Pure Minerals Limited

26 October 2018

ASX Announcement

LEACH TESTS CONFIRM DNi PROCESS™ IS IDEALLY SUITED TO PROCESS NEW CALEDONIA Ni-Co ORE

- **QPM plans to utilise the DNi Process™ to extract nickel and cobalt from imported, high grade New Caledonian Ni-Co ore to produce nickel sulphate and cobalt sulphate for the emerging EV battery market**
- **Core Metallurgy Pty Ltd in Brisbane has completed an initial laboratory test program on representative ore samples from New Caledonia**
- **Extraction and leach time for nickel and cobalt exceeded target with over 95% extraction and better than four hours leach time**
- **Test program confirmed that the DNi Process™ is ideally suited to treating the New Caledonian ore types**
- **Pure Minerals has entered into a binding option agreement to acquire 100% of the issued capital of Queensland Pacific Metals Pty Ltd**

Pure Minerals Limited ("**PM1**" or the "**Company**") is pleased to announce that Queensland Pacific Metals Pty Ltd ("**QPM**"), the privately-owned entity which the Company recently secured an option to acquire (see PM1 announcement dated 15 October 2018), has successfully completed an initial laboratory test program to test the leach characteristics of a representative ore sample from New Caledonia.

The ore sample is representative of the ore which QPM plans to import to Australia for processing in Townsville under its binding ore supply agreement with Societe des Mines de la Tontouta and Societe Miniere Georges Montagnat S.A.R.L, two private New Caledonian entities.

QPM plans to use the DNi Process™, developed by Direct Nickel Projects Pty Limited, to process the New Caledonian ore. This processing technology utilises nitric acid under atmospheric pressure conditions to extract all valuable metals from a lateritic ore source.

The laboratory test program was conducted by Core Metallurgy Pty Ltd in Brisbane, Queensland and tested the leach characteristics of the ore samples provided by QPM's ore supply partners. The objective of the work programme was to:

1. Conduct nitric acid leach tests on representative sample to determine nickel, cobalt and other valuable co-product extraction (iron, magnesium, aluminium, scandium);

2. Test the level of extraction and time taken to extract for each of the metals; and

3. Complete sample characterisation work, including assaying for nickel, cobalt and other valuable co-products.

The results of the test-work exceeded expectations, achieving nickel and cobalt extraction of greater than 95% in well under four hours leach time. In addition, valuable co-products aluminium, iron, magnesium and scandium also achieved the same impressive results.

Element	Sample Head Grade %	Extraction %
Primary Products		
Nickel	1.70%	98.00%
Cobalt	0.15%	98.10%
Co-Products		
Aluminium	1.37%	95.40%
Iron	35.55%	96.10%
Magnesium	6.14%	95.30%
Scandium	40 ppm	97.30%

Table 1: Results of leach test-work conducted by Core Metallurgy Pty Ltd

The test-work demonstrates that utilising nitric acid under atmospheric conditions is highly effective at extracting nickel and cobalt, removing the need to apply high pressures used under the High Pressure Acid Leach (HPAL) process. The high level of extraction allows for greater metal recoveries in the processing plant and the short leach time flows onto the design of the leach circuit and can result in a reduction of the overall process plant capital cost.

Direct Nickel's Chief Technologist, Dr Fiona McCarthy commented,

"The Kinetic Leach tests completed by Core Metallurgical are very encouraging. Extraction levels are at the high end of the range of leach tests we have completed on laterites from around the world, and the leach times also appear particularly short."

The next step for QPM will be to conduct an extensive laboratory program to replicate all process steps in the DNi Process™ and this will be a followed by a continuous pilot plant program utilising the existing pilot plant located at CSIRO Minerals in Waterford, Western Australia.

Further information:

Jeremy King

Chairman

info@pureminerals.com.au

Luke Forrestal

Media & Capital Partners

luke.forrestal@mcpartners.com.au

+61 (0) 411 479 144

John Downie

Queensland Pacific Metals

jdownie@qpmmetals.com.au

+61 (0) 408 329 262

Competent Persons Statements

The information in this report that relates to the Processing and Metallurgy for the Queensland Pacific Metals project is based on and fairly represents information and supporting documentation compiled by Damian Connelly who is a Fellow (CP Met) of The Australasian Institute of Mining and Metallurgy and a full time employee of METS Engineering. Damian Connelly has sufficient experience relevant to the style of mineralisation and 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'. Damian Connelly consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Appendix A

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	• *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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *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.*	The leach sample is a grab sample sourced from a shipping stockpile by laterite supplier SMT in New Caledonia. The sample was packed into seven sealed plastic bags and totalled 27.13kg. The sample grade was requested by QPM to be indicative of the specification required under the terms outlined an ore supply MoU between QPM, SMT and SMGM. It did not need to be representative of any specific location and is not considered to be an insitu sample.

Criteria	JORC Code explanation	Commentary
Drilling techniques	• *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).*	No exploration drilling was undertaken.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	No exploration drilling was undertaken.
Logging	• *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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	No exploration drilling or logging was undertaken.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of*	No exploration drilling or logging was appropriate, required or undertaken. The sample was supplied to Core on 19/06/18 and was classified as being type SMT by QPM. It was received from the mine site as a moist, lumpy material ranging from extremely weathered rock to hard clay and silt consistency. Prior to delivery to Core, the sample was irradiated in accordance with Australian Quarantine requirements.

Criteria	JORC Code explanation	Commentary
	the in situ material collected, including for instance results for field duplicate/second-half sampling. • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	The sample was dried and stage-crushed to -2 mm to enable homogenisation by a rotary splitter and a representative sub-sample was collected and pulverised for test work. The sample size is considered appropriate for the test requirements.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *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.* • *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.*	The method used to assay solid and leach liquor samples is included in Core's NATA certifications SS-4AD-MEICP and LA-MEICP. No geophysical tools were used for assay purposes. Quality control and assay procedures covered by Core's NATA accreditation.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	No exploration drilling or sampling was undertaken.
Location of data points	• *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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	No exploration drilling was undertaken.

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	No exploration drilling was undertaken.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *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.*	No exploration drilling was undertaken.
Sample security	• *The measures taken to ensure sample security.*	The laterite sample was collected, secured and sent in closed plastic bags via either a registered transport company, or were hand delivered directly to the laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	No external audits have been completed.

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	• *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.* • *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.*	Not Applicable Sample was sourced from third party supplier SMT in New Caledonia.

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Not Applicable
Geology	• *Deposit type, geological setting and style of mineralisation.*	Not Applicable
Drill hole Information	• *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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *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.*	No exploration drilling or sampling was undertaken.
Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	No exploration drilling or sampling was undertaken. Metal equivalents were not used or reported.
Relationship between mineralisation	• *These relationships are particularly important in the reporting of Exploration Results.*	No exploration drilling was completed.

Criteria	JORC Code explanation	Commentary
widths and intercept lengths	• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	
Diagrams	• *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.*	No exploration drilling was completed
Balanced reporting	• *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.*	No exploration results have been reported sampling was carried out on insitu laterite.
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.*	Exploration drilling was not carried out.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	No drilling or exploration work is planned.