

## **HEAP LEACH DE-RISKING COMPLETE**

### **Further Outstanding Results from Latest Phase 4 Testwork**

Bannerman Resources Limited (ASX: BMN; NSX: BMN) is pleased to report outstanding results from Phase 4 of the Etango Heap Leach Demonstration Plant Program, which builds upon the exceptional leaching results from previous Phases.

Phase 4 tested the solvent extraction (SX) loading kinetics and efficiency from leach solution generated from the closed circuit heap leach operation of Phase 3. The strong results from the Phase 4 testwork confirm that the SX design parameters in the Etango Definitive Feasibility Study (DFS) are not only robust but also have considerable potential for further improvement.

The completion of Phase 4 testwork has now delivered final validation across all aspects of the planned process route for the Etango Project. All four Phases of the Demonstration Plant Program have confirmed the robustness of the DFS heap leaching parameters for Etango. By delivering genuine proof of concept via this program Bannerman has maintained its market leading profile in this critical area. It has also succeeded in significantly de-risking the planned Etango process route for prospective financial partners. The Demonstration Plant Program has, by any measure, been a resounding success.

The Phase 5 work plan is now directed at optimising the Etango process parameters by drawing on the extensive learnings delivered by the Demonstration Plant Program to date. Initial outcomes from this value engineering have been highly encouraging with the clear potential for adoption of coarser grind sizes and lower reagent usage.

#### **PHASE 4 HIGHLIGHTS**

- **No deleterious elements**

Analyses of the leach solution show no observable build-up of deleterious elements that might influence the efficiency of the solvent extraction process.

- **Fast and efficient solvent extraction**

Fast extraction kinetics of uranium from the aqueous to the organic phase - maximum extraction of uranium was achieved within 30 seconds of phase contact time.

- **Confirms DFS solvent extraction design parameters**

Design criteria used in the DFS have once again been confirmed to be highly robust and potentially conservative.

Bannerman's Chief Executive Officer, Brandon Munro, said, *"The outstanding results from Phase 4 signal the definitive success of the Demonstration Plant Program. The program has conclusively achieved its core objective of technically de-risking the heap leaching process for Etango. In validating the DFS design parameters and confirming projected performance the program has also identified clear opportunities to enhance the project's financial performance. The team is now busy finalising Phase 5 of the program which is directed at evaluating further opportunities for process parameter optimisation."*

## PHASE 4 RESULTS

Phase 4 of the Demonstration Plant Program entailed bench scale SX testwork as per the DFS design criteria. The primary objective of Phase 4 was to confirm the findings of previous SX testwork that was conducted with leach solution modified with anticipated impurities. In the Phase 4 testwork, actual leach solution generated from a larger three cycle closed circuit heap leach operation (Phase 3) was used.

In summary the Phase 4 objective was:

- To investigate the possible build-up of impurities in the leach solution from the closed circuit Phase 3 testwork.
- Assess the impact of impurities on the efficiency of the solvent extraction process.
- Establish the loading kinetics and conduct and equilibrium loading isotherm testwork on each of the three leach solutions from Phase 3

Findings from this testwork are as follows:

- Elemental scan of the three leach solutions generated indicated no observable build-up of deleterious elements.
- Fast extraction of uranium from the pregnant leach solution onto the organic solution. Maximum extraction of uranium onto the organic phase was achieved within 30 seconds.
- Uranium extraction efficiency for all three pregnant leach solutions had a similar profile indicating no observable impact of impurities (See Figure 1).

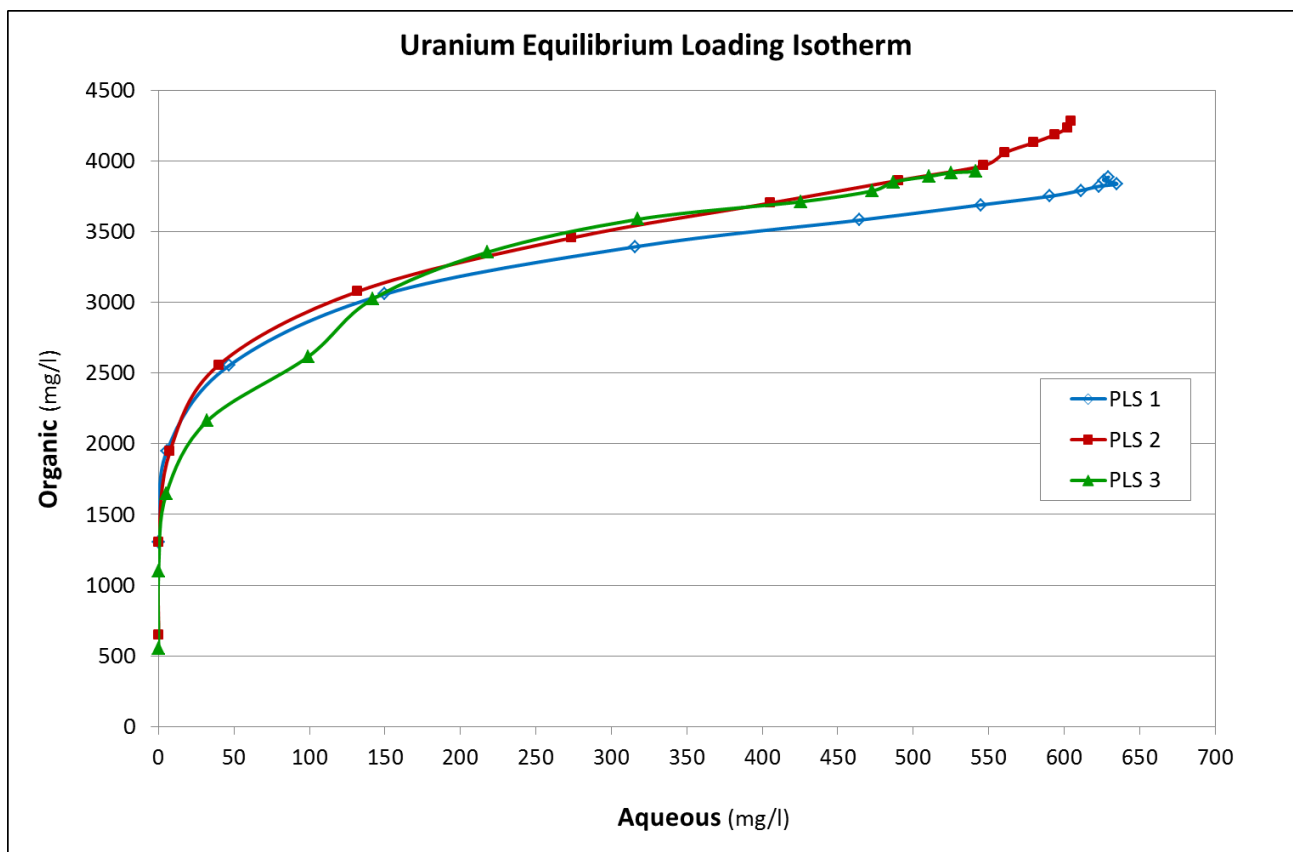


Figure 1 – Uranium Equilibrium Loading Isotherm: the similar profile of each solution shows no observable impact of impurities

## HISTORY OF DEFINITIVE FEASIBILITY STUDY (DFS)

The Etango Project is one of the world's largest undeveloped uranium deposits. It is located in the Erongo uranium mining region of Namibia, which hosts the Rössing and Langer Heinrich mines and the Husab Project currently under construction by the Chinese state owned enterprise, China General Nuclear Power Company (CGNPC). Etango is 73km by road from Walvis Bay, one of southern Africa's busiest deep water ports through which uranium has been exported for over 35 years. Road, rail, electricity and water networks are all located nearby.

Bannerman completed a Definitive Feasibility Study (DFS) and Environmental and Social Impact Assessment on the Etango Project in 2012. The respective studies, as announced to the market on 10 April 2012, confirmed the technical, economic and environmental viability of the project at historical term uranium prices. Bannerman has received environmental approval for the Etango Project from the Namibian Ministry of Environment and Tourism.

In 2015 the Company commenced the Demonstration Plant Program as an integral step in progress towards the project's detailed engineering and financing phases. The program is specifically aimed at:

- Demonstrating the design and projected performance reflected in the DFS;
- Further enhancing project knowledge; and
- Pursuing value engineering and identifying optimisation opportunities.

On 15 July 2015 Bannerman announced the successful commissioning of the demonstration plant and the favourable results from Phase 1 of the program. Subsequently, favourable results from the Phase 2 and Phase 3 program were reported to the market on 23 November 2015 and 7 April 2016 respectively. This program was completed during the June 2016 quarter following analysis of assays using an outsourced laboratory in the Republic of South Africa during May 2016 and review by Bannerman's technical consultants during June 2016.

## DEMONSTRATION PLANT PROGRAM

Identification	Objective(s)	Activities & Key Results	Schedule
<b>PHASE 1</b> COMMISSIONING	<ul style="list-style-type: none"> <li>• Commissioning of Plant.</li> <li>• Validate leaching assumptions in DFS.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Open circuit heap leach operation of 4x cribs and 8x columns.</li> <li>✓ Operational learnings &amp; indicative results</li> </ul>	Completed in June 2015 Quarter
<b>PHASE 2</b> REPRODUCIBILITY	<ul style="list-style-type: none"> <li>• Demonstrate consistent operation of plant.</li> <li>• Validate leaching assumptions in DFS.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Operate 2 cribs and 4 columns incorporating operational learning from Phase 1</li> <li>✓ Specific Results relative to DFS</li> <li>✓ Utilize same blended sample in both cribs.</li> </ul>	Completed in September 2015 Quarter
<b>PHASE 3</b> SOLUTION RECYCLE	<ul style="list-style-type: none"> <li>• Simulate the heap leach pad cycle to generate an enriched Pregnant Leach Solution (PLS).</li> <li>• Assess the possible impacts of the build-up of deleterious elements due to the recycling of intermediate solution.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Operate three cribs in closed cycle.</li> <li>✓ Impact on acid consumption and Recovery</li> <li>✓ Analyse the possible build-up of deleterious elements.</li> <li>✓ Generate and store sufficient PLS to enable the validation of SX assumptions in Phase 4.</li> </ul>	Completed in December 2015 Quarter
<b>PHASE 4</b> SOLVENT EXTRACTION	<ul style="list-style-type: none"> <li>• Demonstrate the solvent extraction process and assumptions in the DFS.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Operate SX bench scale test work at Demonstration Plant.</li> <li>✓ Confirm no issues with contaminants, precipitation and SX work</li> </ul>	Completed in June 2016 Quarter
<b>PHASE 5</b> VALUE ENGINEERING	<ul style="list-style-type: none"> <li>• Conduct Heap Leach Optimisation studies with Multiple Columns Tests</li> </ul>	<ul style="list-style-type: none"> <li>➤ Primarily utilize 8 columns to evaluate various opportunities to improve the project economics.</li> </ul>	Completed in June 2016, Results being reviewed



**Figure 2 - Etango Project Demonstration Plant**

Bannerman's Chairman, Ronnie Beevor, said, *"The Board is delighted with the success of the Demonstration Plant Program. When we decided in 2015 to undertake this work, we were determined to enhance the Etango Project's first mover advantage by removing the perception of technical risk associated with heap leaching. In fact, the Demonstration Plant results have exceeded this objective, further improving Bannerman's extraordinary leverage to a recovery in the uranium market."*

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## TECHNICAL DISCLOSURES

Certain disclosures in this report, including management's assessment of Bannerman's plans and projects, constitute forward looking statements that are subject to numerous risks, uncertainties and other factors relating to Bannerman's operation as a mineral development company that may cause future results to differ materially from those expressed or implied in such forward-looking statements. Full descriptions of these risks can be found in Bannerman's various statutory reports. Readers are cautioned not to place undue reliance on forward-looking statements. Bannerman expressly disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

Mineral Resources that are not Ore Reserves do not have demonstrated economic viability.

Bannerman Resources Limited (Bannerman or the Company) manages its drilling and assaying activities in accordance with industry standard quality assurance/quality control (QA/QC) procedures. Samples are collected by Bannerman personnel and prepared in accordance with specified procedures at the relevant assay laboratories. Drill samples were analysed for uranium by the Bureau Veritas Laboratory in Swakopmund, Namibia. Bureau Veritas is an International Laboratory Group with operations in 140 countries, including Ultratrace and Amdel in Australia. Assay QA/QC involves the use of assay standards (sourced from African Mineral Standards (AMIS) in Johannesburg, made from Bannerman pulp rejects and cross-checked through umpire laboratories for which the round robin reports are available), field duplicates, blanks and barren quartz flushes. A third party "umpire" laboratory (Genalysis in Perth) is used to cross-check and validate approximately 5% of the assay results in accordance with standard procedures. Sample coarse rejects are retained and approximately 5% of samples are re-submitted for further assay verification. All sample pulps, half-core and rock-chip samples are retained at Bannerman's Goanikontes Warehouse Facility (GWS) on site.

The information in this report relating to the Ore Reserves of the Etango Project is based on information compiled or reviewed by Mr Leon Fouché. Mr Fouché is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Fouché is employed by Bannerman Resources. Mr Fouché has sufficient experience relevant to the style of mineralisation and types of deposits under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves", and a Qualified Person as defined by Canadian National Instrument 43-101.