ASX Announcement

Nolans Pilot Program Update

19 April 2018

- **Final Phase 4 Acid Bake pilot plant to begin operating early May**
- **Reporting of results of the Nolans Definitive Feasibility Study remains on schedule for completion end of 2018**

Arafura Resources Limited (**ASX: ARU**) (**Arafura** or **the Company**) is pleased to provide an update on the flowsheet piloting program for its 100 per cent-owned Nolans Neodymium-Praseodymium (NdPr) project in the Northern Territory.

The first stage batch trials of Phase 4 Acid Bake piloting using a paddle dryer were successfully concluded in October 2017. Paddle dryers offer strong advantages over other bake/roasting equipment (such as rotary kilns) including a large heat transfer area, dual rotating paddle shafts to keep material flowing, and the ability to process highly viscous materials. Arafura's October trials on NdPr-rich pre-leach residue (PLR) feedstock from the Phase 2 pilot plant produced excellent results *(refer to ASX announcement 13 December 2017)* featuring 98.5% extraction of light rare earths, including NdPr, to sulphated (acid baked) material. The Company expects to confirm these results in the final Phase 4 Acid Bake continuous pilot plant.

Commencement of the final Phase 4 pilot operation has been delayed from the original timetable for several reasons:

- Significant delays in the construction and delivery of a pug mixer for (pre-bake) sulphuric acid-PLR mixing by an overseas vendor.
- Quality issues in the pug mixer construction also required unplanned rectification, fabrication and assembly works by one of Arafura's partners in the Phase 4 pilot, Bossong Engineering (Bossong), to prepare the unit for commissioning and operation to meet Australian Standards. This is now complete.
- The Company commissioned additional test work, in conjunction with SGS Australia (SGS) and Curtin University, to develop synthetic inert materials with material flow properties that replicate acid bake feed and sulphated material produced in the October trials. This was done to test the pug mixer and paddle dryer procured for the program and to finalise operating parameters in preparation for continuous piloting. The tests using the synthetic materials were successful in demonstrating the smooth transfer of material in both unit operations (see Figure 1). These tests were conducted in Bossong's workshop to enable completion of optimisation prior to moving the equipment to SGS.

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- Lengthy regulatory processes to inspect, certify and register the oil heater that heats the paddle dryer shafts, firstly with WorkSafe Victoria (where the oil heater was designed and manufactured) and then with WorkSafe WA (where it is being commissioned and operated). Final registration by WorkSafe WA has now been secured.

To ensure no further schedule slippage occurs, Arafura and SGS have been working together to keep all piloting activities in line with the updated schedule and take advantage of the first available piloting window at SGS's facility. Arafura now anticipates operating the Phase 4 Acid Bake pilot plant (Figure 2) during the first half of May. Phases 5 and 6 of the pilot program (collectively termed Rare Earth Processing – see Figure 3) are planned to commence immediately thereafter, with a scope of work to be made available to potential service providers in May.

None of the above is expected to delay reporting the results of the Nolans Definitive Feasibility Study (DFS) which is scheduled for the end of 2018 (Figure 4).

A possible flow-on effect from the delay to Phase 4 is that data acquired during the final phase of piloting (Phase 7 – Rare Earth Separation; see Figures 3 and 4) may not be available for the Nolans DFS. However, the Company already has operational and process data from previous rare earth separation work completed on Nolans feedstock during 2011 and 2012 *(refer to ASX announcements 17 January 2012, 6 June 2012 and 24 January 2013)*, and feasibility study level-of-accuracy engineering design and cost data from a Separation Plant engineering cost study completed by Lycopodium in 2013. The Company and its lead DFS engineer Hatch are examining the option of incorporating this data into the DFS as this aspect of the project remains unchanged.

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Figure 1: Synthetic Testing of Pug Mixer (L) and Paddle Dryer (R) Exhibiting Flow Behaviour Consistent with Nolans Material

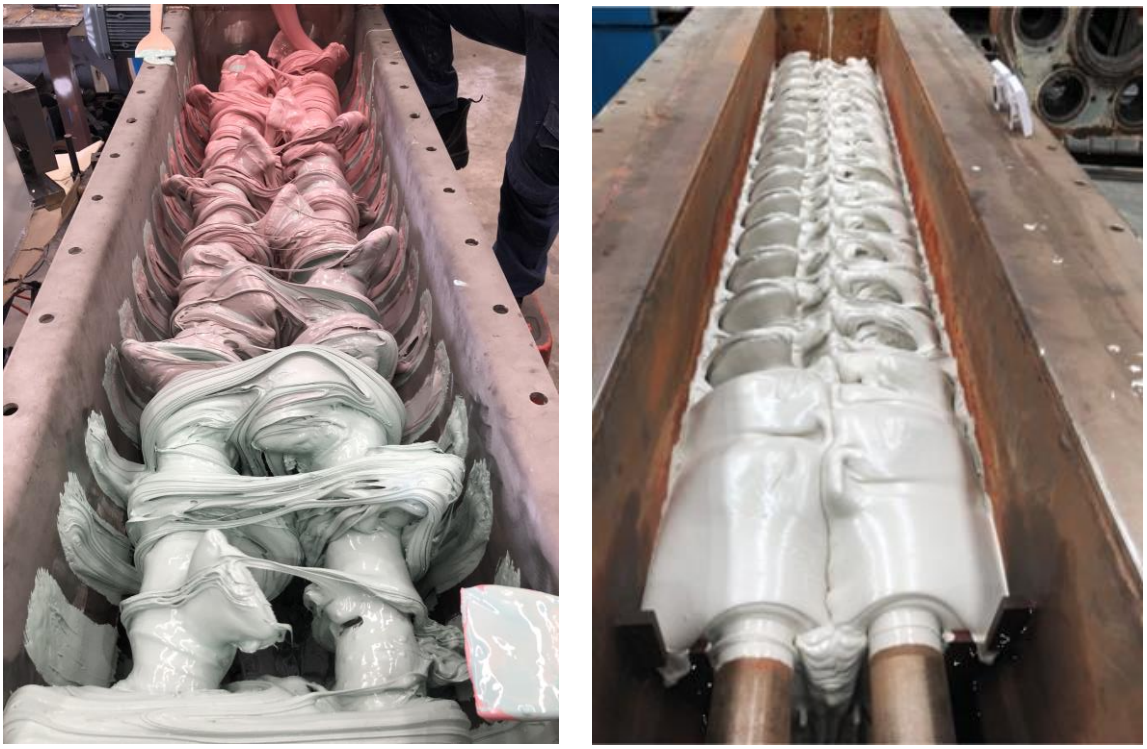


Figure 2a: Phase 4 Acid Bake Pilot General Arrangement

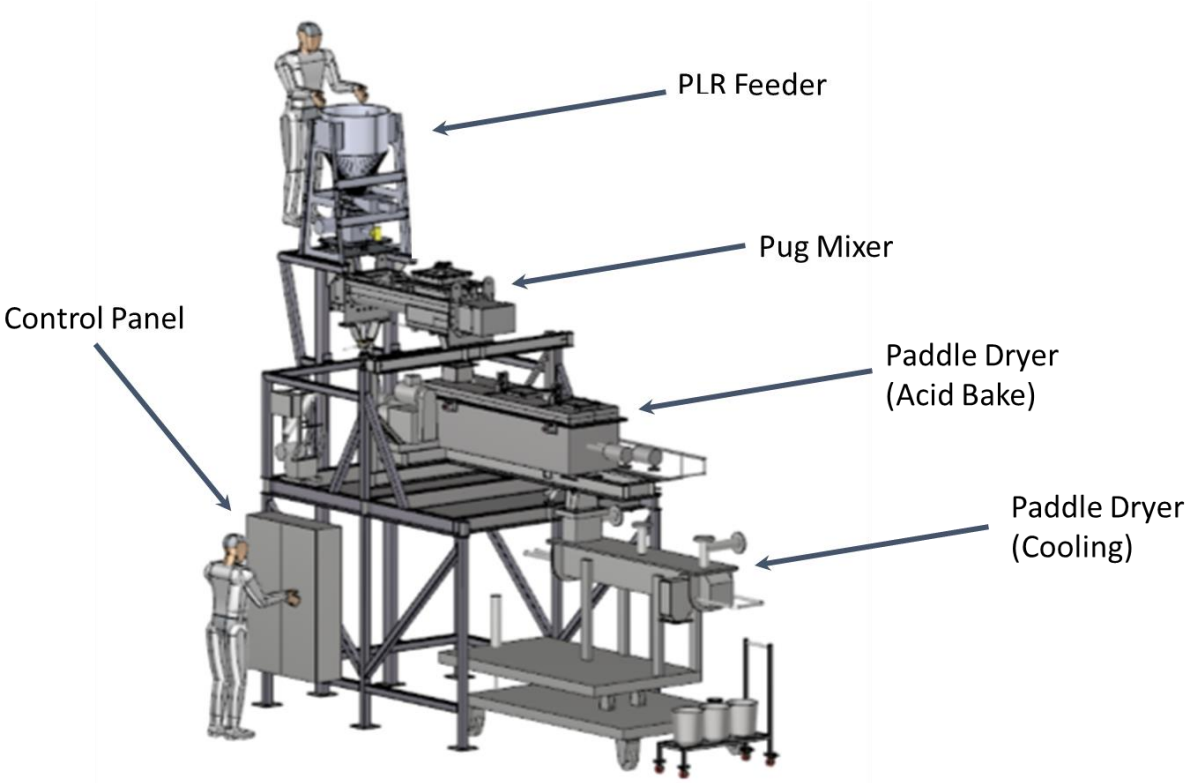
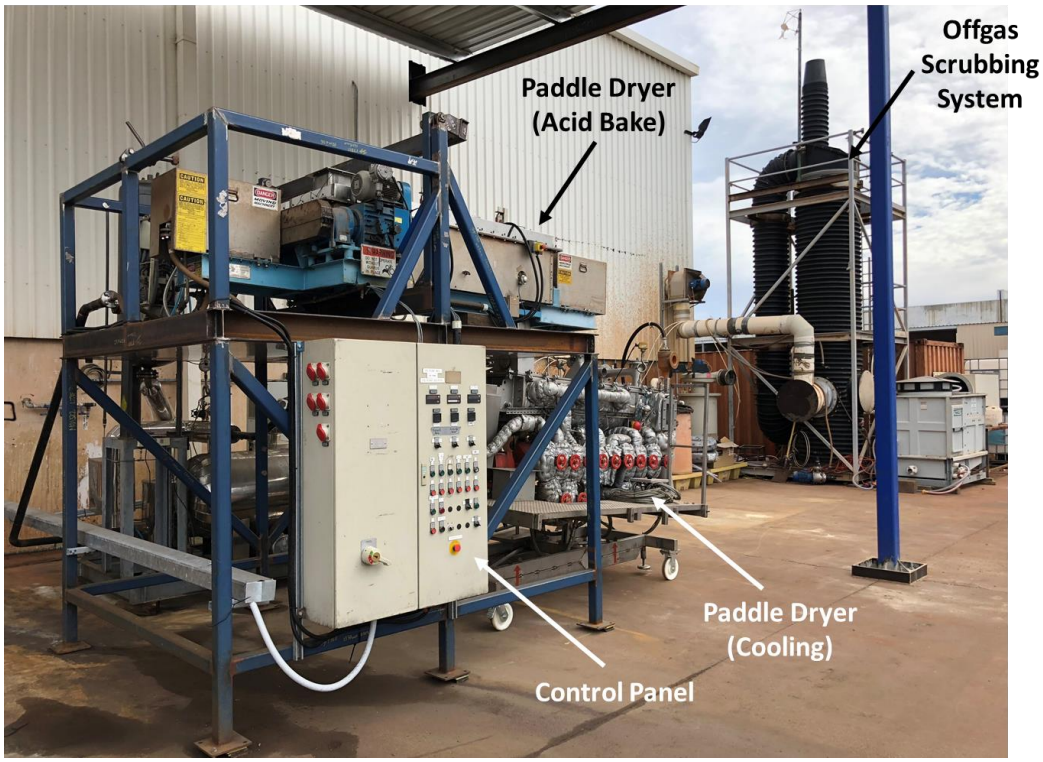


Figure 2b: Phase 4 Acid Bake Pilot Plant at SGS Awaiting Installation of PLR Feeder and Pug Mixer



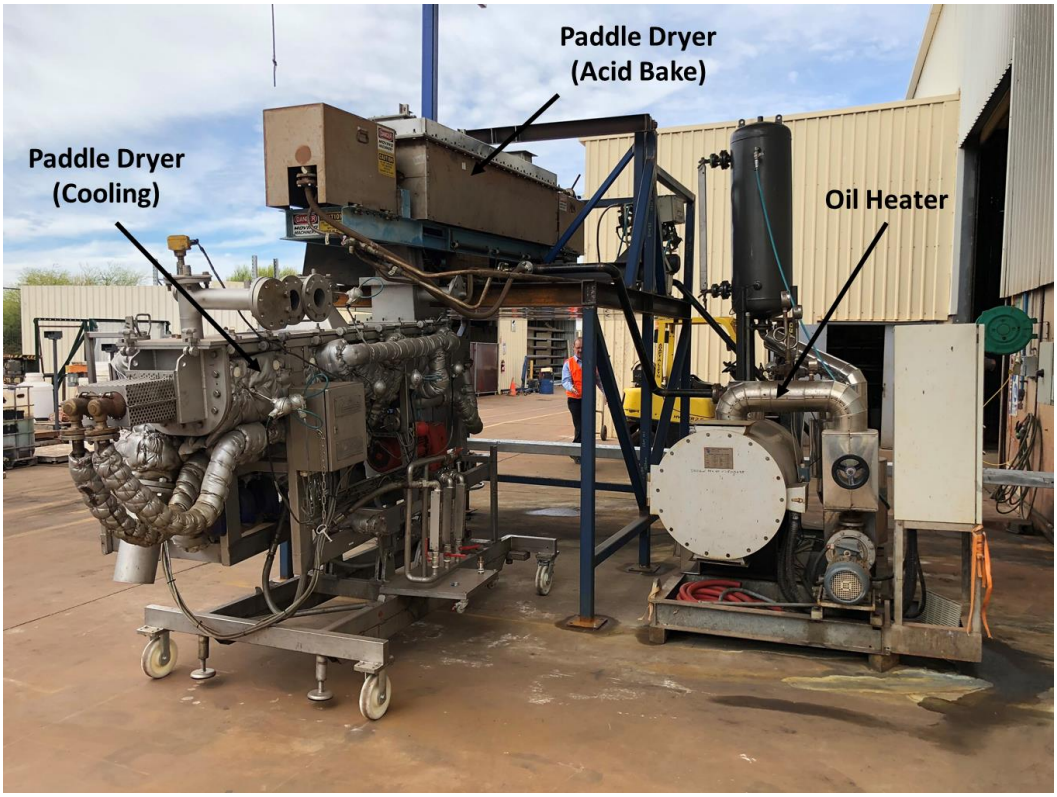


Figure 3: Nolans Pilot Program Phases

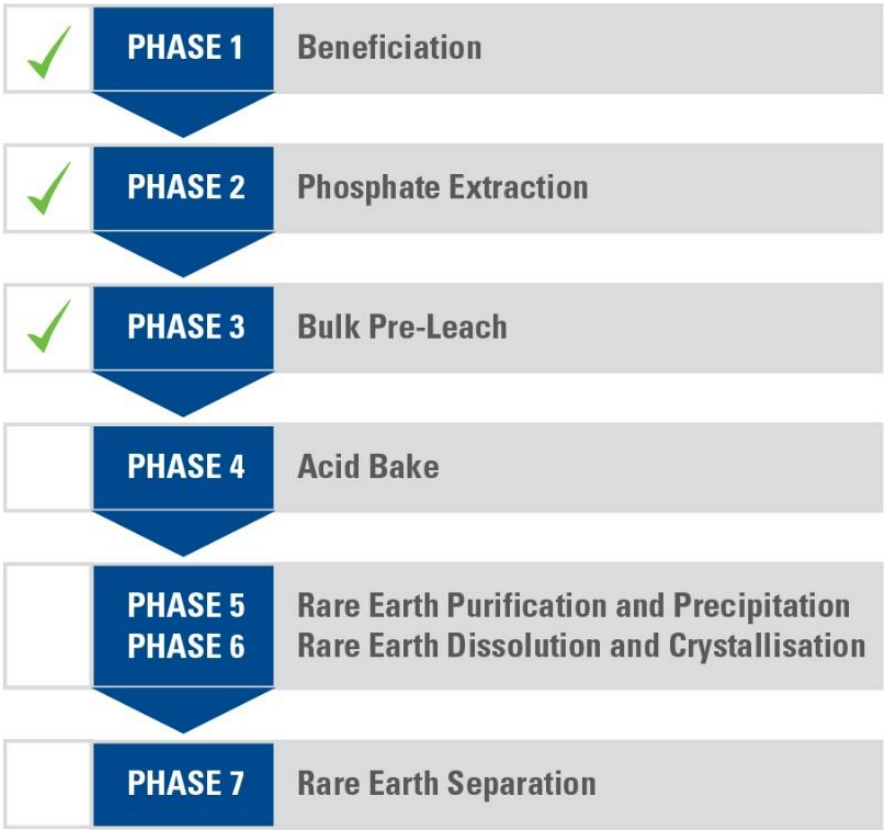


Figure 4: Nolans Pilot Program and DFS Timeline