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ASX Release
6 April 2016

HYDRO MODEL CONFIRMS FLOW RATES FOR SOP PRODUCTION

Highlights

- **Hydrogeological model estimates a steady-state brine flow of 2,150 litres per second based on a 250km trench design with an average 5.5m depth**
- **Modelling confirms the potential to extract significant volumes of brine, representing a major milestone in confirming the Mackay Project as a large-scale SOP operation**
- **Modelling supports steady-state brine production over at least 20 years exclusively from trenching which is the lowest risk and lowest cost method of brine extraction**
- **Modelling is based on permeability and porosity data from field pump tests and laboratory testwork on drill core**
- **Agrimin is advancing its Scoping Study with the geotechnical component nearing completion and evaporations trials continuing**

Agrimin Limited (**ASX: AMN**) ("**Agrimin**" or "**the Company**") is pleased to announce excellent initial results from a hydrogeological modelling study ("**Hydro Model**") for its 100% owned Mackay Sulphate of Potash ("**SOP**") Project. This is a significant de-risking milestone given that brine extraction and pond development are the largest barriers to the commercial viability of brine potash projects globally.

Based on the 250km trench design used in the Hydro Model, the base case steady-state brine flow is estimated to be 2,150 litres per second over an initial 20 year operational life. This is equivalent to a brine production rate of 68,000,000m^3 per year and confirms the potential to extract significant volumes of brine via a trenching network on the lakebed surface.

The Company's preliminary option analysis and cost estimation study undertaken by GHD showed that trenching, as opposed to bores, is the optimal method to extract brines on a large-scale. Brine extraction via trenching networks of this scale is a technique employed by most brine potash operations elsewhere in the world.

Hydrogeological Model

The Mackay Project covers the majority of Lake Mackay which is one of a number of salt lakes in Central and Western Australia that occupy topographic low points in internal drainages and do not flow to the coast. Lake Mackay hosts hypersaline brine containing Potassium and other elements.

Lake Mackay is the low point of an enormous groundwater and surface water catchment area that is approximately 87,000km^2. The lakebed surface area of Lake Mackay is 3,500km^2, comparable to major sources of SOP production at the 4,400km^2 Great Salt Lake in the USA and the 5,500km^2 Lop Nur (Luobupo operation) in China.

Agrimin completed trench pump tests on the west and east of the lake during August and September 2015 (**Figure 1**). The western trench was approximately 110m long and 2.5m deep and was dug into clays with interbedded sand and crystalline gypsum zones. A pump test was completed over 19 consecutive days. The eastern trench was approximately 23m long and 0.5m deep and was dug into porous gypsiferous sands which occur over vast areas of the Project, extending from surface. A pump test was completed over a 24 hour period.

Data from the field pump tests and from laboratory testwork on drill core has been used to construct a numerical groundwater model for the Mackay Project.

Figure 1. Trenches and Field Tests Completed

The Hydro Model was undertaken to simulate different trenching scenarios for large-scale brine production across the lake. The model was based exclusively on trenching given that a preliminary option analysis and cost estimation study showed that trenching, as opposed to bores, is the optimal method to extract brines on a large-scale.

Based on the 250km trench design used in the Hydro Model (**Figure 2**), the base case steady-state brine flow is estimated to be 2,150 litres per second (equivalent to 68,000,000m^3 per year) over an initial 20 year operational life. The construction of the trenching network is likely to be staged depending on initial inflows.

It is important to note that the flow rates assumed in the model are considerably lower than what was measured during pump tests undertaken during the 2015 field program. The reason for this difference is that the initial inflows into trenches and bores occur during a period where a drawdown cone is expanding with likely higher inflow rates experienced. These inflows will settle to a constant rate after a period of time, however this steady-state condition does not often occur for some months and hence the model looks to demonstrate a conservative long-term condition.

The Hydro Model also assessed the impact of changes to key model inputs including permeability and boundary conditions. A number of simulations were run based on changing these model parameters. The results of this sensitivity analysis showed steady-state brine flows varying between 1,850 and 2,500 litres per second (equivalent to 58,000,000m^3 and 79,000,000m^3 per year).

Figure 2. Trench Design for Hydrogeological Model

The trench design used in the Hydro Model is conceptual in nature and designed to demonstrate the trenching requirements to support a large-scale, long-life SOP operation. Further considerations will be made in respect to trench design and layout within the Scoping Study. The final targeted SOP production rate will be influenced by recoveries from the evaporation ponds and process plant. These parameters are currently being defined in on-going geotechnical and process testwork studies.

Lake Mackay consists of essentially two flat lying lithological units, as presented below in the geological model constructed by Hydrominex Geoscience (**Figure 3**):

- **Upper Zone (0-6m)** – a unit of coarse gypsum sand, with an approximate thickness of 1m grading downward into sandy and silty clay, with significant sand, to depths beyond 6m; and

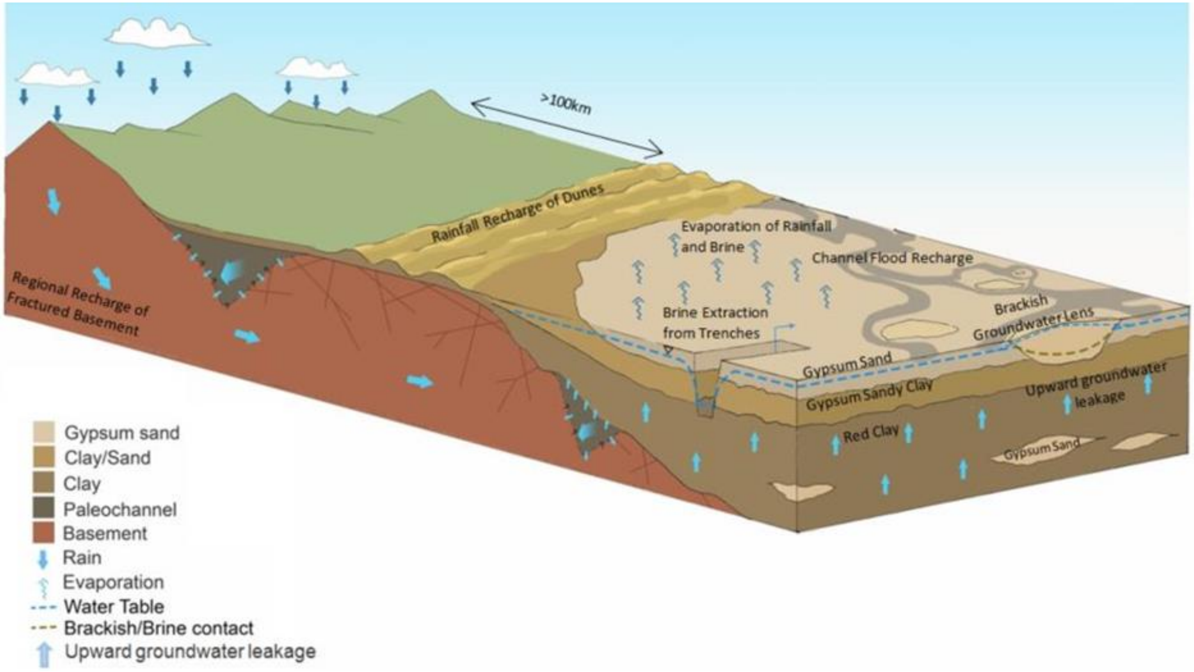
- **Lower Zone (6-25m)** – a unit where the lithology is dominantly clay intermixed with sands and silts, and interbedded layers of granular and crystalline gypsum.

A weathered sandstone, and possibly siltstone, basal unit was interected at aircore refusal above 30m. The capacity of the aircore drill rig was limited to 30m and the deposit remains largely open at depth.

In December 2015, Agrimin reported an in-situ Mineral Resource of 164 million tonnes (based on ***total porosity***) for its Mackay Project. However, the Company's development focus is centred on the estimated 9.7 million tonnes of drainable resource (based on ***specific yield***) which lies within the Upper Zone (top 6m from surface).

Accordingly, the trench design used in the Hydro Model is based on a depth of only 5.5m. The Hydro Model has now established that the combined flow from the Upper Zone has the ability to produce significant volumes of brine via trenching.

Figure 3. Hydrogeological Model of the Eastern Lake Area



The Hydro Model was developed by Groundwater Exploration Services Pty Ltd, an independent hydrogeological consultancy based in Sydney, and has been reviewed by Agrimin's key consulting hydrogeologist, Murray Brooker. Both parties were on-site to supervise the 2015 exploration and pump testing activities.

The Hydro Model has been developed based on data collected from:

- Pump tests on trenches and bores completed during the 2015 field program with test types including short to medium term constant rate pump tests (varying durations of 12 hours, 24 hours and 19 days);
- Slug tests on monitoring bores;
- Laboratory core characterisation testwork (including porosity and permeability) from push tube samples collected during the 2015 field program;
- Key field observations and log data from Agrimin and historical drilling (push tube, vibracore, aircore and auger), surface sampling and mapping;

- Climate data from regional weather stations (Bureau of Meteorology); and
- Topography from Shuttle Radar Topography Mission (SRTM).

The numerical modelling was undertaken using the Groundwater Vistas software interface in conjunction with the MODFLOW-SURFACT program, an advanced version of the MODFLOW code. The trenching network was implemented within the model using the Drain Package to predict extraction over a nominal 20 year period.

The Hydro Model is considered preliminary in nature and falls within the Class 2 confidence level as classified under the Australian Government's National Water Commission (NWC) guidelines. It provides an assessment of the existing groundwater system status and has been used to simulate the extraction of brine over an extended period. It relies on some assumptions which will be evaluated by future field investigations, including long-term pump tests from production-scale trenches.

During the 2015 field program, Agrimin installed an on-site weather station and groundwater loggers in monitoring bores that are constantly recording on-site conditions. This data will also be used for detailed calibration and refinement of the Hydro Model going forward.

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Competent Person's Statements

The information in this statement that relates to Exploration Results for the Mackay Project is based on information compiled or reviewed by Mr Murray Brooker who is a full-time employee of Hydrominex Geoscience Pty Ltd. Mr Brooker is a geologist and hydrogeologist and is an independent consultant to Agrimin. Mr Brooker is a Member of the Australian Institute of Geoscientists and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person in terms of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC Code 2012 Edition). Mr Brooker consents to the inclusion of such information in this statement in the form and context in which it appears.