

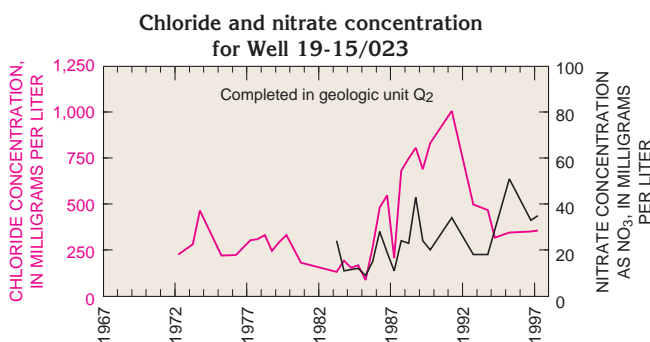
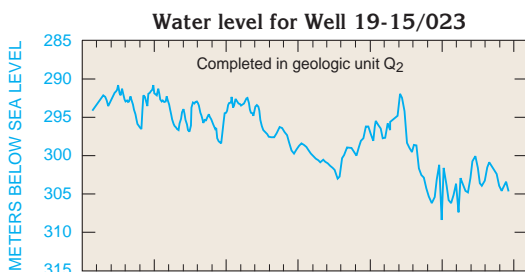
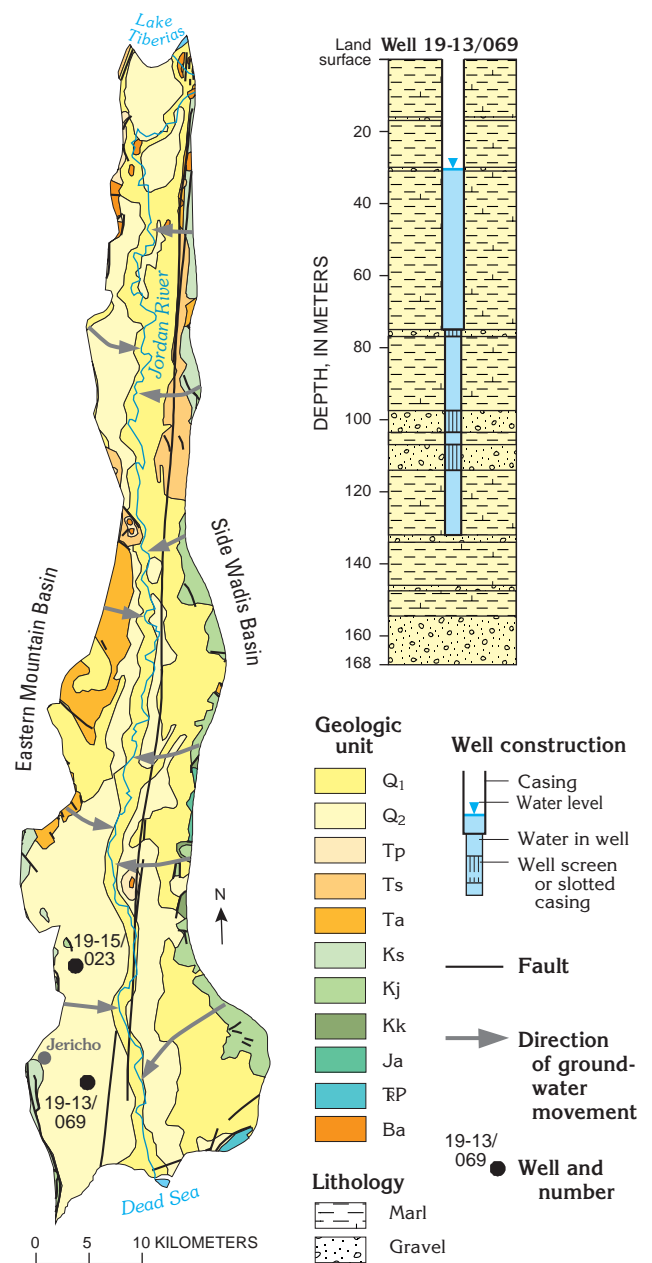
# Jordan Valley Floor Basin



The Jordan Valley Floor Basin is located in the floodplain of the Jordan River south of Lake Tiberias. The entire basin is contained in the Jordan Rift Valley, a pronounced geologic depression in which elevations range from 210 to 400 m below sea level. The basin is underlain by alluvial deposits of soil, sand, and gravel of geologic units  $Q_1$  and  $Q_2$ , and marl, clay and evaporites of the upper part of unit  $Q_2$  that infill the rift valley to a thickness of at least 2,200 m.

Groundwater is recharged by precipitation at an average volume of 21 MCM/yr. Because the quality of water from the Jordan River is generally poor, groundwater is the principal source of freshwater in the basin. About 80% of the fresh groundwater is present in the alluvial fans of the major side wadis (geologic unit  $Q_1$ ). Potential freshwater aquifers occur mainly as lenses of sand and gravel within marl of the Lisan Formation (unit  $Q_2$ ), or as sand and gravel deposits in the alluvial fans. The remaining 20% of freshwater sources are withdrawn from sand, sandstone, and limestone of geologic units Kk and Ja, particularly in areas where these units are recharged along the foothills of the eastern and western escarpments.

Groundwater levels vary greatly in the Jordan Valley Floor Basin, with depths ranging from 5 m in the central part of the valley to 150 m at the escarpment foothills. In parts of the basin, a major concern



Groundwater levels in parts of the basin have shown a long-term decline in response to pumpage as illustrated in well 19-15/023 near Jericho. Increases in chloride and nitrate concentration appear to be related to water-level fluctuations.

Well 19-13/069, near Jericho, is a typical well completed in geologic unit  $Q_2$ . Water is obtained from sand and gravel in several intervals between the depths of 75 and 114 m, with a water level about 31 m below land surface and test yields between 12 and 30 L/s. Well yields in the basin typically vary from 3 to 70 L/s.

is a rising water table due to irrigation return flows, that could potentially result in increased soil salinity.

Groundwater quality in the basin is variable. In the southern part of the basin, water is slightly brackish with chloride concentrations ranging from 700 to 1,850 mg/L; whereas, in the northern part of the basin, the water is somewhat fresher with concentrations ranging from 500 to 1,000 mg/L.