**RESULTS OF THE WATER QUALITY PARAMETERS OF the institute**

**(SAMPLING DATE 23/10/19)**

***TABLE 1- PUMPS***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameters** | **Permissible Limit** | **Maximum Limit** | **P1** | **P3**  | **P7**  | **P8**  | **P11**  | **P12**  | **P13** | **P14** |
|  **pH** | **6.5 to 8.5** | **No relaxation** | **8.11** | **8.01** | **7.71** | **7.94** |  **8.02** | **8.16** | **8.09** | **8.11** |
|  **TDS (mg/l)** | **500** | **2000** | **482** | **467** | **664** | **770** | **685** | **402** | **586** | **650** |
|  **Hardness (as CaCO3)(mg/l)** | **300** | **600** | **110** | **170** | **140** | **190** | **200** | **180** | **170** | **150** |
|  **Alkalinity (as CaCO3) (mg/l)** | **200** | **600** | **300** | **320** | **270** | **280** | **270** | **320** | **280** | **350** |
|  **Nitrate (mg/l)** | **50** | **No relaxation** |  **0.03** | **0.07** |  **0.02** | **0.09** | **0.08** | **0.07** | **0.11** | **0.12** |
|  **Sulfate (mg/l)** | **200** | **400** | **48** | **29** | **52** | **55** | **34** | **31** | **29** | **27** |
|  **Fluoride (mg/l)** | **1** | **1.5** | **0.732** | **0.674** | **0.518** | **0.526** | **0.665** | **0.741** | **0.684** | **0.689** |
|  **Chloride (mg/l)** | **250** | **1000** |  **145** | **135** | **275** | **300** | **290** | **100** | **215** | **265** |
|  **Turbidity (NTU)** | **5** | **10** | **0.001** | **0.001** | **0.001** | **0.001** | **0.001** | **0.001** | **0.001** | **0.001** |
|  **Arsenic (mg/l)** | **0.01** | **No relaxation** | **0.0018** | **0.0012** | **0.0017** | **0.0018** | **0.0019** | **0.0010** | **0.0018** | **0.0014** |
|  **Copper (mg/l)** | **0.05** | **1.5** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
|  **Cadmium (mg/l)** | **0.003** | **No relaxation** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
|  **Chromium (mg/l)** | **0.05** | **No relaxation** | **0.0018** | **0.0032** | **0.0014** | **0.0016** | **0.0021** | **0.0028** | **0.0035** | **0.0042** |
|  **Lead (mg/l)** | **0.05** | **No relaxation** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
|  **Iron (mg/l)** | **0.3** | **1** | **0.12** | **0.16** | **0.15** | **0.21** | **0.11** | **0.16** | **0.19** | **0.22** |
|  **Zinc (mg/l)** | **5** | **15** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
|  **Fecal Coliform (cfu)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
|  **E. Coli (cfu)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

***Sampling Locations: P1 – Opp. Type 2 shop-C near water tank, P3 – Behind Helicopter building, P7 - Near water tank and main entrance of VH-Extension , type-1, P-8 Near Health Centre, P-11 - Behind mess and inside of Hall-10, P-12 - Near about 150 M of P-2 (end of lane-36) , P13 – Near Visiting Faculty Apartment, P14 Near Hall 12***

***TABLE 2 - VARIOUS HOSTELS LOCATIONS***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameters** | **Hall 1** | **Hall 2** | **Hall 3** | **Hall 4** | **Hall 5** | **Hall 7** | **Hall 8** | **Hall 9** | **Hall 10** | **Hall 11** | **Hall 12** | **Hall 13** | **GH 1** | **GH2** |
| **pH** | **8.35** | **8.11** | **8.06** | **8.12** | **7.73** | **8.32** | **8.17** | **8.26** | **8.21** | **8.09** | **8.22** | **8.44** | **7.89** | **8.32** |
| **TDS (mg/l)** | **624** | **99.0** | **723** | **742** | **635** | **680** | **71.8** | **464** | **677** | **679** | **660** | **662** | **735** | **760** |
| **Hardness (mg/l)** | **120** | **60** | **130** | **180** | **130** | **140** | **60** | **100** | **130** | **200** | **150** | **250** | **160** | **140** |
| **Alkalinity (mg/l)** | **290** | **80** | **260** | **270** | **280** | **260** | **70** | **200** | **280** | **280** | **250** | **400** | **290** | **270** |
| **Nitrate (mg/l)** | **0.18** | **0.04** | **0.07** | **0.05** | **0.01** | **0.26** | **0.06** | **0.04** | **0.07** | **0.03** | **0.06** | **0.02** | **0.05** | **0.01** |
| **Sulfate (mg/l)** | **32** | **8** | **15** | **30** | **39** | **50** | **35** | **51** | **28** | **7** | **24** |  **43** | **31** | **61** |
| **Fluoride (mg/l)** | **0.759** | **0.065** | **0.742** | **0.685** | **0.645** | **0.581** | **0.645** | **0.564** | **0.535** | **0.145** | **0.165** | **0.510** | **1.18** | **0.631** |
| **Chloride (mg/l)** | **225** | **45** | **275** | **290** | **245** | **290** | **135** | **200** | **280** | **275** | **275** | **280** | **270** | **290** |
| **Turbidity (NTU)** | **0.001** | **0.002** | **0.001** | **0** | **0** | **0** | **0** | **0.001** | **0** | **0.002** | **0.001** | **0.001** | **0.001** | **0.001** |
| **Arsenic (mg/l)** | **0.0018** | **0.0010** | **0.0012** | **0.0018** | **0.0017** | **0.0012** | **0.0014** | **0.0019** | **0.0015** | **0.0009** | **0.0007** | **0.0015** | **0.0010** | **0.0012** |
| **Copper (mg/l)** | **0.0082** | **0.0025** | **0.0033** | **0.0062** | **0.0054** | **0.0092** | **0.0081** | **0.0089** | **0.0072** | **0.0018** | **0.0069** | **0.0120** | **0.0062** | **0.0051** |
| **Cadmium (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Chromium (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Lead (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Iron (mg/l)** | **0.1831** | **0.0292** | **0.1649** | **0.1672** | **0.1810** | **0.1543** | **0.1928** | **0.182** | **0.1052** | **0.0984** |  **0.091** | **0.1492** | **0.2118** | **0.1819** |
| **Zinc (mg/l)** | **0.032** | **0.113** | **0.071** | **0.035** | **0.012** | **0.085** | **0.068** | **0.083** | **0.012** | **0.023** | **0.012** | **0.061** | **0.046** | **0.016** |
| **Fecal Coliform (cfu)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **E. Coli (cfu)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

***Samples were acquired from water filter located near Hall Mess***

***TABLE 2 - VARIOUS HOSTELS LOCATIONS CONTD..***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Parameters** | **New RA** | **Old RA** | **VH** | **HC** | **New SBRA** | **Old SBRA** |
| **pH** | **8.14** | **8.32** | **8.05** | **8.27** | **8.18** | **8.46** |
| **TDS (mg/l)** | **50.7** | **713** | **124.3** | **505** |  **747** | **568** |
| **Hardness (as CaCO3) (mg/l)** | **70** | **160** | **70** | **100** | **150** | **120** |
| **Alkalinity (as CaCO3) (mg/l)** |  **80** | **280** | **90** | **300** | **260** | **280** |
| **Nitrate (mg/l)** | **0.03** | **0.04** | **0.02** | **0.06** | **0.08** | **0.02** |
| **Sulfate (mg/l)** | **7** | **21** |  **11** | **42** | **49** | **39** |
| **Fluoride (mg/l)** | **0.072** | **0.223** | **0.110** | **0.775** | **0.625** | **0.184** |
| **Chloride (mg/l)** | **30** | **275** | **55** | **165** | **290** | **195** |
| **Turbidity (NTU)** | **0.001** | **0.002** | **0** | **0.001** | **0** | **0.001** |
| **Arsenic (mg/l)** | **0.0011** | **0.0009** | **0.0007** | **0.0016** | **0.0018** | **0.0004** |
| **Copper (mg/l)** | **0.0031** | **0.0024** | **0.0017** | **0.0038** | **0.0059** | **0.0052** |
| **Cadmium (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Chromium (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Lead (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Iron (mg/l)** | **0.0914** | **0.1241** | **0.0846** | **0.1328** | **0.1975** | **0.0982** |
| **Zinc (mg/l)** | **0.0557** | **0.0248** | **0.0408** | **0.0198** | **0.0118** | **0.0365** |
| **Fecal Coliform (cfu)** | **0** | **0** | **0** | **0** | **0** | **0** |
| **E. Coli (cfu)** | **0** | **0** | **0** | **0** | **0** | **0** |

***Sampling locations: VH- Visitors Hostel; HC- Health Centre***

***TABLE 3 – VARIOUS RESIDENTIAL LOCATIONS***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameters** | **T1****(169B)** | **T2****(203)** | **T3D****(377)** | **T3F****(315)** | **T4****(440)** | **T5****(503)** | **T6****(644)** | **FAC APT****A****(101)** | **FAC APT** **B****(103)** | **FAC APT**  **C****(104)** | **FAC APT D****(102)** |
| **pH** | **7.79** | **8.48** | **8.49** | **8.41** | **8.31** | **8.16** | **8.48** | **8.27** | **8.35** | **8.35** | **8.14** |
| **TDS (mg/l)** | **660** | **485** | **405** | **486** | **583** | **559** | **405** | **752** | **746** | **751** | **750** |
| **Hardness (as CaCO3) (mg/l)** | **150** | **80** | **80** | **100** | **110** | **110** | **60** | **230** | **190** | **160** | **190** |
| **Alkalinity (as CaCO3) (mg/l)** | **270** | **310** | **310** | **320** | **290** | **290** | **320** | **270** | **240** | **270** | **250** |
| **Nitrate (mg/l)** | **0.18** | **0.13** | **0.21** | **0.17** | **0.39** | **0.15** | **0.32** | **0.05** | **0.07** | **0.04** | **0.02** |
| **Sulfate (mg/l)** | **52** | **28** | **32** | **20** | **45** | **59** | **25** | **62** | **39** | **60** | **75** |
| **Fluoride (mg/l)** | **0.794** | **0.785** | **0.828** | **0.892** | **0.892** | **0.659** | **0.874** | **0.524** | **0.435** | **0.418** | **0.427** |
| **Chloride (mg/l)** | **285** | **150** | **90** | **150** | **225** | **205** | **95** | **295** | **295** | **290** | **285** |
| **Turbidity (NTU)** | **0** | **0.001** | **0.001** | **0.001** | **0.001** | **0** | **0.001** | **0.001** | **0.002** | **0.001** | **0.001** |
| **Arsenic (mg/l)** | **0.0021** | **0.0018** | **0.0019** | **0.0016** | **0.0020** | **0.0017** | **0.0016** | **0.0014** | **0.0013** | **0.0011** | **0.0014** |
| **Copper (mg/l)** | **0.0182** | **0.0083** | **0.0042** | **0.0051** | **0.0065** | **0.0062** | **0.0080** | **0.0045** | **0.0152** | **0.0065** | **0.0072** |
| **Cadmium (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Chromium (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Lead (mg/l)** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** | **BDL** |
| **Iron (mg/l)** | **0.1389** | **0.1621** | **0.1254** | **0.1442** | **0.1741** | **0.1923** | **0.1327** | **0.1252** | **0.1061** | **0.1493** | **0.1056** |
| **Zinc (mg/l)** | **0.0243** | **0.0352** | **0.0274** | **0.1134** | **0.0639** | **0.0438** | **0.1528** | **0.0074** | **0.0152** | **0.0141** | **0.0218** |
| **Fecal Coliform (cfu)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **E. Coli (cfu)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

***Sampling locations: VH- Visitors Hostel; HC- Health Centre; T1 to T6 Residences with corresponding House Numbers., FAC APT A to D- New Multistorey faculty buildings with corresponding House Numbers.***

***BDL Below Detection Limit; NTU – Nephelometric Turbidity Unit; cfu- Colony forming Units in 100 ml of the sample***

***Detection Limits Pb 0.0001 mg/l, Cu 0.0001 mg/l , Cr 0.0005 mg/l ,Fe 0.0001 mg/l , Cd 0.0004 mg/l, As 0.0001 mg/l, Zn 0.0005 mg/l***