

**POTENTIAL FOR GROUNDWATER POLLUTION AROUND TPST
BANTARGEBAANG, BANTARGEBAANG DISTRICT, BEKASI CITY, WEST
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ABSTRACT

The Bantargebang Integrated Waste Management Site (TPST) accommodates and manages waste from DKI Jakarta Province. The area covers 132,5 hectares with a waste volume reaching 7.500 tons per day. The large volume of waste makes leachate one of the main problems at the Bantargebang TPST. Waste Water Treatment Plants (IPAS) are available as a place to treat leachate, but it cannot be denied that there is still untreated leachate that pollutes the surrounding environment. Some residents' wells around the research location have experienced a change in water color from brown to black and have an unpleasant odor. Based on this, this research aims to determine the potential for groundwater pollution using the Le Grand method, analyze groundwater quality, and provide directions for groundwater processing that can be carried out based on the results of groundwater quality analysis around the Bantargebang TPST.

The research was carried out using field survey methods, sampling methods, laboratory test methods, Le Grand analysis methods, and descriptive evaluation methods. Calculation of potential pollution using the Le Grand method was carried out on 16 wells consisting of resident wells and Bantargebang TPST monitoring wells. Groundwater sampling will be carried out using a convenience sampling method, namely from six wells of residents who have complaints that the water is no longer used. The parameters that will be tested are turbidity, total dissolved solids, mercury, cadmium and organic substances (KMNO₄).

The research results show that the potential for groundwater pollution around the Bantargebang TPST using the Le Grand method is classified as small potential in 15 wells with a value range of 12.33 - 21.70 and medium potential in one well with a value of 10.82. The Le Grand parameter for the depth of the groundwater table obtains a value between 0.15 - 4.20. The absorption capacity parameter above the groundwater level is 4.56 with the soil texture being muddy loam. The aquifer permeability parameter has a value of 0.0051 for clay, tuff silt clay and silty sand aquifer materials. The groundwater level slope parameter has a score range between 2.35 to 8.84. The horizontal distance parameter from the pollutant source shows a score between 6.60 and 9.69. Directions for groundwater processing that can be carried out are in the form of a technological approach, a social approach and an institutional approach. The technological approach is filtration using silica sand and gravel media with a silica sand media thickness of 0.50 m and then gravel as a buffer medium 0.15 m thick.

Keywords : *groundwater, leachate, Le Grand, TPST Bantargebang*