

28 August 2017

# Drilling confirms further mineralisation at Star Mountains

Highlands Pacific Ltd (ASX:HIG) has received further evidence of extensive mineralisation at the Star Mountains project in PNG, with recent assay results confirming long high grade copper intercepts.

Final assay results from the third hole drilled at the Fune prospect have been received, identifying significant mineralised zones at depth, including the following intercepts at 0.1% Cu cut off:

- 50.0m @ 0.32% Cu, 0.09g/t Au, **from surface**, including:
  - 8.0m @ 0.63% Cu, 0.33g/t Au, from surface
- 67.0m @ 0.41% Cu, 0.13g/t Au, from 82m, including:
  - 8.9m @ 0.87% Cu, 0.28g/t Au, from 114m
  - 10.0m @ 0.87% Cu, 0.30g/t, from 137m
- 158m @ 0.45% Cu, 0.13g/t Au, from 198m, including:
  - 6.4m @ 1.12% Cu, 0.28g/t Au, from 198m
  - 2.0m @ 0.57% Cu, 0.28g/t Au, from 208m
  - 2.0m @ 0.65% Cu, 0.07g/t Au, from 278m
  - 6.0m @ 1.09% Cu, 0.20g/t Au, from 234m
  - 42.0m @ 0.87% Cu, 0.31g/t Au, from 308m

The fourth hole drilled at Fune, to investigate a conductive anomaly identified through geophysics and airborne surveys, was completed on August 2, reaching 907.8 metres. Core logging revealed skarn and porphyry mineralisation between 136 metres and 390 metres. Assay results for the hole are expected in September.

Drilling will now resume at the Olgal prospect to the south east of previous drilling, where a number of holes were drilled in the 2015 campaign, revealing extended zones of mineralisation. A drill pad is now being prepared for hole 21 at Olgal, which is to be drilled to 600 metres, targeting a potential skarn zone. This is expected to be the final hole in the current campaign.

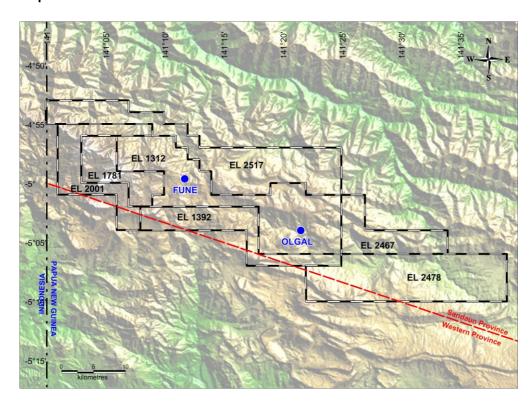
Highlands CEO Craig Lennon said the latest results provided further information to enhance understanding of the Star Mountains geology.

"These are great results, again confirming wide mineralised zones. This drilling information continues to support our expectation that there is potential for a large copper porphyry system at the Star Mountains that could support a significant mining operation. Each piece of drilling data helps us to understand the geology and allows us to refine our exploration efforts," he said.

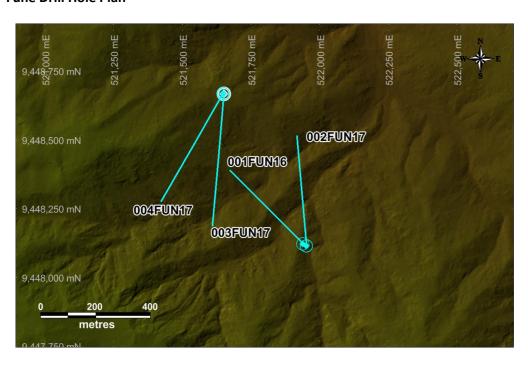
Highlands and Anglo American commenced the current exploration drilling program in October 2016. Six holes have now been drilled and completed for a total of 5,182.6 metres.



### **Prospect Locations**

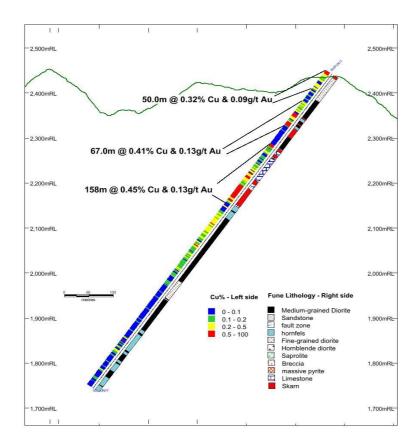


## **Fune Drill Hole Plan**





#### **Fune section view**



The drilling campaign is being funded by Anglo American, in accordance with the farm-in agreement announced in 2015.

The Star Mountains joint venture was finalised on the following terms:

- **US\$10 million initial payment** Anglo American paid Highlands US\$10 million in two tranches of US\$5 million each.
- Phase 1 (51% interest) Anglo American will initially acquire a 51% interest in the Joint Venture with 15% vesting upon a farm-in spend of US\$25m over four years (completed) and 36% vesting upon the declaration of a 43-101/JORC compliant Inferred Resource of 3 million tonnes of contained copper equivalent within 5 years of execution.
- Phase 2 (80% interest) Anglo American can move to an 80% interest in the Joint Venture by completing a Bankable Feasibility Study within 15 years of the execution of the Farm-in and Joint Venture Agreements.
- Development Free Carry Anglo American will provide Highlands with up to US\$150 million in project development funding as a deferred free carry following the completion of the BFS. Anglo American will recover this US\$150 million from a portion of Highland's share of project cashflows once in production.
- Management Anglo American has assumed management of the project having achieved required spending of US\$25 million.

For further information, please contact: Joe Dowling,

Stockwork Corporate Communications, 0421 587755



#### **About the Star Mountains Exploration Tenements:**

The 100% Highlands owned Star Mountains exploration tenements, which include Nong River EL1312, Mt Scorpion EL1781, Munbil EL2001, Tifalmin EL1392 and Mt Abemh EL2467, cover 675 sq kms and are located approximately 20km north east of the Ok Tedi mine and 25kms from the support town of Tabubil, in the West Sepik Province of PNG.

#### **About Anglo American:**

Anglo American is a globally diversified mining business. Its portfolio of world-class competitive mining operations and undeveloped resources provides the raw materials to meet the growing consumer-driven demands of the world's developed and maturing economies. Anglo's people are at the heart of its business. Its people use the latest technologies to find new resources, plan and build its mines and mine, process, move and market its products – from diamonds (through De Beers) to platinum and other precious metals and copper – to its customers around the world. As a responsible miner, Anglo American is the custodian of those precious resources. It works together with its key partners and stakeholders to unlock the long-term value that those resources represent for its shareholders, but also for the communities and countries in which it operates – creating sustainable value and making a real difference.

Competent Persons Statement: Details contained in this report that pertain to exploration results and exploration targets are based upon, and fairly represent, information and supporting documentation compiled by Mr LD Queen, a member of the Australasian Institute of Mining and Metallurgy, and who is a contractor for Highlands Pacific. Mr Queen has sufficient experience relevant to the style of mineralisation and the type of deposit under consideration, and to the activity which he is undertaking, to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Queen consents to the inclusion in the report of the matters based on the information compiled by him in the form and context in which it appears. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.





ASX Code: HIG PoMSox Code: HIG

Shares on Issue: 936 million Performance Rights: 17 million

#### **Directors**

Ron Douglas, Chairman Craig Lennon, MD/CEO Dan Wood Bart Philemon John Wylie

#### Management

Sylvie Moser, CFO Ron Gawi, GM Port Moresby Leslie Nand, GM Exploration Projects

#### **Investor and Media Enquiries to:**

Joe Dowling Stockwork Corporate 0421 587755

Website:

www.highlandspacific.com

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

Highlands Pacific is a PNG incorporated and registered mining and exploration company listed on the ASX and POMSoX exchanges. Its major assets are interests in the producing Ramu nickel cobalt mine and the Frieda River copper gold project; with exploration in progress in the Star Mountains. Highlands also has exploration tenements at on Normanby Island (Sewa Bay).

#### **Star Mountains Prospects**

The Star Mountains exploration tenements are located approximately 20km north of the Ok Tedi mine, in the West Sepik Province, PNG. They lie within the highly prospective New Guinean Orogenic Belt, which hosts the Grasberg, Ok Tedi, Porgera and Hidden Valley mines, as well as the Frieda deposit. The Star Mountains project is held within a joint venture with partner Anglo American plc.

#### Ramu Nickel Cobalt Mine

The producing Ramu nickel cobalt mine is located 75km west of the provincial capital of Madang, PNG. Highlands 8.56% interest in Ramu will increase to 11.3% at no cost to Highlands after repayment of its share of the project debt. Highlands also has an option to acquire an additional 9.25% interest in Ramu at fair market value, which could increase the company's interest in the mine to 20.55%, if the option is exercised.

#### Frieda River Copper/Gold Project

The Frieda River copper gold project is located 175kms north-west of the Porgera gold mine and 75km north-east of the Ok Tedi mine. Highlands has a 20% interest in the project and Frieda River Limited (a wholly owned subsidiary of PanAust Limited which in turn is a wholly owned subsidiary of Guangdong Rising Assets Management Co. Ltd.) has 80%.

# **JORC Code, 2012 Edition – Table 1 report template**

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Sampling reported for the Star Mountains is for ½ PQ, HQ or NQ diameter diamond drill core</li> <li>Holes were generally steeply dipping (&gt;60°)</li> <li>Hole azimuths were generally planned to perpendicularly intercept any known or inferred structural trends.</li> <li>Sampling was done on sawn half core.</li> <li>Consistency of sampling method was maintained by reference to a written protocol</li> <li>Sampling method is considered appropriate for both porphyry and skarn mineralization</li> </ul>
Drilling techniques	<ul> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul> <li>All holes drilled by Highlands Pacific are triple tube diamond core.</li> <li>Holes were collared in PQ and reduced to HQ and NQ as required.</li> <li>The core was un-oriented.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>Recoveries recorded on a drill run and sample length basis</li> <li>There were some zones of poor recovery in near surface leached and oxidized zones and in intensely altered shear zones</li> <li>Recovery is good. Most holes average better than 90% recovery in the mineralized zones.</li> <li>No evidence of grade bias with recovery</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or</li> </ul>	<ul> <li>All holes were geologically and geotechnically logged to a detail and standard appropriate for mineral resource estimation.</li> <li>The logs are qualitative/semi-quantitative and record lithology, alteration, mineralogy, mineralization, weathering, strength, fracture numbers and orientation and other relevant features of the core. All</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul><li>costean, channel, etc) photography.</li><li>The total length and percentage of the relevant intersections logged.</li></ul>	<ul><li>the core is photographed before it is sampled</li><li>All core recovered is logged.</li></ul>
Sub- sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Samples are taken by cutting the core in half using a diamond saw.</li> <li>No non-core samples were taken.</li> <li>Except at strong boundaries, are taken on a consistent 2m interval down hole.</li> <li>Sampling protocol is documented with a flow sheet.</li> <li>Half core samples bagged and dispatched to ALS Townsville for crushing, grinding and assay.</li> <li>All sample methods and sample sizes are deemed to be appropriate and are similar to the sampling protocol used at Frieda River.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>All drill core samples were assayed using a HF-HNO3-HClO4 acid digest with HCl leach and ICP-AES finish.</li> <li>Gold assay by 50 gram fire assay</li> <li>Assaying carried out by ALS Townsville, an accredited lab.</li> <li>Extensive QAQC programme with standards, blanks, laboratory duplicates &amp; secondary lab checks. Outcomes indicate acceptable precision and no obvious biases</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>Significant intersections have been verified by the Competent Person and the Star Mountains Project geologists</li> <li>There have been no twinned holes</li> <li>Highlands Pacific has a series of written protocols relating to sampling, logging, data entry, data checking and data storage</li> <li>There have been no adjustments to the assay data.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Drill hole collars are located by GPS. Elevations were extracted from a LiDAR DEM that Highlands had prepared over the prospect areas. Expected accuracy is +/- 5 m for northing and easting and +/- 5 m for elevation coordinates</li> <li>AMG66, Zone 54</li> <li>Topographic control is from a LiDAR survey flown over the area in</li> </ul>

Criteria	JORC Code explanation	Commentary			
		2010. A 2 m grid was prepared from the LiDAR.			
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Drill holes in the Olgal deposit are spaced on roughly 300 x 300m centers. Other prospects have only been scout drilled with two to three holes.</li> <li>Downhole sampling is generally 2m</li> <li>Compositing has only been applied for reporting purposes as detailed in Section 2</li> </ul>			
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>The deposits being investigated in the Star Mountains are Cu-Au porphyries. The mineralization appears to be stockworks with no dominant structural direction.</li> <li>Drilling orientation is believed appropriate with no bias. Where structural control is suggested either by mapping or geophysical trends the drill hole are oriented to perpendicular to the structures.</li> </ul>			
Sample security	The measures taken to ensure sample security.	<ul> <li>Chain of custody is managed by Highlands Pacific. Samples are collected and stored on site by Highlands Pacific personnel. Half core samples are shipped directly to ALS Townsville by freight courier. Tracking sheets have been set up to track the progress of sample batches.</li> </ul>			
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have been carried out at this stage.			

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>The results reported for the Star Mountains fall under the four Exploration Licenses (EL 1312, 1392, 1781, 2001) that Highlands Pacific holds in the Star Mountains, Sanduan and Western Provinces, Papua New Guinea. The licenses issued under the authority of the PNG Mining Act (1992)</li> <li>The Star Mountains tenements are subject to the terms of a Joint Venture with Anglo American. The terms of the Joint Venture are detailed in an announcement released 11 February 2015 and available on the Highlands Pacific website.</li> </ul>

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Porphyry copper and gold mineralization was discovered in the area in late 1960s by Kennecott. In 1971 Kennecott drill five holes in the Futik and Olgal prospects. Between then and 2001 when Highlands acquired the ground a number of companies including BHP, CRA, Newcrest and OTML carried out mapping and sampling programs focused mainly on the previously identified prospects. The work by these companies is considered reliable and has been used to guide Highlands Pacific's work.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The mineralization so far identified in the Star Mountains consists of Cu-Au porphyries (Olgal, Futik, Rattatat, Kum Kom) and associated Cu-Au skarns (Kum Kom).</li> </ul>
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	Refer to Annexure 1 in body of text
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>All reported assays have been length weighted. No top-cuts have been applied. A nominal 0.1% Cu lower cut-off is reported as significant in the context of geological setting.</li> <li>High grade copper internals (&gt;0.5% Cu) to broader zones of copper mineralization are reported as included intervals.</li> <li>Reported intervals may include up to 6m meters of internal waste.</li> <li>No metal equivalent values are used for reporting exploration results.</li> </ul>
Relationship between mineralisati on widths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> </ul>	The geometry of the mineralization is not known. All reported lengths are down hole lengths. True widths are unknown.

Criteria	JORC Code explanation	Commentary
and intercept lengths	<ul> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	Refer to Figures in the report
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul> <li>All results are reported at a 0.1% Cu cut-off. No top cut has been applied.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>Since 2001 in addition to the diamond core drilling, the following work has been under taken on the Star Mountains tenements:</li> <li>Prospect scale mapping and surface sampling at Olgal, Futik, Kum Kom, Nong River and Bumtim</li> <li>In 2005, a 200m line spacing heli-borne magnetic/radiometric survey</li> <li>In 2010 and 2015, LiDAR surveys to cover all of the Star Mountains tenements</li> <li>In 2015, a 100m line spacing heli-borne magnetic/radiometric survey</li> <li>In 2015, IP and AMT surveys orientation surveys over Olgal and Kum Kom</li> <li>In 2015, prospect scale mapping over Tifalmin prospects</li> <li>In 2016 a helicopter borne ZTEM survey was flown over ELs 1312, 1392, 1781 and 2001</li> <li>In 2017 a ground AMT survey over Olgal, Futik, Fune, Unfin, Bumtim and Tuk</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Highlands is currently carrying out exploration drilling on the Fune prospect.</li> <li>AMT surveys are currently being carried out over Unfin, Tuk and Bumtim and Fune</li> </ul>



Hole	North	East	Level	Azimuth	Dip	Total Depth (m)
003FUN17	9448674	521653	2442	185	-55	851.1
004FUN17	9448670	521650	2442	210	-55	907.8

#### Notes:

The following statements apply to the Star Mountain exploration results:

- Mineralised intersections are quoted as down hole widths; true widths are not known. The porphyry mineralisation occurs as disseminations and vein stockworks. Quoted intercepts may include up to 6 m of internal waste.
- > Collar locations are in UTM Zone 54 co-ordinates using the AMG66 horizontal datum.
- > Drill core is PQ, HQ or NQ size.
- Assays were carried out on half sawn core. The unused half core is stored on site.
- > Samples were analysed at ALS-Chemex in Townsville. Gold is by 50g fire assay and copper by ICP-AES on an aqua regia digest. Samples assaying greater than 0.5% Cu are re-assayed using an ore grade method suitable for higher grade samples.
- ➤ Hole positions are based on GPS survey of drill pads. Actual collars are within 10m of stated locations.
- > Competent Persons Statement: The exploration results reported here are based on information compiled by Mr L.D. Queen who is a member of the Australian Institute of Mining and Metallurgy, and who is employed by Highlands Pacific Limited. Mr Queen has sufficient experience relevant to the style of mineralisation and the type of deposit under consideration, and to the activity which he is undertaking, to qualify as a Competent Person as defined in the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code 2012 Edition". He consents to the inclusion in the report of the matters based on the information compiled by him in the form and context in which it appears.



Hole	From	То	Downhole Interval (m)	Cu (%)	Au (ppm)	Core Recovery %
003FUN17 results down hole at a 0.1% Cu lower cut-off	0	50	50	0.32	0.09	79
de d'Olizzo du Tower due on	54	58	4	0.18	0.02	100
	64	68	4	0.16	0.03	100
	74	76	2	0.11	0.02	100
	82	149	67	0.41	0.13	100
	159	161	2	0.11	0.10	100
	198	356	158	0.45	0.13	96
	364.8	367.2	2.4	0.36	0.10	100
	378	555.5	177.5	0.21	0.05	99
	567.5	580	12.5	0.15	0.02	99
	596	598	2	0.16	0.04	100
	610	612	2	0.13	0.02	100
	642	644	2	0.13	0.02	100
	670	672	2	0.15	0.01	100
	678	680	2	0.12	0.02	100
	700.5	702	1.5	0.16	0.03	100
	720	770.2	50.2	0.16	0.04	99
	785	787	2	0.10	0.03	100
	798.5	800	1.5	0.16	0.02	93
	806	812	6	0.16	0.03	100
	827	838.8	11.8	0.10	0.01	100
Including the following						
intervals at a 0.5% Cu lower cut-off	0	8	8	0.63	0.33	51
cut ojj	114	122.9	8.9	0.87	0.28	100
	137	147	10	0.87	0.30	100
	198	204.4	6.4	1.12	0.28	75
	208	210	2	0.57	0.28	100
	278	278	2	0.65	0.07	100
	283.4	289.4	6	1.09	0.20	100
	326	350	42	0.87	0.31	99
	412	414	2	0.68	0.21	100
	470	472	2	0.57	0.07	100
	728	730	2	1.12	0.07	100