Cobalt Blue Holdings Ltd: an Australian Company at the Forefront of Global Mine Waste Opportunity

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Sydney, Australia - Approximately 10 billion tonnes of global mine waste is produced annually, mostly contained in tailings facilities. These facilities require ongoing management to mitigate potential environmental harm and many contain discarded metals that are important to the Global Energy Transition.

Recent critical minerals legislation enacted by the United States (US) and European Union (EU) responds to the growing demand for responsibly sourced critical minerals essential to battery chemistry, especially to supply the rapid growth in Electric Vehicles (EVs) and battery storage systems. This global backdrop is prompting a re-evaluation of the value contained in mine waste.

Cobalt Blue Holdings Ltd. (ASX:COB) (FRA:COH) (OTCMKTS:CBBHF) is an ASX-listed Australian Company with a strategy to provide a reliable supply of responsibly sourced battery metals to the world. Our projects include a cobalt-nickel refinery in Western Australia, the Broken Hill Cobalt Project in New South Wales, and the patented technology to re-process mine waste.

Cobalt Blue is a global leader in the application of technology and expertise to extract critical minerals from mine waste, like cobalt and nickel, which are essential to lithium-ion battery chemistry. The Cobalt Blue process also removes acid-forming sulphides to create commercial opportunity through sulphur production, this reduces ongoing tailings management costs and mitigates potential environmental harm.

With established test-work arrangements in Australia and Canada, and strong interest being shown in Europe, Cobalt Blue is on the verge of a large-scale global opportunity contained in mine waste and at the forefront of delivering beneficial outcomes to the mining industry, battery manufacturers, local communities, and environments.

Metalliferous mine waste: a massive global opportunity

The world has been mining for clays and metals for tens of thousands of years. Over time, the mining industry has become more sophisticated and productive, creating countless positive impacts for humanity. Yet, mining also leaves behind an enormous environmental legacy of waste, mostly in the form of tailings dams and spent heaps.

The storage of mine waste requires continuous management and maintenance to protect the environment from potential harm. Poorly managed facilities can have devastating impacts on ecosystems and communities.

In 2022, the International Council on Mining and Metals (ICMM) published their 'Roadmap for Tailings Reduction' in the wake of the Brumadinho tailings disaster in Brazil (January 2019). This disaster occurred when a tailings dam at the Corrego do Feijao iron ore mine suffered a catastrophic failure, releasing a mudflow that engulfed mine facilities, houses, farms, roads, and resulted in many lives lost. In the 'Roadmap', the ICMM provides direction on developing improved and cost-effective alternatives to conventionally managed tailings storage facilities to reduce the risk of catastrophic failure.

The ICMM estimates that nearly 10 billion tonnes of tailings were produced worldwide in 2018 alone across the 6 traditional commodities of alumina, gold, coal, iron ore, nickel, and copper (Figure 1*). Copper mining solely accounted for more than one-third of that figure, with 3.4 billion tonnes of tailings produced from copper mines in 2018.

Having developed the processing technology during our test work operations at the Broken Hill Cobalt Project, our approach is now being taken across Australia and worldwide where it can be applied to provide sustainable solutions for recycling mine waste.

Joe Kaderavek, CEO of Cobalt Blue, says the Company is ready to address the enormous opportunity contained globally in mine tailings:

"We have validated and optimised our technology through processing cobalt-pyrite ore from our Broken Hill

Cobalt Project to generate cobalt sulphate for battery manufacture and elemental sulphur for agriculture. Our team at the Demonstration Plant in Broken Hill is the first in the world to develop and apply this process. This expertise has been established in Australia and can be taken world-wide to solve an enormous problem that contains immense opportunity. Not only can we extract metals essential to batteries, but we can also remove acid-forming sulphides to reduce ongoing management costs and potential for environmental harm."

Global Backdrop

Demand for metals and critical minerals is increasing as the world turns to EVs and battery storage to power the Great Energy Transition.

The new US Inflation Reduction Act (IRA) and EU Critical Raw Materials Act (CRMA) will significantly impact the global critical minerals supply chain through the provision of incentives for the supply of responsibly sourced materials. With most of the world's cobalt coming from China and the Democratic Republic of the Congo (DRC), the global race to secure IRA and CRMA compliant supply is rapidly advancing an Allied Nations critical materials supply chain, including the US, EU, Japan, South Korea, Canada, and Australia.

Yet, the global decline in grades of metalliferous mines worldwide is creating a shortage of supply, especially for metals essential to the Energy Transition, such as nickel and copper. This means more and more material is being mined to produce the same volume of metal and this is increasing the quantity of waste being stored year-by-year.

Dr Helen Degeling leads the waste streams project at Cobalt Blue, identifying opportunities for green metal extraction from mine waste. A PhD-qualified geologist, Dr Degeling, has over 18 years of experience in mining, government and academia and a passion for the circular mining economy.

According to Dr Degeling:

"At Cobalt Blue we intend to turn this massive mine waste legacy into an opportunity, not only for the mining industry, but also for battery manufacturers, local communities, and the environment. Our mine waste solution has the potential to commercialise discarded metals and leave sites with a smaller volume of benign waste to reduce the overall environmental liability".

Cobalt Blue at the Forefront

Cobalt Blue launched the Waste Streams Project last year and collaborative arrangements have already commenced on tailing sites in Australia and Canada, with promising initial test work results.

Dr Degeling says that the adaptability of Cobalt Blue's process is important to achieving successful outcomes, with each mine site being different and characterised by variations in mineralogy and chemistry. She adds that collaborative arrangements are 'key' to co-creating solutions that can adapt to local conditions and will prove to be of most benefit to mining companies, governments, communities, and the environment.

On the scale of the opportunity in Australia, it is estimated by the Cooperative Research Centre for Transformations in Mining Economies (CRC TiME; in their report on 'Enabling Mine Closure and Transitions' 2023) that around 240 mines are due to close across Australia by 2040 and tens of thousands of mines remain un-rehabilitated in Australia alone.

"The prospects are even larger in Europe and that's why we are seeing such strong interest arising from the EU, where EuroGeoSurveys have defined over 20,000 active and inactive mine sites, representing thousands of years of mining" says Dr Degeling. "This presents an enormous opportunity for us to revisit these sites and lead a new frontier in critical metal exploration to create a positive legacy out of what has gone before."

For detailed information on Cobalt Blue's Cobalt in Waste Streams Projects, see:
https://cobaltblueholdings.com/projects/cwsp/

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.

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