Mapiu-Mapara – Quarterly River Monitoring – November

Sample Collection Day: 12th November 2025

*Water quality was **Fair** across all sites – Mapara stream (Site 15), Mangaiti stream (Site 19), Mapiu stream (Site 20) and Puputaha stream (Site 26).*

E. coli concentrations were high to very high across all sites (610 – 2,200 cells per 100 mL), exceeding health guidelines for swimming (540 cells per 100 mL).

Nitrogen: Nitrate concentrations were low across all sites (0.30 – 0.43 mg/L), falling well below the ecological toxicity levels (2.4 mg/L). **Ammonia** concentrations were low across three sites (≤ 0.013 mg/L) and slightly elevated in Mangaiti stream (0.038 mg/L). **Dissolved inorganic nitrogen (DIN)** was low across all sites (0.31 – 0.45 mg/L), falling below the ecological impact threshold (0.5 mg/L).

Phosphorus: Dissolved reactive phosphorus (DRP) concentrations were very low across all sites (≤ 0.009 mg/L).

Suspended sediment: Water clarity was *Poor* across all sites (0.18 – 0.74 m), relative to the national bottom line (1.34 m).

The results in the table below have been graded according to the National Policy Statement for Freshwater Management (NPS-FM, 2020).

Mapiu-Mapara	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
Sample Dates: 12-Nov-25 Lab: Analytica	E. coli/100 ml	Nitrates Toxicity (mg N/L)	Ammonia Toxicity (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L)[2]	Dissolved Reactive Phosphorus (mg/L)	Water Clarity (m)[1]	National Bottom Line
15-Mapara Stm	**1800**	0.33	0.006	0.34	0.008	0.18	1.34
19-Mangaiti Stm	**2200**	0.31	0.038	0.35	0.005	0.43	1.34
20-Mapiu Stm	610	0.30	0.008	0.31	0.005	0.74	1.34
26-Puputaha Stream	**1600**	0.43	0.013	0.45	0.009	0.50	1.34

Attribute Band	
A	Ecosystem Health
B	
C	
D	
E	Human Contact only

[1]Water clarity has been converted from measured turbidity using the formular ln(CLAR) = 1.21 – 0.72 ln(TURB) (Franklin, Booker & Stoffels, 2020).

[2]Guideline values to assess ecological impacts of nitrogen on freshwater life. Attribute band limits are from the NPS-FM consultation draft (2019)

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

Mokau River – Summary of water quality collected from 15 sites across the Mokau River catchment on 12th November 2025

Water quality was Fair across the Mokau River Catchment. While most sites had low to moderate levels of nitrogen and phosphorus, 73% of all sites had poor water clarity and 60% had elevated E. coli concentrations. The sites with the best water quality in the Mokau River catchment were Whareroa stream, Ramaroa stream, and Waitanguru stream.

E. coli (Microbial Contamination):

- Three sites (20%) had low concentrations (≤ 190 cells per 100 mL), a low risk for swimming.
- Two sites had very low concentrations (< 100), considered safe for livestock drinking water[1].
- Another three sites (20%) had slightly elevated concentrations (350 - 400 cells per 100 mL)
- Just under two thirds of sites (60%) had very high concentrations (610 – 2,200), which exceeded recommended levels for swimming.

Nitrogen

Nitrate:

- Two thirds of sites (67%) had low concentrations (≤ 0.48 mg/L) and a third of sites exceeded this ecological impact threshold (> 0.5 mg/L), which may affect stream health.
- All sites fell well below ecological toxicity thresholds (2.4 mg/L) for native fish and invertebrates.

Ammonia:

- Most sites had low concentrations (<0.005 - 0.03 mg/L), of little concern for aquatic life.
- Two sites had slightly elevated concentrations (> 0.03 mg/L), which can impact sensitive aquatic species.

Dissolved Inorganic Nitrogen (DIN):

- Two thirds of sites (67%) had low concentrations (≤ 0.50 mg/L).
- The other third had slightly elevated concentrations (0.53 – 0.77 mg/L), exceeding the ecological impact threshold of 0.5 mg/L.

Phosphorus

Dissolved Reactive Phosphorus (DRP):

- Two thirds of sites (67%) had low concentrations (0.003 - 0.01 mg/L).
- The other third of sites had slightly elevated concentrations (0.011 – 0.013 mg/L), which can contribute to problematic plant and algae growth if levels stay high.

Suspended Sediment / Water Clarity:

- Three sites (20%) had *Excellent* water clarity (A band).
- One site had *Fair* water clarity (C band).
- Nearly three quarters of all sites (73%) had *Poor* water clarity (D band).

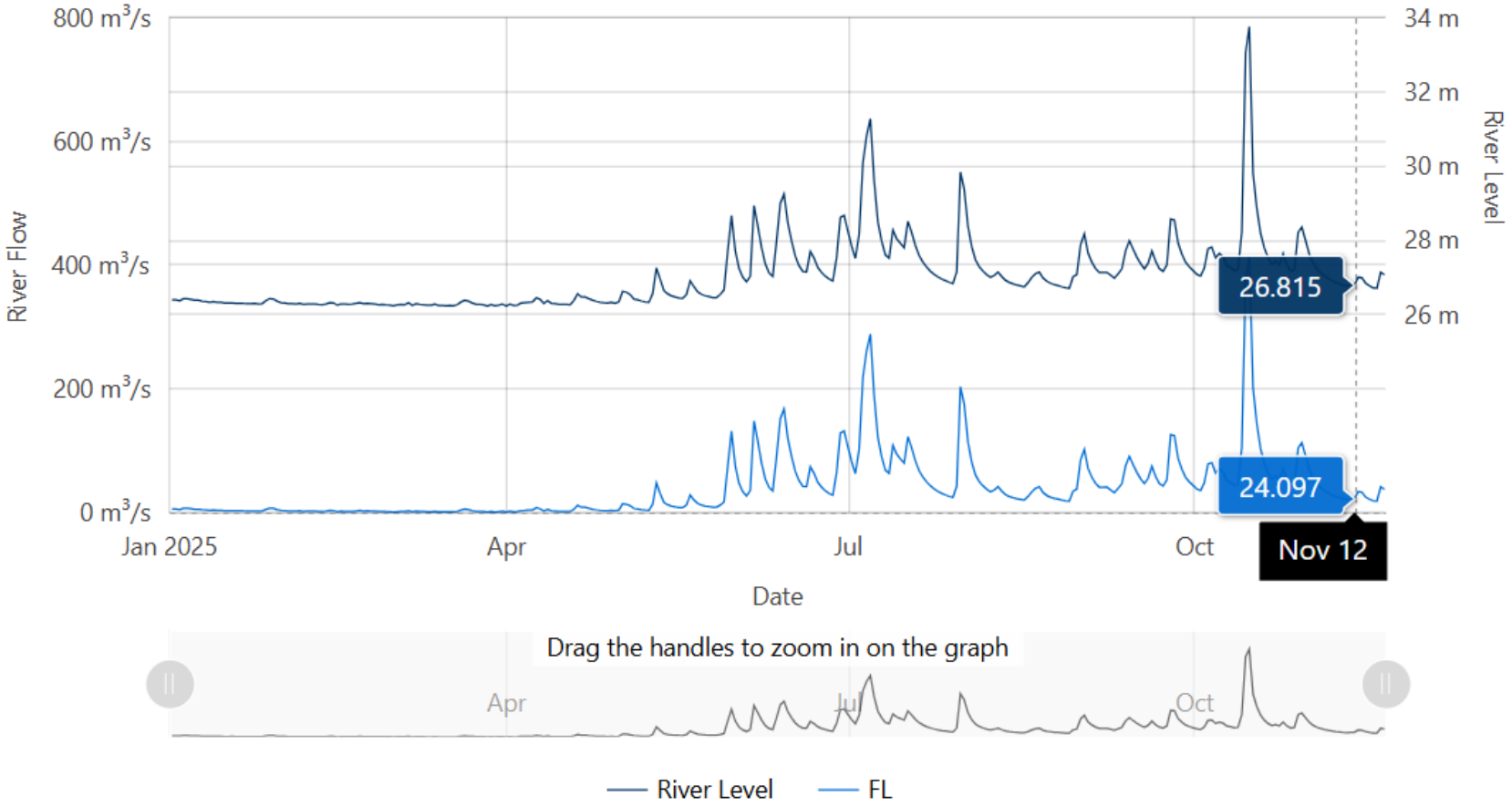
Water clarity bands for each site are based on the National Bottom Line (NBL), which varies depending on local landscape characteristics (e.g. geology, climate, and elevation). For Mokau River sites, the NBL is either 1.34 m or 0.61 m, depending on location.

[1] Drinking water for livestock should contain < 100 cfu/100 mL (median value) of E. coli. Livestock Drinking Water Guidelines (2023), Australian & New Zealand Guidelines for Fresh & Marine Water Quality.

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

River Level and Flow Rate – Mokau River, Totoro Road

The below chart presents continuous data collected by the Waikato Regional Council for Mokau River between 1st January and 20th November 2025. River Level and Flow Rate on the day of sampling (12-November) are highlighted.



Data source: Waikato Regional Council envirohub website for environmental data.

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