

Barton Gold

ASX:BGD

FRA:BGD3

OTCQB:BGDFF

Tarcoola 2D Seismic Insights

1 December 2023 | South Australian Exploration & Mining Conference

Perseverance Mine, Tarcoola Project



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This document is dated 1 December 2023 ("Preparation Date") and is based on the Company's prospectus dated 14 May 2021 ("Prospectus") for an offer to acquire fully paid ordinary shares ("Shares") in the capital of the Company ("Offer"), updated for the results of the Offer, and Barton ASX announcements as from the date of the Prospectus. A copy of the Prospectus is available for download at www.bartongold.com.au or www.asx.com.au. The delivery of this document at any time after the Preparation Date does not imply the information contained in it is correct at any time after the Preparation Date. Delivery of this document does not imply, and is not to be relied upon as a representation or warranty that: (i) there has been no change since the Preparation Date in the business, operations, financial condition, prospects, creditworthiness, status or affairs of the Company or any of the Company's related bodies corporate or affiliates; or (ii) the information contained in this document remains correct and not misleading at any time after the Preparation Date. The information in this document should be considered dynamic and may change over time. Subject to its obligations at law, Barton has no responsibility or obligation to update this document or inform the recipient of any matter arising or coming to their notice after the Preparation Date which may affect any matter referred to in the document. All dollar values expressed in this document are Australian dollars (\$, A\$, or AUD).

Acknowledgements

- **HiSeis.**

Alastair Tait: interpretation – this presentation

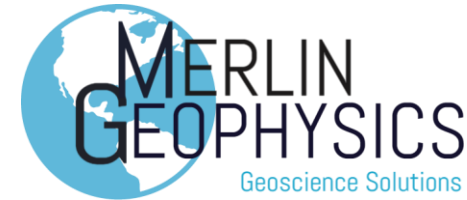
Greg Turner, Manlio Castillo, Jai Kinkela

- **Merlin Geophysics**

Tom Harris – survey design, acquisition, processing, consultation and oversight.

- **Department For Energy and Mining**

ADI financial assistance.





Key Findings

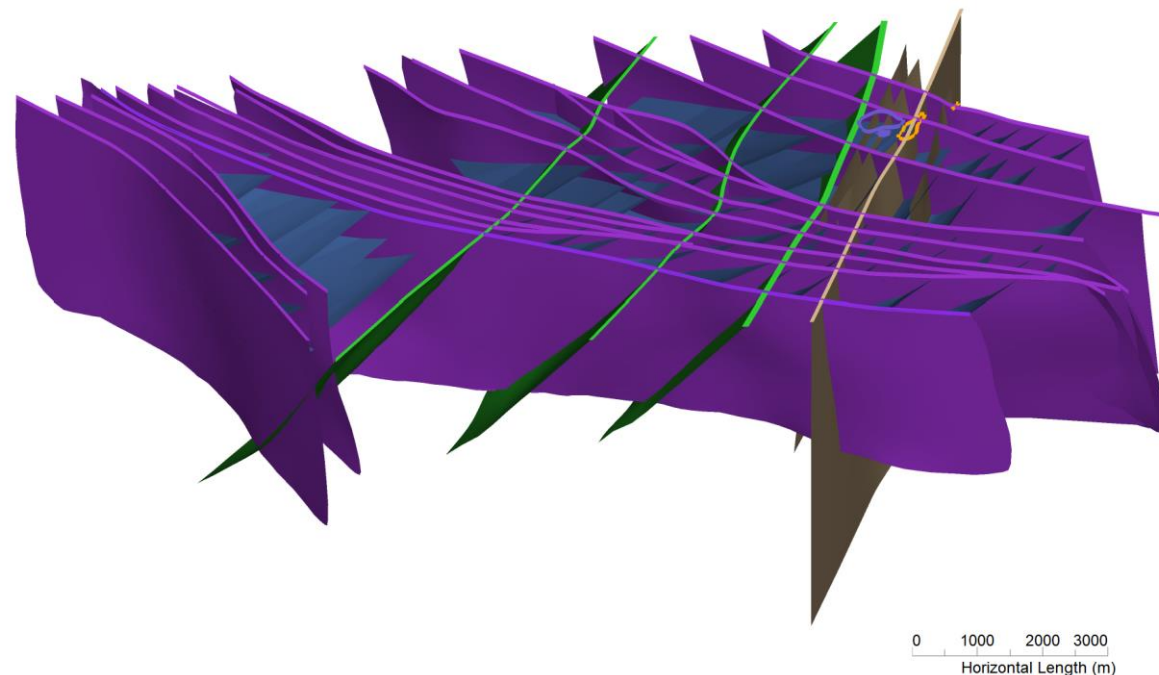
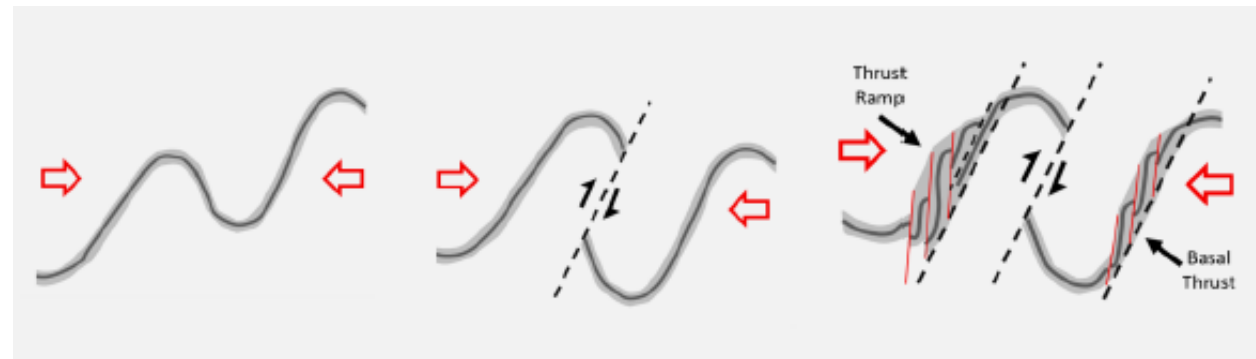
REGIONAL FOLDING:

Folding from NS to NNW-SSE shortening formed a southern syncline and an asymmetric parasitic fold to the north. Consecutive shortening created a thrust duplex on the southern dipping limbs.

STRUCTURAL TIMING RELATIONSHIPS:

Multiple generations of Structures can be found, with some timing relationships:

- EW Trending basal thrusts dipping $\sim 30^\circ\text{S}$, with subvertical thrust ramps (Earliest).
- NE Trending faults dipping $\sim 35^\circ\text{NW}$ (Medium).
- NNE Trending Sinistral faults dipping $\sim 50^\circ\text{NW}$ (Medium).
- NW Trending faults dipping $\sim 70^\circ\text{NE}$ (late).

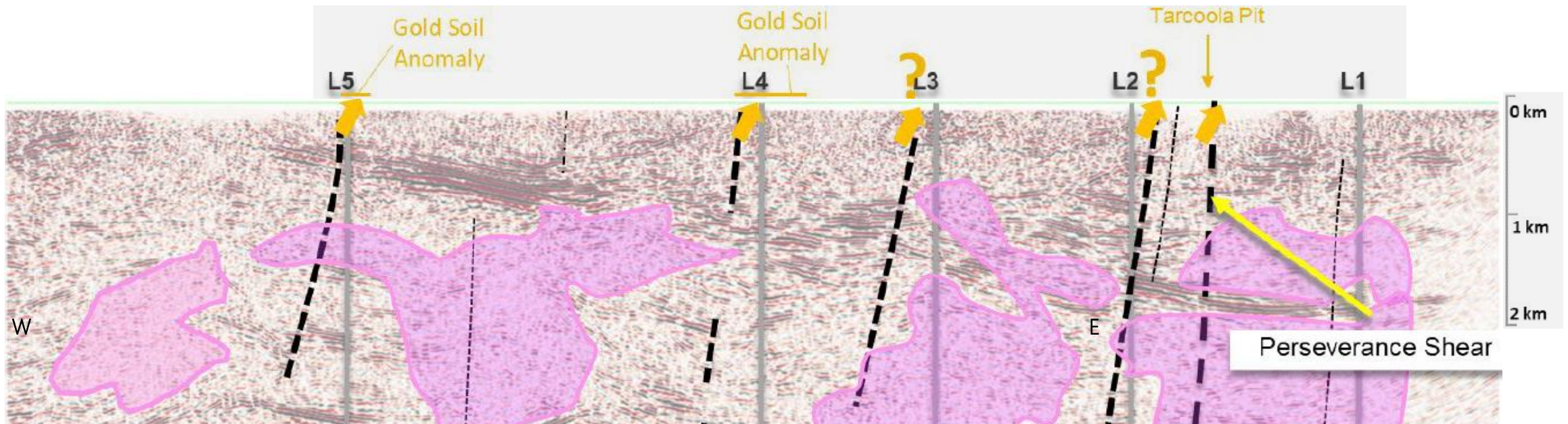
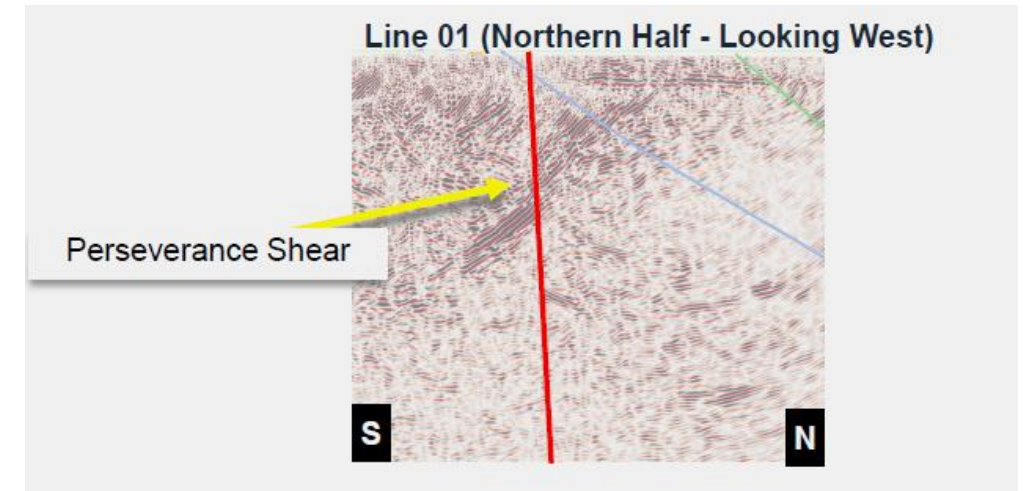




Key Findings

Significance to gold mineralisation:¹

- Perseverance shear imaged on Line 1. It is a deep sub-vertical fault. There are several similar parallel structures observed in the seismic.
- Three of these lie under known gold occurrences but others untested.
- Gold soil anomalies also share similar foot-wall, hanging wall associations to the major faults.



¹ Refer to ASX announcement dated 28 November 2023



Tarcoola Regional Setting

- **Wilgena Domain.**

Archean Mulgathing Complex

St Peter Suite

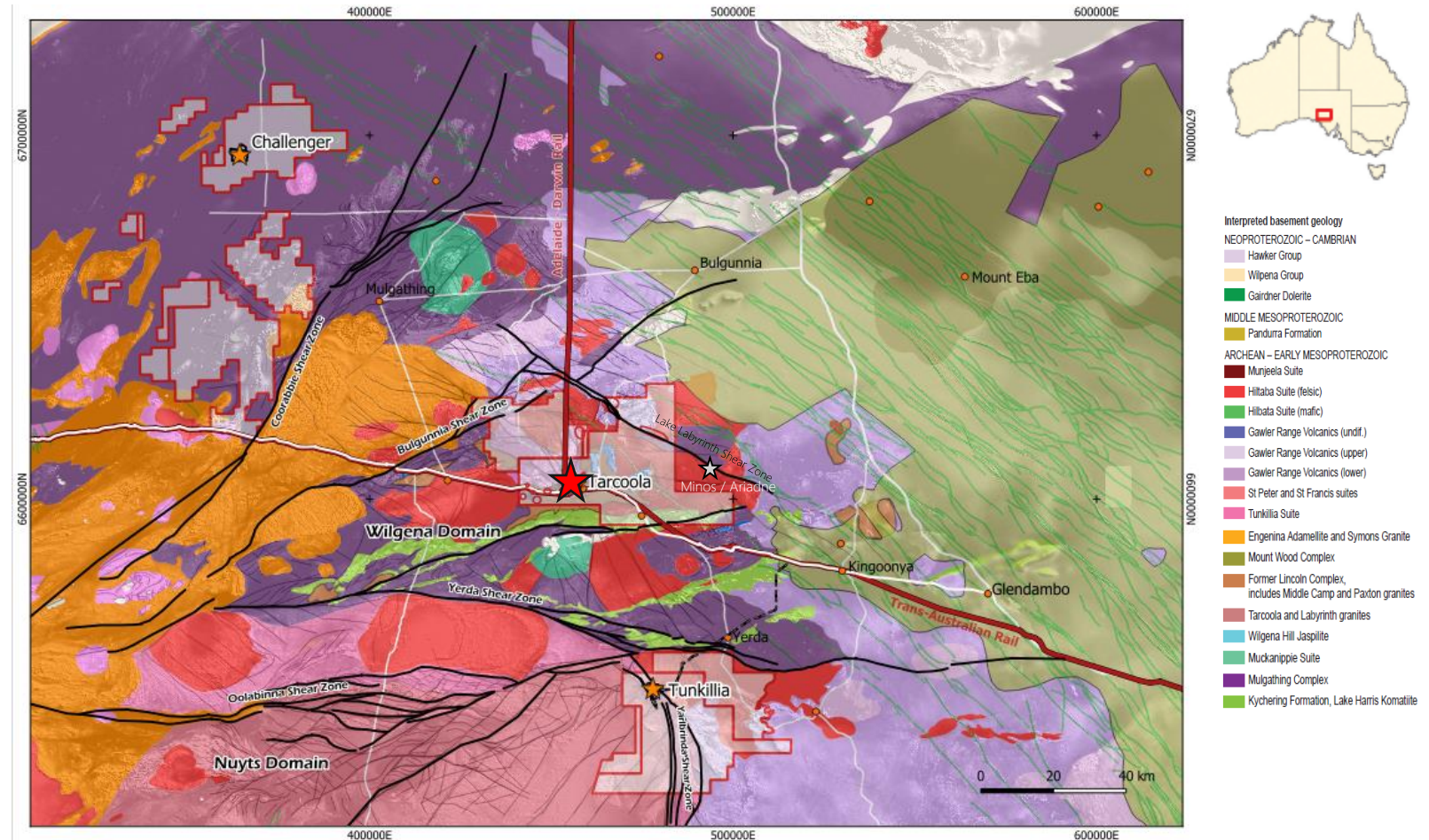
Tarcoola Formation

Hiltaba /GRV

- **Regional Scale Shear zones**

Define southern boundary of domain.

Hosts significant gold mineralisation at Tunkillia, Minos-Ariadne



Barton Gold tenements, GSSA Solid Geology

¹ Refer to Prospectus dated 14 May 2021

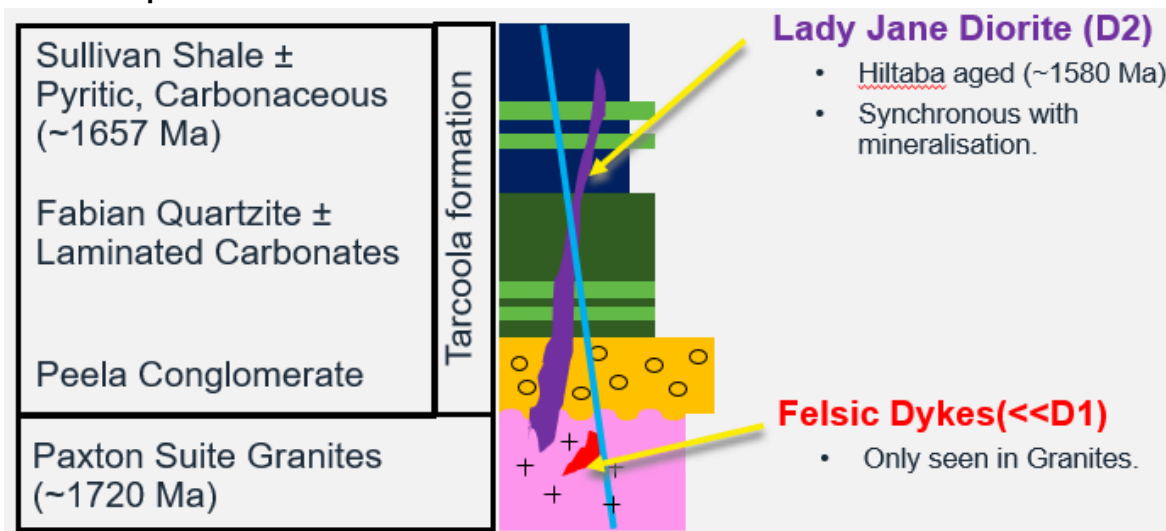
Tarcoola Local Geology

Paxton Granite

- Oldest unit in the Tarcoola mine area.
- 1722 - 1715 Ma monzogranite, quartz monzonite, and syenogranite¹.

Tarcoola Formation

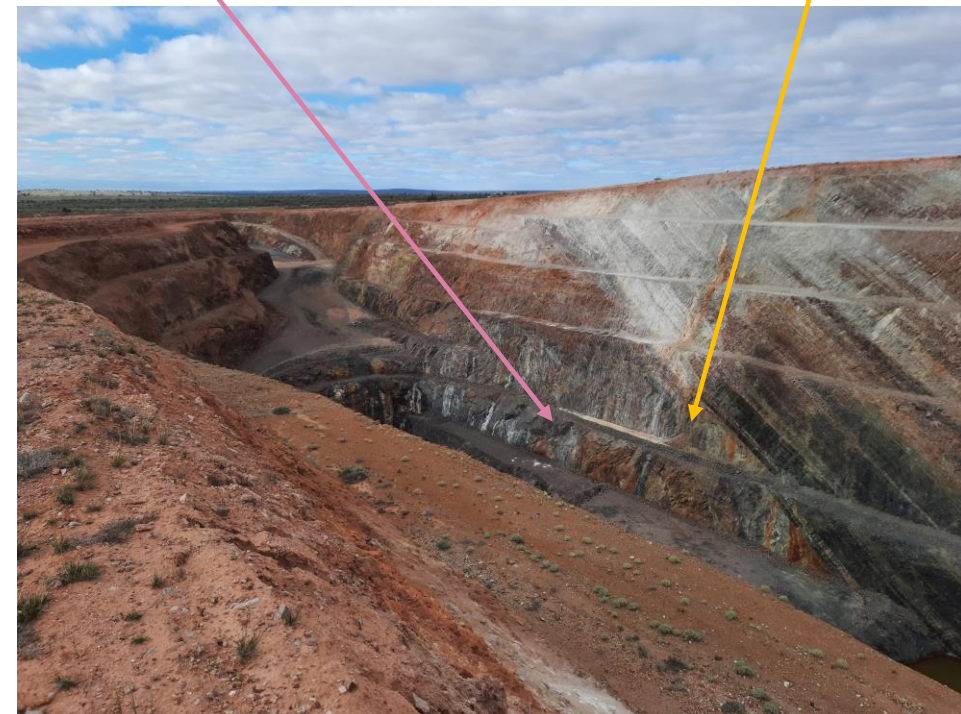
- Overlies Paxton Granite
- 1657 Ma
- Dips ESE at 35-55°



Paxton Granite.



Peela Conglomerate



Perseverance pit, NE view

¹ Budd, 2006



Two of the key structures for localisation of gold at Perseverance are:

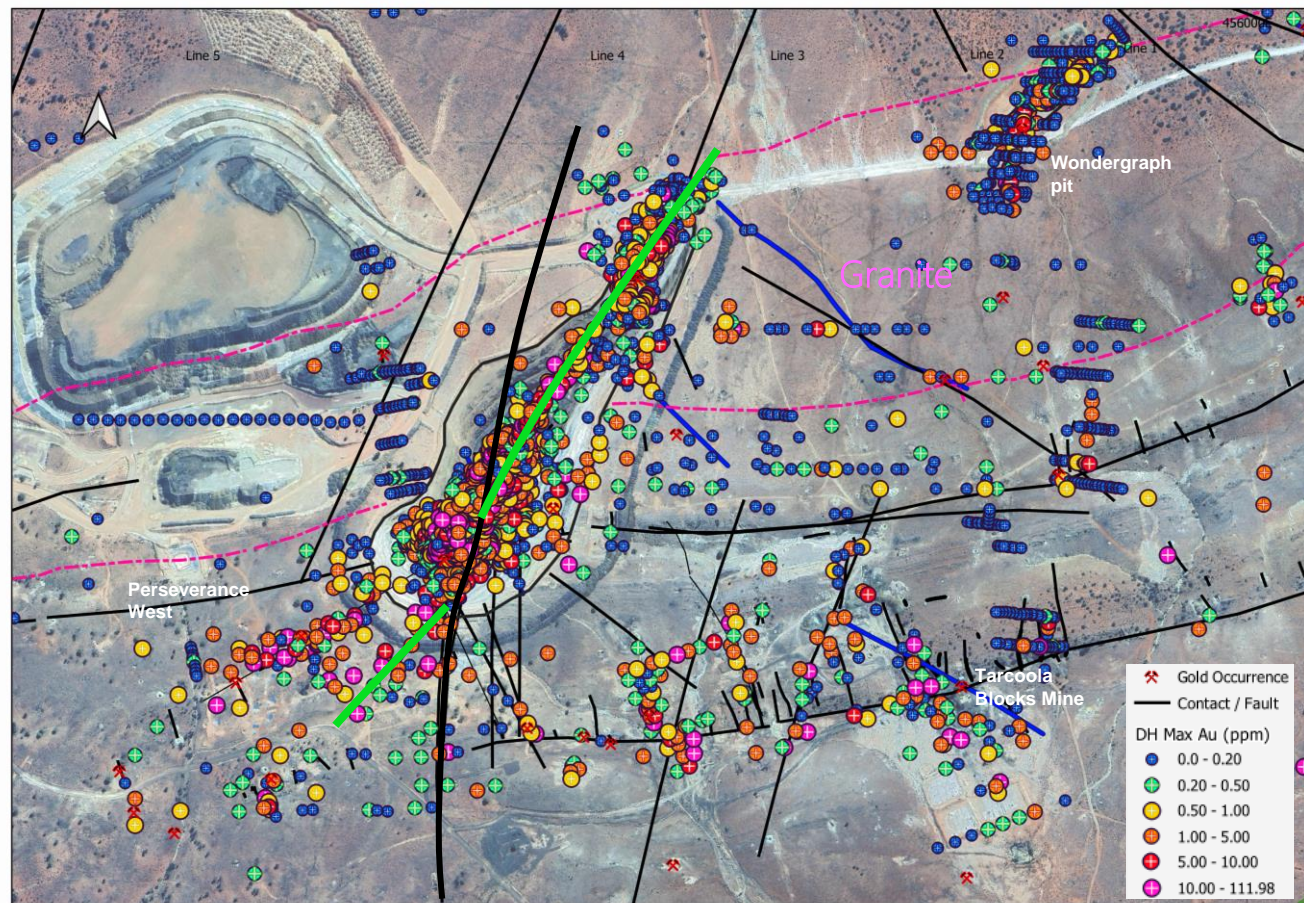
Granite Vein²

North and south of the pit the location of these structures is uncertain.

Do they continue?

What is their orientation at depth?

Are there other similar structures?



Drillhole maximum Au & major faults



Tarcoola Seismic

The Case for Seismic Surveying

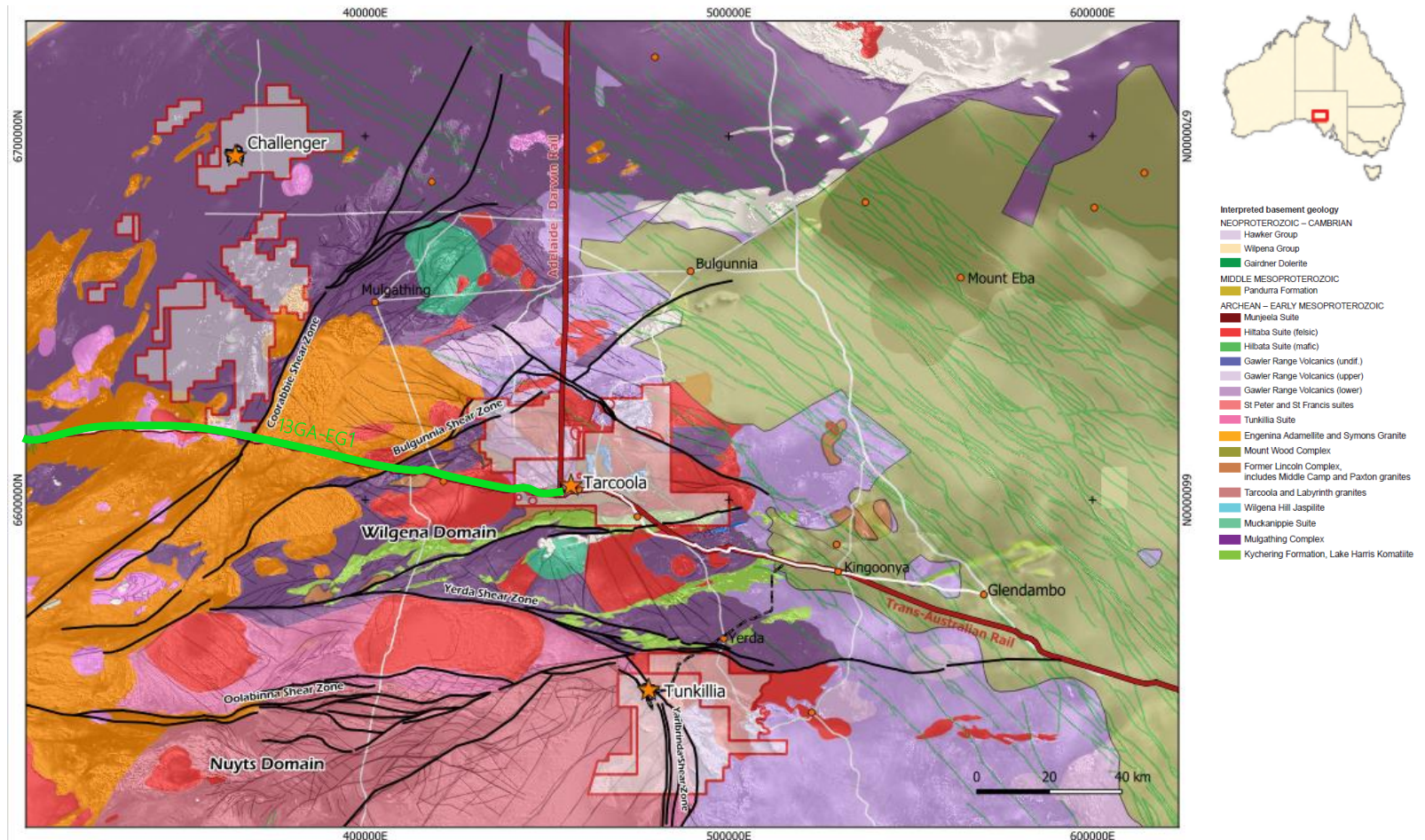
Advantages of seismic:

- Can image the Tarcoola Formation sediments where magnetics and gravity do not respond.
- Images to greater depths without a loss in resolution, unlike potential field and electrical methods.

If it works..

- Tarcoola Formation basin is relatively pristine compared to other Hardrock environments.

Seismic Line 13GA-EG1 reprocessed by HiSeis for Barton Gold as a test.

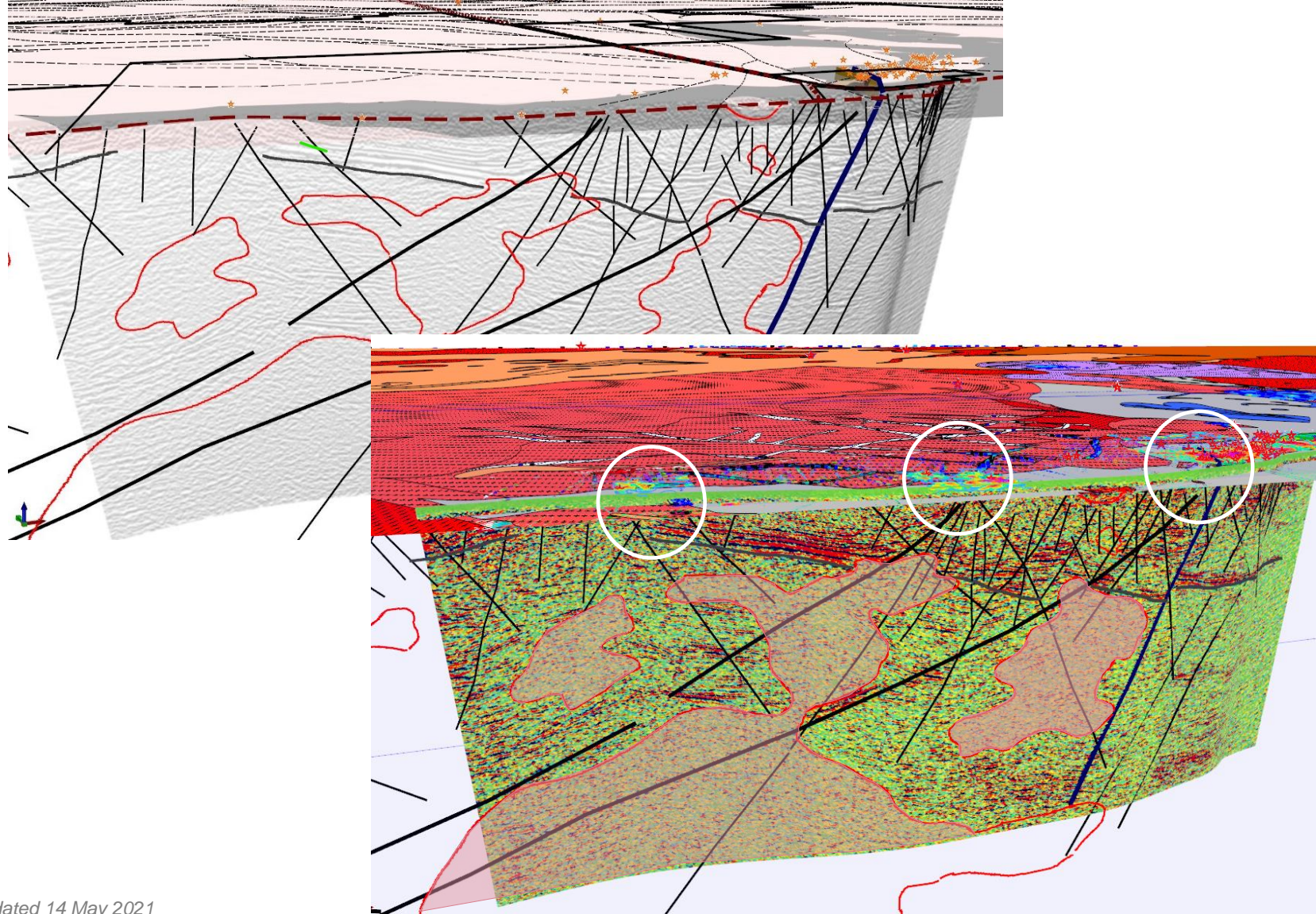




Tarcoola Seismic

Barton 13GA-EG1 Reprocessing

- Interpretation¹ highlighted major structural zones associated with projection of Perseverance Shear and other regional structures.
- Granite bodies beneath and tapping major structures.
- Coincident with some previously identified targets from surface geochemistry and drilling.

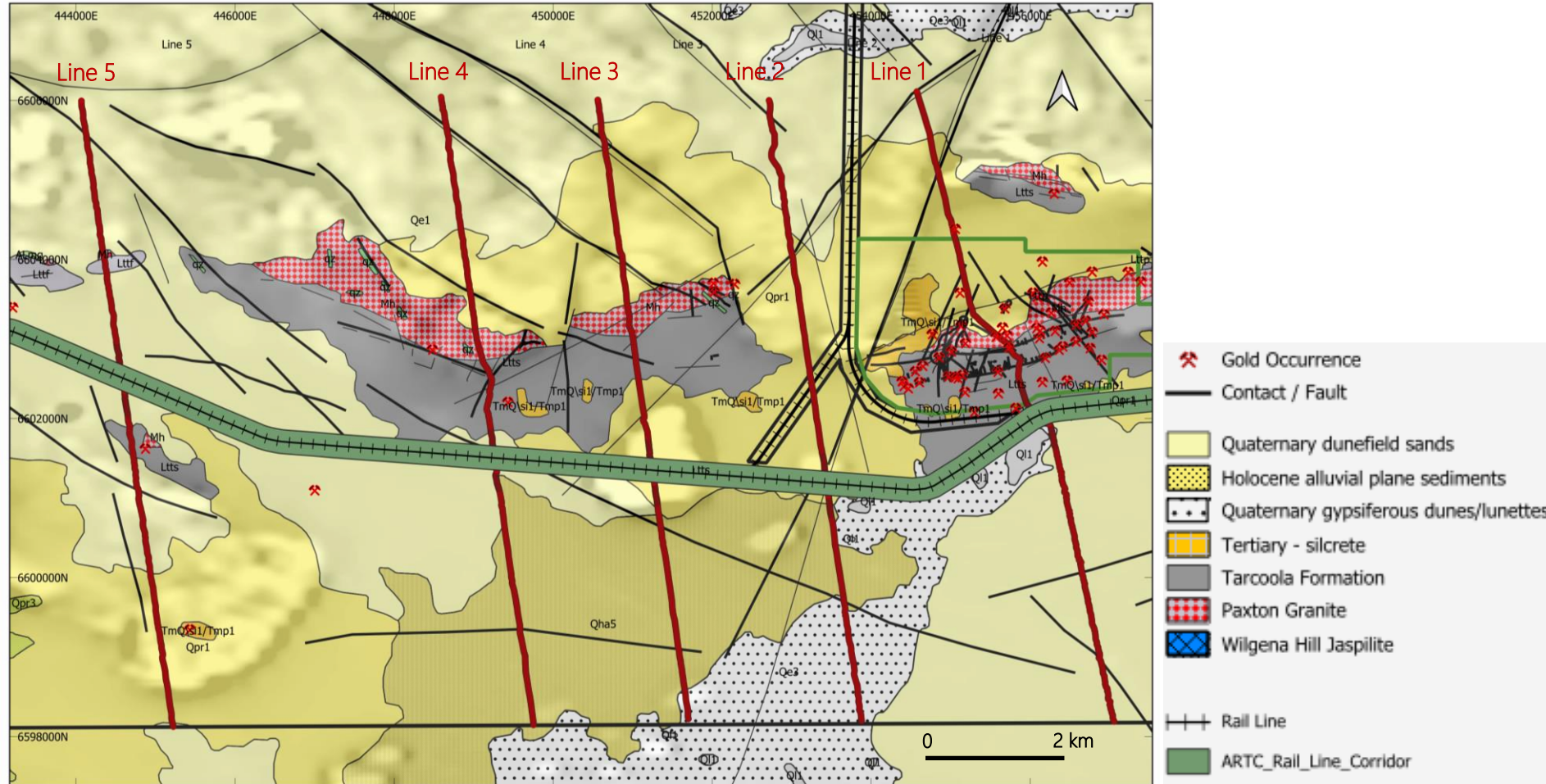


¹ HiSeis 2021 Interpretation report to Barton Gold; refer to Prospectus dated 14 May 2021



Tarcoola Seismic Survey Layout

- 5 lines of 2D seismic across the mine area and to western tenement area.
- Line spacing 2 – 4 km.
- 40 line km in total.
- Infrastructure and heritage restrictions in the mine area.
- No line clearing on Line 1 south of the rail line – weight-drop source used.





Tarcoola Seismic Acquisition

- Vibroseis source controlled and monitored from recorder truck at camp.
- All geophones live once deployed – nodal system.
- Surveying paused for passing trains.

HiSeis
Recorder
Truck






Tarcoola Seismic Acquisition

Survey Details

Equipment Area Coverage

Number of 2D Lines	5
Total number of source points	2071 - skips
Number of Receiver Stns	4008
Sample Interval	2 ms
Record Length	3 s
Nominal Fold	Entire line live
Format	SEG-Y to USB hard drive in field and RECORD SEG Y (or SEG D)
Source	INOVA AHV-IV (60000 lb) or 1500 kg Gravity Weight Drop
Source Array	1 x AHV IV in a single fleet or 1 x 1500 kg Gravity Weigh Drop
Source Number	1 x AHV IV or 1 x Weight Drop
Recording Filters:	
Low-cut	NA
Hi-cut	0.8 Nyquist set to 205 Hz
Notch	Out
Diversity Stack	Yes
Source Parameters:	
Source in-line Spacing	20 m and 10m makeups for gaps
Sweep Frequency	4 – 120 Hz
Sweep Number	1
Sweep Length	20 secs
Sweep Type	Linear
Constant	1
Source Array	1 x vibe per VP
Start Taper	750ms
End Taper	350ms
Maximum Source Gaps	As required for safety/access
Drive Level (Hold Down Force)	70%
Receiver Parameters: QUANTUM	
Group Spacing	10 m
Geophone Type	Quantum 5Hz (PS-5GR) 
Case	land
Frequency	5 Hz
Geophones per Group	One (1)
Geophone Spacing	10m

Vibroseis truck Line 01



Weight drop source,
southern end Line 1



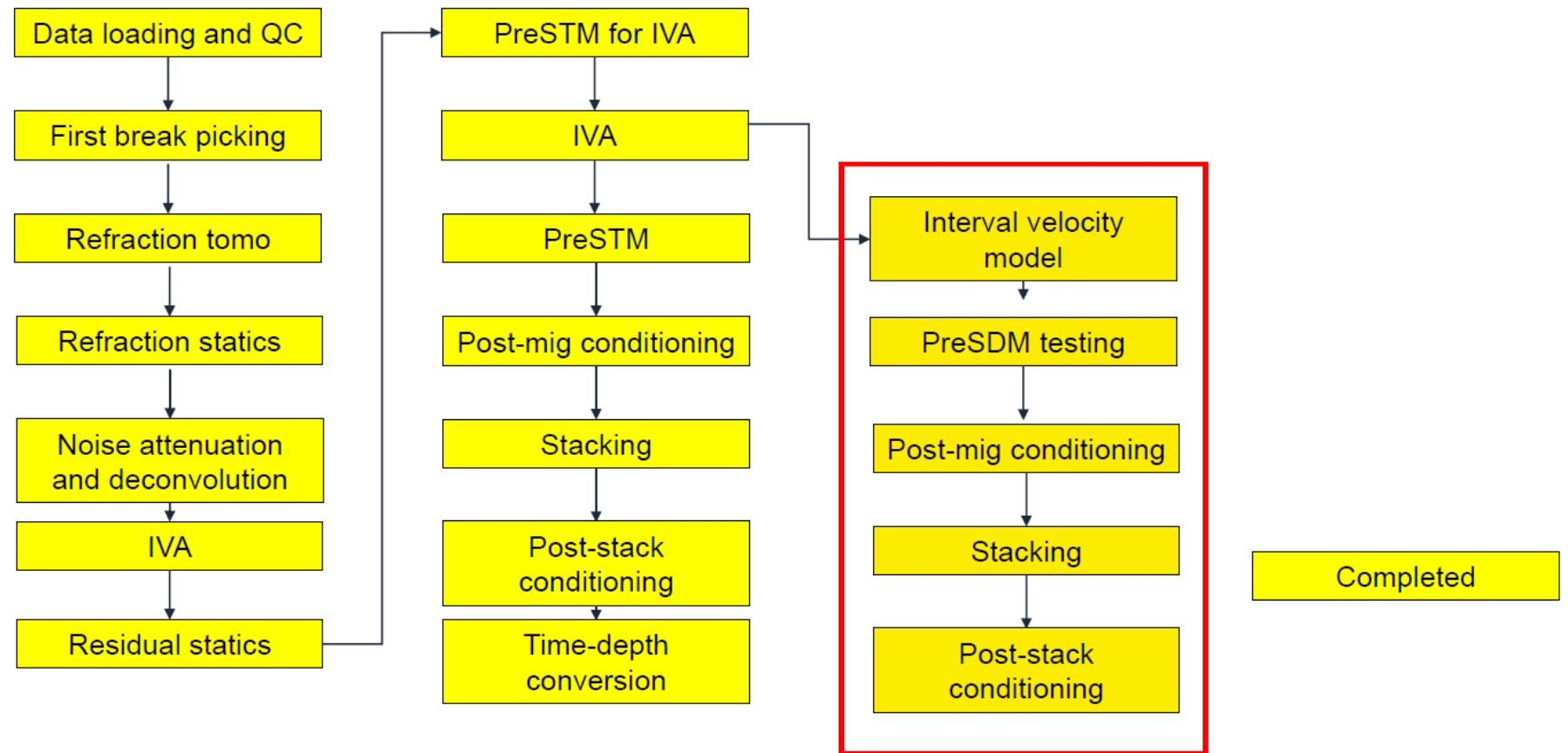
Traffic
control



Tarcoola Seismic Processing

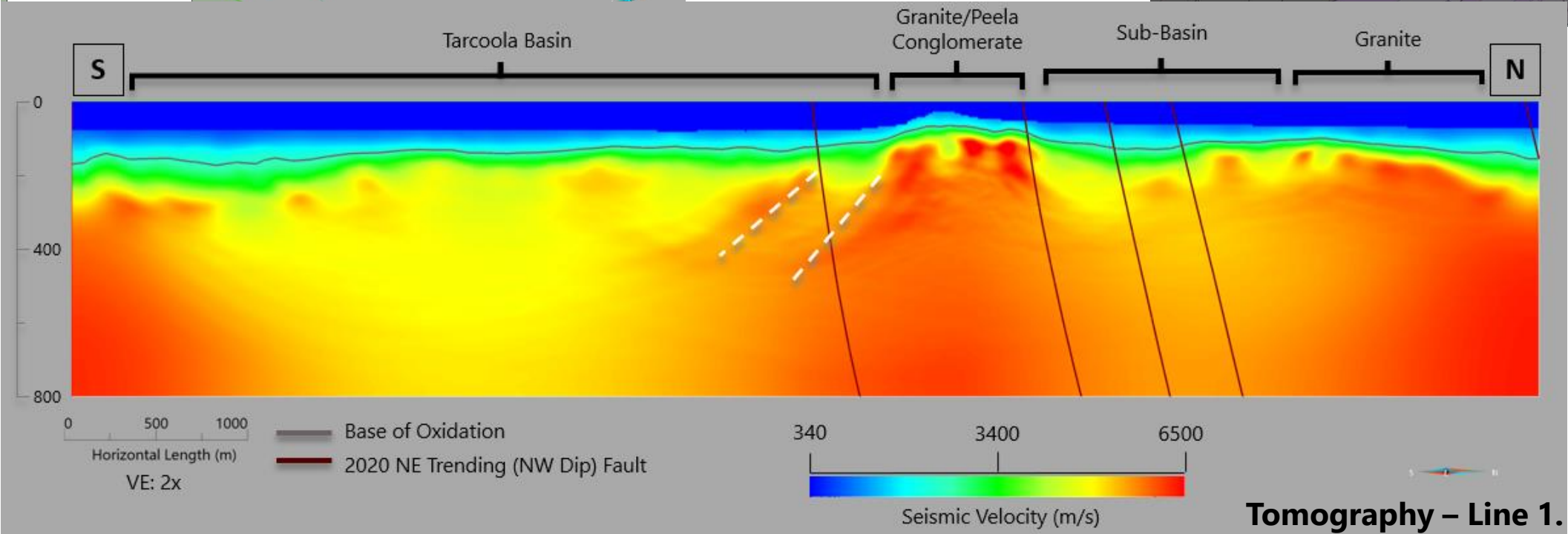
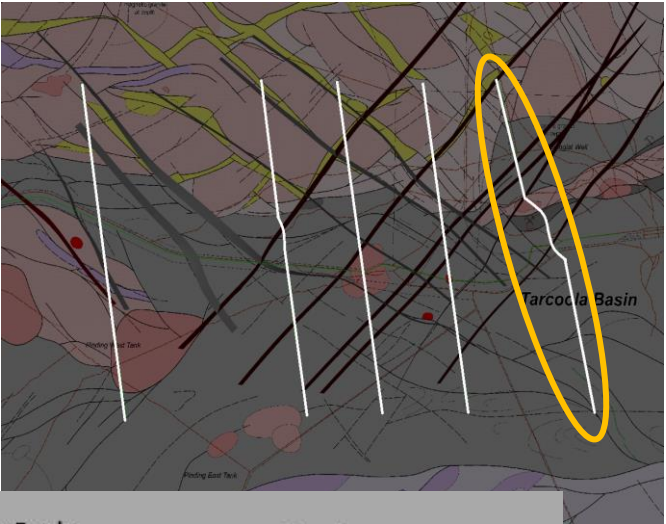
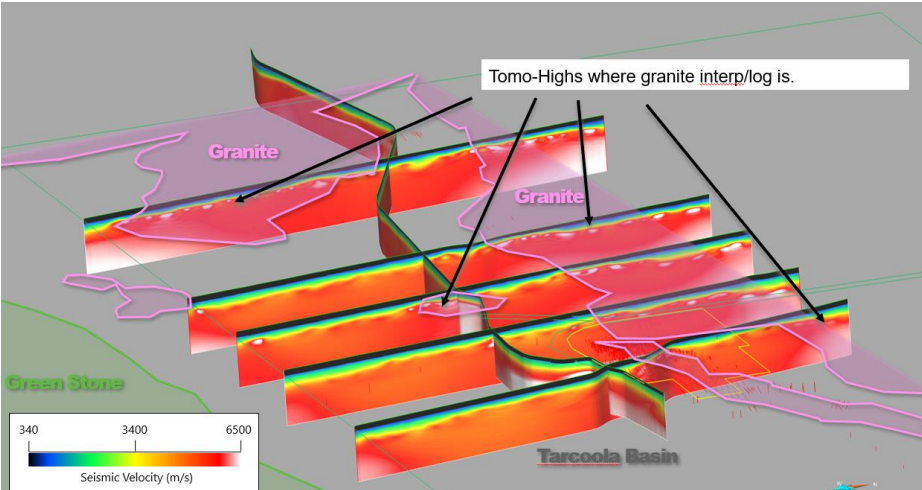
- HiSeis data processing of all 5 lines.
- Velocity modelling.
- PreSTM stacks
- PreSDM stacks

2D Processing Workflow





Tarcoola Seismic Tomography



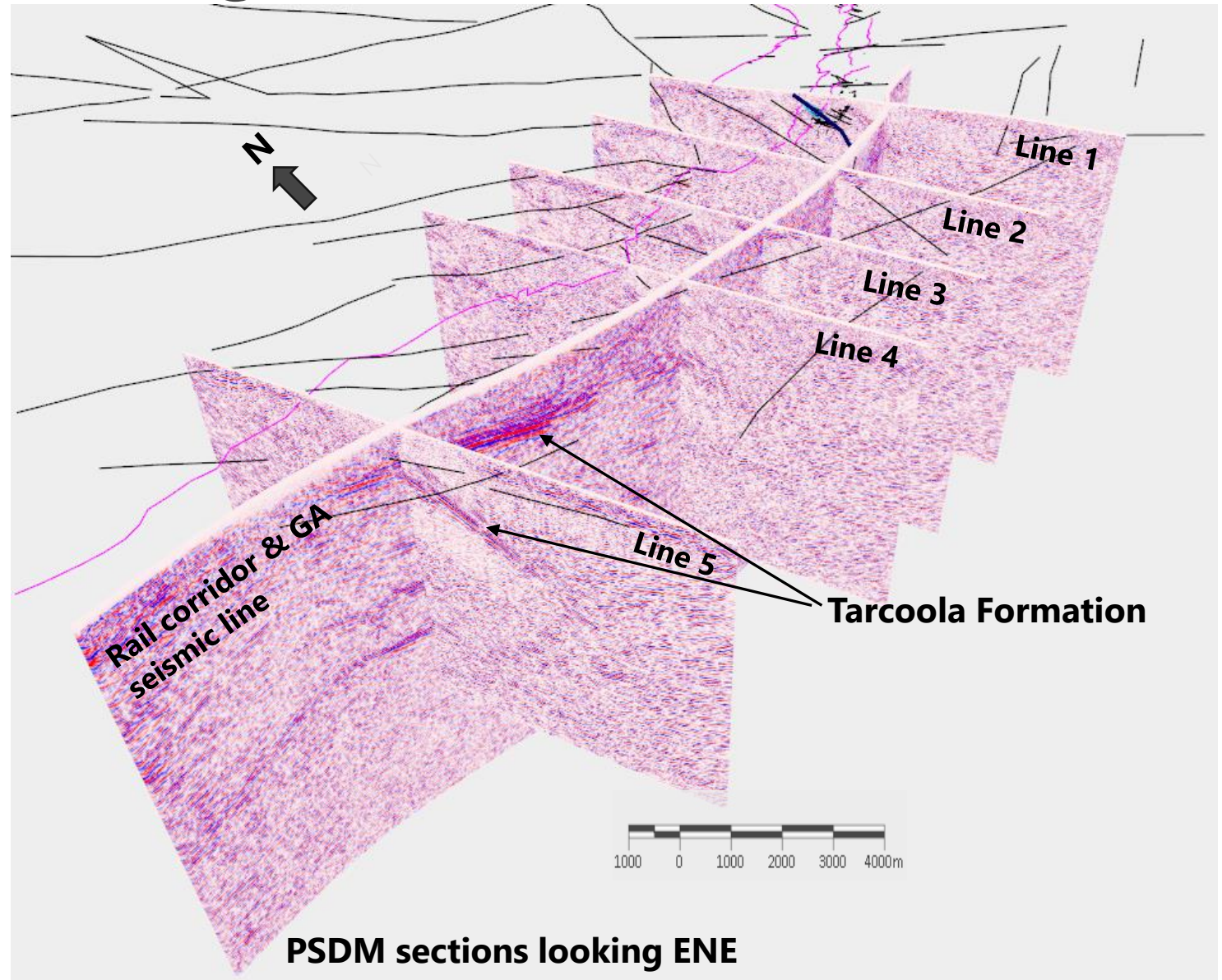
Tomography – Line 1.



Tarcoola Seismic Migrated Sections

- PSDM Sections.
- Regional GA line 13GA-EG.
- Major structures and contacts from magnetics.

Granite contact →



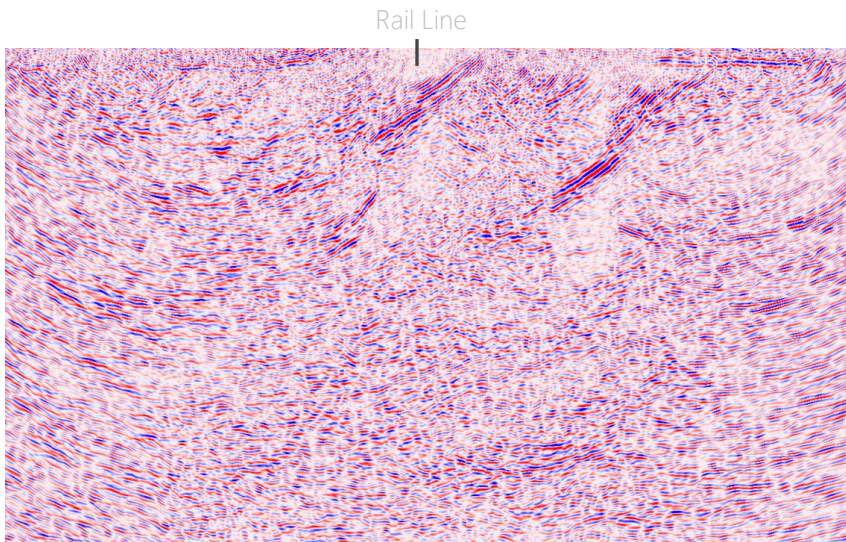
PSDM sections looking ENE

¹ Refer to Prospectus dated 14 May 2021 and ASX announcement dated 14 August 2023

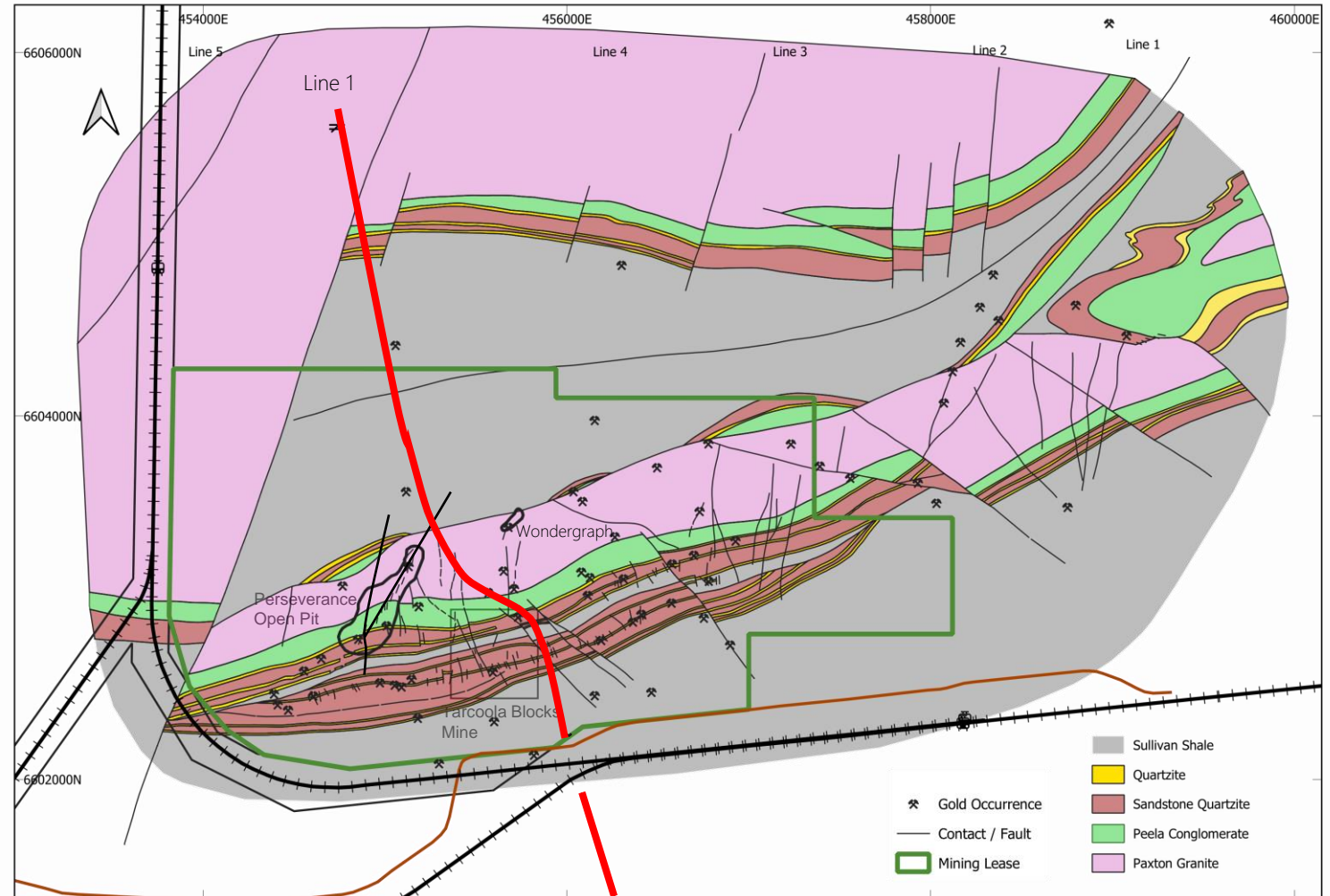


Tarcoola Seismic Line 1

- Crosses the main Tarcoola fold structure
- Immediately north of Perseverance pit
- Over the main ridge adjacent to Tarcoola Blocks mine.
- Further 3.8 km south of rail line, with a gap within the rail corridor.



Line 1 PSDM



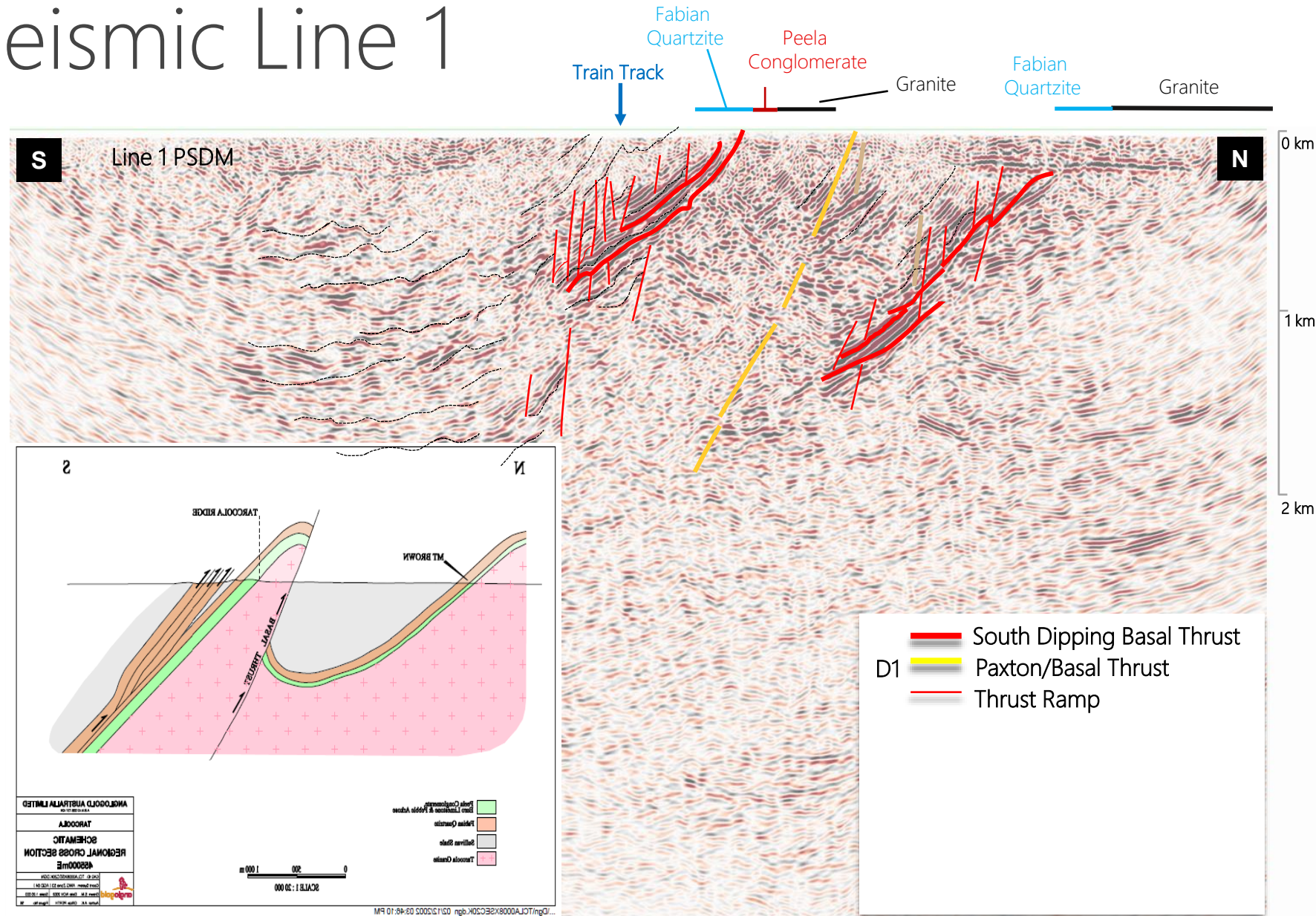
Interpreted bedrock geology¹

¹ Anglo Gold geological interpretation; refer to Prospectus dated 14 May 2021



Tarcoola Seismic Line 1

- Early SSE-NNW shortening.
- Folding and reverse faulting and thrust ramping of south-dipping limbs of Tarcoola Formation.
- Basal Thrust and granite contact not well imaged. The thrust is to the north of the granite contact in the Sullivan shales in the synform. Matches previous interpretation¹ well.



¹ Anglo Gold interpreted geological section.

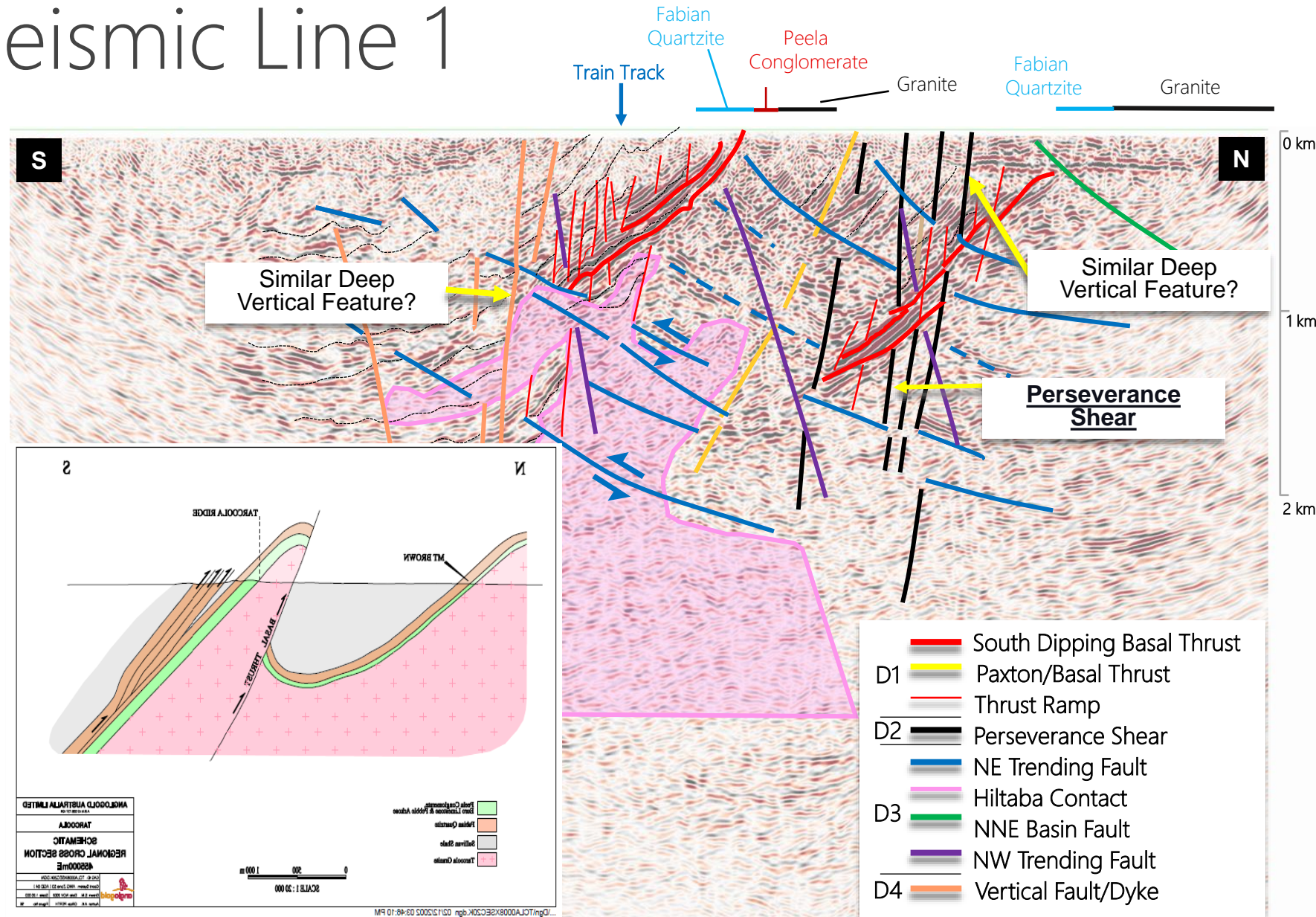


- # Seismic Line 1
-
- Geological map and cross-section of Seismic Line 1. The map shows a complex fault system with various thrusts and shears. A legend identifies features like the South Dipping Basal Thrust, Paxton/Basal Thrust, Thrust Ramp, Perseverance Shear, NE Trending Fault, and Hiltaba Contact. An inset shows a schematic cross-section of the region with labels for Tarcoola Ridge, Mt Brown, and the Basal Thrust. A scale bar indicates 1000m.
- Legend:
- South Dipping Basal Thrust
 - D1 Paxton/Basal Thrust
 - Thrust Ramp
 - D2 Perseverance Shear
 - NE Trending Fault
 - Hiltaba Contact
- Inset labels:
- TARCOOLA RIDGE
 - MT BROWN
 - BASAL THRUST
- Scale: 1000m



Tarcoola Seismic Line 1

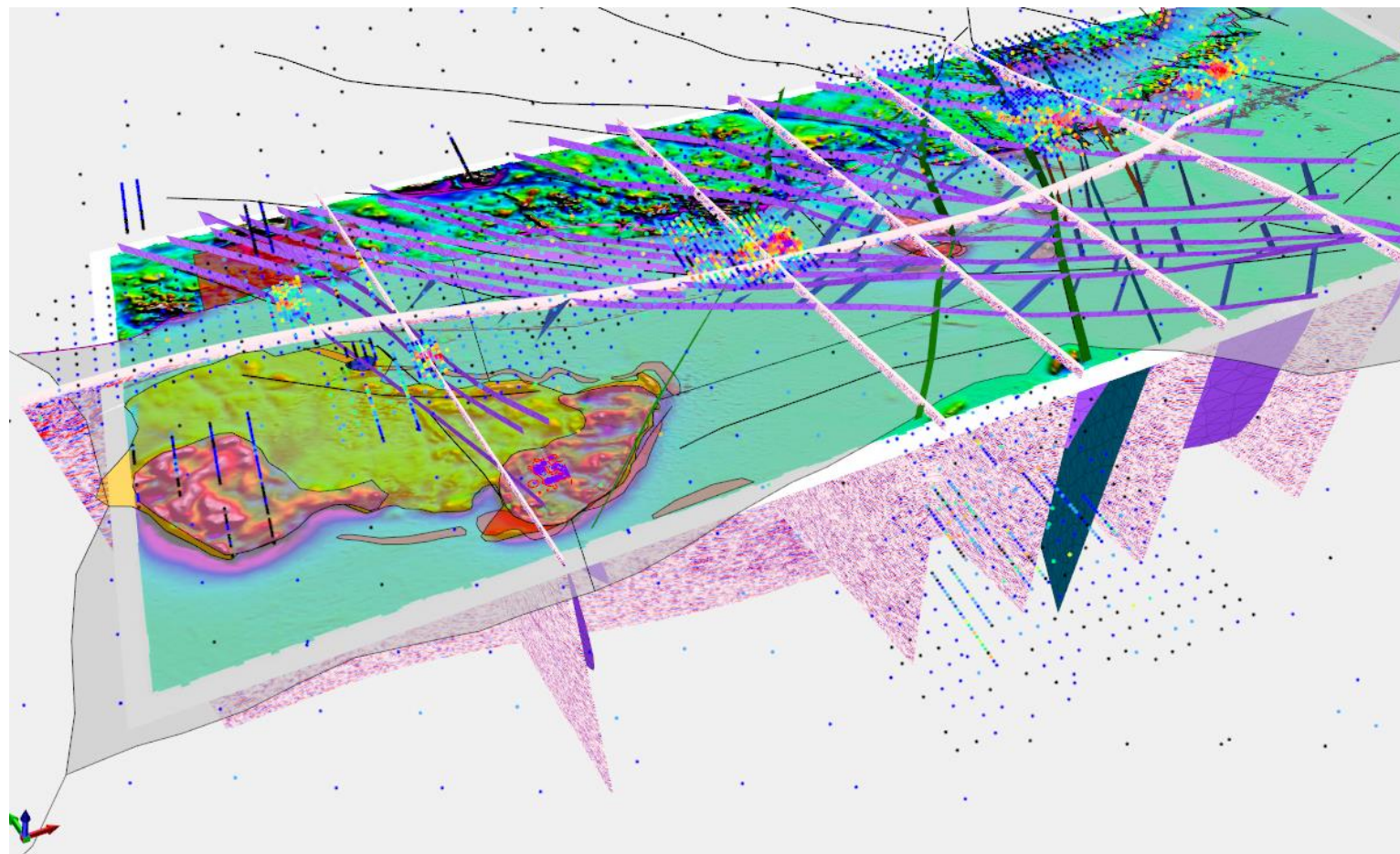
- NE to NNE trending faults (e.g. Basement Fault) and NW faults overprint shallow NE trending faults and steep structures.
- Other late sub-vertical structures may be similar to the Perseverance Shear or dykes.





Tarcoola Seismic Structural Framework

- Good match of major structures visible in magnetics with interpreted fault traces from seismic interpretation.
- Major structural intersections associated with best geochemical anomalies.
- Gold is in the hangingwall of NE trending (NW dipping) structural zones, and footwall of major NE trending sinistral faults.
- Multiple untested structural targets.

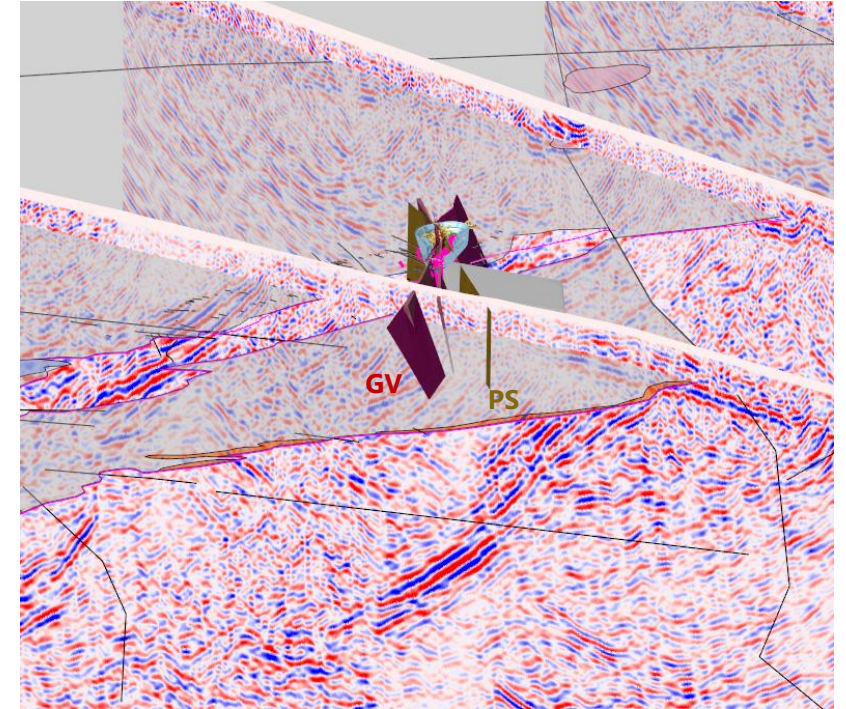


Seismic lines and fault network, interpreted geology, calcrete Au, aeromagnetics



Tarcoola Conclusions¹

- **Seismic has imaged the Tarcoola Formation and revealed relative structural / fault timing. Main reflectors showing thrust-stacking of Fabian Quartzite.**
- **Best Perseverance mineralisation is at the intersection of the Perseverance shear with NE and NW trending faults and dykes**
- **Possible Perseverance Shear type structures on western seismic lines at similar major fault intersections. Ongoing interpretation to better correlate these features also seen in the E-W with the faults in the new Barton seismic lines.**
- **Validate by drill testing priority targets – early 2024. Fences of holes designed to test across possible structural zones.**
- **Incorporate existing and new structural data from drilling to refine interpretation.**
- **3D seismic would be the next step to better define the spatial geometry of the fault networks. Additional physical property data would aid velocity modelling – density measurements, VSP.**



PSDM seismic lines, Tarcoola, Perseverance pit, and major modelled structures² (GV=Granite vein, PS=Perseverance shear). Looking SW.

¹ Refer to ASX announcement dated 28 November 2023

² WPG 2018 wireframes

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Competent Persons Statements

The information relating to Exploration Results and Mineral Resources in this presentation is extracted from the Company's Prospectus dated 14 May 2021 (Prospectus) and Barton ASX announcements as cross-referenced in the body of this presentation. A copy of the Prospectus is available for download at www.bartongold.com.au or www.asx.com.au. Following publication of the Prospectus, the Company published details of updated Mineral Resource Estimates (including in respect of the Company's attributable ownership where a project is not wholly owned) on 14 October 2021 (for the Western Gawler Craton Joint Venture Project) and 26 April 2023 (for the Tunkillia Project). The Company confirms that the form and context in which the applicable Competent Persons' findings are presented have not been materially modified from the relevant market announcement. The Company confirms that it is not aware of any new information or data that materially affects the Exploration Results and Mineral Resource information included in previous announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the previous announcements continue to apply and have not materially changed.

Competent Persons (Tarcoola)

The information in this presentation that relates to the estimate of Mineral Resources for the Tarcoola Gold Project is based upon, and fairly represents, information and supporting documentation compiled by Dr Andrew Fowler MAusIMM CP (Geo). Dr Fowler is an employee of Mining Plus Pty Ltd and has acted as an independent consultant on Barton Gold's Tarcoola Gold Project, South Australia. Dr Fowler is a Member of the Australian Institute of Mining and Metallurgy (AusIMM) and has sufficient experience with the style of mineralisation, the deposit type under consideration and to the activity being undertaken, 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" (The JORC Code).

The information in this presentation that relates to Exploration Results for the Tarcoola Gold Project prior to 15 Nov 2021 (including drilling, sampling, geophysical surveys and geological interpretation) is based upon, and fairly represents, information and supporting documentation compiled by Mr Colin Skidmore BSc Hons (Geology) MAppSc. Mr Skidmore is an employee of Mining Plus Pty Ltd and has acted as an independent consultant on Barton Gold's Tarcoola Gold Project, South Australia. Mr Skidmore is a Member of the Australian Institute of Geoscientists (AIG Member 05415) and has sufficient experience with the style of mineralisation, the deposit type under consideration and to the activity being undertaken, 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" (The JORC Code).

The information in this announcement that relates to new Exploration Results for the Tarcoola Gold Project after 15 Nov 2021 (including drilling, sampling, geophysical surveys and geological interpretation) is based upon, and fairly represents, information and supporting documentation compiled by Mr Marc Twining BSc Hons (Geology). Mr Twining is a full-time employee of Barton Gold Holdings Ltd, and is a Member of the Australasian Institute of Mining & Metallurgy (AusIMM Member 112811) and has sufficient experience with the style of mineralisation, the deposit types under consideration and to the activity being undertaken, 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" (The JORC Code).

Competent Person (Tunkillia)

The information in this presentation that relates to the estimate of Mineral Resources for the Tunkillia Gold Project (including drilling, sampling, geophysical surveys and geological interpretation) is based upon, and fairly represents, information and supporting documentation compiled by Mr Ian Taylor BSc (Hons). Mr Taylor is an employee of Mining Associates Pty Ltd and has acted as an independent consultant on Barton Gold's Tunkillia Gold Project, South Australia. Mr Taylor is a Fellow and certified Professional of the Australian Institute of Mining and Metallurgy (110090) and has sufficient experience with the style of mineralisation, the deposit type under consideration and to the activity being undertaken, 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" (The JORC Code).

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Competent Person (Challenger)

The information in this presentation that relates to the estimate of Mineral Resources for the Challenger Mine is based upon, and fairly represents, information and supporting documentation compiled by Mr Dale Sims, a Competent Person, who is a Chartered Professional Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) and a Member of the Australian Institute of Geoscientists (AIG). Mr Sims is the principal of Dale Sims Consulting Pty Ltd and an independent consultant engaged by Barton Gold for this work and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (The JORC Code).

Competent Person (Western Gawler Craton Joint Venture)

The information in this presentation that relates to Exploration Results and the estimate of Mineral Resources for the Western Gawler Craton Joint Venture is based upon, and fairly represents, information and supporting documentation compiled by Mr Richard Maddocks who is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Maddocks is an independent consultant geologist with Auranmore Consulting who prepared the information, and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the December 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves" (the JORC Code).



Tarcoola Geology

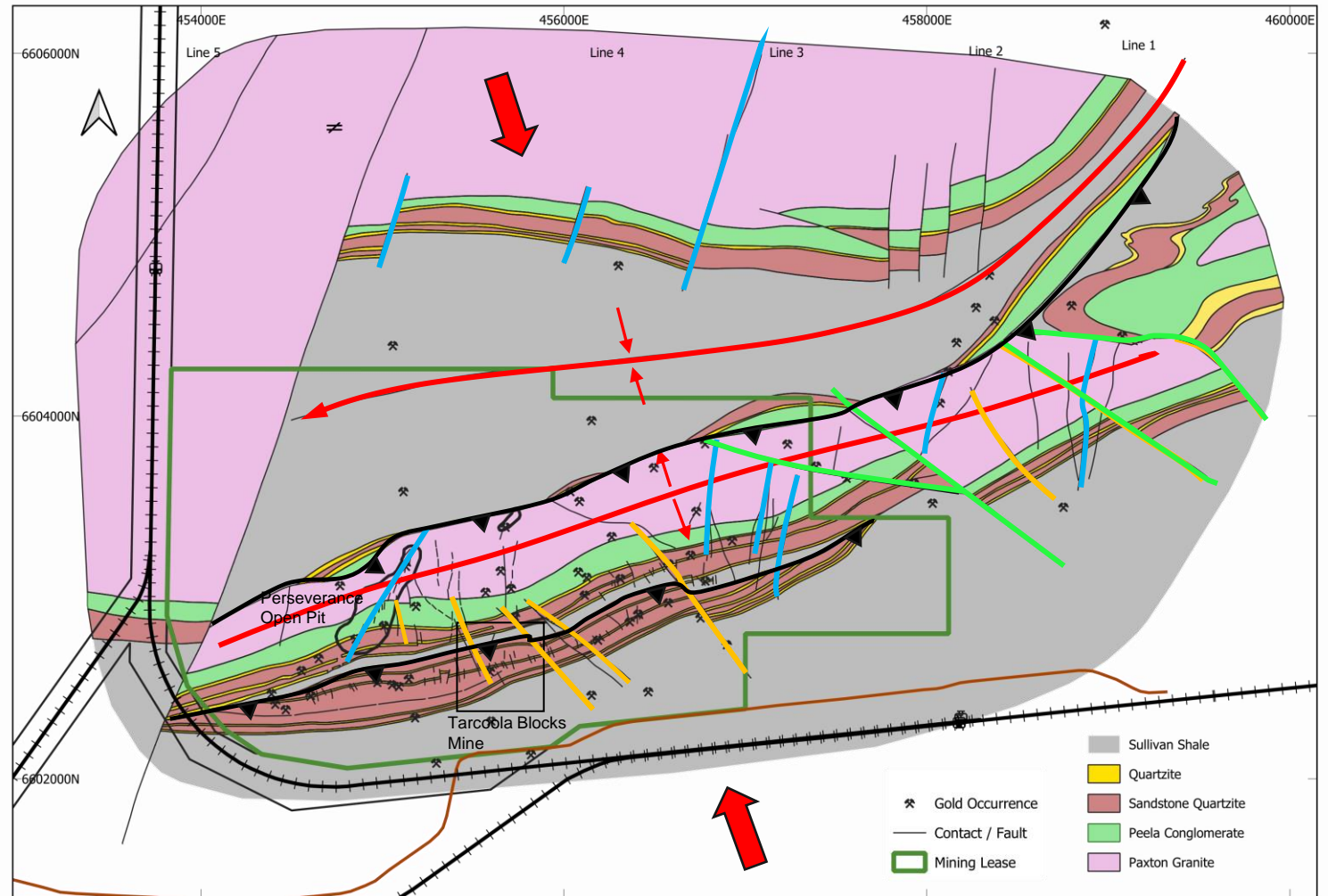
Structural Evolution and Significant Deformation events^{1,2}

Three main deformation events define the Tarcoola area:

D₁ – NNW – SSE directed shortening that resulted in open, broad scale folding.

D₂ – Regional shortening (NNW-SSE), Trans tensional (Riedel) sub-vertical, **NW** and **NNE** trending faulting. **Gold mineralisation.**

D₃ – Is represented by late stage, barren **NW** and **WNW** trending faults and veins that crosscut and intrude previous veining.



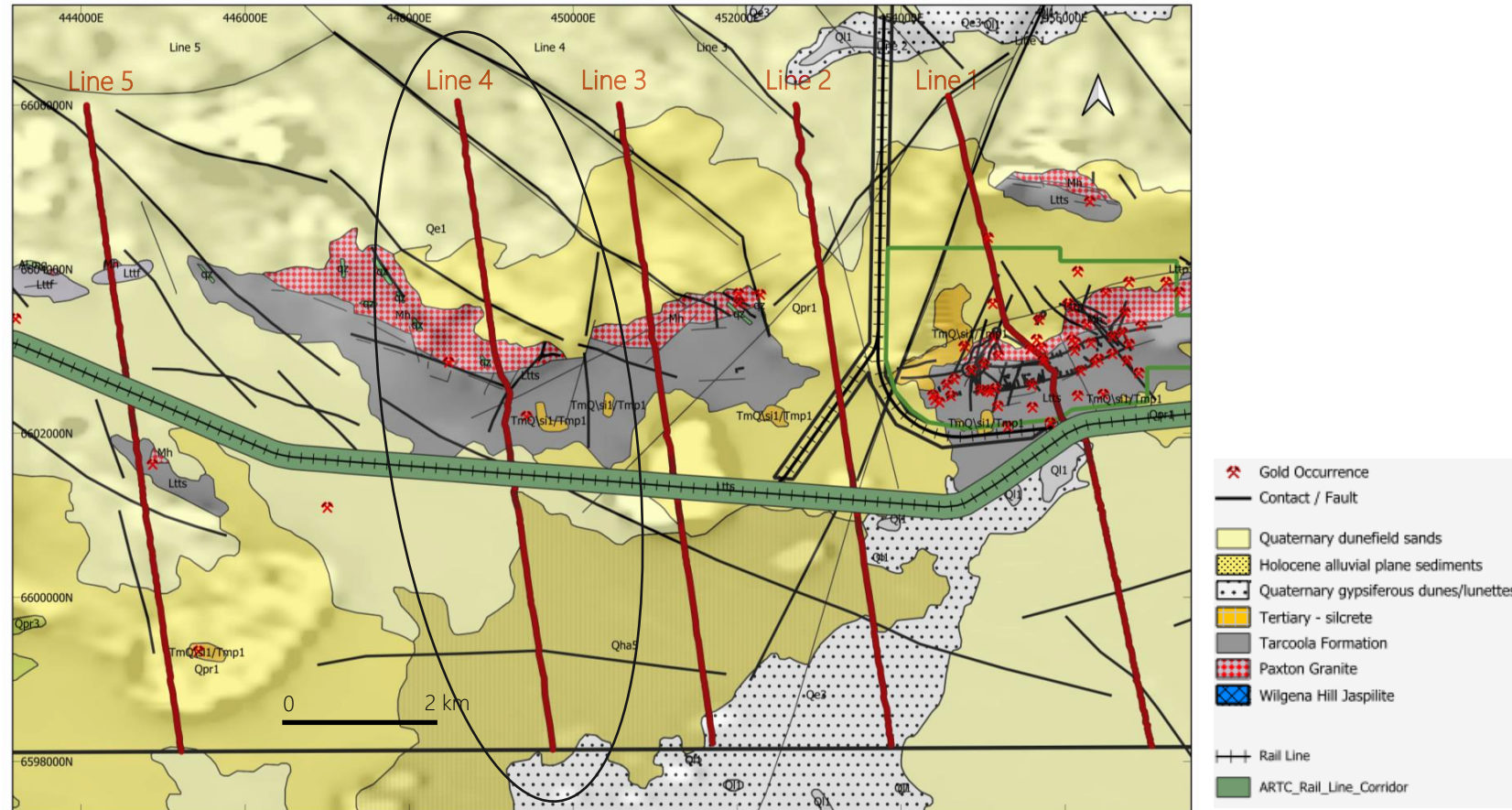
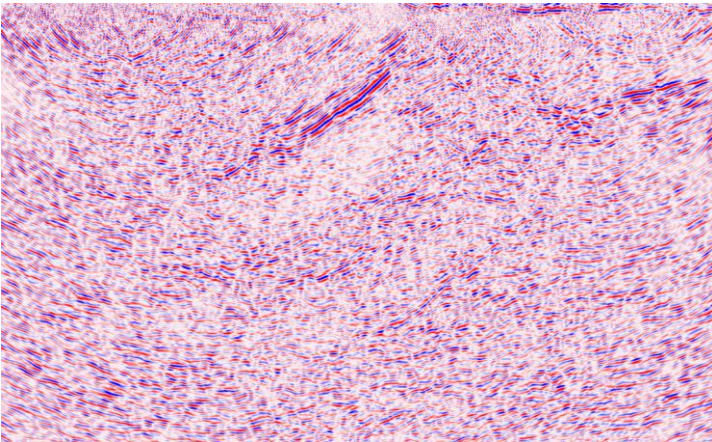
Interpreted bedrock geology³

¹ Verco, R & Traeger, S, 2017 Tarcoola Geology Update, Tarcoola Gold Pty Ltd Internal Memorandum; ² Wilson, et al 2018 Structural Geology and GCAS: implications for gold systems in the central Gawler Craton; ³ Anglo Gold geological interpretation



Tarcoola Seismic Line 4

- Western extension of Tarcoola basin.
- Designed to test over Tolmer prospect area – major structures interpreted from aeromagnetics.

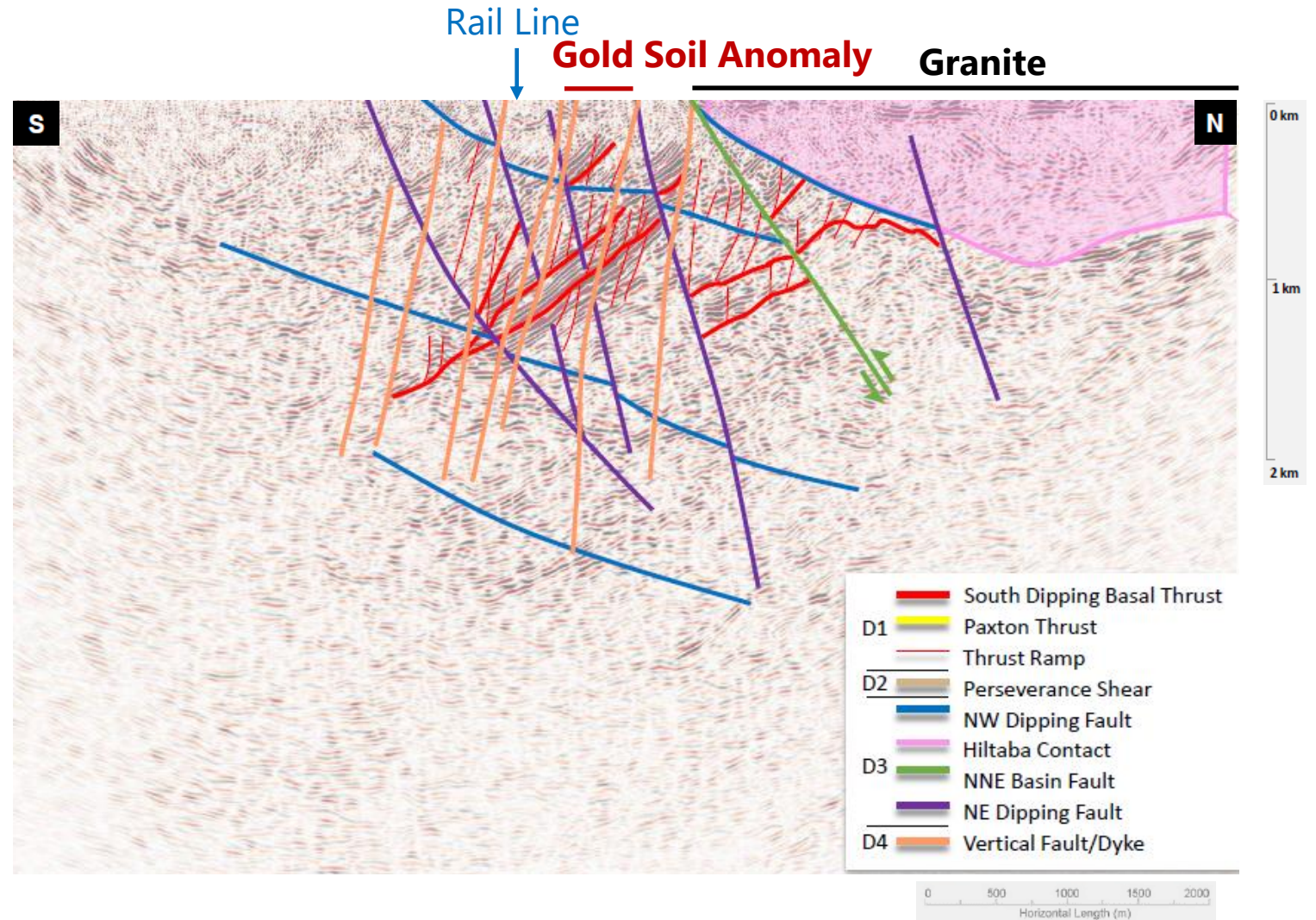


GSSA 100K Geology & GCAS Area 9A magnetic shade



Tarcoola Seismic Line 4

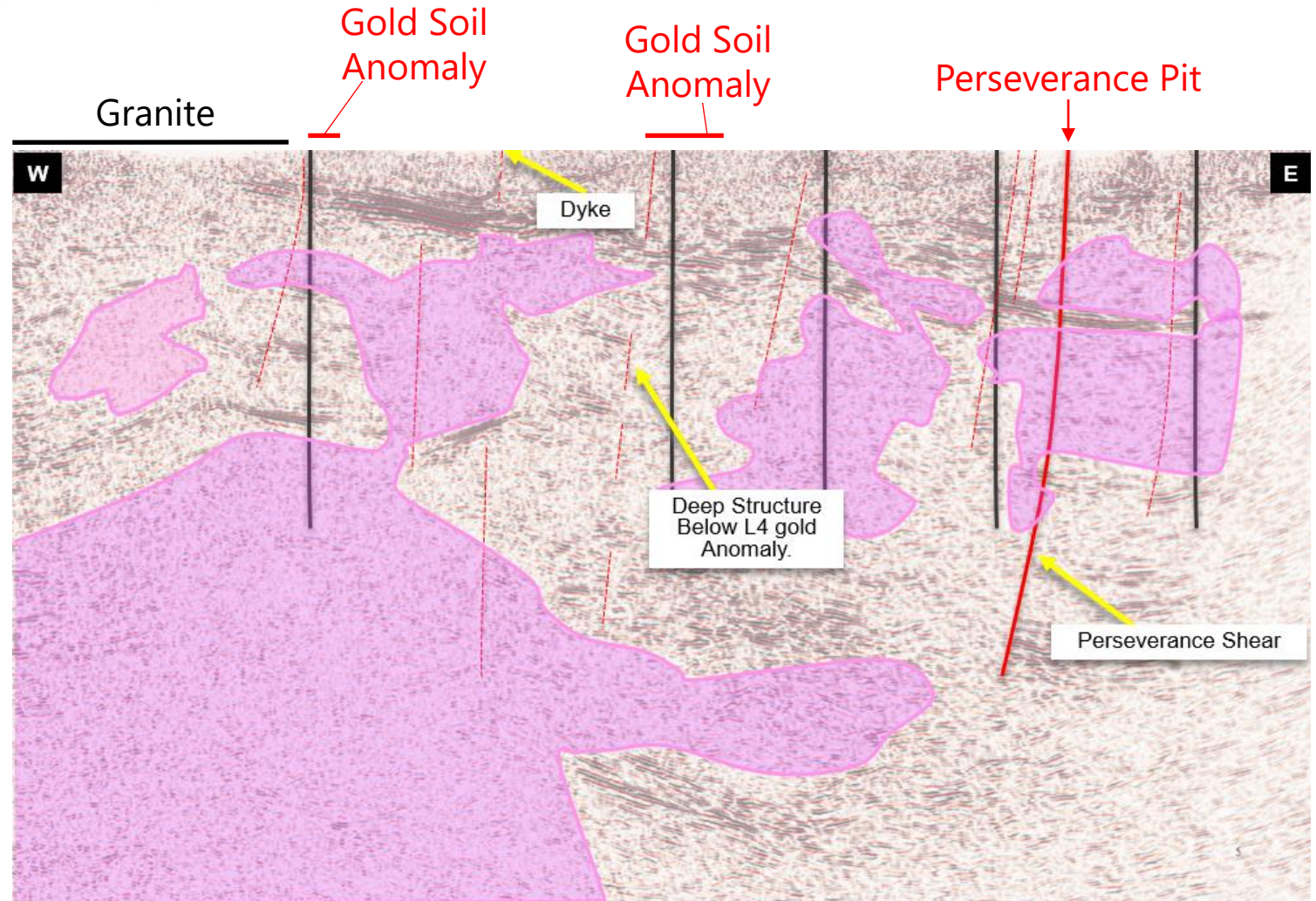
- Single reflector package.
- Same thrust ramping as Line 1.
- Granite on northern end of line shallow, with faulted contact overlying concealed Tarcoola Formation.
- Calcrete soil anomaly at Tolmer Prospect located over zone of vertical faulting.





Tarcoola Seismic

- Other possible deep-tapping, sub-vertical structures that look similar to the Perseverance Shear.
- These may link with vertical structures seen in the Barton seismic lines.



Regional seismic line 13GA-EG1