Kawhia – Quarterly River Monitoring May

Sample Collection Day: 15th May 2025

North Kawhia

*Water quality was **Good** in the Mangapapa stream (Site 32), and **Fair** in Te Kauri stream (Site 33), Awaroa river (Site 34) and Oparau river (Site 31).*

E. coli concentrations were very low across all sites (≤ 130 cells per 100 mL). All sites fell within health guidelines for swimming (540 cells per 100 mL), and Oparau river and Awaroa river met guidelines for livestock drinking water (< 100 cells per 100 mL).

Nitrogen: Nitrate concentrations were low in Oparau river and Awaroa river (≤ 0.36 mg/L), and moderate in Te Kauri stream (0.57 mg/L) and Mangapapa stream (0.61 mg/L). All sites fell well below ecological toxicity levels (2.4 mg/L). Oparau river had the lowest nitrate concentration (0.30 mg/L) and Mangapapa stream had the highest concentration (0.61 mg/L). **Ammonia** concentrations were low across all sites (< 0.01 mg/L). **Dissolved inorganic nitrogen (DIN)** was low in Oparau river and Awaroa river (≤ 0.36 mg/L) and slightly elevated in Mangapapa stream and Te Kauri stream, exceeding the ecological impact threshold (0.5 mg/L).

Phosphorus: Dissolved reactive phosphorus (DRP) concentrations were low in three sites (≤ 0.009 mg/L) and elevated in Awaroa river (0.022 mg/L).

Suspended sediment/Water Clarity: Water clarity was *Good* in Mangapapa stream (1.60 m) and *Poor* in the other three sites (≤ 1.31 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).

North Kawhia Date: 15-May-25 Lab: Analytica	Human Contact	Ecosystem Health					
		Water Quality					
						Sediment	
	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
31-Oparau R.	52	0.30	<0.005	0.30	0.007	1.07	1.34
32-Mangapapa Str	130	0.61	0.01	0.62	0.004	1.60	1.34
33-Te Kauri Str	110	0.57	0.005	0.58	0.009	0.56	1.34
34-Awaroa R.	84	0.36	<0.005	0.36	0.022	1.31	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)

South Kawhia

*Water quality was **Good** in Oteke stream (Site 37), **Fair** in Ngahuinga stream (Site 35) and Puaroa stream (Site 36) and **Poor** in Mangatangi stream (Site 38).*

E. coli was very low in Oteke stream (47 cells per 100 mL), slightly elevated in Ngahuinga stream and Puaroa stream and elevated in Mangatangi stream (630 cells per 100 mL), exceeded the recommended health guidelines for swimming (540 cells per 100 mL). All other sites fell within health guidelines for swimming (540 cells per 100 mL) and Oteke stream met guidelines for livestock drinking water (< 100 cells per 100 mL).

Nitrogen: Nitrate concentrations were low across three sites (≤ 0.38 mg/L) and moderate in Mangatangi stream (0.59 mg/L). All sites fell well below ecological toxicity threshold (2.4 mg/L). **Ammonia** concentrations were low across all sites (≤ 0.01 mg/L). **Dissolved inorganic nitrogen (DIN)** concentrations were low in three sites (≤ 0.39 mg/L) and slightly elevated in Mangatangi stream (0.60 mg/L), exceeding ecological impact threshold 0.5 mg/L.

Phosphorus: Dissolved reactive phosphorus concentrations were slightly elevated in three sites (0.012 - 0.016 mg/L) and very high in Mangatangi stream (0.082 mg/L).

Suspended sediment/Water Clarity: Water clarity was *Excellent* across all sites (≥ 1 m), relative to the national bottom line (0.61 m).

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

South Kawhia Date: 15-May-25 Lab: Analytica	Human Contact	Ecosystem Health					
		Water Quality					
		Nitrates Toxicity (mg N/L)	Ammonia Toxicity (mg N/L)	Dissolved Inorganic Nitrogen (mg N/L)[2]	Dissolved Reactive Phosphorus (mg/L)	Sediment	
	E. coli/100 ml					Water Clarity (m)[1]	National Bottom Line
35-Ngahuinga Str	280	0.38	0.005	0.39	0.014	1.00	0.61
36-Puaroa Str (Owhiro valley)	350	0.28	0.008	0.29	0.016	1.02	0.61
37-Oteke Str	47	0.28	<0.005	0.28	0.012	1.97	0.61
38-Mangatangi Str	630	0.59	0.01	0.60	0.082	1.14	0.61

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)

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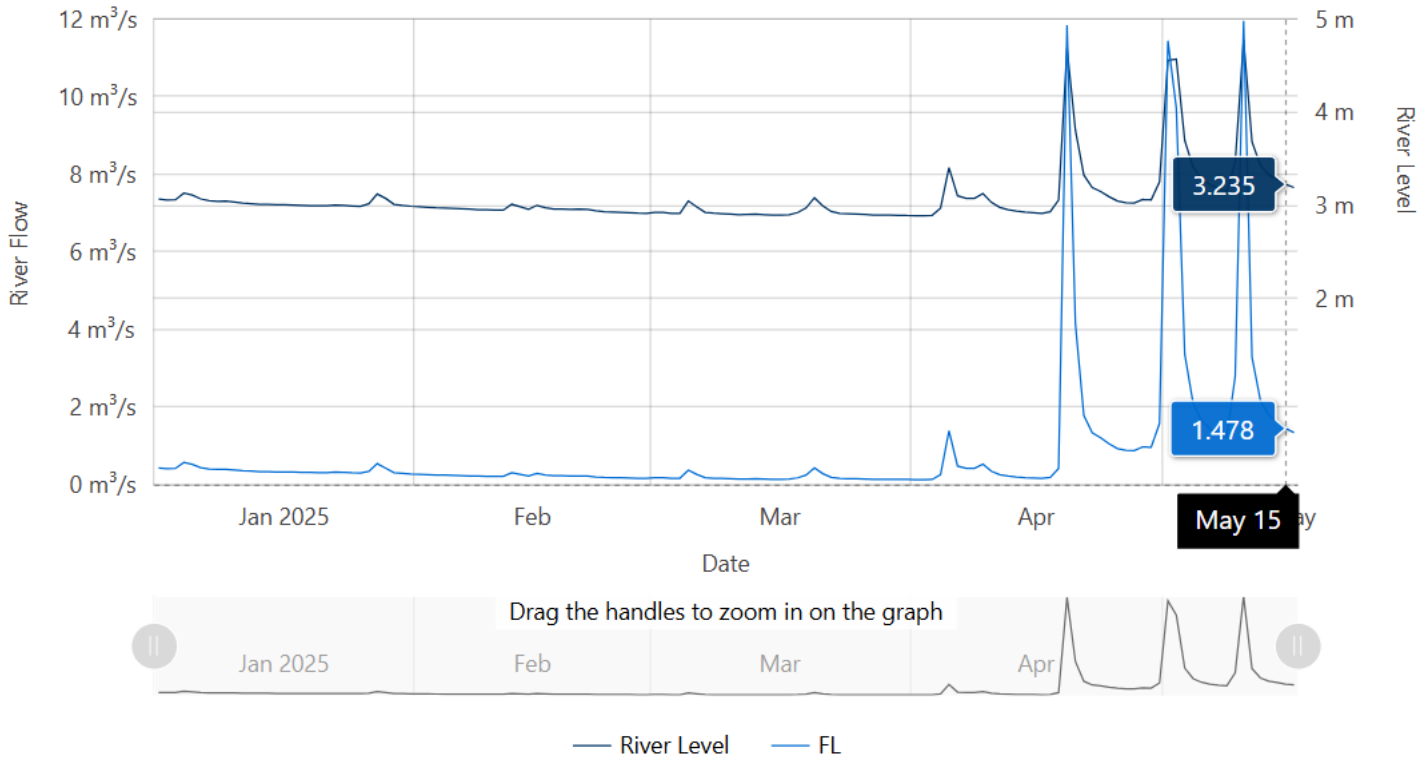
River Level and Flow Rate – Oparau River Langdon Rd (Off Okupata Rd)

The below chart presents continuous data collected by the Waikato Regional Council for Oparau river 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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