



## **BacTech Announces Bankable Feasibility Study Results Confirming Strong Economics for Ecuador Bioleaching Project**

*Key economic highlights include substantial NPV of US\$46.9M, compelling IRR of 48% and projected EBITDA of US\$8.8M @ \$1600 gold*

*All dollar figures in US dollars, unless otherwise indicated*

TORONTO, ON. December 16, 2021 – [BacTech Environmental Corporation](#) (CSE: BAC, OTC: BCCEF, FSE: 0BT1) (“BacTech” or the “Company”), a commercially proven environmental technology company delivering effective and eco-friendly biomining and remediation solutions, is pleased to announce and release the executive summary results of its 3<sup>rd</sup> party produced Bankable Feasibility Study (“BFS”) for the staged development of its 100% owner-operated bioleaching facility in Ponce Enriquez, Ecuador (“PE”). The results point toward a very robust and economically compelling project with strong performance metrics.

South American mining and metallurgical engineering and development firm EPCM Consultores S.R.L. (“EPCMC”) was engaged in July 2021 to undertake the independent feasibility study for the Company’s proposed bioleach processing plant to be located in Tenguel, strategically situated for easy accessibility to PE mining operations. The BFS outlines process economics expectations and metrics pointing toward solid and long-term program viability, while considering associated capital and operating costs for the project.

### **Key Economic Highlights:**

- Pre-tax NPV (Net Present Value with 5% discount rate) of \$46.9M
- Pre-tax IRR (Internal Rate of Return) of 48%
- Annual Gold Production of 25,900 ounces
- Capital Cost of \$15.5M
- Bioleach Operating Cost of \$212 per tonne
- Assumed Purchase Prices of Concentrate - 65% of the contained gold value
- Pre-tax Earnings Prior to Employee Bonus - \$8.94M
- Payback (75% DEBT) - 2 years

“These results exceed my own expectations – especially an NPV of almost \$50M and IRR of 48% and provide a significant confidence boost for our proposed bioleaching project to move forward,” said Ross Orr, CEO of BacTech Environmental. “This past year we’ve worked hard to create lasting relationships with local government and industry partners that will benefit both plant production optimization as well as the community and resident economy to make a community-wide positive impact. We’ve built some cushion into the Capex to accommodate rural supply chain realities, all of which is offset by a much lower Opex than what we originally envisioned. So, what we’re looking at are some very healthy numbers that place us firmly in control of our triple bottom line – being People, Planet and Profit. You could say this project has ticked all the boxes for investment as well as from an ESG perspective.”

### **Additional Project Economics & Parameters:**

- Plant Design Capacity-15,030 tonnes of dry concentrate per annum
- Plant Life - 20 years
- Average Gold Recovery Bioleaching – 96%
- Annual Gold Production (55 gpt average feed) - 25,900 ounces
- All-in Opex - \$212 per tonne
- Up Front Capital - \$15.5M
- Base Case Gold Price - \$1600 per ounce
- Payback from Start of Production – 2.5 years

### **Project Gold Price Sensitivity:**

<b>Gold Price</b>	<b>NPV (5%)</b>	<b>IRR</b>	<b>EBITA</b>
\$1,500	\$41M	43%	\$8.1M
\$1,600	\$47M	47%	\$8.8M
\$1,700	\$53M	53%	\$9.7M
\$1,800	\$59M	57%	\$10.6M
\$1,900	\$65M	62%	\$11.4M

The feasibility study contemplates the purchase of concentrates, high in both arsenic and gold levels, from mines located in the Ponce Enriquez area of SW Ecuador. In total, there are over 90 small mines operating in the area. BacTech intends to return local miner compensation back to previous payment levels, prior to a sweeping price reduction imposed by Chinese buyers due to recent import levies on arsenic/gold concentrates entering China.

EPCMC is a South American engineering and development firm specializing in mining and metallurgical projects. EPCMC has considerable experience in a range of professional engineering services including feasibility studies, project design and construction within South America and Europe, having delivered close to 50 major projects and working with various

international mining companies including Orvana, Silver Standard, Aquila Resources and Yamana Gold.

“As demand for greater environmental responsibility increases across the mining and resource sectors, interest in using natural bacteria in a wider variety of commercial applications to extract valuable metals is also accelerating,” Orr continued. “Like most investors in the Company, I’ve been waiting for the BFS results – but we haven’t slowed down. In addition to gold recovery operations in Ecuador, Peru and other areas, the Company sees a new generation of metallurgical opportunities emerging in North America and other regions, each with their own significance and upside potential.”

This press release has been reviewed by Dr. Paul C. Miller Ph.D. Chem. Eng. C.Eng. MIMM., considered to be a qualified expert for reporting purposes.

### **About the Ponce Enriquez Bioleaching Project**

BacTech is planning to build a new owner-operated bioleaching facility near Ponce Enriquez, Ecuador, in a region where arsenic is associated with gold ore (Arsenopyrite). The Company’s plan is to build a 50 tpd bioleach plant capable of treating high gold/arsenic material. A 50 tpd plant, processing 1.75 ounces of gold per tonne of feed, similar to feeds available to the Company from local miners, would produce approximately 26,000 ounces per year. Plant designs are modular and can be expanded without affecting ongoing production. The total concentrate market in the Ponce Enriquez area is estimated to be between 200 and 250 tonnes per day, allowing for increased throughput potential with a larger plant.

BacTech continues to investigate the prospects of establishing additional modern bioleaching facilities across other areas of Ecuador, Peru, and Colombia. Where possible, the Company will partner with national and local governments, non-governmental organizations (NGOs), and others to assist with the funding of these projects.

### **About BacTech Environmental Corporation**

BacTech is a proven environmental technology company, delivering effective and eco-friendly biomining and remediation solutions to commercial operations to smartly process and recover preferred metals (gold, silver, cobalt, and copper) and safely remove and transform harmful contaminants like arsenic into benign EPA-approved products for landfill. Tapping into numerous environmental and economic advantages of its proprietary method of bioleaching, BacTech uses naturally occurring bacteria, harmless to both humans and the environment, to neutralize toxic mining sites with high-pay potential. BacTech is publicly traded on the CSE under the symbol “BAC”; on the OTC as “BCCEF”; and the Frankfurt Stock Exchange as “OBT1”.

For further information contact:

Ross Orr

**President & CEO, BacTech Environmental Corporation**

416-813-0303 ext. 222,

Email: [borr@bactechgreen.com](mailto:borr@bactechgreen.com)

Website: <https://bactechgreen.com/>

Investor Presentation: <https://bactechgreen.com/investors/>

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This news release contains “forward-looking information”, which may include, but is not limited to, statements with respect to future tailings sites, sampling or other investigations of tailing sites, the Company’s ability to make use of infrastructure around tailings sites or operating performance of the Company and its projects. Often, but not always, forward-looking statements can be identified using words such as “plans”, “expects”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates”, or believes” or variations (including negative variations) of such words and phrases, or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved. Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance, or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements contained herein are made as of the date of this news release and the Company disclaims, other than as required by law, any obligation to update any forward-looking statements whether because of new information, results, future events, circumstances, or if management’s estimates or opinions should change, or otherwise. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, the reader is cautioned not to place undue reliance on forward-looking statements.

Shares outstanding: 157,455,558

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This press release does not constitute an offer to sell or a solicitation of an offer to buy any of the shares, nor is it a solicitation of interest from a prospective investor.

