Cobalt Blue Holdings Limited: Demonstration Plant High Grade Concentration Results

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Sydney, Australia - Cobalt Blue Holdings Ltd. (ASX:COB) (FRA:COH) (OTCMKTS:CBBHF) announce that the cobalt concentrator circuit has now completed processing 4200t of ore, yielding 680t of concentrate.

Grades of gravity circuit concentrate consistently averaged 4400ppm cobalt during operations.

The combined recovery for the concentrator circuit was typically 95%, exceeding the recoveries obtained in the 2020 Project Update (PFS level study) of 90%.

First large scale Mixed Hydroxide Precipitate (MHP) is expected in December, with continuous operation of the leach and MHP circuits planned from January.

The Demonstration Plant operations are on track to deliver the initial 'process plant design criteria' for the Definitive Feasibility Study by the end of Q1 2023.

Commenting on recent achievements, Cobalt Blue's Chief Executive Officer, Joe Kaderavek said: "This is large scale and technically substantial proof of our concentration operation. Converting over 4,000 tonnes of variable low to high grade ore to a consistent high-grade concentrate is a major project enabling step. Put another way, our refinery is 20% of the size of the mine and will see an average ~4,400 ppm concentrate for the life of operations. Concentrate recoveries of up to 95% well exceed our Pre Feasibility Study baseline.

Concentrator Operations

The Concentrator Circuit has now completed operations supporting the Definitive Feasibility Study (DFS). A total of 4,200 t of ore has been processed to produce 680 t of wet concentrate (typical moisture 5 - 10%) concentrate. A further 800 - 1,000 t of ore remains for optimisation studies in the future. Operations were held over 65 days with the longest run of over 100 hours recorded. Mass recovery of ~17 - 20% was consist-ently achieved, with average concentrate grade of 4,434 ppm Co (see Figure 1*).

Survey samples were obtained from the concentrator circuit, and independently assayed by a third-party accredited laboratory. A wide variety of ore grade was processed which confirmed regardless of ore grade, a consistent grade of concentrate was produced. Daily average ore grades varied from 600 ppm to 1300 ppm, with the concentrate consistently between 4,000 - 5,000 ppm (see Figure 2*).

Ore processed via the Concentrator Circuit was extracted from the Pyrite Hill deposit by means of underground development (as released on 1 September 2022 in the market announcement 'Demonstration Plant - Ore Extraction Completed'). The Pyrite Hill deposit extends over 1.2 km along strike, over 300 m down dip and varies in thickness from 10 to 100 m. Mineralisation is hosted by a quartz-albite gneiss and is characterised by the presence of disseminated pyrite concentrated parallel to primary foliation.Ore drive development extracted material between 257 mRL and 262 mRL, approximately 40 to 50 m below surface and 3 to 6 m below the interpreted top of fresh rock.

Concentrate Treatment

The treatment of cobalt-pyrite involves two key steps. The first is conversion of pyrite into pyrrhotite and elemental sulphur, followed by leaching of the pyrrhotite. The solubilised cobalt is then recovered by precipitation as a mixed hydroxide with grades of 30% cobalt and 7% nickel (typical Pilot Plant results from 2021).

Following initial commissioning in September 2022, kiln operating parameters continue to be optimised to maximise pyrite to pyrrhotite conversion. The kiln is now in continuous operation with feed rates between 150 - 200 kg/hr. The kiln will initially focus on production of calcine for leaching, with clean sulphur recovered once a specialised heat-exchange condenser is operational and sulphur prilling equipment installed in Q1 2023.

The leaching autoclave has been commissioned with the first 2 t of kiln product. Ahead of leaching, the kiln calcine was upgraded to 75 - 85% pyrrhotite and 0.6% cobalt, with residual gangue to be recycled to the float

cell to recovery unreacted pyrite. This upgrade step reduces the load of inert material progressing into the leach.

First MHP is expected later this month, with continuous operation of the leach and MHP circuits planned from January 2023.

The Demonstration Plant operations are on track to deliver the initial 'process plant design criteria' for the Definitive Feasibility Study.

The Plant will continue to run through 1H 2023, to obtain large samples of cobalt and sulphur products for market acceptance, and to obtain reliability data for the DFS.

Overall Process Cobalt Recovery

The concentrator circuit recovers cobalt-pyrite from the gravity spirals and the float cell. The deportment of cobalt-pyrite between the two methods depends on the particle size, with coarse particles recovered on the gravity spiral, and fine particles recovered in the float cell.

The combined recovery for the demonstration plant concentrator circuit was typically 95%. This exceeds the previous recoveries obtained in the 2020 Project Update (PFS level study) of 90%.

Further work is ongoing to validate the recovery of cobalt from the concentrate through the remaining downstream processing circuits.

*To view tables and figures, please visit:
https://abnnewswire.net/lnk/L0T9513L

About Cobalt Blue Holdings Limited:

Cobalt Blue Holdings Ltd. (ASX:COB) (FRA:COH) (OTCMKTS:CBBHF) is an exploration and project development company. Work programs advancing the Broken Hill Cobalt Project in New South Wales continue. Our ambitious goals are subject to funding availability. Cobalt is a strategic metal in strong demand for new generation batteries, particularly lithium-ion batteries now being widely used in clean energy systems.

Source:
Cobalt Blue Holdings Ltd.

Contact:

Joe Kaderavek Chief Executive Officer info@cobaltblueholdings.com P: (02) 8287 0660