OCEANAGOLD
WAIHI OPERATION

OceanaGold UPDATE

May 2022

Tailings Impoundments at Waihi

Tailings are the finely ground rock left over after the gold and silver have been extracted. A Tailings Storage Facility (TSF) is the category name for any structure built for the purposes of storing tailings from the gold and silver extraction process. There are several different types of TSF globally, with varying types of construction.

At Waihi we currently operate and manage two tailings impoundments: TSF 1A and TSF 2. TSF 1A is currently in operation, and TSF 2 stopped receiving tailings in 2005. All of our TSFs are built and operated in accordance with internationally recognised standards. As part of the Waihi North Project and to cater for the extension of mining life, OceanaGold Waihi is proposing to construct a new tailings storage facility (TSF 3) immediately east of the current facilities.

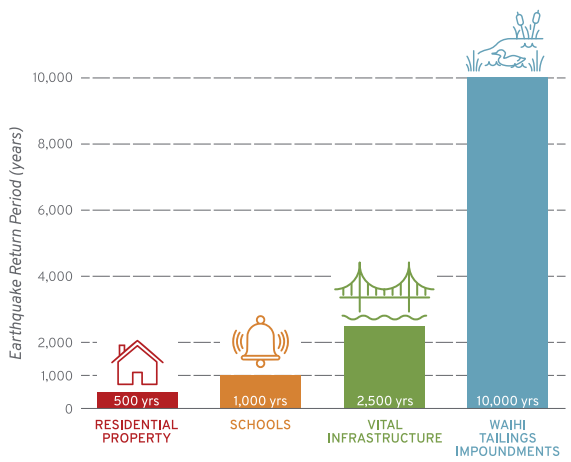
EARTHQUAKE RISK AND DESIGN

Due to the geological setting of New Zealand, one of the greatest risks to a TSF (or any structure) is from an earthquake occurring. While Waihi is an area of historically low seismic activity, the Waihi TSFs are still designed to withstand significant seismic events, including earthquake ground motions with a 1 in 10,000-year 'return period' (or a 0.01% probability of happening in a given year). In 2007 the Institute of Geological and Nuclear Sciences (GNS) provided updated estimates of 10,000-year ground motions for design of the tailings impoundments at Waihi.

The embankments have been designed to resist the effects of earthquake shaking from what is known as the Maximum Credible Earthquake (MCE), based on a seismic hazard study of the site in accordance with international guidelines. The MCE has been conservatively assessed to be a magnitude MW 7 earthquake at a distance of nine kilometres from the site.

To put this in context, standard buildings, such as residential houses, are designed for 1 in 500-year events. Structures that can accommodate large numbers of people, such as schools, are designed for 1 in 1,000-year events. Structures with special emergency and post-disaster functions (e.g., hospitals, fire, and police stations) and vital infrastructure (e.g., state highway bridges) are designed for 1 in 2,500-year events.

CONSTRUCTION STANDARDS FOR EARTHQUAKE 'RETURN PERIODS'



TSFs AND CYANIDE

Cyanide is used in the processing of gold and silver ores at Waihi. The first cyanidation plant in the world was actually established locally, in 1889 at the Crown Mine in Karangahake. The process was a huge success, improving the recovery of gold from ore from around 40-50% at the time to 85-95%.

Given its past history, it is no wonder that there are a number of concerns relating to the toxicity of cyanide, however it is important to distinguish facts from myths and misconceptions. While cyanide can be deadly, it also occurs naturally, is not toxic in all forms or all concentrations, does not persist in the environment, and is not cumulative, nor is it a heavy metal or radioactive.

The particular form of cyanide, together withthe concentration, is what determines whether it has the potential to be toxic within the environment. From an environmental perspective, the 'toxicologically significant' or 'ecologically important' form of cyanide is what's known as weak acid dissociable (WAD) cyanide.

Only low residual concentrations of cyanide are found in the decant pond at our tailings storage areas, with concentrations of WAD cyanide averaging around 4 grams per cubic metre. For comparison, this is well within the level of 50 grams per cubic metre which is the upper level considered safe for migratory birds and waterfowl.

CONCULSION

Tailings and their storage are a complex subject, covering multiple areas across engineering and chemistry disciplines, with differing approaches around the world. As a result, TSFs are one of the most talked about aspects of gold mining operations, but also one of the most prone to myth or misunderstanding. Even this update can only briefly cover some of the aspects of tailings impoundments at Waihi. In a future update we'll cover other TSF topics, including how water and rainfall interacts with TSFs and how TSFs are rehabilitated at the end of their operational life.

For even more information on tailings, the storage and monitoring processes, or the references used, visit www.waihigold.co.nz/about-mining

If you'd like to learn more about the proposed TSF3 or other aspects of the Waihi North Project, visit www.waihinorth.info

Tailings Storage Facility 1A

IF YOU HAVE ANY QUESTIONS OR CONCERNS, PLEASE CONTACT US.

Community Engagement Line: **0800 924 444** | Project Information Office: **86 Seddon St., Waihi.**
Email us via our website: **www.waihigold.co.nz**

NOTE: WE ARE NOT CURRENTLY BLASTING IN THE MARTHA OPEN PIT. CHANGES TO THIS WILL BE NOTIFIED.