INDEPENDENT TECHNICAL REPORT ON THE KEVERI PROPERTY, PAPUA NEW GUINEA

Prepared by Mining Associates Ltd

for

Golden Birch Resources Inc

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Contents

FIGURES

TABLES

1 SUMMARY

This is an independent technical report on Golden Birch Resources Inc's ("GBR") Keveri property ("Keveri" or "the Property") in Papua New Guinea ("PNG") prepared in accordance with Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI43-101).

Keveri is located across the boundary of the Northern and Central Provinces in south-eastern PNG approximately 200 km east-southeast of Port Moresby, at latitude 9° 54' 1.73"S and longitude 148° 48' 46.16" E. The property is comprised of two contiguous staked claims EL2391 and EL2560 covering 248 km^2.

In late August 2018, GBR signed a Joint Venture deal with private Australian-registered company Papuan Minerals Pty Ltd, which owns 100% of Papuan Minerals Ltd ("PML") a PNG registered company. GBR can earn 85% of PML, which holds 100% of exploration licences 2391 and 2560 that comprise the Keveri property. The earn-in option over 84 months requires cash and share payments of $5.0M, and funding of exploration expenditure ($0.3M in year 1) including 13,000 m core drilling within the tenements.

1.1 PROJECT HISTORY

Mineral exploration at Keveri commenced in the late 1960's, with regional stream sediment surveys by CRA Exploration and International Southern Exploration Ltd mainly targeting nickel mineralisation. From 1988 to 1992 Highlands Gold followed up detailed stream sediment surveys and discovered pannable gold and float boulders with copper-gold mineralisation in several drainages and extensive outcropping alteration in the Ioleu Creek area. However, no further work was completed and the area was relinquished. Between 1992 and 2006 Nuigini Nickel NL explored for nickel-copper-cobalt with limited success.

Papuan Precious Metals held licences over the area from 2006 to mid-2012, undertaking mapping, soil sampling, trenching and geophysical surveys (including airborne magnetics and ground-based IP). Prospects covered included Araboro, Urua and Doriri with a few drill holes targeted at the latter two. Since 2015 the licences have been held by a privately-owned company with minimal additional exploration activities completed.

1.2 GEOLOGY

The Project straddles a major WNW trending regional structure, the Keveri Fault Zone, which forms the boundary between two major geological domains: mafic and ultramafic units of the Papuan Ultramafic Belt to the north and basaltic pillow lavas and mixed sediments of Miocene Wavera Volcanics to the south.

GBR is focusing exploration activities on is Porphyry-style Cu-Au mineralisation related to mafic to intermediate composition porphyritic intrusive stocks proximal to the Keveri Fault. Mapping shows features at different prospects related to possible diatreme formation and structurally controlled hydrothermal breccias.

1.3 EXPLORATION

The project has 11 identified prospects with the leases, GBR are currently focusing on four (4) prospects. GBR has undertaken early stage exploration on the primary targets Omu, Araboro-Daru (aka Daru) and Waki. Work to date has comprised:

- Stream float sampling
- Outcrop rock chip sampling
- Geological outcrop mapping (largely confined to stream banks and ridges)
- Soil sampling 100 m x 100 m grid at Omu and Daru
- 26 petrographic samples from Omu Prospect
- 3D IP survey on 100 m x 100 m grid

1.4 SAMPLING AND RESULTS

Soil sampling, trenching and geophysics have defined several target areas requiring follow-up exploration. Results show that mineralization characteristic of porphyry copper-gold systems are present on the Property with grades that are economically interesting. By combining geology, geochemistry and geophysics GBR have generated and prioritised targets for the next phase of exploration. No drilling has occurred at GBR's identified primary targets.

1.5 CONCLUSIONS

The Keveri Property contains significant copper-gold mineralization associated with porphyry style deposits. The work of GBR and previous owners has delineated several target areas, and additional work is warranted to determine if economic mineralization exists on the Property.

1.6 EXPLORATION RECOMMENDATIONS

GBR's planned exploration activities on the Property include:

- Continued Mapping and outcrop sampling at their primary prospects, Omu, Daru and Waki
- Geochemical soil survey over Waki
- Processing and interpretation of the IP survey conducted during June/early July on the Omu prospect
- Ground Magnetic survey over Omu, Waki and Daru

Results of this year's field season will provide the necessary technical information to define suitable drill targets within the Keveri Property.

A three month field program for Keveri Project licences EL 2391 & 2560 should be structured towards the following:

Prospect	Work Programme	Budget (CAD)
Omu	Processing and interpretation of IP survey & ground magnetic results collected in June 2019, processing of additional geological mapping and compilation of all additional rock and soil sampling data to enable definition of drill targets	$ 50,000
Daru	Ground magnetic survey, plus analysis of all technical information to define drill targets.	$ 15,000
Waki	Completion of detailed geologic mapping, completion of soil geochemical survey (sampling a 100 m x 100 m grid). A ground magnetic survey over the same grid or more extensive. Compilation of all technical data to enable definition of drill targets,	$ 115,000
Logistical Support	Including helicopter transport, Camp Accommodation & Wages for consultants and Casual Labour, for the year allow	$ 120,000
Total Budget (Approximately)		$ 300,000

2 INTRODUCTION

2.1 TERMS OF REFERENCE

This Independent Technical Report has been prepared by Mining Associates Ltd ("MA") for Golden Birch Resources ("GBR") in compliance with disclosure requirements of Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI43-101"). MA was commissioned in May 2019 to prepare this Technical Report to meet the requirements of section 4.2.1 (a) of NI43-101 prepared for GBR for the purpose of its initial public offering ("IPO").

2.2 INFORMATION USED

This report is based on technical data provided by GBR to MA. GBR provided open access to all the records necessary, in the opinion of MA, to enable a proper assessment of the project and resource estimates. GBR has warranted in writing to MA that full disclosure has been made of all material information and that, to the best of the GBR's knowledge and understanding, such information is complete, accurate and true.

Additional relevant material was acquired independently by MA from a variety of sources. Historical documents and data sources used in the preparation of this technical report are listed in section 27: References. This material was used to expand on the information provided by GBR and, where appropriate, confirm or provide alternative assumptions to those made by GBR.

2.3 CURRENT PERSONAL INSPECTION BY QUALIFIED PERSONS

The Qualified Person for this Technical Report is Mr Ian Taylor, as defined in the regulations of NI43-101.

The current personal inspection of the property was conducted by Mr Taylor between the 1st of June and the 3rd of July, 2019.

Mr Taylor reviewed the geological setting, examined rock specimens and field locations of interest, and collected a number of independent samples for verification purposes. In addition to the site visit, Mr Taylor held discussions with technical personnel from the Company regarding all pertinent aspects of the Project and carried out a review of available literature and documented results concerning the Property. The reader is referred to those data sources, which are outlined in the References section of this Technical Report, for further details.

The present Technical Report is prepared in accordance with the requirements of NI 43-101 and in compliance with Form 43-101F1 of the Ontario Securities Commission ("OSC") and the Canadian Securities Administrators ("CSA").

3 RELIANCE ON OTHER EXPERTS

The authors have relied on reports, opinions or statements of other experts who are not Qualified Persons for information concerning legal, environmental, political and taxation issues and factors relevant to this report.

MA has assumed, and relied on the fact, that all the information and existing technical documents listed in the References section of this Technical Report are accurate and complete in all material aspects. While MA has carefully reviewed all the available information presented to us, MA cannot guarantee its accuracy and completeness. MA reserves the right, but will not be obligated to revise the Technical Report and conclusions if additional information becomes known to us subsequent to the date of this Technical Report.

Copies of the tenure documents, operating licenses, permits, and work contracts were not reviewed. Information relating to tenure was reviewed by means of the public information available through the Mineral Resources Authority of Papua New Guinea (MRA) website at: http://portal.mra.gov.pg/Map/

MA has relied upon this public information, as well as tenure information from GBR and has not undertaken an independent detailed legal verification of title and ownership of the Keveri Property ownership. MA has not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but has relied on, and believes it has a reasonable basis to rely upon GBR to have conducted the proper legal due diligence.

Select technical data, as noted in the Technical Report, were provided by GBR and MA has relied on the integrity of such data.

A draft copy of this Technical Report has been reviewed for factual errors by the client and MA has relied on GBR's knowledge of the Property in this regard. All statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this Technical Report.

4 PROPERTY DESCRIPTION AND LOCATION

Keveri is located in the Abau District of the Central Province in Papua New Guinea. The Property is 200 km south east of Port Moresby, at latitude 9° 54' 1.73"S and longitude 148° 48' 46.16" E.

4.1 PROPERTY TENURE

The Property is covered by Exploration Licenses EL2391 (143 km^2) and EL2560 (105 km^2) as shown in Table 4-1 and Figure 4-1. The tenement's status has been verified by MA, through the publically available information on the Papua New Guinea Mineral Resources Authority online tenement viewing portal (http://portal.mra.gov.pg/Map/). This includes registered ownership of the leases and licence boundaries.

Title to the Property is held by Papuan Minerals Limited ("PML"), a PNG registered company. Golden Birch Resources has an exclusive option to acquire up to 85% of PML.

Table 4-1. Details of Keveri Licences

Licence ID	Name of area	Area (Sub-blocks)	Issue Date	Expiry Date	PML Ownership %	Annual rent (Kina)	Minimum expenditure (Kina)
EL2391	Doma Village	41	17/12/2015	16/12/2019	100%	7,380	82,000
EL2560	Doma	30	29/08/2018	28/08/2020	100%	2,700	12,000

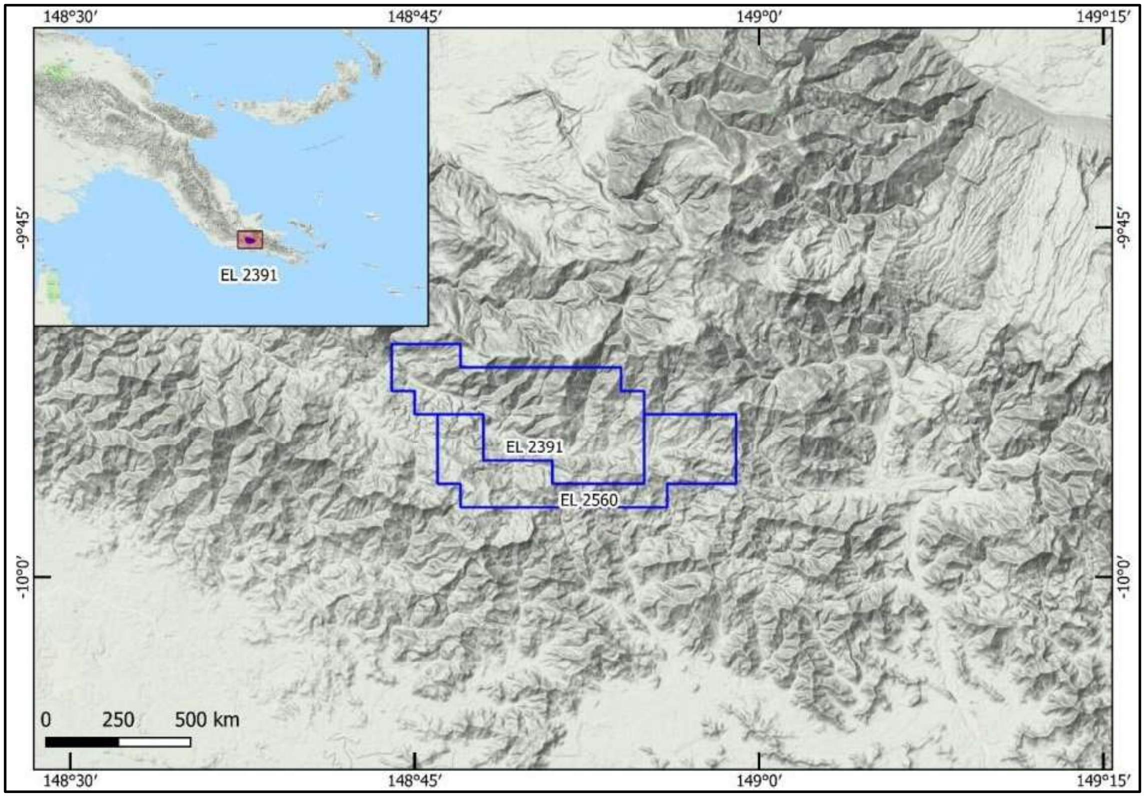


Figure 4-1. Local Property location and access

Annual rental payments for the licences are made in Papua New Guinean Kina (K) to the PNG Mineral Resources Authority and are shown in Table 4-1. Minimum expenditure requirements for exploration licences depend on the area in sub-blocks and the year since grant of the licence.

4.2 PROPERTY RIGHTS AND OBLIGATIONS

GBR have an exclusive option to acquire up to 85% of the legal and beneficial interest in PML shares. The option is exercisable in two stages over a total period of 6 years:

a) 51% interest may be earned during the first 3 years by total payments in shares and cash of $3M and by solely funding all exploration expenditure (minimum of $0.3M in first year), including at least 3,000 m of diamond core drilling.

b) Additional 34% interest may be earned in the next 3 years through total payments of $2M and by solely funding all exploration including at least 10,000 m of diamond core drilling

GBR hold the responsibility of maintaining the licences in good standing and management of the exploration programmes.

4.2.1 Exploration licence rights

Mineral exploration and mining in PNG is regulated primarily under the Mining Act 1992, which is focused on principal approval and registration of tenements.

An exploration licence may be granted for a term not exceeding two years, which may be extended under Section 28 of the Mining Act 1992 and Regulation. An exploration licence includes all land in the State, within the bounds of the exploration licence, including all water lying over that land.

An exploration licence authorizes the holder, in accordance with any conditions to which it may be subject, to:

a) Enter and occupy the land which comprises the exploration licence for the purpose of carrying out exploration for minerals on that land;
b) Subject to Section 162, extract, remove and dispose of such quantity of rock and earth, soil or minerals as may be permitted by the approved programme;
c) Take and divert water situated on or flowing through such land and use it for any purpose necessary for his exploration activities subject to and in accordance with the provisions of the Water Resources Act (Chapter 205); and
d) Do all other things necessary or expedient for the undertaking of exploration on the land.

The holder of an exploration licence is entitled to the exclusive occupancy for exploration purposes of the land in respect of which the exploration licence was granted.

Subject to Subsection (2), the Minister shall, on the application under Section 24 of the holder of an exploration licence, extend the term of the exploration licence for periods each of up to two years, where the Board advises the Minister that the holder has:

a) Complied with the conditions of the exploration licence during the previous term of the exploration licence;
b) Paid compensation as required by this Act; and
c) Submitted a programme for the proposed extended term which the Board recommends for approval under Section 26.

Where he considers that it is in the best interests of the State to do so, the Minister may refuse to extend the term of an exploration licence.

Where the Board is unable to give the advice required under Subsection (1) to the Minister, the Minister may, after receiving a recommendation from the Board, extend the term of the exploration licence for such period or periods of up to two years as he may determine, and include such further conditions of the exploration licence as he may consider necessary.

In considering whether the holder of an exploration licence has paid compensation as required by this Act, the Board shall rely on the advice of the Chief Warden.

4.2.2 Exploration licence reporting requirements

The following reports are required under terms of the Mining Act 1992:

1. Bi-annual prospecting report – submitted every 6 months from date of expiry, on cancellation and on surrendering an exploration licence (“EL”). Summarises all works undertaken on or in connection with EL since the previous report.
2. Bi-annual expenditure report - submitted every 6 months from date of expiry, on cancellation and on surrendering EL. Summarises all expenditure connected with acquisition and interpretation of exploration data on the lease.
3. Annual report – submitted every 12 months from date of grant of lease. Provides detailed information on all work on, or in connection with the license. Includes aims of works, procedures applied and conclusions reached. All relevant data must be included.

4.3 ROYALTIES

The Mining Act 1992 provides that all minerals at or below the surface of any land (i.e. gold, silver, copper and other minerals) are the property of the State.

The tenements are subject to royalties and interests in favour of the Government of Papua New Guinea in accordance with the Mining Act 1992. The holder of a mining lease or a special mining lease under the Mining Act 1992 is required to pay a royalty to the State equal to 2% of either:

- the Free on Board ("FOB") value of the minerals, if they are exported without smelting or refining in Papua New Guinea; or
- the Net Smelter Return from the minerals, if they are smelted or refined in Papua New Guinea.

No other royalty agreements exist over the tenement package.

While not strictly a royalty cost, the PNG government imposes a second cost on mining projects, that of the MRA Levy. This levy is 0.25% of mine revenue (there are no deductions allowed for concentrate transport, smelting and refining).

4.3.1 States Right to Acquire 30% Interest in Mining Projects

Under the laws and upon grant of a mining licence or a special mining licence the State may elect at its discretion to take, at sunk cost, up to a 30% participating interest in any major mineral development in PNG. Upon exercise of that option, the State will fund its share of capital and ongoing costs and the mine developer will be repaid its share of sunk costs.

4.4 ENVIRONMENTAL LIABILITIES

No environmental permits are required by statutory legislation for early stage exploration within the Keveri Property tenements. However, the PNG Environmental Act 2000 requires an application for an Environmental Permit to discharge waste for undertaking more than 2,500 m of drilling.

To the extent known by MA, there are no known environmental liabilities on the Property.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 PHYSIOGRAPHY

The Property is located within the Owen Stanley Ranges, a mountain range forming the spine of the main island of PNG. The area is characterised by moderate to rugged topography covered by light sub-tropical rain forest. Major drainages are represented by the Ada'u and Du'ubo Rivers.

5.2 ACCESS

Access to the Property from Port Moresby is by a 50-60 minute helicopter flight and within the project tenements helicopters are used to locate personnel into localised sites. The area is uninhabited with the traditional landowners living closer to the south coast of PNG some distance from the project tenements. The indigenous landowners, who are employed as unskilled labour, can walk to the area within 2 days.

5.3 CLIMATE

Prevailing climate across much of southeast PNG is hot sub-tropical. Rain falls throughout the year, but there is a defined wet season from December to April and a dry season from September to November. The Property's location on the southwest slopes of the 3,676 m high Mt Suckling, means that local weather patterns are influenced by a distinct rain shadow effect.

5.4 LOCAL RESOURCES AND INFRASTRUCTURE

All necessary supplies and hire equipment, such as drill rigs, are readily available in Port Moresby and GBR use helicopters as their prime method of access to the project area; mobilising technical personnel, equipment and supplies from Port Moresby. An all-weather gravel road connects Port Moresby to Moreguipa which is located 41 km south southwest (bearing 258° for 22.1 nautical miles) of the project area. Driving time from Port Moresby to Moreguipa is approximately 5-6 hours by four-wheel drive or 8-9 hours by truck. Equipment such as drill rigs and supplies can then be lifted from Moreguipa to site by helicopter.

6 HISTORY

The following description of historic exploration activity in the Property area is largely taken from Goldner, 2009 and Lindley, 2018. Most prior exploration was dominated by regional helicopter supported stream sediment sampling programs focusing on nickel-copper-cobalt and to a lesser degree on PGE and gold potential.

The main substantial previous detailed prospect-scale work was on the Doriri Creek prospect, which was investigated for its potential as a sulphide nickel deposit. International Nickel Southern Exploration Limited ("INSEL"), drilled four short core holes. Papuan Precious Metals ("PPM") completed several trenches and also drilled four core holes.

PPM completed most of the detailed follow-up work on prospects in the Property, including an airborne magnetic-radiometric survey, detailed prospect mapping, soil sampling, IP surveys and drilling at Doriri and Urua prospects.

No resources or reserves have been estimated for any defined prospects. There has been no recorded prior mineral production from within the Property tenements.

A summary of historic exploration carried out is given in Table 6-1.

Table 6-1. Summary of historical exploration activity, Keveri

Company or Organisation	Period	Description of Work Completed
H. L. Davies for Geoscience Australia (then BMR)	1966	Nickel sulphide mineralised boulders noted at Doriri and Ada'u rivers confluence. Chip sampling of creek exposures. Chip sample from creek exposure yielded from 7.5-7.8m at 2.6% Ni
CRA Exploration Pty Ltd ("CRAE"): SPA's 25 & 26)	1966	Detailed exploration including mapping and sampling. Doriri Creek prospect referred to as Adau River sulphide nickel prospect by CRAE
International Nickel Southern Exploration Ltd ("INSEL"): PA 10	1967-1968	INSEL's large tenement included the areas of both GBR ELs. Intensive exploration throughout the area included detailed work at the Doriri Ck (Ada'u River) prospect. This included gridding, soil sampling, extending some of the CRAE costeans, plus the excavation of at least one additional costean, ground magnetics and electromagnetics and four DDH. All costean samples assayed for Ni, Co, Cu and Fe; only I-III analysed for Pt and Pd.
Nord Resources (Pacific) Pty Ltd: PA223.	1979-1980	Urua prospect located by tracking mineralised float at the mouth of the Urua River. Prospect exploration included ridge and spur as well as base of slope reconnaissance soil sampling over a 400m x 400m area and some rock chip sampling of creek exposures. All samples assayed for Cu, Au, Ag and Mo but only soil samples were assayed for Pd and Pt
Highlands Gold Limited: PA724	1990-1991	Pan-concentrate sampling in Ada'u River and detailed follow-up pan-concentrate sampling in Dimidi Creek for PGE and Au. Pan-concentrate sampling in the Du'ubo River. Ridge and spur soil sampling near the junction with Oea Creek. Detailed pan-concentrate sampling and geological mapping in upper Ada'u River including Ioleu and Bonua Creeks. Dimidi Creek yielded pannable Au & Pt, Oiso Creek cobble of massive chalcopyrite assayed 29% Cu, 35.5 g/t Ag, 0.2 g/t Au, Waki Creek cobble of chalcopyrite assayed 28% Cu & 0.32 g/t Au, Urua Creek pannable Au noted, Araboro Creek pannable Au, sample of qtz--- sulphide rock collected from lower Araboro Creek assayed 1.3% Cu & 0.14 g/t Au, Ioleu Creek 1989 Au anomaly traced to a headwater tributary (Ioleu Creek) where a large 1500m x 1000m zone of argillic altera<on & pannable Au was discovered.
Niugini Nickel NL: EL1243	1998-2006	Exploration focussed mainly on an evaluation of the Ni, Co & Cr potential of the Ibau breccia unit. Brief follow-up of previous work in the area of the Dimidi Creek Prospect.

Papuan Precious Metals Ltd	2007-2012	Fieldwork completed between 2007 and 2010. Airborne geophysical survey (magnetics and radiometrics) completed in 2010. Geological mapping at Doriri and Urua, preliminary investigation of Araboro. 1300m x 900m grid was established at Urua with collection of soil samples, broad geological mapping & 3D IP surveying. 3 holes were drilled at Urua, 2 beneath Trench 1 (42m @0.1% Cu & 0.21 g/t Au) & third hole tested a strong IP chargeability anomaly in ultramafic sequence. The 2 drill holes beneath Trench 1 delivered encouraging Cu---Au intercepts. Four drill holes were completed at Doriri in early 2012
Papuan Minerals Pty Ltd	2014-	Private company based in Australia with wholly-owned PNG subsidiary. Limited exploration. Copper-rich float cobbles found in Omu Creek at junction with Waki Creek.

6.1 DETAILED PROSPECT HISTORY

Historic exploration activity and results for the main prospects on which most work has been completed are described in further detail below.

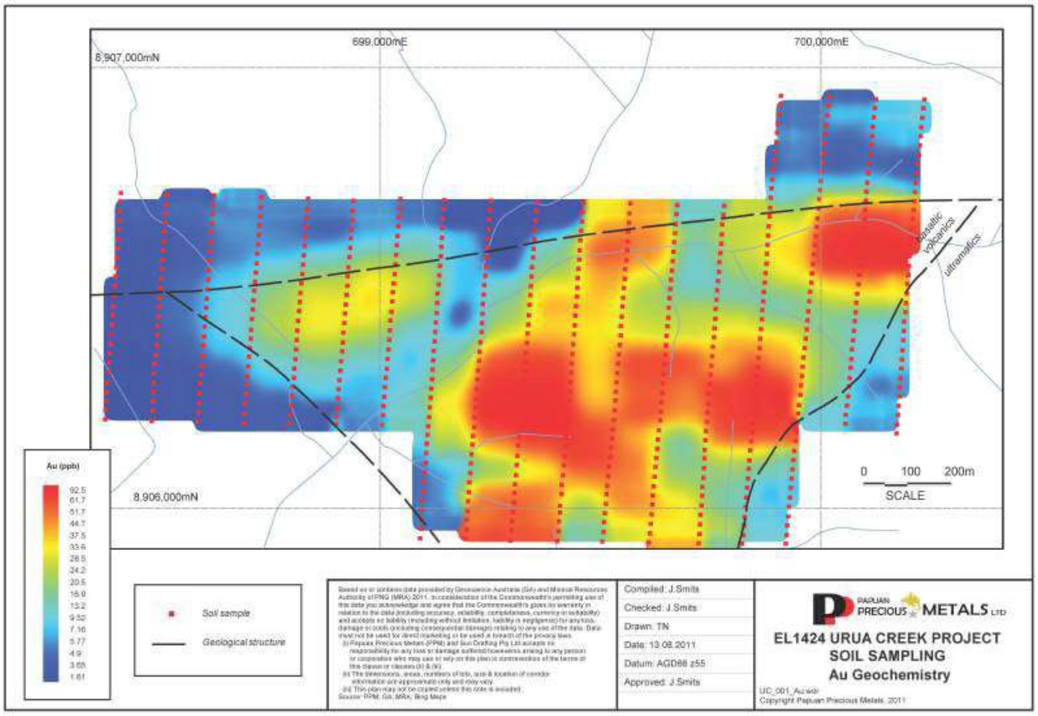
6.1.1 Urua

Nord Resources in 1980 completed ridge-and-spur and base-of-slope reconnaissance soil sampling and rock-chip sampling of some creek sections. All samples were assayed for Cu, Au, Ag and Mo, but only soil samples were assayed for Pt and Pd. Anomalous Pt-Au-Pd soil results covered an area of 400 m x 400 m, which was open-ended to the west and east. Rock chip channel sampling of outcrop returned values up to 10m @ 1.68 g/t Au, 0.24% Cu and 10 m @ 1.39 g/t Au, 0.08% Cu. A high-grade float sample east of the soil anomaly returned 14.8g/t Au, 22% Cu. Nord abruptly ceased work in the project area in 1982 and many of the results of this early work were not reported or preserved.

PPM investigated the prospect from 2007-2012. Work completed included rock chip sampling, soil sampling, trenching, 3D IP geophysics and drilling.

6.1.1.1 Soil sampling

Soil samples were collected at 25 m spacing along grid lines 100 m apart aligned NNE-SSW, for a total of 604 samples. Samples were analysed for Au, Cu, Pt, Pd and Ni. Results for Au and Cu are shown in Figure 6-1, and highest values correspond with mapped breccia. Pd distribution is similar to Cu and Au, whereas Ni and Pt anomalism was related to ultramafic country rocks in the southeastern part of the soil grid.



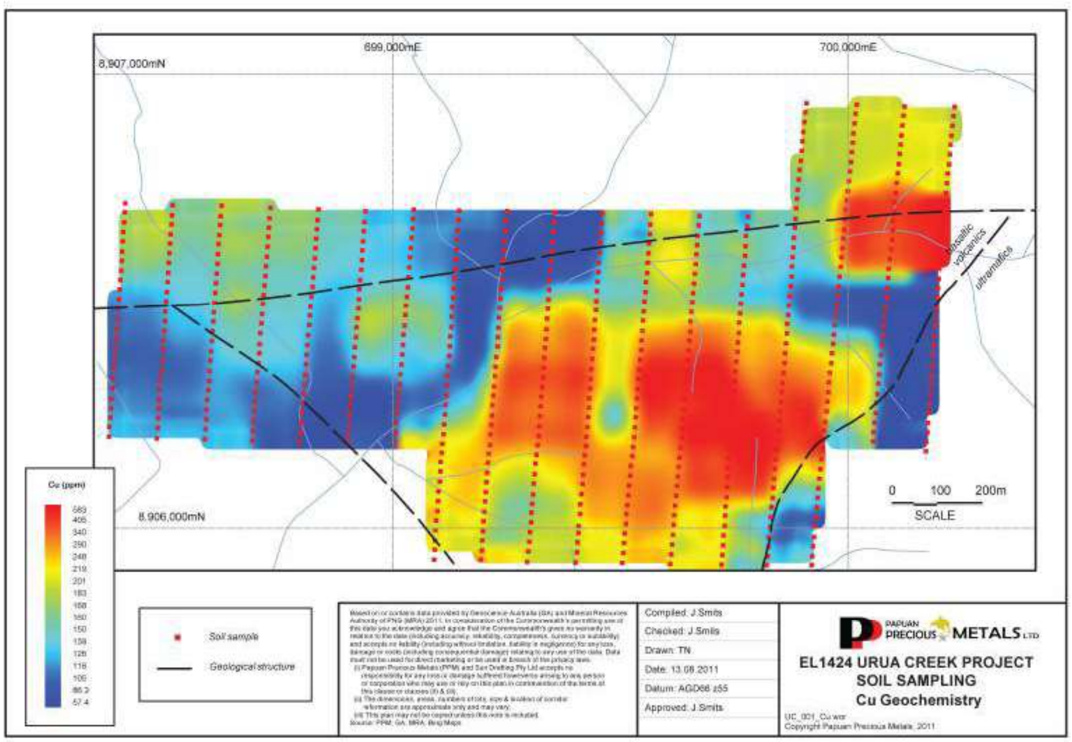


Figure 6-1. Soil sample results, Urua.

6.1.1.2 Rock chip sampling

240 outcrop and float samples were collected along soil sample lines and the extents of mineralized samples reflected soil anomalies. Maximum grab sample results were 37.2 g/t Au and 1.99% Cu (in different samples).

6.1.1.3 Trenching

A total of 15 trenches were hand-dug, all trending NNE. Four trenches returned significant intersections (greater than 0.1% Cu) as shown in Table 6-2

Table 6-2. Trench results >0.1% Cu or >0.1 g/t Au, Urua prospect.

Grade	Trench/Geology
45m @ 0.13% Cu, 0.06g/t Au	T1 – propylitic breccia
42m @ 0.10% Cu, 0.21g/t Au	
18m @ 0.16% Cu, 0.12g/t Au	T2 – propylitic breccia
30m @ 0.11% Cu, 0.17g/t Au	T3 – propylitic breccia
15m @ 0.11% Cu, 0.14g/t Au	
33m @ 0.17% Cu, 0.27g/t Au	
36m @ 0.72% Cu, 0.97g/t Au	T5 – phyllic breccia
12m @ 1.13% Cu, 2.03g/t Au	

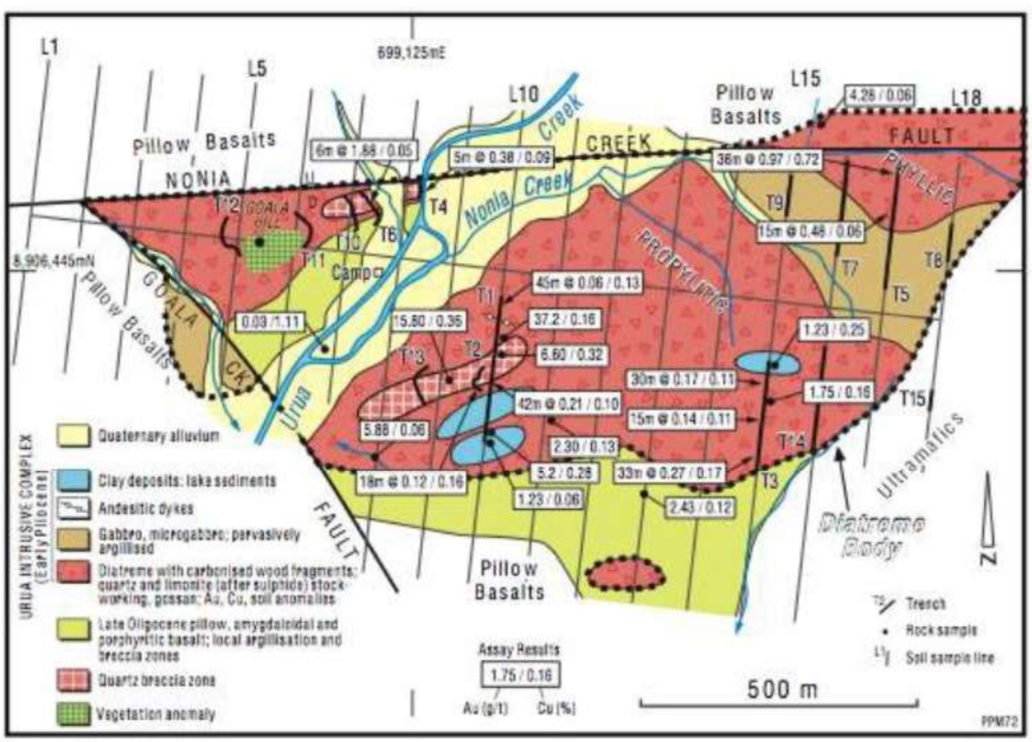


Figure 6-2. Urua prospect trench locations and best intercepts.

6.1.1.4 3D Induced Polarisation

SJ Geophysics completed a 3D Induced Polarisation (modified pole-dipole) survey over the Urua soil grid in April 2011. Lines trended NNE roughly parallel to the soil grid. Resulting data was inverted to chargeability and resistivity values using UBC inversion software. Chargeability anomalies were interpreted to represent disseminated sulphides at 150 m to 250 m depth. A broad 600 m diameter chargeability anomaly is partly coincident with anomalous Au, Cu and Pd in soil samples (Figure 6-3). This anomaly was interpreted to represent disseminated sulphides pyrite and chalcopyrite associated with a porphyry style gold-copper system (Swiridiuk, 2011b).

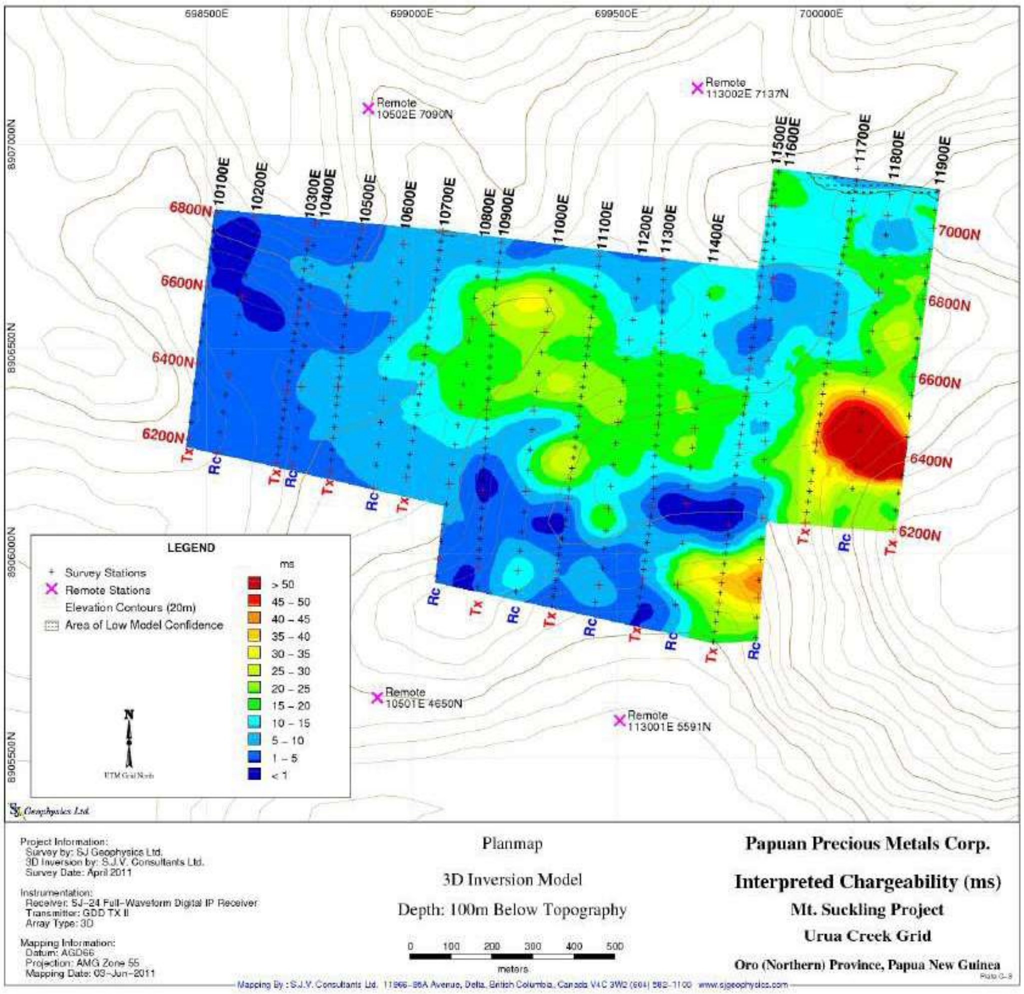


Figure 6-3. Urua prospect – Chargeability map 100 m below surface.

6.1.1.5 Drilling

Two diamond drill holes URD002 and URD003 (total 602.60 m) were drilled into the Urua Creek breccia in 2012. UDR002 was oriented 60° to 000° and UDR003 55° to 045° beneath mineralized breccia sampled in Trench 1. Holes intersected mineralized breccia from surface and several monzonite phases, one of which was intensely epidotized (epidote locally up to 50-80% by volume) containing zones of massive Au-Cu mineralized magnetite-sulphide and Cu-Au mineralised quartz stockwork. Drill intersection highlights are summarised in Table 6-3 and an interpreted geological cross section is shown in Figure 6-4.

Table 6-3. Urua drilling best intercepts.

Drillhole	interval (m)	width (m)	Cu %	Au g/t
URD002	8.00 – 78.00	70	0.1	-
	203.55 – 203.70	0.15	1.15	0.26
	208.85 – 215.50	6.65	0.77	1.84
		Incl. 1.10	2.16	9.6
		Incl. 0.50	0.55	13.59
		Incl 0.60	3.49	6.2
	244.10 – 246.10	2	0.31	-
	264.60 – 276.90	12.3	0.13	-
		Incl. 5.90	0.23	0.6
		Incl. 2.10	0.5	0.7
		Incl. 0.70	1.12	1.16
	289.60 – 290.20	0.6	0.12	0.42
URD003	14.00 - 18.00	4	0.71	0.25
	61.30 - 64.00	2.7	0.13	-
	95.00 - 99.60	4.6	-	0.33
	148.00 - 160.00	12	0.2	-
		Incl. 4.00	0.84	-
	237.80 - 246.00	8.2	0.14	-

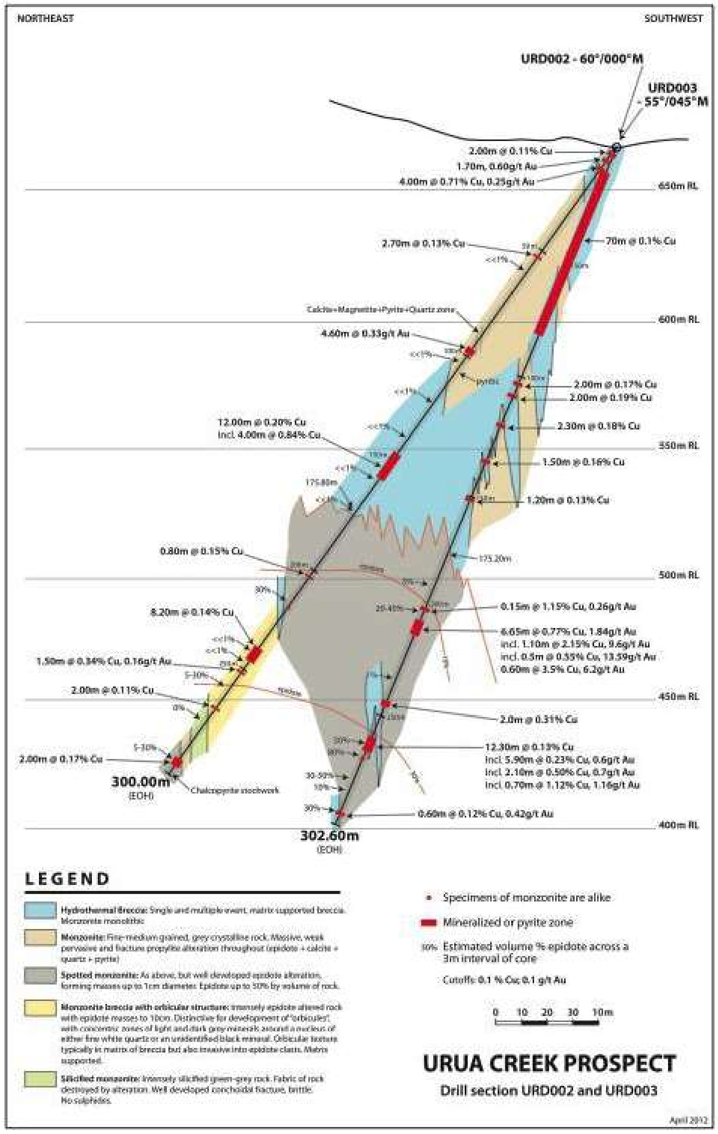


Figure 6-4. Interpreted cross section, Urua drilling.

A third drill hole, URD001, was completed to test the prominent chargeability anomaly on the eastern side of the soil sampling grid (Figure 6-3). The hole intersected peridotite with talc/clay filled fractures that were assumed to be the anomaly source.

6.1.2 Ioleu

INSEL commenced exploration on Ioleu in 1968 with reconnaissance rock chip sampling returning values from 1.81% to 16.8% copper in float and outcrop. This was followed up with a small 50 m x 100 m soil survey over an area of mineralized boulders that returned a maximum of 70 ppm copper.

Highlands Gold in 1990 traversed creeks in the prospect area collecting float and pan concentrate samples from creeks. Results are summarised on the geological map of the prospect area in Figure 6-5.

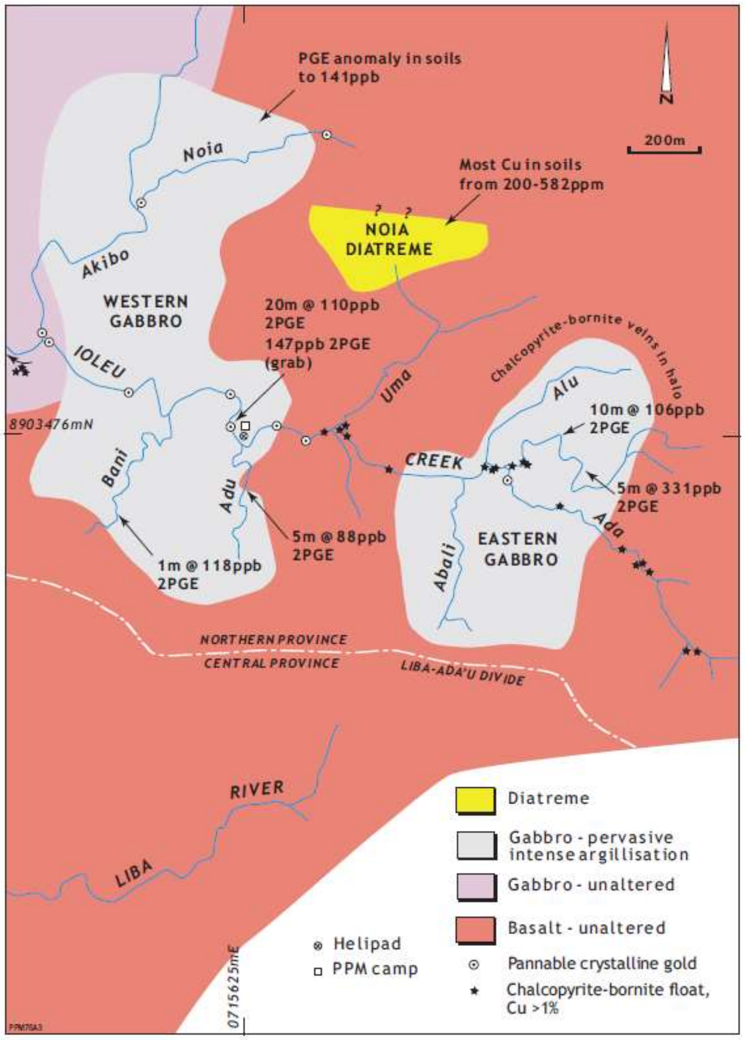


Figure 6-5. Ioleu prospect geological map.

PPM revisited the area in 2009-2011, collecting further float and rock chip samples, ridge and spur soil sampling, mapping and commissioning a 3D IP survey. Significant soil results and the locations of ridge and spur soil lines are summarised on Figure 6-5.

6.1.3 Airborne geophysical survey

Ioleu Creek prospect is underlain by a distinctive airborne magnetic (RTP) low (Figure 6-6). This anomaly is thought to reflect the extensive argillization of the rock sequence and is coincident with anomalous copper in soils (>221ppm Cu) associated with the Nonia Ridge diatreme (Swiridiuk, 2011).

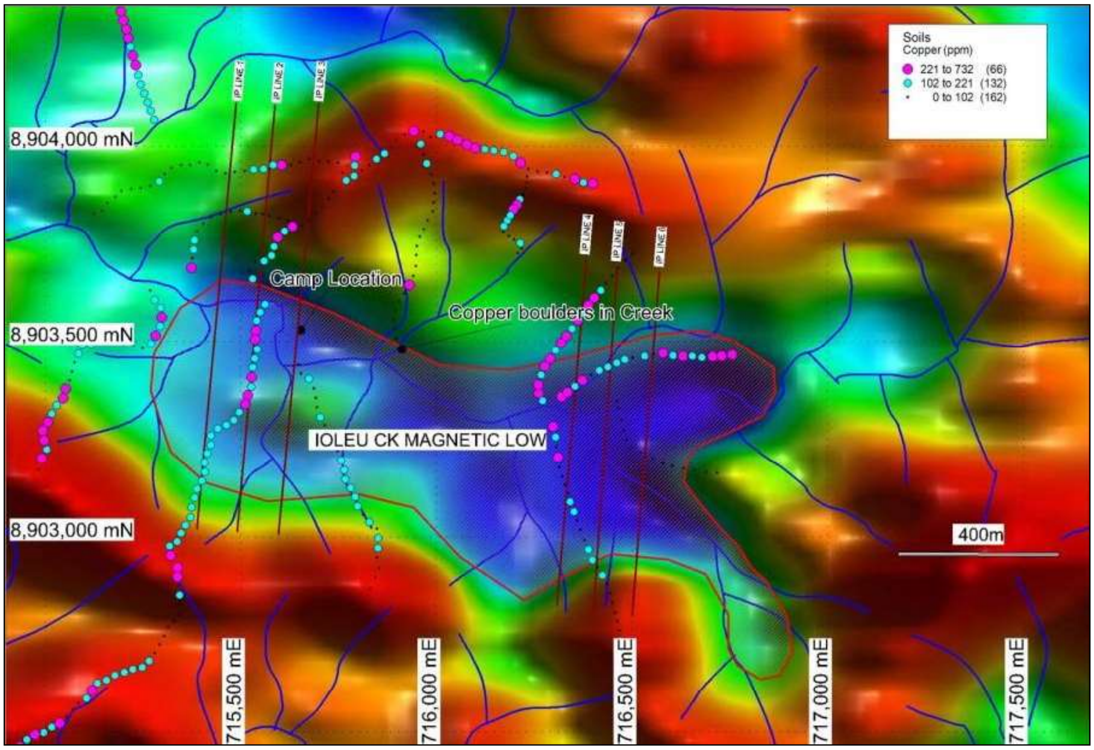


Figure 6-6. Ioleu Creek prospect – Airborne magnetic low (RTP) with copper in soils and six 3D IP geophysical survey lines

6.1.3.1 3D Induced Polarisation

SJ Geophysics completed a 3D-Induced Polarisation survey at Ioleu Creek in May 2011 aimed at detection of disseminated/massive sulphides or changes in resistivity related to alteration. The 3D-IP grid consisted of a pair of 900 m x 200 m swaths, with 3 lines in each (Figure 6-7). Inversion of the IP data did not highlight any zones of significant chargeability that would be related to disseminated sulphides. A discrete 130 m diameter resistivity anomaly was indicated on the eastern IP survey swath. The cause of this resistivity high is unknown, but it does correspond with the apparent source of copper-mineralized float boulders.

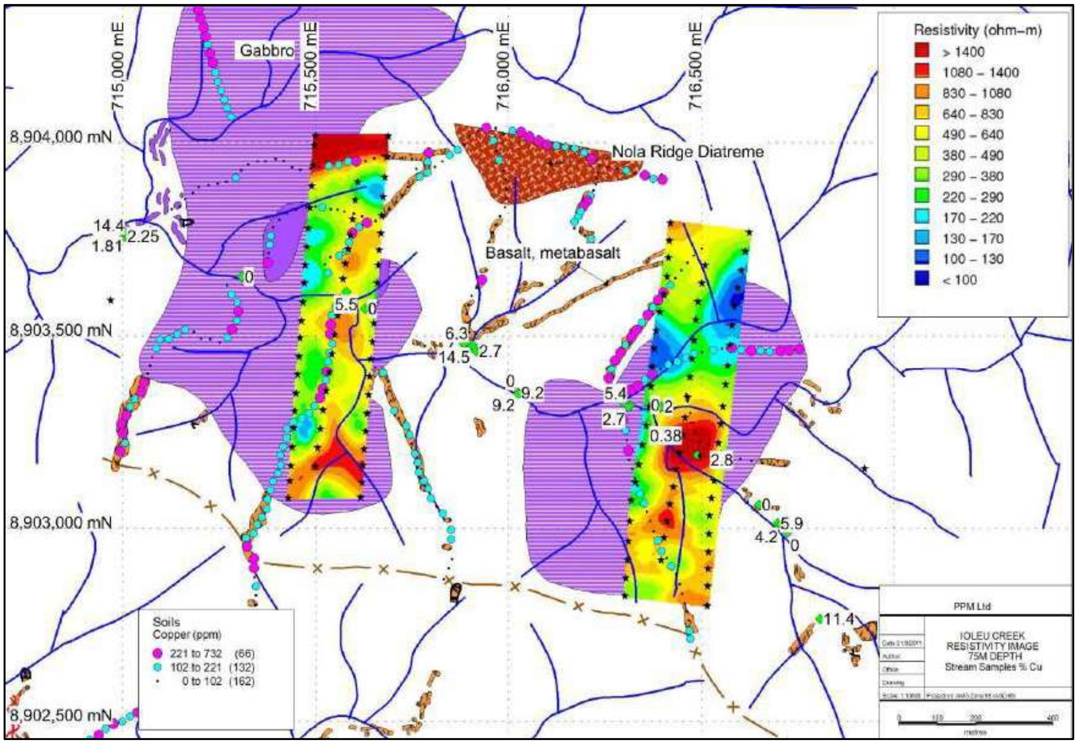


Figure 6-7. Ioleu 3D IP survey inverted resistivity image at 75 m depth.

6.1.4 Araboro

Historic exploration at the Araboro prospect was limited to a brief sampling traverse completed in 2010. 57 outcrop/float samples were collected and two lines of soil samples 500 m to 800 m long were collected across subcropping diatreme breccia and strongly argillized rocks. One float sample from Daru Creek assayed 1.16% Cu and outcropping quartz-sulphide stockwork assayed 0.23% Cu. Soil sample results were not considered to have any significant anomalies for copper or gold.

6.1.5 Omu

Exploration in the Omu area began in 2014 as the Property was under the ownership of Papuan Minerals. Reconnaissance activities included the collection of 46 float samples, which led to outcropping mineralization in the prospect area named Omu. Rock samples were collected as a composite of rock chips over a 1 m^2 panel, with sample panels separated by about 3 m.

In 2016 further rock chip samples were collected over a small area, with one line of orientation soil samples also completed.

Results of rock chip sampling from 2014 and 2018 are shown in Table 6-4.

Table 6-4. Omu rock sample results from 2014 and 2018 programmes.Year	Sample No	Geologic Descriptions	Cu %	Au ppm	Ag ppm
2014	16636	Ccp veinlet/vein in strongly sheared basalt	5.84	0.2	-0.2
2014	16648	Vein with disseminated & fracture ccp & py	2.49	0.03	3
2014	16647	Vein with ccp and py	0.86	0.01	2
2014	16645	Diorite with sheared and fracture ccp & py	1.55	0.25	2
2014	16646	Diorite with ccp and py	1.16	0	4

Table 6-4. Omu rock sample results from 2014 and 2018 programmes.Year	Sample No	Geologic Descriptions	Cu %	Au ppm	Ag ppm
2014	16650	Vein with ccp and py	3.95	0.06	8
2016	SP030		0.56	0.09	-0.5
2016	SP029		1.19	0.06	0.9
2016	SP028		0.62	0.03	-0.5
2016	SP027		0.02	0	-0.5
2016	SP031		0.56	0.06	0.9
2017	16661	Epithermal & saccharoidal & drusy veins with ccp	0.24	0.08	-0.1
2017	16734	Qtz-chalco-bornite-malachite vein breccia	1.22	0.04	1.43
2017	16717		5.66	0.06	2.83
2017	16659	Sheeted veins with ccp (resample 16645)	5.41	0.09	8
2017	16719	Brec. basalt intensely veined with white qtz veining	0.1	0.01	0.2
2017	16720	Qtz-sulphide vein in brecciated basalt	0.07	0.01	0.06
2017	16658	Veined & brecciated sample with ccp	0.71	0.01	-0.1
2017	16722	Leucocratic qtz diorite with trace pyrite	0	0	0.14
2017	16723	Leucocratic qtz diorite with trace pyrite	0.01	0	0.06
2017	16715	Qtz-mal. vein breccia in clay alt. brecciated basalt	1.36	0.06	3.56
2017	16802		0.02	0.01	0.11
2017	16732	Brecciated basalt with veined qtz-epidote	0.06	0	-0.05
2017	16808	Basalt breccia with blebs of massive sulphides	0	0	0.09
2017	16807	Greyish gn magnetite skarn 10% pyrite-limonite	0	0	0.07
2017	16806	Grey intrusive breccia with qtz-cal-sul. vein stkwk	0.12	0.01	0.11
2017	16805	Breccia in contact zone with fine magnetite veining	0	0.01	-0.05
2017	16724	Qtz-diorite breccia with diss.pyrite	0	0	-0.05
2017	16803		0.01	0	-0.05
2017	16801		0.47	0.01	1.41
2017	16735	Sheared brecc. Basalt with qtz-epidote veining	0.04	0	0.09
2017	16733	Qtz-chalco-bornite-malachite vein breccia	4.87	0.06	4.16
2017	16731	Brecciated basalt with veined qtz-epidote	0.05	0	-0.05
2017	16730	Brecciated basalt with veined qtz-epidote	0.02	0	-0.05
2017	16729	Brecciated basalt with veined qtz-epidote	0	0	-0.05
2017	16728	Brecciated basalt with veined qtz-epidote	0	0	-0.05
2017	16727	Brecciated basalt with veined qtz-epidote	0	0	-0.05
2017	16726	Qtz-diorite dyke with trace pyrite	0	0	0.08
2017	16804		0.01	0	-0.05
2018	16866	Um'ia Ck-altn zone in reverse fault			

Table 6-4. Omu rock sample results from 2014 and 2018 programmes.Year	Sample No	Geologic Descriptions	Cu %	Au ppm	Ag ppm
2018	16885		0.03	0.02	0.7
2018	16884		0	0.01	-0.5
2018	16867	Um'ia Ck-altn zone in reverse fault			
2018	16812	Basalt breccia with silica-sulphide	0.01	0	-0.5
2018	16849		0	0	-0.5

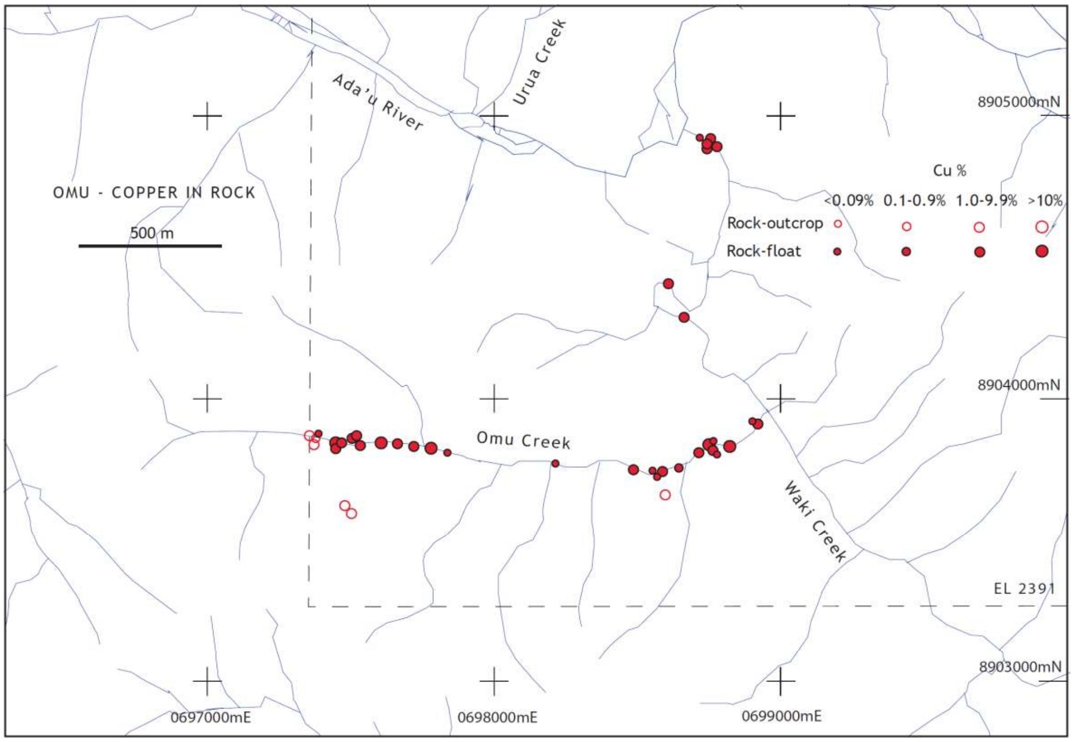


Figure 6-8. Omu rock chip results for copper, 2014-2018 sampling programme.

6.1.6 Waki

The Waki prospect is approximately 500 m east of the Omu prospect: the two areas are separated by lower grade hydrothermal alteration (sericite and chlorite). Fine-grained diorite dominates the Waki area in mapping to-date. Hydrothermal alteration is better developed (chlorite, epidote and secondary magnetite) east of Waki Creek Tand is associated with chalcopyrite and malachite. Several float samples returned greater than 5% copper (Table 6-5).

Table 6-5. Waki rock chip resutls for copper, 2014 sampling programme

Year	Prospect	Sample No	Sample type	Geologic Descriptions	Cu%	Au ppm	Ag ppm
2014	Waki	16608	F	Massive ccp in silicified quartz veined rock	7.36	0.05	9
2014	Waki	16609	F	Semi-massive & disseminated ccp from sample 16608	7.06	0.05	6
2014	Waki	16610	F	Fracture coated ccp in veined/stockworked rock	5.77	0.03	6
2014	Waki	16611	F	Massive silicified rock with stockwork of quartz & pyrite	0.3	0.01	-0.2
2014	Waki	16612	F	Veined and altered basalt with disseminated sulphide	3.11	0.02	3
2014	Waki	16613	F	Massive & disseminated ccp + quartz veining near limest.	8.01	0.14	16
2014	Waki	16614	F	Massive ccp with quartz from large corner in Waki Creek	7.61	0.2	14

6.1.7 Doriri

Initial work on the Doriri prospect was undertaken by CRAE in 1966, with reconnaissance soil sampling followed up with eight hand-dug trenches. CRAE dismissed the prospect as being too small to consider further work. Results of CRAE trench sampling are shown in Figure 6-9.

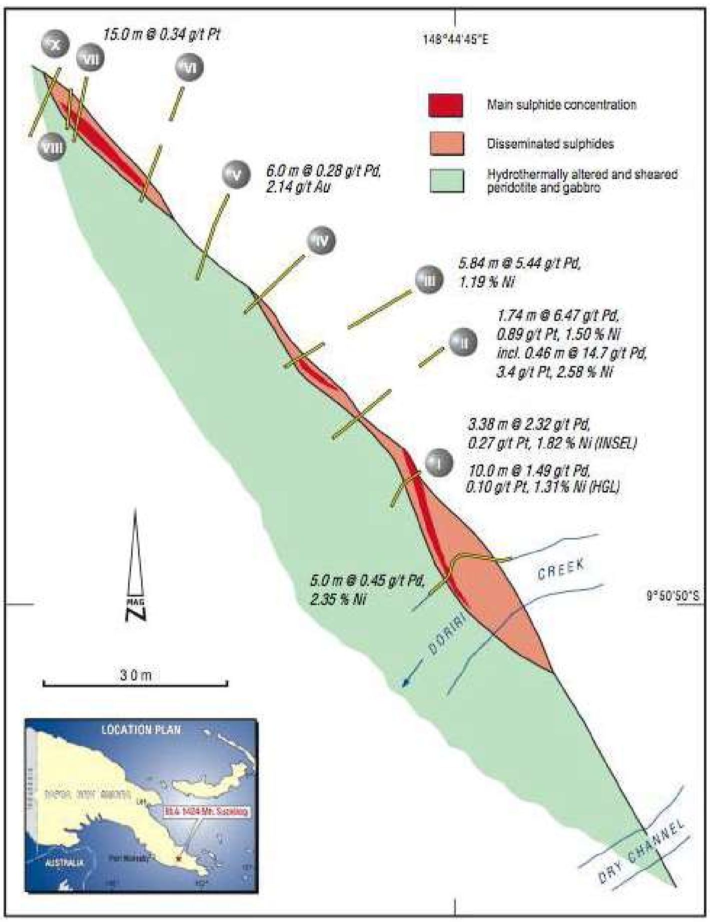


Figure 6-9. Doriri prospect CRA trenches with sampling results from CRAE, INSEL and HGL.

INSEL carried out further investigations in 1966-1967, extending some of the CRAE trenches and excavating new ones (Figure 6-9). Ground magnetics and ground EM surveys were undertaken over the prospect area to define extensions to the strongly magnetic and conductive mineralization. A four-hole drilling programme (total of 325.88m) was commenced in 1967. Drilling used a small core size (BXWL - 33.4mm core diameter; 59.9mm hole diameter) and was beset with core loss problems and stuck rods caused by numerous zones of fault gouge associated with sheared and micaceous material comprising mineralization. Drilling statistics are summarised in Table 6-6.

Table 6-6. INSEL drilling, Doriri.

Hole	Azimuth	Dip	Depth (m)	Year drilled	Comments
Z4302	243°	45°	22.86	1967	Abandoned. Drilled under massive alteration in Costean V. Did not reach lode. Rods bogged in mica+magnetite rock
Z4303	225°	60°	105.15	1968	Abandoned. Drilled under Costean I/Creek section. Mapping suggests that this hole stopped short of the lode
Z4304	225°	60°	114.97	1968	Abandoned. Drilled under Costean VIII. May have intersected stringers
Z4305	225°	60°	82.9	1968	Drilled to completion but PPM mapping suggests hole may have stopped short of lode

Nord Resources in 1980 completed soil sampling over copper anomalism and EM conductors to the north and west of the main nickel mineralisation. Several older trenches were deepened and resampled to better assessing platinum values assayed by INSEL.

Highlands Gold resampled trenches I and II in 1990, confirming the presence of significant Ni-PGM mineralization. Orientation soil sample lines across two trenches confirmed that soil sampling was an effective method for delineating mineralisation.

During 2007-2008 PPM reopened and resampled the CRAE and INSEL trenches, and also excavated eight new trenches. A best result of 15 m @ 1.39% Ni and 1.22 g/t PGM was obtained at the southeastern end near Doriri Creek (Figure 6-10).

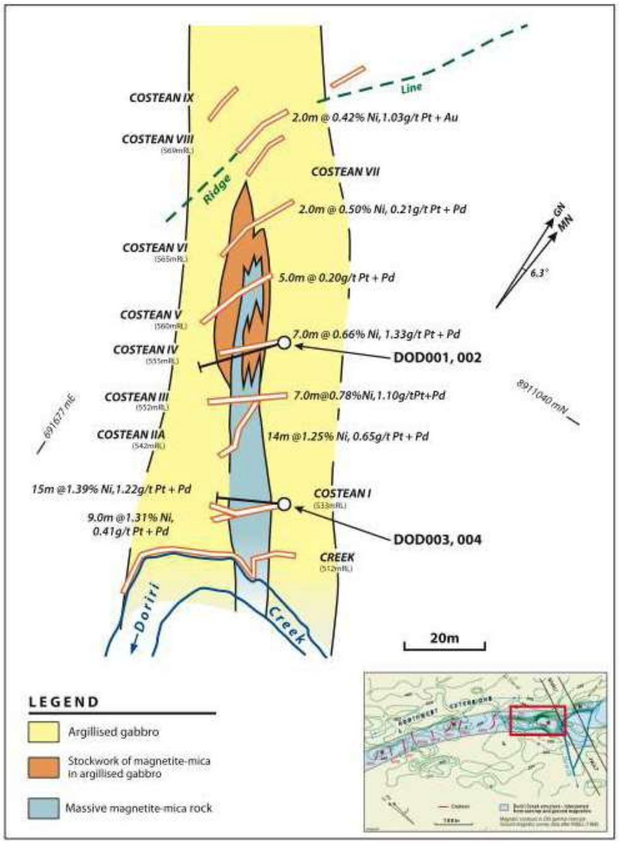


Figure 6-10. Doriri trenches with PPM sampling results.

PPM commissioned a study on the formation of mineralization at Doriri by the Common Wealth Scientific and industrial Research Organisation ("CSIRO") in 2011. It was concluded that nickel-PGM mineralization was formed by low-temperature hydrothermal fluids focussed within a near-vertical structure. As a hydrothermal nickel deposit, Doriri is a rare style of mineralization worldwide, with the only similar style seen at Avebury in Tasmania.

During March-April 2012 PPM completed four diamond drill holes at Doriri, as shown on Figure 6-10 as DD001-DD004. Best intercepts are shown in Table 6-7, and grades and widths broadly correspond with intercepts in trenches above the drill holes, as shown in the cross section in Figure 6-11. Doriri drill section through DD003-DD004.Figure 6-11.

Table 6-7. Doriri prospect PPM drilling results.

Hole ID	From-To	Width (m)	Ni grade %	PGM grade g/t
DOD001	17.60 – 29.80m	12.2	1.08	0.52
		Inc 4.6	1.69	0.53
DOD002	25.00 – 29.00m	4.0	0.86	0.41
	33.00 – 37.00m	4.0	1.28	0.53
		Inc 1.0	0.65	1.19
DOD003	2.80 – 13.50 m	10.7	1.78	0.68
		Inc 5.2	2.51	0.92
		Inc1.2	5.71	1.03
DOD004	6.00 – 18.00m	12.0	0.83	0.62
		Inc 3.0	1.16	1.12
		& 3.0	1.15	0.78
		Inc 1.0	1.41	1.68

Cutoffs: Ni – 0.4%; PGM (Pd + Pt) – 0.05g/t

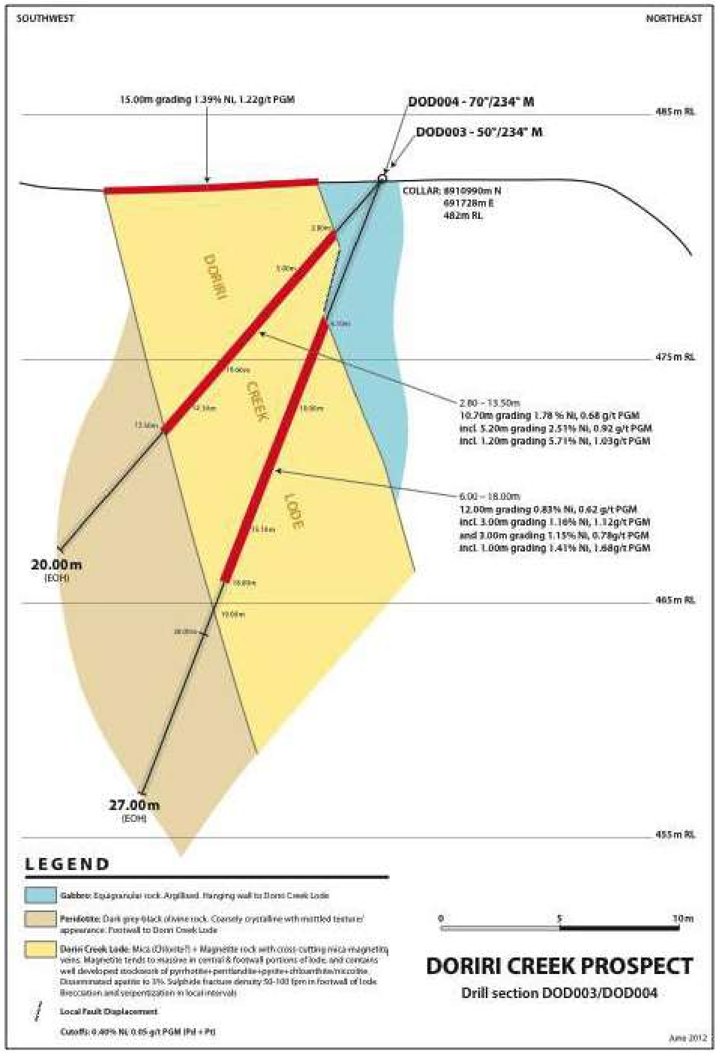


Figure 6-11. Doriri drill section through DD003-DD004.

6.1.8 Dimidi Creek

Highlands Gold creek sampling in 1990-1991 identified pannable gold and platinum in Ada'u River and Dimidi Creek. Chromitite float boulders were also noted. Nuigini Nickel followed up this work in 1991 with limited traversing and sampling to Dimidi Creek's mid-reaches. Pan concentrate Pt values are shown in Figure 6-12.

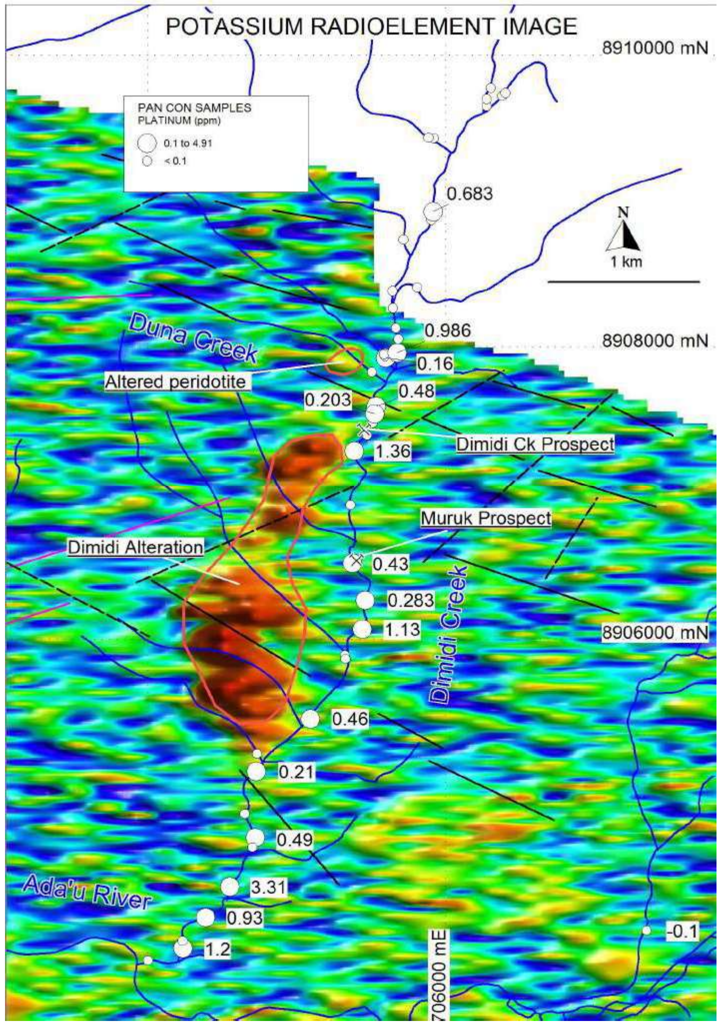


Figure 6-12. Dimidi prospect stream pan concentrate results

6.2 REGIONAL AIRBORNE GEOPHYSICAL SURVEY

PPM commissioned Fugro Airborne Surveys to conduct a helicopter-borne low-level airborne magnetic and radiometric geophysical survey in the Ada'u Valley area, which was completed in December 2010. The survey acquired approximately 1,076 line km of magnetic and radiometric data at 200 m flight line spacing and 60 m nominal mean terrain clearance with a line direction of 000°. Digital terrain modelling, total magnetic intensity, uranium, thorium and potassium results were collected.

3D inversion of the TMI magnetic data was undertaken in 2011 to provide an indication of deeper magnetic sources that may be related to magnetic intrusive bodies and/or magnetite alteration associated with porphyry systems. Some of these inversion anomalies coincide with known mineralization at Omu, Yokai and Oiso.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

PNG straddles the contact between the northern margin of the Australian continental plate and the Pacific Plate to the northeast. The country comprises three broad geological and tectonic provinces:

1. Platform sediments of the Australian Plate to the southwest.
2. Oceanic crust and volcanic arc sequences of the Pacific Plate to the northeast.
3. Highly deformed central mobile belt, consisting of deformed oceanic crust as well as island arc volcanics and sediments.

Large blocks of Cretaceous age ultramafic to mafic units were emplaced along regionally extensive fault zones within the central mobile belt. The largest of these ultramafic units is the Papuan Ultramafic Belt ("PUB"), which extends some 400 km and is up to 40 km wide. The Keveri project straddles the Keveri Fault, a regional structure contiguous to the west-northwest with the Owen Stanley Fault System (Figure 7-1).

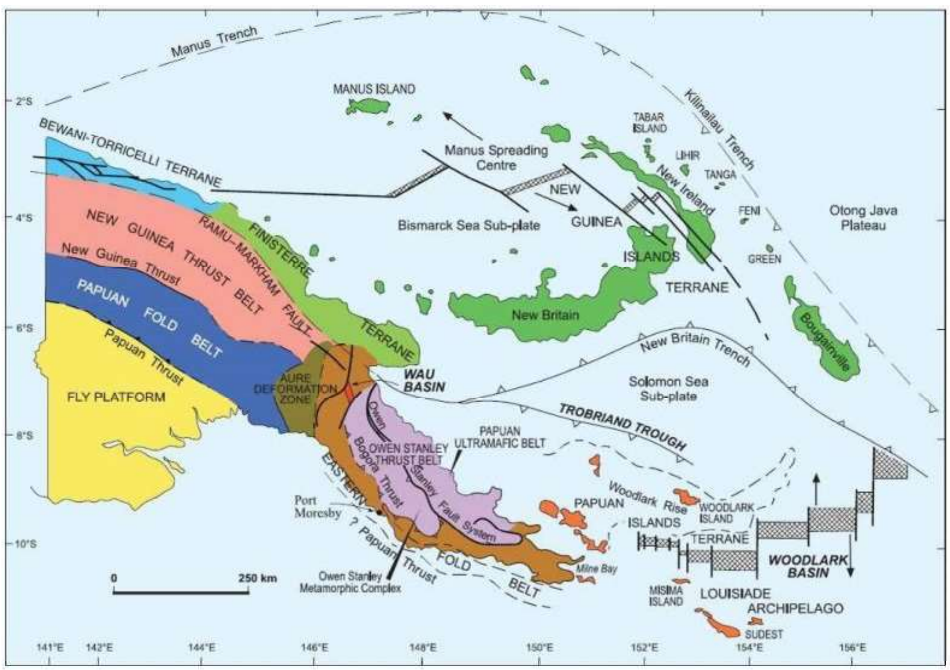


Figure 7-1. Tectonic setting of the Kerveri Project in the Owen Stanley Fault System, Papua New Guinea. (Williamson & Hancock, 2005)

7.2 LOCAL GEOLOGY

A major WNW trending regional structure, the Keveri Fault Zone, dominates the Property area and forms the boundary between two major geological domains: mafic and ultramafic units of the PUB to the north and basaltic pillow lavas and mixed sediments of Miocene Wavera Volcanics to the south. EL 2391 is dominantly underlain by PUB units with Wavera Volcanics only present in the southeastern portion of the tenement. In contrast EL 2560 is predominantly underlain by Wavera Volcanics, with PUB units restricted to its northern portion.

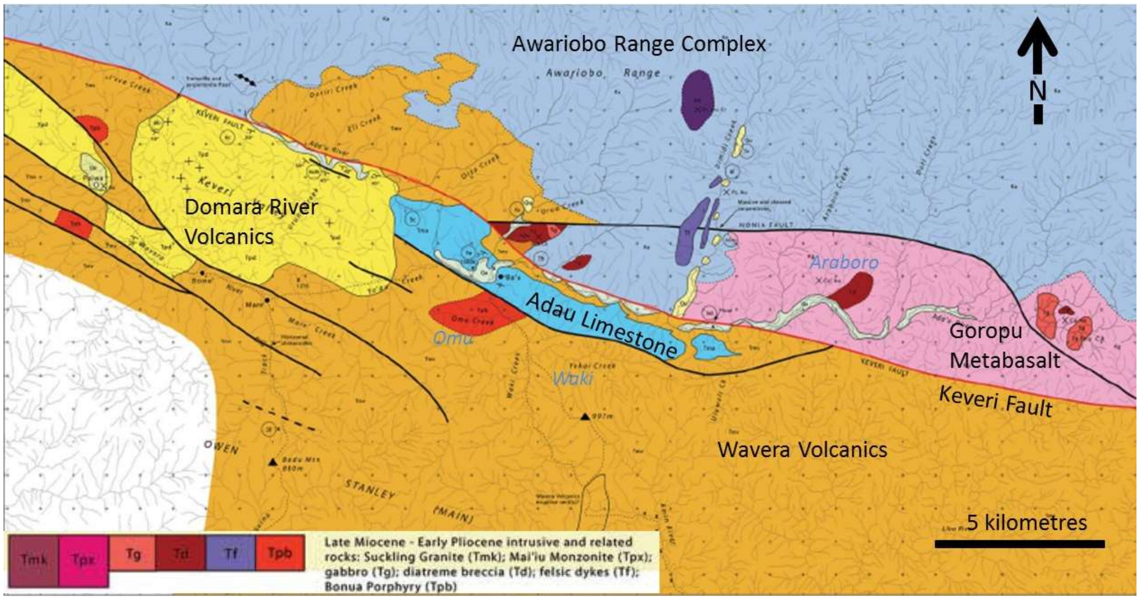


Figure 7-2. Local geology, (modified from Lindley 2014).

7.2.1 Lithological units

The PUB is interpreted to represent a tectonically emplaced slice of oceanic crust and upper mantle (Davies, 1971)Three main units within the PUB are described:

- Basal - ultramafic zone (4-8 km thick) interpreted to represent oceanic mantle material and composed of a basal non-cumulus member (90% of the zone) consisting of harzburgite, dunite and orthopyroxenite. This is overlain by a cumulus member, between 100 m and 500 m thick, consisting of ultramafic cumulates probably grading upwards to into cumulus gabbros.
- Gabbro zone (4 km thick) consisting of a high-level gabbro grading upwards into basalt and an underlying granular gabbro which includes a cumulus gabbro.
- Upper basalt zone (4-6 km thick) consisting predominantly of massive basalt and pillow lavas and some dacites. Locally the unit grades upwards into fine grained calcareous sediments. This unit and the underlying gabbro zone are interpreted to represent oceanic crust.

Smith and Davies (1976) mapped an extensive sequence of ultramafic rocks from the Awariobo Range, in the central portion of EL 2561. The ultramafic units, which exhibit a metamorphic fabric, include harzburgite, dunite, orthopyroxenite and wehrlite. Wehrlite may be unique to this portion of the PUB as it has not been recorded elsewhere in PNG.

South of the Keveri Fault Zone, Wavera Volcanics consist predominantly of basalts and fine-grained dolerites extruded into a marine environment: pillow structures have been recorded from some outcrops (Macnab, 1967). Interbedded calcareous sediments of the Adu'a Limestone are restricted to a single stratigraphic horizon in the volcanic sequence bounded to the north and south by parts of Keveri Fault and consist of fine-grained, laminated red, red-brown and white calcilutite and limestone.

Domara River Conglomerate overlies Wavera Volcanics within the Keveri Valley and more extensively to the northwest of the Property. The formation comprises flat-lying conglomerate, pebbly conglomerate, sandstone, carbonaceous sandstone, siltstone and claystone.

Granite and monzonite of the Suckling Granite and Mai'iu Monzonite outcrop to the northeast of the Property area and are Late Miocene to Early Pliocene in age. Equivalents of the Mai'iu Monzonite occur in several locations within the Property as stocks, dykes and associated diatreme breccias at Urua Creek, Doriri Creek, Dimidi Creek and Araboro Creek prospects.

7.2.2 Major Structures

The **Keveri Fault** is a broad feature up to 4 km wide marked by a series of aligned streams and valley floors of the braided Ada'u River and the Domara River. In the Ada'u River valley the fault trace is marked by a rapid step in elevation immediately north of the river. Truncated ridges in the Ada'u valley and the deflection of drainage channels in Holocene gravels (eg Araboro and Dimidi Creeks) also mark the fault and indicate some component of right-lateral strike-slip movement. There is evidence for significant amounts of uplift of the northern side of the fault, including development of conglomerates and breccias and exposure of granitic rocks around Mount Suckling. Bedding in sediments on the southern side has been tilted to a south-dipping orientation by fault drag, also indicating north-side-up movement.

A series of NNE trending fractures, linear drainages and dykes define the **Dimidi Trend** (Figure 7-3), a recently recognised trans-island structural feature. It is thought to be related to similarly oriented trends known throughout PNG that are interpreted as transfer structures. The structure appears to have been important control on Late Oligocene-Holocene magmatism and volcanism in the area, including eruption of Wavera Volcanics, intrusion of Suckling Granite and Mai'iu Monzonite and intrusion of various mafic and felsic stocks, dykes and diatreme breccias (Lindley, 2018).

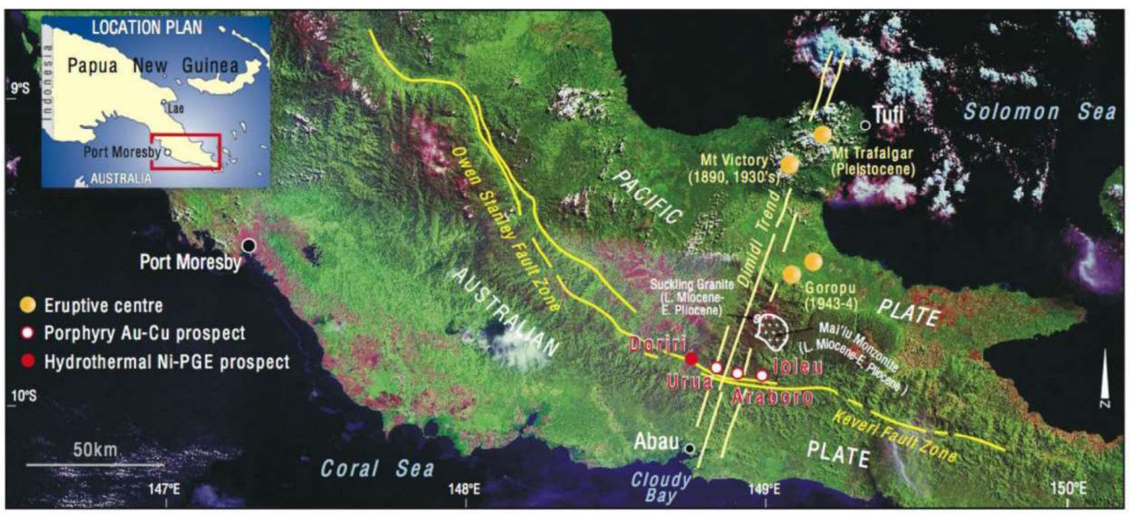


Figure 7-3. Tectonic setting of Property area, showing major structures.

7.3 MINERALIZATION

Two main styles of mineralization are present in the Property:

1. Porphyry-style Cu-Au related to mafic to intermediate composition porphyritic intrusive stocks proximal to the Keveri Fault. Mapping shows features at different prospects related to possible diatreme formation and structurally controlled hydrothermal breccias.
2. Structurally controlled hydrothermal Ni-Cu-PGE mineralization related to mafic-ultramafic rocks of the PUB.

Historic exploration largely focussed on Ni-Cu-PGE deposits, whereas GBR's main interest is the potential for large Cu-Au porphyry systems. Cu-Au prospects are described below first, with only brief descriptions of Ni-Cu-PGE prospects.

7.4 PROSPECT GEOLOGY

The main prospects being investigated by GBR are located along the Adu'a Valley as shown in Figure 7-4 and discussed further below.

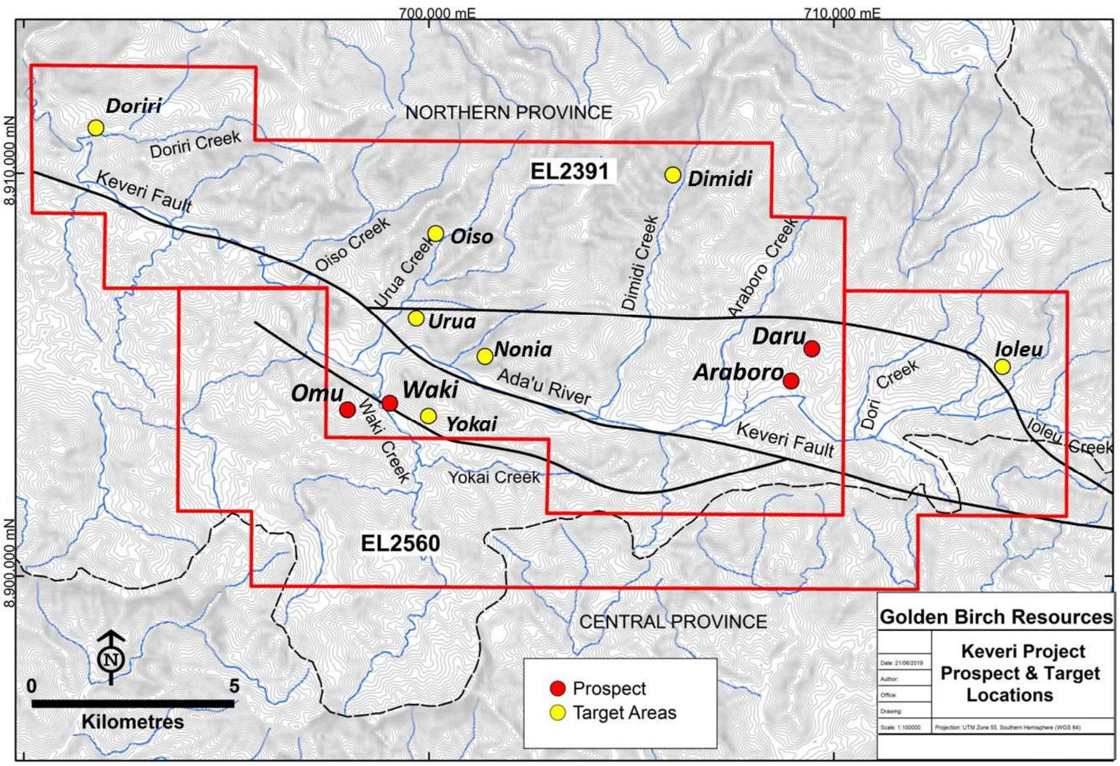


Figure 7-4. Keveri Property Prospects.

7.4.1 Omu

Omu was discovered in 2014 from float sampling/mapping within Omu Creek at its junction with Waki Creek. Mapping has defined an altered and mineralized composite diorite stock covering at least 1,500 m by 750 m (Figure 7-5), elongate in an east-west direction. Five different types of diorite intrusion have been mapped:

1. Microdiorite Porphyry
2. Crowded Porphyry
3. Equigranular diorite
4. Medium-grained diorite porphyry
5. Mafic dykes

Alteration assemblages are dominantly propylitic and argillic, comprising chlorite-epidote ± magnetite, chlorote-sericite and sericite-clay. Basalt country rock (Wavera Volcanics) is strongly sheared and rarely contains copper bearing quartz veins. Copper mineralization is manifested as three main styles:

1. weak disseminations of chalcopyrite in chlorite+sericite microdiorite,
2. chalcopyrite strongly associated with quartz-epidote veins and
3. chalcopyrite in breccia occurring as disseminations and blebs both in diorite altered clasts (K-feldspar and epidote) and matrix (associated with weak magnetite).

During 2018-2019 GBR undertook further reconnaissance work at Omu, including collection of 572 soil samples over a regular grid, rock chip sampling. Copper anomalies are associated with similar patterns in molybdenum, with peripheral zinc-lead-silver.

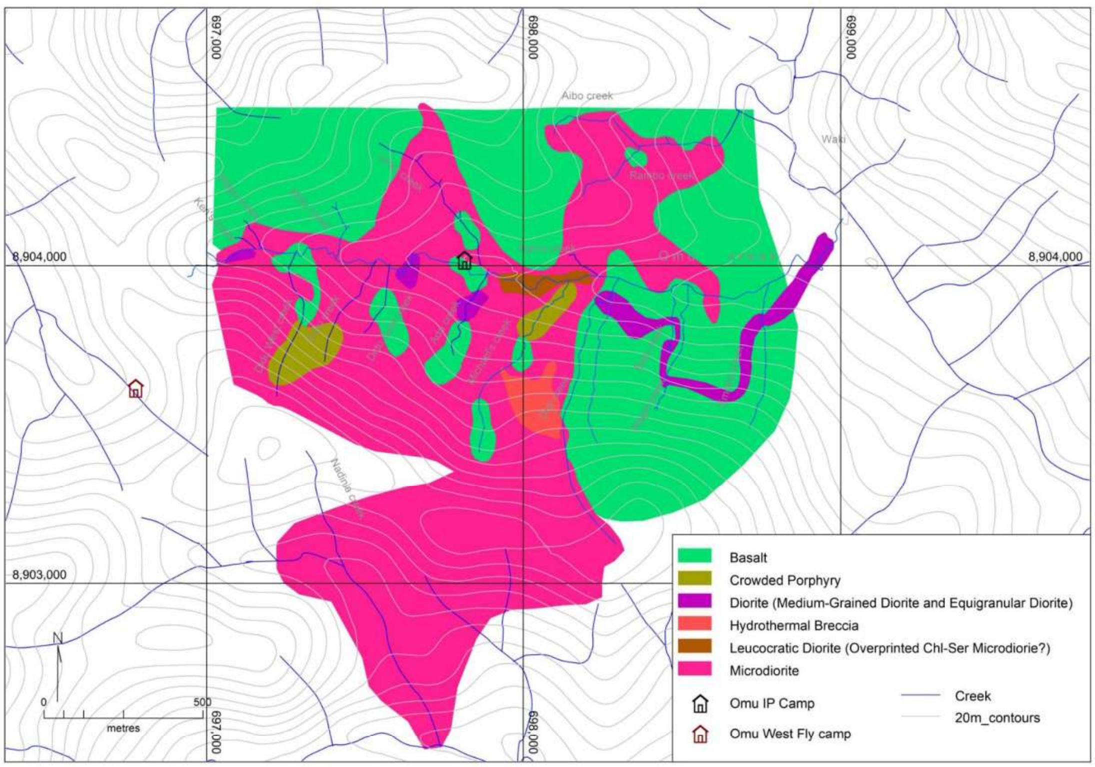


Figure 7-5. Interpretive geological map, Omu prospect (GBR mapping, 2019).

7.4.2 Waki

The Waki prospect is located between Waki creek and Adau River, the prospect is centred over a vertical feature of the magnetic inversion model. Mapping has defined an altered and mineralized composite diorite stock covering at least 1 km^2, current resonance mapping is pushing 1 km west toward an in interpreted magnetic anomaly. One phase of intrusion is mapped at Waki, a fine-grained diorite porphyry with varying degrees of phyllic alteration. The porphyry intrusions are in contact with amygdaloidal basalt (Figure 7-6). Copper mineralization is manifested as three main styles:

- Disseminated fine chalcopyrite
- Rare chalcopyrite veinlets
- Supergene copper (malachite+azurite)

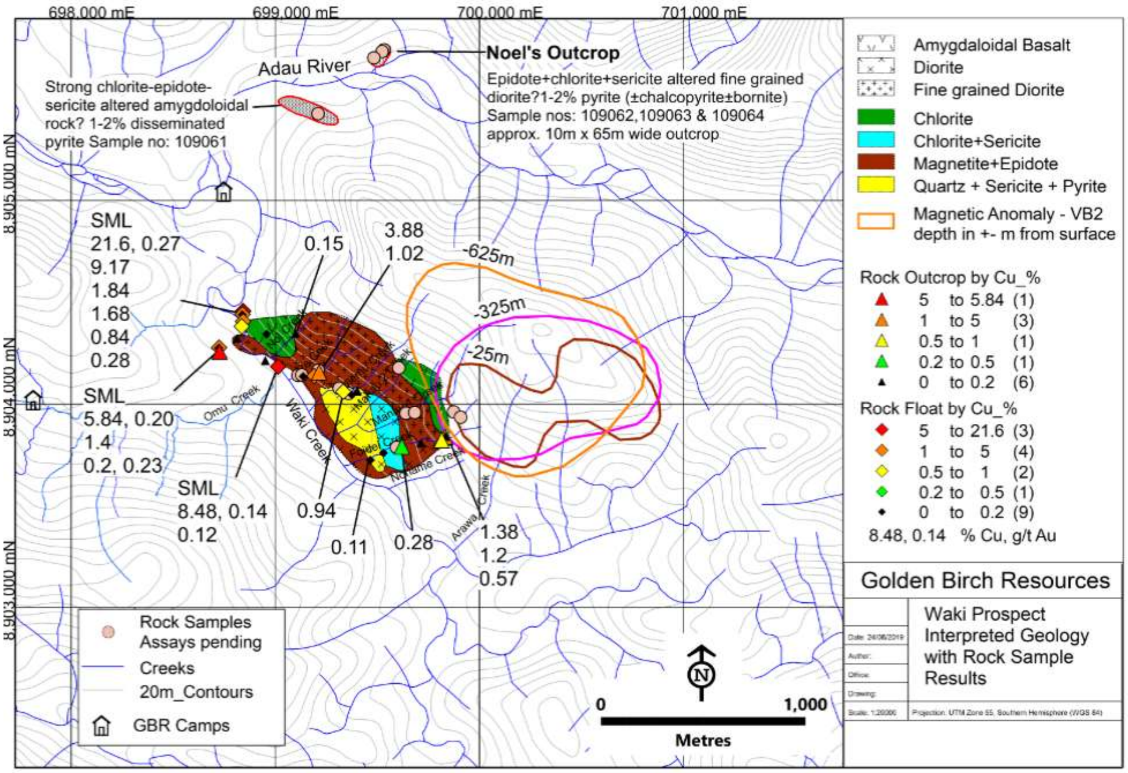


Figure 7-6: Waki Interpreted Geology with rock sample results. (GBR mapping, 2019)

7.4.3 Araboro-Daru

Araboro is a distinct set of nested circular topographic features some 4 km in diameter on the eastern margin of EL 2391. An upstanding rim of fractured and weakly quartz-veined basalt surrounds a semi-circular depression of argillic alteration outcropping over a 500-900 m x 2,000 m area and a poorly-sorted diatreme with mapped dimensions of 1,000 m x 900 m (Figure 7-7). The diatreme breccia matrix is intensely altered (minor white-mica in places) and is accompanied with limonite veining.

Float samples in Daru Creek of brecciated quartz-pyrite-covellite in fine grained diorite intrusive graded 1.16% Cu (PPM sampling), and float in lower Araboro Creek (Highlands Gold, 1990) yielded results of 1.35% Cu and 0.14 g/t Au. Pannable gold grains were also sampled from Araboro Creek.

Within the broad prospect area of Araboro, GBR have identified a prospect named Daru, which lies on the eastern side of the main Araboro circular structure. Recent mapping by GBR has refined the geology of the Araboro structure (Figure 7-7).

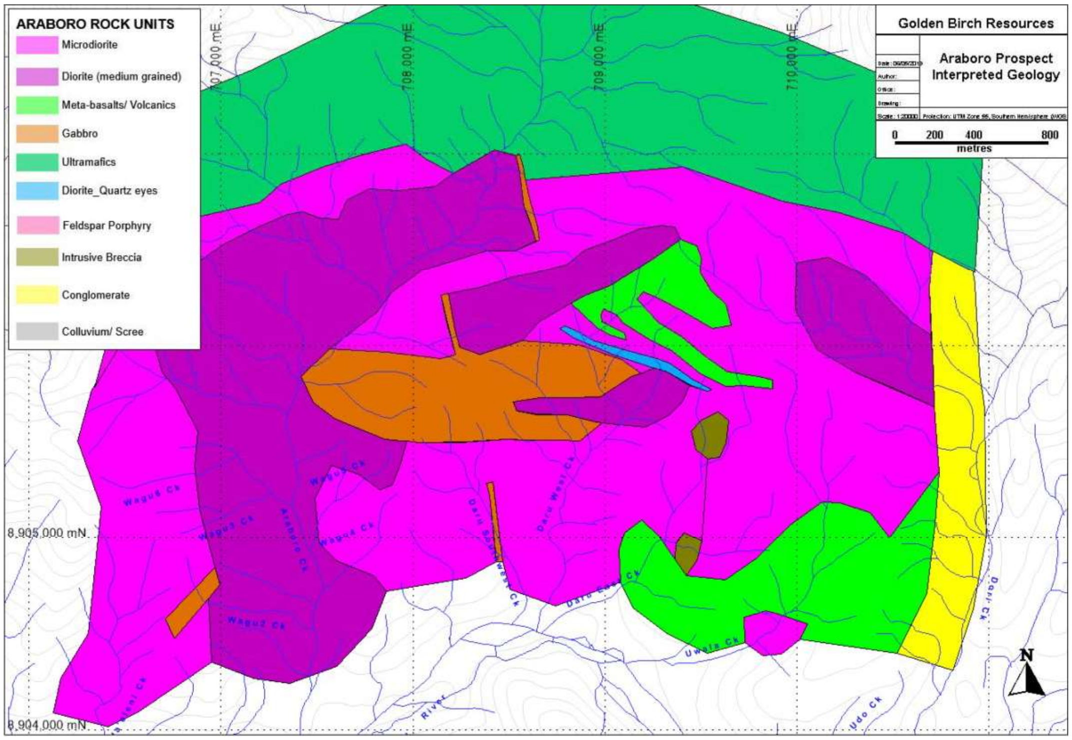


Figure 7-7. Interpretative geological map of Araboro-Daru. (GBR mapping, 2019)

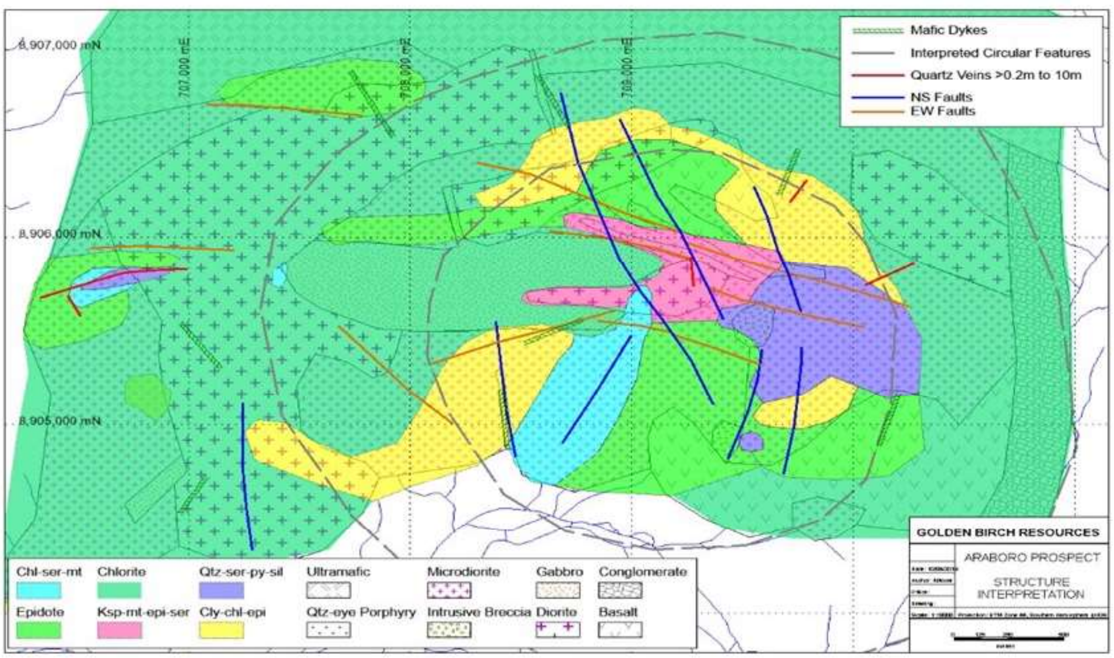


Figure 7-8. Interpretative alteration map of Araboro-Daru. (GBR mapping, 2019)

Three main phases of intrusives are mapped in Araboro:

1. Microdiorite: most common phase, fine-grained and highly fractured with weak potassic and chlorite-sericite-magnetite-pyrite alteration.

2. Quartz diorite: occurs as narrow 2 m – 7 m wide dykes with strong chlorite alteration. Rare disseminated pyrite-chalcopyrite.
3. Diorite: medium grained and blocky appearance, with common propylitic and rarer weak potassic alteration. Is coarser grained and has higher plagioclase content compared to microdiorite.

Other rock types in the area are as follows:

- Conglomerate – poorly sorted well rounded gravel size fragments on eastern margin of Araboro.
- Polymictic breccia – poorly sorted with fragments of microdiorite, diorite and quartz eye porphyry and quartz vein fragments with clay alteration. Mapped in two small areas in eastern side of Araboro structure. Disseminated pyrite (6-7%) occurs throughout with blebs of chalcopyrite±covellite. Possible diatreme/intrusive breccia.
- Gabbro – massive, strongly magnetic with minor sheeted quartz veining. Occurs as late mafic dikes truncating diorite intrusives within the centre of the Araboro structure.
- Basalt – fine-grained, flinty and laminated with quartz veins within the eastern and central part of the Araboro structure.
- Ultramafics – peridotite, harzburgite and pyroxenite. Contains magnetite and quartz-plagioclase layering and late felsic pegmatite veins/dykes. Chlorite-altered and strongly magnetic. On the northern edge of the Araboro structure, represents country rocks of the PUB.

Mineralization occurs as three main styles:

1. Disseminated and fracture-controlled pyrite in phyllic altered microdiorite, diorite and polymictic breccia.
2. Quartz-sulphide veins hosted in microdiorite and diorite.
3. Malachite staining in float and outcrop of veins and vein breccias in microdiorite.

7.4.4 Ioleu

Ioleu is associated with a structural splay off the Keveri Fault Zone and is characterised by a float train of large 50-60 cm diameter boulders of metabasalt containing veins of chalcopyrite. These boulders have been tracked to landslides presumably associated with fractures of the Keveri Fault Zone and are coincident with a widespread area of pannable crystalline gold.

Two altered mafic stocks have been mapped in the area, one 1400 m by 600 m and the other 600 m by 900 m (Figure 6-5). A breccia body interpreted as a diatreme ("Noia Ridge Diatreme") lies between the two mafic stocks. Grab samples of copper mineralization in float assayed up to 24% copper and angular float fragments are scattered over an area of approximately 3 km^2. No outcropping high grade copper mineralization has been found at this stage. Reconnaissance ridge and spur soil sampling yielded values up to 582 ppm copper.

Alteration of gabbro typically comprises illite-smectite overprinted by fracture-controlled quartz-hematite-limonite that approaches stockwork style in some locations. Metabasalt country rock is strongly fractured, and one outcrop sample from basalt near the eastern gabbro assayed 0.27% Cu.

7.4.5 Urua

The prospect was discovered by Nord Resources in 1979 when mineralised float, observed at the mouth of Urua Creek, was followed to its source. Geology of the prospect comprises a Pliocene age diatreme breccia with dimensions of 1,700 m by 900 m, which was intruded by a series of variably altered monzonite stocks at depth. Country rocks are pillowed basalts of the Wavera Volcanics.

Mineralization is associated with zones of propylitic and phyllic alteration exposed in trenches and intersected in drilling. Propylitic altered zones typically grade from 0.1-0.2% Cu and 0.1-0.2 g/t Au in trenches, manifested as breccia and veinlet stockworks. In drilling, propylitic alteration is represented by locally intense epidotisation of monzonite associated with copper mineralisation. Phyllic alteration is localised at surface, with significantly higher grades than the propylitic zone (up to 1.1% Cu and 2 g/t Au over 12 m).

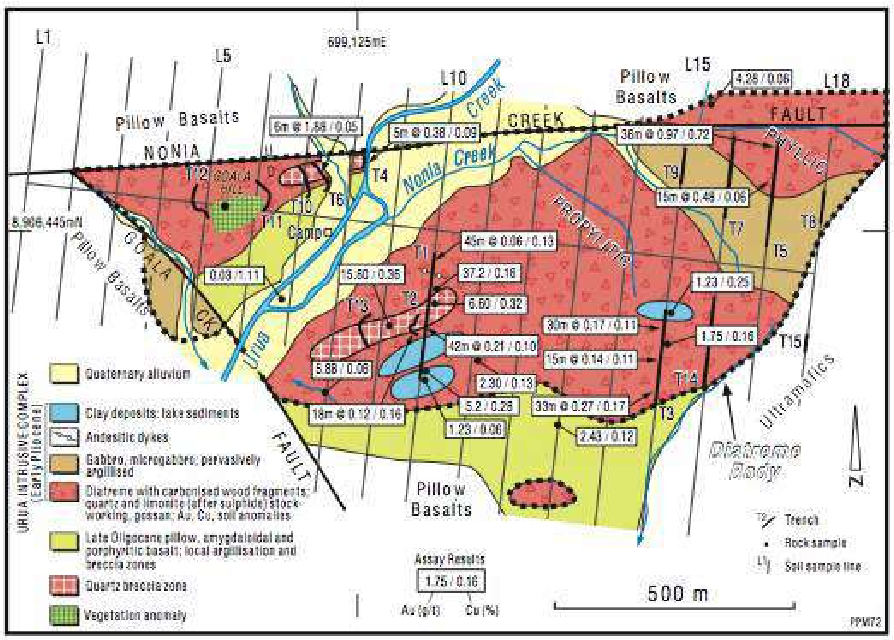


Figure 7-9. Urua prospect geology map (Lindley, 2018)

7.4.6 Other Cu-Au prospects

Two other early stage prospects were defined in 2013: Osio and Yokai. Very limited work on both prospects has been completed, with only reconnaissance float sampling giving an indication of mineralization. At Osio a cobble of massive chalcopyrite grading 29% Cu and 0.2 g/t Au was found, and at Yokai a float sample assayed 0.37% Cu.

7.4.7 Doriri Ni-PGE

Doriri is located in the north-western corner of EL 2391. Geology is dominated by an intrusive ultramafic sequence comprising pyroxenite (orthopyroxenite) with minor peridotite (dunite; mainly olivine in composition) and a subordinate component of mafic intrusive rocks represented by noritic suites (gabbroids with ~12-66% plagioclase). Mineralisation is mainly hosted by norite in contact with dunite to the north.

Doriri mineralisation occurs within a northwest striking zone averaging 10-15 m width and at least 500 m - 600 m long, which is sub-parallel to and within the trace of the Keveri Fault (Figure 7-10).

The Nivali fault (informal name: Lindley & Kirakar 2007) passes ENE along lower Doriri Creek and has apparently down-faulted the zone to the southeast.

Lindley (2016) published a detailed description of the unusual mineralization, which comprises pyrrhotite, pentlandite, pyrite and apatite in a mica-magnetite rock. PGM are dominated by Pd and Pt in the ratio >4:1, respectively, typical of hydrothermal deposits. Four drill holes returned grades over about 10 m true width of 0.9%-1.8% Ni and 0.5-0.7 g/t Pt+Pd

A CSIRO study commissioned by PPM in 2011 estimated temperature of formation between 100°C and 200°C, corresponding with epithermal style conditions. Rare earth elements are also highly enriched within the Ni-PGE mineralization. This type of low-temperature hydrothermal Ni-PGE-REE mineralization is unique and is to date the only known hard-rock PGE occurrence in PNG.

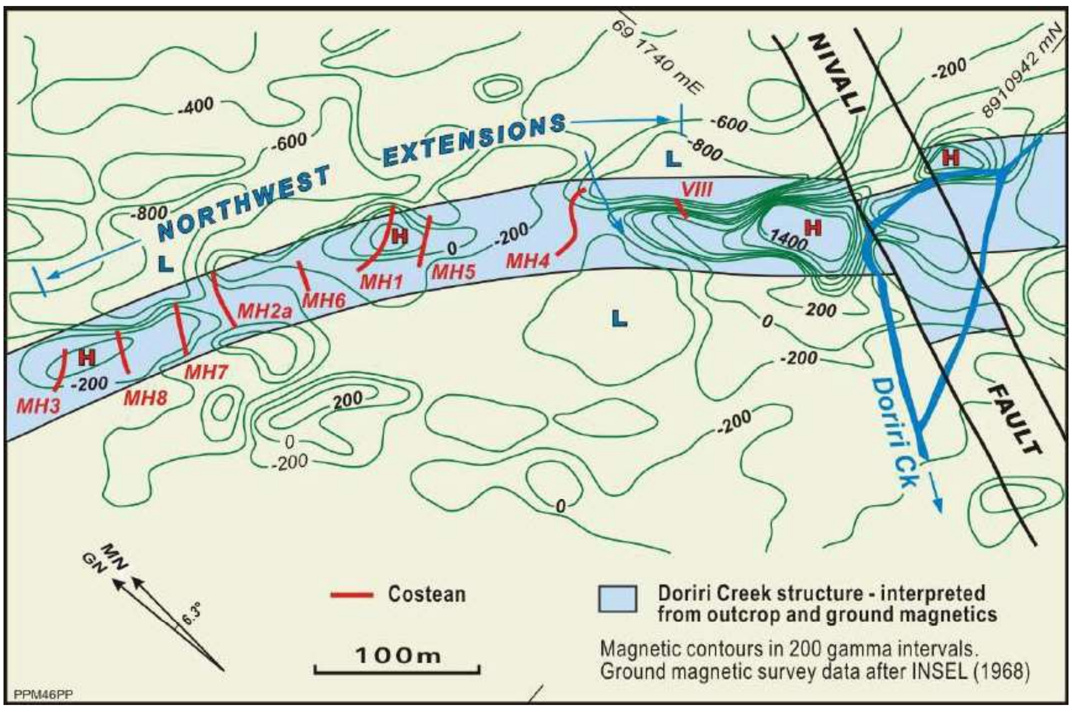


Figure 7-10. Doriri prospect map with PPM trenches and ground magnetic contours.

7.4.8 Dimidi Creek Pt-Pd-Au-Chromitite

Dimidi Creek lies within the Dimidi trend structure and is unique in the area as an occurrence of coarse dunite float, detrital Pt-Pd in pan concentrates and float of chromitite within a broad NNE trending potassium radiometric anomaly. Outcropping dunite and chromitite has not been located, but float occurrences indicate a source region in the upper reaches of Dimidi Creek. Rock chip sampling has also been unable to locate a source for high Pt-Pd values in stream sediments.

Outcrop along the traversed 7.8 km interval of Dimidi Creek comprises dark-grey-black peridotite, pyroxenite and gabbro strongly sheared along NNE trending faults. Holocene age ultramafic breccia/conglomerate overlies ultramafics and is interpreted to be related to erosion and rapid uplift along the Keveri Fault to the south.

A distinctive pair of en echelon porphyritic felsic dykes striking NNE parallel to the Dimidi trend is the source of the Dimidi Creek airborne potassium anomaly (Figure 7-11). The largest dyke is 2,500 m long and 300-500 m wide. A smaller dyke outcrops 250 m to the east and is 200 m long and 10-20m wide. Mineralogy of the dykes comprises hornblende-augite-mica-feldspar phenocrysts in a felsic (white-pinkish/pale brown) groundmass.

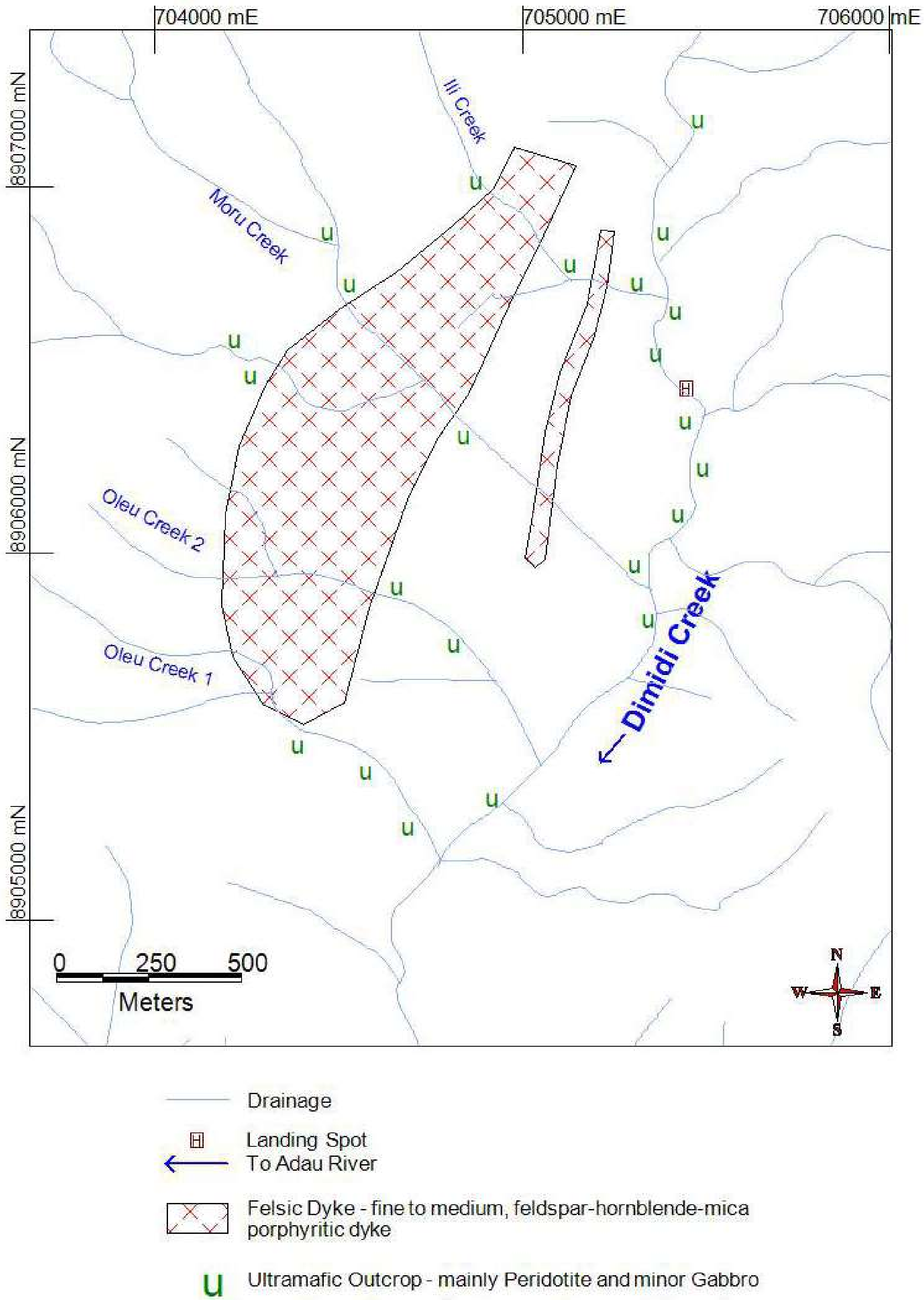


Figure 7-11. Geology, Dimidi prospect.

8 DEPOSIT TYPES

Main deposit types being explored for at Keveri is porphyry gold-copper, the potential for epithermal gold mineralisation is also considered.

Porphyry deposits are very large, relatively low grade deposits that occur in the roof zones of igneous intrusions in island arc and continental margin settings. The mineralization is fracture controlled and comprises Cu and Cu-Fe sulphides with variable concentrations of gold and/or molybdenum. Porphyry deposits occur throughout the world in a series of extensive, relatively narrow, linear metallogenic provinces. They are predominantly associated with Mesozoic to Cenozoic orogenic belts in western North and South America, around the western margin of the Pacific Basin, and in the Tethyan orogenic belt in eastern Europe and southern Asia. However, major deposits also occur within Paleozoic orogens in Central Asia and eastern North America and, to a lesser extent, within Precambrian terranes (Sinclair, 2007).

Epithermal deposits develop in volcanic arcs at convergent plate boundaries and in intra-arc, back-arc and post-collision rift settings in association with calc-alkalic to alkalic magmatism (Simmons, White, & John, 2005).

This type of deposit typically forms at a relatively shallow depth (<1.5 km) from low temperature (<300°C) fluids. Epithermal deposits are typically Tertiary in age or younger. The Pacific Rim (including PNG) is a prime area for epithermal deposits.

Epithermal mineralization typically occurs in veins and veinlets, and or as disseminations in the host rock or in breccias. Various classification schemes of epithermal deposits were proposed based on ore, gangue and alteration mineralogy, and, more recently, based on fluid chemistry (pH and redox state).

The spatial relationships between porphyry gold-copper and epithermal gold emplacement environments are shown in Figure 8-1

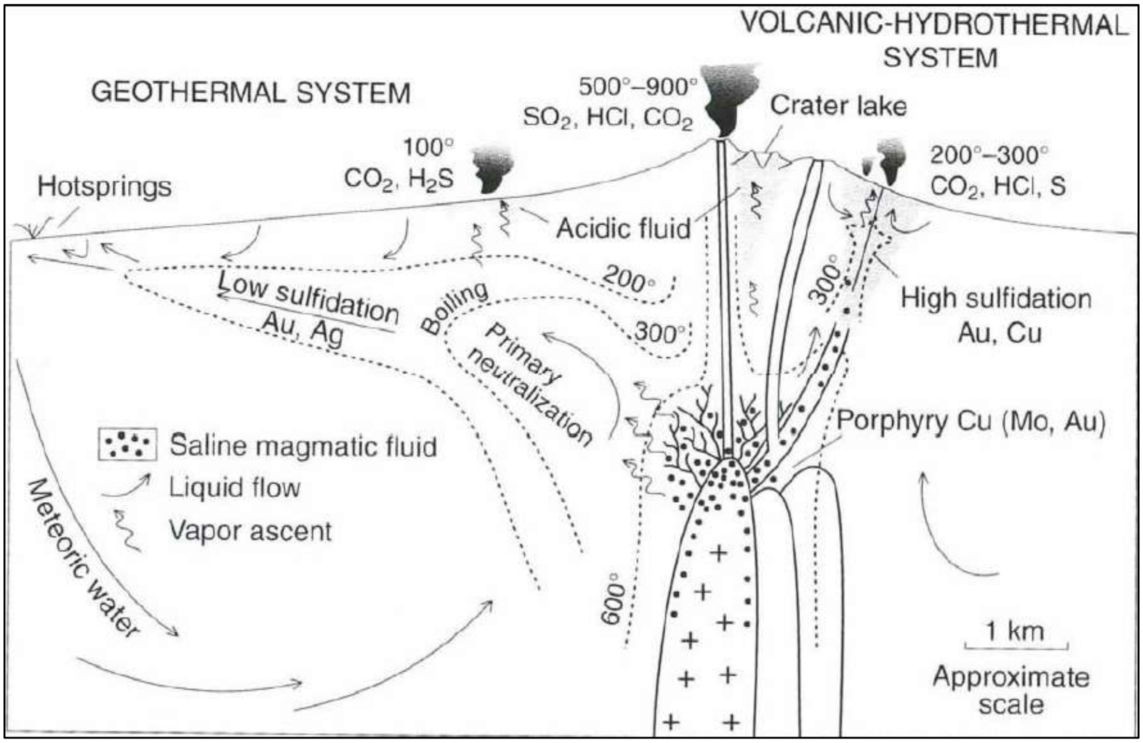


Figure 8-1: Schematic overview of the spatial relationships of high-sulfidation, low-sulphidation and porphyry deposits (from Hedenquist et.al. 2000)

9 EXPLORATION

GBR has undertaken early stage exploration at Omu, Araboro-Daru (aka Daru) and Waki prospects. Work to date has comprised:

- Stream float sampling
- Outcrop rock chip sampling
- Geological outcrop mapping (largely confined to stream banks and ridges)
- Soil sampling 100 m x 100 m grid at Omu and Daru
- 26 petrographic samples from Omu Prospect
- 3D IP survey on 100 m x 100 m grid

The number and types of different samples are summarised in Table 9-1.

Table 9-1. Summary of GBR sampling: 2018-2019.

Year	Prospect	Soils, ridge and spur sample	Float samples	Outcrop samples
2018	Araboro-Daru	242	10	5
	Omu	288	28	153
	Waki	-	2	1
2019	Araboro-Daru	108	37	43
	Omu	267	53	97
	Waki	-	3	7

9.1.1 Float and Outcrop Sampling

To date GBR's exploration work has consisted of a program of mapping and rock chip sampling. At the time of MA's site visit GBR was continuing with field mapping and further rock chip sampling of creek exposures of their three main prospects, Omu, Waki and Daru. The highest outcrop sample returned 14% copper at the Omu prospect (Figure 9-1). Limited work has occurred at the Waki prospect with initial float samples providing encouraging results, to date the highest outcrop sample is 0.58% (Figure 9-2) and the highest Waki sample returned 3.88% copper (Figure 6-8).

Outcrop sampling at Daru (Figure 9-3) is less well mineralised (maximum grade from outcrop is 0.52% Cu), the float samples show there is mineralisation within the area (Float 4.19% Cu). Prospect scale mapping provides encouragement, with evidence of hydrothermal alteration present.

At this stage GBR believes that the available limited historical information, including the close association of anomalous copper and gold could indicate the possible presence of a porphyry copper-gold mineralising system associated with buried intrusive at depth below the Omu and Waki areas.

Table 9-2. Summary Statistics of GBR Float and Outcrop sampling: 2018-2019.

Prospect	Sample_type	Sample Count	Max Cu %	Avg Cu %	Max Au ppm
Daru	F	47	4.19	0.52	1.2
Daru	OC	48	0.52	0.04	0.1
Omu	F	81	11.65	1.4	5.2
Omu	OC	250	14.05	0.26	1.8
Waki	F	5	3.88	0.83	0.0
Waki	OC	8	1.39	0.58	0.0

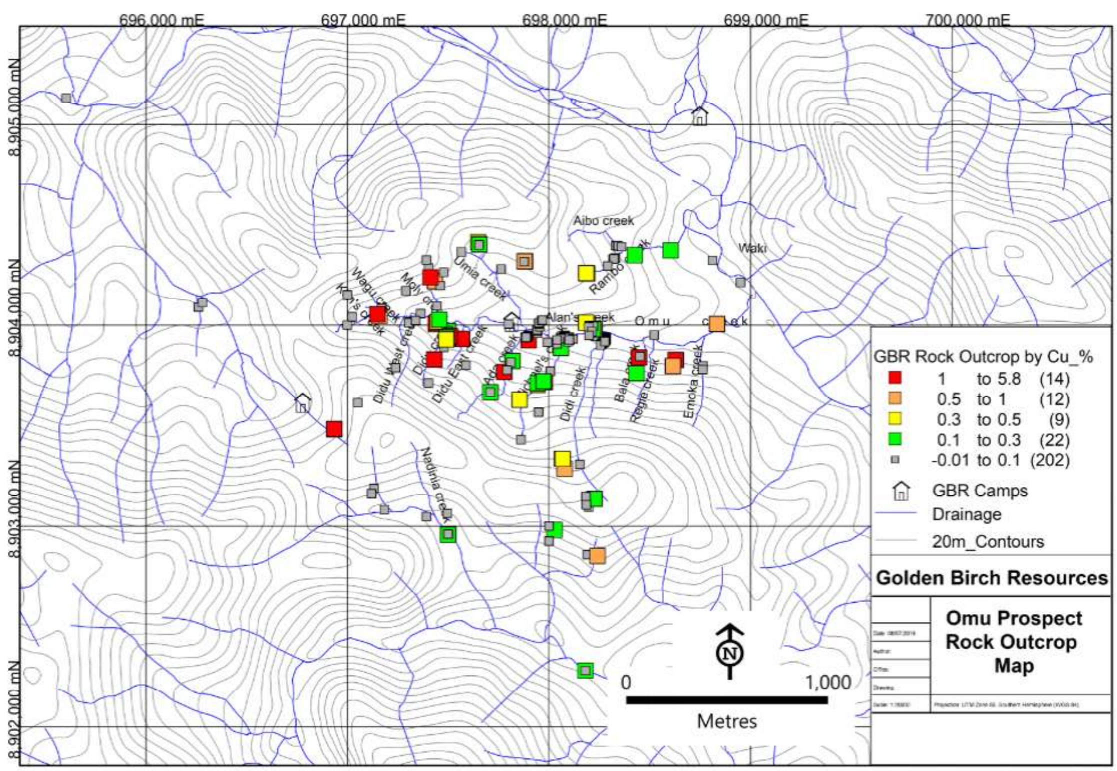


Figure 9-1. Omu copper in outcrop samples from 2018-2019 programme.

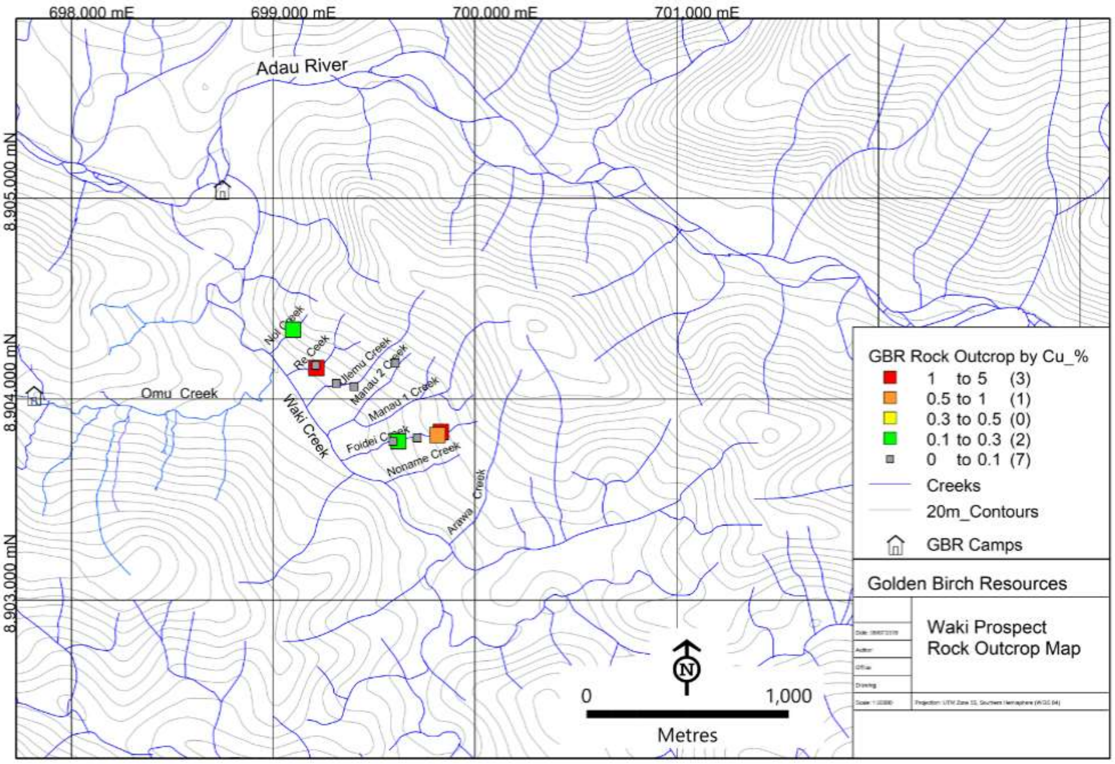


Figure 9-2. Waki copper in outcrop samples from 2018-2019 programme.

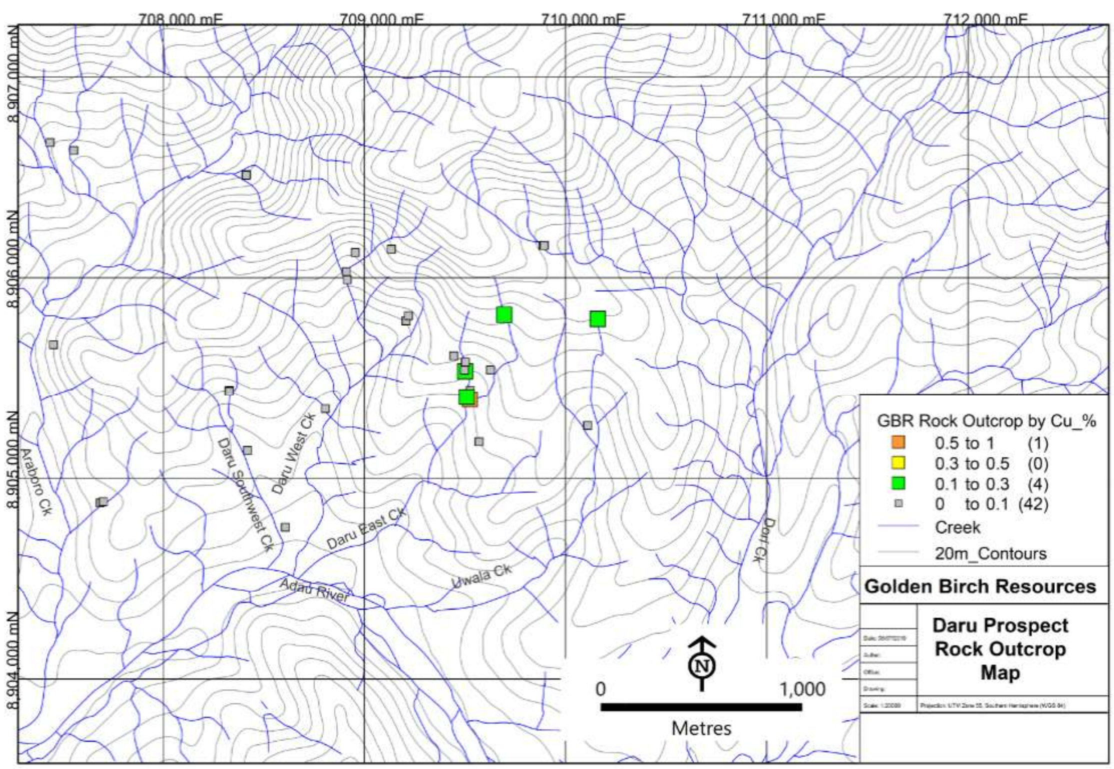


Figure 9-3. Daru copper in outcrop samples from 2018-2019 programme.

9.1.2 Soils Sampling

Float and rock chip sampling identified prospective areas suitable for a soil sampling.

A 100 x 100m soil grid was designed over Omu and Araboro-Daru prospects, soil sample locations were identified using a handheld GPS. The location was cleared of vegetation using a spade and mattock. A hand auger was used to drill to saprock or a maximum of 2 m. The bottom 30-50cm was then sampled, which was usually deeply weathered bedrock (saprock) or materials from the "C" horizon of the soil profile. Samples were not sieved. Sample preparation analysis and security are described in Section 11.

Soil sampling showed a number of broad zones of anomalous copper (defined as greater than 180 ppm Cu) across the Omu area (Figure 9-4) and at Daru area (Figure 9-5).

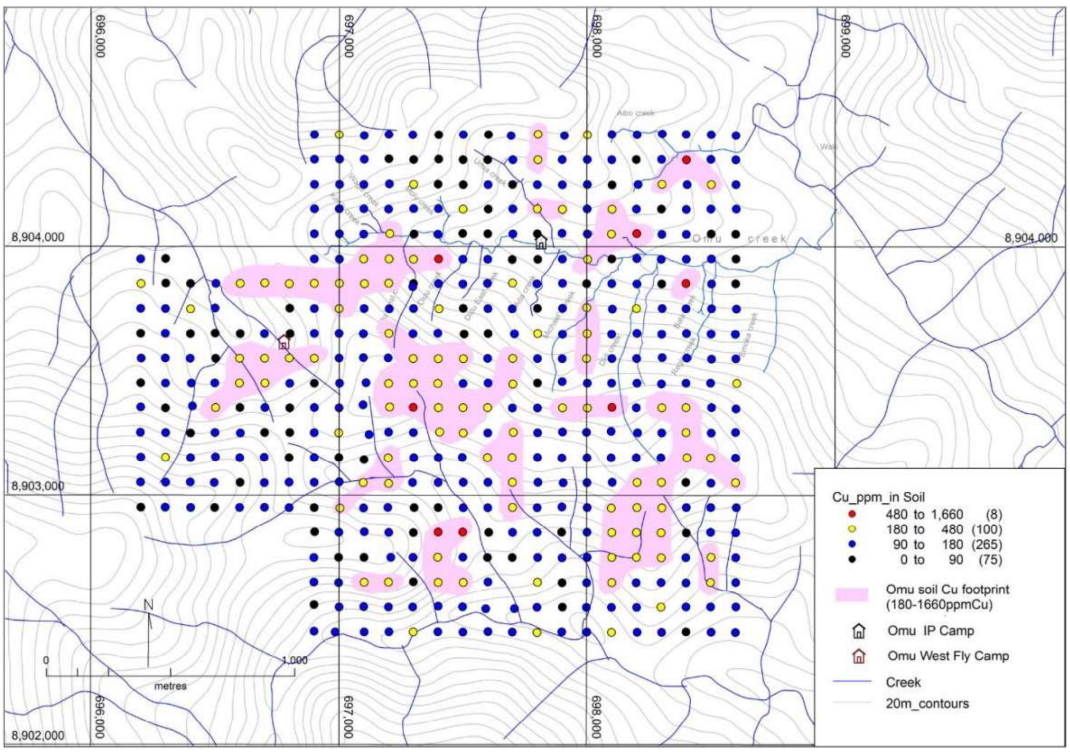


Figure 9-4. Omu copper in soils from 2018-2019 programme.

The Araboro-Daru area has recently been re-visited by GBR geologists undertaking more detailed work than the brief reconnaissance of Papuan Minerals. During 2018-2019 GBR collected a 200 m x 100 m soil sample grid (350 samples in total), rock samples of float and outcrop (94 samples) and carried out geological mapping.

Soil sampling over Daru shows a copper anomaly (>80 ppm) coincident with zinc and silver over and area approximately 1 km x 1 km (Figure 9-5).

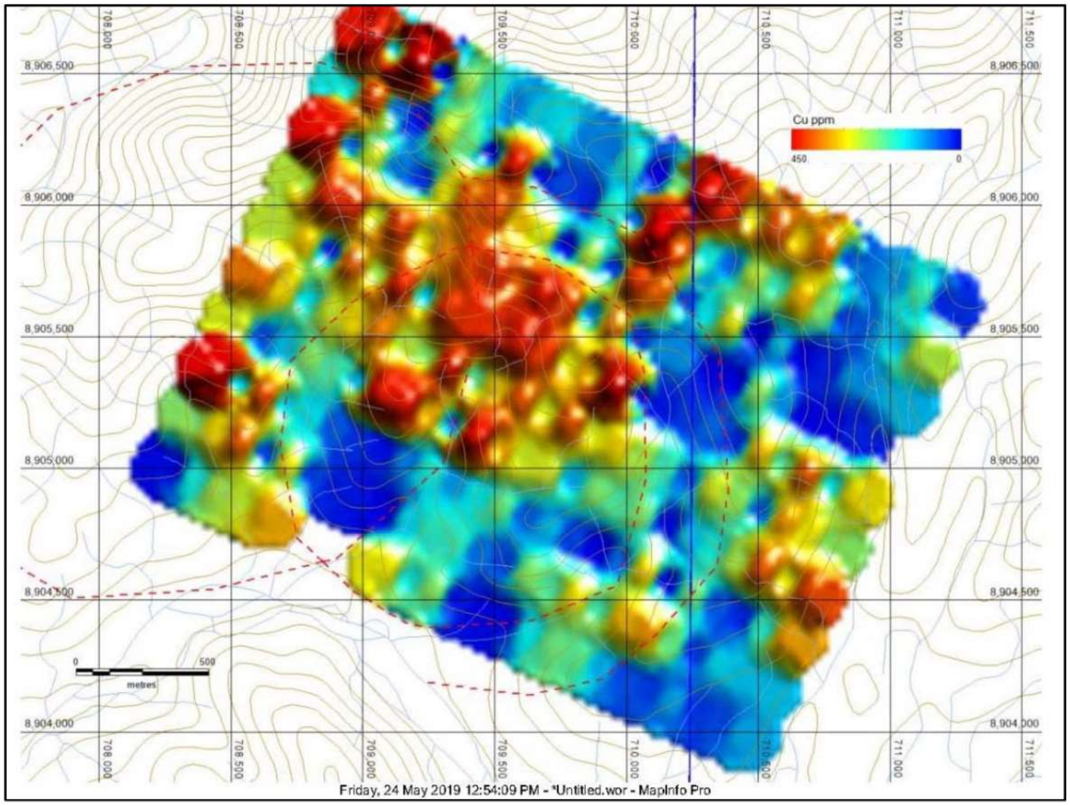


Figure 9-5. Daru copper in soils.

9.1.3 Petrology Report Summary

26 samples from Omu Prospect were sent to Applied Petrographic Services and Research in Wanaka, NZ. The petrology defines a distal porphyry or intrusion-related environment. Copper (and precious metal) mineralisation is the result of structurally controlled convective hydrothermal fluid flow, fluids being of probable heated meteoric source, superimposed on thermally metamorphosed and metasomatised mafic to ultra-mafic, locally alkaline, fine grained igneous rocks. There is evidence amongst the prograde metamorphic-related metasomatism for magmatic hydrothermal contributions, including some early distal porphyry/magmatic hydrothermal style veining (APSAR, 2018).

9.1.4 3D IP survey

At the time of MA's site visit SJ Geophysics (Polutink, 2019), based in Vancouver Canada, had a field team on site conducting an IP survey over the Omu prospect (Figure 9-6). Preliminary results of 3D inversion of the IP data were made available on 29th June 2019.

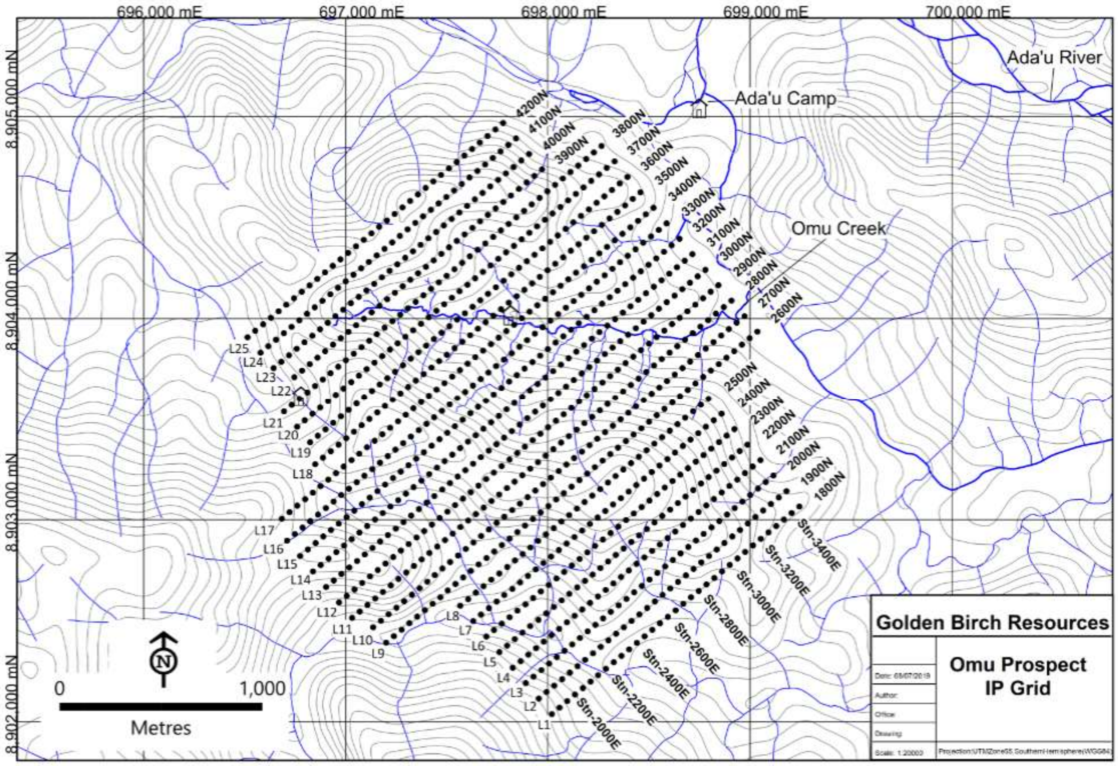


Figure 9-6. Omu IP and ground magnetic grid.

Results of IP data inversion show three areas of higher resistivity within the southern half of the survey area, with a linear east-west low resistivity zone that aligns with a creek and which may represent a fault (Plan View Figure 9-7 and 3D oblique view Figure 9-8). Chargeability amplitudes are generally low and three zones of higher (>6 mV/V) chargeability are defined (Plan view Figure 9-9 and 3d Oblique view Figure 9-10), with the central zone being the largest and highest amplitude. Higher chargeability zones trend southeast-northwest and become shallower towards the northwest.

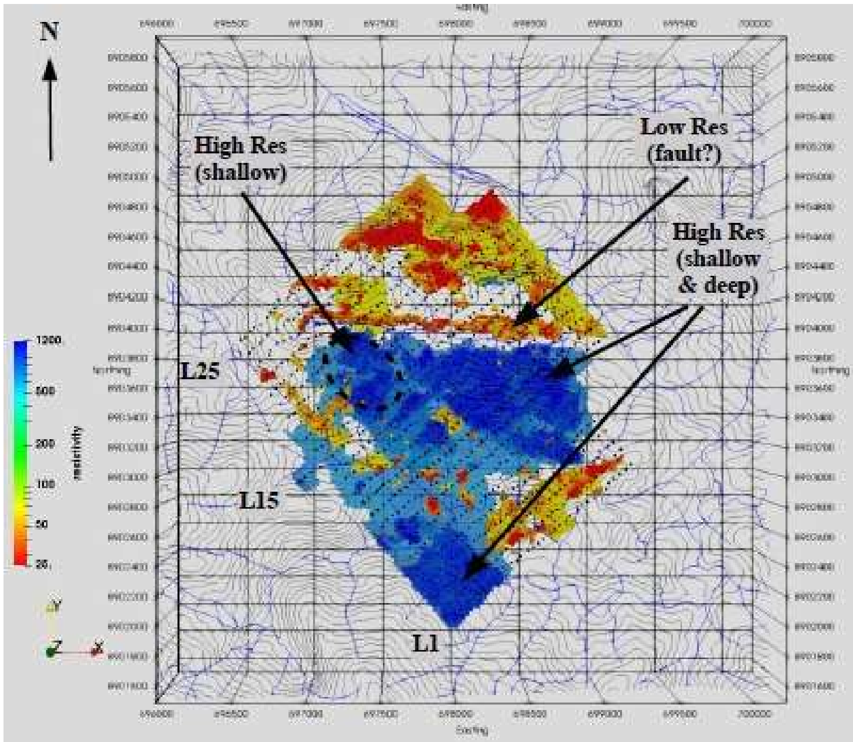


Figure 9-7. Inverted resistivity from 3D IP survey, Omu.

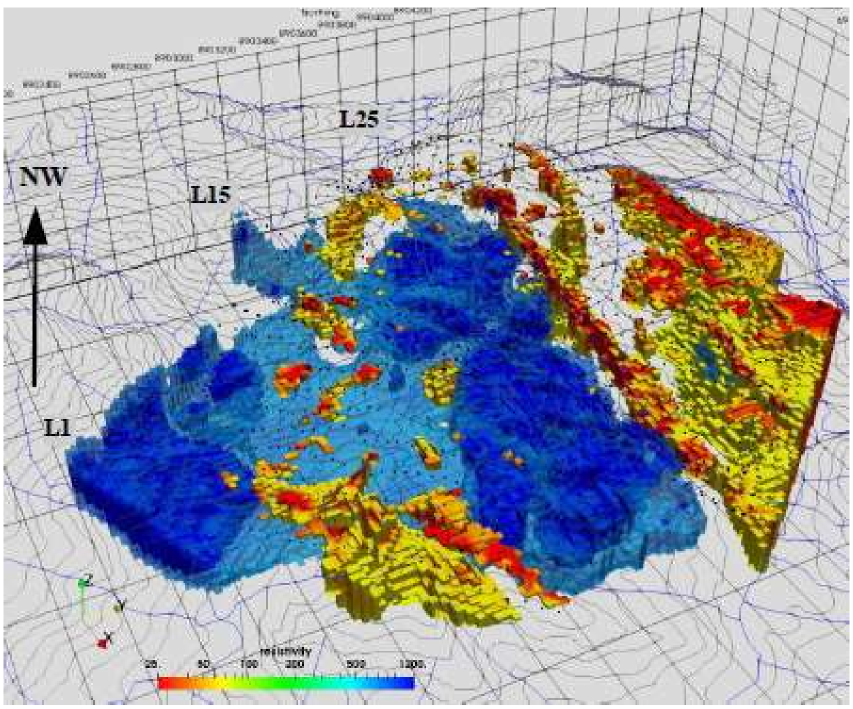


Figure 9-8: 3D oblique view Inverted Resistivity, Omu, (looking NW)

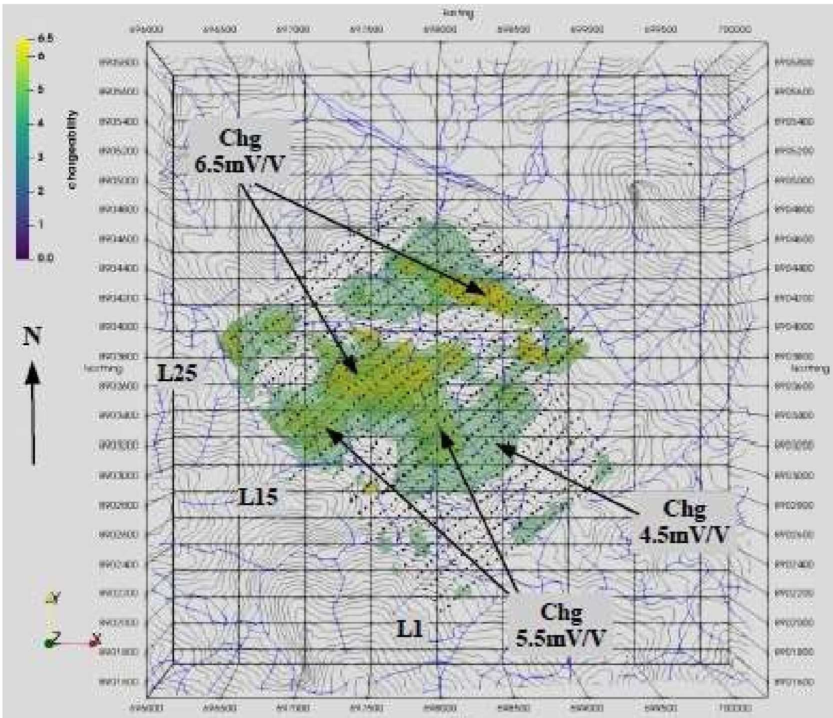


Figure 9-9. Inverted chargeability from 3D IP survey, Omu.

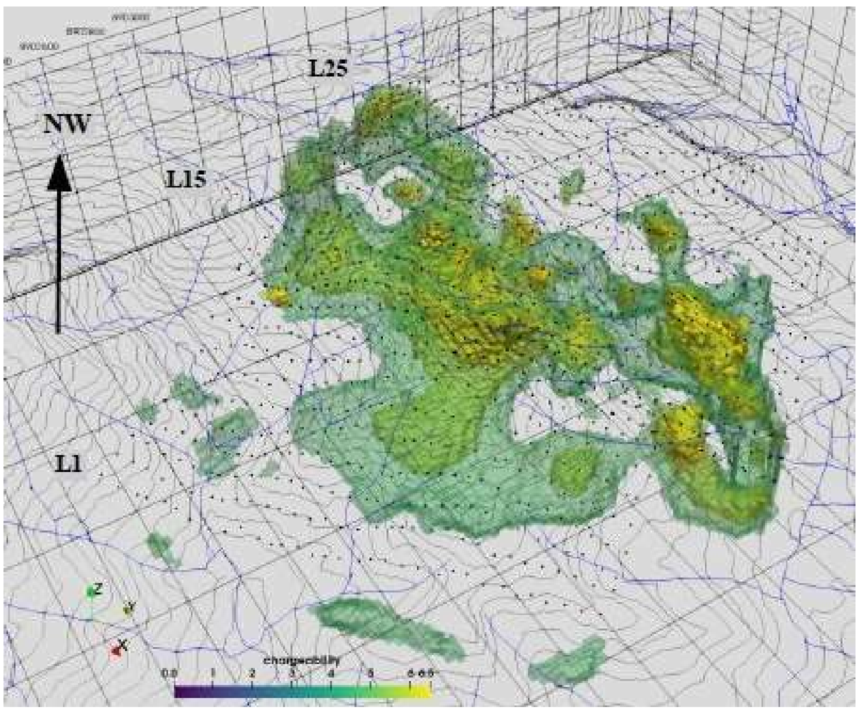


Figure 9-10. 3D oblique view of Inverted Chargeability, Omu, (looking NW).

Comparing IP results with geochemistry and alteration mapping shows that high chargeability-high resistivity zones correspond broadly with higher copper in soils overlying chlorite-epidote and chlorite-sericite altered microdiorite in the central part of Omu prospect (Figure 9-11 and Figure

9-12). Small zones of clay-silica-pyrite and K-feldspar-magnetite alteration occur on the edges of the higher chargeability zones.

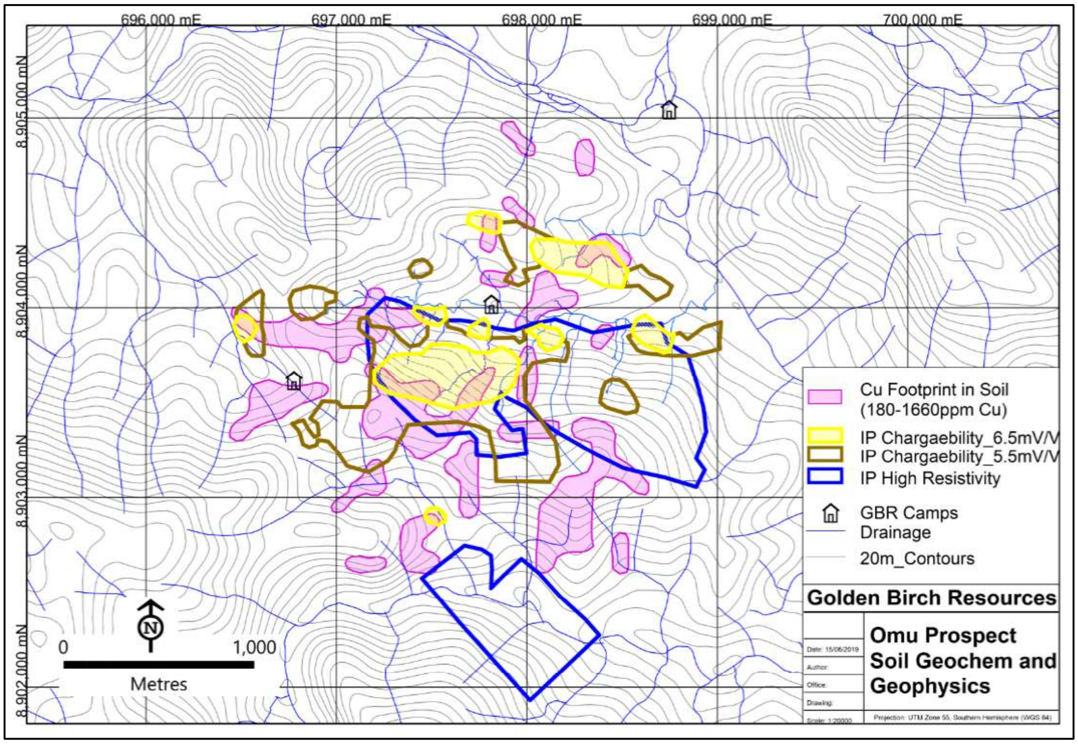


Figure 9-11. Omu soil geochemistry results and outlines of IP inversion zones.

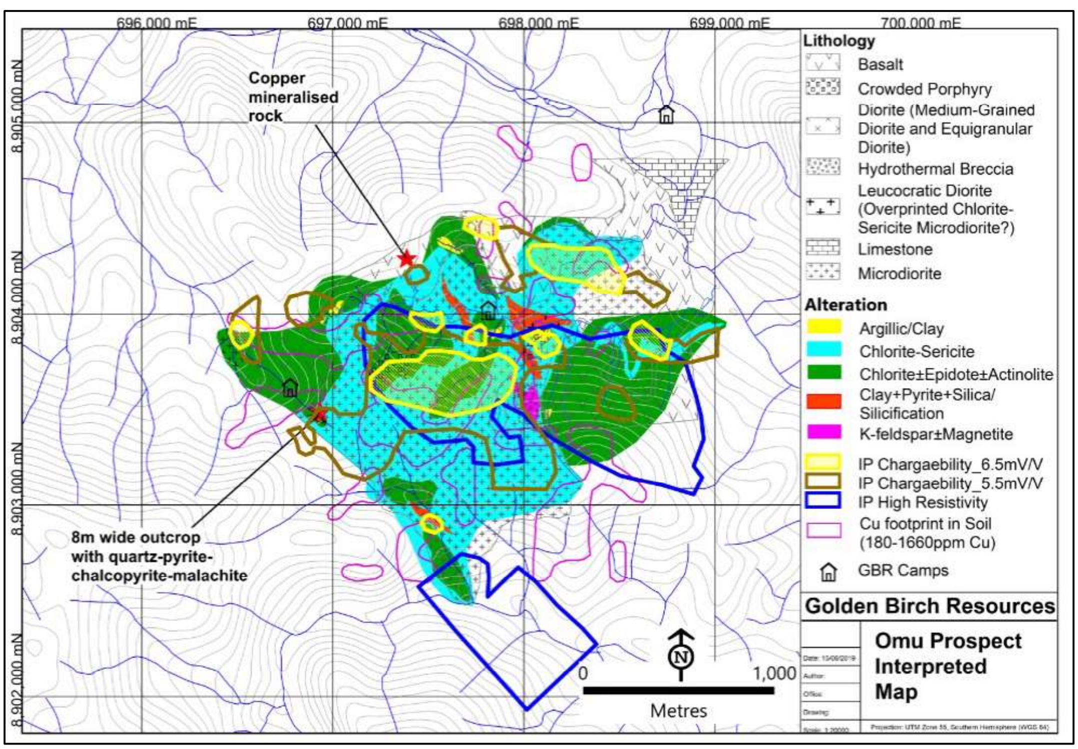


Figure 9-12. Omu geological mapping results and outlines of IP inversion zones.

Ground magnetic data was acquired at the time of the IP survey. Ground Magnetics provide an insight into the subsurface distribution of alteration styles and structural fluid pathways. Magnetite in porphyry systems is associated with prograde high-temperature alteration (North Figure 9-13), with overprinting lower-temperature assemblages being magnetite destructive. The faults interpreted from the resistivity data is supported by changes in magnetic data (Figure 9-13).

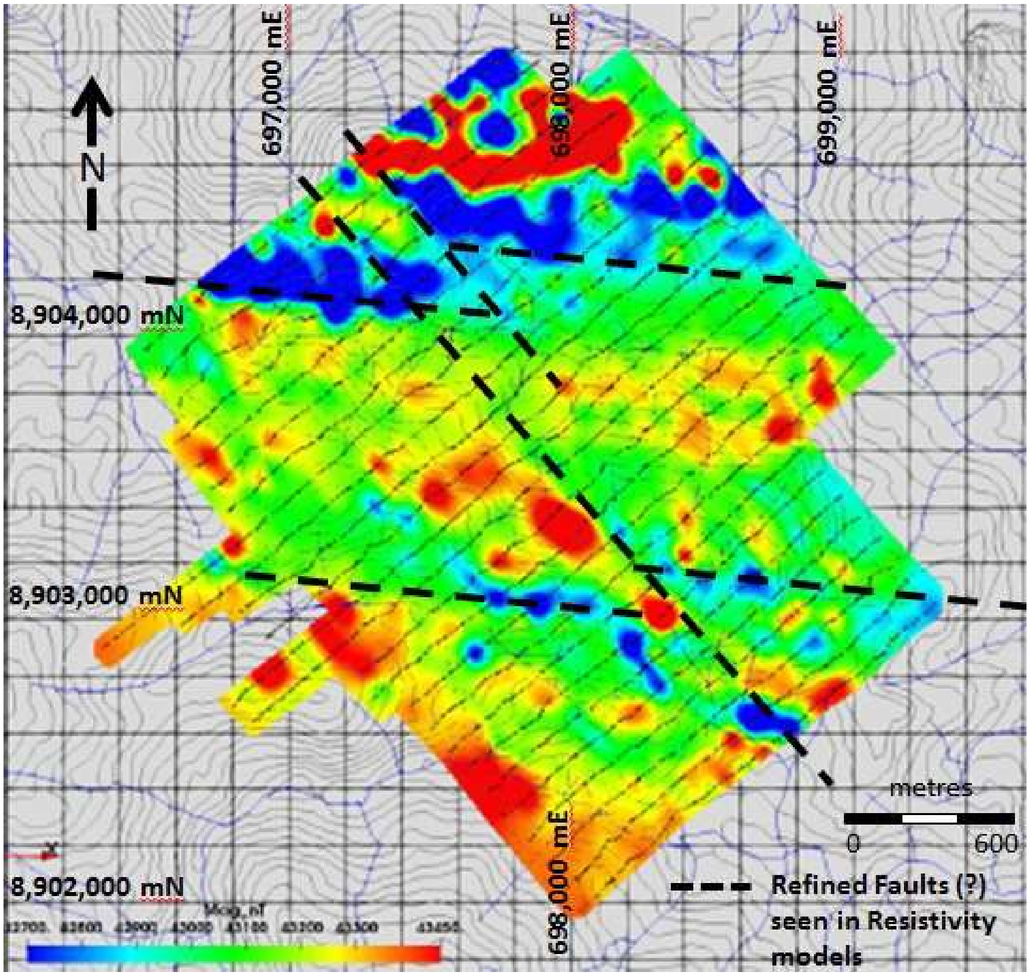


Figure 9-13: Ground Magnetic Survey, Omu.

9.2 MA ASSESSMENT AND PLANNED EXPLORATION BY GBR.

9.2.1 Omu

In MA's opinion the results from GBR's work to date are encouraging and mapped alteration and soil geochemical results suggest that the Omu prospect is most likely associated with a high-level porphyry copper-gold mineralising system. Initial results from the Omu IP and ground magnetic survey is encouraging, and further interpretation and processing of the data is required to locate specific drill targets.

The Omu project is at an early stage of investigation by GBR and in MA's opinion the initial outcrop and soil sampling provided the encouragement to undertake an IP survey over the prospect. The combination of geochemistry and geophysics provide sufficient detail to develop worthwhile drill targets at Omu.

9.2.2 Waki

The Waki prospects is at an early stage of investigation by GBR and in MA's opinion the initial results warrant more detailed follow-up investigation to determine the nature of the mineralisation. GBR intends to focus the next phase of exploration on the Waki prospect toward establishing the geological context of the intrusions and associated copper mineralisation seen in float and outcrop sampling. A gridded soil programme (100 m x 100 m grid) and ground magnetics over the same area will be undertaken in an attempt to define the extent of the mineralised zones.

9.2.3 Daru

The Daru prospects is at an early stage of investigation by GBR and in MA's opinion the initial results warrant more detailed follow-up investigation to determine the nature of the mineralisation. GBR intends to focus the next phase of exploration at the Daru prospect toward establishing the geological context of the intrusions and associated copper mineralisation evident in the soil grid. Mapping of the prospect is continuing. GBR have proposed a ground magnetic survey the prospect to better define controlling geologic structures within the prospect.

10 DRILLING

GBR has not completed any drilling on the property. Results of historic drilling are summarised in Section 6.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

GBR's sampling methodology and approach is dictated by both the nature of the exploration being undertaken (i.e. initial regional exploration and more detailed follow-up of identified targets and prospects) and the limitations imposed by both the topography and the thick vegetation that characterises the Keveri project area.

11.1 PROSPECT SCALE SAMPLING

GBR's prospect scale sampling typically involves a number of increasingly more detailed sampling methods. Initial sampling consists of composite grab sampling of available creek float. Early identification of outcrops in creeks and in conjunction with detailed mapping of lithologies, alteration and mineralisation are sampled as composite chip sample. Areas of interest are then further refined by a combination of ridge and spur soil sampling or in some cases (e.g. the Omu Creek prospect) grid soil sampling surveys.

11.2 SAMPLE HANDLING AND SHIPMENT

GBR samples are bagged into individually numbered calico bags and then consolidated into batches of 5-10 samples and placed into polyweave sacks that are sealed. Samples are either transported from site by helicopter either directly to Port Moresby or to the nearest road head (Moreguipa) and then by truck to Port Moresby. In Port Moresby the samples are stored in a locked container until they are air freighted by commercial carriers to laboratories in Townsville (Australia).

11.3 ASSAY LABORATORIES UTILISED BY PPM

GBR send all samples for assay to ALS-Chemex's ("ALS"), a commercial laboratory in Townsville, Australia for sample preparation and analysis. Samples are analysed with a 4 acid digest and ICP-MS Finish (ME-ICP61), Gold is determined by Fire Assay using a 50g charge (AuAA24) and Atomic Absorption spectrometry (AAS) finish.

12 DATA VERIFICATION

Data verification undertaken by MA included an independent review of open file reports submitted to the MRA by previous tenement holders as well as the previous Independent Technical Reports prepared by Goldner and Associates (Goldner, 2009).

Mr. Taylor, (AusIMM (CP)), of Mining Associates Pty Ltd visited the Keveri Property from 30th June to 3rd July, 2019 for the purpose of reviewing exploration results and independently sampling outcrop from the Keveri Property.

Mr. Taylor has also held discussions with GBR's Director, Mr. Alan Martin, and the Company's Senior Exploration Geologists, Mr. Leo Dagdag, and project geologists Mr. Eu Atse, Mr. Yaeti Gaegae and Mr. Richard Moore during MA's site visit to the project area in early June 2019.

The surface sample database (rockchip and soils) was reviewed. Known outcrop locations were checked in the field with GPS and compared to GBR database.

12.1 INDEPENDENT SAMPLES

Mr. Taylor collected four independent samples from outcrops in the Omu prospect that contained disseminated chalcopyrite. The independent samples consisted of rock chips collected by Mr. Taylor. The bagged and sealed samples were transported under supervision of Mr. Taylor to the TNT depot in Port Moresby. TNT provides an independent courier service. The samples were couriered to the ALS Global ("ALS") laboratory in Townsville, Queensland.

ALS is an independent lab that has developed and implemented a Quality Management System ("QMS") at each of its locations designed to ensure the production of consistently reliable data. The ALS quality program includes quality control steps through sample preparation and analysis, inter-laboratory test programs, and regular internal audits and takes into consideration the requirements of ISO/IEC 17025:2017 and ISO 9001:2015. ALS maintains ISO registrations and accreditations, which provide independent verification that a QMS is in operation at the location in question.

Sample descriptions and copper grade are summarised in Table 12-1. A full list of the multi-element suite is listed in Table 12-2

Table 12-1: Independent Samples Descriptions

Sample	Location	Description	Cu (ppm)
MA1	Didi Creek, Outcrop 698084 mN 8903369 mN	Diorite green-grey. Pervasive ser-chl-py-qtz alteration with MnOx-goethite oxidation. Sampled within strongly fractured zone.	181
MA2	Elvins Outcrop 697454 mE 8904050 mN	40 cm quartz vein dipping 70->240, slickensides moderately plunging SE. Hanging wall is fractured approximately 1m wide, chalcopyrite disseminations within chlorite altered micro-granodiorite.(Quartz vein not sampled)	2,370
MA3	Yengs Outcrop 696939 mE 8903484 mN	Bleached sericite altered minor weak chalcopyrite sooty chalcocite. A type veins minor gossanous textures within the outcrop.	10,035
MA4	Moly Ridge 697430 mN 8904224 mN	Micro-granodiorite haematite clays, Magnetite, Chalcopyrite and pyrite	6,230

Table 12-2: Independent Samples Full Multi-element results

Element	units	MA1	MA2	MA3	MA4
Au	ppm	<0.005	0.101	0.015	0.032
Ag	ppm	<0.5	1	4.6	2.5
Al	%	5.61	2.36	3.75	6.08
As	ppm	<5	<5	<5	<5
Ba	ppm	20	<10	<10	<10
Be	ppm	<0.5	<0.5	<0.5	<0.5
Bi	ppm	2	<2	3	4
Ca	%	4.62	0.86	1.91	0.07
Cd	ppm	<0.5	20.3	0.6	<0.5
Co	ppm	40	18	58	182
Cr	ppm	193	122	266	103
Cu	ppm	181	2370	>10000	6230
Fe	%	6.23	4.1	9.19	23.4
Ga	ppm	10	<10	10	20
K	%	0.12	0.01	0.01	0.02
La	ppm	10	<10	10	40
Mg	%	3.4	1.81	2.89	3.91
Mn	ppm	1405	962	748	1760
Mo	ppm	<1	3	6	1
Na	%	1	<0.01	0.05	<0.01
Ni	ppm	134	79	198	86
P	ppm	480	120	390	270
Pb	ppm	<2	<2	<2	<2
S	%	0.07	0.2	0.75	0.36
Sb	ppm	<5	<5	<5	5
Sc	ppm	26	9	12	25
Sr	ppm	203	43	97	5
Th	ppm	<20	<20	<20	<20
Ti	%	0.7	0.17	0.53	0.29
Tl	ppm	<10	<10	<10	<10
U	ppm	<10	<10	<10	<10
V	ppm	231	96	145	235
W	ppm	<10	<10	<10	50
Zn	ppm	114	2970	80	203

MA3 was re-assayed and returned 1.035% Copper. Sample MA2 and 16801 are from the same outcrop and copper results are as expected, MA2, 2370ppm Cu compared to 16801, 4732. There was sufficient visual chalcopyrite, malachite staining and quartz filled breccia, to suggest a reasonable visual grade estimate be up to 5000 ppm.

In MA's opinion, geological data collection and sampling is in line with industry best practice as defined in the Canadian Institute of Mining and Metallurgy and Petroleum (CIM) Exploration Best Practice Guidelines and the CIM Mineral Resource, Mineral Reserve Best Practice Guidelines.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

No mineral processing or metallurgical testing has been carried out on the Property.

14 MINERAL RESERVE ESTIMATES

There are no defined mineral resources within the Keveri Project Tenements that would conform to either the Canadian NI43-101 or Australian JORC codes.

15 ADJACENT PROPERTIES

GBR's Keveri project tenements, EL 2391 and 2560 are surrounded by an exploration licence held by Munga River Limited (EL2566) and to the south coastal area an exploration lease is held by Mayur Iron PNG Limited (EL 2556) covering the Amazon Bay Industrial sands project.

16 OTHER RELEVANT DATA AND INFORMATION

The author is not aware of any other relevant data and information.

17 INTERPRETATION AND CONCLUSIONS

Prior exploration within the Keveri project tenements (ELs 2391 and 2560) was largely of a reconnaissance nature and predominantly consisted of stream sediment and pan-concentrate sampling with float and outcrop rock chip sampling. Prior lease holders were focused on Nickel or PGE and Au mineralisation. Limited prior work considered copper-gold porphyry style mineralisation.

GBR has undertaken detailed geological mapping and float and outcrop sampling, identifying significant copper values (maximum rock chip sample 14% Cu). Gridded soil survey programmes over the two priority prospects (Omu and Daru) have identified significant copper anomalies. The Omu anomaly covers an area of 1.5 km x 0.6 km and outcrop sample results return values up to 14.05 % copper. The Daru soil anomaly covers 1 km x 0.3 km, and minimal rock chip samples or outcrop has been identified in the area to date.

At this stage MA concurs with GBR's assessment that the alteration and mineralisation identified in mapping at Omu, Waki and Daru may represent the higher levels of porphyry copper-gold systems.

The current exploration focus is on the three main prospects that have the potential to host Cu-Au porphyry style mineralisation:

- Omu - discovery of outcropping porphyry Cu-Au style mineralisation, mapping and soil sampling indicate that there is excellent potential for a large-tonnage deposit in this area. Results surface geochemical sampling programmes have focussed on Omu prospect where the tenor of soil geochemistry is significant and is signalling porphyry Cu-Au mineralisation over broad widths. GBR have recently completed a 3D IP survey over Omu that shows a zone of coincident higher resistivity and higher chargeability spatially related to altered rocks mapped at surface.
- Waki – mapping east of Waki Creek has identified an alteration halo which has the characteristics of a porphyry system, field activities are planned to link Waki Creek alteration to the deep magnetic anomaly to the west via regional soil sampling and detailed field mapping.
- Daru – early stage exploration identified strongly mineralised rock chip samples that are consistent with the diorite intrusives identified at Omu Prospect.

In MA's opinion the Omu prospect is a high priority target warranting considerable additional investigation. MA concurs with GBR's proposal for initial drill testing of specific targets following completion of the IP survey.

18 RECOMMENDATIONS

In the Author's opinion both the Omu, and Araboro-Daru prospects represent high priority targets warranting additional geophysical work to facilitate definition of drill targets. Waki is an early stage prospect; results to date warrant follow-up with soil and ground magnetic surveys.

In addition to these three prospects there are several float and outcrop copper anomalies, including but not limited to those in Yokai Creek, Urua Creek, Nonia and Oiso that require further investigation.

A three month field program for Keveri Project licences EL 2391 and 2560 should be structured towards the following:

Prospect	Work Programme	Budget (CAD)
Omu	Processing and interpretation of IP survey & ground magnetic results collected in June 2019, processing of additional geological mapping and compilation of all additional rock and soil sampling data to enable definition of drill targets	$ 50,000
Daru	Ground magnetic survey, plus analysis of all technical information to define drill targets.	$ 15,000
Waki	Completion of detailed geologic mapping, completion of soil geochemical survey (sampling a 100 m x 100 m grid). A ground magnetic survey over the same grid or more extensive. Compilation of all technical data to enable definition of drill targets,	$ 115,000
Logistical Support	Including helicopter transport, Camp Accommodation & Wages for consultants and Casual Labour, for the year allow	$ 120,000
Total Budget (Approximately)		$ 300,000

For and on behalf of Mining Associates Limited

Ian Taylor BSc (Hons)

Qualified Person

Effective Date: 25/07/2019

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20 DATE AND SIGNATURE PAGE

This report titled “INDEPENDENT TECHNICAL REPORT ON THE KEVERI PROPERTY, PAPUA NEW GUINEA” and dated 1 August 2019 was prepared and signed by the following author:

Dated at Brisbane, Qld

1 August 2019

Ian Taylor

BSc (Hons), MAusIMM(CP)

Qualified Person

CERTIFICATE: IAN TAYLOR

I, Ian Taylor hereby certify that:

a) I am an independent Consulting Geologist employed by Mining Associates Ltd, with its office at L6/445 Upper Edward Street, Spring Hill, QLD, Australia.
b) This certificate applies to the Technical Report entitled: "INDEPENDENT TECHNICAL REPORT ON THE KEVERI PROPERTY, PAPUA NEW GUINEA" dated 1 July 2019 of which the author and responsible person. I am a Qualified Person as defined in National Instrument 43-101 ("NI 43-101").
c) I graduated from James Cook University in 1993 with a BSc (Hons) in Geology and in 2014 was awarded a Graduate Certificate in Geostatistics from Edith Cowan University. I am a member of the Australasian Institute of Geoscientists, and a Certified Professional Geologist in the Australian Institute of Mining and Metallurgy. I have over 20 years' experience in the minerals industry and have had diverse experience in Papua New Guinea and international mineral exploration and project assessments.
    i. I have specialist experience in gold, copper silver, and base metals in a wide range of geological environments.
    ii. My experience includes exploration, resource estimation and due diligence studies
    iii. I have worked more recently as a consulting geologist, and have consulted primarily in relation to gold and base metal exploration (epithermal gold systems), copper and gold (porphyry) on projects across Australia and Asia.
d) I visited the Keveri Property in June 2019
e) I am responsible for all section of this Technical Report.
f) I am independent of the issuer (Golden Birch Resources) as described in Section 1.5 of NI 43-101. I have no direct or indirect interest in the Property that is the subject of this report. I do not hold, directly or indirectly, any shares in Golden Birch Resources or other companies with interests in the Keveri Property.
g) I have not had prior involvement with the Property that is the subject of the Technical Report.
h) I have read the Rule and this report is prepared in compliance with its provisions. I have read the definition of "qualified person" set out in NI 43-101 and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirement to be a "qualified person" for the purposes of NI 43-101.
i) At the effective date of the technical report, to the best of my knowledge, information and belief, the report contains all scientific and technical information that is required to be disclosed in order to make this report not misleading.

Dated at Brisbane this 1st of August 2019.

"*Ian Taylor*"

Ian Taylor BSc (Hons), MAIG, MAusIMM (CP)

Qualified Person

GLOSSARY OF TECHNICAL TERMS

This glossary comprises a general list of common technical terms that are typically used by geologists. The list has been edited to conform in general to actual usage in the body of this report. All units are metric units (SI units), except pounds (lb) and ounces (oz). However, the inclusion of a technical term in this glossary does not necessarily mean that it appears in the body of this report, and no imputation should be drawn. Investors should refer to more comprehensive dictionaries of geology in printed form or available in the internet for a complete glossary.

"Au"	chemical symbol for gold
"bulk density"	The dry in-situ tonnage factor used to convert volumes to tonnage. Bulk density testwork is carried out on site and is relatively comprehensive, although samples of the more friable and broken portions of the mineralized zones are often unable to be measured with any degree of confidence, therefore caution is used when using the data.
"cut-off grade"	The lowest grade value that is included in a resource statement. Must comply with JORC requirement 19 "*reasonable prospects for eventual economic extraction*" the lowest grade, or quality, of mineralized material that qualifies as economically mineable and available in a given deposit. May be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product specification.
"diamond drilling, diamond core"	Rotary drilling technique using diamond set or impregnated bits, to cut a solid, continuous core sample of the rock. The core sample is retrieved to the surface, in a core barrel, by a wireline.
"down-hole survey"	Drillhole deviation as surveyed down-hole by using a conventional single-shot camera and readings taken at regular depth intervals, usually every 50 metres.
"drill-hole database"	The drilling, surveying, geological and analyses database is produced by qualified personnel and is compiled, validated and maintained in digital and hardcopy formats..
"g/t"	grams per tonne, equivalent to parts per million
"g/t Au"	grams of gold per tonne
"gold assay"	Gold analysis is carried out by an independent ISO17025 accredited laboratory by classical 'Screen Fire Assay' technique that involves sieving a 900-1,000 gram sample to 200 mesh (~75microns). The entire oversize and duplicate undersize fractions are fire assayed and the weighted average gold grade calculated. This is one of the most appropriate methods for determining gold content if there is a 'coarse gold' component to the mineralization.
"lb"	Avoirdupois pound (= 453.59237 grams). Mlb = million avoirdupois pounds
"micron (μ)"	Unit of length (= one thousandth of a millimetre or one millionth of a metre).
"Mineral Resource"	A concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence,

	into Inferred, Indicated and Measured categories when reporting under JORC.
“oz”	Troy ounce (= 31.103477 grams). Moz = million troy ounces
“QA/QC”	Quality Assurance/Quality Control. The procedures for sample collection, analysis and storage. Drill samples are despatched to ‘certified’ independent analytical laboratories for analyses. Blanks, Duplicates and Certified Reference Material samples should be included with each batch of drill samples as part of the Company’s QA/QC program.
“RC drilling”	Reverse Circulation drilling. A method of rotary drilling in which the sample is returned to the surface, using compressed air, inside the inner-tube of the drill-rod. A face-sampling hammer is used to penetrate the rock and provide crushed and pulverised sample to the surface without contamination.
“survey”	Comprehensive surveying of drillhole positions, topography, and other cadastral features is carried out by the Company’s surveyors using ‘total station’ instruments and independently verified on a regular basis. Locations are stored in both local drill grid and UTM coordinates.
“t”	Tonne (= 1 million grams)