The length of time water spends in the groundwater portion of the hydrologic cycle may be as little as days, or as much as 10,000 years or more. This is called “residence time.” For example: A raindrop may fall to the earth’s surface. It may seep down through the soil to a saturated zone or aquifer only to pumped back to the surface and sprayed from a garden hose and back down again.

Estimated depth and residence time of the

world’s water supply:

Water Equivalent depth (meters) Residence Time

Oceans/Seas 2500 ~4000 years

Lakes/Reservoirs 0.25 ~10 years

Swamps 0.007 ~1-10 years

Rivers 0.003 ~2 weeks

Soil moisture 0.13 ~2 weeks-1 year

Groundwater 120 ~2 weeks-10000 years

Ice caps/Glaciers 60 10-1000 years

Atmospheric water 0.025 ~10 days

Biospheric water 0.001 ~ 1 week

Source: Freeze, R.A. and Cherry, J.A., 1979, p.5, Groundwater, Prentice-Hall.

How Much Water Exists?

The Earth is 70% Water. Less than 1% is groundwater. In fact, over 99% of all water is not available for our use. So where is all the water? The Earth’s water is all around you. Water is in streams, lakes, oceans and rivers. This water is called “surface water.” But … there is more to our water supply than surface water. There is plenty of water beneath our feet, in the ground as soil moisture and in aquifers.