REPORTS AND PUBLICATIONS by David Banks.

Lectures and Teaching

* = lecture published in course/conference proceedings
** = abstract published in conference proceedings
# = speaker(s).

1990

1991
* Banks, D. 1991. Nasjonal registrering av spesialavfall i deponier og forurenset grunn [National registration of hazardous waste in landfills and contaminated ground - in Norwegian], NIF (Norwegian Engineers’ Organisation)-course "Miljøgeologi i praksis" ("Environmental geology in practice"), 8.1.91, Norwegian Technical University, Trondheim.


1992


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1995


Banks, D. 1995. Mineral and bottled waters - a British perspective. Forum on "Present and Expected Use of Natural Therapeutic Resources", Institute of Physical Medicine, Balneo-Climatology and Medical Rehabilitation, University of Bucharest, Romania, 7/9/95.


1996


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1998


1999


* Banks, D. & Frogstad, B. 1999. Diagnosis of incrustation and corrosion problems in groundwater wells using in-situ techniques. *International conference “Ecological, humanitarian and sporting aspects of underwater activity”*, Tomsk State University, Russia, 10th-11th September 1999 (written lecture only submitted).


2000


**Frengstad, B. # & Banks, D. 2000.** PHREEQC-modelling of groundwater evolution in Egersund anorthosites. Are high pH, high Na and low Ca concentrations the result of silicate weathering or cation exchange? 9th Seminar on Hydrogeology and Environmental Geochemistry, 9-10 February 2000, Trondheim, Norway.


2001


2002


2003


2004


2006


2007


2008


### 2009


### 2010

*Banks, D. & Sørensen, I. (2010).* Introduktion til Jordvarme [An Introduction to Ground Source Heating and Cooling]. VIA Technical University, Horsens, Denmark, 26th January 2010.


Banks, D.* (2010). Water Supply Utilities ...and their role in heat supply, transfer and disposal. Workshop “Use of Heat”, EPSRC network for the sustainable use of energy in water and wastewater treatment. 9th June 2010; Anglian Water, Peterborough, UK.

**Gerasimchuk, A., Butorova, O., Kozlova, A., Zabudchenko, O., Miller, A.A., Banks, D., Karnachuk, O. (2010).** Formation of copper sulfides by acidophilic Desulitosporosinus Sp. DB isolated from extremely acidic tailings of...


### 2011


**Dodds, J.T., Banks, D., Clarke, L. (2011).** The use of wet restored mineral workings for energy recovery. Institute of Quarrying, Annual Conference 2011, 11th October 2011, Kenilworth, Warwickshire, UK.


### 2012


**Banks, D. (2012).** Thermogeological energy: Heat source? Or thermal accumulator in distributed energy networks of 21st century cities? Arduino Lecture, University of Padua, Italy, 13th December 2012. [Abstract: The soils, rocks and groundwaters in the shallow subsurface have long been recognised as a potential source of space heating, via the use of the ground source heat pump to extract heat from the ground. The science of the occurrence and exploitation of shallow, low-enthalpy ground-source heat has been termed thermogeology and its fundamental concepts will be covered in this lecture. Increasingly, the value of the ground as a source of space-cooling, dehumidification and air-conditioning is also being emphasised. The most forward-thinking European nations recognise that the problem of “heat poverty” is somewhat illusory: most urban communities possess plenty of heat – indeed they contain many large commercial and industrial complexes who find it difficult to dispose of waste heat quickly enough in the summer. The problem that many cities face is that of “plenty of heat, but at the wrong time, and in the wrong place”. This lecture will argue that the huge volumetric heat capacity of the ground and groundwater allows significant quantities of surplus heat or “coolth” to be stored from seasons of plenty to seasons of deficit. Regions of surplus heat can also be linked to loci of heat deficit via district heating and cooling systems or, conceivably, by groundwater flow pathways. Rather than thinking of the ground as a straightforward “source” of environmentally friendly heat, we can now regard the ground as a huge heat storage unit: a thermogeological accumulator that can be coupled into urban district heating and cooling networks.]


2014


2015


2016


2017


2018