

## ABSTRACT

The processing method of leachate in the area of *Gunung Tugel Banyumas* Landfill had not been done properly, as a result, the liquid leachate was absorbed by soil which caused this soil being contaminated by heavy metal. To determine the degree of this contamination, the soil analysis will be conducted according to the following methods; using grid sampling in *Gunung Tugel Banyumas* landfill and stratified sampling in rice field area. The heavy metal analysis will utilize "Atomic Absorption Spectrofotometry" (AAS) method, the potential risk of ecological aspect will utilize "Potential Ecological Risk Index" (PERI) method and the map of the spread of heavy metal will utilize The Geographic Information System (GIS). According to the analysis, the content of heavy metal in *Gunung Tugel Banyumas* Landfill is Cd = 10,41 mg/kg, Cr = 51,28 mg/kg, Cu = 72,29 mg/kg, Fe = 8931,82 mg/kg, Mn = 350,91 mg/kg, Pb = 433,36 mg/kg, Zn = 76,33mg/kg. While the average heavy metal in the soil in the rice fields is Cd = 5,04 mg/kg, Cr = 36,98 mg/kg, Cu = 17,07 mg/kg, Fe = 7245,83mg/kg, Mn = 577,50 mg/kg, Pb = 15,57 mg/kg, Zn = 306,95 mg/kg. The average heavy metal content in the rice field area is 79,68, which can be categorized as B risk or medium risk. While the content of heavy metal in the rice field area was about 36,92 which can be categorized as A risk or very low risk.

Keyword : Analysis, Heavy Metal, Landfill, Gunung Tugel Banyumas

## **ABSTRAK**

*Tidak berfungsinya pengolahan air lindi dengan baik menyebabkan air lindi masuk dan terserap kedalam tanah dan menyebabkan tanah tercemar oleh logam berat, sehingga perlu dilakukan analisis logam berat terhadap tanah di TPA Gunung Tugel Banyumas. Penentuan titik sampling dilakukan dengan metode grid sampling pada area TPA dan metode stratified sampling pada area persawahan. Metode analisis logam berat menggunakan spektrofotometri serapan atom, sedangkan penilaian potensi risiko lingkungan menggunakan metode Potential Ecological Risk Index (PERI) dan Geographic Information System (GIS) untuk membuat peta persebaran logam berat di TPA Gunung Tugel Banyumas. Hasil rata-rata analisis logam berat yang didapatkan pada parameter logam berat di dalam tanah TPA Gunung Tugel Banyumas adalah Cd = 10,41 mg/kg, Cr = 51,28 mg/kg, Cu = 72,29 mg/kg, Fe = 8931,82 mg/kg, Mn = 350,91 mg/kg, Pb = 433,36 mg/kg, Zn = 76,33mg/kg. Sedangkan rata-rata logam berat di dalam tanah pada area persawahan adalah Cd = 5,04 mg/kg, Cr = 36,98 mg/kg, Cu = 17,07 mg/kg, Fe = 7245,83mg/kg, Mn = 577,50 mg/kg, Pb = 15,57 mg/kg, Zn = 306,95 mg/kg. Untuk hasil rata-rata penilaian potensi risiko lingkungan pada area TPA sebesar 79,68 termasuk dalam kelas risiko B atau tingkat risiko medium. Sedangkan pada area persawahan rata-rata sebesar 36,92 termasuk dalam kelas risiko A atau tingkat risiko sangat rendah.*

*Kata Kunci : Analisis, Logam Berat, TPA, Gunung Tugel Banyumas*