Memo

Subject: Grounds for a 'FOR' vote on Freeport-McMoRan shareholder resolution requesting that the company recommend an independent board candidate with a high level of expertise and experience in environmental matters relevant to mining companies.

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Shareholders are encouraged to vote FOR the following resolution:

RESOLVED: that the shareholders request that, as the terms in office of elected directors expire, at least one candidate shall be selected and recommended for election to the company's board who:

- *has a high level of expertise and experience in environmental matters relevant to mining and is widely recognized in the business and environmental communities as an authority in such field, in each case as reasonably determined by the company's board, and*
- *will qualify, subject to exceptions in extraordinary circumstances explicitly specified by the board, as an independent director under the standards applicable to the company as a New York Stock Exchange listed company, in order that the board includes at least one director satisfying the foregoing criteria, which director shall have designated responsibility on the board for environmental matters.*

Rationale for a 'FOR' vote:

I. Freeport-McMoRan Copper & Gold Inc. (Freeport) faces reputational risks and significant direct financial losses, and has received negative media attention regarding environmental incidents, both past and present.

A. Freeport continues to garner criticism regarding its poor environmental practices at its Grasberg site in Papau, Indonesia.

1. Grasberg is the third largest copper mine and largest gold mine in the world, representing 92% of Freeport's gold production.[1] It is an enormous open pit mine located in a glacial valley in the highlands of Indonesia. Freeport's current practices involve sending mine tailings and overburden runoff down the Aikwa and Wanagon Rivers, to be washed into the Arafura Sea. This has led to acid rock drainage, groundwater

[1] Freeport-McMoRan 2011 10-K Report, p 66

contamination, toxic rivers, wetlands, and estuaries, loss of productive farmland, loss of fish and marine life, and land contamination. Riverine tailings disposal has been banned in first world countries for more than twenty years. [2]

2. Freeport states on the company's website that "our studies of tailings reclamation and establishment of demonstration plots on deposited tailings have shown that tailings are not toxic to native forests and agricultural plants"[3] and calls the estuary a "functioning ecosystem."[2] However, these claims have been refuted on many occasions by independent professionals.
    a. In 1998 the company admitted that 30 square kilometers of forest were dead from contamination and that area was expected to spread to 130 square kilometers.[2]
    b. Subcontractors working for the company's lab have revealed that some contaminants such as mercury can be found in river water samples at levels four times what is recommended as safe for human consumption.[2]
    c. An independent study done by Parametrix in 2002, and paid for by Freeport, concluded that rivers in the highlands near the mine and wetland areas further downstream were now so clogged with copper waste, sludge, and other contaminants that they were unsuitable for aquatic life. The report also showed that the toxicity of nearly half the sediment samples in parts of the coastal estuary was high enough to kill aquatic organisms that are low on the food chain.[4]
    d. While Indonesian law states that suspended solids should not exceed 400 milligrams per liter in a water sample, Freeport's waste water contained 37,500 milligrams in the lowlands and 7,500 milligrams as it entered the Arafura Sea, according to a 2004 field report by the Indonesian Environment Ministry.[4]
    e. At least 230,000 tons of tailings are being dumped into the river system each day.[5] By Freeport's estimates, 6 billion tons of waste will be excavated before the mine is closed. Mine waste in the

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[2] Kennedy, Danny. "Mining, Murder, and Mayhem: The Impact of the Mining Industry in the South." *Third World Network.* May 1998, available at http://www.twnside.org.sg/title/mine-cn.htm

[3] Freeport-McMoRan 2011 10-K Report, p 53

[4] Perlez, Jane and Raymond Bonner. "Below a Mountain of Wealth, a River of Waste." *The New York Times.* Dec 27 2005, available at http://www.nytimes.com/2005/12/27/international/asia/27gold.html?pagewanted=1&_r=1&ei=5088&en=fba5e5cb626e7d5c&ex=1293339600&partner=rssnyt&emc=rss

[5] "World's second biggest pension fund dumps Rio Tinto." Sept 16 2008, available at http://www.minesandcommunities.org/article.php?a=8809

highlands covers 3 square miles and is 900 feet deep in some places. In the wetlands, it has buried 90 square miles already.[6]

3. Freeport has also made claims that its waste management and environmental practices meet Indonesian and American standards. Again, this has been contested multiple times. In February 1997, the Environmental Minister of Indonesia, Sarwono Kusumaatmaja, accused Freeport of "carelessness and negligence in its management of tailings" and added that the environmental errors the company had committed would make it difficult for Freeport to repair its reputation.[7] A succeeding Environmental Minister, Keraf, was opposed to and outspoken against Freeport practices as well, and confirmed that Freeport does not have a permit from the national government to dispose of mine waste, which is required by the 1999 hazardous waste regulations.[6] In 1995 the company's political risk insurance was cancelled on environmental and human rights grounds by the U.S. Federal Government Overseas Private Investment Corporation (OPIC), something OPIC had never done before.[7] The Indonesian Environmental Ministers and the American OPIC have made it clear that neither country considers Freeport's practices regarding tailings and overburden disposal to be acceptable.
4. A special environmental commission recommended in 2001 that Freeport stop using the riverine system and instead use a series of pipes. The company argued that this would be too difficult and expensive, even though 60 miles of pipes are currently being used to carry copper and gold slurry down the mountains. When environmental experts issued a critical report including all of the environmental issues that have been raised, Freeport went to court to make sure that only a redacted version was made public.[6] Indonesian leadership filed a suit against Freeport for a total of $6 billion in human rights and environmental violations associated with the Grasberg mine operations, but were forced to settle out of court in 2006 when the trial became too expensive to continue.[7] **These numerous, serious environmental incidents have led some in the media to cast Freeport in a seriously negative light, and have made it clear that the company is lacking proper environmental experience and guidance at the board level.**

B. The Government Pension Fund of Norway, the world's largest pension fund, has decided to no longer invest in Freeport and its partner Rio Tinto because of environmental concerns. The Ministry of Finance has said, "The [tailings] discharges will be increasing in future in line with the expansion of the mine. Moreover, there is a high risk that acid rock drainage from the company's waste rock and tailings dumps will cause lasting ground and water contamination. The mine is deemed to remain profitable until 2041, which must be expected to result

[6] "Below a Mountain of Wealth, a River of Waste."
[7] "Mining, Murder, and Mayhem: The Impact of the Mining Industry in the South."

in severe long-term environmental damage in the area."[8] Such a significant investor pulling out of the business should be a sign to Freeport that they need to change their practices or risk severely damaging the company's reputation and finances.

C. In addition to concerns at Grasberg, Freeport has been involved in two water rights suits in Arizona,[9] as well as a $71 million settlement agreed to in 2010 related to groundwater contamination at Pinal Creek near the Miami mine in Arizona. The EPA is also prepared to file a remediation suit regarding the Gilt Edge Mine site in South Dakota where at least $91 million of damage has been done. Negotiations are currently underway.[10] Freeport is currently developing a new site called the Tenke Fungurume mine in the Democratic Republic of Congo, and this project has also raised concerns. It is estimated that 60% of minerals from the DRC are mined illegally, and the mining often involves improper environmental practices, child labor, and can be used to fund conflicting armed groups in the area.[11] For that reason, having operations in the DRC can lead to reputational damage and is fraught with political and country risk.

II. Good environmental management is crucial to avoid and mitigate risks.

A. For mining companies, it is critical to have environmental expertise on the board because of the magnitude of the environmental risks inherent to the industry.

1. Freeport is aware of the environmental risks it faces, stating, "If we do not properly identify, control, minimize and mitigate the environmental impacts of our operations, our risks include non-compliance with regulatory obligations, the potential for costly closure activities and broad public disapproval."[12] The company acknowledges, "some overburden can generate acid rock drainage, or acidic water containing dissolved metals which, if not properly managed, can adversely affect the environment."[13] Freeport also states in the 10-K report, "The potential physical impacts of climate change on our operations…may include changes in rainfall patterns, water shortages, changing sea levels, changing storm patterns and intensities, and changing temperatures. These effects may adversely impact the cost, production and financial performance of our operations."[14] With so much at stake, the smart business decision would

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[8] "World's second biggest pension fund dumps Rio Tinto."
[9] Freeport-McMoRan 2011 10-K Report, p 58
[10] Freeport-McMoRan 2011 10-K Report, p 155
[11] Burns, Stuart. "Conflict Minerals and Their Derivatives: Where Cobalt Fits In." *Metal Miner.* April 12 2011, available at http://agmetalminer.com/2011/04/12/conflict-minerals-and-their-derivatives-where-cobalt-fits-in/
[12] PT Freeport Indonesia Working Toward Sustainable Development Report 2008, p 5
[13] Freeport-McMoRan 2011 10-K Report, p 54
[14] Freeport-McMoRan 2011 10-K Report, p 55

be to nominate an independent board member with environmental expertise who would help guide the company in mitigating these risks.

2. Freeport has also shown that it is aware of the climate and water related risks that affect the company's operations. On the website, the company states, "the potential risks associated with the topic of climate change include potential regulation of greenhouse gas emissions and associated cost increases for fuel and purchased power. Further, our operations require large volumes of water and supply shortages could adversely impact our cost, production and financial performance."[15] Several of Freeport's mines in South America are currently facing water shortages and have to resort to costly processes like ocean water desalinization to meet their needs. The company explains, "The loss of some or all water rights for any of our mines, or physical shortages of water to which we have rights, could require us to curtail or close mining operations and could prevent us from pursuing expansion opportunities."[16] Freeport also details water-related risks in the 10-K report, but provides very little information to shareholders on water scarcity risk mitigation plans. A board member with environmental expertise would help ensure that water scarcity risk was properly managed and that the company's strategy concerning reduction of water-related risk was publicly available.
3. While Freeport has stated, "Our board of directors appreciates the importance of environmental sustainability and recognizes the company's responsibility to minimize the environmental impact of our operations,"[17] the company: has only achieved one of its five water and climate change related goals reported in its sustainability report; does not have greenhouse gas reduction goals; and has increased emissions and energy consumption year to year.[18]

B. If a company is unable to show that its environmental policies and practices align with nationally and internationally accepted standards, it may experience difficulty obtaining regulatory licenses.

1. Climate change and environmental issues continue to garner political attention and related laws and regulations are constantly changing. In Freeport's 10-K Report, the company states,

> *Our mining operations and exploration activities, both in the U.S. and elsewhere, are subject to extensive laws and regulations governing exploration, development, production, occupational health, mine safety, toxic substances, waste disposal, protection and remediation of the environment, protection of endangered and protected species, and other related matters. Compliance with these laws and regulations imposes substantial costs, which*

[15] http://www.fcx.com/envir/envir_energy.htm
[16] Freeport-McMoRan 2011 10-K Report, p 50
[17] Freeport-McMoRan 2011 Proxy Statement, p 58
[18] 2010 Working Toward Sustainable Development Report

> *we expect will continue to increase over time because of increased regulatory oversight, adoption of increasingly stringent environmental standards, and increased demand for remediation services leading to shortages of equipment, supplies and labor, as well as other factors. Recent examples of these trends include EPA's June 2010, promulgation of a new sulfur dioxide ambient air standard and EPA's efforts to curtail the exemption of mining operations from waste management regulation under the Federal Resource Conservation and Recovery Act. These and other such actions could have a significant impact on our operational compliance and closure costs.*[19]

In addition, the EPA announced in February 2012 that it intends to propose regulations regarding hard rock mining financial responsibility next year, which would affect Freeport's future financial assurance obligations (such as required reserves for potential environmental remediation).[20]

2. Regulations affect nearly all aspects of Freeport's business and the costs of complying with them, along with the costs for environmental protection and remediation, can be substantial. As of December 31, 2011 total environmental obligations (including current and projected future costs) for Freeport totaled $1.5 billion.[21] Compliance costs alone were $387 million in 2011. The company has spent more to comply with environmental laws and regulations each year and expects that 2012's costs will total $636 million.[22]

C. A well-qualified board member with environmental expertise is necessary to hold management accountable for the mitigation of environmental risks. Many companies take into consideration or actively seek out, among other things, environmental knowledge and experience when nominating directors for this reason. The perspective provided by a person with environmental skills and experience included in his or her background is, according to ConocoPhilllips, "valued as [companies] implement policies and conduct operations in order to ensure that our actions today will not only provide the energy needed to drive economic growth and social well-being, but also secure a stable and healthy environment for tomorrow."[23] There is also, according to experts in the field, an "expectation that these board members will guide corporate decisions in ways that will have a positive environmental impact…[and] stakeholder theorists would view their inclusion as a positive move."[24]

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[19] Freeport-McMoRan 2011 10-K Report, p 52
[20] Freeport-McMoRan 2011 10-K Report, p 41
[21] Freeport-McMoRan 2011 10-K Report, p 73
[22] Freeport-McMoRan 2011 10-K Report, p 53
[23] ConocoPhillips 2011 Proxy Statement, p 13
[24] Hartman and Mallette. "Impact of Board Structure and Stock Ownership on Toxic Releases by U.S. Industrial Manufacturing Firms." *The Journal of Global Business Management.* 2008.

D. The pollution and destruction of local Indonesian people's land, water, local wildlife, and crops has led to anger and tension toward Freeport near its Grasberg site. Due in part to this tension, along with human rights and corruption complaints, violence has often erupted between the mine staff and the locals. Starting in 1977, a Rebel group in Papau attacked the mine, causing millions of dollars in damage, and costing more than 800 lives when the Indonesian military retaliated. In 1996, rioters ransacked offices and destroyed $3 million of equipment. More recently, between 2009 and February 2012, 32 shooting incidents occurred, resulting in 15 deaths and 56 injuries, including employees, contractors, law enforcement, and civilians.[25] Between September and December 2011, and from February 23rd to March 15th of 2012, worker strikes over low pay and dissatisfaction with the way Freeport operates its Grasberg mine prompted operational shutdowns and more violence.[26] We believe it is possible that some of this conflict could have been avoided had Freeport included a director on the board with environmental expertise who could have best directed the company to manage its environmental practices, ease environmental tension, and maintain a positive relationship with local community members.

III. Freeport-McMoRan's current board members do not demonstrate adequate environmental expertise.

A. None of Freeport's current twelve board members have any apparent background or experience in an environmental field that would enable them to best guide the company on and mitigate environmental risk, or to preserve shareholder value and a positive reputation. While we commend the company for having an advisory director serving as Special Counsel on Human Rights, there is no equivalent environmental director.[27] There is also no executive management position for environmental, social, and governance (ESG) matters. Freeport-McMoRan lacks the leadership at the highest level that is necessary to most effectively guide the company in a way that avoids and mitigates reputational and financial risk related to its environmental practices.

B. Other companies in the mining sector have taken the lead on this matter and Freeport risks falling behind the competition by not nominating a director with environmental expertise.

1. John F. Turner is a member of U.S. Peabody Energy Corporation's Board of Directors. His diverse resume includes serving as the Director of U.S. Fish and Wildlife Service from 1989 to1993, and the Assistant Secretary of State for the Bureau of Oceans and International Environmental and

[25] Freeport-McMoRan 2011 10-K Report, p 44
[26] "Freeport McMoRan: Grasberg Work Stoppage Ends; Sees Full Production in 2Q." *Dow Jones.* March 15 2012, available at http://online.wsj.com/article/BT-CO-20120315-709350.html
[27] http://www.fcx.com/ir/advisory.htm

Scientific Affairs from 2001 to 2005. Mr. Turner was also the President and CEO of The Conservation Fund, is a Chairman of the University of Wyoming, Ruckelshaus Institute of Environment and Natural Resources, and a member of U.S. Peabody Health, Safety and Environmental Committee.[28]

2. Kathryn Fuller is member of the Board of Directors for Alcoa Corporation. In addition to her involvement in many other organizations, she was the U.S. Department of Justice Chief for the Wildlife and Marine Resources Section from 1981 to 1982, was involved with The Conservation Foundation from 1982 to 1989, and served as President and CEO of World Wildlife Fund U.S. from 1989 to 2005.[29] Each of these board members who have demonstrated extensive experience and expertise in environmental matters are helping their companies best manage environmental, financial, and reputational risk, and are upholding shareholder value with the valuable environmental focus they bring to high level company strategy.
3. Donald Deranger is a director on Cameco Corporation's Board. (Cameco is the world's largest uranium miner, according to Morningstar.) Among other titles, he is also a director of the Mackenzie River Basin Board, serves on the Keepers of the Athabasca Watershed Council Board of Directors, and is a member of the Saskatchewan Fisheries Advisory Committee. Mr. Deranger is the President of Learning Together, a non-profit that works to build relationships between aboriginals and the mining community.[30]

Conclusion:

Freeport-McMoRan, as an international mining company with operations across four continents, is exposed to environmental risk and opportunity in nearly every part of its business. Environment and sustainability related risks are of great concern to shareholders and the public, and past and ongoing environmental incidents, controversies, and fines indicate that they are not being dealt with at the most strategic level by Freeport. Freeport's board lacks a director with adequate environmental expertise to enable the company to operate at its best. An independent director who holds relevant environmental skills along with other qualifications would allow Freeport to most effectively address environmental issues and would demonstrate the company's seriousness about doing so. Shareholders should vote 'FOR' the resolution.

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[28] U.S. Peabody 2012 Proxy Statement, p 9
[29] http://www.alcoa.com/global/en/about_alcoa/corp_gov/directors/Kathryn_Fuller.asp
[30] http://www.cameco.com/responsibility/governance/board_of_directors/donald_deranger/