

ASX ANNOUNCEMENT

27 May 2020

3 BCF PROSPECTIVE HELIUM RESOURCE

- **3 BCF total P50 unrisks prospective helium resource net to BNL in Enterprise and Galileo prospects identified by independent oil and gas consultant Sproule**
- **Within play fairway proven by Model Dome helium field**
- **Enterprise drilling permitting underway**
- **Low cost proof of concept dry hole drilling costs of US\$300k**

Blue Star Helium Ltd (“Blue Star” or the “Company”) (ASX:BNL) is pleased to announce the outcomes from the independent Prospective Helium Resource Evaluation recently completed by Sproule which has assessed prospective resources at the Company’s Enterprise and Galileo Prospects.

Net Recoverable Helium (mmcf)	1U (P90)	2U (P50)	3U (P10)
Enterprise Prospect	372	2,296	5,003
Galileo Prospect	270	725	1,389
Total Net Recoverable Helium	641	3,021	6,391

Note 1: The estimated quantities of petroleum that may potentially be recovered by the application of a future development project relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

Note 2: The resource estimates have been prepared using the probabilistic method and are presented on an unrisks basis. In a probabilistic resource distribution, 1U (P90), 2U (P50), 3U (P10) estimates represent the 90% probability, 50% probability and 10% probability respectively that the quantity recovered will equal or exceed the estimate assuming a success case in the prospect. Resource totals have been arithmetically added.

Note 3: The resource estimates are reported as at an evaluation date of 30 April 2020.

Note 4: The Enterprise and Galileo leases are described in Schedule B.

Note 5: The resource estimates are presented on a net entitlements basis and represent Blue Star’s net economic interest in the prospective recoverable helium volumes after deductions for the volume weighted royalty burden in accordance with the methodology described in Schedule A.



Blue Star Managing Director, Joanne Kendrick, commented “This is an outstanding result at our first two prospects in our portfolio. It gives us great confidence as we prepare for our initial drilling campaign later this year.”

Enterprise and Galileo Prospects

Blue Star’s interests in the Enterprise and Galileo prospects are located in Las Animas County, Colorado as shown in Schedule B.

The prospects are situated in the Lyons Formation Helium Play, which is proven in the area by the historical Model Dome field. As an example, the Hoff Heirs #2 well in the Model Dome field, had a tested production rate from the Lyons Formation of 500 mcf raw gas per day. Petrophysical analysis of surrounding wells in combination with the regional soil gas sampling and geochemical analysis program conducted in 3Q 2019 have proven the play elements of helium charge, high quality reservoir and the presence of a good top seal extend across our Enterprise and Galileo prospects.

Within this proven play fairway, each of the Enterprise and Galileo prospects are subject to independent trap risk. Internal geologic modelling is based on reprocessed gravity and magnetic data, incorporated offset well data and surface and subsurface horizon and fault mapping. The geological chance of success is assessed by the Company to be moderate to high for an exploration target given the proven play elements.

The Company remains positive that, based on the work it has done to date, the chance of development, upon a discovery, is strong. The Company has identified that a number of development options are available and detailed discussions with service providers are underway with a view to selecting a preferred option and supplier. Skid mounted, modular surface processing equipment is readily available with 6 months delivery time and may be secured under a rental contract. This equipment is standard-sized at 2 mmcf/d raw gas and would concentrate the helium in the raw gas stream to 98%+ gaseous helium which would then be loaded onto an offtaker’s tube trailer for transport to a liquefaction plant or end-user. The Las Animas location is within trucking distance to established liquefaction plants with significant available capacity. In the event that the Company elects this type of rental option for the surface processing equipment, the majority of the development capital expenditure would be related to drilling and completing development wells.

Forward Work Program

Blue Star proposes to drill one well at its Enterprise Prospect. The Company proposes to drill the well as soon as practicable following approval of the relevant permits which is expected to be later this year. To prepare the prospect for drilling, Blue Star is currently preparing to stake the well location which will be followed by the drilling permit application and associated surface use agreements.

Engineering estimates have confirmed the expected dry hole cost at circa US\$300,000. Should the first well discover helium, Big Star intends to conduct a log evaluation and well testing program. If commercial production rates of helium are indicated during the well testing, the well may be completed as a producer. In this event, completion costs have been estimated at US\$100,000 which is



additional to the dry hole cost. Further exploration activities at Enterprise and Galileo will depend on the results of the first well.

The Board has authorised this announcement for release to ASX.

For further information, please contact:

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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 provide its shareholders with exposure to multiple high-value helium projects 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.



SCHEDULE A

About Sproule

Sproule is a global energy consulting firm with a 65-year legacy of driving value for clients by helping professionals in the oil and gas sector make better business decisions. Sproule is anchored by deep geoscience and engineering expertise combined with a strong commercial understanding of energy markets and policy requirements. Sproule's integrated consulting solutions support critical oil and gas workflows that are underpinned by the following cross-functional disciplines; geology, geophysics, petrophysics, engineering, land, petroleum accounting and economics. Its teams accurately characterize subsurface opportunities and increase shareholder confidence through independent economic evaluations of resources. Advisory services include development planning, investment analysis and asset management services. In addition, Sproule offers relevant courses designed for energy professionals, enabling organizations to build scale and capacity,

Cautionary Statement for Prospective Resource Estimates

With respect to the Prospective Resource estimates contained within this report, it should be noted that the estimated quantities of gas that may potentially be recovered by the future application of a development project relate to undiscovered accumulations. These estimates have an associated risk of discovery and risk of development. Further exploration and appraisal is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

Helium Resource Estimates

The Prospective Resource estimates presented in this report are prepared at an effective date of 30 April 2020. The Prospective Resource estimates are quoted on an unrisks basis. The unrisks total presented in the table has been arithmetically added and assumes a success case in both prospects.

Mineral Owner Royalty

The Enterprise and Galileo prospect leases ("Leases") are situated in Las Animas County, Colorado, USA. The mineral lessors comprise the US Department of the Interior, Bureau of Land Management (**BLM**), the State of Colorado and various private mineral owners. The Leases issued by the BLM are subject to a 12.5% government royalty. The Leases issued by the State of Colorado are subject to a 20% royalty. The Leases issued by private mineral owners are subject to 12.5% royalty.

Weighted Average Royalty Burden (%)	1U (P90)	2U (P50)	3U (P10)
Enterprise Prospect	15.03	14.36	14.64
Galileo Prospect	12.50	12.56	13.59



In this report, the prospective resource entitlement is presented after deduction of the weighted royalty burden. The Leases include an additional lease recently acquired over-the-counter from the BLM. It is for 2,525.47 gross (2,525.47 net) acres, for an initial term of 10 years and an annual rental payment of US\$1.50/acre payable annually in advance for the first 5 years and then US\$2/acre. If the Company successfully produces helium or other products from the lease area, a 12.5% royalty will be payable to the US Federal Government and the lease term will be extended indefinitely until production ceases. The lease does not include any minimum work commitments. The consideration for the new lease was not material. The Company is the only working interest owner in the lease.

Resource Estimation Methodology

The resource estimates have been prepared by Sproule in accordance with the definitions and guidelines set forth in the Petroleum Resources Management System, 2018, approved by the Society of Petroleum Engineers.

The data used by Sproule as input to the independent prospective resource assessment included:

Data	Data obtained from within leased area	Data obtained from outside leased area
well files including logs, core and DST results	Yes	Yes
petrophysical interpretations of well data	Yes	Yes
reprocessed and interpreted gravity and aero-magnetic data	Yes	Yes
regional geological data, maps and reports	Yes	Yes
various geological reports on helium field, Model Dome ¹		Yes
compositional data from 8 wells in Model Dome ¹		Yes
soil gas helium survey results	Yes	Yes

Note 1 : Model Dome is a historical helium field which produced pre-WWII. BNL does not own any economic interest in Model Dome.

This data was used by Sproule to independently map various geological horizons across the area of interest including the Lyons Formation. Independent structural closures were mapped as prospects Enterprise and Galileo. Both fault-bounded closures have up to 200-250 feet of structural closure at the top of the Lyons Formation.

Sproule assumed a mean porosity of 20% based on the petrophysics, log and core data from surrounding wells including at Model Dome. Sproule concluded that available log data was inconclusive as to the connate water saturation and elected to use a bulk volume water method using data from two analogue fields with comparable rock quality. A mean of 0.045 was used.

Gas analysis for 8 wells in the Model Dome area showed an average of 8% helium content and reservoir temperature and pressure were estimated for each prospect from local DST data. Sproule reviewed the compositional data and the supplied correlation for estimating the gas deviation factor and gas formation volume factor for these conditions and found it to be acceptable. For helium



content, the Monte Carlo calculations used a most likely value of 8% helium with a minimum of 7% and a maximum of 9%.

No reliable long-term production data was available for the Model Dome field to use in estimating the recovery factor, however, permeability data was available from Lyons Formation core data with calculated means between 43 and 160mD. A forecasting tool was constructed assuming a single well producing from a 640-acre area under volumetric depletion and matched to the initial production rates reported from individual Model Dome wells (500-1,000 mcf/day). Recovery factors determined ranged from 50% to 75%. The upper recovery factors for each prospect were found to be consistent with reported recoveries from the Pinta Dome field in Arizona which produced low-pressure helium-rich gas from a sandstone reservoir of comparable quality to the Lyons Formation in the prospect area.

The estimates were generated on an unrisksed basis by probabilistic calculations using Monte Carlo software. For each Monte Carlo iteration, the gross gas in place was calculated by the standard volumetric formula. The gross helium in place was determined by multiplying the gas in place by the assumed helium content. The recoverable helium was then calculated by multiplying the gross helium in place by the gas recovery factor. The areas of each of Blue Star's leases that fell within the independent structural closures of Enterprise and Galileo prospects were calculated and a weighted Blue Star working interest and royalty burden was determined for each prospect in each of the P90, P50 and P10 outcomes.

Mineral Leases

In Las Animas County, Colorado, the mineral estate (including helium) may be owned by private citizens or corporations, the State of Colorado or the United States of America. A mineral owner may permit a third party to develop and produce the mineral estate (including helium) by entering into a mineral lease between itself as lessor and the third party as lessee. (For a detailed description of the system of mineral ownership, development and production in the United States see appendix 3 of the Company's announcement of 19 September 2019.)

The Company's rights to develop, produce and sell any helium that may be derived from the Enterprise and Galileo Prospects has been granted by private mineral owners, the State of Colorado and the United States of America pursuant to mineral leases issued by each of those mineral owners.

The leases issued by the United States of America via the Bureau of Land Management ("BLM Leases") are in their standard form (Form 3100-11, October 2008) and provide for an initial term of 10 years from 1 May 2020 and an annual rental payment of US\$1.50/acre payable annually in advance for the first 5 years and then US\$2/acre. If the Company successfully produces helium or other products from the lease area, a 12.5% royalty will be payable to the US Federal Government and the lease term will be extended indefinitely until production ceases. The leases do not include any minimum work commitments. The Company is the only working interest owner in each of these leases.



The leases issued by the State of Colorado (“State Leases”) are in their standard form (revised DOL 20190301) for an initial term of 5 years from 21 November 2019, with the right to request an extension of 1 year and an annual rental payment of US\$2.50/acre payable in advance. If the Company successfully produces helium or other products from the lease area, a 20% royalty will be payable to the State of Colorado and the lease term will be extended indefinitely until production ceases. The leases do not include any minimum work commitments. The Company is the only working interest owner in each of these leases.

The leases issued by the private mineral owners (“Private Leases”) are in the form of Producers 88, Rocky Mountain 1989 (Paid-Up Rev. 1996 w ext.) for an initial term of 5 years from no sooner than 23 July 2019 with an option to renew for a further 5 years. If the Company successfully produces helium or other products from the lease area, a 12.5% royalty will be payable to the lessor and the lease term will be extended indefinitely until production ceases. The leases do not include any minimum work commitments. The Company is the only working interest owner in each of these leases.

The net mineral acres associated with the prospective resources at the Enterprise prospect comprise 7,606 net acres under BLM Leases, 3,233 net acres under State Leases and 484 net acres under Private Leases.

The net mineral acres associated with the prospective resources at the Galileo prospect comprise 1,424 net acres under BLM Leases, 591 net acres under State Leases and 2,057 net acres under Private Leases.

The leases are shown on the map in Schedule B.

Competent Person Statement Information

The information in this report relating to prospective resources is based on, and fairly represents, information and supporting documentation prepared by or under the supervision of Jeffrey B Aldrich and Stanley Kleinsteiber.

Mr Aldrich is employed by Sproule as a Senior Geoscientist. Mr Aldrich is a qualified geoscientist with over 40 years of oil and gas industry experience and is a member of the American Association of Petroleum Geologists and the Society of Petroleum Engineers. Mr Aldrich consents to the inclusion of the information in this report relating to helium Prospective Resources in the form and context in which it appears.

Mr Kleinsteiber is employed by Sproule as a Senior Petroleum Engineer. Mr Kleinsteiber is a qualified petroleum engineer with over 40 years of oil and gas industry experience and is a member of the Society of Petroleum Engineers. Mr Kleinsteiber consents to the inclusion of the information in this report relating to helium Prospective Resources in the form and context in which it appears.

The information in this report has been prepared under the supervision of Trent Spry who is executive director of BNL. Mr Spry is a qualified geoscientist with over 20 years of oil and gas industry experience and a member of the American Association of Petroleum Geologists and the Petroleum Exploration



Society of Australia. Mr Spry consents to the inclusion of the information in this report relating to helium Prospective Resources in the form and context in which it appears.

Forward Looking Statements

This document may include forward looking statements. Forward looking statements include, are not necessarily limited to, statements concerning BNL's planned operation program and other statements that are not historic facts. When used in this document, the words such as "could", "plan", "estimate", "expect", "intend", "may", "potential", "should" and similar expressions are forward looking statements. Although BNL believes the expectations reflected in these are reasonable, such statements involve risks and uncertainties, and no assurance can be given that actual results will be consistent with these forward- looking statements. The entity confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all material assumptions and technical parameters underpinning this announcement continue to apply and have not materially changed.

Units of Measure

bcf	billion cubic feet
mmcf	million cubic feet
mcf	thousand cubic feet



SCHEDULE B

