ASX ANNOUNCEMENT

5 October 2022

LOGS CONFIRM HIGH CONCENTRATION HELIUM DISCOVERY AT JXSN#4 GALACTICA/PEGASUS

Highlights

- JXSN#4 helium discovery well log analysis confirms 233.5 ft gas column with 133.5 ft of net pay across the upper and lower Lyons.
- Comingled (upper and lower Lyons) gas samples most representative of reservoir gas have returned calculated air-free helium of 6.06%.
- Seven proposed development wells now in advanced stages of permitting to follow up four helium discoveries at Galactica/Pegasus.
- Results to be incorporated into updated resource declaration at Galactica/Pegasus.

Blue Star Helium Limited (ASX:BNL) (**Blue Star** or the **Company**) provides an update on the JXSN#4 helium discovery well drilled on its Galactica/Pegasus prospect in Las Animas County, Colorado.

As previously announced the well was successfully drilled to a final total depth (TD) of 1,043 feet encountering the upper and lower Lyons sands, which both flowed gas to surface.

JXSN#4 Log Analysis

The Company has now received and analysed the logs.

Analysis of the log data has confirmed intersection of the top of the Lyons formation at 753 feet measured depth and a gas column in high quality reservoir from the top of the Lyons formation to a depth of 986.5 feet (233.5 ft gas column) across the upper and lower Lyons sands.

Gross reservoir rock for both the upper and lower Lyons sands is 213 ft (to the base of log data) with net pay in the well of 133.5 ft.

There is a possible gas water contact and transition zone close to the base of the upper Lyons sand. This zone has not been included in the net pay calculation. There is a gas water contact in the lower Lyons sand at 986.5 feet.

Flow Data

The well was recorded flowing at 124.6 mcfd during drilling and sampling. Long term flow testing and clean up was not attempted in this well. Shut in pressures were the same as observed in the previous JXSN wells which flowed between 202 and 412 Mcfd.

Reservoir Gas Composition

Comingled (upper and lower Lyons) gas samples most representative of reservoir gas from two different analyses have returned calculated air-free helium of 6.06% and 4.20%.

Sampling during the overnight flow of the comingled upper and lower Lyons reservoir yielded 6.06% helium while an individual sample taken for lab analysis yielded 4.20% helium. Both are considered high concentration and are higher than helium content in the previous three discoveries on Galactica/Pegasus. These samples confirm the tenor of the previously announced composition from the upper Lyons of 6.5% in respect of a sample analysed at that time (see ASX announcement of 29 September 2022).

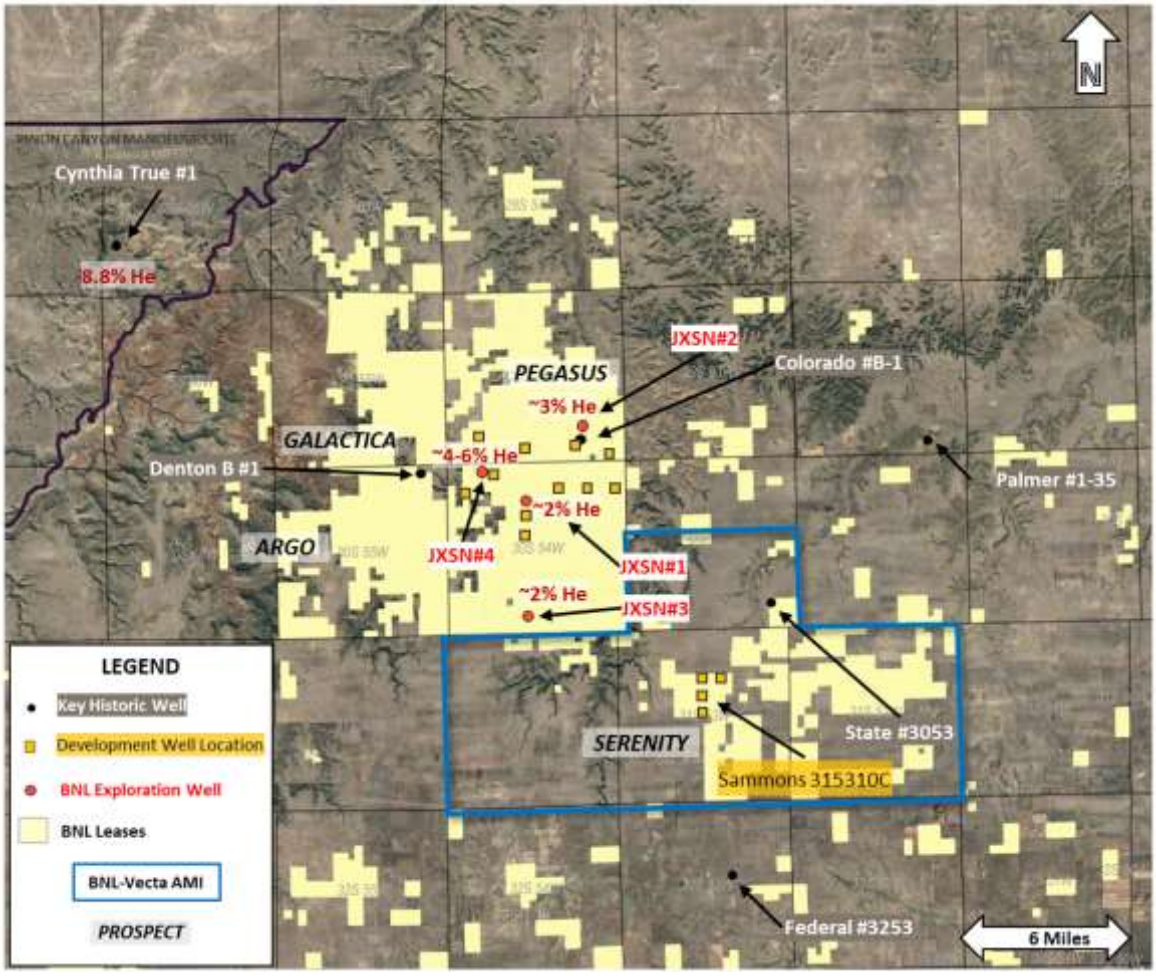
Summary of Galactica Pegasus Results

The three exploration wells drilled earlier this year at Galactica/Pegasus – JXSN#1, JXSN#2 and JXSN#3 – discovered significant helium bearing gas columns of up to 230 feet containing up to 3.14% helium (refer Table 1). These wells also proved the Company's previous interpretations of gas on logs at historic wells, Denton B #1 and Colorado #B-1, also located on the Galactica/Pegasus structure.

Table 1: Key results from recent Galactica/Pegasus wells

Key parameter	JXSN#1	JXSN#2	JXSN#3	JXSN#4
Helium concentration (%)	1.98	3.14	2.14	4.20 & 6.06
Gas column in Lyons formation (ft)	217.5	101+	230	233.5
Net pay in Lyons formation (ft)	143.5	101	153.5	133.5
Stabilized initial flow rate (mcfd)	412	202	412	N/A

The four successful discovery wells on Galactica/Pegasus and the planned offsetting development wells are shown on the map below and announced on 15 September 2022.



Blue Star Managing Director and CEO, Trent Spry, commented:

"We are delighted to have returned high-concentration helium from JXSN#4. This is the fourth consecutive helium discovery on the Galactica/Pegasus field in the targeted Lyons formation.

"These four successful discovery wells on Galactica/Pegasus provide the structural and stratigraphic control and high helium reservoir gas composition for the planned offsetting development wells which are well advanced.

"The results of this well will be integrated into current resource update process for Galactica/Pegasus which is expected to culminate in the declaration of contingent resources for this field."

This ASX Announcement has been authorised for release by the Board of Blue Star Helium Limited.

For further information, please contact:

Trent Spry
Managing Director & CEO
info@bluestarhelium.com
+61 8 9481 0389

About Blue Star Helium:

Blue Star Helium Ltd (ASX:BNL) is an independent helium exploration and production company, headquartered in Australia, with operations and exploration in North America. Blue Star's strategy is to find and develop new supplies of low cost, high grade helium in North America. For further information please visit the Company's website at www.bluestarhelium.com

About Helium:

Helium is a unique industrial gas that exhibits characteristics both of a bulk, commodity gas and of a high value specialty gas and is considered a "high tech" strategic element. Due to its unique chemical and physical qualities, helium is a vital element in the manufacture of MRIs and semiconductors and is critical for fibre optic cable manufacturing, hard disc manufacture and cooling, space exploration, rocketry, lifting and high-level science. There is no way of manufacturing helium artificially and most of the world's reserves have been derived as a by-product of the extraction of natural hydrocarbon gas.

About wells:

JXSN#4 has been permitted by a rancher as a water well. Water wells are drilled by a contractor pursuant to a drilling contract between the contractor and the rancher. Neither the Company nor its subsidiaries are a party to this contract. The well is the property of the rancher and the Blue Star group does not have an economic interest in it. The Company will agree to fund water wells if the rancher selects a location that may be of interest to the Company, the Company has leased the underlying minerals and the rancher agrees to let the Company obtain any available data from the drilling program. Water wells are drilled for the purpose of producing water for use by the rancher. Water wells may not produce helium and may not be converted into producing helium wells.

Schedule
JXSN#4 well details

The JXSN#4 well was drilled and is owned by the rancher and Blue Star does not have any interest in it. The rancher agreed to permit Blue Star to collect data in consideration of it agreeing to fund the rancher's drilling costs.

The JXSN#4 well is located in Township 30 Range 54 Section 5. The minerals are the subject of a mineral leases entered into between Las Animas Leasing Inc (LAL) and a private mineral owner. The lease has an effective date of 22 January 2022, the total area of the lease is 3,361 gross acres, the term is 5 years from the effective date, the rental was paid in advance, the royalty is 17.5% and LAL's working interest in the lease is 100%.

The JXSN#4 well was not conventionally tested. The Company ran a suite of logs including gamma ray, resistivity (induction), micro log, density and neutron logs.

Gas analysis of samples obtained while drilling was performed using mass spectrometry. Samples most representative of the reservoir gas had an estimated air-free gas composition from the co-mingled upper and lower Lyons sands of 6.06% helium (He), 41.52% nitrogen (N) and 50.38% carbon dioxide (CO2).

Gas samples are pumped from a 2" nipple directly on top of the flow line on the rig. The 2" nipple reduces down to ¼" polytube which runs to the pump system. That sample is then fed to the onsite mass spec (Inficon/Future Mass Spectrometer) at a continuous flow rate of ~1.5 SCFH. The samples are analysed by Crown Geochemistry Inc. The calculations are made using only the principal peaks for each gas species; full deconvolution for the entire mass/charge range will not meaningfully affect the indicated percentages. The results are then corrected for air.

A separate set of samples obtained while drilling was performed using mass spectrometry. Samples most representative of the reservoir gas had an estimated air-free gas composition from the co-mingled upper and lower Lyons sands of 4.20% helium (He), 47.31% nitrogen (N) and 48.48% carbon dioxide (CO2).

The analysis was caried out by Gas Analysis Service, Farmington NM using a single thermal conductivity detector (TCD) for gas compositional analysis for the determination of C1-C6+ hydrocarbons, helium, nitrogen and CO2 adopted from Gas Processors Association standard 2261-00. Concentrations of the compounds are measured using thermal conductivity detectors using ultra-high purity hydrogen as a carrier gas.