Gary Clarke

Doctoral Researcher

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About

Title of PhD: Understanding the influence of transient saline-freshwater interfaces on potential radiological contaminant coastal discharges

Supervisors: Mike Rivett (/staff/profiles/gees/rivett-michael.aspx) , Alan Herbert (/staff/profiles/gees/herbert-alan.aspx) , Nick Atherton (Sellafield Ltd)

Gary is undertaking doctoral research into transient saline-freshwater interfaces and the influence they exert on potential radiological contaminant coastal discharges. It is well known that the saline-freshwater interface is not a no-flow boundary and processes such as diffusion and mechanical mixing caused by tides and wave action can cause contaminants initially in the fresh groundwater to end up on the other (saline) side of this interface. The approach of the PhD project will primarily be modeling based with complimentary field and lab studies being undertaken where needed to calibrate the models. Applicable radiological contaminants of concern will be identified for the detailed modeling study. The project will be approached in the context of the Sellafield site, but is of generic value to nuclear site assessments both in the UK and worldwide.

Qualifications

BSc Geophysical Sciences (University of Southampton)
MSc Water and Environmental Management (Loughborough University)

Biography

Gary studied Geophysical Sciences at the University of Southampton from 2009-2012 and completed his dissertation on electrical resistivity anisotropy in marine sedimentary rocks. From 2012-2013 he studied Water and Environmental Management at Loughborough University and completed his research project on the applicability of EM34 conductivity surveying to distinguish between clays in the sub-surface in collaboration with the British Geological Survey.

Research

Research interests

- Hydrogeology of nuclear sites
- Radiological risk to public health and the environment
- Geophysical surveying
- Computational modelling

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