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TOPIC: Analysis of Geophysical Logging for Assessment of Contamination Level in Shallow Aquifers

KEYWORD: GEOPHYSICAL LOGGING, GROUNDWATER CONTAMINATION, SP LOGGING, RESISTIVITY LOGGING, WATER QUALITY, AQUIFER SYSTEM

Findings

This study was carried out to examine the geologic context and groundwater condition of the region and to define the structural elements and identify subsurface formations and depths suitable for groundwater development. The subsurface of soil is made up of alluvial topsoil, sandy silt, silty sand, coarse sand, weathered rock, and fractured rock, according to the lithological investigation from the tube well. There is fresh groundwater in the locations of quartzite rocks. However, the Aligarh area has more shale rock at a deeper depth, therefore the salinity has been experienced relatively low with TDS. In contrast, the dense alluvial cover areas in Haryana in the Yamuna River basin have the salinity increasing with depth due to high TDS values. Based on the results of resistivity and spontaneous potential logging, it has been noted that while Palwal and Faridabad have significant salinity and TDS values, Aligarh and Taoru have relatively low TDS and low chloride contents. With the idea that the slotted pipe should be put in non-saline zones with low TDS & low chloride values and the blind pipe should be positioned in high salinity areas. Resistivity and spontaneous potential logging have been utilized as a result, Therefore, a rainwater collection device should be used to replenish it.