

## **COMPARISON BETWEEN BINARY AND WEIGHTED MULTI-CRITERIA ANALYSIS IN SOLID RESIDUE DISPOSAL SUITABILITY MAPPING**

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This study used the resources found in Geographic Information System (GIS) to analyse and produce geologic- geotechnique information with the purpose of mapping areas adequate for solid residue disposal in the municipal district of Americana, SP. To accomplish this, thematic maps were used that were obtained from various sources, as well as others, produced from operations carried out in GIS. Two spatial data treatment were used, binary and weighted multi-criteria, methods available in the SPANS program. Advantages and disadvantages of each method are considered in relation to topic and environmental characteristics. The topics chosen were: relative permeability, PH scale, cationic exchange capacity, unconsolidated material thickness, static level depth, slope, distance from urban perimeter, distance from city water reservoir, distance from city water source and from environmental protection areas. As a final result of this study, two maps are available that are related to residue disposal suitability in the municipal district of Americana. The first one demonstrates the adequate and inadequate areas obtained using the binary method and the second one indicates a suitability scale obtained through a multi-criteria method. A comparison between the two methods were made, indicating the main differences and the advantages and disadvantages between the both in environmental studies.