



2 September 2019

Companies Announcement Office
Via Electronic Lodgement

LOW PH FIELD DEMONSTRATION AND TRANSITION UPDATE

Peninsula Energy Limited (**Peninsula or Company**) is pleased to provide the following update on the Lance Projects in Wyoming, USA.

- **Success of initial mining and restoration phases of Low pH Field Demonstration**
 - **Mining phase met all key objectives – pH lowered to approximately 2.0 S.U.**
 - **Initial restoration phase objective achieved – pH raised above 5.0 S.U.**
- **Interim Operation Report summarising Field Demonstration results being finalised for Wyoming Department of Environmental Quality (WDEQ)**
- **Commercial scale low pH operations in Mine Units 1 & 2 can commence upon acceptance by WDEQ that pre-defined criteria have been achieved**
- **Field Demonstration highlights opportunities to optimise and enhance processes set out in the Low pH Feasibility Study and further de-risk the project**
- **Optimisation and de-risking activities commenced and expected to complete during first half of calendar year 2020**
- **Company awaits recommendations from the U.S. Nuclear Fuel Working Group, which may positively impact uranium market conditions**

Wayne Heili, Peninsula's Managing Director/CEO, commented: *"We are very pleased with the performance of both the mining and initial restoration activities of our low pH field demonstration. All the key performance objectives have been satisfied and this will guide our future planning and activities. These results, in combination with the recent completion of the major permit and license amendments, exemplify the results driven focus of the Peninsula team."*

While the current uranium market environment remains challenging, we are optimistic that substantial positive catalysts may soon be delivered by the President's United States Nuclear Fuel Working Group. Meanwhile, the Company is taking the prudent step of conducting activities to both de-risk and refine key technical aspects of the planned operational transition of the Lance Project to low pH ISR. Hand in hand with these important activities, we will steadfastly manage our expenditures until the time we decide to fund and implement the work required for the transition and ramp-up of low pH operations."

Low pH Field Demonstration – Success of initial mining and restoration phases

The low pH field demonstration, which consists of mining and restoration phases, commenced in December 2018 using three adjoining wellfield recovery patterns which were previously operated utilising alkaline in-situ recovery (**ISR**) solutions. As announced on 1 April 2019, the mining phase of the demonstration met all key test objectives, including lowering the mining zone pH to the targeted level of approximately 2.0 standard units (**S.U.**) without compromising the ability to move low pH solutions through the mining zone.

Following the successful completion of the mining phase, the Company proceeded to the restoration phase activities of the field demonstration. During the initial restoration demonstration phase, the main objective was to return the pH in the mining zone to above 5.0 S.U. At this pH level, industry standard methods can be employed to complete groundwater restoration. The Company is pleased to report that it has successfully achieved this main objective, with pH level now above the targeted 5.0 S.U. throughout the test pattern area.

Pursuant to the requirements defined in the approved Permit to Mine (**PTM**), an Interim Operation Report that summarises the results of the field demonstration to date is being finalised for submission to the Wyoming Department of Environmental Quality (**WDEQ**). Commencement of commercial scale low pH operations in Mine Units 1 and 2 can commence upon acceptance by the WDEQ that the Interim Operation Report has demonstrated that pre-defined criteria have been achieved, or through approval by the WDEQ following evaluation of variations to the pre-defined criteria (if any).

Low pH Technical De-risking activities

The Company has initiated a series of actions designed to further de-risk and optimise future commercial-scale low pH operations. These actions will be completed in parallel with additional groundwater restoration activities within the field demonstration area which are intended to meet PTM defined metrics that will allow production from Mine Unit 3 and other future mine areas.

Process modifications have been identified during the field demonstration which may provide opportunities to improve the outcomes of future low pH operations in comparison to the September 2018 Low pH Feasibility Study. These modifications are being evaluated and may be incorporated in further field trials. Ongoing evaluations include measures with the potential to optimise the ion exchange system capture efficiency and resin loading levels, engineering and design optimisation in respect of the removal of fines from process streams that are typically encountered during mining zone acidification, and redesign of the proposed site acid storage and distribution. The Company has engaged external specialists for technical support and assistance with these activities and is reviewing the relevant regulatory requirements to determine whether any significant ancillary permitting actions may be necessary in order to implement the recommended outcomes.

Anticipated Timelines

The Company anticipates that the de-risking and optimisation activities will be completed during the first half of the 2020 calendar year and depending on market conditions, an investment decision for funding the implementation and commencement of low pH operations could be made in parallel with these activities. As advised previously, the initiation of commercial scale low pH operations in Mine Units 1 and 2, and the commencement of development of Mine Unit 3 will be guided by uranium market conditions and the Company's requirements for produced uranium. The Company is capable of fully satisfying the balance of its current 2019 and 2020 sales obligations without continued production activities.

The United States domestic uranium production industry, of which Peninsula is a part, awaits the recommendations from the President's U.S. Nuclear Fuel Working Group, which are expected to be reported to him by the 10th October 2019 and which may positively impact market conditions. In the meantime, focused measures are being instituted by the Company with the intention of reducing expenditure levels while the de-risking and optimisation activities are advanced.

Yours Sincerely,



Wayne Heili
Managing Director/CEO

For further information, please contact our office on +61 8 9380 9920
during normal business hours.

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.