

ABSTRACT

The solid waste management system used in Final Disposal Site-Benowo is *sanitary landfill*, but the process of soil recovery to waste of cells not daily but doing for each 3-6 month. This is able to cause a negative impact that the liquid which is the result of solid waste decomposition (leachate) containing heavy metal, especially lead (Pb), can pollute people's salt pond. A content of lead is capable to cause some diseases as a result of pollution on environment that spreads through water, soil, and air. Pb or lead enters human body through respiratory, digestive apparatus, and skin. The purpose of this research is to observe the relationship between leachate lead of final disposal site in the salt pond pollution with lead level in hair and public health disorder of salt consumers in Final Disposal Site-Benowo.

This research is classified as *Analytical Observational* and uses *Cross Sectional Design*. Approximately 30 people have participated as samples for research, and 10 people have become the controllers/standards of comparison who are selected by using Systematic Random Sampling from people in RW 2 Tambakdono-Pakal subordinate. The measurement of environment sample, as well as hair sample, has been done and it is continued to the interview towards 20-55 year-old people who possibly know about digestive and nerve disorder. Questionnaires are used as a part of the interview.

The result of the research shows that the lead level in leachate outlet IPAL in Final Disposal Site-Benowo is 21,83 mg/l. From *One Way Anova* test, it is obtained that there are some differences among lead level of salt in radius ± 100 m, ± 800 m, ± 1500 in the north and the west of Final Disposal Site. From *Independent Sample T Test*, it is obtained that there are some differences of lead level of hair between the first group and the standard of comparison (P: 0,039). From *Chi square*, it is obtained that there are some differences of diarrhea disorder between the first group and the standard of comparison (P: 0,038). It is obtained from *correlation* test that there is a relationship between the lead level in hair of first group with diarrhea disorder (P: 0,031) and black feces disorder (P: 0,031).

The conclusion of this research is that the leachate which is drained into water is ineligible with Keputusan Menteri Lingkungan Hidup Nomor 51/MENLH/10/1995 about Baku Mutu Limbah Cair Bagi Kegiatan Industri and it has polluted the salt pond in radius ± 100 m in the north and the west of Final Disposal Site, also in radius ± 800 m in the north of Final Disposal Site. It makes the lead level of salt in those radius increases beyond the value quality standard (SNI 01-4435-2000).

Keywords: Leachate Lead, Salt Lead, Hair Lead, The Health Disorder

ABSTRAK

Sistem pengolahan sampah di TPA sampah Benowo adalah *sanitary landfill*, tetapi proses penutupan tanah pada sel sampah tidak dilakukan secara harian namun dilaksanakan hanya setiap 3-6 bulan sekali. Hal ini akan dapat menimbulkan dampak negatif yaitu cairan hasil dekomposisi sampah (lindi) yang mengandung logam berat khususnya Pb dapat mencemari tambak garam warga. Paparan logam Pb dapat menyebabkan penyakit akibat pencemaran lingkungan baik lewat air, tanah dan udara. Pb atau timah hitam masuk kedalam tubuh manusia melalui saluran pernafasan, pencernaan dan kulit. Tujuan penelitian ini adalah untuk mempelajari hubungan pencemaran Pb lindi TPA pada tambak garam dengan kadar Pb dalam rambut dan gangguan kesehatan masyarakat konsumen garam di sekitar TPA sampah Benowo.

Penelitian ini merupakan penelitian *Analytic Observasional* dengan rancang bangun penelitian *Cross Sectional*. Besar sampel penelitian sebanyak 30 orang dan 10 orang sebagai kelompok kontrol/pembanding yang diambil secara *Systematic Random Sampling* pada warga RW 2 Kelurahan Tambakdono Kecamatan Pakal. Dilakukan pengukuran sampel lingkungan dan cuplikan rambut serta dilakukan wawancara pada masyarakat berumur 20-55 tahun tentang gangguan pencernaan dan syaraf dengan menggunakan kuesioner.

Hasil dari penelitian menunjukkan kadar Pb lindi outlet IPAL TPA sampah Benowo yaitu 21,83 mg/l. Dari uji *One Way Anova* didapatkan hasil bahwa terdapat perbedaan antara kadar Pb garam radius ± 100 m, ± 800 m, ± 1500 m sebelah utara dan barat TPA sampah. Dari uji *Independent Sample T Test* didapatkan hasil bahwa terdapat perbedaan kadar Pb rambut antara kelompok terpapar dan pembanding (P: 0,039). Dari uji *Chi Square* didapatkan hasil bahwa terdapat perbedaan antara gangguan diare pada kelompok terpapar dan pembanding (P: 0,038). Dari uji Korelasi didapatkan hasil bahwa ada hubungan antara kadar Pb rambut kelompok terpapar dengan gangguan diare (P: 0,013) dan gangguan faeces warna hitam (P: 0,031).

Kesimpulan dari penelitian ini adalah lindi yang akan dibuang ke badan air tidak memenuhi persyaratan Keputusan Menteri Lingkungan Hidup Nomor 51/MENLH/10/1995 tentang Baku Mutu Limbah Cair Bagi Kegiatan Industri dan telah mencemari tambak garam warga di radius ± 100 m sebelah utara dan barat TPA serta di radius ± 800 m sebelah utara TPA, yang menyebabkan kadar Pb garam di radius tersebut telah melebihi nilai baku mutu (SNI 01-4435-2000).

Kata kunci: Pb lindi, Pb garam, Pb rambut, Gangguan Kesehatan