

# **Guidelines for Installation of Piezometers and their Monitoring**

Piezometer is a bore well/ tube well used only for measuring the water level by lowering the tape/sounder or automatic water level measuring equipment. It is also used to take water sample for water quality testing whenever needed. General guidelines for installation of piezometers are as follows for compliance of NOC:

- The piezometer is to be installed/constructed at the minimum of 50 m distance from the pumping well through which groundwater is being withdrawn. The diameter of the piezometer should be about 4" to 6".
- The depth of the piezometer should be same as in case of the pumping well from which groundwater is being abstracted. If, more than one piezometers are installed the second piezometer should monitor the shallow groundwater regime. It will facilitate shallow as well as deeper groundwater aquifer monitoring.
- The measuring frequency should be monthly and accuracy of measurement should be up to cm. The reported measurement should be given in meter up to two decimal.
- For measurement of water level sounder or Automatic Water Level Recorder (AWLR) with telemetry system should be used for accuracy.
- The measurement of water level in piezometer should be taken, only after the pumping from the surrounding tube wells has been stopped for about four to six hours.
- All the details regarding coordinates, reduced level (with respect to mean level), depth, zone tapped and assembly lowered should be provided for bringing the piezometer into the National Hydrograph Monitoring System of Central Ground Water Board, and State Groundwater Monitoring System of State Groundwater Department for its validation.
- The groundwater quality has to be monitored twice in a year during pre-monsoon (May/June) and post-monsoon (October/November) periods. Quality may be got analysed from NABL approved lab or GWD Analytical Labs. Besides, one sample (1 liter capacity bottle) of ground water collected during pre-monsoon after proper packing may be sent to the concerned Regional Labs for chemical analysis.
- A permanent display board should be installed at Piezometer/ Tube well site for providing the location, piezometer/ tube well number, depth and zone tapped of piezometer/tube well for standard referencing and identification.
- Any other site specific requirement regarding safety and access for measurement may be taken care off.