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NEWS

What the Grind-Size and Gold Recovery Relationship Can Teach Us About Mt Todd

The finer the grind size, the higher the gold extraction.

Gold is challenging to extract. This difficulty was evident in the original Mt Todd gold project in the Northern Territory of Australia, which briefly operated in the 1990s. The particle size of the gold and the attributes of the deposit limited the options for finding an efficient processing method.

Thankfully, technological advances in gold mining and extraction can also, over time, change identifiable resources (resources potentially feasible to extract) into reserves, and turn undiscovered resources (theorized to be in mineral deposits) into identifiable resources. The Mt Todd project is an excellent example of the former.

The origin of a gold deposit and the physical characteristics of the gold in the deposit have a significant impact on the processing technology that recovers the gold. Like most gold deposits presently being mined, the Mt Todd project is a fine-grained gold deposit.

The Grind-Size and Gold Recovery Relationship

Vista Gold Corp's (Vista's) Mt Todd gold project demonstrates a strong correlation between the grind-size and the gold recovery. This result is borne out by a considerable volume of testing.

Understanding this relationship has allowed Vista to improve the projected gold recovery for the Mt Todd project through the testing and incorporation of fine grinding technology. Gold recovery for the Mt Todd project is now estimated to be 91.9% over the life of the project.

To help the reader understand what this means, and the particle sizes referenced, we measure particle sizes in microns (or thousandths of a millimeter). Flour purchased in the store for baking is typically in the range of 100-120 microns. The gold particles found at the Mt Todd



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project generally are on the order of 10-15 microns.

The recovery of gold from fine-grained deposits is dependent on the permeability of the rock or the grind size. Rock that is highly permeable allows fluid to fill the pore spaces and pass through in the same way that water moves through a sponge. The rock at Mt Todd is not porous. Consequently, it is necessary to grind the rock to a finer size. At any grind size, a certain amount of gold particles is on the outer surfaces of the rock. The number of gold particles exposed increases as the grind size gets finer.

Consider an example: Peanut M&M's. Suppose the peanuts represent gold particles, and the chocolate covering represents the rock encapsulating the gold particle. Straight out of the bag, there is only an occasional M&M that has the peanut exposed. But if we somewhat gently roll the M&M's between two hard surfaces, some of the chocolate coatings will break, exposing the peanut. If we increase the pressure, we will reveal more and more peanuts.

Fine grinding does much the same thing. As we approach a rock particle size in the range of 3-5 times the size of the gold particles, we see a significant increase in the number of gold particles that are exposed, like a peanut in an M&M.

Several series of leach tests evaluated the effect of grind size, leach pulp density, and cyanide concentration on the gold extraction and reagent consumption. This testing demonstrated that decreasing the 80% passing grind size from 60 microns to 40 microns results in an increase in gold recovery from 86.4% to 91.9%.

For Mt Todd, this means that an additional 349,000 ounces of gold will be recovered from the same rock over the life of the project.

Notes to Article



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Technical Report on Mt Todd

For further information on the Mt Todd Gold Project, see the Technical Report entitled “NI 43-101 Technical Report Mt Todd Gold Project 50,000 tpd Preliminary Feasibility Study Northern Territory, Australia” with an effective date of September 10, 2019 and an issue date of October 7, 2019, which is available on SEDAR at www.sedar.com, on EDGAR at www.sec.gov, as well as on Vista’s website at “*Mt Todd - Technical Report.*”

John Rozelle, Vista’s Senior Vice President, a Qualified Person as defined by National Instrument 43-101 - *Standards of Disclosure for Mineral Projects*, has approved the information in this press release.

This blog post contains forward-looking statements within the meaning of the U.S. Securities Act of 1933, as amended, and U.S. Securities Exchange Act of 1934, as amended.