



## Pathway to Zero Solids Waste for the TECH Project

### Highlights

- ✓ QPM has made significant advancements in reaching its stated goal of having zero solids waste at the TECH Project as a result of positive testwork and discussions with regulators.
- ✓ The combination of zero solids waste and negative carbon credentials would be a feat that is unheard of in the resources sector and position QPM and the TECH Project as a global leader in ESG credentials.
- ✓ Preliminary testwork undertaken by James Cook University ("JCU") has indicated that the residue would be suitable for use as engineered fill and has strong potential to meet regulatory guidelines.
- ✓ Positive discussions held with the Queensland Department of Environment and Science ("DES") regarding the approvals process to operate under a Queensland Government End of Waste Code ("EOW Code"), whereby residue would be recognised as a resource rather than a waste stream.

Queensland Pacific Metals Ltd (ASX:QPM) ("QPM" or "the Company") is pleased to announce that significant progress has been made on QPM's ability to utilise residue from the TECH Project in commercial application as engineered fill.

In the TECH Project, all valuable metals will be leached into solution and then recovered and refined into saleable products. The remnant residue is only ~25% of the dry ore feed and it is typically comprised of silicates including quartz sand. The ability to utilise this residue as an engineered fill would mean that 100% of the ore processed by the TECH Project reports to a commercial application, effectively positioning the TECH Project as zero solids waste. Such a feat would be an industry first in the resources sector, particularly in nickel laterite processing which typically requires large tailings dams that leave significant environmental footprint. Such tailings dams usually have to hold more than 1.2 tonnes of tailings per tonne of feed ore.

### James Cook University Residue Testwork

Residue from the TECH Project is neutralised, filtered prior to storage or alternative use. QPM is working with JCU to undertake testwork on the TECH Project residue. The testwork conducted had two main areas of focus:

- Mixing varying levels of simple binding agents with the residue and testing structural properties to determine suitability as engineered fill; and
- Undertaking leaching chemical content tests of the residue to ensure it met regulatory guidelines.

From JCU's testwork, it has been determined that, with a simple binder, the residue from the TECH Project demonstrated the requisite structural properties and can be used as engineered fill.

The chemical leaching tests undertaken by JCU involved:

- Toxicity Characteristic Leaching Procedure ("TCLP");
- Inductively coupled plasma mass spectrometry ("ICP-MS"); and

- X-Ray powder diffraction.

This testwork demonstrated that under the Townsville City Council (TCC) guidelines, QPM comfortably met the threshold for all elements of potential concern except nickel. QPM and JCU are confident that nickel levels will also be reduced to below the threshold with additional washing.

Metal	TCC guideline (ppm)	Result (ppm)
Antimony	5.0	< 0.1
Arsenic	5.0	< 0.1
Barium	100.0	< 0.1
Boron		< 0.1
Cadmium	0.5	< 0.1
Chromium	5.0	0.3
Cobalt	5.0	2.8
Copper	100.0	< 0.1
Lead	5.0	< 0.1
Nickel	5.0	9.37
Mercury	0.1	0.0001
Molybdenum	1.0	< 0.1
Selenium	1.0	< 0.05
Silver	5.0	< 0.1
Tin	3.0	< 0.1
Titanium		< 0.1
Vanadium	5.0	< 0.1
Zinc	500.0	0.1

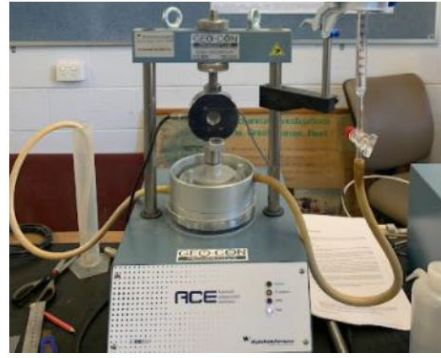
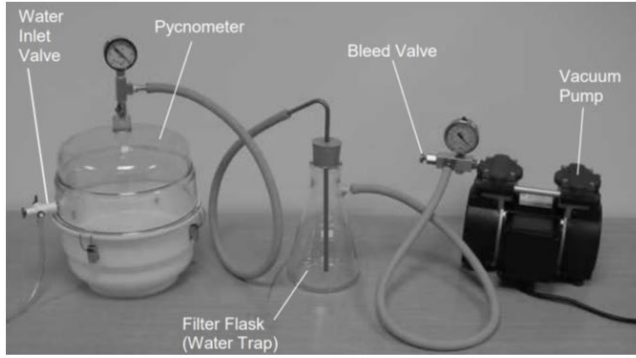
## End of Waste Code Approval

QPM recently held a pre-lodgement meeting with the Queensland Department of Environment and Science to discuss the JCU test work, potential commercial applications, and the next steps required to finalise an End of Waste Code. An EOW Code allows a previously characterised waste stream (e.g. the residue) to be re-classified as a resource (e.g. engineered fill).

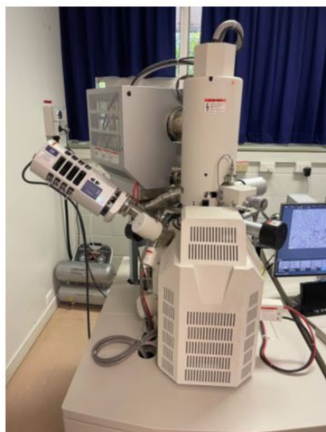
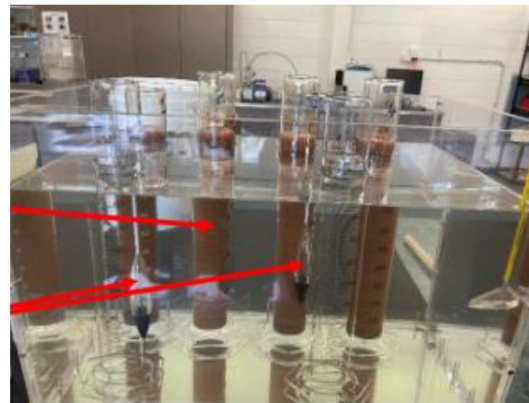
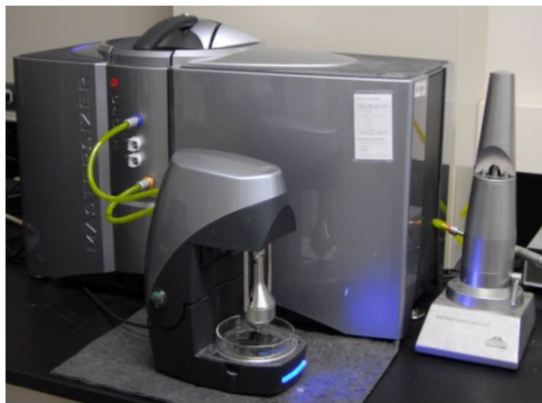
Typically, as part of an EOW Code approval, a large scale field trial is required to use a waste stream in a commercial application prior to final approval being granted. However, given the positive results from JCU's testwork and the planned future work program, DES indicated that QPM probably will not be required to undertake a field trial as part of the approval process. This would eliminate a hurdle and fast track QPM's ability to obtain the EOW Code approval and to immediately utilise the residue in commercial applications.

The next step for QPM and JCU will be to undertake further geotechnical testwork on the residue and also environmental leaching testwork to confirm compliance with regulations. QPM will also start the approvals process to obtain the EOW Code. There are no statutory timeframes tied to developing an EOW Code; however, it is expected that the code will be finalised during the construction phase, pending confirmation of assessment requirements by DES.

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JCU Structural Tetswork – Clockwise: Specific gravity test, computerised consolidation test, oven density test, cone penetration test, linear shrinkage test



JCU Structural Tetswork – Clockwise: Laser particle size test, hydrometer test, linear shrinkage test, scanning electron microscope test

## Initial Commercial Application of Residue

Encouraging discussions have occurred between QPM and the Office of Coordinator-General, one of the owners of the Townsville State Development Area ("TSDA"), for using this engineered fill at the TSDA. One of the major benefits of the TSDA is that the location is directly on the backloaded route from the TECH site to the Port of Townsville. QPM will continue to advance these discussions and is working closely with the Office of Coordinator-General as a Queensland Prescribed Project.

Managing Director and CEO Stephen Grocott commented,

“Potential offtakers and financiers have been forthright in their communications to QPM regarding the importance of ESG credentials when evaluating battery metal projects. They are already delighted that QPM are already world-leading through our zero process liquid discharge, very small residue proportion and negative greenhouse gas intensity. However, we are now going even further than this to stamp the the TECH Project as a global benchmark. Achieving zero solids waste lifts the ESG bar to a level not even under consideration in the battery material sector. Having been in the resources industry for over four decades, it is refreshing to see mindsets of organisations and people change to ensure the environmental impact is not just minimised but turned into greater environmental value. I am excited at the potential to make the TECH Project the first zero solids waste project in the world and to exceed the expectations of the companies who will be purchasing our products.”

**This announcement has been authorised for release by Stephen Grocott.**



QUEENSLAND  
PACIFIC METALS

ASX: QPM | ACN:125 368 658

For Further Info: P: +61 7 3517 5900 | E: info@qpmetals.com.au | W: www.qpmetals.com.au

Contact: Dr Stephen Grocott, MD & CEO | Address: Level 17, 307 Queens St, Brisbane Q 4000

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