



## **Daniel Wohling** B.Sc. M.Sc.

Senior Hydrogeologist

### **Overview**

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Daniel is a hydrogeologist with over 15 years experience working in South Australia, the Northern Territory and Western Australia. Daniel joined IGS in February 2017 after 15 years working for the South Australian Government where he was responsible for managing small to regional groundwater resource assessment projects, many of which involved remote or isolated field work.

Daniel's capabilities include characterisation of groundwater recharge and discharge, regional groundwater flow, aquifer connectivity (including classifying source water for groundwater dependent ecosystems) and groundwater resource capacity, and the development of water supply and irrigation design strategies. Daniel has technical expertise in aquifer pumping tests, hydrochemistry and environmental tracers, analytical groundwater modelling, and the design and implementation of groundwater monitoring networks. Daniel is highly organised and committed to regular communication to ensure timely delivery of practical outcomes that meet client expectations.

### **Qualifications**

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2011	M.Sc.	Flinders University, South Australia.  <i>Thesis: Application of a recharge and salinisation model using field chloride inventories in the Border Groundwaters Agreement Designated Area, South-East South Australia</i>
2001	B.Sc.	Flinders University, South Australia.

## Employment History

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### **February 2017 – present**

Senior Hydrogeologist: Innovative Groundwater Solutions Pty Ltd.

### **March 2016 – October 2016**

Acting Principal Hydrogeologist: South Australia Government – Department of Environment, Water and Natural Resources (DEWNR)

### **March 2014 – February 2017**

Sub-team leader, Groundwater Investigations: South Australia Government – DEWNR

### **February 2002 – February 2017**

Senior Hydrogeologist: South Australia Government – DEWNR

## Recent Major Projects

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### **Tanami Road Hydrogeological Assessment – Water Supply Strategy**

Oct. 2017 – ongoing, Australian Gas Infrastructure Tanami Pty Ltd

### **Locks Well Pastoral Pty Ltd Irrigation Development**

Oct. 2017 – ongoing, Locks Well Pastoral Pty Ltd.

### **Kimberley Asparagus H3 Hydrogeological Assessment**

Jun. 2017 – Dec. 2017, Kimberley Asparagus.

### **Shamrock Station Irrigation Project H3 Hydrogeological Assessment**

Mar. 2017 – Nov. 2017, Australian Standard Agriculture / Argyle Cattle Company.

### **Tanami Road – Scoping Study for Construction Water Supply**

Feb. 2017 – Jun. 2017, NT Department of Infrastructure, Planning and Logistics.

### **Goyder – Facilitating Long-term Outback Water Solutions: Stage 3 (G-FLOWS Stage 3)**

Sept. 2015 – Feb. 2017, Goyder Institute for Water Research.

### **Salinity Investigations and Groundwater Modelling: South Australian Riverland Floodplains Integrated Infrastructure Program (SARFIIP)**

Jan. 2015 – Mar. 2016, Murray-Darling Basin Commission.

### **Arckaringa Basin and Pedirka Basin Groundwater Assessment Project**

Jul. 2012 – Jun. 2015, Department of the Environment and Energy.

### **Allocating Water and Maintaining Springs in the Great Artesian Basin**

Jul. 2008 – Jun. 2012, National Water Commission.

## Minimising Salt Accession to the South East of South Australia and Groundwater Salinisation in the Naracoorte Range Portion of the Padthaway PWA

Sept. 2004 – Jun. 2008, SA Department of Environment, Water and Natural Resources.

## Publications

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### International Peer-Reviewed Journals

1. Priestley, Stacey C., Post, Vincent E. A., Shand, Paul, Love, Andrew J., Payne, Timothy E., Harrison, Jennifer J. and **Wohling, Daniel L.** (in preparation) Uranium geochemistry in the south-western margin of the Great Artesian Basin and Arckaringa Basin, central Australia
2. Priestley, Stacey C. Kleinig, Tavis, Love, Andrew J., Post, Vincent E. A., Shand, Paul, Stute, Martin, Wallis, Ilka and **Wohling, Daniel L.** (2017) Palaeohydrogeology and transport parameters derived from  $4\text{He}$  and  $\text{Cl}$  profiles in aquitard pore waters in a large multilayer aquifer system, central Australia. *Geofluids*, vol. 2017, Article ID 9839861, doi:10.1155/2017/9839861.
3. Priestley, Stacey C., **Wohling, Daniel L.**, Keppel, Mark N., Post, Vincent E. A., Love, Andrew J., Shand, Paul, Tyroller, Lina, and Kipfer, Rolf. 2017. Detecting inter-aquifer leakage in areas with limited data using hydraulics and multiple environmental tracers, including  $4\text{He}$ ,  $36\text{Cl}/\text{Cl}$ ,  $14\text{C}$  and  $87\text{Sr}/86\text{Sr}$ , *Hydrogeology Journal*, doi: 10.1007/s10040-017-1609-x
4. **Wohling, D.L.**, Leaney, F.W. and Crosbie, R.S., 2012. Deep drainage estimates using multiple linear regression with percent clay content and rainfall. *Hydrol. Earth Syst. Sci.*, 16, 563-572.
5. **Wohling, D.L.**, Leaney, F.W. and Crosbie, R.S., 2011. Improving confidence in deep drainage estimates, for arid and semi-arid areas using multiple linear regression with percent clay content and rainfall. *Hydrol. Earth Syst. Sci. Discuss.*, 8, 4535-4557.

### Client and Technical Reports

6. Innovative Groundwater Solutions (2017). Skuthorpe Irrigation Development: Stage 1 H3 Hydrogeological Assessment. A final report prepared for Kimberley Asparagus by Innovative Groundwater Solutions.
7. Innovative Groundwater Solutions Pty Ltd. (2017). Shamrock Station Irrigation Development: Stage 1 Hydrogeological Assessment. A report prepared for Argyle Cattle Company.
8. **Wohling, D.** and Fulton, S. (2017). Tanami Road Hydrogeological Assessment & Water Supply Strategy. A final report prepared for the Department of Infrastructure, Planning and Logistics, Northern Territory by Innovative Groundwater Solutions.
9. Keppel M, Gotch T, Inverarity K, Niejalke D and **Wohling D**, 2016, A hydrogeological and ecological characterisation of springs near Lake Blanche, Lake Eyre Basin, South Australia, DEWNR Technical report 2016/03, Government of South Australia, through the Department of Environment, Water and Natural Resources, Adelaide
10. Schneider I., Costar A. and **Wohling D.**, 2015, SARFIIP SMM Investigations: Groundwater monitoring on Pike Floodplain and Katarapko Floodplain 2015, DEWNR Technical note 2015/27, Government of South Australia, through the Department of Environment, Water and Natural Resources, Adelaide

11. Keppel, M., Inverarity, K. and **Wohling, D.**, L. 2015, A hydrogeological characterisation of springs in the Neales River catchment and Lake Cadibarrawirracanna regions, Lake Eyre Basin, South Australia, DEWNR Technical report 2015/13, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide
12. Kleinig T, Priestley S, **Wohling D** and Robinson N, 2015, Arckaringa Basin aquifer connectivity, DEWNR Technical report 2015/14, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide
13. Keppel M, **Wohling D**, Jensen-Schmidt B and Sampson L, 2014, *A hydrogeological characterisation of the Arckaringa Basin*, DEWNR Technical report 2014/03, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide
14. Fulton S, **Wohling D** and Keppel M, 2015, *Pedirka Basin Aquifer Connectivity Investigation*, DEWNR Technical Report 2014/08, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide
15. Hancock M, Fulton S and **Wohling D**, 2015, *Pedirka Basin–Finke River recharge study*, DEWNR Technical report 2015/06, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide.
16. Sampson L, **Wohling D**, Fulton S, Jensen-Schmidt B and Keppel M, 2014, *South Australia Arckaringa Basin Hydrogeological Map – Part 1 & Part 2*. Department of Environment, Water and Natural Resources, South Australian Government.
17. Sampson L, **Wohling D**, Fulton S, Jensen-Schmidt B and Keppel M, 2014, *South Australia and Northern Territory Pedirka Basin Hydrogeological Map – Part 1 & Part 2*. Department of Environment, Water and Natural Resources, South Australian Government.
18. **Wohling, D.**, Keppel, M., Fulton, S., Costar, A., Sampson, L. and Berens, V. 2013, *Australian Government Initiative on Coal Seam Gas and Large Coal Mining – Arckaringa Basin and Pedirka Basin Groundwater Assessment Projects*, DEWNR Technical Report 2013/11, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide
19. **Wohling, D.**, Fulton, S., Love, A. and Scanlon, B., 2013. Diffuse recharge. In *Groundwater Recharge, Hydrodynamics and Hydrochemistry of the Western Great Artesian Basin in South Australia and the Northern Territory* (Eds. Love A, Wohling D, Fulton S, Rousseau-Gueutin P, De Ritter S).
20. Fulton, S., **Wohling, D.**, Love, A. and Berens, V., 2013. Ephemeral river recharge. In *Groundwater Recharge, Hydrodynamics and Hydrochemistry of the Western Great Artesian Basin in South Australia and the Northern Territory* (Eds. Love A, Wohling D, Fulton S, Rousseau-Gueutin P and De Ritter S).
21. **Wohling, D.**, Fulton, S., Love, A., Dailey, M., Hallihan, T., Berens, V., Purtschert, R. and Shand, P., 2013. Mountain system recharge. In *Groundwater Recharge, Hydrodynamics and Hydrochemistry of the Western Great Artesian Basin in South Australia and the Northern Territory* (Eds. Love A, Wohling D, Fulton S, Rousseau-Gueutin P and De Ritter S).
22. Keppel, M., **Wohling, D.**, Fulton, S., Sampson, L., Karlstrom, K. and Love, A., 2013. Summary of hydrogeology and hydrostratigraphy. In *Hydrogeological Framework of the Western Great Artesian Basin in South Australia and the Northern Territory* (Eds. Keppel M, Karlstrom K, Love A, Priestley S, Wohling D and De Ritter S).
23. Sampson, L., **Wohling, D.**, Jensen-Schmidt, B. and Fulton, S. 2012. *South Australia and Northern Territory Great Artesian (Eromanga Basin) Hydrogeological Map – Part 1*. Department of Environment, Water and Natural Resources, South Australian Government.

24. Sampson, L., **Wohling, D.**, Jensen-Schmidt, B. and Fulton, S. 2012. South Australia and Northern Territory Great Artesian (Eromanga Basin) Hydrogeological Map – Part 2. Department of Environment, Water and Natural Resources, South Australian Government.
25. **Wohling, D.**, 2011. Application of a recharge and salinisation model using field chloride inventories in the Border Groundwaters Agreement Designated Area, South-East South Australia. *Submitted as a requirement in full for the degree of Master of Science in the School of the Environment, Faculty of Science and Engineering, Flinders University.*
26. Crosbie, R. S., Jolly, I. D., Leaney, F. W., Petheram, C., and **Wohling, D.**, 2010. Review of Australian groundwater recharge studies, CSIRO Water for a Healthy Country National Research Flagship, Canberra.  
<http://www.clw.csiro.au/publications/waterforahealthycountry/2010/wfhc-review-Australian-recharge.pdf>
27. **Wohling, D.**, 2008. Padthaway Groundwater Flow and Solute Transport Model (PADMOD2), New Abstraction Scenarios Requested by the SENRM Board. DWLBC Technical Note 2008/22. Government of South Australia, through Department of Water, Land and Biodiversity Conservation, Adelaide.
28. **Wohling, D.**, 2007. Minimising Salt Accession to the South East of South Australia. The Border Designated Area and Hundred of Stirling Salt Accession Projects. Volume 2 – Analytical Techniques, Results and Management Implications. DWLBC Report 2008/23. Government of South Australia, through Department of Water, Land and Biodiversity Conservation, Adelaide.
29. **Wohling, D.**, 2006. Minimising Salt Accession to the South East of South Australia. The Border Designated Area and Hundred of Stirling Salt Accession Projects. Volume 1 – Methods, Site Description and Instrumentation. DWLBC Report 2006/19. Government of South Australia, through Department of Water, Land and Biodiversity Conservation, Adelaide.
30. **Wohling, D.**, Leaney, F., Davies, P. and Harrington, N., 2005. Groundwater Salinisation in the Naracoorte Ranges Portion of the Padthaway Prescribed Wells Area. South Australia. Department of Water, Land and Biodiversity Conservation. DWLBC Report, 2005/27.
31. Harrington, G.A., James-Smith, J.M., **Wohling, D.** and van den Akker, J., 2004. Hydrogeological investigation of the Mount Lofty Ranges, progress report 5, Drilling Phases 2.1 to 2.3: research and monitoring wells at Scott Creek, Balhannah, Willunga Fault, Lobethal, Eden Valley and Ashbourne. South Australia. Department of Water, Land and Biodiversity Conservation. DWLBC Report 2004/04.
32. Zulfic, H. and **Wohling, D.**, 2004. Northern Adelaide Plains Prescribed Wells Area Groundwater Monitoring Status Report 2003. South Australia. Department of Water, Land and Biodiversity Conservation. DWLBC Report 2004/41.
33. **Wohling, D.**, 2003. Groundwater (Border Agreement) Act March 2002 Full Chemical Analysis Sampling Program. South Australia. Department of Water, Land and Biodiversity Conservation. Report, DWLBC 2003/11.