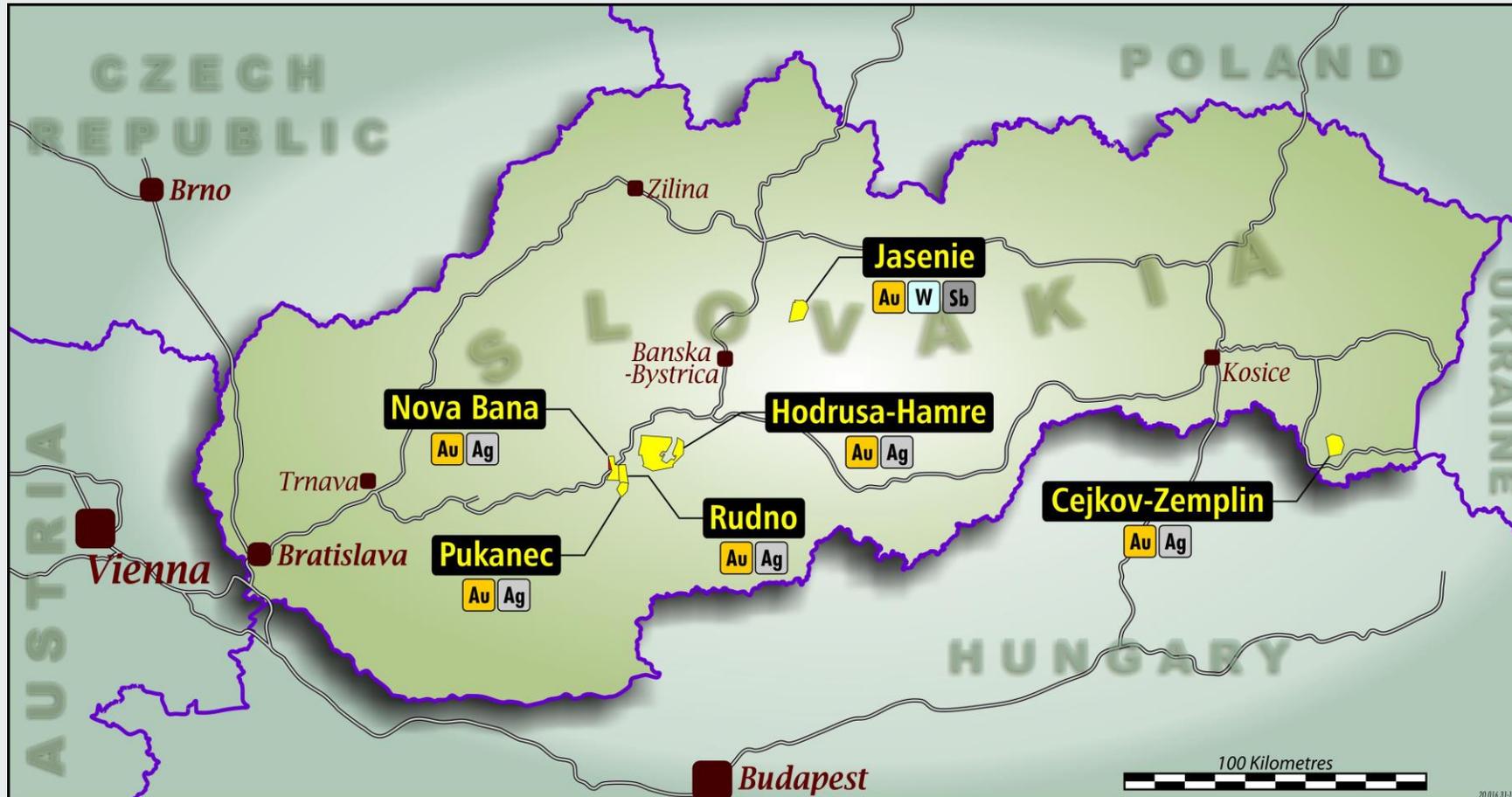
Gold silver being drilled with goal to define > 3g/t Au resources



# Europe – Western Edge of the Tethyan Metals Belt

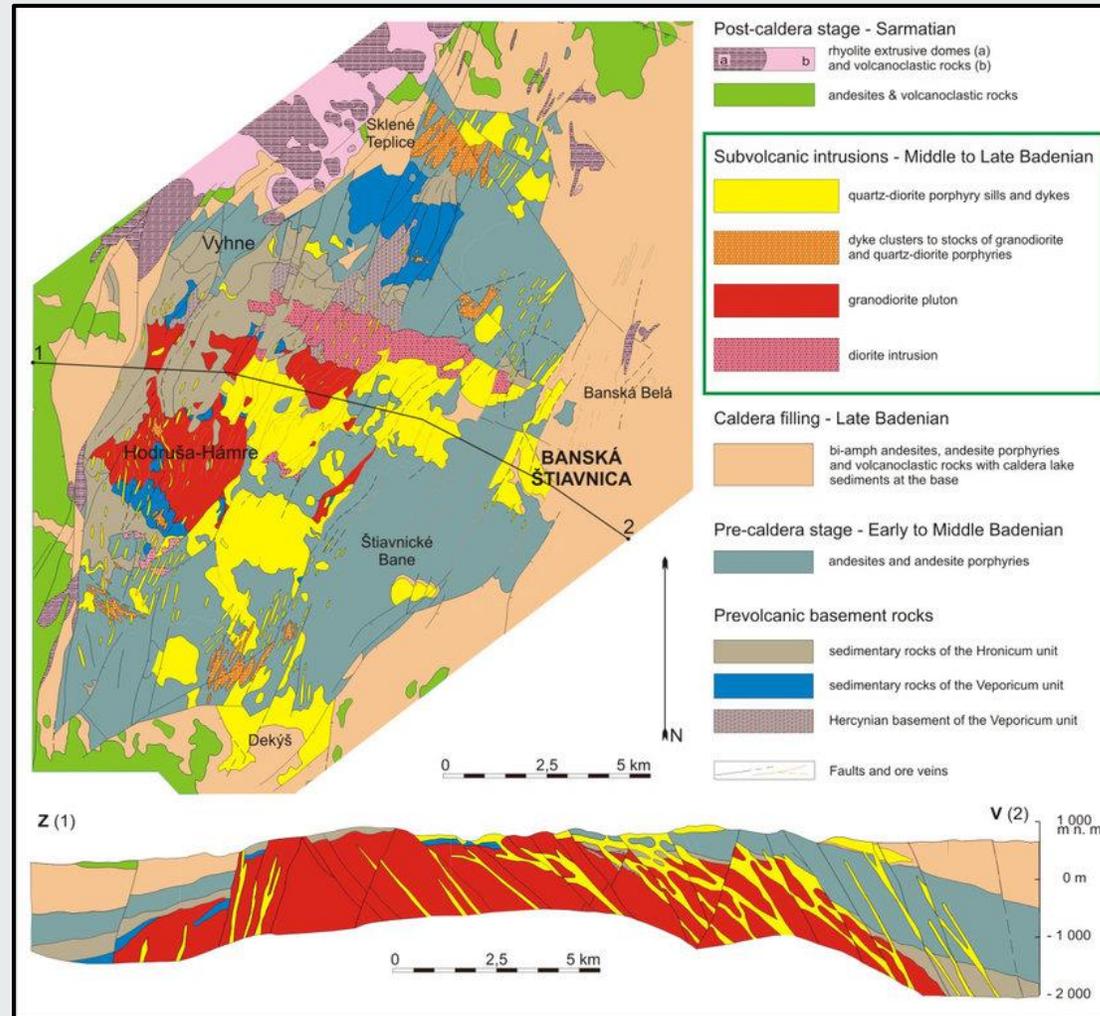


# Exploration in Mining Friendly Central Europe - Gold Silver Tungsten Antimony Projects



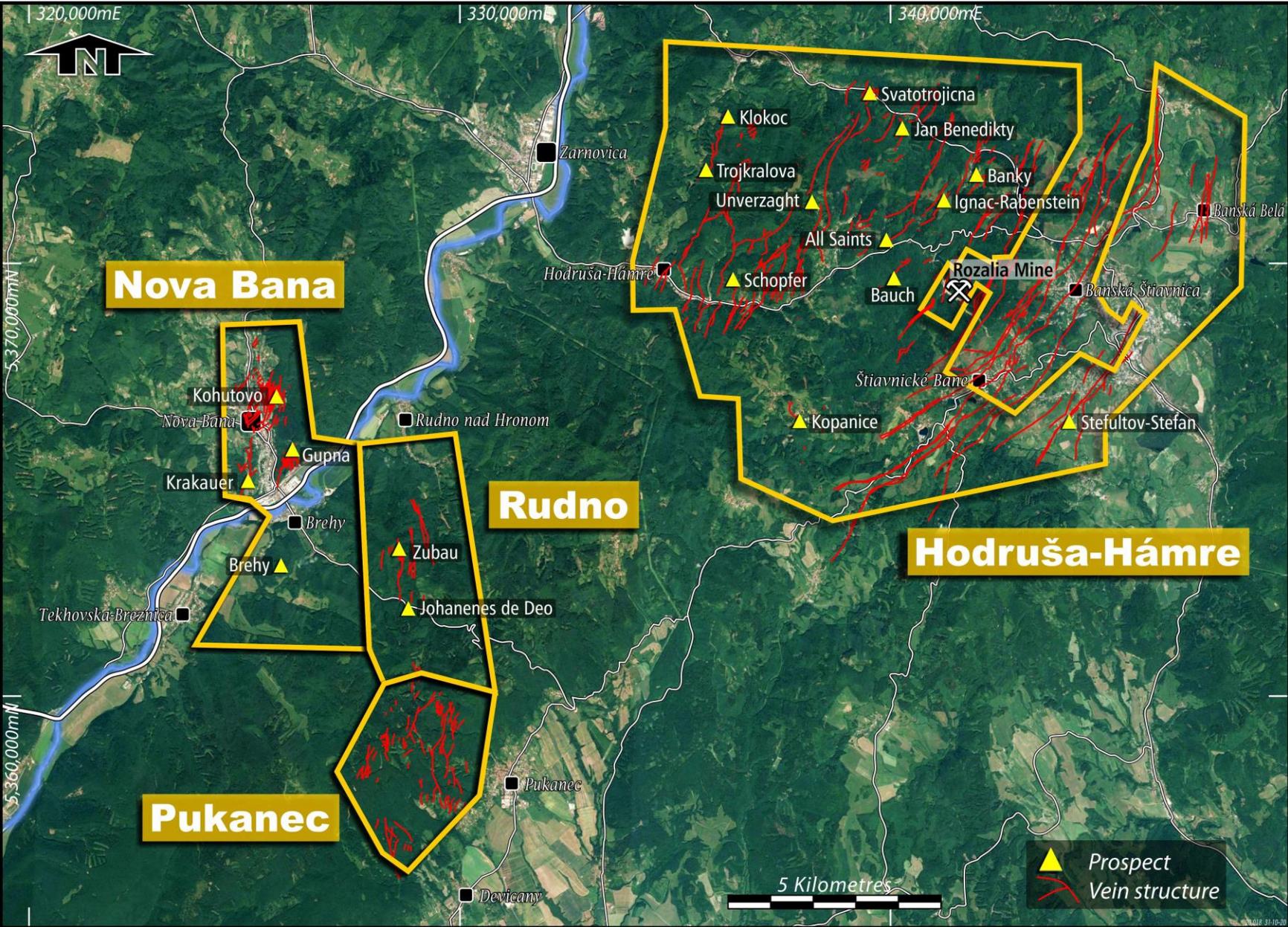
Prospech holds 100% of all properties with no ongoing commitments to third parties  
- First mover advantage for a Gold Silver Explorer in a mining friendly jurisdiction

# Exploration of Miocene Mineralisation in a Caldera



Prospech is exploring a Caldera scale system containing moderate tonnage high grade gold silver systems

# Main Gold Silver Endowment in Hodrusa Caldera



# Event 1 – 2017 breakthrough – Detachment Fault Low Angle Normal Fault (LANF)

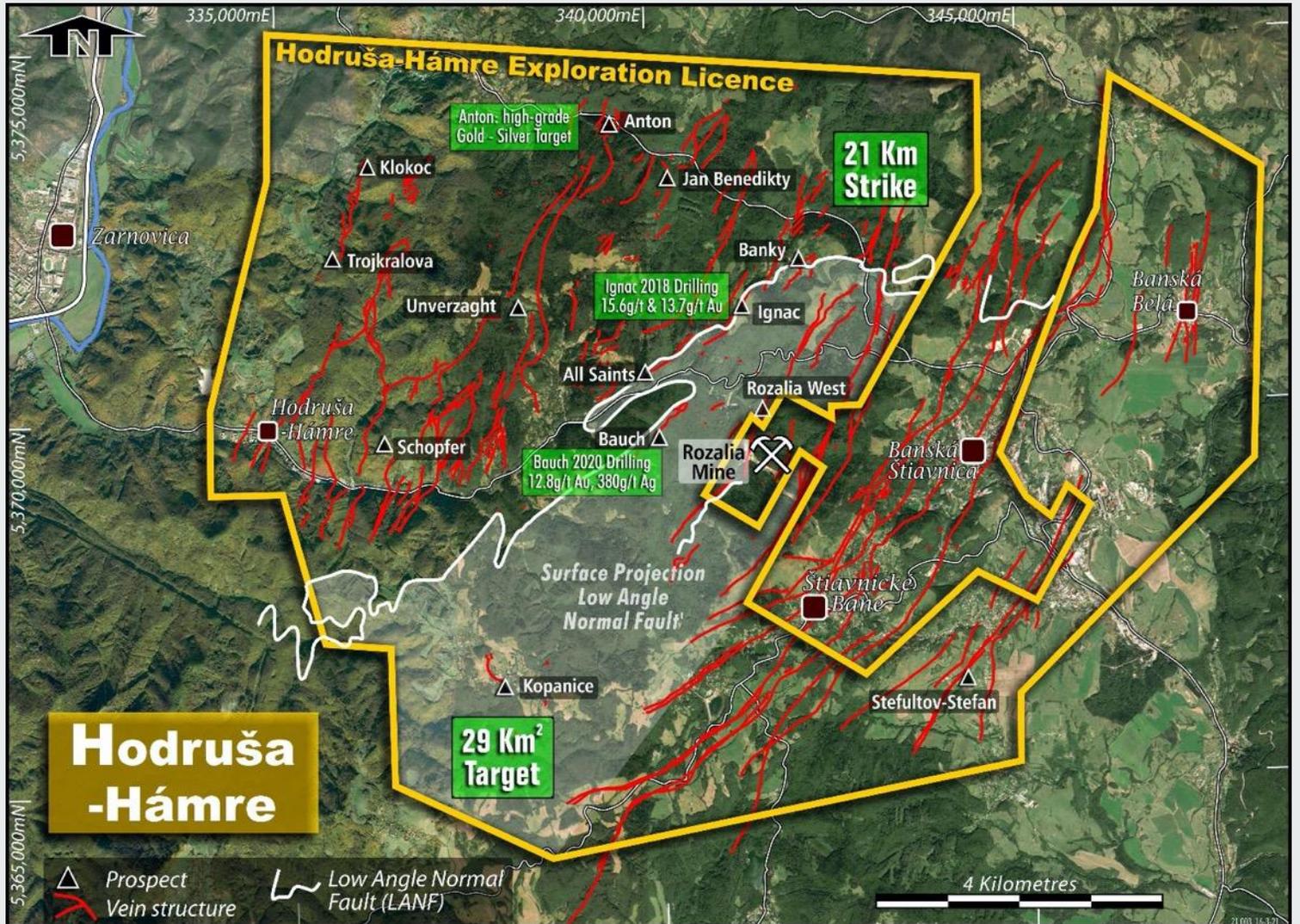


## Hodrusa-Hamre Caldera Goldfield

Covers large volcanic caldera: Shallow dipping Eastern LNF Au and steep Horst and Graben Ag/Au targets.

Different metal ratio of Au:Ag 1:10 compared to later Horst Graben veins of 1:100.  
Rozalia Mine head grade of 10 g/t Au:20 g/t Ag.

Unconfirmed LNF position on Western Side of Caldera at Klokoc.

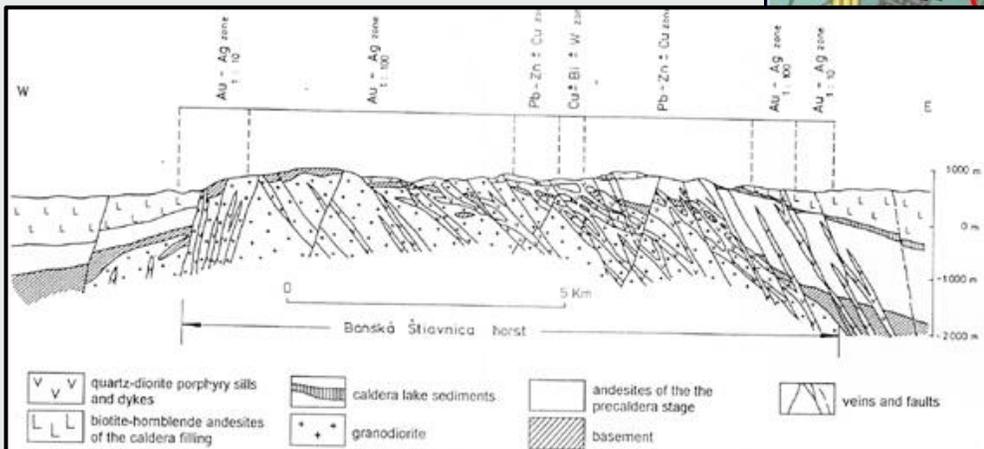
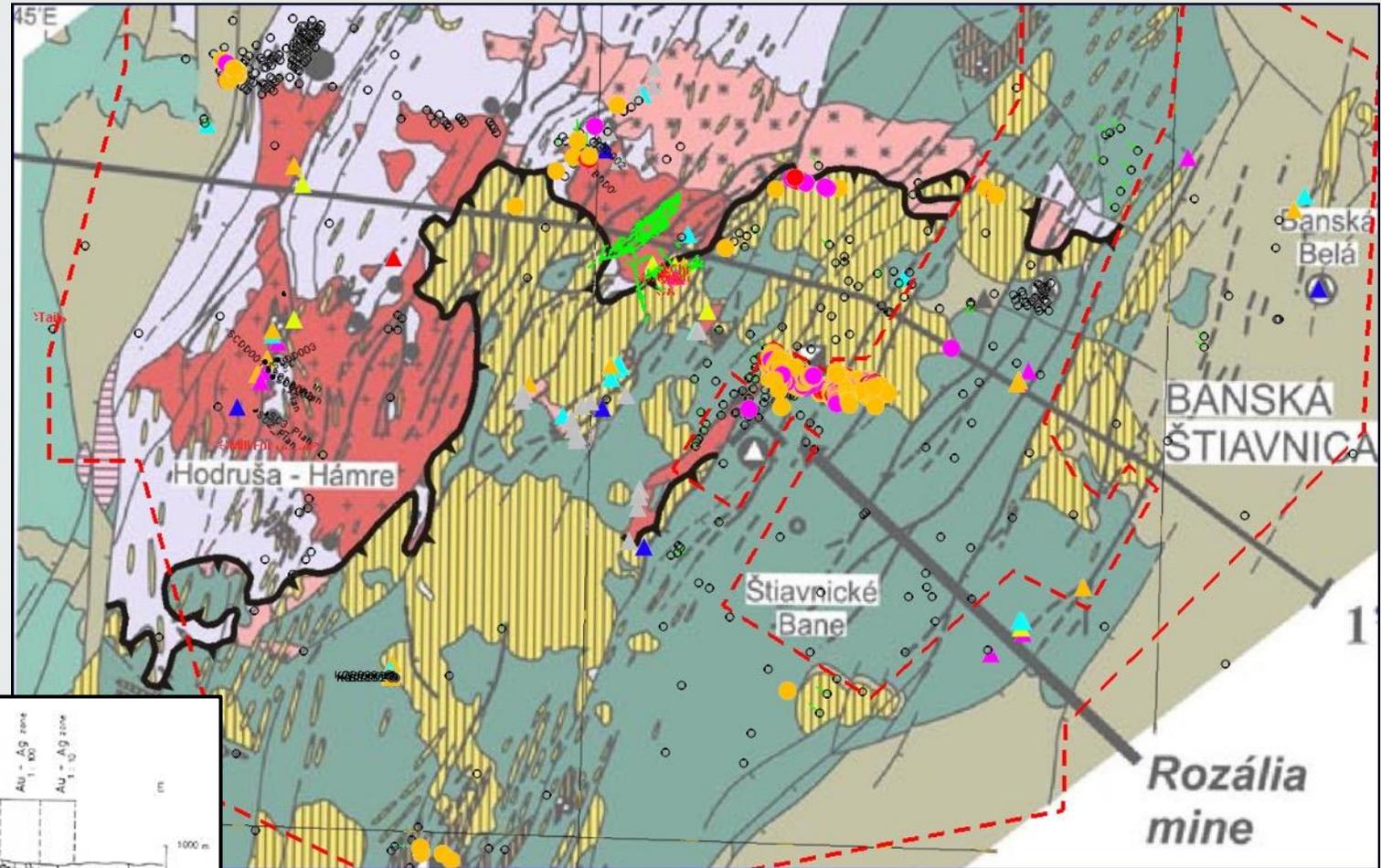


# Event 1 – Mineralised Detachment Fault



Presence of LANF (or detachment fault) has been recently recognized as a result of a structural study inside and around the Rozalia Mine (1.2 Mt @ 10 g/t Au, 14 g/t Ag).

The LANF surface expression occurs 90% on Prospech tenure predominately to the West of the third party Rozalia Mine.

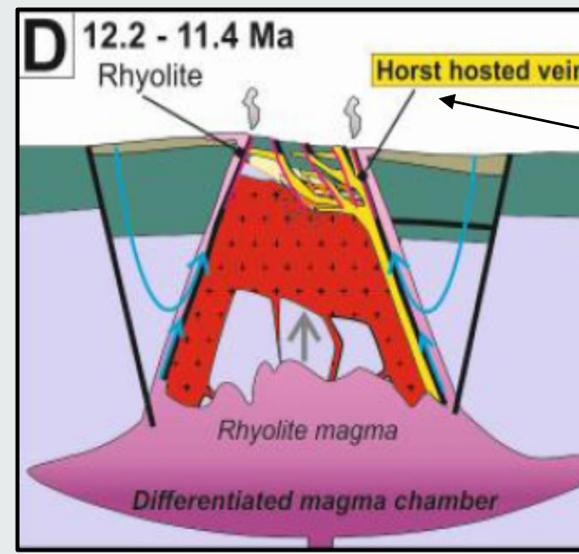
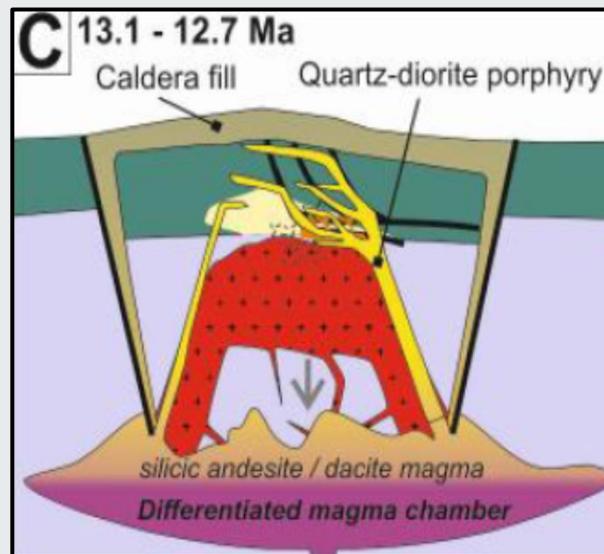
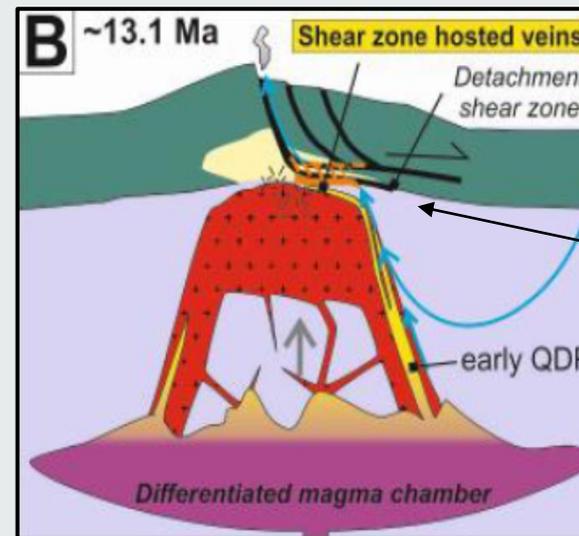
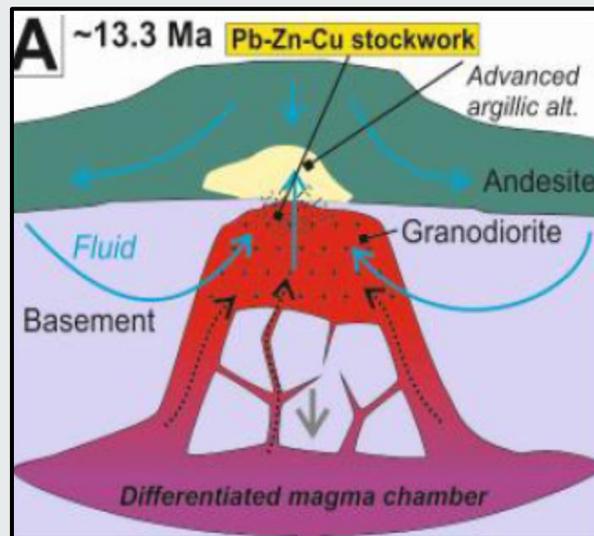


# Stages of Evolution of Hodrusa Caldera

## Event 1 - B - Mineralised Detachment Fault

(noted as Shear Zone by Kodera et al)

## Event 2 - D - Horst Graben fault hosted veins



Mined from 1993

Mined from 1093?

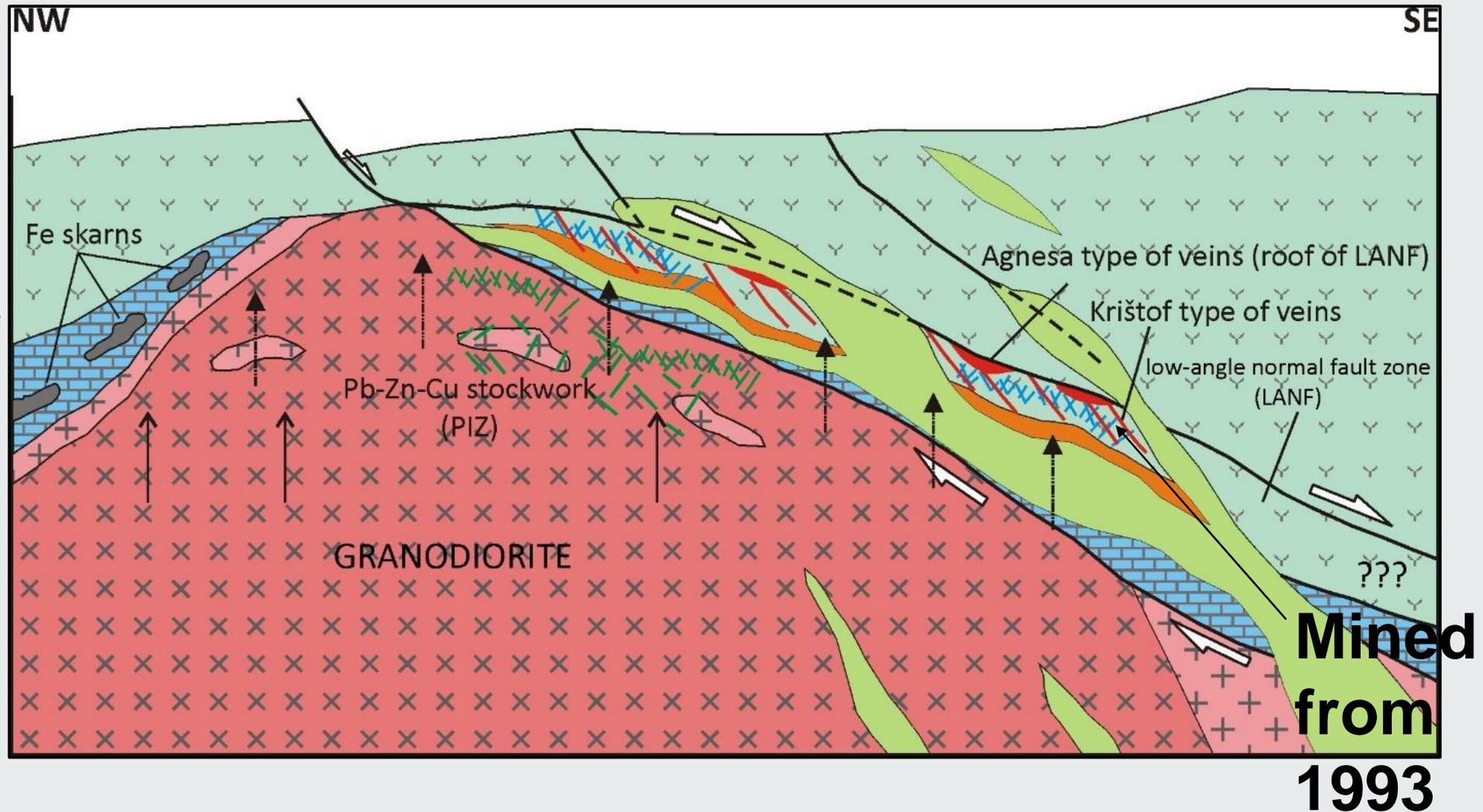
# Event 1 – Mineralised Detachment Fault – Exhumation of granodiorite and evolution of LANF



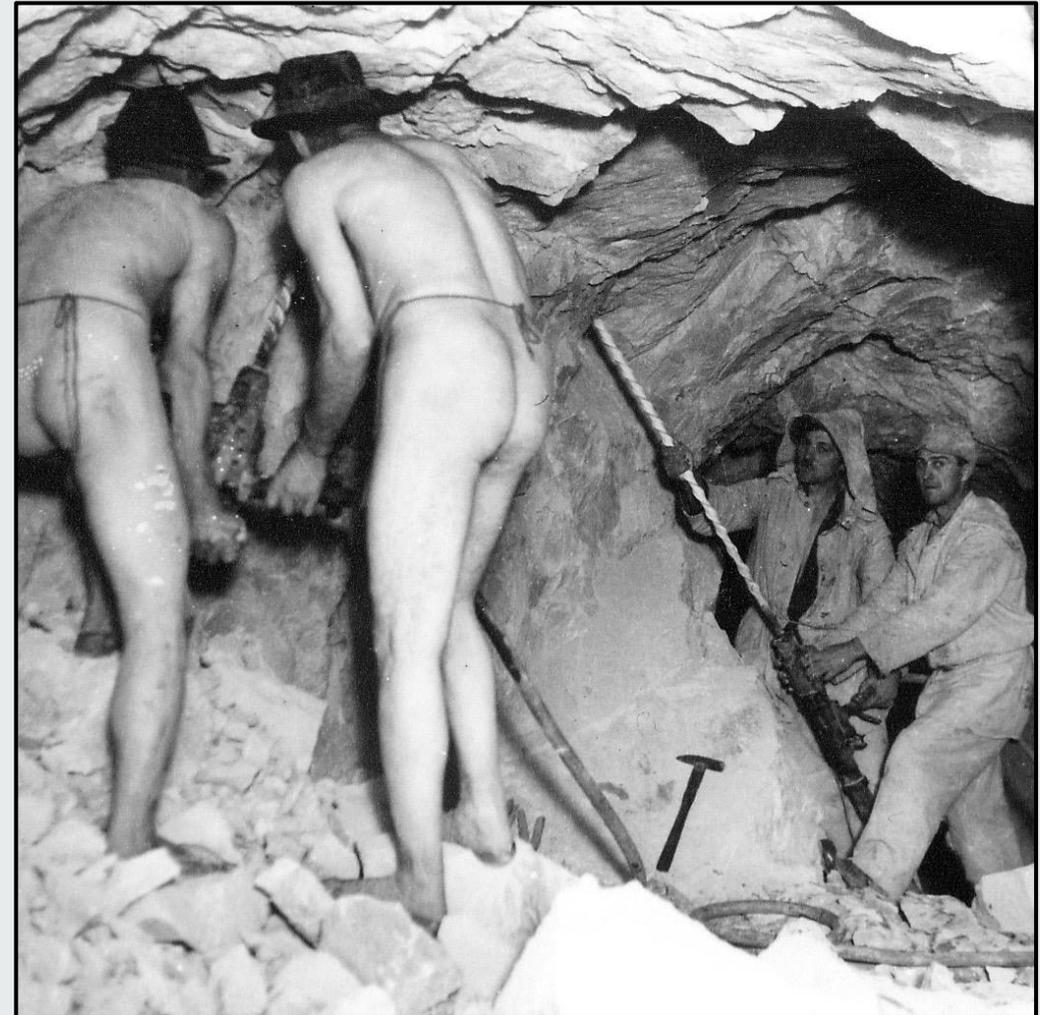
## LANF host target: a potential game changer?

Now testing the low angle detachment fault zone, host to the adjacent Rozalia mine feedstock

Originally identified in 2006 but overlooked at the time, Comenius University, Geological Survey and Prospech Management's experience recognized the importance of the LANF as the host controlling the high grade mineralisation.



# Event 1 – Mineralised Detachment Fault – Modern Mapping LANF (or detachment fault) 2017.



New ideas from old areas - 2017 LANF mapping by V. Rastislav and 1950's historic production in geothermally active Caldera

# Event 1 – Mineralised Detachment Fault – IP MT Geophysics 2021 - Current



# Event 1 – Detachment Fault Definition by IP and MT currently

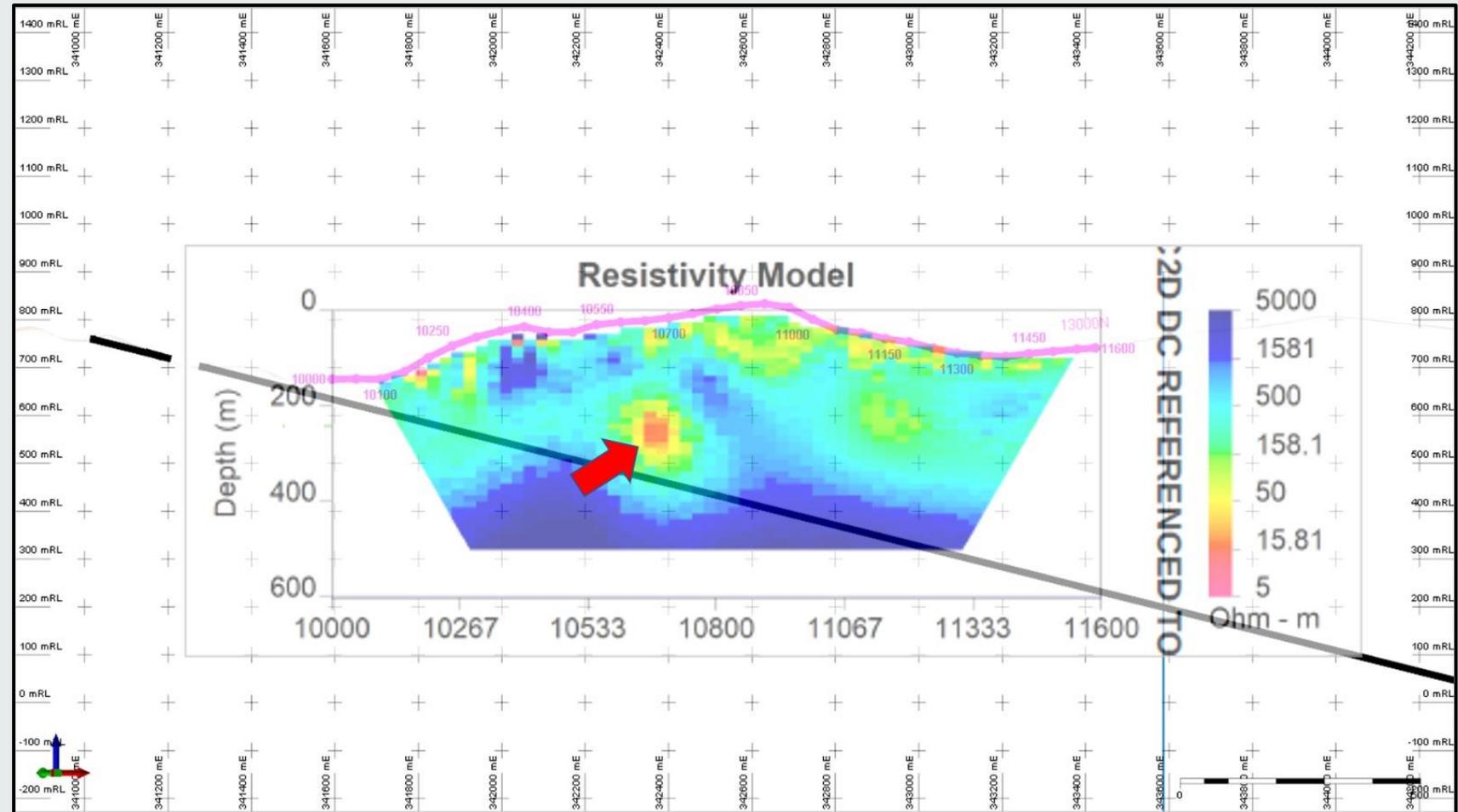


Targeting high-grade LANF mining horizon

Ground IP for the first time

Rozalia Mine sequence target

Never previously drilled

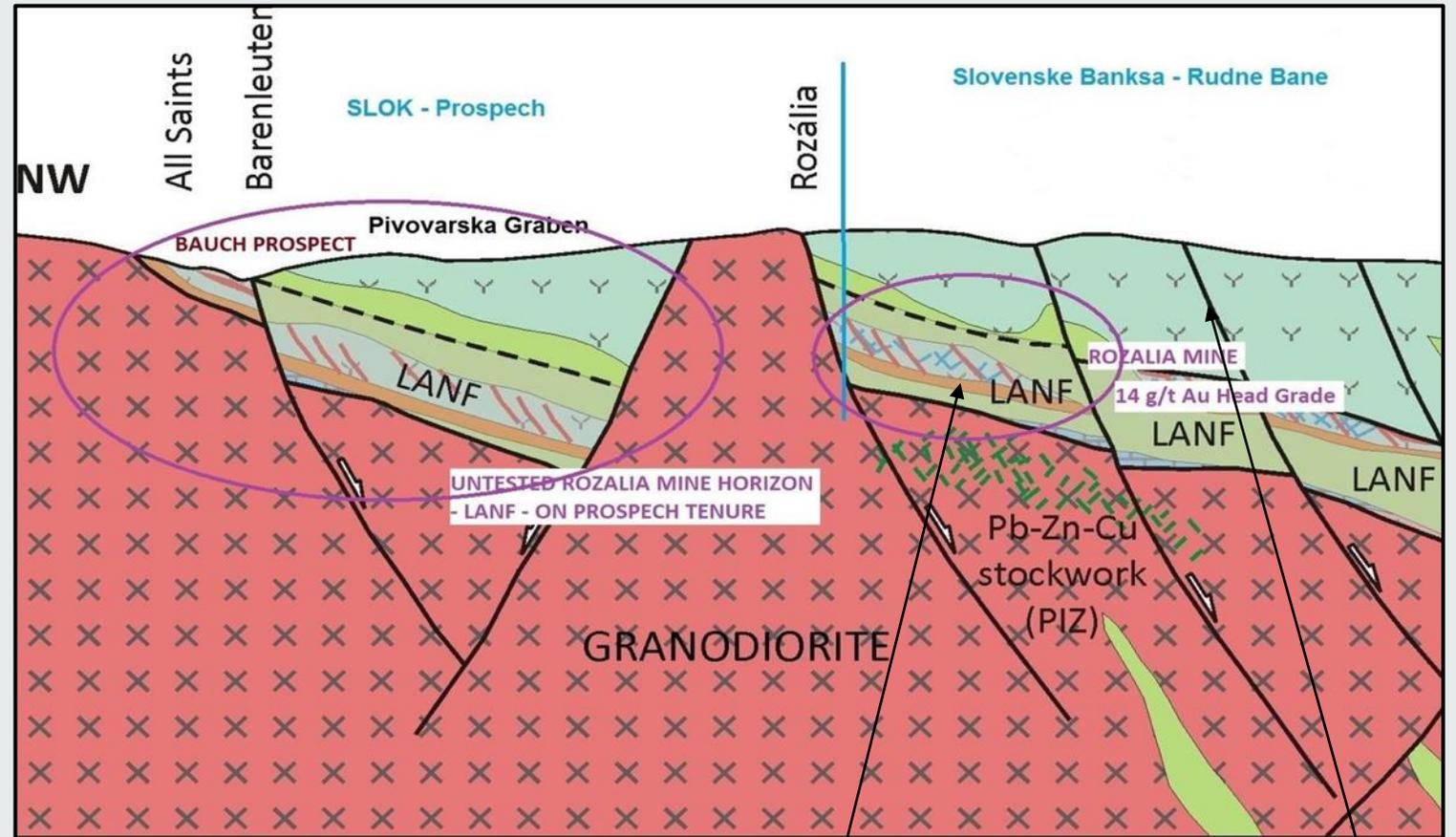


# Event 1 – Detachment Fault offset by; Event 2 – Horst Graben Faults – also mineralised



LANF host target also offset by a second pulse of mineralisation

Testing of later offset Horst Graben bounding faults which are also filled with mineralised veins also underway on Caldera scale.



Event 1 - Mined  
from 1993

Event 2 - Mined  
from 1093?

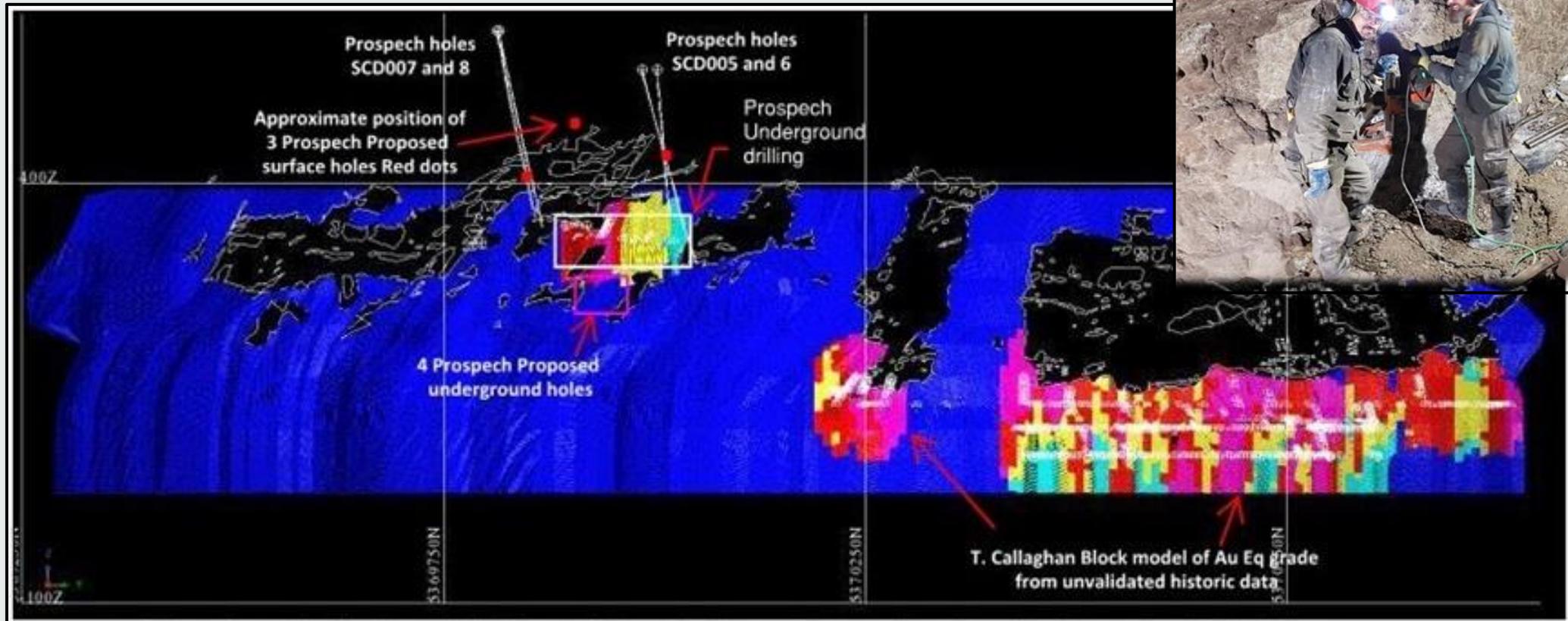
# Event 2 – Horst Graben Faults – Schopfer



Horst Graben Fault – old mine Schopfer is able to be drilled underground for the length of the main 2nd level access.

Short underground diamond holes (<20m), drilled by in house team, provide BQ core and in this case, returned encouraging results.

Up to 9.1 g/t Au equiv (Au+Ag)

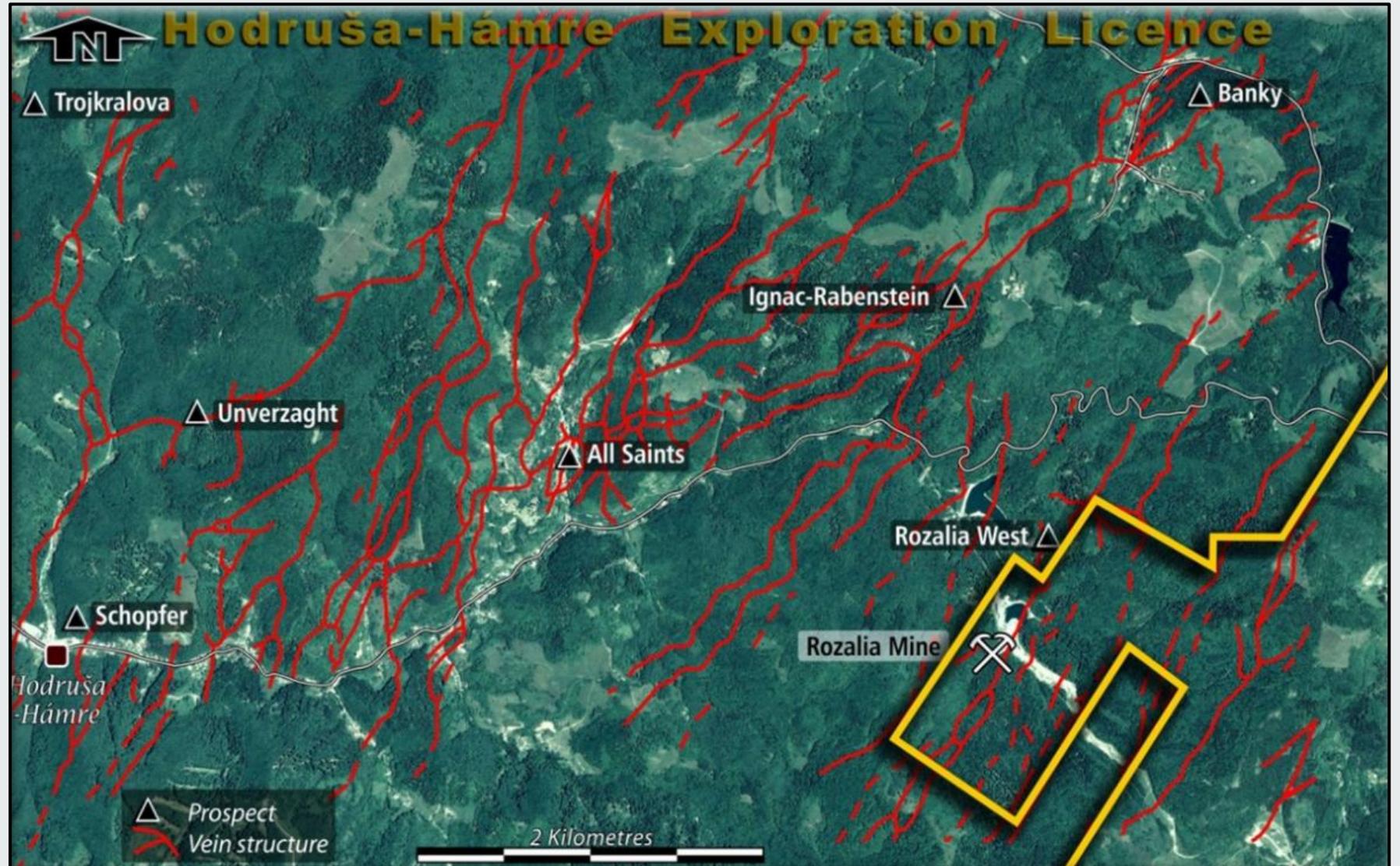


## Event 2 – Horst Graben Faults – Ignac-Rabenstein – High Grade Discovery – 400m from underground infrastructure



Interpreted mineralised mine sequence just above LANF but connected to it – 400m from haulage drive from Rozalia Mine

42 rock chip samples averaged 7.7 g/t Au and 329 g/t Ag (up to 47.0 g/t Au and 1,500 g/t Ag)



# Event 2 – Horst Graben Faults – Anton



**Untested Mined Au Ag –  
High Grade Stope  
locations known**

**Targets preserved with  
water flows noted to have  
stopped production**

**17 rock chip samples  
averaged 8.6 g/t Au and  
464 g/t Ag (up to 52.6 g/t  
Au).**

**Currently being drilled for  
the first time.**

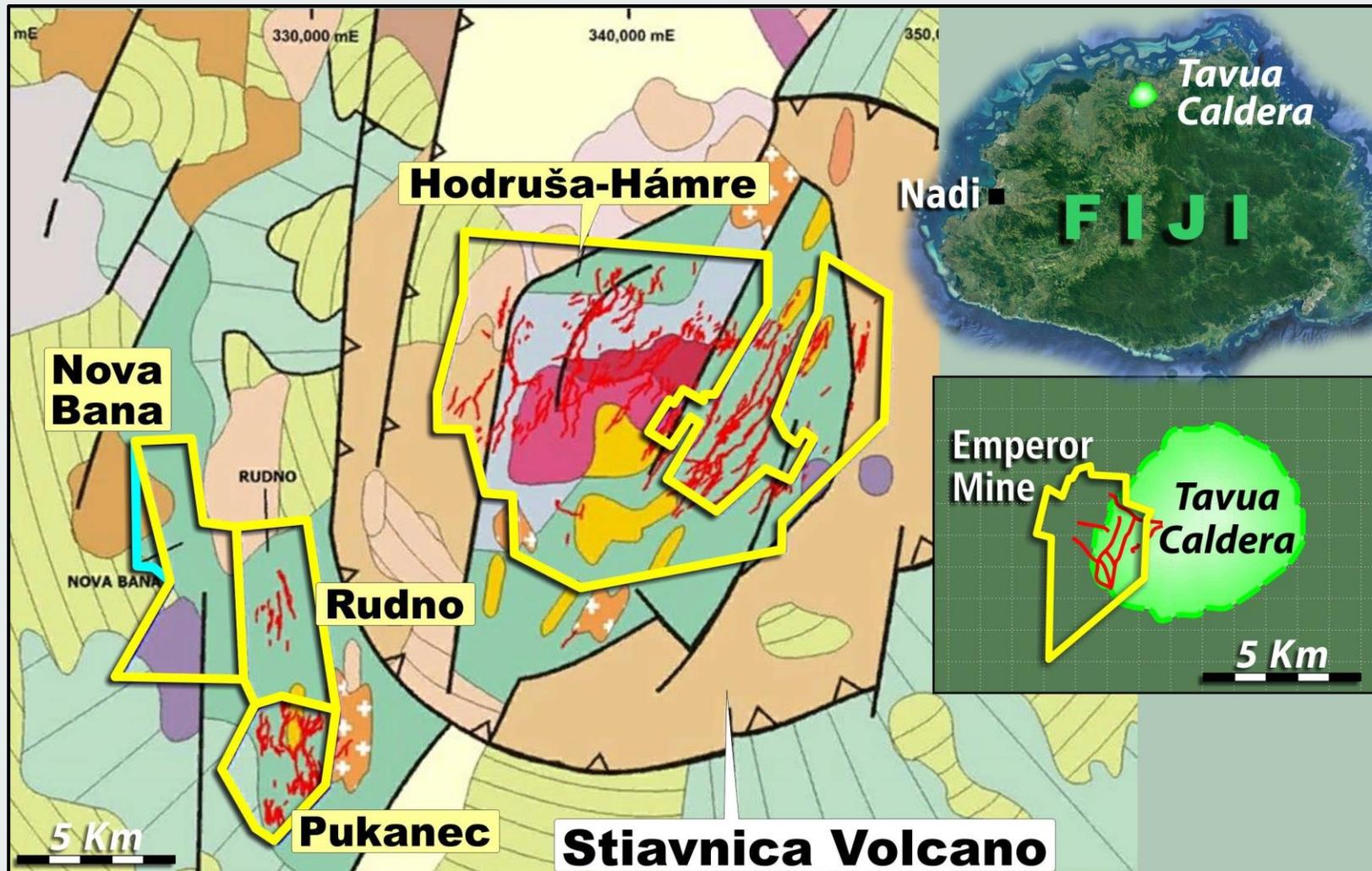




# Detachment Faults – Event 1

# Offset vertical Faults – Event 2 – Horst Graben Faults

## Analogies – Where else? – PacRim - Emperor Mine Fiji

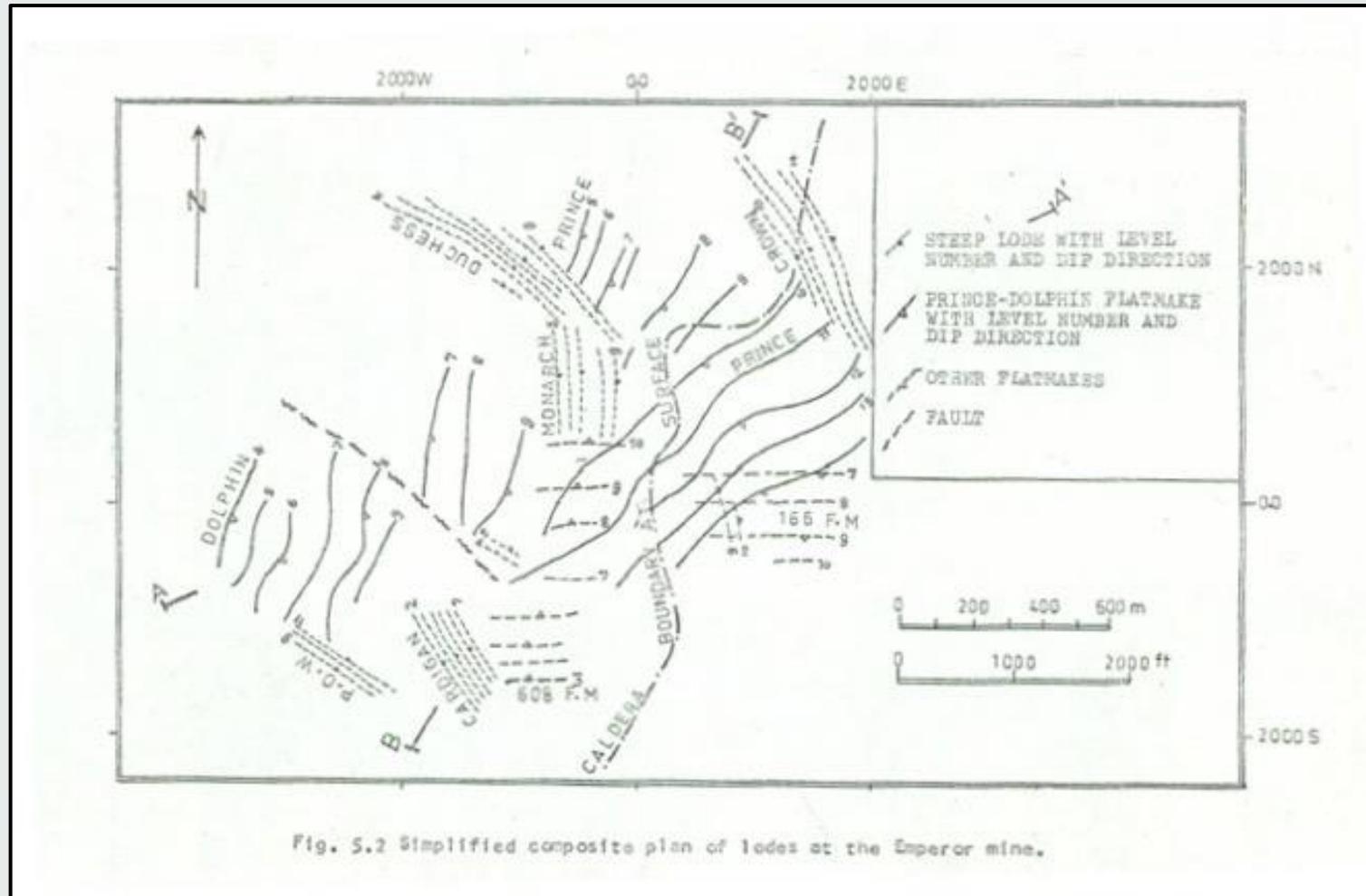




# Detachment Faults – Event 1

# Offset vertical Faults – Event 2 – Horst Graben Faults

## Analogies – Where else? – PacRim - Emperor Mine Fiji



Emperor Mine – Fiji – high grade ‘Flat makes’ (detachment faults) offset by lower grade higher tonnage offsets – as per Hodrusa in Slovakia - on the edge of or within a Caldera (Ahmad Masood 1979).

# Detachment Faults – Event 1 Offset vertical Faults – Event 2 – Horst Graben Faults



## Analogies – Where else? – Tethyan - Ada Tepe Bulgaria

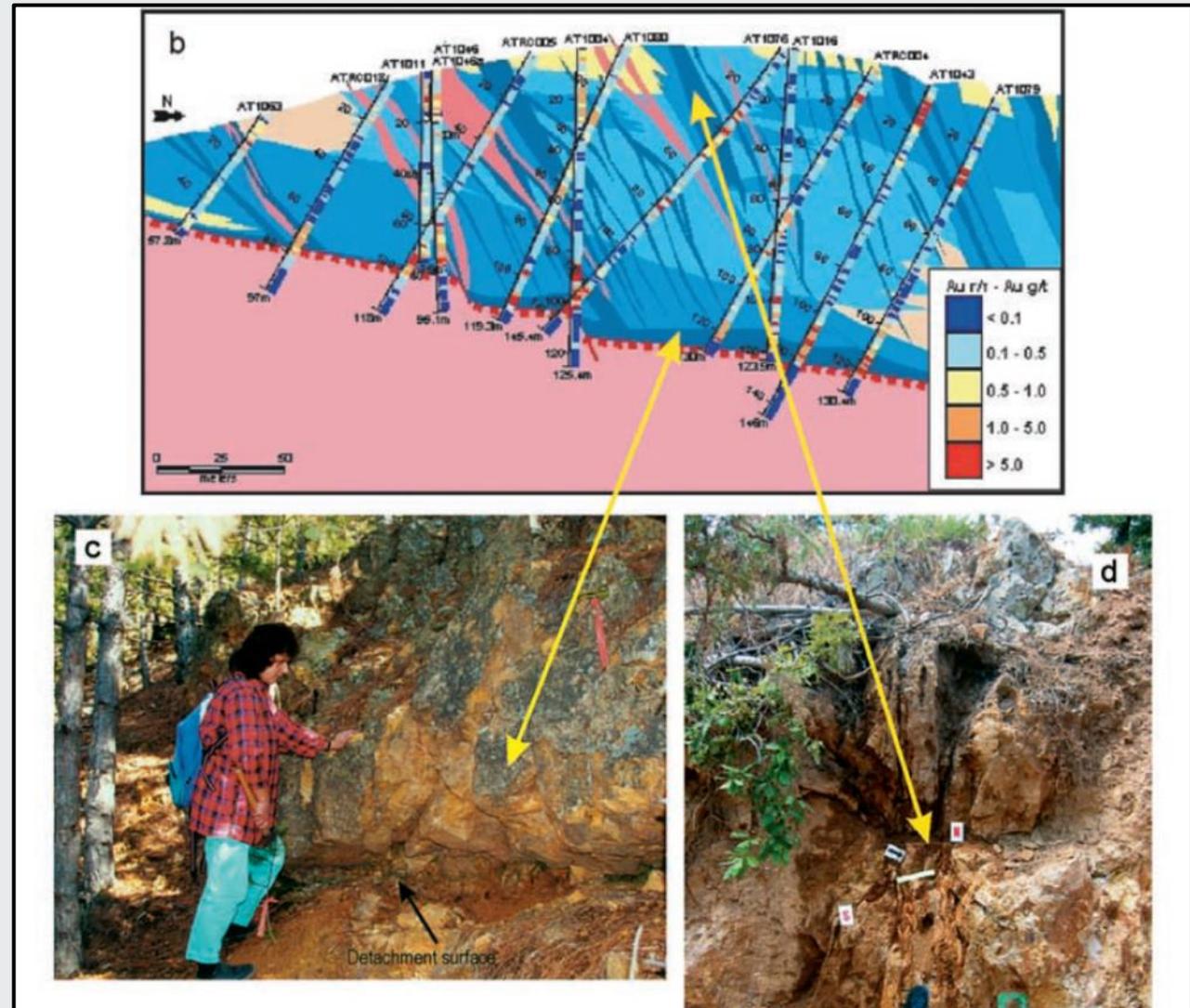
Ada Tepe – high grade Flats offset by lower grade higher tonnage offsets.

<https://www.dundeeprecious.com/English/Operating-Regions/Current-Operations/Ada-Tepe/Geology--Mineralization/default.aspx>

Ada Tepe is classified as a low sulphidation epithermal gold-silver deposit.

The mineralization at Ada Tepe is divided into two types. Wall Zone mineralization forms a massive siliceous body up to five metres in thickness that lies immediately above a flat detachment fault. The 'Upper Zone' mineralization is a series of predominantly steeply dipping east-west trending veins that extend upwards from the Wall Zone.

Tsvetana Jeleva - Project Manager,  
Krumovgrad Exploration, Dundee Precious  
Metals Inc. Minex Europe 2019 – Sofia.





# Conclusions



Known deposits may have unknown structural zones that are also mineralised

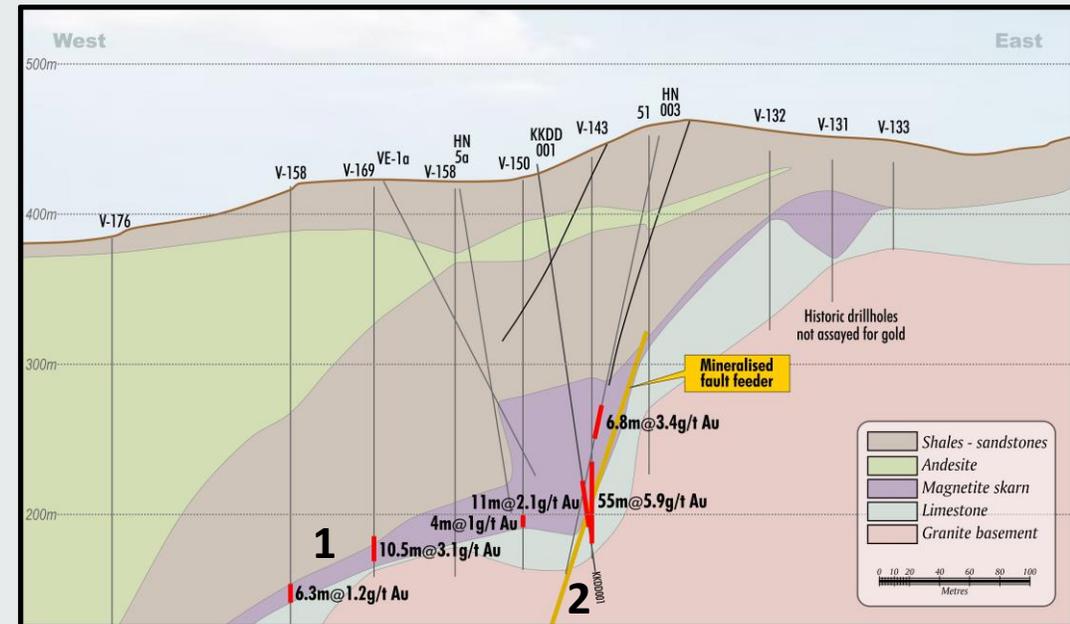
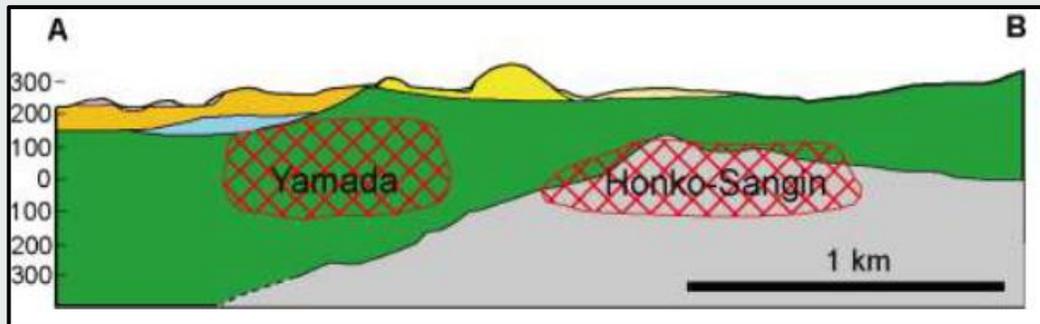


LANF style mineralisation occurs at a remobilized unconformity on each side of a resurgent horst – review unconformities in 3D



Map metal ratios of gold and silver to discern possible earlier Caldera related events

Hishikari discordant high grade veins cluster on unconformity.  
- No Detachment or LANF occurrences noted at present?



Western Hodrusa Caldera - Klokoc – but how can Event 2 be the feeder? – in this case mineralised LANF position in a magnetite host

# References



**V. Rastislav<sup>1</sup> & P. Žitňan**

**2016 Tectonics of the low-angle normal fault zone and its mineralisation (Štiavnica Stratovolcano)**

<sup>1</sup>Department of Geology and Paleontology, Faculty of Natural Sciences, Comenius University in Bratislava, Mlynská dolina, Ilkovičova 6, 842 15 Bratislava, Slovakia; [vojtko@fns.uniba.sk](mailto:vojtko@fns.uniba.sk)

**A. Masood**

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**Y. Watanabe and K. Sanematsu**

**2017 Epithermal Gold Mineralisation and associated hydrothermal alteration in southern Kyushu.** SEG 2017 Field Trip FT02 Guidebook.

# Disclaimer and Contact

## Competent Person Statement

The information in this Report that relates to exploration targets and exploration results is based on information compiled by Mr Jason Beckton, who is a Member of the Australian Institute of Geoscientists. Mr Beckton, who is Managing Director of the Company, has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Beckton consents to the inclusion in this Report of the matters based on the information in the form and context in which it appears.

AuEq calculated at an Ag:Au ratio of 75:1.

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2017 Kyushu on SEG Field Trip



Ignac Horst Graben-LANF junction 48 gt Au and 46 gt Ag