

VANCOUVER, British Columbia, Sept. 14, 2016 (GLOBE NEWSWIRE) -- [Pure Energy Minerals Ltd.](#) (TSX-V:PE) (FRANKFURT:A111EG) (OTCQB:PEMIF) (the "Company" or "Pure Energy") is pleased to announce that the initial brine analyses from its latest exploration borehole at the Clayton Valley South ("CVS") lithium brine project are very positive. Sampling in CV-3 encountered continuously elevated lithium compositions from a depth near the top of the perforated interval of the well at approximately 244 m (800 ft), to the deepest sample collected near the bottom of the perforated interval at 564 m (1,850 ft) below surface. The lithium content over this 320 m (1,050 ft) interval ranged from 150 to 200 mg/L, averaging approximately 175 mg/L (See Table 1 for details).

In June, drillers successfully completed CV-3 well beyond target to a total depth of 610 m (2,000 ft) below ground level. The new exploration hole is located approximately 200 m (656 ft) southeast of CV-1. During July, the well drillers prepared the well for geophysical logging and sampling by flushing sediment and residual drilling muds from the hole. Independent hydrogeologists from Montgomery & Associates ("Montgomery") completed sampling of the well using site-specific hardware and techniques developed by Pure Energy and its team. The sampling targeted specific intervals based on geology and analysis of downhole geophysical data. The team collected a total of 19 discrete fluid samples from depths of 45 m (150 ft) down to 564 m (1,850 ft).

As previously encountered in the northern project area, the results confirm the presence of a shallow, fresher water zone from 45 m (150 ft) down to approximately 122 m (400 ft), which is underlain by brackish zones from 152 m (500 ft) to 175 m (575 ft). Brine is first encountered at a depth between the brackish zone and the top of the perforated zone at approximately 244 m (800 ft). The range of lithium concentrations in the brine is very consistent (possibly within the analytical error of the method), and there is no evidence of zonation. Since the samples are from discrete depths, there may be variation between the sampled intervals, but there were no internal samples of fresher water or indications of dilution in the geophysical data below the brine interface.

Pure Energy Minerals CEO, Patrick Highsmith, commented on the results: "We are very pleased with the grade and consistency of the brine encountered in CV-3. It is also positive that all the wells in the northern portion of the project have bottomed in brine. In fact, CV-3 confirms the presence of lithium brine well below the bottom of our inferred resource, at 494 m (1,620 ft). The average lithium concentrations encountered in CV-1 (209 mg/L) and CV-3 (175 mg/L) are well above the average grade of our inferred resource (102 mg/L). Given these higher lithium grades and increased saturated thickness in this area, we expect to see the lithium endowment increase in the northern project area."

Table 1 – CV-3 brine chemistry for selected elements (all analyses in mg/L)

Sample Intervals	Li	Mg	Ca	Sr	K	Na	Cl
CV-3 @ 800 ft	150	400	1,100	87	1,900	45,000	57,000
CV-3 @ 850 ft	190	510	1,600	84	3,200	41,000	61,000
CV-3 @ 1,025 ft	200	510	1,600	92	3,000	45,000	65,000
CV-3 @ 1,125 ft	180	480	1,500	83	2,800	40,000	57,000
CV-3 @ 1,225 ft	180	540	1,600	90	2,800	46,000	63,000
CV-3 @ 1,325 ft	180	510	1,600	88	3,000	43,000	58,000
CV-3 @ 1,425 ft	180	480	1,500	88	2,700	45,000	61,000
CV-3 @ 1,525 ft	180	480	1,500	90	2,800	44,000	62,000
CV-3 @ 1,600 ft	160	460	1,400	80	2,600	39,000	54,000
CV-3 @ 1,650 ft	170	480	1,500	84	2,700	40,000	57,000
CV-3 @ 1,750 ft	170	470	1,400	82	2,600	42,000	57,000
CV-3 @ 1,755 ft	170	470	1,400	83	2,600	40,000	57,000
CV-3 @ 1,850 ft	160	420	1,300	97	2,300	45,000	58,000
Average CV-3 Brine	175	478	1,462	87	2,692	42,692	59,000

In general, lithium concentrations are positively correlated with brine electrical conductivity from downhole logs, and the geophysical data show that elevated fluid conductivity extends to the base of the borehole. This means that lithium brine is likely present to the base of the borehole, significantly extending the depth range of lithium brines on the Clayton Valley South Project.

The overall chemistry of the CVS brines continues to be favorable. The magnesium and calcium concentrations are consistent with previous sampling from nearby wells. The average ratio of magnesium to lithium (Mg:Li) in CV-3 is approximately 2.7. Magnesium to lithium ratios of less than 3.0 are considered to be favorable for lithium processing, and lower concentrations of calcium and strontium may also be beneficial.

September and October will be active months in the field at the CVS Project. The Company continues to augment its database and build a three dimensional picture of the CVS brine and its host aquifers. Ongoing work includes a new round of downhole geophysical logging in CV-3 and other wells. Field crews are also collecting additional samples from several of the boreholes in Clayton Valley. The Pure Energy team is well underway with the engineering and technical studies that will contribute to the Preliminary Economic Assessment slated for completion later this year.

Quality Assurance and Quality Control

All analytical data reported in this news release were generated by Western Environmental Testing Laboratory ("WETLAB") of Sparks, Nevada. WETLAB is accredited by the Nevada State Division of Environmental Protection for determination of lithium, magnesium and other elements in non-potable water by EPA method 200.7. The lab employs its own quality assurance program to ensure accuracy and precision of its data. Consistent with industry best practice, Pure Energy inserts additional blind quality control samples with every batch of samples.

ALS Minerals in Vancouver, British Columbia provides systematic blind and independent check analyses on the lithium and other analyses in the sampling program at Clayton Valley South. ALS Minerals Vancouver operates an industry leading quality management system and is accredited under ISO 17025 for provision of mineral analysis. The data described herein have satisfied the Company's quality criteria for release.

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 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 four main claim groups, mostly 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

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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 include statements regarding delivery of a preliminary economic assessment, future exploration programs, operation plans, geological interpretations, mineral tenure issues and mineral recovery processes. 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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