



Tailings Facilities – Beauty is in the Eye of the Beholder

Mine Tailings Reprocessing Investigation in Mexico

Where Shared Goals Intersect

Reprocessing of historic tailings impoundments can create shared value between the mining company and the nearby communities when the additional minerals are extracted from legacy impoundments and the new reprocessed tailings are then placed in modern and engineered facilities compliant with current environmental requirements. The nearby communities receive the environmental benefits and the mining company recovers the cost of compliance.

The Field Investigation

I recently completed a field investigation on a pair of active and inactive tailing storage facilities in Central Mexico with the primary objective of collecting sample material in support of a cost: benefit evaluation of reprocessing the tailings. The field investigation program consisted of:

- Sonic core drilling;
- Core logging;
- Density testing / sampling;
- Standpipe piezometer installations;
- Assay submittal as well as results compilation;
- Metallurgical sample collection; and
- Geochemical and metallurgical laboratory analyses.



Drilling to Define the Overlooked Resource

Coming Together Over Mutual Benefits

A favorable feasibility study of the recoverable minerals in the tailings would create a financial incentive for any company to re-examine the value of their historically placed mine tailings.

Both geotechnical and environmental tailings regulations have changed much over the last few decades and continue to evolve as permitting becomes more challenging. If historically under-regulated tailings facilities by today's standards could be re-built to modern codes and following international best practices, the environmental value to the nearby communities that now border some of these older facilities would be substantial. Reprocessing of these older tailings provides the financial incentive to do just that.

Why Experience Matters

The challenge was not only to conduct a successful geological and metallurgical sampling program of the tailings facilities. In this project, our familiarity with the local regulations together with the integrated approach we undertook with the re-processing goals allowed us to see a need for and install long-term monitoring equipment into the completed boreholes with a minimal increased cost to the client. With this monitoring equipment, knowing the phreatic surface within the impoundments will be of critical importance to the future geotechnical stability assessments of the facility. And monitoring the long-term drain down of the tailings and standing water levels will be important to the reprocessing mining plan.



Quality Sampling is of Key Importance

We routinely come across many historic impoundments while working internationally; I wonder how many of them have been properly characterized to see if reprocessing is a feasible alternative to turn these financial and environmental liabilities into assets that may pay for their reprocessing?

Other SRK colleagues Involved in this field program:

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