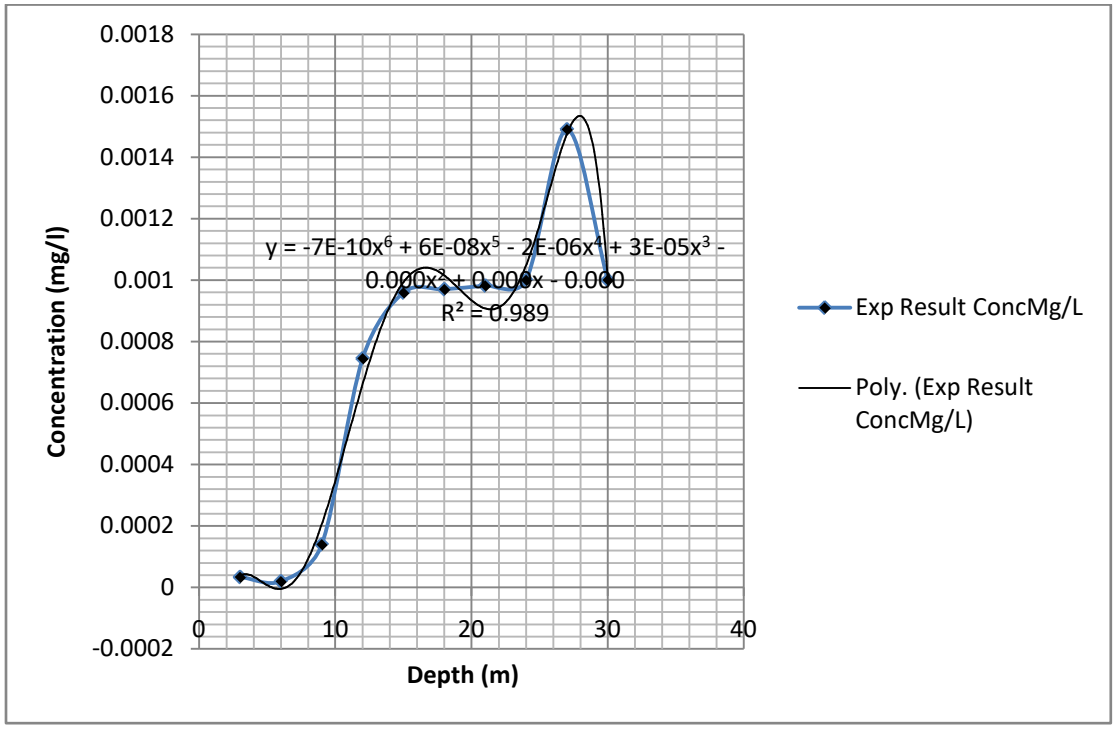

Figure 3.3: Concentration of column E. coli at different Depths

In Figure 3.3, the concentration rapidly increased in a vacillation form and obtained its optimum value at twenty-seven metres, finally dropped a little, this can be attributed to change in soil stratum caused by other depositions either by manmade activities or natural origin, these two conditions can cause the concentration of the microbes deposited in this form as presented in figure. Furthermore, looking at this condition, quality ground water can be abstracted from this formation, but will be subjected to thorough treatment before it can be allowed for human consumption. The best fit line equations are displayed on the graph.

4.0 Conclusion

Investigation into transport of E. coli in phreatic aquifer was carried out and the findings are presented as follows:

- The presence of E. coli on any aquifer depends on the availability of the nutrient as well as favourable condition in terms of physiochemical parameter.
- The concentration of E. coli increases with reduction of nutrient, because at the formation the nutrient generated high level of deposition, the microbes definitely remain at that formation and con-

tinue to feed at that region, they will definitely decrease the concentration of the nutrients, this will result to the microorganism increasing rapidly in growth rate.

- Rapid growth rate on the population of E. coli is experienced when the pH value is acidic than alkaline, therefore the influence of these depositions determines the level of population.

- The E. coli helps to stabilize groundwater quality by inhibiting the presence of metallic element, in most cases; the microorganism reduced the level of concentration on metallic element deposited in some location in the study area.

- The presence of E. coli at different aquifer in this condition is less harmful to the quality of groundwater, for purpose of human utilization.

- Investigation on this microbial transport E. coli on groundwater aquifer has generated a lot of challenges; the investigation carried out has generated a better solution that will definitely improve the condition of groundwater quality in Rivers State.

- Another concept that is applied which has generated better solution to solve microbial transport is calibration and verification of permeability to determine the level influence from those parameters those verified model that can be used to monitor and predict the microbial growth rate of E. coli in different aquifers.

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