

ASX Release
29 February 2024

Mackay Potash Project Process Engineering Update

Highlights

- **Testwork conducted in partnership with Veolia Water Technologies has resulted in significant increase in knowledge with positive impacts on process design and process control during pond commissioning**
- **Identification of a unique minerology in startup feed salts in Western Australian SOP projects caused by local climatic conditions**
- **Excellent test work results with Veolia Water Technologies determines optimal temperature to manage startup feed salt composition**
- **Mackay Potash Project will be the first SOP development in Western Australia to use a cooling crystalliser for temperature-controlled feed salt conversion**
- **Flotation test work being undertaken to further derisk the process flowsheet**

Agrimin Limited (ASX: AMN) (“Agrimin” or “the Company”) is pleased to provide an update in relation to ongoing process test work for the Mackay Potash Project (“the Project”).

Process Engineering Update

The Company, as part of front end engineering design (“FEED”), has been progressing thorough process test work using samples harvested from the Mackay Potash Project. In conjunction with recent industry learnings, and with the support of leading equipment vendors, the results produced are being used to finalise the process design and equipment selection.

Technical review following the Definitive Feasibility Study (“DFS”) uncovered a mineralisation anomaly whereby Leonite ($K_2SO_4 \cdot MgSO_4 \cdot 4H_2O$) occurs with Schoenite ($K_2SO_4 \cdot MgSO_4 \cdot 6H_2O$) in the harvested salts during startup. This anomaly was discovered during bulk testing by Veolia Water Technologies Inc. (USA) (“Veolia Water Technologies”) in 2022, while smaller scale testing prior had not differentiated the minerals. It was initially understood that the minerals would respond in the same manner when processed given their similar chemical composition.

Global investigation and local learnings suggest that the presence of Leonite in the precipitated harvest salts is unique to Western Australian salt lake projects and arises due to climatic conditions, namely the heat experienced in the ponds and on the run of mine stockpile. The formation of Leonite is exacerbated during startup until brine recirculation develops higher Magnesium (Mg) levels in the ponds and plant.

Continued process test work during 2022 sought to validate the flotation step in the process flowsheet as designed in the DFS. However, this testing resulted in unexpected, sub-optimal recovery rates of ~60% which

was subsequently attributed to the occurrence of Leonite as it did not readily float; a behaviour which is contrary to Schoenite in the same conditions.

Once it was established that Leonite behaves differently to Schoenite and does not readily float, collaborative test work continued with Veolia Water Technologies (USA) in 2023 with the focus being to successfully identify the conditions required to convert Leonite to Schoenite (refer to Figure 1).

Test work results for the conversion stage have repeatably demonstrated that the occurrence of Leonite can be managed through temperature control and sufficient residence time in a cooling crystalliser. A cooling crystalliser, rather than heat exchanger vessel, was incorporated into the DFS design and remains the preferred equipment as it provides uniform temperature control throughout the vessel ensuring conversion to Schoenite. The optimal temperature required in the conversion stage to resolve Leonite is ~15 degrees celsius, which is lower than the 28 degrees celsius assumed during the DFS, prior to understanding the occurrence of Leonite in the startup feed salts.

With the Leonite issue now resolved by temperature-controlled conversion, further technical de-risking will occur through a suite of flotation tests. Using converted feed salts from Lake Mackay, FLSmidth will undertake this scope of work which aims to demonstrate acceptable recovery rates in the flotation stage of the flowsheet. This testing will be undertaken in the 1H 2024.

Graeme Ditri, Process Manager at Agrimin commented: *"Discovering the occurrence of Leonite in the Mackay feed salts has had a profound impact on our understanding of the required process flowsheet. While Schoenite and Leonite are very similar, the difference in waters of hydration (H₂O) affects how the salts respond in flotation.*

"By understanding industry learnings and working in collaboration with Veolia Water Technologies, the test plan we created has tested a range of scenarios and sensitivities to narrow down the key design parameters required in conversion, the first stage of the process.

"Using a cooling crystalliser for conversion enables tight and uniform temperature control which results in the required conversion ahead of flotation, the second stage of the process.

"We look forward to our continued partnership with Veolia Water Technologies and commencing the flotation test work with FLSmidth."

Debbie Morrow, Managing Director & CEO of Agrimin commented: *"As we continue toward development of the Mackay Potash Project, I am pleased to share that our robust technical diligence has identified, corroborated and worked to resolve a mineralisation anomaly unique to salt lakes in Western Australia.*

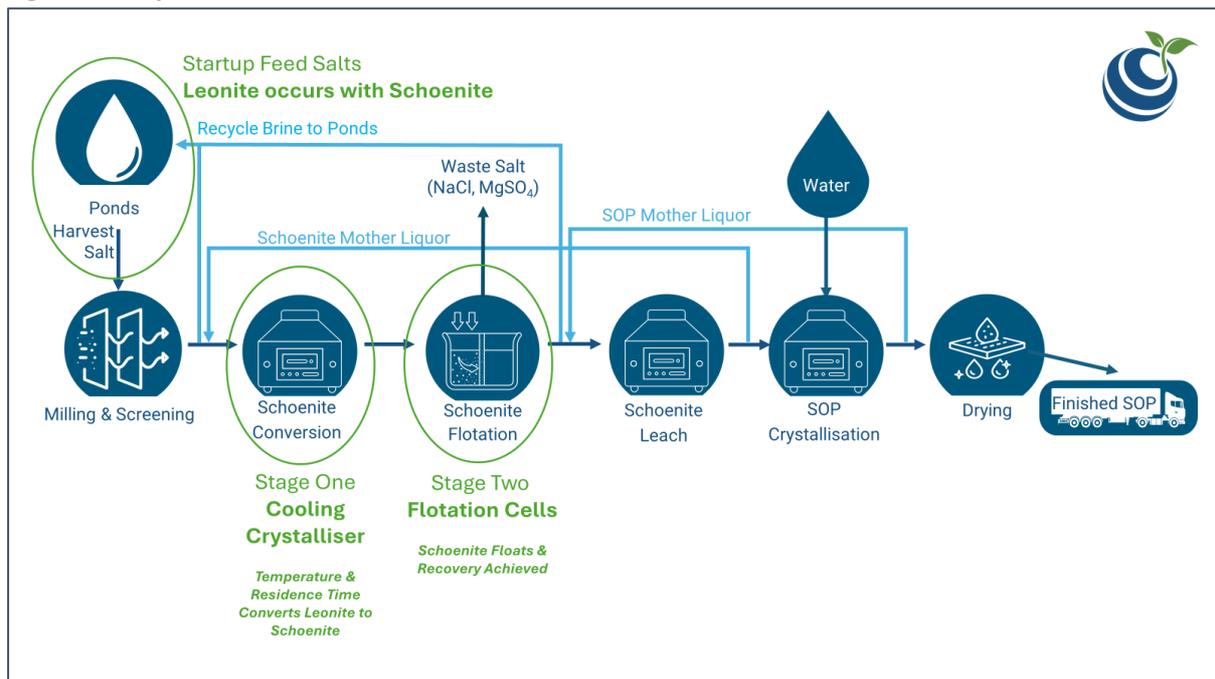
"As previously announced (refer to ASX announcement dated 26 July 2023) we have been undertaking extensive test work with Veolia Water Technologies which has successfully resolved Leonite in Lake Mackay harvest feed salts ensuring that conversion to Schoenite occurs before flotation.

"Conversion to Schoenite ahead of flotation, being the second stage in our process flow sheet is essential, and we now have a thorough understanding of the required cooling crystalliser conditions to resolve the occurrence of Leonite.

“Planning is well advanced for the next round of test work, which will focus on the second stage in the flow sheet, being flotation. Agrimin is partnering with FLSmidth on this scope which will focus on the mechanical design optimal for grade versus recovery and the impact of particle size distribution.

“This development validates our patient and diligent approach to delivering the Mackay Potash Project and we look forward to continued collaboration and testing with Veolia Water Technologies and FLSmidth to finalise our process design and progress equipment selection.”

Figure 1. Simplified Process Flowsheet



ENDS

For further information, please contact:

Investors

Debbie Morrow
 Managing Director & Chief Executive Officer
 T: +61 8 9389 5363
 E: dmorrow@agrumin.com.au

Media

Michael Vaughan
 Fivemark Partners
 T: +61 422 602 720
 E: michael.vaughan@fivemark.com.au

Or visit our website at www.agrumin.com.au

This ASX Release is authorised for market release by Agrimin’s Board.

About Agrimin

Based in Perth, Agrimin Limited is the leading fertiliser development company on the ASX (**ASX: AMN**) focused on development of its 100% owned Mackay Potash Project. The Project is situated on Lake Mackay in Western Australia, the largest undeveloped potash-bearing salt lake in the world. Agrimin's vision is sustainable food security for future generations by providing nutrition the world needs. The demand for SOP is underpinned by population growth, which the Food and Agriculture Organization of the United Nations predicts will drive an increase in global food demand by 50% by 2050¹.

Forward-Looking Statements

This ASX Release may contain certain "forward-looking statements" which may be based on forward-looking information that are subject to a number of known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented here. Where the Company expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. Forward-looking information includes exchange rates; the proposed production plan; projected brine concentrations and recovery rates; uncertainties and risks regarding the estimated capital and operating costs; uncertainties and risks regarding the development timeline, including the need to obtain the necessary approvals. For a more detailed discussion of such risks and other factors, see the Company's Annual Reports, as well as the Company's other ASX Releases. Readers should not place undue reliance on forward-looking information. The Company does not undertake any obligation to release publicly any revisions to any forward-looking statement to reflect events or circumstances after the date of this ASX Release, or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws.

¹ Food and Agriculture Organization of the United Nations, The future of food and agriculture Trends and challenges, accessed 24 October 2023, page 136: <https://www.fao.org/3/i6583e/i6583e.pdf>