

Injection Well to Recharge Drinking Water Borewells through 'V' Wire Technology

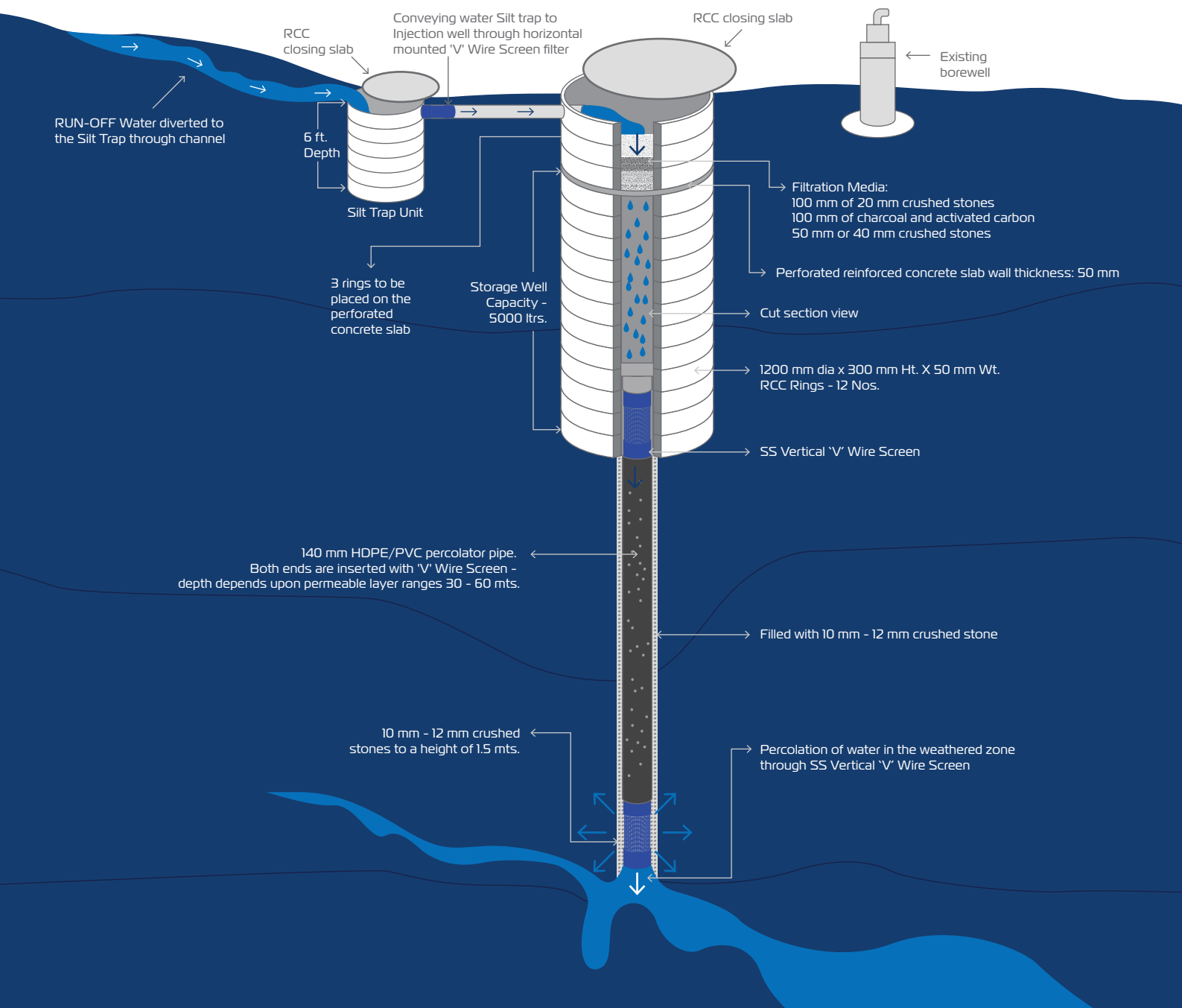
(Artificial Recharge and Aquifer Storage and Recovery)

The average rainfall considered is 800 mm/year.

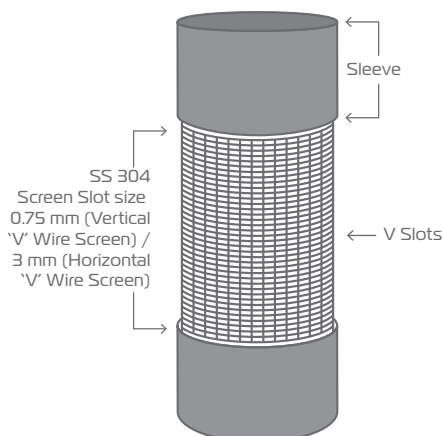
The water falling on the streets, storm drains, open area will be connected to the silt-trap through a channel. The run-off along with dirt and debris deposits in the silt-trap, and overflow of water, flows to the injection well through horizontal connected pipe with 'V' Wire Filter unit which passes through multi-layers of filtration Media placed at top of the injection well and is stored in a specially designed storage well down below, which creates a water column, injecting large quantities of water through the Dual Non Clogging 'V' Wire Screens attached to the percolator Pipe. This water percolates into the deeper layers of the earth's strata through the dry Joints, cracks and Weathered Zone and recharges the Groundwater Source.

A precipitation of just 12.5 mm can yield 50,000 ltrs. of yield per acre. Even a 40% of water is lost due to evaporation / runoff and soil absorption a minimum of 30,000 liters of assured quantity of water can be recharged into the groundwater source per day. Considering an average rainfall spread of 70 days in a year, the approximate total quantum of water percolating into groundwater source is 2.1 Million liters per injection well.

In coastal areas because of higher rainfall (3000 mm the minimum quantum of water percolating is 50,000 liters per day. Considering average spread over for 90 days in a year 4.5 millions of water can be injected per well.



'V' Wire Technology components



- The V wire screens are of stainless steel material, grade SS-304, Cage type trapezoidal wire wound screen
- Screen is evenly distributed continuous slot opening of 0.75 mm (Vertical) / 3 mm (Horizontal), so that it has more open area for minimum turbulence and loss of energy
- The trapezoidal V shape inwardly widening slots are non-clogging, so that sediments have only point contact
- The diameter of the 'V' Wire Screen is 163 mm (Vertical) / 200 mm (Horizontal) and length 0.5 Metre for both

Salient Features of 'V' Wire Screen



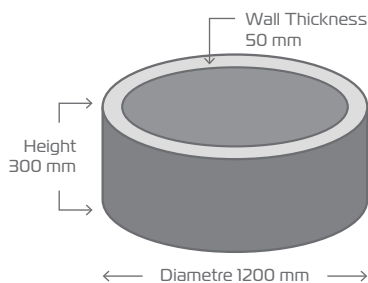
Continuous Slots

The special design gives continuous slot opening across the periphery and length of screen.

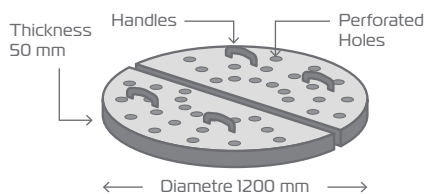


Non Clogging Slots

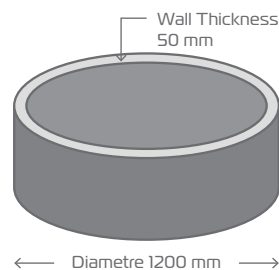
V-shape wire gives inwardly widening V-shape slots. This shape does not give space for any sand particle to get stuck inside the slot and hence these screens are non-clogging.



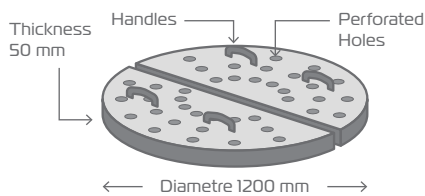
Top view of Reinforced Concrete Ring



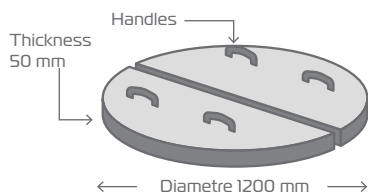
Top view of Reinforced Perforated Concrete Slab of Injection Well



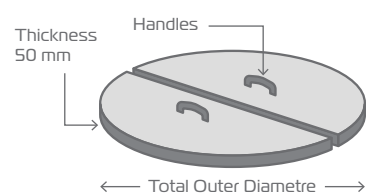
Top view of Reinforced Concrete
Ring of Silt Trap



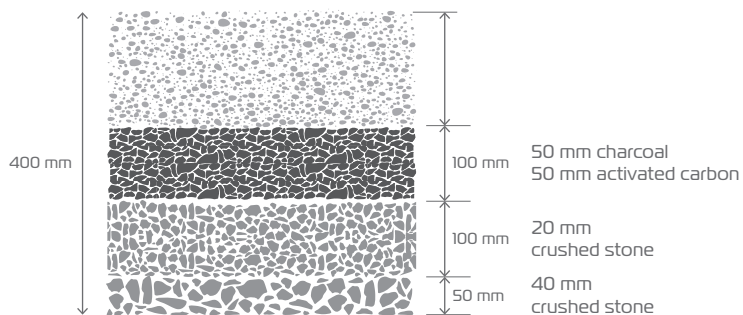
Top view of Reinforced Perforated Concrete Slab of Silt Trap



Top view of Reinforced Concrete Closing Slab

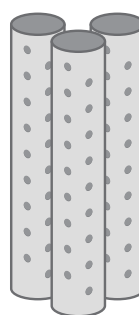


Reinforced Concrete Closing Slab of Silt Trap



Different Layers of Filtration Media

Activated Carbon: (G carbon GS 800 Granule activated carbons (GAC) Removes dissolved organic contaminants and controls taste and odor problems.) Charcoal used is 25 mm to 32 mm Burnt in Foundries; To observe Color in the water and better filtration of rain water.



Longitudinal section of
HDPE / PVC Percolator Pipe

A specially designed high tensile strength 140 mm percolator high density poly-ethylene pipe with 10-12 mm spirally perforated holes at 70 mm intervals, throughout the inner layer of the wall, provides an open area of 135 square centimeters/ meter. This increased surface area allows for large quantities of water to be recharged at varied depths.



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