

17 May 2021

Companies Announcement Office  
Via Electronic Lodgement

## Lance Project Low-pH Field Demonstration Update

Peninsula Energy Limited (“**Peninsula**” or “**the Company**”) (ASX:PEN, OTCQB:PENMF) is pleased to provide an update on the MU1A low-pH field demonstration at the Company’s flagship, 100% owned Lance Project (“**Lance**”) located in Wyoming, USA. The field demonstration of low-pH In-Situ Recovery (“**ISR**”) has been flexibly designed to generate comprehensive site-specific data on the influence of certain development and operational parameters ahead of a final investment decision to restart production at the Project.

Since the last field demonstration update, actions have been taken across key focus areas to ensure performance continues to meet the Company’s expectations. Further changes to the configuration of the injection and recovery well patterns have been implemented with the intention of reducing response times for assessing and adjusting chemical parameters. The Company has also commenced the evaluation of several alternative uranium recovery process options with the object of reducing downstream processing costs.

Commenting on the progress of the field demonstration, Peninsula Managing Director and Chief Executive Officer Wayne Heili said “*The field operations team at Lance continue to apply innovative thinking and solutions to the low pH field demonstration. Our demonstration design was conceived with the flexibility to implement changes as we progress and this month we made additional changes which we believe can help deliver the completed test in an accelerated timeframe. The field demonstration continues to perform within expectations and the information gained from it will be invaluable, as the Company progresses the Lance Project toward a return to commercial production.*”

### OPERATIONAL OVERVIEW

Achieving and maintaining the correct operational pH and Oxygen Reduction Potential (“**ORP**”) for the process solutions is critical to successful uranium low-pH ISR operations. As reported on 13 April, changes in oxidant and pattern configurations delivered significant improvement in key chemical parameters.

The demonstration operations have continued over the last month without significant disruption. With the original pattern configuration having longer than typical distances between injection and recovery wells, more than one month of operations is generally necessary to observe the impacts of operational adjustments. The pH of each recovery well has continued moving modestly downward toward the target level during the last month. Free acid concentrations, another measure of acidity, have improved in 2 out of the three recovery wells. At approximately 400 mv, the recovery stream ORP has also moved closer to the target range of 450 to 600 mv during the past month. After a doubling of uranium grade to between 20 and 25 ppm as reported on 13 April, the grade has remained within this range during the past month.

### PATTERN CONFIGURATION ADJUSTMENTS

As noted in the 13 April update, the Company has adjusted the original pattern configuration of 10 injection wells fully surrounding 3 recovery wells by installing and activating two new internal injection wells that are located between each pair of recovery wells. To further reduce the expected response time for chemical parameter adjustments, the Company has subsequently switched off selected perimeter injection wells that were more distant to the recovery wells, creating a pattern design with the average

injector to recovery well distance reduced from 135 feet to approximately 80 feet. These supplementary pattern configuration changes should accelerate the upward movement of uranium grades.

### **URANIUM GRADES - ION EXCHANGE**

As previously reported, with increasing field demonstration grades, the Company activated the pilot ion exchange uranium recovery circuit in early March. Within the current range of uranium concentrations, ion exchange systems have limited capacity to capture and retain uranium, and minimal actual recovery of uranium has occurred thus far. Ion exchange processes are concentration driven and the system performance is expected to improve with increasing uranium grades.

Mindful of the widely understood limitations of ion exchange processes in low pH applications, including those at successfully operating commercial facilities, the Company has identified and begun evaluating several innovative uranium recovery process flowsheet options. The alternative process technologies are being evaluated progressively with desktop, benchtop and potentially pilot scale demonstrations that can be run in conjunction with the current field demonstration. These advanced technologies have the potential to significantly enhance downstream processing performance while reducing operating costs.

Peninsula will provide further updates on the MU1A low-pH field demonstration as additional meaningful results become available.

Sincerely Yours,



Wayne Heili  
Managing Director / CEO

This release has been approved by the Board of Directors.

For further information, please contact

**Peninsula Energy**  
+61 8 6263 4461

or

**Citadel-MAGNUS**  
Michael Weir - +61 402 347 032  
Cameron Gilenko - +61 466 984 953

### **ABOUT PENINSULA ENERGY LIMITED**

*Peninsula Energy Limited (PEN) is an ASX listed uranium mining company which commenced in-situ recovery operations in 2015 at its 100% owned Lance Projects in Wyoming, USA. Following a positive feasibility study, Peninsula is embarking on a project transformation initiative at the Lance Projects to change from an alkaline ISR operation to a low-pH ISR operation with the aim of aligning the operating performance and cost profile of the project with industry leading global uranium production projects.*