



**ASX RELEASE**  
31 October 2019

## Quarterly Activities Report- September 2019

### Highlights

- **Progression of Townsville Energy Chemicals Hub (TECH) Project Prefeasibility Study**
- **Secured conditional commitment from Townsville City Council for land to construct TECH**
- **Secured significant extension to ore supply terms with New Caledonian partners**
- **Completed share placement raising \$2.1 million**

Pure Minerals Limited (ASX:PM1) ("**PM1**" or "the **Company**") is pleased to provide the following update on its activities for the three-month period ending 30<sup>th</sup> September 2019.

During the quarter, PM1's wholly owned subsidiary, Queensland Pacific Metals Pty Ltd ("QPM") continued to advance the Townsville Energy Chemicals Hub Project ("TECH" or the "Project"). The TECH Project is envisaged as a modern refinery producing nickel sulphate and cobalt sulphate for the rapidly expanding EV market, as well as other valuable co-products.

### Pre-Feasibility Study

The primary focus for the PM1 team has been advancing the engineering and Pre-Feasibility study ("PFS") work for the TECH Project. Substantial progress has been made on the process design, project configuration and commercial structure during the past three months.

The Process Design Criteria, Mass and Energy (METSIM) balance for the complete process and (ASPEN) modelling of iron hydrolysis circuit (including liquid-vapour equilibria) has been completed.

Process Flow Diagrams, all equipment specifications (including materials of construction) and general arrangement drawings, have been completed by Lycopodium.

### Location

The Project will be located approximately 40 km south of Townsville at the proposed Lansdown Industrial Precinct near Woodstock as shown in Figure 1. PM1 received conditional commitment from the Townsville City Council (TCC) for a block of land to construct the Project. TCC is in the process of rezoning the precinct to a strategic high-impact industrial zone. Other projects committed to Lansdown include the Imperium3 consortium's planned battery plant. The next step is for PM1 and the TCC to negotiate a term sheet regarding the land and associated commercial terms.

The area is well positioned, with ready access to power, transport and water.

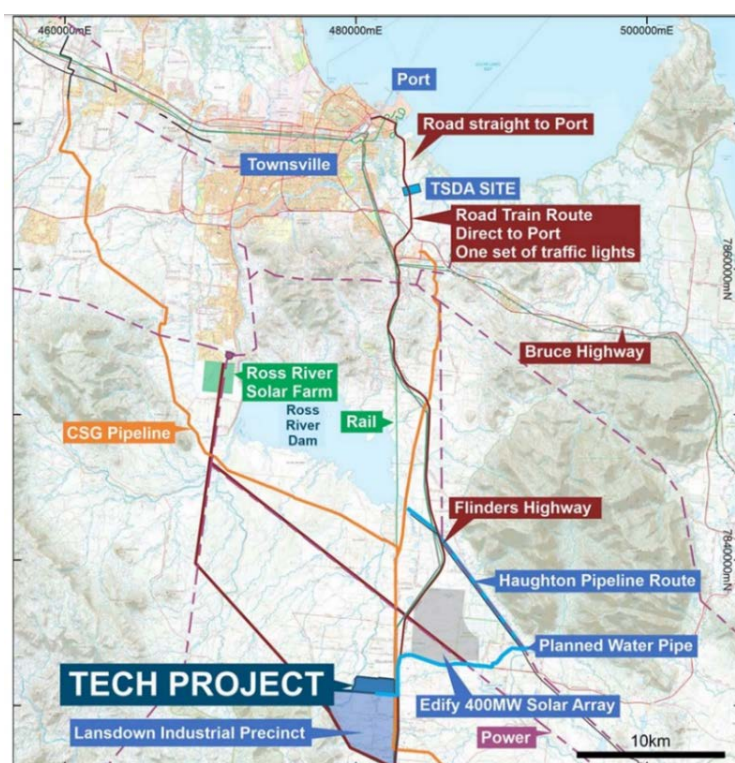


Figure 1. TECH Project Location

Figure 2 below shows the plant layout, as currently proposed:

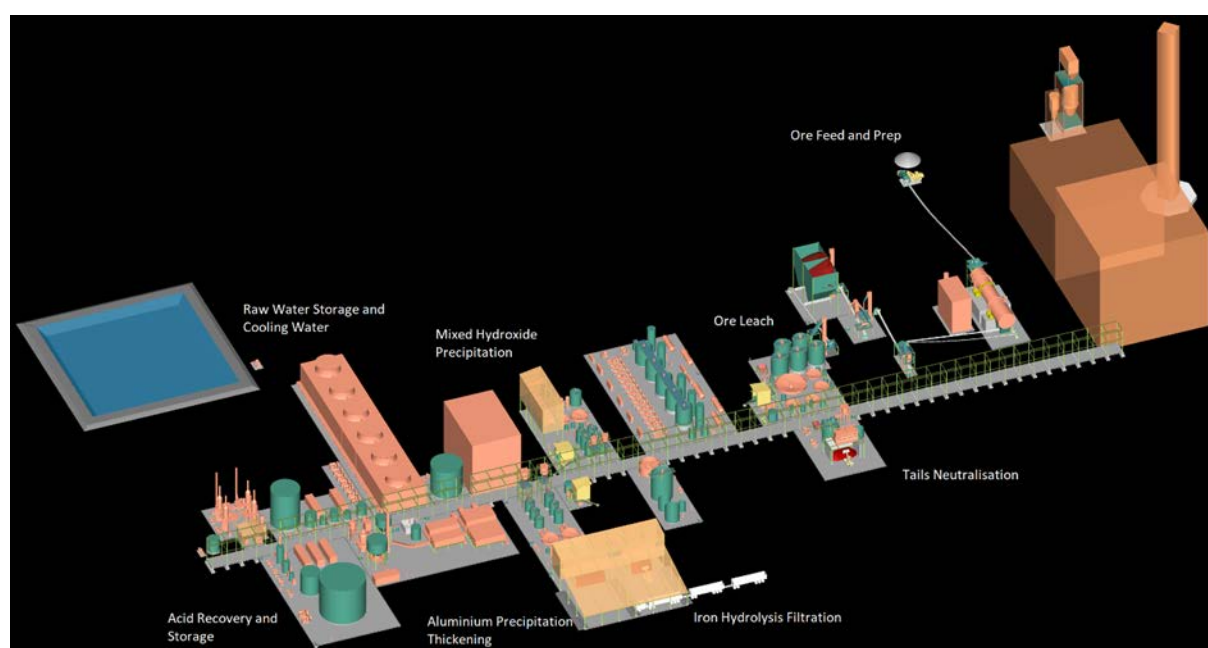


Figure 2: TECH Plant Layout

**Refinery**

Following the successful production of nickel and cobalt sulphate at bench scale from mixed hydroxide precipitate (MHP) samples produced from New Caledonian ore, CSIRO and QPM completed the initial flow sheet selection for the refinery work in September 2019.

CSIRO has commenced the next stage of work to prepare the flow sheet for the Pilot Scale testing and Feasibility Study.

**Port Handling and Storage**

QPM has had discussions with the Port of Townsville, confirming availability of a berth to discharge imported ore from New Caledonia. In addition, there is available land at the port to construct intermediate storage facilities for both nickel ore and final end-user products. An assessment of port storage costs and associated haul road transport to and from the TECH plant has been completed as part of the PFS.

**Geotechnical and Site Conditions**

During the quarter, QPM completed initial geotechnical investigations at the proposed site in the Lansdown Precinct for tailings placement.

**Energy**

Energy is one of the largest operating costs of the TECH project and incorporates both electrical and thermal generation requirements.

The Scoping Study considered the use of coal as the most reliable, primary source of energy. As part of the PFS, a number of other options have been considered, both to achieve cost savings and to further reduce project emissions and environmental footprint. These include gas, solar, biofuel, grid electrical energy along with co-generation options.

The consideration of a number of power options has required additional work from our lead engineers to provide pricing of alternative energy supply packages. QPM will continue to assess its options and will continue to strive to include renewable energy solutions for at least part of the electrical energy requirements.

**Project Status Update**

Although significant progress was made on the PFS, there were a number of delays, largely attributable to slower than expected response times on supplier quotes for both capital and operating items and services. Assessing various energy options has also resulted in several reworks and has contributed to delays. The PFS will be completed well within the December quarter 2019.

## Environment

QPM has engaged Saunders Havil Group to progress the application process for environmental approvals for the TECH project. During the quarter, initial field mapping work was completed.

## Pilot Plant

During the quarter, QPM inspected CSIRO's pilot plant located in Perth, Western Australia. As part of this inspection, a number of minor modifications were identified as required in order to process the 100t bulk sample. The reason behind this is that ore previously processed at this plant had a much lower iron content than the New Caledonia ore. QPM expects to ship the bulk sample to Perth during the December 2019 quarter.



Figure 3. Pilot Plant

## Ore Supply Extension

Subsequent to quarter end, the Company announced it had extended the terms of its Ore Supply Agreement with its New Caledonian partners Societe des Mines de la Tontouta ("SMT") and Societe Miniere Georges Montagnat S.A.R.L ("SMGM"). SMT and SMGM agreed to extend the term of the ore supply agreement for the TECH Project to 10 years (from date of first ore supply), with an additional five-year option period upon mutual agreement. The original agreement was for a five-year term. All other key terms of the agreement remain the same (refer to ASX Announcement 15th October 2018).

QPM is delighted with the support shown by SMT and SMGM in agreeing to this extension, particularly when taking into consideration the nickel ore export bans announced by Indonesia.



## Corporate

### Grants

QPM received a grant of \$47,507 from the Department of Industry, Innovation and Science's Innovation Connections program. This grant will partially fund work being undertaken by CSIRO on critical flowsheet options.

During the quarter, QPM was informed that it was unsuccessful in its application for the CRC-P Round 7 of the Australian Government Grant Scheme. PM1 notes that at the time of this application, it was still completing the acquisition of QPM.

QPM appointed Ernst and Young to assist with its application for CRC-P Round 8, which was submitted during the quarter.

### Cash

PM1's cash balance as at 30 September 2019 was \$2.06M.

### Investor Relations

During and subsequent to quarter end, PM1 attended and presented at a number of mining conferences. This includes Resource Stocks in Sydney and 121 Mining Conference in Hong Kong.

### Tenement Table: ASX Listing Rule 5.3.3

Tenements currently held by PM1 as at 30 September 2019 are detailed in the table below.

Tenement ID	Status	Applic. Date	Granted Date	Expiry Date	Holding	Name	Registered Co.
E08/2693	GRANTED	04-Feb-15	29-Sep-15	28-Sep-20	80%	Mt Boggola	Mineral Developments Pty Ltd
E09/2217	GRANTED	17-Feb-17	13-Sep-17	12-Sep-22	100%	Battery Hub	Pure Manganese Pty Ltd
E52/3523	GRANTED	17-Feb-17	06-Nov-17	05-Nov-22	100%	Battery Hub	Pure Manganese Pty Ltd
E09/2133	GRANTED	19-Dec-14	20-Jul-16	19-Aug-21	100%	Morrissey Hill	Mineral Developments Pty Ltd
E09/2136-I	GRANTED	4-Feb-15	20-Jul-16	19-Aug-21	100%	Morrissey Hill	Mineral Developments Pty Ltd
EPM27035	GRANTED	28-Aug-2018	12-Feb-19	12-Feb-21	100%	Serpentinite Ridge	Queensland Pacific Metals Pty Ltd

### **Annual General Meeting**

The Company will hold its Annual General Meeting on Thursday 14th November at 10.30am at the offices of Mirador Corporate, Suite 2, Level 1, 1 Altona Street, West Perth, 6005.

#### **For more information, please contact:**

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#### **About Pure Minerals**

Pure Minerals (ASX: PM1), through its wholly owned subsidiary Queensland Pacific Metals Pty Ltd (QPM), is focused on developing a modern battery metals refinery in northern Queensland.

The Townsville Energy Chemicals Hub or TECH, will process imported, high grade Ni-Co laterite ore from New Caledonia to produce nickel sulphate, cobalt sulphate and other valuable co-products.

Pure Minerals' senior management has combined experience of more than 60 years in nickel refinery operations and is well versed in dealing with nickel and cobalt buyers around the world.

With established infrastructure, a well-developed labour pool and a long history of processing imported laterite ore, Townsville is the ideal location for the project.