



# Aquifer Unit Management Program (AUMP) for Managing Groundwater Resources in Multi Layered Coastal Groundwater Systems

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## ABOUT THE STUDY

The efficacy of the Aquifer Unit Management Program (AUMP) lies within the assessment of natural and synthetic recharge to the aquifer gadgets, pumping and gift state of affairs of the hydraulic heads in assessment with the ancient heads. AUMP for coastal aquifer is primarily based totally on the subsequent aquifer control concepts a) Pressure-head element of hydraulic head to exceed the elevation-head element within the discharge area or coastal area and create artesian situations of the constrained and unconfined aquifer unit. b) Maintain hydraulic equilibrium of the aquifer gadgets.

The essential thrust is to reveal or percentage human beings on the existing popularity of the aquifer gadgets and the effect of over exploitation of groundwater assets in close to future. The touchy facts on aquifer gadgets as a result shared with public increases scope for powerful implementation of control techniques to make sure sustainability of the groundwater abstraction systems and guard the coastal aquifer from the chance of sea water intrusion. The Cuddalore aquifer accommodates of argillaceous sandstone, pebble bearing sandstone, ferruginous arkosics sandstone, gravel, grits, and clay beds. They are friable, whitish, pinkish, and reddish in color deposited below continental, fluvial and close by shore environment. The Nayeli aquifer accommodates of friable calcareous sandstones, lignite seam, sandy limestones, clay, and carbonaceous clay.

Sustainability of the coastal groundwater assets has been a crucial trouble as pumping-precipitated hydraulic head draw down has the capacity to opposite the hydraulic gradient into the coastal aquifer. The Aquifer Unit Management Plan (AUMP) is a groundwater assets control plan designed for Cuddalore coastal aquifer machine to recognize and control its assets in a sustainable way. AUMP is decisive because it cogitates annual groundwater withdrawal limit,

annual recharge, and hydraulic heads of the aquifer gadgets, control techniques and administrative measures. With complicated aquifer hydraulics and methods within, aquifer unit sensible control interventions can manually water managers to provoke movement plan and act rapidly to guard the coastal aquifer machine from sea water intrusion. As many coastal aquifers within the sub-continent lack control plan bringing up its complexity, AUMP designed for Cuddalore aquifer coastal machine may be extensively amended to unmarried in addition to multi-layered coastal aquifers of the sub-continent.

To cope with the vulnerability of coastal aquifer to over exploitation and sea water intrusion, a groundwater assets control plan titled as Aquifer Unit Management Plan (AUMP) is designed to offer precious steerage for groundwater control of a multi-layered cuddlier coastal aquifer machine positioned east coast of South India. The aquifer unit control plan is primarily based totally at the summative exam of the aquifer unit disposition, reaction of hydraulic heads to recharge and discharge and impact of extended pumping on aquifer hydraulics. The secure hydraulic heads and annual exploitable capacity had been taken into consideration because the guiding elements to control sparkling groundwater assets of the coastal aquifer. The effects display that the system of sea water intrusion has already began out and with the existing charge of pumping 1034.86 mcmy<sup>-1</sup>, the ocean water intrusion hazard has extended manifold all alongside the coast. The salient control techniques encouraged are limiting pumping to 695 mcmy<sup>-1</sup>, stepping up recharge sports in recharge area, adopting water use performance techniques and law within the coastal area. AUMP is straightforward and may manually water managers to devise for sustainable groundwater withdrawal and secure protect the coastal aquifer from sea water intrusion and make sure sustainability of groundwater abstraction systems.

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