Evolution and Technical considerations for tailings management in the mining title RPP-140 (Antioquia – Colombia)

Wolff, E¹, & García, B².
¹ Gerente Ambiental, Gran Colombia Gold, Medellín, 0500, erwin.wolff@grancolesiagold.com.co,
² Superintendente Obras Civiles, Gran Colombia Gold, Medellín, 0500, boris.garcia@grancolesiagold.com.co,

Keywords: Tailings, geotextile tubes, filter press, Segovia

Abstract

In Colombia, to the Antioquia’s northeast, there is a gold deposit that has been continuously exploited since the mid-nineteenth century, within the mining title RPP-140 under the ownership of Gran Colombia Gold (GCG) since 2010. The mined materials are taken to the “María Dama” Benefit Plant where 1,500 tons are processed daily.

Before the year 2010, the previous owner of the mining title processed about 600 t / day and directly discharged almost all its tailings, since they had’nt capacity to accommodate them in final deposits.

El Chocho was conceived as a final tailings deposit to store the pulp from the beneficiation plant; it was divided into two phases with two dikes (upper dam and lower dam) since the presence of illegal miners in the low phase prevented a design for a single dike.

A land invader prevented the construction of the upper dam, and it was then necessary to start at the highest part (governed by GCG), building the 1B dike to store tailings in pulp; after the land invader returned the land to the owner (GCG) it was necessary to build tailings dam 1A and thus complete the construction of the 1C dam or upper dam.

While all this was happening, GCG decided to acquire a 1,500 ton / day filter press which today dehydrates the tailings to take them to the valley controlled by dike 1A. The construction of dike 1A was carried out under the design of a retaining wall made of geotextile tubes.

These improvements led to a lower pressure on renewable natural resources because water is recirculated requiring less fresh water contributions; the soil, flora and fauna are demanded in less quantity because the area intervened to store tailings will have more storage capacity and therefore a longer useful life.