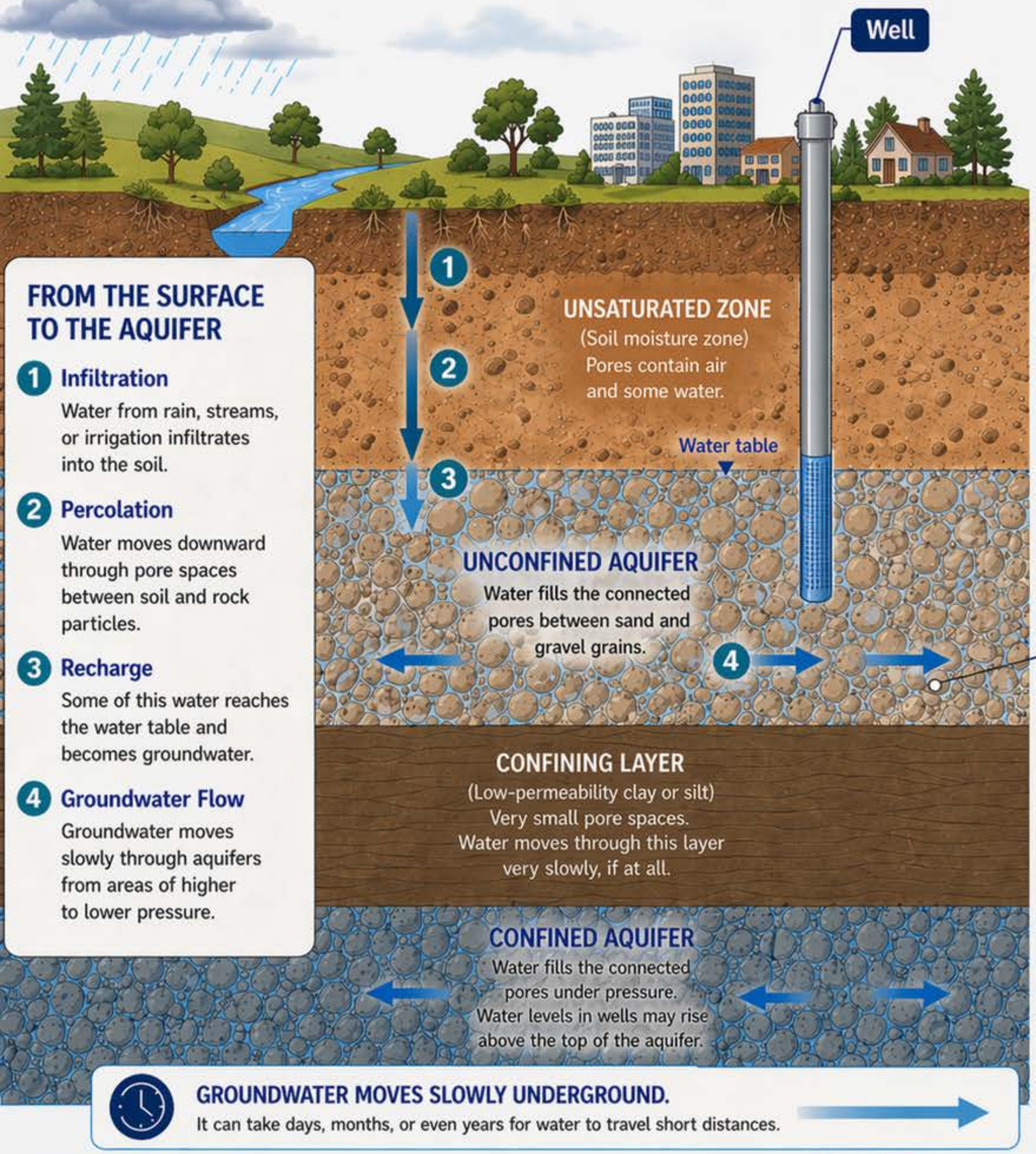
WHAT AN AQUIFER ACTUALLY IS

Aquifers are underground layers of sand, gravel, rock, or sediment that store and transmit groundwater.

An aquifer is NOT an underground lake.
Groundwater fills the tiny spaces (pores and cracks) between grains of rock and sediment.



FROM THE SURFACE TO THE AQUIFER

1 Infiltration
Water from rain, streams, or irrigation infiltrates into the soil.

2 Percolation
Water moves downward through pore spaces between soil and rock particles.

3 Recharge
Some of this water reaches the water table and becomes groundwater.

4 Groundwater Flow
Groundwater moves slowly through aquifers from areas of higher to lower pressure.

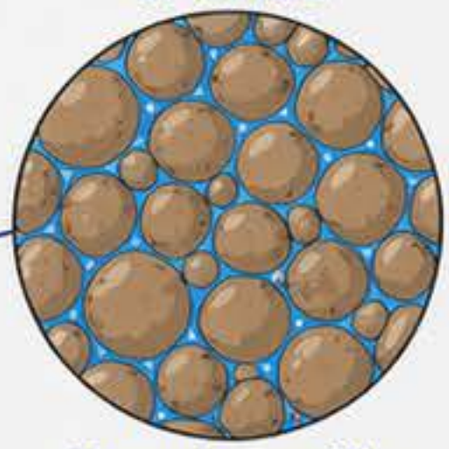
LAND SURFACE

- Rainfall, streams, lakes, and irrigation provide water that can recharge groundwater.
- Some water runs off, some evaporates, and some soaks into the ground.

UNCONFINED AQUIFER

- The upper surface is the water table.
- Water is under atmospheric pressure.
- Wells in this aquifer are often shallower.

WHAT IT LOOKS LIKE UP CLOSE



Groundwater fills pores and cracks
Tiny spaces store and move water.

CONFINED AQUIFER

- Water is under pressure from overlying layers.
- Wells may be deeper.
- Water can rise in the well when tapped.

GROUNDWATER MOVES SLOWLY UNDERGROUND.
It can take days, months, or even years for water to travel short distances.

KEY TAKEAWAYS

Aquifers are geologic materials, not empty cavities or lakes.

Groundwater is stored in pores and cracks and moves very slowly.

Confining layers can protect water quality but also limit recharge and recovery.

Not every layer can store, transmit, or yield usable water. It depends on matters.

POLICY TAKEAWAY

Aquifer storage depends on geology.
Not every underground layer can store, transmit, or recover water effectively.