

# Groundwater Resources Management

Technical Report:

## Building a Groundwater Model for the Corridor Well Field

**Compiled by** : *Thair Al-Momani (MWI), Ibraheem Hamdan (BGR-MWI project), Ariane Borgstedt (BGR), Armin Margane (BGR), Ali Subah (MWI), Sven Altfelder (BGR)*

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## **Summary**

The report describes the development of a groundwater flow model for the Corridor well field in northern Jordan. Data from a previous study on the delineation of groundwater protection zones, combined with data from other sources are used to define initial and boundary conditions of the flow model and to construct a three dimensional model of the catchment geology.

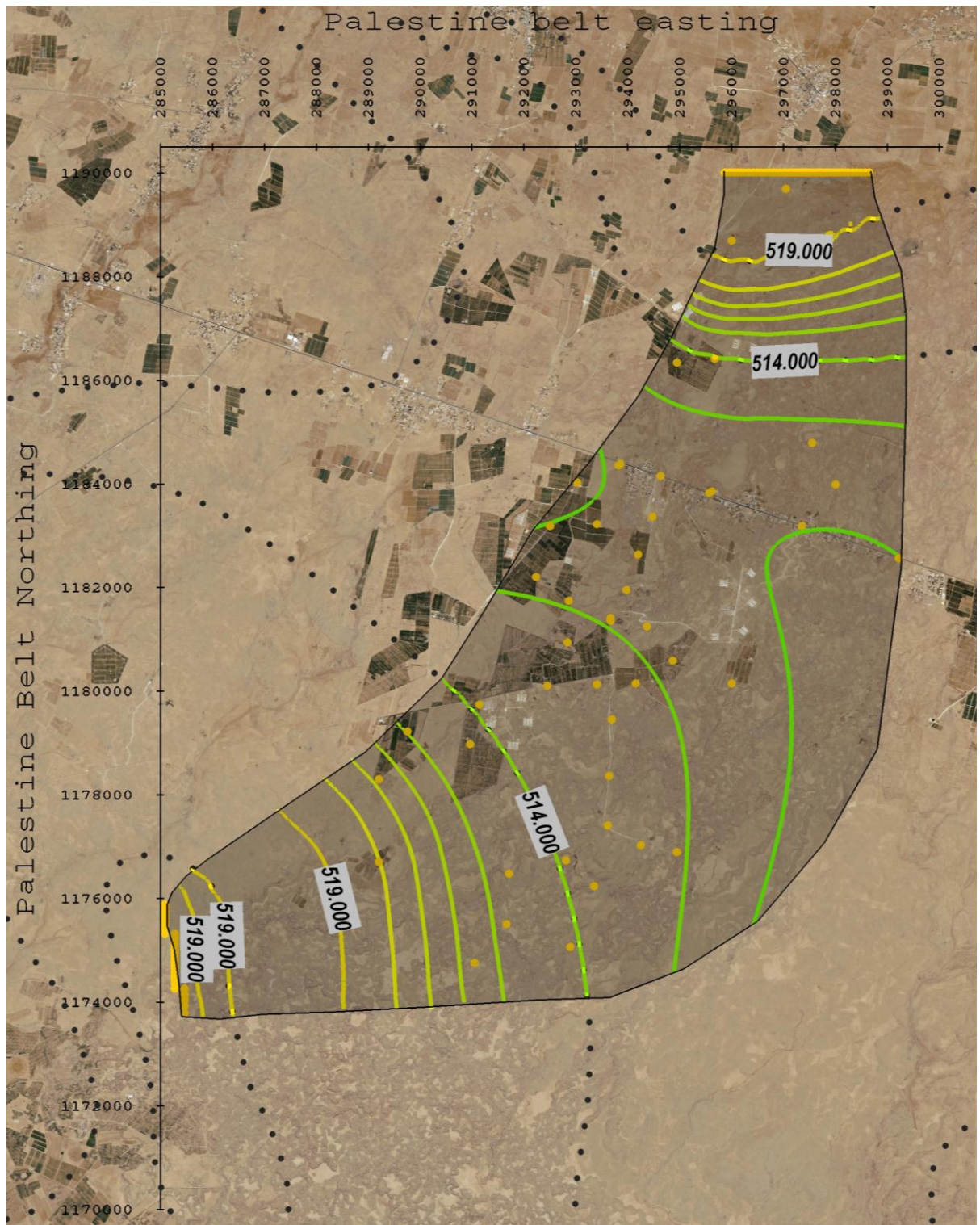
In a scenario analysis several possible recharge and porosity values are tested with the goal of achieving the best agreement between model results and water table measurements of the only monitoring well within the catchment. After identifying the most suitable scenario, this scenario is investigated in depth with regard to water level changes in other parts of the catchment where monitoring wells are missing.

Finally model results are used for the identification of catchment areas which are the most suitable for future well constructions.

## **Scope of work**

The scope of the assignment in the BGR-MWI Groundwater Resources Management project was the verification and updating of an existing groundwater model for the Corridor well field (Khalifa & Mahamid, 2000). The work was done in close collaboration with the staff of the Water Protection Studies Directorate of the Ministry of Water and Irrigation (MWI), Amman, Jordan. This task includes reviewing and correcting of boundary conditions chosen in 2000. Additionally the model should be adapted to include new data material acquired since then.

The assignment included also on-the-job training to acquire modelling skills necessary for successful completion of upcoming MWI-projects involving groundwater modelling.



Groundwater table reconstructed from well data for 01.01.2000 (black dots). The GW-table is used as the starting condition for the transient model run (colored lines limited to GW-catchment). The black dots outline the regional extent of the contour lines beyond the catchment.