Plateau Energy Metals Announces Successful Completion of Preliminary Falchani By-Product Test Work

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TORONTO, April 08, 2020 - Plateau Energy Metals Inc. (“Plateau” or the “Company”) (TSX-V: PLU | OTCQB: PLUUF) is pleased to announce it has completed a preliminary test work program (“Program”) for the recovery of potential by-products such as sulfate of potash (“SOP”), caesium and rubidium from its Falchani Lithium Project in Peru. This Program was conducted by ANSTO Minerals, based in Sydney, Australia.

The Program focused on recovery and precipitation of SOP and caesium concentrate from a pregnant leach solution (“PLS”) created from the Falchani Project Preliminary Economic Assessment (“PEA”) flowsheet.

Highlights of the Program:

- The final test work was run on a sample of Falchani lithium-rich tuff material at the same conditions as the lithium leaching studies published by the Company in the PEA with concentrations of 3,400 ppm lithium; 3 wt% K; 600 ppm Cs and 1,400 ppm Rb;
- Extractions of the following metals (from lithium-rich tuff into sulfate solution via previous test work and supported in this Program):
  - Potassium (“K”): 43%
  - Caesium (“Cs”): 84%
  - Rubidium (“Rb”): 67%
- Excellent rejection of aluminum using ‘simple’ neutralization with lime or high temperature treatment (calcination);
- Caesium precipitation: selective crystallization of >99% of the Cs and Rb from PLS, along with some K, by cooling to between 20 and 30?C (refer to Figure 1 and Table 1) following the PEA flowsheet; and
- Precipitation of approximately 18% of K from leaching of feed material through to PLS at temperatures below 20?C to a purified K-alum in the first pass, with future test work potentially optimizing the yield.

“These preliminary results are encouraging and support potential by-products that our Falchani project could supply in addition to lithium carbonate," stated Dr. Laurence Stefan, President & COO. "By simply controlling pH with lime re-agent addition combined with solution cooling, ANSTO has demonstrated the precipitation of a critical caesium-rubidium sulfate chemical from leach solutions at temperatures above 25?C and of a potential SOP at lower temperatures. The SOP could be used as a strategic fertilizer for Peru and possibly in the rest of South America."

Program Details

This Program was an extension of ANSTO’s previous test work to support the Falchani Project National Instrument 43-101 PEA technical report titled “Falchani Lithium Project NI 43-101 Technical Report – Preliminary Economic Assessment” prepared by DRA Pacific, effective February 4, 2020 (filed on SEDAR March 20, 2020), in which a mixed alkali metal alum is crystallized from the PLS prior to purification (refer to flowsheet linked above). This mixed alkali metal alum is where >99% of Cs and Rb report to in the process, which forms a potential feed for further processing to realize the value of the contained caesium.

Three different processing options were examined in the Program, including:

- Neutralization / Sulfate Crystallization (“Neutralization Option”);
- Calcination / Water Leaching / Sulfate Crystallization (“Calcination Option”); and

- Upgrading of the Mixed K/Rb/Cs-alum (“Pre-Concentration”).

The results of the Program have demonstrated excellent rejection of aluminum, iron, and other trace elements, and substantial recoveries of the alkali metals (potassium, rubidium and caesium) using either an initial treatment of calcination at between 700 to 800ºC in the Calcination Option, or dissolution of alum followed by neutralization using lime in the Neutralization Option.

The test work also demonstrated selective crystallization of >99% of the Cs and Rb, in both the Neutralization Option and Calcination Option from actual PLS by cooling to between 20 to 30?C (see Figure 1). At this point the Rb and Cs content is reduced to below detection limits (1 mg/L). A proportion of potassium also crystalizes in this step.

At temperatures below 20?C a portion of the K available in solution precipitated out while lithium and other metals, remained in the sulfate solution. This resulted in an unoptimized first pass recovery of approximately 18% of the K in solution and ANSTO believes future test work may further improve the yield. As described in the PEA flowsheet, the lithium-rich solution continues with an additional three-stage conventional impurity removal prior to the next steps utilized to precipitate a low impurity, battery quality lithium carbonate.

These two options for processing of alum are used on an industrial scale today and with the success of this Program, future test work will follow well established process designs.

While sulfate crystallization was not examined in this Program in the first two options, the pronounced differences in the solubility of SOP versus caesium and rubidium sulfates is expected to allow the ready crystallization of a SOP product in accordance with conventional approaches employed for alum processing.

The third processing option of Pre-Concentration was examined to determine if the caesium grade of the mixed alkali metal alum could be improved prior to further processing using the first two options. This approach simply represents an optimization of the alum crystallization step already considered for the PEA flowsheet. Alum crystallization is adopted by the lithium industry to control the build-up of alkali metals such as potassium, caesium and rubidium in sulfate-based processing liquors. At this stage, further work is required to demonstrate the viability of this processing route.

Figure 1: Precipitation versus Temperature (staged cooling of PLS)

Figure 1 is available at
https://www.globenewswire.com/NewsRoom/AttachmentNg/43d68ea1-8c1a-4ad4-b98f-94299137507c

Table 1: Extraction and Precipitation in Current Program

		Precipitation %	
Element	Extraction in Leach %	At 25?C	At 5?C
K	43	61	87
Rb	67	100	100
Cs	84	100	100

Future Test Work

These preliminary test work results support the need for future test work including:

- Optimized SOP crystallization step for the feed solutions containing K, Cs and Rb sulfates;
- A techno-economic evaluation of the proposed processing options in order to understand the opportunity that the SOP, Cs and Rb represent for the Falchani Project; and
- Final precipitation of K from the alum solution at a temperature range of 20-6?C (in a temperature range where the solution is Cs, Rb-free), as a high purity SOP product.

Qualified Person

Doug Collier (FAusIMM) of ANSTO Minerals, an Independent Qualified Person as defined by National Instrument 43-101 *Standards of Disclosure for Mineral Projects*, has reviewed and approved the scientific and technical information contained in this news release.

About ANSTO Minerals

ANSTO (Australian Nuclear Science and Technology Organisation) Minerals is an international mining consultancy group located in Sydney, Australia, with an experienced team of 60+ engineers, metallurgists, chemists, and scientists who have been providing consulting services and process development services to the mining and minerals processing industries for well over 35 years. ANSTO Minerals has world-leading expertise in uranium ore processing, rare earth processing, zirconium/niobium/hafnium processing, base metals processing, lithium processing, and radioactivity control and management.

About Plateau Energy Metals

Plateau Energy Metals Inc., a Canadian exploration and development company, is enabling the new energy paradigm through exploring and developing its Falchani lithium project and Macusani uranium project in southeastern Peru, both of which are situated near significant infrastructure.

For further information, please contact:
Plateau Energy Metals Inc.

Alex Holmes, CEO & Director	Facebook: www.facebook.com/pluenergy/
+1-416-628-9600	Twitter: www.twitter.com/pluenergy/
IR@PlateauEnergyMetals.com	Website: www.PlateauEnergyMetals.com

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Forward Looking Statements

This news release contains certain forward-looking information and forward-looking statements (collectively “forward-looking statements”) within the meaning of applicable securities legislation. All statements, other than statements of historical fact, are forward-looking statements. Forward-looking statements in this news release include, but are not limited to, statements with respect to: (i) the development of the SOP component of the Falchani Project, including potential future production, offtake and use of SOP from the Falchani Project; (ii) the timing or the results of any additional test work conducted on by-products at the Falchani Project; and (iii) potential production of caesium-rubidium as lithium by-products from the Falchani Project.

Forward-looking statements are frequently identified by such words as "may", "will", "plan", "expect", "anticipate", "estimate", "intend", “indicate”, “scheduled”, “target”, “goal”, “potential”, “subject”, “efforts”, “option” and similar words, or the negative connotations thereof, referring to future events and results. Forward-looking statements are based on the current opinions and expectations of management. Although the Company believes that the current opinions and expectations reflected in such forward-looking statements are reasonable based on information available at the time, undue reliance should not be placed on forward-looking statements since the Company can provide no assurance that such opinions and expectations will prove to be correct. All forward-looking statements are inherently uncertain and subject to a variety of assumptions, risks and uncertainties, including risks and uncertainties relating to the development of the SOP component of the Falchani Project in Peru, potential future production, offtake and use of SOP from the Falchani Project; the timing or the results of any additional test work conducted on by-product at the Falchani Project, the timing and results of the SOP market study and potential production of caesium-rubidium as lithium by-products from the Falchani Project; the COVID-19 pandemic and the extent and manner to which measures taken by governments and their agencies, the Company or others to attempt to reduce the spread of COVID-19 could affect the Company, which could have a material adverse impact on many aspects of the Company's business including but not limited to: the ability to continue activity at the

Falchani Project, demand for the Company’s potential products, employee health, contractor and workforce availability, availability of materials, global travel restrictions, and the availability of insurance and the associated costs; risks related to the certainty of title to our properties; the status of the “Precautionary Measures” filed by the Company’s subsidiary Macusani, the outcome of the administrative process, the judicial process, and any and all future remedies pursued by Plateau and its subsidiary Macusani to resolve the title for 32 of its concessions; the ongoing ability to work cooperatively with stakeholders, including but not limited to local communities and all levels of government; the potential for delays in exploration or development activities due to the COVID-19 pandemic; the interpretation of drill results, the geology, grade and continuity of mineral deposits; the possibility that any future exploration, development or mining results will not be consistent with our expectations; mining and development risks, including risks related to accidents, equipment breakdowns, labour disputes (including work stoppages, strikes and loss of personnel) or other unanticipated difficulties with or interruptions in exploration and development; risks related to commodity price and foreign exchange rate fluctuations; risks related to foreign operations; the cyclical nature of the industry in which we operate; risks related to failure to obtain adequate financing on a timely basis and on acceptable terms or delays in obtaining governmental approvals; risks related to environmental regulation and liability; political and regulatory risks associated with mining and exploration; risks related to the uncertain global economic environment and the effects upon the global market generally, and due to the COVID-19 pandemic measures taken to reduce the spread of COVID-19, any of which could continue to negatively affect global financial markets, including the trading price of the Company's shares and could negatively affect the Company's ability to raise capital. Other risks and uncertainties related to our prospects, properties and business strategy are identified in the “Risks and Uncertainties” section of Plateau’s Management’s Discussion and Analysis filed on January 20, 2020 and in recent securities filings available at www.sedar.com. Actual events or results may differ materially from those projected in the forward-looking statements and Plateau cautions against placing undue reliance thereon. Except as required by applicable securities legislation, neither Plateau nor its management assume any obligation to revise or update these forward-looking statements.