The harsh economic environment in Zimbabwean cities in general and- Gweru in particular has led to an extensification of urban agricultural on most open spaces. Gweru's sole official waste disposal site is surrounded by numerous plots of land where residents grow staple maize, sweet potatoes and other food crops for subsistence. Ingestion of crop produce from the dumpsite area and its vicinity is likely to put lives at risk. This paper assesses the concentration levels of toxic chemicals lead (pb), cadmium (cd) ; and sulphides (so2) within and around Gweru dumpsite. Sampling points for soil were randomly selected using Arcview GIS along each transect on the dumpsite and its environs in order to assess the concentration of each of the chemicals from one point to the adjacent one.; Chemicals concentrations were determined through Leco Machine tests for sulphides and Atomic Absorption Spectrometer for lead and cadmium. Independent t-test results revealed that the concentration levels for the three pollutants are significantly ($p<0, 05$) higher within the dump, compared to its surroundings, indicating that the dump is the source of toxic chemicals. Although toxic chemical levels are relatively lower in the vicinity of the dumpsite, they remain a threat to human health if ingested. Given this j background, the paper recommends that cultivation be prohibited around the dumpsite. The city | council should construct a properly designed and. engineered landfill that will minimise pollution risks both to the people and the ecological environment. In the snort-term a concrete barrier could be constructed around the dump to reduce/leachate spreading.