

Interactive comment on “Faulting patterns determining groundwater flow paths in the Lower Yarmouk Gorge” by Nimrod Inbar et al.

Reviewer #1

Dear reviewer 1,

We thank you for your valuable comments, which very much helped to improve clarity of the manuscript! We hope to reply in the following sufficiently to your remarks.

C1: Major comment: On figure 4, it seems there are no faults leading to the springs of Hamat Gader. Please explain better how water reach those springs? or suggest an alternative strategy to overcome this issue.

A1: This is by all mean an important question. The aim of the current MS is to delineate the main fault block system which controls the different hydrological observations in the area. However, those blocks exhibit extensive inner faults as was clearly described by Bruner and Dekel, 1989. This complexity can be seen also on the geological profile (Fig. 3) where only the main stem of the LYF is shown on the map (Fig. 1). Due to the limited available data, we receive only a coarse picture of the subsurface and hence, our interpretation “provides a **coarse** fault block model...” as mentioned in the abstract - line 30

C2: Minor comments: Line 20: suggest change ‘were previously’ to ‘were so far’ or ‘remain until now’

A2: We follow the suggestion and changed it.

C3: Line 22: reads like the fault was ‘constructed by’ you. . . should be ‘followed a compilations and revisions of. . .’

A3: We follow the suggestion and changed it.

C4: p.3, and Line 110: the Authors have clearly tried to avoid the notion of Israel and Jordan, yet, as observed in the top paragraph this task is not viable. Please add the Israel and Jordan at least to the introduction and map 1.

A4: We included respective information. In map 1, the international borders are included and respective country names are given.

C5: L126: Fig 3 shows map not cross section.

A5: After amending the figures we corrected all figures references.

C6: References: - Suggest to add: Starinsky, A., Kats, A., Levite, D. (1979). Temperature composition-

depth relation in rift Valley hot springs Hamat Gadder, northern Israel. Chem. Geol. 27, 233-244

A6: We follow the suggestion and changed it.

C7: Table 1: - add row for short name as appeared in Figures. - Standard the capitalization on lithology row.

A7: We follow the suggestion and changed it.

C8: Fig 2: - Perhaps add the in-interpreted section as well in the time domain? - On the interpreted sections add units name or numbers (e.g. for Turonian, Jurassic etc)

A8: Adding the un-interpreted GP-3662 section is not possible as the report by Brunner and Dekel (1989) contain only stack (un-interpreted) and migrated (interpreted) sections. The presented section is (as described in the caption)

reinterpretation after Bruner and Dekel. Unit names were omitted by mistake in the current version – We follow the suggestion and changed it.

C9: Fig 3 and 4a: - Seems overlapping. Maybe choose on them? Fig. 4: - Split to two figures- one for the map other for the cross section, and give proper titles. - change W-E to SW-NE.

A9: We follow the suggestion and changed it.

C10: I found it strange that the markers are faulted (shifted vertically), yet you state there is no fault.

A10: Based on the available interpreted data in the study area, we are not able to trace a fault along the path of the gorge. Unpublished data by GSI indicate a SW-NE running fault, coming from the Lower Jordan Valley and reaching Hammat Gader indicate, faulting may also have occurred along the gorge. However, according to our interpretation, several faults crosses the gorge but - as far as observable - faults exhibits little to no vertical displacement at the surface.