



## **FORTUNE MINERALS LIMITED**

140 Fullarton Street, Suite 1902, London, Ontario, Canada N6A 5P2  
Tel. 519-858-8188 ~ Fax. 519-858-8155

February 23, 2012

Shannon Hayden  
Environmental Assessment Officer  
Mackenzie Valley Environmental Impact Review Board  
200 Scotia Centre  
Box 938, 5102-50th Ave  
Yellowknife, NT  
X1A 2N7

Dear Ms. Hayden

**Re: Undertaking Response # 12 for the NICO Project - EA0809-004  
Developer's Assessment Report Technical Meetings**

Fortune Minerals Limited ("Fortune") is pleased to submit this response for undertaking # 12 to the Mackenzie Valley Environmental Impact Review Board (MVEIRB). This undertaking was generated during the Technical Meetings held for the NICO Cobalt-Gold-Bismuth-Copper Project Developer's Assessment Report (DAR) from February 7-9, 2012.

We trust the information in this undertaking response provides the answers required to fulfill our requirements.

*Undertaking #12: Fortune is to indicate at what commodity prices the viability of the NICO Project would become in question, including an analysis of the cut-off line for metal prices where the NICO Project might experience a potential temporary shutdown or closure.*

Response:

The NICO Project is a poly-metallic gold and specialty metals mine. It consists of four payable metals: gold, cobalt, bismuth and copper. Because the ultimate value of ore is determined by the combination of multiple metals, the cut-off grade to determine whether or not mineralized material is ore (i.e. profitable) is based on Net Smelter Revenue (NSR). Typically, when only one primary metal is mined, a cut-off grade is determined to decide if mineralized material is ore or not. The NSR is calculated using the value of all recoverable metals contained within a minable block of ore. Therefore, ore within the NICO deposit will have significantly different metal content but will exceed the cut-off NSR dollar value based on the combination of grades, recoveries and metal prices.



The design NSR is based the premise that the NSR for the mine, in total dollar terms, will equal or exceed both the estimated operating and capital costs for the project. The cut-off NSR for a particular block of ore is based on a dollar value that will exceed the operating costs to mine and process that block of ore (i.e. there is contribution to the capital costs or sunk costs of the project). This cut-off NSR is approximately 20% below the design NSR. The design NSR has been determined to be \$76.00/tonne of ore. Based on mining plans, to determine what is ore, metal prices used in the mine model were \$1,100.00/ounce of gold, \$20.00/pound of cobalt, \$10.00/pound of bismuth, and \$3.00/pound of copper. This would mean that sum of the value for all payable metals would need to drop approximately 20 percent in total for the viability of NICO to be in question (i.e. the operations would not be contributing to the capital cost invested into the project). To cause the sum of the value of all payable metals to fall 20%, if all other the metal prices remained constant, gold price would have to fall to \$335.00/ounce, cobalt price would have to fall to \$7.38/pound or bismuth price would have to fall to \$1.95/pound. Alternatively, all of the metal prices would have to fall by 20% to \$880.00/ounce of gold, \$16.00/pound of cobalt, \$8.00/pound of bismuth, and \$2.40/pound of copper.

The metals at NICO are considered counter cyclical to each other because both base and precious metals are being mined. Counter cyclical means that one or more metals will increase in price as the price of other metals are dropping. This is due to the fact that prices for cobalt, bismuth and copper are dependent on the world economies, while the price of gold would be expected to increase during a poor economic period. It is anticipated that a decline in price for certain metals will be, at least partially offset by increases in other metal(s). To demonstrate, on February 22, 2012, these metals traded for \$1,775.00/ounce of gold, \$17.80/pound of cobalt, \$11.25/pound of bismuth, and \$3.80/pound of copper. Due to the counter cyclical nature of NICO's metals, at these recent metal prices, the average NSR for the project is approximately 12% above the design cutoff. Given the variability in metal prices, an approximate sensitivity is that for every \$100.00/ounce increase in gold price offsets a \$0.50/pound decrease in price for both cobalt and bismuth and vice versa or for every \$1.00 increase in cobalt is offset by a \$1.00 increase in bismuth and vice versa. Therefore, there are nearly an infinite number of price combinations that can maintain the viability of the NICO Project.

Sincerely,

**Fortune Minerals Limited**

Rick Schryer, Ph.D.  
Director of Regulatory and Environmental Affairs

