

## Wyoming ~ The Bentonite Capital

*Adapted from information by The Wyoming Mining Association*

Although bentonite is produced all over the world in places such as Greece, Japan, Italy, Brazil, Romania, Germany, and Mexico just to name a few, the bentonite deposits in Wyoming make up 70% of the world's known supply.



Removing overburden at a mine site.

Bentonite is referred to as the clay of 1000 uses. It is used in everything from cat litter, crayons, animal feed, wine, vinegar, and beer, to paint, medications, cosmetics, sealants, and more importantly to the drilling community, in drilling mud. Not only does drilling mud lubricate drilling equipment, it helps prevent the borehole from caving in.

Bentonite is thought to be the result of ancient volcanic ash settling in shallow seas about 100 million years ago. The salt water and ash formed a clay called montmorillonite, more commonly known as sodium bentonite. It is believed the sodium content in Wyoming's ancient seas had higher concentrations of sodium, making Wyoming's bentonite unique. It can swell up to 16 times its original size, and absorb up to 10 times its own weight in water. In scientific terms, the atomic structure of Wyoming's bentonite consists of repetitive layers of aluminum hydroxide atoms bonded or held between layers of silicate atoms. The resulting platelets are stacked on each other, much like a deck of cards, allowing water to penetrate between the platelets, inducing swelling.



Loading bentonite for transport.

Mining bentonite in Wyoming is fairly economical. Most of the surface mines used to mine bentonite are less than 40

feet\* deep. The deposits are made of several layers and grades of bentonite. Since bentonite will absorb moisture, new applications are being developed all the time. There are three major geologic areas for bentonite in Wyoming: the Clay Spur areas around Upton and Newcastle; the Colony Area in the northeast corner of Wyoming; and along the east and west flanks of the Big Horn Range.

Although bentonite is also produced in Montana, California, Arizona, and Texas, Wyoming's large proven reserves of bentonite are sure to help them remain the bentonite capital for years to come.

\*(1 foot ≈ .304 meters)

## Financing Available for African Mining Projects

*Adapted from information by Fin24*

While the economic environment for mining projects is uncertain, according to Standard Bank, there is evidence to suggest financing for mining projects in Africa is available.

Vaughan Wickins, director of mining and metals for Standard Bank said in 2011, there were a number of financings for new mine-related developments.

Speaking at the mines and money conference in London, Wickins also mentioned new mine financing availability despite the raft of complex challenges, including resource nationalism and skills shortage. "The macroeconomic environment, with the European debt crisis and volatility raging on, creates a challenging situation for any company seeking finance," he warned.

Mining companies trying to secure financing in Africa will discover certain commodities such as iron ore and coal, as well as precious and base metals have an easier time raising financing. However, financing is restricted for commodities such as diamonds and some alloys.

One piece of advice Wickins shared concerned hiring advisors. He believes hiring advisors allows the mine's management team to focus on mine development which can also maximize the likelihood of successful financing. Another important issue is having a clear understanding of the various funding sources which can be targeted - both debt and equity, as well as a clear strategy about how and when to approach each source.

Regarding the project itself, the company must have a thorough understand-

ing of the project challenges and risk mitigation. Mining companies need to be confident in their ability to demonstrate strong economics and use conservative long-term assumptions for financing. A well-planned strategy and coordinated execution is the key to successful mine financing.



Photo courtesy of mineafrica.com

"While the short-term market volatility presents challenges to mining companies, we will be focusing on those companies with strong management teams, quality assets, solid track records and a commitment to detailed technical review work. Those are the companies that will weather the storm and secure funding," Wickins concluded.