

CONSTRUCTION OF HORIZONTAL WELLS IN KAMPUNG PALOH, SARIKEI DIVISION, SARAWAK

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A horizontal production well system was constructed at Terabah, Kampung Paloh in Sarawak. The well system is designed to supply 240 m³ (52,800 gallons) of water per day for the projected kampung population of 1585 people by the year 1990.

The horizontal well system was constructed in an unconfined aquifer which consists of unconsolidated fine sand with some medium sand. The system consists of three subsidiary collector wells and a main collector well. Each well consists of 4 lengths of cylindrical concrete culvert with an internal diameter of 1.22 m and height of 6.08 m. Each subsidiary collector well is installed with one pair of slotted 101 mm diameter PVC pipes. The total length of the screens for every collector well is 100 m. It is installed horizontally at an average depth of 3.0 m below the groundwater-table. The PVC pipe, which has an open area of 0.00167 m² per metre, is slotted on the upper half along its length. The slot is 0.2 mm wide and has an effective length of 4 cm. Coarse sand of 0.7 mm to 1.00 mm in size is used as filter sand. Groundwater from the subsidiary collector wells is channelled to the main collector well by 202 mm diameter PVC pipes.

The installation of the screens and the collector wells requires the lowering of the groundwater-table which is achieved using a dewatering wellpoint system. This ensures a stable trenchy-slope and a dry, firm working condition.

Construction of the horizontal well system was successfully completed in three months and proven by a month-long pumping test to work satisfactorily.