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# Fayoumi weir, bottom pipes, free discharge, discharge coefficient, contracted and un-contracted piped-weirs.

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## Abstract:

This paper studies the apparent ground resistivity in two-horizontal layer ground and in two-vertical layer ground through the site measurements obtained. Wenner method was used to measure apparent ground resistance in different grounds. A numerical model was proposed to model the four electrode buried in ground. The apparent ground resistivity had been studied for different conditions which are two-horizontal and -vertical layer grounds. Field measurements had been done in various sites close to water channel and also far away from any apparent vertical layer ground. Generally, the calculated results agreed with the measured results. Analytical calculations had been proposed to distinguish between two-horizontal and two-vertical layer ground.

## Keywords:

Four-electrode method, Two layer ground, Vertical layerground, Horizontal layer ground, Ground resistivity

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