MIDLAND EXPLORATION

TSX -V:MD

Samson Project

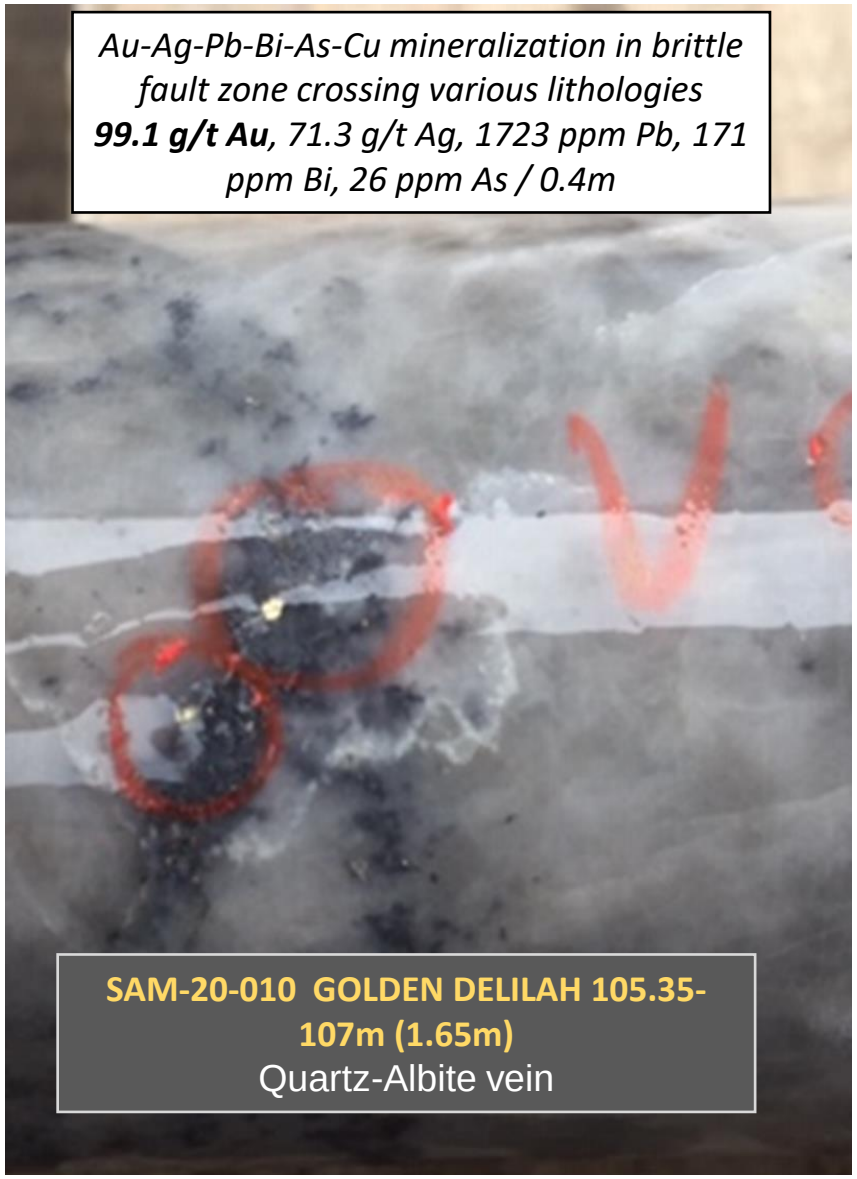
December 2024

Samson Project Highlights

- ✓ Late magmatic-hydrothermal system identified in 2020-2021 with Au, Ag, As, Bi, Cu, Pb, probably associated with a swarm of monzonites dykes / sills
- ✓ Complex structural zone with polyphase deformation (refolded folds), cut by a series of later faults. The central area could be an uplifted block
- ✓ Abundance of magnetic ultramafic units favorable chemical traps for hydrothermal fluids
- ✓ Strong hydrothermal footprint in As, Cu in all 2020-2021 drillholes
- ✓ **Golden Delilah zone**: epithermal Au-Ag-As-Bi-Cu-Pb epithermal mineralization in a brittle fault zone; up to **99.1 g/t Au**, 71.3 g/t Ag, 1723 ppm Pb, 171 ppm Bi / 0.4m
- ✓ **Au-As-Cu in a quartz-monzonite dyke**: **23 g/t Au / 1.05m**; 1.42 g/t Au / 0.96m
- ✓ **Southern Au-As zone**: brittle fault zone with epithermal characteristics that separates two distinct lithological domains; 0.61 g/t Au, 0.5% As / 0.85m
- ✓ No previous drilling in the favorable Lower Detour deformation zone; strong IP chargeability anomaly in the deformation zone near complexly folded ultramafics

Samson Project

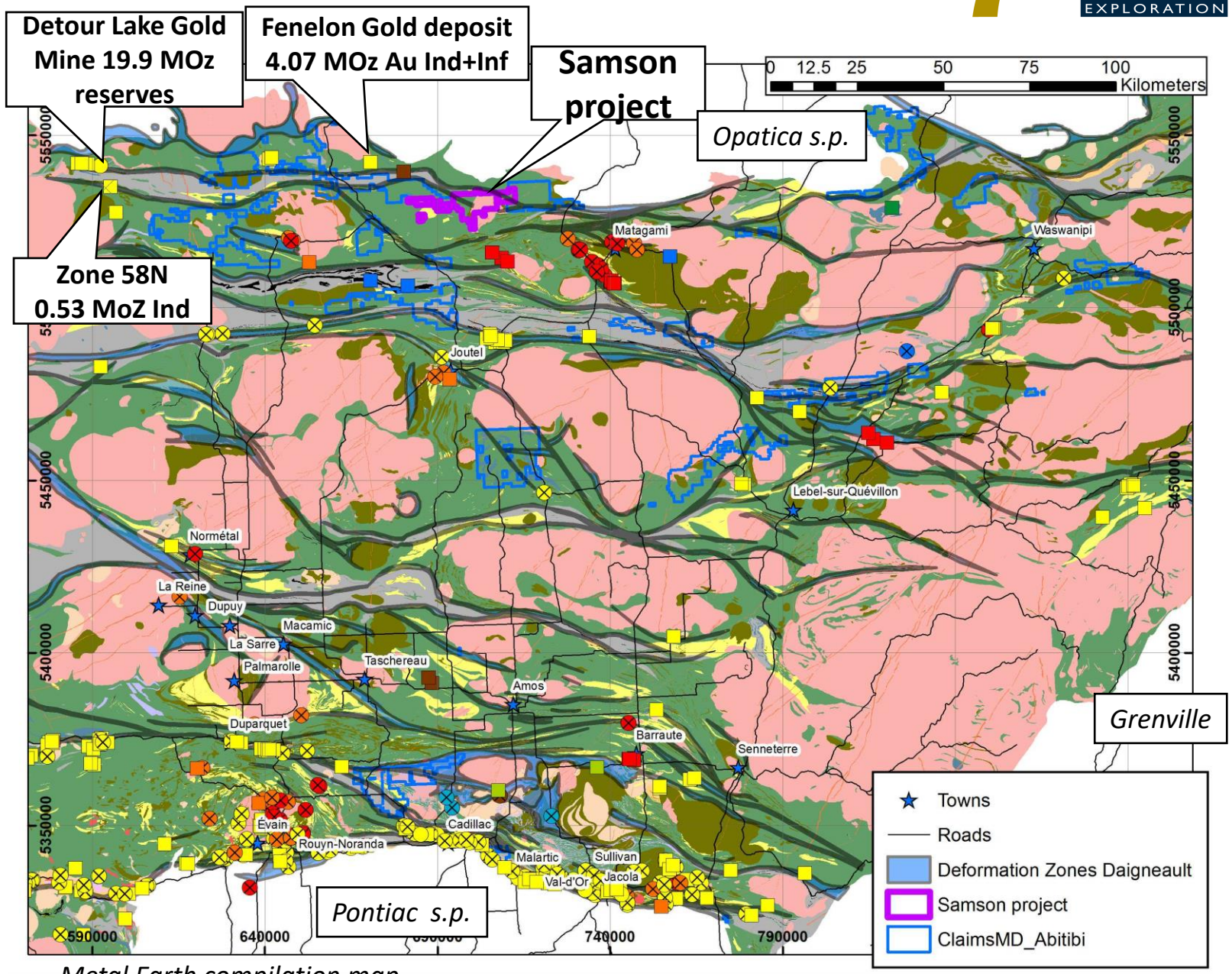
- **Overview**
- Regional geology
- Local geology
- Historical exploration
- 2020-2021 drilling area
  - Geology and structures
  - Mineralization
  - Mineral deposit model
- Exploration targets



SAM-20-009 (SOUTHERN AS ZONE)
373.60-374.45 (0.85m)
Breccia interval with strong alteration in Alb-Sr. Moderate fuchsite and weak chlorite, tourmaline. AS: 0.5-5% in mm veinlets or disseminated PY: 0.5-1% along AB-QZ veins or disseminated

Samson Project: Overview

- Samson project located 35 km NW of the town of Matagami and 20 km SE of the Fenelon gold deposit
- In the northern part of the prolific Abitibi Archean greenstone belt, near the contact of the Opatica subprovince to the north
- Access by helicopter



Metal Earth compilation map

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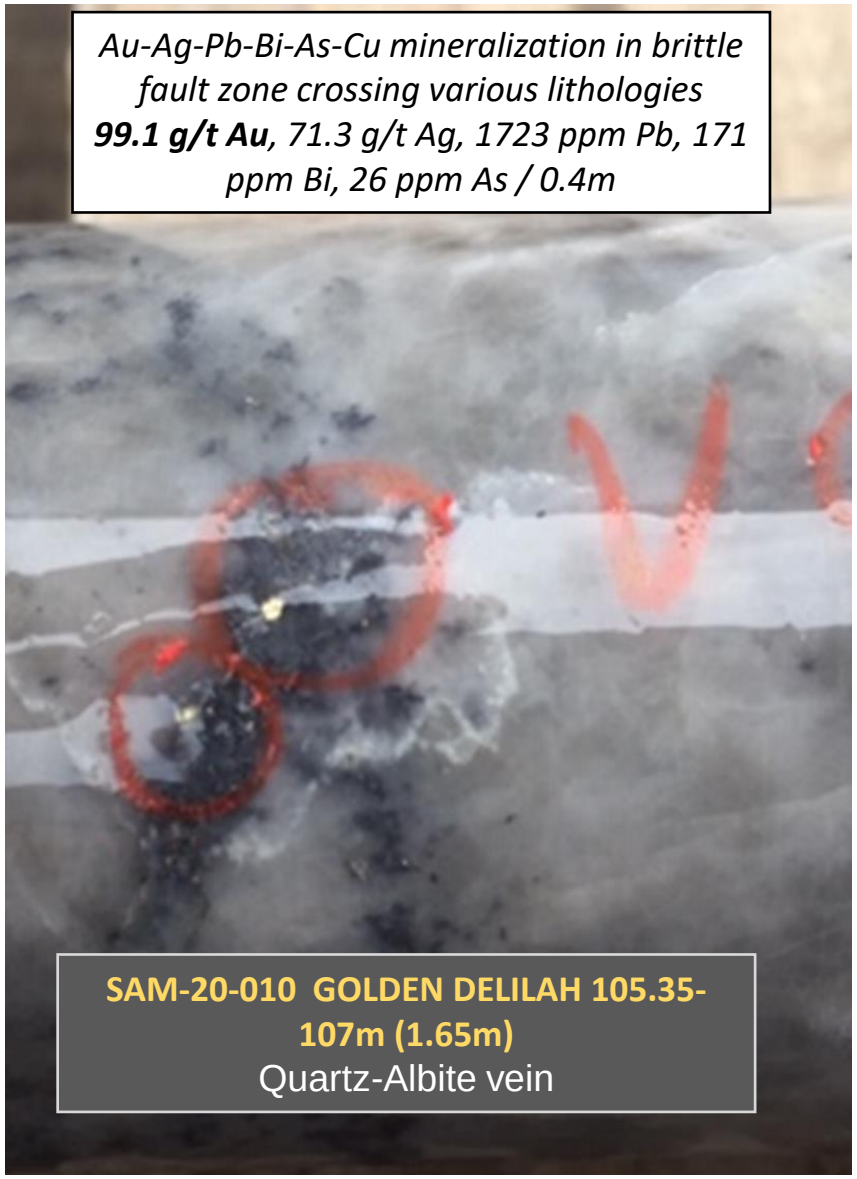

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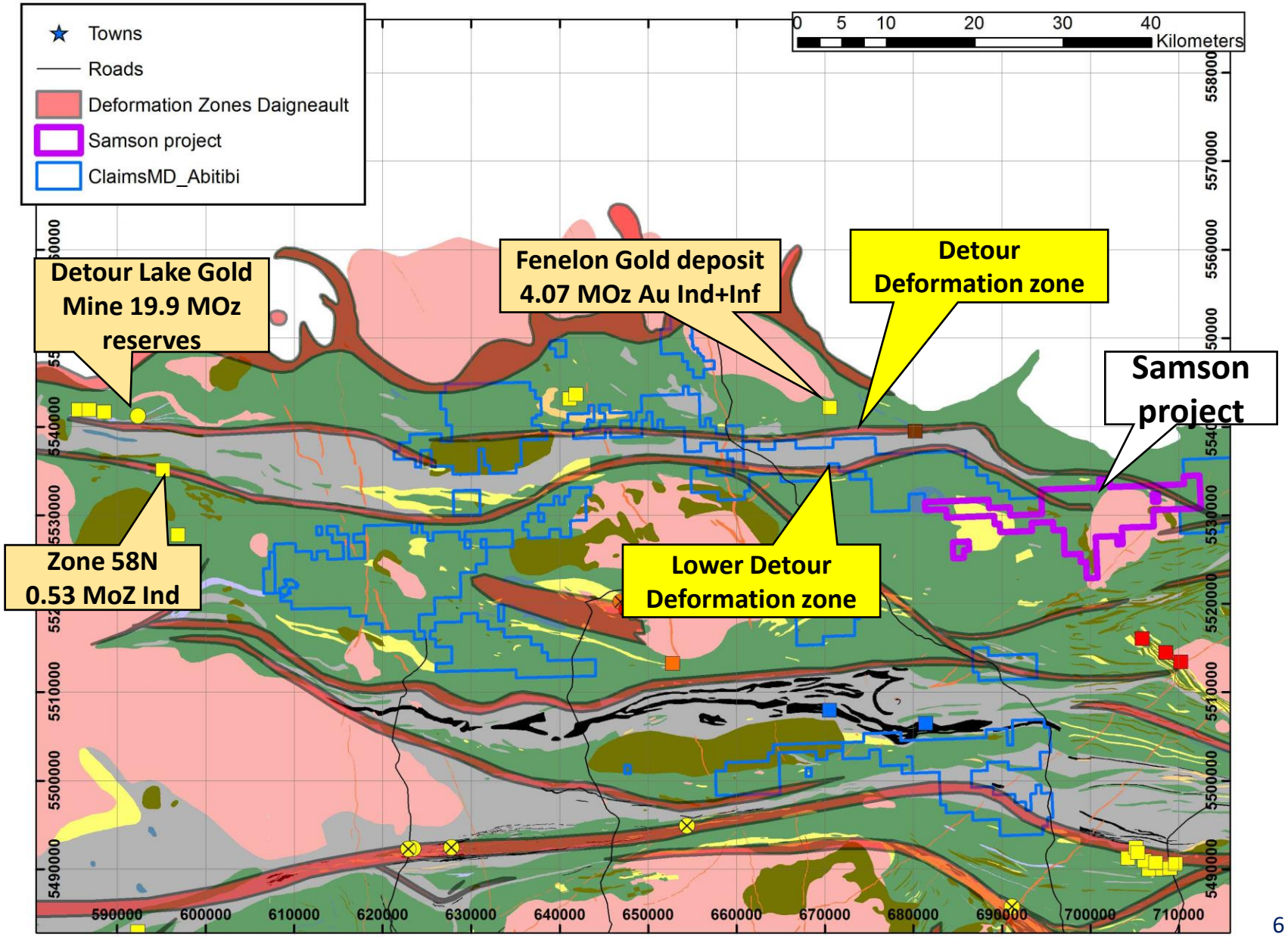
Samson Project: Regional Geology and Gold Deposits

- The Samson project covers the eastern extension of the Detour Lake deformation zone (host of the Detour Lake gold mine) and Lower Detour deformation zone (host of the 58N gold prospect)



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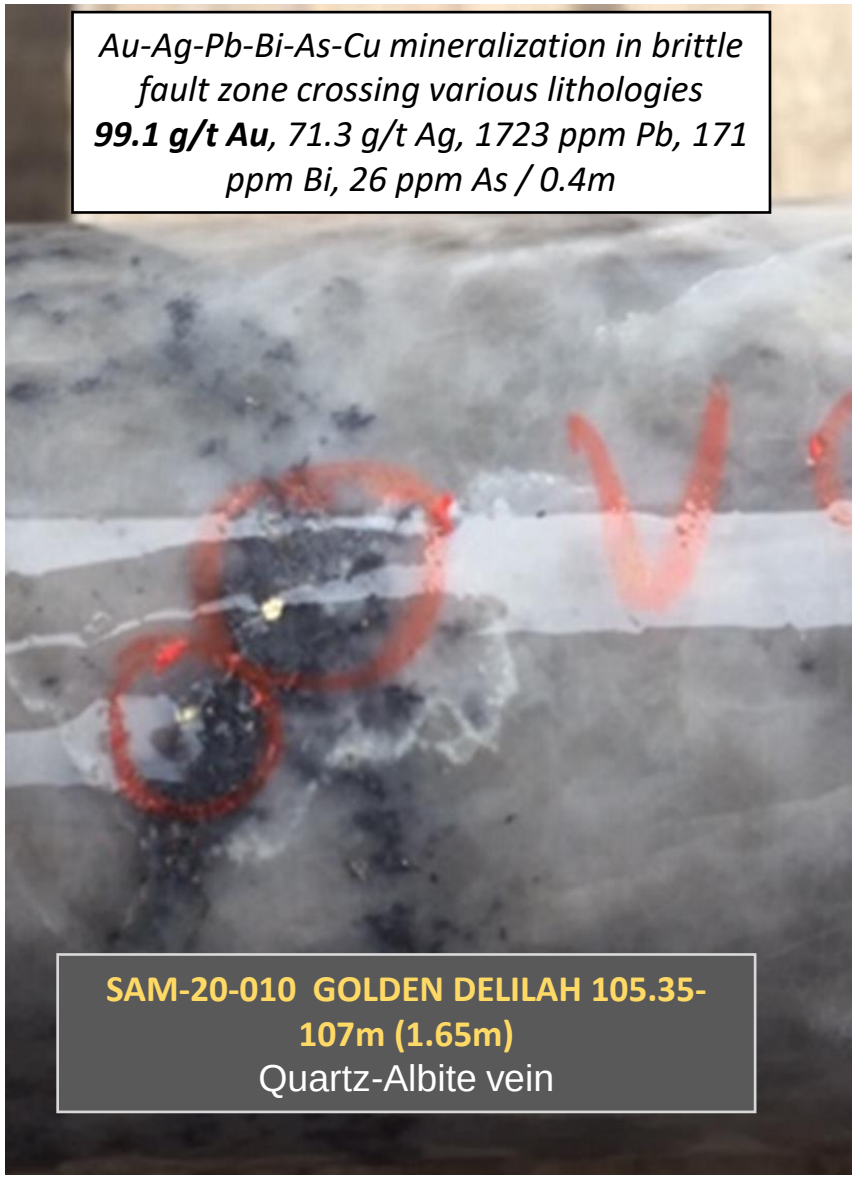

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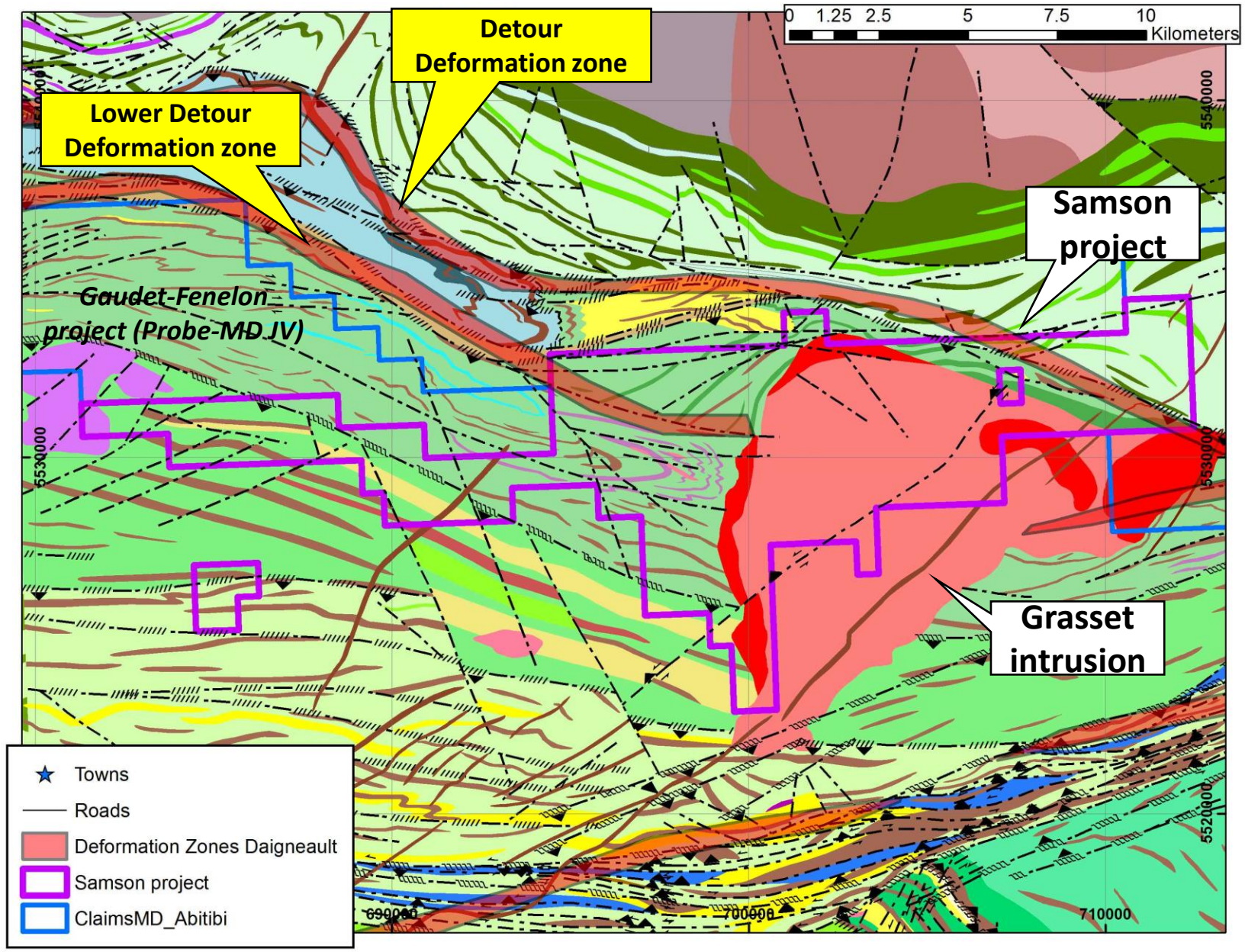
Samson Project: Local Geology

- Project dominated by tholeiitic mafic volcanic rocks with calc-alcaline felsic volcanics, ultramafic intrusives intercalated
- Large amount of monzonites dykes and sills, and mafic lamprophyre dykes in the central part
- Large late monzogranite intrusion with monzonite border in the eastern part (Grasset intrusion)
- Both the Lower Detour and Detour deformaiton zones are present on the project



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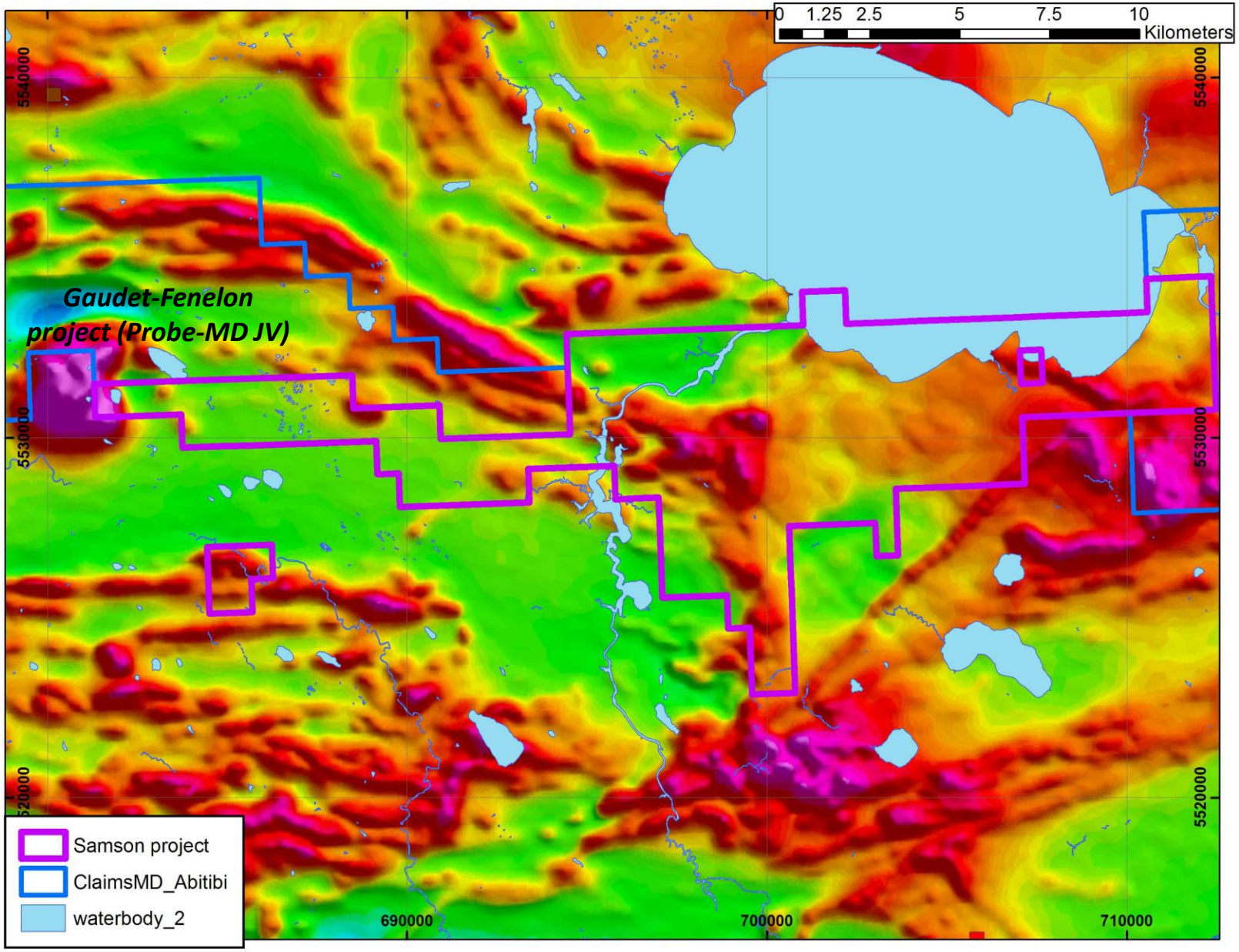

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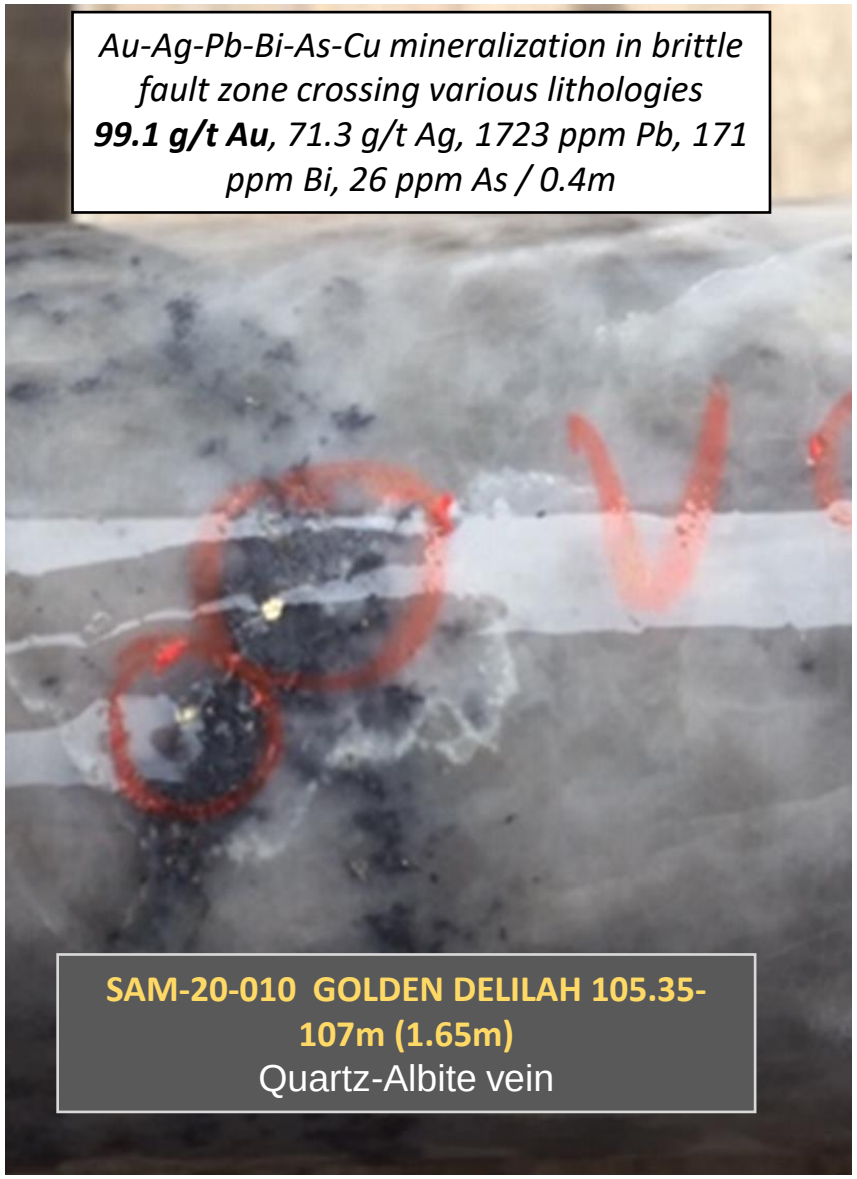

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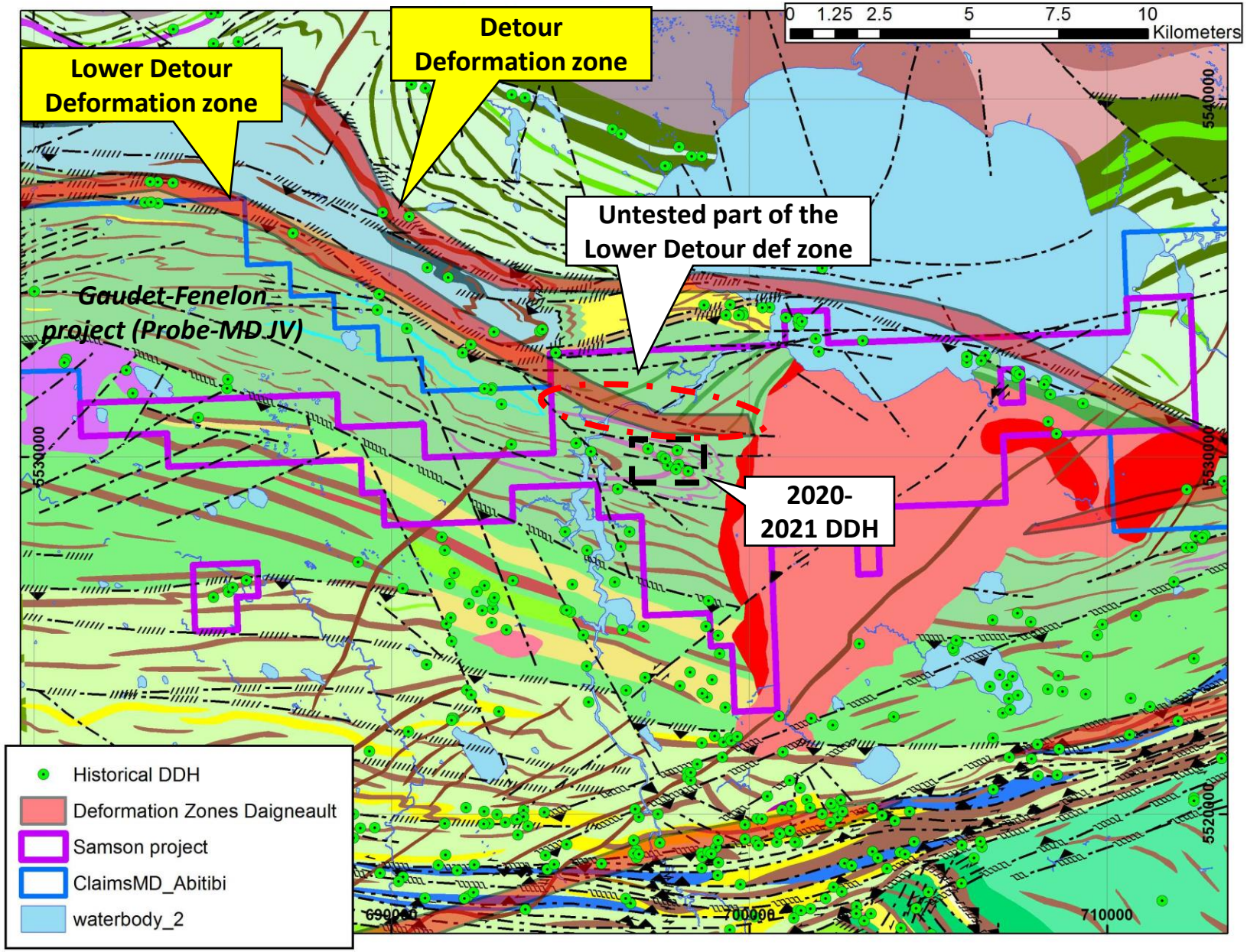
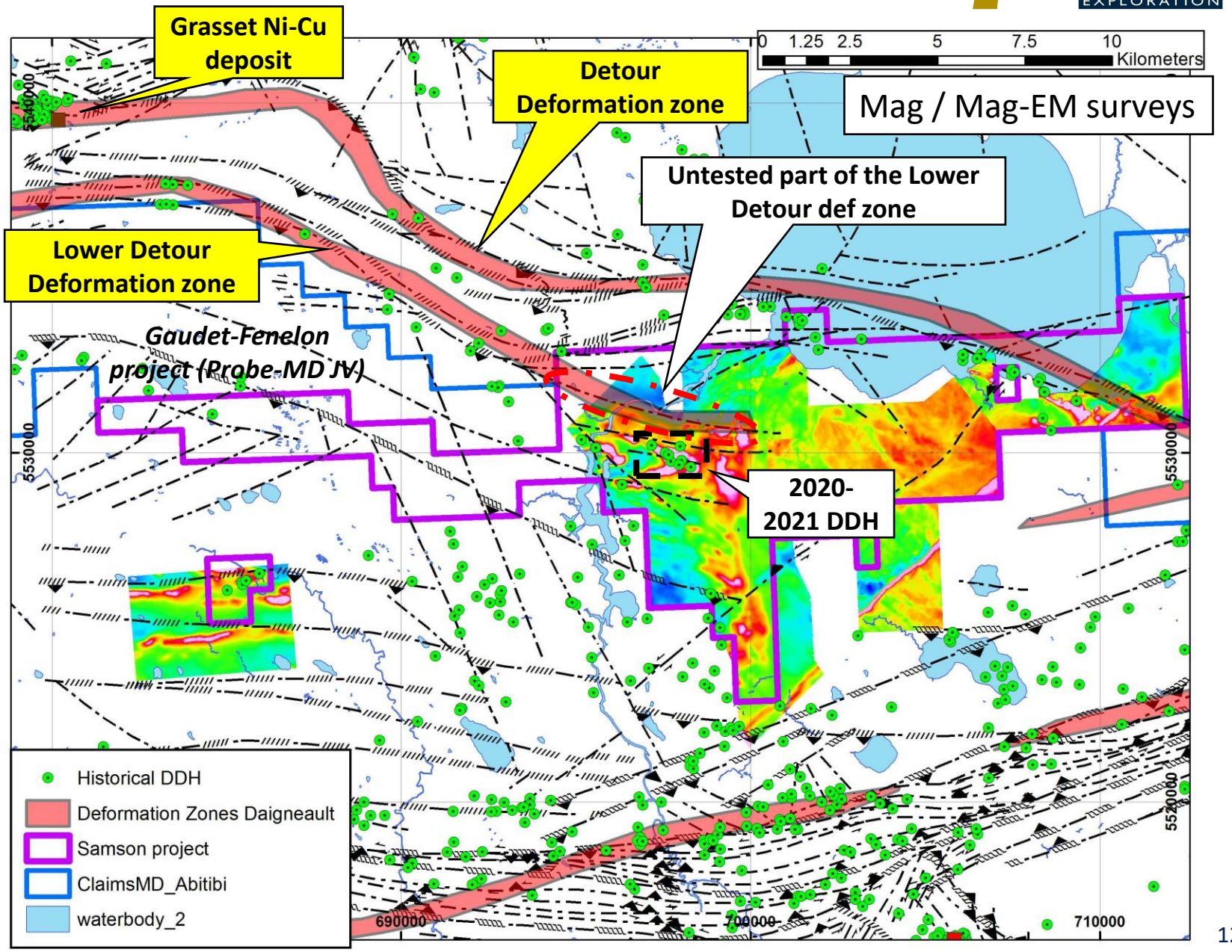
Samson Project: Historical Drilling

- Most DDH done on the project west of the Grasset intrusion done by Midland in 2015, 2020, 2021
- Drilling in 2020-2021 in the central part of the project, west of the Grasset intrusion uncovered several Au occurences, with strong geochemical footprint in As, Cu, Pb, Zn, Ag - Main focus of this presentation
- **Note that the Lower Detour deformation zone on the project has never been tested by DDH**



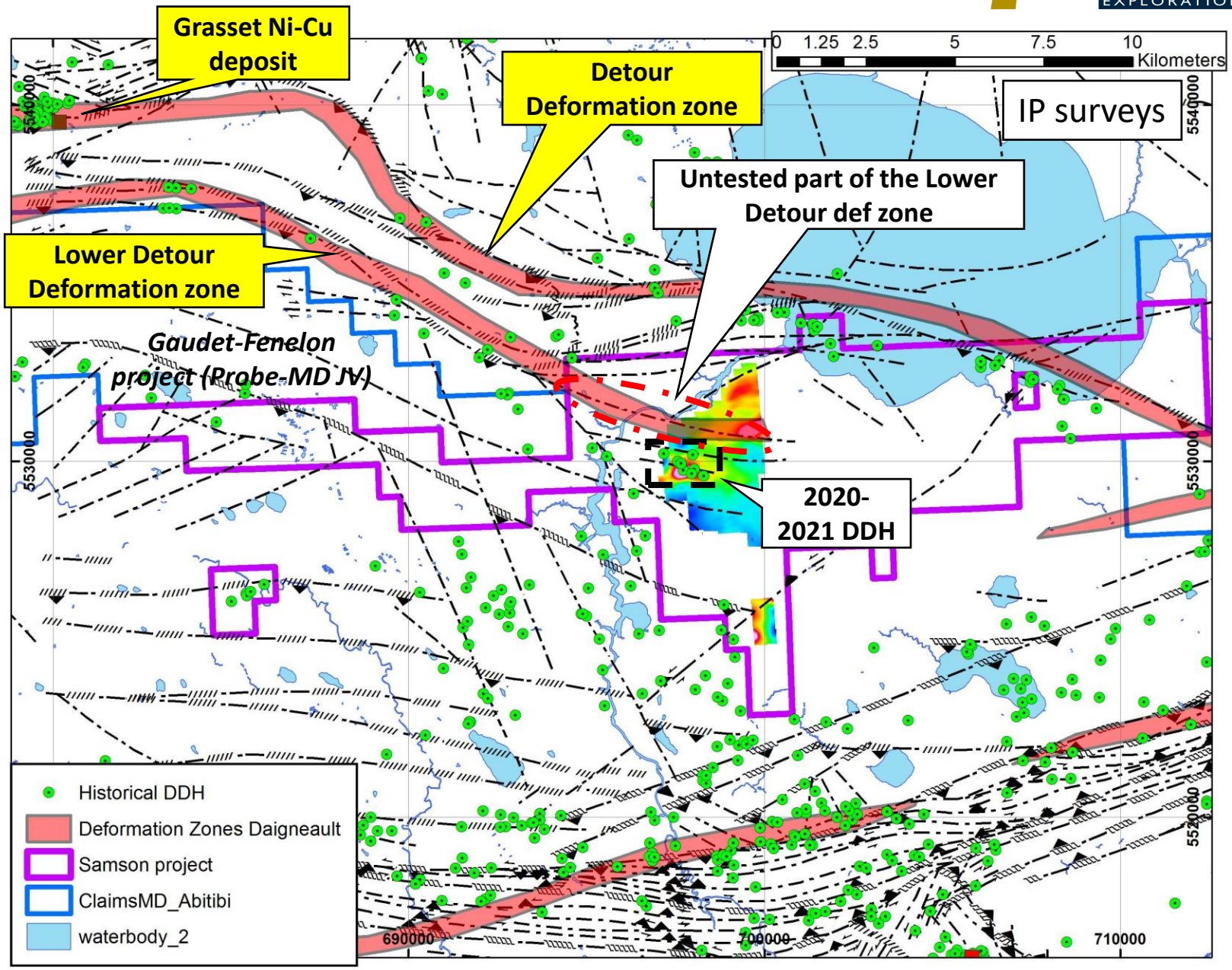
Samson Project: Mag Geophysics

- Early exploration by Midland on the project focused mostly on the Ni-Cu potential in ultramafic rocks, following the discovery of the Grasset Ni-Cu deposit (Wallbridge)
- Gold exploration was the focus since 2019
- Several mag / mag-em airborne geophysical surveys done by Midland between 2014 and 2022
  - Airborne EM+Mag
  - Airborne mag



Samson Project: IP Geophysics

- Early exploration by Midland on the project focused mostly on the Ni-Cu potential in ultramafic rocks, following the discovery of the Grasset Ni-Cu deposit (Wallbridge)
- Gold exploration was the focus since 2019
- Various geophysical surveys done by Midland between 2014 and 2022
  - Ground IP in the area of the 2020-2021 drilling
  - Ground EM on airborne EM anomalies



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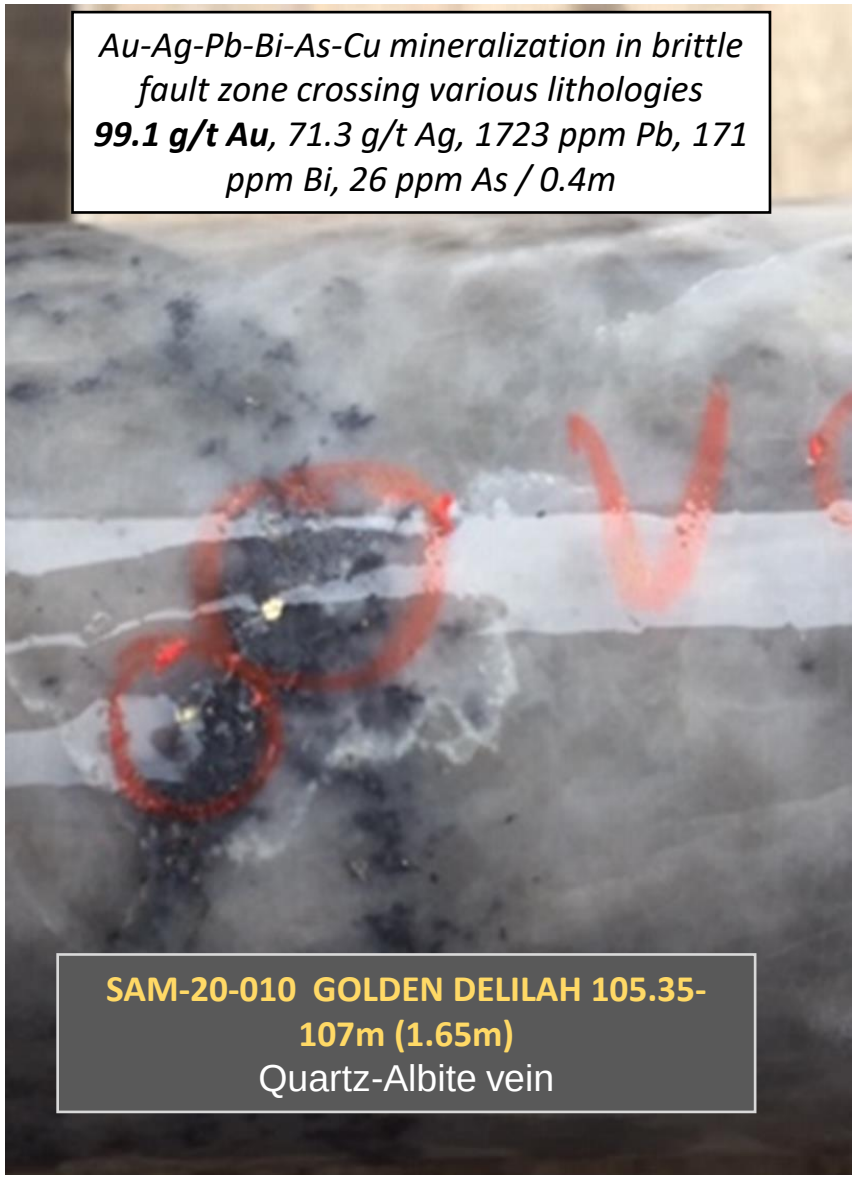

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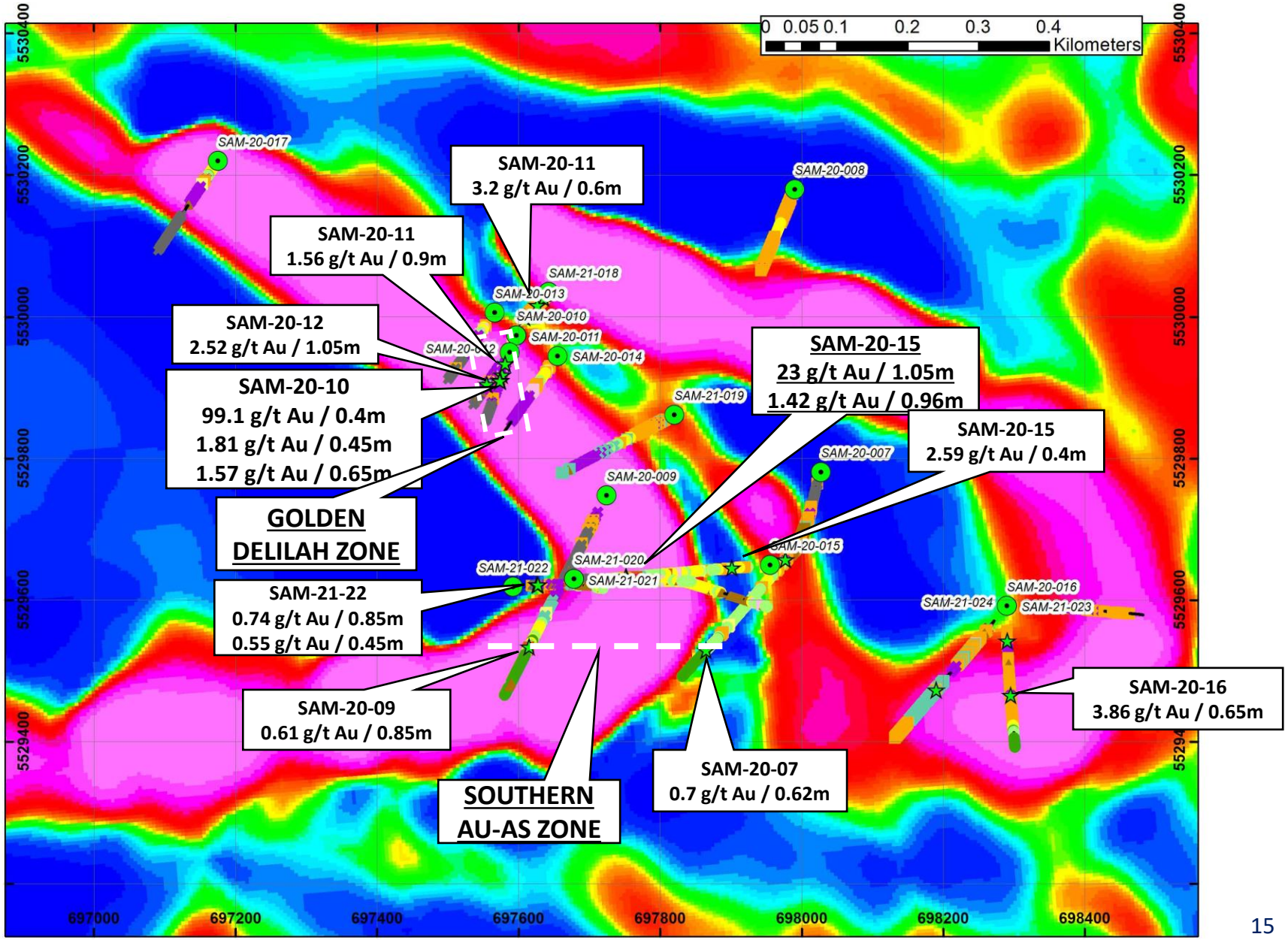
Mineralized Zones in 2020-2021 DDH

Main mineralized zones

1. **Golden Delilah Zone:** Au-Ag-As-Bi-Cu-Pb in late brittle fault zone, cutting various lithologies

2. **Southern Au-As zone**: Au-As mineralization in major brittle fault zone at a major contact between two distinct lithological domains

3. **SAM-20-15:** Au-As-Cu mineralization in a quartz-monzonite dyke



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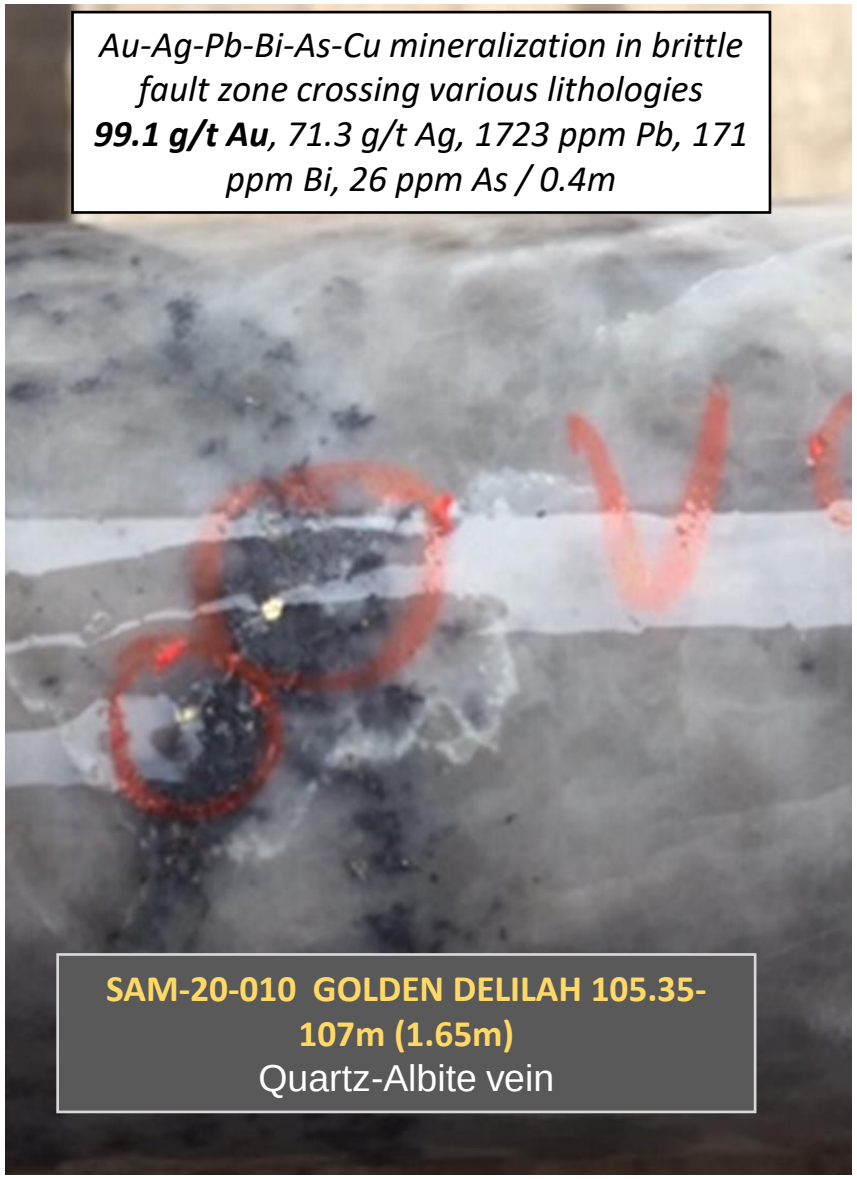
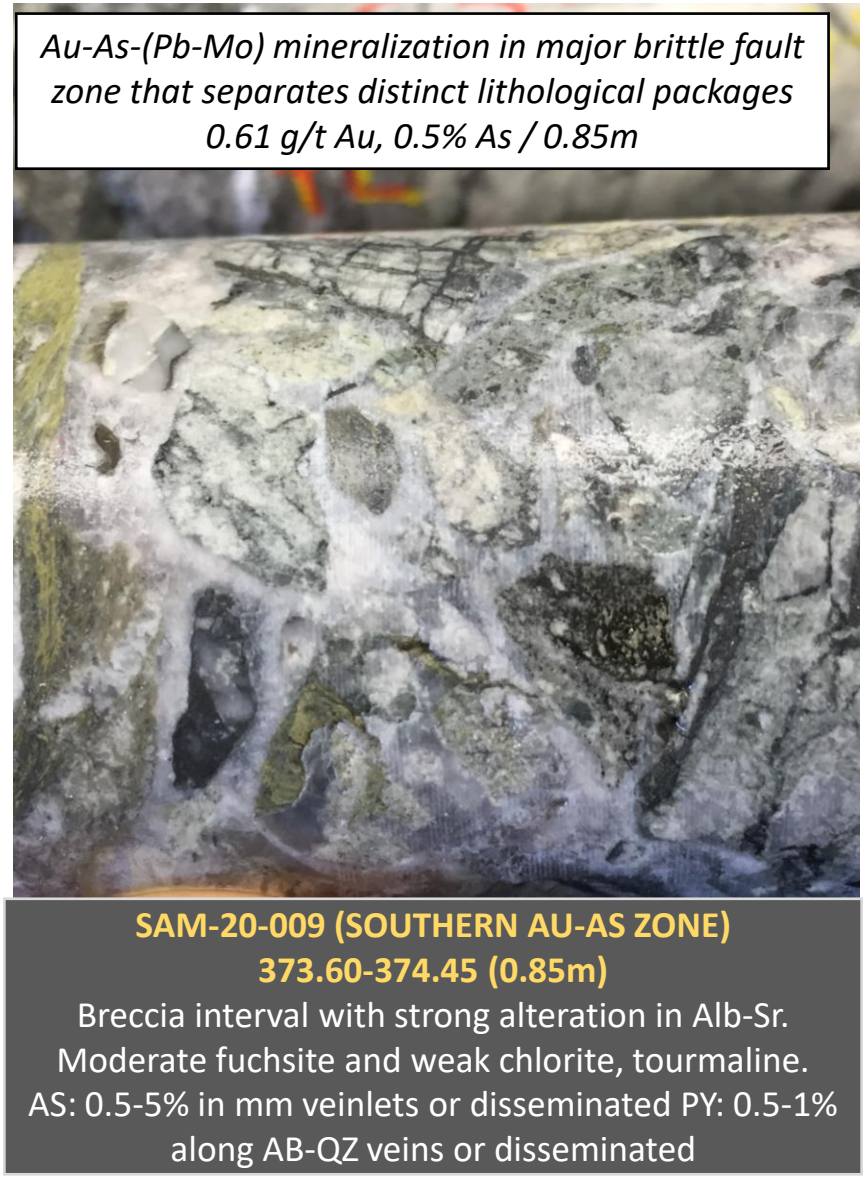




Classification of DDH Lithologies

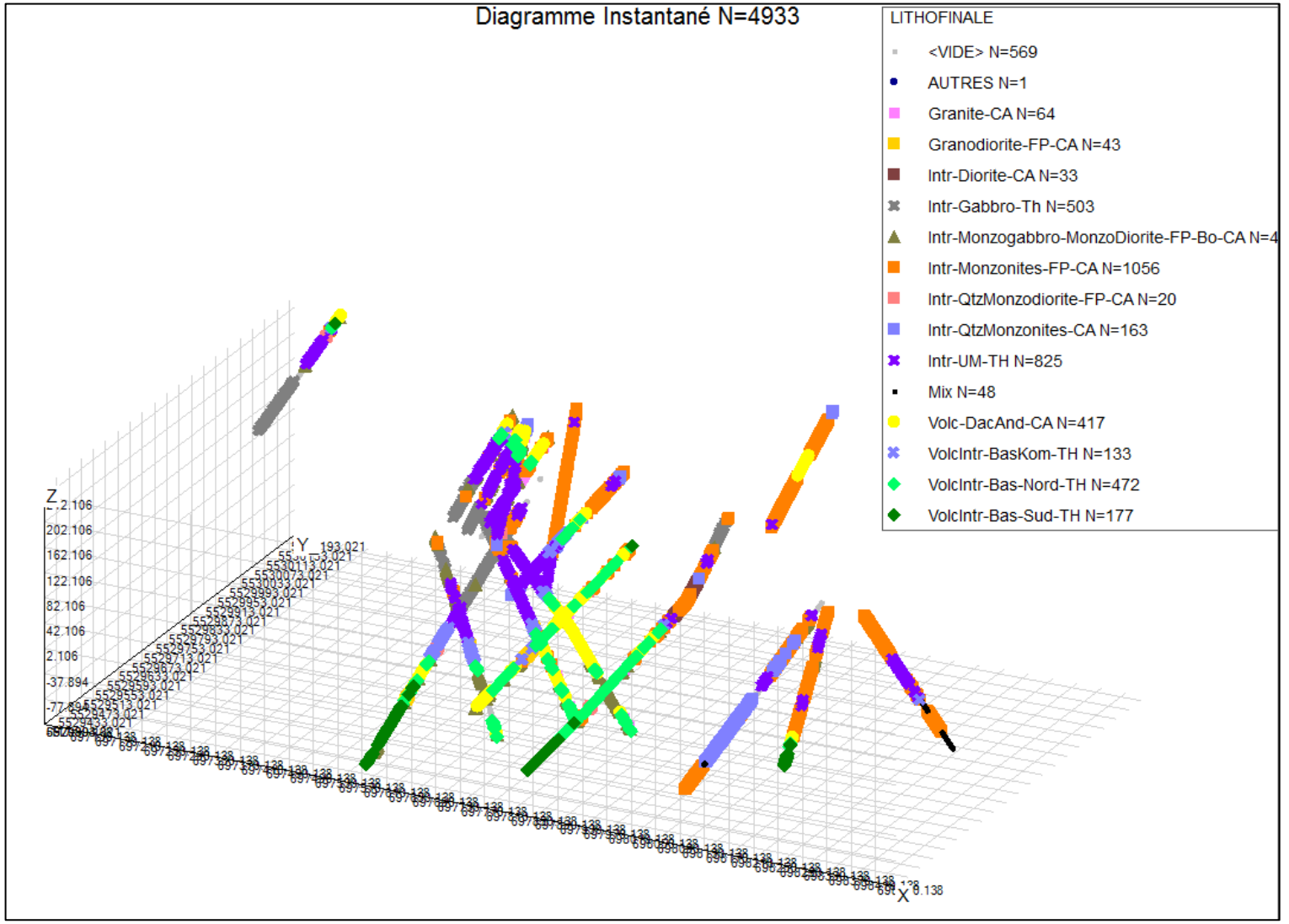
- Statistical (UMAP + HDBSCAN) classification on WRA and ICP based on (mostly) immobile elements:,log-centered transform.
  - ICP: Al, P, Ti, V, Cr, Ba
  - WRA: Cr, Al2O3, TiO2, Y, Zr, Nb, La, Ce, Eu, Yb, Th, Ta

1. Lithogeochemical diagrams to identify statistical classes: Jensen (1976) - ICP, Winchester and Floyd (1977), Ross and Bedard, 2009, TAS,

2. Mag susceptibility every 1m

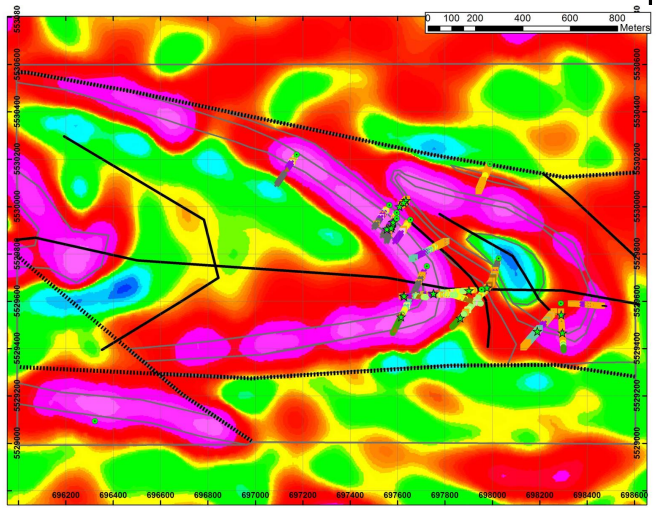
3. Lithological descriptions from DDH logs

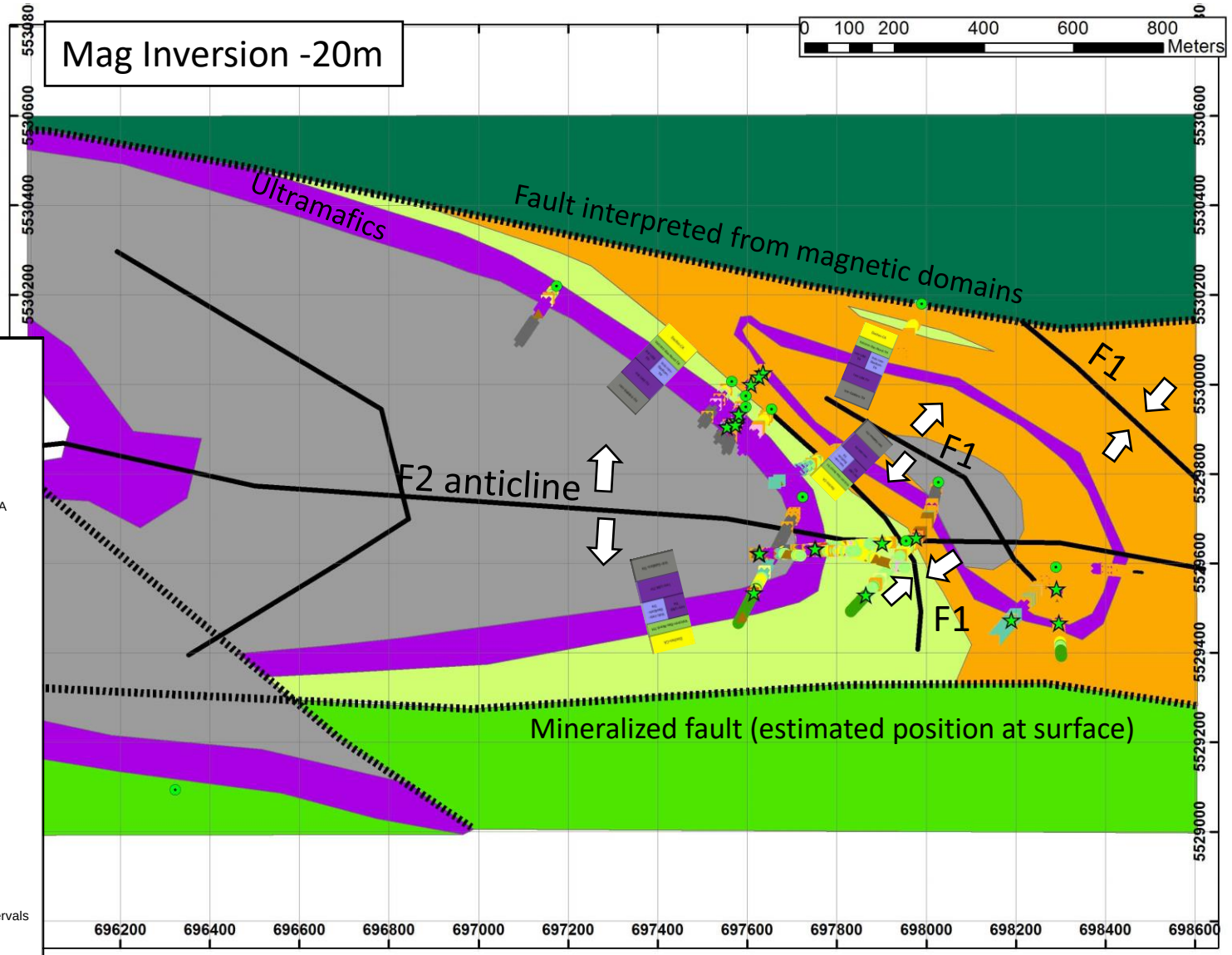
- Final classes best-fit between all data (reported on mag susc data, every 1m)
  - 28 classes, simplified to 14



Fold Hinge Area Top Down View

- The most probable interpretation of the geology is that early (F1) fold hinges (F1) are responsible for the repetition of units, are refolded (F2) and faulted





Historical DDH

Mag Events

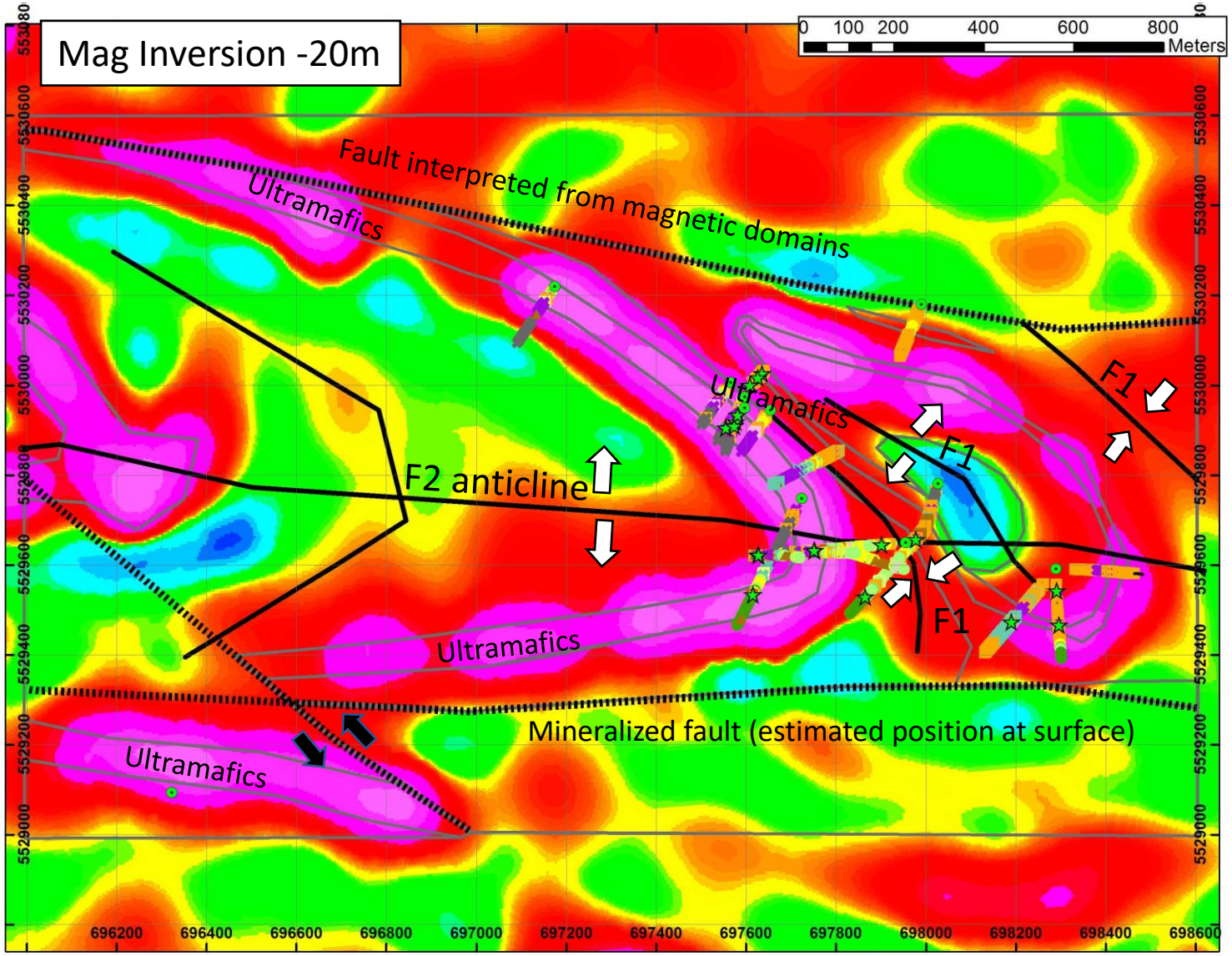
- Granite-CA
- Granodiorite-FP-CA
- Intr-Diorite-CA
- Intr-Gabbro-Th
- Intr-Monzogabbro-MonzoDiorite-FP-Bo-CA
- Intr-Monzonites-FP-CA
- Intr-QtzMonzodiorite-FP-CA
- Intr-QtzMonzonites-CA
- Intr-UM-TH
- Mix
- Volc-DacAnd-CA
- VolcIntr-Bas-Nord-TH
- VolcIntr-Bas-Sud-TH
- VolcIntr-BasKom-TH
- Samson_InterpretedFolds
- Samson_InterpretedFaults
- Samson project

Lithology

- Dacites-CA + VolcIntr-Bas-Nord-TH
- INTR-Gabbro-Th
- INTR-Monzonite-FP-CA
- INTR-Monzonite-FP-CA + Intr-UM-TH intervals
- Intr-UM-TH
- VolcIntr-Bas-Sud-TH
- VolcIntr-Bas-Undiff-TH

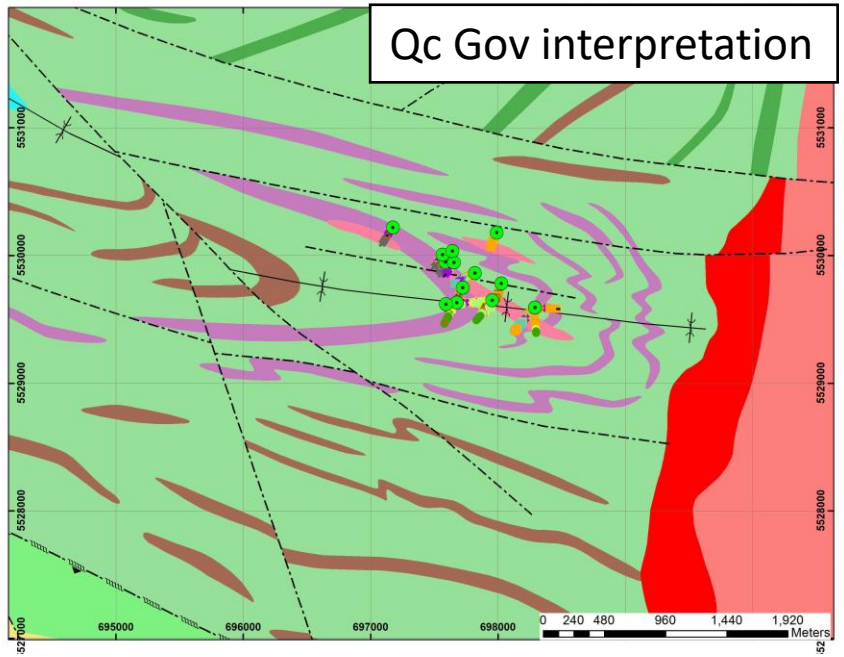
Structural Interpretation

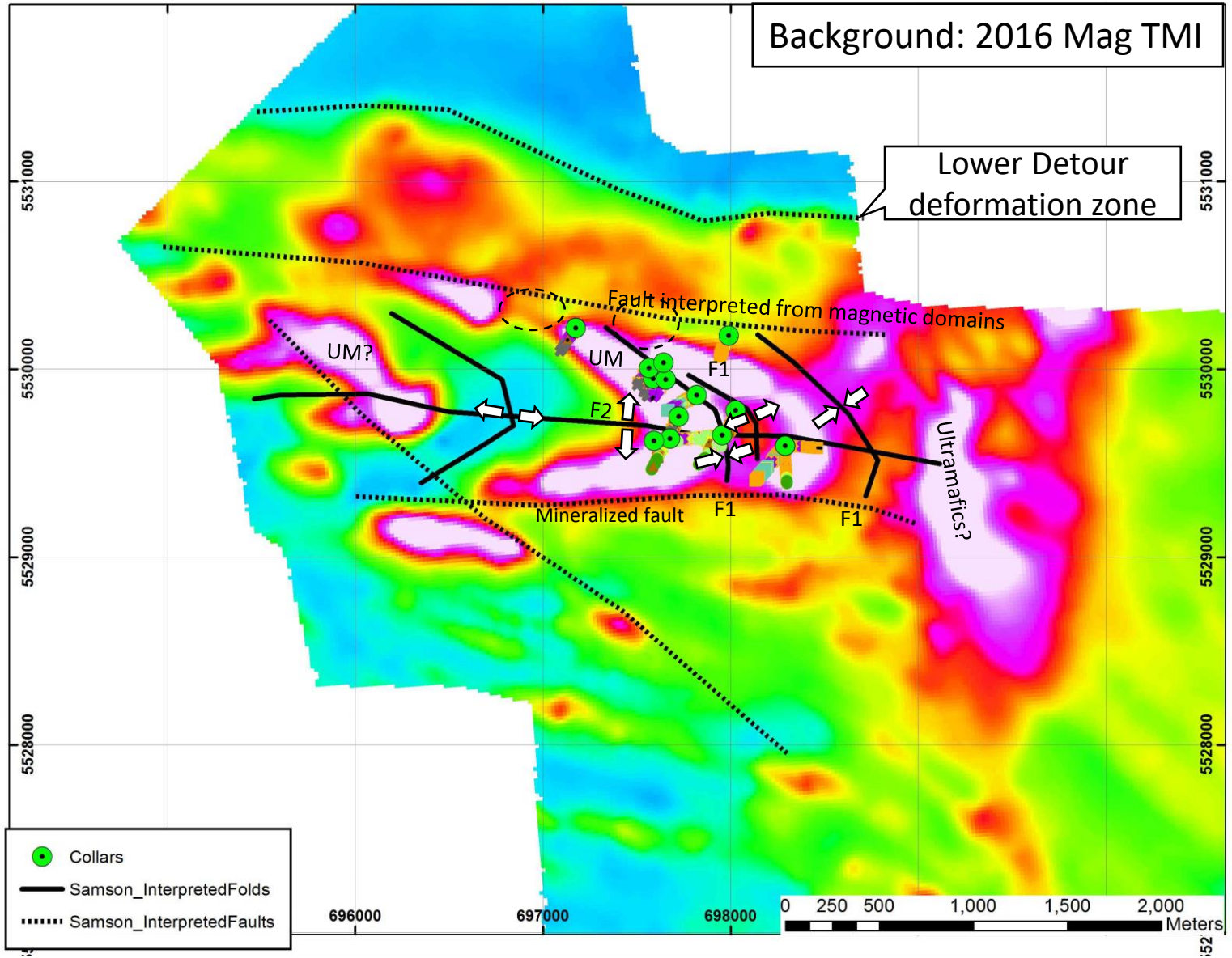
- F1 Folds are cut to the south by a fault observed in DDH (Southern Au-As zone)
- Another fault is interpreted to the north based on the termination of ultramafic rocks
- Complex structural zone!



Structural Interpretation - Larger

- Lower Detour fault shown to the north
- **Overall the central area could be a down or up-faulted block --> Ultramafic rocks appear restricted to that central area**





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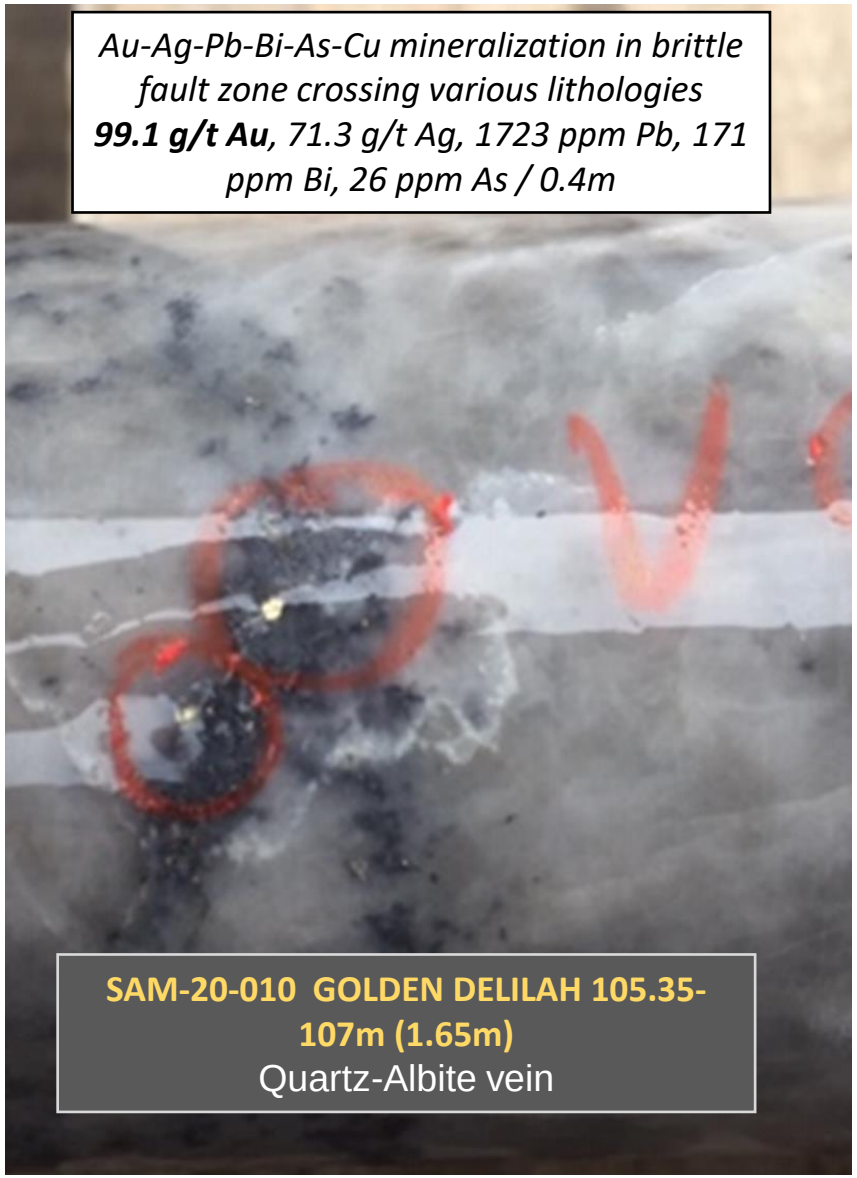

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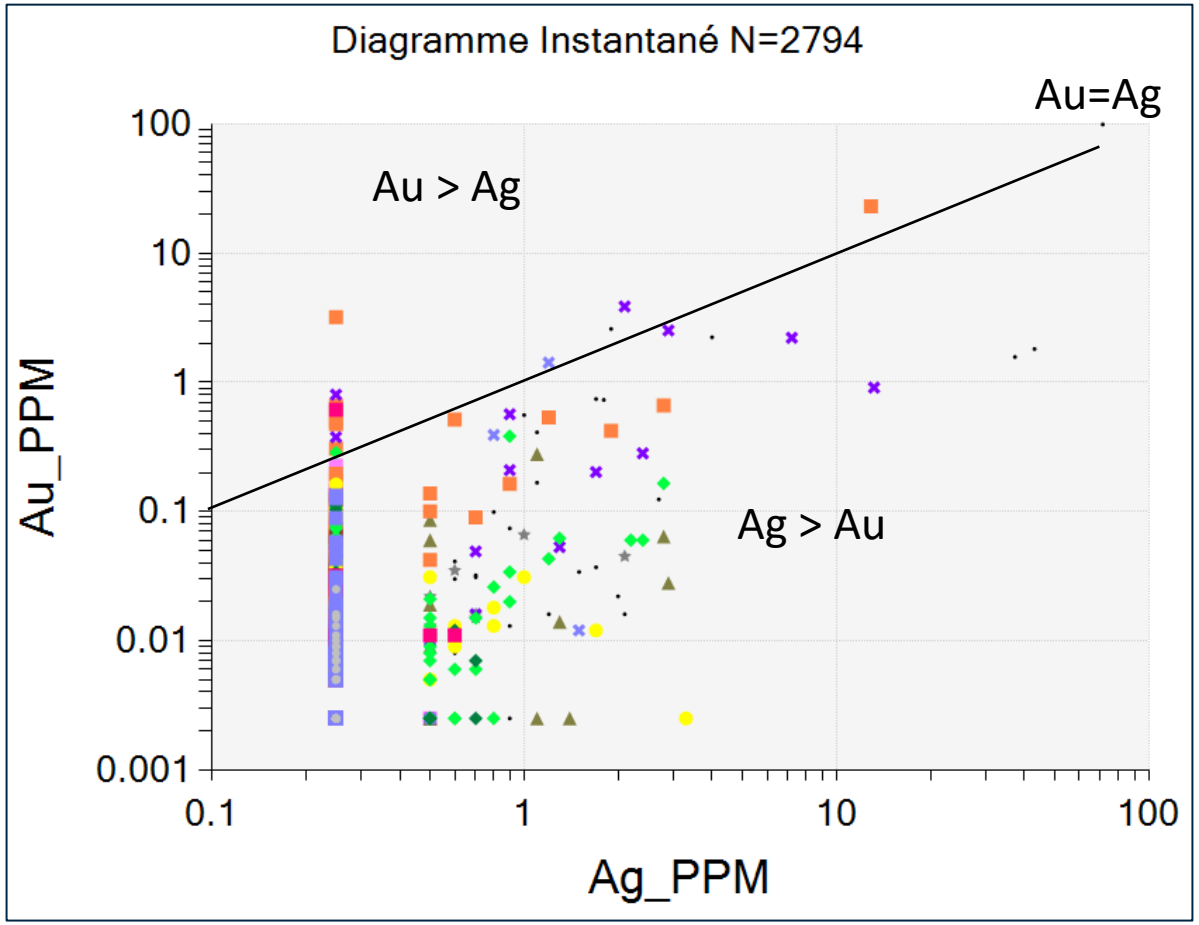
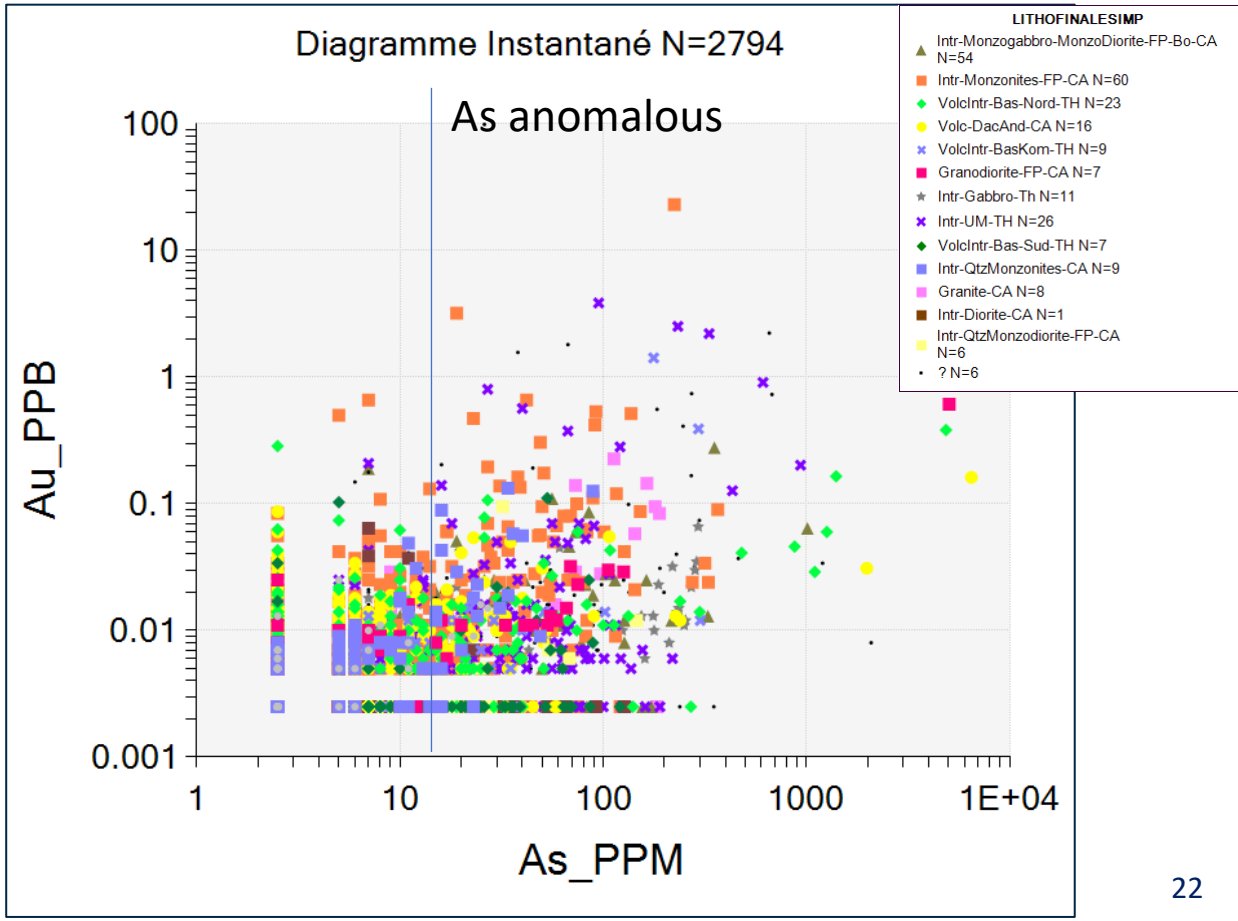
Au, As, Ag Mineralization

- **Few samples with Au > Ag**, even those that have high As (note: detection limit on Ag is 0.5 ppm). Most samples with Au --> **Not typical of orogenic gold mineralization**
- **Large As footprint overall, with 711 out of 2,794 samples anomalous in As > 15 ppm (25%)**
- **Lots of Pb, Cu, Ag, Bi associated with the mineralization as well (ex: Golden Delilah)**
- **As anomalies in all rock types including granites, monzonites, lamprophyres (Bo) considered to be the latest intrusions in the Abitibi** --> not volcanogenic mineralization - **Probably magmatic-hydrothermal mineralization associated with late intrusions**





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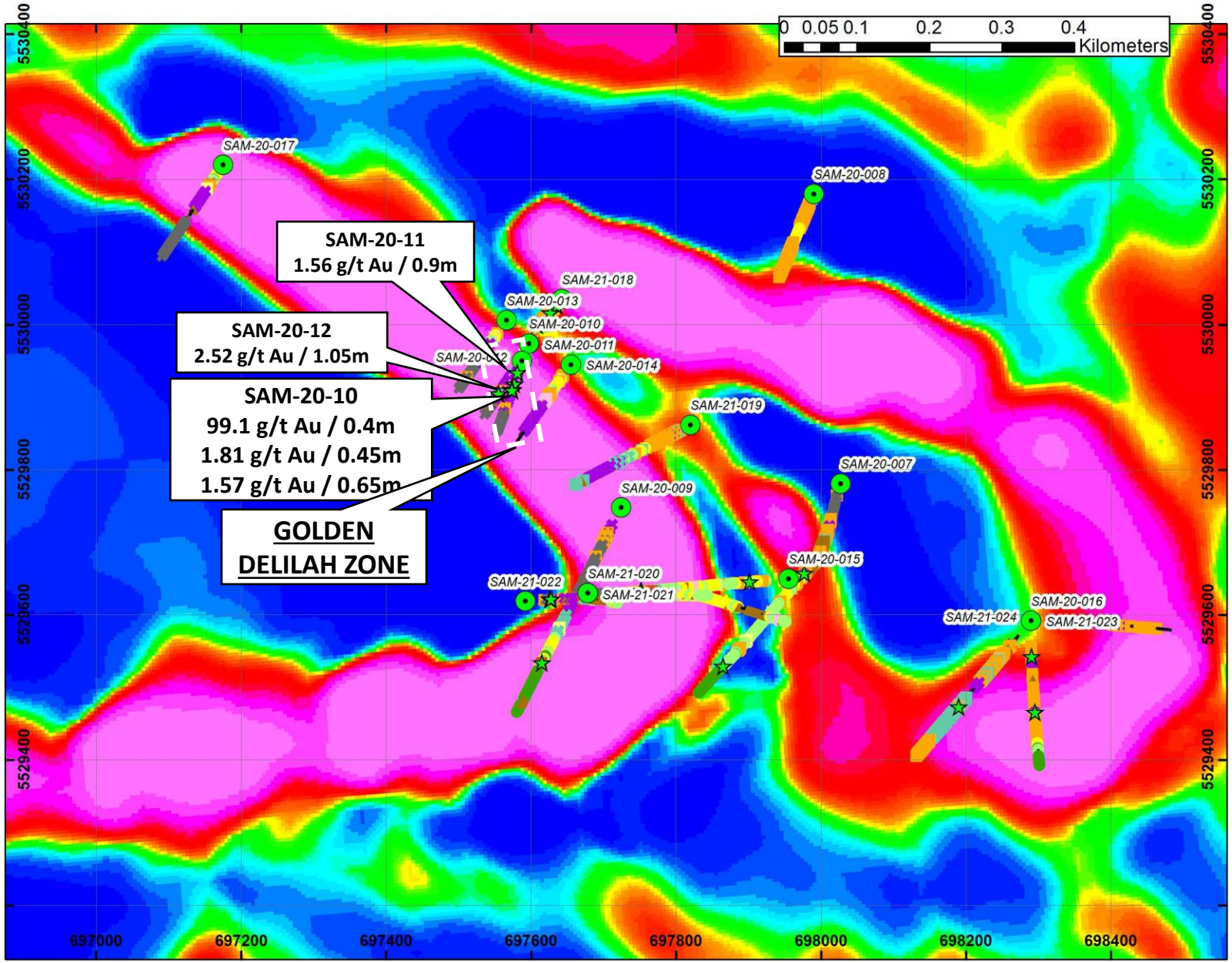


Golden Delilah Zone, SAM-20-010

- At bottom contact between a quarz monzonite (Intr-Monzonite-FP) and ultramafics (in both)
- Polymetallic, with Au, Ag, Bi, As, pb, Cu
- Brittle, epithermal-style fault zone
- Best Values:
  - 99.1 g/t Au, 71.3 g/t Ag, 1723 ppm Pb, 171 ppm Bi, 26 ppm As (Monzonite)
  - 1.81 g/t Au, 43 g/t Ag, 493 ppm Cu, 67 ppm As (Monzonite)
  - 2.23 g/t Au, 4 g/t Ag, 656 ppm As, 133 ppm Pb (UM)

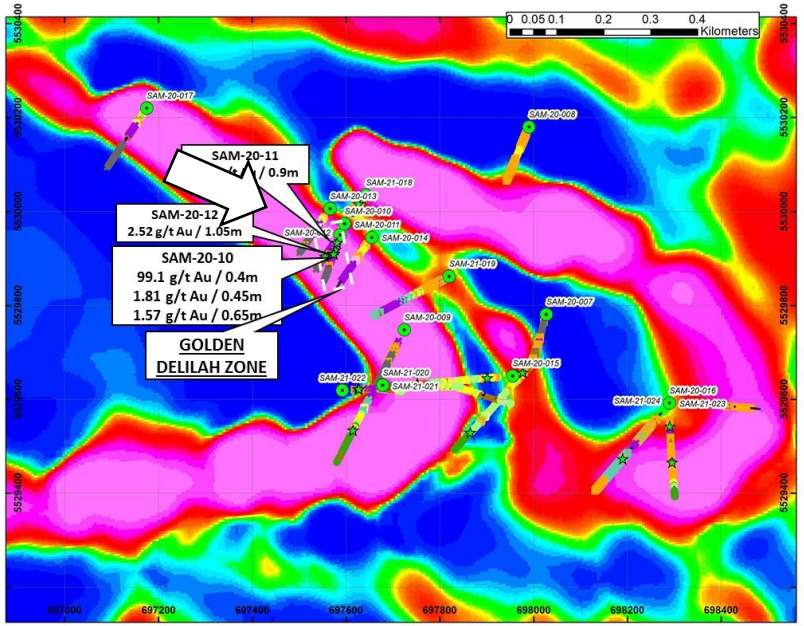
SAM-20-010 **GOLDEN DELILAH**

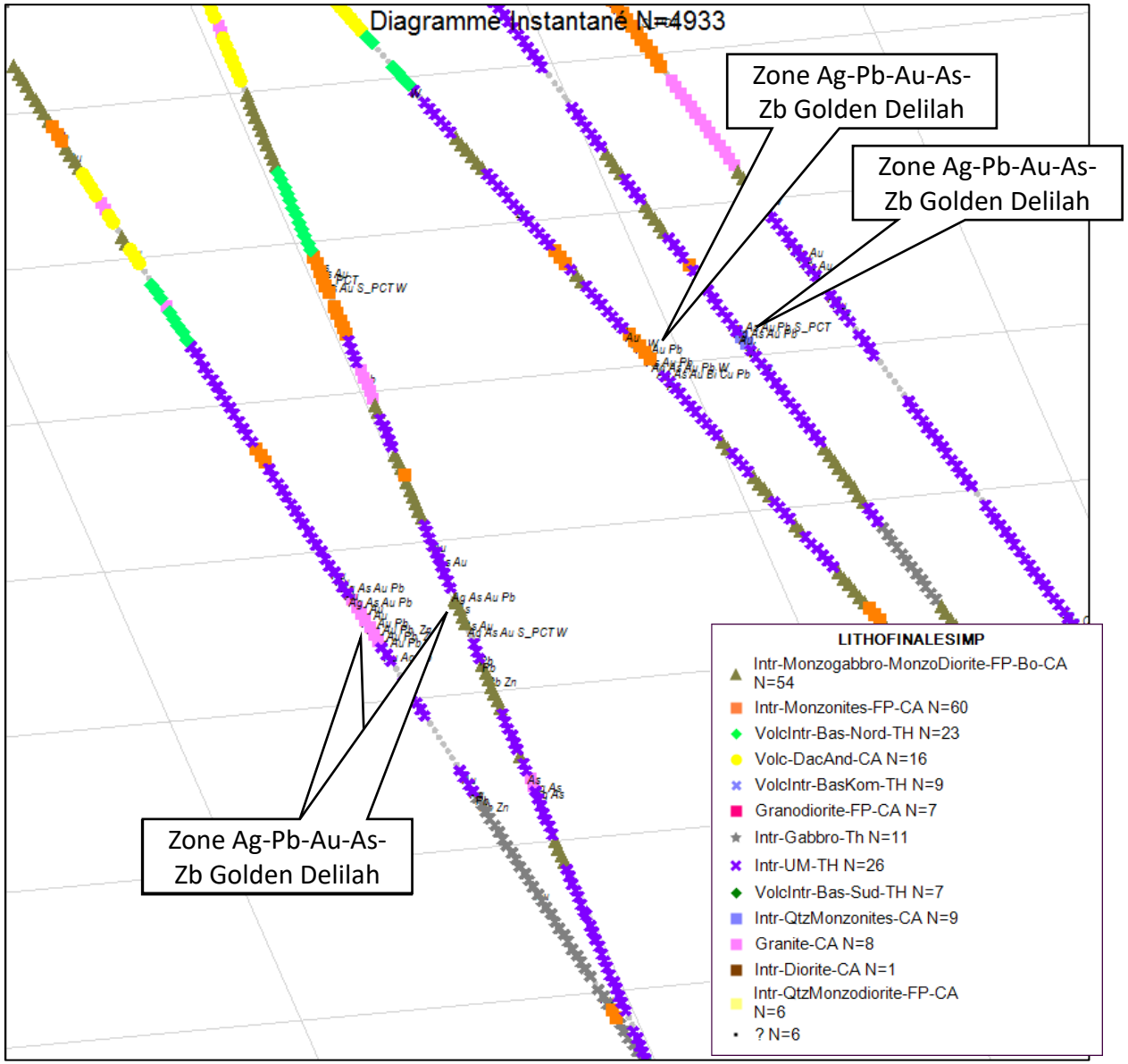
100.70m-105.35m (4.65m)

Intermediate dyke altered moderately in sericite, injected with 3% of quartz-albite veinlets 1-2cm, mineralized in pyrite (5%) and often massive over 2-3mm along the quartz-albite veinlets injection (2% injections).

Golden Delilah Sector Zoom View SE

- Golden Delilah zone location vs rock types
- SAM-20-010: at bottom contact between a quartz monzonite and ultramafics (in both)
- SAM-20-011: at upper contact between ultramafics and monzogabbro with biotite dyke
- SAM-20-012: all within ultramafics
- SAM-20-013: upper contact and within a Granite-CA, near and within ultramafics
- Conclusion: Golden Delilah does not follow a precise dyke or lithology, cuts everything (probably late)
- Appears to be restricted in lateral extension





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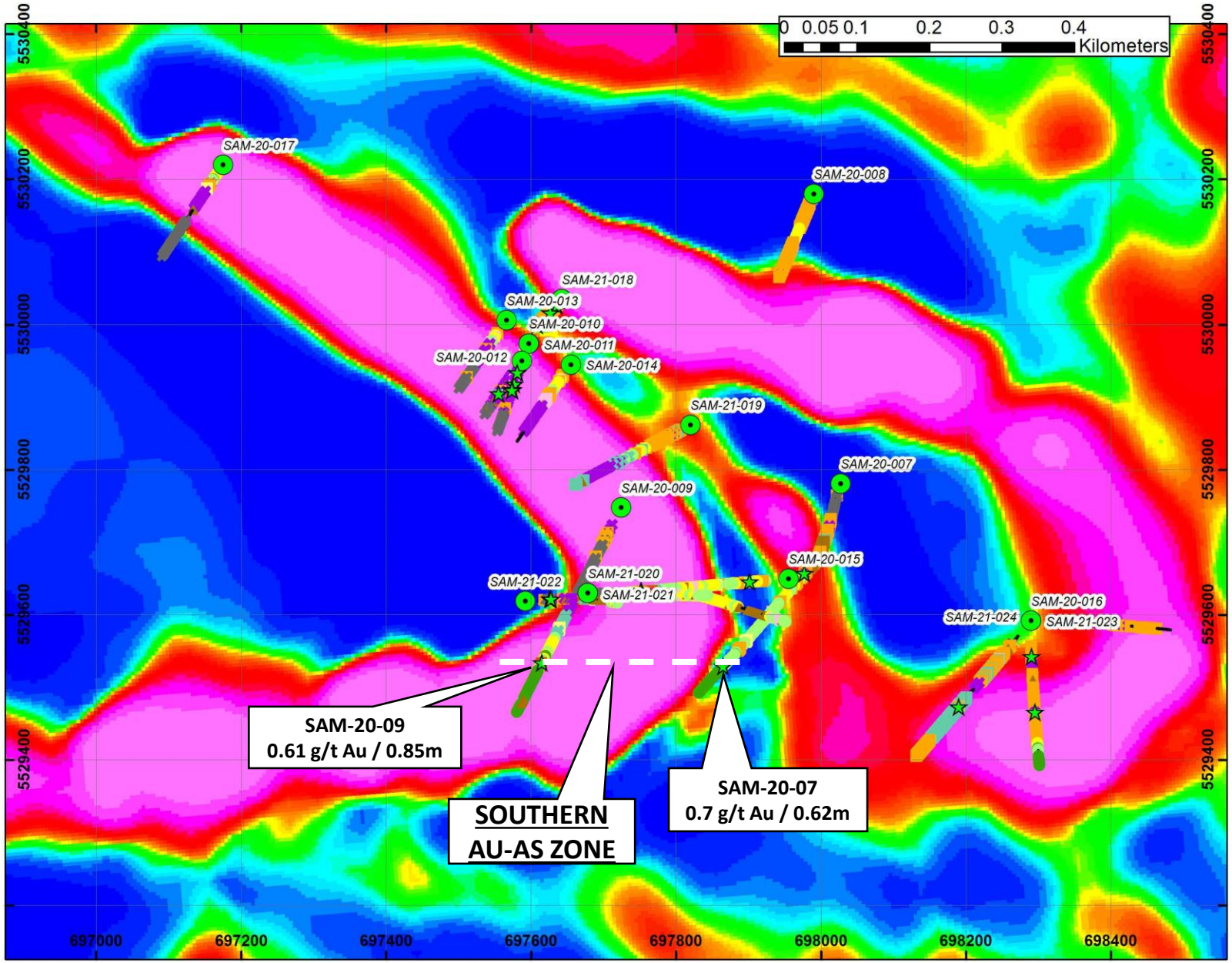

Southern As-Au Zone

- SAM-20-009
- Contact between south and north domains, mainly in a Granodiorite-CA at the north contact of that intrusion
- Clearly fragile fault zone
- Breccia with different kinds of fragments that indicate movement
- Lots of quartz veinlets with As-Py in granodiorite
- 0.6 g/t Au, 0.5% As / 0.85m

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SAM-20-009 (AS ZONE)
374,45-382m (7,5m)
0.5-1% Pyrite, 0.3-1% arsenopyrite.
AS is fine, aligned along Qz-Alb veinlets or and disseminated. 1% mm quartz veins

Southern As-Au Zone

SAM-20-007 435 - 435.62
0.73 g/t Au, 1.8 g/t Ag, 676 ppm As / 0.62m
Fault zone with Py and Qtz Veins
Lithology uncertain but likely altered basalt based on geochem
Right at the contact between VolcIntr-BAS-Sud-TH and VolcIntr-BAS-Nord-TH
(North and South domains)
Fault could be the contact

Model for Samson Mineralization

- **Magmatic-hydrothermal (porphyry - epithermal) Au-Ag-Cu-Pb-Bi-As mineralization associated with monzonitic intrusions. Not exactly "syenite-associated" as defined by Robert, 2001, because intrusions are more monzonitic than syenitic but close**

- **Arguments**

  - Low Au / Ag ratios, not typical of orogenic gold

  - Significant base metals contents (Cu, Pb)

  - **Very strong and large As footprint**

  - Textures indicate brittle mineralization probably epithermal (breccias, open-space cristallisation textures)

  - Few large quartz veins, more stockwork or disseminated mineralization

  - **Abundance of monzonite-series intrusions near the mineralization**

  - **All lithologies are mineralized, including typically very late intrusions like lamprophyres and monzonites, suggesting that the mineralized system is very late in the area's geological history**

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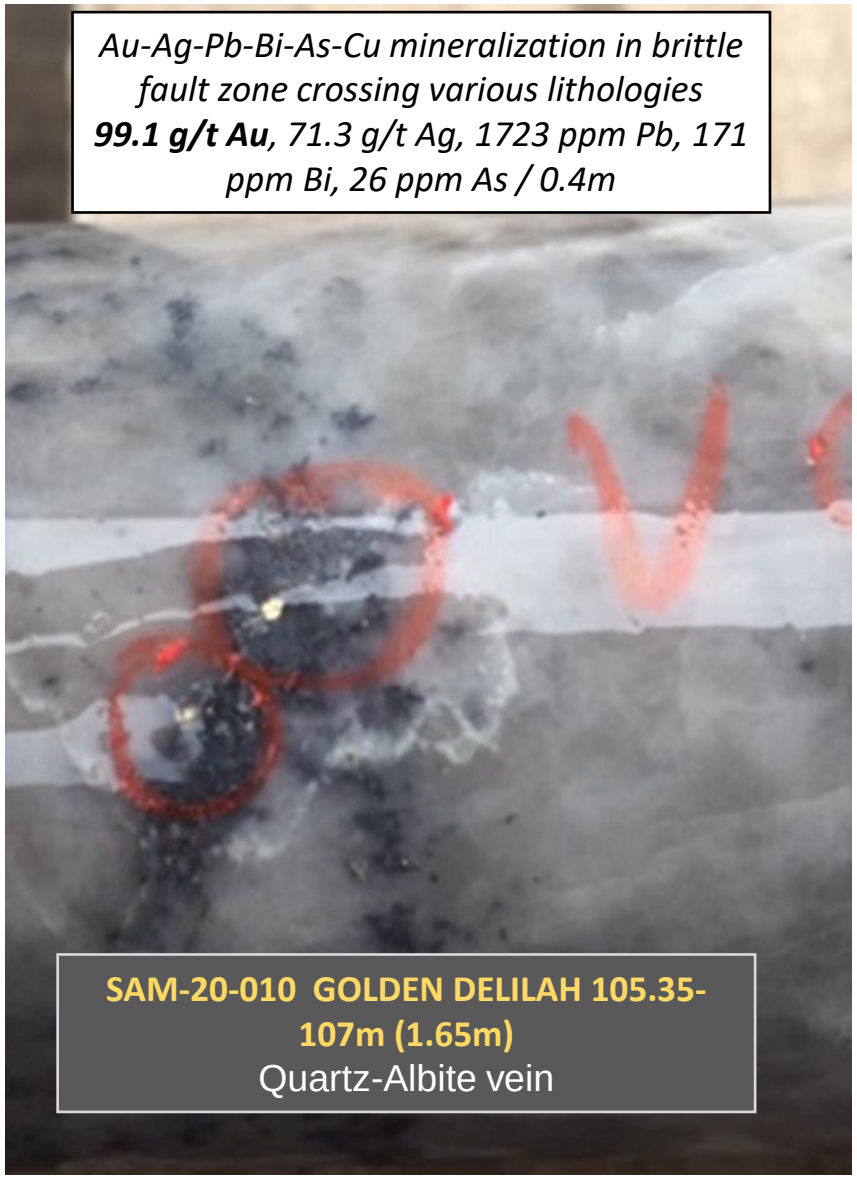
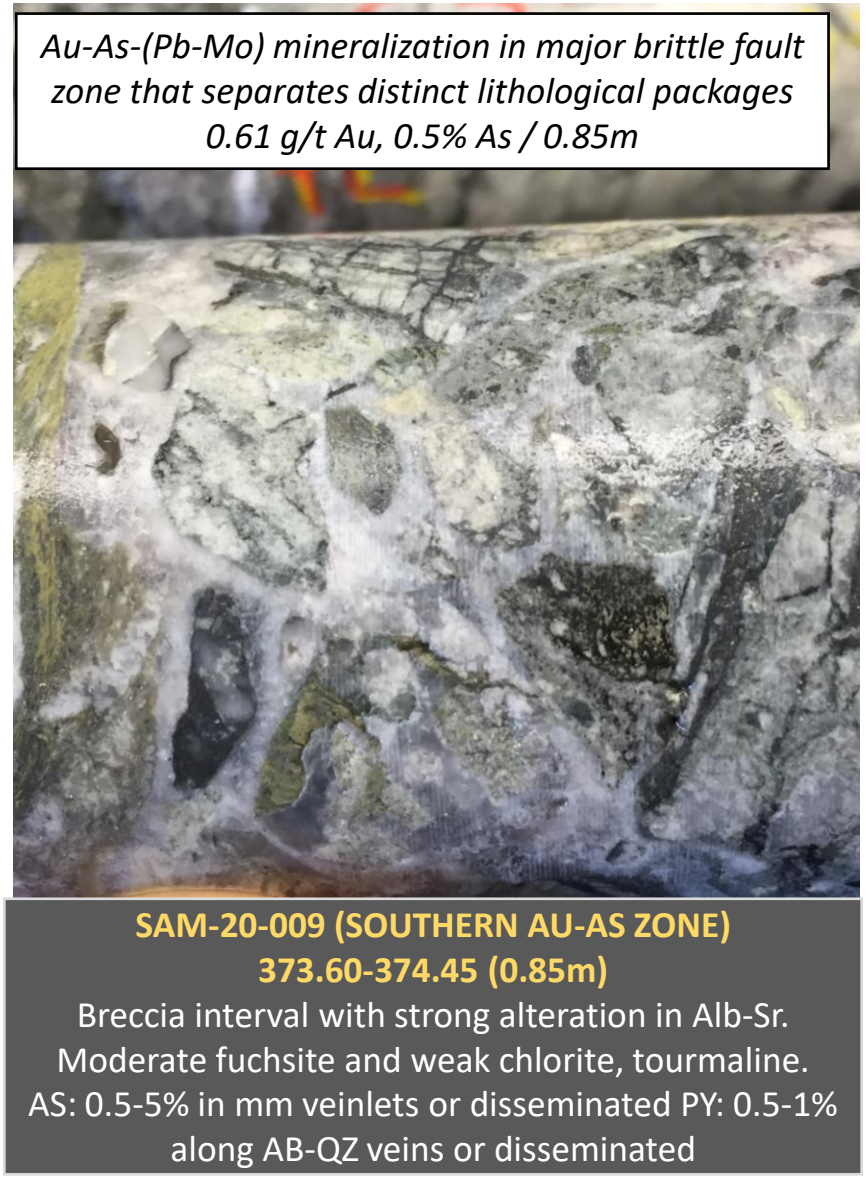
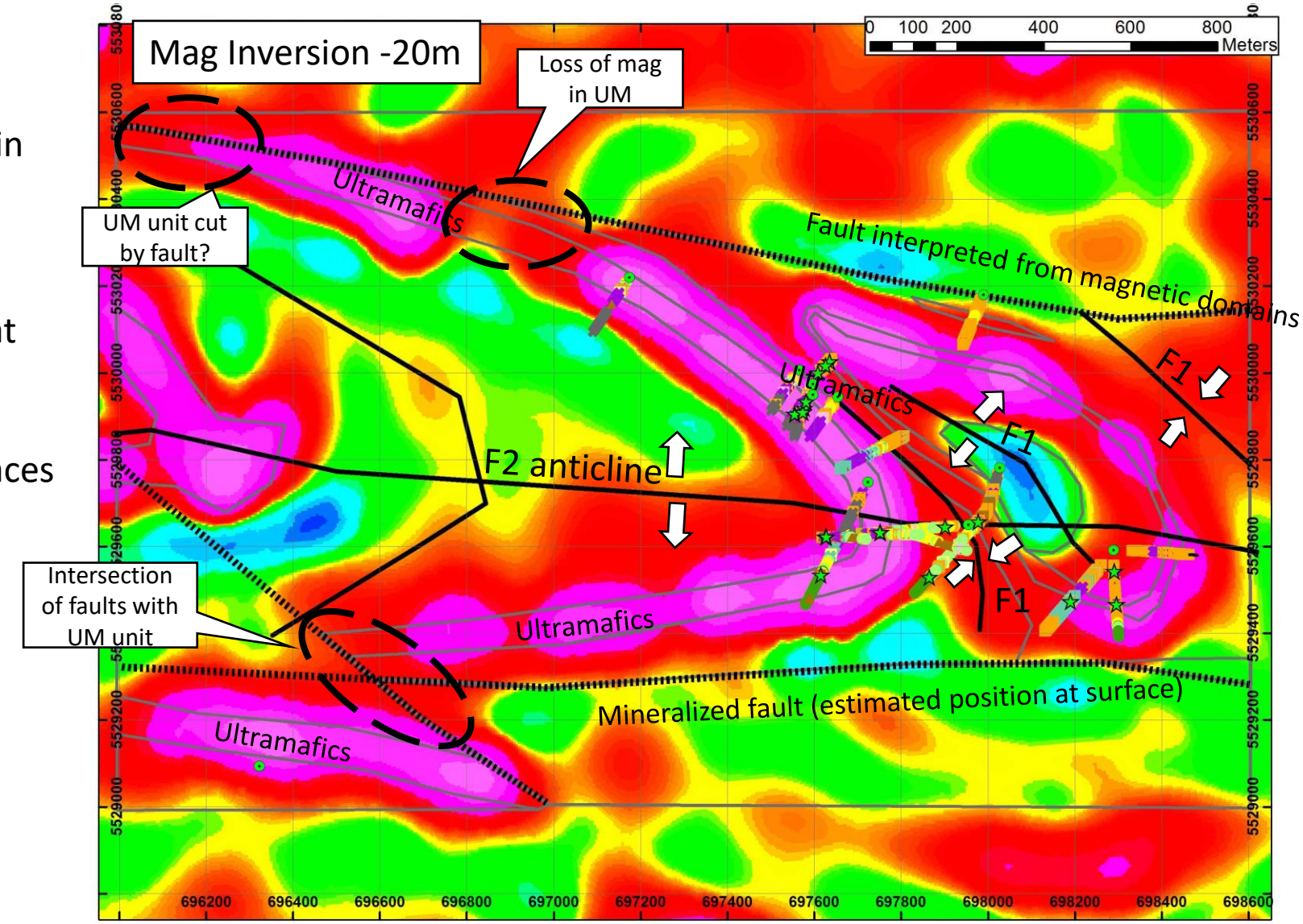




Exploration Targets

- The southern As-Au zone shows that late brittle faults are clear exploration targets in the area
- Also, the main host for the Golden Delilah zone is ultramafic rocks that are somewhat demagnetized
- Exploration targets suggested here are places where : (especially where several are present)

    1. Ultramafics appear to be faulted
    2. Ultramafic rocks that are probably demagnetized
    3. Intersection between different interpreted faults



Exploration Targets - Larger

1. Strong IP anomaly right on the Lower Detour Deformation zone north of possible ultramafics (unknown area). Possibly most interesting target
2. The area to the east contains a strongly magnetic unit in a complex area that is broadly at a 90 degrees angle to the 2020-2021 drilled area... complexly folded ultramafics???
3. SE jog in the Lower Detour deformation zone