

Project 2 - Application of stable noble gas concentrations (SNG) and radioactive noble gas isotopes (RNGI) for the understanding of deep and shallow groundwater systems

Location: The project will be based at CSIRO's Waite Campus, Adelaide, SA

Required area of expertise/background: An Honours or MSc degree in Hydrology, Environmental Sciences/Engineering, or relevant fields with good understanding of groundwater modelling, geoscience, geology, chemistry, physics or mathematics is likely to be suitable. Experience with the use of environmental tracers to develop conceptual models of hydrogeological flow system would be advantageous.

Project: The role of the student will be to collaborate with the Environmental Tracers and Applications team in CSIRO to help carry on the first generation of demonstration projects for the new noble gas facilities. As these projects are among the first applications for the new facilities, they are anticipated to generate a significant impact in the form of scientific publications and in influencing policy for sustainable groundwater extraction limits, especially in remote areas where traditional data is sparse.

Specifically the student will:

- Assist with the preparation of field sampling campaigns in remote areas.
- Measurement of noble gas samples, preparation of samples for measurement of radioactive noble gas isotopes like ^{85}Kr , ^{39}Ar , ^{81}Kr

Interpretation of these in Australia highly novel tracer tools, using simple lumped parameter or more complex numerical groundwater models.

2017 RTP full time RTP Stipend Rates* (\$26,682). Approximate annual top-up amount: \$7,000

Principal Supervisor:

[Dr Ilka Wallis](#) – Flinders University

Co Supervisors:

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