

13 October 2014

# PanAust Ltd – Frieda River Copper – Gold Project Site Visit October 2014 Presentation

Please find attached a presentation released by PanAust Ltd in relation to the Frieda River Copper-Gold project.

For further information, please contact: John Gooding or Craig Lennon Highlands Pacific - 07 3239 7800 Media Enquiries to: Simon Jemison Collins St Media - 03 9224 5319





ASX Code: HIG PoMSox Code: HIG

Shares on Issue: 854 million Options on Issue: 7.2 million Performance Rights: 24.4 million

#### **Directors**

Ken MacDonald, Chairman John Gooding, Managing Director Mike Carroll Dan Wood Bart Philemon

#### Management

Craig Lennon, CFO & Co.Sec Larry Queen, Chief Geologist Peter Jolly, GM Projects Ron Gawi, GM Port Moresby

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#### **Media Enquiries to:**

Simon Jemison Collins St Media - 03 9224 5319

Website: www.highlandspacific.com

#### **About Highlands Pacific Limited**

Highlands Pacific is a PNG incorporated and registered mining and exploration company listed on the ASX and PoMSoX exchanges. Its major assets are interests in the producing US\$2.1bn Ramu nickel cobalt mine and the Frieda River copper gold project; with exploration in progress on the Star Mountains (Nong River, Mt Scorpion, Munbil and Tifalmin) licenses approximately 20km north of the Ok Tedi mine. Highlands also has exploration tenements at Muller Range on the border of the Western and Southern Highlands Provinces and on Normanby Island (Sewa Bay).

#### **Star Mountains Prospects\***

The Star Mountains exploration tenements, which include Nong River EL1312, Mt Scorpion EL1781, Munbil EL2001 and Tifalmin EL1392, are located approximately 20km north of the Ok Tedi mine, in the West Sepik Province, PNG. They lie within the highly prospective New Guinean Orogenic Belt, which hosts the Grasberg, Ok Tedi, Porgera and Hidden Valley mines, as well as the Frieda deposit.

#### Ramu Nickel Cobalt Mine

The producing Ramu nickel mine is located 75km west of the provincial capital of Madang, PNG. Highlands 8.56% interest in Ramu will increase to 11.3% at no cost to Highlands after repayment of its share of the project debt (estimated to be paid by 2018). From commissioning, Highlands has access to its pro-rata 8.56% share of Ramu's post-debt servicing, net cash flow. Highlands also has an option to acquire an additional 9.25% interest in Ramu at fair market value, which could increase the company's interest in the mine to 20.55%, if the option is exercised.

#### Frieda Copper/Gold Project\*

The Frieda copper gold project is located 175kms north-west of the Porgera gold mine and 75km north-east of the Ok Tedi mine. Highlands has a 20% interest in the project, subject to the completion of the PanAust Glencore Agreement which was announced on 1 November 2013. PanAust, subject to the completion of the PanAust Glencore Agreement, will be responsible for 100% of the costs incurred by the Frieda River Joint Venture to finalise the definitive feasibility study for PanAust's development concept and will appoint and fund the cost of an independent expert to provide a peer review. PanAust will also be responsible for 100% of the costs to maintain the Frieda River project site, assets and community relations programmes up to the point in time of lodgement of the Mining Lease or Special Mining Lease application.

<sup>\*</sup> Subject to the right of the Independent State of Papua New Guinea to acquire up to a 30% equity interest in any mining development in the country.



#### Frieda River Project

Site visit 11/12 October 2014



The data provided in this presentation is based on the feasibility concept and is subject to further evaluation

### Frieda River Copper-Gold Project





#### The acquisition



- In Nov 2013, PanAust entered into a share sale and purchase agreement with Glencore plc to acquire its shares in Xstrata Frieda River Ltd
- Transaction completed on 25 Aug 2014
- Initial cash consideration of US\$25 million upon transaction close plus reimbursement of approx. US\$4 million in costs incurred by the joint venture since 1 Nov 2013; and US\$50 million# on 31 December 2015
- On successful completion of a project development a 2% NSR royalty becomes payable that will not exceed US\$50 million#
- Completion of the acquisition is consistent with PanAust's strategy to ensure access to sufficient mineral resources to secure the Company's growth beyond the life of the Phu Kham Operation in Laos

#### The PanAust Highlands Agreement



- PanAust will fund all Project and feasibility study costs up to an application for a Special Mining Lease
- Frieda River Project ownership will be PanAust 80%, Highlands 20%; the PNG Government has an option to acquire, on a sunk cost basis, up to 30% of Frieda River
- The first 20% of any PNG Government acquisition will be from the PanAust equity share; above 20% the split will be equal between PanAust and Highlands. Should the PNG Government acquire 30% then PanAust's interest will be 55% and Highland's interest will be 15%
- PanAust took a 7.5% shareholding in Highlands on 7 Nov 2013 through a A\$5M placement of 64,432,990 fully paid ordinary shares and increased its cornerstone shareholding to approx. 14% by exercised an option on 1 Sep 2014 to acquire a further 64,432,990 shares for a further A\$5M

### Recent Project history



- 2H 2012 feasibility study completed (commissioned by Xstrata)
  - Scope of work and costing by Bechtel
- Oct 2013 due diligence development case (used for PanAust acquisition)
  - Reduced scale similar to Phu Kham, illustrative pit shell (c. 430Mt), lower capex, higher opex, but NOT optimised
- Sept 2014 JV preferred development scenario
  - Amendments to due diligence case, scope and opex updates, new pit optimisation (c. 600Mt), basis for new feasibility study

#### **About Frieda River**



- To date, four copper-gold deposits and several prospects have been identified along an approximate 10 km trend
- Substantial Measured and Indicated Mineral Resources estimated; project focused on the large Horse-Ivaal-Trukai (HIT) copper-gold deposit
- Project terrain similar to that at PanAust's Phu Kham operation in Laos;
- Located at modest elevation of 400m to 800m above msl
- Feasibility study work by XFRL focused on a large scale development
- PanAust funded feasibility study will evaluate a mid-sized development that utilises existing logistical routes and minimises infrastructure requirements, resulting in a competitive capital intensity and manageable risk profile
- Feasibility study based on the HIT copper-gold deposit is expected to be complete before Nov 2015

### **Terrain similar to Laos**







# **Campsite**





# Frieda River airstrip



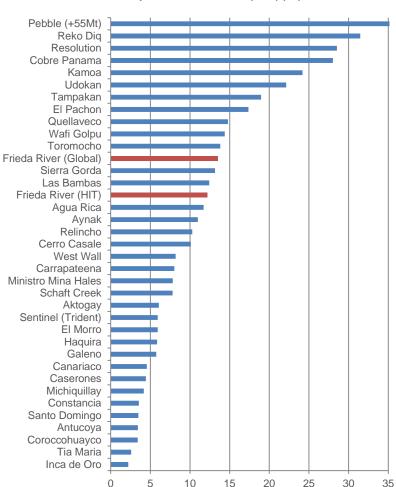


#### Frieda River is a world class copper resource



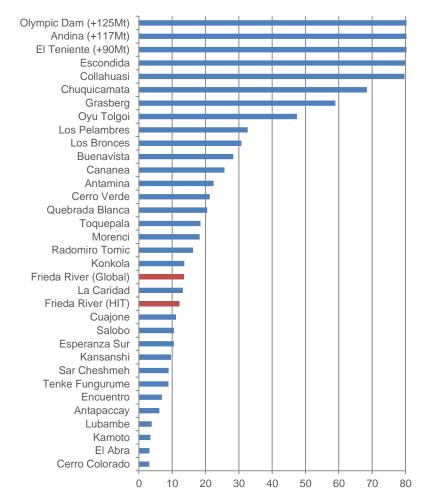
#### **Pre-development copper assets**

Cu Eq in Mineral Resource (MI&I) (Mt)



#### **Developed copper assets**

Cu Eq in Mineral Resource (MI&I) (Mt)



#### Frieda River Mineral Resources\*



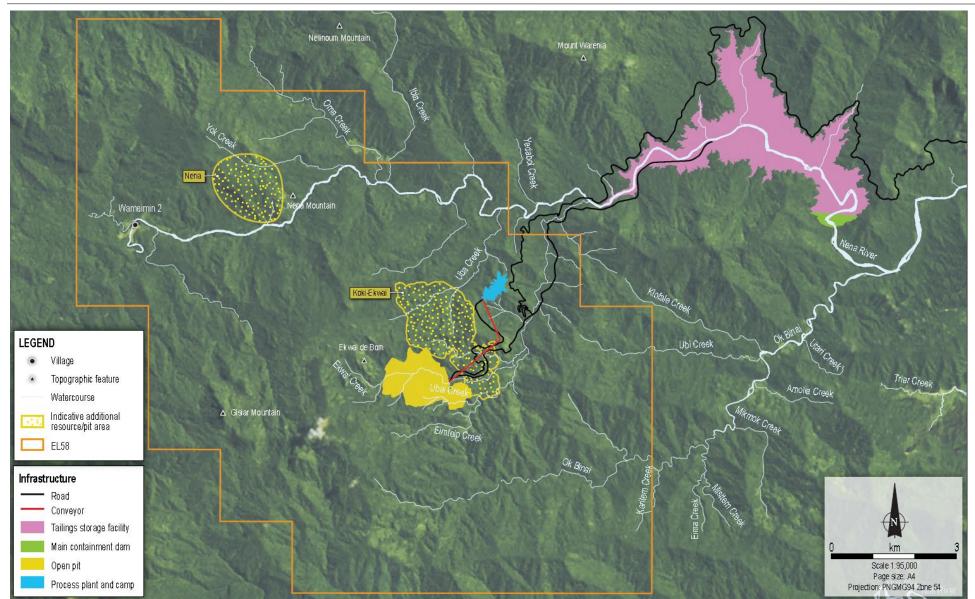
MINERAL RESOURCES	Category	Tonnes (Mt)	Copper Grade (%)	Gold Grade (g/t)	Drilling
Horse-Ivaal-Trukai	Measured	780	0.51	0.28	]
(HIT)	Indicated	410	0.44	0.20	140 000m
(0.2% copper cut-off)	Total M+I	1,190	0.49	0.25	† 140,000m
	Inferred	900	0.4	0.2	J
Nena (0.3% copper cut-off)	Measured	-	-	-	]
	Indicated	33	2.81	0.65	20 000m
	Total M+I	33	2.81	0.65	38,000m
	Inferred	12	1.84	0.45	
MINERAL RESOURCES	Category	Tonnes (Mt)	Copper Grade (%)	Gold Grade (g/t)	
Ekwai (0.2% copper cut-off)	Inferred	170	0.38	0.23	} 6,200m
Koki (0.2% copper cut-off	Inferred	452	0.37	0.25	} 13,000m

Reported on a 100% equity basis – PanAust has an 80% beneficial interest.

The HIT and Nena Mineral Resource estimates were reported under 'The JORC Code, 2004 Edition' in the announcement "PanAust to acquire 80% of the Frieda River Project and a cornerstone interest in Highlands Pacific" lodged with the ASX on 1 November 2013. PanAust confirms that it is unaware of any new information or data that materially affects the information included in this table and that material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Ekwai and Koki Mineral Resource estimates were reported by Highland Pacific Limited in its "December 2013 Mineral Resources & Ore Statement" dated 14 March 2014 and is available on the Highlands Pacific website.

## **Mineral Resources nearby**





### 2012 feasibility study in context



#### Pros:

- Excellent resource definition
- Favourable metallurgy
- 'Solutions' for all issues
- Conservative costings
- Bechtel thoroughness and quality

#### Cons:

- Opex sensitive, capex insensitive
- ARD poorly understood
- Large scale hydro dam
- Bulge bracket EPCM lead
- Scale, "standard" concentrator

#### **PanAust Evaluation Objectives:**

- Understand project drivers and optimise
- Increase value proposition
- Reduce capex to a level that could be funded
- Leverage Laos experience
- Deliver robust proposition for underpinning success

### PanAust feasibility study concept

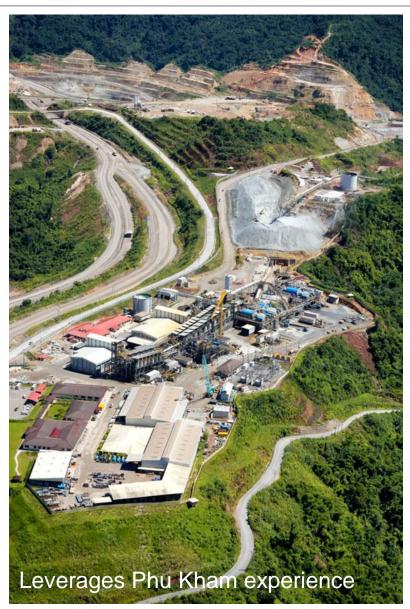


- Single process plant module; similar configuration to Phu Kham, small footprint
- Mill feed of c. 600M tonnes grading 0.5% copper and 0.3g/t gold for an 20-year mine life; represents less than 30% of the total HIT mineral resource tonnes
- Average annual production of 125,000t copper and 200,000oz gold in concentrate at a C1 cash cost of between US\$1.30/lb and US\$1.40/lb after gold credits\*. The all-in sustaining cost is estimated to be between US\$1.60/lb and US\$1.70/lb.
- Open pit mine: low waste:strip ratio of 0.7:1 (Inferred Resource may reduce this)
- Development capital estimate\*\*: US\$1.7Bn; competitive capital intensity
- The likely timing for implementation of PanAust's development concept for Frieda River coincides with rising production levels scheduled for Phu Kham
- Robust economics demonstrated at a copper price of US\$2.80/lb\*

#### Feasibility study development concept



- Quality data-set from extensive feasibility study work will be utilised in the PanAust funded feasibility study
- Circa 56MW comminution circuit with conventional flotation plant allowing a lifeof-mine average throughput rate of 30Mtpa; +/- 20% depending on ore hardness; higher throughputs achieved in the first five years
- Base Case applies Phu Kham experience: with similar plant configuration; conventional flotation technology; compact footprint; integrated TSF-waste management



#### **Trade-off studies**

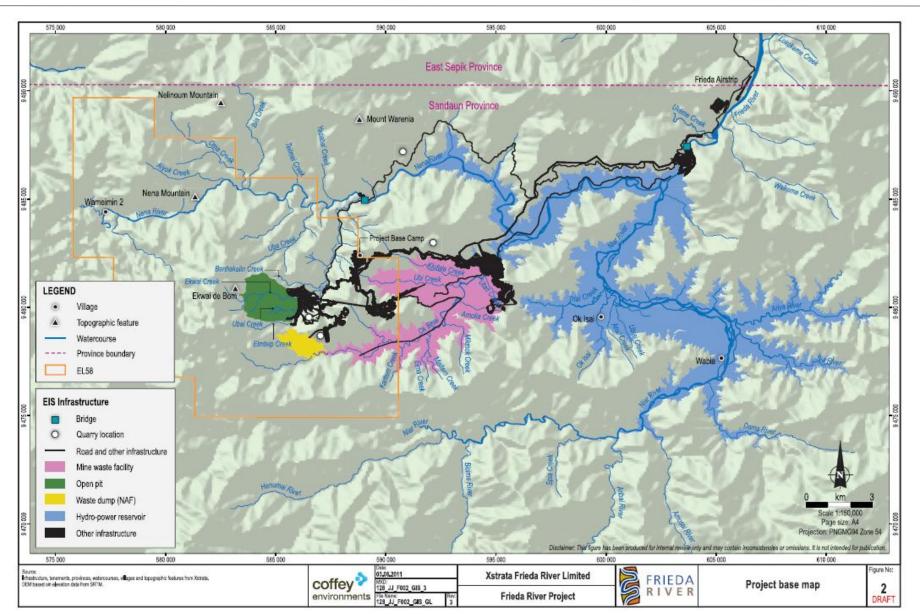


- Potential to reduce opex and initial capex will be evaluated with trade-off studies as part of the feasibility study
- A staged development approach will be considered which would require lower initial capex; subsequent capital expansion in years 3 to 5
- A hydro-power option may enhance the Project economics through lower operating costs
- Utilises the positive water balance within the TSF catchment to generate low-cost renewable power; augment IFO generated power



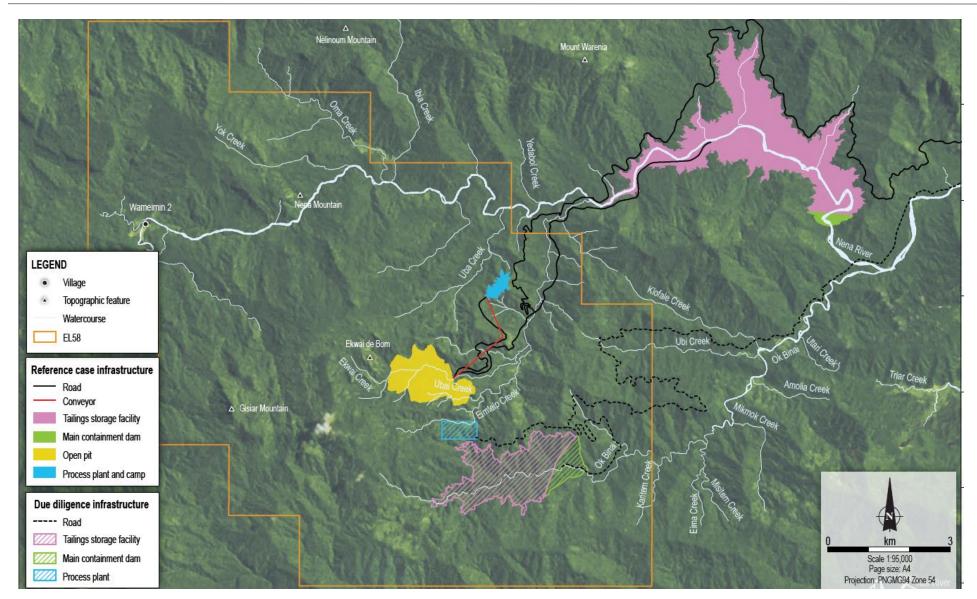
### **2012 Project layout (Xstrata)**





### New site layout: smaller footprint





# **Logistics concept**





### New feasibility study concept



- Initially: Minimise risk / compelling value
  - Deliver robust production outcome
  - Based on HIT resources only
  - Single module plant
  - Maximise investment in installed grinding power
  - Keen focus on logistics lifeline
  - Lock in attractive opex
  - Design layout for future expansion
- Later: maximise value
  - Counteract increased ore hardness
  - Incorporate initial operating learnings
  - Expand feed sources (Koki, Ekwai, Nena deposits)
  - Expand plant (2<sup>nd</sup> module)

## Scope change history



Facility	2012 study	Due Diligence	New Feasibility Concept
Case purpose	Feasibility study	acquisition	development
Grinding circuit	2*(24MW SAG+2*16.4MW BM)	17MW SAG+2*10MW BM	26MW SAG+2*15MW BM
Throughput model	Starkey	Starkey	Starkey
Nominal rate	50Mtpa	24Mtpa	30Mtpa ±20%
Mining fleet	6*shovels, 39*793	3*shovels, 32*793	5*shovels, 32*793
Power generation	200 MW hydro dam on Frieda	75 MW IFO at Iniok	110 MW IFO
Power price	0.4c /kWh	16 c/kWh	19 c/kWh
Power transmission	17 km @ 220 kV	130 km @ 110 kV	40 km @ 110 kV
Access road	130 km (ridges)	120 km (valley)	40km (valley)
River port	Kubkain on Sepik River	Iniok on Sepik River	Airstrip on Frieda River
Export port	Hansa Bay – silo vessel	Wewak (trans-ship)	Wewak (trans-ship)
Concentrate dewater	port	plant site	plant site
Concentrate to port	126 km pipeline	truck	truck
Layout	Separate mine and plant	Combined mine and plant	Combined mine and plant
Plant location	1 km from pit exit on Ekwai	1 km from pit exit to south	2 km from pit exit to north
TSF location	Ok Binai above hydro dam	Ok Binai	Nena
Mine waste disposal	crush/convey/barge to TSF	Split - truck fines to TSF	truck to TSF
Plant waste disposal	sub-aqueous	sub-aqueous 25%, sub-aerial 75%	sub-aqueous
Camp	2 km from plant	3 km from plant	Adjacent to plant

### New feasibility study concept



Parameter	Unit	Feasibility Concept
Production (average LOM)		
Copper	tpa	125,000
Gold	OZ	200,000
Physicals - LOM		
Mine Life	yrs	20
Strip Ratio (waste:ore)	t:t	0.7:1
Processing rate	Mtpa	30 <sup>+</sup> / <sub>-</sub> 20%
Total Tonnes Treated	Mt	600
Copper Head Grade	%	0.50%
Gold Head Grade	g/t	0.30
Opex - LOM		
C1 Costs	US\$/lb	1.30 - 1.40
All-in Sustaining Costs	US\$/lb	1.60 - 1.70
Capex		
Initial Development Capex (excl. leased)	US\$Bn	Circa 1.7

- Higher production in the first 5
  years with processing rates
  expected to be 20% higher than
  the 30Mtpa LOM average
- Costs worked up from scaled
   2012 feasibility study data
- Costs worked up from scaled
   Phu Kham actual data
- Key cost inputs verified with Ok Tedi Mining Limited

### By the physicals – less is more!



Parameter	2012 study	New Feasibility	Scaling
Mining inventory	964Mt	600Mt (initially)	62%
Ore grade	0.45% Cu, 0.26 g/t Au	0.5% Cu, 0.3 g/t Au	113%
Strip ratio (w:o)	1.1	0.7	64%
Mining waste	1,070Mt	400Mt	37%
Tailings waste	946Mt	590Mt	62%
Pre-strip	42Mt	11Mt	26%
Production rate	50Mtpa nominal, 65Mtpa peak	30Mtpa nominal, 36Mtpa peak	60%
Mine Life	20 yr	20 yr	100%
Ore hardness DWi	5.2 kWh/m <sup>3</sup>	4.5 kWh/m <sup>3</sup>	87%
Recovery Cu	84%	84%	100%
Recovery Au	70%	72%	103%
Production Cu	3.9 Mt	2.25 Mt	58%
Production Au	5.7 Moz	3.9 Moz	68%
Power Draw	~180 MW	~ 96MW	53%
Personnel	~3,200	~1,500	47%

#### PanAust capability – focus on experience



- Technical Services Team
  - Mining, processing, maintenance, study managers
- Implementation Team
  - Electrical, structural/civil, project controls, commercial, project and construction managers
- Laos construction activities
  - Road building (including bridges), HV power lines, bulk earthworks and site preparation, civil works, TSF construction, camp construction, logistics

### New feasibility study – focus



#### Mining

New TSF & plant site location favourable for mining, lower RL pit exit, mine waste water drainage gravitates to TSF, waste haul to TSF downhill at steady 3% grade, shared facilities with plant

#### Processing

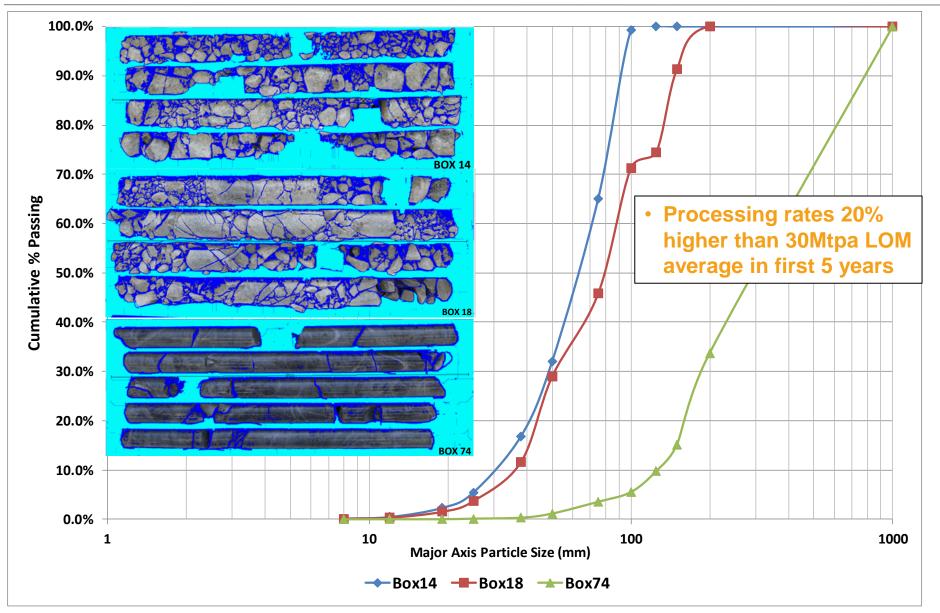
 Optimisation of: reagent suite, silver recovery, primary grind vs. recovery, secondary grind vs. recovery, final concentrate grade vs recovery

#### Environmental

Limited new work required, EIS submission targeted for early 2015

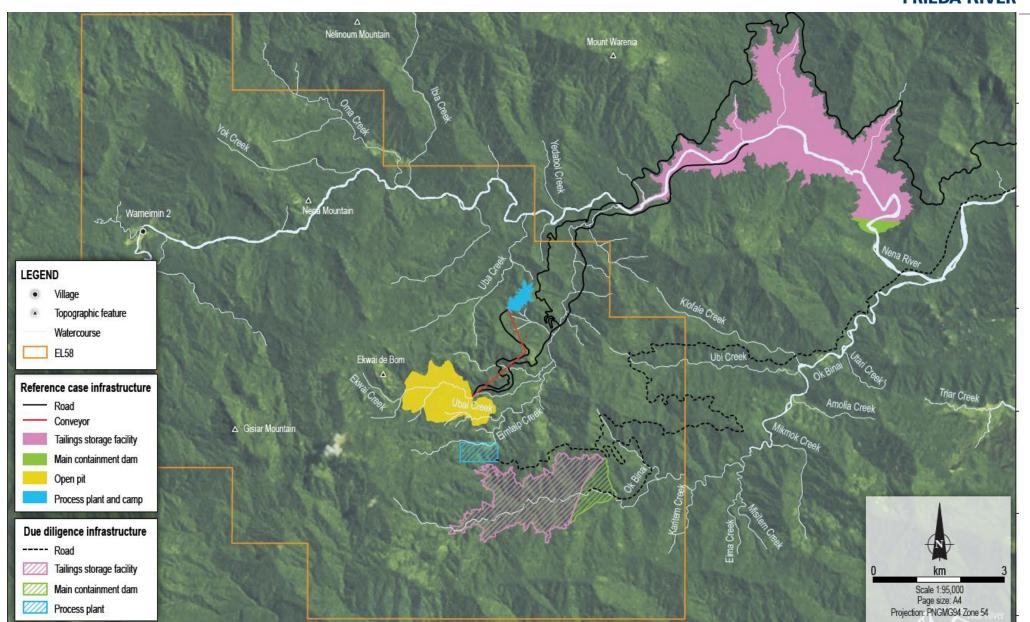
### 400 Mt of highly fractured feed





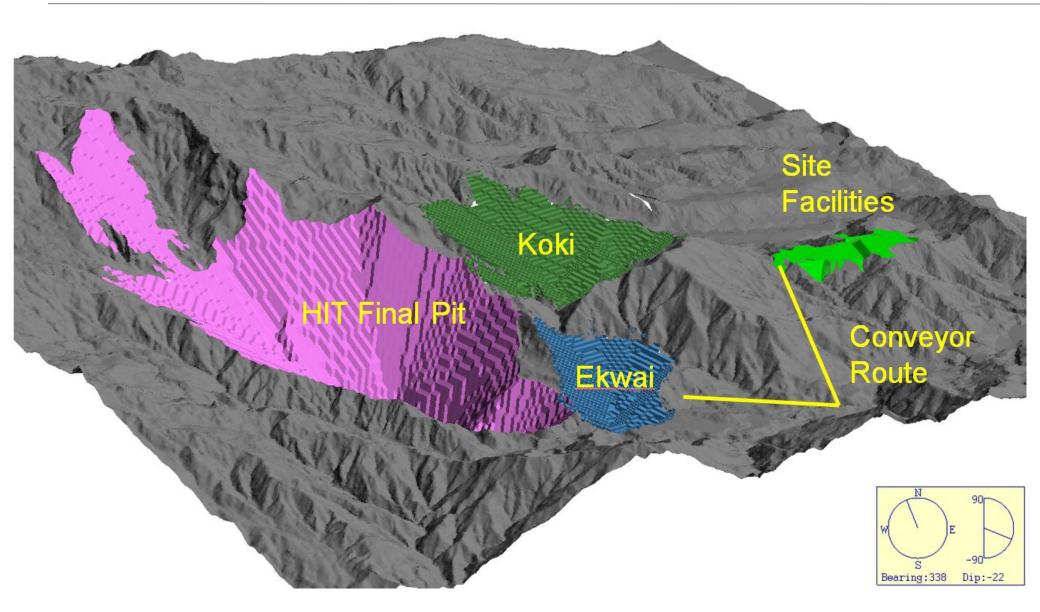
### **New site layout**





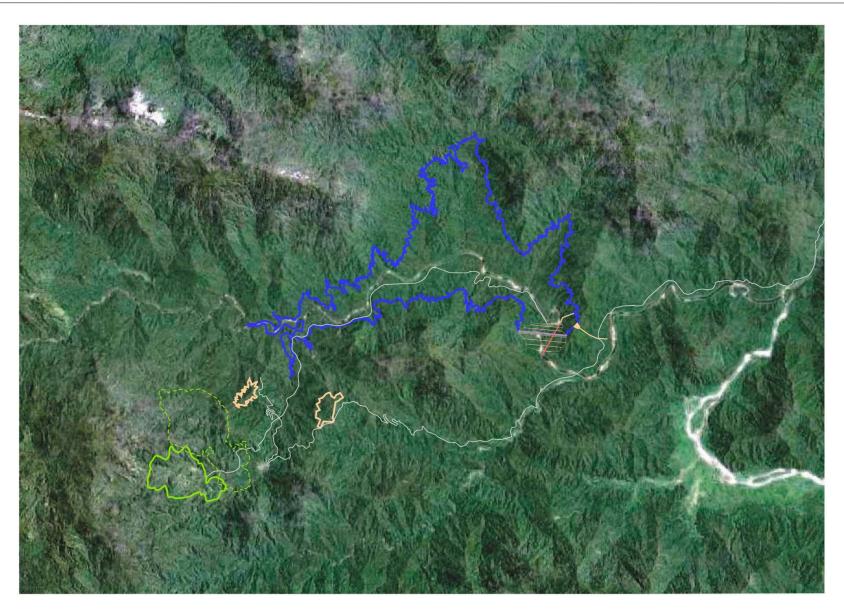
## **Site layout**





# TSF: up to 1.5 Billion tonnes storage

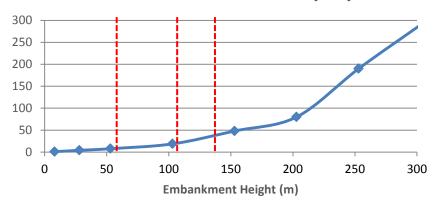




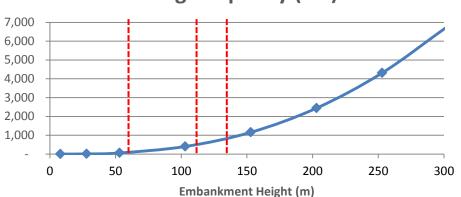
## Conceptual level impoundment data







#### **Storage Capacity (Mt)**

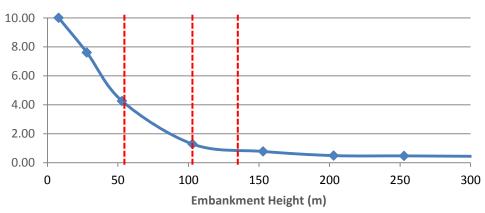


2,500 2,000 1,500 1,000 500 0 50 100 150 200 250 300

**Embankment Height (m)** 

CAPEX (\$M)

#### CAPEX (\$/t capacity)

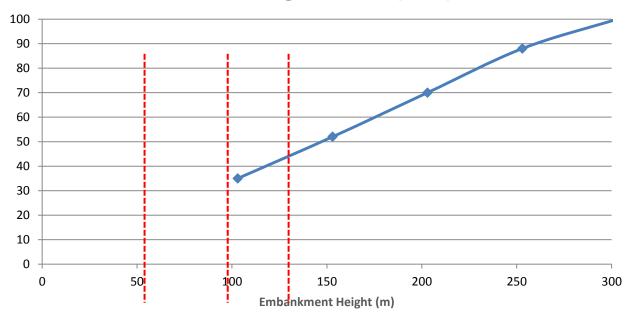


### Potential for hydropower



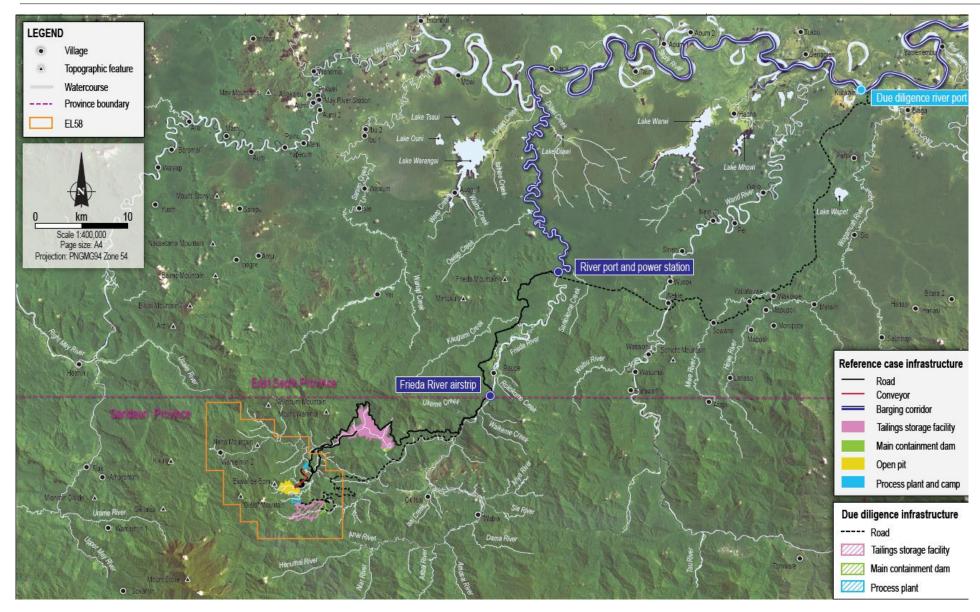
- Given the topography, hydrology, seismicity, and aqueous storage, the TSF embankment must be built to a Hydro Dam Stewardship Standard
- "If it's built to a hydro dam standard, in a 250 km² catchment with 40m³/s mean flow, then why not add the hydropower?"

#### **Generating Potential (MW)**



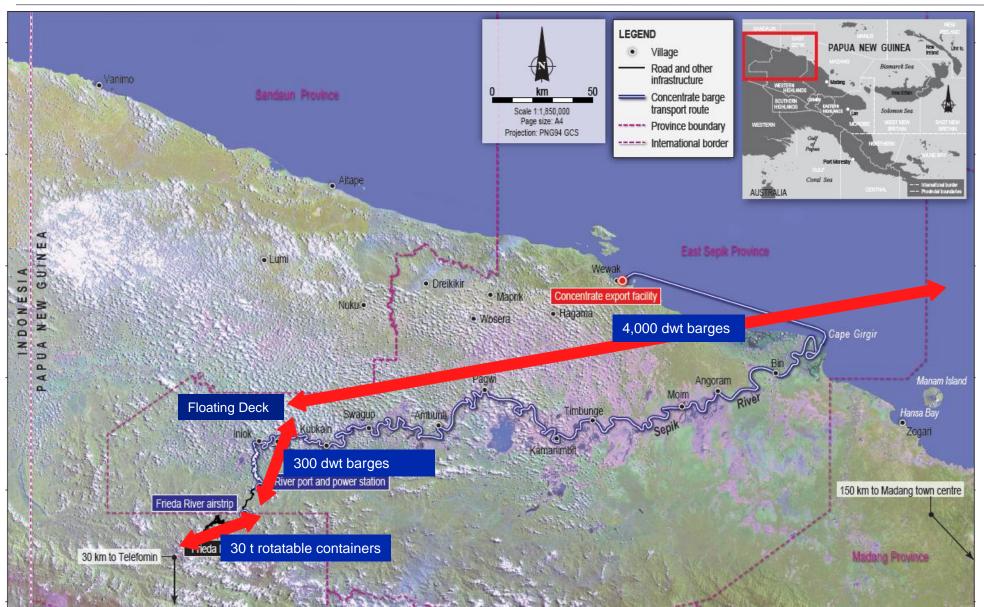
# **Logistics layout**





### Logistics – utilising the river "highway"





# **Sepik River**





# **Wewak port**





### **Opportunities aplenty**



- Upgrading of Inferred Mineral Resources within the existing pit shell to reduce mine waste and increase Ore Reserves; upgrading and development of Nena resource potential to provide incremental high margin concentrator feed; development of higher grade, low strip ratio ore from adjacent satellite resources at Koki and Ekwai to reduce operating costs an supplemental feed
- Staged expansion
- Reduction in power costs potential from hydropower generation from the TSF
- Reduction in length of site access road from Frieda River port
- Reduction in comminution installed capital and operating costs arising from further investigation of the impact high fracture frequency feed on throughput
- Reduction in grinding circuit capital arising from optimisation of primary grind and concentrate regrind product sizing versus recovery

#### **Opportunities aplenty (cont.)**



- Optimisation of the flotation reagent regime and conditions to enhance recoveries; potential to increase silver grade to payable level in final concentrate
- Optimisation of concentrate grade and recovery to enhance value
- Further reduction in operating costs through integration of Frieda River support services with existing services available via PanAust Asia
- Reduction in FIFO costs through investigation of alternative employee off site housing and hiring options

#### Frieda River: sustainable development



- PanAust is a successful developer of mine operations in remote regions and places a high priority on its sustainability performance
- Ability to leverage off the Company's experience of working in Laos
- Due diligence indicates that the communities in the Project region are generally supportive of the Frieda River Project; 6 landowning communities (1625 people) within 10km of the Project
- Consistent with its internationally recognised sustainability performance,
   PanAust aims to maintain a high standard of community and government engagement

# Frieda River Project: indicative Project milestones FRIEDA RIVER

٠	2012 feasibility study (by Bechtel for Xstrata)	Dec 2011
•	PanAust announces a proposal to acquire Glencore-Xstrata's interest in the Frieda River Project and outlines a scaled-down development concept	Nov 2014
•	PanAust acquires 80% interest	25 Aug 2014
•	Feasibility study concept announced	2 Sep 2014
•	Feasibility study completion est.	Nov 2015
•	Permitting and approvals est.	mid/end 2016
٠	Construction start est.	2017
	Initial production and ramp-up est.	2019

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#### Mineral Resources and Ore Reserves



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