

# **Geographical Information System Assessment of Groundwater Potential Zones of Iju Town, Ondo State Nigeria**

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**Key words:** Geoinformation/GI; Groundwater, VES, Resistivity, Potentials, Iju

## **SUMMARY**

The groundwater potential of Iju town in Ondo state was investigated using electrical resistivity and geographical information system to obtain the hydrologic/hydrogeologic conditions. A total of 230 hydrostatic level depths of existing hand-dug wells and 44 schlumberger vertical soundings were acquired in the study area to achieve the goals of the study. The VES data were interpreted both quantitatively and qualitatively by partial curve matching, computer iteration and visual inspection techniques, to obtain layer thicknesses, resistivities and geoelectric curve type, while the hydrostatic level depths data were processed to obtain groundwater head values. The iso-resistivity, coefficient of anisotropy, weathered layer resistivity, bedrock resistivity, groundwater head and overburden thickness maps generated from the acquired data, were used to establish the hydrogeologic/hydrologic conditions. The GIS analysis was used to produce digital maps from these coverage maps, which resulted to delineation into high, medium and low groundwater potential zones. From the composite maps, the major groundwater flow direction of the aquifer system was established as NW-SE axis, the recharge and discharge zones were also identified. Thus, from the composite maps, geoelectric sections and other relevant coverage maps, the northeaster, southeastern, part of central and northwestern portions were identified to be suitable locations for groundwater abstraction. The results provide geo-database from which groundwater potential could be assessed for groundwater development. It is recommended that the northwest-southeast axis of the study area should be free of refuse/waste dump site or landfill to avoid both surface and subsurface waters contamination/pollution problems.

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