Daniel Gilbert

Project Engineer | Water engineering

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Daniel is a Project Engineer at the Water Research Laboratory. He has 3 years of experience in the water space, working on problems relating to water quality, hydrology, hydraulics and groundwater resources. He completed a degree of Civil Engineering at UNSW, with a focus towards aspects of water engineering including water quality, hydrology and groundwater. As a part of his studies, he completed an honours thesis performing an assessment of emerging PFAS present in landfill leachate, building upon previous work he completed as a research assistant at UNSW.

Daniel has since gained experience working on a wide range of projects, solving complex water-related problems by utilising his understanding of coastal wetland hydrodynamics and fundamental hydraulic processes in the laboratory and field. Daniel has particular expertise in the numerical modelling of estuarine hydrodynamics and water quality processes. He is proficient with a broad spectrum of laboratory and field instruments, as well as numerical modelling techniques.

Qualifications and affiliations

BE Hons (Civil Engineering, first class), UNSW, 2022

Professional history

November 2020 - December 2021:	Research Student and Research Assistant, UNSW
December 2021 - August 2022:	Student Engineer, Aurecon
September 2022 - Current:	Project Engineer, UNSW WRL

Expertise

- Numerical modelling of estuarine hydrodynamics and water quality processes
- Conceptual understanding of environmental systems
- Water quality data analysis
- Environmental sampling and analysis

- Groundwater resources
- Physical hydraulic and coastal modelling
- Hydrodynamic numerical modelling
- Wastewater networks

Summary of relevant experience

Environmental engineering

2021: Global PFAS contamination study
2022: Landfill leachate PFAS assessment
2022: Groundwater resource assessment
2023: Muddy Lake hydrological assessment2023: Coastal floodplain prioritisation study
2023: Review on the use of injection grouting as a hydraulic barrier to prevent groundwater inflows
2023: Assessment of DO in Manly Lagoon
2024: Turf growers flood impact study

Numerical modelling

2023: Everlasting Swamp hydrodynamic modelling
2023: Seaham Weir Pool water quality model scoping study
2023: Hunter River estuary water quality – Baiada trade waste discharge
2023: Hunter River estuary water quality – Hunter Water WWTW discharge scenarios
2024: Hunter River estuary saline dynamics – Lostock to Glennies pipeline

Physical modelling

2022: Somerset Dam physical hydraulic modelling

2023: Port of Townsville Eastern Breakwater physical coastal modelling

2023: Kyowa rock bag riverine physical hydraulic modelling

2024: Injection grouting of fractured rock systems

Wastewater

2022: Wastewater treatment plant aeration modelling

2022: Wastewater odour modelling

2022: Wet weather overflow modelling and abatement

Computing skills

GIS: QGis, ArcGIS, Mapinfo

Programming: Excel, MATLAB, Python

Numerical modelling: MIKE, RMA

Other: Civil3D