

## TECHNICAL REPORT NO. 8

# Delineation of Groundwater Protection Zones for the Corridor Well Field

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## 1 Summary

The corridor well field located in the northeastern part of Jordan, about 25 km east of Zarqa is an important source of water supply to Amman and Zarqa. A total of 18 wells (14 operating and 3 newly drilled; 1 monitoring well) have been drilled into the basalt / A7/B2 aquifer. Therefore the German-Jordanian Technical Cooperation project "Groundwater Resources Management" has chosen this well field as one of its working areas for the delineation of groundwater protection zones according to the newly issued Jordanian guideline (July 2006). The proposed groundwater protection area has been subdivided into three zones, which require different degrees of land use restrictions.

During the field work to this report several risks to the drinking water supply provided by the well field were noticed. They partly arise from deficits in the construction and upkeep of the water supply infrastructure (water conveyance system – T-connections), from a lacking of access barriers to the protection zone 1 (partly missing fence), and from pollution risks in zone 2.

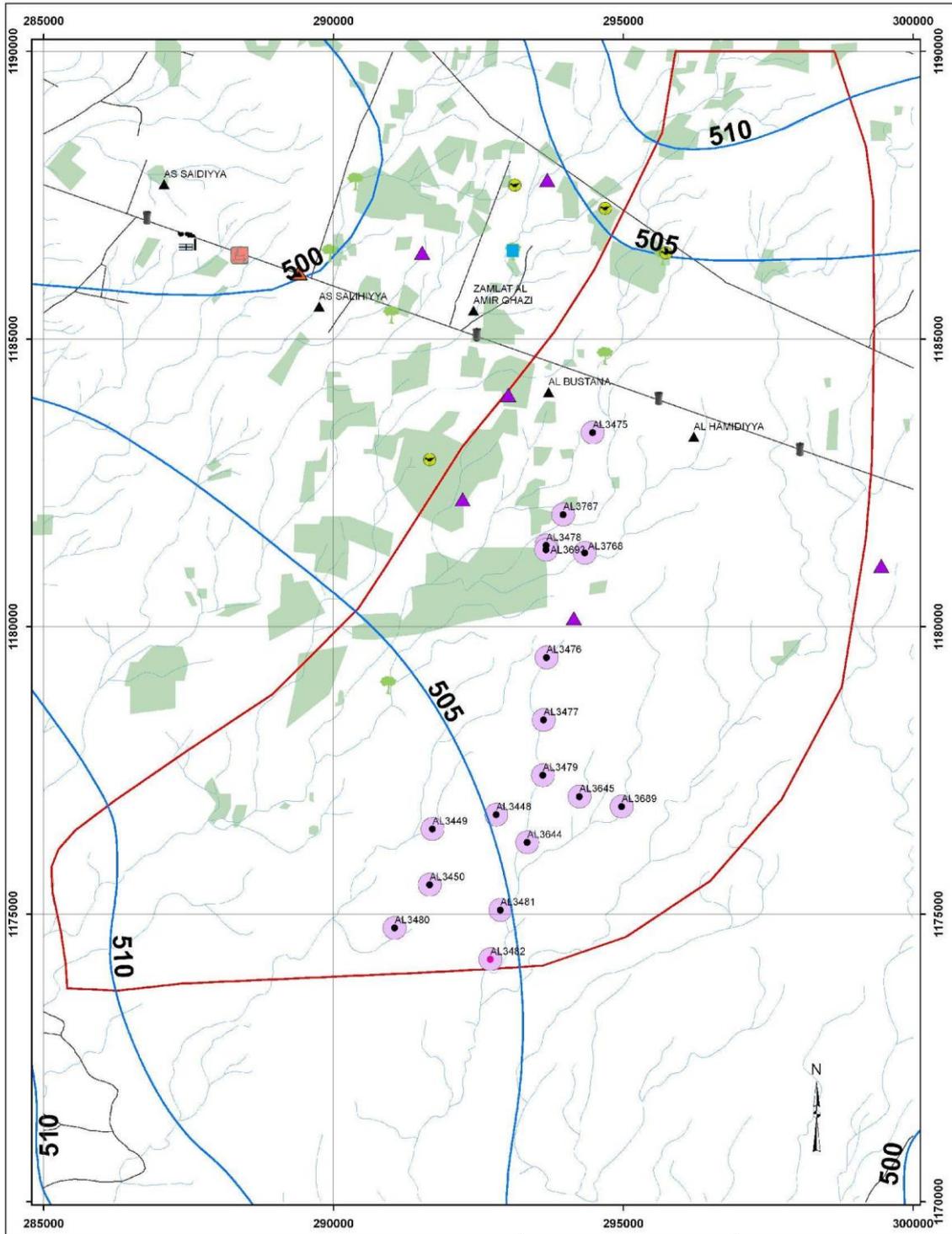
The report proposes several corrective measures in order to avoid contamination of the drinking water source. It is important that these measures are implemented as soon as possible so that the risk of bacteriological contamination is reduced. This will require that WAJ

reestablishes the missing parts of the fences, enlarges protection zone 1 so that the distance from well to fence is 25 m, installs an overlapping well cap with a conduit box to avoid direct access to the well, repairs broken/leaking T-connections, repairs damaged pipe network and physically blocks entrance to the installations.

A number of corrective measures have also been proposed for protection zone 2, where the most prominent contamination risks arise from agricultural/farming activities. Implementation of these measures should also be given priority. Since the implementing agency concerning groundwater protection zone 2 is the Ministry of Environment, the responsible staff will need to control the enforcement of these measures.

In order to avoid further contamination risks in the future, it is seen as important that the land use planning authorities closely coordinate their activities with the Ministry of Water and Irrigation as well as with the Water Authority of Jordan.

The project will carry out workshops for awareness building and provide training for the implementation agencies.



<b>Legend</b> — Groundwater Contour Line — Groundwater Catchment - Protection Zone 3 ■ Protection Zone 2 🐔 Chicken Farm ⚡ Electrical Station 🍷 Fruit Farm 🌿 Olive Farm 🐑 Sheep Farm 🏭 Factory ⛛ Fuel 🌿 Agricultural_Areas — Wadi — Road ▲ Village		 The Hashemite Kingdom Of Jordan Ministry Of Water And Irrigation		 Federal Republic Of Germany Federal Institute For Geosciences And Natural Resources	
<b>Groundwater Resources Management Project</b>					
<b>Corridor Wellfield</b> <b>Groundwater Protection Zone 2 &amp; 3</b>					
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