



Acid Mine Drainage Problem in Democratic Republic of Congo

Patrick Maheshe (1) and Kitae Beak (2)

(1) Chonbuk National University, of Engineering, Environmental Remediation Engineering, Congo, The Democratic Republic Of The (maheshepatrick88@gmail.com), (2) Chonbuk National University, of Engineering, Environmental Remediation Engineering, south Korea, Republic Of The

Mining industry is one of major economic sources in Democratic Republic of Congo (DR Congo). The mining activities contaminate environments seriously, and it has threatened human beings and ecosystems. Especially, the copper-cobalt mine (Cu-Co- U-Zn-Pb -Cd-Ge) in Katanga and Tin ores group (tin- Wolframite - Colomboatantalite- Beryl -Monazite) in the eastern part as well as other non-enumerated deposits exploited or abandoned in the Democratic Republic of the Congo produce tailings resulting from mining and the concentration discharges containing metallic sulfide minerals exhibit high chemical instability. Exposed to the open air and to the water, they undergo various reactions generate sulfuric acid, allowing the dissolution of the metal elements. This behavior known as Acid mine drainage (AMD) is cause for pollution or contamination of surface water by contamination responsible to acid waters and metal ions such as Fe, Cu, As, etc., by increasing the toxicity of water. Currently, the main concern is the decanting of contaminated water from some mines such as Katanga or a study was made on the assessment of the contamination of the trophic chain by the trace elements. In this area of Likasi, whose mineral washing waters and mill effluents contain heavy metals which are discharged untreated into the upper Lualaba basin. For cons, the problem of acid mine drainage is much broader measure and to understand in its entirety, it is good to adopt a wider geographical view. Environmental problems began to be reported since the late 1900, which led the early investigation. This has clarified the main area where acid mine drainage has appeared in and abandoned mines or parks tailing, In addition, AMD has started to happen in mining trash parks in operating mining areas when the waters underground began to fill the pit voids due to the shutdown of the pumping system due to the shortage of electricity. The threat of acid mine drainage to health systems and human ecology, as it contains heavy metal contaminants that are not biodegradable and therefore tends to accumulate in living organisms causing various diseases and disorders. Low PH of AMD causes the solubility of heavy metals in water and its high concentration of metals kill organisms directly. AMD also has direct effects on fish causing various physiological disorders. Trace metals, such as As, Zn, Cd and copper, which may also be present in mine drainage, are toxic at two extremely high concentrations.