

CVE 505 ASSIGNMENT

- A. Using Ado-Ekiti and Afe Babalola University, Ado-Ekiti (ABUAD) as a case study. Groundwater is the most efficient resource for meeting water demand in the basement complex areas. Basement complexes worldwide shared common hydrogeological indicators and the situation in the entire Ado Ekiti is not like to be far from that of Afe Babalola University Ado-Ekiti, Ekiti State (ABUAD). This study examined groundwater exploitation in fractured basement of Ado Ekiti and environs. The scope was narrowed to groundwater supply and potential in ABUAD. Seventeen boreholes have been drilled in ABUAD and yet there is a seeming perennial water scarcity in the University. The data generated in this study could provide benchmarks to unravel the prevailing conditions on groundwater potential and exploitation in fractured basement in the whole of Ado Ekiti and environs. The study revealed that most appealing geologic sequence for good groundwater potential is overburden thickness of $\geq 25\text{m}$ and weathered/fractured basement having resistivity range between $20\text{-}100\Omega\text{-m}$ with thickness ranging between $12 - 30\text{m}$. Present daily water demand for ABUAD stands at $420,000\text{litres/day}$ and in a decade's time the daily projection is expected to be 934200liters/day . If the University is experiencing water scarcity, it means that all the boreholes put altogether is currently producing below 37% efficiency. The problem probably could be attributed to poor borehole completion operation, 'hanging borehole' and incomplete development. Pumping test is very vital for successful borehole completion and benchmark for future operation and maintenance. Efforts should be geared towards the redevelopment of all the boreholes in ABUAD to increase their efficiencies. Pumping test should be carried out to ascertain the true status of the remaining boreholes. Efforts should only be concentrated in areas designated to have good groundwater potential for new borehole schemes. As a long term measures and also to meet up with the decade's forecast on water demand, dam should be constructed for water supply and power generation.
- B. What are the disadvantage of large dam projects?
- I. Building a dam is very expensive, the government needs to ensure that strict guidelines are followed and a very high standard is maintained.
 - II. They must operate for many years in order to become profitable enough to compensate for the high building cost.
 - III. People residing in villages and towns in the nearby area, where there are chances of flooding, have to be relocated. They lose their businesses and farms.
 - IV. Sometimes people are removed forcibly to set up hydro-power plant and it poses a serious ethical concern.
 - V. The building of large dams can cause serious changes to the earth's surface and lead to geological damage. It can trigger frequent earthquakes, however, modern planning and design of dams have reduced the possibility of occurrence of certain disasters.
- C. What are the effects of water pollution on the environment?
- Water pollution affects the the quantity of water and results in costly treatment or remediation of the environment.
 - Water pollution has so many adverse effects on humankind and the environment including but not limited to waterborne diseases, accumulation of toxic elements in aquatic organisms, etc. In general, exposure to high levels of polluted water can lead to death.
- D. What is a suitable approach to decontaminate river water, such as the Ganga river in India, which gets polluted daily by industrial effluent.

The one obvious method is to decrease extent of pollution added to it. in this direction, the first step to have database of contaminants coming into it and fate of these contaminants.
Treatment at river end is not a preferred option.