**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 2mm  Percent finer BS sieve 0.425mm  Percent finer BS sieve 0.075mm | 98.20  80.52  41.23 | 93.50  70.28  36.12 | 95.10  72.52  30.20 | 92.15  58.50  25.30 | 92.11  71.50  35.20 | 92.11  58.5  25.30 | 98.20  80.52  41.23 | 94.21  70.66  33.61 | 2.27  7.06  5.43 |
| 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 limit  Plastic limit  Plasticity Index  Linear Shrinkage | 38.5  21.06  17.44  4.32 | 34.0  11.4  22.6  5.12 | 37.0  16.3  20.7  5.78 | 37.5  24.0  13.5  6.50 | 43.0  38.5  24.5  5.50 | 34.0  11.4  13.5  4.32 | 43.0  38.5  24.5  6.50 | 38  22.25  19.75  5.44 | 2.92  9.18  3.90  0.72 |
| 5. | COMPACTION  Maximum Dry Density (kg/m3)  Optimum Moisture Content (%) | 1822  14.8 | 1720  15.0 | 1780  12.0 | 1880  14.0 | 1850  11.0 | 1720  11.0 | 1880  15.0 | 1810.40  13.36 | 55.93  1.59 |
| 6. | TRIAXIAL TEST  Angle of internal friction ( o )  Cohesion (kN/m3) | 32  28 | 36  21 | 34  24 | 20  22 | 24.5  27 | 20  21 | 36  28 | 29.3  24.4 | 6.06  2.73 |
| 7. | HYDRAULIC CONDUCTIVITY TEST  Coeff. 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 CLASSIFICATION  Unified  AASHTO  Textural | SC  A - 6  Sandy Clay loam | SC  A - 6  Sandy Clay loam | SC  A -2- 6  Sandy Clay loam | SC  A -2- 6  Sandy Clay loam | SC  A -7- 6  Sandy Clay loam |  |  |  |  |