

# The Tuvatu High-Grade Alkaline Gold System: Fundamental Controls and Upside Potential

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# Forward Looking Statements

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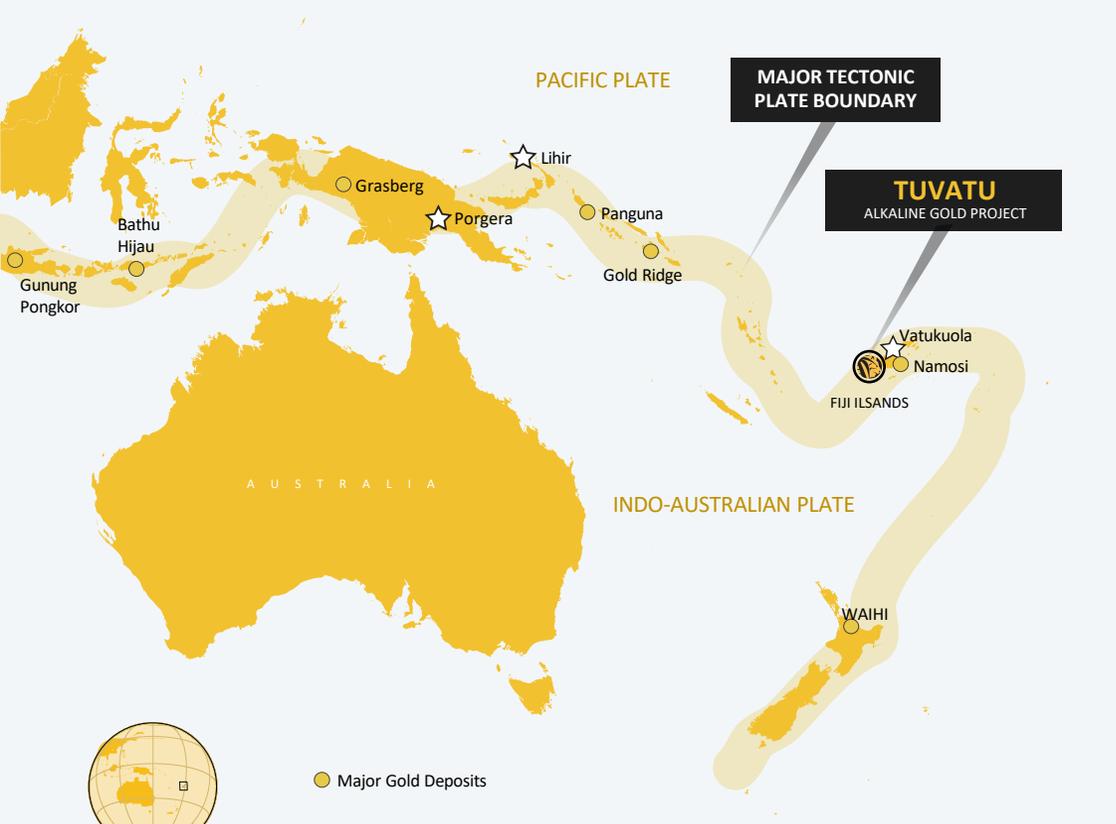
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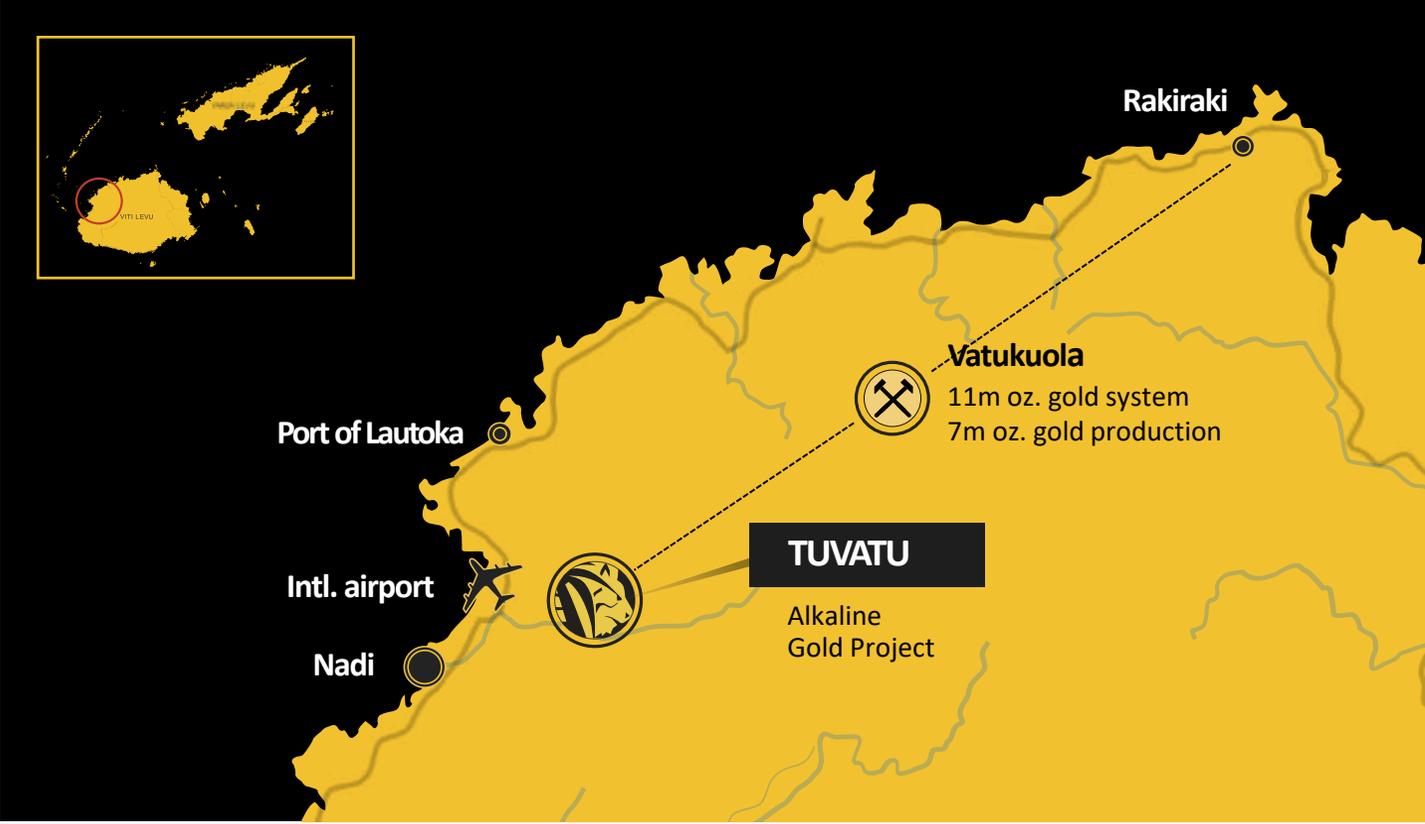
The technical information in this presentation has been approved by Sergio Cattalani, P,Geo., Senior Vice President, Exploration of the Company and a Qualified Person as defined by National Instrument "NI" 43-101 Standards of Disclosure for Mineral Projects .

# Location & Setting

TECTONIC SETTING IN THE SOUTH PACIFIC RING OF FIRE

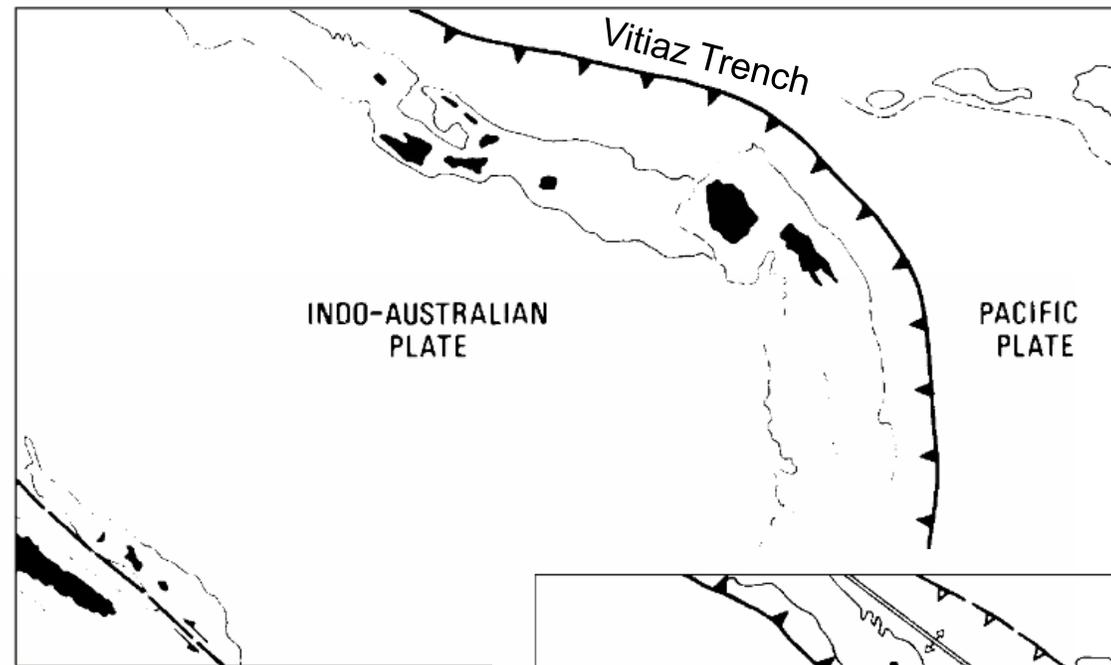


STRUCTURAL SETTING ON FIJI'S VITI LEVU LINEAMENT



# Tectonic Setting

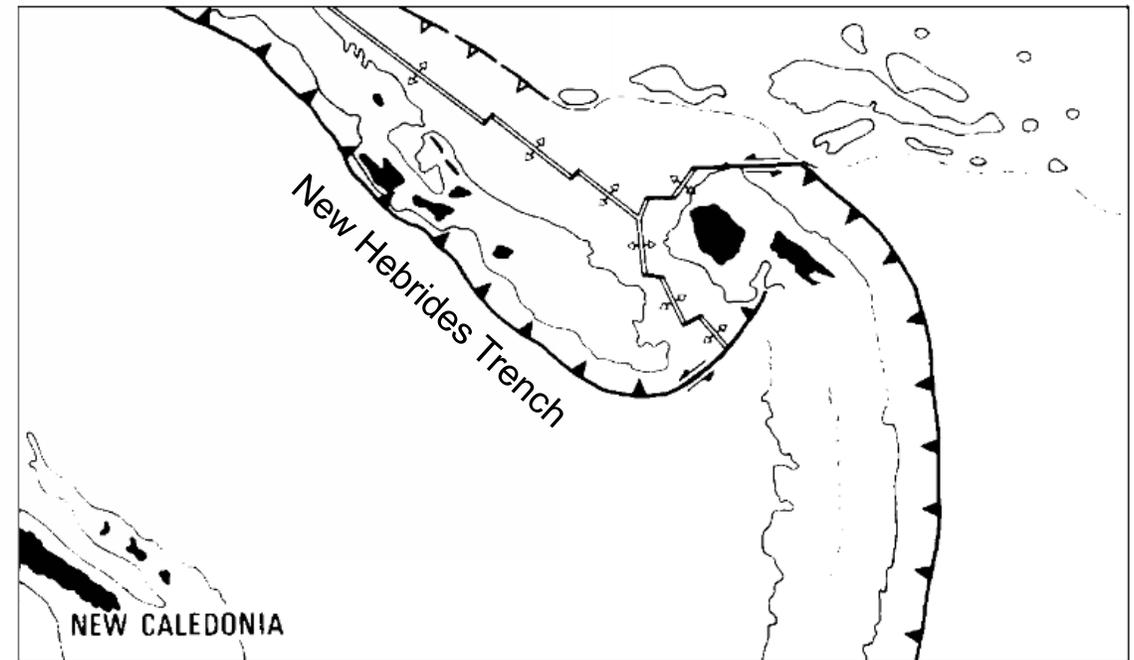
10-26 Ma



Modified from Hathway, 1993

- Pacific plate subduction beneath Indo-Australian plate
- Vitiaz arc
- Arc volcanism, tholeiitic
- Arc fragmentation, subduction stalling, rotation and reversal of subduction
- Post-subduction alkalic volcanism from thickened and modified lithosphere

~5 Ma



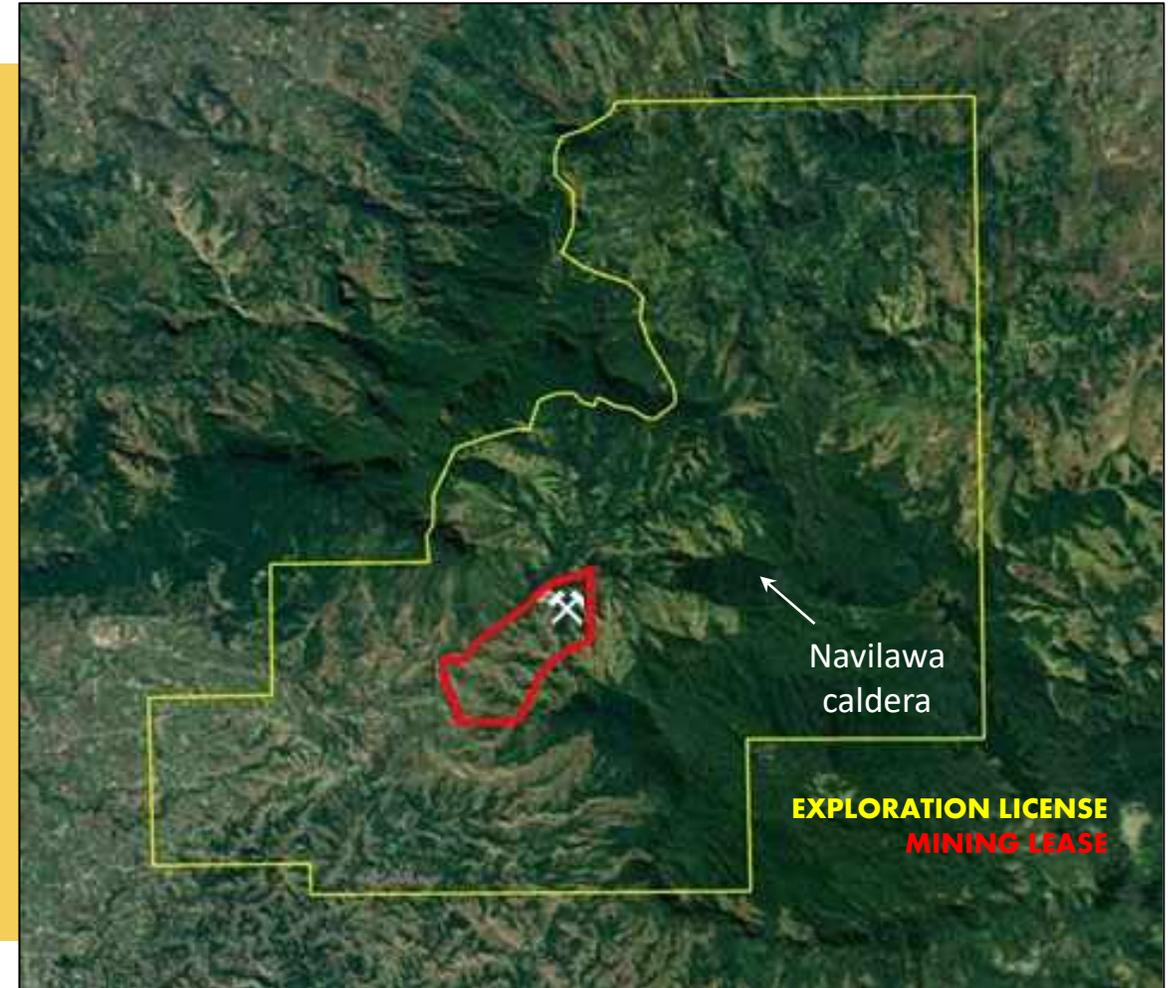
# Tuvatu Project

High grade resource

Fully permitted for production

Prime geological setting

World class infrastructure



# General Stratigraphy & Lithologies



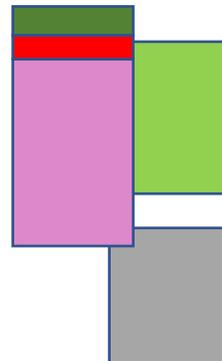
## Intrusive Rocks

## Extrusive Rocks and Sediments

Late "andesite" dykes

Mineralising event (Tuvatu, Vatukoula) post dates Mz and SV

Navilawa monzonite (4.85Ma)



### Post-subduction alkalic volcanism

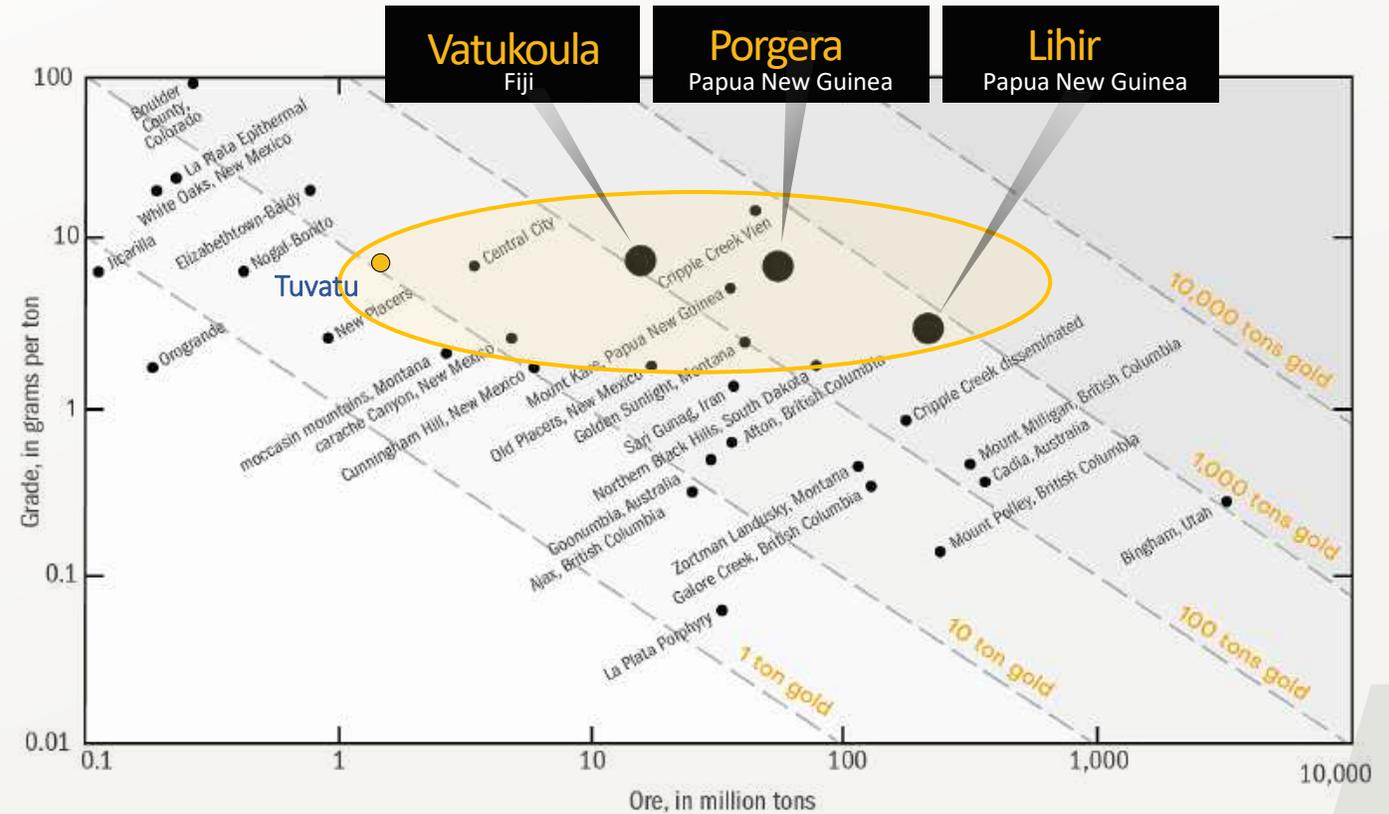
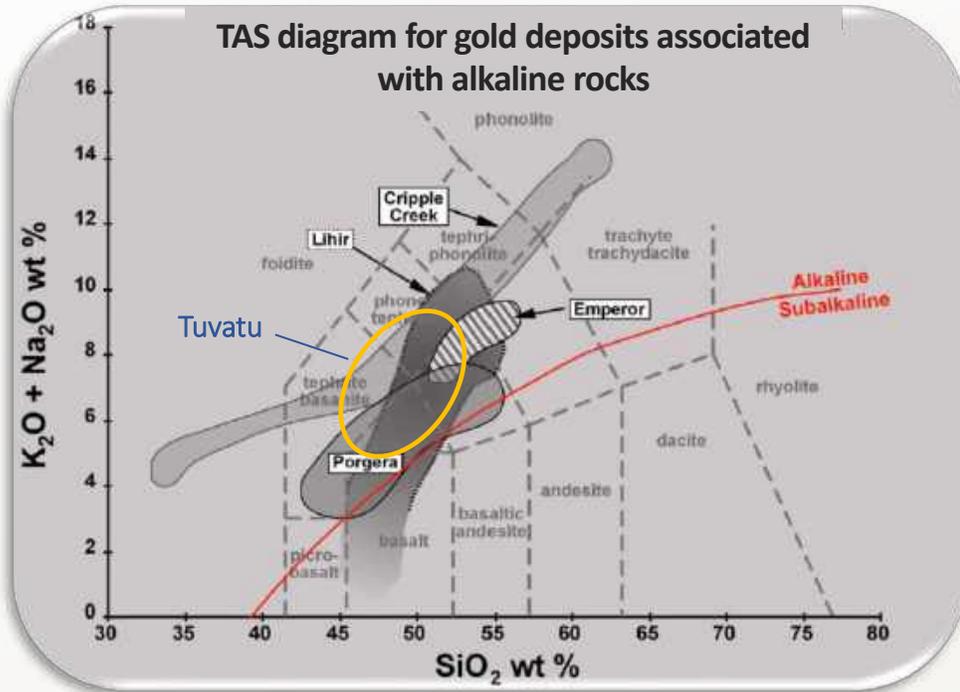
Sabeto Volcanics (5.5-4.85Ma); alkaline shoshonites, generally subaerial andesite flows, tuffs, peperites and volcaniclastic rocks

### Arc volcanism, syn-subduction

Nadele Breccia Volcanics (26-12Ma); tholeiites, generally shallow submarine to emergent basalt to andesite flows, pillows, agglomerates, flow and volcaniclastic breccias



# Alkaline Gold Systems



Tuvatu data from Hatcher, 1998; Scherbarth and Spry, 2006; Forsythe et al., 2019. Other fields modified from Jensen and Barton, 2000.

## TUVATU Current Resource (at 3.0 g/t cutoff)

1,007,000t at 8.48 g/t Au for 274,600 oz Indicated  
1,325,000t at 9.00 g/t Au for 384,000 oz Inferred

- Small in Number
- Economically Significant
- Unusually Large
- Unusually High Grade

# Navilawa Caldera - Geology

Vatakoula Gold Mine >7Moz

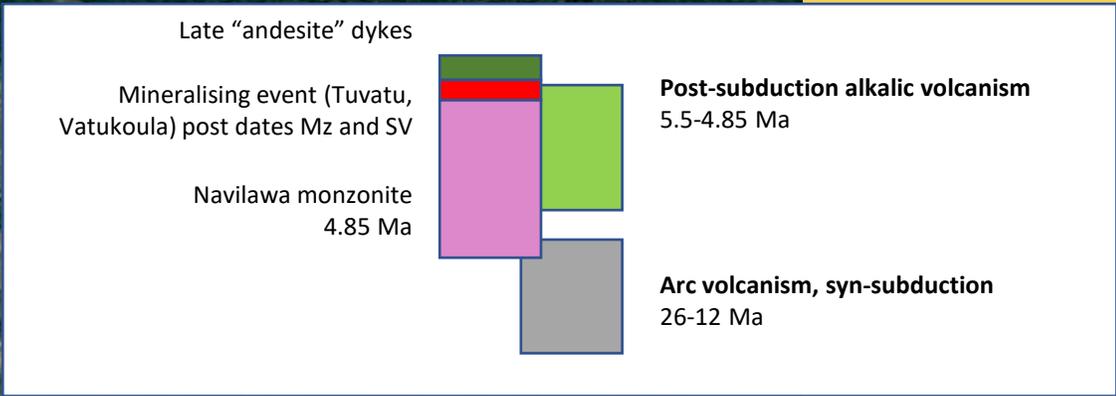
~7 km

Remnant caldera structure

Unroofed monzonite core

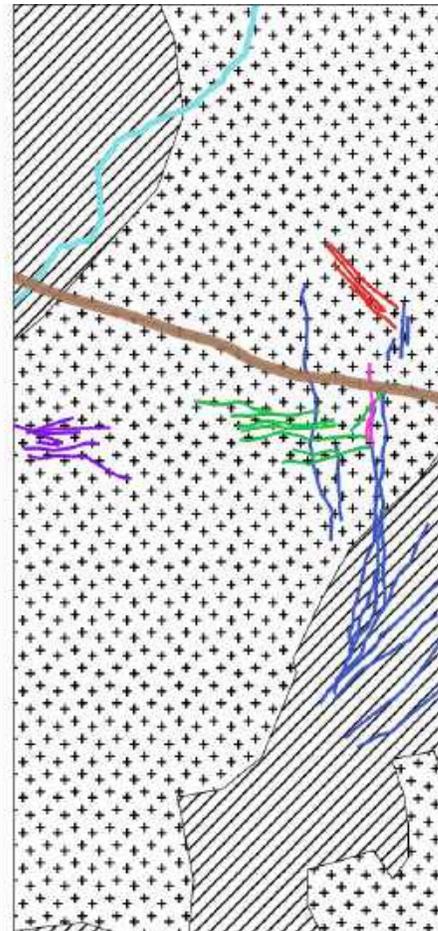
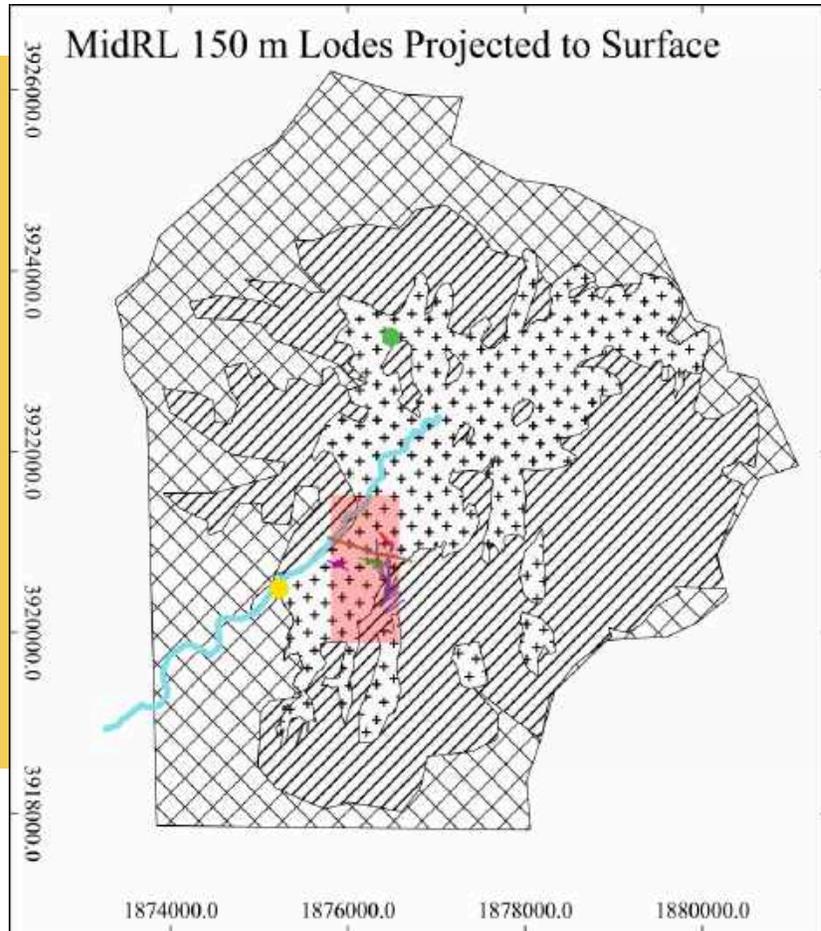
Monzonite

Tuvatu Gold Project



View NE

# Tuvatu Deposit - Geology

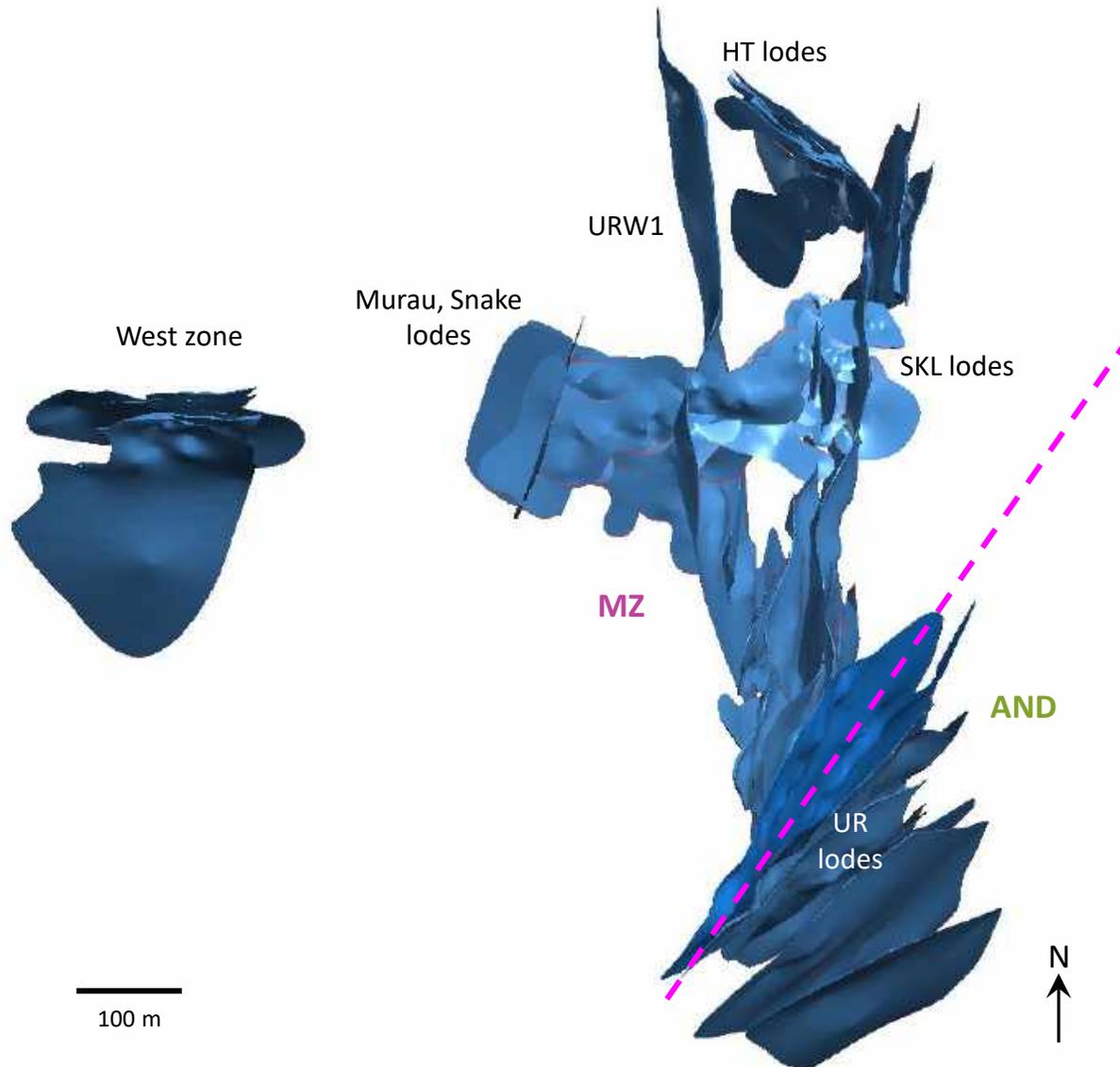


- Sabeto River
- Tuvatu Base Camp
- Navilawa Village
- GRF Lodes
- Murau and Snake Lodes
- West Lodes
- Upper Ridges Lodes
- H and Tuvatu Lodes
- Core Shed Fault

Simplified geologic map showing spatial relationship between various lode arrays, Core Shed Fault and monzonite-andesite host rocks

- Nadele Breccia  
(Wainimala Group, 32-13 Ma)
- Navilawa Monzonite  
(4.85 Ma)
- Sabeto Volcanics  
(Koroimavua Group, 5.5-4.8 Ma)

# Tuvatu Deposit - Geometry

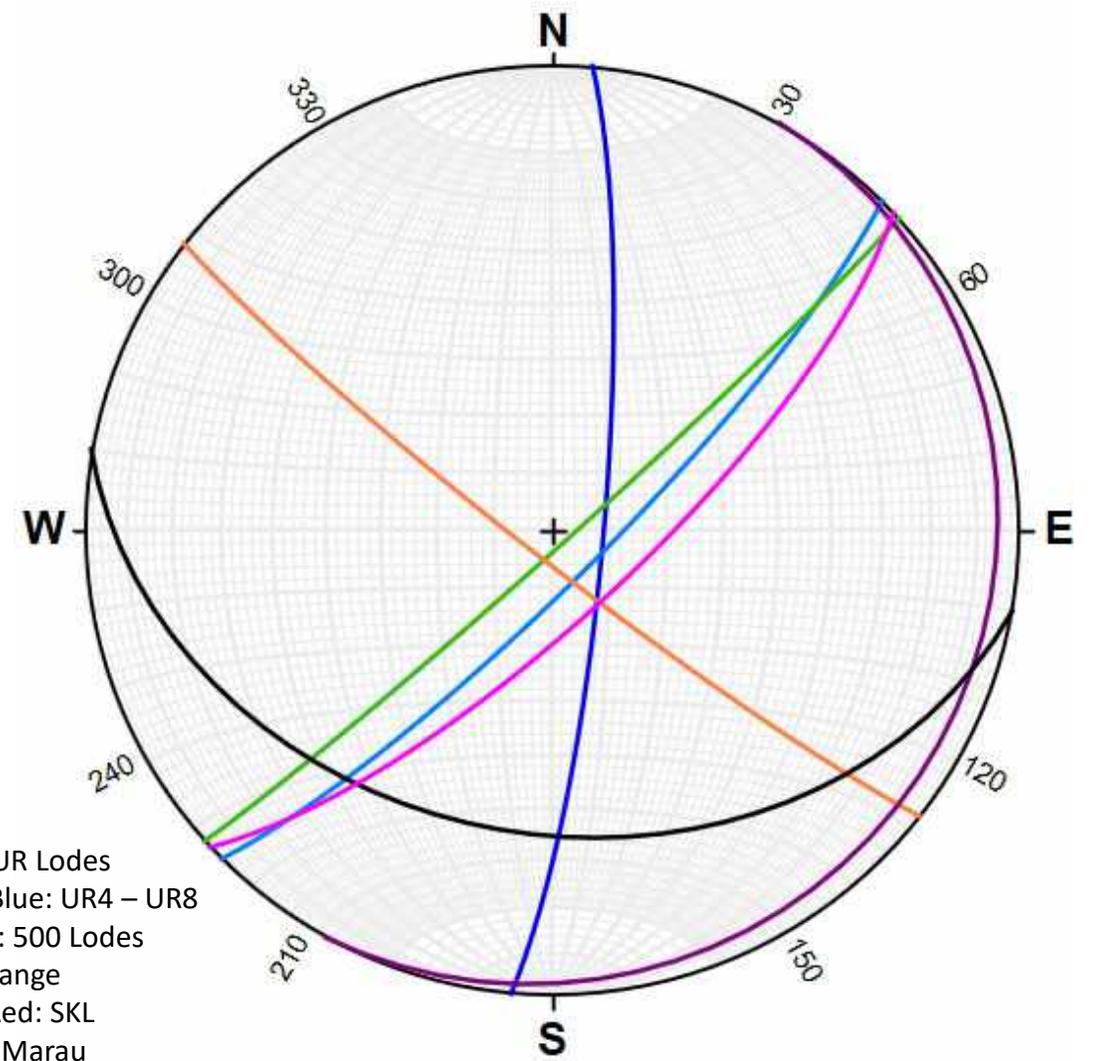
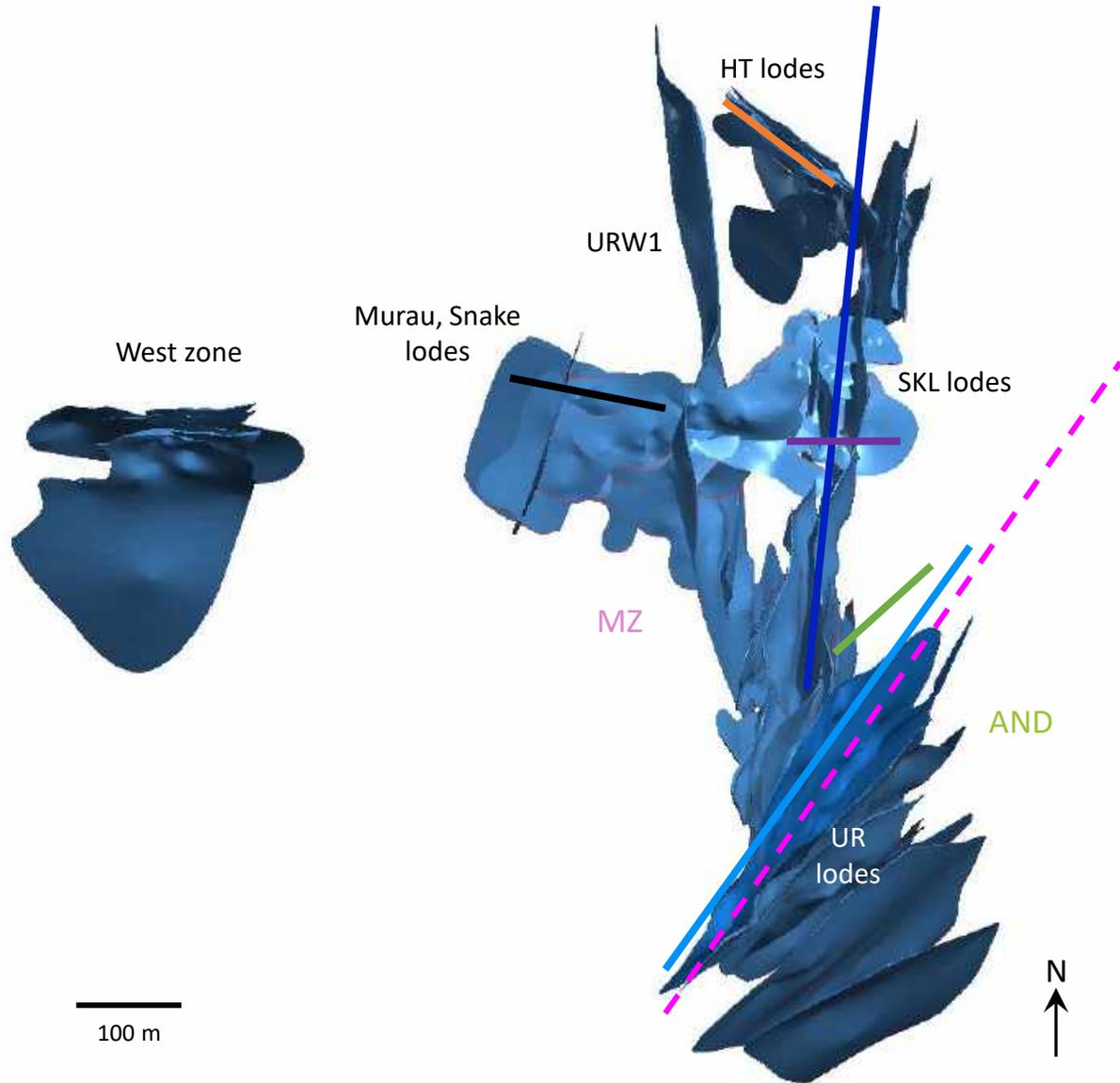


Structurally controlled, narrow-vein, high-grade Au deposit consisting of numerous lode arrays that can be grouped into sets with distinct orientations and geometry

Deposit corresponds to a distinct lithological contact MZ-AND

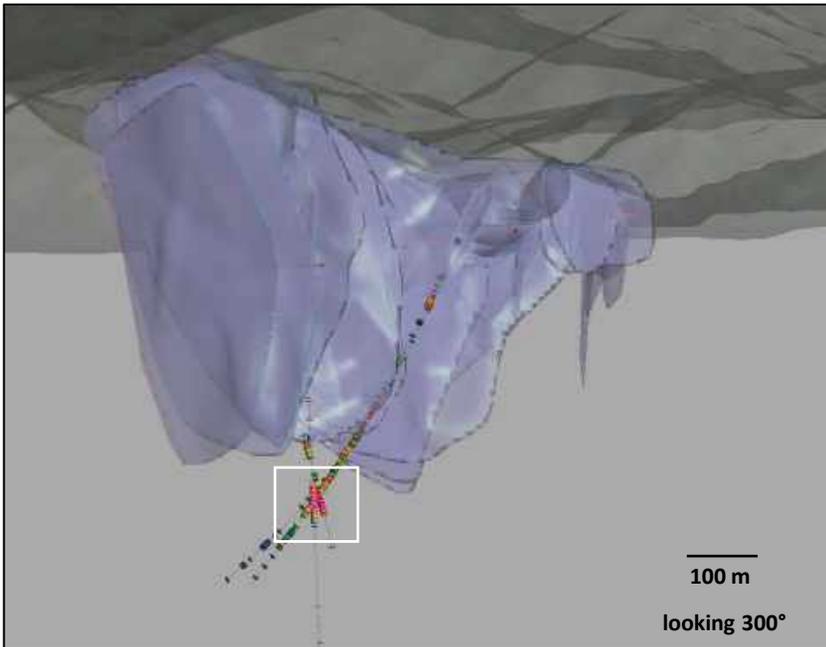
Lode arrays occur along specific orientations with N-S and NE-SW as the prominent directions for the mineralized veins and veinlets observed in drill core

# Tuvatu Deposit - Geometry



- Blue: UR Lodes
- Light Blue: UR4 – UR8
- Green: 500 Lodes
- HT: Orange
- Dark Red: SKL
- Black: Marau
- Pink: Andesite-Monz Contact

# 500 Zone High-grade Discovery

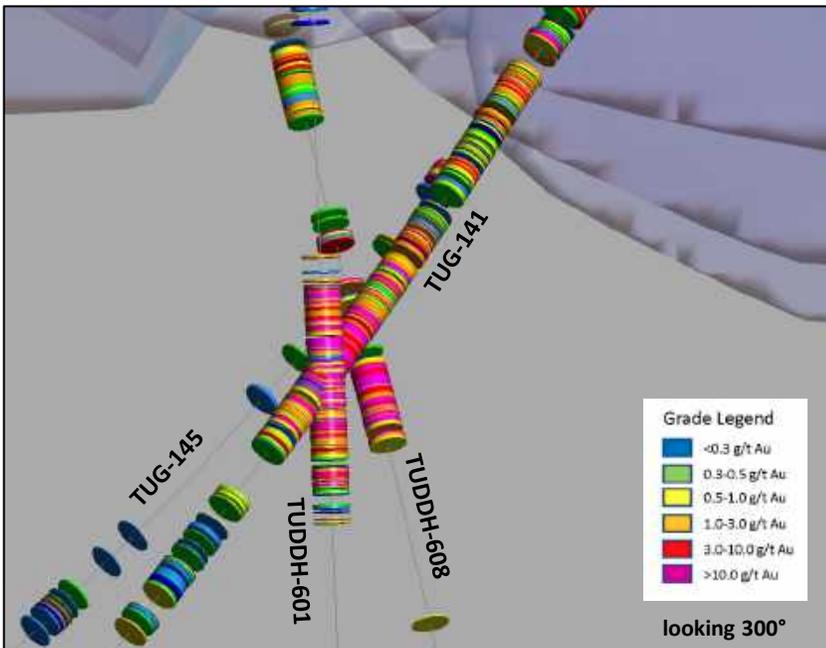


TUG-141 intersected **75.90m** at **20.86 g/t Au**, including:

- 37.5m at 35.25 g/t Au
- 30.0m at 43.62 g/t Au
- 7.2m at 90.35 g/t Au

TUDDH-601 confirmed the mineralization with **12.22 g/t Au** over **54.90m**, including:

- 15.6m at 29.24 g/t Au
- 5.4m at 15.03 g/t Au

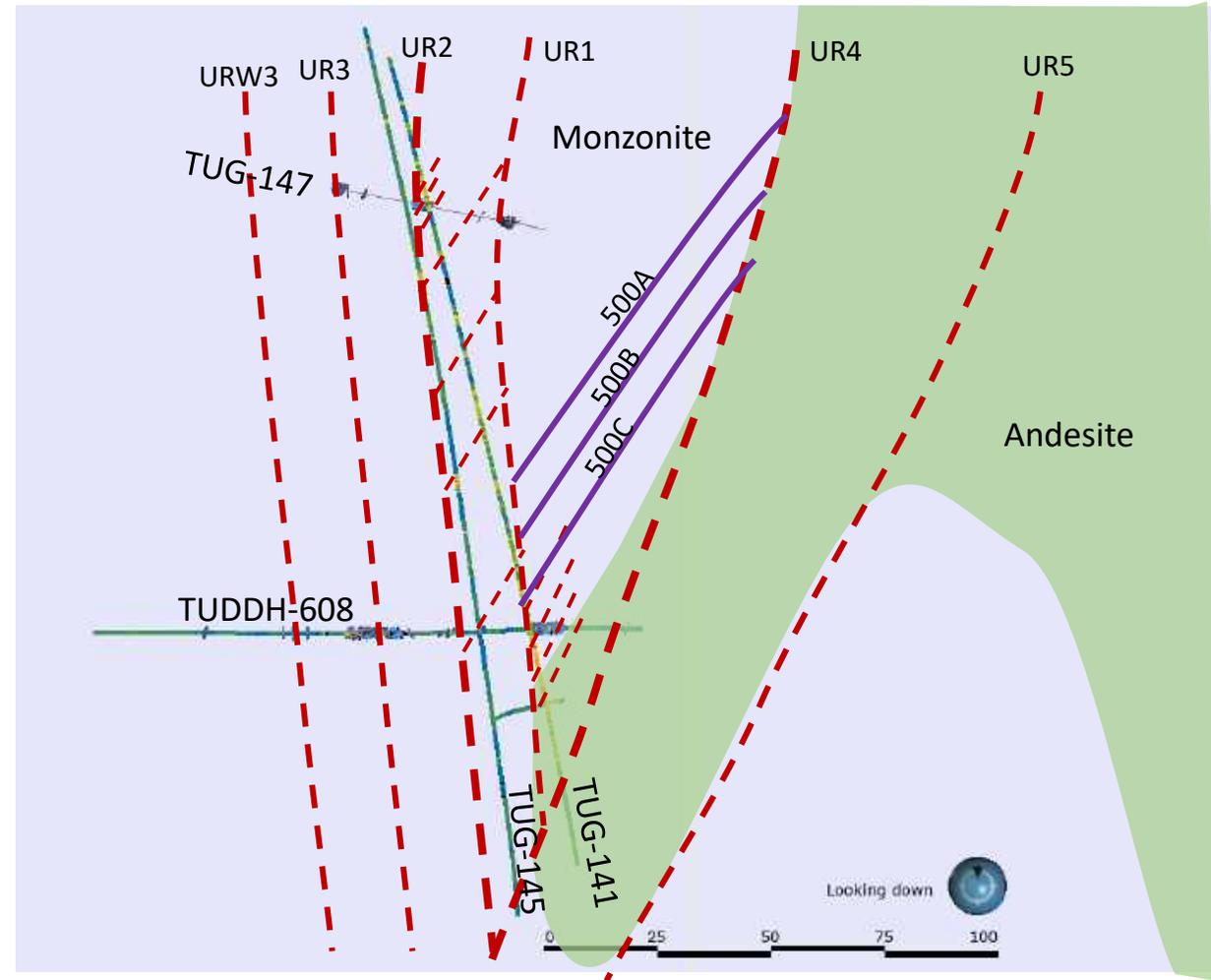
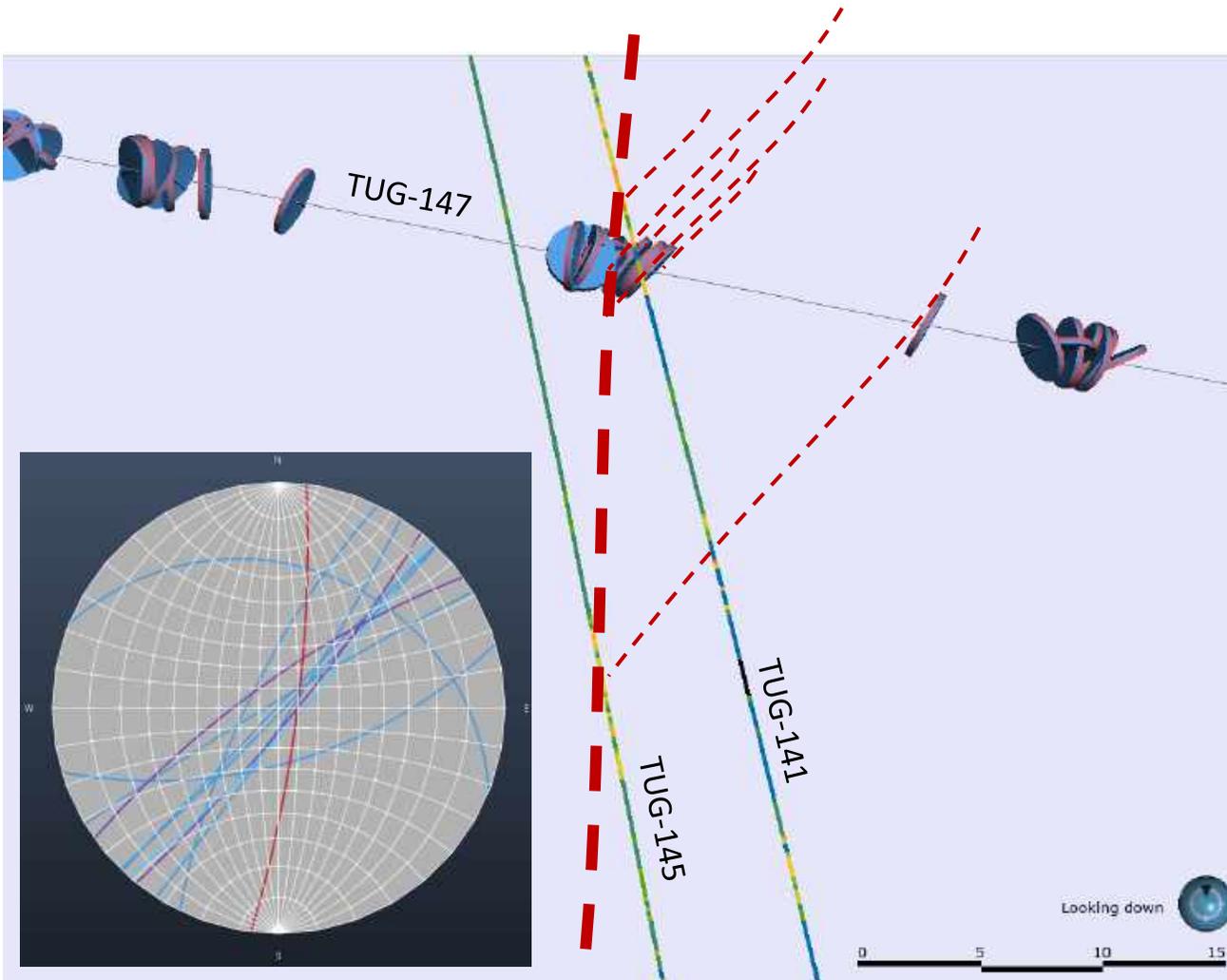


TUDDH-608 defined the true width of >10m with **17.52 g/t Au** over **23.7m**, including:

- 21.16 g/t Au at 19.6m

500 Zone is a structurally complex convergence of multiple structural elements

# Structural Controls



# Structural Controls

Structurally controlled, narrow-vein, high-grade Au deposit consisting of numerous lode arrays that can be grouped into sets with distinct orientations and geometry

Principal structural orientations for mineralization are NS and NE-SW

Flat mineralized structures have limited extent but observed throughout deposit

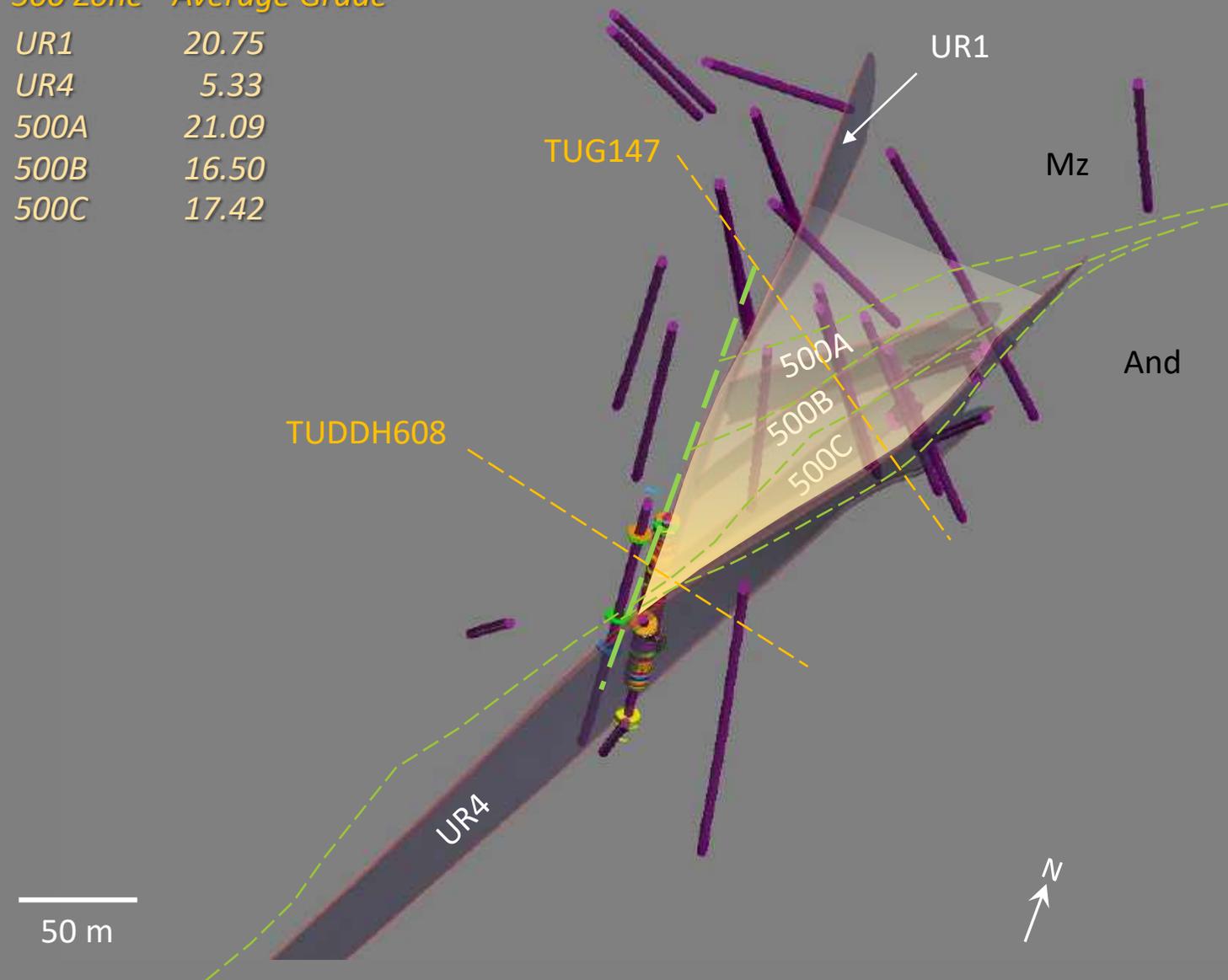
Bonanza grades associated with intersections of structures

Deep high-grade 500 Zone occurs at or near lithological contact of MZ-AND

Evidence for at least one high-grade structurally complex “shatter zone” developed between UR1-UR4 lodes and MZ-AND contact

## 500 Zone Average Grade

UR1	20.75
UR4	5.33
500A	21.09
500B	16.50
500C	17.42



# Mineralization & Alteration

Early, high-T potassic “porphyry” stage

Photo credits: J. Jefferson



HT Zone mineralization

Bleaching, coarse biotite, K-feldspar, apatite, epidote

A-type veins, quartz, K-feldspar, biotite

C-type veins, bornite, chalcopyrite, magnetite

Deep veins, coarse biotite, magnetite, epidote

# Mineralization & Alteration

## Epithermal stage mineralization



Epithermal base metal stage,  
sphalerite, galena, chalcopyrite, pyrite

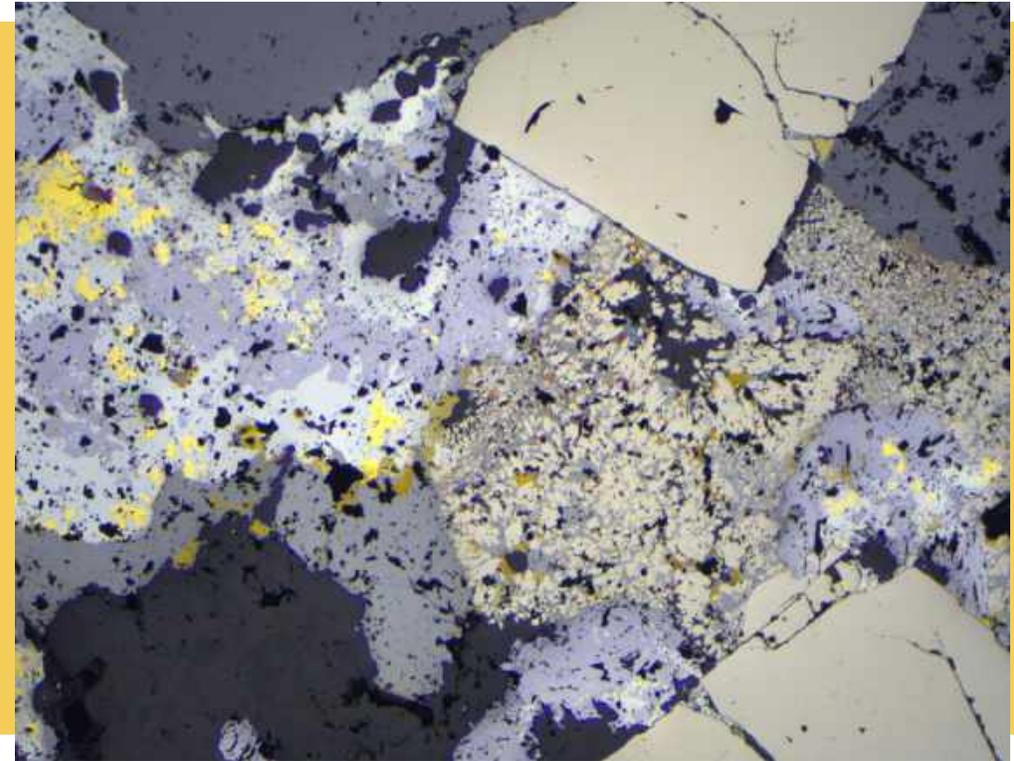
Colloform, zoned sphalerite common

Photo credit: J. Jefferson

# Mineralization & Alteration

## Epithermal stage mineralization

Photo credit: J. Jefferson



Complex mineral textures  
suggesting multiple episodes of precipitation

Complex mineralogy  
pyrite, sphalerite, galena, tennantite-tetrahedrite, proustite-pyrargyrite,  
tellurides and selenides incl. altaite, clausthalite, calaverite

# Mineralization & Alteration

Late epithermal stage, low-T high-grade Au overprint

Photo credits: J. Jefferson

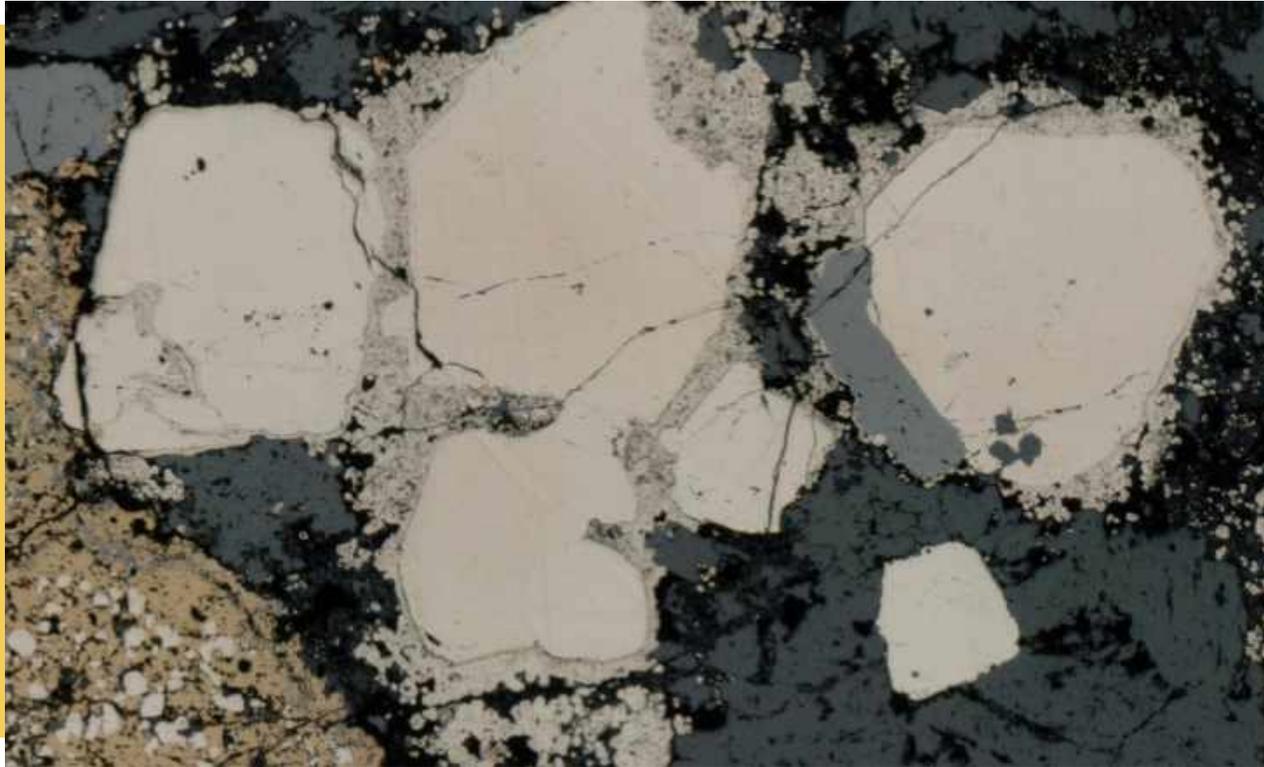


Dark, late pyrite overgrowth, elevated in  
Au-As-Ag-Co-Cu-Sb

# Mineralization & Alteration

Late epithermal stage, low-T high-grade Au overprint

Photo credits: J. Jefferson



Dark pyrite overgrowth  
elevated in Au-As-Ag-Co-Cu-Sb



Chalcedonic quartz, roscoelite, native gold



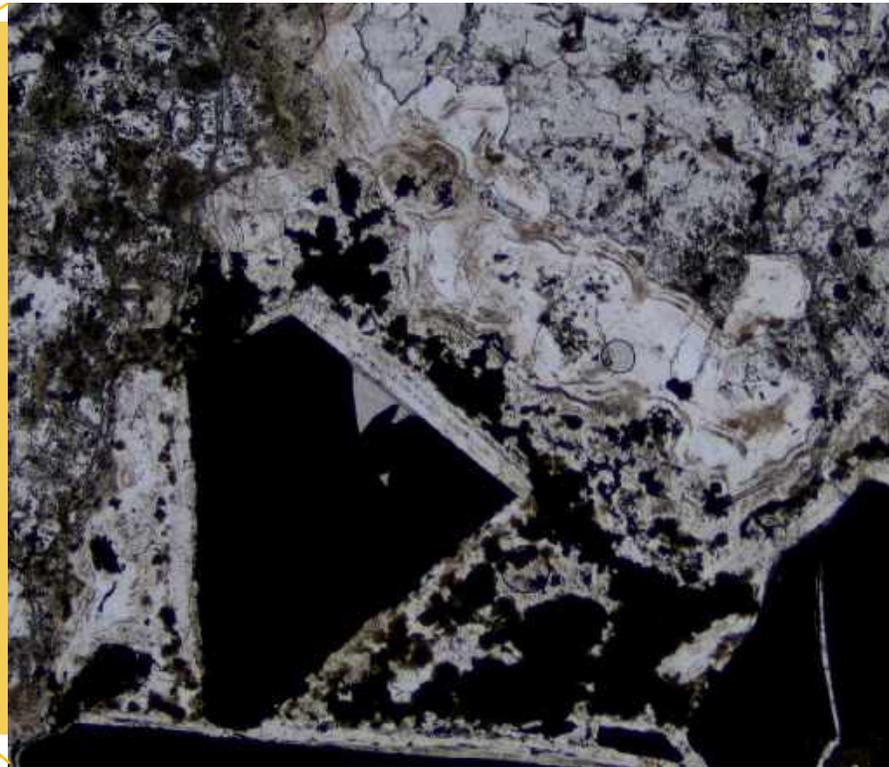
# Mineralization & Alteration

Late, low-T, rapid boiling (flashing) event

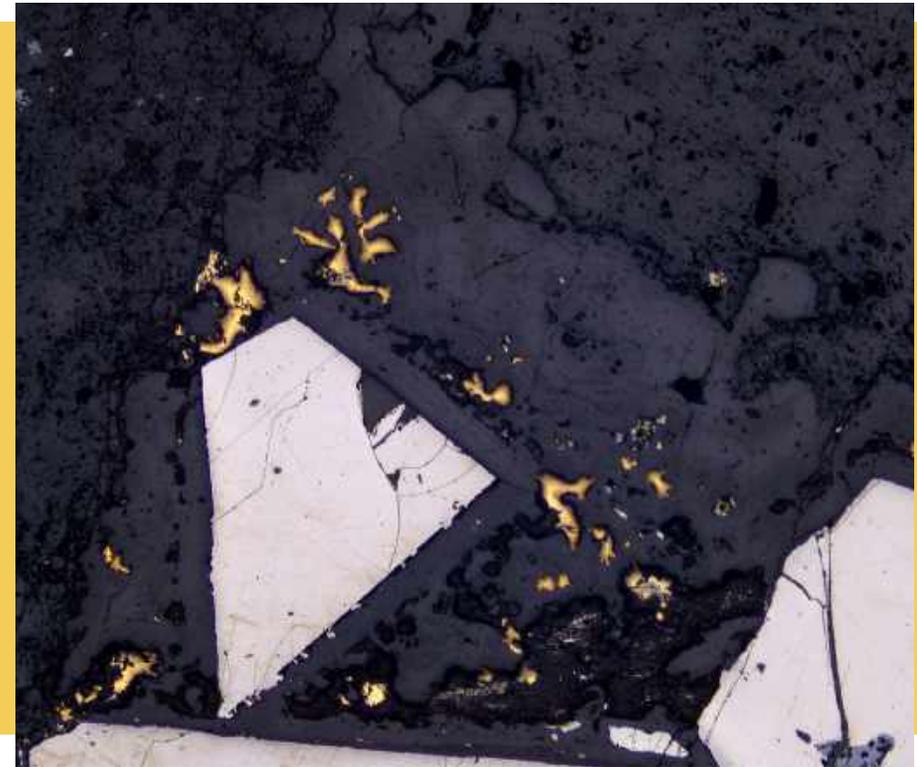
Photo credits: D. Schmidt



Micro-XRF gold map of sample 26; TUDDH-496



Banded chalcedony and  
roscoelite (plane polarized light)



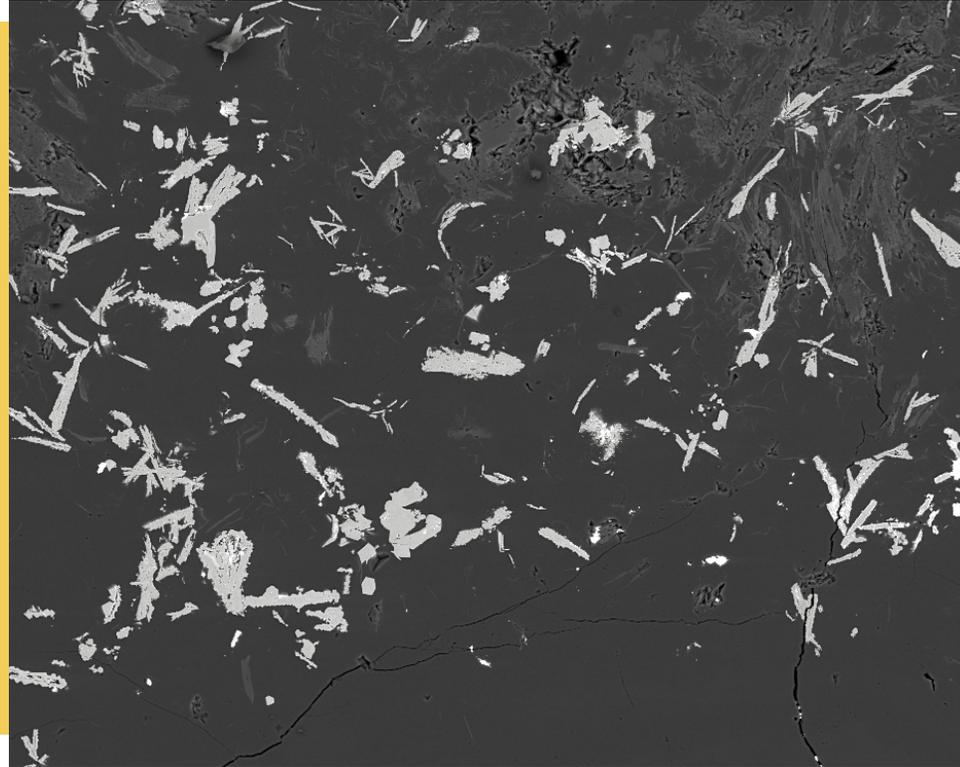
Dendritic gold (reflected light)

Late silica-rich overgrowth

# Mineralization & Alteration

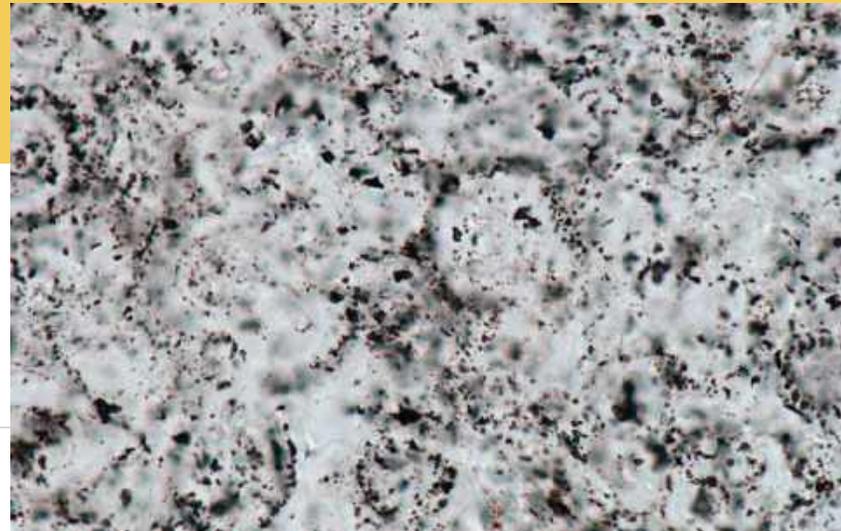
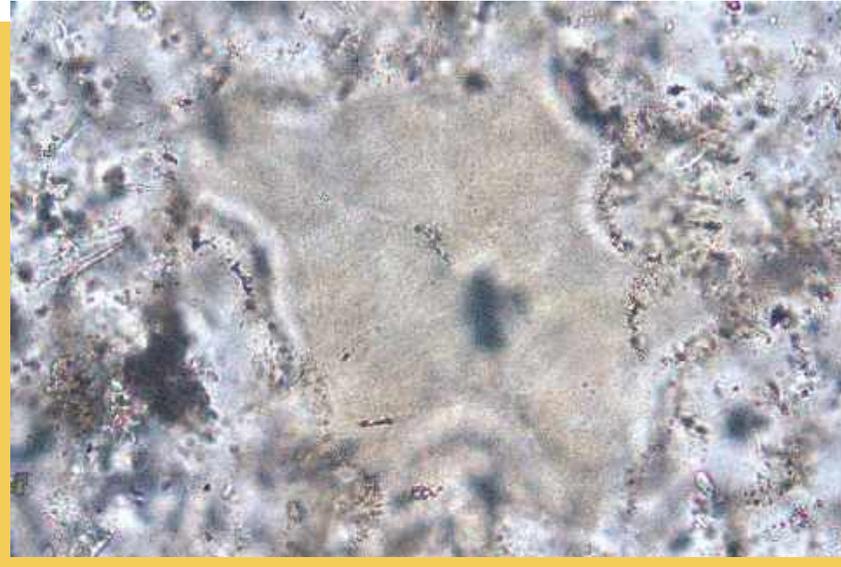
Late, low-T, rapid boiling (flashing) event

Photo credit: J. Jefferson



Dendritic marcasite intergrown with altaite (PbTe)

Photo credits: D. Schmidt



Although largely recrystallized to mosaic quartz, late silica shows relict microsphere textures suggesting Opal A<sub>G</sub> (flashing)

This, combined with dendritic growth patterns suggests disequilibrium conditions, supersaturation and fluid flashing

Photomicrograph showing similar relict microspheres in bonanza type veins of the Buckskin National Deposit, Nevada (Taksavasu et al., 2018)

# Tuvatu Deposit Paragenesis

## Magmatic-hydrothermal stage

Early, high-T porphyry style potassic alteration

## Epithermal stage

Early base-metal rich stage (Pb-Zn-Cu, geny low to med. Au)

Main Au stage: veins with Au-qtz-roscoelite-dark py elevated in Au-As-Ag-Co-Cu-Sb (Jake's "spongy" py)

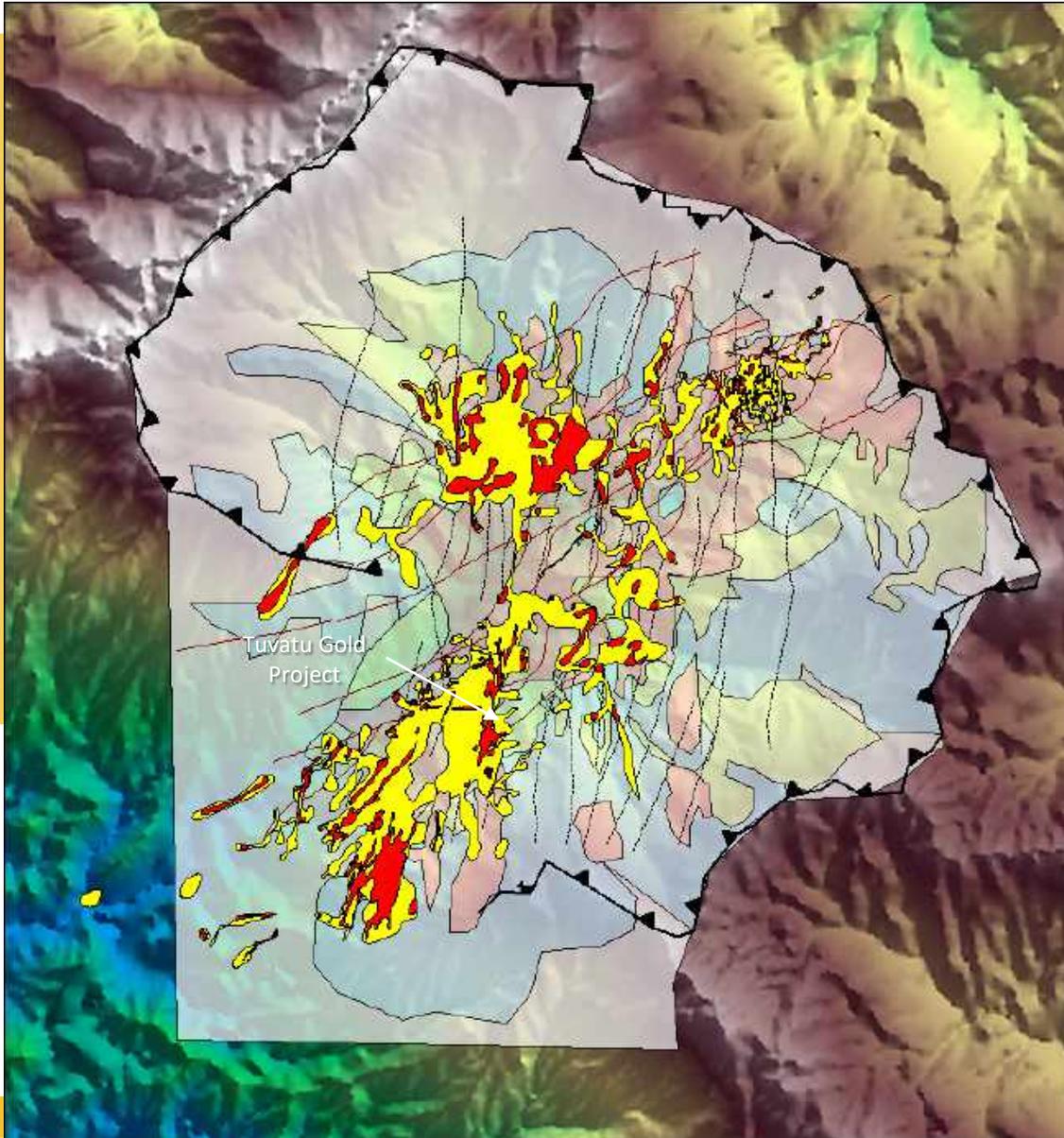
Dendritic mineral growth (incl. free Au) and amorphous silica resulting from fluid flashing under disequilibrium conditions.

Subsequent recrystallization to mosaic quartz

Post-mineral stage of barren carbonate

Photo credits: D. Schmidt

# Navilawa Caldera - Geology



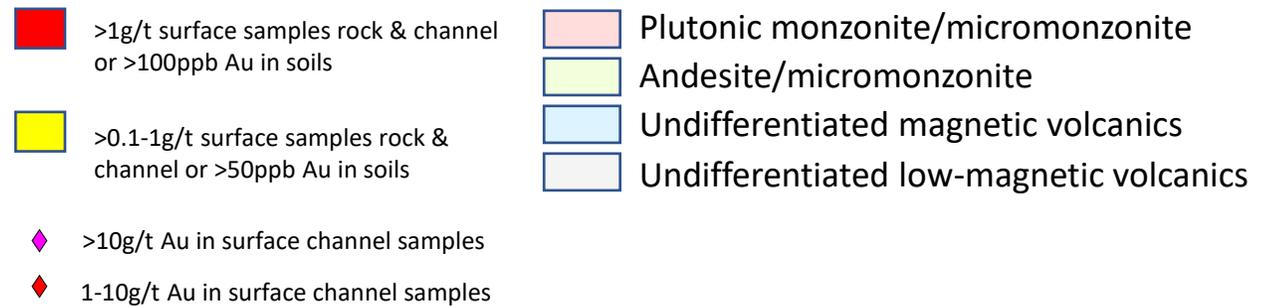
Clear remnant caldera structure

Monzonite core clearly mapped with K-Band radiometrics

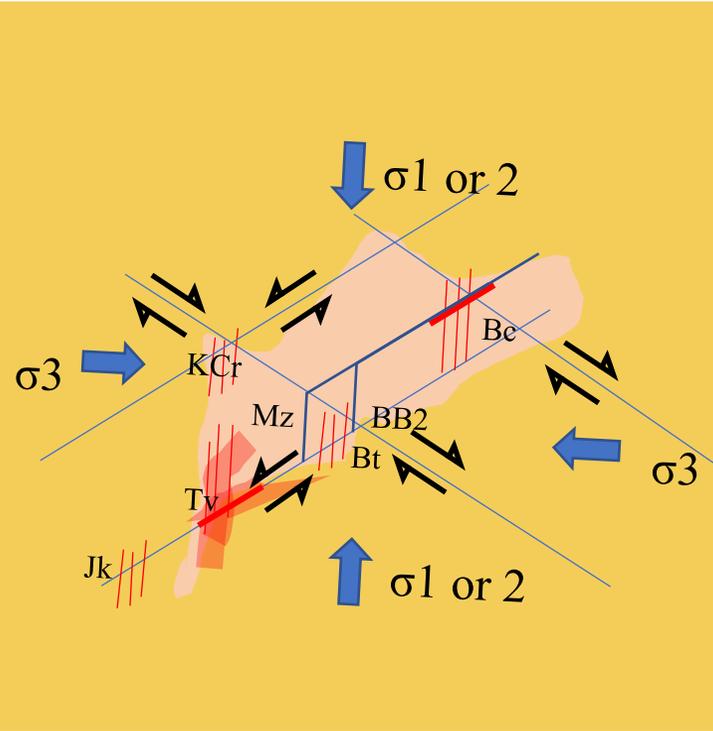
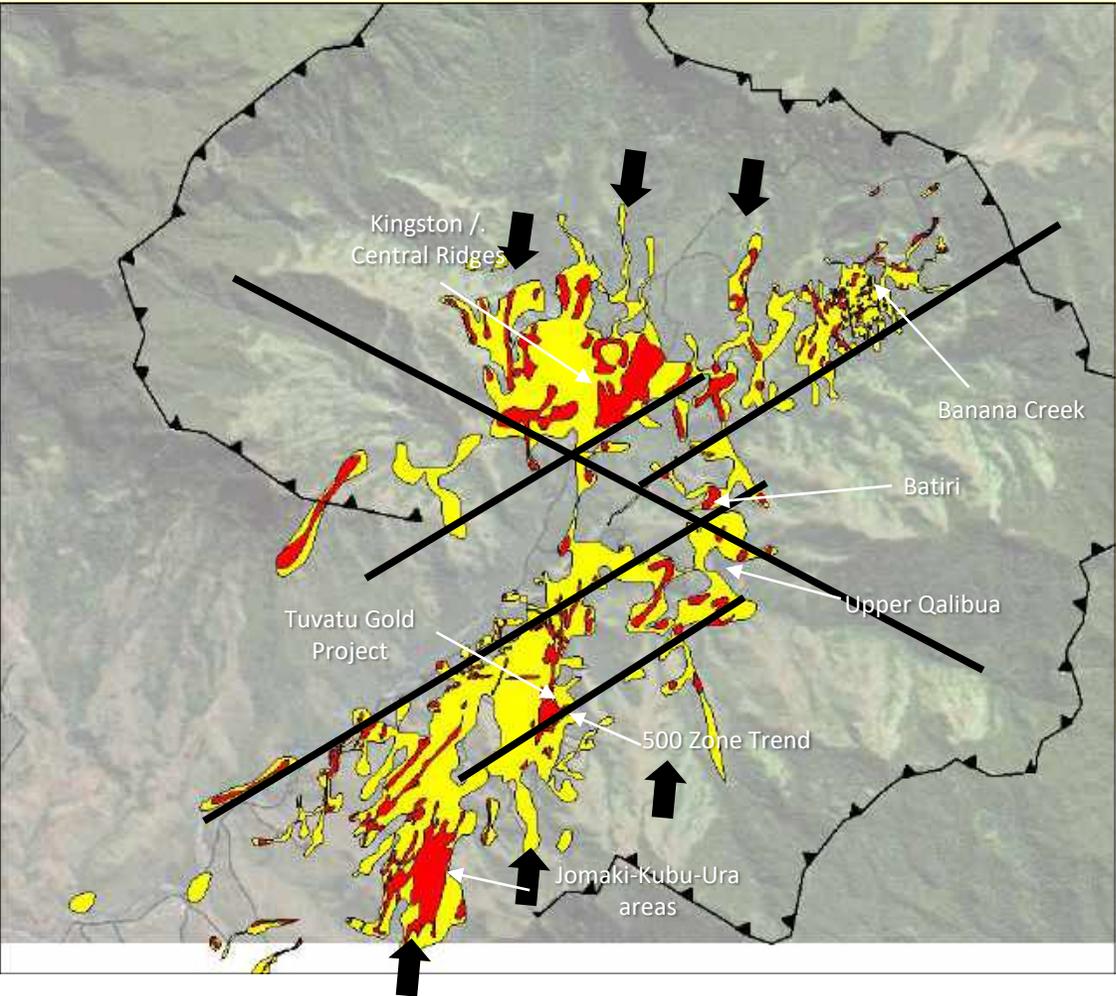
Monzonite with pre- and syn volcanism

Structural control with dominant N-S and NE-SW structures

Regional gold anomalism over 7km corridor, highlighting the potential for additional discoveries



# Navilawa Caldera – Regional Chemistry Contours & Simplified Structural Model

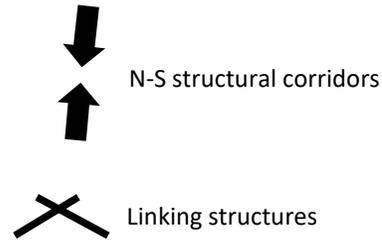


Known mineralized occurrences

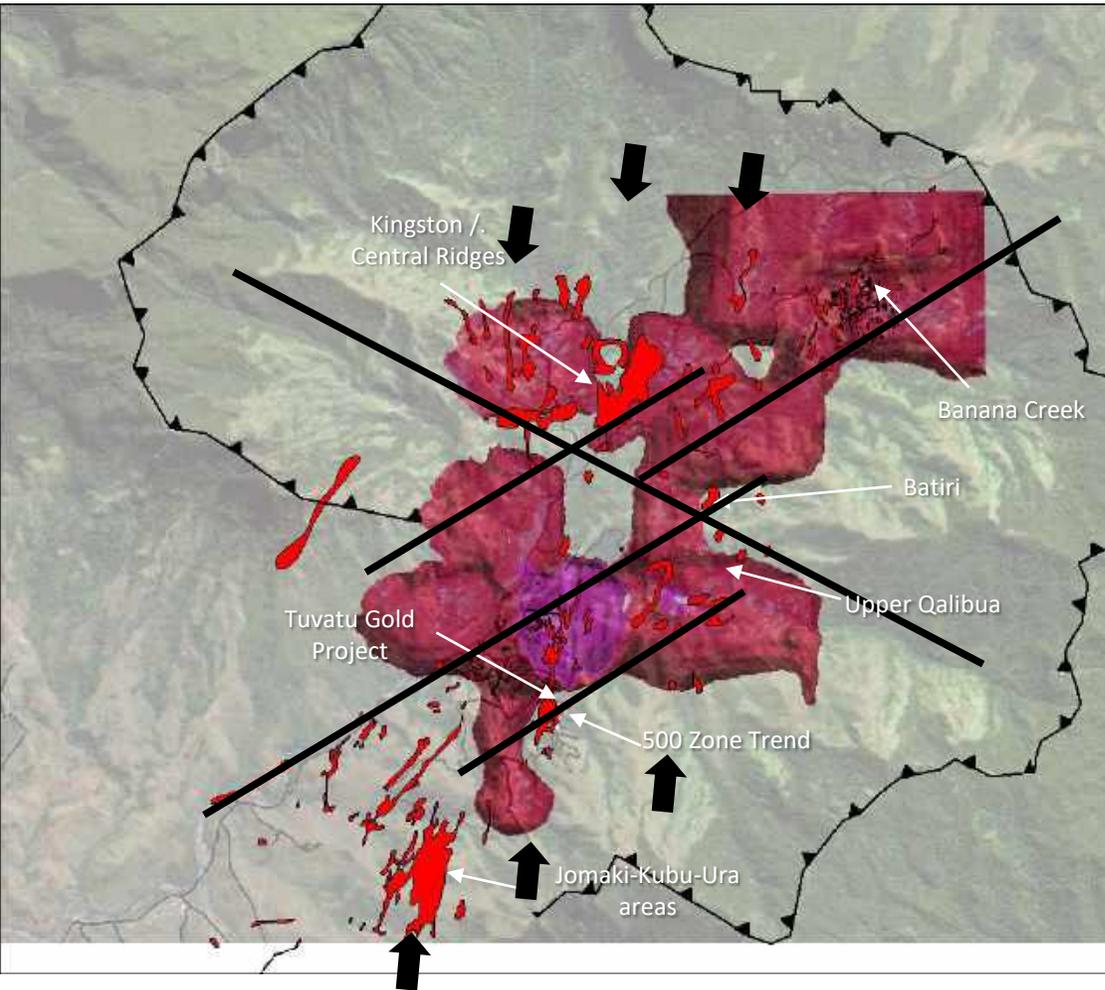
Regional structural regime can be characterised by normal faults, dextral and sinistral strike-slip faulting

Mineralisation controlled at intersections of major structures

- >1g/t surface samples rock & channel or >100ppb Au in soils
- >0.1-1g/t surface samples rock & channel or >50ppb Au in soils



# Navilawa Caldera – CSAMT



Controlled Sourced Audio-Magnetic Tellurics (CSAMT) used routinely

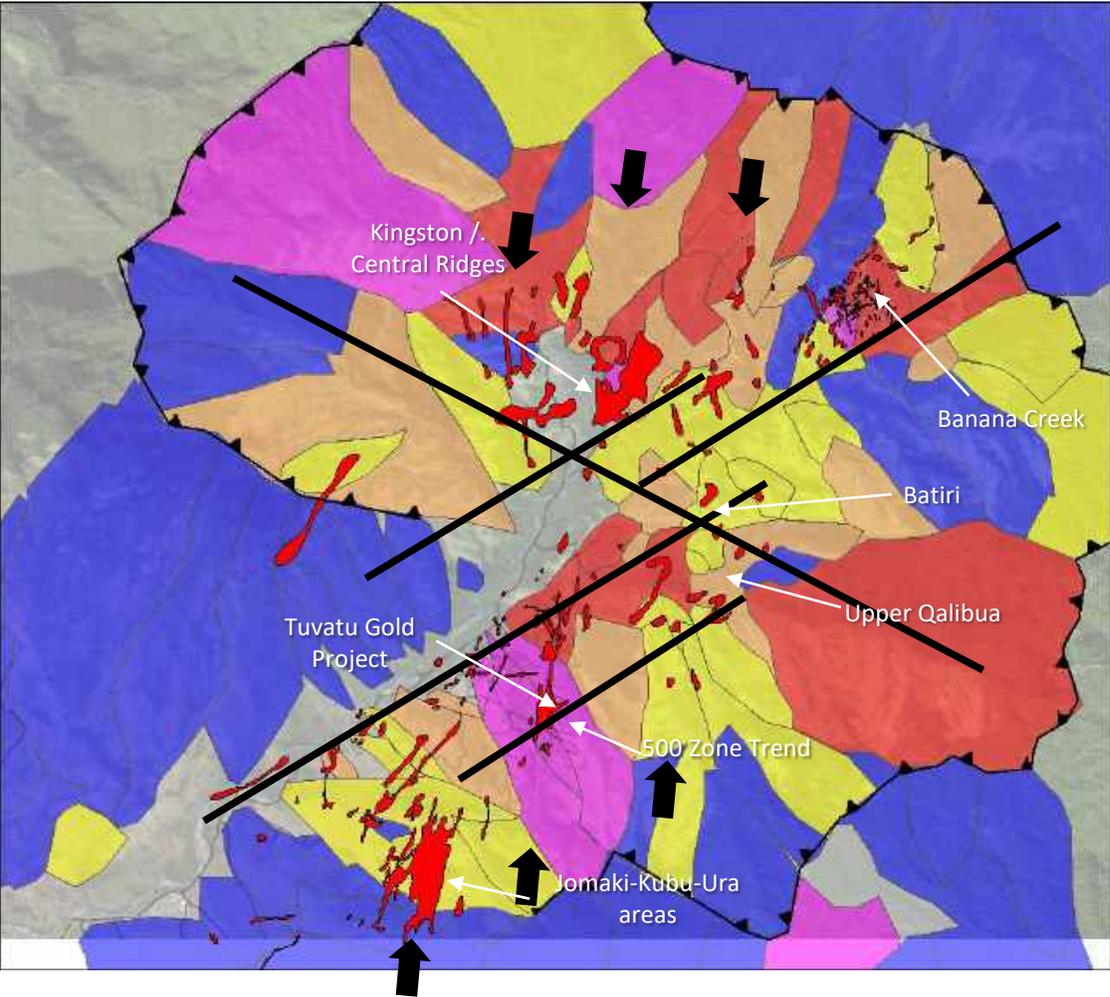
Major gradients indicating structural contacts, lithological boundaries and increased resistivity related to alteration

 >1g/t surface samples rock & channel or >100ppb Au in soils

 N-S structural corridors

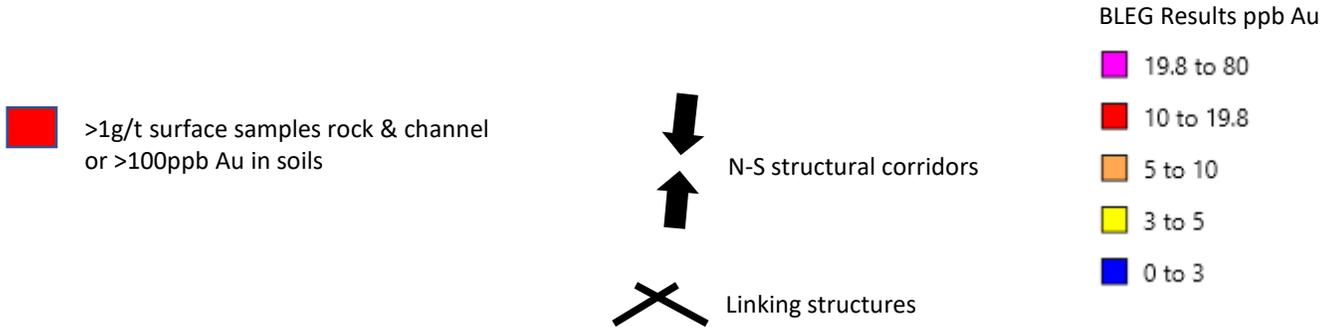
 Linking structures

# Navilawa Caldera – Regional BLEG Sampling

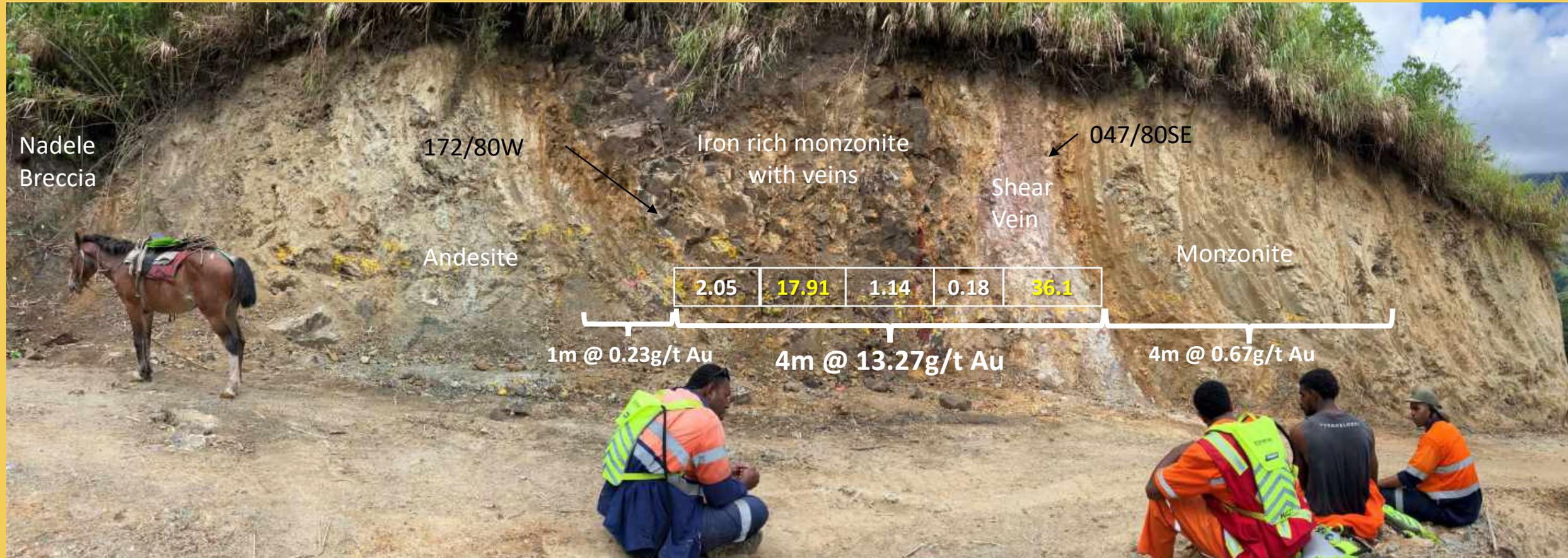


Regional Bulk Leach Extractable Gold assays using clay fraction stream sampling.

Catchment analysis shows several other catchments comparable to Tuvatu



# Navilawa Caldera – Targeting & Exploration Techniques



Benching and channel sampling provides opportunity for exposing mineralized structures

# Navilawa Caldera – Summary, Regional Targeting



Multiple 'factual' datasets including

- BLEG stream sampling
- Soil and bench geochemistry
- Mapping
- CSAMT geophysics

Conceptual and interpretative geology

- Regional structural regime
- Intersections of major structures
- Interpretive geology
- Alkaline window



Integrated Targeting Model



The Navilawa Caldera and wider Tuvatu Gold Project has:

- Evidence of mineralisation over 7km
- Prioritised targets that will be drill-tested in 2023
- Sufficient evidence to suggest the presence of additional mineral systems of comparable size or larger to Tuvatu



# Thank-you

## Booth 1024



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