**Table 1: Hydraulic Conductivities Results from the two approaches**

|  |  |
| --- | --- |
| **Sampling Locations in Southwestern Nigeria** | **Hydraulic Conductivities (cm/sec)** |
| **Geophysical Field Results** | **Geotechnical Results** |
| **Sample 1** | **Sample 2** | **Sample 3** | **Sample 1** | **Sample 2** | **Sample 3** |
| Ile-Ife | 2.38 x 10-5 | 2.56 x 10-5 | 2.71 x 10-5 | 1.40 x 10-5 | 2.81 x 10-5 | 3.25 x 10-5 |
| Akure | 1.06 x 10-5 | 2.11 x 10-5 | 1.85 x 10-5 | 1.18 x 10-5 | 1.48 x 10-5 | 2.05 x 10-5 |
| Ibadan | 2.37 x 10-5 | 2.43 x 10-4 | 2.26 x 10-5 | 2.28 x 10-5 | 2.52 x 10-5 | 2.91 x 10-5 |
| Ondo | 4.69 x 10-5 | 3.74 x 10-5 | 4.15 x 10-5 | 1.99 x 10-5 | 5.85 x 10-5 | 5.85 x 10-5 |
| Ogbomoso | 3.40 x 10-5 | 4.29 x 10-4 | 4.17 x 10-4 | 1.20 x 10-5 | 4.20 x 10-5 | 5.71 x 10-4 |
| Ilesha | 2.20 x 10-5 | 2.38 x 10-5 | 2.53 x 10-5 | 1.84 x 10-5 | 2.84 x 10-5 | 3.44 x 10-5 |

**Table 2: Statistical t-test result of the two Approaches used in this study**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data** | **Mean** | **Variance** | **N** |
| K Values derived from Geophysical approach | 0.0000829 | 1.79562E-8 | 18 |
| K Values derived from Geotechnical approach | 0.0000579 | 1.65901E-8 | 18 |
| t-test | -0.57193 |
| P | 0.57113 |
| Correlation coefficients ( r) | 0.92580 |

**TABLE 3: SUMMARY OF THE GEOTECHNICAL TEST RESULT FOR ILE-IFE**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | **Test** | **Depth of collection** | **Minimum****Value** | **Maximum****value** | **Mean** | **Standard****Deviation** |
| **0.60m** | **1.20m** | **1.80m** | **2.40m** | **3.0m** |
| 1. | GRAIN SIZE ANALYSIS (%)Percent finer BS sieve 2mmPercent finer BS sieve 0.425mmPercent finer BS sieve 0.075mm | 98.2080.5241.23 | 93.5070.2836.12 | 95.1072.5230.20 | 92.1558.5025.30 | 92.1171.5035.20 | 92.1158.525.30 | 98.2080.5241.23 | 94.2170.6633.61 | 2.277.065.43 |
| 2. | NATURAL MOISTURE CONTENT (%) | 15.5 | 10.8 | 22.8 | 24.5 | 18.5 | 10.8 | 24.5 | 18.42 | 4.95 |
| 3. | SPECIFIC GRAVITY | 2.62 | 2.70 | 2.65 | 2.63 | 2.60 | 2.60 | 2.70 | 2.64 | 0.03 |
|  | ATTERBERG LIMIT (%)Liquid limitPlastic limitPlasticity IndexLinear Shrinkage | 38.521.0617.444.32 | 34.011.422.65.12 | 37.016.320.75.78 | 37.524.013.56.50 | 43.038.524.55.50 | 34.011.413.54.32 | 43.038.524.56.50 | 3822.2519.755.44 | 2.929.183.900.72 |
| 5. | COMPACTIONMaximum Dry Density (kg/m3)Optimum Moisture Content (%) | 182214.8 | 172015.0 | 178012.0 | 188014.0 | 185011.0 | 172011.0 | 188015.0 | 1810.4013.36 | 55.931.59 |
| 6. | TRIAXIAL TESTAngle of internal friction ( o ) Cohesion (kN/m3) | 3228 | 3621 | 3424 | 2022 | 24.527 | 2021 | 3628 | 29.324.4 | 6.062.73 |
| 7. | HYDRAULIC CONDUCTIVITY TESTCoeff. of Hydraulic. conductivity (cm/sec) | 1.825x10-5 | 2.215x10-5 | 2.525x10-5 | 2.452x10-5 | 2.381x10-5 | 1.825x10-5 | 2.525x10-5 | 2.28x10-5 | 2.49x10-5 |
| 8. | SOIL CLASSIFICATIONUnifiedAASHTOTextural | SCA - 6Sandy Clay loam | SCA - 6Sandy Clay loam | SCA -2- 6Sandy Clay loam | SCA -2- 6Sandy Clay loam | SCA -7- 6Sandy Clay loam |  |  |  |  |