



## AGM Presentation

Kalia Limited (ASX: KLH)  
29 November 2018  
[www.kaliagroup.com](http://www.kaliagroup.com)





Tore Joint Venture Limited 1-119206

UNITY – COMMITMENT – ACTION – RESPONSIBILITY - RESULTS

# **TORE JOINT VENTURE**

## **BOUGAINVILLE, PAPUA NEW GUINEA**

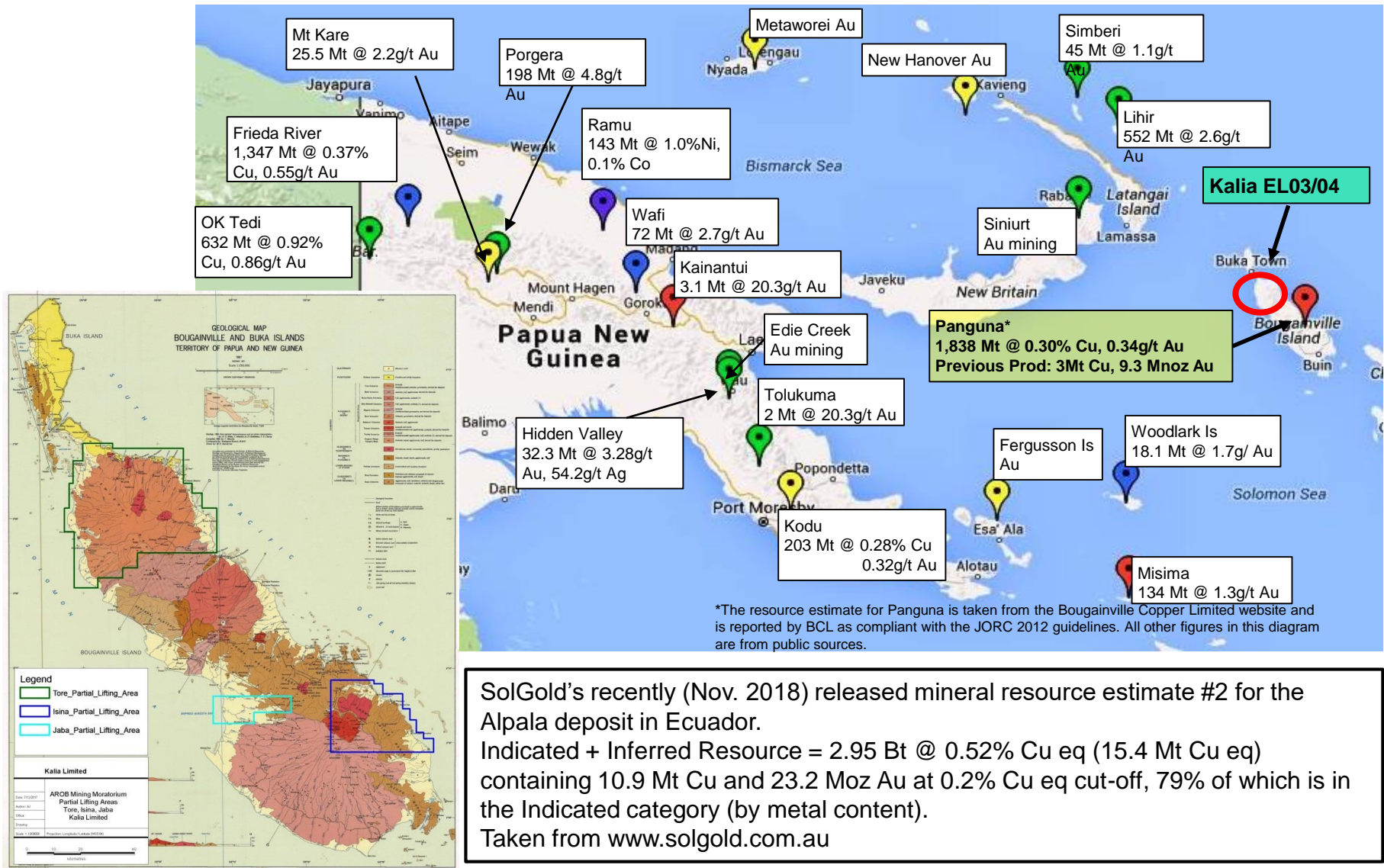


# Bougainville Context/Timeline

- Autonomous Regional Government within PNG
- Supportive environment for exploration and mining
- Own Mining Act of 2015
- The Landowners own the mineral rights, not the State
- Bougainville moratorium on mining in place since 1980's
- Kalia has been active in Bougainville since 2016 in expectation of change and have been engaged in:
  - Landowner discussions
  - Awareness programmes
  - Relationship development with suppliers, officials, interest groups, churches
- The Moratorium partially lifted for 3 specific areas in May 2017
- 4 undisputed valid licences in operation in the 3 areas – Kalia has a 75% interest in two of them covering 1,704 km<sup>2</sup>
- Kalia is focused on the highly prospective area in the North of the island with supportive and engaged landowner base

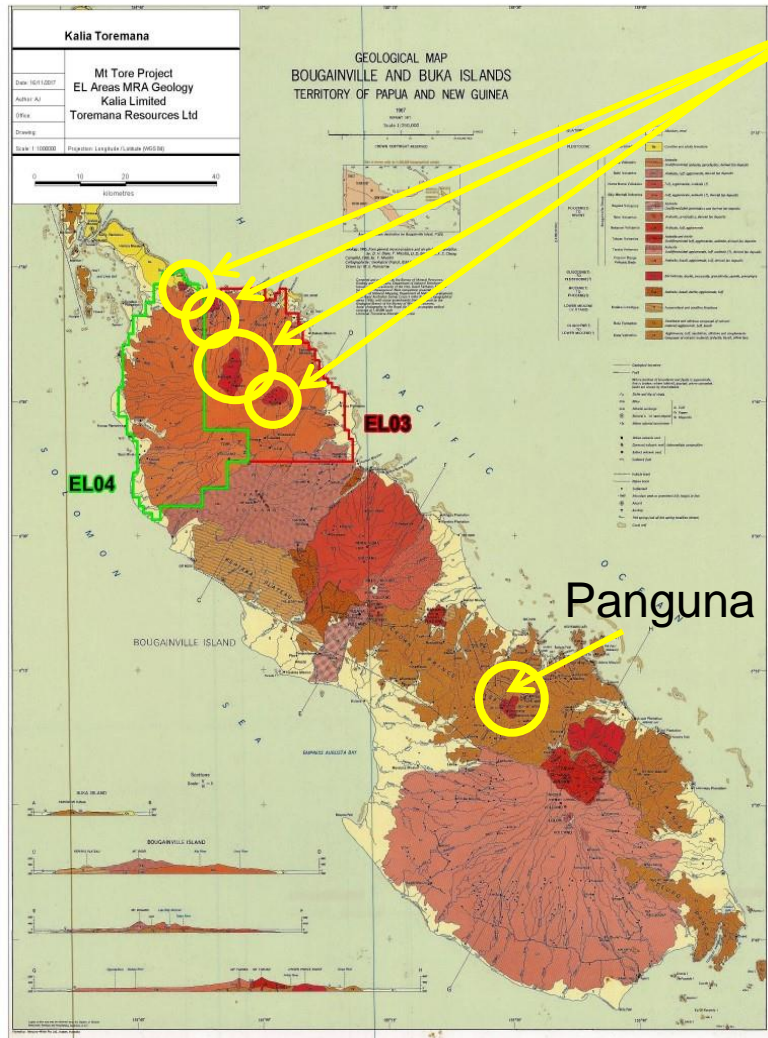


# TJV - Geology

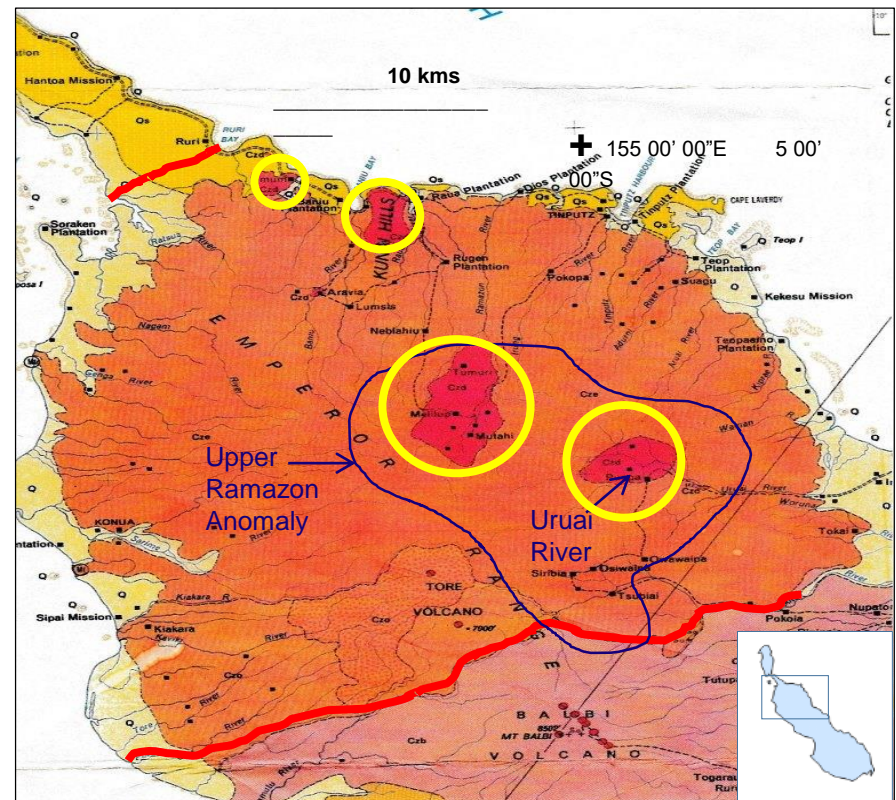




## 4 MRA 1:250,000 Geology in EL areas

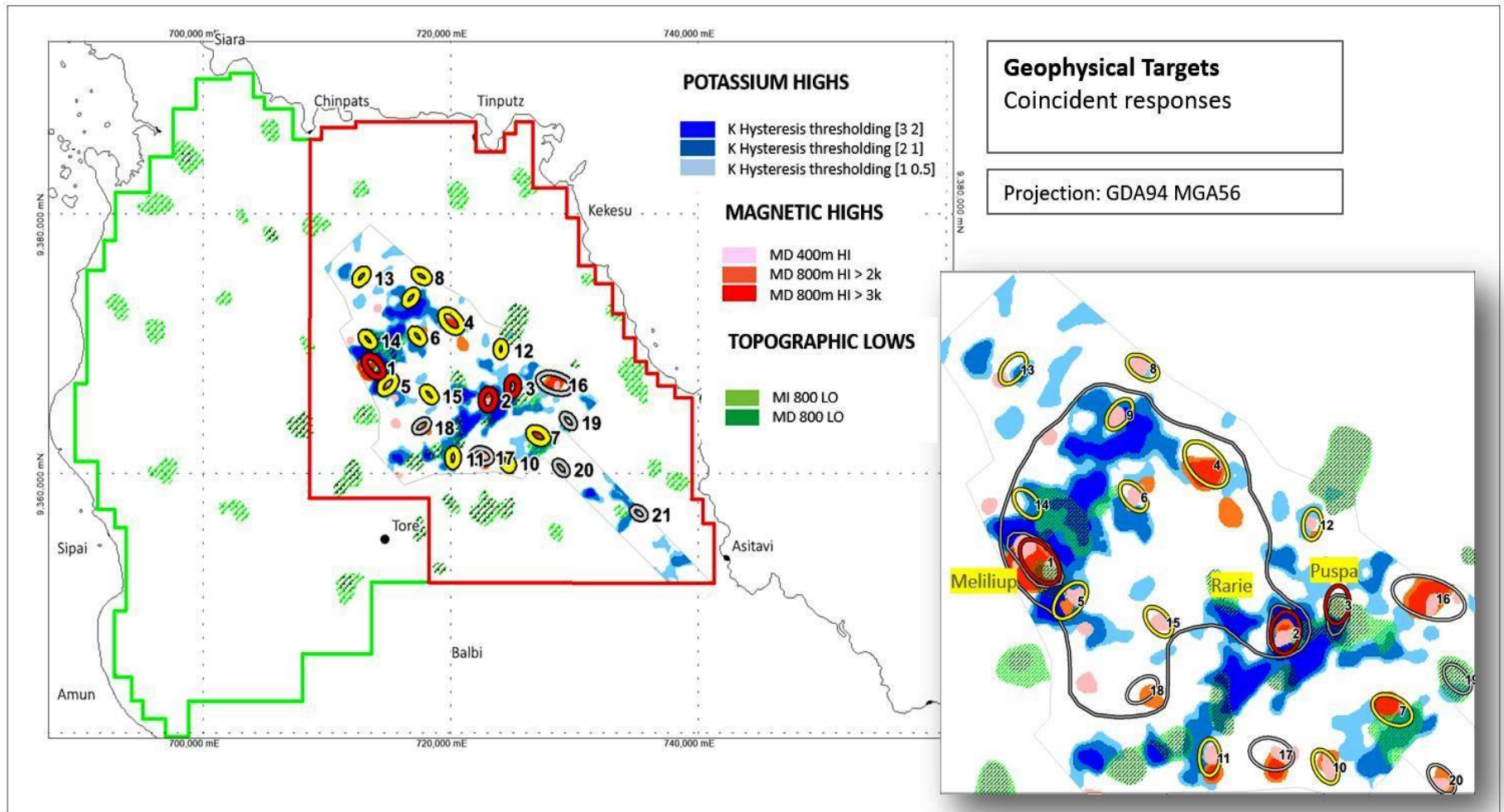


- Panguna styles intrusives identified on EL03
- Major anomalous province identified – The Upper Ramazon Anomaly





# Initial Target Zones Defined





# Mapping - Historical Data

- Rogerson (1989) identified a +20km<sup>2</sup> zone of anomalous Au, Cu, As and Hg that was named the "Upper Ramazon Anomalous Zone".
- The Rogerson study incorporated findings from airborne geophysical survey conducted for the Geological Survey of Papua New Guinea (GSPNG) by The Federal Institute for Geosciences and Natural Resources, Federal Republic of Germany (FIGNR). The survey recorded Magnetics, Electromagnetics and Radiometrics (K, TH, U) on 20% of the licence areas.
- Fathom Geophysics Australia Pty Ltd (Fathom) specialise in epithermal terrains Within this zone sampling has identified areas of interest for initial programmes at Melilup – Wasinobis, Melilup – PetsPets and Rarie'/Puspa for Gold.
- Rogerson noted in the report that potential exists for multiple deposits in the north and up to seven different styles of mineralisation were identified, these seven styles can be broadly grouped into three:
  - Porphyry Cu, Au;
  - Epithermal veining (including polymetallic veins and Au); and
  - Volcanogenic Massive Sulphides (VMS).
- Sampling has identified areas of interest for the initial exploration programmes at Melilup – Topis and Tore – Kunua for copper in the Upper Ramazon Anomalous Zone.
- Tsiperau's work concentrated on sampling the Diorite, Granodiorite, Monzonite Intrusives at Rarie' Puspa (similar geology to the intrusives at Panguna) and the results of her work has further enhanced knowledge of this location.



# Landowner Engagement

- Kalia established a relationship with landowners in the region in March 2016.
- Kalia assisted the formation and organization of the Toremāna Resource Owners Association (“TROA”) and their management company, Toremāna Resources Limited (“TRL”).
- TROA has representation from the 7 Landowner major Clans resident in the Licence areas.
- The Exploration Licence applications were made jointly by Kalia (75%) and TRL (25%)
- Since the issue of the Exploration Licences on 15 November 2017 Kalia has executed the following formalities:
  - Negotiated and concluded the Land Access and Compensation Agreement,
  - Negotiated and agreed the Joint Venture Agreement with the major Clans,
  - Incorporated the Joint Venture and formed a joint Board of Directors with Kalia being the operating manager of the JV,
  - Lodged and implemented the Environmental Management Plan,
  - Lodged and implemented the Community Engagement Plan; and
  - Commenced exploration activities.

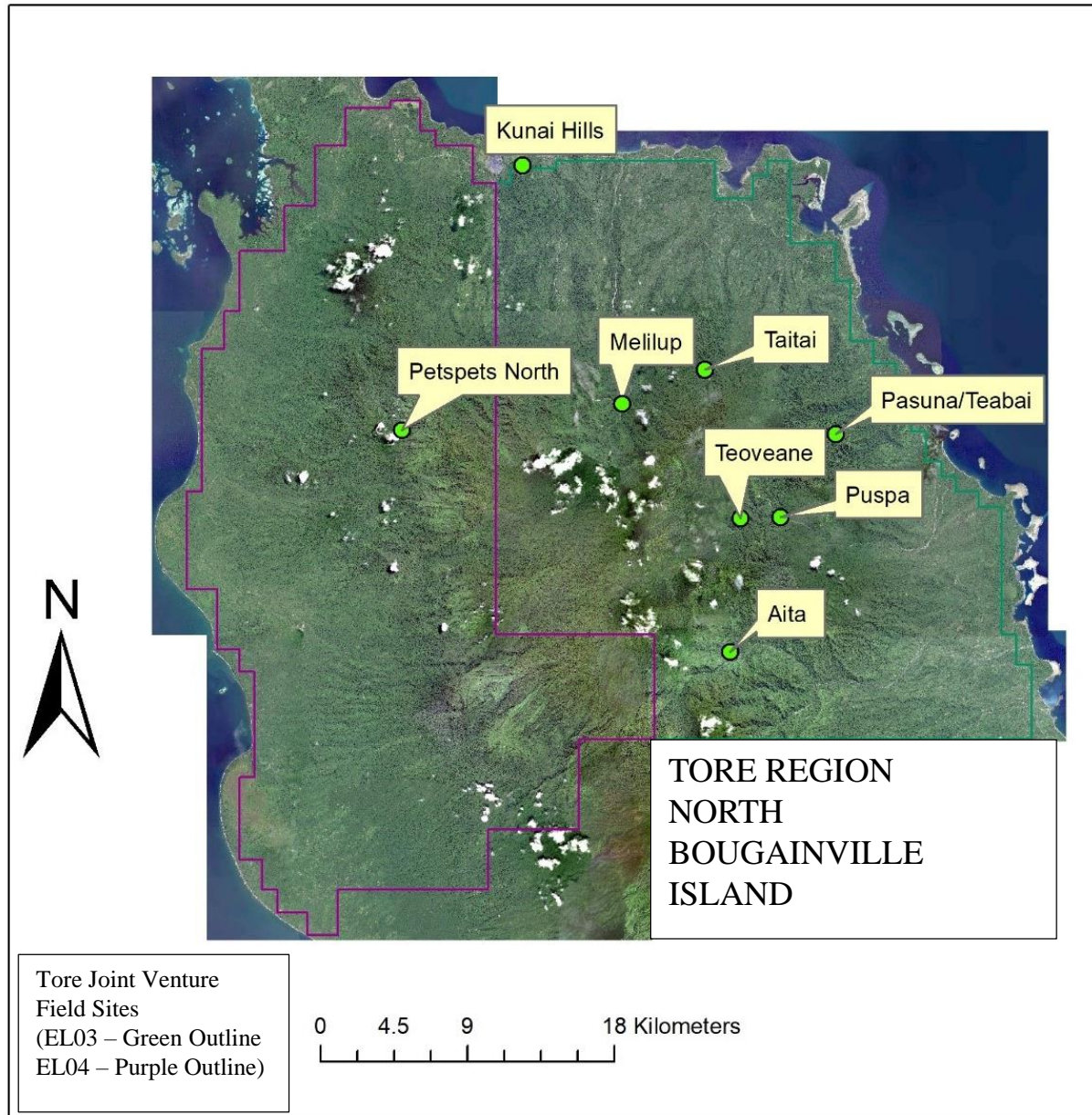


# Landowner Developments

- In January 2018 the Community Engagement activities expanded beyond the immediate environs of the base for the TROA.
- Since January dozens of individual Awareness meetings with villages, clan associations, community groups and community leaders have taken place.
- The most significant outcome is that the landowners throughout the region agreed that the TROA represents the major Clans but that the landowners want to organize themselves into 8 distinct areas and that area should have a Landowner Association, TROA being one of the eight.
- Kalia, with the support of DoMER and the ABG, has conducted extensive consultation in across the Exploration Licences and is in the process of organising the 8 groups; including registering and establishing the 7 additional Landowner Associations.
- The 8 groups will organise into corporate entities to participate in the 25% minority free carried (until production) stake in the incorporated joint venture(s).
- The exploration fieldwork has been challenged by access to land for exploration being interrupted while addressing the structural issues raised by the landowners.
- Despite the intense period of (re)negotiation for access the exploration activities have progressed with:
  - Geophysical Survey
  - The field team undertaking field trips to eight separate locations.



# Sites of regional exploration expeditions





# Exploration results – Teoveane 1

Two attempts were made to access the priority target (from the desktop studies) at Rarie/Puspa.

Neither trip reached the location, with heavy rain reducing physical access on one trip and cultural considerations terminating the second trip prematurely.

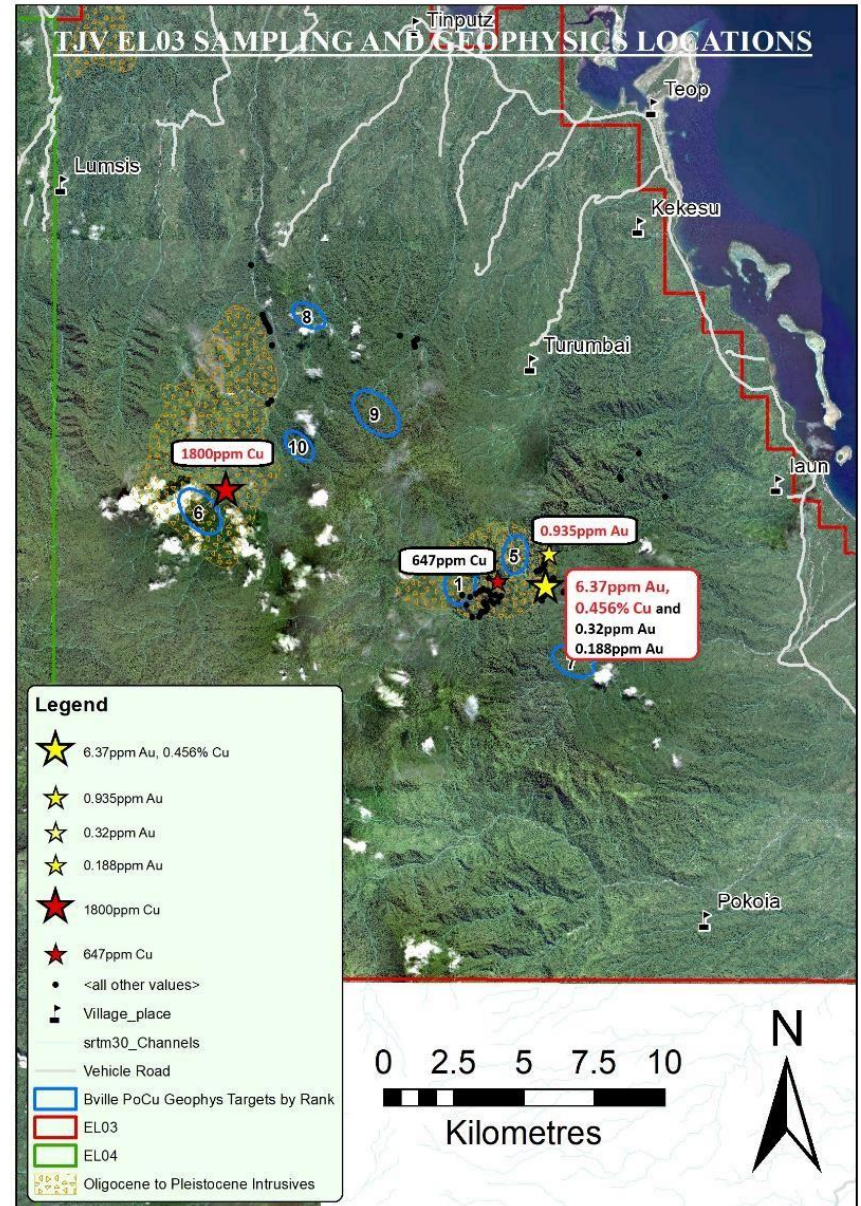
In the process of attempting to reach Rarie/Puspa sampling results from Teoveane were received from the first trip that warranted a revisit on the second trip.

One rockchip sample returned a gold grade of 0.19 gpt Au from an altered diorite/granodiorite, an anomaly in the right rocks.

The results of the second sampling programme were also positive.

In addition to enhancing the original outcrop from anomalous gold grades, one sample returned a good copper result from the original outcrop but more significantly a second and similar outcrop was located 1.1 kilometers from the original.

Sampling at the second outcrop returned anomalous gold and elevated copper results from rockchips.





# Exploration results – Teoveane 2



The alteration of the diorite outcrop appears zoned with epidote at the contact (left hand side of outcrop image below). Mineralogy changes to less epidote and introduction of magnetite (and biotite?).

This is the location of rock chip from outcrop, sample KTR00077, that assayed at **6.37 ppm Au and 0.45% Cu**



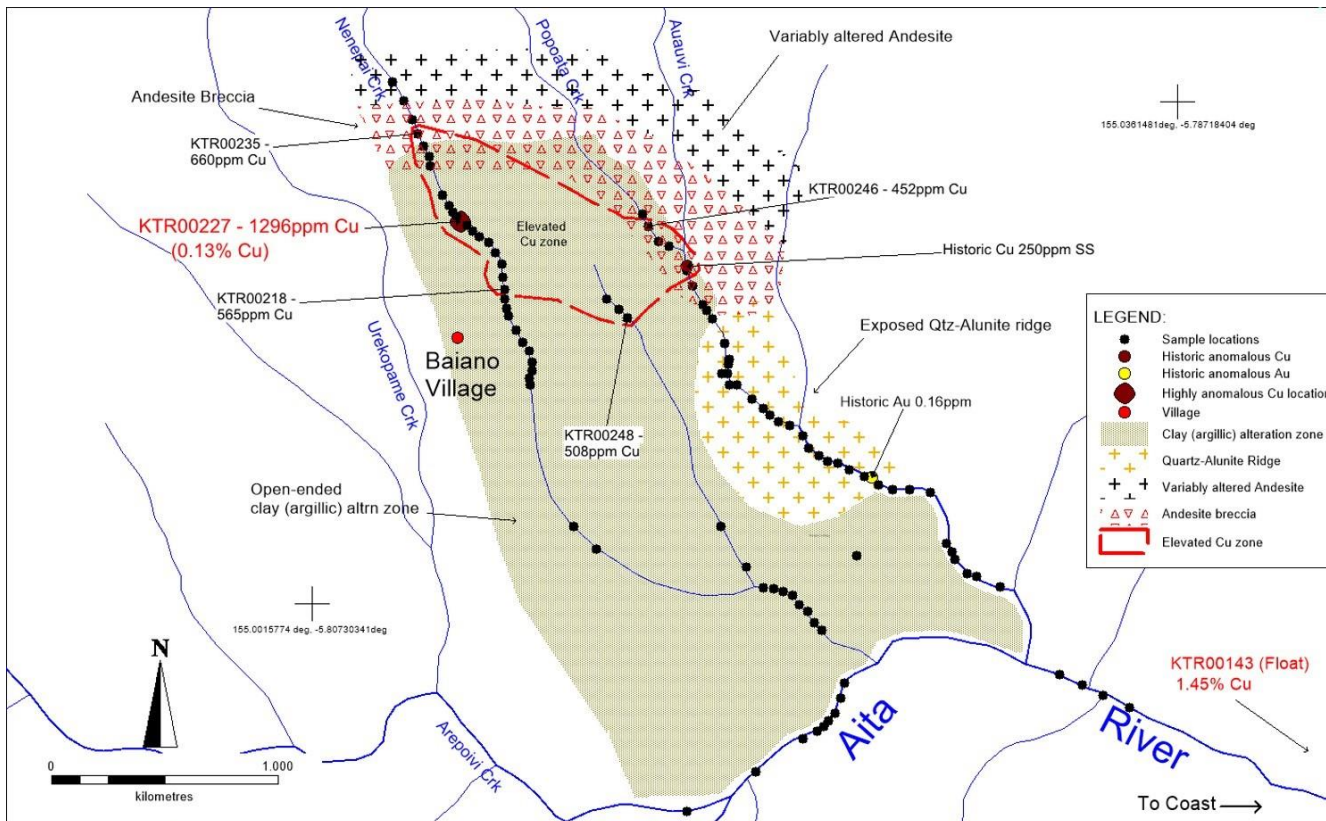
The field trip extended upstream to the north of this outcrop where, at a location 1.1km to the north of sample KTR00077 another altered diorite outcrop was sampled with one sample (KTR00112) anomalous with a gold grade of 0.935 ppm Au and elevated copper at 565 ppm Cu (0.05% Cu).

All sampling was rockchip from outcrop.





# Exploration results – Baiano Area, Aita



Three field trips have been completed in the Aita region.

Access was negotiated to the north of the district where historic sampling indicated epithermal alteration with elevated copper signatures.

Mapping of the area has shown what appears to be a collapsed volcanic vent structure, with exposed quartz and alunite ridges. Sampling has defined a 1000m x 400m of elevated copper anomalism in rock chips.



River float sampling, at Aita, produced the highest grade copper in the North Bougainville region of 1.45% Cu.

Turiviki, site of an historic 2.20 gpt Au result, is now clear for access and sampling.



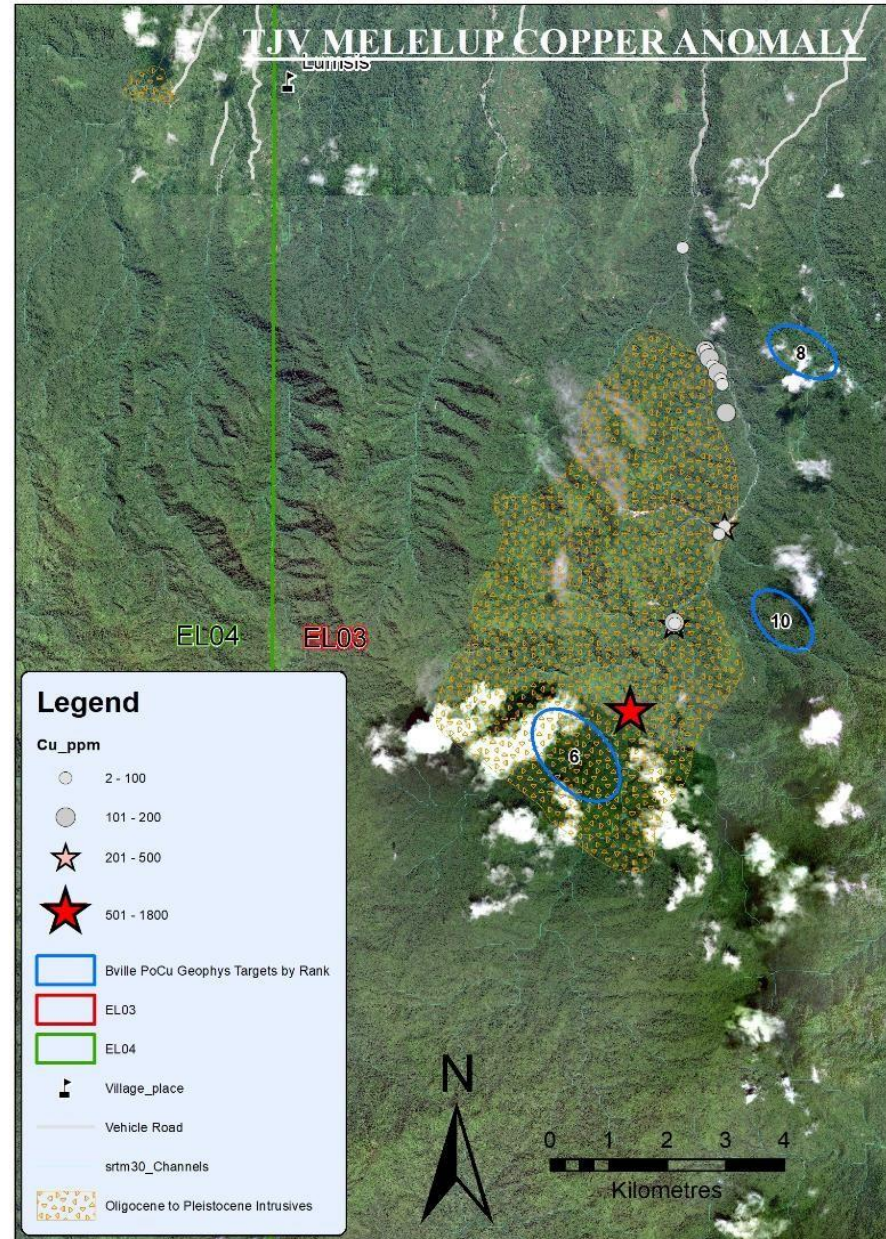
# Exploration results - Melilup

Melilup has been an site of interest from the desktop study stage.

Only one field trip was possible prior to the need to renegotiate access with separate landowner groups. This trip did not reach the location of highest order geophysical anomaly for this region (#6 in picture).

Elevated copper results were returned for all samples within the projected intrusive zone of the sampling programme.

With the highest copper grade (#399621, 1800ppm Cu, see slide 9) resulting from sampling directly below the #6 location.





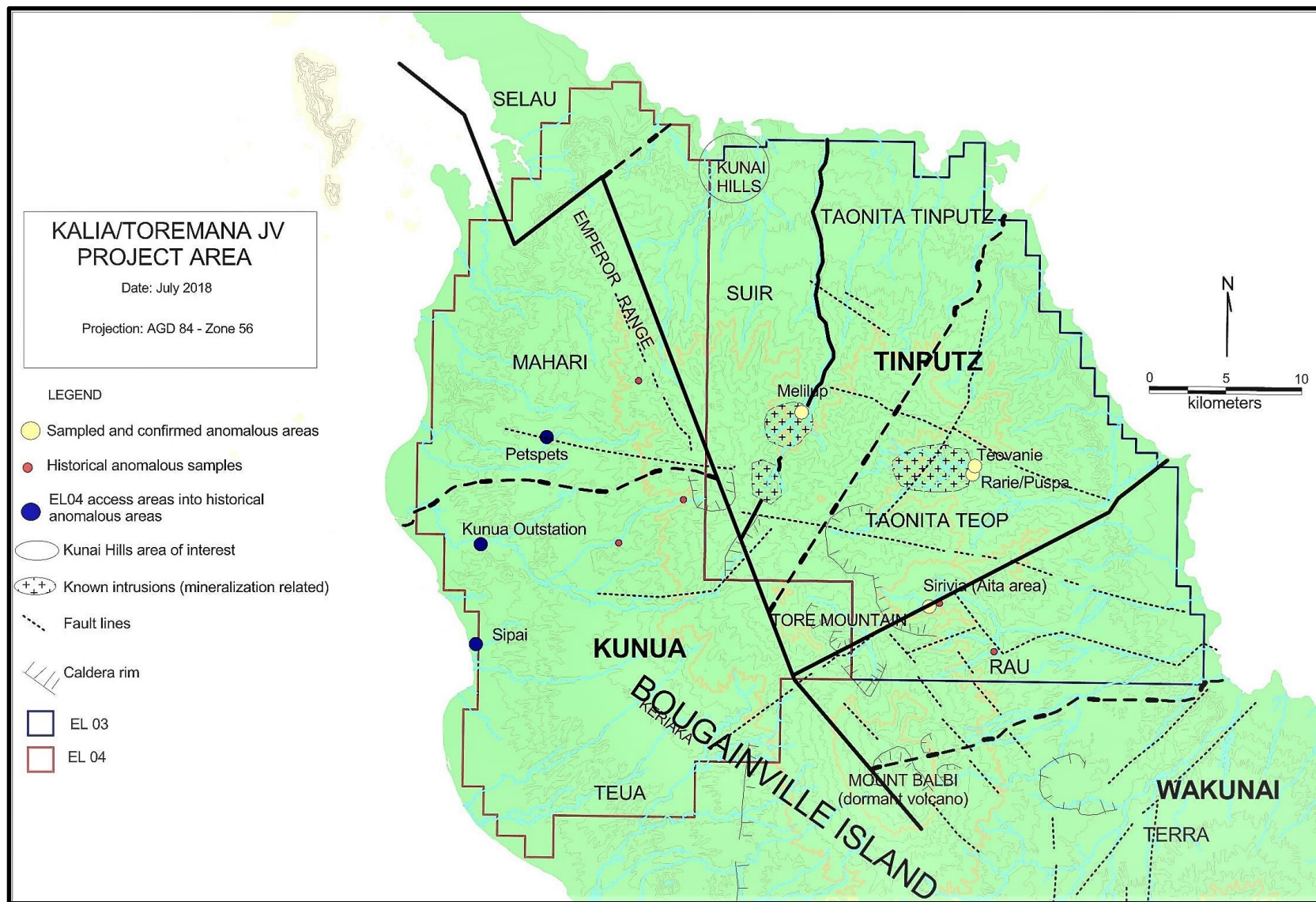
# Other geological fieldwork to date

Expeditions have been undertaken to the following areas:

- The Teabai area of Toanita Teop
  - Rocks presented by landowners reportedly from this area contained copper oxides
  - Reported alluvial gold from river in region
  - Geological samples have returned base mineral (copper) results returned limited elevated results
- Kunai Hills is an identified geophysical anomaly with no historic geochemistry
  - Geologists found minimal material of interest to sample
  - Assay of sampled material produced no geochemistry of interest
- PetsPets has two distinct areas (north and south) with historic geochemistry results for gold but has no existing geophysical data – new geophysics will assist in targeting exploration activity.
  - Geologists aimed to reach PetsPets north target area
  - Did not reach target due to challenging terrain
  - Samples collected enroute returned nothing of interest

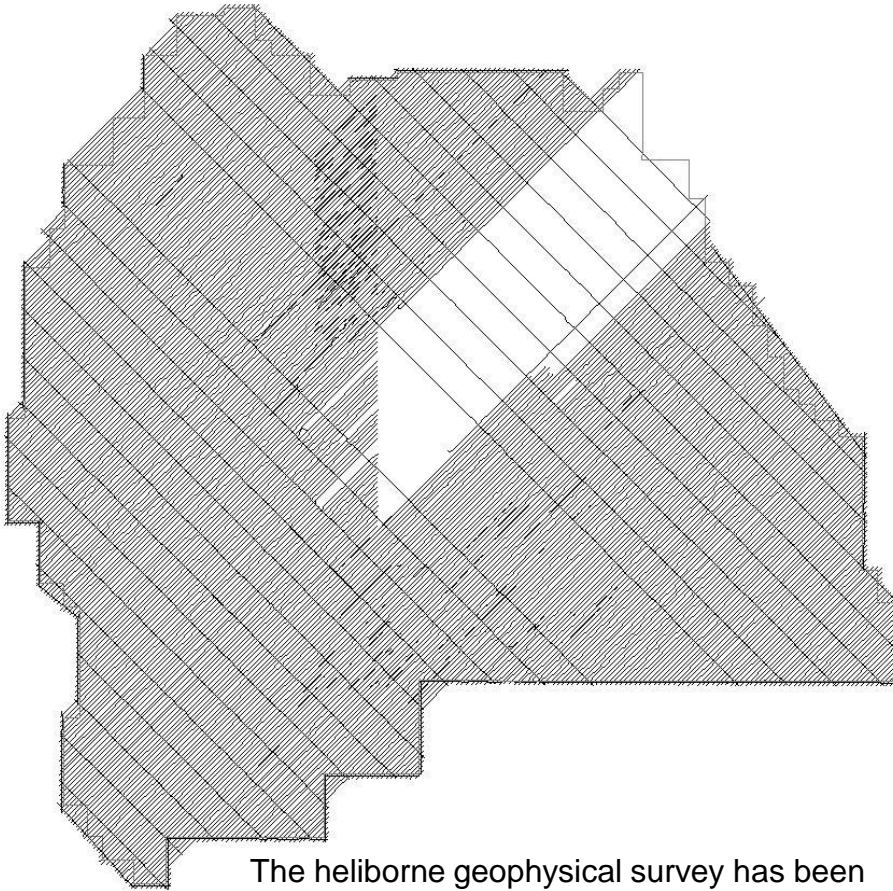


# Orientation Map – pre updated Geophysics

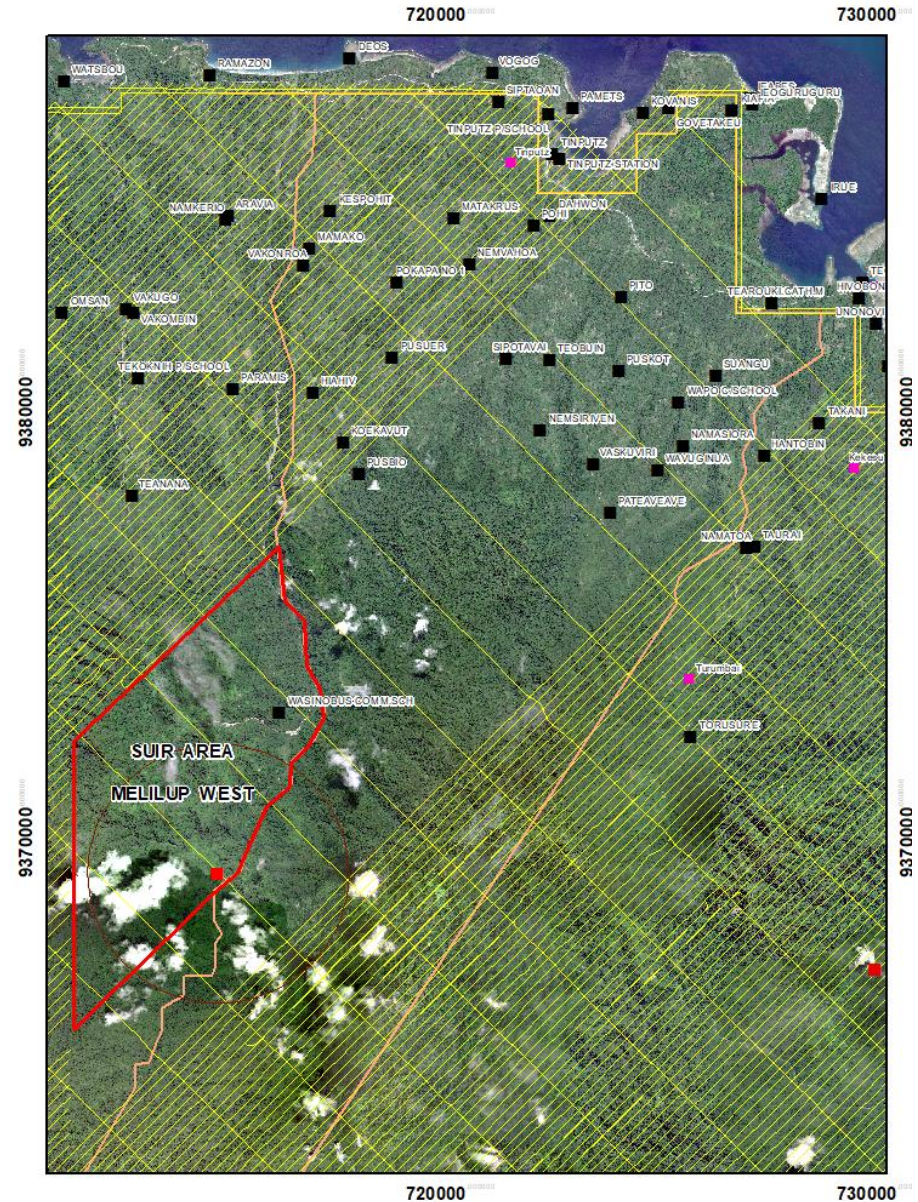




# Geophysics coverage @ 23 Nov 2018 – 92%

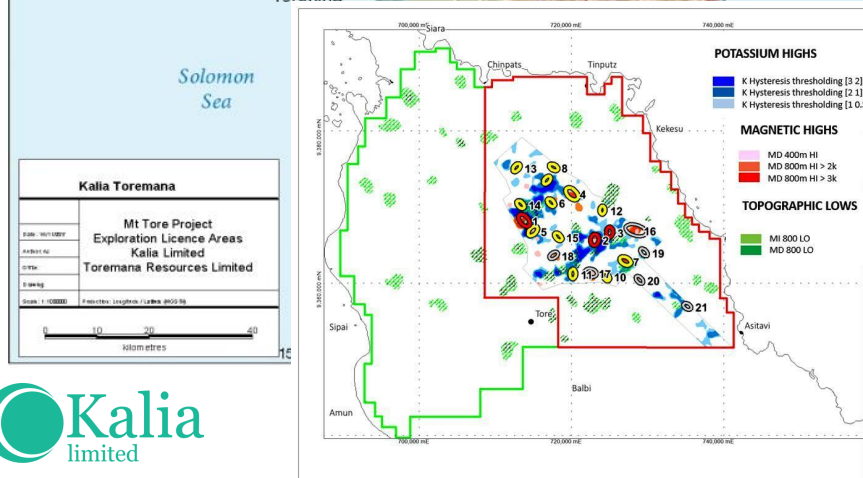
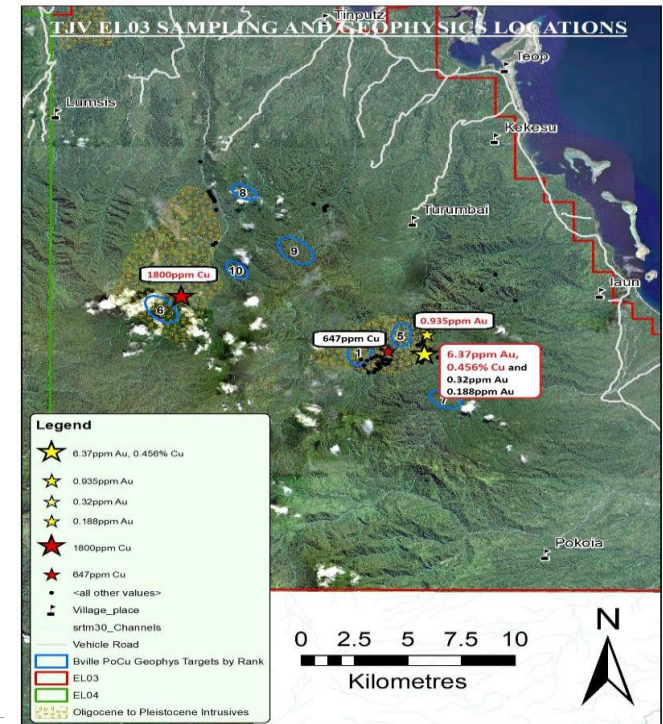
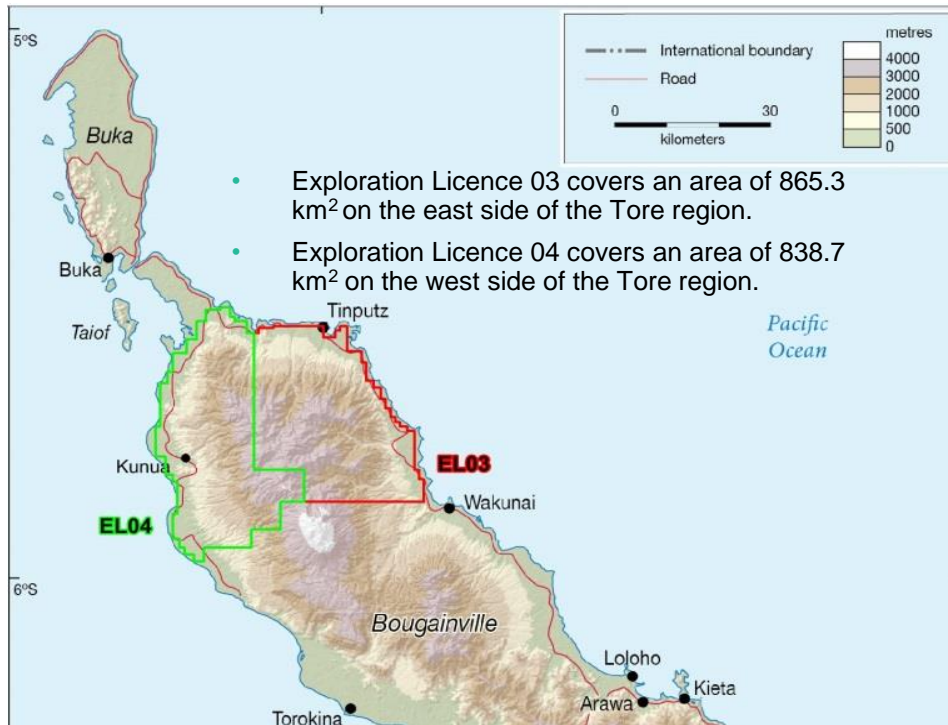


The heliborne geophysical survey has been plagued with delays.  
Community – periods of no access  
Weather – cloud and electromagnetic pulsing  
Volcanic activity – ash clouds  
Mechanical failure



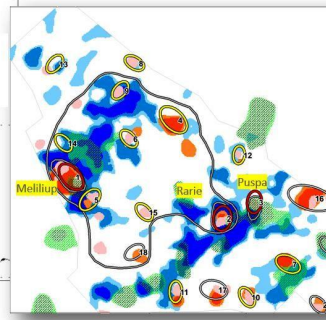


# Summary JV Lease Geology



**Geophysical Targets**  
Coincident responses

Projection: GDA94 MGA56





# Planned Exploration Activity

## Access status to target areas identified from historical data

### Target areas open

- Aita – Turiviki, sampling at landslide
- PetsPets – geological caldera with previous geochem anomalies Au
- Melilup – geological intrusion and elevated copper results
- Sipai – historical Cu finding
- Rapomo - geological intrusion, no other data
- Teoveane – alteration zone with sampled Au ~6g/t
- Rarie / Puspa – intrusion with historical Cu and Au anomalies
- Keriaka – large geographic area of interest awaiting geophysics

### Geophysical Survey

- Data Collection West (EL04) commenced 30<sup>th</sup> August 2018
- Adverse weather and solar activities have caused most delays and sporadic community issues
- Data collection to complete with analysis 2018

### Plan going forward

- Field trips in EL04 were suspended due to difficult terrain to await geophysical results
- Geophysical results will enable the team to accurately locate sample programmes and allow planning to incorporate terrain matters
- Teoveane will be further worked to determine if it should become the first drill project.
- More mapping and sampling in the Aita region
- Dedicated field trips to Rarie/Puspa, Melilup, Sipai and PetsPets
- Continue to develop model and complete field programmes as data is derived



# Kalia's Bougainville Proposition

- 1,704 km<sup>2</sup> under 2 exploration licences
- Panguna an indicator of development potential
- Environmental and Community Engagement Plans submitted and accepted
- Management team with proven government, community and landowner relationships in Bougainville
- All social licence processes are in place
- Legacy community issues being managed with good progress
- Historical geochemical and geophysical study data obtained and reworked showing good potential
- Targets identified off historical work and exploration underway
- Huge potential upside – analysis of geophysics covering whole licence area due on completion of programme in November 2018
- Gateway to further opportunities in Bougainville



# Invested in Bougainville to date

No	Description	\$m
Pre Kalia Limited		
1	Corporate structures	0.12
2	Licence fees / legal	0.15
3	Geology Research and analysis	0.25
4	Fees / wages before Kalia Ltd	0.70
5	Community Engagement / development costs before Kalia Ltd	1.00
	Sub total	2.22
Post Kalia Limited		
1	Vehicles and equipment	0.39
2	Geophysics	1.01
3	Field expeditions and assays	0.22
4	Bougainville costs (salaries / rent / accommodation / telecoms / travel etc)	1.03
5	Community engagement and development	1.30
6	Corporate and admin overheads	0.49
7	Professional fees, legal and consultants	0.65
8	Finance and placement costs	0.41
	Sub total	5.50
	TOTAL	7.72





# Australian Assets and Corporate



# Indiana NT

- Targeting sulphide mineralisation within the Riddock Amphibolite and later intrusives within the Irindina Province and extensions under thin cover
- Four titles, EL31275, EL31393 and applications ELA31537 and 31542
- Existing Blackadder and Baldrick Cu-Ni-PGE prospects over outcropping copper-bearing gabbro intrusions
  - Blackadder: rock chip assays up to 3.8% Ni and 9.6%Cu
  - Baldrick: rock chip assays 2.3% Ni and 2.4% Cu
- Approximately 15km NE of the Basil Copper-Cobalt sulphide prospect

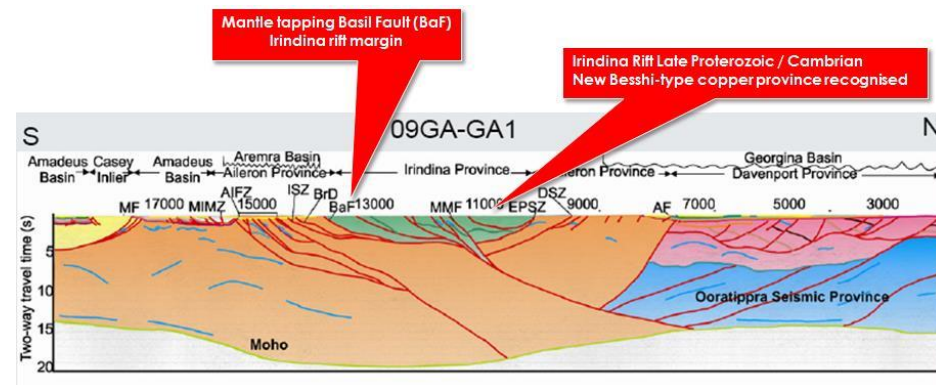
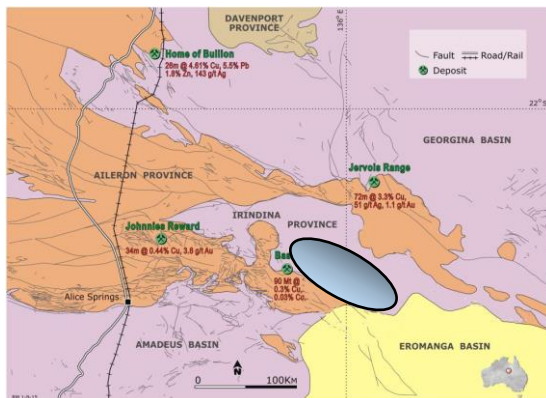
<sup>1</sup>Initial inferred mineral resource estimate

- 90Mt@0.28%Cu, 0.03%Co at a 0.1%Cu Cut off; or 26.5Mt@0.57%Cu, 0.05%Co at a 0.3%Cu Cut off

[www.mithrilresources.com.au/pdfs/2012-03-20-22144220120321\\_JORC\\_Basil\\_Cu-Co\\_Resource.pdf](http://www.mithrilresources.com.au/pdfs/2012-03-20-22144220120321_JORC_Basil_Cu-Co_Resource.pdf)

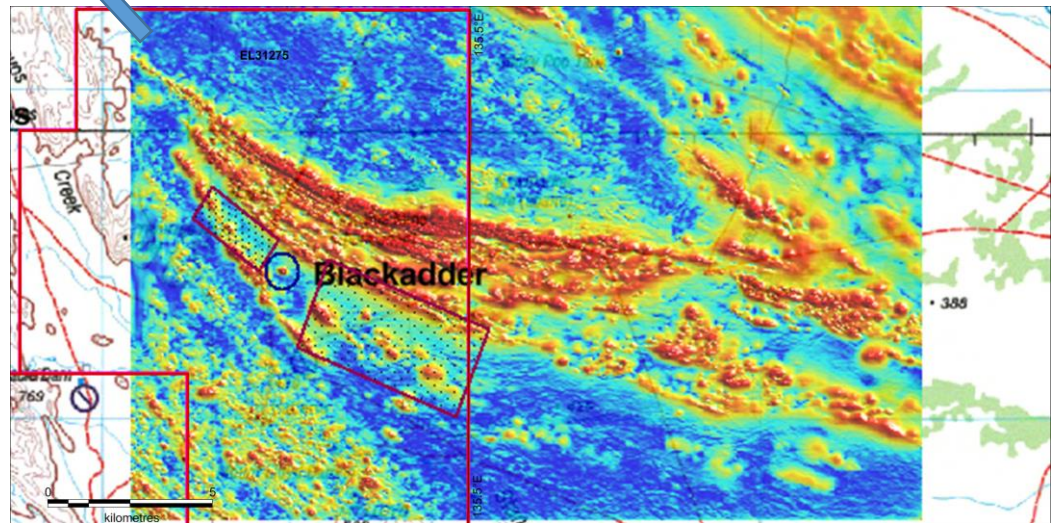
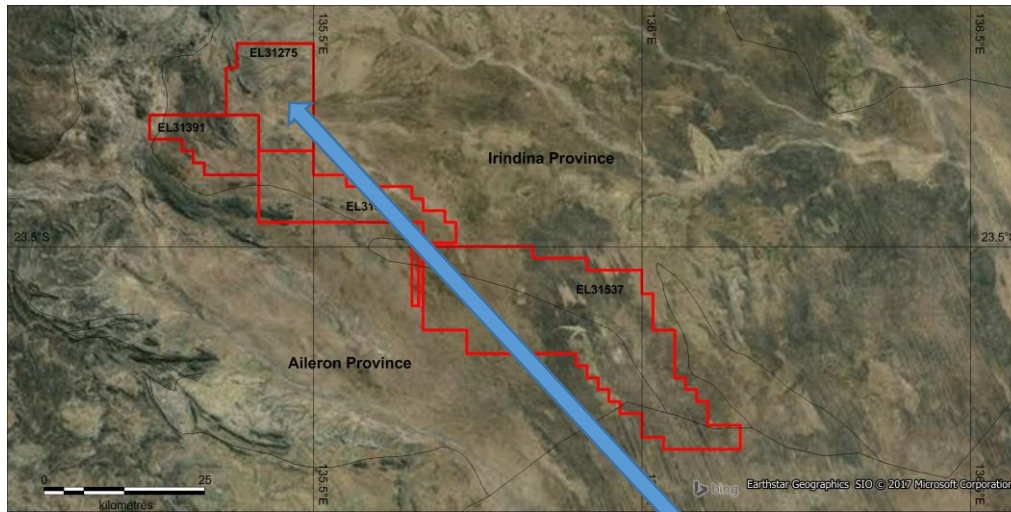
- Noted Lithium-Caesium-Tantalum (LCT) type pegmatites in the province<sup>2</sup>.

<sup>2</sup>Frater KM, 2005. Tin-tantalum pegmatite mineralisation of the Northern Territory. Northern Territory Geological Survey, Report 16





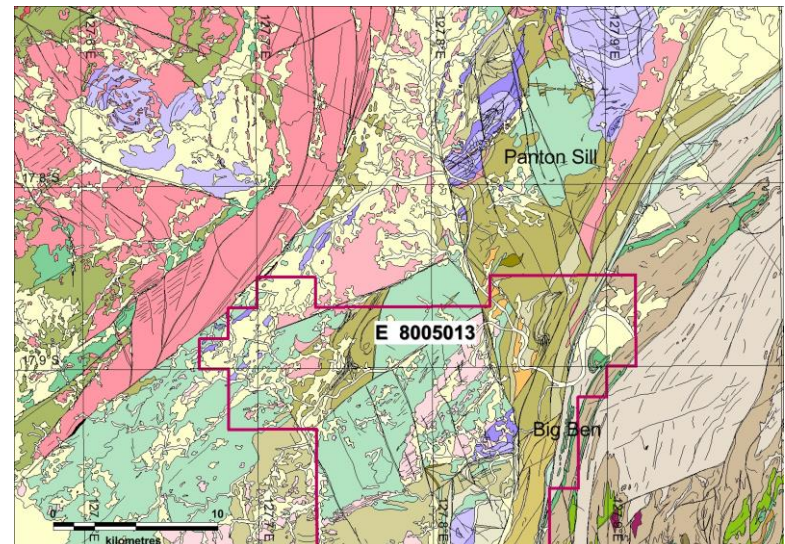
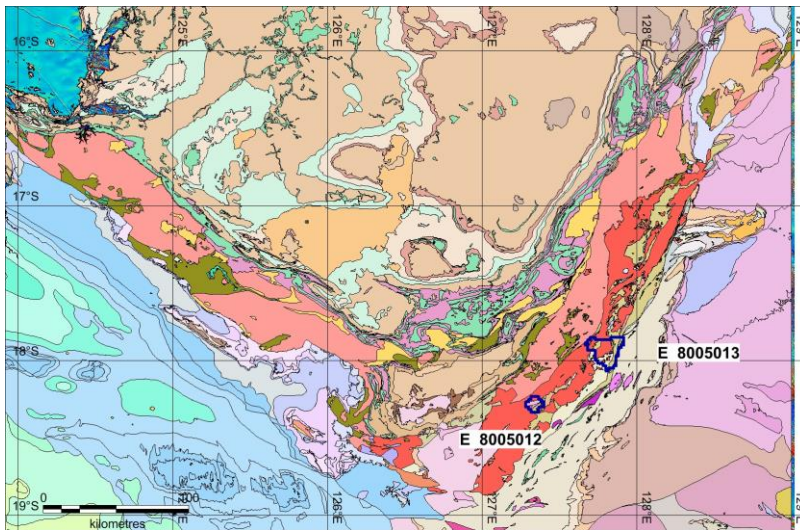
# Indiana NT





# Kimberley WA

- Targeting copper, chromium and platinum group elements
- Two applications E80\_5012 Mt Angelo and E80\_5013 Armanda River
- Covers Big Ben intrusion, the faulted western extension of the Panton Sill, Tickalara Metamorphics and Koongie Park Formation
  - Historic soil sampling over Big Ben identified anomalous Cr, Pt and Pd values (as per Thundelarra Annual Report 2001)
- Potential of the fertile Tickalara Metamorphics for base-metal, graphite and gold mineralisation
- Native Title agreement signed, awaiting grant





# Strategy

## Corporate

- Secure additional funds to get to develop geology to drill target stage and increase valuation with drill results by mid 2019
- Aim to issue equity off increased valuation to minimise dilution
- Commence community work to increase licence footprint adjoining existing areas (see below)
- Structure projects to allow for separate development if preferred

## Operational

- Update geophysics to define targets
- Increase field geology team to get to 4 in field teams by end of 2019 starting with
- Explore through field geology to develop drilling target sites
- Aim for drilling on first project to start 1H 2019
- Develop bases on both the East and West due to physical barriers

## Additional opportunities

- Landowner groups from our areas have approached us for initial discussions for adjoining areas including known gold area
- Local development team working with Landowner relationships in areas of interest



# Corporate Snapshot

## CAPITAL STRUCTURE

Shares on issue	2,514,347,391
Options on issue	294,500,000
Market capitalisation (@ A\$0.003 per share)	A\$7.54m
Cash on hand (30 Sept 2018)	A\$0.1m
Secured (undrawn) loan facility (30 Sept 2018)	A\$1.3m

## KEY PERSONNEL

Chairman	The Hon. David Johnston
Managing Director	Terry Larkan
Technical Director	Peter Batten
Non-Executive Directors	Sean O'Brien
Comp. Secretary / CFO	Phillip Hartog

## TOP 20 SHAREHOLDERS (27 November 2018)

Name	Units	%
GLOBAL RESOURCES INVESTMENT	480,000,000	19.09%
NIKOLAJS ZUKS,	225,000,000	8.95%
GLENEAGLE SECURITIES NOMINEES	122,905,985	4.89%
KSLCORP PTY LTD,	107,000,000	4.26%
J P MORGAN NOMINEES AUSTRALIA	100,000,000	3.98%
ENZED NOMINEES PTY LTD	75,301,205	2.99%
ENZED NOMINEES PTY LTD	67,934,157	2.70%
GREYWOOD HOLDINGS PTY LTD,	62,000,000	2.47%
MRS MELANIE THERESE VERHEGGEN,	60,000,000	2.39%
TYGOLA PTY LTD,	55,150,000	2.19%
CARLA MICHELLE PTY LTD,	55,031,988	2.19%
PILLAGE INVESTMENTS PTY LTD	55,000,000	2.19%
MAYSTAR PTY LTD,	54,216,867	2.16%
JESSIKA ERIN PTY LTD	40,662,651	1.62%
PETER BATTEN,	36,144,578	1.44%
FINROW LIMITED,	31,200,000	1.24%
LSAF HOLDINGS PTY LTD	30,000,000	1.19%
SUZAN BAKER,	27,352,651	1.09%
VANAVO PTY LIMITED,	25,100,000	1.00%
IAN SANDOVER & ASSOCIATES PTY	25,000,000	0.99%
	<b>1,735,000,082</b>	<b>69.00%</b>



# References

- **Geology of Bougainville and Buka Islands, New Guinea**, Blake, D.H. and Miezeitis, Y., 1967.
- **Panguna copper gold deposit**, in Geology of the Mineral Deposits of Australia and Papua New Guinea (Ed- F.E. Hughes) pp1807-1816 (The Australasian Institute of Mining and Metallurgy: Melbourne). Clark, G.H., 1990.
- **Report No. 3, Interpretation of Aerogeophysical data and followup Aerogeophysical anomalies on the island of Bougainville, Papua New Guinea, text volume and Appendix I**. Dr. D. Bering, Prof. Dr. W. Bosum, Dr. K. Busch, F. Plattetschlager, Dr. D. Rammlmair, Dr. R. Robling, B. Stroheker, R. Sumaiang, 1990. (Federal Institute for Geosciences and Natural Resources, Federal Republic of Germany.)
- **Memoir 16: The Geology and Mineral Resources of Bougainville and Buka Islands, Papua New Guinea**, Rogerson, R.J., Hilyard, D.B., Finlayson, E.J., Johnson, R.W. and McKee, C.O., 1989 (Geological Survey of PNG.)
- **Report for the Fourth Field Trip for the North Bougainville Collaborative Research Project, 13<sup>th</sup> February to 07<sup>th</sup> March 2012, Version 2**. Tsiperau, C.U., 2012 (Unpublished).