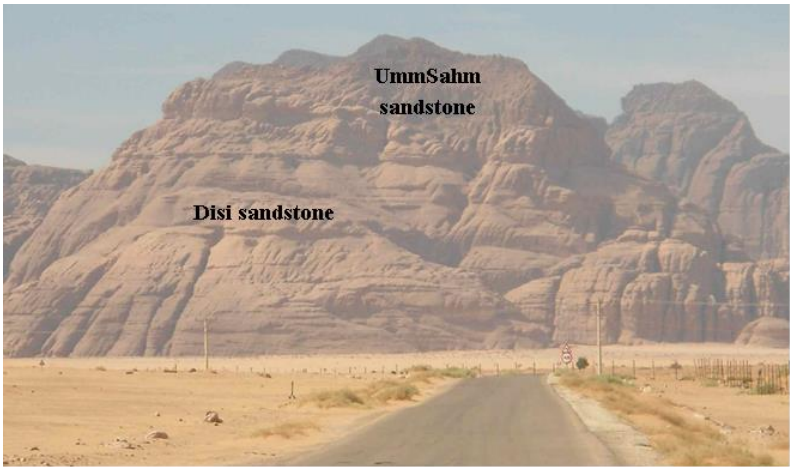
The Geological Society

Thames Valley Regional Group & Engineering Group Joint Meeting

18th July 2018

2nd Talk - The fossil Ram sandstone aquifer of Jordan: hydrogeology, depletion & sustainability

Speaker: Andreas N. Charalambous



The Ram Sandstone is a large transboundary aquifer of Cambro-Ordovician age, shared between Jordan and Saudi Arabia. It is 500 m to >4,000 m thick and stores fossil groundwater 10,000-35,000 years old. Modern recharge is probably insignificant and the aquifer has been in a state of depletion since at least the last humid interludes of 5,000 to 10,000 years ago. Groundwater flows NNW from the outcrop in southern Jordan and northwest Saudi Arabia to the Dead Sea. Despite its long residence, the groundwater is generally fresh although radium concentrations exceeding accepted limits have been identified recently. Exploitation in Jordan has been mainly in the Southern Desert, predominantly for irrigation with smaller amounts supplying the coastal city of Aqaba. In 2013 a scheme was completed to supply the capital Amman with 100 million m^3/year (~274 Ml/day) for 50 years from a wellfield in the Southern Desert, a distance of ~325 km. Being a fossil aquifer, its utilization will reduce the stock available for future generations, but with prudent planning, extractions should be sustainable and depletion may not reach a critical level. However, the Dead Sea thermal springs that have been enjoyed since historical times and the baseflow of deeply incised valleys could be affected.

Programme

Tea/coffee	17:15
1st Talk	18:00
Interval	
2nd Talk	19:00

Post-talk refreshments

Venue

Fugro GeoServices
Fugro House
Hithercroft Road
Wallingford
OX10 9RB

TVRG
Thames Valley Regional Group