

Fairlie Ultrafiltration Plant Upgrade

Canterbury, New Zealand

FILTEC

Making Water Safer

Project Snapshot



Client: Mackenzie District Council



Capacity: 26 L/s (2,300 m³/day)



Technology: Toray Ultrafiltration, Coagulation, Chlorination, Control Systems



Source Water: Spring Water



Completion: 2024

Project Outcomes

- ✓ Certified 4-log protozoa removal under DWSNZ
- ✓ Reliable compliance during high turbidity events
- ✓ Fully integrated mechanical, electrical and civil delivery
- ✓ Two 1,000 m³ IL4-rated reservoirs
- ✓ Expansion-ready to 4,100 m³/day

End-to-End Ultrafiltration Upgrade and Infrastructure Delivery

Rainfall-driven turbidity spikes reduced the reliability of chlorination as a standalone treatment barrier, creating compliance risk under the Drinking Water Standards for New Zealand (DWSNZ).

FILTEC designed and delivered a new ultrafiltration membrane-based treatment plant incorporating Toray ultrafiltration membranes as the primary barrier, supported by upgraded coagulation and chemical dosing systems, secondary chlorination infrastructure, and modern instrumentation and control.

The scope included installation of the ultrafiltration membrane system, construction of two 1,000 m³ IL4-rated steel reservoirs, treatment ponds and interconnecting pipelines, and full mechanical, electrical, civil and process integration. Mechanical assemblies were prefabricated in FILTEC's Auckland workshop to enhance quality control and reduce onsite installation time.

Comprehensive commissioning verified membrane integrity, dosing calibration and treated water performance. Operator training was provided, with ongoing service and technical support delivered by FILTEC's South Island-based service team.

