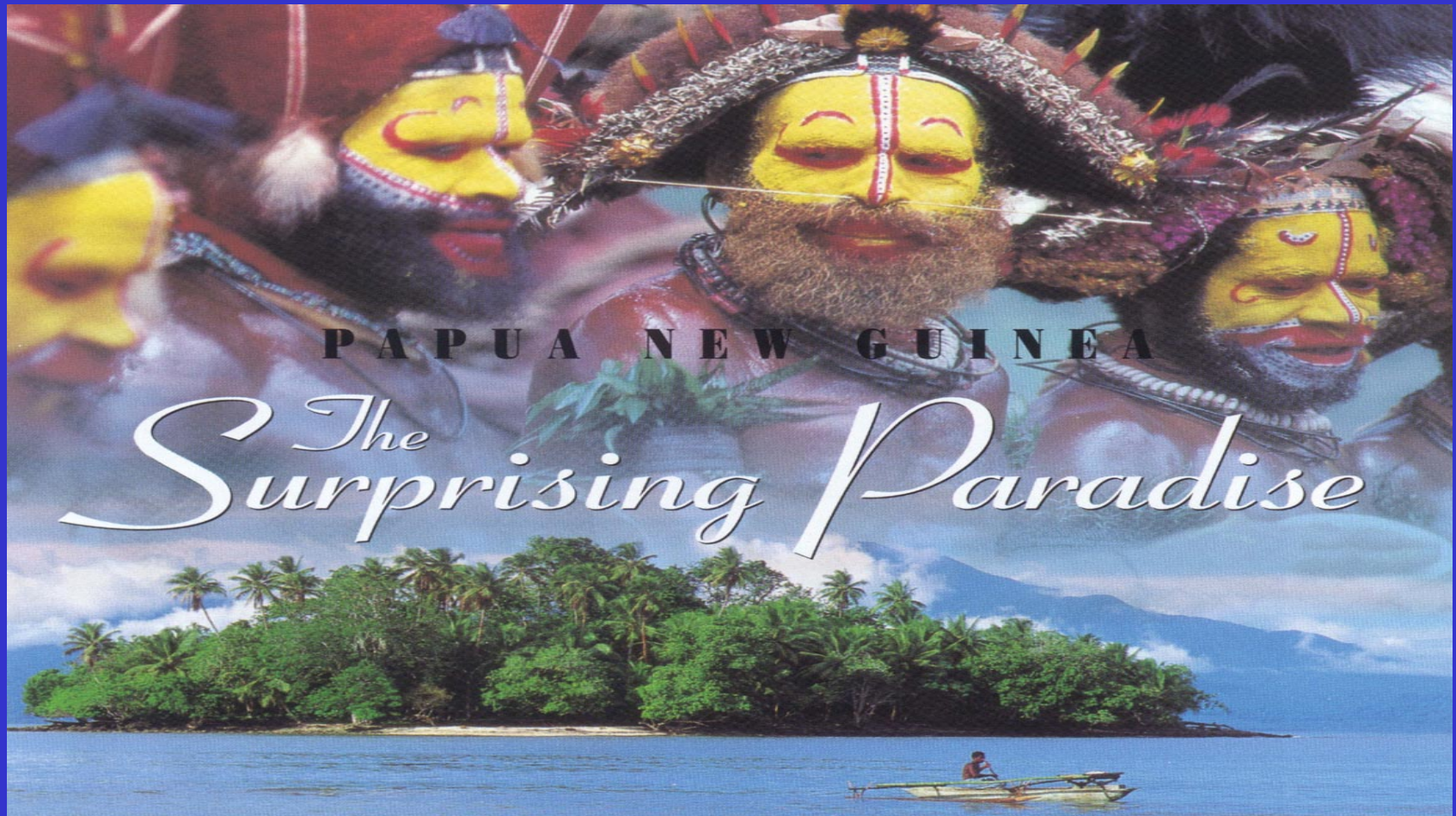
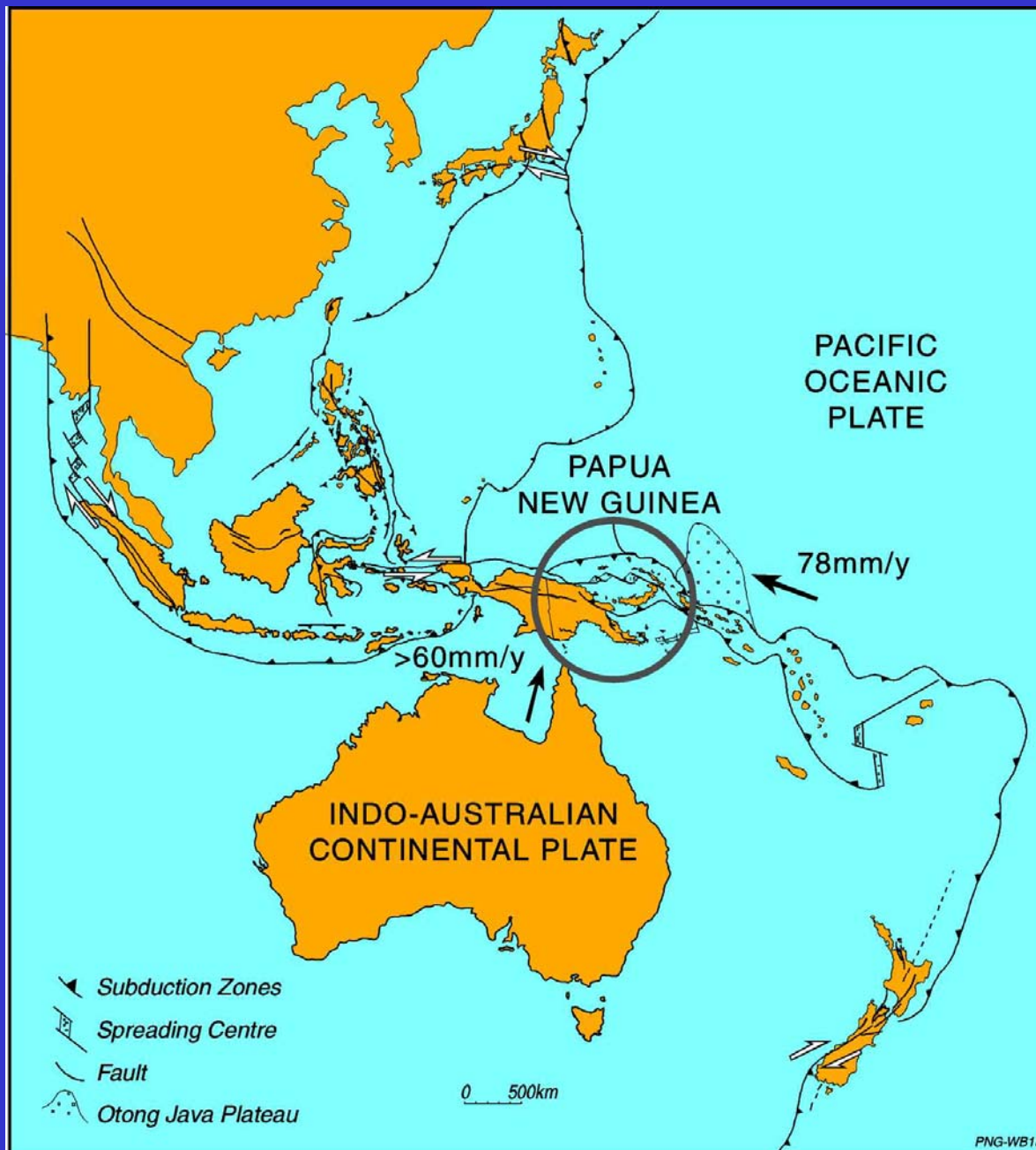


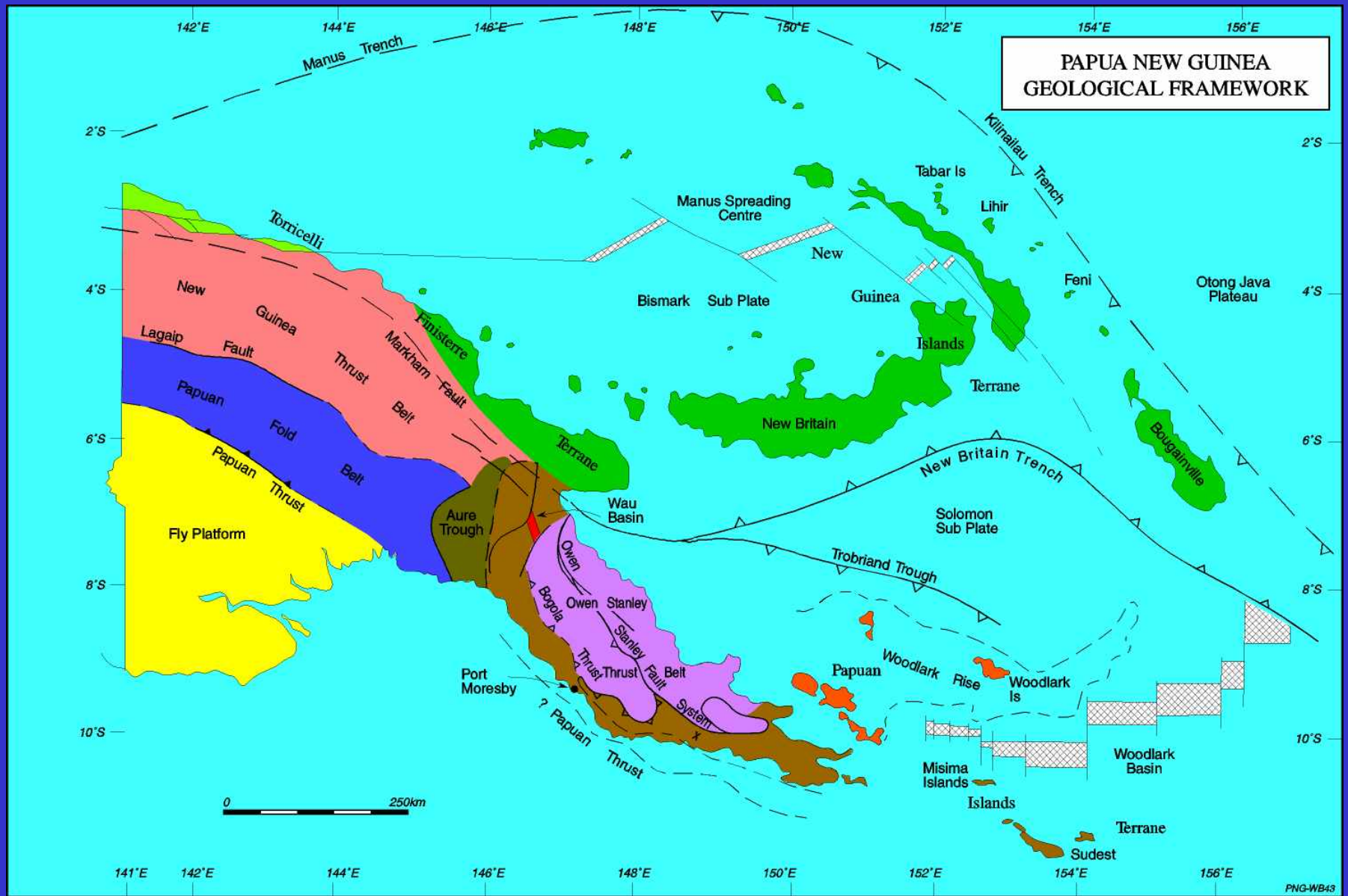
# OVERVIEW OF MINING PROJECTS IN PNG



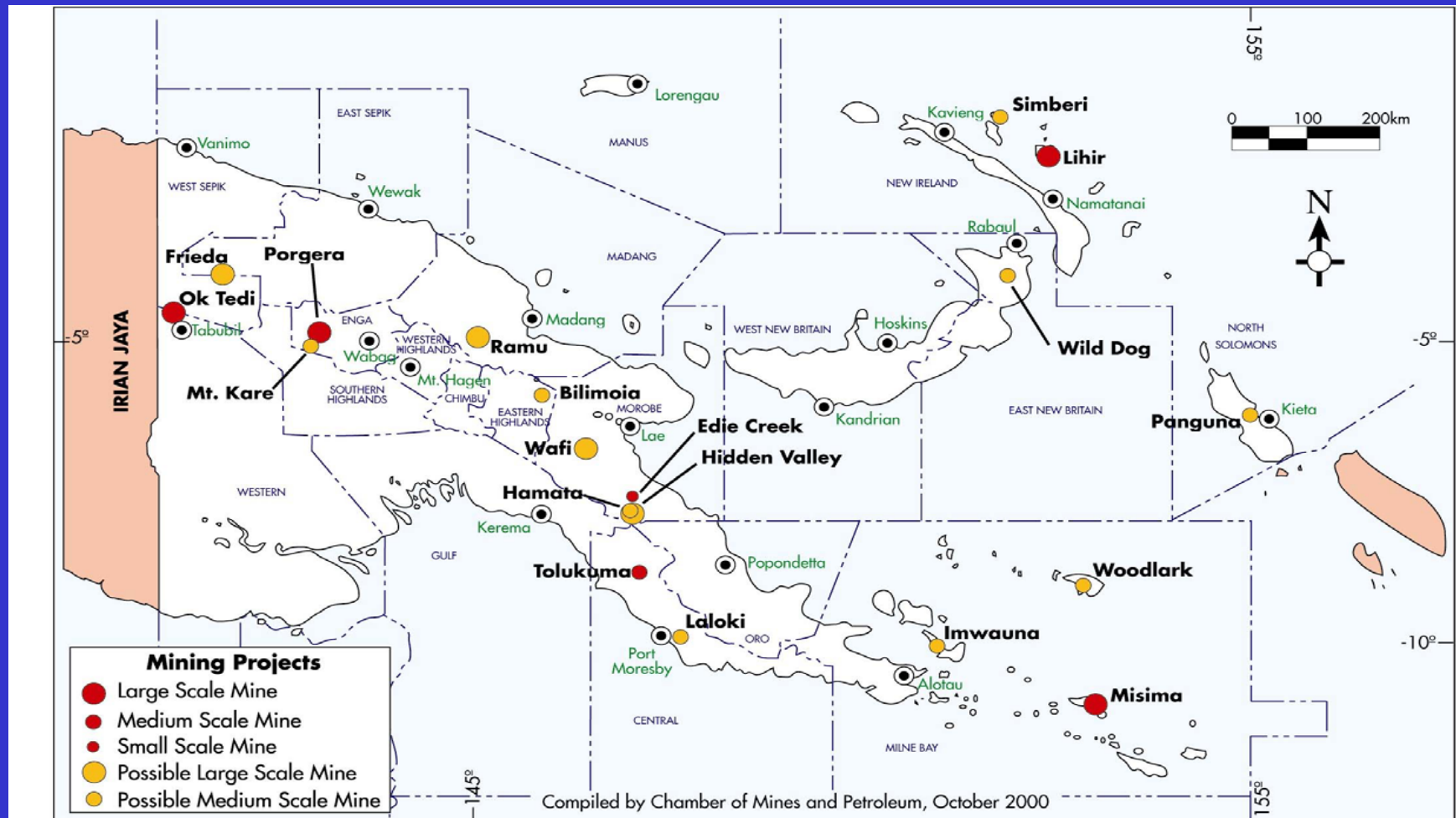
Terry Leach Symposium – Sydney. 17 October 2008

- Terry Leach held his first workshop on petrology for geologists in Bulolo PNG for Highlands Gold
- Long association with PNG and made a significant contribution to unlocking the mineral wealth of the country
- Many ideas initially developed in PNG and refined elsewhere provide a platform for understanding the processes of orebody formation and discovery.



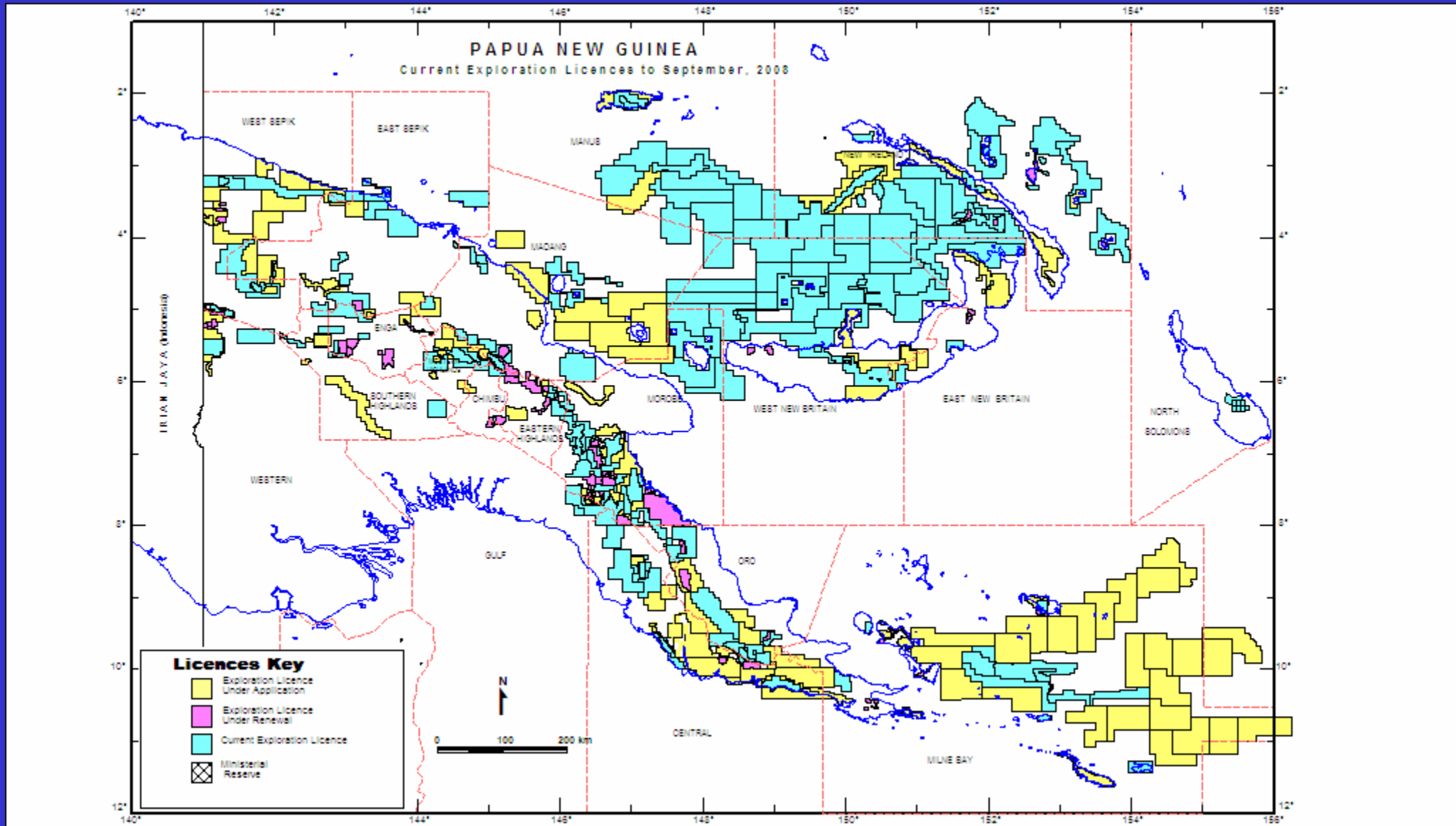


# Mining Projects



# CURRENT STATUS

- 8 producing mines (Ok Tedi, Porgera, Lihir, Tolukuma, Kainantu, Sinivit, Simberi and Edie Creek)
- 3 under construction (Ramu Ni, Hidden Valley Au/Ag, Nautilus Cu/Au)
- 4 in scoping/ feasibility (Frieda River, Yandera & Wafi/Golpu and Woodlark)
- 364 Exploration Licence (110 offshore – 246,000km<sup>2</sup>  
254 onshore – 152,000km<sup>2</sup>)



# Production

2007

- Copper 192,216 t
- Gold 57.98 t (1,864,042oz)
- Silver 60.66 t (1,950,356oz)

Estimate 2012

- Copper 438,000 t
- Gold 92 t
- Nickel 33,000 t
- Cobalt 3,200 t



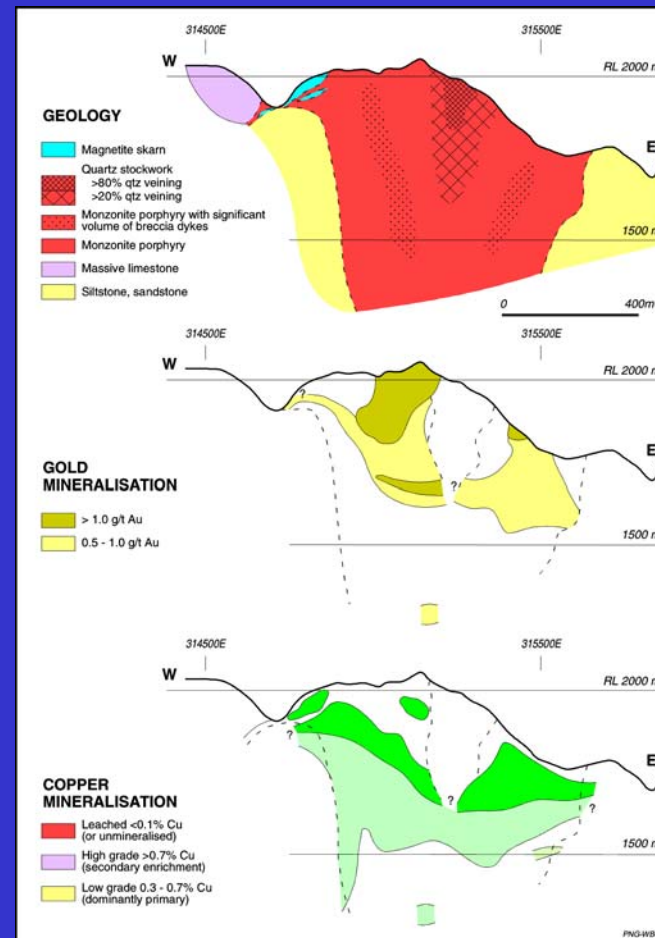
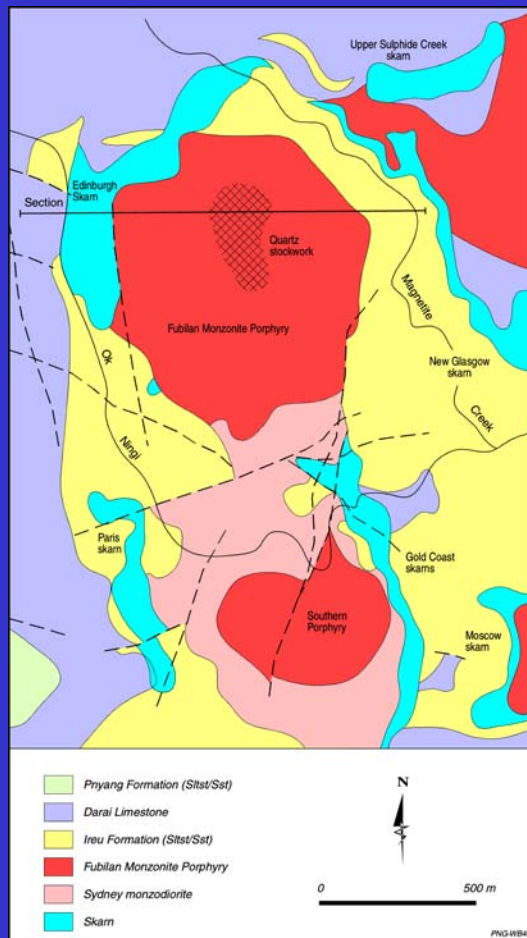
## COMMODITIES SOLD - EXPORTED 2007

Mine	Gold Production		Silver Production		Copper Production	
	(kgs)	(ozs)	(kgs)	(ozs)	(tonnes)	(lbs)
Porgera	16,031	515,415	4,482	144,089	0	0
Ok Tedi	16,609	533,998	50,511	1,623,952	192,216	423,759,394
Lihir	21,394	687,827	-	-	0	0
Tolukuma	1,295	41,630	5,671	182,314	0	0
Kainantu	384	12,343	-	-	0	0
Alluvial	2,265	72,829	n/a	n/a	0	0
<b>Total:</b>	<b>57,978</b>	<b>1,864,042</b>	<b>60,663</b>	<b>1,950,356</b>	<b>192,216</b>	<b>423,759,394</b>

# Ok Tedi



# Ok Tedi – Porphyry Cu Au



# Ok Tedi

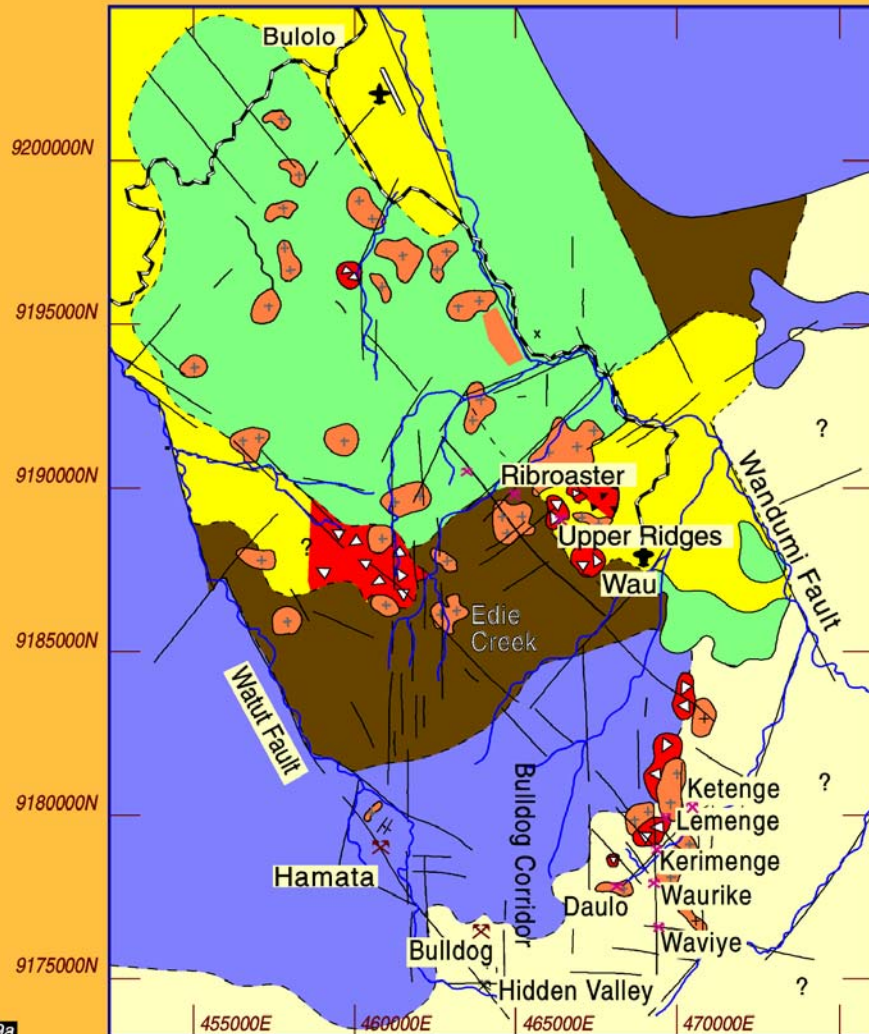
May 1984 - gold production

1987 – copper/gold concentrate production

25 years production

- 3.8M t Copper
- 10.6M oz Gold
- 13M oz Silver
- Currently going underground Closure 2013

# Wau District



## BULOLO GRABEN Geology

-  *Otibanda Formation*
-  *Bulolo Conglomerate*
-  *Edie Porphyry*
-  *Diatreme breccia*
-  *Morobe Granodiorite*
-  *Kaindi Phyllite*

0 10 km

1279a

Corbett

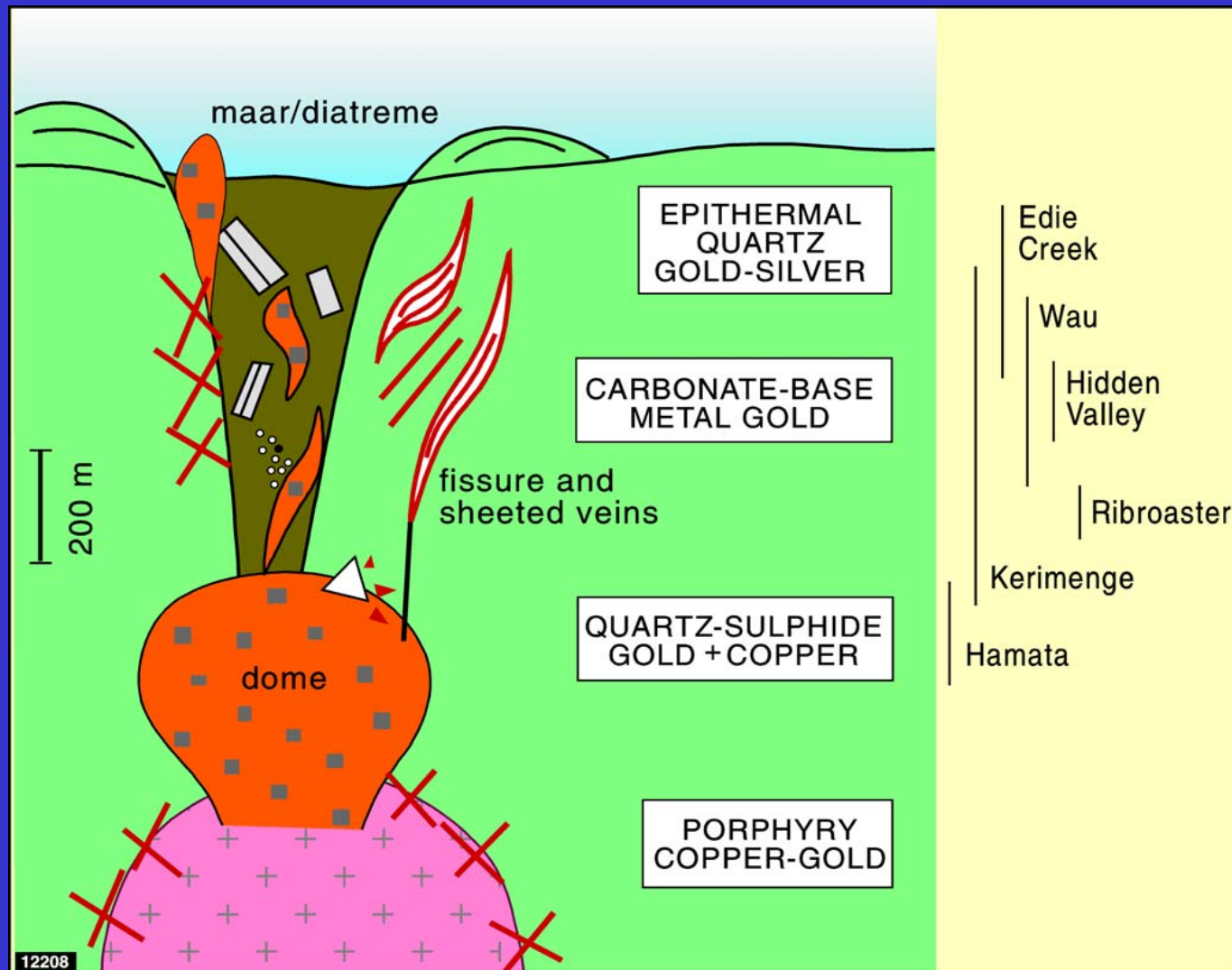
# Wau District

- Historic mining area in PNG since 1926
- Experiencing major revival
- Hidden Valley in construction
- Edie Creek expansion
- Wau mine closed

# Wau District

- Wau Deposit – 1 million oz 1923- 1990
- Hamata – 500,000oz
- Hidden Valley 3.5 million oz
- Kerimenge - +1 million oz
- Edie Creek Area – 1-2million oz

# Wau District





# Edie Creek

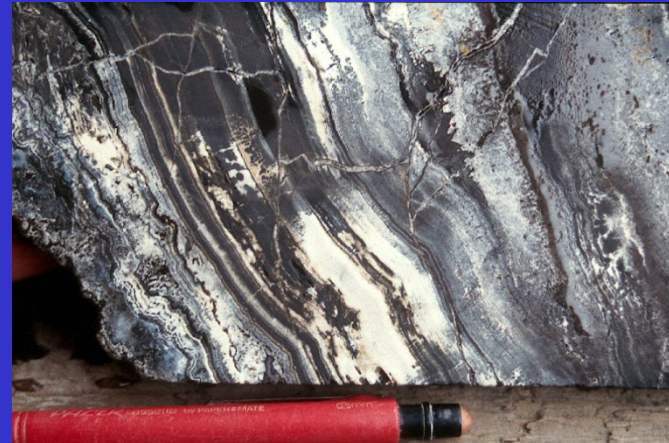


Bonanza Veins



Banded Carbonate

# Wau Mine 1987

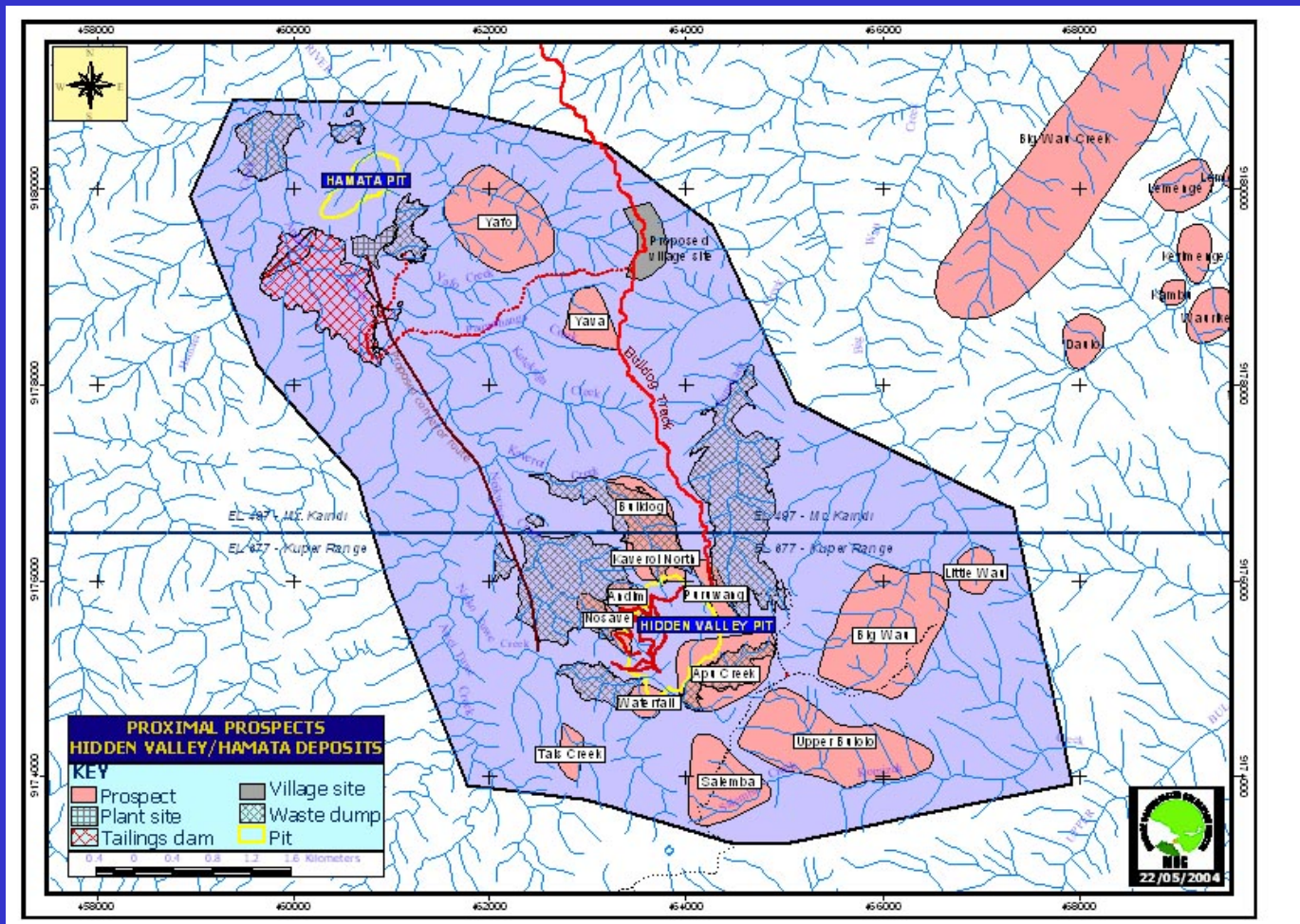


Banded Carbonate ore



Namie Breccia

# Hidden Valley



Planned  
commissioning  
Q2 2009

300,000 oz Au

# Hidden Valley

## Reserves

	M Tonnes	g/t	K ozs
Au Reserve	44.7	2.0	2,872
Ag Reserve	38.1	34	41,759
Au Resource	91.4	1.9	5,471
Ag Resource	84.7	32.8	89,578

## Project Summary

Mine Life	Years	9.7
Ore Tonnes	M Tonnes	41.9
Au Grade	g/t Au	2.1
Ag Grade	g/t Ag	38
Au Recovered	Ounces (000's)	2,664
Ag Recovered	Ounces (000's)	38,135
Project Capital	A\$M	475
Cash Cost	US\$/oz	207

# Hidden Valley

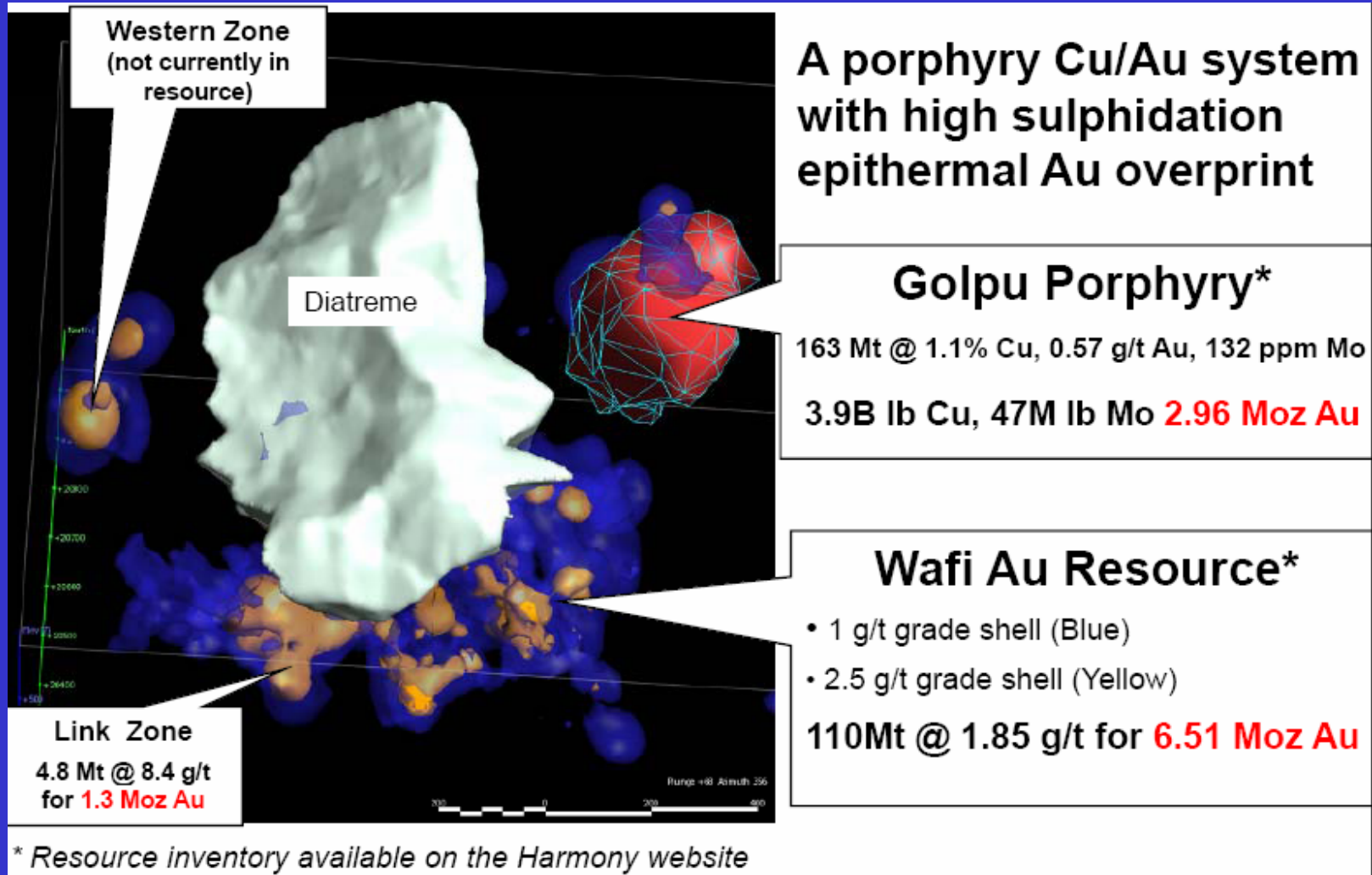


Hidden Valley Road

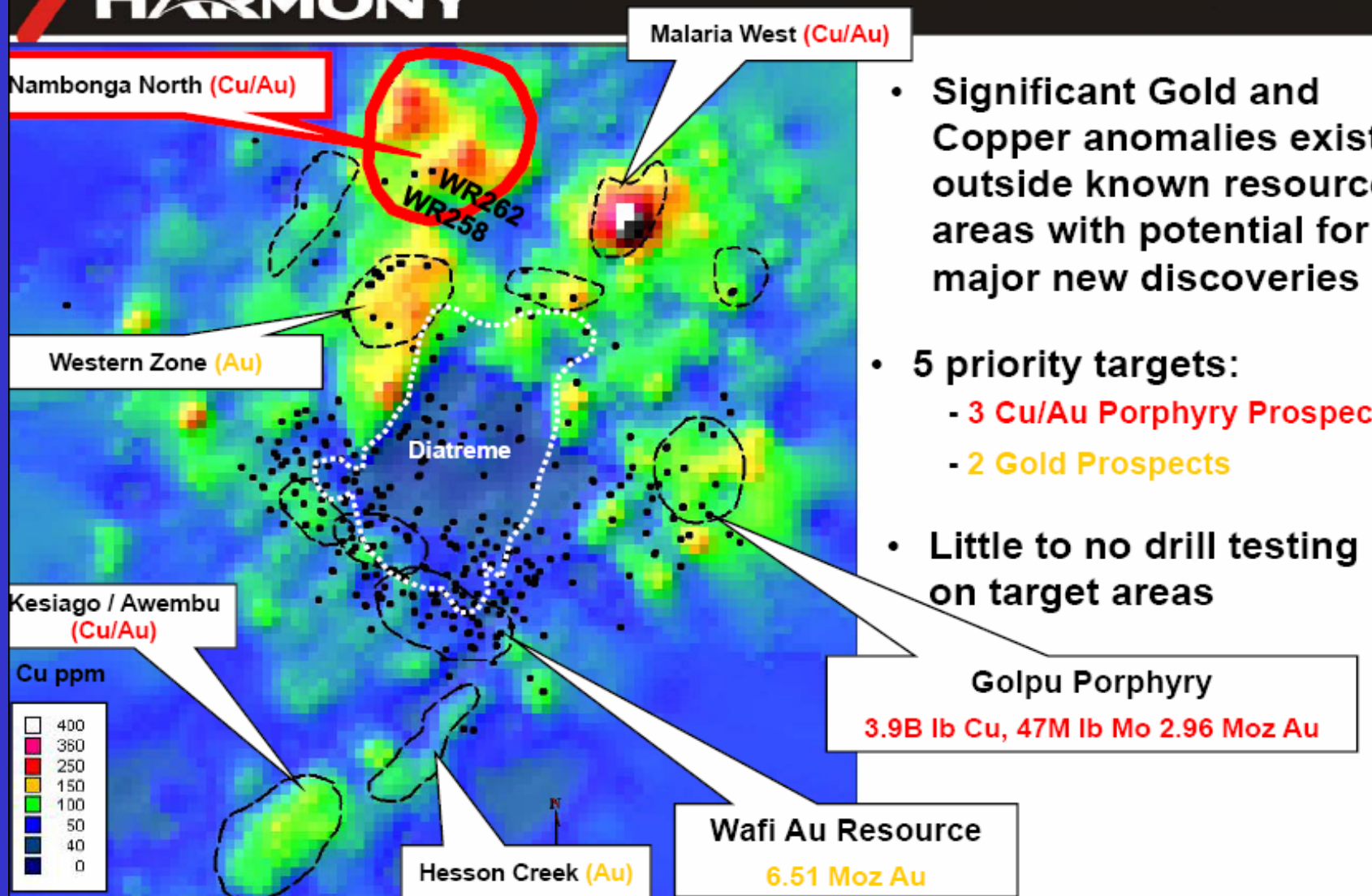


Tailing Dam construction

# Wafi / Golpu



# Wafi "Near Mine" Targets



- Significant Gold and Copper anomalies exist outside known resource areas with potential for major new discoveries

- 5 priority targets:
  - 3 Cu/Au Porphyry Prospects
  - 2 Gold Prospects

- Little to no drill testing on target areas

# Porgera



Before



Now

1990-2003 – 12.22M oz Au 2.23M oz Ag

2006 reserves 77.26Mt @ 3.79g/t Au (9.4M oz)

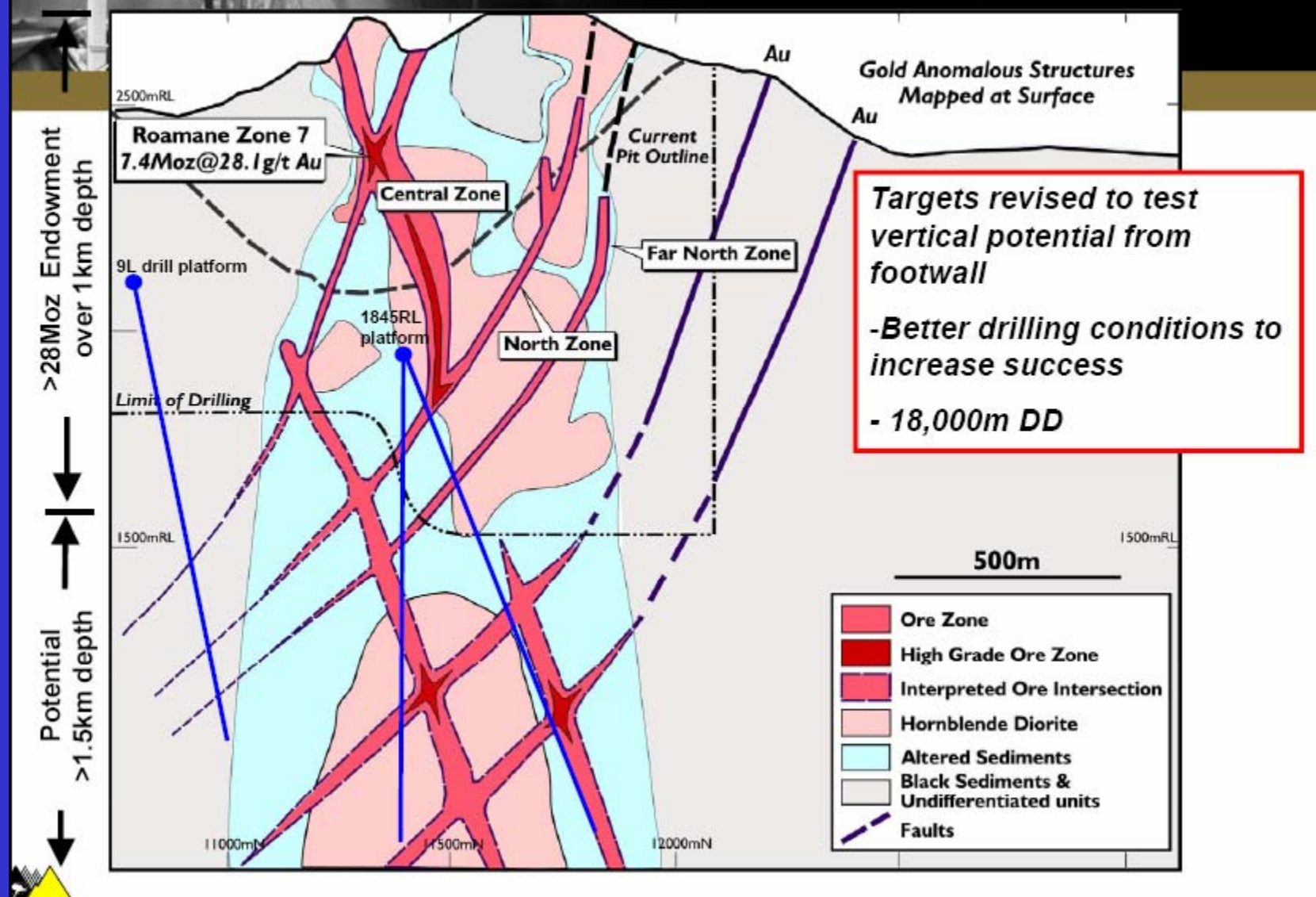
Underground production increasing to 60% of Au



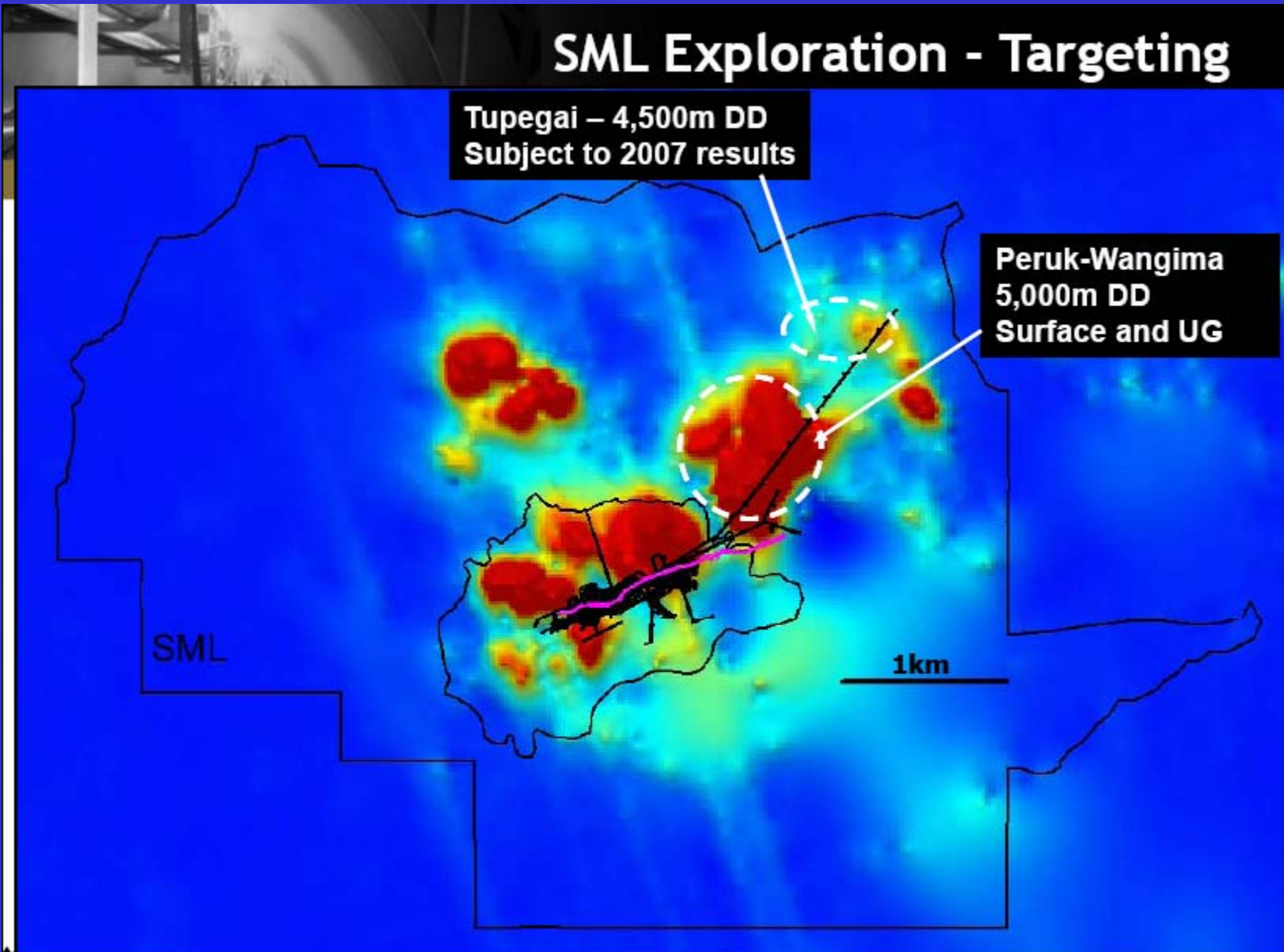
# Porgera



# Porgera Mine - Deep Mine Targets



# SML Exploration - Targeting



# Mt Kare

Major rush in 1988

Multiple owners

25.5 million t @

2.2/t Au and 29g/t Ag

Scoping study  
completed



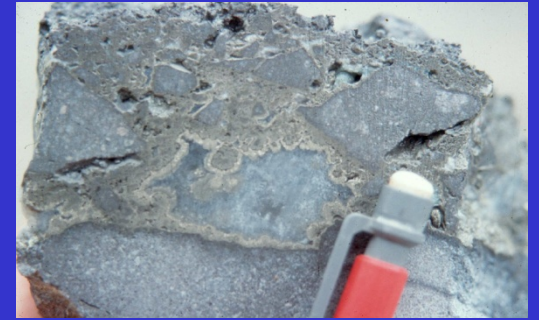
# Mt Kare



# Lihir



# Lihir



2003



1984



Lienetz Pit 2006

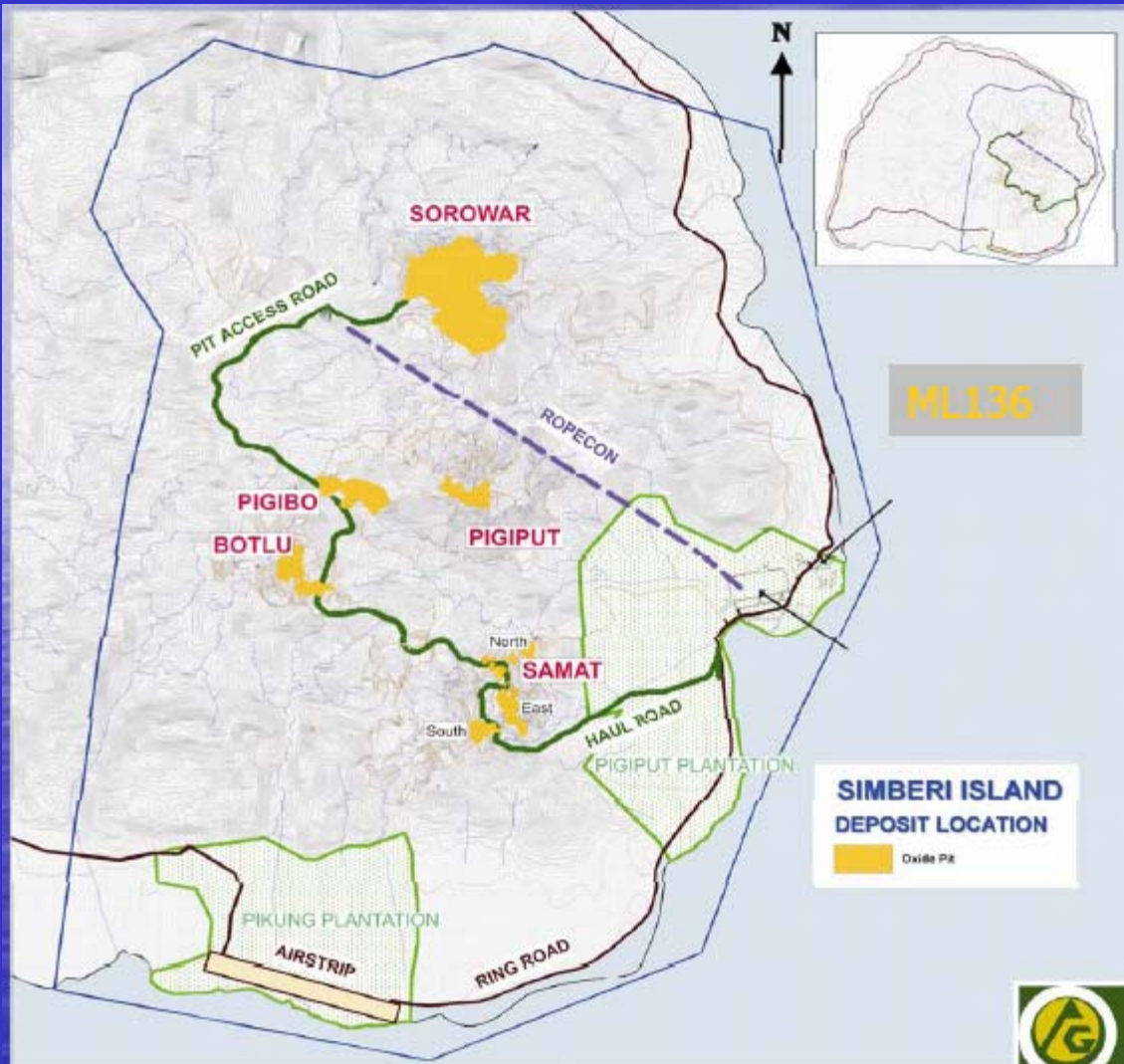
# Lihir



- Feasibility study underway
- Addition of one autoclave with double the capacity of each of current autoclaves
- Capex US\$500-550m
- Proposed timing:
  - Construction 2008?
  - Production 2010?
- Interim optimisations continuing



# Simberi



# Simberi

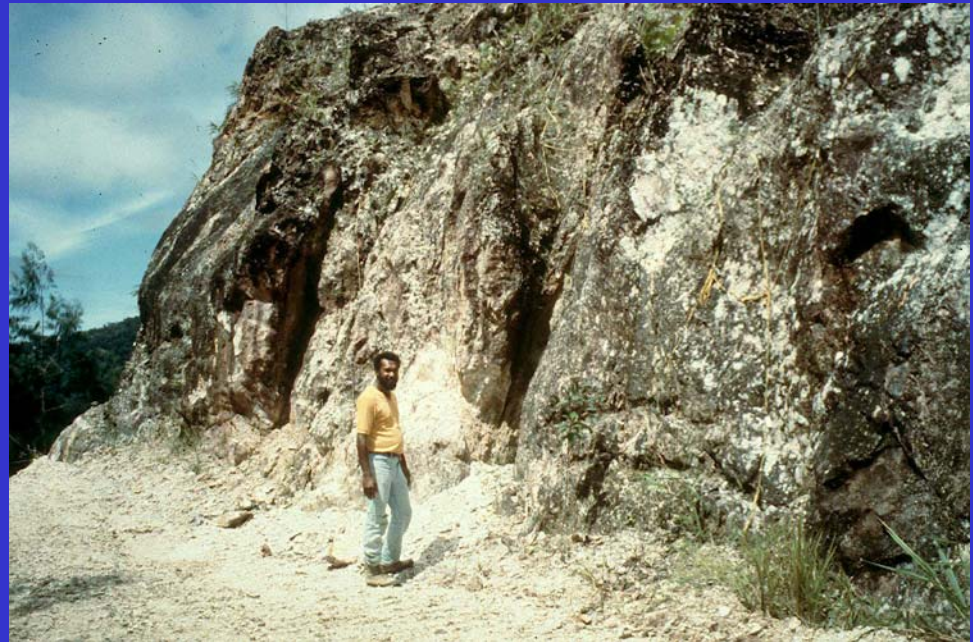
	Million Tonnes	Grade (g/t Au)	Oz Au
Proved	9.70	1.38	430,000
Probable	5.17	1.46	243,000
<b>TOTAL Reserves</b>	<b>14.87</b>	<b>1.41</b>	<b>673,000</b>
Inferred Resources	2.90	1.20	112,000
<b>GRAND TOTAL</b>	<b>17.77</b>	<b>1.37</b>	<b>785,000</b>

Commenced production Dec 2007

Annualized production 84,000oz

# Sinivit

Only vat leach operation  
in PNG - 30,000 oz /y



Wild dog Vein Outcrop

# Tolukuma



Commenced open  
pit 1995.

Underground 1998

Produced + 1Moz

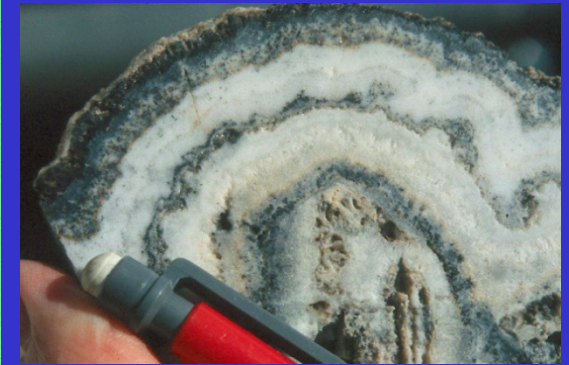
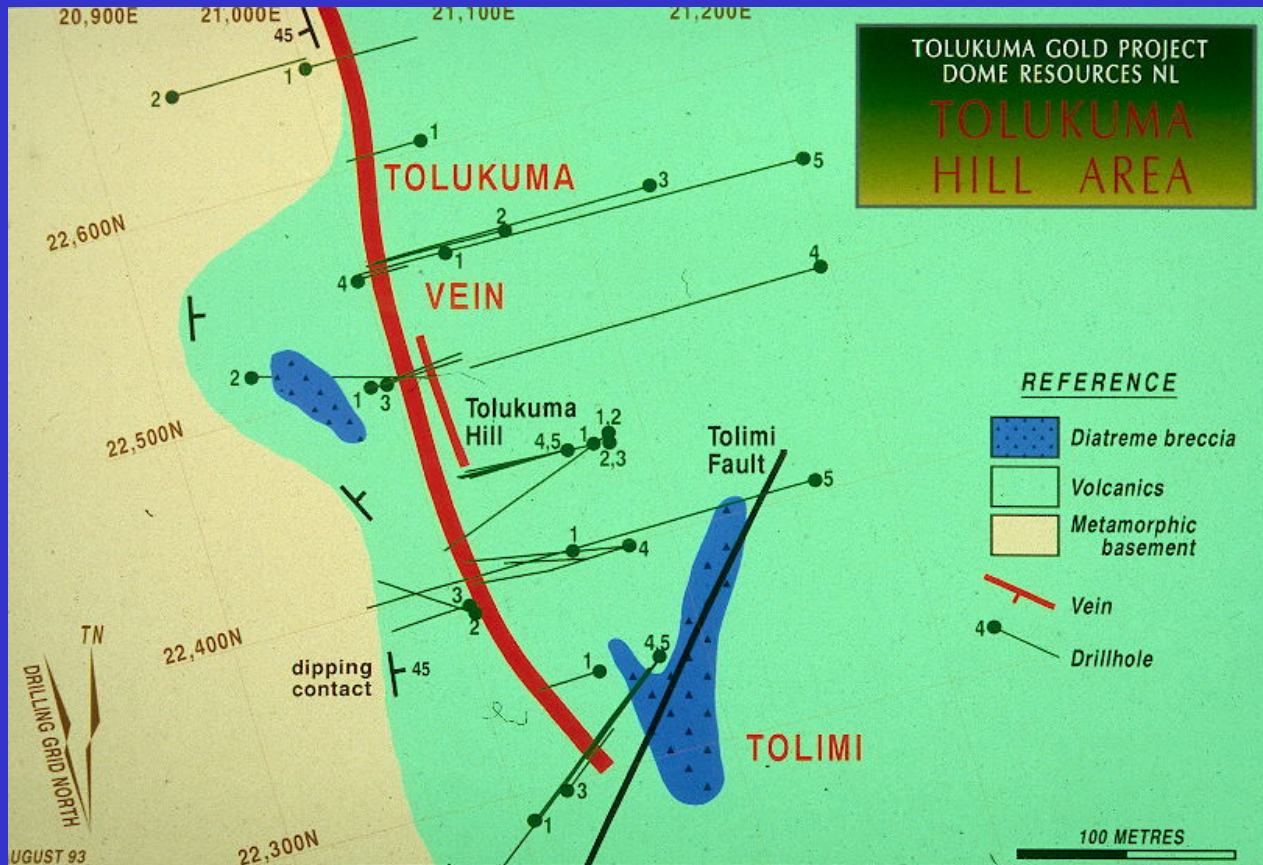
Au and 2.5M oz

Ag

Currently operated  
by Petromin

# Tolukuma

Banded chalcidony-ginguro Au-Ag vein system



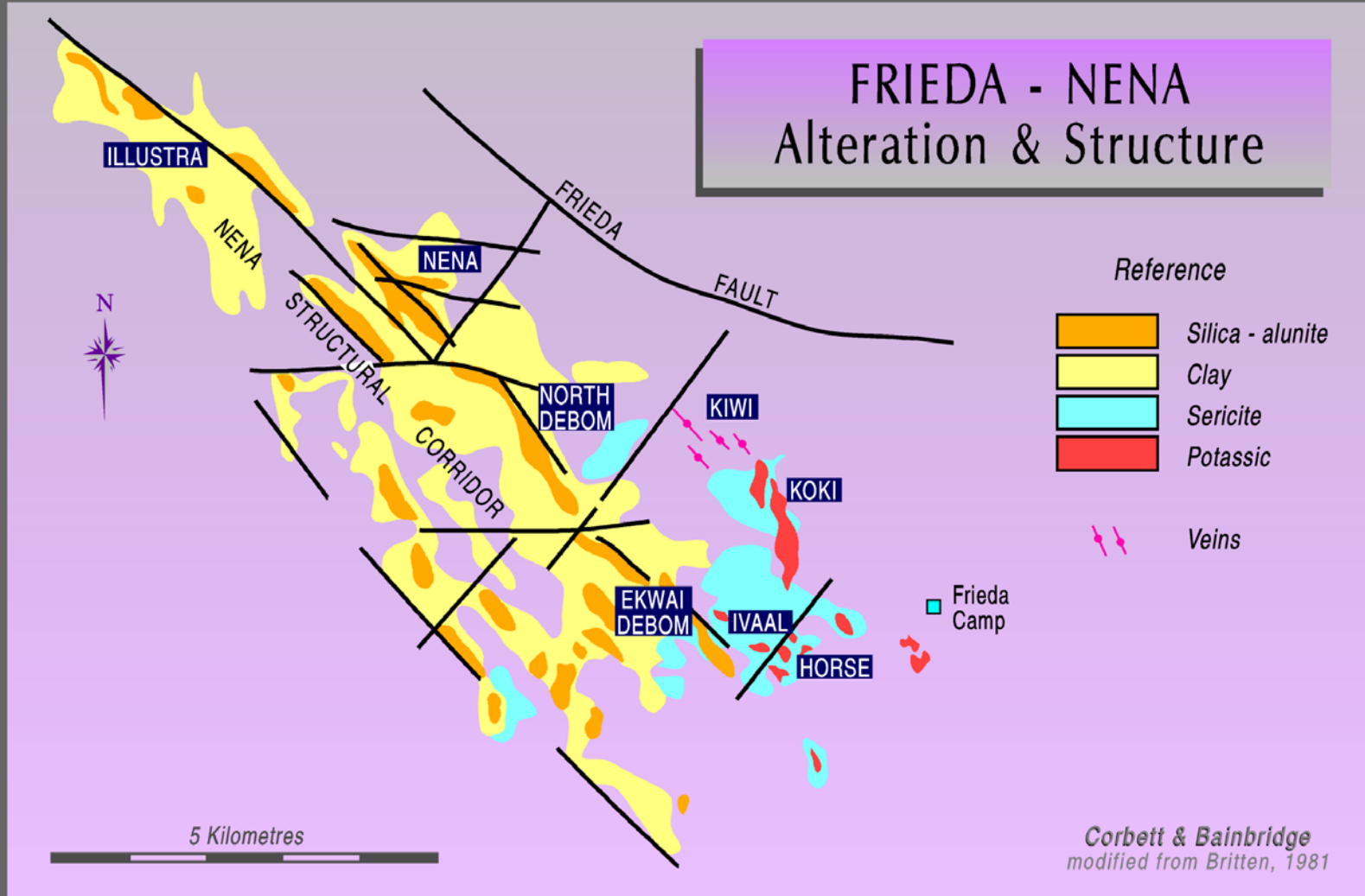
# Tolukuma



View of view outcrop

# Frieda River

94.006



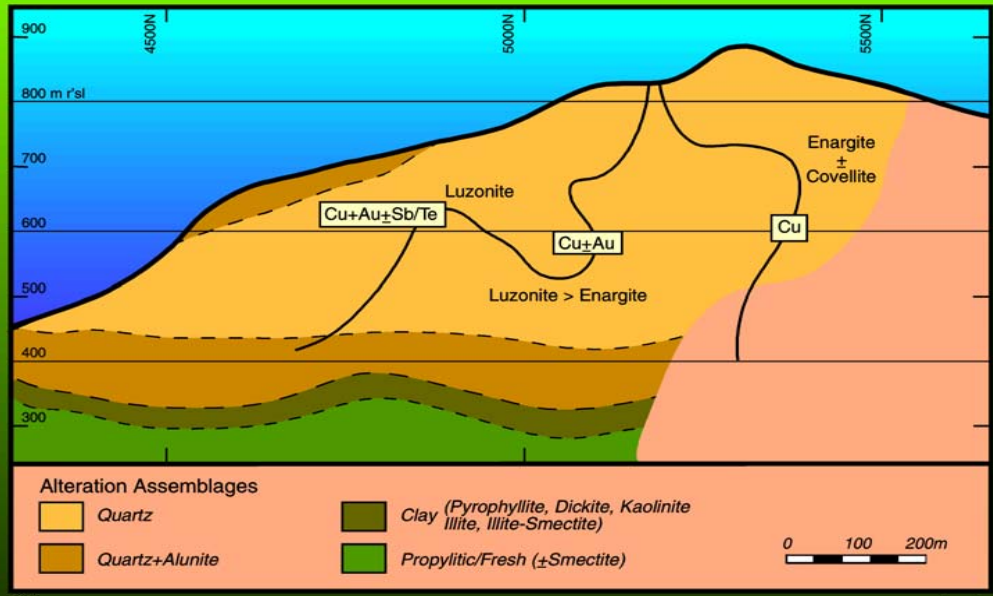
# Frieda River

- Horse-Ivaal :1005 Mt @ 0.5% Cu 0.3gt Au
- Nena:
  - Gold resource: 18 Mt @ 0.1% Cu 1.4g/t Au
  - Copper resources: 51Mt @ 2.2% Cu 0.6g/t Au

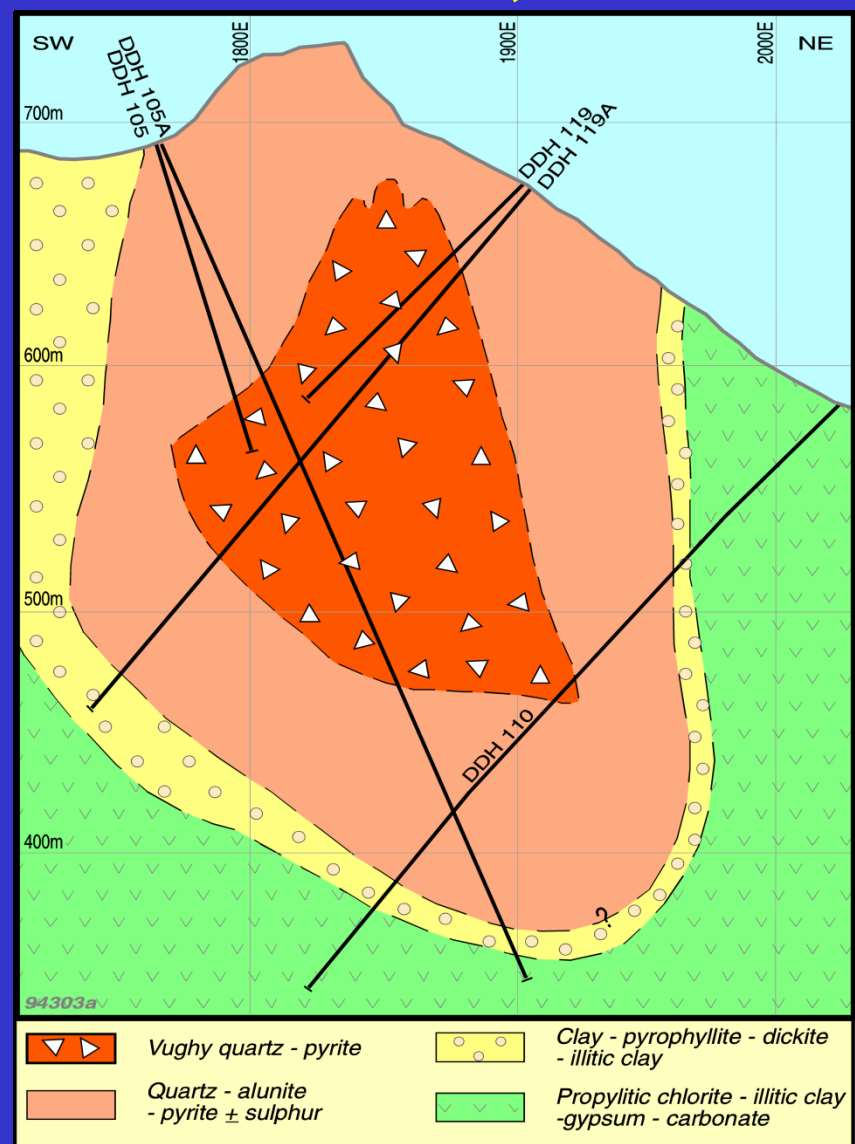
Currently in feasibility



### Nena Alteration and Mineralisation - N-S Longitudinal Section



# Alteration cross section - Nena, PNG



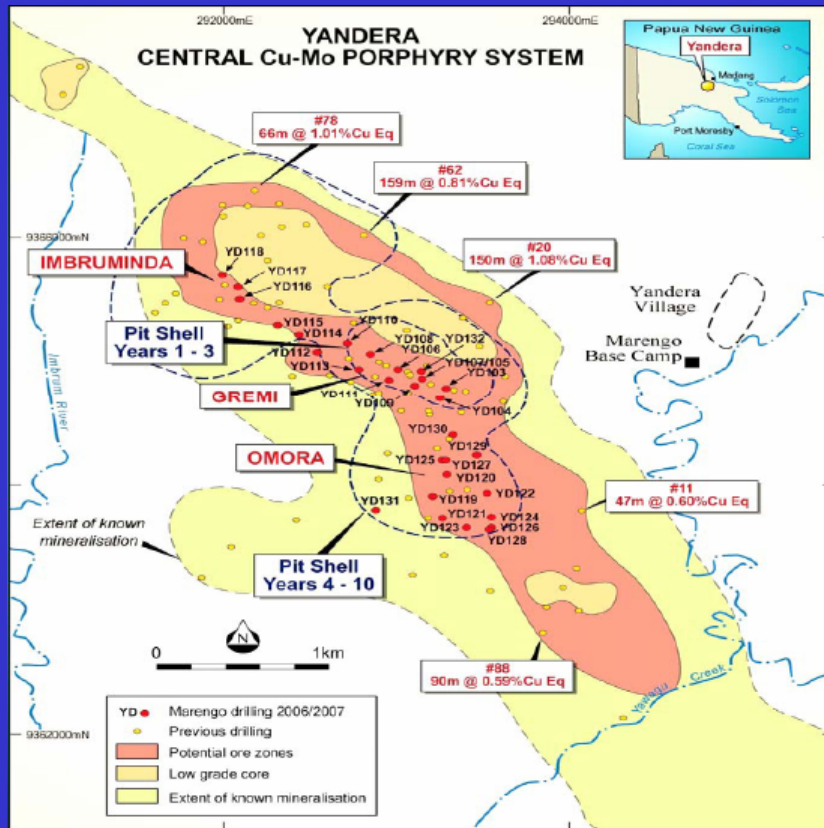
# Frieda River



# Yandera

Porphyry Cu Mo system

Currently in feasibility



# Yandera

Resources: 163Mt indicated @ 0.49% Cu Eq

497Mt inferred @ 0.48% Cu Eq

Cu Eq = Cu+ [Mo x 10]



# Ramu Nickel



Basamuk Plant Site

Basamuk Wharf



Basamuk Camp



# Ramu Nickel



Ramu Camp



Pipeline

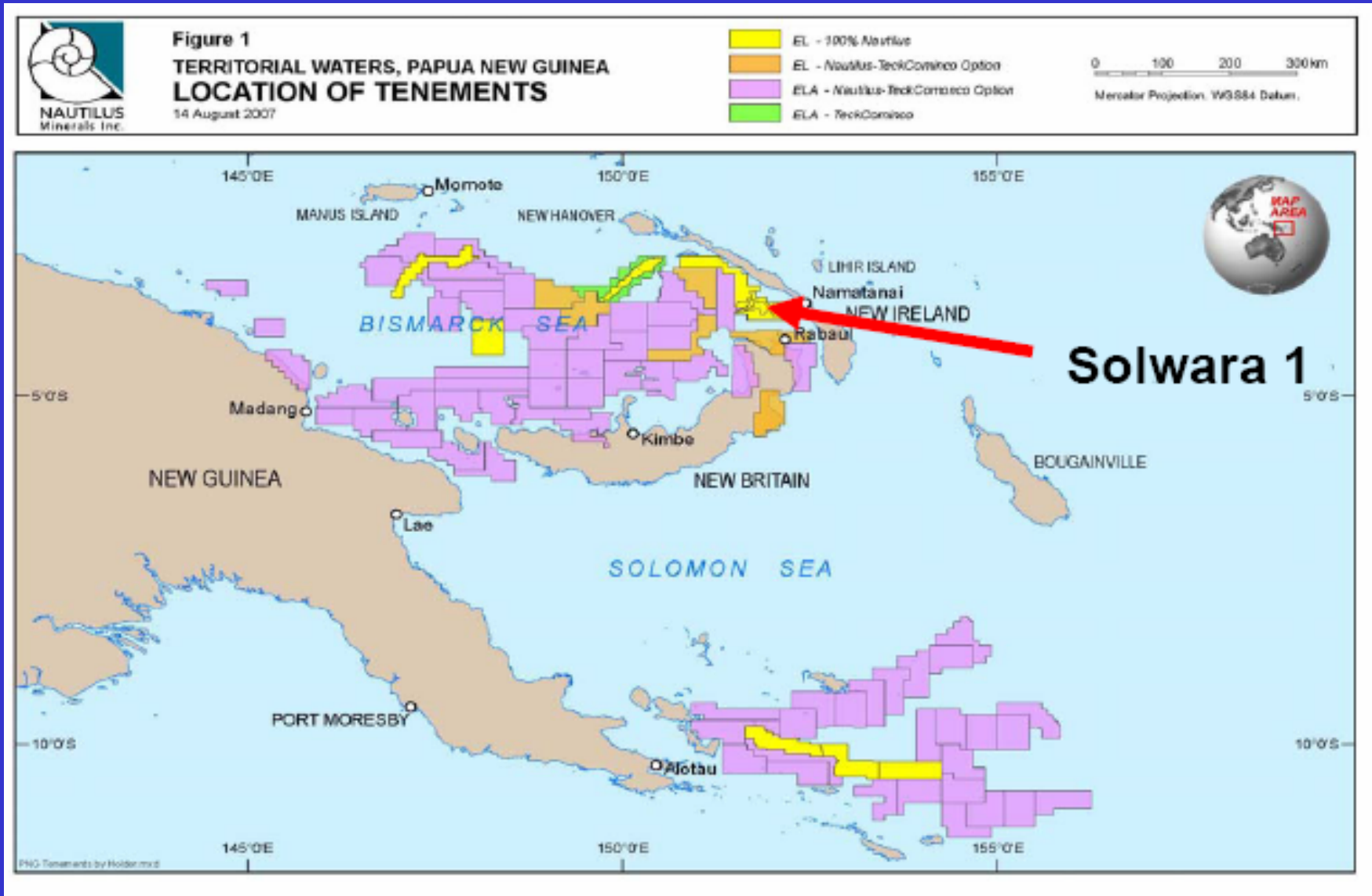


Ramu Bridge



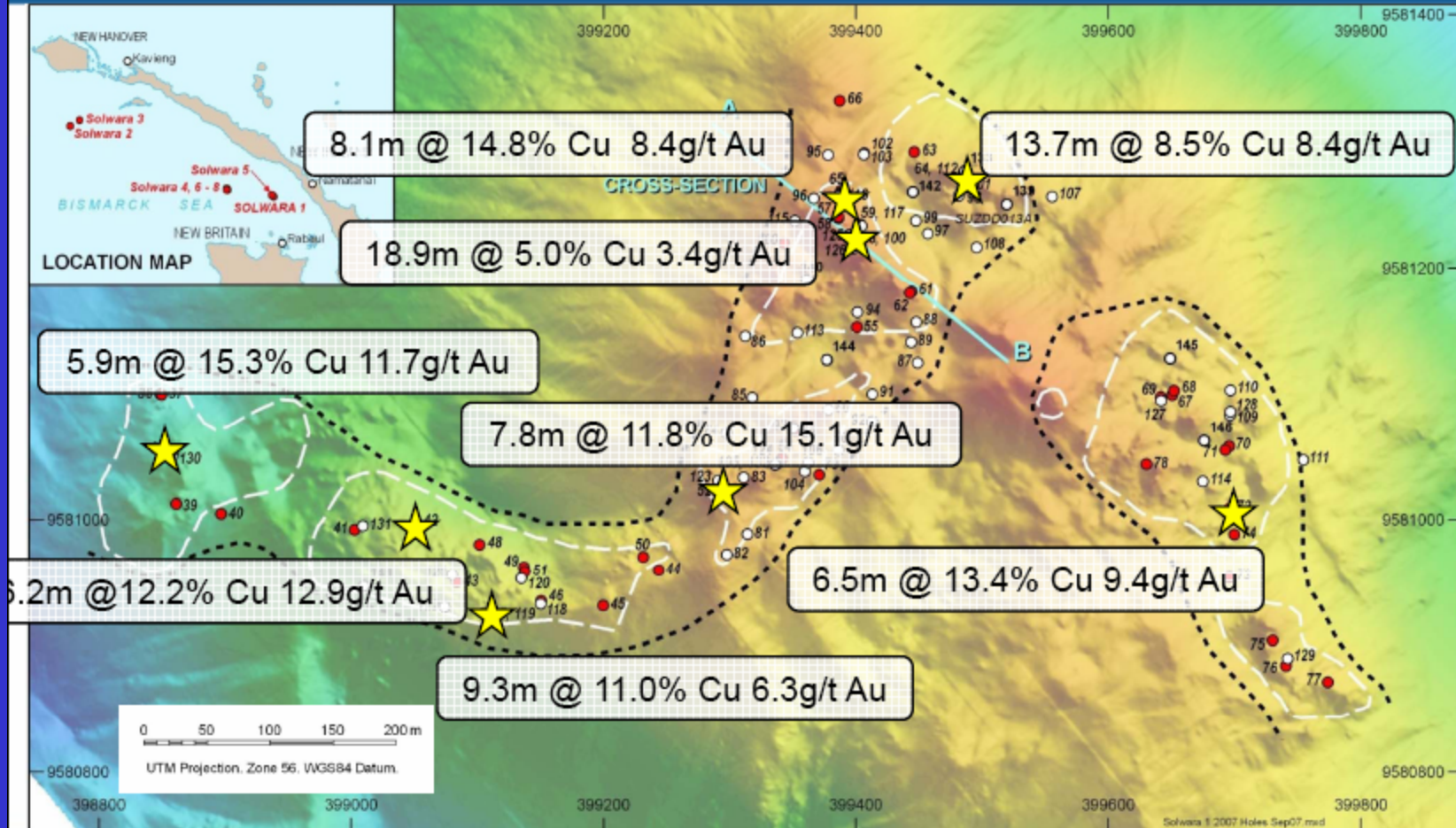
Plant Site

# Solwara



# Solwara

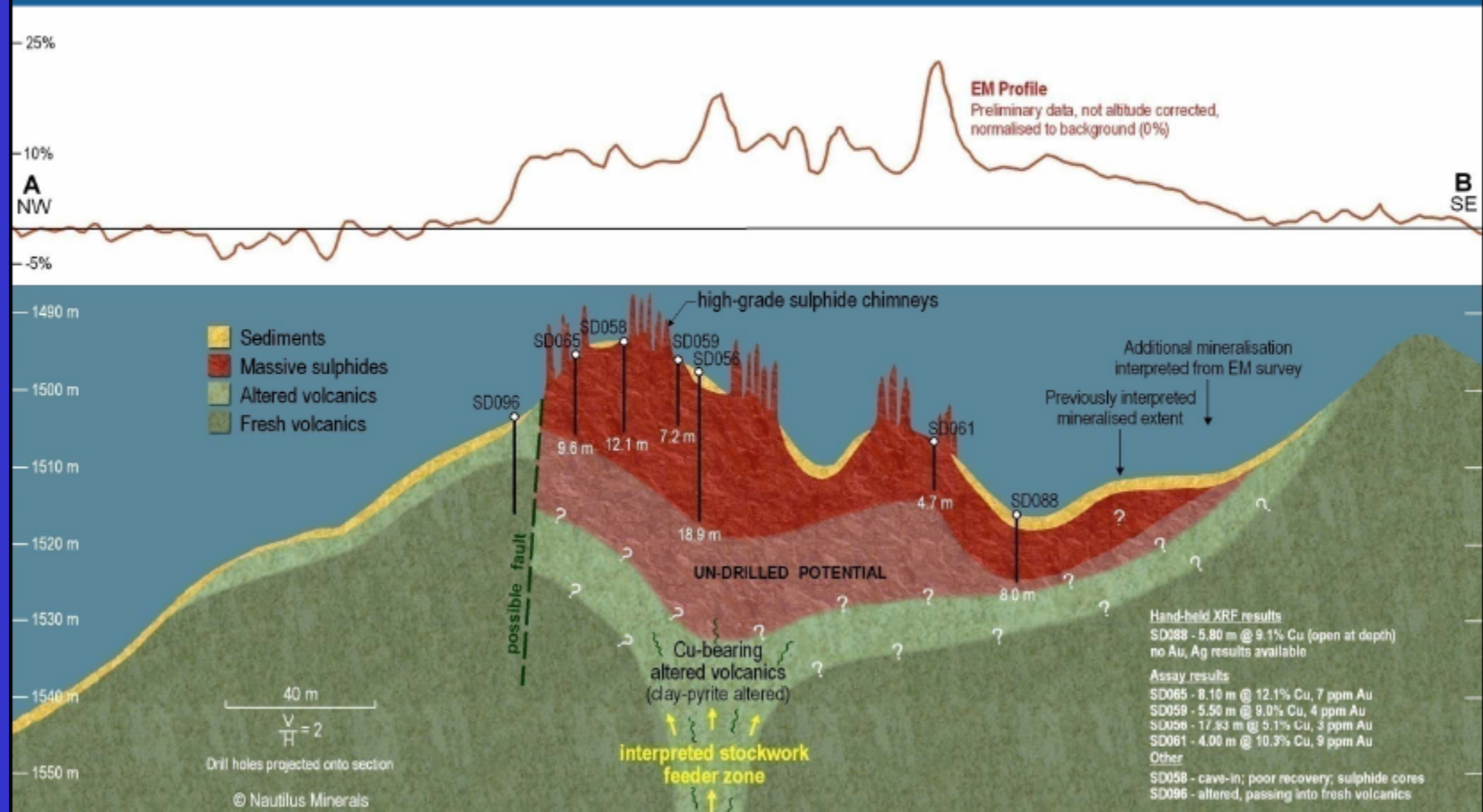
## SOLWARA 1 – MASSIVE SULPHIDE INTERCEPTS



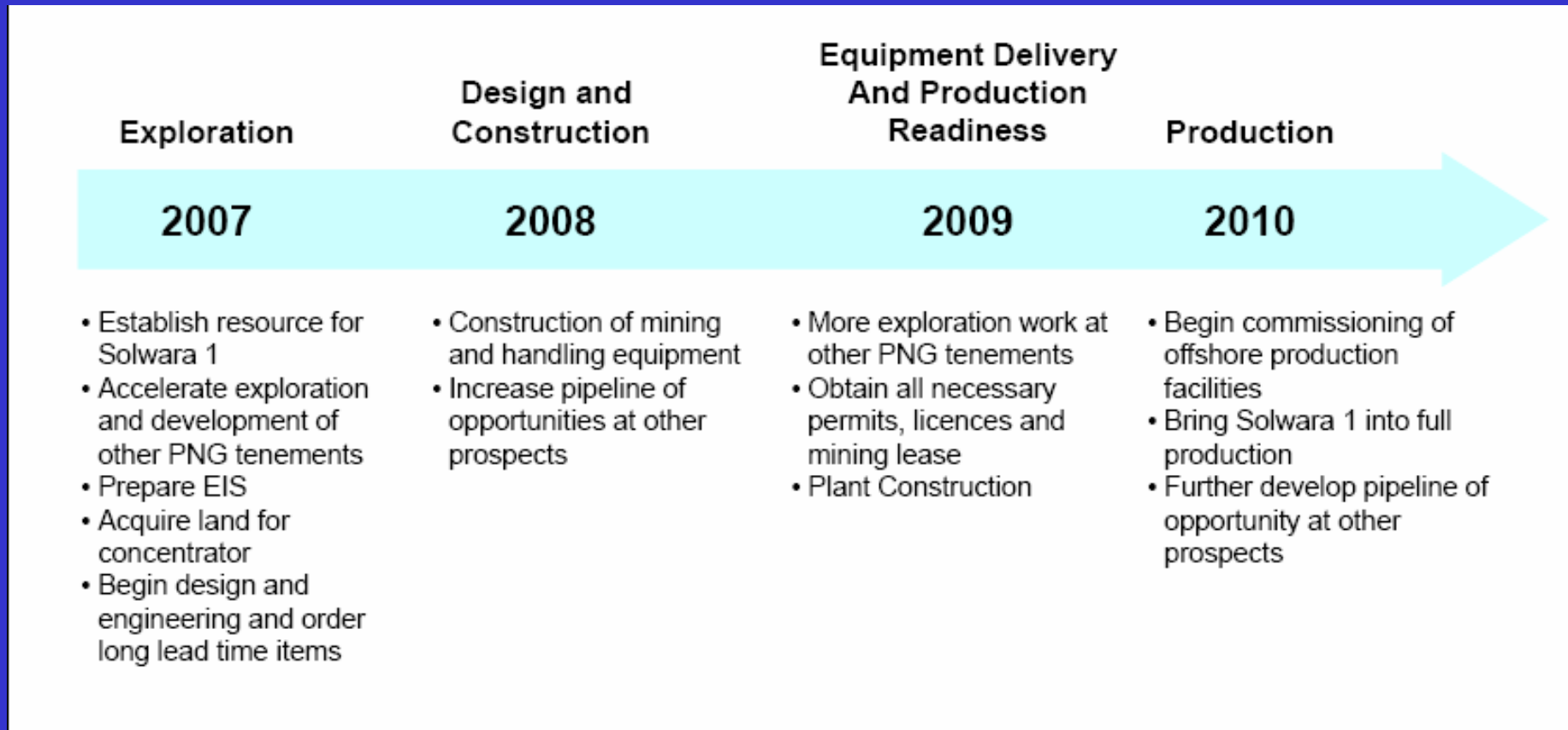


# Solwara

## SOLWARA 1 – ELECTROMAGNETIC SURVEY



# Solwara



# Blind Men & Elephants

