

ASX ANNOUNCEMENT

14 February 2024

UPDATE ON BOLLING #4 SESW EVALUATION

Highlights

Bolling #4 SESW

- Initial testing and evaluation at Bolling #4 SESW resulted in gas to surface flow of >4% helium under vacuum with flow up to 268.4 mscf/d.
- Engineering analysis is underway to evaluate well production potential.

Blue Star Helium Limited (ASX: BNL, OTCQB: BSNLF) (**Blue Star or the Company**) provides an update on field activities at its Voyager helium development in Las Animas County, Colorado.

Bolling #4 SESW well evaluation

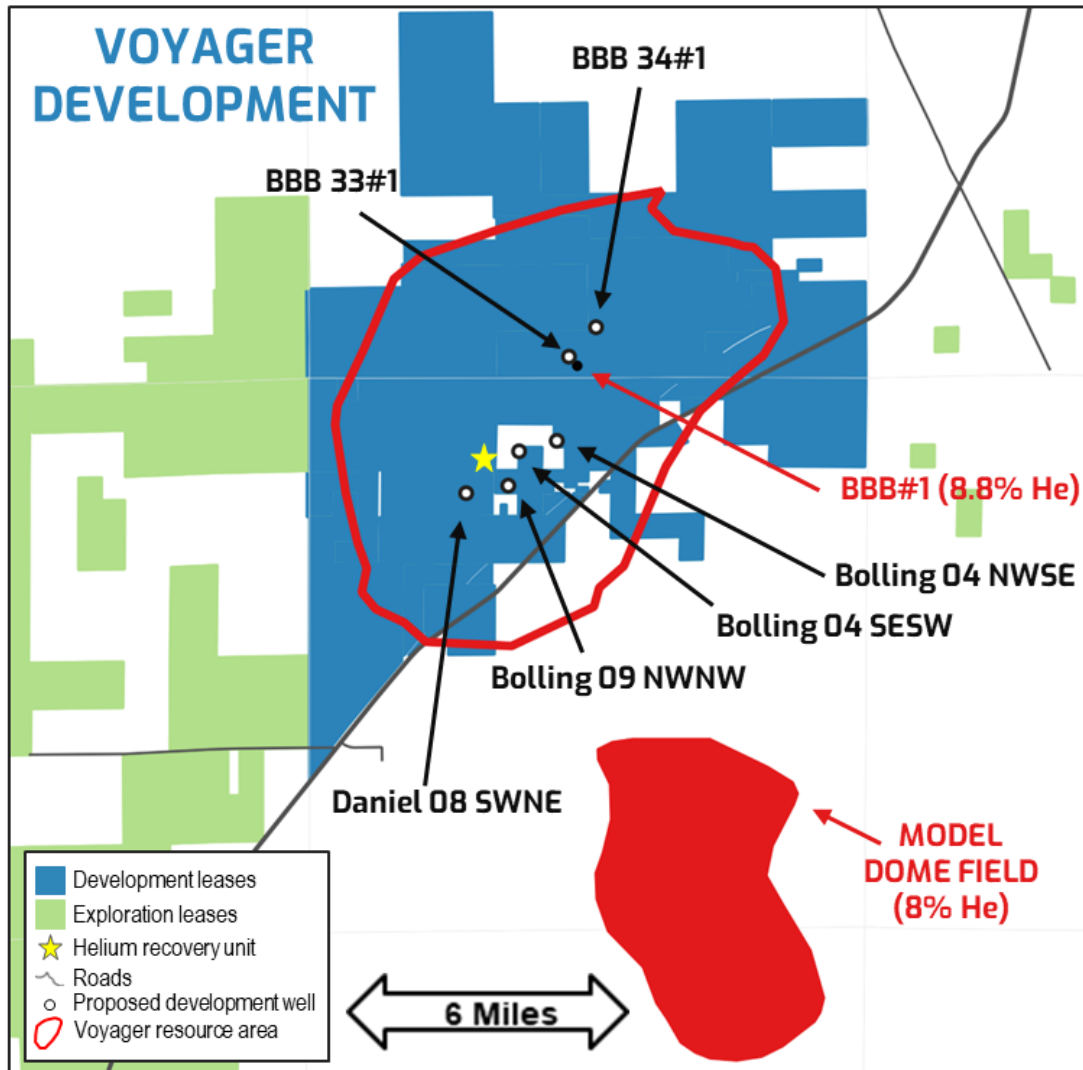
The initial post drilling evaluation continues at Bolling #4 SESW. Several independent parties are evaluating the apparent and anomalous low reservoir pressure as indicated by surface flow and pressure measurements while drilling.

Initial post drill testing at Bolling #4 SESW has been performed using a variable vacuum test over a 24 hour period. Flow rates of up to 268.4 mscf/d were recorded (at an approximate 14psi vacuum) during testing. The downhole and surface pressure gauges will remain in hole for a pressure build-up test over a 72 hour period. It should be noted that the current Voyager development plan contemplates wells on varying degrees of vacuum initially and as production progresses via the feed compressor acquired by Blue Star last year (refer plant layout image overleaf and BNL ASX release dated 15 August 2023, *Voyager Helium Development Update*).

Gas to surface flow from this initial testing contained approximately 4.1% helium, 83.1% nitrogen and 12.8% carbon dioxide. Further, the helium concentration gradually increased over the life of the test and the returning gas flow was still showing signs of 'cleaning up' at the end of the test (most likely related to in reservoir air dilution by influx during the drilling process).

Evaluation of these initial test results is ongoing and will be integrated with the learnings from the BBB #33 evaluation to date. Further evaluation and potential testing is planned to determine individual well completion and production potential.

The Company will provide a further update as soon as additional material information is available. Further information regarding the drilling programme and evaluation is available in the BNL ASX release dated 12 February 2024, *Update on BBB #33 Evaluation and Bolling #4 Drilling*.

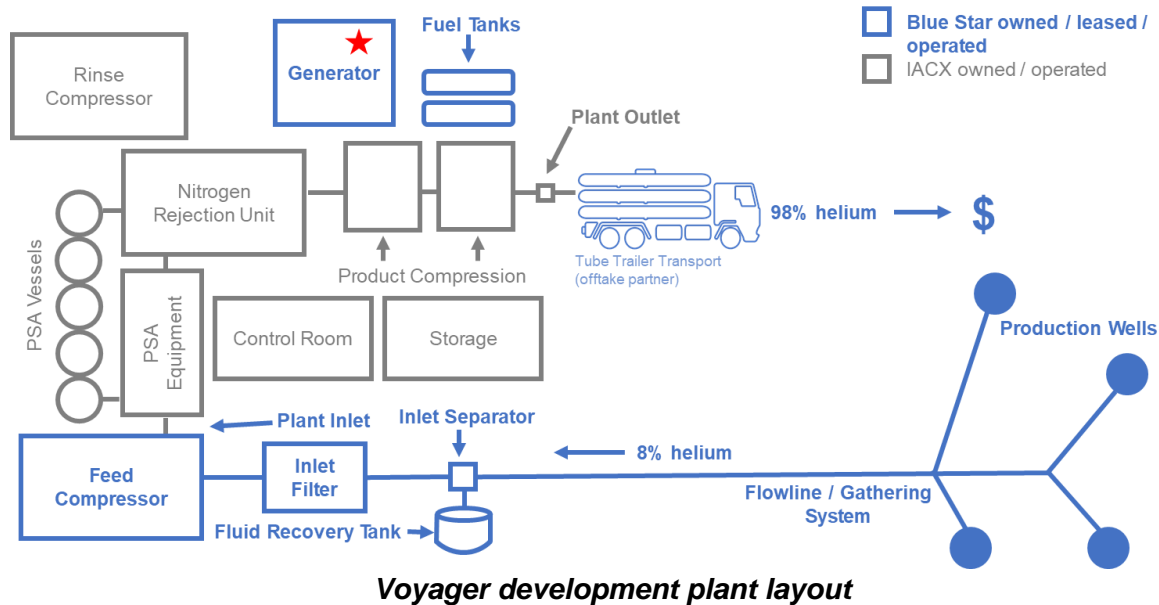


Voyager helium development ECMC approved well locations.

Voyager development plan

Ongoing engineering studies and well testing at Bolling #4 SESW and BBB #33 continue to assist Blue Star in understanding the anomalous initial flow and pressure results seen at these two initial wells. The outcomes are expected to shape the development strategy and well completion strategy for the project.

The current Voyager development plan contemplates wells on varying degrees of vacuum via the feed compressor located between the helium recovery unit and the production well gathering system.



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

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Appendix

Bolling #4 SESW well details

The Bolling #4 SESW well is located in Township 29 Range 60 Section 4 (see figure above). The minerals are the subject of one mineral lease entered into between Blue Star's wholly owned subsidiary, Las Animas Leasing Inc (**LAL**), and a private mineral owner. The lease has an effective date of 12 January 2021, the total area of the leases is 270 gross acres (270 net acres), the term is 5 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%.

The Bolling #4 SESW well was tested as described below.

Sampling methodologies

Laboratory methodology

The analysis was carried 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.

Flow Testing

Flow tests were conducted with a ABB XFC 6413 Total Flow Meter with a 1" orifice diameter at the meter run. Using AGA 1992 calculation method. The meter atmospheric pressure was set for model, CO, with specific gravity at 0.138. The meter was located on the outlet "sales" side of the meter house downstream from the compressor. Flow was measured throughout the 24 hour vacuum test.

About The Voyager Project

Voyager is Blue Star's maiden development project. The BBB#1 well tested the Voyager prospect in November 2021 and encountered a calculated air-free gas concentration of 8.8% helium and interpreted a 134ft gas column in the Lyons formation (see BNL ASX release of 17 November 2021).

Voyager is located only 6 miles from the historic Model Dome analogue production which produces a similar high helium gas composition, averaging 8% concentration.

It is expected that Voyager will ultimately utilise a 20 well development inventory to maximise the contingent resource.

A midstream solution has been selected for gas processing where IACX will provide gas processing services via an owned and operated helium recovery plant.

Total forecast field and plant operating cost is highly attractive at around US\$100-120/Mcf of helium product gas (full capacity) with targeted helium production of 38 MMcf in first full capacity year (see BNL ASX release of 30 June 2023).

Discussions for distributor and end user relationships are in progress.

About Blue Star Helium

Blue Star Helium Ltd (ASX:BNL, OTCQB:BSNLF) 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.