# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Hydrogeologist/Hydrogeochemist |
| Job Reference | 93632 |
| Tenure | Specified Term of 3 years/Full time  Full-time, but Part-time will be considered |
| Salary Range | AU$105k - AU$114k per annum (pro-rata for part-time)  plus up to 15.4% superannuation |
| Location(s) | Kensington, WA |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * All Candidates |
| Position reports to the | Team Leader for Minerals and Water |
| Client Focus – Internal | 40% |
| Client Focus – External | 60% |
| Number of Direct Reports | 0 |
| Enquire about this job | Walid.salama@csiro.au |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply via **Jobs Central**  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**Child Safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

### Role Overview

The role of Research Scientist staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. The Research Scientist may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. The Research Scientist will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

CSIRO Mineral Resources (CMR) is one of the largest minerals research and development groups globally, with a proud track record in delivering innovation and solutions across the mineral resources value chain. We thrive on innovation harnessed by the diversity of the minds and lived experiences of our team and apply our expert knowledge and specialised research to provide innovation that solves the complex problems faced by minerals companies, mining equipment, technology, and services (METS) companies, government, and other industry stakeholders.

This role is aligned with the strategy of CSIRO Mineral Resources and the Discovery Program focusing the Sustainable Energy and Resources Challenge, particularly on securing mineral resources to enable Australia’s energy transition. The successful applicant will use hydrogeology and hydrogeochemistry to sense and identify different lithologies and mineralisation through deep cover. The focus of this role will be to develop methods and tools for mapping buried geology and mineral deposits by understanding their expression in groundwaters and define and understand the relationships between cover, basement (including depth to crystalline basement) and the regolith.

The primary aim for the researcher in this role will be to understand the relationships between basement (including basins where appropriate) and regolith through new knowledge of hydrogeology and hydrogeochemistry. This will include an improved understanding of element migration processes (physical and chemical) within current landscape environments and translation into element dispersion in palaeolandscapes.

The skill set required for the role is a combination of hydrogeology, hydrogeochemistry, regolith and geochemistry.

### Duties and Key Result Areas

* Work collaboratively as part of a multi-disciplinary, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s scientific objectives;
* Investigate architecture of aquifers within transported cover and in situ regolith for interpreting the physical and chemical signature of buried mineralisation within and beneath the cover sequences;
* Support and conduct innovative research in hydrogeological conceptualisation, statistical and geostatistical analyses for better understanding of groundwater processes, aquifers connectivity and groundwater-surface water exchanges
* Conduct experimental studies of the solid and aqueous geochemistry of selected major and trace elements of geological interest to deduce mechanisms responsible for their dispersion (solubilization, mobilization and precipitation) relevant to Australian weathering environments;
* Conduct local to district-scale geochemical orientation and dispersion studies focused on critical mineral deposits;
* Conduct field work in local and remote locations;
* Liaise with government agencies and industry to determine their needs and take personal responsibility for attaining a positive outcome;
* Under limited direction, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity, and innovation;
* Present results in a meaningful format adhering to FAIR (findable, accessible, interoperable, and reproducible) data principles, both digital and analogue, prepare reports for clients, author scientific papers for publication;
* Address problems promptly and in a constructive manner, selecting the most profitable lines of attack upon a problem, preparing detailed design proposals and experimental protocols;
* Undertake experimental and/or observational research activities, often requiring the supervision and/or training of others to ensure experiments are established in accordance with research design;
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new perspectives by pursuing innovative ideas/approaches and networking with scientific colleagues across a range of disciplines;
* Communicate openly, effectively, and respectfully with all staff, clients, and suppliers in the interests of good business practice, collaboration, and enhancement of CSIRO’s reputation;
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals;
* Recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas and approaches and network with scientific colleagues across a range of disciplines.
* Other duties as directed.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A PhD (or equivalent experience), preferably in hydrogeology/exploration geochemistry/hydrogeochemistry (or a related discipline), with experience and/or a keen interest in developing exploration methods for regolith-dominated terrains.
2. Excellent oral, written and presentation skills, with a track record commensurate of opportunity of publication of articles, preferably in international journals.
3. Groundwater modelling and analysis software proficiency (e.g. MODFLOW / Leapfrog / GIS – ARCGIS/QGIS)
4. Ability to work in multi-disciplinary research teams.
5. A willingness to travel to, and work in the field in Australia, and potentially overseas.
6. Ability to work under limited supervision and adapt to changing circumstances to prioritise and address problems in a constructive professional manner.
7. Demonstrated track record of initiative and communication within a team environment, both internally and externally, and formation and maintenance of effective working relationships with a range of colleagues and collaborators.

**Desirable Criteria:**

1. Experience with assessments of water quality (knowledge of or willing to learn hydrochemistry in relation to lithology or mineral exploration understanding).
2. Experience with undertaken hydrogeological assessments including data collection, interpretation of field data, site investigation planning and co-ordination, assisting with aquifer conceptualisation.
3. Understanding of the issues of quality control when outsourcing analyses
4. Experience with the application of the Geochemists Workbench software.
5. Geological assessment and the development of 2D and 3D groundwater models

## **Required Competencies**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others’ reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate responses by adapting/creating and testing alternative solutions.
* **Independence:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of change.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Mineral Resources](https://www.csiro.au/en/about/people/business-units/Mineral-Resources) if relevant for more information.

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted