Professor John Tellam BSc, MSc, PhD, FGS

Professor of Hydrogeology

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About

John Tellam's main research interests are in inorganic, surface-interacting, solute and particle transport in groundwaters, with a particular emphasis on sandstone aquifers.

Qualifications

- BSc in Geological Sciences, University of Southampton
- MSc in Hydrogeology, University of Birmingham
- PhD in Groundwater Chemistry, University of Birmingham

Biography

1978-1980 Research Associate, Birmingham University.
1980-1995 Lecturer in Hydrogeology, University of Birmingham.
1995-1997 Senior Lecturer in Hydrogeology, University of Birmingham.
1997-2002 Reader in Hydrogeology, University of Birmingham.
2002- Professor of Hydrogeology, University of Birmingham.
2002-2005 Director, Earth Sciences

Teaching

BSc taught modules, year 3 &4: Pollution Hydrogeology; Engineering Geology; Natural Hazards (part)
MSc Hydrogeology Course taught modules: Hydraulic Properties (part); Inorganic Chemistry and Groundwater; Hydrogeophysics; Water Resources Studies (part)
MSc Hydrogeology Course tutor; senior MSc Course tutor and Research Ethics Coordinator for GEES; Fieldwork Safety Coordinator for Earth Sciences.

Postgraduate supervision

John Tellam has been a supervisor of nearly 50 PhD students in a wide range of groundwater subjects, and is always keen to consider new applications.

Current students are:

- T Batty: Metal sorption on sandstone
- F Sam: Impact of open pit mining on groundwater flow
- N Roslan: Urban hydrogeology
- A Saadat: Urban hydrogeology
- L McMillan: Sampling from long screened wells
- B Anderson: Nanoparticle interactions in groundwaters
- M Jaweesh: Geochemical property / lithofacies correlations in sandstones

Research

Current research interests focus on the quantification of surface reacting solute transport in groundwaters and the quantification of inorganic nanoparticle movement in groundwaters. This work involves laboratory and field experimentation, and modelling. Within the Water Sciences group, there are extensive facilities for this type of research, including an on-campus research borehole array.

Most recent research projects have centred on: virus movement in groundwaters (NERC, European Union, and Environment Agency funding); nanoparticle movement in groundwaters (NERC); and applications of biogeochemistry in nuclear waste disposal (EPSRC). PhD and PDRA research has recently included work on: characterizing surface properties of rocks; examining particle/virus interactions; quantifying correlations between hydraulic properties, geochemical properties, and lithofacies; quantifying ion exchange reactions; and developing new methods for borehole logging interpretations.

Other activities

Member of the Council of the Geological Society of London, and member of the Society's Science and Election Committees.
Member of the EPSRC review college.
Member of the Steering Committee, UK Groundwater Forum.

External examiner to the MSc Course in Environmental Hydrogeology at Cardiff University.
Guest lecturer on the MSc Course in Hydrogeology and Environmental Geoscience, Göttingen University, Germany.

Publications

Some recent publications:

R. A. White, M. O. Rivett, and J. H. Tellam, 2008. Paleo-roothole facilitated transport of aromatic hydrocarbons through a Holocene clay bed. Environmental Science and Technology, 42(19):7118-7124.

C. Gaebel, J.R. Lead, J.C. Renshaw, and J.H. Tellam, 2009. Preliminary indications from atomic force microscopy of the presence of rapidly-formed nanoscale films on aquifer material surfaces. Journal of Contaminant Hydrology, 108, 46–53.

R. B. Greswell, M.S. Riley, P. Alves, and J.H. Tellam, 2009. A heat perturbation flow meter for application in soft sediments. Journal of Hydrology, 370, 73-82.

J.H.Tellam and D.N.Lerner, 2009. Management tools for the river-aquifer interface. Hydrological Processes, 23, 2267-2274.

R. B. Greswell, S. H. Rahman, M. O. Cuthbert & J. H. Tellam. 2010. An inexpensive flow-through laser nephelometer for the detection of colloids and manufactured nanoparticles. Journal of Hydrology, 388, 112-120.

M. O. Cuthbert, R. Mackay, J. H. Tellam and K. E. Thatcher. 2010. Combining unsaturated and saturated hydraulic observations to understand and estimate groundwater recharge through glacial till. Journal of Hydrology, 391, 263–276.

B. V. Furlong, M. S. Riley, A. W. Herbert, J. A. Ingram, R. Mackay, & J. H. Tellam. 2011. Using regional groundwater flow models for prediction of regional wellwater quality distributions. J. Hydrology, 398, 1-16.

K. Bashar, and J. H. Tellam. 2011. Sandstones of apparently unusually high diffusibility. J Contaminant Hydrology, 122, 40–52.

M. S. Riley, J. H. Tellam, R. B. Greswell, V. Durand, & M. F. Aller. 2011. Convergent tracer tests in multilayered aquifers: the importance of vertical flow. Water Resources Research, doi:10.1029/2010WR009838.