



## ASX ANNOUNCEMENT

13 January 2021

# Metallurgical test work confirms Manono Primary Lithium Sulphate suitable for battery production feedstock

## Highlights

- Primary Lithium Sulphate Monohydrate bench scale test work successfully completed
- AVZ's planned production flow sheet independently tested and confirmed as technically feasible
- Primary Lithium Sulphate with greater than 80% (wt. %) lithium content can be readily produced
- Primary Lithium Sulphate produced presents as suitable feedstock for the electrolytic conversion of Lithium Hydroxide Monohydrate used in battery production

AVZ Minerals Limited (ASX:AVZ, "the Company" or "AVZ") is pleased to announce the successful completion of preliminary metallurgical testing for the Company's planned lithium sulphate plant and production of 1.5 kg of Primary Lithium Sulphate (PLS) material.

AVZ engaged Kingston Process Metallurgy ("KPM") in Canada, to test, at bench-scale, each of the processes in the Company's proposed Manono Lithium Sulphate plant flowsheet.

The testwork objective was to produce Primary Lithium Sulphate from Manono spodumene concentrate (SC6) and to demonstrate the technical feasibility of the flowsheet.

The testwork was undertaken from September to December 2020 at KPM's Kingston, Ontario, facility. Approximately 9kg of spodumene concentrate (SC6) from the Manono deposit assaying approximately 6.1% (Li<sub>2</sub>O) was processed.

Conversion of the alpha-spodumene to beta-spodumene was successfully completed and confirmed the original testwork outcome upon which the DFS was predicated.

### AVZ Minerals Limited

Level 2, 8 Colin Street,  
West Perth WA 6005  
Australia

T: + 61 8 6117 9397

F: + 61 8 6118 2106

E: [admin@avzminerals.com.au](mailto:admin@avzminerals.com.au)

W: [www.avzminerals.com](http://www.avzminerals.com)

ABN 81 125 176 703

### Directors:

Non-Executive Chairman: John Clarke

Managing Director: Nigel Ferguson

Technical Director: Graeme Johnston

Non-Executive Director: Rhett Brans

Non-Executive Director: Peter Huljich

### Market Cap

\$589 M

ASX Code: AVZ

Acid roasting was conducted at different ratios with successful roasting achieved well within the expected design ranges, as planned. This was followed by water leaching, which achieved a lithium recovery of 84-88%. Solution purification yielded a purified leach solution very low in metal contaminants.

Evaporation of the purified leach solution yielded a primary lithium sulphate solid product composed predominantly of lithium sulphate monohydrate ( $\text{Li}_2\text{SO}_4 \cdot \text{H}_2\text{O}$ ). The main secondary component of the product was sodium sulphate, along with a small amount of potassium sulphate, both of which can be readily removed during downstream conversion processes.

By operating under suitable conditions as planned, the test results indicated a Primary Lithium Sulphate product containing greater than 80 wt. % lithium sulphate monohydrate can be readily produced.

The Primary Lithium Sulphate product produced by the metallurgical testing would make a highly suitable feedstock for the electrolytic production of Lithium Hydroxide Monohydrate.

**AVZ's Managing Director, Mr Nigel Ferguson, said:** "It is pleasing to have independent confirmation of our proposed lithium sulphate plant process as well as verification that our product is suitable for feedstock for battery plants."

"KPM's test work provides further confirmation that our high-quality Manono product is capable of producing clean Primary Lithium Sulphate that is suitable for use in the production of batteries."



*Figure 1: Primary Lithium Sulphate produced under metallurgical testing for AVZ's planned Manono Lithium Sulphate Plant*

The Company is also pleased to provide an update on its field operations as follows:

### **Roche Dure Pit Floor Drilling**

The Roche Dure pit floor resource drilling programme recommenced on 11 January 2021 after a three-week Christmas break. Two deeper holes and the final 30 metres of Hole MO20DD007 are still to be completed. Pulverised samples from the first six holes have been received at ALS in Perth and the assay results will be reported prior to them being used for a re-estimation of the geological resource figures. Drilling of the pit floor is expected to be completed by the end of January.

### **Hydrogeological Modelling**

Installation of the piezometers surrounding the 10-year pit shell has also recommenced. A full suite of water table drawdown tests will be completed once all piezometers are installed. Initial pumping from the first piezometer completed in December 2020 demonstrated a very slow recharge of that hole and this may indicate that there may be no water inflow issues in that part of the pit. Since this work remains ongoing, the completion of the test programme will determine if this is an accurate assessment or not.

### **Plant Site Geotechnical Assessment**

The geotechnical programme at the Roche Dure plant site continues. Samples of both soil and rock from the 10-hole geotechnical drilling programme and the 38 test pits have been sent to Rocklab in Johannesburg for particle size distribution test work and strength tests. Results are pending and will be used for foundation design for the processing plant. Five geotechnical drill holes are still to be completed at the Tailings Storage Facility and once these are finalised, following on from the completion of the pit floor drilling, representative samples of soil and rock will be sent to a specialist laboratory in Johannesburg for assessment.

### **Camp Site Expansion**

Further site works have commenced at Manono's Camp Colline to accommodate approximately 250 construction workers who will build the processing plant and associated mine infrastructure. Providing road access to house plots is currently underway along with the collection and storage of new building materials.

### **Environmental and Social Impact Assessment**

Six of the seven required Environmental and Social Impact Assessment (ESIA) certificates have been received, with the seventh ESIA application to be submitted in Q1/21.

### **Project Tendering**

All of the large and medium packages have been tendered and adjudicated and now await a Final Investment Decision to be made before awarding contracts.

This release was authorised by Nigel Ferguson, Managing Director of AVZ Minerals Limited.

For further information, visit [www.avzminerals.com.au](http://www.avzminerals.com.au) or contact:

**Mr. Leonard Math**  
Company Secretary  
AVZ Minerals Limited  
Phone: +61 8 6117 9397  
Email: [admin@avzminerals.com.au](mailto:admin@avzminerals.com.au)

**Media Enquiries:**  
**Mr. Peter Harris**  
Peter Harris & Associates  
Phone: +61 (0) 412 124 833

