VANCOUVER, BC--(Marketwired - Sep 29, 2016) - Pure Energy Minerals Ltd. (TSX VENTURE: PE) (FRANKFURT: A111EG) (OTCQB: PEMIF) (the "Company" or "Pure Energy") is pleased to provide an update on various activities on its lithium projects in Clayton Valley, Nevada. As outlined below, the Pure Energy and Tenova Bateman Technologies (TBT) team have passed several fundamental milestones on the innovative process engineering work for the Clayton Valley South (CVS) lithium brine project. These are important steps towards the delivery of a Preliminary Economic Assessment (PEA), slated for the fourth quarter of this year.

It is also a busy time in the field as activity increased on the CVS Project and on the adjacent claims recently optioned from Cypress Development Corp. (the "Cypress Project"). Recent highlights and activities include the following:

- Tenova Bateman Technologies (TBT) has concluded the CVS Project Mini-Pilot Plant trials at its facility in Katzrin, Israel;
- The Mini-Pilot Plant program encompassed successful vetting, preliminary optimization, and execution of the three stages of the TBT lithium process: the brine pretreatment (LiP™), solvent extraction (LiSX™), and electrolysis (LiEL™);
- The program culminated with the successful demonstration of crystallization of high-purity, battery-grade lithium hydroxide monohydrate from a synthetic electrolysis product liquor;
- Field crews and consultants have mobilized to the Cypress Project to commence a systematic sampling and mapping program.

Patrick Highsmith, Pure Energy Minerals CEO commented on the Company's recent activity, *"We are excited to see the TBT Mini-Pilot Plant wind down with such strong preliminary indications of success. The engineering reviews among our owner's team and key independent service providers have resulted in a consensus opinion that we are on track in all the major categories of the process engineering work. It is important to highlight the near-seamless collaboration across this diverse team. It is uncommon to see a team focused consistently on results without regard to agenda or bias. We are receiving preliminary technical findings and incorporating them into preliminary design work and cost estimation that will form the foundation of our PEA."*

CVS PROJECT ENGINEERING WORK
The TBT Mini-Pilot Plant study of the CVS brines concluded recently. TBT and Pure Energy's consulting engineers report that each phase of the test work yielded a successful outcome. Brine pre-treatment (LiP™) testing exceeded expectations for lithium recovery and rejection of magnesium and calcium, and a final membrane has been selected for some additional testing work, and likely use in the next phase of testing, a pilot plant to be operated as part of the feasibility study.

Very positive results were obtained for the concentration of lithium from the brine by solvent extraction (SX). Likely operating conditions during the LiSX™ stage were determined (e.g. operating pH, flux rates and brine:extractant ratios). TBT's favoured extractant has demonstrated highly efficient lithium recovery (close to 100% in the SX circuit), leaving very low levels of lithium in the barren brine which is destined for re-injection into the wellfield.

As reported previously (see Company news release dated August 9, 2016), the electrolysis component of the process (LiEL™) also yielded good results and generated important parameters for input to the preliminary design and cost estimation steps that follow.

Among the final steps from the Mini-Pilot Plant was confirming that a service provider had crystallized high-purity lithium hydroxide monohydrate through conventional evaporative crystallization. Preliminary results demonstrated that crystallization operating conditions were successfully determined and that recovery of lithium hydroxide monohydrate was efficient, and produced "battery-grade" material.

The scheduled work for the CVS Mini-Pilot Plant program is now complete, and draft results are flowing into the Pure Energy technical team from TBT, SGS Canada Inc., and other providers. These data and other engineering work will allow the team to provide a complete description of the process flowsheet and an integrated "well-to-product" costing estimate. This will form the bulk of the Company's forthcoming PEA. Some additional test work will follow as TBT and other consultants make recommendations for additional work beyond the PEA.

Dr. Ron Molnar, Professional Metallurgical Engineer (Ontario P.E.# 100111288), is a qualified person as defined by NI 43-101, and has reviewed and approved the scientific and technical information that forms the basis for the process engineering components of this news release. Dr. Molnar is independent of the Company.

CYPRESS PROJECT -- EARN-IN JOINT VENTURE WITH Cypress Development Corp.
The Pure Energy and Cypress teams have launched a systematic sampling and mapping program on the 1,520-acre Cypress Project, which adjoins the CVS Project on the east. The sampling will consist of approximately 500 rock and colluvium samples on a nominal 100-metre grid. The sampling program is designed to augment and compliment previous Cypress sampling that outlined a mineralized zone at surface, averaging approximately 1,350 ppm Li in a sequence of volcaniclastic and lacustrine sediments.

The systematic sampling is intended to provide greater context for the large area of high lithium in these rocks. Combined with

mapping, these data will give the team a better idea of true thickness and potential volumes of the lithium-rich rocks. The geologists are sending the samples to ALS Laboratories in Reno, Nevada for analysis by a rigorous multi-element geochemical package that includes lithium and other key elements.

Pure Energy is funding this program as part of its earn-in agreement on the Cypress Project, which includes a first-year investment of US $300,000 in exploration and development activities.

Patrick Highsmith, Certified Professional Geologist (AIPG CPG # 11702), is a qualified person as defined by NI 43-101, and has supervised the preparation of the scientific and technical information that forms the basis for the Cypress Project portion of this news release. Mr. Highsmith is not independent of the Company as he is an officer and director.

About Pure Energy Minerals Ltd.
Pure Energy is a lithium-brine resource developer that is driven to become the lowest-cost lithium supplier for the burgeoning North American lithium battery industry. Pure Energy is currently focused on the development of our prospective CVS Lithium Brine Project, which has the following key attributes:

- A large land position with excellent existing infrastructure in a first-class mining jurisdiction: Approximately 9,544 acres in three main claim groups in the southern half of Clayton Valley, Esmeralda County, Nevada;
- Adjacent to the only producing lithium operation in the United States (Albemarle's Silver Peak lithium brine mine);
- An inferred mineral resource of 816,000 metric tonnes of Lithium Carbonate Equivalent (LCE), reported in accordance with NI 43-101;
- Metallurgical and process studies underway to better understand the feasibility and economics of using modern environmentally-responsible processing technology to convert the CVS brines into high purity lithium products for new energy storage uses.

On behalf of the Board of Directors,

"Patrick Highsmith"
Chief Executive Officer

Forward-Looking Statements: The information in this news release contains forward-looking statements that are subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those anticipated in our forward-looking statements. Factors that could cause such differences include: changes in world commodity markets, equity markets, costs and supply of materials relevant to the mining industry, change in government and changes to regulations affecting the mining industry. Forward-looking statements in this release may include statements regarding mineral processing, adaptation of test work to larger scale and/or future operational scales, estimates of reduced future capital and operating expenses, delivery of a preliminary economic assessment, future exploration programs, operation plans, geological interpretations, and mineral tenure issues. Although we believe the expectations reflected in our forward looking statements are reasonable, results may vary, and we cannot guarantee future results, levels of activity, performance or achievements.

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