Upper Mangaokewa – Quarterly River Monitoring May

Sample Collection Day: 15th May 2025

*Water quality was **Fair** in Waiteti stream-viaduct (Site 6) and Waiteti stream-upper (Site 46), and **Poor** in Mangaokewa stream-viaduct (Site 4), Mangawhauwhi stream (Site 5).*

E. coli concentrations were low in Waiteti stream-upper (150 cells per 100 mL), slightly elevated in Mangaokewa stream (370 cells per 100 mL) and elevated in Mangawhauwhi stream (550 cells per 100 mL) and Waiteti stream-viaduct (650 cells per 100 mL), exceeding recommended health guidelines for swimming (540 cells per 100 mL).

Nitrogen: Nitrate concentrations were low in Waiteti stream (≤ 0.38 mg/L) and moderate in Mangaokewa stream (0.52 mg/L), falling well below ecological toxicity levels (2.4 mg/L) and Waikato Plan Change One targets (0.525 mg/L). Concentrations were moderate in Mangawhauwhi stream (0.76 mg/L) exceeding Waikato, Plan Change One targets (0.525 mg/L). **Ammonia** concentrations were low in all sites (≤ 0.02 mg/L), posing a low risk to aquatic life. However, all sites exceeded Plan Change One targets (0.005 mg/L). **Dissolved inorganic nitrogen (DIN)** was low in Waiteti stream (≤ 0.38 mg/L), and slightly elevated in Mangaokewa stream (0.52 mg/L) and Mangawhauwhi stream (0.76 mg/L), exceeding the ecological impact threshold (0.5 mg/L).

Phosphorus: Dissolved reactive phosphorus (DRP) concentrations were low in Waiteti stream-viaduct (0.009 mg/L) and Mangawhauwhi stream (0.01 mg/L), slightly elevated in Mangaokewa stream-viaduct (0.017 mg/L) and Waiteti stream-upper (0.013 mg/L).

Suspended sediment/Water Clarity: Water clarity was *Excellent* in Mangawhauwhi stream (2.20 m), *Good* in Mangawkewa stream (1.69 m) and Waiteti stream-vaiduct (1.60 m) and *Fair* in Waiteti stream-upper (1.52 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) and Waikato Plan Change One (PC1, 2020), using the strictest applicable measure.

Upper Mangaokewa[1] Sample Dates: 15-May-25 Lab: Analytica	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
	E. coli/100 ml	Nitrates (mg N/L)	Ammonia (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L)[3]	Dissolved Reactive Phosphorus (mg/L)	Water Clarity (m)[2]	National Bottom Line
4-Mangaokewa Stm (viaduct)	370	0.52	0.008	0.52	0.017	1.69	1.34
5-Mangawhauwhi Stm 071	550	0.76	0.02	0.76	0.010	2.20	1.34
6-Waiteti Stm (viaduct)	650	0.38	0.02	0.38	0.009	1.60	1.34
46-Waiteti stream (Upper)	150	0.23	0.007	0.23	0.013	1.52	1.34

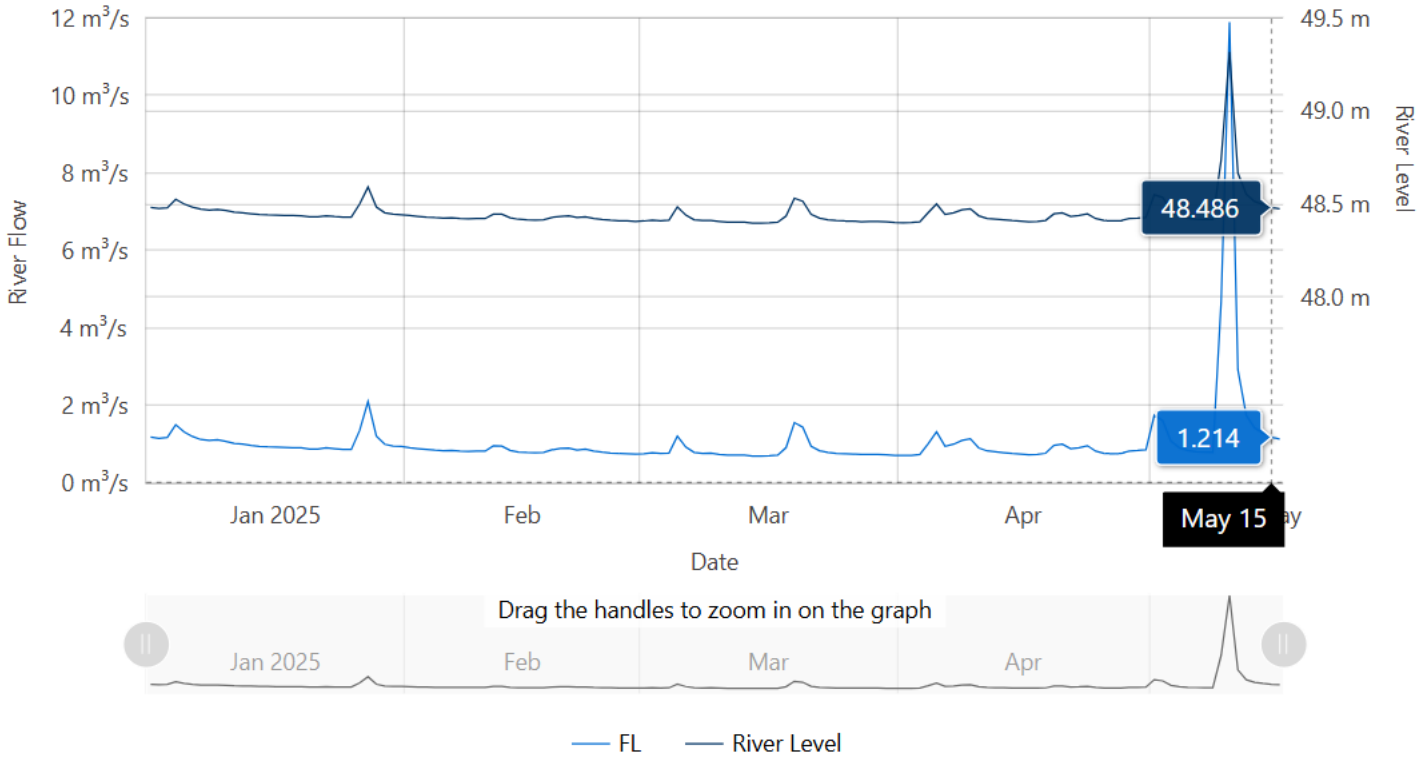
[1]Assessed against Short-term PC1 targets & NPS-FM National Bottom Lines - where the most stringent measures apply.
[2]Water clarity has been converted from measured turbidity using the formular ln(CLAR) = 1.21 – 0.72 ln(TURB) (Franklin, Booker & Stoffels, 2020).
[3]Guideline values to assess ecological impacts of nitrogen on freshwater life. Attribute band limits are from the NPS-FM consultation draft (2019)

Attribute	
A	Ecosystem Health
B	
C	
D	
E	Human Contact only

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

River Level and Flow Rate – Mangaokewa Stream, Te Kuiti

The below chart presents continuous data collected by the Waikato Regional Council for Mangaokewa between 1st January and 16th May 2025. River Level and Flow Rate on the day of sampling (15-May) are highlighted.



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

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