

# Eastern Mountain Basin

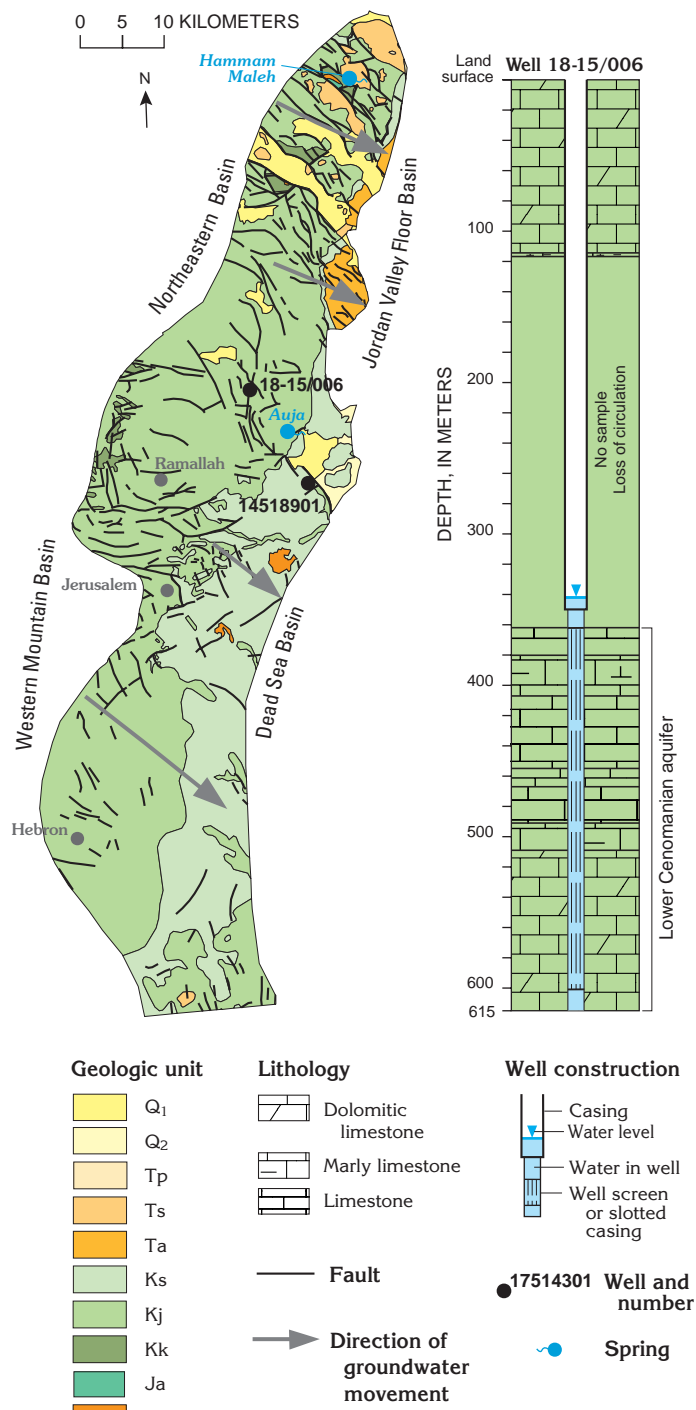


The Eastern Mountain Basin covers an area of about 3,080 km<sup>2</sup> and includes the eastern part of the Mountain Belt and the steep Western Escarpment of the Jordan Rift Valley. In this report, the term Eastern Mountain Basin does not include the Jordan Valley Floor Basin and the Northeastern Basin, which are treated separately. The Eastern Mountain Basin is underlain by a thick sequence of layered limestone and dolomite of the Judea and Mount Scopus Groups (geologic units Kj and Ks) that are folded into north-south trending synclines (lows) and anticlines (highs). The Jordan Rift Valley forms the eastern boundary of the basin.

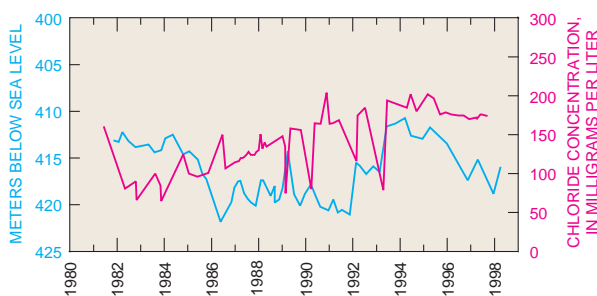
Groundwater is recharged by precipitation at an average volume of 172 MCM/yr, and flows generally in a southeastward direction toward the Jordan Rift Valley. Groundwater is the principal source of freshwater in the basin and is supplied to wells and springs by three principal aquifers:

- The Turronian aquifer, consisting of limestone and dolomite of the uppermost part of geologic unit Kj;
- The Upper Cenomanian aquifer, consisting of limestone and dolomite of the middle part of geologic unit Kj; and
- The Lower Cenomanian aquifer, consisting of limestone and dolomite of the lower part of geologic unit Kj.

The Upper and Lower Cenomanian aquifers are the most productive, and occur at depths greater than 250 m. Groundwater generally occurs in synclines that are bounded by faults. Major springs, such as Auja and Hammam Maleh, issue from fault zones and deep seated fractures.



Water level and chloride concentration Well 14518901



Groundwater levels in parts of the basin have shown long-term decline in response to pumpage. During 1981–91, water levels in well 14518901 declined about 8 m in response to groundwater pumpage, followed by a rise of about 10 m during 1992–93. The rise was in response to a period of heavy precipitation that resulted in increased recharge to the aquifer. Chloride concentrations generally increased during 1981–94, and may be related to water-level fluctuations in the well.

Typical well construction is illustrated by well 18-15/006 in the central part of the basin. The 615-m deep well withdraws water from the Lower Cenomanian aquifer between depths of 362 and 615 m with a water level of about 342 m, and an average yield of about 17 L/s.

Groundwater in the basin is of excellent quality, with low concentrations of dissolved chloride and nitrate. In some areas, water quality is deteriorated by salts and gypsum as water flows through lake sediments.