

# **QUARTERLY ACTIVITIES REPORT**

For the Period Ended 31 December 2017

Bannerman Resources Limited (ASX:BMN, NSX:BMN) ("Bannerman" or "the Company") is pleased to report on an excellent December quarter during which the Etango Project was strongly progressed while uranium market fundamentals also substantially improved.

#### HIGHLIGHTS

#### Processing Optimisation Study completed

- US\$73m estimated Etango processing-related capital cost savings (+/-30%)
- Operating costs reduced, with DFS Update to target improvements of US\$3+/lb U<sub>3</sub>O<sub>8</sub>

#### Membrane Study initial test work successfully completed

- Preliminary results ready for evaluation, with early indications of positive results
- Secondary testwork and economic evaluation underway
- DFS Update to incorporate any confirmed cost savings

## • Positive developments in uranium sector during quarter

- o Cameco Inc announced suspension of MacArthur River, world's largest uranium mine
- o KazAtomProm, world's largest uranium producer, announced 20% reduction in forecast production

Bannerman's Chief Executive Officer, Mr Brandon Munro, said, "The December quarter yielded excellent improvements to the Etango Project's projected economics with the Processing Optimisation Study confirming significant reductions in estimated capital costs and opportunities for operating cost reductions. The Bannerman team immediately built on this progress with an innovative Membrane Study that has delivered strong preliminary results. The timing of these achievements could not be better, with both Cameco and KazAtomProm announcing substantial curtailments in uranium supply for 2018."

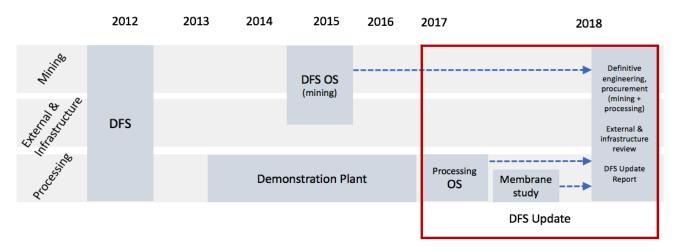


Figure 1 – Etango Processing Optimisation Study in context of technical enhancement of Etango uranium project.

#### **ETANGO PROJECT (Bannerman 95%)**

### DFS Update Progressed - Processing Optimisation Study Successfully completed

Bannerman's 95%-owned Etango Project is one of the largest and most advanced uranium projects globally. Etango is located within the Erongo uranium province of Namibia, which also hosts the Rössing (Rio Tinto), Langer Heinrich (Paladin Energy) and Husab (China General Nuclear) uranium mines.

Bannerman commenced the Etango Processing Optimisation Study (Processing OS) in the March 2017 quarter with the objective of incorporating the favourable results obtained in the Heap Leach Demonstration Plant Program and evaluating the application of recent processing technological advances since the 2012 Definitive Feasibility Study (DFS) was completed. The results and recommendations from the Processing OS will be incorporated into the DFS Update, in conjunction with definitive level procurement aimed at capturing the broader cost deflation that has occurred in the resources sector since 2012.

A processing opportunity review workshop was held in January 2017 involving Bannerman and AMEC Foster Wheeler personnel. Discipline experts were engaged to critically review the project and identify potential options to improve the economics of the Etango Project and review/evaluate such options ahead of a DFS Update. After 133 improvement ideas were identified, high potential opportunities were prioritised in the key processing plant areas.

In November 2017 AMEC Foster Wheeler issued a detailed report following completion of the Processing OS. The announcement in November 2017 demonstrated the success of the study, the potential for nanofiltration to benefit the project (discussed below) and identified a number of areas where further potential capital and operating cost savings may be confirmed by the work to be undertaken during completion of the DFS Update.

## Estimated Capital Cost Savings of US73m (+/-30%)

The Processing OS was undertaken with the primary objective of reducing the capital cost associated with the comminution circuit and processing plant design, without simply "trading off" reduced capital costs against increased operating costs. In addition to substantially reducing estimated pre-production capital by US\$73 million without an operating cost trade-off, the Processing OS identified further capital and operating cost reduction opportunities that can be evaluated during definitive level engineering and procurement to be completed under the DFS Update.

Identified capital savings were supported by revised budget quotations for new equipment and revised layouts and basic arrangements layouts. Civil, structural, electrical and instrument costs were benchmarked against current projects.

The most significant estimated capital cost savings resulted from the following:

- Simplifying the crushing, stockpiling and screening circuit;
- Confirmation that Ion Exchange is favourable to Solvent Exchange for both economic and operational reasons;
- Removing pinned bed clarifiers after the Heap Leach Demonstration Plant program confirmed the low suspended solids content of the PLS in the Etango solution; and
- The use of a single agglomeration unit.

The aggregate impact is an overall simplification of the Etango flowsheet that delivers an estimated US\$73 million savings, with a level of accuracy of +/- 30%.

### **Improvement in Operating Cost**

The Processing OS identifies significant potential operating cost savings and has led to the Company formulating a DFS Update improvement target of US\$3+/lb U $_3$ O $_8$ , compared with the operating costs published in the 2015 Optimisation Study. The most significant estimated operating cost savings resulted from the following:

- Testwork confirmed a 40% reduction in the binder required for the agglomeration process. Stacking
  tests and hydrodynamic column tests were performed at Mintek laboratories in South Africa with
  varying binder levels. The testwork concluded that a binder dosage of 150 grams per tonne of ore (as
  compared to the 250 g/t in the DFS) is sufficient for the target heap height and irrigation flow. This
  reduction in binder reduces the forecast operating cost by approximately US\$0.75/lb.
- The Heap Leach Demonstration Plant testwork over two years has consistently shown a final recovery of approximately 93% against the DFS projection for a scaled-up heap of 86.9%. The testwork results, which included 280 tonnes of ore, were used by AMEC Foster Wheeler to project a scaled-up processing recovery of 87.8%. This improved recovery reduces the forecast operating cost by approximately US\$0.40/lb.
- The Heap Leach Demonstration Plant testwork also consistently showed acid consumption averaging 14.4kg/tonne compared to the DFS projection of 17.6 kg/tonne. The scaled-up acid consumption was reduced to a level of 16.8 kg/tonne. Further detailed engineering work will be done in the DFS Update to accurately reflect the operating savings achieved with this lower acid consumption and other opportunities to reduce acid costs such as membrane acid recovery.
- The operating savings obtained from the simplified comminution circuit will also be reflected in the DFS Update.

A range of further potential operating cost saving opportunities, such as reduced maintenance assumptions associated with capital reductions and the operating benefits of a simplified processing circuit, will be considered during the definitive level engineering and procurement to be conducted under the DFS Update.

Accordingly, further operating cost improvements are anticipated and the Company targets improvements of US3+/Ib U $_3O_8$  across the life of mine.

### DFS Update to be continued in 2018, adding value through continued technical enhancement of Etango

The Processing OS identified the opportunity to incorporate nano-filtration technology in the processing circuit. A subsequent desk-top study by the Australian equipment vendors confirmed this potential after reviewing analytical data from the Etango Heap Leach Demonstration Plant. A membrane pilot test rig was mobilised to site to undertake an initial test work program, under the supervision of Bannerman's technical team and the equipment vendors. The test work used significant volumes of pregnant leach solution obtained from operation of two cribs at the Demonstration Plant. An IX process was then used to make concentrated eluate solution which was also used in the test work. The initial test work is now complete.

The completed Processing Optimisation Study and initiated Membrane Study will provide valuable input into the DFS Update, to be continued in 2018. The DFS Update will include:

- Definitive standard engineering incorporating the enhancements from the mining Optimisation Study (2015), the Processing Optimisation Study (2017) and the Membrane Study (2018).
- Definitive level procurement to capture the full value of the mining sector deflation experienced since the 2012 DFS and to incorporate the competitive benefits from a broader range of technology and equipment vendors.
- Further possible improvements to mine design, mining approach and, if feasible, potential adoption of new mining technologies.

• Updated external/financial costs and potential infrastructure improvements.

The continued technical enhancement since the 2012 DFS repositions Etango and has confirmed the technical robustness of the project metrics. The Mining and Processing Optimisation studies and the extensive confirmatory testwork conducted at the Etango Demonstration Plant and external laboratories places Etango at the forefront of the global development pipeline of projects with targeted annual production at or above 2 Mlbs  $U_3O_8$  per annum.

### **Mineral Deposit Retention Licence**

On 2 October 2017, Bannerman announced that the Namibian Ministry of Mines and Energy had granted a Mineral Deposit Retention Licence with a five year extendable term (Retention Licence) over Bannerman's 95%-owned Etango Uranium Project.

The Retention Licence covers an area of 7,295 hectares, which includes the Etango ore body, two satellite deposits at Hyena and Ondjamba and all planned mine infrastructure (see Figure 2 below). Accordingly, 100% of the project's uranium resources are now secured under long term tenure.

The Retention Licence provides strong and exclusive rights to tenure and the right (without obligation) to continue with exploration or development work, enabling the DFS Update work program to continue.

Under the Namibian Minerals (Prospecting and Mining) Act 1992, a Mineral Deposit Retention Licence may be granted to a project where all feasibility and other work has been completed to enable mining, however the commodity price does not currently support the profitable development of the project. The applicant must demonstrate that the relevant commodity price is expected to improve sufficiently to enable profitable mining.

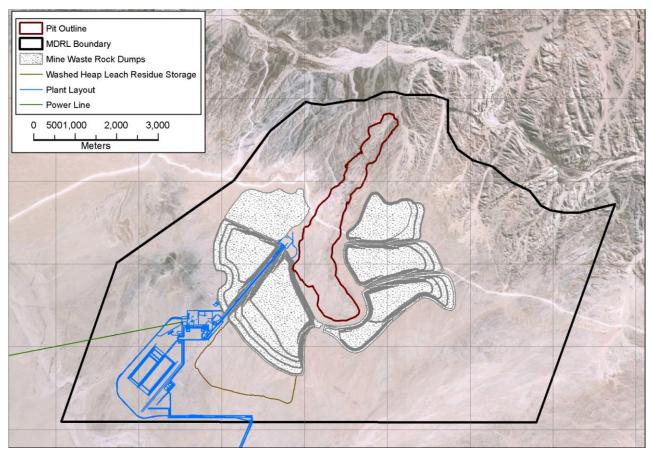


Figure 1 - MDRL 3345 (outline shown in black) covers an area of 7,295 hectares and, as can be seen above, the Licence area includes all planned mine infrastructure.

There were no other interests in other mining tenements or any beneficial interests in farm-in or farm-out agreements which were acquired or disposed of during the quarter.

### **CORPORATE**

## **Director Resignation**

Mr David Tucker stepped down as a Non-Executive Director at the Company's Annual General Meeting in November 2017. Mr Tucker has served Bannerman in this role since March 2008. Over this time his combined 40 years of experience as an exploration geologist and in senior corporate affairs roles has provided critical insights for the Company to the benefit of all stakeholders. Mr Tucker was also instrumental in laying a strong foundation for the Company in Namibia by providing hands-on assistance with community relations and instilling the open and transparent approach to community engagement for which Bannerman remains well regarded.

#### **Cash Position and Operating Expenditure**

Cash reserves at 31 December 2017 totalled A\$2.0 million (30 September 2017: A\$2.5 million).

Net operating cash outflow during the quarter totalled A\$0.5 million.

#### **Issued Securities**

At the date of this report, the Company has on issue 855,358,304 ordinary shares, 37,909,033 performance and share rights and 69,875,400 unlisted share options. The share rights and share options are subject to various performance targets and continuous employment periods.

#### **URANIUM MARKET**

Two important events occurred in the uranium sector during the quarter. On 9 November 2017, Cameco Inc announced a major production cutback with the suspension of the McArthur River mine from February 2018. The suspension was announced for an initial period of 10 months, with Cameco subsequently clarifying that the suspension will continue until an improvement in uranium prices. On 4 December 2017, KazAtomProm announced that it will reduce planned uranium production by 20% for three years to match reduced demand.

The world's third largest uranium producer, Areva, also recently announced supply reductions in Niger. The combined effect of cutbacks by the world's three largest uranium producers is forecast to put the uranium market back into balance after 11 years of surplus and is expected to have a significant effect on uranium prices in 2018 as the reduction in supply starts to take effect.

Brandon Munro
Chief Executive Officer
31 January 2018

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**About Bannerman** - Bannerman Resources Limited is an ASX and NSX listed exploration and development company with uranium interests in Namibia, a southern African country which is a premier uranium mining jurisdiction. Bannerman's principal asset is its 95%-owned Etango Project situated near Rio Tinto's Rössing uranium mine, Paladin's Langer Heinrich uranium mine and CGNPC's Husab uranium mine. A definitive feasibility study has confirmed the technical, environmental and financial (at consensus long term uranium prices) viability of a large open pit and heap leach operation at one of the world's largest undeveloped uranium deposits. From 2015 to 2017, Bannerman conducted a large scale heap leach demonstration program to provide further assurance to financing parties, generate process information for the detailed engineering design phase and build and enhance internal capability. More information is available on Bannerman's website at <a href="www.bannermanresources.com">www.bannermanresources.com</a>.

#### **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 was employed by Bannerman Resources until 14 July 2017. 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.