ASX ANNOUNCEMENT
17 November 2021

HIGH CONCENTRATION OF 8.8% HELIUM IN VOYAGER PROSPECT WATER WELL

Highlights

- **BBB#1 water well completed in Blue Star's Voyager prospect** located approximately six miles north of the historic Model Dome helium field.
- Analysis of gas obtained during drilling shows a calculated **air-free gas composition of 8.8% helium** in the Lyons formation.
- This represents a similar gas composition to the historic Model Dome analogue production and **one of the highest in-situ helium concentrations both in the U.S. and globally**.
- Blue Star is **in discussions** with other ranchers **regarding the funding of further low-cost water wells** given strong initial outcomes and additional data benefits of the program.
- Form 2 (final permit to drill) submitted for maiden **Enterprise 16#1** helium exploration well and **on track for** expected approval and **drilling commencement in December 2021**.

Blue Star Helium Limited (ASX:BNL) (**Blue Star** or the **Company**) is pleased to provide an update on the water well program in Las Animas County, Colorado.

Drilling of the BBB#1 water well has been completed by the ranch owner. The water well is located within Blue Star's Voyager prospect and approximately six miles north of the historic Model Dome helium field (see Figure 1) which produced raw gas with an average helium content of 8%. Data collected during the drilling of this water well included continuous gas logging and sampling, mudlogging and geologic sampling, and wireline logs.

Analysis of this data has confirmed intersection of the top of the Lyons formation at 888 feet depth, with wireline logs confirming a gas column in high quality reservoir from the top of the Lyons formation to a depth of 922 feet (which was also the achieved logged total depth (TD) of the well). The well TD'ed in gas in the Lyons reservoir and no gas-water contact was observed on the logs, meaning the gas column is greater than observed.

Gas analysis of samples obtained while drilling has resulted in a calculated air-free gas composition from the Lyons formation in BBB#1 of 8.8% helium (He), 78.7% nitrogen (N) and 12.5% carbon dioxide (CO_2). This composition is very similar to the average historic Model Dome analogue production. It also represents one of the highest in-situ helium concentrations found both in the United States and globally.

BBB#1 will not be completed as a water well as it did not encounter material water to TD. Blue Star is evaluating the funding of an additional water well for the rancher on the same terms.

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

"The whole Blue Star team is incredibly proud of this result. Historic wells in the Voyager area were reported as dry holes, and plugged and abandoned, however our interpretation was that gas had been missed. This result proves that gas is trapped in the Voyager prospect and is a strong validation of that interpretation and our prospect mapping. Encouragingly we have also interpreted

gas from historic well data in the Argo, Galactica and Pegasus prospects, which we have yet to confirm with new drilling activity and data.

"We have improved the water well gas sampling protocol from that utilised at Hill#2. The new protocol has allowed less diluted samples to be collected and enabled air-free gas calculations to be performed at BBB#1, which we were unable to do at Hill#2.

"The air-free calculated helium content from gas sampled while drilling BBB#1 has confirmed helium concentrations in the order of those reported from historic production from the Model Dome field analogue. This is further, modern evidence that the area contains some of the highest helium concentrations in the United States and globally – a dynamic which drew us to Las Animas County and has us excited about the targeted commercialisation pathway ahead for Blue Star."

Voyager prospect

BBB#1 is located within Blue Star's Voyager prospect and approximately six miles north from the historic Model Dome field. The Voyager prospect is associated with a dome feature mapped in the area around Thatcher in Las Animas County, Colorado. Thatcher was the historic location for the helium processing facility that treated gas from the Model Dome field. Historic wells drilled on the Thatcher Dome structure in the 1920's and 1930's were reported as dry holes and plugged and abandoned. Unearthing of old well data and reinterpretation by Blue Star resulted in the proposition that gas had been missed in the Thatcher Dome area and the Voyager prospect was mapped defining the associated prospective resources.

No prospective resources associated with the Voyager prospect have been reported by Blue Star. Any prospective resources at Voyager would be in addition to the Company's stated prospective helium resources of 13.4 BCF associated with the Enterprise, Galileo, Argo, Galactica and Pegasus prospects.

Water well drilling program

As previously advised, Blue Star agreed to fund the drilling of three water wells for local ranch holders (see BNL ASX releases dated 29 July 2021, 10 September 2021, 30 September 2021 and 20 October 2021). In the process of drilling these wells, Blue Star is seeking to gather data from the wells that might aid in the further definition of its helium prospects. The wells are drilled and owned by the ranchers and Blue Star does not have any interest in them. However, the Company does own a mineral lease interest at each of the well locations.

Water wells are drilled differently to the method the Company expects to use to drill dedicated helium gas wells (particularly given the low-pressure nature of the Lyons formation). The water wells are air drilled with increasing pressure and if significant water is encountered assisted, if required, by foam to lift the cuttings. The result is that any formation gas in the return gas is highly diluted by air. Additionally, water wells cannot be conventionally tested.

Hill #1

The drilling of the first of these water wells (Hill#1) (associated with the Galileo prospect) commenced during the June 2021 quarter, however it remains incomplete. Significant shallow water was encountered, which required the delivery of additional equipment to complete drilling to target depth (see BNL ASX release dated 29 July 2021). There have been ongoing delays in the delivery of this equipment, which remains pending. However, and as also previously reported, the initial data obtained to current depth from this well supports the Company's stratigraphic interpretation of the area around its Galileo prospect.

Hill#2

The drilling of the second water well (Hill#2), which was associated with Blue Star's Enterprise prospect, was completed during October. Neutron and density wireline logs run in the well show approximately 26 feet of gas effect at the top of the high-quality Lyons formation, with a free water level interpreted in the well at the base of the gas effect. The resistivity logs across the gas effected part of the Lyons formation suggest a transition zone above the free water level. The composition of the free gas in the Lyons formation could not be determined because of the nature of the water well configuration (see BNL ASX release dated 20 October 2021). This drilling and sampling protocol was revised and the new protocol used on BBB#1.

The Hill#2 water well was located approximately 1.5 miles to the north-east, and interpreted to be down dip from, Blue Star's planned Enterprise 16#1 helium exploration well (see Figure 1). Blue Star expects to receive the approved final permit to drill the Enterprise 16#1 well during Q4 2021 and to commence drilling the well promptly thereafter.

BBB#1 well details

The BBB#1 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 cost which was not material.

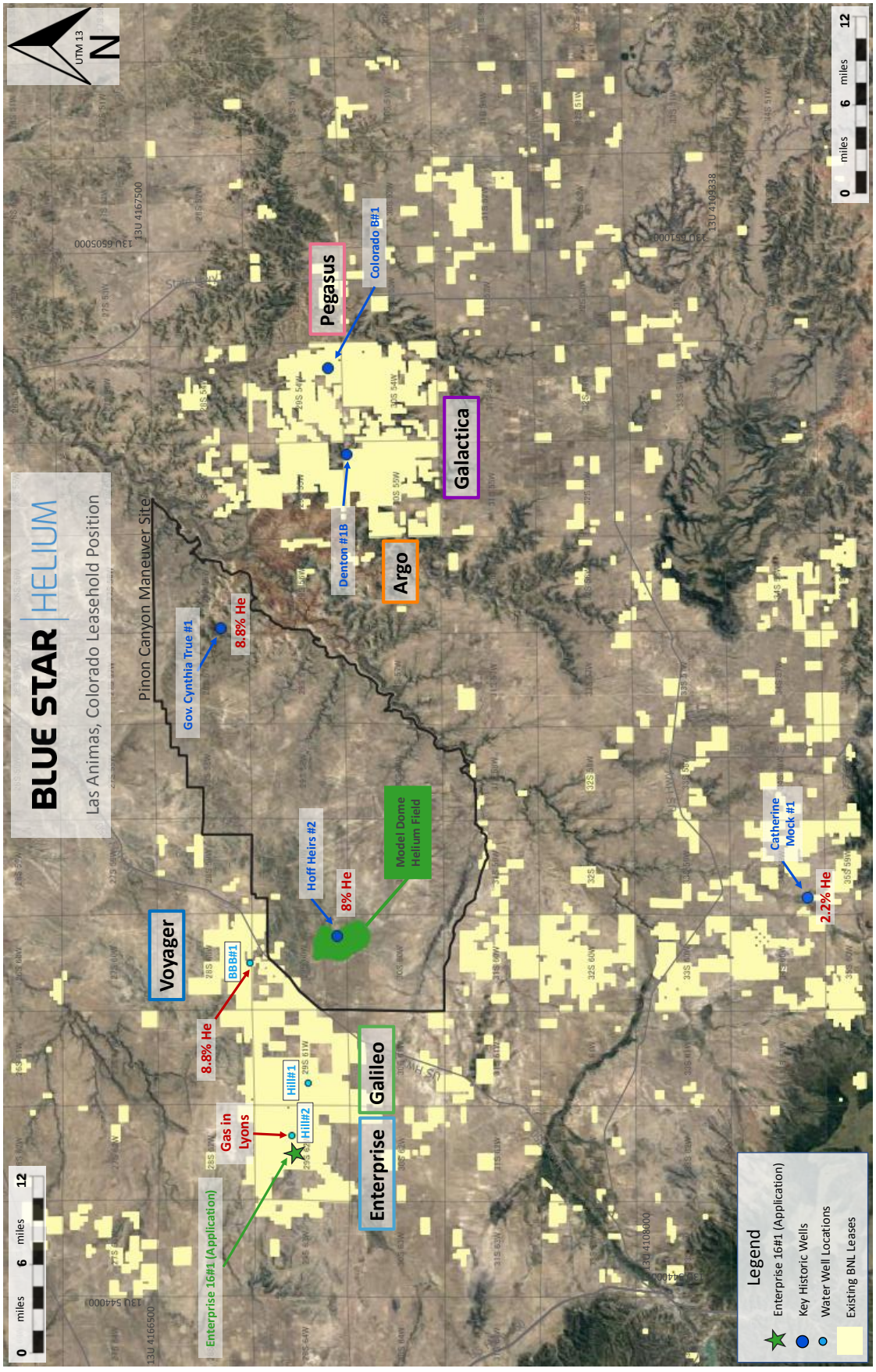
The BBB#1 water well is located in Township 28 Range 60 Section 33 (see Figure 1). The minerals are the subject of two mineral leases entered into between Las Animas Leasing Inc (**LAL**) and private mineral owners. The first lease has an effective date of 14 June 2021, the total area of the lease is 2,644 gross acres, the term is 5 years from the effective date, the rental was paid in advance, the royalty is 15% and LAL's working interest in the lease is 100%. The second lease has an effective date of 2 July 2021, the total area of the lease is 1,552 gross acres, the term is 5 years from the effective date, the rental was paid in advance, the royalty is 12.5% and LAL's working interest in the lease is 100%.

The BBB#1 water 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. An estimated air-free gas composition from the Lyons formation in BBB#1 of 8.8% helium (He), 78.7% nitrogen (N) and 12.5% carbon dioxide (CO_2) has been calculated after backing out air.

The miniRuedi mass spectrometer was operated by Geochemical Insight. The instrument was calibrated with a certified air standard comprised of 0.000524% He, 0.934% Ar, 0.05% CH_4, 0.2% CO_2, 20.95% O_2 in a nitrogen (77.87%) balance. The standard was prepared and certified by Global Calibration Gases, LLC out of Sarasota, Florida, USA.

Figure 1: Location of Hill#1, Hill#2 and BBB#1 water wells, the planned Enterprise 16#1 helium exploration well and the historic Model Dome field



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

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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.