Mokauiti-Aria – Quarterly River Monitoring February

Sample Collection Day: 18th February 2025

*Water quality was **Good** in Mokauiti stream (Site 28), **Fair** in Huioteko stream (Site 22) and Whareroa stream (Site 23) and **Poor** in Ramaroa stream (Site 27).*

E. coli concentrations were very low in Mokauiti stream (17 cells per 100 mL) and slightly elevated in Whareroa stream (410 cells per 100 mL) but fell within recommended health guidelines. *E. coli* was very high in Ramaroa stream (1,300 cells per 100 mL) and elevated in Huioteko stream (780 cells per 100 mL), both sites exceeded recommended health guidelines for swimming (540 cells per 100 mL).

Nitrogen: Nitrate concentrations were low in all sites (≤ 0.16 mg/L), falling well below ecological toxicity levels (2.4 mg/L). Ramaroa stream and Mokauiti stream had the lowest concentrations (0.01 mg/L) and Whareroa stream had the highest concentrations (0.16 mg/L). **Ammonia** concentrations were low in Ramaroa stream and Mokauiti stream (≤ 0.02 mg/L) and were slightly elevated in Huioteke stream (0.20 mg/L) and Whareroa stream (0.12 mg/L). **Dissolved inorganic nitrogen (DIN)** was also low across all sites (≤ 0.29 mg/L), falling well below the ecological impact threshold (0.5 mg/L).

Phosphorus: Dissolved reactive phosphorus (DRP) concentrations were low in Whareroa stream and Mokauiti stream (≤ 0.004 mg/L). Huioteko stream had slightly elevated DRP concentrations (0.012 mg/L) and Ramaroa stream had very high concentrations (0.024 mg/L).

Suspended sediment/Water Clarity: Water clarity was excellent in Ramaroa stream (1.42 m) but was poor in the other three sites (≤ 1.02 m), relative to the national bottom line (1.34 m for Mokauiti stream and 0.61 m for all other sites). Huioteko stream had the lowest water clarity (0.12 m).

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

Mokauiti-Aria	Human Contact	Ecosystem Health					
		Water Quality				Sediment	
Sample Date: 18-Feb-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
22-Huioteko Stm-248	780	0.09	0.200	0.29	0.012	0.12	0.61
23-Whareroa Stm-231	410	0.16	0.120	0.28	<0.002	0.29	0.61
27-Ramaroa stream	1,300	0.01	<0.005	0.01	0.024	1.42	0.61
28-Mokauiti stream	17	0.01	0.020	0.03	0.004	1.02	1.34

[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)

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

Prepared by Freshwater Ecologist Merrin Whatley (PhD)

Mokau River – *Summary of water quality collected from 15 sites across the Mokau River catchment on 18th February 2025*

Most sites had low nutrient levels, but elevated E. coli and poor water clarity were common, with a few locations exceeding human health and ecological health thresholds.

E. coli: 60% of sites had elevated concentrations (between 890 and 3,100 cells per 100 mL), 20% (3 sites) had slightly elevated concentrations (between 300 and 500), and 20% had low concentrations (≤ 170).

Nitrogen: Nitrate: 100% of sites had low concentrations (range = 0.001 to 0.56 mg/L). **Ammonia:** 100% of sites were low to moderate (range = <0.005 to 0.200 mg/L). **Dissolved Inorganic Nitrogen (DIN):** 93% of sites had low concentrations (≤ 0.50 mg/L), and 7% (1 site) was slightly elevated (0.58 mg/L), exceeding the ecological impact threshold of 0.5 mg/L.

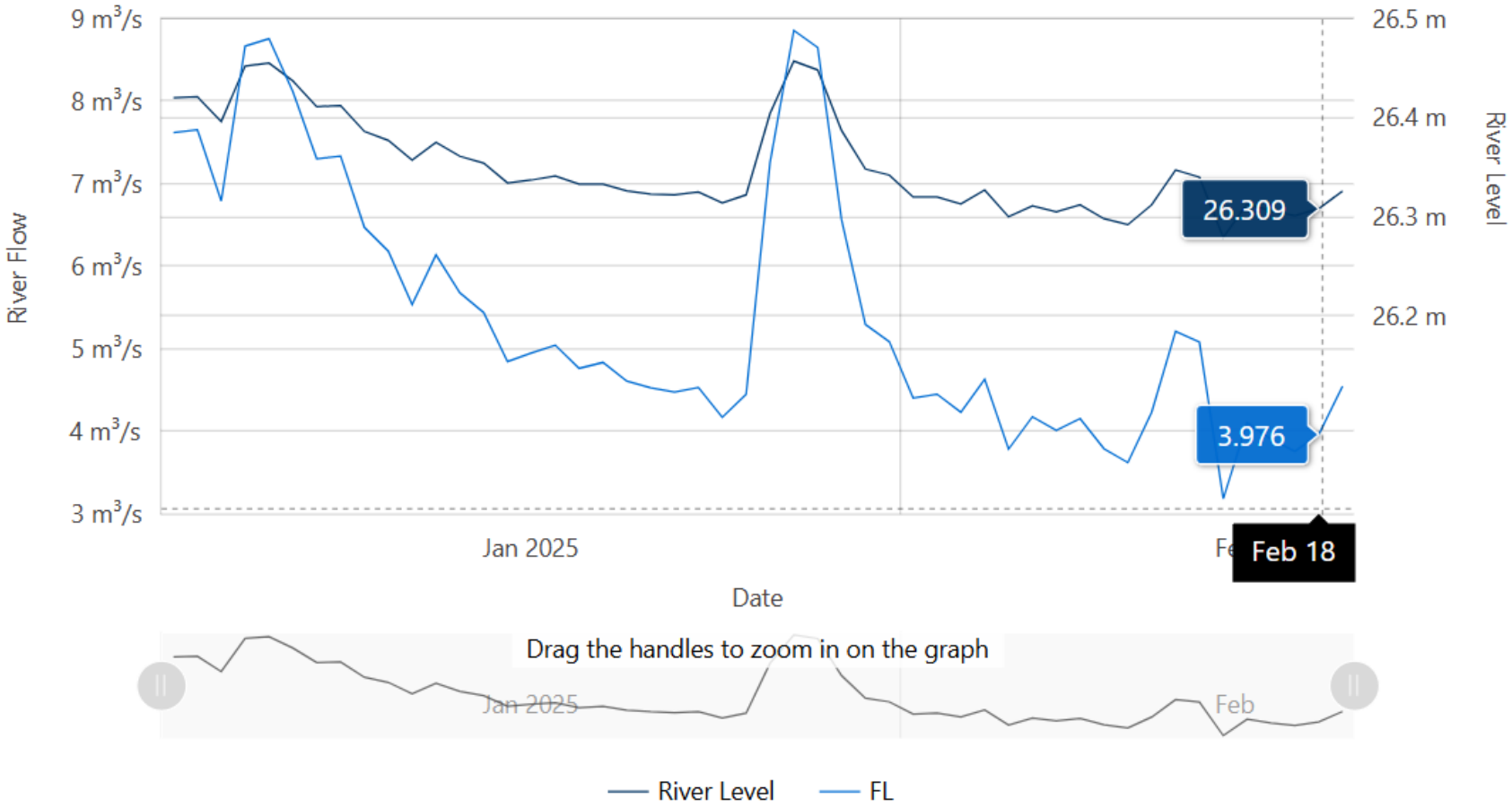
Phosphorus: Dissolved Reactive Phosphorus (DRP): 80% of sites had low concentrations (between <0.002 and 0.009 mg/L), 13% (2 sites) were slightly elevated (0.011 – 0.012 mg/L), and 7% (1 site) returned a very high concentration (0.024 mg/L).

Suspended Sediment / Water Clarity: 47% of sites had good water clarity (A or B band), 7% (1 site) had fair water clarity (C band), and the remaining 47% had poor water clarity (D band). Bands for each site relate to the National Bottom Line (NBL) for water clarity and depend on landscape characteristics including geology, climate, and elevation. The NBL for Mokau River monitoring sites is either 1.34 m or 0.61 m, depending on local landscape characteristics.

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 19th February 2025. River Level and Flow Rate on the day of sampling (18-Feb) are highlighted.



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

Prepared by Freshwater Ecologist Merrin Whatley (PhD)