

# **ASX RELEASE**

20 June 2018

# Opportunity for Further Efficiencies and Size Reductions in Leach Circuit Highlighted in Second Stage Leach Test Work

# **Highlights**

- Initial results of leach test work confirm potential to further significantly decrease size of leach circuit and leach residence time required for treatment of Lake Maitland beneficiated concentrates.
- These initial results provide the opportunity for further reductions in both the capital and operating costs of the hydrometallurgical plant for the Wiluna Uranium Project.
- Further leaching and ion exchange test work anticipated to be completed by Q3 2018.
- Share Purchase Plan open to eligible shareholders: <a href="http://www.toroenergy.com.au/investors/share-purchase-plan">http://www.toroenergy.com.au/investors/share-purchase-plan</a>

Toro Energy Limited (ASX:**TOE**) (**Toro** or the **Company**) is pleased to announce the initial results of leach test work undertaken in advancing the next stage of the **Beneficiation** and **Process Design** studies ('**BPD Studies**') for the Company's 100% owned Wiluna Uranium Project in Western Australia (refer to **Figure 1**). These results have confirmed the potential to further significantly decrease the size of the leach circuit and decrease the leach residence time required for the treatment of Lake Maitland beneficiated concentrates.

Two leach tests were performed on a single beneficiated concentrate (Mets065 – Clay80)<sup>1</sup>, the first to confirm the leaching characteristics from the first stage scoping level BPD Studies in 2016,<sup>1</sup> and the second to leach the concentrate at a higher pulp density to assess the leaching characteristics at higher pulp densities and to increase the leach liquor tenor.

The outcomes of these initial leach tests include:

- residence time was reduced by as much as one third of the 2016 BPD Study (**Table 1**);
- the calculated leach tank capacity required for leaching Clay80 beneficiated concentrates was reduced by over half that of the 2016 BPD Study (**Table 1**);
- confirmation that carbonate leaching can be used on the Clay80 beneficiated concentrates;
   and
- that higher pulp densities can be used in leaching without losing extraction efficiency.

Running the leach at higher pulp density has a number of advantages, namely:

- reducing the size of reaction vessels;
- increasing leach liquor concentration;
- · reducing equipment size downstream; and
- · decreasing reagent consumption, steam and process water.

<sup>&</sup>lt;sup>1</sup> Refer to the Company's ASX announcement of 30 January 2018 for sample details and beneficiation results



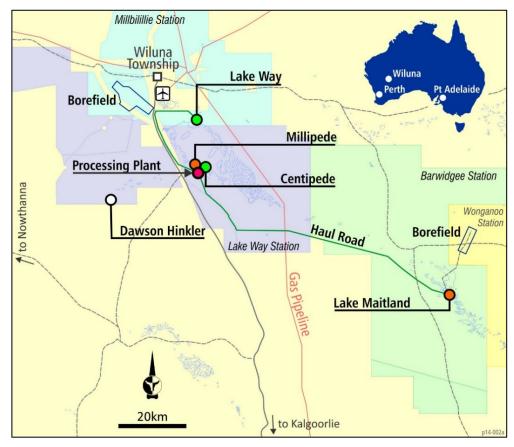


Figure 1: Location of the Wiluna Uranium Project

Overall these results provide the opportunity for further reductions in both the capital and operating costs of the hydrometallurgical plant beyond those already highlighted in the Company's previous BPD Studies.

This is the first of a number of samples to be tested in this phase of the processing studies. Leach testing will also be performed on Mets062, Mets085 and Mets089 beneficiated concentrates under optimised conditions to generate leach liquor for ion exchange test work. However, further leach test work on Mets065 will also be undertaken to determine the highest possible pulp densities that can be used to further increase leach liquor tenor without losing extraction efficiencies.

The further work required to complete Phase 1 Leaching and ion exchange test work is anticipated to be completed by Q3 2018.

#### **Share Purchase Plan Update**

The Company is pleased to provide an update in relation to its Share Purchase Plan (**SPP**), details of which are contained in the Company's ASX announcements of 31 May 2018. The SPP booklet with a personalised application form was despatched to eligible shareholders around Monday 4 June 2018. If you would like to receive an electronic copy of your personalised application form this can be requested through OzFinancial Australia, the advisors assisting the management of the SPP, at <a href="http://www.toroenergy.com.au/investors/spp-form">http://www.toroenergy.com.au/investors/spp-form</a>

The SPP offer will close on Monday 25 June 2018. New Shares issued under the SPP will rank equally with existing Shares and are expected to be allotted on Thursday 28 June 2018. The Company reserves the right to vary the timetable for the SPP, including the closing date of the SPP offer.



# **Background**

The aim of Phase 1 in the second stage of the BPD Studies is to further evaluate and optimise conditions in the hydrometallurgical plant developed in the 2016 Scoping Study. This will entail confirmation of the leaching characteristics and ion exchange efficiency on leach liquors. Testing will be conducted only on Lake Maitland Clay80 concentrates produced in the Beneficiation Design test work, namely Mets062, Mets065, Mets085 and Mets089. The Clay80 lithology is one of the common lithologies within the Wiluna Uranium Project and the dominant lithology of the Lake Maitland deposit, the largest of the Wiluna Uranium Project deposits. It has been identified as the early feed to the mill<sup>2</sup>.

The concentrate samples were produced by de-sliming and rejecting +500 µm material. This ASX announcement reports on a total of two leach tests completed on the Mets065 concentrate sample. Leach Test 1 was conducted to confirm the leaching characteristics achieved from the 2016 scoping level BPD Study test work. Leach Test 2 was conducted at a higher pulp density to assess the leaching characteristics and to increase the leach liquor tenor.

#### **Leach Results**

## Leach Test 1

The initial leach test was conducted at 35% solids. **Figure 2** shows the leach curve. Rapid leach extractions were achieved with 98.9% uranium extraction occurring in the first 8 hours, with 99.2% extraction achieved after 24 hours. The final leach liquor contained 529 mg/L uranium. This leach test confirmed the ability to use carbonate leaching on Clay80 Mets065 concentrate.

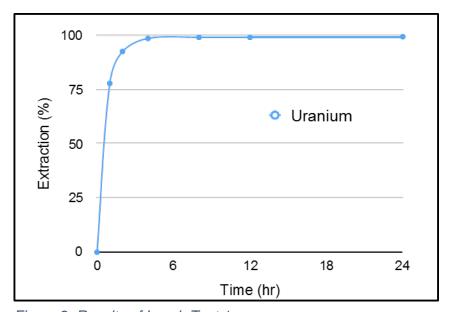


Figure 2: Results of Leach Test 1

<sup>&</sup>lt;sup>2</sup> Refer to the Company's ASX announcement of 28 September 2016



#### **Leach Test 2**

The second leach test was conducted at 50% solids with similar extractions to the initial test. Uranium extraction was rapid, reaching 98% within the first 8 hours and 98.7% after 24 hours. **Figure 3** shows the leach curve. The final leach liquor concentration increased to 1126 mg/L.

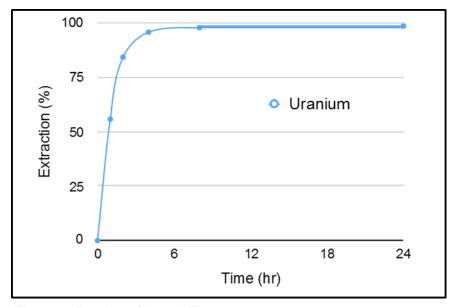


Figure 3: Results of Leach Test 2

## **Leach Tank Size Calculations**

Based on the above leach test results the leach tank size calculation is presented in **Table 1** along with the comparative from the 2016 scoping study. The leach concentrate from the scoping study was produced by rejecting +75  $\mu$ m material and de-sliming resulting in approximately 71% mass rejection. These test results have indicated that optimum leach concentrate will be produced by rejecting +500  $\mu$ m material and de-sliming, which equates to approximately 50% mass rejection. Although this results in an increased mass of solids feeding the leach, by increasing the leach feed pulp density and decreasing the residence time, **Table 1** shows that the size of the leach circuit can be decreased by as much as half (from approximately 2325 m3 to 1073 m3).

Table 1: Leach Tank Size Comparison

	Units	Scoping	Updated (50wt%)
Leach Tank Details			
Residence time (total)	hrs	24	8
Capacity required (overall)	m <sup>3</sup>	2325	1073
% of Scoping Capacity		100	46
Leach Feed			
Rate (fresh)	dtph	56.4	97.9
solids content	wt%	42.6	50.0
Rate	m <sup>3</sup> /hr	97	134



## **ENDS**

**FURTHER INFORMATION:** 

Richard Homsany Toro Energy 08 9214 2100
Greg Shirtliff Toro Energy 08 9214 2100

Toro's flagship asset is the 100% owned Wiluna Uranium Project, located 30 kilometres southwest of Wiluna in Central Western Australia. The Wiluna Uranium Project has received environmental approval from the state and federal governments providing the Project with the opportunity to become Western Australia's first uranium mine. Toro will maximise shareholder returns through responsible mine development and asset growth including evaluating the prospectivity of its asset portfolio for minerals other than uranium and increasing their value.

www.toroenergy.com.au



#### FORWARD LOOKING AND CAUTIONARY STATEMENTS

# **Forward Looking Statements**

This announcement may contain certain "forward-looking statements" which may not have been based solely on historical facts, but rather may be based on the Company's current expectations about future events and results. Where the Company expresses or implies an expectation of belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. However, forward looking statements are subject to risks, uncertainties, assumptions and other factors, which could cause actual results to differ materially from future results expressed, projected or implied by such forward-looking statements. Such risks include, but are not limited to Resource risk, metals price volatility, currency fluctuations, increased production costs and variances in ore grade or recovery rates from those assumed in mining plans, as well as political and operational risks in the Countries and States in which we operate or sell product to, and governmental regulation and judicial outcomes. For a more detailed discussion of such risks and other factors, see the Company's Annual Reports, as well as the Company's other filings. Readers should not place undue reliance on forward looking information. The Company does not undertake any obligation to release publically any revisions to any "forward looking statement" to reflect events or circumstances after the date of this announcement, or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws.

## **Cautionary Statement**

The Studies are based on lower-level technical and economic assessments and are insufficient to provide certainty that the conclusions of the Studies will be realised. Further, the Company cautions that there is no certainty that the forecast financial information contained in the Studies will be realised. All material assumptions underpinning the forecast financial information are set out in this announcement. This forecasted financial information is deduced from an underlying mining production rate deemed possible due to the size of the Mineral Resources at Lake Maitland. Refer ASX announcement dated 1 February 2015 that shows Lake Maitland deposit has sufficient Mineral Resources to support a 2Mt/a mining operation. The estimated mineral resources underpinning the Studies have been prepared by competent persons in accordance with the current JORC Code 2012 Edition and the current ASX Listing Rules. Toro has concluded it has a reasonable basis for providing the forward looking statement included in this announcement. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.