



Multielemental pollution of soils at the Ingenios, decommissioned mineralurgical sites in Potosí (Bolivia).

Pablo Higuera (1), Williams Llanos (1), María Eugenia García (2), Rocío Millán (3), Carlos Serrano (4), and Eva María García-Noguero (1)

(1) Universidad Castilla-La Mancha, Ingeniería Geológica y Minera, Almadén, Spain (pablo.higuera@uclm.es), (2) Universidad Mayor de San Andrés, Facultad de Ciencias Químicas, La Paz (Bolivia), (3) Centro de Estudios Energéticos, Medio Ambientales y Tecnológicos - CIEMAT, Madrid, (4) Universidad Tomás Frías, Potosí (Bolivia).

Potosí is a world classical mining site, located in South West Bolivia. Mining activity is centered at the so-called Cerro Rico, an impressive mount formed by rhyolitic rocks affected by intensive hydrothermal alteration, and hosting a complex multivein deposit including mainly Ag and Sn minerals. From the starting of the mining activity, in the late 16th Century, to 1850 the main ore was silver minerals, and from 1850 the silver ores exhausted, and mining activity centered on Sn minerals. During the first stage, the silver minerals were treated by amalgamation, using the so-called “método de patio”, which implies the usage of mercury and other compounds as metallurgical agents. This work was carried out at the “ingenios”, facilities located next to streams, in order to have the water and mechanical energy needed for the process, and nowadays in ruins. We have studied the soil pollution related with this activity, at several of these old “ingenios”, putting forward a multielemental contamination including high Hg and Sn concentrations, and, to a lesser extent, but also with values above reference levels, with As, Cu, Zn, Pb and Sb.