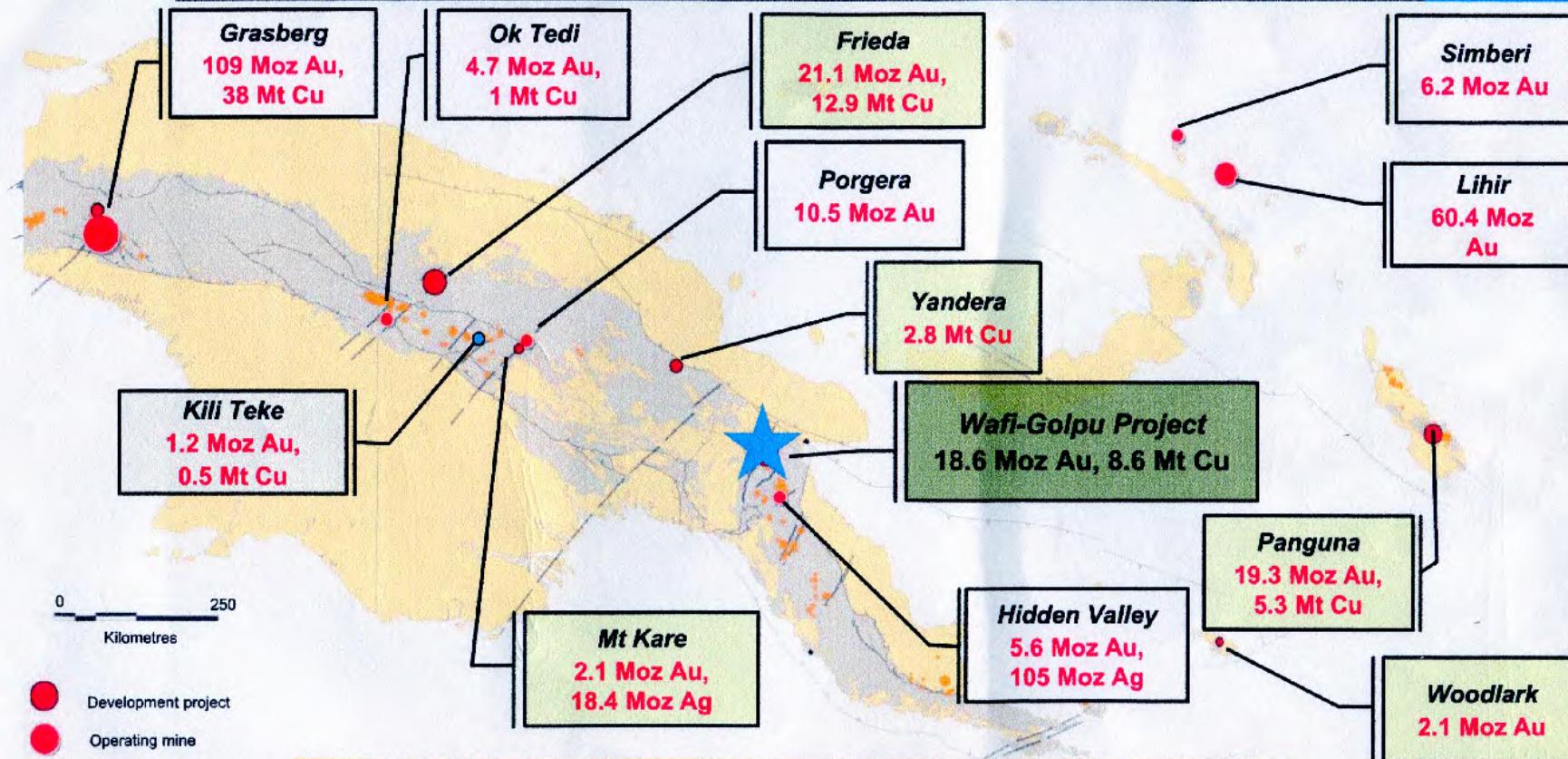


PNG, An Exceptional Copper-Gold Country

Full endowment still to be realised



Papua New Guinea

- ▶ Significant historic copper and gold producer
- ▶ In excess of 30 Mt Cu and 73 Moz Au in development pipeline
- ▶ Wafi-Golpu Project is a significant component of the development pipeline

PNG MINING

PNG MINING – EXISTING MINING OPERATIONS

- PNG currently has 8 mines that produce gold, copper, silver, nickel and cobalt
 - The largest of the existing mines are:
 - **Lihir** - gold/silver mine owned by Newcrest Mining (Australia)
 - **Porgera** - gold/silver mine operated in a JV between Barrick Gold of Canada, Zijin Mining Group of China and Mineral Resource Enga
 - **Ok Tedi** - copper/gold/silver mine owned by the PNG Government
 - **Ramu NiCo** - nickel/cobalt JV between MCC Ramu Nico Ltd of China, Highlands Pacific (Australia), the PNG Government and local landowners
-



- LIHIR

- 251,000 oz gold production Dec. qtr. 2018

- PORGERA

- Mined 20M ozs by 2017 – from 143Mt ore
- 2.0Mozs reserves; 3.4Mozs resources

- OK TEDI

- 2025 finish
- 2017 3.8% PNG's GDP; Mined to 2016 4.6MT Cu, 12.6Mozs Au, 30.2Mozs Ag

PNG MINING – EXISTING MINING OPERATIONS

- The other mines are:
 - **Simberi** - gold mine owned and operated by St Barbara (Australia)
 - **Hidden Valley** - gold/silver mine owned and operated by Harmony Gold (South Africa)
 - **Kainantu** - gold mine owned and operated by K92 Mining (Canada)
 - **Edie Creek** - small gold/silver mine owned by Niuminco Group Limited (Australia)

PNG MINING – POTENTIAL MINING OPERATIONS

- Potential new mining projects
- **Wafi-Golpu** – major gold/copper project to be developed in a JV between Harmony Gold (South Africa) & Newcrest Mining (Australia)
- **Frieda River** – one of the world's largest undeveloped copper and gold deposits to be developed by PanAust (a Chinese owned Australian company) in a JV with Highlands Pacific (Australia)
- **Solwara 1** – a world first deep sea mining project to be developed by Canadian company, Nautilus Minerals, to recover copper, gold, zinc and silver from deposits in the Bismarck Sea
- **Crater Mountain** – underground gold mine to be developed by ASX listed company, Crater Gold Mining

PNG MINING

PNG MINING – POTENTIAL MINING OPERATIONS

- Potential new mining projects
 - **Woodlark** – gold project to be developed by Geopacific Resources (Australia) on Woodlark Island in Milne Bay Province
 - **Orokolo Bay** – industrial and mineral sands project to be developed in the Gulf Province by Mayur Resources (Australia)
 - **Misima** – gold project in Milne Bay Province to be developed by ASX listed company, Kingston Resources, in partnership with PPC (Japan)
 - **Imwauna** – gold project on Normanby Island in Milne Bay Province currently being explored by ASX listed company, AMD Resources Ltd
-

- WOODLARK

- Reserve 28.9MT at 1.12g/t Au for 1,037,000 ozs Au.
Resource 47Mt at 1.04g/t Au for 1.57Mozs Au. Capital \$A202 M, Free cash flow \$A343M.

- MISIMA

- Historic production 3.7Mozs Placer Dome
- Resource – 82.3Mt at 1.1g/t Au, 5.3g/t Ag for 2.8M ozs Au and 13.9M ozs

- IMWAUNA

- Current Target high grade veins -700,000 ozs Au

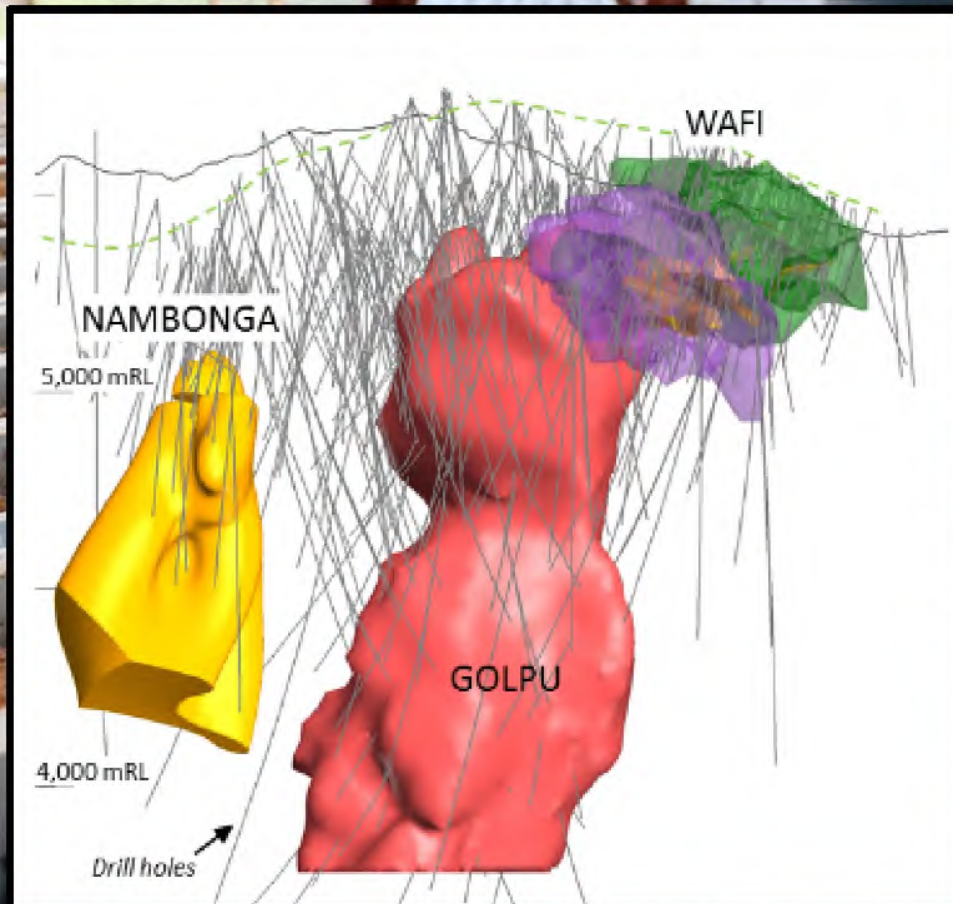


WAFI-GOLPU PROJECT

**A Multi-generational Greenfield
Copper-Gold
Development**

Mineral Resource

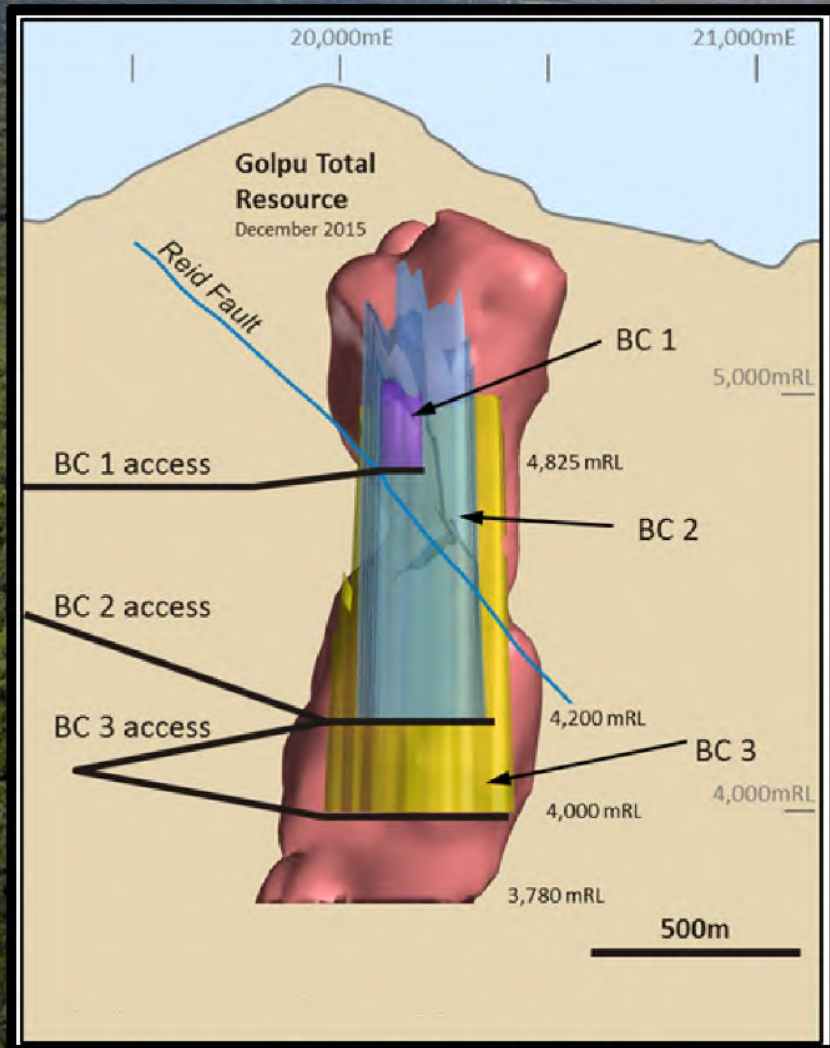
Economically significant



1. For full Resource and Reserve declarations please refer to either www.harmony.co.za or to Newcrest's Annual Statement of Mineral Resources and Ore Reserves as at 31 December 2015 at www.newcrest.com.au. Resource figures quoted on 100% basis. Data is reported to two significant figures to reflect appropriate precision in the estimate and this may cause some apparent discrepancies in totals.

Value Proposition

Multi-generational orebody



**Large
resource**

**18.6moz gold
8.6Mt copper**

**Long mine
life**

28 to ~ 40 years

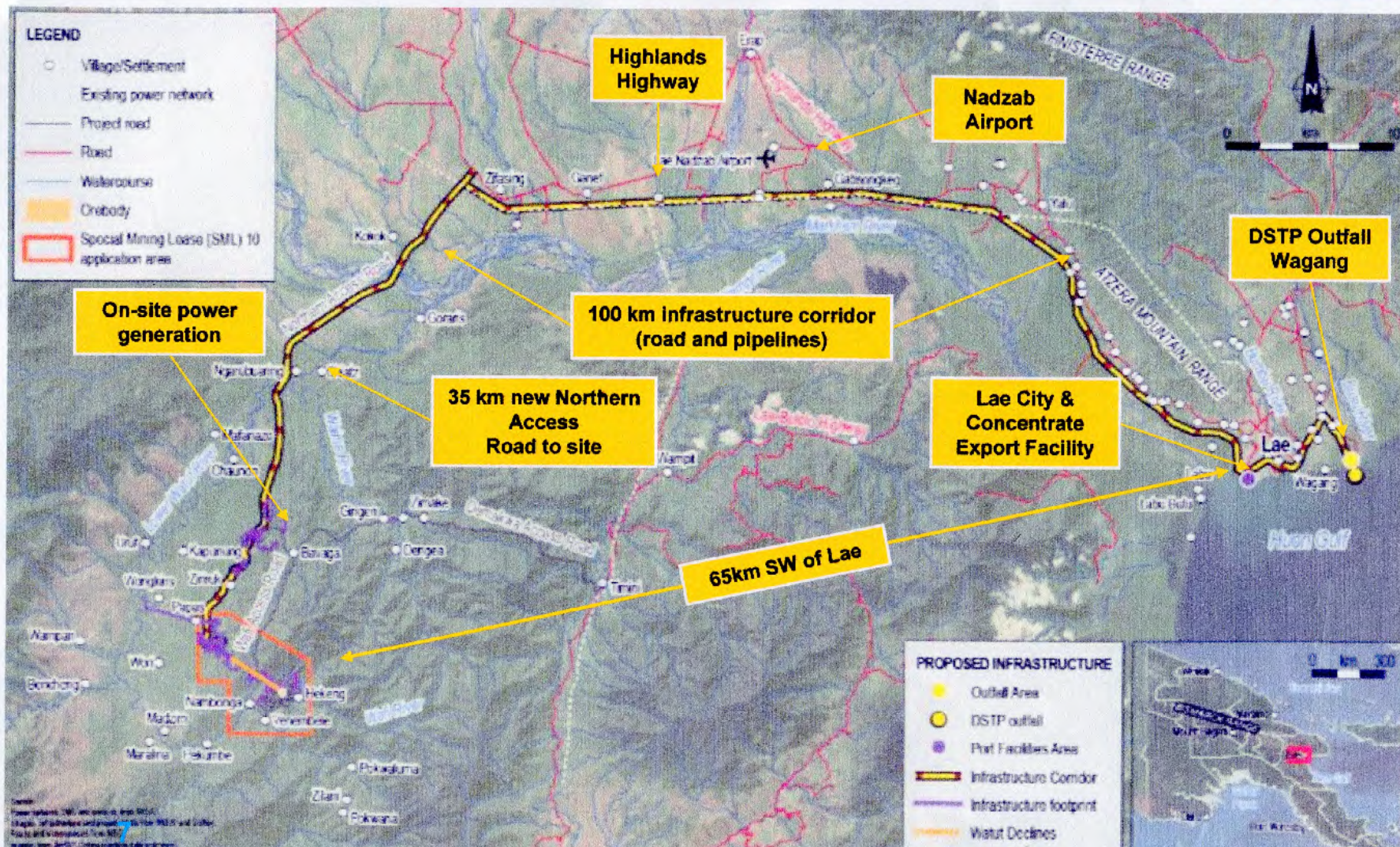
**Low cost
producer**

**Copper cash cost
~US\$0.60/lb**

**Close to
infrastructure**

**65km South West of
Lae**

Project footprint overview



Economic Benefits Summary

Substantial positive economic contribution



1 st Development	Benefit Summary
Projected GDP growth (real)	K36 billion, equiv. to 22% of PNGs 2015 GDP
GDP increase (real)	Morobe Province - K33.7 billion
Income (real)	Morobe Province - K5.4 billion
Taxes, Royalties and Levies	K8 billion (real), or K287 million/year
Employment (total)	1,420 (construction), 600 (operations)
GoPng 30% equity participation	K8.2 billion post tax ungeared cashflow
Future Expansion	Benefit Summary
Taxes, Royalties and Levies	K18.3 billion (real)), or K469 million/year
GoPng 30% equity participation	K16 billion post tax ungeared cashflow

Forecast dependent on – fiscal terms, commodity market, operating conditions

FRIEDA RIVER PROJECT

- Feasibility study completed end 2018
- Pan Aust 80%; Highlands Pacific 20%
- Mineral resource -2640t at 0.44 Cu and 0.23 Au
- Pre production capital – US\$6 billion, not including US\$1.1 billion for road, port, slurry pipeline to be provided by third parties
- IRR of 11%; post tax cashflow – US\$34.8 billion
- Annual production – 175,000 tonnes of copper and 230,000 ozs gold

















































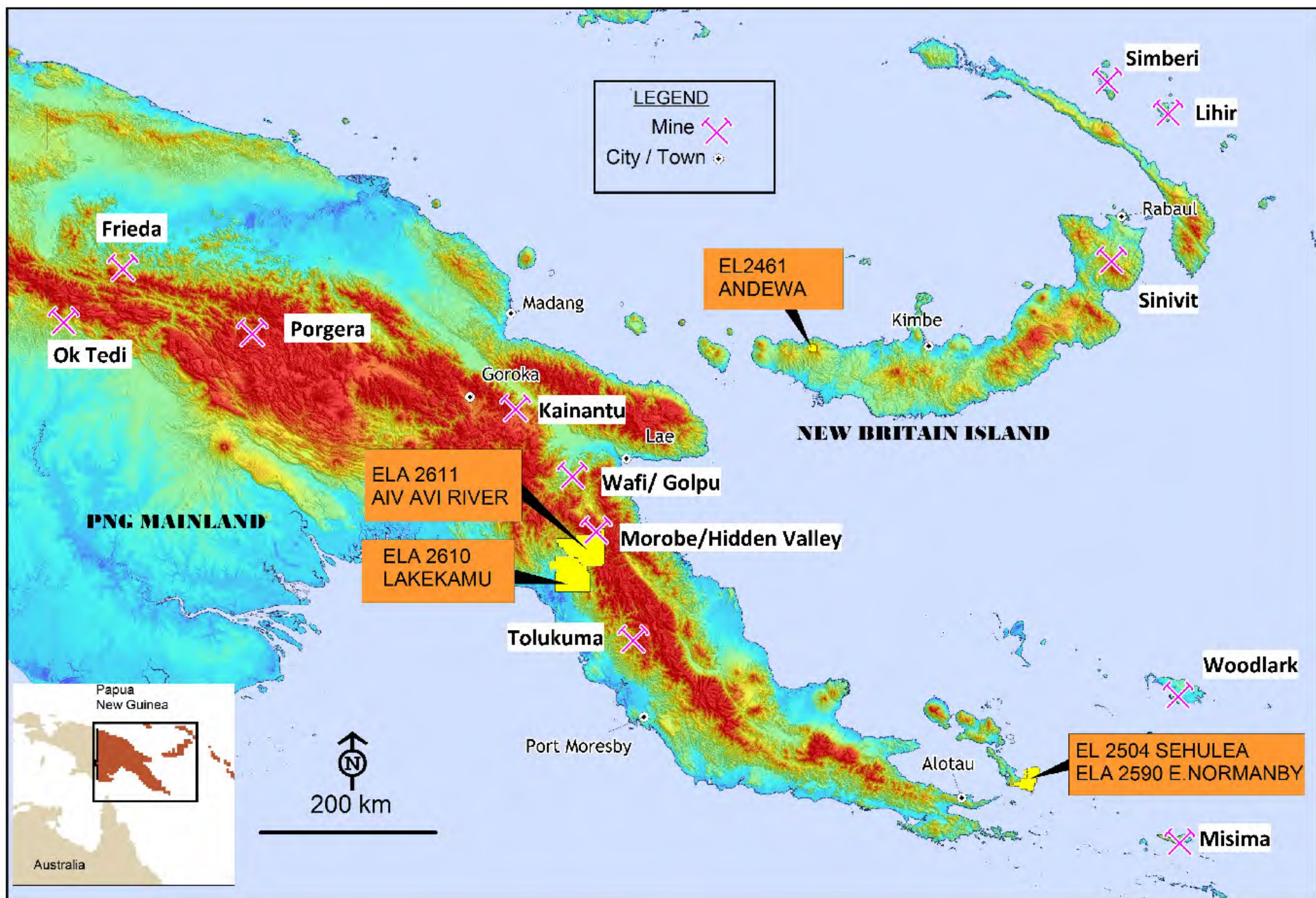










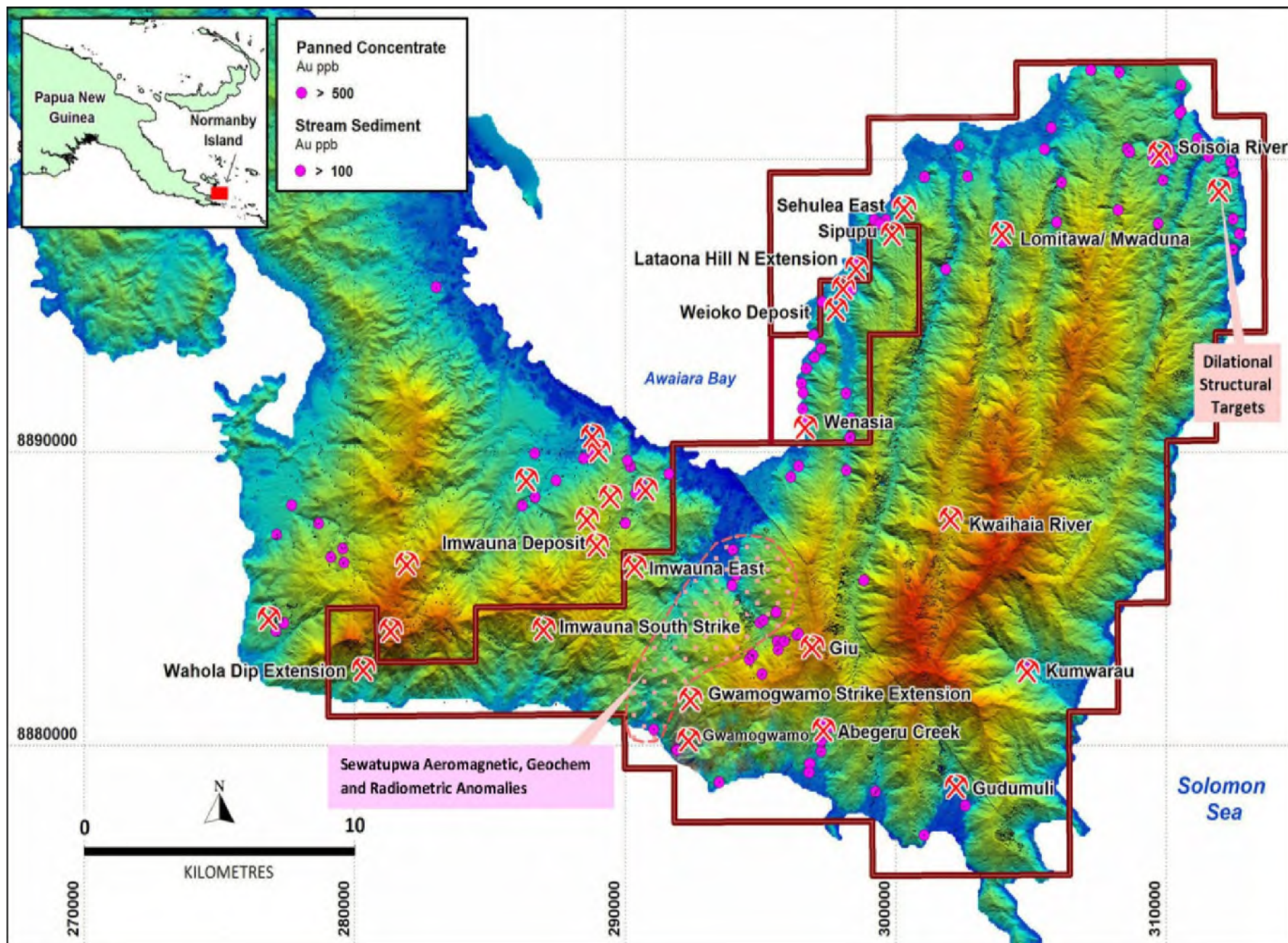






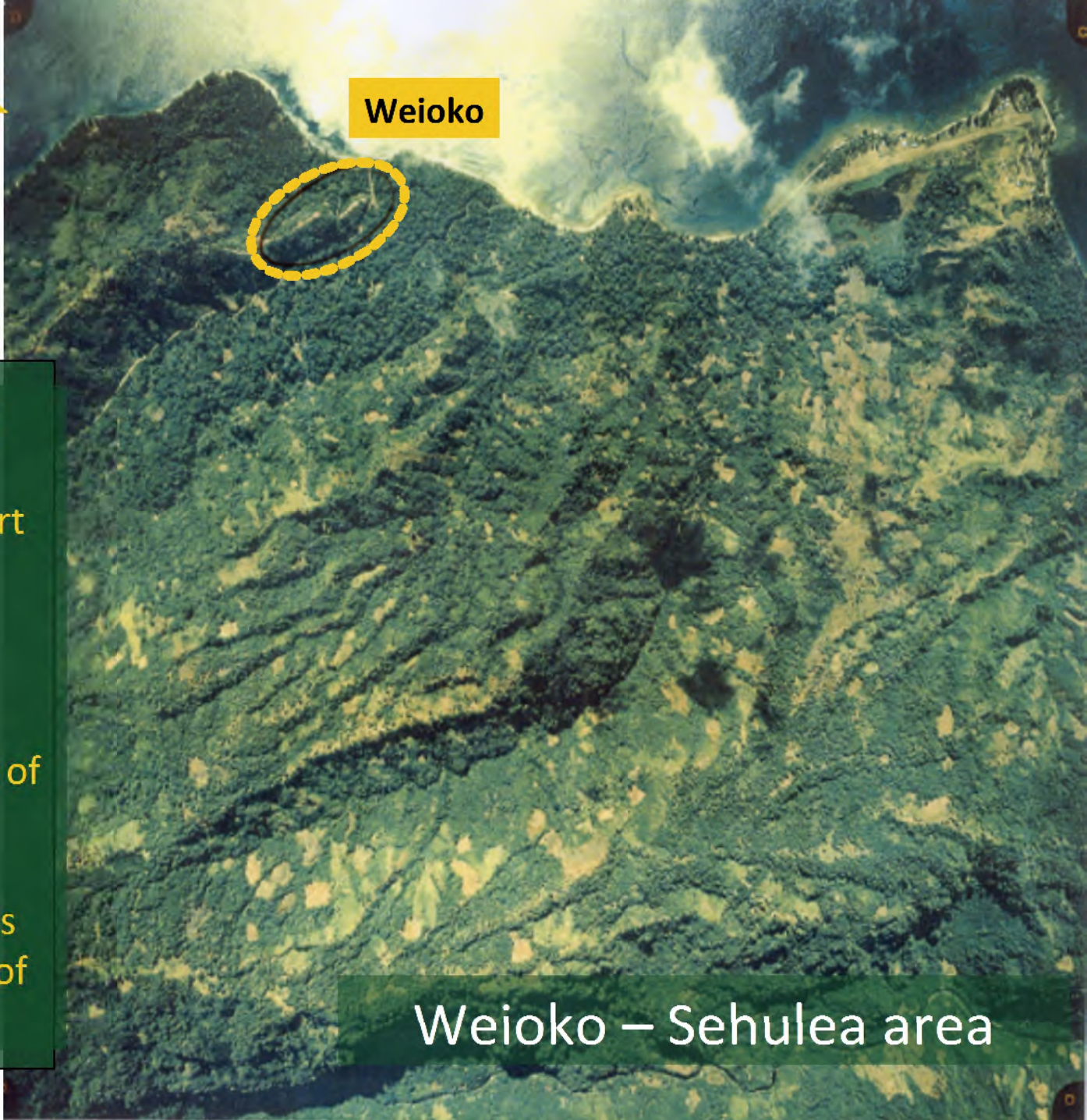






The trenched/drilled area comprises the smallest northern part of the ridge in the outlined area only. There has been no drilling on the southern, offset part of the ridge.

The Sehulea airstrip is in the northern part of the photo.



Weioko

Weioko – Sehulea area

SEHULEA PROJECT (Weioko)

Weioko Trench Results

- 164m at 3.96g/t Au inc. 16m at 20.3g/t Au
- 12m at 8.07g/t Au
- 40m at 3.36g/t Au
- 26m at 5.70g/t Au
- 28m at 5.19g/t Au inc. 4m at 24.4g/t Au

Hole ID	Intercept Length	Assay Grades		Intercept	
		Gold (g/t)	Silver (g/t)	From	To
PWED047	64.6 m	2.24	8.9	0.0 m	64.6 m
PWED035	36.0 m	2.67	6.7	0.0 m	36.0 m
WEH031	63.8 m	1.49	4.7	1.0 m	64.8 m
PWED041	28.0 m	3.29	8.6	9.0 m	37.0 m
PWED042	32.5 m	2.52	5.8	8.0 m	40.5 m
WEH005	38.0 m	2.14	8.5	22.0 m	60.0 m
WED003	117.5 m	0.76	6.9	0.0 m	117.5 m
WEH007	60.0 m	1.01	8.0	0.0 m	60.0 m
WEH014	56.0 m	1.10	5.0	16.0 m	72.0 m
PWED043	59.3 m	1.29	6.2	1.0 m	60.3 m
PWED046	48.0 m	1.40	5.2	0.0 m	48.0 m
WEH004	28.0 m	2.09	12.6	26.0 m	54.0 m
WEH006	36.0 m	1.39	4.1	2.0 m	38.0 m
PWED044	33.5 m	1.42	6.5	7.0 m	40.5 m
plus	12.8 m	1.12	6.0	59.2 m	72.0 m

GRID WEST

GRID EAST

20m

20m

A1

A

10m

10m

Sea Level

Sea Level

-10m

-10m

-20m

-20m

WEH002
WEH003
WEH005
WEH004

WEH001

Alluvium and scree

Altered Conglomerate



Drill hole showing metreage
in grams per tonne of gold



0.50 - 1.00g/t gold



1.00 - 2.00g/t gold



>2.00g/t gold

4m at 0.71 g/t Au

2m at 0.71 g/t Au

4m at 0.82g/t Au

2m at 0.71 g/t Au

8m at 2.41g/t Au

12m at 0.79g/t Au

16m at
0.73g/t Au

10m at
0.62g/t Au

20m at
1.08g/t Au

4m at 0.90g/t Au

6m at 1.89g/t Au

12m at
1.55g/t Au

22m at 2.63g/t Au

12m at 2.97g/t Au

4m at 1.06g/t Au

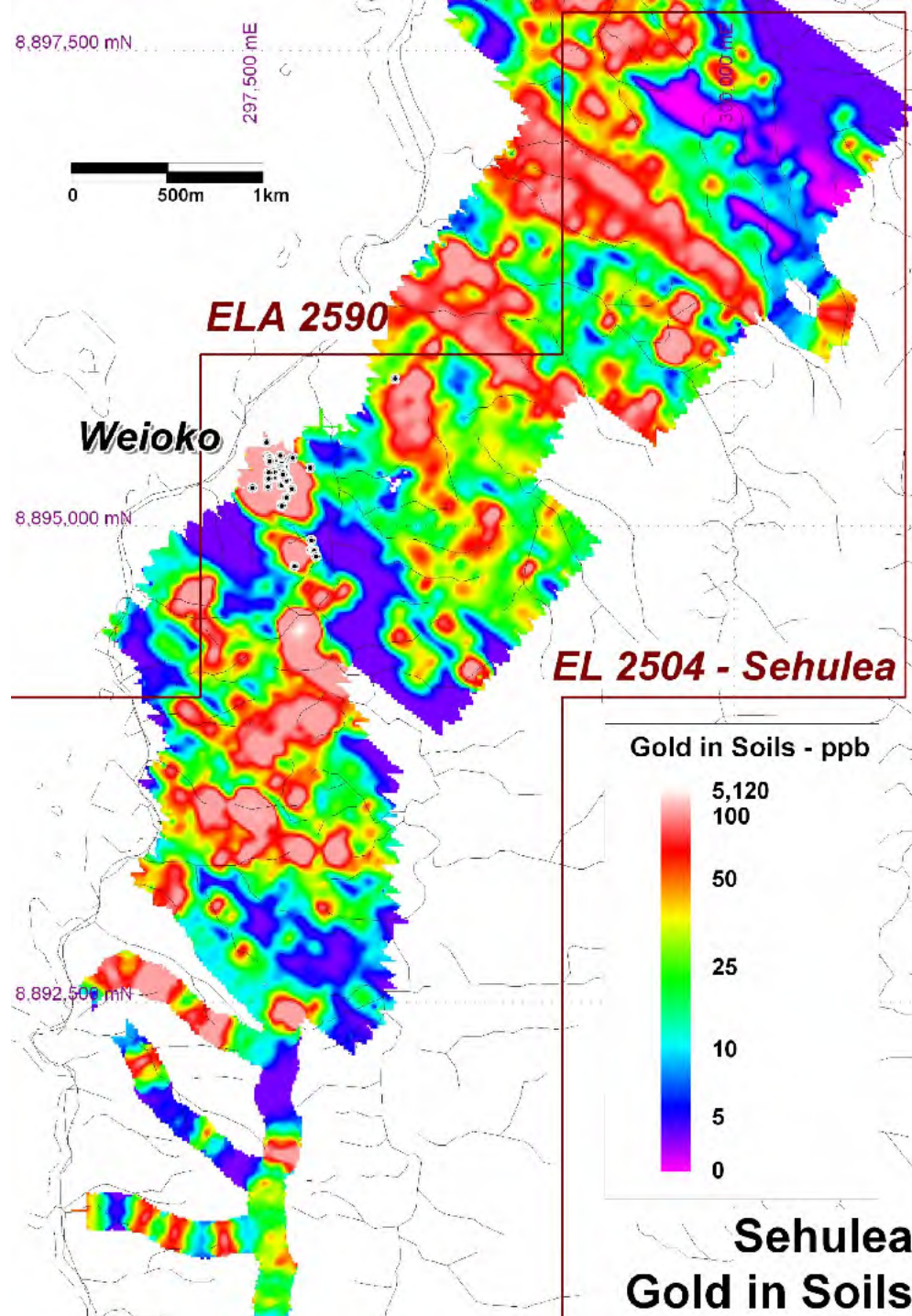
8m at 0.77g/t Au

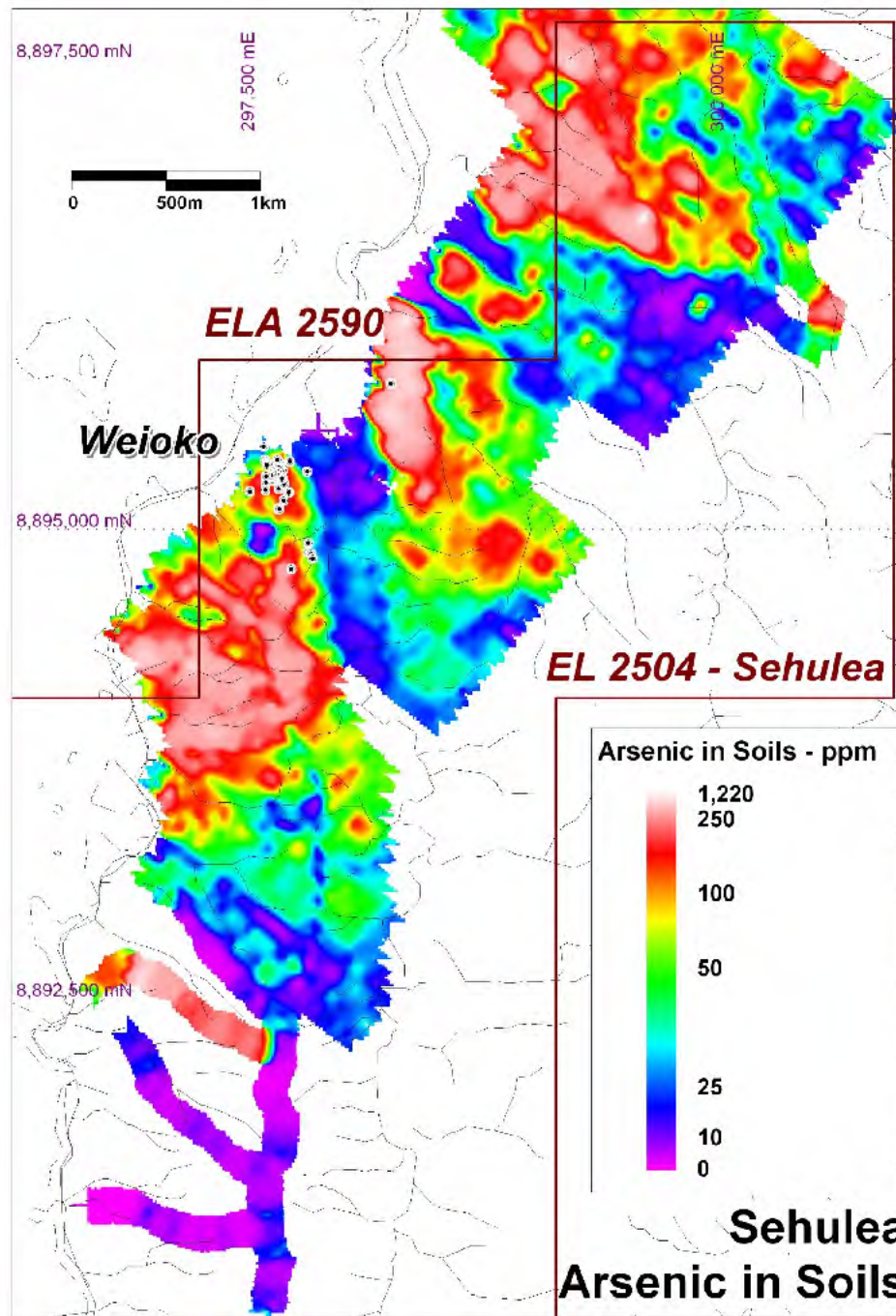
6m at 0.75g/t Au

12m at 1.70g/t Au

16m at 0.70g/t Au

6m at 0.73g/t Au





Andewa



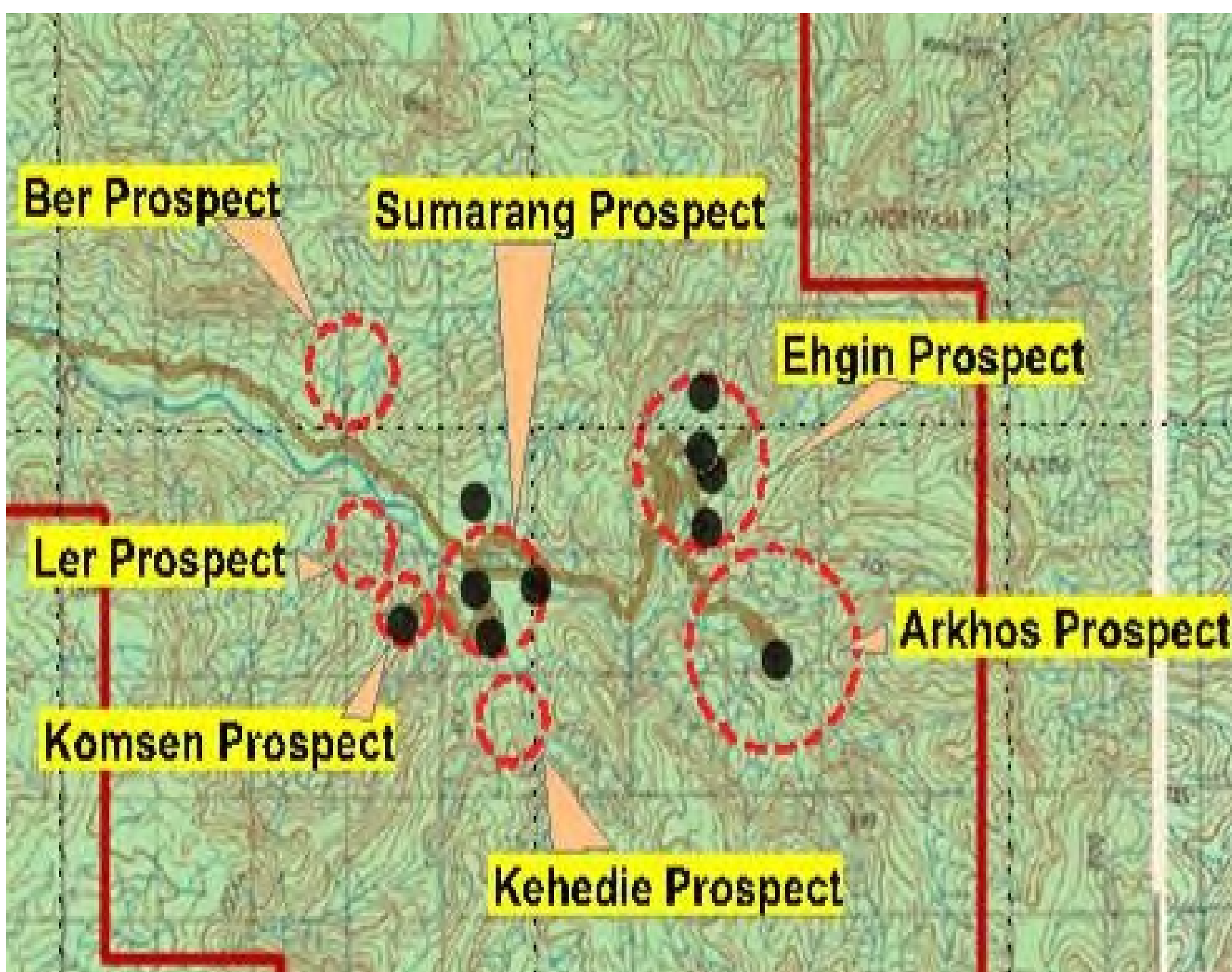






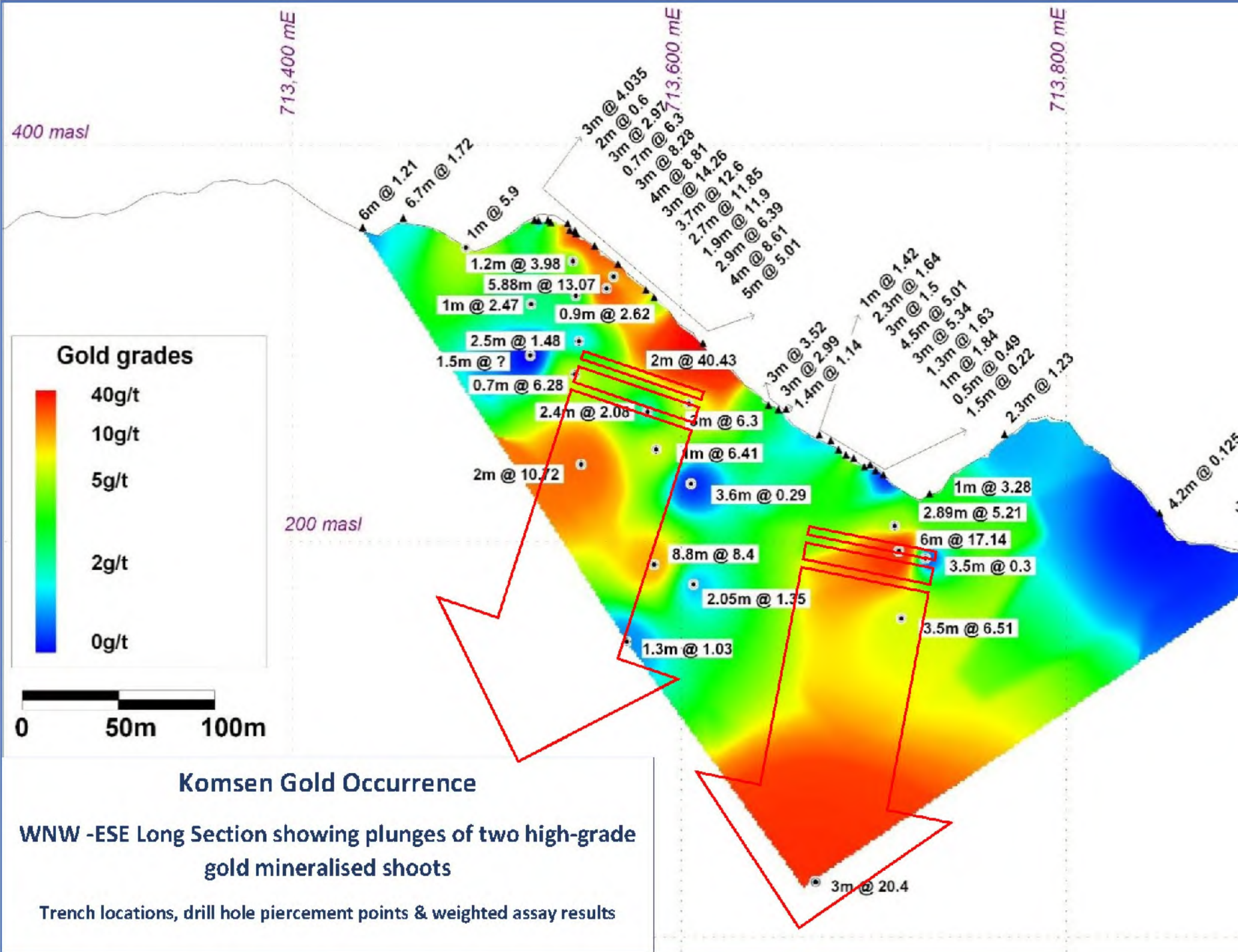


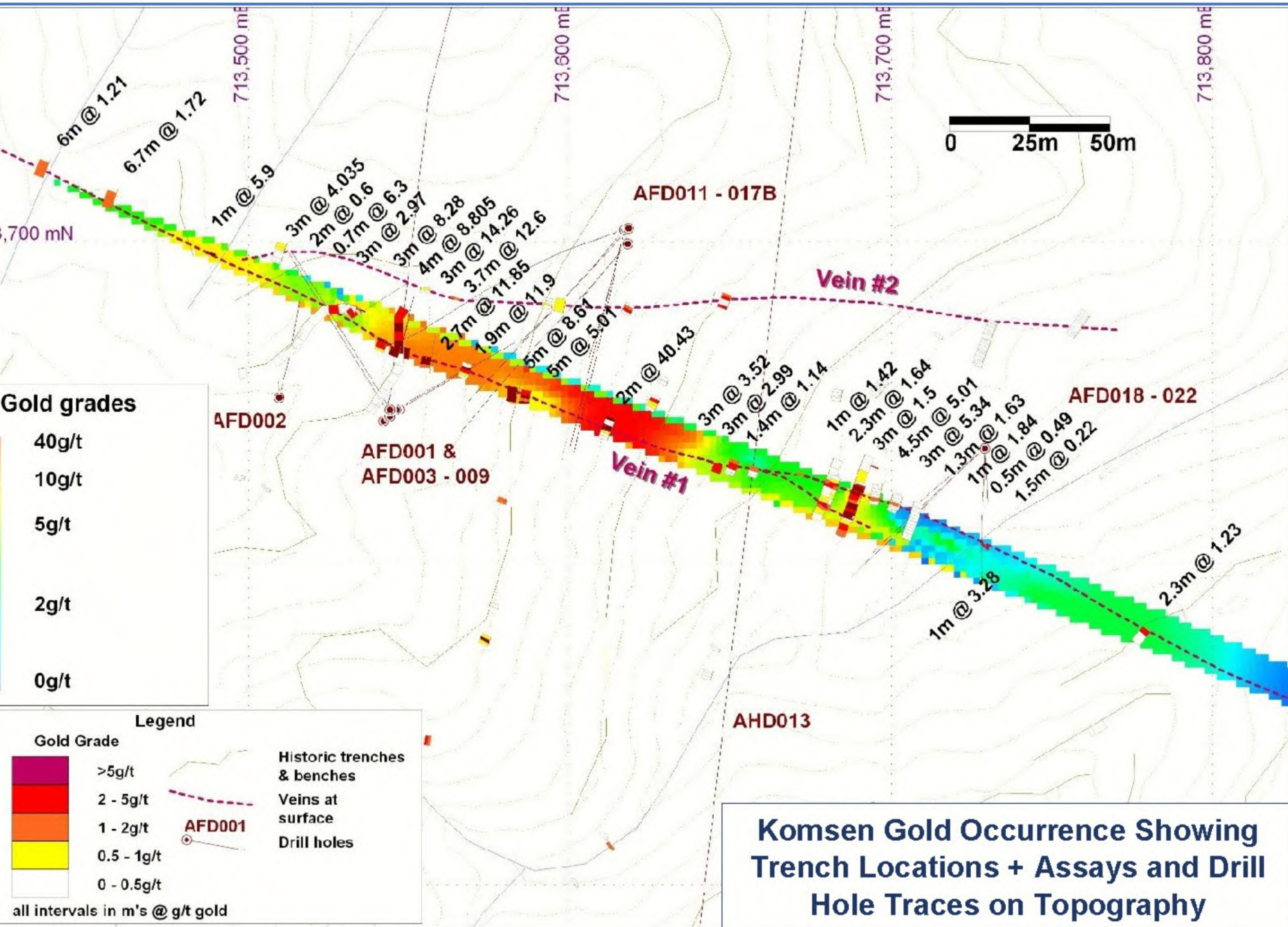


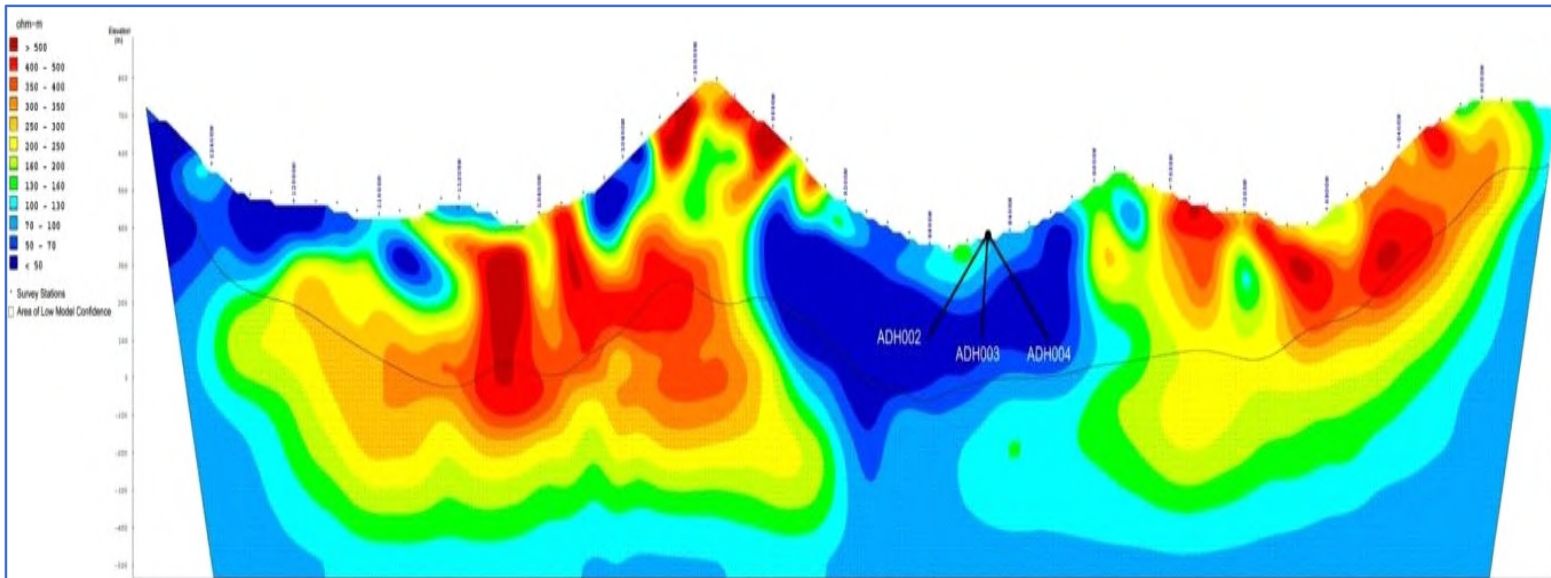


ANDEWA

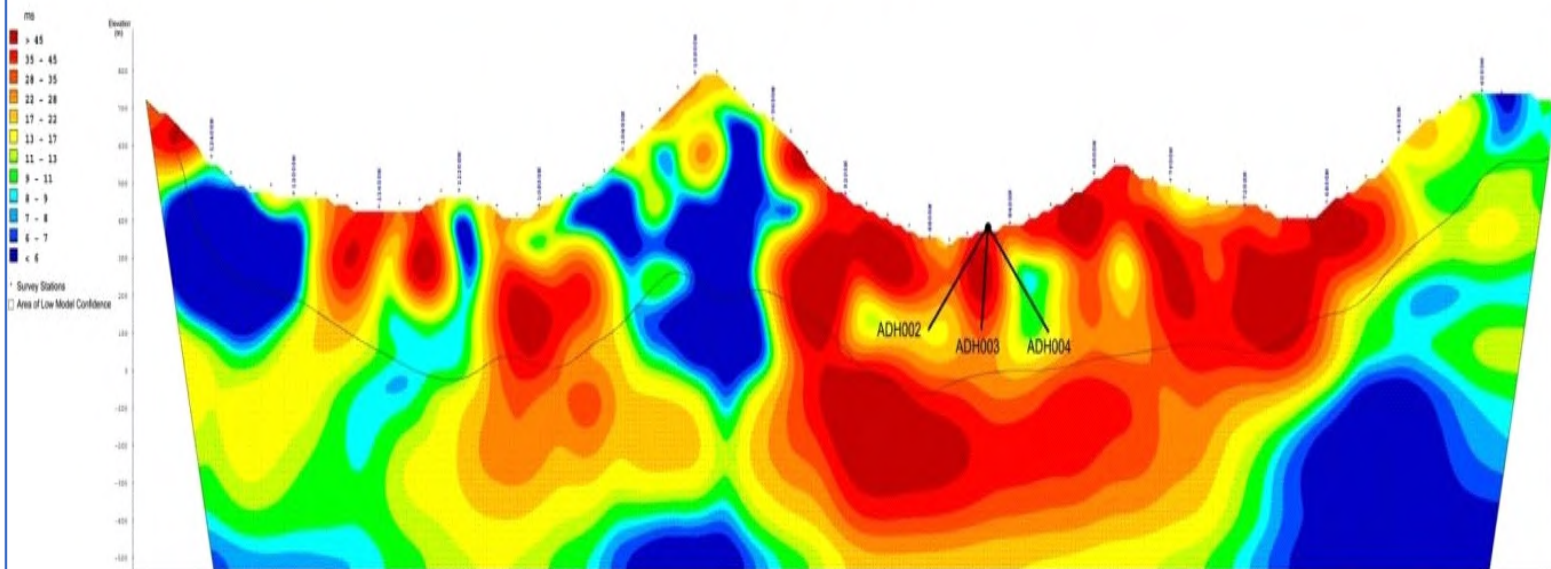
- 2 phases of drilling – Komsen prospect and Andewa deep drilling
- **Komsen – 22 DDH holes**
- 3m at 10.97 g/t Au; 10.8m at 6.99 g/t Au; 7.5m at 3.73 g/t Au; 17.9m at 2.09 g/t Au; 7.9m at 10.01g/t Au
- **Deep drilling -18 holes**
- 48.5m at 1.02 g/t Au and 0.38% Cu within 106.6m@0.75 g/t Au and 0.3 % Cu within 398.8m at 0.35g/t Au and 0.15% Cu
- **Channel samples – Akhos Prospect**
- 15m@15.48 g/t Au and 21.9 g/t silver; 11m at 5.44 g/t Au and 85 g/t silver; 3m at 9.20 g/t Au and 32 g/t Ag



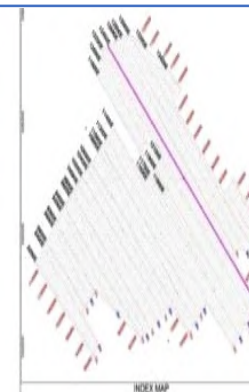




Interpreted Resistivity (ohm-m)



Interpreted Chargeability (ms)



Project Information:
 Survey by: SJ Geophysics Ltd.
 3D Inversion by: S.J.V. Consultants Ltd.
 Survey Date: August-November, 2010

Instrumentation:
 Receiver: SJ-24 Full-Waveform Digital IP Receiver
 Transmitter: GDO TX II
 Array Type: 3D

Mapping Information:
 Datum: AGD66
 Projection: AMG Zone 55
 Mapping Date: January, 2011

Frontier Resources Ltd.

Andewa Project

Andewa Grid

West New Britain, Papua New Guinea

3D Inversion Model

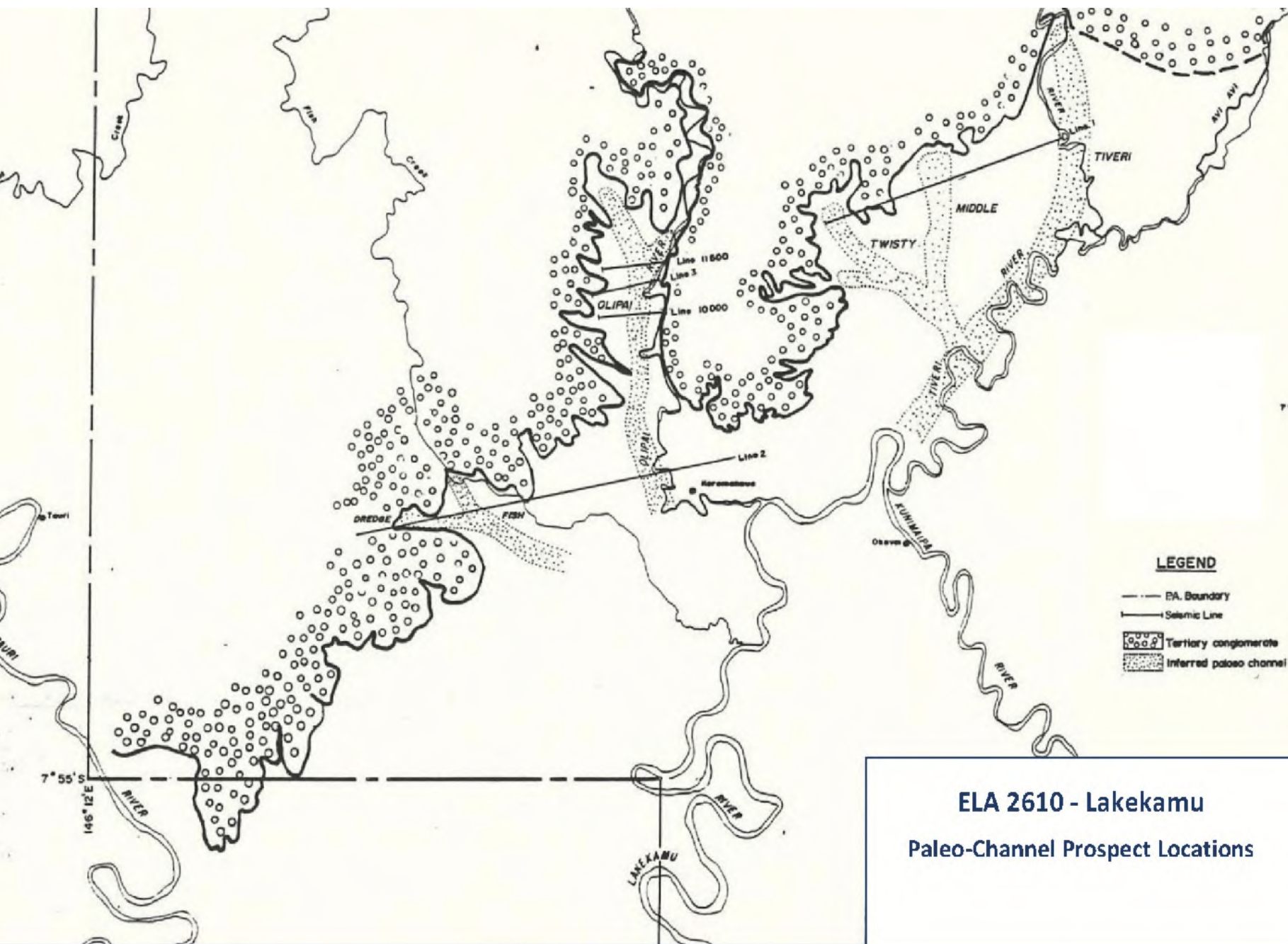
of

Interpreted
 Resistivity & Chargeability

Cross Section Map

Section: 12400E





ELA 2610 - Lakekamu
Paleo-Channel Prospect Locations



