ASX ANNOUNCEMENT

6 June 2024

BLUE STAR ADDS CO_2 TO ITS INDUSTRIAL GAS PORTFOLIO

- Targeted addition of primary, premium CO_2 product from Serenity to Blue Star's high-grade helium and CO_2 co-product offering from Galactica/Pegasus.
- The Serenity project is a source of natural very high-grade carbon dioxide with raw gas concentrations approaching 99% CO_2.
- Blue Star has increased its stake in the Serenity project to 100% at zero cash or scrip outlay.
- Targeted development of Serenity provides a foundation to commercializing the CO_2 component of Blue Star's key asset focus, the Galactica/Pegasus helium project (see new Galactica discovery BNL ASX release of 4 June 2024).
- Blue Star continues to work with various engineering and commercially interested parties to forecast volumes and costs to maximize development.

Blue Star Helium Limited (ASX: BNL, OTCQB: BSNLF) (**Blue Star** or the **Company**) provides an update on its Serenity project.

Blue Star Managing Director and CEO, Trent Spry, said

"*The primary CO_2 commercialisation opportunity at the Sammons 315310C well, which is suspended for tie in to production, and across the broader Serenity project is one that excites us. While clearly non-core for Vecta and its partners, it is an opportunity that aligns neatly with our planned co-production of premium CO_2 at Galactica/Pegasus along with high-grade helium.*

"In short, Serenity offers a very high-grade, natural CO_2 development opportunity enabling Blue Star to deliver a valuable additional gas product to end-users in critical markets that are undersupplied with reliable, sustainable CO_2 streams. Expected CO_2 purification technology utilisation and targeted marketing strategies also overlap significantly with our high-grade helium projects. As such, the advancement of Serenity is also expected to be technically and commercially foundational to monetising the CO_2 co-product from our core development focus, the Galactica/Pegasus helium project."

Serenity acquisition

Blue Star has agreed to acquire the interests of and Vecta Oil & Gas Ltd (**Vecta**) and its partners in the mineral leases, the Sammons 315310C well and three additional approved drilling locations and to terminate the participation agreement, joint operating agreement and other arrangements relating to the area of mutual interest which were originally entered into in December 2021 (see BNL ASX release dated 22 December 2021, *Agreement to Jointly Develop Blue Star's Serenity Prospect*). These leases contain Blue Star's Serenity prospect.

In consideration, Blue Star has agreed to assign mineral leases located in T28S R54W comprising 1640 net mineral acres to Vecta and its partners. The transaction does not include any cash or scrip consideration. The transaction lifts Blue Star's interest in approximately 18,141 net acres from 50% to 100%.

Sammons 315310C well

The Serenity prospect was drilled and tested by the Sammons 315310C well and encountered a high-grade natural carbon dioxide accumulation.

Lab analysis of representative reservoir samples taken during natural flowing of the well contained a combined average composition from both the upper and lower Lyons reservoirs of 98.77% carbon dioxide, 1.15% nitrogen and 0.09% helium, with the lower Lyons reservoir consistently showing higher CO_2 up to 98.95%.

During drilling the upper Lyons sand was fully penetrated between 1,155 feet and 1,238 feet, representing an 83 ft gas column in high-quality reservoir. The upper Lyons is completely gas filled with no water being encountered during drilling or testing. Flow testing was conducted at various stages throughout the upper Lyons drilling with gas rates as high as 500 Mcfd through a 1.25 inch orifice.

Casing was set at 1,270 feet in the shale that separates the upper and lower Lyons sands. The lower Lyons sand was penetrated at 1,308 feet and the well was TD'd at 1,323 feet as planned penetrating 15 feet of the lower Lyons sands. The drilled lower Lyons section was also completely gas filled with no water being encountered during drilling. Initial flow testing was conducted with gas rates of around 115 Mcfd through a ¾ inch orifice. No water was encountered during testing. Based on offset wells there is approximately 40 feet of high-quality lower Lyons sand in addition to the 15 feet penetrated.

The three remaining approved drilling locations remain active and only require final drill Form 2 approvals in order for additional wells to be drilled.

Synergy with Galactica / Pegasus project

The Galactica/Pegasus helium development discovered by Blue Star in 2022 is a larger-scale project with multiple potential product streams. The Company has just successfully drilled the first production well, the State 16, at Galactica confirming high helium and CO_2 content and flow rates from the high-quality Lyons formation (see BNL ASX releases dated 27 May 2024 and 4 June 2024).

Engineering and market work continues to refine the initial planned development configuration and forecast production and cost estimates for Galactica/Pegasus.

There are currently a range of development pathways under consideration including a leased plant and third party operated option. The final development is expected to include a CO_2 extraction route and co-product stream.

The targeted development of a primary CO_2 production stream from Serenity provides a foundation to commercializing the CO_2 component of Galactica/Pegasus (which ranges from 40% to 70% in raw gas concentration).

Ultimately, Blue Star's goal is the production of high-grade helium from Galactica/Pegasus and the sustainable production of food/beverage grade CO_2 from both Serenity and Galactica/Pegasus.

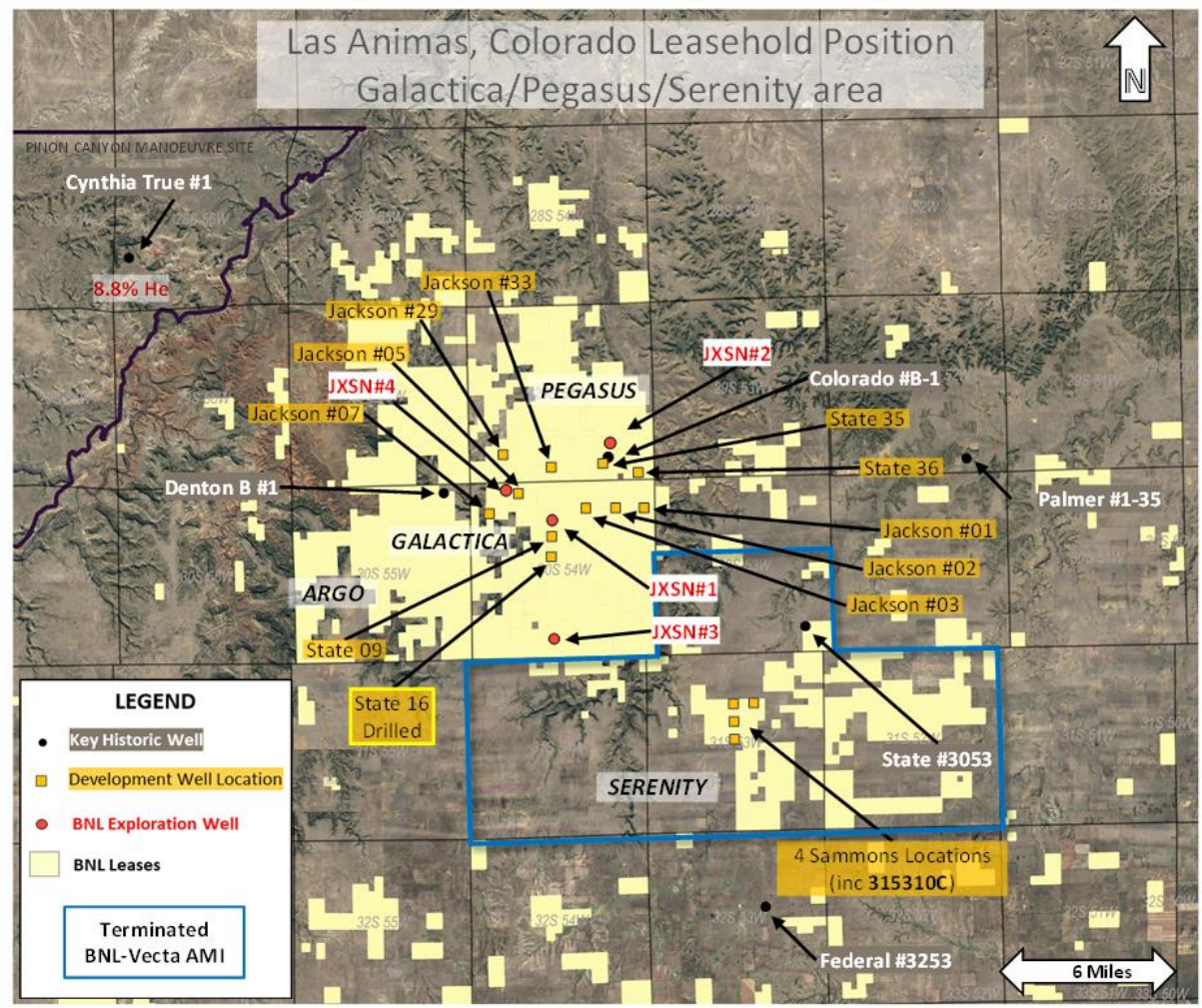
Targeted CO_2 production is expected to be contracted for fixed-price offtake with large beverage corporations, dry ice manufactures, regional distributors, and others.

US carbon dioxide market

US merchant CO_2 demand is approximately 10.4 million tons per year, with annual demand growth projected between 3.6% and 5.0% through 2030. The industry however does not currently have sufficient, reliable new sources coming online to support that growth.

CO_2 is a critical path component in many key industrial sectors. In the US, food and beverage production account for 70% of high purity consumption. The remaining 30% is used in processes for welding, EV battery production, agriculture and oil field services. Reliable supply of CO2 is key to municipal waste-water treatment, displacing the high cost and hazards of sulfuric acid in processing. Notably, significant progress also continues to be made in processes that convert CO2 into a carbon neutral jet fuel.

US domestic CO_2 supply has been dominated by the large US industrial gas companies led by Linde PLC and Air Liquide/Airgas, along with CO2 distribution specialists such as Poet and Reliant.



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

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Appendix

LR 5.30	Rule Requirement	
(a)	Name and type of well	Sammons 315310C exploration well
(b)	Location of well and details of lease	The Sammons 315310C well is located in section 10 of Township 31 South Range 53 West (see figure above). The minerals are the subject of one mineral lease between Blue Star's wholly owned subsidiary, Las Animas Leasing Inc (**LAL**), and a private mineral owner. The lease has an effective date of 29 May 2024, the total area of the leases is 640 gross acres (640 net acres), the term is 2 years from the effective date, the rental is payable on signing, the royalty is 12.5% and LAL's working interest in the lease is 100%.
(c)	Working Interest	100%.
(d)	Net pay (if gross pay reported)	Not Applicable
(e)	Geological rock type of formation	Lyons sandstone
(f)	Depth of zones tested	1,115 to 1,238 feet
(g)	Types of tests and duration	Natural flow measured from wellhead. Flow rates below are maximum measured during 24 hour periods.
(h)	Hydrocarbon phases recovered	Nil
(i)	Any other recovery	CO_2, nitrogen, helium
(j)	Choke size, flow rates and volumes measured	500 Mcfd through a 1.25 inch orifice in Upper Lyons formation. 115 Mcfd through a ¾ inch orifice in Lower Lyons formation.
(k)	Pressures associated with flow and duration of test	Upper Lyons wellhead pressure 6.0 to 3.8 psig. Lower Lyons wellhead pressure 2.2 psig.
(l)	Number of fracture stipulation stages	Nil
(m)	Material volumes of non-hydrocarbon gases	See paragraph (j) above.
(n)	Any other material information	See information in BNL ASX releases dated 10 June 2022, *12 July 2022*, *20 July 2022*, *29 July 2022*, 4 August 2022, 22 August 2022, 31 August 2022, 2 September 2022, 12 September 2022, 19 September 2022 and 30 March 2023. Lab Analysis The sample 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.

About Blue Star Helium

Blue Star Helium Ltd (ASX:BNL, OTCQB:BSNLF) is an independent helium exploration 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.