

Regional rivers water quality monitoring programme: Data report 2016

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Table of contents

1	Introduction	1
1.1	Background	1
1.2	Report content	1
1.3	Water quality guidelines and standards	1
2	Regional rivers monitoring design	2
2.1	Sampling locations	2
2.2	Sample collection	6
2.3	Water quality parameters	6
2.4	Quality control, data storage and analysis	6
2.5	Reports	6
3	Results	7
3.1	Regional rivers monitoring programme summary statistics	7
3.2	Regional rivers monitoring programme comparison with water quality guidelines and standards	27
	References	30
	Appendix I: Water quality guidelines and standards	31
	Appendix II: Water quality monitoring parameters	32
	Field instruments and analytical methods	32

List of figures

Figure 1:	Monitoring locations	5
Figure 2:	Spatial contour plots of four water quality parameters (based on 5 year median values, 2012-2016); a: Total Nitrogen, b: Total Phosphorus, c: Escherichia coli, d: Turbidity.	26

List of tables

Table 1:	Guidelines and standards for physico-chemical water quality for ecological health and for human uses of water. See Appendix I for a description of the guidelines and standards used.	2
Table 2:	Waikato Regional Council's sampling locations	3

1 Introduction

1.1 Background

To effectively manage water quality, the regional rivers monitoring programme addresses the following questions:

1. What is the quality of the water now?
2. Why is the water of the observed level of quality?
3. Is water quality getting better or worse? If so - what makes it change?
4. How can we improve the quality, ecological health and integrity of the region's rivers and streams?

The monitoring information allows Waikato Regional Council to:

- determine compliance with classification standards
- assess the suitability of the resource for various beneficial uses and values of the water
- monitor the impact of major discrete point source discharges on water quality
- monitor the impacts of diffuse discharges on water quality
- provide a basis for evaluating the effectiveness of resource management measures.

This dataset is invaluable for the evaluation of the region's rivers: their state, the pressures on them and our response to these pressures. We need to continue to gather comprehensive, reliable and good quality data on the region's rivers to protect and enhance their values into the future.

This report is the 21st since the implementation of the regional rivers monitoring programme (RERIMP) in 1993¹ and follows the format of the previous data report (Tulagi, 2016). Copies of reports as described in the list of references (page 30) can be obtained by contacting Waikato Regional Council (the Library) on 0800 800 401 and filling out the request for service form at: www.waikatoregion.govt.nz/request or in electronic format from the publications page of the Waikato Regional Council website: www.waikatoregion.govt.nz/publications.

1.2 Report content

The report provides information on the routine monthly monitoring of water quality at 100 locations across the Waikato region, and includes:

- year 2016 summary statistics tabulated by parameter and reported together
- spatial contour plots for four water quality parameters using spatial interpolation of the median of the previous 5 years
- summary tables identifying the number of samples meeting 'satisfactory' and 'excellent' water quality guidelines and standards.

1.3 Water quality guidelines and standards

Table 1 lists the physical, chemical (physico-chemical) and microbiological water quality guidelines and standards used to assess the condition of the region's rivers in 2016. The standards relate to either the protection of the ecological health of rivers and streams or to the suitability for direct-contact water-based recreation (for example swimming).

¹ Waikato River reported separately — see Tulagi, 2017.

Table 1: Guidelines and standards for physico-chemical water quality for ecological health and for human uses of water. See Appendix I for a description of the guidelines and standards used.

Water quality measure	Relevance ¹	Satisfactory	Excellent
Ecological health			
Dissolved oxygen (% of saturation)	aquatic life (breathing)	>80	>90
pH	aquatic life (acidity)	6.5–9	7–8
Turbidity (NTU)	plant growth (clarity)	<5	<2
Ammoniacal-N (g N/m ³)	aquatic life (toxicity)	<0.88	<0.1
Temperature (°C)	(May-Sep)	<12	<10
	(Oct-Apr)	<20	<16
Total phosphorus (g/m ³)	nuisance plant growth	<0.04	<0.01
Total nitrogen (g/m ³)	nuisance plant growth	<0.5	<0.1
Human uses—recreation			
Baseflow water clarity (m)	visibility	>1.6	>4
<i>Escherichia coli</i> (no./100 mL)	human health	<550	<55
Median <i>E. coli</i> (no./100 mL)	human health	<126	<23

¹ Refer to Appendix II for further information. These guidelines and standards are also described on the Waikato Regional Council Internet site www.waikatoregion.govt.nz

In each case two values are shown. The less stringent values define water that is “satisfactory” for the desired use; these are mostly based on existing national and other guidelines and standards (Appendix I). The more stringent values identify “excellent” water, and reflect expert opinion.

2 Regional rivers monitoring design

2.1 Sampling locations

Routine water quality monitoring locations of the regional rivers monitoring programme are summarised in *Table 2* and illustrated in *Figure 1*. One hundred sites were sampled monthly by Waikato Regional Council. A further five locations form part of NIWA’s National Rivers Water Quality Network, whose data can be found on the NIWA website (www.niwa.co.nz).

The sampling locations are reasonably evenly distributed across the Waikato region (*Figure 1*). To assist assessment of water quality, sites in the region were divided into 7 water quality zones. This division is based on expert opinion, and reflects river catchments and some broad ecological features, including geology, altitude, winter temperatures, vegetation cover and land use. The boundaries of these water quality zones are shown on *Figure 1*.

Table 2: Waikato Regional Council's sampling locations

Map No.	Location	Location Id	Map Ref.
Coromandel			
1	Hikutaia River at Old Maratoto Rd	169.2	T12:471-312
2	Kauaeranga River at Smiths Cableway/Recorder	234.11	T12:404-461
9	Ohinemuri River at Queens Head	619.19	T13:576-170
8	Ohinemuri River at SH25 Bridge	619.20	T13:641-213
6	Tairua River at Morrisons Bridge Hikuia	940.10	T12:567-548
3	Tapu River at Tapu-Coroglen Rd	954.5	T11:332-658
4	Waiau River at E309 Rd Ford	1105.3	T11:357-866
10	Waitekauri River at U/S Ohinemuri Confluence	1239.32	T13:566-168
5	Waiwawa River at SH25 Coroglen	1257.3	T11:503-717
7	Wharekawa River at SH25	1312.3	T12:628-478
Hauraki			
12	Mangawhero Stm (Kaihere) at Mangawara Rd	489.2	S13:249-195
20	Oraka Stm at Lake Rd	669.6	T15:536-607
15	Piako River at Kiwitahi	749.10	T14:398-856
13	Piako River at Paeroa-Tahuna Rd Bridge	749.15	T13:318-068
17	Piakonui Stm at Piakonui Rd	753.4	T14:417-719
18	Waihou River at Okauia	1122.18	T14:602-756
21	Waihou River at Whites Rd	1122.41	T15:572-500
22	Waiohotu Stm at Waiohotu Rd (Off SH5)	1173.2	T15:665-513
19	Waiomou Stm at Matamata-Tauranga Rd	1174.4	T15:623-683
11	Waitakaruru River (Hauraki Plains) at Coxhead Rd Bridge	1230.1	S12:194-339
16	Waitoa River at Landsdowne Rd Bridge	1249.15	T14:517-783
14	Waitoa River at Mellon Rd Recorder	1249.18	T13:426-047
Tributaries to the lower Waikato River			
23	Awaroa River (Waiuku) at Otatau Rd Bridge opp Moseley Rd	41.9	R12:662-319
34	Awaroa Stm (Rotowaro) at Sansons Bridge-Rotowaro-Huntly	39.11	S14:948-997
44	Karapiro Stm at Hickey Rd Bridge	230.5	T15:331-639
37	Kirikiroa Stm at Tauhara Drive	253.4	S14:095-817
36	Komakorau Stm at Henry Rd	258.4	S14:091-949
45	Little Waipa Stm at Arapuni – Putaruru Rd	335.1	T15:489-462
39	Mangakotukutuku Stm (Rukuhia) at Peacock Rd	398.1	S14:127-743
47	Mangamingi Stm (Tokoroa) at Paraonui Rd Bridge	407.1	T16:588-302
40	Mangaone Stm at Annebrooke Rd Bridge	417.7	S14:159-744
41	Mangaonua Stm at Hoeka Rd	421.10	S14:205-776
42	Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	421.16	T14:314-731
28	Mangatangi River at SH2 Maramarua	453.6	S12:042-372
27	Mangatawhiri River at Lyons Rd at Buckingham Bridge	459.6	S12:997-427
35	Mangawara Stm at Rutherford Rd Bridge	481.7	S13:084-023
43	Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	488.1	S15:217-653
33	Matahuru Stm at Waiterimu Rd Br	516.5	S13:083-109
25	Ohaeroa Stm at SH22 Bridge	612.9	R12:834-303
24	Opuatia Stm at Ponganui Rd	665.5	R13:773-245
46	Pokaiwhenua Stm at Arapuni-Putaruru Rd	786.2	T15:491-458
31	Waerenga Stm at Taniwha Rd	1098.1	S13:131-217
38	Waitawhiriwhiri Stm at Edgecumbe Street	1236.2	S14:102-787
26	Whakapipi Stm at SH22 Bridge	1282.8	R12:812-365
48	Whakauru Stm at U/S SH1 Bridge	1287.7	T16:614-282
29	Whangamarino River at Island Block Rd	1293.7	S12:954-308
30	Whangamarino River at Jefferies Rd Bridge	1293.9	S13:084-273
32	Whangape Stm at Rangiriri-Glen Murray Rd	1302.1	S13:950-154

Map No.	Location	Location Id	Map Ref.
Waipa River and tributaries			
50	Kaniwhaniwha Stm at Wright Rd	222.16	S15:985-680
56	Mangaohoi Stm at South Branch Maru Rd	411.9	T15:329-471
61	Mangaokewa Stm at Lawrence St Bridge	414.6	S16:998-162
51	Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	438.3	S15:093-560
58	Mangapu River at Otorohanga	443.3	S16:033-318
55	Mangatutu Stm (Waikeria) at Walker Rd Bridge	476.7	S15:203-422
52	Mangauika Stm at Te Awamutu Borough Water Supply Intake	477.10	S15:980-504
49	Ohote Stm at Whatawhata/Horotiu Rd	624.5	S14:997-794
54	Puniu River at Bartons Corner Rd Bridge	818.2	S15:115-500
62	Waipa River at Mangaokewa Rd	1191.5	S17:233-028
53	Waipa River at Pukehoua Bridge on Baffin Road	1191.2	S15:028-541
59	Waipa River at SH3 Otorohanga	1191.12	S16:036-322
57	Waitomo Stm at SH31 Otorohanga	1253.5	S16:022-335
60	Waitomo Stm at Tumutumu Rd	1253.7	S16:938-249
Tributaries to the upper Waikato River			
69	Kawaunui Stm at SH5 Bridge	240.5	U17:021-081
65	Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	359.1	U16:733-129
71	Mangakara Stm (Reporoa) at SH5	380.2	U17:996-003
63	Mangakino River (Whakamaru) at Sandel Rd	388.1	T17:486-013
67	Otamakokore Stm at Hossack Rd	683.4	U16:955-166
74	Pueto Stm at Broadlands Rd Bridge	802.1	U17:938-827
66	Tahunaatara Stm at Ohakuri Rd	934.1	U16:785-138
73	Torepatutahi Stm at Vaile Rd Bridge	1057.6	U17:985-965
70	Waiotapu Stm at Campbell Rd Bridge	1186.2	U17:024-082
72	Waiotapu Stm at Homestead Rd Bridge	1186.4	U17:003-000
64	Waipapa Stm (Mokai) at Tirohanga Rd Bridge	1202.7	T17:685-047
68	Whirinaki Stm at Corbett Rd	1323.1	U16:957-171
West coast			
84	Awakino River at Gribbon Rd	33.6	R17:702-918
82	Awakino River at SH3 Awakau Rd Junction	33.9	R18:588-799
81	Manganui River at Off Manganui Rd	410.4	R17:554-831
85	Mangaotaki River at SH3 Bridge	428.3	R17:764-963
79	Marokopa River at Speedies Rd (Off Te Anga Rd)	513.3	R16:708-256
83	Mokau River at Awakau Rd	556.2	R18:601-785
88	Mokau River at Mangaokewa Rd (Off SH30)	556.5	S17:096-017
86	Mokau River at Totoro Rd Recorder	556.9	R17:759-907
87	Mokauiti Stm at Three Way Point – Aria	557.5	R17:828-929
77	Ohautira River at Waingaro - Te Uku Rd	616.1	R14:842-803
78	Oparau River at Langdon Rd (Off Okupata Rd)	658.1	R15:799-494
80	Tawarau River at Off Speedies Rd	976.1	R16:718-249
75	Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	1167.4	R14:837-837
76	Waitetuna River at Te Uku-Waingaro Rd	1247.2	R14:842-742
Inflows to Lake Taupo			
91	Hinemaiaia River at SH1	171.5	U18:722-567
96	Kuratau River at Te Rae Street	282.5	T18:502-536
95	Kuratau River at SH41 Moerangi	282.4	T18:356-537
89	Mapara Stm at Off Mapara Rd (Whakaipo Reserve)	504.2	T18:681-750
92	Tauranga-Taupo River at 20 Metres U/S SH1 Bridge	971.5	T18:614-506
94	Tokaanu Power Station Tailrace Canal at SH41 Bridge	1491.1	T19:504-435
93	Tokaanu Stm at Off SH41 Turangi	1045.3	T19:517-423
99	Waihaha River at SH32	1106.4	T18:434-747
90	Waitahanui River at Blake Rd	1226.1	U18:781-627
100	Whangamata Stm (Kinloch) at Whangamata Rd	1300.1	T17:649-804
98	Whanganui Stream at Lakeside Lake Taupo	1301.1	T18:473-653
97	Whareroa Stream at Lakeside Lake Taupo	1318.4	T18:515-568

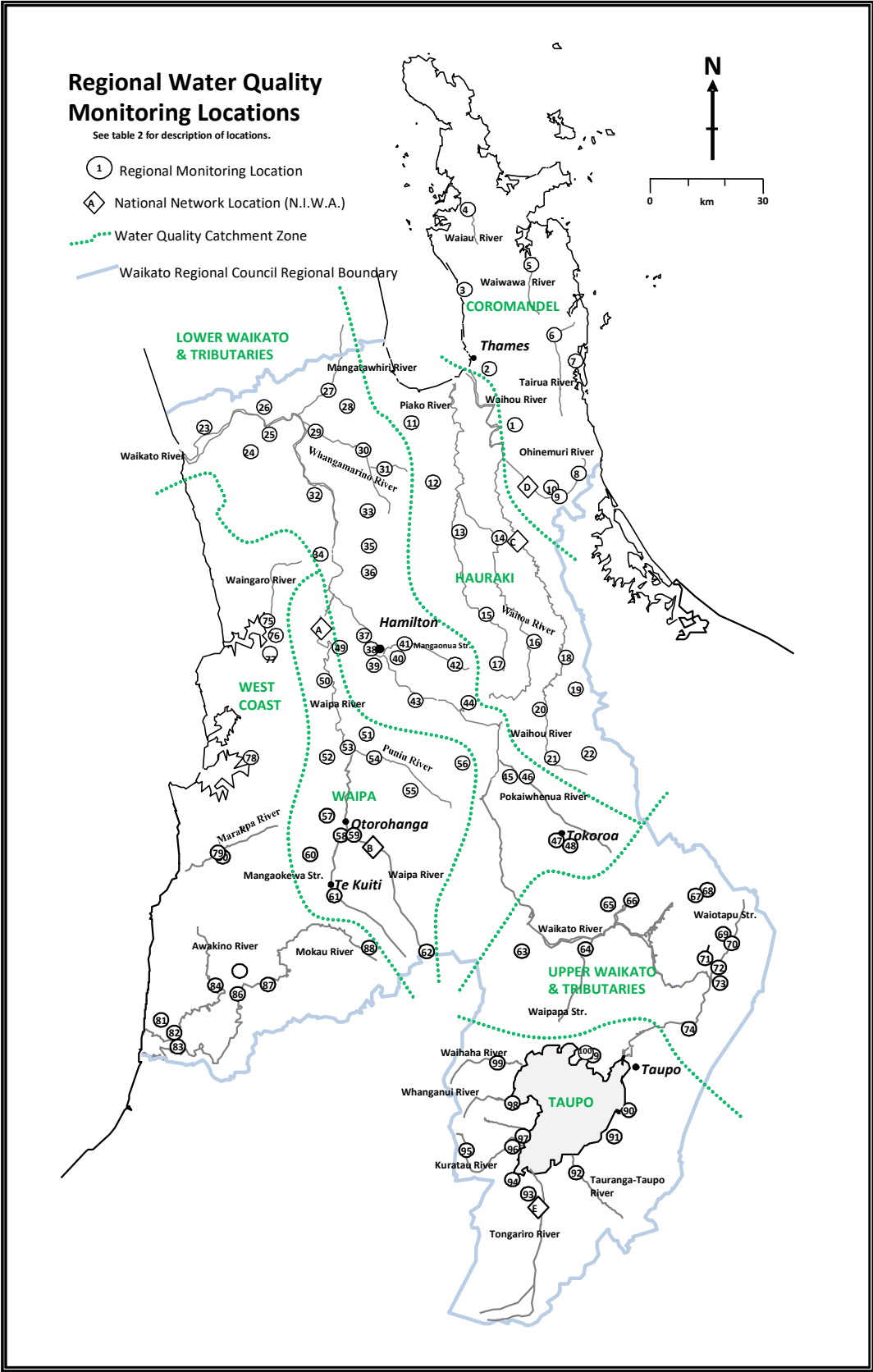


Figure 1: Monitoring locations

2.2 Sample collection

Sample collection occurs monthly. The 100 locations sampled by Waikato Regional Council staff are divided between 8 sampling runs. The runs are sampled in the same order each month, and by the same group of field staff. Sampling is assigned to either the second, third or fourth week of each month. A similar time of sampling (± 1 hour) is maintained for subsequent visits to a location to minimise the effect of any diurnal variation on water quality parameters, thereby increasing long term trend detection power.

2.3 Water quality parameters

Water quality of the region's rivers is assessed by measuring up to 32 parameters (19 routinely). Some parameters are measured in the field, but most are analysed by laboratories using standard analytical methods. Details of field measurements and analytical methods are given in *Appendix II*.

2.4 Quality control, data storage and analysis

Quality control measures are undertaken in accordance with Waikato Regional Council's standards including procedures for the collection, transport and storage of samples, and methods for data verification and quality assurance to ensure the consistency of data across the programme. Samples are sent to IANZ registered laboratories for analysis. Back-up samples are held for two months until results have been verified by routine quality assurance procedures. All data from field measurements and laboratory analyses are stored in Waikato Regional Council's new database called WISKI.

Data analysis was performed using Data Desk (version 6.0.1). For the purpose of data analysis, non-detect results (i.e. results with "less than" values) were assumed to be equal to half the corresponding limit of detection (i.e. $<x = x/2$), and results greater than the value reported were taken as equal to the value reported (i.e. $>x = x$).

The water quality spatial contour plots were created using Surfer (version 12). To present the spatial contour plots the kriging spatial interpolation procedure was used to estimate the variable at unsampled locations, using weighted sums of the variable at neighbouring sample points. The procedure is designed to minimize the variance of the estimation errors. In some cases artificial sites were used at points downstream of lowland sample sites to show a catchment flow-through effect.

2.5 Reports

A report on Regional Water Quality Trends (Vant 2013) summarises the trends and patterns in regional water quality during 1993 to 2012. Waikato Regional Council's State of the Environment Report briefly summarises the state of the rivers in the region, and common pressures (Waikato Regional Council, 1999).

The data contained in these regional rivers reports is updated to the Waikato Regional Council website, which also provides a link to details of the water quality guidelines and standards used to assess the condition of the region's rivers, as well as other information relating to lakes, rivers and wetlands. View this information at

<http://www.waikatoregion.govt.nz/fresh-water-quality>

3 Results

The results are divided into two sections. Section 3.1 has a statistical summary of routine monitoring of the region's rivers in 2016 and provides the spatial contour plots using water quality data from four parameters, based on median values for the last five years. Section 3.2 compares the results with water quality guidelines and standards for compliance.

3.1 Regional rivers monitoring programme summary statistics

Absorbance of filtered sample at 340 nm (units: cm⁻¹)

Location	Count	Mean	Median	Min	Max	IQR	Skew	12-16
								Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.016	0.015	0.006	0.031	0.005	1.11	0.014
Kauaeranga River at Smiths Cableway/Recorder	12	0.023	0.016	0.006	0.060	0.017	1.27	0.012
Ohinemuri River at Queens Head	12	0.017	0.016	0.008	0.032	0.014	0.66	0.014
Ohinemuri River at SH25 Br	12	0.013	0.014	0.006	0.019	0.007	-0.18	0.013
Tairua River at Morrisons Br Hikuai	12	0.019	0.016	0.003	0.035	0.014	0.29	0.014
Tapu River at Tapu-Coroglen Rd	12	0.014	0.011	0.003	0.039	0.009	1.39	0.009
Waiiau River at E309 Rd Ford	12	0.020	0.018	0.011	0.056	0.007	2.38	0.015
Waitekauri River at U/S Ohinemuri Conflu	12	0.012	0.011	0.006	0.031	0.005	2.00	0.011
Waiwawa River at SH25 Coroglen	12	0.029	0.022	0.009	0.069	0.031	0.88	0.017
Wharekawa River at SH25	12	0.018	0.018	0.010	0.030	0.008	0.65	0.016
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.024	0.018	0.011	0.057	0.011	1.42	0.018
Oraka Stm at Lake Rd	12	0.016	0.014	0.004	0.038	0.007	1.24	0.014
Piako River at KIWITAH	12	0.046	0.041	0.004	0.089	0.024	0.20	0.043
Piako River at Paeroa-Tahuna Rd Br	12	0.072	0.069	0.053	0.100	0.021	0.57	0.069
Piakonui Stm at Piakonui Rd	12	0.032	0.033	0.007	0.052	0.010	-0.59	0.029
Waihou River at Okauia	12	0.019	0.014	0.009	0.046	0.012	1.33	0.014
Waihou River at Whites Rd	12	0.006	0.001	0.001	0.048	0.002	<u>2.95</u>	0.001
Waihotu Stm at Waihotu Rd (Off SH5)	12	0.057	0.052	0.034	0.086	0.027	0.56	0.043
Waiomou Stm at Matamata-Tauranga Rd	12	0.023	0.020	0.014	0.050	0.007	<u>2.04</u>	0.020
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.076	0.076	0.057	0.100	0.012	0.59	0.068
Waitoa River at Landsdowne Rd Br	12	0.044	0.041	0.031	0.074	0.011	1.34	0.043
Waitoa River at Mellon Rd Recorder	12	0.044	0.042	0.033	0.064	0.010	1.22	0.041
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otawa Rd Br opp Moseley Rd	12	0.036	0.036	0.022	0.059	0.017	0.55	0.040
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	0.030	0.026	0.013	0.057	0.015	1.03	0.025
Karapiro Stm at Hickey Rd Bridge	12	0.053	0.054	0.030	0.077	0.025	-0.08	0.050
Kirikiriou Stm at Tauhara Dr	12	0.049	0.051	0.008	0.069	0.011	-1.50	0.052
Komakorau Stm at Henry Rd	12	0.129	0.119	0.067	0.220	0.052	0.76	0.119
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.018	0.012	0.004	0.054	0.016	1.42	0.011
Mangakotukutuku Stm (Rukuhia) at Peacockes Rd	12	0.248	0.220	0.007	0.540	0.301	0.29	0.200
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.032	0.027	0.021	0.068	0.017	1.54	0.026
Mangaone Stm at Annebrooke Rd Br	12	0.050	0.045	0.037	0.083	0.009	<u>1.86</u>	0.046
Mangaonua Stm at Hoeka Rd	12	0.036	0.035	0.020	0.065	0.008	1.47	0.032
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	0.026	0.026	0.008	0.042	0.012	-0.09	0.028
Mangatangi River at SH2 Maramara	12	0.045	0.043	0.027	0.064	0.020	0.34	0.048
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.036	0.027	0.019	0.080	0.016	1.47	0.026
Mangawara Stm at Rutherford Rd Br	12	0.127	0.097	0.056	0.240	0.109	0.51	0.126
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.134	0.080	0.052	0.340	0.120	1.03	0.092
Matahuru Stm at Waiterimu Road Below Confluence	12	0.083	0.083	0.040	0.134	0.047	0.23	0.088
Ohaeroa Stm at SH22 Br	12	0.029	0.025	0.017	0.056	0.007	1.52	0.026
Opuatia Stm at Ponganui Rd	12	0.033	0.027	0.019	0.087	0.007	<u>2.00</u>	0.029
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.021	0.018	0.011	0.052	0.011	1.46	0.016
Waerenga Stm at Taniwha Rd	12	0.029	0.025	0.015	0.053	0.013	1.02	0.027
Waitawhiriwhiri Stm at Edgecumbe Street	12	0.130	0.122	0.046	0.220	0.113	0.16	0.113
Whakapipi Stm at SH22 Br	12	0.034	0.034	0.023	0.042	0.008	-0.28	0.035
Whakauru Stm at U/S SH1 Br	12	0.029	0.023	0.017	0.067	0.015	1.64	0.023
Whangamarino River at Island Block Rd	12	0.175	0.130	0.068	0.460	0.115	1.42	0.121
Whangamarino River at Jefferies Rd Br	12	0.043	0.041	0.032	0.064	0.005	1.66	0.044
Whangape Stm at Rangiriri-Glen Murray Rd	12	0.074	0.077	0.035	0.114	0.028	-0.11	0.066

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Absorbance of filtered sample at 440 nm (units: cm⁻¹)

Count	Mean	Median	Min	Max	IQR	Skew	12-16
							Median
Coromandel							
12	0.003	0.003	0.001	0.007	0.002	0.93	0.003
12	0.005	0.003	0.001	0.013	0.004	1.19	0.002
12	0.003	0.003	0.001	0.007	0.004	0.51	0.003
12	0.002	0.003	0.001	0.004	0.002	0.05	0.003
12	0.004	0.003	0.001	0.007	0.003	0.23	0.003
12	0.003	0.002	0.001	0.008	0.003	1.31	0.001
12	0.004	0.004	0.002	0.010	0.002	1.64	0.003
12	0.003	0.002	0.001	0.007	0.002	1.54	0.002
12	0.006	0.005	0.001	0.013	0.007	0.64	0.004
12	0.004	0.004	0.002	0.007	0.002	0.65	0.003
Hauraki							
12	0.005	0.004	0.002	0.012	0.003	1.31	0.004
12	0.003	0.003	0.001	0.008	0.002	1.52	0.002
12	0.009	0.008	0.001	0.020	0.005	0.96	0.008
12	0.012	0.011	0.009	0.018	0.004	0.92	0.011
12	0.006	0.007	0.001	0.011	0.002	-0.44	0.006
12	0.004	0.003	0.001	0.009	0.002	1.31	0.002
12	0.002	0.001	0.001	0.010	0.000	<u>3.02</u>	0.001
12	0.011	0.011	0.006	0.017	0.006	0.43	0.009
12	0.005	0.004	0.003	0.010	0.002	<u>2.09</u>	0.004
12	0.014	0.014	0.009	0.019	0.004	0.38	0.012
12	0.008	0.007	0.005	0.013	0.003	1.13	0.007
12	0.008	0.008	0.006	0.011	0.001	1.07	0.007
Tributaries to the lower Waikato River							
12	0.006	0.006	0.003	0.011	0.005	0.46	0.006
12	0.005	0.004	0.001	0.010	0.003	0.87	0.004
12	0.009	0.009	0.003	0.015	0.005	0.00	0.008
12	0.008	0.008	0.001	0.011	0.003	-1.29	0.008
12	0.020	0.019	0.009	0.031	0.006	0.30	0.018
12	0.003	0.003	0.001	0.011	0.004	1.30	0.002
12	0.042	0.038	0.001	0.089	0.048	0.26	0.036
12	0.007	0.006	0.004	0.014	0.004	1.29	0.005
12	0.009	0.008	0.007	0.015	0.002	<u>1.84</u>	0.008
12	0.006	0.006	0.003	0.011	0.001	1.14	0.005
12	0.005	0.006	0.001	0.008	0.002	-0.49	0.005
12	0.008	0.008	0.005	0.012	0.005	0.22	0.008
12	0.007	0.005	0.003	0.018	0.003	1.51	0.005
12	0.020	0.016	0.009	0.037	0.014	0.52	0.020
12	0.022	0.014	0.009	0.054	0.020	1.04	0.016
12	0.014	0.012	0.007	0.022	0.006	0.54	0.015
12	0.006	0.005	0.003	0.012	0.002	1.66	0.005
12	0.006	0.005	0.003	0.016	0.001	<u>2.11</u>	0.005
12	0.005	0.004	0.002	0.011	0.002	1.40	0.003
12	0.006	0.006	0.003	0.010	0.003	0.87	0.005
12	0.022	0.023	0.003	0.036	0.018	-0.21	0.019
12	0.006	0.006	0.004	0.009	0.003	0.25	0.006
12	0.006	0.005	0.004	0.013	0.003	1.51	0.004
12	0.034	0.024	0.011	0.091	0.024	1.32	0.022
12	0.008	0.007	0.006	0.012	0.001	<u>1.93</u>	0.007
12	0.012	0.013	0.004	0.020	0.006	-0.08	0.011

Waipa River and Tributaries

Kaniwhaniwha Stm at Wright Rd	12	0.033	0.030	0.014	0.062	0.014	0.95	0.027
Mangaohoi Stm at South Branch Maru Rd	12	0.010	0.008	0.005	0.033	0.005	<u>2.54</u>	0.007
Mangaokewa Stm at Lawrence Street Br	12	0.043	0.041	0.021	0.066	0.028	0.20	0.035
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	0.099	0.089	0.053	0.197	0.051	1.08	0.075
Mangapu River at Otorohanga	12	0.036	0.034	0.018	0.055	0.022	0.10	0.027
Mangatutu Stm (Waikeria) at Walker Rd Br	12	0.022	0.022	0.011	0.034	0.012	0.09	0.018
Mangauika Stm at Te Awamutu Borough W/S Intake	12	0.015	0.010	0.003	0.060	0.007	<u>2.27</u>	0.006
Ohote Stm at Whatawhata/Horotiu Rd	12	0.172	0.163	0.028	0.280	0.109	-0.14	0.155
Puniu River at Bartons Corner Rd Br	12	0.032	0.031	0.018	0.059	0.016	0.84	0.028
Waipa River at Mangaokewa Rd	12	0.073	0.069	0.032	0.122	0.046	0.26	0.050
Waipa River at Pukehoua Bridge on Baffin Road	9	0.030	0.026	0.019	0.054	0.009	1.34	
Waipa River at SH3 Otorohanga	12	0.034	0.030	0.018	0.053	0.019	0.41	0.026
Waitomo Stm at SH31 Otorohanga	12	0.029	0.025	0.014	0.054	0.018	0.82	0.019
Waitomo Stm at Tumutumu Rd	12	0.019	0.016	0.008	0.042	0.013	1.07	0.012

	12	0.007	0.006	0.003	0.013	0.003	1.05	0.005
	12	0.002	0.001	0.001	0.007	0.001	<u>2.33</u>	0.001
	12	0.008	0.008	0.004	0.013	0.006	0.29	0.007
	12	0.017	0.016	0.009	0.033	0.008	1.01	0.013
	12	0.007	0.007	0.002	0.011	0.005	-0.22	0.005
	12	0.005	0.004	0.002	0.008	0.003	0.46	0.004
	12	0.003	0.002	0.001	0.013	0.002	<u>2.23</u>	0.001
	12	0.027	0.027	0.001	0.047	0.019	-0.19	0.025
	12	0.007	0.006	0.004	0.013	0.003	1.30	0.005
	12	0.015	0.013	0.005	0.025	0.011	0.32	0.009
	9	0.006	0.005	0.003	0.010	0.003	0.84	
	12	0.007	0.006	0.003	0.011	0.004	0.38	0.005
	12	0.006	0.005	0.003	0.010	0.004	0.88	0.004
	12	0.004	0.003	0.001	0.008	0.003	0.60	0.002

Tributaries to the upper Waikato River

Kawaunui Stm at SH5 Br	12	0.034	0.031	0.013	0.064	0.018	0.81	0.026
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.038	0.031	0.024	0.077	0.015	1.52	0.029
Mangakara Stm (Reporoa) at SH5	12	0.023	0.023	0.015	0.034	0.008	0.46	0.018
Mangakino Stm (Whakamaru) at Sandel Rd	12	0.017	0.014	0.009	0.037	0.010	1.37	0.012
Otamakokore Stm at Hossack Rd	12	0.047	0.039	0.025	0.117	0.026	1.60	0.034
Pueto Stm at Broadlands Rd Br	12	0.010	0.010	0.002	0.013	0.002	<u>2.08</u>	0.010
Tahunaatara Stm at Ohakuri Rd	12	0.044	0.036	0.024	0.082	0.028	0.84	0.033
Torepatutahi Stm at Vaile Rd Br	12	0.015	0.014	0.010	0.022	0.005	0.46	0.012
Waiotapu Stm at Campbell Rd Br	12	0.006	0.006	0.004	0.016	0.002	<u>2.45</u>	0.005
Waiotapu Stm at Homestead Rd Br	12	0.026	0.026	0.021	0.032	0.004	0.50	0.021
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.015	0.013	0.009	0.030	0.007	1.64	0.012
Whirinaki Stm at Corbett Rd	12	0.004	0.003	0.001	0.008	0.002	0.90	0.002

	12	0.007	0.006	0.003	0.012	0.004	0.82	0.005
	12	0.007	0.006	0.004	0.015	0.003	1.40	0.005
	12	0.005	0.005	0.003	0.006	0.002	-0.22	0.004
	12	0.003	0.003	0.002	0.008	0.002	1.45	0.002
	12	0.010	0.008	0.002	0.024	0.006	1.23	0.007
	12	0.001	0.001	0.001	0.002	0.001	1.15	0.001
	12	0.009	0.008	0.005	0.016	0.006	0.63	0.006
	12	0.003	0.003	0.001	0.004	0.001	0.13	0.002
	12	0.001	0.001	0.001	0.003	0.000	<u>3.02</u>	0.001
	12	0.004	0.004	0.003	0.005	0.001	-0.15	0.004
	12	0.004	0.003	0.001	0.021	0.002	<u>2.73</u>	0.002
	12	0.001	0.001	0.001	0.001	0.000	-1.00	0.001

West Coast

Awakino River at Gribbon Rd	12	0.018	0.012	0.003	0.076	0.015	<u>2.15</u>	0.006
Awakino River at SH3 Awakau Rd Junction	12	0.019	0.018	0.008	0.036	0.012	0.56	0.012
Manganui River at Off Manganui Rd	12	0.012	0.010	0.006	0.029	0.008	1.36	0.008
Mangaotaki River at SH3 Br	12	0.026	0.018	0.010	0.064	0.023	1.08	0.016
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.026	0.025	0.012	0.057	0.019	0.91	0.015
Mokau River at Awakau Rd	12	0.046	0.042	0.022	0.099	0.024	1.29	0.033
Mokau River at Mangaokewa Rd (Off SH30)	12	0.056	0.048	0.028	0.107	0.039	0.71	0.047
Mokau River at Totoro Rd Recorder	12	0.040	0.038	0.021	0.063	0.027	0.17	0.029
Mokautiti Stm at Three Way Point - Aria	12	0.065	0.068	0.033	0.101	0.041	-0.07	0.055
Ohautira Stm at Waingaro Te Uku Rd	12	0.031	0.029	0.011	0.061	0.017	0.75	0.021
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.024	0.020	0.010	0.040	0.017	0.47	0.016
Tawarau River at Off Speedies Rd	12	0.025	0.024	0.011	0.064	0.019	1.38	0.015
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	0.040	0.039	0.018	0.064	0.031	0.22	0.034
Waitetuna River at Te Uku-Waingaro Rd	12	0.029	0.029	0.013	0.040	0.012	-0.51	0.025

	12	0.003	0.001	0.001	0.015	0.004	<u>1.98</u>	0.001
	12	0.004	0.004	0.001	0.007	0.003	0.05	0.002
	12	0.002	0.001	0.001	0.006	0.002	1.33	0.001
	12	0.005	0.004	0.001	0.012	0.004	1.00	0.003
	12	0.005	0.005	0.002	0.012	0.004	1.01	0.003
	12	0.009	0.008	0.004	0.020	0.005	1.33	0.006
	12	0.011	0.010	0.005	0.022	0.008	0.62	0.009
	12	0.008	0.008	0.003	0.012	0.006	0.06	0.005
	12	0.012	0.012	0.005	0.018	0.008	-0.16	0.009
	12	0.006	0.006	0.002	0.011	0.003	0.58	0.004
	12	0.005	0.004	0.001	0.009	0.004	0.24	0.003
	12	0.005	0.005	0.002	0.013	0.004	1.37	0.003
	12	0.007	0.007	0.003	0.012	0.006	0.20	0.006
	12	0.006	0.006	0.003	0.009	0.002	0.14	0.005

Inflows to Lake Taupo

Hinemaiaia River at SH1	12	0.015	0.014	0.009	0.021	0.004	0.35	0.014
Kuratau River at SH41 Moerangi	12	0.021	0.019	0.016	0.038	0.006	<u>1.75</u>	0.017
Kuratau River at Te Rae Street	12	0.020	0.018	0.005	0.036	0.015	0.18	0.020
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	0.038	0.038	0.026	0.067	0.012	1.34	0.036
Tauranga-Taupo River at 20 Metres U/S SH1 Bridge	12	0.008	0.007	0.006	0.021	0.002	<u>2.73</u>	0.007
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	0.006	0.006	0.004	0.010	0.003	0.87	0.006
Tokaanu Stm at Off SH41 Turangi	12	0.007	0.001	0.001	0.047	0.003	<u>2.47</u>	0.001
Waihaha River at SH32	12	0.012	0.010	0.006	0.030	0.007	<u>1.81</u>	0.009
Waitahanui River at Blake Rd	12	0.004	0.003	0.001	0.013	0.003	1.65	0.002
Whangamata Stm (Kinloch) at Whangamata Rd	12	0.009	0.007	0.002	0.022	0.003	1.56	0.005
Whanganui Stm at Lakeside Lake Taupo	12	0.018	0.017	0.010	0.041	0.010	<u>1.71</u>	0.014
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	0.020	0.020	0.005	0.046	0.006	1.42	0.016

	12	0.003	0.003	0.001	0.005	0.001	-0.20	0.003
	12	0.004	0.003	0.003	0.007	0.001	<u>1.89</u>	0.003
	12	0.004	0.003	0.001	0.007	0.003	0.23	0.004
	12	0.008	0.008	0.005	0.014	0.003	1.14	0.007
	12	0.001	0.001	0.001	0.004	0.000	<u>2.56</u>	0.001
	12	0.001	0.001	0.001	0.002	0.000	<u>3.02</u>	0.001
	12	0.002	0.001	0.001	0.010	0.000	<u>2.56</u>	0.001
	12	0.002	0.002	0.001	0.006	0.002	1.29	0.001
	12	0.001	0.001	0.001	0.003	0.000	<u>3.02</u>	0.001
	12	0.002	0.001	0.001	0.006	0.000	<u>1.85</u>	0.001
	12	0.004	0.004	0.002	0.008	0.003	1.14	0.003
	12	0.004	0.004	0.001	0.010	0.002	1.66	0.003

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Black Disk (m)

Location	Black Disk (m)							12-16
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	3.57	3.58	1.60	5.70	1.26	0.16	3.10
Kauaeranga River at Smiths Cableway/Recorder	12	3.76	3.96	0.48	7.00	2.25	-0.10	3.56
Ohinemuri River at Queens Head	12	2.70	2.80	0.59	4.31	2.11	-0.39	3.02
Ohinemuri River at SH25 Br	12	3.53	3.56	1.85	5.10	1.38	-0.10	3.00
Tairua River at Morrisons Br Hikuai	-	-	-	-	-	-	-	-
Tapu River at Tapu-Coroglen Rd	12	4.02	4.31	0.30	7.70	2.04	-0.14	4.06
Waiiau River at E309 Rd Ford	12	2.43	2.42	0.05	3.98	1.49	-0.52	2.31
Waitekauri River at U/S Ohinemuri Conflu	12	3.20	3.63	0.88	5.50	2.46	-0.13	3.45
Waiwawa River at SH25 Coroglen	12	3.48	3.76	0.15	5.10	1.97	-1.00	3.20
Wharekawa River at SH25	12	2.37	2.37	1.15	3.91	1.02	0.37	2.51
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.81	0.92	0.21	1.29	0.43	-0.57	1.00
Oraka Stm at Lake Rd	12	0.93	0.94	0.18	1.62	0.84	-0.09	1.03
Piako River at Kiwitahi	11	1.53	1.39	0.52	2.95	1.28	0.60	1.60
Piako River at Paeroa-Tahuna Rd Br	12	1.21	1.10	0.35	2.56	0.61	0.91	0.97
Piakonui Stm at Piakonui Rd	11	1.52	1.60	0.73	2.17	0.58	-0.36	1.53
Waihou River at Okauia	12	0.98	1.02	0.27	1.62	0.76	-0.18	1.10
Waihou River at Whites Rd	12	4.79	5.27	2.67	6.20	1.34	-0.75	5.09
Waihotu Stm at Waihotu (Off SH5)	-	-	-	-	-	-	-	-
Waiomou Stm at Matamata-Tauranga Rd	12	1.32	1.42	0.28	2.14	0.83	-0.45	1.29
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	1.39	1.34	0.69	2.23	0.90	0.21	0.92
Waitoa River at Landsdowne Rd Br	12	2.32	1.76	0.37	7.50	2.64	1.42	1.61
Waitoa River at Mellon Rd Recorder	12	1.48	1.38	0.49	2.99	1.01	0.62	1.25
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	10	0.51	0.47	0.19	1.32	0.28	1.57	0.39
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	0.92	0.98	0.13	1.52	0.44	-0.74	0.95
Karapiro Stm at Hickey Rd Bridge	10	1.13	1.22	0.19	1.93	0.99	-0.27	0.89
Kirikiriroa Stm at Tauhara Dr	12	0.46	0.43	0.23	0.95	0.19	1.45	0.45
Komakorau Stm at Henry Rd	12	0.16	0.15	0.08	0.30	0.06	1.10	0.19
Little Waipa Stm at Arapuni - Putaruru Rd	12	1.58	1.44	0.32	3.45	1.24	0.42	1.55
Mangakotukutuku Stm at Peacocks Rd	12	0.53	0.54	0.32	0.68	0.17	-0.41	0.51
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.71	0.76	0.21	0.98	0.24	-1.04	0.80
Mangaone Stm at Annebrooke Rd Br	12	1.21	1.26	0.91	1.49	0.41	-0.32	1.16
Mangaonua Stm at Hoeka Rd	12	1.23	1.24	0.57	1.95	0.89	0.12	1.08
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	1.45	1.54	0.08	2.23	0.55	-1.19	1.32
Mangatangi River at SH2 Maramarua	12	0.66	0.57	0.35	1.21	0.51	0.69	0.55
Mangatawhiri River at Lyons Rd At Buckingham Br	12	1.98	2.30	0.18	3.50	1.55	-0.50	1.66
Mangawara Stm at Rutherford Rd Br	11	0.23	0.23	0.08	0.36	0.12	-0.06	0.29
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.24	0.23	0.13	0.42	0.06	1.23	0.24
Matahuru Stm at Waiterimu Road Below Confluence	-	-	-	-	-	-	-	-
Ohaeroa Stm at SH22 Br	12	0.91	0.94	0.32	1.49	0.38	-0.09	0.86
Opuatia Stm at Ponganui Rd	12	0.51	0.48	0.08	1.12	0.28	0.42	0.52
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	1.08	0.95	0.22	2.15	1.01	0.25	1.13
Waerenga Stm at Taniwha Rd	12	0.78	0.88	0.20	1.33	0.41	-0.34	0.86
Waitawhiriwhiri Stm at Edgecumbe Street	12	0.37	0.38	0.18	0.58	0.19	0.17	0.42
Whakapipi Stm at SH22 Br	12	1.76	1.60	0.61	3.14	0.71	0.68	1.47
Whakauru Stm at U/S SH1 Br	12	0.50	0.52	0.18	0.81	0.32	-0.16	0.69
Whangamarino River at Island Block Rd	12	0.18	0.17	0.11	0.28	0.12	0.27	0.21
Whangamarino River at Jefferies Rd Br	12	0.29	0.28	0.20	0.42	0.09	0.62	0.41
Whangape Stm at Rangiriri-Glen Murray Rd	12	0.13	0.11	0.06	0.28	0.06	1.23	0.18

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Conductivity at 25 °C (mS/m)

Location	Conductivity at 25 °C (mS/m)							12-16
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	8.0	8.1	7.0	8.9	0.8	-0.44	8.3
Kauaeranga River at Smiths Cableway/Recorder	12	7.9	8.2	4.9	10.0	1.9	-0.63	8.3
Ohinemuri River at Queens Head	12	23.5	21.7	12.6	43.0	7.8	0.94	22.5
Ohinemuri River at SH25 Br	12	7.6	7.6	7.2	8.1	0.4	0.46	7.6
Tairua River at Morrisons Br Hikuai	12	6.0	6.1	4.9	6.5	0.5	-1.10	6.1
Tapu River at Tapu-Coroglen Rd	12	10.0	10.3	8.4	11.0	0.7	-1.06	10.4
Waiiau River at E309 Rd Ford	12	9.1	9.5	5.6	10.0	0.6	<u>-2.34</u>	9.7
Waitekauri River at U/S Ohinemuri Conflu	12	11.0	11.0	8.0	13.9	4.1	-0.05	11.0
Waiwawa River at SH25 Coroglen	12	6.4	6.8	4.3	7.3	1.0	-1.33	6.8
Wharekawa River at SH25	12	7.3	7.3	6.5	7.8	0.5	-0.66	7.3
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	11.8	11.8	11.0	12.5	1.2	-0.09	11.4
Oraka Stm at Lake Rd	12	14.8	13.8	10.5	21.2	8.9	0.36	12.5
Piako River at Kiwitahi	12	15.5	15.5	13.4	17.3	1.2	-0.18	14.9
Piako River at Paeroa-Tahuna Rd Br	12	23.0	22.7	21.0	26.2	2.3	0.57	22.5
Piakonui Stm at Piakonui Rd	12	8.2	8.2	6.4	10.2	2.9	0.04	7.7
Waihou River at Okauia	12	10.6	10.7	9.5	11.6	1.4	-0.06	10.2
Waihou River at Whites Rd	12	8.4	8.4	8.2	8.5	0.1	-0.28	8.2
Waihotu Stm at Waihotu (Off SH5)	12	5.4	5.4	4.6	5.7	0.2	-1.39	5.5
Waiomou Stm at Matamata-Tauranga Rd	12	7.0	7.1	6.3	7.8	1.1	-0.04	7.0
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	18.1	18.4	14.7	22.0	3.6	0.03	17.0
Waitoa River at Landsdowne Rd Br	12	17.3	17.5	14.6	19.8	3.6	-0.15	16.6
Waitoa River at Mellon Rd Recorder	12	30.9	29.3	22.0	39.3	9.3	0.16	29.2
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	27.3	26.1	23.9	37.0	3.9	1.56	26.4
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	68.9	65.4	28.7	132.8	39.8	0.61	66.9
Karapiro Stm at Hickey Rd Bridge	12	14.6	15.1	12.2	17.2	3.2	-0.05	13.4
Kirikiriroa Stm at Tauhara Dr	12	20.9	20.7	18.6	23.2	2.4	0.12	21.0
Komakorau Stm at Henry Rd	12	26.6	25.3	23.2	34.9	5.4	1.05	25.8
Little Waipa Stm at Arapuni - Putaruru Rd	12	10.7	10.9	10.0	11.4	0.9	-0.16	10.3
Mangakotukutuku Stm at Peacocks Rd	12	20.0	19.8	16.3	24.9	1.5	0.55	19.0
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	13.8	14.2	11.6	15.1	1.5	-0.87	14.0
Mangaone Stm at Annebrooke Rd Br	12	27.1	27.1	25.0	28.5	0.8	-0.99	27.0
Mangaonua Stm at Hoeka Rd	12	20.9	21.1	19.7	22.0	1.4	-0.10	20.8
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	10.6	10.8	8.9	12.3	2.9	0.01	9.9
Mangatangi River at SH2 Maramarua	12	12.9	12.9	10.7	14.6	1.5	-0.33	12.9
Mangatawhiri River at Lyons Rd At Buckingham Br	12	12.0	12.4	9.4	13.9	2.7	-0.47	12.2
Mangawara Stm at Rutherford Rd Br	12	22.8	21.8	18.9	30.7	3.1	1.22	21.9
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	22.3	22.4	20.4	24.7	0.5	0.22	21.9
Matahuru Stm at Waiterimu Road Below Confluence	12	14.3	13.8	12.8	16.6	1.9	0.71	13.8
Ohaeroa Stm at SH22 Br	12	17.3	17.4	14.2	20.5	4.1	0.05	15.8
Opuatia Stm at Ponganui Rd	12	18.1	18.5	13.8	19.4	1.5	<u>-2.12</u>	17.6
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	11.2	10.9	9.9	12.6	1.4	0.22	10.8
Waerenga Stm at Taniwha Rd	12	12.2	12.0	11.5	13.5	0.9	0.96	12.0
Waitawhiriwhiri Stm at Edgecumbe Street	12	19.3	20.7	6.8	22.1	2.5	<u>-2.47</u>	20.4
Whakapipi Stm at SH22 Br	12	20.4	20.7	17.4	23.7	4.2	0.01	18.9
Whakauru Stm at U/S SH1 Br	12	7.9	7.9	7.5	8.4	0.5	0.34	7.3
Whangamarino River at Island Block Rd	12	17.2	16.9	14.9	20.4	2.7	0.61	16.5
Whangamarino River at Jefferies Rd Br	12	15.8	15.7	14.3	17.8	1.1	0.39	15.7
Whangape Stm at Rangiriri-Glen Murray Rd	12	22.8	22.6	17.2	28.3	7.6	0.03	20.5

Waipa River and Tributaries

Kaniwhaniwha Stm at Wright Rd	12	0.60	0.57	0.20	1.02	0.50	0.03	0.92
Mangaohoi Stm at South Branch Maru Rd	11	1.32	1.25	1.05	1.55	0.30	-0.01	1.56
Mangaokewa Stm at Lawrence Street Br	12	0.73	0.71	0.15	1.40	0.71	0.20	0.95
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	7	1.34	1.34	0.43	2.55	1.50	0.45	0.70
Mangapu River at Otorohanga	9	0.83	0.43	0.20	1.99	1.15	0.82	0.61
Mangatutu Stm (Waikeria) at Walker Rd Br	11	1.63	1.61	0.38	2.70	0.61	-0.37	1.63
Mangauika Stm at Te Awamutu Borough W/S Intake	12	4.19	3.40	0.90	10.00	5.15	0.69	3.83
Ohote Stm at Whatawhata/Horotiu Rd	12	0.56	0.59	0.22	0.98	0.35	0.08	0.60
Puniu River at Bartons Corner Rd Br	-	-	-	-	-	-	-	-
Waipa River at Mangaokewa Rd	11	1.71	1.46	0.72	3.26	0.89	0.88	1.70
Waipa River at Pukehoua Bridge on Baffin Road	9	0.61	0.54	0.14	1.22	0.56	0.28	-
Waipa River at SH3 Otorohanga	10	1.21	0.99	0.07	3.25	1.07	0.94	1.11
Waitomo Stm at SH31 Otorohanga	12	0.58	0.35	0.06	1.55	0.74	0.95	0.60
Waitomo Stm at Tumutumu Rd	8	0.76	0.53	0.10	1.82	1.18	0.63	0.95

12	10.2	9.7	7.4	12.3	2.1	-0.14	9.7
12	7.8	7.9	6.1	9.1	1.2	-0.47	8.2
12	15.8	15.4	10.6	20.2	6.4	0.00	14.9
12	20.7	20.5	17.2	26.5	3.9	0.74	18.8
12	19.6	19.6	15.5	24.0	4.9	0.02	18.5
12	6.5	6.5	5.0	7.4	0.6	-0.86	6.8
12	6.6	6.4	5.4	8.2	1.3	0.50	6.4
12	18.0	17.8	14.9	20.1	2.7	-0.25	17.7
12	8.1	8.4	7.0	8.7	1.0	-0.69	8.4
12	5.2	5.2	4.4	6.1	0.6	0.57	5.0
9	11.9	12.1	9.5	13.2	1.0	-0.88	-
12	8.4	8.4	6.9	9.3	0.7	-0.79	8.3
12	18.0	18.6	13.1	22.0	4.1	-0.46	18.7
12	18.3	18.4	14.7	21.1	3.1	-0.28	18.8

Tributaries to the upper Waikato River

Kawaunui Stm at SH5 Br	12	1.31	1.17	0.44	2.20	0.89	0.11	1.45
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.83	0.87	0.39	1.35	0.34	0.18	0.96
Mangakara Stm (Reporoa) at SH5	12	0.90	0.82	0.30	1.90	0.50	0.86	0.90
Mangakino Stm (Whakamaru) at Sandel Rd	6	1.18	1.12	0.33	2.42	0.59	0.70	1.74
Otamakokore Stm at Hossack Rd	12	1.28	1.13	0.60	2.21	0.67	0.67	1.25
Pueto Stm at Broadlands Rd Br	11	1.65	1.65	0.58	2.50	0.87	-0.23	1.80
Tahunaatara Stm at Ohakuri Rd	12	1.02	1.03	0.43	1.79	0.64	0.22	1.36
Torepatutahi Stm at Vaile Rd Br	-	-	-	-	-	-	-	-
Waiotapu Stm at Campbell Rd Br	12	1.30	1.30	0.70	1.90	0.54	0.01	1.18
Waiotapu Stm at Homestead Rd Br	-	-	-	-	-	-	-	-
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	1.19	1.15	0.43	2.09	0.47	0.35	1.22
Whirinaki Stm at Corbett Rd	-	-	-	-	-	-	-	-

12	13.8	14.0	9.9	15.9	0.9	-1.66	13.6
12	9.0	9.1	8.7	9.3	0.3	-0.53	8.9
12	9.7	9.8	9.0	10.2	0.5	-0.67	9.9
12	6.4	6.7	5.3	7.4	1.3	-0.30	6.6
12	38.7	38.7	33.8	43.0	6.4	-0.08	39.8
12	11.7	11.7	11.4	12.1	0.4	0.21	11.7
12	8.0	8.0	7.7	8.2	0.3	-0.06	7.7
12	9.8	9.9	9.0	10.7	1.1	0.05	9.5
12	74.7	74.4	63.9	84.1	11.6	-0.07	73.1
12	48.2	46.6	42.4	55.8	10.3	0.30	50.1
12	45.4	44.6	41.8	48.8	3.6	0.14	43.5
12	6.9	6.9	6.8	7.2	0.2	0.80	6.8

West Coast

Awakino River at Gribbon Rd	11	1.73	1.78	0.07	3.77	2.83	0.12	2.12
Awakino River at SH3 Awakau Rd Junction	12	1.17	1.02	0.05	3.00	1.80	0.50	1.31
Manganui River at Off Manganui Rd	12	1.00	0.83	0.08	2.21	1.44	0.29	1.07
Mangaotaki River at SH3 Br	12	0.82	0.77	0.04	2.71	1.04	1.15	0.79
Marokopa River at Speedies Rd (Off Te Anka Rd)	11	0.80	0.96	0.05	1.86	0.80	0.24	1.03
Mokau River at Awakau Rd	12	0.51	0.31	0.07	1.44	0.76	0.82	0.46
Mokau River at Mangaokewa Rd (Off SH30)	-	-	-	-	-	-	-	-
Mokau River at Totoro Rd Recorder	9	0.94	0.78	0.07	2.98	1.42	1.02	0.73
Mokauiti Stm at Three Way Point - Aria	11	0.61	0.37	0.02	1.89	0.75	1.01	0.74
Ohautira Stm at Waingaro Te Uku Rd	10	0.84	0.89	0.11	2.37	0.77	1.12	0.86
Oparau River at Langdon Rd (Off Okupata Rd)	12	1.57	1.59	0.15	2.80	1.43	-0.22	1.54
Tawarau River at Off Speedies Rd	11	0.85	0.96	0.05	1.78	0.93	-0.04	1.18
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	9	0.85	0.50	0.03	2.08	1.37	0.56	0.78
Waitetuna River at Te Uku-Waingaro Rd	11	0.60	0.60	0.07	1.28	0.72	0.28	0.72

12	6.7	6.8	5.2	7.9	1.2	-0.37	7.0
12	13.3	12.4	8.3	19.8	4.7	0.50	12.5
12	10.3	10.2	8.0	12.3	1.7	-0.16	10.5
12	13.1	13.2	10.8	14.8	1.2	-0.68	13.3
12	13.3	13.7	10.5	15.8	3.0	-0.33	14.2
12	12.8	12.1	10.2	16.7	3.3	0.84	12.4
12	6.7	6.6	5.3	7.5	0.9	-0.57	6.6
12	12.0	11.6	9.8	13.9	2.0	0.09	11.8
12	11.0	10.6	9.4	12.6	1.5	0.23	10.5
12	13.6	13.9	11.0	15.5	2.5	-0.49	13.6
12	8.6	8.6	6.9	9.9	1.7	-0.13	8.5
12	12.5	12.9	9.6	14.9	2.6	-0.33	13.3
12	14.7	14.6	9.5	17.4	3.2	-0.78	14.3
12	10.3	10.3	8.3	11.4	1.5	-0.47	9.9

Inflows to Lake Taupo

Hinemaiaia River at SH1	12	2.19	2.25	1.20	3.80	0.78	0.64	2.26
Kuratau River at SH41 Moerangi	12	2.88	2.30	1.14	8.50	1.15	2.37	2.53
Kuratau River at Te Rae Street	-	-	-	-	-	-	-	-
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	1.27	1.31	0.60	1.64	0.37	-0.81	1.48
Tauranga- Taupo River at 20 Metres U/S SH1 Bridge	12	2.69	2.86	0.29	4.91	1.69	-0.15	3.43
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	-	-	-	-	-	-	-	-
Tokaanu Stm at Off SH41 Turangi	-	-	-	-	-	-	-	-
Waihaha River at SH32	7	2.75	3.06	0.33	4.30	2.11	-0.54	3.32
Waitahanui River at Blake Rd	12	2.28	2.15	1.07	3.73	1.09	0.32	2.91
Whangamata Stm (Kinloch) at Whangamata Rd	-	-	-	-	-	-	-	-
Whanganui Stm at Lakeside Lake Taupo	-	-	-	-	-	-	-	-
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	-	-	-	-	-	-	-	-

12	5.6	5.8	4.1	7.0	1.3	-0.21	5.9
12	4.5	4.6	3.8	4.9	0.7	-0.57	4.4
12	7.4	7.1	5.7	10.8	2.5	0.80	6.6
12	12.6	12.6	12.4	12.8	0.2	0.01	12.5
12	4.5	4.7	3.1	5.9	1.4	-0.22	4.7
12	12.0	11.5	10.4	14.9	2.4	0.56	12.4
12	10.0	10.1	9.2	10.3	0.2	<u>-1.69</u>	10.0
12	4.7	4.9	3.8	5.5	1.1	-0.24	4.7
12	7.3	7.3	6.6	7.8	0.7	-0.26	7.5
12	8.9	8.9	8.8	9.0	0.1	0.08	8.8
12	5.6	5.7	4.1	6.7	1.6	-0.30	5.6
12	7.6	7.7	6.6	8.5	1.5	-0.24	7.8

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Dissolved Oxygen (% Saturation)

Location	Count	Mean	Median	Min	Max	IQR	Skew	12-16	
								Count	Median
Coromandel									
Hikutaia River at Old Maratoto Rd	12	97.9	95.2	91.9	113.4	6.5	1.41		95.8
Kauaeranga River at Smiths Cableway/Recorder	12	100.7	98.8	93.2	123.8	6.3	<u>2.22</u>		99.2
Ohinemuri River at Queens Head	12	105.4	102.4	86.6	126.6	17.0	0.38		104.6
Ohinemuri River at SH25 Br	12	107.3	108.3	99.9	116.6	8.0	0.08		107.6
Tairua River at Morrisons Br Hikuai	12	99.1	96.7	93.1	109.5	8.9	0.78		97.4
Tapu River at Tapu-Coroglen Rd	12	102.0	100.9	96.4	109.2	4.2	0.53		102.0
Waiau River at E309 Rd Ford	12	103.8	104.2	95.5	114.5	7.4	0.34		103.0
Waitekauri River at U/S Ohinemuri Conflu	12	104.9	102.2	98.2	118.9	11.5	0.80		102.9
Waiwawa River at SH25 Coroglen	12	102.2	100.3	95.7	112.4	8.3	0.74		101.6
Wharekawa River at SH25	12	99.5	96.4	93.5	109.6	9.0	0.70		98.7
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	97.7	97.5	95.3	102.1	2.5	0.94		97.2
Oraka Stm at Lake Rd	12	92.8	93.8	86.4	97.4	5.0	-0.41		91.3
Piako River at Kiwitahi	12	80.3	85.4	40.5	102.4	22.0	-0.90		88.3
Piako River at Paeroa-Tahuna Rd Br	12	81.3	82.7	70.1	87.8	10.1	-0.59		84.0
Piakonui Stm at Piakonui Rd	12	100.3	98.7	96.6	106.5	4.8	0.64		98.4
Waihou River at Okauia	12	93.8	93.8	91.3	97.3	1.9	0.65		93.0
Waihou River at Whites Rd	12	101.9	101.1	96.3	108.1	6.4	0.15		100.5
Waihotu Stm at Waihotu (Off SH5)	12	94.0	93.6	86.4	99.0	3.6	-0.30		93.2
Waiomou Stm at Matamata-Tauranga Rd	12	95.8	96.1	91.8	101.1	3.4	0.31		94.4
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	91.5	89.6	84.9	100.2	10.4	0.54		92.0
Waitoa River at Landsdowne Rd Br	12	82.6	86.3	61.0	92.3	14.1	-1.02		88.5
Waitoa River at Mellon Rd Recorder	12	73.7	74.7	59.7	85.3	12.0	-0.40		76.0
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	86.4	87.9	15.9	130.1	19.1	-1.09		86.7
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	82.2	84.4	59.8	90.3	7.7	<u>-1.70</u>		84.8
Karapiro Stm at Hickey Rd Bridge	12	89.5	90.6	76.9	94.8	5.9	-1.20		89.7
Kirikiroa Stm at Tauhara Dr	12	70.9	70.5	60.7	81.7	12.0	0.00		71.2
Komakorau Stm at Henry Rd	11	68.5	69.8	62.4	72.8	6.9	-0.30		66.6
Little Waipa Stm at Arapuni - Putaruru Rd	12	101.5	101.3	91.9	109.3	10.3	-0.13		100.9
Mangakotukutuku Stm at Peacocks Rd	12	89.3	90.0	84.7	92.9	4.7	-0.39		91.3
Mangamingi Stm (Tokoroa) at Parooni Rd Br	12	100.7	100.1	95.7	106.5	7.4	0.37		100.7
Mangaone Stm at Annebrooke Rd Br	12	78.5	77.3	71.9	84.6	4.8	0.06		78.4
Mangaonua Stm at Hoeka Rd	12	75.8	78.6	60.5	85.0	13.9	-0.59		80.8
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	100.4	99.2	97.2	108.4	4.1	1.17		98.4
Mangatangi River at SH2 Maramarua	12	88.0	88.3	82.8	94.5	5.6	0.16		87.5
Mangatawhiri River at Lyons Rd At Buckingham Br	12	109.5	107.1	99.1	129.8	13.6	0.92		109.9
Mangawara Stm at Rutherford Rd Br	12	71.4	72.2	65.1	77.6	6.5	-0.29		73.9
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	86.9	87.0	80.6	90.3	2.7	-1.05		85.7
Matahuru Stm at Waiterimu Road Below Confluence	12	78.4	84.2	18.9	89.7	5.2	<u>-2.78</u>		84.8
Ohaeroa Stm at SH22 Br	12	96.1	95.5	91.6	101.5	5.0	0.51		95.7
Opuatia Stm at Ponganui Rd	12	95.2	95.9	88.5	100.3	3.2	-0.60		95.4
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	99.6	98.4	94.0	107.1	7.8	0.31		101.4
Waerenga Stm at Taniwha Rd	12	92.9	97.9	89.9	110.8	7.2	<u>-2.83</u>		97.2
Waitawhiririri Stm at Edgecumbe Street	12	87.0	85.8	76.8	96.6	9.1	0.10		84.8
Whakapipi Stm at SH22 Br	12	91.4	92.4	70.5	102.4	7.8	-1.09		92.3
Whakauru Stm at U/S SH1 Br	12	97.6	98.4	83.2	107.2	3.4	-1.11		98.3
Whangamarino River at Island Block Rd	12	70.2	66.0	14.0	153.4	60.8	0.45		64.3
Whangamarino River at Jefferies Rd Br	12	77.3	81.1	59.1	85.9	10.9	-0.90		76.2
Whangape Stm at Rangiriri-Glen Murray Rd	12	82.3	88.7	34.3	101.2	24.5	-1.14		89.6

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Dissolved Oxygen (g/m³)

Location	Count	Mean	Median	Min	Max	IQR	Skew	12-16	
								Count	Median
Coromandel									
Hikutaia River at Old Maratoto Rd	12	10.1	10.1	8.7	12.3	1.3	0.73		10.1
Kauaeranga River at Smiths Cableway/Recorder	12	10.2	10.2	8.8	11.7	1.4	0.02		10.1
Ohinemuri River at Queens Head	12	10.3	10.4	9.1	12.2	1.8	0.26		10.4
Ohinemuri River at SH25 Br	12	10.4	10.5	9.5	11.2	0.9	-0.18		10.5
Tairua River at Morrisons Br Hikuai	12	9.8	9.8	8.7	10.9	1.3	0.14		9.8
Tapu River at Tapu-Coroglen Rd	12	10.3	10.1	9.4	11.5	1.0	0.47		10.3
Waiau River at E309 Rd Ford	12	10.5	10.5	9.5	11.4	0.5	0.20		10.5
Waitekauri River at U/S Ohinemuri Conflu	12	10.3	10.2	9.3	12.7	1.0	1.29		10.3
Waiwawa River at SH25 Coroglen	12	10.2	10.1	9.1	11.2	1.1	0.13		10.2
Wharekawa River at SH25	12	9.9	9.9	9.1	10.8	1.1	0.22		9.9
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	10.0	9.9	8.9	10.9	0.5	-0.41		9.9
Oraka Stm at Lake Rd	12	9.4	9.5	8.6	10.2	1.1	-0.08		9.6
Piako River at Kiwitahi	12	8.2	8.7	3.5	10.7	3.7	-0.59		9.1
Piako River at Paeroa-Tahuna Rd Br	12	8.4	8.2	6.1	10.4	1.6	0.04		8.3
Piakonui Stm at Piakonui Rd	12	10.4	10.3	9.4	11.5	1.3	0.29		10.2
Waihou River at Okauia	12	9.6	9.7	8.5	10.3	0.8	-0.65		9.7
Waihou River at Whites Rd	12	10.6	10.5	10.1	11.2	0.6	0.48		10.4
Waihotu Stm at Waihotu (Off SH5)	12	9.9	9.9	8.5	10.8	0.9	-0.49		10.0
Waiomou Stm at Matamata-Tauranga Rd	12	9.9	10.0	8.7	10.8	0.8	-0.37		9.8
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	9.0	9.1	7.2	10.3	1.9	-0.30		9.4
Waitoa River at Landsdowne Rd Br	12	8.5	8.6	5.4	10.5	2.6	-0.40		9.1
Waitoa River at Mellon Rd Recorder	12	7.5	7.8	5.6	8.9	2.3	-0.41		7.6
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	8.4	8.7	3.0	12.0	1.4	-1.24		8.9
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	8.4	8.4	5.4	10.3	1.2	-0.74		8.5
Karapiro Stm at Hickey Rd Bridge	12	9.2	9.1	6.9	11.1	1.8	-0.10		9.0
Kirikiroa Stm at Tauhara Dr	12	7.2	7.3	5.7	9.2	1.6	0.35		7.1
Komakorau Stm at Henry Rd	11	7.0	7.0	6.1	8.2	1.2	0.26		6.8
Little Waipa Stm at Arapuni - Putaruru Rd	12	10.3	10.3	9.6	11.1	0.7	0.08		10.3
Mangakotukutuku Stm at Peacocks Rd	12	9.1	8.7	7.9	10.6	1.3	0.60		9.1
Mangamingi Stm (Tokoroa) at Parooni Rd Br	12	10.0	10.0	9.1	10.8	0.6	-0.06		10.1
Mangaone Stm at Annebrooke Rd Br	12	8.3	7.9	7.1	10.1	1.8	0.59		8.1
Mangaonua Stm at Hoeka Rd	12	8.0	8.2	5.5	10.0	2.0	-0.14		8.4
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	10.4	10.3	8.9	11.7	1.5	0.13		10.2
Mangatangi River at SH2 Maramarua	12	8.6	8.5	7.1	9.8	1.3	-0.07		8.4
Mangatawhiri River at Lyons Rd At Buckingham Br	12	10.6	10.6	8.4	11.9	1.7	-0.47		10.6
Mangawara Stm at Rutherford Rd Br	12	7.2	7.4	5.7	8.3	1.2	-0.42		7.5
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	9.0	8.8	8.0	10.4	1.2	0.60		8.7
Matahuru Stm at Waiterimu Road Below Confluence	12	8.6	8.7	6.4	10.0	0.9	-0.77		8.4
Ohaeroa Stm at SH22 Br	12	9.8	10.1	8.4	11.1	0.8	-0.42		9.9
Opuatia Stm at Ponganui Rd	12	9.7	9.8	7.9	11.0	1.0	-0.75		9.7
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	10.1	10.0	9.5	10.7	0.7	0.04		10.4
Waerenga Stm at Taniwha Rd	12	10.2	10.3	8.1	11.8	1.3	-0.31		10.2
Waitawhiririri Stm at Edgecumbe Street	12	8.5	8.5	7.4	10.0	0.8	0.46		8.5
Whakapipi Stm at SH22 Br	12	9.1	9.4	6.1	10.5	2.0	-0.88		9.3
Whakauru Stm at U/S SH1 Br	12	10.1	10.1	9.2	11.0	0.5	0.20		10.1
Whangamarino River at Island Block Rd	12	6.5	5.8	1.4	14.9	4.1	0.73		6.2
Whangamarino River at Jefferies Rd Br	12	7.9	8.4	5.2	9.7	1.7	-0.74		7.7
Whangape Stm at Rangiriri-Glen Murray Rd	12	8.2	8.8	2.9	11.3	3.3	-0.83		9.2

Waipa River and Tributaries

Kaniwhaniwha Stm at Wright Rd	12	85.6	86.6	73.0	99.7	4.7	-0.07	85.7	12	8.6	8.9	6.5	10.2	1.4	-0.60	8.9
Mangaohoi Stm at South Branch Maru Rd	12	101.2	100.5	97.4	105.5	5.1	0.41	99.8	12	10.2	10.1	9.4	10.9	1.0	0.05	10.0
Mangaokewa Stm at Lawrence Street Br	12	96.3	96.5	93.6	100.0	2.7	0.32	95.1	12	10.0	9.9	9.0	11.3	1.2	0.37	10.1
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	101.2	95.1	81.6	144.0	22.4	1.10	96.6	12	9.8	9.8	7.8	11.9	1.6	-0.01	9.7
Mangapu River at Otorohanga	12	92.1	91.9	84.1	101.8	6.4	0.20	93.5	12	9.1	9.0	8.3	10.1	1.0	0.25	9.3
Mangatutu Stm (Waikeria) at Walker Rd Br	12	96.8	96.4	93.5	102.0	4.0	0.57	95.6	12	10.0	10.1	8.9	11.1	1.1	-0.09	9.9
Mangauika Stm at Te Awamutu Borough W/S Intake	12	100.9	99.6	96.9	108.6	4.5	0.97	99.7	12	10.5	10.4	9.4	11.1	0.6	-0.65	10.4
Ohote Stm at Whatawhata/Horotiu Rd	12	47.2	48.8	16.3	77.1	42.9	-0.10	48.0	12	4.9	4.9	1.5	8.3	4.9	0.05	4.6
Puniu River at Bartons Corner Rd Br	12	92.9	92.6	85.1	99.3	7.2	-0.11	93.5	12	9.4	9.4	7.8	10.7	1.1	0.06	9.4
Waipa River at Mangaokewa Rd	12	103.3	102.3	98.9	112.9	4.9	1.27	102.5	12	10.2	10.2	9.4	11.2	0.8	0.38	10.2
Waipa River at Pukehoua Bridge on Baffin Road	9	92.3	91.9	88.2	97.5	3.2	0.75		9	9.6	9.7	8.9	10.2	0.8	-0.06	
Waipa River at SH3 Otorohanga	12	100.8	97.6	91.4	118.2	10.1	0.97	101.3	12	10.0	10.0	8.7	11.2	1.1	-0.03	10.2
Waitomo Stm at SH31 Otorohanga	12	95.5	91.9	86.8	111.6	9.6	0.99	97.6	12	9.6	9.6	8.7	11.1	1.2	0.53	9.9
Waitomo Stm at Tumutumumu Rd	12	100.9	98.7	94.9	110.1	7.9	0.53	102.3	12	10.3	10.3	9.2	11.4	0.3	-0.01	10.5

Tributaries to the upper Waikato River

Kawaunui Stm at SH5 Br	12	88.4	87.7	83.9	100.6	4.9	1.45	86.3	12	8.6	8.5	7.9	10.0	0.7	1.15	8.5
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	94.9	94.6	91.6	99.3	4.4	0.42	93.6	12	9.6	9.6	8.9	10.1	0.5	-0.10	9.6
Mangakara Stm (Reporoa) at SH5	12	93.5	93.3	90.3	98.2	3.5	0.52	91.9	12	9.4	9.4	8.5	10.0	0.5	-0.42	9.4
Mangakino Stm (Whakamaru) at Sandel Rd	12	104.6	103.9	99.7	109.3	5.4	0.25	102.3	12	10.9	10.9	9.7	11.7	0.9	-0.51	10.8
Otamakokore Stm at Hossack Rd	12	95.7	97.4	83.4	102.5	7.1	-0.94	98.9	12	8.2	8.3	7.5	8.9	0.7	-0.18	8.5
Pueto Stm at Broadlands Rd Br	12	96.0	95.1	92.7	100.6	3.8	0.66	93.9	12	9.6	9.6	8.8	10.1	0.3	-0.60	9.5
Tahunaatara Stm at Ohakuri Rd	12	103.0	103.3	98.2	110.4	5.3	0.50	103.6	12	10.4	10.5	9.2	10.9	0.5	-1.16	10.6
Torepatutahi Stm at Vaile Rd Br	12	98.0	95.6	86.7	115.3	10.0	0.76	99.1	12	9.7	9.8	8.4	10.6	0.9	-0.44	9.9
Waiotapu Stm at Campbell Rd Br	12	87.7	87.5	84.4	92.3	4.2	0.46	87.4	12	6.5	6.6	6.0	6.9	0.5	-0.43	6.6
Waiotapu Stm at Homestead Rd Br	12	84.7	85.2	75.8	89.4	5.6	-0.80	88.0	12	7.7	7.6	7.0	8.3	0.7	0.24	8.1
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	100.2	99.6	96.6	104.8	4.9	0.37	99.0	12	8.4	8.4	7.8	8.9	0.4	-0.25	8.4
Whirinaki Stm at Corbett Rd	12	99.3	98.7	94.6	106.0	5.8	0.28	96.6	12	10.2	10.2	9.7	10.9	0.5	0.55	10.1

West Coast

Awakino River at Gribbon Rd	12	103.6	101.4	97.9	116.6	6.6	1.12	102.6	12	10.7	10.6	9.8	11.8	1.0	0.28	10.6
Awakino River at SH3 Awakau Rd Junction	12	103.1	100.0	96.4	116.9	10.6	0.94	103.5	12	10.4	10.3	9.0	11.9	0.9	0.29	10.7
Manganui River at Off Manganui Rd	12	101.1	99.7	96.3	107.9	7.8	0.48	100.6	12	10.4	10.3	9.3	11.5	0.8	0.34	10.3
Mangaotaki River at SH3 Br	12	103.8	103.0	98.5	110.9	5.2	0.54	103.4	12	10.6	10.5	9.8	11.8	0.9	0.71	10.5
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	103.6	101.9	97.8	113.1	5.7	0.90	104.2	12	10.7	10.7	9.9	11.8	0.5	0.71	10.7
Mokau River at Awakau Rd	12	94.9	95.0	91.9	98.5	3.5	0.10	95.6	12	9.6	9.7	8.4	10.8	1.1	0.11	9.7
Mokau River at Mangaokewa Rd (Off SH30)	12	100.6	100.3	95.5	105.6	4.3	-0.01	99.9	12	10.3	10.3	9.6	11.4	0.9	0.51	10.3
Mokau River at Totoro Rd Recorder	12	104.4	103.8	99.0	113.3	5.1	0.63	102.9	12	10.6	10.5	9.8	11.7	0.9	0.59	10.4
Mokauiti Stm at Three Way Point - Aria	12	91.6	90.9	83.5	103.0	12.5	0.31	94.0	12	9.2	9.0	7.6	10.7	1.6	0.18	9.5
Ohautira Stm at Waingaro Te Uku Rd	12	95.8	96.1	89.0	100.6	3.3	-0.51	94.9	12	10.0	10.0	8.2	11.3	0.7	-0.64	10.1
Oparau River at Langdon Rd (Off Okupata Rd)	12	104.2	101.5	98.0	113.0	9.9	0.57	105.7	12	10.6	10.5	9.3	11.6	0.8	-0.03	10.7
Tawarau River at Off Speedies Rd	12	104.0	102.1	97.8	111.3	6.4	0.57	104.3	12	10.7	10.6	9.8	11.7	0.5	0.44	10.7
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	93.5	92.8	85.6	104.0	7.2	0.54	93.5	12	9.4	9.7	7.5	11.0	1.2	-0.34	9.7
Waitetuna River at Te Uku-Waingaro Rd	12	97.2	97.4	88.3	105.4	2.7	-0.23	95.9	12	9.9	10.1	7.6	11.3	0.6	-1.17	10.2

Inflows to Lake Taupo

Hinemaiaia River at SH1	12	100.3	99.6	97.6	105.7	2.6	1.14	100.2	12	10.5	10.5	8.9	11.4	1.1	-0.52	10.6
Kuratau River at SH41 Moerangi	12	96.0	96.3	91.3	99.7	3.6	-0.29	94.0	12	10.0	10.1	8.9	10.8	1.1	-0.32	10.1
Kuratau River at Te Rae Street	12	96.2	99.2	69.3	109.1	7.5	-1.34	100.3	12	9.8	10.2	5.9	11.3	1.8	-1.25	10.3
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	88.1	86.6	83.1	97.9	5.2	1.23	86.9	12	9.3	9.3	8.5	9.7	0.6	-0.61	9.3
Tauranga- Taupo River at 20 Metres U/S SH1 Bridge	12	99.0	98.4	96.2	103.3	3.2	0.72	98.4	12	10.5	10.6	8.8	11.6	1.3	-0.49	10.5
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	101.4	99.5	95.9	107.9	6.7	0.35	102.9	12	10.3	10.4	8.4	11.9	1.6	-0.41	10.5
Tokaanu Stm at Off SH41 Turangi	12	82.8	81.9	78.3	89.7	4.6	0.70	82.0	12	8.6	8.6	7.9	9.3	0.5	0.16	8.4
Waihaha River at SH32	12	103.0	102.3	99.3	110.0	6.5	0.55	102.2	12	10.7	10.7	9.3	11.6	0.8	-0.80	10.6
Waitahanui River at Blake Rd	12	99.6	98.7	96.2	104.5	2.6	0.87	99.0	12	10.6	10.7	9.7	11.1	0.7	-0.78	10.7
Whangamata Stm (Kinloch) at Whangamata Rd	12	95.3	94.8	91.4	99.9	4.4	0.41	95.0	12	10.2	10.4	9.1	10.6	0.5	-1.32	10.3
Whanganui Stm at Lakeside Lake Taupo	12	100.6	101.3	91.3	105.3	5.7	-0.95	101.1	12	10.6	10.7	8.3	11.5	1.1	-1.26	10.6
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	97.2	96.4	93.7	102.3	4.5	0.51	96.1	12	10.3	10.2	8.8	11.2	1.1	-0.37	10.1

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Dissolved Reactive Phosphorus (g/m³)

Location	12-16							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.003	0.004	0.002	0.006	0.002	0.38	0.002
Kauaeranga River at Smiths Cableway/Recorder	12	0.003	0.002	0.002	0.007	0.000	<u>1.79</u>	0.002
Ohinemuri River at Queens Head	12	0.005	0.002	0.002	0.015	0.004	1.49	0.002
Ohinemuri River at SH25 Br	12	0.006	0.005	0.002	0.015	0.003	1.63	0.004
Tairua River at Morrisons Br Hikuai	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Tapu River at Tapu-Coroglen Rd	12	0.002	0.002	0.002	0.005	0.000	<u>3.02</u>	0.002
Waiiau River at E309 Rd Ford	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Waitekauri River at U/S Ohinemuri Conflu	12	0.003	0.002	0.002	0.010	0.000	<u>3.02</u>	0.002
Waiwawa River at SH25 Coroglen	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002
Wharekawa River at SH25	12	0.003	0.002	0.002	0.006	0.001	1.45	0.002
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.040	0.040	0.033	0.047	0.008	0.07	0.037
Oraka Stm at Lake Rd	12	0.082	0.066	0.048	0.160	0.030	1.34	0.086
Piako River at Kiwitahi	12	0.040	0.044	0.022	0.055	0.022	-0.44	0.044
Piako River at Paeroa-Tahuna Rd Br	12	0.232	0.230	0.045	0.460	0.295	0.12	0.230
Piakonui Stm at Piakonui Rd	12	0.013	0.013	0.008	0.020	0.010	0.18	0.012
Waihou River at Okauia	12	0.059	0.061	0.049	0.068	0.011	-0.21	0.062
Waihou River at Whites Rd	12	0.075	0.075	0.070	0.079	0.002	-0.28	0.074
Waihotu Stm at Waihotu (Off SH5)	12	0.015	0.014	0.008	0.022	0.007	0.21	0.013
Waiomou Stm at Matamata-Tauranga Rd	12	0.020	0.020	0.016	0.026	0.004	0.72	0.019
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.023	0.025	0.014	0.030	0.008	-0.51	0.024
Waitoa River at Landsdowne Rd Br	12	0.020	0.021	0.010	0.036	0.011	0.52	0.022
Waitoa River at Mellon Rd Recorder	12	0.069	0.062	0.044	0.124	0.018	1.47	0.059
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.003	0.002	0.002	0.005	0.001	1.34	0.002
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	0.003	0.002	0.002	0.005	0.003	0.81	0.002
Karapiro Stm at Hickey Rd Bridge	12	0.058	0.065	0.020	0.091	0.035	-0.41	0.049
Kirikiriroa Stm at Tauhara Dr	12	0.012	0.012	0.009	0.022	0.003	<u>2.02</u>	0.012
Komakorau Stm at Henry Rd	12	0.010	0.007	0.002	0.025	0.009	0.90	0.009
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.064	0.062	0.044	0.102	0.020	0.98	0.056
Mangakotukutuku Stm at Peacocks Rd	12	0.302	0.181	0.049	0.980	0.353	1.24	0.169
Mangamingi Stm (Tokoraka) at Paraonui Rd Br	12	0.253	0.225	0.143	0.430	0.156	0.61	0.265
Mangaone Stm at Annebrooke Rd Br	12	0.070	0.074	0.050	0.084	0.015	-0.70	0.063
Mangaonua Stm at Hoeka Rd	12	0.018	0.013	0.006	0.059	0.010	<u>2.03</u>	0.013
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	0.016	0.016	0.008	0.024	0.011	-0.07	0.016
Mangatangi River at SH2 Maramara	12	0.021	0.021	0.012	0.028	0.010	-0.01	0.021
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.015	0.014	0.009	0.021	0.007	0.23	0.012
Mangawara Stm at Rutherford Rd Br	12	0.052	0.029	0.015	0.121	0.074	0.57	0.047
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.062	0.025	0.014	0.186	0.073	1.06	0.037
Matahuru Stm at Waiterimu Road Below Confluence	12	0.025	0.024	0.018	0.039	0.007	1.02	0.024
Ohaeroa Stm at SH22 Br	12	0.011	0.011	0.007	0.017	0.007	0.30	0.008
Opuatia Stm at Ponganui Rd	12	0.007	0.007	0.002	0.014	0.003	0.55	0.006
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.094	0.092	0.074	0.112	0.005	-0.17	0.092
Waerenga Stm at Taniwha Rd	12	0.022	0.018	0.012	0.043	0.013	1.00	0.020
Waitawhinwhiri Stm at Edgecumbe Street	12	0.038	0.033	0.015	0.074	0.034	0.37	0.025
Whakapipi Stm at SH22 Br	12	0.033	0.032	0.013	0.072	0.019	0.95	0.028
Whakauru Stm at U/S SH1 Br	12	0.035	0.033	0.024	0.068	0.014	1.59	0.025
Whangamarino River at Island Block Rd	12	0.010	0.006	0.002	0.032	0.010	1.37	0.006
Whangamarino River at Jefferies Rd Br	12	0.029	0.027	0.020	0.043	0.008	0.83	0.029
Whangape Stm at Rangiriri-Glen Murray Rd	12	0.002	0.002	0.002	0.002	0.000	-1.00	0.002

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions.

Total Phosphorus (g/m³)

Location	12-16							
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.007	0.008	0.002	0.014	0.003	0.56	0.008
Kauaeranga River at Smiths Cableway/Recorder	12	0.007	0.006	0.002	0.016	0.009	0.43	0.006
Ohinemuri River at Queens Head	12	0.017	0.009	0.006	0.066	0.018	<u>1.95</u>	0.010
Ohinemuri River at SH25 Br	12	0.013	0.011	0.007	0.028	0.002	<u>1.86</u>	0.011
Tairua River at Morrisons Br Hikuai	12	0.005	0.004	0.002	0.010	0.004	0.79	0.004
Tapu River at Tapu-Coroglen Rd	12	0.006	0.002	0.002	0.025	0.004	<u>1.95</u>	0.002
Waiiau River at E309 Rd Ford	12	0.023	0.006	0.002	0.220	0.004	<u>3.01</u>	0.006
Waitekauri River at U/S Ohinemuri Conflu	12	0.006	0.004	0.002	0.024	0.005	<u>2.25</u>	0.006
Waiwawa River at SH25 Coroglen	12	0.006	0.002	0.002	0.041	0.004	<u>2.83</u>	0.002
Wharekawa River at SH25	12	0.005	0.005	0.002	0.008	0.005	-0.21	0.005
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.054	0.053	0.039	0.071	0.015	0.26	0.048
Oraka Stm at Lake Rd	12	0.138	0.122	0.084	0.250	0.085	0.79	0.121
Piako River at Kiwitahi	12	0.064	0.059	0.045	0.148	0.016	<u>2.54</u>	0.063
Piako River at Paeroa-Tahuna Rd Br	12	0.289	0.275	0.107	0.510	0.268	0.16	0.285
Piakonui Stm at Piakonui Rd	12	0.025	0.023	0.016	0.044	0.011	1.01	0.020
Waihou River at Okauia	12	0.091	0.088	0.072	0.113	0.033	0.20	0.082
Waihou River at Whites Rd	12	0.078	0.079	0.072	0.084	0.009	-0.04	0.078
Waihotu Stm at Waihotu (Off SH5)	12	0.028	0.025	0.020	0.036	0.013	0.25	0.026
Waiomou Stm at Matamata-Tauranga Rd	12	0.041	0.032	0.025	0.127	0.008	<u>2.60</u>	0.034
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.051	0.051	0.026	0.074	0.014	-0.17	0.056
Waitoa River at Landsdowne Rd Br	12	0.043	0.035	0.018	0.113	0.028	1.37	0.044
Waitoa River at Mellon Rd Recorder	12	0.114	0.112	0.080	0.169	0.057	0.37	0.105
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.034	0.032	0.018	0.053	0.016	0.49	0.040
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	0.021	0.013	0.007	0.069	0.014	<u>1.76</u>	0.011
Karapiro Stm at Hickey Rd Bridge	12	0.098	0.100	0.056	0.200	0.038	1.44	0.087
Kirikiriroa Stm at Tauhara Dr	12	0.055	0.058	0.035	0.066	0.011	-0.96	0.060
Komakorau Stm at Henry Rd	12	0.097	0.098	0.064	0.126	0.012	-0.29	0.090
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.093	0.075	0.054	0.230	0.033	<u>1.85</u>	0.071
Mangakotukutuku Stm at Peacocks Rd	12	0.460	0.370	0.184	1.050	0.430	0.83	0.395
Mangamingi Stm (Tokoraka) at Paraonui Rd Br	12	0.301	0.315	0.176	0.450	0.135	0.28	0.320
Mangaone Stm at Annebrooke Rd Br	12	0.121	0.121	0.084	0.170	0.037	0.32	0.108
Mangaonua Stm at Hoeka Rd	12	0.072	0.042	0.030	0.280	0.035	<u>2.20</u>	0.051
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	0.032	0.028	0.016	0.082	0.024	1.60	0.028
Mangatangi River at SH2 Maramara	12	0.062	0.049	0.038	0.102	0.037	0.77	0.062
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.039	0.033	0.020	0.078	0.029	0.83	0.025
Mangawara Stm at Rutherford Rd Br	12	0.173	0.154	0.096	0.310	0.091	0.78	0.184
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.181	0.148	0.110	0.360	0.077	1.33	0.150
Matahuru Stm at Waiterimu Road Below Confluence	12	0.095	0.094	0.054	0.142	0.052	0.16	0.092
Ohaeroa Stm at SH22 Br	12	0.030	0.027	0.020	0.053	0.011	1.21	0.027
Opuatia Stm at Ponganui Rd	12	0.043	0.030	0.012	0.130	0.021	1.62	0.030
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.132	0.119	0.101	0.240	0.024	<u>1.93</u>	0.111
Waerenga Stm at Taniwha Rd	12	0.046	0.041	0.027	0.087	0.025	0.98	0.045
Waitawhinwhiri Stm at Edgecumbe Street	12	0.123	0.098	0.052	0.240	0.105	0.79	0.086
Whakapipi Stm at SH22 Br	12	0.053	0.050	0.034	0.082	0.021	0.62	0.054
Whakauru Stm at U/S SH1 Br	12	0.088	0.067	0.043	0.220	0.033	1.59	0.050
Whangamarino River at Island Block Rd	12	0.143	0.127	0.088	0.240	0.078	0.85	0.140
Whangamarino River at Jefferies Rd Br	12	0.092	0.097	0.069	0.118	0.037	0.04	0.085
Whangape Stm at Rangiriri-Glen Murray Rd	12	0.117	0.105	0.057	0.193	0.057	0.54	0.119

Waipa River and Tributaries

Kaniwhaniwha Stm at Wright Rd	12	0.011	0.010	0.005	0.025	0.006	1.22	0.007
Mangaohoi Stm at South Branch Maru Rd	12	0.039	0.041	0.014	0.060	0.019	-0.45	0.041
Mangaokewa Stm at Lawrence Street Br	12	0.019	0.018	0.008	0.028	0.009	-0.07	0.015
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	0.136	0.134	0.044	0.350	0.087	1.43	0.118
Mangapu River at Otorohanga	12	0.025	0.021	0.016	0.042	0.011	0.97	0.023
Mangatutu Stm (Waikeria) at Walker Rd Br	12	0.010	0.010	0.006	0.016	0.004	0.54	0.008
Mangauika Stm at Te Awamutu Borough W/S Intake	12	0.004	0.005	0.002	0.008	0.003	0.53	0.002
Ohote Stm at Whatawhata/Horotiu Rd	12	0.021	0.020	0.010	0.030	0.011	-0.04	0.020
Puniu River at Bartons Corner Rd Br	12	0.023	0.023	0.015	0.030	0.004	-0.07	0.022
Waipa River at Mangaokewa Rd	12	0.007	0.006	0.004	0.013	0.005	0.81	0.006
Waipa River at Pukehoua Bridge on Baffin Road	9	0.016	0.016	0.013	0.020	0.002	0.45	
Waipa River at SH3 Otorohanga	12	0.010	0.010	0.005	0.018	0.005	0.55	0.008
Waitomo Stm at SH31 Otorohanga	12	0.009	0.008	0.002	0.018	0.003	1.07	0.006
Waitomo Stm at Tumutumu Rd	12	0.011	0.010	0.007	0.019	0.003	1.22	0.010

	12	0.052	0.048	0.023	0.102	0.037	0.69	0.026
	12	0.049	0.051	0.023	0.072	0.019	-0.28	0.053
	12	0.056	0.051	0.023	0.113	0.053	0.59	0.036
	12	0.223	0.207	0.100	0.420	0.171	0.61	0.210
	12	0.067	0.068	0.028	0.126	0.040	0.55	0.047
	12	0.027	0.019	0.013	0.071	0.008	1.66	0.019
	12	0.009	0.008	0.002	0.024	0.006	1.30	0.008
	12	0.085	0.095	0.045	0.118	0.043	-0.42	0.077
	12	0.065	0.055	0.032	0.141	0.037	1.23	0.047
	12	0.023	0.018	0.009	0.064	0.015	1.51	0.016
	9	0.077	0.052	0.028	0.220	0.042	1.66	
	12	0.058	0.027	0.012	0.320	0.018	<u>2.61</u>	0.022
	12	0.100	0.059	0.012	0.440	0.100	<u>2.14</u>	0.029
	12	0.058	0.027	0.012	0.300	0.032	<u>2.61</u>	0.022

Tributaries to the upper Waikato River

Kawaunui Stm at SH5 Br	12	0.053	0.055	0.030	0.065	0.009	-1.27	0.052
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.032	0.032	0.028	0.034	0.003	-0.73	0.032
Mangakara Stm (Reporoa) at SH5	12	0.047	0.047	0.040	0.061	0.008	0.85	0.048
Mangakino Stm (Whakamaru) at Sandel Rd	12	0.037	0.037	0.021	0.052	0.018	-0.24	0.038
Otamakokore Stm at Hossack Rd	12	0.164	0.167	0.132	0.192	0.033	-0.29	0.152
Pueto Stm at Broadlands Rd Br	12	0.074	0.074	0.066	0.082	0.008	-0.03	0.072
Tahunaaatara Stm at Ohakuri Rd	12	0.040	0.040	0.032	0.048	0.006	0.23	0.034
Torepatutahi Stm at Vaile Rd Br	12	0.085	0.083	0.074	0.106	0.008	1.19	0.084
Waiotapu Stm at Campbell Rd Br	12	0.002	0.002	0.002	0.004	0.000	<u>1.79</u>	0.002
Waiotapu Stm at Homestead Rd Br	12	0.034	0.037	0.008	0.050	0.021	-0.75	0.034
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.092	0.092	0.076	0.104	0.013	-0.23	0.089
Whirinaki Stm at Corbett Rd	12	0.062	0.062	0.056	0.065	0.003	-0.82	0.061

	12	0.087	0.077	0.066	0.162	0.026	<u>1.96</u>	0.076
	12	0.063	0.056	0.039	0.118	0.020	1.51	0.051
	12	0.073	0.070	0.058	0.117	0.011	<u>2.01</u>	0.072
	12	0.054	0.050	0.032	0.125	0.010	<u>2.50</u>	0.048
	12	0.159	0.1585	0.139	0.19	0.0165	0.62	0.148
	12	0.090	0.090	0.071	0.122	0.020	0.66	0.089
	12	0.061	0.055	0.046	0.095	0.027	0.86	0.048
	12	0.094	0.093	0.082	0.117	0.007	1.31	0.096
	12	0.056	0.055	0.016	0.092	0.032	0.00	0.069
	12	0.104	0.094	0.059	0.153	0.039	0.44	0.098
	12	0.098	0.096	0.076	0.116	0.022	-0.01	0.095
	12	0.066	0.065	0.059	0.076	0.008	0.62	0.063

West Coast

Awakino River at Gribbon Rd	12	0.014	0.015	0.010	0.020	0.004	0.32	0.012
Awakino River at SH3 Awakau Rd Junction	12	0.017	0.012	0.002	0.086	0.006	<u>2.80</u>	0.009
Manganui River at Off Manganui Rd	12	0.016	0.016	0.010	0.023	0.007	0.10	0.013
Mangaotaki River at SH3 Br	12	0.017	0.014	0.007	0.033	0.006	1.15	0.012
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.016	0.016	0.011	0.021	0.005	0.12	0.014
Mokau River at Awakau Rd	12	0.010	0.010	0.002	0.018	0.003	0.26	0.007
Mokau River at Mangaokewa Rd (Off SH30)	12	0.015	0.015	0.010	0.021	0.007	0.15	0.015
Mokau River at Totoro Rd Recorder	12	0.014	0.013	0.006	0.021	0.007	0.14	0.010
Mokauiti Stm at Three Way Point - Aria	12	0.021	0.010	0.005	0.128	0.006	<u>2.82</u>	0.008
Ohautira Stm at Waingaro Te Uku Rd	12	0.020	0.021	0.010	0.025	0.004	-1.24	0.019
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.007	0.008	0.002	0.010	0.002	-0.81	0.006
Tawarau River at Off Speedies Rd	12	0.018	0.016	0.012	0.031	0.006	1.25	0.014
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	0.011	0.012	0.006	0.016	0.003	-0.22	0.010
Waitetuna River at Te Uku-Waingaro Rd	12	0.013	0.013	0.004	0.035	0.006	<u>1.80</u>	0.012

	12	0.050	0.017	0.010	0.220	0.029	<u>1.75</u>	0.016
	12	0.061	0.027	0.010	0.320	0.054	<u>2.53</u>	0.017
	12	0.050	0.027	0.007	0.230	0.038	<u>2.39</u>	0.023
	12	0.088	0.027	0.016	0.480	0.084	<u>2.23</u>	0.024
	12	0.071	0.030	0.010	0.470	0.017	<u>2.92</u>	0.025
	12	0.074	0.060	0.018	0.260	0.067	<u>1.76</u>	0.032
	12	0.038	0.029	0.021	0.073	0.033	0.87	0.035
	12	0.089	0.046	0.015	0.300	0.108	1.23	0.028
	12	0.132	0.052	0.024	0.600	0.140	<u>1.91</u>	0.034
	12	0.071	0.055	0.025	0.220	0.051	1.67	0.036
	12	0.155	0.017	0.004	1.610	0.011	<u>3.00</u>	0.014
	12	0.072	0.029	0.010	0.470	0.021	<u>2.89</u>	0.024
	12	0.079	0.035	0.017	0.300	0.063	1.67	0.031
	12	0.070	0.045	0.016	0.180	0.076	1.04	0.032

Inflows to Lake Taupo

Hinemaiaia River at SH1	12	0.024	0.022	0.017	0.033	0.008	0.56	0.026
Kuratau River at SH41 Moerangi	12	0.003	0.002	0.002	0.006	0.000	<u>2.22</u>	0.002
Kuratau River at Te Rae Street	12	0.007	0.005	0.002	0.016	0.007	0.85	0.002
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	0.141	0.141	0.124	0.159	0.014	-0.18	0.125
Tauranga- Taupo River at 20 Metres U/S SH1 Bridge	12	0.012	0.014	0.009	0.015	0.004	-0.40	0.013
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	0.003	0.002	0.002	0.006	0.001	1.68	0.002
Tokaanu Stm at Off SH41 Turangi	12	0.076	0.076	0.066	0.083	0.005	-0.71	0.076
Waihaha River at SH32	12	0.018	0.019	0.007	0.027	0.012	-0.29	0.018
Waitahanui River at Blake Rd	12	0.041	0.040	0.037	0.051	0.005	1.26	0.043
Whangamata Stm (Kinloch) at Whangamata Rd	12	0.079	0.074	0.068	0.105	0.009	1.43	0.067
Whanganui Stm at Lakeside Lake Taupo	12	0.009	0.009	0.004	0.017	0.006	0.58	0.009
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	0.018	0.019	0.012	0.027	0.007	0.24	0.020

	12	0.030	0.031	0.020	0.042	0.009	0.21	0.033
	12	0.004	0.004	0.002	0.010	0.003	1.18	0.004
	12	0.015	0.015	0.008	0.024	0.005	0.21	0.013
	12	0.158	0.158	0.144	0.181	0.008	0.97	0.144
	12	0.018	0.016	0.011	0.035	0.006	1.63	0.016
	12	0.012	0.012	0.007	0.016	0.004	0.00	0.012
	12	0.080	0.079	0.074	0.088	0.006	0.82	0.078
	12	0.024	0.024	0.012	0.038	0.012	0.20	0.024
	12	0.045	0.045	0.040	0.050	0.006	0.01	0.046
	12	0.085	0.079	0.073	0.127	0.019	1.51	0.073
	12	0.018	0.015	0.008	0.069	0.004	<u>2.81</u>	0.014
	12	0.037	0.035	0.026	0.060	0.009	1.21	0.032

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions.

Ammoniacal Nitrogen (g/m³N)

Location	Ammoniacal Nitrogen (g/m ³ N)								12-16 Median
	Count	Mean	Median	Min	Max	IQR	Skew	Median	
Coromandel									
Hikutaia River at Old Maratoto Rd	12	0.01	0.01	0.01	0.02	0.00	<u>1.98</u>	0.005	
Kauaeranga River at Smiths Cableway/Recorder	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	
Ohinemuri River at Queens Head	12	0.08	0.07	0.02	0.14	0.05	0.39	0.056	
Ohinemuri River at SH25 Br	12	0.01	0.01	0.01	0.05	0.00	<u>3.02</u>	0.005	
Tairua River at Morrisons Br Hikuai	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	
Tapu River at Tapu-Coroglen Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	
Waiuu River at E309 Rd Ford	12	0.01	0.01	0.01	0.02	0.00	<u>3.02</u>	0.005	
Waitekauri River at U/S Ohinemuri Conflu	12	0.01	0.01	0.01	0.02	0.00	<u>3.02</u>	0.005	
Waiwawa River at SH25 Coroglen	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	
Wharekawa River at SH25	12	0.01	0.01	0.01	0.05	0.00	<u>3.02</u>	0.005	
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	
Oraka Stm at Lake Rd	12	0.13	0.05	0.01	0.55	0.10	1.64	0.034	
Piako River at Kiiwiti	12	0.03	0.01	0.01	0.09	0.04	1.22	0.005	
Piako River at Paeroa-Tahuna Rd Br	12	0.04	0.03	0.01	0.12	0.06	0.66	0.022	
Piakonui Stm at Piakonui Rd	12	0.01	0.01	0.01	0.03	0.00	<u>3.02</u>	0.005	
Waihou River at Okauia	12	0.02	0.01	0.01	0.07	0.04	0.84	0.011	
Waihou River at Whites Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	
Waihotu Stm at Waihotu (Off SH5)	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	
Waiomou Stm at Matamata-Tauranga Rd	12	0.02	0.01	0.01	0.07	0.01	<u>1.78</u>	0.010	
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.01	0.01	0.01	0.04	0.01	1.26	0.012	
Waitoa River at Landsdowne Rd Br	12	0.02	0.01	0.01	0.05	0.01	1.36	0.008	
Waitoa River at Mellon Rd Recorder	12	0.06	0.02	0.01	0.26	0.07	1.66	0.028	
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otua Rd Br opp Moseley Rd	12	0.05	0.04	0.01	0.17	0.06	1.15	0.040	
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	0.03	0.02	0.01	0.08	0.04	0.92	0.035	
Karapiro Stm at Hickey Rd Bridge	12	0.04	0.02	0.01	0.22	0.05	<u>2.20</u>	0.019	
Kirikiriroa Stm at Tauhara Dr	12	0.24	0.22	0.13	0.40	0.12	0.63	0.255	
Komakorau Stm at Henry Rd	12	0.52	0.49	0.01	1.20	0.62	0.29	0.720	
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.03	0.01	0.01	0.12	0.01	<u>1.91</u>	0.012	
Mangakotukutuku Stm at Peacocks Rd	12	0.22	0.20	0.05	0.55	0.17	0.93	0.176	
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.32	0.30	0.08	0.70	0.20	0.82	0.260	
Mangaone Stm at Annebrooke Rd Br	12	0.02	0.01	0.01	0.04	0.01	0.70	0.017	
Mangaonua Stm at Hoeka Rd	12	0.06	0.05	0.01	0.14	0.08	0.43	0.083	
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	0.01	0.01	0.01	0.01	0.00	1.18	0.005	
Mangatangi River at SH2 Maramarua	12	0.01	0.01	0.01	0.03	0.02	0.41	0.012	
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.01	0.01	0.01	0.03	0.00	<u>2.41</u>	0.005	
Mangawara Stm at Rutherford Rd Br	12	0.31	0.34	0.09	0.51	0.34	-0.04	0.300	
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.13	0.11	0.04	0.30	0.15	0.65	0.101	
Matahuru Stm at Waiterimu Road Below Confluence	12	0.05	0.04	0.01	0.11	0.05	0.70	0.048	
Ohaeroa Stm at SH22 Br	12	0.01	0.01	0.01	0.02	0.01	0.52	0.005	
Opuatia Stm at Ponganui Rd	12	0.01	0.01	0.01	0.03	0.01	<u>1.92</u>	0.008	
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.03	0.01	0.01	0.18	0.03	<u>2.46</u>	0.005	
Waerenga Stm at Taniwha Rd	12	0.01	0.01	0.01	0.02	0.01	0.88	0.011	
Waitawhiriwhiri Stm at Edgecumbe Street	12	0.53	0.56	0.25	0.77	0.17	-0.40	0.590	
Whakapipi Stm at SH22 Br	12	0.01	0.01	0.01	0.03	0.01	<u>2.77</u>	0.012	
Whakauru Stm at U/S SH1 Br	12	0.02	0.01	0.01	0.09	0.01	<u>2.22</u>	0.005	
Whangamarino River at Island Block Rd	12	0.17	0.11	0.01	0.61	0.25	1.11	0.041	
Whangamarino River at Jefferies Rd Br	12	0.04	0.04	0.01	0.08	0.03	0.53	0.028	
Whangape Stm at Rangiriri-Glen Murray Rd	12	0.03	0.01	0.01	0.23	0.02	<u>2.57</u>	0.005	

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Nitrate/Nitrite (g/m³)

Location	Nitrate/Nitrite (g/m ³)								12-16 Median
	Count	Mean	Median	Min	Max	IQR	Skew	Median	
Coromandel									
Hikutaia River at Old Maratoto Rd	12	0.059	0.018	0.002	0.240	0.106	1.24	0.019	
Kauaeranga River at Smiths Cableway/Recorder	12	0.050	0.029	0.001	0.164	0.057	1.20	0.032	
Ohinemuri River at Queens Head	12	1.108	1.010	0.830	1.840	0.250	<u>1.84</u>	0.940	
Ohinemuri River at SH25 Br	12	0.560	0.530	0.220	0.900	0.320	0.05	0.460	
Tairua River at Morrisons Br Hikuai	12	0.037	0.019	0.002	0.153	0.051	1.65	0.016	
Tapu River at Tapu-Coroglen Rd	12	0.009	0.003	0.001	0.033	0.013	1.21	0.003	
Waiuu River at E309 Rd Ford	12	0.041	0.014	0.001	0.200	0.046	<u>1.83</u>	0.016	
Waitekauri River at U/S Ohinemuri Conflu	12	0.163	0.125	0.002	0.410	0.240	0.36	0.108	
Waiwawa River at SH25 Coroglen	12	0.016	0.006	0.002	0.072	0.019	<u>1.97</u>	0.006	
Wharekawa River at SH25	12	0.079	0.054	0.007	0.240	0.112	0.92	0.051	
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.346	0.310	0.230	0.510	0.170	0.38	0.320	
Oraka Stm at Lake Rd	12	2.213	2.200	1.890	2.600	0.470	0.25	2.100	
Piako River at Kiiwiti	12	1.084	0.514	0.022	3.500	2.065	0.81	0.635	
Piako River at Paeroa-Tahuna Rd Br	12	1.485	1.070	0.128	3.600	<u>1.760</u>	0.60	1.275	
Piakonui Stm at Piakonui Rd	12	0.300	0.186	0.119	0.680	0.346	0.84	0.195	
Waihou River at Okauia	12	1.243	1.220	0.990	1.820	0.275	1.24	1.130	
Waihou River at Whites Rd	12	0.779	0.780	0.740	0.850	0.025	0.92	0.750	
Waihotu Stm at Waihotu (Off SH5)	12	0.165	0.167	0.122	0.240	0.061	0.53	0.143	
Waiomou Stm at Matamata-Tauranga Rd	12	0.581	0.480	0.290	1.310	0.390	1.15	0.490	
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.230	0.187	0.006	0.840	0.312	1.21	0.190	
Waitoa River at Landsdowne Rd Br	12	1.581	1.300	0.820	3.000	1.210	0.76	1.420	
Waitoa River at Mellon Rd Recorder	12	2.018	1.765	0.820	3.600	1.070	0.56	1.925	
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otua Rd Br opp Moseley Rd	12	1.390	1.425	0.124	2.600	1.370	0.02	1.365	
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	0.425	0.485	0.046	0.810	0.419	-0.24	0.640	
Karapiro Stm at Hickey Rd Bridge	12	0.721	0.655	0.184	1.830	0.850	0.80	0.520	
Kirikiriroa Stm at Tauhara Dr	12	0.996	0.680	0.470	2.300	0.860	1.10	0.740	
Komakorau Stm at Henry Rd	12	1.608	1.370	1.230	3.000	0.405	<u>2.12</u>	1.340	
Little Waipa Stm at Arapuni - Putaruru Rd	12	1.942	2.020	1.500	2.400	0.735	-0.10	1.620	
Mangakotukutuku Stm at Peacocks Rd	12	1.008	0.850	0.700	2.300	0.080	<u>2.20</u>	0.805	
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	2.588	2.650	1.750	3.400	0.600	-0.02	2.600	
Mangaone Stm at Annebrooke Rd Br	12	2.415	2.450	1.680	3.000	0.300	-0.43	2.500	
Mangaonua Stm at Hoeka Rd	12	1.437	1.380	1.070	1.920	0.360	0.55	1.460	
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	0.538	0.380	0.200	1.200	0.560	0.90	0.445	
Mangatangi River at SH2 Maramarua	12	0.243	0.085	0.002	1.090	0.362	1.58	0.121	
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.105	0.080	0.001	0.480	0.129	<u>1.92</u>	0.033	
Mangawara Stm at Rutherford Rd Br	12	0.921	0.820	0.420	2.600	0.460	<u>2.08</u>	0.790	
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	2.054	1.985	1.780	2.700	0.225	1.38	1.985	
Matahuru Stm at Waiterimu Road Below Confluence	12	0.656	0.615	0.061	1.750	0.833	0.64	0.740	
Ohaeroa Stm at SH22 Br	12	1.768	1.755	1.320	2.300	0.380	0.13	1.535	
Opuatia Stm at Ponganui Rd	12	0.805	0.730	0.430	1.170	0.415	0.10	0.730	
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	2.001	1.900	1.580	2.600	0.690	0.35	1.765	
Waerenga Stm at Taniwha Rd	12	0.734	0.785	0.191	1.320	0.705	-0.03	0.820	
Waitawhiriwhiri Stm at Edgecumbe Street	12	0.862	0.890	0.360	1.250	0.230	-0.62	0.840	
Whakapipi Stm at SH22 Br	12	4.292	3.950	2.200	6.200	<u>1.900</u>	0.10	3.450	
Whakauru Stm at U/S SH1 Br	12	0.726	0.840	0.440	0.980	0.440	-0.26	0.370	
Whangamarino River at Island Block Rd	12	0.198	0.148	0.001	0.720	0.191	1.48	0.130	
Whangamarino River at Jefferies Rd Br	12	0.654	0.560	0.047	1.890	0.779	0.87	0.625	
Whangape Stm at Rangiriri-Glen Murray Rd	12	0.172	0.013	0.001	0.860	0.279	1.39	0.005	

Waipa River and Tributaries																
Kaniwhaniwha Stm at Wright Rd	12	0.04	0.04	0.01	0.08	0.05	0.00	0.018	12	0.443	0.485	0.014	0.880	0.585	-0.05	0.390
Mangaohoi Stm at South Branch Maru Rd	12	0.01	0.01	0.01	0.01	0.00	<u>1.82</u>	0.005	12	0.243	0.230	0.133	0.410	0.180	0.60	0.225
Mangaokewa Stm at Lawrence Street Br	12	0.02	0.01	0.01	0.04	0.01	0.62	0.012	12	0.619	0.590	0.220	1.030	0.420	0.07	0.560
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	0.06	0.02	0.01	0.20	0.12	0.92	0.031	12	1.898	1.670	0.820	3.600	1.455	0.48	1.500
Mangapu River at Otorohanga	12	0.03	0.03	0.01	0.09	0.04	0.88	0.023	12	0.967	0.935	0.420	1.560	0.680	0.16	0.810
Mangatutu Stm (Waikeria) at Walker Rd Br	12	0.01	0.01	0.01	0.04	0.01	<u>2.25</u>	0.005	12	0.457	0.415	0.063	1.120	0.658	0.53	0.380
Mangauika Stm at Te Awamutu Borough W/S Intake	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.173	0.176	0.014	0.270	0.094	-0.77	0.210
Ohote Stm at Whatawhata/Horotiu Rd	12	0.07	0.08	0.01	0.15	0.06	0.10	0.060	12	0.503	0.430	0.003	1.470	0.581	0.87	0.455
Puniu River at Bartons Corner Rd Br	12	0.03	0.02	0.01	0.12	0.03	<u>1.86</u>	0.015	12	0.808	0.730	0.210	1.560	0.910	0.31	0.640
Waipa River at Mangaokewa Rd	12	0.01	0.01	0.01	0.02	0.01	0.80	0.005	12	0.291	0.270	0.115	0.520	0.201	0.47	0.330
Waipa River at Pukehoua Bridge on Baffin Road	9	0.03	0.03	0.01	0.06	0.03	-0.24		9	0.817	0.690	0.390	1.300	0.490	0.14	
Waipa River at SH3 Otorohanga	12	0.02	0.02	0.01	0.10	0.03	<u>2.02</u>	0.012	12	0.529	0.495	0.094	1.080	0.687	0.19	0.410
Waitomo Stm at SH31 Otorohanga	12	0.04	0.04	0.01	0.12	0.06	0.80	0.015	12	0.610	0.570	0.370	1.070	0.315	0.71	0.530
Waitomo Stm at Tumutumu Rd	12	0.01	0.01	0.01	0.06	0.01	<u>2.40</u>	0.005	12	0.620	0.595	0.480	0.800	0.140	0.41	0.610
Tributaries to the upper Waikato River																
Kawaunui Stm at SH5 Br	12	0.03	0.01	0.01	0.19	0.01	<u>2.87</u>	0.014	12	2.546	2.650	0.850	3.200	0.350	<u>-2.14</u>	2.600
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.01	0.01	0.01	0.03	0.01	1.30	0.005	12	0.614	0.585	0.350	0.980	0.370	0.29	0.510
Mangakara Stm (Reporoa) at SH5	12	0.02	0.02	0.01	0.05	0.01	1.07	0.025	12	1.363	1.335	1.090	1.610	0.260	0.07	1.290
Mangakino Stm (Whakamaru) at Sandel Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.693	0.695	0.510	1.030	0.160	0.87	0.660
Otamakokore Stm at Hossack Rd	12	0.01	0.01	0.01	0.07	0.00	<u>2.87</u>	0.005	12	0.942	0.895	0.590	1.450	0.575	0.32	0.740
Pueto Stm at Broadlands Rd Br	12	0.01	0.01	0.01	0.02	0.00	<u>2.39</u>	0.005	12	0.490	0.500	0.410	0.550	0.110	-0.27	0.450
Tahunaatara Stm at Ohakuri Rd	12	0.02	0.01	0.01	0.06	0.01	1.53	0.005	12	0.706	0.675	0.460	1.010	0.340	0.30	0.570
Torepatutahi Stm at Vaile Rd Br	12	0.01	0.01	0.01	0.01	0.00	1.25	0.005	12	0.481	0.470	0.300	0.670	0.200	-0.03	0.475
Waiotapu Stm at Campbell Rd Br	12	1.03	1.05	0.86	1.20	0.15	-0.25	0.970	12	0.893	0.885	0.800	0.990	0.120	0.15	0.930
Waiotapu Stm at Homestead Rd Br	12	0.31	0.28	0.12	0.58	0.22	0.60	0.290	12	1.439	1.380	1.140	1.910	0.150	1.14	1.330
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.01	0.01	0.01	0.01	0.00	<u>1.97</u>	0.005	12	1.312	1.335	1.040	1.560	0.310	-0.11	1.205
Whirinaki Stm at Corbett Rd	12	0.01	0.01	0.01	0.01	0.00	<u>1.86</u>	0.005	12	0.798	0.770	0.740	1.050	0.065	<u>2.08</u>	0.780
West Coast																
Awakino River at Gribbon Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.108	0.124	0.015	0.193	0.133	-0.23	0.112
Awakino River at SH3 Awakau Rd Junction	12	0.01	0.01	0.01	0.06	0.01	<u>2.76</u>	0.005	12	0.258	0.255	0.008	0.530	0.376	0.15	0.230
Manganui River at Off Manganui Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.005	12	0.150	0.158	0.014	0.270	0.206	-0.10	0.141
Mangaotaki River at SH3 Br	12	0.01	0.01	0.01	0.03	0.01	1.51	0.005	12	0.732	0.740	0.410	1.120	0.370	0.16	0.670
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.01	0.01	0.01	0.02	0.00	<u>2.71</u>	0.005	12	0.289	0.305	0.160	0.410	0.176	-0.11	0.255
Mokau River at Awakau Rd	12	0.02	0.02	0.01	0.06	0.02	1.12	0.012	12	0.514	0.525	0.047	0.950	0.525	-0.07	0.425
Mokau River at Mangaokewa Rd (Off SH30)	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.414	0.390	0.170	0.690	0.370	0.21	0.325
Mokau River at Totoro Rd Recorder	12	0.02	0.01	0.01	0.06	0.02	1.27	0.005	12	0.683	0.635	0.230	1.170	0.505	0.19	0.525
Mokauiti Stm at Three Way Point - Aria	12	0.05	0.03	0.01	0.16	0.07	1.31	0.018	12	0.509	0.460	0.015	1.210	0.681	0.43	0.280
Ohautira Stm at Waingaro Te Uku Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.005	12	0.317	0.360	0.008	0.690	0.332	-0.07	0.330
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.01	0.01	0.01	0.02	0.00	<u>2.22</u>	0.005	12	0.144	0.137	0.006	0.320	0.211	0.11	0.115
Tawarau River at Off Speedies Rd	12	0.01	0.01	0.01	0.02	0.00	<u>1.97</u>	0.005	12	0.334	0.350	0.191	0.460	0.180	-0.10	0.315
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	0.02	0.02	0.01	0.04	0.02	0.56	0.005	12	0.468	0.535	0.001	0.920	0.676	-0.26	0.480
Waitetuna River at Te Uku-Waingaro Rd	12	0.02	0.02	0.01	0.06	0.02	1.30	0.011	12	0.434	0.495	0.028	0.820	0.370	-0.29	0.425
Inflows to Lake Taupo																
Hinemaiaia River at SH1	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.005	12	0.095	0.095	0.030	0.141	0.029	-0.56	0.082
Kuratau River at SH41 Moerangi	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.368	0.345	0.230	0.630	0.140	0.93	0.275
Kuratau River at Te Rae Street	12	0.01	0.01	0.01	0.02	0.01	1.21	0.005	12	0.657	0.705	0.380	0.880	0.220	-0.64	0.620
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	0.01	0.01	0.01	0.01	0.01	-0.01	0.010	12	0.773	0.775	0.680	0.850	0.070	-0.19	0.785
Tauranga- Taupo River at 20 Metres U/S SH1 Bridge	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.060	0.061	0.030	0.085	0.020	-0.32	0.058
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	0.01	0.01	0.01	0.09	0.00	<u>3.02</u>	0.005	12	0.003	0.002	0.001	0.009	0.005	0.79	0.002
Tokaanu Stm at Off SH41 Turangi	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.438	0.440	0.400	0.480	0.045	-0.20	0.435
Waihaha River at SH32	12	0.01	0.01	0.01	0.02	0.00	<u>2.31</u>	0.005	12	0.104	0.103	0.060	0.140	0.053	-0.02	0.106
Waitahanui River at Blake Rd	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.383	0.380	0.340	0.420	0.035	-0.35	0.415
Whangamata Stm (Kinloch) at Whangamata Rd	12	0.01	0.01	0.01	0.01	0.00	<u>1.79</u>	0.005	12	1.131	1.135	1.030	1.210	0.070	-0.40	1.535
Whanganui Stm at Lakeside Lake Taupo	12	0.01	0.01	0.01	0.02	0.00	1.58	0.005	12	0.322	0.330	0.183	0.490	0.175	0.05	0.310
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	0.01	0.01	0.01	0.01	0.00	1.00	0.005	12	0.745	0.810	0.450	1.010	0.450	-0.19	0.670

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Total Kjeldahl Nitrogen (g/m³)

Location	Count	Mean	Median	Min	Max	IQR	Skew	12-16
								Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.08	0.08	0.03	0.13	0.04	-0.16	0.07
Kauaeranga River at Smiths Cableway/Recorder	12	0.12	0.10	0.03	0.26	0.06	0.99	0.08
Ohinemuri River at Queens Head	12	0.37	0.36	0.16	0.72	0.28	0.57	0.24
Ohinemuri River at SH25 Br	12	0.14	0.13	0.08	0.26	0.06	1.03	0.13
Tairua River at Morrisons Br Hikuai	12	0.09	0.08	0.03	0.22	0.05	1.57	0.06
Tapu River at Tapu-Coroglen Rd	12	0.09	0.08	0.03	0.27	0.03	<u>2.28</u>	0.07
Waiiau River at E309 Rd Ford	12	0.19	0.09	0.03	1.39	0.05	<u>2.98</u>	0.08
Waitekauri River at U/S Ohinemuri Conflu	12	0.10	0.10	0.07	0.19	0.04	1.33	0.10
Waiwawa River at SH25 Coroglen	12	0.10	0.07	0.03	0.34	0.06	<u>2.15</u>	0.07
Wharekawa River at SH25	12	0.09	0.10	0.06	0.12	0.04	-0.40	0.08
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.14	0.13	0.06	0.29	0.09	0.92	0.11
Oraka Stm at Lake Rd	12	0.55	0.44	0.15	1.23	0.68	0.53	0.31
Piako River at Kiwitahi	12	0.40	0.38	0.24	0.88	0.15	<u>1.98</u>	0.35
Piako River at Paeroa-Tahuna Rd Br	12	0.61	0.64	0.37	0.90	0.31	-0.03	0.52
Piakonui Stm at Piakonui Rd	12	0.18	0.18	0.09	0.27	0.06	0.09	0.16
Waihou River at Okauia	12	0.29	0.19	0.06	0.71	0.31	0.90	0.20
Waihou River at Whites Rd	12	0.09	0.07	0.03	0.40	0.05	<u>2.72</u>	0.03
Waihotu Stm at Waihotu (Off SH5)	12	0.18	0.17	0.11	0.29	0.08	0.61	0.14
Waiomou Stm at Matamata-Tauranga Rd	12	0.24	0.17	0.12	0.64	0.10	<u>1.76</u>	0.17
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.32	0.30	0.21	0.50	0.12	0.58	0.35
Waitoa River at Landsdowne Rd Br	12	0.39	0.34	0.24	0.70	0.14	1.15	0.36
Waitoa River at Mellon Rd Recorder	12	0.55	0.50	0.29	0.98	0.33	0.56	0.47
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	0.51	0.52	0.35	0.65	0.15	-0.17	0.54
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	0.32	0.26	0.16	0.63	0.17	1.05	0.27
Karapiro Stm at Hickey Rd Bridge	12	0.43	0.37	0.22	1.03	0.27	1.55	0.30
Kirikiroa Stm at Tauhara Dr	12	0.57	0.56	0.31	0.83	0.21	0.25	0.60
Komakorau Stm at Henry Rd	12	1.54	1.43	0.77	2.50	1.14	0.19	1.68
Little Waipa Stm at Arapuni - Putaruru Rd	12	0.31	0.22	0.10	0.92	0.23	1.47	0.20
Mangakotukutuku Stm at Peacockes Rd	12	1.13	1.06	0.40	2.20	1.09	0.39	0.98
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	0.81	0.74	0.47	1.48	0.42	0.92	0.65
Mangaone Stm at Annebrooke Rd Br	12	0.39	0.39	0.23	0.53	0.14	-0.07	0.37
Mangaonua Stm at Hoeka Rd	12	0.39	0.36	0.23	0.80	0.22	1.25	0.36
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	0.24	0.22	0.17	0.38	0.10	0.94	0.22
Mangatangi River at SH2 Maramarua	12	0.33	0.32	0.18	0.60	0.23	0.61	0.34
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.19	0.13	0.08	0.45	0.16	1.16	0.14
Mangawara Stm at Rutherford Rd Br	12	0.98	0.87	0.42	1.82	0.78	0.43	1.10
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	0.94	0.74	0.50	1.75	0.70	0.74	0.71
Matahuru Stm at Waiterimu Road Below Confluence	12	0.59	0.59	0.28	0.95	0.38	0.07	0.60
Ohaeroa Stm at SH22 Br	12	0.28	0.26	0.17	0.43	0.14	0.35	0.28
Opuatia Stm at Ponganui Rd	12	0.38	0.29	0.16	1.12	0.10	<u>2.02</u>	0.31
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	0.36	0.24	0.15	0.94	0.24	1.37	0.24
Waerenga Stm at Taniwha Rd	12	0.26	0.24	0.13	0.54	0.08	1.60	0.26
Waitawhiriwhiri Stm at Edgecumbe Street	12	1.22	1.27	0.30	1.84	0.25	-0.98	1.15
Whakapipi Stm at SH22 Br	12	0.36	0.36	0.24	0.53	0.12	0.65	0.36
Whakauru Stm at U/S SH1 Br	12	0.39	0.33	0.21	0.92	0.12	1.58	0.22
Whangamarino River at Island Block Rd	12	1.98	1.90	1.28	3.90	0.53	<u>1.69</u>	1.72
Whangamarino River at Jefferies Rd Br	12	0.46	0.45	0.31	0.69	0.21	0.39	0.43
Whangape Stm at Rangiriri-Glen Murray Rd	12	2.11	2.01	1.13	4.10	1.10	1.03	1.91

Total Nitrogen (g/m³)

Location	Count	Mean	Median	Min	Max	IQR	Skew	12-16
								Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	0.14	0.12	0.03	0.35	0.13	0.93	0.10
Kauaeranga River at Smiths Cableway/Recorder	12	0.17	0.17	0.03	0.28	0.12	-0.20	0.12
Ohinemuri River at Queens Head	12	1.48	1.43	1.04	2.25	0.27	1.30	1.26
Ohinemuri River at SH25 Br	12	0.70	0.68	0.36	1.03	0.33	0.09	0.59
Tairua River at Morrisons Br Hikuai	12	0.13	0.10	0.05	0.27	0.08	1.10	0.08
Tapu River at Tapu-Coroglen Rd	12	0.10	0.08	0.05	0.30	0.03	<u>2.42</u>	0.07
Waiiau River at E309 Rd Ford	12	0.23	0.11	0.04	1.59	0.06	<u>2.98</u>	0.10
Waitekauri River at U/S Ohinemuri Conflu	12	0.27	0.23	0.10	0.50	0.23	0.30	0.21
Waiwawa River at SH25 Coroglen	12	0.11	0.08	0.03	0.37	0.07	<u>2.12</u>	0.07
Wharekawa River at SH25	12	0.17	0.16	0.10	0.31	0.10	0.87	0.13
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	0.49	0.53	0.31	0.76	0.20	0.40	0.45
Oraka Stm at Lake Rd	12	2.76	2.84	2.12	3.52	0.99	-0.06	2.43
Piako River at Kiwitahi	12	1.48	0.97	0.29	3.88	2.21	0.66	1.06
Piako River at Paeroa-Tahuna Rd Br	12	2.10	1.83	0.50	4.36	2.04	0.50	1.80
Piakonui Stm at Piakonui Rd	12	0.47	0.38	0.21	0.94	0.34	0.81	0.36
Waihou River at Okauia	12	1.54	1.39	1.13	2.53	0.56	1.18	1.34
Waihou River at Whites Rd	12	0.87	0.84	0.77	1.19	0.07	<u>2.30</u>	0.79
Waihotu Stm at Waihotu (Off SH5)	12	0.35	0.33	0.24	0.49	0.10	0.74	0.29
Waiomou Stm at Matamata-Tauranga Rd	12	0.82	0.65	0.43	1.76	0.50	1.15	0.68
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	0.55	0.47	0.26	1.34	0.38	1.48	0.55
Waitoa River at Landsdowne Rd Br	12	1.97	1.72	1.09	3.42	1.34	0.64	1.81
Waitoa River at Mellon Rd Recorder	12	2.57	2.27	1.18	4.38	1.44	0.52	2.34
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	1.90	1.89	0.58	3.08	1.51	0.01	1.99
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	0.74	0.82	0.27	1.17	0.63	-0.23	0.96
Karapiro Stm at Hickey Rd Bridge	12	1.15	1.08	0.40	2.21	1.17	0.35	0.82
Kirikiroa Stm at Tauhara Dr	12	1.56	1.21	0.88	3.13	1.15	0.96	1.36
Komakorau Stm at Henry Rd	12	3.15	3.06	2.11	5.50	1.36	1.02	3.01
Little Waipa Stm at Arapuni - Putaruru Rd	12	2.25	2.25	1.60	3.22	0.93	0.33	1.83
Mangakotukutuku Stm at Peacockes Rd	12	2.14	1.89	1.10	4.40	1.14	1.10	1.75
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	3.40	3.47	2.63	3.99	0.35	-0.75	3.38
Mangaone Stm at Annebrooke Rd Br	12	2.80	2.82	2.21	3.47	0.44	0.21	2.88
Mangaonua Stm at Hoeka Rd	12	1.83	1.81	1.47	2.43	0.43	0.64	1.81
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	0.78	0.62	0.40	1.40	0.62	0.77	0.68
Mangatangi River at SH2 Maramarua	12	0.57	0.40	0.20	1.63	0.62	1.26	0.49
Mangatawhiri River at Lyons Rd At Buckingham Br	12	0.29	0.22	0.10	0.85	0.18	1.55	0.20
Mangawara Stm at Rutherford Rd Br	12	1.90	1.71	0.84	4.42	1.27	1.28	1.89
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	2.99	2.81	2.28	4.33	0.70	0.98	2.89
Matahuru Stm at Waiterimu Road Below Confluence	12	1.24	1.09	0.34	2.54	1.09	0.48	1.35
Ohaeroa Stm at SH22 Br	12	2.05	2.06	1.69	2.48	0.46	0.10	1.84
Opuatia Stm at Ponganui Rd	12	1.18	1.16	0.80	1.83	0.49	0.56	1.05
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	2.36	2.53	1.81	2.99	0.96	-0.15	2.07
Waerenga Stm at Taniwha Rd	12	0.99	1.06	0.42	1.49	0.57	-0.17	1.13
Waitawhiriwhiri Stm at Edgecumbe Street	12	2.08	2.21	0.79	2.61	0.27	<u>-1.91</u>	2.04
Whakapipi Stm at SH22 Br	12	4.65	4.31	2.71	6.55	1.87	0.12	3.79
Whakauru Stm at U/S SH1 Br	12	1.12	1.17	0.66	1.90	0.52	0.67	0.62
Whangamarino River at Island Block Rd	12	2.18	2.01	1.41	4.10	0.91	1.32	1.99
Whangamarino River at Jefferies Rd Br	12	1.11	1.00	0.39	2.58	0.84	0.97	1.09
Whangape Stm at Rangiriri-Glen Murray Rd	12	2.28	2.10	1.44	4.12	0.77	1.48	2.10

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries																
Kaniwhaniwha Stm at Wright Rd	12	0.34	0.29	0.14	0.68	0.27	0.71	0.19	12	0.78	0.79	0.15	1.48	0.78	-0.06	0.61
Mangaohoi Stm at South Branch Maru Rd	12	0.16	0.16	0.09	0.21	0.07	-0.36	0.13	12	0.40	0.38	0.23	0.62	0.16	0.50	0.35
Mangaokewa Stm at Lawrence Street Br	12	0.39	0.37	0.19	0.77	0.24	0.78	0.23	12	1.01	1.10	0.42	1.39	0.45	-0.61	0.84
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	0.79	0.57	0.35	2.00	0.64	1.25	0.58	12	2.69	2.30	1.17	5.00	2.25	0.58	2.09
Mangapu River at Otorohanga	12	0.46	0.48	0.21	0.78	0.32	0.12	0.27	12	1.42	1.35	0.63	2.21	0.99	0.13	1.20
Mangatutu Stm (Waikeria) at Walker Rd Br	12	0.20	0.18	0.09	0.47	0.08	1.47	0.14	12	0.66	0.55	0.21	1.55	0.72	0.73	0.51
Manguaika Stm at Te Awamutu Borough W/S Intake	12	0.09	0.08	0.03	0.18	0.07	0.49	0.05	12	0.26	0.27	0.05	0.37	0.07	-1.22	0.27
Ohote Stm at Whatawhata/Horotiu Rd	12	0.80	0.82	0.51	1.14	0.32	0.21	0.69	12	1.30	1.43	0.66	2.37	0.95	0.30	1.18
Puniu River at Bartons Corner Rd Br	12	0.35	0.26	0.16	0.86	0.19	1.37	0.23	12	1.16	0.94	0.46	2.34	1.12	0.62	0.89
Waipa River at Mangaokewa Rd	12	0.25	0.21	0.14	0.43	0.16	0.49	0.19	12	0.54	0.57	0.34	0.69	0.16	-0.40	0.55
Waipa River at Pukehoua Bridge on Baffin Road	9	0.47	0.32	0.20	1.28	0.30	1.47		9	1.28	1.30	0.59	2.03	0.85	0.12	
Waipa River at SH3 Otorohanga	12	0.41	0.28	0.16	1.59	0.13	<u>2.56</u>	0.20	12	0.94	0.91	0.29	2.47	0.77	1.22	0.64
Waitomo Stm at SH31 Otorohanga	12	0.71	0.41	0.13	2.40	0.74	1.35	0.21	12	1.32	1.08	0.51	3.12	1.04	1.12	0.74
Waitomo Stm at Tumutumu Rd	12	0.30	0.21	0.10	1.17	0.17	<u>2.22</u>	0.12	12	0.92	0.80	0.66	1.92	0.27	<u>2.04</u>	0.76
Tributaries to the upper Waikato River																
Kawaunui Stm at SH5 Br	12	0.41	0.32	0.22	0.97	0.19	1.68	0.31	12	2.96	3.07	1.07	4.17	0.55	-1.24	2.98
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	0.26	0.21	0.14	0.48	0.18	0.79	0.18	12	0.87	0.91	0.52	1.36	0.46	0.30	0.69
Mangakara Stm (Reporoa) at SH5	12	0.30	0.29	0.19	0.52	0.12	1.11	0.25	12	1.67	1.57	1.37	2.04	0.36	0.38	1.54
Mangakino Stm (Whakamaru) at Sandel Rd	12	0.19	0.16	0.09	0.50	0.09	<u>1.79</u>	0.10	12	0.88	0.86	0.61	1.25	0.25	0.58	0.77
Otamakokore Stm at Hossack Rd	12	0.29	0.25	0.13	0.63	0.19	1.14	0.23	12	1.24	1.14	0.78	2.08	0.80	0.57	0.99
Pueto Stm at Broadlands Rd Br	12	0.14	0.12	0.08	0.32	0.04	<u>1.96</u>	0.09	12	0.63	0.65	0.52	0.73	0.09	-0.33	0.55
Tahunaatara Stm at Ohakuri Rd	12	0.27	0.22	0.13	0.49	0.21	0.78	0.19	12	0.97	0.89	0.62	1.50	0.54	0.46	0.82
Torepatutahi Stm at Vaile Rd Br	12	0.20	0.14	0.08	0.65	0.13	<u>2.27</u>	0.11	12	0.68	0.66	0.44	0.95	0.19	0.28	0.59
Waiotapu Stm at Campbell Rd Br	12	1.21	1.24	0.91	1.37	0.14	-1.09	1.08	12	2.10	2.12	1.76	2.28	0.27	-0.66	2.06
Waiotapu Stm at Homestead Rd Br	12	0.66	0.59	0.32	1.20	0.36	0.76	0.60	12	2.10	1.99	1.64	3.11	0.52	1.13	1.87
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	0.19	0.18	0.08	0.37	0.10	0.90	0.16	12	1.50	1.53	1.18	1.84	0.44	-0.06	1.36
Whirinaki Stm at Corbett Rd	12	0.08	0.09	0.03	0.20	0.05	1.01	0.05	12	0.88	0.86	0.77	1.14	0.11	1.26	0.83
West Coast																
Awakino River at Gribbon Rd	12	0.22	0.09	0.03	1.14	0.10	<u>2.11</u>	0.06	12	0.32	0.20	0.06	1.27	0.19	<u>1.86</u>	0.17
Awakino River at SH3 Awakau Rd Junction	12	0.29	0.18	0.10	1.18	0.19	<u>2.39</u>	0.13	12	0.55	0.44	0.15	1.41	0.51	1.01	0.38
Manganui River at Off Manganui Rd	12	0.18	0.10	0.06	0.57	0.14	1.51	0.10	12	0.33	0.33	0.08	0.74	0.34	0.47	0.24
Mangaotaki River at SH3 Br	12	0.50	0.22	0.11	2.20	0.40	<u>1.99</u>	0.17	12	1.23	1.13	0.55	3.05	0.61	1.61	0.90
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	0.35	0.17	0.09	2.10	0.17	<u>2.85</u>	0.12	12	0.64	0.46	0.28	2.51	0.26	<u>2.68</u>	0.40
Mokau River at Awakau Rd	12	0.45	0.34	0.19	1.28	0.35	1.64	0.24	12	0.96	0.89	0.32	2.19	0.78	0.89	0.67
Mokau River at Mangaokewa Rd (Off SH30)	12	0.30	0.22	0.14	0.69	0.22	1.19	0.20	12	0.71	0.76	0.36	1.09	0.38	-0.22	0.56
Mokau River at Totoro Rd Recorder	12	0.55	0.38	0.14	1.58	0.52	1.23	0.24	12	1.23	1.19	0.42	2.49	0.73	0.55	0.84
Mokauiti Stm at Three Way Point - Aria	12	0.71	0.45	0.23	2.40	0.60	1.61	0.30	12	1.22	0.99	0.29	2.77	1.16	0.71	0.60
Ohautira Stm at Waingaro Te Uku Rd	12	0.30	0.21	0.08	1.02	0.19	<u>1.84</u>	0.14	12	0.62	0.59	0.19	1.71	0.48	1.26	0.51
Oparau River at Langdon Rd (Off Okupata Rd)	12	0.14	0.11	0.07	0.43	0.07	<u>2.27</u>	0.11	12	0.29	0.25	0.10	0.64	0.28	0.65	0.22
Tawarau River at Off Speedies Rd	12	0.38	0.16	0.08	2.40	0.16	<u>2.78</u>	0.13	12	0.72	0.52	0.30	2.83	0.25	<u>2.62</u>	0.44
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	0.49	0.29	0.19	1.46	0.39	1.47	0.24	12	0.96	0.91	0.20	2.09	1.11	0.41	0.79
Waitetuna River at Te Uku-Waingaro Rd	12	0.35	0.25	0.15	0.79	0.37	0.74	0.17	12	0.78	0.77	0.19	1.52	0.73	0.29	0.61
Inflows to Lake Taupo																
Hinemaiaia River at SH1	12	0.09	0.09	0.05	0.13	0.03	0.10	0.08	12	0.18	0.18	0.13	0.25	0.05	0.33	0.15
Kuratau River at SH41 Moerangi	12	0.11	0.12	0.08	0.15	0.04	0.23	0.09	12	0.48	0.45	0.34	0.75	0.11	1.04	0.39
Kuratau River at Te Rae Street	12	0.17	0.16	0.13	0.28	0.05	1.49	0.15	12	0.83	0.86	0.58	1.03	0.19	-0.37	0.79
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	0.23	0.23	0.18	0.30	0.07	0.44	0.19	12	1.00	0.99	0.86	1.10	0.15	-0.18	0.98
Tauranga- Taupo River at 20 Metres U/S SH1 Bridge	12	0.09	0.07	0.03	0.30	0.04	<u>2.33</u>	0.05	12	0.15	0.12	0.08	0.38	0.04	<u>2.42</u>	0.11
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	0.12	0.12	0.07	0.21	0.04	0.97	0.09	12	0.12	0.12	0.07	0.21	0.04	0.90	0.10
Tokaanu Stm at Off SH41 Turangi	12	0.06	0.03	0.03	0.20	0.03	1.55	0.03	12	0.50	0.47	0.43	0.66	0.07	1.18	0.47
Waihaha River at SH32	12	0.16	0.09	0.05	0.80	0.05	<u>2.90</u>	0.07	12	0.26	0.21	0.15	0.93	0.07	<u>2.88</u>	0.17
Waitahanui River at Blake Rd	12	0.11	0.11	0.05	0.16	0.05	0.15	0.08	12	0.49	0.49	0.45	0.56	0.04	0.79	0.49
Whangamata Stm (Kinloch) at Whangamata Rd	12	0.18	0.17	0.10	0.33	0.09	0.97	0.12	12	1.31	1.31	1.13	1.46	0.14	-0.12	1.61
Whanganui Stm at Lakeside Lake Taupo	12	0.17	0.13	0.07	0.73	0.05	<u>2.84</u>	0.10	12	0.50	0.45	0.32	1.02	0.22	1.52	0.40
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	0.25	0.18	0.15	0.66	0.13	<u>2.01</u>	0.16	12	1.00	1.02	0.61	1.48	0.62	0.11	0.82

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Turbidity (NTU)

Location	Turbidity (NTU)								12-16 Median
	Count	Mean	Median	Min	Max	IQR	Skew	Median	
Coromandel									
Hikutaia River at Old Maratoto Rd	12	1.6	1.1	0.5	4.5	1.3	1.3	1.3	
Kauaeranga River at Smiths Cableway/Recorder	12	2.6	1.5	0.5	12.9	1.4	<u>2.5</u>	1.3	
Ohinemuri River at Queens Head	12	2.7	1.5	0.7	12.2	2.4	<u>2.2</u>	1.2	
Ohinemuri River at SH25 Br	12	1.2	1.0	0.7	3.1	0.4	<u>2.5</u>	1.0	
Tairua River at Morrisons Br Hikuai	12	1.8	0.9	0.7	6.3	1.3	1.7	1.0	
Tapu River at Tapu-Coroglen Rd	12	2.9	1.1	0.5	19.8	0.8	<u>2.7</u>	1.0	
Waiiau River at E309 Rd Ford	12	20.9	2.7	1.6	220	2.1	<u>3.0</u>	2.2	
Waitekauri River at U/S Ohinemuri Conflu	12	1.4	1.2	0.5	4.9	0.7	<u>2.3</u>	0.7	
Waiwawa River at SH25 Coroglen	12	4.0	1.0	0.6	34.0	1.5	<u>3.0</u>	1.1	
Wharekawa River at SH25	12	2.3	1.8	1.3	7.6	0.9	<u>2.6</u>	2.1	
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	12.0	7.8	5.8	36.0	9.0	1.7	7.6	
Oraka Stm at Lake Rd	12	12.2	7.1	3.0	46.0	8.5	<u>1.7</u>	5.1	
Piako River at KIWITAHĪ	12	4.7	3.4	1.0	16.7	4.3	<u>1.8</u>	3.6	
Piako River at Paeroa-Tahuna Rd Br	12	7.8	6.4	1.8	23.0	8.9	1.1	6.9	
Piakonui Stm at Piakonui Rd	12	4.6	3.9	2.3	9.2	1.5	1.3	3.8	
Waihou River at Okauia	12	10.0	6.8	2.7	24.0	12.4	0.7	4.4	
Waihou River at Whites Rd	12	1.0	0.7	0.4	2.1	1.0	1.0	0.6	
Waihotu Stm at Waihotu (Off SH5)	12	4.5	4.4	2.4	7.1	1.2	0.6	4.7	
Waiomou Stm at Matamata-Tauranga Rd	12	6.2	4.4	1.9	24.0	3.4	<u>2.1</u>	4.2	
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	6.4	4.4	1.5	16.4	5.6	1.0	7.3	
Waitoa River at Landsdowne Rd Br	12	5.7	2.9	0.7	19.4	7.0	1.2	3.9	
Waitoa River at Mellon Rd Recorder	12	6.8	5.8	1.7	14.5	8.0	0.3	6.1	
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	14.5	15.0	4.8	24.0	4.7	0.0	15.4	
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	13.7	6.4	4.4	55.0	4.4	<u>1.8</u>	6.2	
Karapiro Stm at Hickey Rd Bridge	12	9.9	5.1	2.8	48.0	4.6	<u>2.4</u>	5.4	
Kirikirihoa Stm at Tauhara Dr	12	25.0	25.0	14.6	31.0	8.5	-0.5	25.5	
Komakorau Stm at Henry Rd	12	76.6	78.0	36.0	127.0	38.5	0.0	71.5	
Little Waipa Stm at Arapuni - Putaruru Rd	12	4.9	2.6	0.8	18.6	4.0	1.6	2.0	
Mangakotukutuku Stm at Peacockes Rd	12	21.1	20.9	8.3	30.0	10.6	-0.4	22.0	
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	7.6	5.2	2.8	22.0	4.4	1.6	5.5	
Mangaone Stm at Annebrooke Rd Br	12	7.9	7.7	4.7	11.8	4.3	0.1	7.0	
Mangaonua Stm at Hoeka Rd	12	9.3	8.1	4.5	18.9	6.5	0.8	9.5	
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	11.5	3.9	2.4	96.0	2.3	<u>3.0</u>	3.9	
Mangatangi River at SH2 Maramarua	12	12.6	11.5	6.1	23.0	9.7	0.5	13.0	
Mangatawhiri River at Lyons Rd At Buckingham Br	12	11.4	2.8	1.4	36.0	21.6	0.9	3.3	
Mangawara Stm at Rutherford Rd Br	12	40.5	44.5	17.9	60.0	19.5	-0.2	38.5	
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	45.6	48.5	22.0	68.0	23.5	-0.2	47.5	
Matahuru Stm at Waiteirimu Road Below Confluence	12	37.1	35.0	14.1	58.0	20.0	0.1	32.0	
Ohaeroa Stm at SH22 Br	12	9.9	8.5	4.4	19.0	8.2	0.7	8.6	
Opuatia Stm at Ponganui Rd	12	28.7	18.1	7.0	111.0	15.1	<u>1.8</u>	14.7	
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	7.8	4.5	1.6	27.0	4.6	1.6	3.4	
Waerenga Stm at Taniwha Rd	12	11.7	9.1	3.5	28.0	4.8	1.4	8.2	
Waitawhiriwhiri Stm at Edgumbe Street	12	33.2	34.5	16.0	54.0	17.0	0.3	31.5	
Whakapipi Stm at SH22 Br	12	5.7	5.4	1.4	15.7	4.7	1.2	5.6	
Whakauru Stm at U/S SH1 Br	12	13.1	11.1	6.2	31.0	5.4	1.5	6.6	
Whangamarino River at Island Block Rd	12	36.2	26.0	18.6	90.0	17.5	1.5	38.5	
Whangamarino River at Jefferies Rd Br	12	26.7	26.0	16.2	39.0	10.0	0.3	21.5	
Whangape Stm at Rangiriri-Glen Murray Rd	12	69.7	62.5	34.0	158.0	37.0	1.4	52.0	

pH (pH units)

Location	pH (pH units)							12-16 Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River at Old Maratoto Rd	12	7.2	7.1	6.8	7.8	0.3	0.9	7.2
Kauaeranga River at Smiths Cableway/Recorder	12	7.2	7.2	6.8	8.1	0.3	1.1	7.2
Ohinemuri River at Queens Head	12	7.1	7.1	6.8	7.5	0.5	0.3	7.1
Ohinemuri River at SH25 Br	12	7.2	7.2	6.8	7.6	0.6	0.0	7.2
Tairua River at Morrisons Br Hikuai	12	7.0	7.0	6.5	7.3	0.5	-0.4	7.0
Tapu River at Tapu-Coroglen Rd	12	7.5	7.5	7.1	8.2	0.5	0.9	7.4
Waiiau River at E309 Rd Ford	12	7.3	7.3	6.9	7.7	0.5	-0.1	7.4
Waitekauri River at U/S Ohinemuri Conflu	12	7.2	7.2	6.9	7.7	0.4	0.4	7.2
Waiwawa River at SH25 Coroglen	12	7.2	7.2	6.6	7.6	0.3	-0.7	7.2
Wharekawa River at SH25	12	7.0	7.0	6.7	7.3	0.4	-0.1	7.1
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	7.5	7.5	7.3	7.7	0.2	0.4	7.4
Oraka Stm at Lake Rd	12	7.3	7.3	6.9	7.5	0.2	-0.8	7.3
Piako River at KIWITAHĪ	12	7.2	7.2	6.8	7.4	0.4	-0.4	7.1
Piako River at Paeroa-Tahuna Rd Br	12	7.3	7.4	6.8	7.7	0.5	-0.4	7.3
Piakonui Stm at Piakonui Rd	12	7.4	7.4	7.1	7.7	0.4	0.2	7.4
Waihou River at Okauia	12	7.2	7.3	6.9	7.6	0.3	0.2	7.3
Waihou River at Whites Rd	12	7.0	7.0	6.7	7.2	0.2	-0.7	7.0
Waihotu Stm at Waihotu (Off SH5)	12	7.1	7.3	6.4	7.4	0.4	-1.3	7.2
Waiomou Stm at Matamata-Tauranga Rd	12	7.1	7.1	6.7	7.4	0.2	-0.5	7.2
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	7.3	7.3	6.9	7.6	0.2	-0.2	7.2
Waitoa River at Landsdowne Rd Br	12	7.1	7.1	6.9	7.4	0.2	0.4	7.1
Waitoa River at Mellon Rd Recorder	12	7.4	7.4	6.8	7.8	0.6	-0.3	7.3
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	7.3	7.4	6.7	7.7	0.6	-0.5	7.2
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	7.7	7.8	7.2	8.2	0.3	-0.2	7.8
Karapiro Stm at Hickey Rd Bridge	12	7.2	7.3	6.9	7.5	0.3	-0.5	7.2
Kirikirihoa Stm at Tauhara Dr	12	6.9	7.0	6.6	7.2	0.2	-0.2	6.9
Komakorau Stm at Henry Rd	12	6.7	6.8	6.0	7.0	0.2	-1.5	6.6
Little Waipa Stm at Arapuni - Putaruru Rd	12	7.0	7.0	6.8	7.2	0.1	-0.5	7.0
Mangakotukutuku Stm at Peacockes Rd	12	7.0	7.1	6.5	7.5	0.6	-0.4	7.1
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	7.4	7.4	7.1	7.7	0.3	0.0	7.5
Mangaone Stm at Annebrooke Rd Br	12	7.4	7.4	7.1	7.5	0.2	-0.5	7.3
Mangaonua Stm at Hoeka Rd	12	7.1	7.1	6.9	7.3	0.2	0.2	7.0
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	7.4	7.4	6.9	7.7	0.5	-0.3	7.4
Mangatangi River at SH2 Maramarua	12	7.2	7.2	6.8	7.5	0.3	-0.3	7.2
Mangatawhiri River at Lyons Rd At Buckingham Br	12	7.5	7.5	7.0	7.9	0.5	0.0	7.4
Mangawara Stm at Rutherford Rd Br	12	6.9	6.9	6.1	7.3	0.3	-1.3	6.8
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	7.1	7.1	6.6	7.3	0.5	-0.4	7.0
Matahuru Stm at Waiteirimu Road Below Confluence	12	7.2	7.2	6.5	7.5	0.3	-1.2	7.1
Ohaeroa Stm at SH22 Br	12	7.5	7.5	7.2	7.8	0.3	0.0	7.5
Opuatia Stm at Ponganui Rd	12	7.5	7.5	7.3	7.8	0.3	0.1	7.5
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	7.2	7.2	6.9	7.4	0.2	-0.1	7.2
Waerenga Stm at Taniwha Rd	12	7.4	7.5	7.0	7.6	0.3	-0.7	7.3
Waitawhiriwhiri Stm at Edgumbe Street	12	7.1	7.1	6.8	7.4	0.3	0.5	7.0
Whakapipi Stm at SH22 Br	12	7.4	7.4	7.1	7.6	0.3	-0.4	7.3
Whakauru Stm at U/S SH1 Br	12	7.4	7.4	7.1	7.7	0.3	-0.3	7.4
Whangamarino River at Island Block Rd	12	7.1	7.2	6.7	8.0	0.6	0.9	7.0
Whangamarino River at Jefferies Rd Br	12	7.2	7.3	6.6	7.4	0.2	-1.6	7.2
Whangape Stm at Rangiriri-Glen Murray Rd	12	7.7	7.7	7.3	8.5	0.6	0.7	7.4

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries																
Kaniwhaniwha Stm at Wright Rd	12	15.9	12.8	5.0	35.0	12.7	0.9	5.9	12	7.2	7.2	6.5	7.5	0.3	-1.1	7.2
Mangaohoi Stm at South Branch Maru Rd	12	3.0	2.5	1.8	7.3	1.2	<u>2.2</u>	2.1	12	7.4	7.4	6.9	7.7	0.4	-0.2	7.4
Mangaokewa Stm at Lawrence Street Br	12	11.5	7.6	2.5	33.0	9.0	1.3	5.7	12	7.4	7.4	7.0	7.7	0.4	-0.5	7.4
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	13.8	7.9	1.7	64.0	11.9	<u>2.2</u>	11.3	12	7.4	7.4	6.5	8.2	0.8	-0.3	7.3
Mangapu River at Otorohanga	12	19.6	19.5	2.3	38.0	25.2	0.1	11.5	12	7.6	7.6	7.0	8.2	0.6	0.1	7.6
Mangatutu Stm (Waikeria) at Walker Rd Br	12	7.1	3.5	1.1	29.0	4.0	<u>1.8</u>	2.8	12	7.2	7.3	6.7	7.5	0.4	-0.5	7.2
Mangauika Stm at Te Awamutu Borough W/S Intake	12	2.7	2.2	0.4	6.1	2.4	0.7	1.5	12	7.3	7.4	6.8	7.7	0.4	-0.3	7.3
Ohote Stm at Whatawhata/Horotiu Rd	12	13.6	10.6	7.8	30.0	5.8	1.5	10.0	12	6.8	6.9	6.5	7.1	0.3	-0.5	6.8
Puniu River at Bartons Corner Rd Br	12	11.0	6.9	1.3	37.0	6.9	1.6	6.1	12	7.1	7.2	6.6	7.5	0.4	-0.8	7.1
Waipa River at Mangaokewa Rd	12	3.6	3.1	1.2	10.3	1.8	<u>1.8</u>	2.2	12	7.3	7.3	7.1	7.6	0.4	0.2	7.4
Waipa River at Pukehoua Bridge on Baffin Road	9	25.6	13.2	5.2	93.0	20.4	1.6		9	7.2	7.2	6.6	7.5	0.3	-1.0	
Waipa River at SH3 Otorohanga	12	17.2	7.6	1.4	105.0	6.2	<u>2.4</u>	4.3	12	7.3	7.3	7.0	7.6	0.4	0.1	7.3
Waitomo Stm at SH31 Otorohanga	12	44.2	27.5	3.4	210.0	39.5	<u>2.1</u>	11.5	12	7.6	7.6	7.3	8.1	0.4	0.5	7.7
Waitomo Stm at Tumutumu Rd	12	24.8	9.5	2.7	135.0	18.6	<u>2.4</u>	6.4	12	7.8	7.8	7.6	8.1	0.3	0.2	7.8
Tributaries to the upper Waikato River																
Kawaunui Stm at SH5 Br	12	5.0	4.8	1.9	12.2	2.5	1.6	3.6	12	6.9	6.9	6.7	7.2	0.3	0.4	7.0
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	7.9	6.9	4.7	16.6	4.1	1.4	5.4	12	7.4	7.5	7.0	7.6	0.2	-1.1	7.4
Mangakara Stm (Reporoa) at SH5	12	8.4	7.6	4.4	21.0	4.0	<u>2.0</u>	5.7	12	7.1	7.1	6.8	7.3	0.2	-0.1	7.1
Mangakino Stm (Whakamaru) at Sandel Rd	12	5.2	3.2	1.4	25.0	4.2	<u>2.6</u>	1.8	12	7.3	7.2	7.0	7.5	0.3	0.2	7.4
Otamakokore Stm at Hossack Rd	12	4.0	3.7	2.0	7.4	2.2	0.8	3.5	12	8.0	8.0	7.7	8.2	0.3	-0.3	8.1
Pueto Stm at Broadlands Rd Br	12	4.1	4.0	2.0	7.8	2.3	0.8	3.0	12	7.5	7.5	7.3	7.7	0.3	0.2	7.4
Tahunaatara Stm at Ohakuri Rd	12	4.3	3.7	2.2	8.4	3.8	0.7	3.3	12	7.5	7.4	7.2	7.7	0.2	-0.1	7.5
Torepatutahi Stm at Vaile Rd Br	12	1.2	1.1	0.7	2.2	0.6	1.1	1.5	12	7.2	7.3	7.0	7.4	0.3	-0.4	7.3
Waiotapu Stm at Campbell Rd Br	12	7.3	7.0	3.7	13.4	3.7	0.8	7.2	12	5.4	5.4	4.9	5.7	0.5	-0.3	5.6
Waiotapu Stm at Homestead Rd Br	12	13.2	12.3	7.3	24.0	8.9	0.6	11.8	12	6.8	6.8	6.6	7.0	0.2	-0.2	6.8
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	5.7	4.7	2.8	15.8	3.6	<u>1.8</u>	3.7	12	7.7	7.7	7.6	7.8	0.2	-0.1	7.7
Whirinaki Stm at Corbett Rd	12	0.9	0.7	0.5	1.8	0.4	1.7	0.7	12	7.3	7.3	7.1	7.4	0.1	-1.0	7.3
West Coast																
Awakino River at Gribbon Rd	12	21.4	2.5	0.7	96.0	26.8	1.5	1.4	12	7.4	7.5	7.1	7.6	0.2	-0.7	7.5
Awakino River at SH3 Awakau Rd Junction	12	31.4	6.2	1.2	220.0	27.5	<u>2.6</u>	3.7	12	7.5	7.5	7.1	7.9	0.2	0.3	7.5
Manganui River at Off Manganui Rd	12	30.2	7.3	1.5	210.0	28.4	<u>2.7</u>	5.6	12	7.5	7.6	7.2	7.6	0.2	-1.1	7.4
Mangaotaki River at SH3 Br	12	38.2	8.2	1.9	210.0	42.9	<u>2.1</u>	6.2	12	7.7	7.7	7.2	7.9	0.3	-1.0	7.7
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	26.8	7.1	2.1	210.0	14.9	<u>2.9</u>	3.9	12	7.8	7.8	7.2	8.2	0.5	-0.3	7.9
Mokau River at Awakau Rd	12	47.3	27.0	3.8	169.0	71.8	1.2	16.7	12	7.4	7.4	7.2	7.6	0.1	-0.2	7.4
Mokau River at Mangaokewa Rd (Off SH30)	12	6.6	4.5	2.3	19.2	6.4	1.4	3.6	12	7.3	7.3	7.0	7.5	0.3	-0.2	7.2
Mokau River at Totoro Rd Recorder	12	39.4	13.2	1.6	137.0	60.6	1.1	7.6	12	7.6	7.6	7.2	7.8	0.3	-0.4	7.5
Mokauiti Stm at Three Way Point - Aria	12	114.0	17.9	3.5	960.0	39.2	<u>2.8</u>	10.1	12	7.3	7.3	6.9	7.7	0.4	0.3	7.3
Ohautira Stm at Waingaro Te Uku Rd	12	41.1	16.2	3.7	220.0	41.7	<u>2.1</u>	9.0	12	7.4	7.4	7.1	7.6	0.2	-0.1	7.4
Oparau River at Langdon Rd (Off Okupata Rd)	12	9.3	3.8	1.9	51.0	7.1	<u>2.4</u>	3.0	12	7.3	7.4	6.9	7.9	0.4	0.3	7.4
Tawarau River at Off Speedies Rd	12	24.7	5.1	1.9	200.0	11.4	<u>2.9</u>	3.4	12	7.8	7.8	7.3	8.3	0.5	0.0	7.9
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	63.6	18.2	2.6	420.0	40.0	<u>2.4</u>	11.0	12	7.5	7.5	7.1	7.8	0.4	-0.2	7.5
Waitetuna River at Te Uku-Waingaro Rd	12	38.5	16.1	4.0	170.0	49.5	<u>1.8</u>	10.6	12	7.2	7.4	6.4	7.5	0.3	-1.6	7.3
Inflows to Lake Taupo																
Hinemaiaia River at SH1	12	1.5	1.3	0.8	2.7	1.0	0.8	1.2	12	7.4	7.4	7.2	7.6	0.1	0.4	7.4
Kuratau River at SH41 Moerangi	12	2.1	1.9	1.3	4.4	0.5	<u>2.3</u>	1.6	12	7.1	7.2	6.7	7.4	0.1	-1.4	7.2
Kuratau River at Te Rae Street	12	1.4	1.2	0.6	2.5	0.8	0.6	1.2	12	7.3	7.4	7.0	7.5	0.1	-1.1	7.4
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	3.8	3.6	2.4	6.9	1.7	1.1	3.2	12	7.4	7.4	7.3	7.6	0.2	0.5	7.4
Tauranga- Taupo River at 20 Metres U/S SH1 Bridge	12	3.2	1.3	0.4	19.2	2.6	<u>2.7</u>	1.0	12	7.3	7.3	7.2	7.4	0.1	0.2	7.3
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	1.5	1.4	1.0	2.2	1.0	0.4	1.4	12	7.4	7.4	7.1	7.6	0.1	-0.6	7.4
Tokaanu Stm at Off SH41 Turangi	12	0.4	0.2	0.1	1.0	0.4	1.0	0.2	12	7.2	7.2	7.1	7.4	0.1	0.6	7.2
Waihaha River at SH32	12	2.6	1.4	0.7	15.9	1.3	<u>2.9</u>	0.7	12	7.2	7.3	6.6	7.4	0.2	-1.6	7.3
Waitahanui River at Blake Rd	12	2.7	2.1	0.9	5.8	2.8	0.5	0.9	12	7.4	7.4	7.3	7.6	0.1	0.4	7.4
Whangamata Stm (Kinloch) at Whangamata Rd	12	1.8	1.8	0.9	3.2	1.2	0.6	1.7	12	7.3	7.3	7.0	7.7	0.2	0.3	7.4
Whanganui Stm at Lakeside Lake Taupo	12	3.4	1.8	1.1	20.0	1.3	<u>2.9</u>	1.3	12	7.2	7.2	7.0	7.5	0.3	0.3	7.4
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	6.7	4.0	1.9	23.0	5.0	<u>1.8</u>	3.3	12	7.3	7.3	7.2	7.5	0.1	0.8	7.4

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

E. Coli (n/100mL)

Location	Count	Mean	Median	Min	Max	IQR	Skew	12-16	
								Median	Median
Coromandel									
Hikutaia River at Old Maratoto Rd	12	263	235	43	580	160	0.8		240
Kauaeranga River at Smiths Cableway/Recorder	12	186	125	46	700	154	<u>1.9</u>		120
Ohinemuri River at Queens Head	12	1073	51	13	9000	610	<u>2.7</u>		54
Ohinemuri River at SH25 Br	12	170	70	20	500	260	0.9		100
Tairua River at Morrisons Br Hikuai	12	93	75	10	240	122	0.7		70
Tapu River at Tapu-Coroglen Rd	12	127	55	24	570	78	<u>1.8</u>		50
Waiu River at E309 Rd Ford	12	228	120	34	1400	147	<u>2.8</u>		80
Waitekauri River at U/S Ohinemuri Conflu	12	230	65	10	1800	138	<u>2.9</u>		58
Waiwawa River at SH25 Coroglen	12	105	55	6	400	110	<u>1.7</u>		50
Wharekawa River at SH25	12	296	100	42	1900	220	<u>2.8</u>		185
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	185	39	10	1100	154	<u>2.2</u>		42
Oraka Stm at Lake Rd	12	1203	425	280	5900	215	<u>1.9</u>		300
Piako River at Kiwitahi	12	866	300	110	5800	670	<u>2.8</u>		220
Piako River at Paeroa-Tahuna Rd Br	12	1000	500	200	6200	565	<u>2.8</u>		460
Piakonui Stm at Piakonui Rd	12	265	110	6	1200	216	<u>1.7</u>		55
Waihou River at Okauia	12	667	295	150	2200	865	1.2		210
Waihou River at Whites Rd	12	81	57	4	270	58	1.6		40
Waihohu Stm at Waihohu (Off SH5)	12	192	52	1	1200	153	<u>2.4</u>		53
Waiomou Stm at Matamata-Tauranga Rd	12	773	525	120	3400	700	<u>2.3</u>		310
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	324	165	40	2000	210	<u>2.8</u>		240
Waitoa River at Landsdowne Rd Br	12	723	410	60	3100	750	<u>2.1</u>		400
Waitoa River at Mellon Rd Recorder	12	938	295	30	6300	610	<u>2.6</u>		305
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	322	190	16	1300	355	1.9		210
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	886	250	49	7200	305	<u>2.9</u>		250
Karapiro Stm at Hickey Rd Bridge	12	898	175	70	9000	125	<u>3.0</u>		205
Kirikiroa Stm at Tauhara Dr	12	624	400	70	2200	470	1.6		530
Komakorau Stm at Henry Rd	12	2098	1600	280	6000	1900	1.1	1100	
Little Waipa Stm at Arapuni - Putaruru Rd	12	469	260	20	1900	375	1.7		180
Mangakotukutuku Stm at Peacocks Rd	12	2402	540	40	23000	715	<u>3.0</u>		425
Mangamingi Stm (Tokoroa) at Paronui Rd Br	12	1125	615	30	5100	950	<u>2.2</u>		510
Mangaone Stm at Annebrooke Rd Br	12	529	430	290	900	320	0.8		540
Mangaonua Stm at Hoeka Rd	12	1527	1300	140	6500	1000	<u>2.4</u>	1100	
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	378	190	70	1800	360	<u>2.4</u>		160
Mangatangi River at SH2 Maramarua	12	578	340	70	1900	560	1.3		340
Mangatawhiri River at Lyons Rd At Buckingham Br	12	533	195	66	2400	595	2.0		210
Mangawara Stm at Rutherford Rd Br	12	1478	1250	210	4400	1250	1.2	1000	
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	974	850	90	2800	900	1.1	515	
Matahuru Stm at Waiterimu Road Below Confluence	12	792	465	270	3100	385	2.0	550	
Ohaeroa Stm at SH22 Br	12	478	340	120	1500	430	1.6	340	
Opuatia Stm at Ponganui Rd	12	2676	170	100	26000	645	<u>2.9</u>	380	
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	638	245	160	2500	780	<u>1.7</u>	210	
Waerenga Stm at Taniwha Rd	12	1220	490	160	7100	1165	<u>2.5</u>	500	
Waitawhiriwhiri Stm at Edgecumbe Street	12	923	755	160	2300	840	0.8	610	
Whakapipi Stm at SH22 Br	12	480	330	140	2000	240	2.4	320	
Whakauru Stm at U/S SH1 Br	12	953	850	430	2000	645	1.0	600	
Whangamarino River at Island Block Rd	12	115	75	18	450	95	2.1	110	
Whangamarino River at Jefferies Rd Br	12	2145	1500	300	6000	2525	0.9	700	
Whangape Stm at Rangiri-Glen Murray Rd	12	116	100	5	400	138	1.2	150	

Enterococci (n/100ml)

Location	Count	Mean	Median	Min	Max	IQR	Skew	12-16	
								Median	Median
Coromandel									
Hikutaia River at Old Maratoto Rd	12	224	115	16	820	307	1.2		150
Kauaeranga River at Smiths Cableway/Recorder	12	107	86	20	240	84	0.6		100
Ohinemuri River at Queens Head	12	572	20	1	3400	25	<u>1.8</u>		19
Ohinemuri River at SH25 Br	12	63	42	1	240	54	1.5		41
Tairua River at Morrisons Br Hikuai	12	63	55	1	200	81	1.0		31
Tapu River at Tapu-Coroglen Rd	12	116	72	4	380	155	1.1		56
Waiu River at E309 Rd Ford	12	285	91	2	2100	229	<u>2.8</u>		83
Waitekauri River at U/S Ohinemuri Conflu	12	223	26	1	2200	61	<u>3.0</u>		31
Waiwawa River at SH25 Coroglen	12	306	81	4	2200	285	<u>2.6</u>		56
Wharekawa River at SH25	12	175	48	2	580	337	0.9		85
Hauraki									
Mangawhero Stm (Kaihere) at Mangawara Rd	12	1140	205	14	10000	790	<u>2.9</u>		60
Oraka Stm at Lake Rd	12	766	405	70	3000	260	<u>1.7</u>		260
Piako River at Kiwitahi	12	430	170	28	2000	422	<u>1.9</u>		110
Piako River at Paeroa-Tahuna Rd Br	12	1103	620	110	6900	470	<u>2.9</u>		280
Piakonui Stm at Piakonui Rd	12	633	310	7	2800	905	1.6		75
Waihou River at Okauia	12	346	280	43	1200	475	1.3		160
Waihou River at Whites Rd	12	38	34	5	100	35	0.9		27
Waihohu Stm at Waihohu (Off SH5)	12	101	36	2	470	147	<u>1.7</u>		21
Waiomou Stm at Matamata-Tauranga Rd	12	497	360	33	2100	405	<u>2.0</u>		230
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	474	115	21	3500	248	<u>2.7</u>		110
Waitoa River at Landsdowne Rd Br	12	336	340	25	900	430	0.6		270
Waitoa River at Mellon Rd Recorder	12	359	245	22	1600	290	<u>2.2</u>		215
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	12	218	120	5	800	351	1.2		56
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	589	255	4	2000	1125	1.0		90
Karapiro Stm at Hickey Rd Bridge	12	2091	155	21	23000	284	<u>3.0</u>		125
Kirikiroa Stm at Tauhara Dr	12	668	325	60	2200	870	1.1		275
Komakorau Stm at Henry Rd	12	1992	2100	60	5400	2905	0.4		400
Little Waipa Stm at Arapuni - Putaruru Rd	12	219	145	40	1000	110	<u>2.4</u>		140
Mangakotukutuku Stm at Peacocks Rd	12	1268	690	29	4500	1305	1.4		415
Mangamingi Stm (Tokoroa) at Paronui Rd Br	12	636	580	13	1700	650	0.8		370
Mangaone Stm at Annebrooke Rd Br	12	1209	675	220	6000	620	<u>2.5</u>		450
Mangaonua Stm at Hoeka Rd	12	1216	670	110	4500	950	1.6		570
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	947	380	17	4700	1247	<u>1.9</u>		240
Mangatangi River at SH2 Maramarua	12	495	140	26	2400	300	1.8		120
Mangatawhiri River at Lyons Rd At Buckingham Br	12	764	140	10	5900	225	2.5		80
Mangawara Stm at Rutherford Rd Br	12	1732	900	70	6400	2160	1.3	620	
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	1213	830	100	4100	1560	1.1	480	
Matahuru Stm at Waiterimu Road Below Confluence	12	780	330	35	3700	470	1.8	200	
Ohaeroa Stm at SH22 Br	12	1165	145	15	7400	1209	2.2	170	
Opuatia Stm at Ponganui Rd	12	3890	145	20	36000	205	2.7	150	
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	334	190	30	1300	305	1.6	100	
Waerenga Stm at Taniwha Rd	12	912	145	20	4800	817	<u>1.8</u>	140	
Waitawhiriwhiri Stm at Edgecumbe Street	12	1141	800	110	4400	1135	1.5	580	
Whakapipi Stm at SH22 Br	12	915	660	48	2700	1225	0.9	310	
Whakauru Stm at U/S SH1 Br	12	579	660	38	1200	460	-0.1	420	
Whangamarino River at Island Block Rd	12	49	36	10	150	31	1.5	56	
Whangamarino River at Jefferies Rd Br	12	1592	1150	100	7600	1845	2.1	370	
Whangape Stm at Rangiri-Glen Murray Rd	12	520	36	8	5600	105	3.0	50	

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries

Kaniwhaniwha Stm at Wright Rd	12	3732	800	60	27000	2800	2.7	310
Mangaohoi Stm at South Branch Maru Rd	12	309	78	1	1400	381	1.5	90
Mangaokewa Stm at Lawrence Street Br	12	2638	675	230	12000	1435	1.7	470
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	562	395	110	2600	175	2.7	365
Mangapu River at Otorohanga	12	1890	1000	220	5500	3120	0.8	435
Mangatutu Stm (Waikeria) at Walker Rd Br	12	325	110	35	1200	463	1.2	125
Mangauika Stm at Te Awamutu Borough W/S Intake	12	256	45	1	1300	283	<u>1.7</u>	18
Ohote Stm at Whatawhata/Horotiu Rd	12	318	130	80	1100	265	1.5	200
Puniu River at Bartons Corner Rd Br	12	947	150	50	6200	645	2.4	125
Waipa River at Mangaokewa Rd	12	781	170	20	3000	1265	1.1	180
Waipa River at Pukehoua Bridge on Baffin Road	9	2344	420	100	16000	1433	<u>2.4</u>	
Waipa River at SH3 Otorohanga	12	1203	145	60	7000	875	<u>1.9</u>	160
Waitomo Stm at SH31 Otorohanga	12	3305	1350	60	20000	3720	<u>2.5</u>	330
Waitomo Stm at Tumutumu Rd	12	1004	370	52	5100	1310	<u>2.0</u>	180

	12	1521	1100	36	4500	2135	0.9	280
	12	182	33	5	900	246	1.8	50
	12	2188	460	60	17000	1425	2.9	250
	12	272	200	15	1000	235	1.6	190
	12	1216	305	19	4100	2295	1.0	180
	12	327	185	17	2300	221	<u>2.8</u>	90
	12	340	58	1	2900	151	<u>2.9</u>	17
	12	351	125	18	1500	415	1.5	83
	12	314	150	5	1400	331	1.6	100
	12	512	140	1	4400	219	2.9	41
	9	1665	120	33	11000	1298	2.3	
	12	1714	60	32	6600	3808	1.0	70
	12	1430	465	11	4800	2775	1.0	175
	12	806	240	2	3600	972	1.5	60

Tributaries to the upper Waikato River

Kawaunui Stm at SH5 Br	12	175	120	50	560	130	1.6	140
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	432	300	80	1200	215	1.4	200
Mangakara Stm (Reporoa) at SH5	12	435	215	50	1100	685	0.8	180
Mangakino Stm (Whakamaru) at Sandel Rd	12	156	54	11	600	225	1.3	42
Otamakokore Stm at Hossack Rd	12	287	280	170	410	100	0.2	230
Pueto Stm at Broadlands Rd Br	12	45	34	10	120	34	1.2	26
Tahunaatara Stm at Ohakuri Rd	12	315	185	50	1000	305	1.3	110
Torepatutahi Stm at Vaile Rd Br	12	65	47	26	130	70	0.5	54
Waiotapu Stm at Campbell Rd Br	12	3	3	1	10	2	1.4	1
Waiotapu Stm at Homestead Rd Br	12	179	140	40	490	85	1.5	130
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	125	115	70	250	65	1.3	100
Whirinaki Stm at Corbett Rd	12	55	39	11	160	31	1.5	32

	12	1033	390	5	4800	905	<u>1.7</u>	170
	12	324	240	23	900	335	1.1	140
	12	595	250	8	2500	535	1.6	180
	12	131	51	7	800	106	2.4	22
	12	265	205	21	800	320	1.0	130
	12	75	45	4	280	91	1.4	19
	12	222	115	11	1300	100	<u>2.7</u>	80
	12	80	55	10	260	59	1.4	46
	12	6	2	1	20	9	1.1	3
	12	166	98	15	600	237	1.3	100
	12	121	75	21	360	153	1.1	76
	12	149	51	5	900	166	2.4	22

West Coast

Awakino River at Gribbon Rd	12	851	145	15	4900	1109	<u>2.0</u>	70
Awakino River at SH3 Awakau Rd Junction	12	1585	295	10	14000	846	<u>2.9</u>	130
Manganui River at Off Manganui Rd	12	1497	380	10	13000	656	<u>2.9</u>	160
Mangaotaki River at SH3 Br	12	7828	530	60	62000	6255	2.6	355
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	1676	485	24	15000	891	<u>3.0</u>	120
Mokau River at Awakau Rd	12	1606	340	9	7000	2670	1.3	130
Mokau River at Mangaokewa Rd (Off SH30)	12	577	115	5	4400	481	<u>2.8</u>	120
Mokau River at Totoro Rd Recorder	12	3258	385	40	19000	3955	<u>2.0</u>	170
Mokauiti Stm at Three Way Point - Aria	12	5699	565	55	39000	2995	<u>2.2</u>	230
Ohautira Stm at Waingaro Te Uku Rd	12	1092	550	60	3700	1475	1.2	390
Oparau River at Langdon Rd (Off Okupata Rd)	12	411	175	16	2500	330	2.6	110
Tawarau River at Off Speedies Rd	12	2114	380	34	20000	916	3.0	110
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	3045	340	17	23000	2885	2.7	250
Waitetuna River at Te Uku-Waingaro Rd	12	2380	900	110	11000	2630	<u>1.7</u>	400

	12	1253	46	1	12000	173	<u>2.8</u>	37
	12	629	69	4	2200	1430	0.9	47
	12	1028	84	3	11000	250	<u>3.0</u>	30
	12	2545	360	41	18000	2365	2.5	150
	12	786	115	3	5700	830	2.6	38
	12	1110	170	10	5500	1734	1.5	63
	12	535	165	2	4600	247	<u>3.0</u>	60
	12	3649	155	12	33000	2168	<u>2.8</u>	60
	12	6192	160	5	57000	4114	<u>2.9</u>	90
	12	1067	800	8	3500	1619	0.9	190
	12	449	105	5	3700	247	2.8	42
	12	592	115	3	4600	453	2.7	40
	12	1744	1050	22	5600	3150	0.7	60
	12	1184	900	50	5400	1290	2.1	220

Inflows to Lake Taupo

Hinemaiaia River at SH1	12	30	21	9	90	22	1.4	15
Kuratau River at SH41 Moerangi	12	20	11	1	130	18	2.7	7
Kuratau River at Te Rae Street	12	58	35	8	230	27	2.0	31
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	81	26	16	600	23	<u>2.9</u>	50
Tauranga- Taupo River at 20 Metres U/S SH1 Bridge	12	38	21	3	140	43	1.4	19
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	14	3	1	90	4	2.1	3
Tokaanu Stm at Off SH41 Turangi	12	101	11	3	900	47	2.9	10
Waihaha River at SH32	12	35	15	2	240	18	<u>2.7</u>	8
Waitahanui River at Blake Rd	12	28	26	5	90	29	1.5	18
Whangamata Stm (Kinloch) at Whangamata Rd	12	674	105	33	6800	99	3.0	80
Whanganui Stm at Lakeside Lake Taupo	12	80	36	5	400	74	<u>2.2</u>	29
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	210	120	38	1100	130	<u>2.7</u>	100

	12	34	12	1	100	59	0.8	10
	12	25	3	1	230	11	2.9	3
	12	63	35	5	380	41	2.6	19
	12	641	275	17	3500	549	2.1	70
	12	27	18	1	70	43	0.5	6
	12	9	4	1	40	10	1.9	1
	12	231	9	1	2100	42	2.7	7
	12	101	5	1	800	50	2.5	3
	12	68	19	1	500	53	2.8	11
	12	1853	235	38	16000	700	2.8	90
	12	105	41	4	430	164	1.3	19
	12	149	69	16	520	192	1.2	32

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Temperature (°C)

Location	Count	Mean	Median	Min	Max	IQR	Skew	12-16 Median
Coromandel								
Hikutaia River at Old Maratoto Rd	12	14.7	15.1	8.7	19.9	5.6	-0.18	14.2
Kauaeranga River at Smiths Cableway/Recorder	12	15.4	16.2	8.6	21.4	6.2	-0.21	15.2
Ohinemuri River at Queens Head	12	16.8	17.4	11.5	21.1	6.1	-0.09	16.5
Ohinemuri River at SH25 Br	12	16.6	16.4	10.6	21.8	5.7	-0.22	16.1
Tairua River at Morrisons Br Hikuai	12	16.4	17.0	9.8	21.6	6.5	-0.23	16.1
Tapu River at Tapu-Coroglen Rd	12	15.4	16.0	8.5	20.9	5.7	-0.26	14.4
Waiau River at E309 Rd Ford	12	15.3	15.4	9.8	20.4	6.0	-0.02	14.3
Waitekauri River at U/S Ohinemuri Conflu	12	16.3	15.7	10.3	22.9	5.8	0.18	15.1
Waiwawa River at SH25 Coroglen	12	16.0	17.0	9.9	22.0	6.6	-0.15	15.4
Wharekawa River at SH25	12	16.1	16.0	9.8	22.0	6.2	-0.14	15.4
Hauraki								
Mangawhero Stm (Kaihere) at Mangawara Rd	12	14.4	14.3	10.4	18.7	3.8	0.19	14.2
Oraka Stm at Lake Rd	12	14.5	14.6	11.1	18.6	3.6	0.26	14.1
Piako River at Kiwitahi	12	15.7	15.5	8.9	22.6	8.4	-0.02	15.7
Piako River at Paeroa-Tahuna Rd Br	12	15.1	15.8	8.5	22.0	7.9	-0.07	15.3
Piakonui Stm at Piakonui Rd	12	13.3	13.7	8.2	18.0	5.7	-0.19	13.0
Waihou River at Okauia	12	14.3	14.2	11.2	18.3	3.8	0.30	14.4
Waihou River at Whites Rd	12	13.2	13.2	12.4	14.5	1.0	0.56	13.3
Waiohotu Stm at Waiohotu (Off SH5)	12	12.2	11.4	8.3	17.2	3.2	0.50	11.2
Waiomou Stm at Matamata-Tauranga Rd	12	14.4	14.3	10.5	19.8	3.6	0.50	14.0
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	16.6	16.5	11.2	23.8	5.6	0.35	16.1
Waitoa River at Landsdowne Rd Br	12	14.9	15.6	8.5	20.6	7.5	-0.22	15.7
Waitoa River at Mellon Rd Recorder	12	15.5	16.4	8.8	21.7	7.6	-0.17	15.8
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) at Otua Rd Br opp Moseley Rd	12	17.3	17.1	12.2	24.1	6.2	0.31	16.9
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntly Rd	12	15.2	14.7	10.0	20.7	4.7	0.30	15.0
Karapiro Stm at Hickey Rd Bridge	12	14.9	15.5	8.3	20.7	7.8	-0.15	15.2
Kirikiriira Stm at Tauhara Dr	12	15.3	16.1	10.5	19.1	4.7	-0.36	15.1
Komakorau Stm at Henry Rd	12	15.3	14.4	10.6	21.3	4.8	0.42	14.7
Little Waipa Stm at Arapuni - Putaruru Rd	12	14.3	14.2	11.5	17.2	2.6	0.19	14.2
Mangakotukutuku Stm at Peacockes Rd	12	15.1	16.0	9.6	19.7	5.7	-0.31	15.2
Mangamingi Stm (Tokoroa) at Paraonui Rd Br	12	14.2	13.7	10.1	20.7	4.1	0.73	14.0
Mangaone Stm at Annebrooke Rd Br	12	13.4	14.3	7.9	19.1	5.5	-0.12	13.9
Mangaonua Stm at Hoeka Rd	12	14.0	14.6	8.5	19.5	5.6	-0.14	14.1
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	14.0	14.2	7.8	20.0	6.8	-0.09	14.2
Mangatangi River at SH2 Maramarua	12	17.2	16.8	12.0	24.2	6.2	0.26	16.7
Mangatawhiri River at Lyons Rd At Buckingham Br	12	17.2	16.5	11.9	23.4	7.1	0.09	16.7
Mangawara Stm at Rutherford Rd Br	12	15.6	15.5	10.6	21.8	5.0	0.32	15.1
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	14.3	14.8	9.4	18.1	4.9	-0.40	14.5
Matahuru Stm at Waiterimu Road Below Confluence	12	15.3	15.0	10.3	21.3	4.6	0.23	14.9
Ohaeroa Stm at SH22 Br	12	14.7	14.7	9.5	20.2	3.6	0.39	14.6
Opuatia Stm at Ponganui Rd	12	15.2	15.1	9.6	21.3	5.2	0.25	14.9
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	14.2	14.1	10.8	18.7	3.4	0.46	14.0
Waerenga Stm at Taniwha Rd	12	14.8	15.1	8.9	21.3	4.4	0.11	14.7
Waitawhiriwhiri Stm at Edgecumbe Street	12	16.8	17.3	11.3	21.9	6.0	-0.16	16.2
Whakapipi Stm at SH22 Br	12	15.9	16.0	11.4	21.6	4.8	0.24	15.8
Whakauru Stm at U/S SH1 Br	12	12.6	12.5	9.6	16.5	3.0	0.39	12.3
Whangamarino River at Island Block Rd	12	18.2	17.6	11.4	26.2	8.4	0.10	17.6
Whangamarino River at Jefferies Rd Br	12	15.4	15.2	10.2	22.2	4.7	0.47	15.0
Whangape Stm at Rangiri-Glen Murray Rd	12	16.8	17.0	11.1	23.4	5.6	0.14	16.4

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm at Wright Rd	12	15.1	14.8	10.2	20.8	4.9	0.33	14.6
Mangaohoi Stm at South Branch Maru Rd	12	14.4	14.8	10.7	18.3	5.5	-0.04	14.2
Mangaokewa Stm at Lawrence Street Br	12	14.0	13.8	8.7	18.7	5.3	0.03	13.7
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	17.1	17.2	8.7	25.0	8.5	-0.20	17.2
Mangapu River at Otorohanga	12	15.8	15.0	11.4	21.1	6.1	0.34	14.9
Mangatutu Stm (Waikeria) at Walker Rd Br	12	14.4	14.0	9.1	21.1	5.8	0.11	13.7
Mangauika Stm at Te Awamutu Borough W/S Intake	12	13.1	12.8	9.8	16.2	3.3	0.20	12.4
Ohote Stm at Whatawhata/Horotiu Rd	12	15.5	16.8	9.4	21.1	6.3	-0.29	15.7
Puniu River at Bartons Corner Rd Br	12	15.6	15.4	8.8	22.1	6.9	-0.16	14.8
Waipa River at Mangaokewa Rd	12	13.7	12.8	9.3	19.3	5.1	0.32	13.0
Waipa River at Pukehoua Bridge on Baffin Road	9	14.0	13.4	10.6	18.6	3.6	0.26	
Waipa River at SH3 Otorohanga	12	15.7	14.7	10.6	21.5	6.8	0.31	14.7
Waitomo Stm at SH31 Otorohanga	12	15.1	14.7	11.6	18.9	4.9	0.20	14.9
Waitomo Stm at Tumutumu Rd	12	14.3	13.9	11.7	17.3	4.1	0.33	13.9
Tributaries to the upper Waikato River								
Kawaunui Stm at SH5 Br	12	14.9	14.8	12.4	18.2	2.4	0.42	14.7
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	13.7	13.6	10.8	16.7	2.8	0.16	13.1
Mangakara Stm (Reporoa) at SH5	12	13.6	13.5	10.6	17.4	3.0	0.27	13.2
Mangakino Stm (Whakamaru) at Sandel Rd	12	12.2	11.7	9.0	16.5	3.7	0.26	12.3
Otamakokore Stm at Hossack Rd	12	20.7	20.7	17.6	26.2	4.0	0.68	21.0
Pueto Stm at Broadlands Rd Br	12	14.0	13.8	11.4	17.1	2.3	0.45	13.6
Tahunaatara Stm at Ohakuri Rd	12	13.8	13.6	10.0	19.3	4.2	0.43	13.3
Torepatutahi Stm at Vaile Rd Br	12	14.4	14.2	11.1	19.0	3.6	0.44	14.1
Waiotapu Stm at Campbell Rd Br	12	28.8	28.8	25.2	33.0	2.9	0.17	28.6
Waiotapu Stm at Homestead Rd Br	12	18.8	18.7	15.2	24.3	3.6	0.55	18.6
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	23.0	22.9	20.4	26.8	2.8	0.49	22.7
Whirinaki Stm at Corbett Rd	12	12.3	12.3	10.7	14.7	1.5	0.68	12.1
West Coast								
Awakino River at Gribbon Rd	12	13.5	13.0	8.5	17.3	3.2	-0.04	13.0
Awakino River at SH3 Awakau Rd Junction	12	15.1	14.2	10.5	19.8	5.8	0.27	14.8
Manganui River at Off Manganui Rd	12	14.4	14.0	9.2	19.1	4.6	-0.02	13.8
Mangaotaki River at SH3 Br	12	14.3	13.7	9.2	18.0	4.7	-0.04	13.7
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	14.4	13.9	10.2	18.8	4.4	0.20	13.8
Mokau River at Awakau Rd	12	15.4	14.8	10.6	20.3	5.7	0.17	14.6
Mokau River at Mangaokewa Rd (Off SH30)	12	13.2	12.4	8.4	17.6	4.3	0.09	12.3
Mokau River at Totoro Rd Recorder	12	15.1	14.4	10.0	19.9	5.5	0.09	14.4
Mokauiti Stm at Three Way Point - Aria	12	15.3	14.1	10.1	20.6	5.7	0.24	14.4
Ohautira Stm at Waingaro Te Uku Rd	12	13.9	13.5	8.3	19.4	3.7	0.12	13.1
Oparau River at Langdon Rd (Off Okupata Rd)	12	15.1	14.9	9.7	20.1	6.2	0.10	14.4
Tawarau River at Off Speedies Rd	12	14.1	13.6	10.0	18.2	4.3	0.20	13.7
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	15.6	15.2	9.3	21.7	5.8	0.15	15.0
Waitetuna River at Te Uku-Waingaro Rd	12	14.8	14.5	9.7	20.4	4.8	0.30	13.9
Inflows to Lake Taupo								
Hinemaiaia River at SH1	12	11.9	11.1	7.7	18.5	5.4	0.50	11.7
Kuratau River at SH41 Moerangi	12	10.2	9.7	6.3	13.7	3.3	0.17	9.8
Kuratau River at Te Rae Street	12	13.4	12.7	8.7	20.3	6.4	0.36	13.4
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Res)	12	11.0	10.9	8.6	13.4	1.6	0.06	11.2
Tauranga- Taupo River at 20 Metres U/S SH1 Bridge	12	11.1	10.5	6.7	17.4	4.8	0.39	11.3
Tokaanu Power Station Tailrace Canal at SH41 Bridge Over Canal	12	13.1	12.9	7.9	20.3	6.6	0.33	13.2
Tokaanu Stm at Off SH41 Turangi	12	12.0	11.8	11.3	13.6	1.0	1.04	12.2
Waihaha River at SH32	12	11.3	10.8	7.7	15.9	4.0	0.30	11.8
Waitahanui River at Blake Rd	12	10.7	10.7	8.6	13.5	2.2	0.24	10.8
Whangamata Stm (Kinloch) at Whangamata Rd	12	10.6	10.6	8.7	13.1	1.7	0.38	10.5
Whanganui Stm at Lakeside Lake Taupo	12	11.5	11.1	7.5	17.1	4.2	0.42	12.2
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	11.3	11.1	8.0	16.0	3.6	0.37	11.5

IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

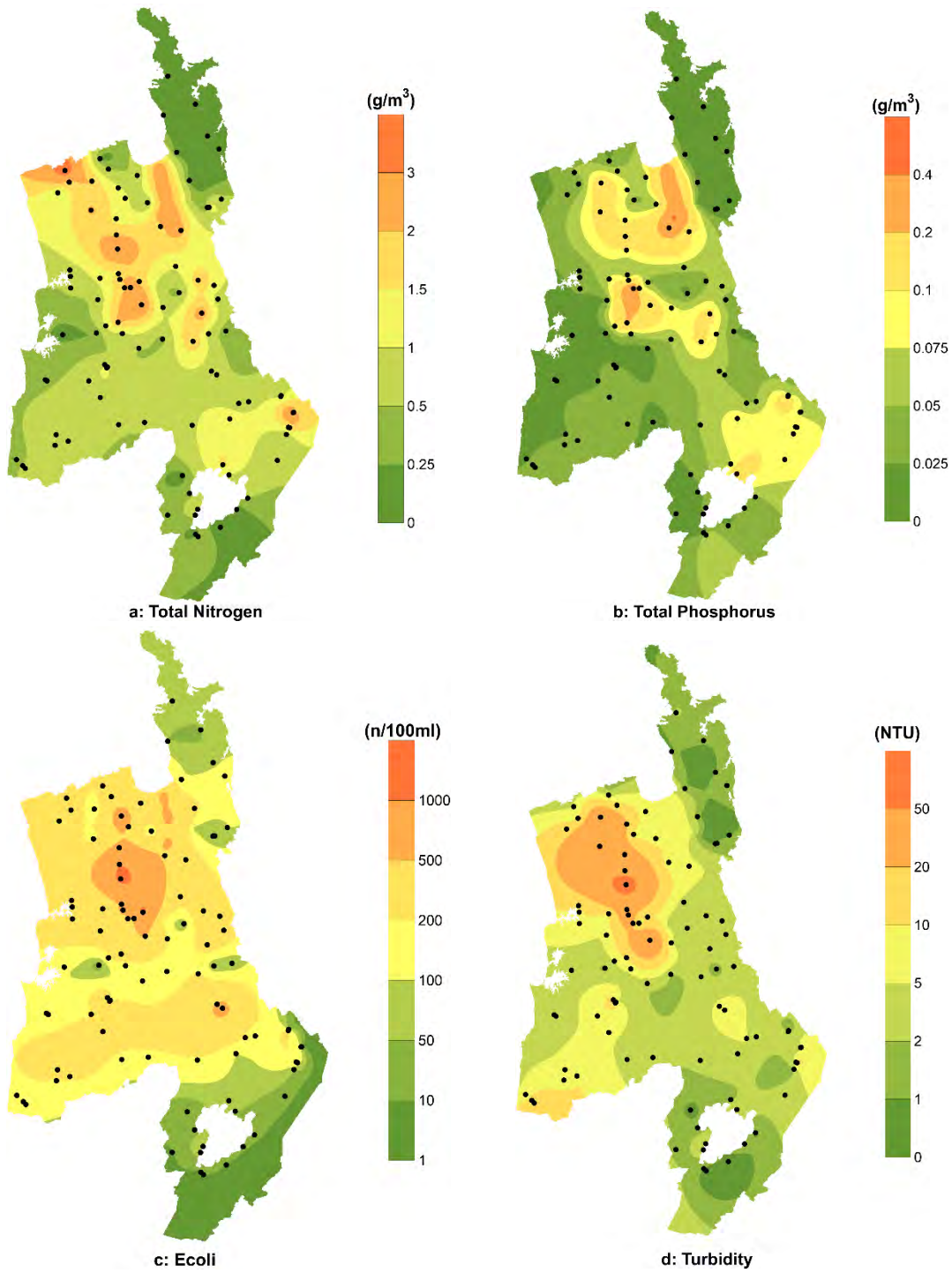


Figure 2: Spatial contour plots of four water quality parameters (based on 5 year median values, 2012-2016); a: Total Nitrogen, b: Total Phosphorus, c: Escherichia coli, d: Turbidity.

3.2 Regional rivers monitoring programme comparison with water quality guidelines and standards

Number of Samples (2016) that Comply with the Satisfactory and the Excellent Water Quality Standards and Guidelines (^n=6, @ n=7, # n=8, *n=9, ~n=10, ^n=11)

Location	SATISFACTORY										EXCELLENT									
	ECOLOGICAL HEALTH							RECREATION			ECOLOGICAL HEALTH							RECREATION		
	DO	pH	Turb	NH4	Temp	TP	TN	Bdisk	E.coli	E.coli-m	DO	pH	Turb	NH4	Temp	TP	TN	Bdisk	E.coli	E.coli-m
Coromandel																				
Hikutaia River at Old Maratoto Rd	12	12	12	12	10	12	12	12	11/12	N	12	9	9	12	4	11	5	4	1/12	N
Kauaeranga River at Smiths Cableway/Recorder	12	12	11	12	8	12	12	10	11/12	Y	12	9	9	12	3	8	3	6	3/12	N
Ohinemuri River at Queens Head	12	12	10	12	5	11	0	9	9/12	Y	11	7	8	9	1	6	0	2	6/12	N
Ohinemuri River at SH25 Br	12	12	12	12	7	12	2	12	12/12	Y	12	8	11	12	1	2	0	4	6/12	N
Tairua River at Morrisons Br Hikuai	12	12	11	12	6	12	12	-	12/12	Y	12	7	9	12	2	11	5	-	5/12	N
Tapu River at Tapu-Coroglen Rd	12	12	10	12	7	12	12	10	11/12	Y	12	11	10	12	2	10	10	7	6/12	N
Waiau River at E309 Rd Ford	12	12	10	12	8	11	11	10	11/12	Y	12	11	5	12	4	10	5	0	3/12	N
Waitekauri River at U/S Ohinemuri Conflu	12	12	12	12	6	12	11	10	11/12	Y	12	10	10	12	1	11	0	5	5/12	N
Waiwawa River at SH25 Coroglen	12	12	11	12	6	11	12	11	12/12	Y	12	9	8	12	2	11	8	5	6/12	N
Wharekawa River at SH25	12	12	11	12	7	12	12	10	11/12	Y	12	7	8	12	2	12	1	0	1/12	N
Hauraki																				
Mangawhero Stm (Kaihere) at Mangawara Rd	12	12	0	12	9	1	5	0	11/12	Y	12	12	0	12	4	0	0	0	8/12	N
Oraka Stm at Lake Rd	12	12	4	12	8	0	0	1	9/12	N	9	11	0	8	4	0	0	0	0/12	N
Piako River at Kiwitahi	7	12	8	12	7	0	6	^4	8/12	N	4	10	5	12	4	0	0	^0	0/12	N
Piako River at Paeroa-Tahuna Rd Br	7	12	5	12	8	0	1	2	8/12	N	0	11	2	11	4	0	0	0	0/12	N
Piakonui Stm at Piakonui Rd	12	12	9	12	11	11	7	^7	10/12	Y	12	12	0	12	7	0	0	^0	4/12	N
Waihou River at Okauia	12	12	5	12	8	0	0	1	9/12	N	12	11	0	12	4	0	0	0	0/12	N
Waihou River at Whites Rd	12	12	12	12	7	0	0	12	12/12	Y	12	9	11	12	7	0	0	9	5/12	N
Waiohotu Stm at Waiohotu Rd (Off SH5)	12	11	9	12	12	12	12	-	11/12	Y	11	9	0	12	7	0	0	-	7/12	N
Waiomou Stm at Matamata-Tauranga Rd	12	12	7	12	9	9	4	5	6/12	N	12	9	1	12	4	0	0	0	0/12	N
Waitakaruru River (Hauraki Plains) at Coxhead Rd Br	12	12	7	12	7	2	6	5	11/12	N	5	11	1	12	0	0	0	0	1/12	N
Waitoa River at Landsdowne Rd Br	8	12	8	12	8	6	0	8	7/12	N	3	10	6	12	4	0	0	2	0/12	N
Waitoa River at Mellon Rd Recorder	2	12	6	12	7	0	0	6	8/12	N	0	10	1	9	2	0	0	0	2/12	N
Tributaries to the Lower Waikato River																				
Awaroa River (Waiuku) at Otatau Rd Br opp Moseley Rd	8	12	1	12	4	9	0	~0	11/12	N	4	9	0	11	0	0	0	~0	2/12	N
Awaroa Stm (Rotowaro) at Sansons Br @ Rotowaro-Huntl	8	12	2	12	7	10	4	0	10/12	N	2	11	0	12	2	2	0	0	1/12	N
Karapiro Stm at Hickey Rd Bridge	11	12	6	12	8	0	2	3	11/12	N	6	11	0	11	4	0	0	0	0/12	N
Kirikiri Stm at Tauhara Dr	1	12	0	12	9	1	0	#0	7/12	N	0	7	0	0	0	0	0	#0	0/12	N
Komakorau Stm at Henry Rd	0	10	0	9	7	0	0	0	2/12	N	0	1	0	2	2	0	0	0	0/12	N
Little Waipa Stm at Arapuni - Putaruru Rd	12	12	9	12	8	0	0	5	9/12	N	12	10	5	11	4	0	0	0	1/12	N
Mangakotukutuku Stm (Rukuhia) at Peacocks Rd	12	12	0	12	10	0	0	0	6/12	N	6	8	0	3	3	0	0	0	1/12	N
Mangamingi Stm (Tokoroa) at Paronui Rd Br	12	12	4	12	10	0	0	0	5/12	N	12	12	0	1	4	0	0	0	1/12	N
Mangaone Stm at Annebrooke Rd Br	4	12	2	12	11	0	0	0	8/12	N	0	12	0	12	7	0	0	0	0/12	N
Mangaonua Stm at Hoeka Rd	6	12	1	12	11	6	0	3	2/12	N	0	10	0	8	6	0	0	0	0/12	N
Mangaonua Stm (a.k.a Waitakaruru Stm) at Te Miro Rd	12	12	8	12	10	9	3	5	11/12	N	12	11	0	12	6	0	0	0	0/12	N
Mangatangi River at SH2 Maramara	12	12	0	12	4	1	8	0	7/12	N	3	10	0	12	0	0	0	0	0/12	N
Mangatawhiri River at Lyons Rd At Buckingham Br	12	12	8	12	3	7	10	9	8/12	N	12	12	4	12	0	0	0	0	0/12	N
Mangawara Stm at Rutherford Rd Br	0	11	0	12	8	0	0	^0	3/12	N	0	5	0	1	1	0	0	^0	0/12	N
Mangawhero Stm (Cambridge) at Cambridge-Ohaupo Rd	12	12	0	12	10	0	0	0	4/12	N	1	8	0	6	5	0	0	0	0/12	N
Matahuru Stm at Waiterimu Road Below Confluence	9	12	0	12	8	0	2	-	8/12	N	0	11	0	11	2	0	0	-	0/12	N
Ohaeroa Stm at SH22 Br	12	12	1	12	7	10	0	0	8/12	N	12	12	0	12	4	0	0	0	0/12	N
Opuatia Stm at Ponganui Rd	12	12	0	12	8	8	0	0	9/12	N	11	12	0	12	4	0	0	0	0/12	N
Pokaiwhenua Stm at Arapuni - Putaruru Rd	12	12	7	12	8	0	0	4	8/12	N	12	11	3	11	4	0	0	0	0/12	N
Waerenga Stm at Taniwha Rd	12	12	1	12	8	5	2	0	8/12	N	11	12	0	12	4	0	0	0	0/12	N
Waitawhiriwhiri Stm at Edgumbe Street	11	12	0	12	6	0	0	0	5/12	N	4	7	0	0	0	0	0	0	0/12	N
Whakapipi Stm at SH22 Br	11	12	6	12	6	3	0	6	10/12	N	9	12	2	12	1	0	0	0	0/12	N
Whakauru Stm at U/S SH1 Br	12	12	0	12	11	0	0	0	3/12	N	11	12	0	12	7	0	0	0	0/12	N
Whangamarino River at Island Block Rd	4	12	0	12	4	0	0	0	12/12	Y	3	7	0	6	0	0	0	0	4/12	N
Whangamarino River at Jefferies Rd Br	7	12	0	12	8	0	2	0	3/12	N	0	11	0	12	2	0	0	0	0/12	N
Whangape Stm at Rangiriri-Glen Murray Rd	8	12	0	12	7	0	0	0	12/12	Y	6	9	0	11	0	0	0	0	5/12	N

Waipa River and Tributaries																					
Kaniwhaniwha Stm at Wright Rd	10	12	0	12	7	5	4	0	5/12	N	1	10	0	12	3	0	0	0	0/12	N	
Mangaohoi Stm at South Branch Maru Rd	12	12	11	12	10	3	9	^0	10/12	Y	12	11	1	12	2	0	0	^0	6/12	N	
Mangaokewa Stm at Lawrence Street Br	12	12	3	12	10	5	1	0	5/12	N	12	12	0	12	4	0	0	0	0/12	N	
Mangapiko Stm (Pirongia/Te Awamutu) at Bowman Rd	12	12	4	12	6	0	0	@2	9/12	N	8	9	2	9	3	0	0	@0	0/12	N	
Mangapu River at Otorohanga	12	12	2	12	7	3	0	*2	4/12	N	8	10	0	12	3	0	0	*0	0/12	N	
Mangatutu Stm (Waikeria) at Walker Rd Br	12	12	8	12	9	10	5	^6	9/12	Y	12	10	2	12	4	0	0	^0	4/12	N	
Mangauika Stm at Te Awamutu Borough W/S Intake	12	12	10	12	11	12	12	8	10/12	Y	12	10	6	12	6	8	2	5	7/12	N	
Ohote Stm at Whatawhata/Horotiu Rd	0	12	0	12	8	0	0	0	10/12	N	0	3	0	10	2	0	0	0	0/12	N	
Puniu River at Bartons Corner Rd Br	12	12	5	12	9	3	2	-	8/12	N	9	9	1	11	4	0	0	-	1/12	N	
Waipa River at Mangaokewa Rd	12	12	10	12	10	10	5	^5	7/12	N	12	12	3	12	5	1	0	^0	2/12	N	
Waipa River at Pukehoua Bridge on Baffin Road	*9	*9	*0	*9	*6	*2	*0	*0	*5/9	*N	*8	*8	*0	*9	*2	*0	*0	*0	*0/9	*N	
Waipa River at SH3 Otorohanga	12	12	4	12	7	9	4	~3	8/12	N	12	12	2	11	3	0	0	~0	0/12	N	
Waitomo Stm at SH31 Otorohanga	12	12	2	12	9	4	0	0	4/12	N	10	11	0	11	3	0	0	0	0/12	N	
Waitomo Stm at Tumutumumu Rd	12	12	3	12	9	7	0	#2	7/12	N	12	10	0	12	3	0	0	#0	1/12	N	
Tributaries to the Upper Waikato River																					
Kawaunui Stm at SH5 Br	12	12	7	12	7	0	0	5	11/12	Y	2	5	1	11	4	0	0	0	2/12	N	
Mangaharakeke Stm (Atiamuri) at SH30 (Off Jct SH1)	12	12	2	12	9	1	0	0	9/12	N	12	12	0	12	5	0	0	0	0/12	N	
Mangakara Stm (Reporoa) at SH5	12	12	2	12	10	0	0	1	8/12	N	12	9	0	12	6	0	0	0	1/12	N	
Mangakino Stm (Whakamaru) at Sandel Rd	12	12	8	12	12	2	0	1	11/12	Y	12	12	4	12	8	0	0	0	6/12	N	
Otamakokore Stm at Hossack Rd	12	12	9	12	0	0	0	3	12/12	N	10	8	0	12	0	0	0	0	0/12	N	
Pueto Stm at Broadlands Rd Br	12	12	9	12	8	0	0	^7	12/12	Y	12	12	1	12	5	0	0	^0	8/12	N	
Tahunaatara Stm at Ohakuri Rd	12	12	8	12	11	0	0	1	10/12	N	12	12	0	12	4	0	0	0	1/12	N	
Torepatutahi Stm at Vaile Rd Br	12	12	12	12	8	0	1	-	12/12	Y	11	12	11	12	3	0	0	-	7/12	N	
Waiotapu Stm at Campbell Rd Br	12	0	3	1	0	3	0	2	12/12	Y	3	0	0	0	0	0	0	0	12/12	Y	
Waiotapu Stm at Homestead Rd Br	11	12	0	12	4	0	0	-	12/12	N	0	2	0	0	0	0	0	-	1/12	N	
Waipapa Stm (Mokai) at Tirohanga Rd Br	12	12	7	12	0	0	0	2	12/12	Y	12	12	0	12	0	0	0	0	0/12	N	
Whirinaki Stm at Corbett Rd	12	12	12	12	11	0	0	-	12/12	Y	12	12	12	12	7	0	0	-	8/12	N	
West Coast																					
Awakino River at Gribbon Rd	12	12	8	12	9	9	10	^6	8/12	N	12	12	6	12	5	0	2	^0	4/12	N	
Awakino River at SH3 Awakau Rd Junction	12	12	4	12	9	8	7	4	8/12	N	12	12	1	12	3	0	0	0	3/12	N	
Manganui River at Off Manganui Rd	12	12	4	12	9	8	10	4	7/12	N	12	12	1	12	4	1	1	0	4/12	N	
Mangaotaki River at SH3 Br	12	12	2	12	9	8	0	2	6/12	N	12	12	1	12	4	0	0	0	0/12	N	
Marokopa River at Speedies Rd (Off Te Anga Rd)	12	12	4	12	9	8	6	^1	6/12	N	12	9	0	12	3	0	0	^0	1/12	N	
Mokau River at Awakau Rd	12	12	1	12	8	5	4	0	7/12	N	12	12	0	12	3	0	0	0	2/12	N	
Mokau River at Mangaokewa Rd (Off SH30)	12	12	7	12	11	8	3	-	9/12	Y	12	12	0	12	6	0	0	-	5/12	N	
Mokau River at Totoro Rd Recorder	12	12	3	12	9	6	2	*3	6/12	N	12	12	2	12	3	0	0	*0	2/12	N	
Mokauti Stm at Three Way Point - Aria	12	12	2	12	8	5	3	1	6/12	N	7	11	0	11	3	0	0	0	0/12	N	
Ohautira Stm at Waingaro Te Uku Rd	12	12	3	12	9	5	4	~1	6/12	N	11	12	0	12	5	0	0	~0	0/12	N	
Oparau River at Langdon Rd (Off Okupata Rd)	12	12	8	12	9	10	11	6	10/12	N	12	11	3	12	4	1	0	0	1/12	N	
Tawarau River at Off Speedies Rd	12	12	6	12	9	9	6	^1	7/12	N	12	10	1	12	3	0	0	^0	1/12	N	
Waingaro River (Pukemiro) at Ruakiwi Rd Off SH22	12	12	3	12	7	7	4	*2	7/12	N	8	12	0	12	3	0	0	*0	1/12	N	
Waitetuna River at Te Uku-Waingaro Rd	12	11	2	12	8	5	4	^0	5/12	N	11	11	0	12	4	0	0	^0	0/12	N	
Inflows to Lake Taupo																					
Hinemaiaia River at SH1	12	12	12	12	12	11	12	9	12/12	Y	12	12	9	12	10	0	0	0	10/12	Y	
Kuratau River at SH41 Moerangi	12	12	12	12	12	12	8	11	12/12	Y	12	11	7	12	12	11	0	1	11/12	Y	
Kuratau River at Te Rae Street	10	12	12	12	11	12	0	-	12/12	Y	10	12	9	12	8	2	0	-	9/12	N	
Mapara Stm (Lake Taupo) at Off Mapara Rd (Whakaipo Re	12	12	11	12	12	0	0	2	11/12	Y	4	12	0	12	9	0	0	0	10/12	N	
Tauranga-Taupo River at 20 Metres U/S SH1 Bridge	12	12	11	12	0	12	12	9	12/12	Y	12	12	8	12	0	0	2	2	9/12	Y	
Tokaanu Stm at Off SH41 Turangi	10	12	12	12	12	0	8	-	11/12	Y	0	12	12	12	7	0	0	-	9/12	Y	
Tokaanu Power Station Tailrace Canal at SH41 Bridge Ove	12	12	12	12	11	12	12	-	12/12	Y	12	12	8	12	7	3	4	-	11/12	Y	
Waihaha River at SH32	12	12	11	12	12	12	11	@6	12/12	Y	12	11	9	12	11	0	0	@2	10/12	Y	
Waitahanui River at Blake Rd	12	12	11	12	12	0	7	10	12/12	Y	12	12	6	12	10	0	0	0	11/12	N	
Whangamata Stm (Kinloch) at Whangamata Rd	12	12	12	12	12	0	0	-	11/12	Y	12	12	9	12	9	0	0	-	1/12	N	
Whanganui Stm at Lakeside Lake Taupo	12	12	11	12	12	11	7	-	12/12	Y	12	12	7	12	10	2	0	-	9/12	N	
Whareroa Stm (Taupo District) at Lakeside Lake Taupo	12	12	8	12	12	8	0	-	11/12	Y	12	12	1	12	9	0	0	-	1/12	N	

E.coli-m refers to whether the 2016 sample median meets the satisfactory median *E.coli* guideline of <126/100 ml or the Excellent guideline value of <23/100 ml for recreational use of water

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Appendix I: Water quality guidelines and standards

Details of water quality guidelines and standards for “satisfactory” water quality

Parameter	Critical Value(s)	Source
Dissolved oxygen	>80% of saturation concentration	RMA Third Schedule, Classes AE, F, and FS.
pH	6.5–9	ANZECC (1992) and Canadian guidelines for freshwater aquatic life (1987).
Turbidity	<5 NTU	Studies of adverse effects on underwater light—and thus on plant and invertebrate production—in certain South Island streams (Davies-Colley 1991).
Ammoniacal-nitrogen	<0.88 g N/m ³	USEPA (1998) value for 1-hour exposure at pH 9.
Temperature	<12°C (May – Sep) <20°C (Oct – Apr)	Waikato Regional Council Draft Regional Plan standards for trout fisheries and trout spawning (1997).
Total phosphorus	<0.04 g/m ³	From upper quartile values for 77 New Zealand rivers in NIWA’s National Water Quality Network (after Smith & Maasdam 1994)—note that the guidelines for “excellent” conditions are the lower quartile concentrations for these rivers.
Total nitrogen	<0.5 g/m ³	From upper quartile values for 77 New Zealand rivers in NIWA’s National Water Quality Network (after Smith & Maasdam 1994)—note that the guidelines for “excellent” conditions are the lower quartile concentrations for these rivers.
Water clarity at baseflow	>1.6 m	“Baseflow” defined as flows less than the upper decile flow. Guideline from Ministry for the Environment (1994).
<i>Escherichia coli</i>	<550/100 mL	Ministry of the Environment (2003) guidelines for the management of recreational and marine shellfish-gathering waters.
Median <i>Escherichia coli</i>	<126/100 mL	Ministry of the Environment (1999) guidelines for the management of recreational and marine shellfish-gathering waters.

Appendix II: Water quality monitoring parameters

Field instruments and analytical methods

Regional River monitoring programme - water quality parameters and analytical methods

Id ¹	Parameter	Method
A340F	Absorbance @ 340 nm filtered	Spectrophotometer, 1 cm path length, APHA method 5910B
A440F	Absorbance @ 440 nm filtered	Spectrophotometer, 1 cm path length, APHA method 5910B
A780	Absorbance @ 780 nm filtered	Spectrophotometer, 1 cm path length, APHA method 5910B
BDISK	Black disk	Field measurement, horizontal water transparency (20mm, 60mm, 100mm, 200mm disk) in river or trough (20mm only)
COND	Conductivity	Lab Meter @ 25°C. APHA method 2510B
DO	Dissolved oxygen	Field measurement (Hach DO meter, model HQ 30d)
DO (% Sat)	Dissolved oxygen (percent saturation)	Field measurement (Hach DO meter, model HQ 30d)
DRP	Dissolved reactive Phosphorus	Filtration, Molybdenum Blue Colorimetry. Discrete analyser. APHA 4500 PE (modified)
E. coli	Escherichia coli	Membrane Filtration (mFC Agar) confirmation by MUG Agar. APHA method 9222 G
ENT	Enterococci bacteria	Membrane Filtration (mE Agar) confirmation by EIA Agar. APHA method 9230 C
FC	Faecal coliforms	Membrane Filtration (mFC Agar). APHA method 9222 D
NH ₄ -N	Ammoniacal Nitrogen (Total)	Filtration, Phenol/Hypochlorite Colorimetry. Discrete analyser. APHA method 4500-NH ₃ F (modified).
NNN	Nitrite/Nitrate Nitrogen	Automated Cadmium reduction. Flow injection analyser. APHA method 4500 – NO ₃ -I (modified).
pH	pH	Lab Meter @ 25°C. APHA method 4500-H ⁺ B
TEMP	Temperature	Field measurement (Hach DO meter, model HQ 30d)
TKN	Total Kjeldahl-Nitrogen	Acid digestion. Phenol/Hypochlorite colorimetry. Discrete analyser. APHA method 4500-N _{org} D
TN	Total Nitrogen	Calculated from NNN + TKN (Nitrite/Nitrate Nitrogen + Total Kjeldahl-Nitrogen)
TP	Total Phosphorus As Reductant	Acid persulphate digestion, Colorimetry. Discrete Analyser. APHA method 4500-P B & E (modified). Also modified to include the use of reductant to eliminate interference from arsenic present in the sample. NAWASCA Pub 38, 1982
TURB	Turbidity	Turbidity Meter Hach 2100N. APHA method 2130 B

¹ Water quality parameter identification code refers to Waikato Regional Council's water quality database (Timestudio) parameter short name. APHA = Standards Methods for the Examination of Water and Wastewater, 22nd Edition, 2012, APHA, AWWA, WEF

