



## **TECH Project Update**

### Highlights

- **Pilot plant activities progressing as planned at ALS Global**
- **Hatch appointed to QPM owner's team for pilot plant trials**
- **Iron collaboration with Sun Metals delivers successful agglomeration work undertaken on haematite by-product**
- **MOU signed with James Cook University in Townsville for joint research program focussing on transforming the TECH Project into a zero solids waste operation**

Pure Minerals Limited (ASX:PM1) ("**PM1**" or "**the Company**") is pleased to provide an update on activities for its wholly owned subsidiary Queensland Pacific Metals Pty Ltd ("**QPM**") and the TECH Project.

### Pilot Plant Activities

Pilot plant work at ALS Global is progressing well and the schedule remains on track. The final pilot plant flowsheet details have been agreed and assembly is underway.

A pilot plant project management team has been formed, consisting of representatives from ALS Global, CSIRO, Direct Nickel and QPM. The team holds weekly meetings and monitors progress.

The bulk ore sample from QPM's partners mines in New Caledonia has been prepared and is ready for nickel/cobalt production in the pilot plant. Reagents required for the operation including acid, magnesia and flocculant have also been ordered.

In parallel with the activity undertaken at ALS Global, QPM has started to assemble an owner's team to supervise and manage the operation of the pilot plant. As part of the owner's team, QPM has engaged Hatch. The owner's team will ensure the pilot plant meets Bankable Feasibility Study standards.

Hatch is an internationally renowned engineering company with extensive experience in nickel and cobalt and familiarity with the Direct Nickel process. The involvement of Hatch is a stepping stone to commencing a Bankable Feasibility Study undertaken with them or other partners. The owner's team, augmented with Hatch's experience and knowledge will add credibility to the pilot plant operation, particularly with potential offtakers and financiers of the TECH Project.



*Figure 1: Pilot plant activities at ALS Global, Hydrometallurgy Centre of Excellence, Balcatta, WA*

### Iron (haematite) by-product Collaboration with Sun Metals

Collaboration works on a joint iron product with Sun Metals, a wholly owned subsidiary of Korea Zinc (refer to ASX announcement 27 July 2020), have delivered early encouraging results.

QPM and Sun Metals appointed Drytech International Holdings ("**Drytech**") to carry out preliminary agglomeration trials on iron samples. Initial trials have demonstrated successful agglomeration of the iron fines into pellets (See Figure 2).

The agglomeration converts the iron fines into saleable product with the target market being blast furnace feed for steel making.



*Figure 2: Successful agglomeration of by-product iron ore fines at Drytech*



## MOU with James Cook University, Townsville

QPM has entered into a Memorandum of Understanding (“**MOU**”) with James Cook University, Townsville (“**JCU Townsville**”) regarding joint studies for the TECH Project. The initial focus of the research program relates to the leach residue produced from the TECH Project.

A sustainability advantage of the TECH project is that the remaining inert residue is only ~20% of the feed ore. This compares with high pressure acid leach (“**HPAL**”), which produces a greater mass of waste than its feed ore (~120%).

Another advantage of the TECH Project is that this benign residue can be dry-stacked. This eliminates the need for risky tailings dams associated with HPAL operations and which are expensive to build and maintain. One HPAL operation practices ocean disposal of tailings and others are contemplating this.

The initial focus of the research program with JCU Townsville is on the characterisation of this residue and the potential to convert it to commercial applications. These include engineered land fill and non-structural construction material applications such as blocks, pavers and cement feed.

If the TECH Project was able to redirect its small amount of inert residue to commercial application, it would deliver an additional revenue stream. More importantly though, the TECH Project would effectively become the world’s first “zero-waste” nickel/cobalt production facility. This step-change would be attractive to the end users of battery chemicals, international conglomerates who are focussed on ensuring that their raw materials are responsibly sourced, both from an environmental and social perspective.

***This announcement has been authorised for release by the Board.***

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