

Regional Rivers Water Quality Monitoring Programme : Data Report 2004

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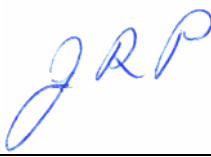
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1 Introduction

1.1 Background

To effectively manage water quality, the Regional River 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 Environment Waikato 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 10th since the implementation of the Regional Rivers Monitoring Programme (RERIMP) in 1993¹ and follows the format of the previous data report (Smith, 2004). Copies of reports as described in the list of references (page 32) can be obtained by contacting Environment Waikato (the Library) on 0800 800 401, in electronic format from the publications page of the Environment Waikato website: www.ew.govt.nz/publications or email: inforeq@ew.govt.nz

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 2004 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 Waikato River reported on separately — see Smith, 2005 (in prep).

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 2004. 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 (e.g. swimming).

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)	fish (spawning)	<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 Environment Waikato Internet site; www.ew.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 locations were sampled regularly by Environment Waikato. A further 5 locations form part of N.I.W.A.'s National Water Quality Network, whose data are reported annually (Bryers, *in prep*).

Table 2: Environment Waikato's Sampling Locations

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

Map No.	Location	Location Id	Map Ref.
Waipa River and Tributaries			
11	Kaniwhaniwha Stm @ Wright Rd	222.16	S15:985-680
74	Mangaohoi Stm @ South Branch Maru Rd	411.9	T15:329-471
65	Mangaokewa Stm @ Te Kuiti Borough Water Supply Intake	414.12	S16:998-161
76	Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	438.3	S15:093-560
63	Mangapu River @ Otorohanga	443.3	S16:033-318
73	Mangatutu Stm (Waikeria) @ Walker Rd Bridge	476.7	S15:203-422
13	Mangauika Stm @ Te Awamutu Borough Water Supply Intake	477.10	S15:980-504
88	Ohote Stm @ Whatawhata/Horotiu Rd	624.5	S14:997-794
75	Puniu River @ Bartons Corner Rd Bridge	818.2	S15:115-500
61	Waipa River @ Mangaokewa Rd	1191.5	S17:233-028
12	Waipa River @ Pirongia-Ngutunui Rd Bridge	1191.10	S15:037-529
64	Waipa River @ SH3 Otorohanga	1191.12	S16:036-322
18	Waitomo Stm @ SH31 Otorohanga	1253.5	S16:022-335
17	Waitomo Stm @ Tumutumu Rd	1253.7	S16:938-249
Tributaries to the upper Waikato River			
48	Kawaunui Stm @ SH5 Bridge	240.5	U17:021-081
43	Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	359.1	U16:733-129
49	Mangakara Stm (Reporoa) @ SH5	380.2	U17:996-003
60	Mangakino River (Whakamaru) @ Sandel Rd	388.1	T17:486-013
46	Otamakokore Stm @ Hossack Rd	683.4	U16:955-166
52	Pueto Stm @ Broadlands Rd Bridge	802.1	U17:938-827
44	Tahunaatara Stm @ Ohakuri Rd	934.1	U16:785-138
51	Torepatutahi Stm @ Vaile Rd Bridge	1057.6	U17:985-965
47	Waiotapu Stm @ Campbell Rd Bridge	1186.2	U17:024-082
50	Waiotapu Stm @ Homestead Rd Bridge	1186.4	U17:003-000
42	Waipapa Stm (Mokai) @ Tirohanga Rd Bridge	1202.7	T17:685-047
45	Whirinaki Stm @ Corbett Rd	1323.1	U16:957-171
West Coast			
70	Awakino River @ Gribbon Rd	33.6	R17:702-918
69	Awakino River @ SH3 Awakau Rd Junction	33.9	R18:588-799
67	Manganui River @ Off Manganui Rd	410.4	R17:554-831
66	Mangaotaki River @ SH3 Bridge	428.3	R17:764-963
15	Marokopa River @ Speedies Rd (Off Te Anga Rd)	513.3	R16:708-256
68	Mokau River @ Awakau Rd	556.2	R18:601-785
62	Mokau River @ Mangaokewa Rd (Off SH30)	556.5	S17:096-017
71	Mokau River @ Totoro Rd Recorder	556.9	R17:759-907
72	Mokauiti Stm @ Three Way Point – Aria	557.5	R17:828-929
9	Ohautira River @ Waingaro Te Uku Rd	616.1	R14:842-803
14	Oparau River @ Langdon Rd (Off Okupata Rd)	658.1	R15:799-494
16	Tawarau River @ Off Speedies Rd	976.1	R16:718-249
8	Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	1167.4	R14:837-837
10	Waitetuna River @ Te Uku-Waingaro Rd	1247.2	R14:842-742
Inflows to Lake Taupo			
55	Hinemaiaia River @ SH1	171.5	U18:722-567
101	Kuratau River @ Te Rae Street	282.5	T18:502-536
58	Kuratau River @ SH41 Moerangi	282.4	T18:356-537
53	Mapara Stm @ Off Mapara Rd (Whakaipo Reserve)	504.2	T18:681-750
56	Tauranga-Taupo River @ Te Kono Slackline	971.4	T19:636-473
105	Tokaanu Power Station Tailrace Canal @ SH41 Bridge	1491.1	T19:504-435
57	Tokaanu Stm @ Off SH41 Turangi	1045.3	T19:517-423
59	Waihaha River @ SH32	1106.4	T18:434-747
54	Waitahanui River @ Blake Rd	1226.1	U18:781-627
104	Whanganui Stream @ Lakeside Lake Taupo	1301.1	T18:473-653
102	Whareroa Stream @ Lakeside Lake Taupo	1318.4	T18:515-568
103	Whareroa Stream @ Whareroa Station Bridge	1318.3	T18:483-583

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.

2.2 Sample Collection

Sample collection occurs monthly. The 100 locations sampled by Environment Waikato staff are divided between 7 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 are assessed by measuring up to 32 parameters (16 routinely). Seventy-four locations are measured quarterly for enterococci and *E.coli* bacteria. 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 Environment Waikato's ISO 9001:2000 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 Environment Waikato's water quality archiving database (HYDROL).

Data analysis was performed using DataDesk (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 8). 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 & Smith, 2004) summarises the trends and patterns in regional water quality during 1990 to 2002. Environment Waikato's State of the Environment Report briefly summarises the state of the rivers in the region, and common pressures (Environment Waikato, 1999).

The data contained in these Regional Rivers reports is updated to the Environment Waikato "Healthy Rivers" Internet page:

www.ew.govt.nz/ourenvironment/water/healthyrivers/index.htm

upon completion of the report. This page also provides a link to details of the water quality guidelines and standards used to assess the condition of the Regions rivers, as well as other information relating to Lakes, Rivers and Wetlands.

3 Results

The results are divided into 2 sections. Section 3.1 has a statistical summary of routine monitoring of the Region's rivers in 2004 and provides the spatial contour plots using water quality data from four parameters, based on median values for the last 5 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	Median	00-04
Coromandel									
Hikutaia River @ Old Maratoto Rd	12	0.021	0.020	0.013	0.035	0.006	1.17	0.018	
Kauaeranga River @ Smiths Cableway/Recorder	12	0.019	0.015	0.009	0.048	0.011	1.44	0.016	
Ohinemuri River @ Queens Head	12	0.020	0.019	0.007	0.038	0.012	0.67	0.016	
Ohinemuri River @ SH25 Br	12	0.015	0.014	0.009	0.026	0.008	0.76	0.011	
Tairua River @ Morrisons Br Hikuai	12	0.023	0.020	0.012	0.052	0.010	1.42	0.018	
Tapu River @ Tapu-Coroglen Rd	12	0.013	0.013	0.006	0.025	0.005	1.10	0.012	
Waiau River @ E309 Rd Ford	12	0.020	0.015	0.009	0.075	0.006	<u>2.70</u>	0.014	
Waitekauri River @ U/S Ohinemuri Conflu	12	0.017	0.016	0.008	0.039	0.007	<u>1.90</u>	0.013	
Waiwawa River @ SH25 Coroglen	12	0.025	0.021	0.011	0.059	0.011	1.39	0.023	
Wharekawa River @ SH25	12	0.029	0.024	0.014	0.056	0.016	0.98	0.020	
Hauraki									
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.028	0.017	0.013	0.078	0.016	1.60	0.019	
Oraka Stm @ Lake Rd	12	0.017	0.015	0.001	0.033	0.007	0.31	0.014	
Piako River @ Kiwitahi	12	0.049	0.049	0.027	0.089	0.022	0.80	0.052	
Piako River @ Paeroa-Tahuna Rd Br	12	0.074	0.070	0.049	0.098	0.018	0.28	0.074	
Piakonui Stm @ Piakonui Rd	12	0.030	0.030	0.017	0.046	0.018	0.04	0.033	
Waihou River @ Okauia	12	0.018	0.016	0.009	0.034	0.007	1.18	0.015	
Waihou River @ Whites Rd	12	0.002	0.001	0.001	0.004	0.002	1.00	0.001	
Waihotu Stm @ Waihotu Rd (Off SH5)	12	0.039	0.038	0.027	0.056	0.017	0.38	0.029	
Waiomou Stm @ Matamata-Tauranga Rd	12	0.021	0.020	0.015	0.037	0.006	1.46	0.017	
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.063	0.057	0.044	0.110	0.017	1.38	0.063	
Waitoa River @ Landsdowne Rd Br	12	0.052	0.051	0.030	0.085	0.012	0.83	0.047	
Waitoa River @ Mellon Rd Recorder	12	0.053	0.051	0.033	0.099	0.013	1.62	0.044	
Tributaries to the lower Waikato River									
Awaroa River (Waiuku) @ Otua Rd Br opp Moseley Rd	12	0.046	0.041	0.029	0.100	0.023	<u>1.72</u>	0.043	
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.027	0.022	0.018	0.053	0.008	1.60	0.026	
Karapiro Stm @ Hickey Rd Bridge	12	0.052	0.054	0.028	0.076	0.023	-0.02	0.051	
Kirikiri Stm @ Tauhara Dr	12	0.062	0.062	0.051	0.084	0.010	0.97	0.061	
Komakorau Stm @ Henry Rd	12	0.103	0.091	0.077	0.155	0.032	1.03	0.100	
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.017	0.013	0.007	0.037	0.008	1.29	0.012	
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.285	0.281	0.130	0.447	0.164	0.20	0.215	
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.029	0.027	0.021	0.046	0.011	0.95	0.027	
Mangaone Stm @ Annebrooke Rd Br	12	0.058	0.054	0.041	0.094	0.014	1.33	0.052	
Mangaonua Stm @ Hoeka Rd	12	0.042	0.040	0.026	0.071	0.007	1.35	0.039	
Mangaonua Stm @ Te Miro Rd	12	0.028	0.029	0.017	0.040	0.009	0.04	0.031	
Mangatangi River @ SH2 Maramaru	12	0.055	0.055	0.032	0.088	0.011	0.77	0.050	
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.029	0.023	0.013	0.079	0.009	<u>1.77</u>	0.022	
Mangawara Stm @ Rutherford Rd Br	12	0.124	0.113	0.080	0.203	0.041	0.99	0.121	
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.158	0.138	0.084	0.277	0.104	0.69	0.112	
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.078	0.073	0.046	0.144	0.025	1.26	0.070	
Ohaeroa Stm @ SH22 Br	12	0.026	0.022	0.015	0.056	0.009	1.58	0.024	
Opuatia Stm @ Ponganui Rd	12	0.032	0.027	0.018	0.066	0.013	1.42	0.029	
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.020	0.017	0.012	0.036	0.008	1.16	0.015	
Waerenga Stm @ Taniwha Rd	12	0.030	0.025	0.017	0.070	0.012	<u>1.97</u>	0.028	
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.153	0.161	0.081	0.224	0.061	-0.20	0.132	
Whakapipi Stm @ SH22 Br	12	0.038	0.037	0.021	0.067	0.015	0.95	0.037	
Whakauru Stm @ U/S SH1 Br	12	0.032	0.027	0.021	0.053	0.019	0.79	0.026	
Whangamarino River @ Island Block Rd	12	0.125	0.106	0.064	0.310	0.068	1.67	0.105	
Whangamarino River @ Jefferies Rd Br	12	0.049	0.042	0.031	0.085	0.024	1.00	0.045	
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.070	0.061	0.041	0.115	0.027	0.94	0.061	

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

Count	Mean	Median	Min	Max	IQR	Skew	Median	00-04
12	0.004	0.004	0.003	0.008	0.002	1.33	0.004	
12	0.004	0.003	0.001	0.010	0.002	1.27	0.003	
12	0.005	0.005	0.001	0.009	0.002	0.66	0.003	
12	0.003	0.003	0.001	0.006	0.003	0.42	0.003	
12	0.005	0.004	0.003	0.011	0.003	1.34	0.004	
12	0.003	0.003	0.001	0.006	0.002	0.70	0.002	
12	0.005	0.004	0.002	0.015	0.002	<u>2.31</u>	0.003	
12	0.004	0.004	0.001	0.008	0.002	0.89	0.003	
12	0.006	0.005	0.003	0.013	0.003	1.32	0.006	
12	0.007	0.005	0.003	0.013	0.004	0.98	0.005	
12	0.006	0.004	0.003	0.017	0.005	1.49	0.004	
12	0.004	0.003	0.001	0.010	0.002	1.58	0.003	
12	0.009	0.009	0.005	0.018	0.004	1.11	0.009	
12	0.013	0.012	0.008	0.018	0.002	0.40	0.013	
12	0.006	0.006	0.004	0.009	0.004	0.04	0.006	
12	0.004	0.003	0.002	0.008	0.002	1.08	0.003	
12	0.001	0.001	0.001	0.004	0.000	<u>3.02</u>	0.001	
12	0.008	0.008	0.005	0.012	0.004	0.20	0.006	
12	0.005	0.004	0.003	0.008	0.003	1.02	0.004	
12	0.012	0.011	0.008	0.022	0.003	<u>1.72</u>	0.012	
12	0.009	0.009	0.005	0.016	0.002	1.03	0.008	
12	0.009	0.009	0.006	0.017	0.003	1.42	0.007	
12	0.008	0.008	0.005	0.018	0.005	1.48	0.008	
12	0.005	0.004	0.003	0.009	0.003	1.23	0.004	
12	0.010	0.010	0.005	0.014	0.005	0.02	0.009	
12	0.010	0.010	0.008	0.015	0.002	1.45	0.010	
12	0.015	0.014	0.012	0.021	0.005	0.92	0.015	
12	0.004	0.003	0.001	0.007	0.003	0.48	0.003	
12	0.051	0.047	0.023	0.083	0.030	0.30	0.038	
12	0.006	0.006	0.004	0.010	0.003	0.64	0.006	
12	0.011	0.010	0.008	0.018	0.002	1.66	0.009	
12	0.007	0.007	0.004	0.013	0.002	1.51	0.007	
12	0.006	0.006	0.004	0.008	0.002	0.31	0.006	
12	0.010	0.010	0.006	0.017	0.002	1.20	0.009	
12	0.006	0.005	0.003	0.016	0.002	<u>1.78</u>	0.004	
12	0.020	0.019	0.013	0.032	0.007	0.72	0.020	
12	0.026	0.023	0.014	0.049	0.015	0.90	0.020	
12	0.013	0.013	0.008	0.024	0.004	1.17	0.013	
12	0.005	0.004	0.003	0.010	0.001	1.47	0.005	
12	0.006	0.005	0.004	0.011	0.003	1.35	0.005	
12	0.005	0.004	0.003	0.008	0.003	0.91	0.003	
12	0.006	0.005	0.003	0.014	0.002	<u>2.09</u>	0.006	
12	0.025	0.026	0.014	0.036	0.011	-0.17	0.021	
12	0.007	0.007	0.003	0.012	0.003	0.24	0.007	
12	0.007	0.006	0.004	0.012	0.004	0.61	0.005	
12	0.024	0.019	0.011	0.065	0.014	<u>1.85</u>	0.019	
12	0.009	0.008	0.005	0.017	0.005	1.02	0.009	
12	0.012	0.010	0.008	0.021	0.005	1.15	0.010	

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

Waipa River and Tributaries

Kaniwhaniwha Stm @ Wright Rd	12	0.031	0.027	0.016	0.077	0.015	<u>1.90</u>	0.028
Mangaohoi Stm @ South Branch Maru Rd	12	0.013	0.012	0.006	0.024	0.011	0.29	0.009
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.035	0.036	0.021	0.053	0.020	0.13	0.034
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.086	0.077	0.052	0.153	0.037	0.91	0.073
Mangapu River @ Otorohanga	12	0.029	0.026	0.019	0.040	0.014	0.51	0.027
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.023	0.021	0.014	0.041	0.010	1.11	0.021
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.011	0.007	0.002	0.047	0.008	<u>2.32</u>	0.007
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.157	0.159	0.110	0.193	0.053	-0.21	0.152
Puniu River @ Bartons Corner Rd Br	12	0.034	0.029	0.019	0.089	0.014	<u>2.27</u>	0.030
Waipa River @ Mangaokewa Rd	12	0.043	0.042	0.029	0.064	0.023	<u>0.44</u>	0.045
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.027	0.026	0.019	0.046	0.012	0.98	0.028
Waipa River @ SH3 Otorohanga	12	0.027	0.023	0.019	0.053	0.011	1.67	0.025
Waitomo Stm @ SH31 Otorohanga	12	0.019	0.016	0.012	0.042	0.009	1.57	0.019
Waitomo Stm @ Tumutumu Rd	12	0.015	0.011	0.007	0.037	0.007	1.52	0.012

Tributaries to the upper Waikato River

Kawaunui Stm @ SH5 Br	12	0.039	0.029	0.022	0.089	0.016	1.45	0.029
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.038	0.033	0.022	0.081	0.010	1.62	0.028
Mangakara Stm (Reporoa) @ SH5	12	0.023	0.018	0.015	0.065	0.006	<u>2.67</u>	0.017
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.022	0.017	0.010	0.073	0.014	<u>2.29</u>	0.013
Otamakokore Stm @ Hossack Rd	12	0.050	0.034	0.024	0.136	0.032	1.50	0.030
Pueto Stm @ Broadlands Rd Br	12	0.012	0.011	0.010	0.016	0.003	1.11	0.010
Tahunaatara Stm @ Ohakuri Rd	12	0.038	0.032	0.025	0.073	0.020	1.26	0.029
Torepatutahi Stm @ Vaile Rd Br	12	0.016	0.014	0.011	0.025	0.005	1.21	0.012
Waiotapu Stm @ Campbell Rd Br	12	0.007	0.007	0.005	0.009	0.004	0.32	0.005
Waiotapu Stm @ Homestead Rd Br	12	0.034	0.026	0.022	0.067	0.019	1.19	0.022
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.023	0.016	0.013	0.055	0.007	1.61	0.014
Whirinaki Stm @ Corbett Rd	12	0.005	0.005	0.002	0.008	0.004	-0.03	0.003

West Coast

Awakino River @ Gribbon Rd	12	0.009	0.007	0.004	0.034	0.003	<u>2.73</u>	0.006
Awakino River @ SH3 Awakau Rd Junction	12	0.014	0.012	0.009	0.026	0.005	1.30	0.013
Manganui River @ Off Manganui Rd	12	0.009	0.009	0.006	0.016	0.004	0.92	0.009
Mangaotaki River @ SH3 Br	12	0.018	0.015	0.010	0.051	0.008	<u>2.43</u>	0.015
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.022	0.016	0.012	0.061	0.008	<u>1.80</u>	0.016
Mokau River @ Awakau Rd	12	0.036	0.034	0.019	0.052	0.023	0.06	0.034
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.041	0.039	0.027	0.062	0.018	0.53	0.042
Mokau River @ Totoro Rd Recorder	12	0.032	0.032	0.019	0.048	0.016	0.28	0.029
Mokauiti Stm @ Three Way Point - Aria	12	0.046	0.045	0.030	0.067	0.023	0.35	0.045
Ohautira Stm @ Waingaro Te Uku Rd	12	0.027	0.018	0.013	0.081	0.015	<u>1.69</u>	0.020
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.025	0.015	0.012	0.076	0.018	1.61	0.018
Tawarau River @ Off Speedies Rd	12	0.021	0.015	0.011	0.062	0.007	<u>1.86</u>	0.015
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.036	0.036	0.019	0.065	0.022	0.53	0.038
Waitetuna River @ Te Uku-Waingaro Rd	12	0.027	0.023	0.014	0.057	0.015	1.13	0.026

Inflows to Lake Taupo

Hinemaiaia River @ SH1	12	0.013	0.013	0.010	0.020	0.002	1.49	0.013
Kuratau River @ 43 Te Rae Street	12	0.021	0.021	0.012	0.038	0.008	0.98	0.020
Kuratau River @ SH41 Moerangi	12	0.021	0.019	0.014	0.034	0.009	0.97	0.018
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.048	0.043	0.030	0.082	0.025	0.74	0.038
Tauranga-Taupo River @ Te Kono Slackline	12	0.009	0.009	0.005	0.014	0.005	0.24	0.007
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Can	12	0.008	0.006	0.004	0.023	0.004	<u>2.26</u>	0.006
Tokaanu Stm @ Off SH41 Turangi	12	0.002	0.001	0.001	0.005	0.002	1.24	0.001
Waihaha River @ SH32	12	0.010	0.009	0.006	0.016	0.006	0.56	0.008
Waitahanui River @ Blake Rd	12	0.005	0.005	0.002	0.011	0.002	1.54	0.003
Whanganui Stm @ Lakeside Lake Taupo	12	0.018	0.014	0.011	0.049	0.005	<u>2.69</u>	0.014
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.019	0.018	0.014	0.030	0.004	1.18	0.017
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.018	0.018	0.013	0.026	0.003	0.94	0.017

12	0.006	0.006	0.003	0.016	0.003	<u>1.91</u>	0.006
12	0.003	0.003	0.001	0.006	0.003	0.13	0.002
12	0.007	0.007	0.004	0.011	0.004	0.20	0.007
12	0.015	0.014	0.009	0.029	0.008	0.93	0.014
12	0.005	0.005	0.003	0.008	0.003	0.41	0.005
12	0.005	0.004	0.003	0.008	0.003	0.73	0.004
12	0.002	0.001	0.001	0.010	0.001	<u>2.39</u>	0.001
12	0.026	0.027	0.018	0.033	0.008	-0.17	0.024
12	0.007	0.006	0.004	0.018	0.004	<u>2.06</u>	0.006
12	0.008	0.008	0.006	0.012	0.005	0.45	0.009
12	0.005	0.005	0.003	0.009	0.003	0.84	0.005
12	0.005	0.005	0.003	0.011	0.002	<u>1.70</u>	0.005
12	0.004	0.003	0.002	0.008	0.002	1.43	0.003
12	0.003	0.002	0.001	0.007	0.002	1.20	0.002

12	0.008	0.005	0.004	0.020	0.005	1.46	0.006
12	0.007	0.007	0.004	0.015	0.002	1.51	0.006
12	0.005	0.004	0.003	0.013	0.002	<u>2.47</u>	0.004
12	0.005	0.004	0.002	0.015	0.003	<u>2.29</u>	0.003
12	0.011	0.007	0.006	0.030	0.008	1.53	0.007
12	0.002	0.002	0.001	0.004	0.001	1.15	0.002
12	0.008	0.006	0.005	0.015	0.005	1.18	0.006
12	0.003	0.003	0.001	0.005	0.001	0.81	0.002
12	0.001	0.001	0.001	0.002	0.000	<u>3.02</u>	0.001
12	0.005	0.004	0.003	0.012	0.002	1.59	0.004
12	0.005	0.003	0.003	0.012	0.004	1.18	0.003
12	0.001	0.001	0.001	0.001	0.000	-1.00	0.001

12	0.002	0.001	0.001	0.007	0.001	<u>2.77</u>	0.001
12	0.003	0.003	0.001	0.005	0.002	0.42	0.003
12	0.002	0.001	0.001	0.004	0.001	1.30	0.002
12	0.004	0.003	0.001	0.011	0.002	<u>2.12</u>	0.003
12	0.005	0.003	0.002	0.012	0.002	<u>1.73</u>	0.003
12	0.007	0.006	0.003	0.010	0.005	0.04	0.007
12	0.008	0.008	0.005	0.013	0.004	0.59	0.008
12	0.006	0.006	0.004	0.010	0.003	0.55	0.005
12	0.008	0.008	0.005	0.013	0.005	0.52	0.008
12	0.006	0.004	0.002	0.015	0.003	1.51	0.004
12	0.005	0.004	0.002	0.015	0.004	1.44	0.004
12	0.004	0.003	0.002	0.013	0.001	<u>1.98</u>	0.003
12	0.007	0.007	0.004	0.012	0.004	0.42	0.007
12	0.005	0.005	0.003	0.011	0.002	1.25	0.005

12	0.003	0.003	0.002	0.004	0.001	0.15	0.003
12	0.004	0.005	0.002	0.008	0.002	0.78	0.004
12	0.004	0.004	0.002	0.006	0.002	0.47	0.004
12	0.010	0.009	0.006	0.017	0.005	0.74	0.008
12	0.002	0.001	0.001	0.003	0.001	0.86	0.001
12	0.001	0.001	0.001	0.004	0.001	<u>2.21</u>	0.001
12	0.001	0.001	0.001	0.001	0.000	-1.00	0.001
12	0.002	0.002	0.001	0.004	0.002	0.61	0.002
12	0.001	0.001	0.001	0.002	0.000	<u>3.02</u>	0.001
12	0.004	0.003	0.002	0.011	0.001	<u>2.76</u>	0.003
12	0.004	0.004	0.003	0.006	0.001	0.94	0.003
12	0.004	0.004	0.003	0.006	0.001	1.37	0.003

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

Black Disk (m)

Location								00-04
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	3.81	4.03	1.76	5.25	1.20	-0.56	2.91
Kauaeranga River @ Smiths Cableway/Recorder	12	4.17	4.82	1.80	6.09	3.23	-0.51	3.54
Ohinemuri River @ Queens Head	12	3.25	3.61	0.71	5.20	2.02	-0.52	3.07
Ohinemuri River @ SH25 Br	12	4.41	3.77	1.17	7.38	3.25	0.31	3.90
Tairua River @ Morrisons Br Hikuaui	12	3.32	3.22	1.84	6.41	2.05	0.82	2.72
Tapu River @ Tapu-Coroglen Rd	12	4.49	4.57	0.54	7.48	3.04	-0.27	3.86
Waiau River @ E309 Rd Ford	12	2.56	2.64	0.17	4.12	1.53	-0.62	2.60
Waitekauri River @ U/S Ohinemuri Conflu	12	3.76	3.97	0.65	7.12	1.62	-0.17	4.16
Waiwawa River @ SH25 Coroglen	12	3.39	3.39	2.17	4.68	0.98	0.11	3.02
Wharekawa River @ SH25	12	2.84	2.44	1.16	7.08	1.92	1.47	2.30
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.97	0.96	0.21	1.73	0.75	0.28	1.10
Oraka Stm @ Lake Rd	12	0.88	0.92	0.29	1.49	0.32	0.07	1.11
Piako River @ Kiwitahi	12	1.41	1.40	0.52	2.50	1.24	0.13	1.58
Piako River @ Paeroa-Tahuna Rd Br	12	0.57	0.60	0.13	0.89	0.28	-0.34	0.76
Piakonui Stm @ Piakonui Rd	12	1.23	1.09	0.69	1.80	0.78	0.13	1.23
Waihou River @ Okauia	12	0.99	1.02	0.40	1.49	0.43	-0.23	1.28
Waihou River @ Whites Rd	12	6.43	6.60	3.03	7.75	1.12	-1.42	6.55
Waihotu Stm @ Waihotu Rd (Off SH5)	-	-	-	-	-	-	-	-
Waiomou Stm @ Matamata-Tauranga Rd	12	1.27	1.26	0.55	1.92	0.28	-0.32	1.49
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.71	0.68	0.13	1.68	0.56	0.68	0.84
Waitoa River @ Landsdowne Rd Br	12	1.29	1.09	0.28	3.65	0.78	1.46	1.46
Waitoa River @ Mellon Rd Recorder	12	0.89	0.70	0.22	2.18	0.73	0.97	1.04
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otawa Rd Br opp Moseley Rd	12	0.62	0.39	0.14	2.16	0.31	<u>1.72</u>	0.39
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	1.82	1.98	0.42	2.53	0.92	-0.88	1.76
Karapiro Stm @ Hickey Rd Bridge	12	1.06	0.98	0.30	2.03	0.53	0.34	1.50
Kirikiriira Stm @ Tauhara Dr	12	0.38	0.35	0.10	0.68	0.21	0.32	0.38
Komakorau Stm @ Henry Rd	12	0.19	0.17	0.11	0.29	0.06	0.75	0.18
Little Waipa Stm @ Arapuni - Putaruru Rd	12	1.79	1.97	0.39	3.33	1.89	0.05	2.11
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	0.34	0.35	0.10	0.54	0.16	-0.25	0.40
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	1.13	1.21	0.29	1.88	0.96	-0.26	1.42
Mangaone Stm @ Annebrooke Rd Br	12	0.78	0.80	0.30	1.12	0.36	-0.31	1.01
Mangaonua Stm @ Hoeka Rd	12	1.05	1.06	0.36	1.70	0.42	-0.06	1.12
Mangaonua Stm @ Te Miro Rd	12	1.21	1.17	0.07	2.20	0.52	-0.20	1.36
Mangatangi River @ SH2 Maramarua	12	1.19	1.14	0.29	2.53	1.10	0.35	1.17
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	2.38	2.50	0.15	4.00	2.03	-0.34	2.10
Mangawara Stm @ Rutherford Rd Br	12	0.24	0.25	0.04	0.43	0.15	0.04	0.23
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.25	0.25	0.11	0.36	0.05	-0.68	0.26
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.35	0.28	0.21	0.75	0.18	1.36	0.26
Ohaeroa Stm @ SH22 Br	12	1.13	1.21	0.26	2.10	0.81	0.00	0.92
Opuatia Stm @ Ponganui Rd	12	0.77	0.84	0.13	1.26	0.56	-0.44	0.90
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	1.10	1.11	0.31	2.06	0.83	0.23	1.62
Waerenga Stm @ Taniwha Rd	12	1.38	1.47	0.16	2.11	1.08	-0.50	1.12
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.37	0.33	0.15	0.95	0.21	1.49	0.36
Whakapipi Stm @ SH22 Br	12	1.32	1.46	0.47	2.00	0.90	-0.48	1.50
Whakauru Stm @ U/S SH1 Br	12	0.85	0.83	0.25	1.77	0.63	0.47	1.31
Whangamarino River @ Island Block Rd	12	0.14	0.13	0.08	0.26	0.06	1.21	0.20
Whangamarino River @ Jefferies Rd Br	12	0.47	0.36	0.09	1.30	0.37	1.24	0.67
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.25	0.18	0.13	0.79	0.13	<u>2.09</u>	0.44

Conductivity at 25 °C (mS m⁻¹)

Location								00-04
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	8.6	8.5	7.5	9.6	1.2	0.01	8.4
Kauaeranga River @ Smiths Cableway/Recorder	12	8.7	8.7	6.8	10.2	1.6	-0.26	7.7
Ohinemuri River @ Queens Head	12	16.4	15.6	7.7	28.4	4.6	0.82	15.7
Ohinemuri River @ SH25 Br	12	8.1	7.8	7.4	9.0	1.0	0.68	7.8
Tairua River @ Morrisons Br Hikuaui	12	6.4	6.3	5.5	7.1	1.0	-0.04	6.2
Tapu River @ Tapu-Coroglen Rd	12	10.6	10.6	9.3	11.7	1.1	-0.11	10.2
Waiau River @ E309 Rd Ford	12	9.6	9.6	8.6	10.4	0.9	-0.29	9.4
Waitekauri River @ U/S Ohinemuri Conflu	12	14.0	13.5	9.6	22.1	3.3	1.10	11.7
Waiwawa River @ SH25 Coroglen	12	7.0	7.0	5.9	8.0	0.7	-0.21	6.9
Wharekawa River @ SH25	12	7.6	7.6	6.4	8.7	0.8	-0.15	7.4
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	11.2	11.4	8.5	12.7	1.1	-1.23	11.3
Oraka Stm @ Lake Rd	12	14.7	15.2	10.3	18.6	5.7	-0.08	12.7
Piako River @ Kiwitahi	12	14.3	14.5	12.7	15.4	1.5	-0.36	14.5
Piako River @ Paeroa-Tahuna Rd Br	12	20.5	20.2	18.9	23.1	2.0	0.57	20.4
Piakonui Stm @ Piakonui Rd	12	7.4	7.3	6.7	8.6	0.7	1.00	7.7
Waihou River @ Okauia	12	10.8	10.8	10.1	11.6	0.7	0.30	10.3
Waihou River @ Whites Rd	12	8.2	8.3	7.8	8.4	0.4	-0.69	8.0
Waihotu Stm @ Waihotu Rd (Off SH5)	12	5.7	5.7	5.1	6.2	0.6	-0.18	5.7
Waiomou Stm @ Matamata-Tauranga Rd	12	7.7	7.5	6.9	8.8	1.0	0.60	7.2
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	16.3	16.1	12.1	19.5	3.3	-0.27	15.5
Waitoa River @ Landsdowne Rd Br	12	15.7	15.4	13.8	18.0	1.9	0.47	15.6
Waitoa River @ Mellon Rd Recorder	12	30.3	26.6	20.5	48.2	9.9	1.03	30.1
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otawa Rd Br opp Moseley Rd	12	27.2	26.9	23.3	33.6	5.3	0.56	24.8
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	52.3	55.7	32.5	80.2	21.3	0.23	49.1
Karapiro Stm @ Hickey Rd Bridge	12	12.3	12.0	10.7	15.2	2.0	0.65	12.7
Kirikiriira Stm @ Tauhara Dr	12	21.3	22.4	15.1	23.9	2.7	-1.23	20.6
Komakorau Stm @ Henry Rd	12	26.8	26.5	24.3	31.6	3.3	0.85	25.5
Little Waipa Stm @ Arapuni - Putaruru Rd	12	10.0	9.9	9.4	11.1	0.5	1.23	9.5
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	19.0	19.8	14.2	21.6	2.5	-1.13	18.6
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	13.7	14.3	9.7	17.0	2.8	-0.42	14.3
Mangaone Stm @ Annebrooke Rd Br	12	27.1	27.7	20.5	29.9	1.4	<u>-1.83</u>	26.6
Mangaonua Stm @ Hoeka Rd	12	19.4	19.6	16.4	21.7	1.8	-0.51	19.0
Mangaonua Stm @ Te Miro Rd	12	9.6	9.5	8.8	11.0	0.7	0.93	9.6
Mangatangi River @ SH2 Maramarua	12	13.5	13.6	12.6	14.3	0.9	-0.21	13.1
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	11.9	12.1	9.4	13.4	1.5	-0.78	11.8
Mangawara Stm @ Rutherford Rd Br	12	23.0	22.5	15.6	27.5	4.7	-0.64	21.7
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	20.7	21.2	15.5	22.9	1.2	<u>-1.89</u>	20.1
Matahuru Stm @ Waiterimu Road Below Confluence	12	13.9	13.6	12.6	15.1	1.7	0.09	13.6
Ohaeroa Stm @ SH22 Br	12	16.2	16.0	14.6	17.8	1.9	0.12	16.0
Opuatia Stm @ Ponganui Rd	12	17.0	17.4	14.4	18.0	0.9	<u>-1.72</u>	16.7
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	10.4	10.5	9.4	11.6	0.5	-0.04	10.0
Waerenga Stm @ Taniwha Rd	12	12.0	12.1	9.1	13.9	0.8	-1.17	11.9
Waitawhiriwhiri Stm @ Edgecumbe Street	12	19.1	20.8	9.7	22.1	3.6	-1.48	20.0
Whakapipi Stm @ SH22 Br	12	19.0	18.7	16.0	21.8	2.7	0.15	17.9
Whakauru Stm @ U/S SH1 Br	12	6.5	6.8	5.2	7.8	1.2	-0.30	6.8
Whangamarino River @ Island Block Rd	12	15.7	15.7	14.6	17.3	0.9	0.55	15.8
Whangamarino River @ Jefferies Rd Br	12	15.9	15.6	14.0	18.0	1.9	0.19	15.4
Whangape Stm @ Rangiriri-Glen Murray Rd	12	19.4	19.7	14.6	22.1	3.8	-0.59	20.3

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

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	1.19	1.28	0.29	1.78	0.29	-0.96	1.26
Mangaohoi Stm @ South Branch Maru Rd	12	1.33	1.41	0.76	1.72	0.47	-0.40	1.34
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	1.06	1.11	0.30	2.20	0.81	0.41	1.05
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.47	0.52	0.19	0.70	0.25	-0.49	0.74
Mangapu River @ Otorohanga	12	0.64	0.65	0.12	1.10	0.53	0.09	0.79
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	1.23	1.17	0.42	2.20	1.14	0.07	1.85
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	4.50	4.69	1.53	7.02	2.28	-0.26	4.35
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.58	0.54	0.25	0.97	0.33	0.22	0.71
Puniu River @ Bartons Corner Rd Br	12	1.07	1.15	0.38	1.68	0.54	-0.28	1.56
Waipa River @ Mangaokewa Rd	12	2.29	2.18	1.16	3.80	0.81	0.41	1.89
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.72	0.62	0.26	2.03	0.48	<u>1.68</u>	0.76
Waipa River @ SH3 Otorohanga	12	1.20	1.16	0.29	2.40	0.70	0.47	1.21
Waitomo Stm @ SH31 Otorohanga	12	0.71	0.50	0.11	1.84	0.60	1.07	0.63
Waitomo Stm @ Tumutumu Rd	12	0.83	0.65	0.06	2.24	0.77	0.99	1.09

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	1.14	1.21	0.30	1.80	0.77	-0.49	1.14
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.93	0.97	0.40	1.32	0.39	-0.42	1.32
Mangakara Stm (Reporoa) @ SH5	12	0.67	0.67	0.28	1.15	0.39	0.17	0.99
Mangakino Stm (Whakamaru) @ Sandel Rd	12	1.83	1.66	0.80	4.01	1.23	0.99	2.53
Otamakokore Stm @ Hossack Rd	11	1.41	1.37	0.69	2.04	0.53	-0.03	1.50
Pueto Stm @ Broadlands Rd Br	12	2.10	1.98	1.34	3.20	0.76	0.66	2.05
Tahunaatara Stm @ Ohakuri Rd	12	1.37	1.23	0.35	2.58	0.90	0.22	1.74
Torepatutahi Stm @ Vaile Rd Br	-	-	-	-	-	-	-	-
Waiotapu Stm @ Campbell Rd Br	12	1.26	1.37	0.25	1.90	0.55	-0.78	1.49
Waiotapu Stm @ Homestead Rd Br	12	0.70	0.63	0.38	1.09	0.39	0.37	0.71
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	1.07	1.14	0.30	2.00	0.66	-0.07	1.41
Whirinaki Stm @ Corbett Rd	-	-	-	-	-	-	-	-

West Coast								
Awakino River @ Gribbon Rd	12	2.57	2.72	0.82	5.23	2.02	0.32	2.66
Awakino River @ SH3 Awakau Rd Junction	12	1.30	1.33	0.19	2.93	1.11	0.50	1.34
Manganui River @ Off Manganui Rd	12	1.33	1.32	0.23	2.41	1.63	0.04	1.22
Mangaotaki River @ SH3 Br	12	0.95	0.85	0.09	2.35	0.74	0.74	0.97
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	1.17	1.23	0.10	2.54	0.88	0.31	1.28
Mokau River @ Awakau Rd	12	0.42	0.39	0.07	1.20	0.47	0.93	0.37
Mokau River @ Mangaokewa Rd (Off SH30)	12	1.50	1.53	0.63	2.45	0.66	0.12	1.49
Mokau River @ Totoro Rd Recorder	12	0.73	0.62	0.09	2.10	0.85	0.90	0.81
Mokauiti Stm @ Three Way Point - Aria	12	0.57	0.49	0.13	2.10	0.47	<u>2.09</u>	0.59
Ohautira Stm @ Waingaro Te Uku Rd	12	0.73	0.73	0.07	1.17	0.42	-0.39	0.80
Oparau River @ Langdon Rd (Off Okupata Rd)	12	1.45	1.40	0.26	2.40	1.39	-0.11	1.60
Tawarau River @ Off Speedies Rd	12	1.22	1.23	0.14	2.72	0.92	0.43	1.31
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.66	0.64	0.09	1.14	0.29	-0.18	0.89
Waitetuna River @ Te Uku-Waingaro Rd	12	0.77	0.79	0.08	1.76	0.38	0.80	0.88

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	2.86	2.84	1.00	4.13	1.27	-0.48	3.34
Kuratau River @ 43 Te Rae Street	-	-	-	-	-	-	-	-
Kuratau River @ SH41 Moerangi	12	3.07	3.22	1.27	4.51	2.03	-0.20	3.07
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	1.35	1.36	0.78	1.75	0.20	-0.65	1.38
Tauranga-Taupo River @ Te Kono Slackline	12	2.84	2.82	0.87	5.00	1.70	0.15	4.20
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Cana	-	-	-	-	-	-	-	-
Tokaanu Stm @ Off SH41 Turangi	-	-	-	-	-	-	-	-
Waihaha River @ SH32	12	4.47	4.42	1.24	7.05	1.74	-0.21	5.20
Waitahanui River @ Blake Rd	12	3.17	3.12	1.30	5.03	1.75	0.05	4.09
Whanganui Stm @ Lakeside Lake Taupo	-	-	-	-	-	-	-	-
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	-	-	-	-	-	-	-	-
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	-	-	-	-	-	-	-	-

12	10.1	10.3	8.2	11.1	1.1	-1.07	10.3
12	7.6	7.6	6.3	8.8	1.2	-0.04	8.2
12	13.8	13.8	9.4	17.5	4.3	-0.17	14.2
12	16.4	16.6	14.0	18.1	1.2	-0.63	17.9
12	17.6	17.4	14.2	20.4	2.4	-0.13	17.6
12	6.9	7.1	5.8	7.7	1.1	-0.43	6.8
12	6.5	6.6	5.5	7.3	0.6	-0.54	6.8
12	17.6	17.7	15.2	20.8	2.1	0.38	18.1
12	8.4	8.5	7.1	9.9	1.1	0.13	8.3
12	5.5	5.2	4.7	8.2	0.9	<u>2.15</u>	5.1
12	11.5	11.4	9.4	13.0	1.0	-0.48	11.5
12	7.7	7.8	5.7	9.1	1.4	-0.65	7.9
12	18.6	18.7	15.4	21.2	3.7	-0.14	18.4
12	18.3	19.0	12.8	20.5	2.7	-1.38	18.3

12	14.7	14.4	12.8	20.1	1.5	<u>1.95</u>	13.5
12	8.9	9.0	7.7	9.6	0.8	-0.81	8.6
12	9.2	9.3	8.6	9.7	0.6	-0.17	8.9
12	6.6	6.8	5.4	8.3	1.3	0.20	6.6
12	36.4	36.6	28.9	42.7	6.2	-0.07	38.1
12	11.4	11.3	11.1	12.0	0.5	0.89	11.5
12	7.7	7.8	7.1	8.3	0.2	-0.41	7.6
12	10.2	10.0	8.9	11.8	1.4	0.47	8.9
12	69.1	70.9	57.9	78.1	13.6	-0.15	70.6
12	43.6	42.9	36.7	52.1	10.1	0.21	47.1
12	35.2	35.7	28.6	39.6	6.4	-0.53	35.6
12	7.0	7.0	6.5	7.4	0.2	-0.22	6.8

12	7.2	7.3	6.4	7.8	0.8	-0.38	7.2
12	13.3	13.4	9.8	18.4	3.6	0.42	13.0
12	10.5	10.9	9.3	11.8	1.6	-0.33	10.8
12	13.1	13.4	11.4	14.1	1.3	-0.80	13.5
12	13.5	14.5	9.7	15.1	2.2	-1.13	13.9
12	12.4	12.5	9.2	16.9	3.3	0.37	12.4
12	6.5	6.6	5.6	7.2	0.7	-0.53	6.5
12	11.5	11.5	8.9	13.4	1.5	-0.40	11.5
12	10.5	10.5	9.2	12.2	0.7	0.50	10.6
12	13.4	13.5	10.1	14.8	1.3	-1.58	13.5
12	8.7	8.9	6.3	9.9	1.1	-1.16	8.8
12	12.8	13.7	9.6	14.5	2.1	-0.94	13.3
12	14.1	14.2	11.4	16.3	0.8	-0.52	14.4
12	10.2	10.2	9.1	10.9	0.5	-0.55	10.2

12	5.9	6.1	4.5	7.0	1.3	-0.55	6.2
12	6.7	6.8	5.1	8.7	0.9	0.37	6.8
12	4.3	4.3	3.7	5.3	0.8	0.54	4.4
12	12.2	12.3	11.7	12.7	0.6	-0.17	12.0
12	4.7	4.5	3.5	6.2	1.3	0.54	5.0
12	11.8	11.9	10.2	13.5	1.8	0.06	12.3
12	10.3	10.3	9.9	10.8	0.5	0.46	10.1
12	4.8	4.8	3.9	5.8	1.1	0.05	4.9
12	7.3	7.4	6.6	7.8	0.7	-0.40	7.3
12	5.8	5.8	4.8	7.3	1.3	0.42	6.0
12	7.7	7.8	6.4	8.4	0.7	-0.87	7.8
12	7.5	7.8	6.3	8.3	0.9	-0.71	7.7

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

Dissolved Oxygen (% Saturation)

Location	00-04							Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	99.2	98.0	95.3	108.5	4.7	1.26	95.9
Kauaeranga River @ Smiths Cableway/Recorder	12	102.0	100.6	98.7	107.2	4.5	0.59	99.7
Ohinemuri River @ Queens Head	12	107.0	107.4	98.2	114.2	8.3	-0.25	108.7
Ohinemuri River @ SH25 Br	12	106.4	107.7	92.2	119.5	7.6	-0.22	106.2
Tairua River @ Morrisons Br Hikuai	12	97.7	99.1	86.5	104.0	2.7	-1.32	98.4
Tapu River @ Tapu-Coroglen Rd	12	104.0	103.5	101.5	109.8	2.6	1.35	102.1
Waiau River @ E309 Rd Ford	12	103.3	103.1	94.8	108.7	2.5	-1.07	102.5
Waitekauri River @ U/S Ohinemuri Conflu	12	107.7	107.9	98.4	120.0	4.4	0.58	104.8
Waiwawa River @ SH25 Coroglen	12	102.5	102.4	95.8	108.5	4.3	-0.09	102.0
Wharekawa River @ SH25	12	94.8	97.7	79.1	103.7	10.0	-0.90	96.8
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	99.3	98.9	94.8	102.5	2.9	-0.42	98.7
Oraka Stm @ Lake Rd	12	94.1	94.7	88.4	97.5	4.0	-0.80	92.9
Piako River @ Kiwitahi	12	86.8	86.2	78.2	102.2	4.9	1.30	89.1
Piako River @ Paeroa-Tahuna Rd Br	12	81.3	80.5	68.2	96.9	10.9	0.23	80.1
Piakonui Stm @ Piakonui Rd	12	100.2	99.7	98.3	104.8	1.8	1.35	99.8
Waihou River @ Okauia	12	95.4	95.0	89.2	105.7	3.3	1.22	93.7
Waihou River @ Whites Rd	12	102.7	102.3	97.5	112.5	6.8	0.71	102.6
Waihotu Stm @ Waihotu Rd (Off SH5)	12	96.7	95.8	93.2	103.2	3.9	0.82	95.1
Waiomou Stm @ Matamata-Tauranga Rd	12	97.2	97.2	93.9	103.6	3.8	0.76	96.0
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	95.7	94.6	74.8	118.4	15.9	0.15	90.3
Waitoa River @ Landsdowne Rd Br	12	88.9	87.9	80.1	98.2	4.3	0.45	85.4
Waitoa River @ Mellon Rd Recorder	12	72.7	73.5	44.6	96.9	10.8	-0.25	73.5
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otawa Rd Br opp Moseley Rd	12	100.9	99.0	75.3	130.8	9.8	0.45	96.7
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	90.7	89.2	80.6	103.0	12.9	0.30	88.3
Karapiro Stm @ Hickey Rd Bridge	12	95.2	94.6	87.2	108.5	6.3	1.05	94.2
Kirikiri Stm @ Tauhara Dr	12	72.2	69.9	64.2	87.9	12.7	0.76	70.2
Komakorau Stm @ Henry Rd	12	66.1	67.0	54.7	76.8	15.2	-0.18	65.6
Little Waipa Stm @ Arapuni - Putaruru Rd	12	100.6	99.0	93.7	110.2	8.1	0.69	97.7
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	88.9	90.2	82.7	95.2	5.4	-0.13	89.4
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	101.9	101.0	97.6	106.8	5.8	0.29	104.1
Mangaone Stm @ Annebrooke Rd Br	12	77.8	73.5	68.6	104.1	9.4	<u>1.76</u>	74.0
Mangaonua Stm @ Hoeka Rd	12	78.1	79.1	60.2	85.4	8.4	-1.31	81.7
Mangaonua Stm @ Te Miro Rd	12	101.3	100.6	97.8	107.9	4.5	0.85	100.0
Mangatangi River @ SH2 Maramaru	12	87.9	90.6	71.6	101.2	12.1	-0.56	87.8
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	109.5	106.0	96.0	127.0	11.2	0.63	108.5
Mangawara Stm @ Rutherford Rd Br	12	72.5	75.2	59.2	81.7	12.5	-0.48	72.2
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	87.9	87.7	84.0	93.3	3.4	0.47	85.7
Matahuru Stm @ Waiterimu Road Below Confluence	12	90.2	91.0	79.9	100.4	10.0	-0.12	87.0
Ohaeroa Stm @ SH22 Br	12	102.3	101.1	89.7	112.8	6.7	-0.07	99.6
Opuatia Stm @ Ponganui Rd	12	98.9	99.2	88.3	105.4	5.6	-0.84	99.2
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	98.1	98.1	89.2	105.6	3.5	-0.20	97.8
Waerenga Stm @ Taniwha Rd	12	102.5	104.2	92.6	107.3	3.8	-1.30	98.0
Waitawhirihiri Stm @ Edgecumbe Street	12	84.6	84.4	72.5	98.7	7.7	0.23	83.9
Whakapipi Stm @ SH22 Br	12	90.2	92.5	70.3	111.9	10.5	0.03	90.5
Whakauru Stm @ U/S SH1 Br	12	98.1	97.6	91.2	107.8	3.8	0.85	97.4
Whangamarino River @ Island Block Rd	12	38.9	37.7	0.6	127.8	37.2	1.32	43.3
Whangamarino River @ Jefferies Rd Br	12	80.2	82.4	63.2	90.2	14.8	-0.85	76.9
Whangape Stm @ Rangiriri-Glen Murray Rd	12	95.2	98.0	80.7	110.3	10.8	-0.25	89.5

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

Dissolved Oxygen (g m⁻³)

Location	00-04							Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	10.6	10.4	8.7	12.2	1.9	-0.03	9.9
Kauaeranga River @ Smiths Cableway/Recorder	12	11.0	11.0	9.2	14.0	2.4	0.51	10.4
Ohinemuri River @ Queens Head	12	10.8	10.6	9.4	12.8	1.2	0.82	10.7
Ohinemuri River @ SH25 Br	12	10.7	10.7	8.8	12.3	1.4	-0.18	10.6
Tairua River @ Morrisons Br Hikuai	12	10.0	10.3	7.8	11.9	1.4	-0.47	10.0
Tapu River @ Tapu-Coroglen Rd	12	11.0	11.0	9.1	13.1	1.5	0.29	10.6
Waiau River @ E309 Rd Ford	12	10.9	11.1	9.3	12.6	1.5	0.00	10.7
Waitekauri River @ U/S Ohinemuri Conflu	12	11.0	10.8	10.0	12.7	1.0	0.97	10.7
Waiwawa River @ SH25 Coroglen	12	10.6	10.7	9.3	12.2	1.5	0.16	10.5
Wharekawa River @ SH25	12	9.8	9.8	6.9	12.0	1.9	-0.43	9.9
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	10.5	10.4	8.9	11.6	1.0	-0.28	10.2
Oraka Stm @ Lake Rd	12	9.7	9.6	8.8	10.6	1.2	0.25	9.5
Piako River @ Kiwitahi	12	8.9	8.7	6.5	11.6	1.7	0.33	9.0
Piako River @ Paeroa-Tahuna Rd Br	12	8.3	8.1	6.7	10.9	2.3	0.49	8.1
Piakonui Stm @ Piakonui Rd	12	10.6	10.7	9.7	11.9	0.8	0.40	10.6
Waihou River @ Okauia	12	9.8	9.8	8.9	10.6	1.1	-0.14	9.5
Waihou River @ Whites Rd	12	10.7	10.7	10.0	11.9	0.6	0.89	10.6
Waihotu Stm @ Waihotu Rd (Off SH5)	12	10.4	10.4	9.4	11.4	0.5	0.02	10.3
Waiomou Stm @ Matamata-Tauranga Rd	12	10.2	10.1	9.2	11.0	0.9	0.05	9.9
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	9.8	10.3	7.0	12.3	3.2	-0.35	9.1
Waitoa River @ Landsdowne Rd Br	12	9.0	8.9	6.8	11.0	1.4	-0.12	8.6
Waitoa River @ Mellon Rd Recorder	12	7.4	7.3	4.1	9.6	1.8	-0.27	7.4
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otawa Rd Br opp Moseley Rd	12	10.1	10.1	7.0	12.3	1.9	-0.41	9.4
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	9.5	9.7	7.9	11.2	2.6	-0.07	8.9
Karapiro Stm @ Hickey Rd Bridge	12	9.9	9.8	7.9	12.5	1.5	0.51	9.6
Kirikiri Stm @ Tauhara Dr	12	7.4	6.9	6.0	9.5	2.2	0.65	7.0
Komakorau Stm @ Henry Rd	12	6.8	7.0	5.2	8.6	2.4	-0.10	6.5
Little Waipa Stm @ Arapuni - Putaruru Rd	12	10.3	10.4	9.1	11.3	0.7	-0.41	10.1
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	9.1	9.0	7.5	10.7	1.4	0.07	9.0
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	10.4	10.5	9.5	11.6	1.0	0.06	10.5
Mangaone Stm @ Annebrooke Rd Br	12	8.2	8.0	6.8	10.3	1.7	0.51	7.7
Mangaonua Stm @ Hoeka Rd	12	8.2	8.2	5.3	9.7	1.7	-0.67	8.4
Mangaonua Stm @ Te Miro Rd	12	10.6	10.6	9.3	12.1	1.1	0.12	10.5
Mangatangi River @ SH2 Maramaru	12	9.1	9.3	6.4	10.9	2.2	-0.51	8.9
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	10.9	11.0	8.8	12.9	2.3	-0.11	10.6
Mangawara Stm @ Rutherford Rd Br	12	7.6	8.0	5.6	9.3	2.6	-0.31	7.3
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	9.2	9.1	8.0	10.7	1.2	0.34	8.8
Matahuru Stm @ Waiterimu Road Below Confluence	12	9.4	9.5	6.6	11.4	2.7	-0.27	8.7
Ohaeroa Stm @ SH22 Br	12	10.8	10.8	9.0	12.1	1.5	-0.47	10.4
Opuatia Stm @ Ponganui Rd	12	10.4	10.4	8.6	12.1	2.0	-0.13	10.0
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	10.2	10.4	8.8	11.1	0.8	-0.79	10.2
Waerenga Stm @ Taniwha Rd	12	10.9	10.7	8.4	12.8	1.9	-0.24	10.1
Waitawhirihiri Stm @ Edgecumbe Street	12	8.4	8.5	6.8	9.6	1.1	-0.63	8.2
Whakapipi Stm @ SH22 Br	12	9.3	9.4	6.6	11.8	2.7	-0.14	9.3
Whakauru Stm @ U/S SH1 Br	12	10.2	10.2	8.9	11.3	1.0	-0.31	10.2
Whangamarino River @ Island Block Rd	12	3.9	3.6	0.1	12.3	4.5	1.03	4.4
Whangamarino River @ Jefferies Rd Br	12	8.5	8.8	5.7	10.8	2.9	-0.46	7.9
Whangape Stm @ Rangiriri-Glen Murray Rd	12	9.6	9.6	7.4	11.7	2.3	-0.02	8.9

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	90.3	91.4	81.2	98.0	5.5	-0.55	90.0
Mangaohoi Stm @ South Branch Maru Rd	12	101.2	100.3	95.6	108.6	2.7	0.80	100.2
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	97.0	96.3	92.0	107.1	3.5	1.38	96.3
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	84.2	87.4	59.9	94.8	9.7	-1.31	84.0
Mangapu River @ Otorohanga	12	96.6	94.9	88.7	107.1	6.4	0.67	93.3
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	95.5	95.0	90.3	101.4	7.0	0.34	94.9
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	100.6	100.9	90.8	107.0	3.0	-0.96	100.0
Ohote Stm @ Whatawhata/Horotiu Rd	12	51.5	52.1	21.0	73.4	32.1	-0.19	48.2
Puniu River @ Bartons Corner Rd Br	12	92.3	94.0	72.1	101.4	7.4	-1.35	95.5
Waipa River @ Mangaokewa Rd	12	102.6	102.8	95.2	108.8	6.7	-0.16	101.6
Waipa River @ Pirongia-Ngutunui Rd Br	12	93.6	93.3	88.2	101.0	5.3	0.53	91.6
Waipa River @ SH3 Otorohanga	12	99.0	98.0	94.2	106.4	4.9	0.74	99.4
Waitomo Stm @ SH31 Otorohanga	12	100.1	98.4	90.6	114.8	9.4	0.62	100.2
Waitomo Stm @ Tumutumu Rd	12	101.8	101.0	96.3	110.8	4.3	0.89	100.0

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	86.8	87.3	75.7	94.3	4.3	-0.85	85.1
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	96.1	94.8	90.8	110.0	3.7	<u>2.02</u>	93.4
Mangakara Stm (Reporoa) @ SH5	12	94.5	94.3	89.6	102.1	4.5	0.56	92.6
Mangakino Stm (Whakamaru) @ Sandel Rd	12	102.2	103.4	87.6	107.6	1.4	<u>-2.28</u>	103.0
Otamakokore Stm @ Hossack Rd	12	94.2	94.7	68.8	116.3	13.7	-0.29	95.5
Pueto Stm @ Broadlands Rd Br	12	96.0	94.8	93.2	106.8	2.5	<u>2.29</u>	95.7
Tahunaatara Stm @ Ohakuri Rd	12	102.6	102.1	100.3	108.2	1.9	1.34	102.8
Torepatutahi Stm @ Vaile Rd Br	12	100.0	99.3	89.1	114.2	15.1	0.28	101.4
Waiotapu Stm @ Campbell Rd Br	12	91.4	86.8	83.0	120.6	6.0	<u>1.74</u>	87.9
Waiotapu Stm @ Homestead Rd Br	12	87.3	87.5	74.8	104.6	4.7	0.86	86.2
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	100.6	99.9	92.8	115.1	2.9	1.58	100.2
Whirinaki Stm @ Corbett Rd	12	99.4	98.1	96.1	104.0	5.0	0.53	97.7

West Coast								
Awakino River @ Gribbon Rd	12	101.5	100.8	97.2	108.0	3.6	0.77	101.7
Awakino River @ SH3 Awakau Rd Junction	12	103.9	102.2	95.4	115.0	7.9	0.50	105.4
Manganui River @ Off Manganui Rd	12	101.7	102.3	96.4	107.1	5.9	-0.05	102.7
Mangaotaki River @ SH3 Br	12	102.4	102.0	101.1	104.4	1.8	0.54	102.1
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	104.3	104.7	97.5	108.8	7.0	-0.32	104.0
Mokau River @ Awakau Rd	12	95.8	95.5	92.3	99.5	4.1	0.08	95.0
Mokau River @ Mangaokewa Rd (Off SH30)	12	101.0	100.4	95.5	107.4	5.7	0.28	100.3
Mokau River @ Totoro Rd Recorder	12	104.0	104.6	96.3	110.7	4.8	-0.35	103.5
Mokauiti Stm @ Three Way Point - Aria	12	95.7	96.0	85.9	103.2	6.1	-0.38	96.7
Ohautira Stm @ Waingaro Te Uku Rd	12	96.2	96.6	92.7	99.6	3.0	-0.19	94.5
Oparau River @ Langdon Rd (Off Okupata Rd)	12	103.4	103.4	98.8	107.6	4.1	-0.17	103.0
Tawarau River @ Off Speedies Rd	12	103.3	102.7	100.3	109.0	3.1	0.94	103.0
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	95.5	96.2	83.8	101.7	6.4	-0.86	94.3
Waitetuna River @ Te Uku-Waingaro Rd	12	98.5	98.3	95.6	103.0	3.2	0.48	96.1

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	103.8	103.0	99.8	115.2	3.0	<u>2.09</u>	101.3
Kuratau River @ 43 Te Rae Street	12	101.8	100.9	97.5	106.6	5.0	0.46	101.5
Kuratau River @ SH41 Moerangi	12	96.0	95.2	91.6	100.9	5.4	0.39	93.9
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	88.0	88.0	83.1	93.1	4.6	0.13	88.4
Tauranga-Taupo River @ Te Kono Slackline	12	103.3	103.0	99.7	108.0	3.0	0.46	101.9
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Cana	12	99.7	99.1	93.7	112.1	5.6	1.15	99.4
Tokaanu Stm @ Off SH41 Turangi	12	84.3	84.8	81.2	87.1	3.4	-0.12	82.7
Waihaha River @ SH32	12	103.1	103.1	99.6	108.8	4.2	0.60	102.5
Waitahanui River @ Blake Rd	12	100.1	99.8	97.5	106.4	1.7	<u>1.89</u>	99.8
Whanganui Stm @ Lakeside Lake Taupo	12	102.0	102.2	92.1	106.2	3.4	<u>-1.70</u>	102.0
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	97.8	96.9	95.2	106.2	2.8	<u>1.93</u>	97.0
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	98.2	98.4	92.7	102.1	2.6	-0.63	98.0

12	9.5	9.7	8.0	10.8	1.6	-0.35	9.3
12	10.5	10.5	9.4	11.5	0.7	-0.15	10.3
12	10.4	10.6	9.0	11.7	1.6	-0.14	10.3
12	8.5	9.0	5.1	10.4	1.7	-0.91	8.2
12	9.8	9.9	8.6	11.2	0.9	0.29	9.5
12	10.0	10.0	8.7	11.6	1.4	0.14	10.0
12	10.9	10.8	10.2	11.9	0.9	0.53	10.6
12	5.4	5.1	1.9	8.6	4.1	0.07	4.8
12	9.5	10.2	6.7	11.0	2.0	-0.85	9.6
12	10.6	10.8	8.7	11.6	1.1	-0.81	10.5
12	9.7	9.9	8.4	11.3	1.3	0.03	9.5
12	10.3	10.6	9.0	11.3	1.2	-0.55	10.2
12	10.3	10.4	8.8	11.3	0.8	-0.92	10.5
12	10.6	10.8	9.7	11.3	0.4	-0.83	10.5

12	8.7	8.6	7.1	10.2	1.0	-0.18	8.4
12	10.1	10.0	8.9	11.5	1.1	0.37	9.8
12	9.7	9.7	8.6	10.8	0.8	0.31	9.5
12	10.9	10.8	9.2	12.0	1.0	-0.52	10.9
12	8.2	8.3	6.1	9.3	0.7	-1.19	8.3
12	9.8	9.8	9.2	10.5	0.6	0.30	9.7
12	10.7	10.8	9.6	11.5	0.9	-0.29	10.7
12	10.1	10.0	8.6	11.6	0.7	-0.17	10.2
12	6.8	6.6	6.0	8.4	0.8	1.18	6.6
12	8.0	8.1	6.6	8.7	0.6	-1.21	7.9
12	8.9	8.5	8.3	10.9	0.6	<u>1.98</u>	8.5
12	10.3	10.4	9.9	10.8	0.5	0.01	10.2

12	10.8	10.9	9.3	11.8	0.8	-0.68	10.8
12	11.0	10.9	9.3	12.8	1.1	0.20	10.8
12	10.8	10.6	9.7	12.4	1.4	0.62	10.5
12	10.9	11.0	9.9	12.1	1.2	0.23	10.6
12	11.0	11.0	9.9	12.4	1.2	0.09	10.8
12	10.0	10.1	8.7	11.2	1.3	-0.05	9.8
12	10.7	10.8	9.6	11.6	1.0	-0.27	10.5
12	10.9	11.1	9.8	11.8	1.2	-0.29	10.7
12	10.0	10.3	8.1	11.5	1.5	-0.40	9.9
12	10.5	10.5	9.4	11.7	1.5	0.02	10.1
12	11.0	10.9	9.9	11.7	0.7	-0.40	10.7
12	11.0	10.9	10.1	12.0	1.0	0.12	10.8
12	10.0	10.2	8.0	11.4	1.7	-0.40	9.6
12	10.4	10.4	9.3	11.5	1.5	0.06	10.2

12	11.1	11.2	10.2	11.8	1.0	-0.21	10.9
12	10.7	10.5	9.7	11.9	1.4	0.31	10.5
12	10.5	10.5	9.6	11.4	0.9	0.14	10.2
12	9.4	9.4	8.5	10.3	0.9	0.17	9.5
12	11.4	11.3	10.6	12.5	1.2	0.33	11.1
12	10.5	10.5	9.6	11.7	0.9	0.51	10.4
12	8.7	8.7	8.2	9.0	0.3	-0.53	8.6
12	11.0	11.0	10.3	11.8	0.6	0.09	10.9
12	10.8	10.9	10.4	11.1	0.7	-0.19	10.7
12	11.0	11.0	9.7	11.8	0.9	-0.59	11.0
12	10.3	10.3	9.8	11.0	0.8	0.14	10.3
12	10.4	10.4	10.0	10.9	0.4	0.25	10.3

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

Dissolved Reactive Phosphorus (g m⁻³)

Location	00-04							Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.007	0.007	0.005	0.011	0.002	1.36	0.007
Kauaeranga River @ Smiths Cableway/Recorder	12	0.005	0.005	0.002	0.010	0.005	0.53	0.004
Ohinemuri River @ Queens Head	12	0.025	0.023	0.007	0.040	0.014	-0.02	0.020
Ohinemuri River @ SH25 Br	12	0.010	0.009	0.006	0.015	0.005	0.57	0.009
Tairua River @ Morrisons Br Hikuai	12	0.005	0.005	0.002	0.008	0.002	-0.43	0.005
Tapu River @ Tapu-Coroglen Rd	12	0.005	0.005	0.002	0.008	0.002	-0.12	0.005
Waiau River @ E309 Rd Ford	12	0.007	0.006	0.004	0.010	0.001	0.71	0.006
Waitekauri River @ U/S Ohinemuri Conflu	12	0.006	0.006	0.002	0.012	0.004	0.31	0.005
Waiwawa River @ SH25 Coroglen	12	0.005	0.006	0.002	0.007	0.002	-0.91	0.004
Wharekawa River @ SH25	12	0.008	0.007	0.006	0.010	0.001	1.00	0.007
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.040	0.042	0.019	0.048	0.009	-1.43	0.041
Oraka Stm @ Lake Rd	12	0.127	0.115	0.061	0.288	0.060	1.40	0.097
Piako River @ Kiwitahi	12	0.044	0.044	0.021	0.065	0.014	0.11	0.048
Piako River @ Paeroa-Tahuna Rd Br	12	0.119	0.089	0.043	0.248	0.108	0.59	0.129
Piakonui Stm @ Piakonui Rd	12	0.012	0.012	0.010	0.017	0.004	0.78	0.015
Waihou River @ Okauia	12	0.076	0.077	0.056	0.094	0.028	-0.11	0.072
Waihou River @ Whites Rd	12	0.088	0.090	0.077	0.094	0.007	-0.81	0.087
Waihotu Stm @ Waihotu Rd (Off SH5)	12	0.020	0.019	0.014	0.028	0.006	0.50	0.020
Waiomou Stm @ Matamata-Tauranga Rd	12	0.030	0.031	0.023	0.041	0.010	0.22	0.029
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.023	0.022	0.016	0.037	0.011	0.83	0.023
Waitoa River @ Landsdowne Rd Br	12	0.034	0.033	0.020	0.060	0.010	1.01	0.029
Waitoa River @ Mellon Rd Recorder	12	0.361	0.289	0.063	0.927	0.402	0.86	0.342
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.015	0.010	0.004	0.065	0.009	<u>2.50</u>	0.007
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.004	0.005	0.002	0.008	0.004	0.13	0.002
Karapiro Stm @ Hickey Rd Bridge	12	0.032	0.029	0.023	0.049	0.013	0.78	0.035
Kirikiriira Stm @ Tauhara Dr	12	0.015	0.016	0.012	0.019	0.002	0.15	0.014
Komakorau Stm @ Henry Rd	12	0.016	0.015	0.013	0.022	0.004	0.91	0.014
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.061	0.058	0.044	0.099	0.011	1.50	0.063
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.274	0.159	0.043	1.000	0.264	1.54	0.097
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.426	0.404	0.177	0.665	0.262	-0.10	0.561
Mangaone Stm @ Annebrooke Rd Br	12	0.069	0.068	0.050	0.085	0.007	-0.24	0.067
Mangaonua Stm @ Hoeka Rd	12	0.013	0.013	0.010	0.021	0.003	1.39	0.013
Mangaonua Stm @ Te Miro Rd	12	0.018	0.018	0.010	0.027	0.006	0.23	0.018
Mangatangi River @ SH2 Maramara	12	0.024	0.024	0.013	0.034	0.012	-0.01	0.022
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.010	0.010	0.005	0.014	0.004	-0.12	0.010
Mangawara Stm @ Rutherford Rd Br	12	0.040	0.035	0.012	0.089	0.027	0.91	0.032
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.101	0.042	0.019	0.528	0.075	<u>2.31</u>	0.030
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.029	0.028	0.018	0.043	0.006	0.58	0.026
Ohaeroa Stm @ SH22 Br	12	0.010	0.010	0.004	0.015	0.004	-0.28	0.009
Opuatia Stm @ Ponganui Rd	12	0.009	0.008	0.002	0.018	0.003	0.94	0.009
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.110	0.116	0.056	0.152	0.043	-0.49	0.115
Waerenga Stm @ Taniwha Rd	12	0.026	0.023	0.014	0.055	0.013	1.43	0.026
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.032	0.028	0.013	0.070	0.014	1.52	0.028
Whakapipi Stm @ SH22 Br	12	0.015	0.014	0.007	0.032	0.007	1.05	0.012
Whakauru Stm @ U/S SH1 Br	12	0.022	0.020	0.015	0.031	0.007	0.64	0.022
Whangamarino River @ Island Block Rd	12	0.006	0.006	0.002	0.016	0.004	1.24	0.007
Whangamarino River @ Jefferies Rd Br	12	0.029	0.028	0.015	0.043	0.010	0.18	0.026
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.003	0.002	0.002	0.011	0.000	<u>2.56</u>	0.002

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

Total Phosphorus (g m⁻³)

Location	00-04							Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.012	0.011	0.008	0.019	0.006	0.77	0.013
Kauaeranga River @ Smiths Cableway/Recorder	12	0.005	0.005	0.002	0.009	0.003	0.28	0.005
Ohinemuri River @ Queens Head	12	0.056	0.058	0.007	0.102	0.033	-0.08	0.041
Ohinemuri River @ SH25 Br	12	0.015	0.015	0.005	0.025	0.007	-0.13	0.016
Tairua River @ Morrisons Br Hikuai	12	0.006	0.007	0.002	0.010	0.005	-0.18	0.007
Tapu River @ Tapu-Coroglen Rd	12	0.007	0.005	0.002	0.023	0.007	<u>1.71</u>	0.006
Waiau River @ E309 Rd Ford	12	0.016	0.007	0.002	0.108	0.007	<u>2.87</u>	0.009
Waitekauri River @ U/S Ohinemuri Conflu	12	0.020	0.012	0.002	0.088	0.018	<u>2.33</u>	0.011
Waiwawa River @ SH25 Coroglen	12	0.006	0.005	0.002	0.025	0.004	<u>2.33</u>	0.006
Wharekawa River @ SH25	12	0.008	0.007	0.002	0.021	0.006	1.17	0.010
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.057	0.057	0.039	0.073	0.019	-0.13	0.059
Oraka Stm @ Lake Rd	12	0.178	0.159	0.102	0.366	0.079	1.35	0.150
Piako River @ Kiwitahi	12	0.114	0.100	0.056	0.195	0.053	0.51	0.118
Piako River @ Paeroa-Tahuna Rd Br	12	0.304	0.282	0.130	0.475	0.169	0.17	0.278
Piakonui Stm @ Piakonui Rd	12	0.032	0.033	0.019	0.058	0.009	1.24	0.034
Waihou River @ Okauia	12	0.104	0.105	0.072	0.132	0.026	-0.10	0.095
Waihou River @ Whites Rd	12	0.088	0.086	0.078	0.124	0.013	<u>1.92</u>	0.085
Waihotu Stm @ Waihotu Rd (Off SH5)	12	0.035	0.032	0.024	0.055	0.016	0.78	0.035
Waiomou Stm @ Matamata-Tauranga Rd	12	0.054	0.050	0.039	0.083	0.017	0.89	0.048
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.108	0.084	0.061	0.220	0.075	1.06	0.083
Waitoa River @ Landsdowne Rd Br	12	0.105	0.104	0.054	0.189	0.055	0.64	0.085
Waitoa River @ Mellon Rd Recorder	12	0.523	0.473	0.216	1.020	0.490	0.51	0.495
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.081	0.065	0.022	0.285	0.033	<u>1.85</u>	0.049
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.014	0.010	0.004	0.046	0.008	<u>1.88</u>	0.012
Karapiro Stm @ Hickey Rd Bridge	12	0.099	0.097	0.058	0.134	0.041	-0.25	0.106
Kirikiriira Stm @ Tauhara Dr	12	0.116	0.093	0.064	0.308	0.043	<u>2.04</u>	0.094
Komakorau Stm @ Henry Rd	12	0.124	0.119	0.070	0.212	0.053	0.59	0.101
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.089	0.073	0.053	0.154	0.054	0.82	0.081
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.575	0.425	0.187	1.490	0.319	1.38	0.415
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.485	0.470	0.251	0.682	0.237	-0.09	0.628
Mangaone Stm @ Annebrooke Rd Br	12	0.214	0.207	0.123	0.364	0.073	0.96	0.160
Mangaonua Stm @ Hoeka Rd	12	0.084	0.074	0.029	0.145	0.045	0.48	0.064
Mangaonua Stm @ Te Miro Rd	12	0.053	0.037	0.026	0.234	0.015	<u>2.92</u>	0.037
Mangatangi River @ SH2 Maramara	12	0.101	0.086	0.046	0.192	0.049	0.99	0.082
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.032	0.022	0.010	0.131	0.017	<u>2.44</u>	0.024
Mangawara Stm @ Rutherford Rd Br	12	0.360	0.258	0.119	1.530	0.110	<u>2.83</u>	0.260
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.311	0.180	0.118	1.280	0.150	<u>2.41</u>	0.200
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.133	0.120	0.071	0.247	0.061	1.08	0.126
Ohaeroa Stm @ SH22 Br	12	0.037	0.026	0.016	0.125	0.020	<u>2.32</u>	0.030
Opuatia Stm @ Ponganui Rd	12	0.055	0.033	0.020	0.170	0.033	1.59	0.034
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.164	0.158	0.124	0.231	0.033	0.90	0.155
Waerenga Stm @ Taniwha Rd	12	0.072	0.046	0.028	0.301	0.036	<u>2.67</u>	0.054
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.137	0.111	0.071	0.320	0.059	1.49	0.132
Whakapipi Stm @ SH22 Br	12	0.064	0.063	0.036	0.129	0.035	1.18	0.048
Whakauru Stm @ U/S SH1 Br	12	0.047	0.042	0.025	0.094	0.033	0.80	0.032
Whangamarino River @ Island Block Rd	12	0.240	0.231	0.107	0.494	0.084	1.57	0.181
Whangamarino River @ Jefferies Rd Br	12	0.152	0.144	0.076	0.331	0.078	1.23	0.095
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.158	0.151	0.077	0.270	0.112	0.44	0.075

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	0.008	0.008	0.002	0.019	0.004	1.49	0.007
Mangaohoi Stm @ South Branch Maru Rd	12	0.037	0.039	0.018	0.055	0.009	-0.47	0.046
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.034	0.016	0.010	0.134	0.012	<u>1.79</u>	0.016
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.083	0.083	0.051	0.145	0.035	0.82	0.116
Mangapu River @ Otorohanga	12	0.038	0.030	0.019	0.079	0.021	1.16	0.034
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.015	0.012	0.008	0.033	0.006	1.67	0.012
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.006	0.007	0.002	0.009	0.003	-0.79	0.007
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.017	0.016	0.013	0.021	0.005	0.29	0.015
Puniu River @ Bartons Corner Rd Br	12	0.024	0.022	0.016	0.047	0.009	<u>1.76</u>	0.023
Waipa River @ Mangaokewa Rd	12	0.009	0.009	0.008	0.013	0.002	1.23	0.010
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.018	0.018	0.013	0.025	0.004	0.67	0.017
Waipa River @ SH3 Otorohanga	12	0.016	0.012	0.007	0.063	0.006	<u>2.73</u>	0.010
Waitomo Stm @ SH31 Otorohanga	12	0.008	0.008	0.005	0.011	0.002	0.43	0.007
Waitomo Stm @ Tumutumui Rd	12	0.010	0.010	0.007	0.013	0.003	0.02	0.010

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	0.166	0.100	0.046	0.898	0.074	<u>2.83</u>	0.086
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.039	0.038	0.029	0.051	0.012	0.27	0.039
Mangakara Stm (Reporoa) @ SH5	12	0.063	0.061	0.049	0.095	0.013	1.37	0.059
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.047	0.039	0.024	0.137	0.014	<u>2.61</u>	0.041
Otamakokore Stm @ Hossack Rd	12	0.159	0.158	0.123	0.229	0.019	1.30	0.158
Pueto Stm @ Broadlands Rd Br	12	0.081	0.083	0.068	0.090	0.011	-0.50	0.083
Tahunaatara Stm @ Ohakuri Rd	12	0.037	0.038	0.030	0.045	0.007	0.03	0.038
Torepatutahi Stm @ Vaile Rd Br	12	0.089	0.090	0.077	0.100	0.011	-0.36	0.083
Waiotapu Stm @ Campbell Rd Br	12	0.029	0.026	0.022	0.040	0.010	0.69	0.027
Waiotapu Stm @ Homestead Rd Br	12	0.042	0.045	0.023	0.057	0.019	-0.42	0.044
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.076	0.076	0.063	0.092	0.011	0.28	0.079
Whirinaki Stm @ Corbett Rd	12	0.072	0.073	0.063	0.081	0.006	-0.05	0.072

West Coast								
Awakino River @ Gribbon Rd	12	0.015	0.016	0.008	0.018	0.002	-1.59	0.014
Awakino River @ SH3 Awakau Rd Junction	12	0.011	0.012	0.002	0.020	0.006	-0.22	0.010
Manganui River @ Off Manganui Rd	12	0.015	0.015	0.007	0.020	0.007	-0.31	0.014
Mangaotaki River @ SH3 Br	12	0.015	0.015	0.007	0.025	0.009	0.35	0.013
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.022	0.016	0.008	0.098	0.006	<u>2.90</u>	0.014
Mokau River @ Awakau Rd	12	0.012	0.011	0.005	0.020	0.005	0.44	0.008
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.017	0.015	0.012	0.030	0.006	1.55	0.016
Mokau River @ Totoro Rd Recorder	12	0.014	0.013	0.009	0.031	0.006	<u>1.86</u>	0.011
Mokauiti Stm @ Three Way Point - Aria	12	0.010	0.008	0.004	0.036	0.005	<u>2.50</u>	0.007
Ohautira Stm @ Waingaro Te Uku Rd	12	0.021	0.021	0.013	0.027	0.003	-0.47	0.021
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.012	0.009	0.006	0.038	0.007	<u>2.39</u>	0.009
Tawarau River @ Off Speedies Rd	12	0.025	0.017	0.011	0.125	0.007	<u>2.96</u>	0.015
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.012	0.011	0.008	0.024	0.004	<u>2.19</u>	0.011
Waitetuna River @ Te Uku-Waingaro Rd	12	0.013	0.013	0.009	0.016	0.003	-0.35	0.013

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	0.030	0.030	0.022	0.038	0.006	0.08	0.032
Kuratau River @ 43 Te Rae Street	12	0.011	0.012	0.008	0.014	0.003	-0.14	0.011
Kuratau River @ SH41 Moerangi	12	0.006	0.007	0.005	0.008	0.002	-0.11	0.007
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.147	0.147	0.134	0.165	0.008	0.38	0.141
Tauranga-Taupo River @ Te Kono Slackline	12	0.019	0.018	0.012	0.025	0.006	0.11	0.018
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over C:	12	0.009	0.009	0.005	0.013	0.003	0.11	0.009
Tokaanu Stm @ Off SH41 Turangi	12	0.080	0.082	0.061	0.091	0.012	-0.80	0.080
Waihaha River @ SH32	12	0.021	0.021	0.015	0.027	0.007	-0.29	0.021
Waitahanui River @ Blake Rd	12	0.048	0.049	0.028	0.059	0.010	-1.10	0.052
Whanganui Stm @ Lakeside Lake Taupo	12	0.012	0.014	0.008	0.017	0.006	-0.10	0.014
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.023	0.024	0.009	0.031	0.006	-0.96	0.024
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.021	0.021	0.011	0.030	0.009	-0.18	0.025

12	0.034	0.023	0.014	0.088	0.025	1.51	0.032
12	0.051	0.049	0.025	0.070	0.013	-0.21	0.060
12	0.070	0.050	0.017	0.193	0.056	1.29	0.043
12	0.255	0.255	0.178	0.372	0.090	0.40	0.281
12	0.106	0.096	0.062	0.237	0.036	<u>1.93</u>	0.099
12	0.044	0.039	0.014	0.090	0.031	0.79	0.028
12	0.009	0.008	0.002	0.016	0.007	0.36	0.008
12	0.113	0.110	0.066	0.159	0.028	0.00	0.101
12	0.069	0.058	0.035	0.161	0.021	<u>2.18</u>	0.055
12	0.022	0.022	0.008	0.039	0.007	0.59	0.024
12	0.079	0.072	0.033	0.176	0.041	1.21	0.065
12	0.043	0.034	0.021	0.108	0.029	1.49	0.036
12	0.058	0.048	0.015	0.205	0.031	<u>2.22</u>	0.045
12	0.055	0.033	0.016	0.271	0.025	<u>2.74</u>	0.029

12	0.275	0.175	0.080	1.360	0.137	<u>2.78</u>	0.157
12	0.070	0.068	0.033	0.115	0.028	0.46	0.060
12	0.116	0.103	0.082	0.225	0.032	<u>1.93</u>	0.091
12	0.069	0.050	0.038	0.271	0.012	<u>2.85</u>	0.052
12	0.184	0.170	0.143	0.333	0.050	<u>2.06</u>	0.170
12	0.097	0.098	0.082	0.108	0.008	-0.44	0.110
12	0.058	0.049	0.037	0.119	0.026	1.65	0.054
12	0.105	0.106	0.088	0.129	0.013	0.38	0.107
12	0.118	0.120	0.084	0.141	0.021	-0.62	0.113
12	0.158	0.160	0.099	0.235	0.070	0.22	0.150
12	0.106	0.092	0.072	0.191	0.036	1.49	0.090
12	0.071	0.073	0.063	0.078	0.011	-0.14	0.072

12	0.023	0.018	0.009	0.050	0.015	1.06	0.018
12	0.043	0.025	0.006	0.144	0.045	1.41	0.023
12	0.050	0.037	0.012	0.113	0.055	0.57	0.025
12	0.104	0.041	0.017	0.800	0.033	<u>2.98</u>	0.033
12	0.069	0.032	0.019	0.346	0.052	<u>2.48</u>	0.030
12	0.156	0.068	0.032	0.440	0.258	0.86	0.060
12	0.034	0.032	0.016	0.053	0.018	0.09	0.037
12	0.103	0.043	0.028	0.337	0.099	1.36	0.042
12	0.102	0.053	0.034	0.380	0.068	<u>1.95</u>	0.053
12	0.070	0.040	0.023	0.376	0.023	<u>2.89</u>	0.048
12	0.027	0.020	0.010	0.052	0.023	0.77	0.019
12	0.063	0.033	0.026	0.257	0.033	<u>2.08</u>	0.032
12	0.064	0.047	0.024	0.195	0.035	<u>1.97</u>	0.047
12	0.066	0.034	0.025	0.341	0.031	<u>2.74</u>	0.041

12	0.035	0.033	0.024	0.073	0.010	<u>2.23</u>	0.037
12	0.015	0.015	0.009	0.023	0.006	0.63	0.015
12	0.007	0.008	0.002	0.014	0.004	0.36	0.006
12	0.180	0.173	0.147	0.228	0.023	0.84	0.174
12	0.020	0.021	0.010	0.032	0.005	0.31	0.021
12	0.016	0.015	0.011	0.026	0.004	0.95	0.015
12	0.079	0.080	0.068	0.086	0.004	-0.87	0.081
12	0.021	0.021	0.015	0.028	0.007	0.28	0.024
12	0.049	0.049	0.031	0.064	0.005	-0.55	0.052
12	0.018	0.015	0.011	0.046	0.007	<u>2.23</u>	0.015
12	0.042	0.035	0.023	0.129	0.010	<u>2.77</u>	0.036
12	0.040	0.033	0.020	0.115	0.006	<u>2.44</u>	0.033

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

Ammoniacal Nitrogen (g N m⁻³)

Location								00-04
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.02	0.02	0.01	0.05	0.02	0.97	0.02
Kauaeranga River @ Smiths Cableway/Recorder	12	0.01	0.01	0.01	0.04	0.00	<u>2.83</u>	0.01
Ohinemuri River @ Queens Head	12	0.02	0.01	0.01	0.07	0.03	1.19	0.02
Ohinemuri River @ SH25 Br	12	0.01	0.01	0.01	0.04	0.01	<u>2.21</u>	0.01
Tairua River @ Morrisons Br Hikuai	12	0.01	0.01	0.01	0.02	0.01	<u>1.92</u>	0.01
Tapu River @ Tapu-Coroglen Rd	12	0.01	0.01	0.01	0.03	0.00	<u>2.83</u>	0.01
Waiau River @ E309 Rd Ford	12	0.01	0.01	0.01	0.01	0.00	1.15	0.01
Waitekauri River @ U/S Ohinemuri Conflu	12	0.01	0.01	0.01	0.02	0.01	1.51	0.01
Waiwawa River @ SH25 Coroglen	12	0.01	0.01	0.01	0.01	0.00	1.15	0.01
Wharekawa River @ SH25	12	0.01	0.01	0.01	0.01	0.01	0.00	0.01
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.01	0.01	0.01	0.04	0.00	<u>2.83</u>	0.01
Oraka Stm @ Lake Rd	12	0.07	0.03	0.01	0.43	0.04	<u>2.74</u>	0.03
Piako River @ Kiwitahi	12	0.08	0.07	0.01	0.28	0.10	1.16	0.02
Piako River @ Paeroa-Tahuna Rd Br	12	0.13	0.09	0.02	0.40	0.14	1.26	0.07
Piakonui Stm @ Piakonui Rd	12	0.01	0.01	0.01	0.01	0.00	1.15	0.01
Waihou River @ Okauia	12	0.03	0.02	0.01	0.07	0.04	0.74	0.01
Waihou River @ Whites Rd	12	0.01	0.01	0.01	0.01	0.00	<u>1.79</u>	0.01
Waihotu Stm @ Waihotu Rd (Off SH5)	12	0.01	0.01	0.01	0.01	0.00	1.15	0.01
Waiomou Stm @ Matamata-Tauranga Rd	12	0.03	0.02	0.01	0.10	0.02	1.47	0.02
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.08	0.04	0.01	0.35	0.08	<u>1.86</u>	0.02
Waitoa River @ Landsdowne Rd Br	12	0.08	0.05	0.01	0.26	0.08	1.32	0.02
Waitoa River @ Mellon Rd Recorder	12	0.14	0.12	0.01	0.49	0.15	1.53	0.08
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otua Rd Br opp Moseley Rd	12	0.05	0.04	0.01	0.14	0.03	1.43	0.03
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.02	0.02	0.01	0.04	0.02	0.35	0.02
Karapiro Stm @ Hickey Rd Bridge	12	0.03	0.03	0.02	0.05	0.01	1.02	0.02
Kirikiriira Stm @ Tauhara Dr	12	0.40	0.38	0.14	0.71	0.18	0.49	0.36
Komakorau Stm @ Henry Rd	12	1.09	1.10	0.63	1.54	0.35	-0.20	0.94
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.03	0.02	0.01	0.12	0.02	<u>1.75</u>	0.01
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.38	0.38	0.25	0.53	0.13	0.34	0.30
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.13	0.11	0.02	0.49	0.14	<u>1.74</u>	0.05
Mangaone Stm @ Annebrooke Rd Br	12	0.04	0.03	0.02	0.08	0.01	1.65	0.03
Mangaonua Stm @ Hoeka Rd	12	0.08	0.08	0.01	0.11	0.05	-0.73	0.07
Mangaonua Stm @ Te Miro Rd	12	0.01	0.01	0.01	0.02	0.01	1.06	0.01
Mangatangi River @ SH2 Maramarua	12	0.02	0.02	0.01	0.04	0.02	0.77	0.01
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.01	0.01	0.01	0.03	0.01	<u>1.78</u>	0.01
Mangawara Stm @ Rutherford Rd Br	12	0.69	0.54	0.24	2.00	0.35	<u>1.93</u>	0.42
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.16	0.13	0.06	0.46	0.09	<u>2.09</u>	0.13
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.06	0.05	0.02	0.13	0.05	0.74	0.05
Ohaeroa Stm @ SH22 Br	12	0.01	0.01	0.01	0.04	0.01	<u>1.80</u>	0.01
Opuatia Stm @ Ponganui Rd	12	0.02	0.01	0.01	0.08	0.02	<u>1.70</u>	0.01
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.03	0.02	0.01	0.07	0.03	1.06	0.01
Waerenga Stm @ Taniwha Rd	12	0.01	0.01	0.01	0.04	0.01	<u>2.18</u>	0.01
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.69	0.72	0.13	1.11	0.34	-0.38	0.68
Whakapipi Stm @ SH22 Br	12	0.03	0.02	0.01	0.14	0.02	<u>2.02</u>	0.01
Whakauru Stm @ U/S SH1 Br	12	0.01	0.01	0.01	0.03	0.01	<u>1.72</u>	0.01
Whangamarino River @ Island Block Rd	12	0.19	0.12	0.01	0.82	0.21	<u>1.89</u>	0.05
Whangamarino River @ Jefferies Rd Br	12	0.08	0.08	0.01	0.22	0.07	0.87	0.05
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.01	0.01	0.01	0.04	0.02	1.51	0.01

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

Nitrate/Nitrite (g m⁻³)

Location								00-04
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.055	0.028	0.005	0.154	0.097	0.83	0.045
Kauaeranga River @ Smiths Cableway/Recorder	12	0.026	0.017	0.003	0.124	0.017	<u>2.42</u>	0.019
Ohinemuri River @ Queens Head	12	0.698	0.671	0.053	1.190	0.557	-0.22	0.764
Ohinemuri River @ SH25 Br	12	0.504	0.460	0.075	0.993	0.317	0.28	0.490
Tairua River @ Morrisons Br Hikuai	12	0.028	0.021	0.001	0.078	0.044	0.64	0.029
Tapu River @ Tapu-Coroglen Rd	12	0.006	0.005	0.001	0.019	0.005	1.52	0.004
Waiau River @ E309 Rd Ford	12	0.070	0.063	0.003	0.200	0.049	1.28	0.049
Waitekauri River @ U/S Ohinemuri Conflu	12	0.139	0.095	0.031	0.291	0.178	0.31	0.159
Waiwawa River @ SH25 Coroglen	12	0.017	0.013	0.001	0.038	0.021	0.47	0.015
Wharekawa River @ SH25	12	0.041	0.024	0.009	0.103	0.064	0.70	0.050
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.357	0.374	0.253	0.432	0.090	-0.47	0.345
Oraka Stm @ Lake Rd	12	2.369	2.155	1.800	3.260	0.715	0.52	1.975
Piako River @ Kiwitahi	12	1.577	1.340	0.497	3.390	1.106	0.67	1.190
Piako River @ Paeroa-Tahuna Rd Br	12	1.842	1.805	1.260	2.770	0.435	0.72	1.585
Piakonui Stm @ Piakonui Rd	12	0.422	0.394	0.208	0.782	0.261	0.66	0.252
Waihou River @ Okauia	12	1.239	1.185	1.030	1.580	0.285	0.59	1.065
Waihou River @ Whites Rd	12	0.629	0.631	0.581	0.660	0.038	-0.43	0.585
Waihotu Stm @ Waihotu Rd (Off SH5)	12	0.213	0.206	0.178	0.264	0.048	0.48	0.192
Waiomou Stm @ Matamata-Tauranga Rd	12	0.636	0.566	0.385	1.120	0.351	0.77	0.473
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.349	0.384	0.031	0.687	0.347	-0.05	0.279
Waitoa River @ Landsdowne Rd Br	12	1.720	1.665	0.797	2.810	0.790	0.30	1.500
Waitoa River @ Mellon Rd Recorder	12	2.124	2.145	1.130	3.000	1.065	0.00	2.345
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otua Rd Br opp Moseley Rd	12	1.390	1.475	0.585	2.030	0.900	-0.20	1.050
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.307	0.297	0.069	0.659	0.196	0.45	0.233
Karapiro Stm @ Hickey Rd Bridge	12	0.831	0.666	0.273	1.740	0.527	0.80	0.583
Kirikiriira Stm @ Tauhara Dr	12	1.171	1.235	0.785	1.440	0.225	-0.72	0.993
Komakorau Stm @ Henry Rd	12	1.475	1.300	0.915	2.960	0.425	1.64	1.470
Little Waipa Stm @ Arapuni - Putaruru Rd	12	1.530	1.445	1.250	2.030	0.325	0.85	1.255
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	1.322	1.315	0.969	1.710	0.385	0.16	1.070
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	2.668	2.760	1.930	3.610	0.760	0.04	2.790
Mangaone Stm @ Annebrooke Rd Br	12	2.530	2.580	1.710	3.230	0.420	-0.39	2.600
Mangaonua Stm @ Hoeka Rd	12	1.421	1.370	0.785	2.050	0.325	0.23	1.370
Mangaonua Stm @ Te Miro Rd	12	0.721	0.686	0.253	1.310	0.444	0.35	0.529
Mangatangi River @ SH2 Maramarua	12	0.353	0.270	0.057	0.807	0.393	0.66	0.280
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.066	0.020	0.001	0.202	0.113	0.70	0.060
Mangawara Stm @ Rutherford Rd Br	12	1.064	0.932	0.761	1.770	0.214	1.38	0.977
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	1.694	1.655	1.220	2.190	0.450	0.18	1.610
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.822	0.780	0.433	1.350	0.491	0.44	0.799
Ohaeroa Stm @ SH22 Br	12	1.359	1.385	0.814	1.870	0.655	-0.03	1.145
Opuatia Stm @ Ponganui Rd	12	0.720	0.737	0.415	1.040	0.380	-0.07	0.576
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	1.695	1.640	1.530	2.000	0.195	0.98	1.435
Waerenga Stm @ Taniwha Rd	12	0.777	0.794	0.187	1.130	0.400	-0.54	0.782
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.815	0.828	0.517	1.140	0.203	0.07	0.863
Whakapipi Stm @ SH22 Br	12	4.196	4.615	1.710	5.190	1.325	-1.14	3.455
Whakauru Stm @ U/S SH1 Br	12	0.091	0.088	0.045	0.143	0.043	0.36	0.049
Whangamarino River @ Island Block Rd	12	0.199	0.107	0.001	0.631	0.343	0.87	0.115
Whangamarino River @ Jefferies Rd Br	12	0.790	0.780	0.121	1.460	0.482	0.24	0.749
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.079	0.001	0.001	0.582	0.074	<u>2.31</u>	0.008

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	0.02	0.03	0.01	0.04	0.01	-0.47	0.02
Mangaohoi Stm @ South Branch Maru Rd	12	0.01	0.01	0.01	0.03	0.01	<u>1.69</u>	0.01
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.03	0.02	0.01	0.17	0.01	<u>2.85</u>	0.02
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.12	0.10	0.03	0.43	0.06	<u>2.18</u>	0.09
Mangapu River @ Otorohanga	12	0.03	0.03	0.01	0.04	0.01	-0.69	0.03
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.02	0.02	0.01	0.05	0.02	<u>0.83</u>	0.01
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.01	0.01	0.01	0.01	0.00	<u>1.79</u>	0.01
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.09	0.08	0.03	0.18	0.07	0.62	0.05
Puniu River @ Bartons Corner Rd Br	12	0.03	0.03	0.01	0.10	0.01	<u>2.25</u>	0.02
Waipa River @ Mangaokewa Rd	12	0.01	0.01	0.01	0.02	0.01	1.51	0.01
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.03	0.03	0.01	0.05	0.02	-0.26	0.03
Waipa River @ SH3 Otorohanga	12	0.04	0.03	0.01	0.13	0.03	<u>1.85</u>	0.01
Waitomo Stm @ SH31 Otorohanga	12	0.01	0.02	0.01	0.03	0.01	0.27	0.02
Waitomo Stm @ Tumutumu Rd	12	0.01	0.01	0.01	0.02	0.01	<u>1.69</u>	0.01

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	0.28	0.03	0.01	2.72	0.13	<u>2.99</u>	0.02
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.03	0.02	0.01	0.08	0.03	0.99	0.01
Mangakara Stm (Reporoa) @ SH5	12	0.04	0.04	0.01	0.07	0.03	0.48	0.03
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.01	0.01	0.01	0.03	0.01	<u>2.54</u>	0.01
Otamakokore Stm @ Hossack Rd	12	0.04	0.01	0.01	0.35	0.02	<u>2.83</u>	0.01
Pueto Stm @ Broadlands Rd Br	12	0.01	0.01	0.01	0.02	0.01	1.51	0.01
Tahunaatara Stm @ Ohakuri Rd	12	0.01	0.01	0.01	0.02	0.02	0.17	0.01
Torepatutahi Stm @ Vaile Rd Br	12	0.01	0.01	0.01	0.02	0.02	0.11	0.01
Waiotapu Stm @ Campbell Rd Br	12	0.94	0.91	0.82	1.08	0.18	0.30	0.89
Waiotapu Stm @ Homestead Rd Br	12	0.31	0.33	0.13	0.46	0.18	-0.35	0.30
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.01	0.01	0.01	0.02	0.00	<u>2.56</u>	0.01
Whirinaki Stm @ Corbett Rd	12	0.01	0.01	0.01	0.01	0.00	1.15	0.01

West Coast								
Awakino River @ Gribbon Rd	12	0.01	0.01	0.01	0.02	0.00	<u>2.21</u>	0.01
Awakino River @ SH3 Awakau Rd Junction	12	0.01	0.01	0.01	0.03	0.01	<u>1.78</u>	0.01
Manganui River @ Off Manganui Rd	12	0.01	0.01	0.01	0.02	0.01	<u>1.92</u>	0.01
Mangaotaki River @ SH3 Br	12	0.01	0.01	0.01	0.02	0.01	1.37	0.01
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.01	0.01	0.01	0.04	0.00	<u>2.83</u>	0.01
Mokau River @ Awakau Rd	12	0.02	0.02	0.01	0.06	0.01	1.21	0.02
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.01	0.01	0.01	0.01	0.01	0.00	0.01
Mokau River @ Totoro Rd Recorder	12	0.02	0.02	0.01	0.03	0.02	0.08	0.01
Mokauiti Stm @ Three Way Point - Aria	12	0.03	0.03	0.01	0.05	0.03	-0.21	0.02
Ohautira Stm @ Waingaro Te Uku Rd	12	0.01	0.01	0.01	0.02	0.01	1.29	0.01
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.01	0.01	0.01	0.02	0.01	<u>1.92</u>	0.01
Tawarau River @ Off Speedies Rd	12	0.01	0.01	0.01	0.05	0.00	<u>2.53</u>	0.01
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.01	0.02	0.01	0.03	0.02	0.27	0.01
Waitetuna River @ Te Uku-Waingaro Rd	12	0.01	0.01	0.01	0.04	0.01	1.24	0.01

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	0.01	0.01	0.01	0.01	0.01	0.71	0.01
Kuratau River @ 43 Te Rae Street	12	0.01	0.01	0.01	0.02	0.02	0.61	0.01
Kuratau River @ SH41 Moerangi	12	0.01	0.01	0.01	0.02	0.00	<u>2.21</u>	0.01
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.01	0.02	0.01	0.02	0.01	-0.21	0.01
Tauranga-Taupo River @ Te Kono Slackline	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over C:	12	0.01	0.01	0.01	0.05	0.00	<u>2.90</u>	0.01
Tokaanu Stm @ Off SH41 Turangi	12	0.01	0.01	0.01	0.01	0.00	<u>1.79</u>	0.01
Waihaha River @ SH32	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Waitahanui River @ Blake Rd	12	0.01	0.01	0.01	0.01	0.00	<u>3.02</u>	0.01
Whanganui Stm @ Lakeside Lake Taupo	12	0.01	0.01	0.01	0.01	0.00	<u>1.79</u>	0.01
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.01	0.01	0.01	0.02	0.01	1.43	0.01
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.01	0.01	0.01	0.02	0.01	1.43	0.01

12	0.372	0.315	0.103	0.812	0.294	0.84	0.319
12	0.362	0.349	0.214	0.488	0.087	-0.24	0.317
12	0.545	0.530	0.352	0.832	0.230	0.60	0.450
12	1.772	1.770	1.440	2.460	0.360	0.98	2.100
12	0.760	0.759	0.468	1.100	0.386	0.15	0.793
12	0.479	0.382	0.284	0.903	0.312	0.95	0.310
12	0.168	0.172	0.077	0.264	0.084	-0.15	0.136
12	0.721	0.659	0.135	1.360	0.633	0.21	0.573
12	0.818	0.768	0.526	1.410	0.433	0.85	0.579
12	0.434	0.434	0.280	0.568	0.187	-0.07	0.321
12	0.680	0.615	0.321	1.230	0.413	0.68	0.605
12	0.483	0.430	0.222	0.799	0.251	0.53	0.400
12	0.550	0.533	0.338	0.787	0.219	0.14	0.514
12	0.613	0.607	0.405	0.794	0.170	-0.23	0.570

12	2.479	2.245	1.680	4.270	1.120	1.04	1.710
12	0.374	0.347	0.191	0.662	0.229	0.47	0.195
12	1.207	1.140	0.917	1.670	0.275	0.78	0.906
12	0.650	0.615	0.414	0.904	0.208	0.23	0.486
12	1.008	0.923	0.536	1.870	0.711	0.66	0.595
12	0.384	0.387	0.334	0.430	0.044	-0.07	0.340
12	0.610	0.551	0.387	1.050	0.263	1.04	0.450
12	0.483	0.439	0.287	0.868	0.153	1.20	0.280
12	0.715	0.712	0.646	0.797	0.078	0.43	0.726
12	1.403	1.300	1.120	1.870	0.245	1.02	1.220
12	0.786	0.729	0.607	1.040	0.209	0.58	0.623
12	0.660	0.611	0.561	0.915	0.102	1.39	0.572

12	0.127	0.126	0.026	0.210	0.136	-0.10	0.134
12	0.220	0.222	0.017	0.386	0.212	-0.12	0.188
12	0.131	0.106	0.007	0.233	0.123	0.03	0.119
12	0.713	0.726	0.391	0.984	0.294	-0.25	0.635
12	0.270	0.252	0.146	0.395	0.140	0.13	0.230
12	0.456	0.458	0.155	0.760	0.304	0.19	0.369
12	0.338	0.327	0.224	0.513	0.132	0.60	0.264
12	0.584	0.577	0.315	0.877	0.226	0.20	0.501
12	0.360	0.304	0.116	0.708	0.278	0.62	0.265
12	0.286	0.272	0.100	0.488	0.121	0.03	0.262
12	0.154	0.155	0.017	0.351	0.160	0.34	0.107
12	0.308	0.294	0.179	0.437	0.166	0.05	0.270
12	0.366	0.374	0.005	0.778	0.291	0.15	0.355
12	0.334	0.296	0.150	0.623	0.145	0.81	0.301

12	0.063	0.065	0.018	0.102	0.046	-0.27	0.058
12	0.534	0.516	0.363	0.740	0.185	0.20	0.471
12	0.100	0.101	0.047	0.176	0.048	0.45	0.085
12	0.702	0.714	0.574	0.863	0.162	0.15	0.728
12	0.055	0.050	0.033	0.086	0.030	0.41	0.049
12	0.004	0.002	0.001	0.024	0.004	<u>2.53</u>	0.003
12	0.423	0.425	0.364	0.478	0.038	-0.11	0.391
12	0.116	0.115	0.066	0.163	0.033	0.02	0.111
12	0.378	0.387	0.334	0.413	0.035	-0.50	0.346
12	0.451	0.435	0.205	0.678	0.168	-0.11	0.400
12	0.723	0.700	0.471	1.110	0.282	0.56	0.601
12	0.738	0.712	0.480	1.130	0.279	0.53	0.616

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

Total Kjeldahl Nitrogen (g m⁻³)

Location								00-04
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.12	0.13	0.06	0.19	0.04	-0.23	0.12
Kauaeranga River @ Smiths Cableway/Recorder	12	0.08	0.08	0.03	0.17	0.06	0.39	0.08
Ohinemuri River @ Queens Head	12	0.30	0.23	0.11	0.79	0.20	1.63	0.27
Ohinemuri River @ SH25 Br	12	0.14	0.11	0.07	0.29	0.10	0.97	0.14
Tairua River @ Morrisons Br Hikuaui	12	0.11	0.11	0.03	0.20	0.05	0.32	0.10
Tapu River @ Tapu-Coroglen Rd	12	0.07	0.04	0.03	0.21	0.07	1.33	0.07
Waiau River @ E309 Rd Ford	12	0.12	0.07	0.03	0.54	0.09	<u>2.50</u>	0.08
Waitekauri River @ U/S Ohinemuri Conflu	12	0.16	0.14	0.07	0.57	0.07	<u>2.55</u>	0.11
Waiwawa River @ SH25 Coroglen	12	0.10	0.09	0.03	0.24	0.09	0.78	0.09
Wharekawa River @ SH25	12	0.12	0.10	0.03	0.32	0.09	1.20	0.12
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.16	0.11	0.03	0.49	0.09	1.57	0.12
Oraka Stm @ Lake Rd	12	0.43	0.39	0.21	0.92	0.19	1.46	0.33
Piako River @ Kiwitahi	12	0.58	0.44	0.22	1.54	0.35	1.48	0.46
Piako River @ Paeroa-Tahuna Rd Br	12	0.88	0.69	0.55	1.70	0.51	1.12	0.74
Piakonui Stm @ Piakonui Rd	12	0.19	0.20	0.10	0.27	0.07	-0.22	0.20
Waihou River @ Okauia	12	0.29	0.28	0.15	0.51	0.13	0.72	0.20
Waihou River @ Whites Rd	12	0.07	0.07	0.03	0.15	0.03	0.63	0.03
Waihoutu Stm @ Waihoutu Rd (Off SH5)	12	0.18	0.17	0.11	0.27	0.10	0.41	0.13
Waiomou Stm @ Matamata-Tauranga Rd	12	0.28	0.24	0.17	0.48	0.17	0.72	0.19
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.53	0.36	0.25	1.10	0.39	0.99	0.36
Waitoa River @ Landsdowne Rd Br	12	0.61	0.54	0.38	1.21	0.23	1.40	0.46
Waitoa River @ Mellon Rd Recorder	12	0.82	0.74	0.36	2.01	0.34	<u>1.83</u>	0.63
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otawa Rd Br opp Moseley Rd	12	0.60	0.56	0.31	1.32	0.25	1.31	0.51
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.26	0.22	0.17	0.47	0.07	1.49	0.26
Karapiro Stm @ Hickey Rd Bridge	12	0.39	0.39	0.20	0.71	0.15	0.84	0.35
Kirikiriira Stm @ Tauhara Dr	12	0.89	0.88	0.69	1.21	0.29	0.46	0.88
Komakorau Stm @ Henry Rd	12	2.16	2.17	1.62	2.65	0.44	0.01	1.95
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.30	0.24	0.11	0.70	0.25	0.99	0.20
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	1.51	1.48	0.79	2.42	0.60	0.28	1.35
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.60	0.55	0.33	0.95	0.34	0.46	0.45
Mangaone Stm @ Annebrooke Rd Br	12	0.60	0.56	0.44	1.13	0.21	<u>1.72</u>	0.47
Mangaonua Stm @ Hoeka Rd	12	0.47	0.43	0.24	0.72	0.19	0.26	0.40
Mangaonua Stm @ Te Miro Rd	12	0.29	0.22	0.14	1.16	0.10	<u>2.84</u>	0.24
Mangatangi River @ SH2 Maramarua	12	0.41	0.35	0.25	0.85	0.22	1.27	0.34
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.19	0.14	0.08	0.72	0.11	<u>2.54</u>	0.15
Mangawara Stm @ Rutherford Rd Br	12	1.67	1.45	0.99	3.50	0.69	1.46	1.35
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	1.02	0.85	0.50	2.53	0.38	<u>2.01</u>	0.82
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.64	0.56	0.46	1.13	0.31	1.23	0.58
Ohaeroa Stm @ SH22 Br	12	0.29	0.26	0.16	0.69	0.09	<u>1.78</u>	0.27
Opuatia Stm @ Ponganui Rd	12	0.38	0.27	0.18	1.23	0.10	<u>2.22</u>	0.26
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	0.38	0.29	0.17	0.66	0.35	0.56	0.24
Waerenga Stm @ Taniwha Rd	12	0.34	0.20	0.17	1.67	0.10	<u>2.91</u>	0.23
Waitawhiriwhiri Stm @ Edgecumbe Street	12	1.35	1.37	0.93	1.75	0.19	-0.21	1.36
Whakapipi Stm @ SH22 Br	12	0.53	0.42	0.37	1.24	0.16	<u>2.15</u>	0.42
Whakauru Stm @ U/S SH1 Br	12	0.25	0.24	0.12	0.44	0.15	0.46	0.13
Whangamarino River @ Island Block Rd	12	1.59	1.25	0.74	3.80	0.91	1.35	1.27
Whangamarino River @ Jefferies Rd Br	12	0.64	0.53	0.31	1.61	0.40	1.55	0.44
Whangape Stm @ Rangiriri-Glen Murray Rd	12	1.46	1.54	0.39	3.10	1.09	0.48	0.75

Total Nitrogen (g m⁻³)

Location								00-04
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.18	0.18	0.07	0.28	0.13	-0.03	0.18
Kauaeranga River @ Smiths Cableway/Recorder	12	0.11	0.10	0.03	0.22	0.09	0.44	0.10
Ohinemuri River @ Queens Head	12	0.99	0.82	0.24	1.77	0.75	0.25	1.08
Ohinemuri River @ SH25 Br	12	0.64	0.64	0.26	1.07	0.30	0.07	0.65
Tairua River @ Morrisons Br Hikuaui	12	0.14	0.14	0.03	0.20	0.06	-0.74	0.13
Tapu River @ Tapu-Coroglen Rd	12	0.07	0.05	0.03	0.22	0.07	1.36	0.07
Waiau River @ E309 Rd Ford	12	0.19	0.15	0.06	0.74	0.08	<u>2.59</u>	0.14
Waitekauri River @ U/S Ohinemuri Conflu	12	0.30	0.25	0.12	0.80	0.18	1.60	0.26
Waiwawa River @ SH25 Coroglen	12	0.12	0.11	0.03	0.24	0.09	0.52	0.11
Wharekawa River @ SH25	12	0.16	0.16	0.04	0.34	0.10	0.74	0.16
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.51	0.51	0.35	0.82	0.14	1.14	0.46
Oraka Stm @ Lake Rd	12	2.80	2.82	2.09	3.73	0.86	0.10	2.32
Piako River @ Kiwitahi	12	2.16	2.18	0.73	4.06	1.12	0.21	1.81
Piako River @ Paeroa-Tahuna Rd Br	12	2.72	2.66	1.84	4.01	0.93	0.52	2.40
Piakonui Stm @ Piakonui Rd	12	0.62	0.61	0.39	1.04	0.27	0.76	0.45
Waihou River @ Okauia	12	1.53	1.45	1.18	2.09	0.38	0.59	1.28
Waihou River @ Whites Rd	12	0.70	0.69	0.66	0.77	0.07	0.59	0.64
Waihoutu Stm @ Waihoutu Rd (Off SH5)	12	0.39	0.38	0.31	0.52	0.06	0.73	0.34
Waiomou Stm @ Matamata-Tauranga Rd	12	0.92	0.82	0.59	1.51	0.48	0.58	0.67
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.88	0.91	0.34	1.56	0.73	0.11	0.71
Waitoa River @ Landsdowne Rd Br	12	2.33	2.40	1.18	3.28	0.58	-0.26	1.91
Waitoa River @ Mellon Rd Recorder	12	2.94	2.91	1.95	5.00	1.38	0.75	3.05
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otawa Rd Br opp Moseley Rd	12	1.99	1.92	1.53	2.57	0.53	0.22	1.80
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.56	0.55	0.30	0.86	0.26	0.21	0.53
Karapiro Stm @ Hickey Rd Bridge	12	1.22	1.19	0.56	2.18	0.54	0.49	0.93
Kirikiriira Stm @ Tauhara Dr	12	2.06	2.02	1.58	2.55	0.42	0.04	1.95
Komakorau Stm @ Henry Rd	12	3.63	3.50	3.10	5.10	0.58	1.54	3.40
Little Waipa Stm @ Arapuni - Putaruru Rd	12	1.83	1.64	1.47	2.55	0.70	0.70	1.49
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	2.83	2.86	1.91	3.89	0.96	0.10	2.36
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	3.27	3.20	2.61	4.51	0.56	1.18	3.28
Mangaone Stm @ Annebrooke Rd Br	12	3.13	3.06	2.84	3.69	0.44	0.81	3.06
Mangaonua Stm @ Hoeka Rd	12	1.89	1.82	1.03	2.77	0.24	0.15	1.77
Mangaonua Stm @ Te Miro Rd	12	1.01	0.96	0.43	2.47	0.42	<u>1.87</u>	0.78
Mangatangi River @ SH2 Maramarua	12	0.76	0.77	0.31	1.36	0.56	0.24	0.77
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.26	0.21	0.09	0.86	0.10	<u>2.34</u>	0.24
Mangawara Stm @ Rutherford Rd Br	12	2.74	2.45	1.92	4.26	1.17	0.68	2.44
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	2.71	2.60	1.85	4.16	0.88	0.82	2.43
Matahuru Stm @ Waiterimu Road Below Confluence	12	1.46	1.36	0.95	2.09	0.66	0.28	1.53
Ohaeroa Stm @ SH22 Br	12	1.65	1.62	1.23	2.06	0.48	0.17	1.50
Opuatia Stm @ Ponganui Rd	12	1.10	1.08	0.84	1.65	0.37	0.86	0.90
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	2.07	2.03	1.81	2.63	0.32	1.00	1.78
Waerenga Stm @ Taniwha Rd	12	1.12	1.07	0.38	2.39	0.46	1.32	1.04
Waitawhiriwhiri Stm @ Edgecumbe Street	12	2.17	2.19	1.52	2.63	0.34	-0.70	2.22
Whakapipi Stm @ SH22 Br	12	4.73	5.16	2.44	6.03	1.43	-0.82	3.96
Whakauru Stm @ U/S SH1 Br	12	0.34	0.36	0.18	0.54	0.19	0.04	0.19
Whangamarino River @ Island Block Rd	12	1.79	1.66	0.87	3.81	0.87	1.27	1.46
Whangamarino River @ Jefferies Rd Br	12	1.43	1.39	0.50	2.46	0.57	0.23	1.39
Whangape Stm @ Rangiriri-Glen Murray Rd	12	1.54	1.54	0.39	3.10	0.90	0.57	0.96

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

Waipa River and Tributaries

Kaniwhaniwha Stm @ Wright Rd	12	0.27	0.22	0.15	0.68	0.10	<u>1.92</u>	0.22
Mangaohoi Stm @ South Branch Maru Rd	12	0.16	0.14	0.03	0.36	0.07	0.93	0.15
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.30	0.29	0.16	0.56	0.17	0.77	0.25
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.80	0.68	0.38	1.49	0.31	1.04	0.72
Mangapu River @ Otorohanga	12	0.36	0.29	0.24	0.68	0.19	1.20	0.32
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.23	0.24	0.09	0.38	0.13	0.18	0.17
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.07	0.06	0.03	0.15	0.06	0.59	0.05
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.89	0.92	0.53	1.20	0.25	-0.12	0.81
Puniu River @ Bartons Corner Rd Br	12	0.32	0.28	0.21	0.80	0.09	<u>2.46</u>	0.25
Waipa River @ Mangaokewa Rd	12	0.20	0.18	0.12	0.43	0.08	1.64	0.20
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.35	0.30	0.19	0.78	0.21	1.33	0.28
Waipa River @ SH3 Otorohanga	12	0.24	0.24	0.16	0.30	0.06	-0.30	0.22
Waitomo Stm @ SH31 Otorohanga	12	0.31	0.23	0.17	0.92	0.14	<u>2.44</u>	0.24
Waitomo Stm @ Tumutumu Rd	12	0.23	0.14	0.07	1.14	0.11	<u>2.79</u>	0.13

Tributaries to the upper Waikato River

Kawaunui Stm @ SH5 Br	12	0.84	0.45	0.28	4.11	0.38	<u>2.63</u>	0.40
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.28	0.28	0.09	0.55	0.17	0.54	0.16
Mangakara Stm (Reporoa) @ SH5	12	0.42	0.41	0.17	0.79	0.22	0.58	0.24
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.23	0.14	0.07	0.90	0.19	<u>2.22</u>	0.11
Otamakokore Stm @ Hossack Rd	12	0.42	0.34	0.12	1.34	0.13	<u>2.05</u>	0.23
Pueto Stm @ Broadlands Rd Br	12	0.09	0.09	0.03	0.14	0.04	0.02	0.09
Tahunaatara Stm @ Ohakuri Rd	12	0.26	0.22	0.13	0.59	0.11	1.46	0.19
Torepatutahi Stm @ Vaile Rd Br	12	0.15	0.15	0.08	0.25	0.10	0.27	0.11
Waiotapu Stm @ Campbell Rd Br	12	1.14	1.15	0.90	1.27	0.15	-0.81	1.05
Waiotapu Stm @ Homestead Rd Br	12	0.07	0.76	0.39	1.02	0.45	-0.21	0.62
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.25	0.20	0.10	0.70	0.17	1.62	0.13
Whirinaki Stm @ Corbett Rd	12	0.10	0.11	0.03	0.18	0.07	-0.30	0.07

West Coast

Awakino River @ Gribbon Rd	12	0.05	0.03	0.03	0.18	0.05	1.67	0.07
Awakino River @ SH3 Awakau Rd Junction	12	0.16	0.14	0.05	0.44	0.09	<u>1.90</u>	0.13
Manganui River @ Off Manganui Rd	12	0.11	0.11	0.03	0.27	0.09	0.64	0.10
Mangaotaki River @ SH3 Br	12	0.32	0.19	0.14	1.78	0.06	<u>2.96</u>	0.20
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.25	0.13	0.03	1.64	0.12	<u>2.88</u>	0.12
Mokau River @ Awakau Rd	12	0.44	0.30	0.16	1.04	0.39	0.94	0.30
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.22	0.22	0.11	0.47	0.11	1.31	0.21
Mokau River @ Totoro Rd Recorder	12	0.43	0.24	0.16	1.53	0.36	<u>1.70</u>	0.25
Mokauiti Stm @ Three Way Point - Aria	12	0.38	0.29	0.21	1.07	0.19	<u>2.19</u>	0.31
Ohautira Stm @ Waingaro Te Uku Rd	12	0.31	0.20	0.10	1.56	0.16	<u>2.81</u>	0.17
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.15	0.12	0.06	0.40	0.07	<u>1.81</u>	0.12
Tawarau River @ Off Speedies Rd	12	0.26	0.11	0.07	1.63	0.11	<u>2.87</u>	0.13
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.32	0.26	0.16	1.03	0.10	<u>2.44</u>	0.26
Waitetuna River @ Te Uku-Waingaro Rd	12	0.35	0.19	0.07	1.20	0.21	1.60	0.18

Inflows to Lake Taupo

Hinemaiaia River @ SH1	12	0.06	0.06	0.03	0.11	0.04	0.17	0.06
Kuratau River @ 43 Te Rae Street	12	0.14	0.14	0.03	0.21	0.07	-0.60	0.15
Kuratau River @ SH41 Moerangi	12	0.10	0.11	0.03	0.22	0.11	0.24	0.07
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.22	0.21	0.13	0.31	0.11	0.01	0.20
Tauranga-Taupo River @ Te Kono Slackline	12	0.05	0.04	0.03	0.11	0.05	0.56	0.03
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Cana	12	0.17	0.12	0.06	0.34	0.15	0.65	0.09
Tokaanu Stm @ Off SH41 Turangi	12	0.04	0.03	0.03	0.12	0.04	1.62	0.03
Waihaha River @ SH32	12	0.08	0.08	0.03	0.15	0.04	0.36	0.06
Waitahanui River @ Blake Rd	12	0.07	0.06	0.03	0.14	0.06	0.50	0.06
Whanganui Stm @ Lakeside Lake Taupo	12	0.15	0.13	0.03	0.31	0.05	1.08	0.11
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.19	0.16	0.03	0.48	0.10	1.00	0.15
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.18	0.17	0.06	0.53	0.09	<u>2.00</u>	0.16

12	0.64	0.59	0.30	1.03	0.37	0.23	0.56
12	0.52	0.53	0.24	0.70	0.09	-0.97	0.47
12	0.84	0.79	0.55	1.13	0.22	0.19	0.77
12	2.58	2.58	1.96	3.26	0.83	0.08	2.96
12	1.12	1.12	0.75	1.72	0.40	0.48	1.18
12	0.71	0.67	0.44	1.06	0.35	0.33	0.50
12	0.24	0.23	0.18	0.32	0.07	0.51	0.19
12	1.61	1.54	0.88	2.24	0.72	0.08	1.39
12	1.14	1.04	0.77	1.68	0.45	0.52	0.86
12	0.64	0.63	0.42	0.77	0.15	-0.56	0.56
12	1.03	1.00	0.58	1.58	0.41	0.25	0.93
12	0.72	0.71	0.51	1.06	0.25	0.68	0.63
12	0.86	0.84	0.51	1.39	0.27	0.71	0.80
12	0.85	0.83	0.61	1.55	0.20	<u>1.93</u>	0.73

12	3.32	2.82	1.96	6.38	1.99	0.97	2.09
12	0.65	0.70	0.34	0.97	0.34	-0.18	0.36
12	1.63	1.59	1.18	2.24	0.44	0.45	1.15
12	0.88	0.79	0.52	1.80	0.30	<u>1.82</u>	0.60
12	1.43	1.23	0.70	2.41	1.14	0.48	0.83
12	0.47	0.46	0.39	0.57	0.05	0.48	0.43
12	0.87	0.78	0.60	1.45	0.42	0.83	0.65
12	0.63	0.58	0.39	1.05	0.26	0.73	0.40
12	1.86	1.86	1.61	2.05	0.20	-0.14	1.79
12	2.14	1.96	1.68	2.85	0.67	0.58	1.79
12	1.03	1.04	0.74	1.35	0.35	0.10	0.77
12	0.76	0.70	0.62	1.06	0.15	1.16	0.63

12	0.18	0.22	0.05	0.24	0.09	-0.90	0.21
12	0.38	0.38	0.10	0.58	0.19	-0.43	0.34
12	0.24	0.22	0.03	0.40	0.14	-0.41	0.25
12	1.03	0.96	0.61	2.17	0.34	<u>1.93</u>	0.87
12	0.52	0.43	0.22	1.86	0.16	<u>2.69</u>	0.41
12	0.90	0.82	0.49	1.46	0.39	0.55	0.73
12	0.55	0.56	0.41	0.72	0.18	0.05	0.50
12	1.02	0.89	0.57	1.91	0.44	1.15	0.79
12	0.74	0.64	0.37	1.30	0.41	0.63	0.60
12	0.59	0.50	0.23	1.83	0.14	<u>2.52</u>	0.45
12	0.30	0.29	0.12	0.51	0.18	0.15	0.25
12	0.57	0.47	0.28	1.86	0.14	<u>2.73</u>	0.42
12	0.68	0.64	0.27	1.33	0.37	0.55	0.63
12	0.69	0.56	0.36	1.49	0.38	1.30	0.51

12	0.13	0.13	0.07	0.19	0.05	0.23	0.12
12	0.67	0.66	0.48	0.83	0.11	-0.09	0.59
12	0.20	0.21	0.13	0.27	0.07	-0.33	0.16
12	0.92	0.90	0.72	1.13	0.12	0.29	0.92
12	0.11	0.11	0.06	0.16	0.06	0.03	0.09
12	0.17	0.12	0.06	0.36	0.15	0.71	0.10
12	0.47	0.46	0.39	0.57	0.07	0.57	0.42
12	0.19	0.19	0.14	0.31	0.04	1.51	0.17
12	0.45	0.45	0.40	0.48	0.06	-0.37	0.40
12	0.60	0.55	0.44	0.98	0.17	1.43	0.52
12	0.91	0.88	0.55	1.59	0.32	1.18	0.74
12	0.92	0.89	0.60	1.66	0.38	1.16	0.75

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

Turbidity (NTU)

pH (pH units)

Location	00-04							Median
	Count	Mean	Median	Min	Max	IQR	Skew	
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	1.3	1.1	0.7	2.4	0.5	1.19	1.5
Kauaeranga River @ Smiths Cableway/Recorder	12	1.5	1.0	0.5	5.4	1.3	<u>1.98</u>	1.2
Ohinemuri River @ Queens Head	12	2.1	1.0	0.6	6.4	2.3	1.21	1.3
Ohinemuri River @ SH25 Br	12	1.1	1.0	0.5	3.6	0.4	<u>2.60</u>	0.9
Tairua River @ Morrisons Br Hikuaui	12	1.3	1.2	0.9	2.1	0.6	0.80	1.3
Tapu River @ Tapu-Coroglen Rd	12	1.6	1.0	0.3	5.8	1.1	<u>1.72</u>	1.3
Waiau River @ E309 Rd Ford	12	6.3	2.3	1.4	47.0	1.6	<u>2.97</u>	2.6
Waitekauri River @ U/S Ohinemuri Conflu	12	3.0	0.8	0.4	14.6	2.9	<u>1.85</u>	0.8
Waiwawa River @ SH25 Coroglen	12	1.4	1.2	0.9	2.6	0.6	1.14	1.5
Wharekawa River @ SH25	12	2.2	1.8	1.4	4.4	1.1	1.39	2.0
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	12.7	7.4	3.5	53.2	8.9	<u>2.21</u>	6.2
Oraka Stm @ Lake Rd	12	8.1	6.0	3.4	25.8	6.0	<u>1.98</u>	4.3
Piako River @ Kiwitahi	12	7.1	5.1	2.0	18.4	5.8	1.16	4.2
Piako River @ Paeroa-Tahuna Rd Br	12	20.3	14.6	6.4	63.4	9.0	<u>1.80</u>	10.9
Piakonui Stm @ Piakonui Rd	12	4.8	4.2	2.4	8.6	3.2	0.55	4.2
Waihou River @ Okauia	12	5.1	3.5	2.0	11.6	4.8	0.95	3.3
Waihou River @ Whites Rd	12	0.4	0.3	0.2	1.7	0.2	<u>2.59</u>	0.4
Waihotu Stm @ Waihotu Rd (Off SH5)	12	6.8	5.4	2.2	15.9	3.4	1.23	4.9
Waiomou Stm @ Matamata-Tauranga Rd	12	3.4	3.2	1.7	5.6	2.3	0.40	3.0
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	24.0	9.7	2.1	167.0	10.5	<u>2.90</u>	9.7
Waitoa River @ Landsdowne Rd Br	12	8.8	6.0	1.5	24.1	6.2	1.26	4.8
Waitoa River @ Mellon Rd Recorder	12	12.8	10.3	3.0	47.1	9.5	<u>2.10</u>	7.7
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otawa Rd Br opp Moseley Rd	12	14.4	10.3	4.0	60.3	9.2	<u>2.47</u>	11.1
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	4.9	3.5	2.2	18.0	1.2	<u>2.55</u>	3.9
Karapiro Stm @ Hickey Rd Bridge	12	8.9	6.4	3.2	30.9	4.1	<u>2.01</u>	4.7
Kirikiri Stm @ Tauhara Dr	12	35.0	33.6	13.1	88.8	10.6	<u>2.05</u>	30.9
Komakorau Stm @ Henry Rd	12	65.5	67.0	27.0	89.6	21.3	-0.65	68.7
Little Waipa Stm @ Arapuni - Putaruru Rd	12	3.3	1.2	0.6	11.3	5.4	1.09	1.4
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	26.4	24.5	14.2	66.4	7.5	<u>2.41</u>	25.7
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	4.7	3.4	1.5	18.5	2.0	<u>2.42</u>	2.8
Mangaone Stm @ Annebrooke Rd Br	12	12.4	9.8	6.2	29.5	5.3	1.48	7.9
Mangaonua Stm @ Hoeka Rd	12	11.5	8.7	2.6	27.4	7.4	1.17	8.9
Mangaonua Stm @ Te Miro Rd	12	13.4	4.5	2.5	109.0	2.9	<u>3.00</u>	4.1
Mangatangi River @ SH2 Maramarua	12	9.7	6.7	2.1	33.7	9.0	<u>1.68</u>	6.0
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	10.7	2.3	0.9	84.2	3.8	<u>2.78</u>	3.0
Mangawara Stm @ Rutherford Rd Br	12	70.8	43.1	20.0	374.0	21.5	<u>2.89</u>	40.5
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	38.9	33.2	23.2	95.9	12.3	<u>2.14</u>	40.5
Matahuru Stm @ Waiterimu Road Below Confluence	12	28.4	20.8	10.8	70.1	24.5	1.11	26.6
Ohaeroa Stm @ SH22 Br	12	9.4	5.3	2.4	45.8	6.0	<u>2.68</u>	6.3
Opuatia Stm @ Ponganui Rd	12	24.3	7.6	4.6	126.0	11.9	<u>2.01</u>	8.0
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	7.1	3.2	1.6	21.6	10.6	0.94	2.0
Waerenga Stm @ Taniwha Rd	12	15.8	4.1	1.8	133.0	4.9	<u>2.96</u>	4.9
Waitawhiriwhiri Stm @ Edgecumbe Street	12	36.3	33.2	16.1	95.8	8.7	<u>2.25</u>	32.1
Whakapipi Stm @ SH22 Br	12	7.4	5.4	2.6	18.5	5.0	1.23	4.9
Whakauru Stm @ U/S SH1 Br	12	8.3	5.4	2.1	19.8	11.5	0.76	2.9
Whangamarino River @ Island Block Rd	12	84.1	75.5	19.0	164.0	90.4	0.35	43.0
Whangamarino River @ Jefferies Rd Br	12	30.5	27.4	4.9	108.0	17.8	<u>2.18</u>	11.7
Whangape Stm @ Rangiriri-Glen Murray Rd	12	41.2	29.9	11.8	124.0	28.9	<u>1.84</u>	14.7

Count	00-04						Median
	Mean	Median	Min	Max	IQR	Skew	
12	7.1	7.0	6.9	7.5	0.4	0.50	7.1
12	7.0	7.0	6.8	7.3	0.3	0.40	7.0
12	7.2	7.1	6.9	7.6	0.5	0.51	7.2
12	7.1	7.0	6.8	7.5	0.5	0.45	7.0
12	6.9	6.9	6.6	7.2	0.4	0.22	6.9
12	7.5	7.5	7.2	7.8	0.3	0.03	7.4
12	7.3	7.4	7.0	7.6	0.3	-0.09	7.3
12	7.2	7.2	6.9	7.7	0.3	0.76	7.2
12	7.1	7.1	6.8	7.4	0.3	-0.05	7.1
12	7.0	7.0	6.7	7.2	0.5	0.00	6.9
Hauraki							
12	7.4	7.4	7.1	7.6	0.2	-0.25	7.4
12	7.5	7.4	7.2	8.3	0.2	<u>2.21</u>	7.3
12	7.1	7.2	6.8	7.4	0.3	-0.28	7.1
12	7.2	7.2	6.8	7.6	0.3	-0.12	7.2
12	7.2	7.2	6.9	7.4	0.2	-0.07	7.2
12	7.4	7.3	7.3	7.6	0.1	<u>1.69</u>	7.3
12	7.1	7.1	7.0	7.3	0.1	1.37	7.0
12	7.2	7.2	7.0	7.3	0.1	-0.38	7.1
12	7.2	7.2	7.0	7.7	0.1	<u>2.10</u>	7.1
12	7.3	7.4	7.0	7.6	0.3	-0.19	7.2
12	7.2	7.2	6.9	7.5	0.3	0.09	7.1
12	7.3	7.3	6.9	7.8	0.4	0.46	7.2
Tributaries to the lower Waikato River							
12	7.4	7.3	7.0	8.3	0.6	1.03	7.3
12	8.0	8.0	7.7	8.2	0.3	-0.14	7.8
12	7.2	7.2	7.0	7.4	0.3	-0.01	7.3
12	7.0	7.0	6.6	7.4	0.3	0.34	6.9
12	6.8	6.8	6.4	7.2	0.4	0.22	6.7
12	7.1	7.1	6.9	7.2	0.1	-0.92	7.1
12	7.1	7.0	6.4	7.5	0.5	-0.36	7.0
12	7.4	7.4	7.0	7.7	0.4	0.11	7.5
12	7.4	7.4	7.2	7.7	0.2	0.78	7.3
12	7.0	7.0	6.8	7.3	0.2	0.40	6.9
12	7.3	7.3	7.0	7.6	0.1	0.35	7.3
12	7.1	7.1	7.0	7.4	0.3	0.51	7.1
12	7.4	7.4	7.2	7.8	0.4	0.30	7.5
12	6.9	6.9	6.4	7.5	0.5	0.44	6.8
12	7.0	7.0	6.7	7.3	0.4	0.05	7.0
12	7.2	7.2	6.7	7.5	0.3	-0.17	7.1
12	7.5	7.6	7.2	8.0	0.5	0.30	7.5
12	7.6	7.6	7.4	7.8	0.2	0.42	7.7
12	7.2	7.3	6.9	7.4	0.2	-1.03	7.2
12	7.4	7.4	7.1	8.2	0.3	<u>1.86</u>	7.3
12	7.1	7.0	6.5	7.3	0.3	-0.92	7.0
12	7.3	7.3	7.1	7.6	0.2	0.25	7.3
12	7.4	7.3	7.2	7.7	0.2	1.00	7.4
12	6.8	6.7	6.5	7.2	0.4	0.55	6.8
12	7.2	7.2	6.9	7.6	0.4	0.45	7.1
12	7.6	7.6	7.2	8.1	0.5	0.23	7.7

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

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	6.6	4.9	3.2	17.9	4.6	1.65	5.6
Mangaohoi Stm @ South Branch Maru Rd	12	2.4	1.7	0.9	7.2	1.3	<u>2.02</u>	2.2
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	7.1	4.1	1.5	17.7	7.9	1.04	4.5
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	19.5	18.7	9.8	38.3	8.7	0.98	10.2
Mangapu River @ Otorohanga	12	20.1	12.5	4.5	96.7	12.7	<u>2.55</u>	9.0
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	8.5	4.6	1.7	27.4	10.7	1.21	2.6
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	1.1	1.1	0.7	1.9	0.4	0.60	1.0
Ohote Stm @ Whatawhata/Horotiu Rd	12	12.7	10.9	8.6	27.8	3.9	<u>2.24</u>	9.8
Puniu River @ Bartons Corner Rd Br	12	8.0	7.8	2.9	19.7	5.6	1.23	3.1
Waipa River @ Mangaokewa Rd	12	2.1	1.8	1.3	4.2	0.7	1.45	2.1
Waipa River @ Pirongia-Ngutunui Rd Br	12	12.5	12.9	3.0	25.1	10.3	0.17	10.7
Waipa River @ SH3 Otorohanga	12	6.6	4.4	2.0	19.3	4.3	1.48	4.5
Waitomo Stm @ SH31 Otorohanga	12	23.6	15.8	3.3	112.0	13.0	<u>2.45</u>	12.3
Waitomo Stm @ Tumutumu Rd	12	29.2	10.6	2.5	215.0	17.0	<u>2.86</u>	5.5

Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	5.1	3.6	2.8	13.2	3.8	1.53	4.6
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	6.8	6.4	2.6	16.6	3.9	1.38	4.2
Mangakara Stm (Reporoa) @ SH5	12	9.5	7.5	3.9	26.9	7.9	1.50	4.8
Mangakino Stm (Whakamaru) @ Sandel Rd	12	3.1	1.7	0.6	11.0	2.4	1.60	1.3
Otamakokore Stm @ Hossack Rd	12	3.4	2.9	1.6	6.6	2.2	0.81	2.7
Pueto Stm @ Broadlands Rd Br	12	2.2	2.2	1.2	3.3	0.7	0.26	2.1
Tahunaatara Stm @ Ohakuri Rd	12	4.5	3.2	1.4	13.3	2.9	1.49	2.0
Torepatutahi Stm @ Vaile Rd Br	12	1.0	1.0	0.7	1.2	0.3	-0.43	0.9
Waiotapu Stm @ Campbell Rd Br	12	6.7	5.2	3.9	11.9	5.5	0.76	5.3
Waiotapu Stm @ Homestead Rd Br	12	12.7	11.3	5.6	24.7	8.9	0.69	11.3
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	7.5	4.2	2.3	25.3	6.9	1.58	3.3
Whirinaki Stm @ Corbett Rd	12	0.6	0.5	0.2	1.2	0.4	0.73	0.5

West Coast								
Awakino River @ Gribbon Rd	12	2.4	1.2	0.5	6.2	4.0	0.69	1.6
Awakino River @ SH3 Awakau Rd Junction	12	13.7	4.3	0.9	72.0	16.0	<u>2.03</u>	3.9
Manganui River @ Off Manganui Rd	12	12.2	4.5	1.3	41.7	17.4	1.04	4.7
Mangaotaki River @ SH3 Br	12	17.1	5.7	1.7	114.0	11.3	<u>2.72</u>	5.4
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	11.9	3.5	1.4	83.5	8.9	<u>2.76</u>	3.6
Mokau River @ Awakau Rd	12	65.4	22.0	4.3	200.0	119.9	0.85	20.0
Mokau River @ Mangaokewa Rd (Off SH30)	12	3.2	2.5	1.4	6.3	2.7	0.78	2.7
Mokau River @ Totoro Rd Recorder	12	37.1	10.0	1.7	167.0	49.1	1.50	7.9
Mokauiti Stm @ Three Way Point - Aria	12	30.8	14.2	6.2	106.0	31.8	1.40	13.9
Ohautira Stm @ Waingaro Te Uku Rd	12	36.6	9.6	3.7	314.0	10.6	<u>2.99</u>	10.6
Oparau River @ Langdon Rd (Off Okupata Rd)	12	6.0	4.3	1.6	19.3	4.2	<u>1.72</u>	3.2
Tawarau River @ Off Speedies Rd	12	10.4	3.9	1.2	68.2	5.2	<u>2.70</u>	3.4
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	26.5	11.4	4.8	167.0	8.4	<u>2.82</u>	9.3
Waitetuna River @ Te Uku-Waingaro Rd	12	21.0	8.9	4.0	132.0	13.3	<u>2.85</u>	8.4

Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	1.4	1.1	0.6	3.5	1.0	1.34	1.0
Kuratau River @ 43 Te Rae Street	12	1.4	1.1	0.7	3.3	0.5	1.56	1.1
Kuratau River @ SH41 Moerangi	12	1.5	1.6	1.0	2.1	0.5	0.10	1.5
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	3.1	3.0	2.1	5.0	0.9	1.10	3.0
Tauranga-Taupo River @ Te Kono Slackline	12	1.8	1.3	0.4	5.5	2.2	1.11	0.7
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Cana	12	1.9	1.3	0.8	5.5	0.8	1.64	1.1
Tokaanu Stm @ Off SH41 Turangi	12	0.1	0.1	0.1	0.4	0.1	<u>2.02</u>	0.1
Waihaha River @ SH32	12	0.8	0.6	0.3	2.3	0.7	1.33	0.5
Waitahanui River @ Blake Rd	12	1.1	0.9	0.3	3.3	0.8	1.45	0.5
Whanganui Stm @ Lakeside Lake Taupo	12	2.3	1.7	0.8	9.2	1.6	<u>2.47</u>	1.2
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	6.4	3.9	1.6	36.7	3.4	<u>2.86</u>	2.9
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	5.2	3.6	1.2	25.8	3.3	<u>2.73</u>	2.5

12	7.2	7.2	6.9	7.5	0.3	0.18	7.1
12	7.3	7.4	6.6	7.7	0.4	-1.01	7.4
12	7.5	7.5	7.0	8.1	0.5	0.29	7.3
12	7.2	7.2	6.7	7.5	0.4	-0.49	7.2
12	7.7	7.7	7.4	8.2	0.5	0.52	7.7
12	7.0	7.1	6.7	7.3	0.2	-0.21	7.1
12	7.2	7.3	6.8	7.5	0.4	-0.41	7.3
12	6.8	6.8	6.4	7.1	0.3	-0.17	6.7
12	7.1	7.1	6.7	7.4	0.4	-0.45	7.1
12	7.2	7.1	6.8	7.8	0.4	0.63	7.1
12	7.3	7.3	7.0	7.6	0.3	0.10	7.2
12	7.2	7.1	6.6	7.8	0.5	0.29	7.1
12	7.8	7.8	7.5	8.1	0.5	0.08	7.8
12	7.9	8.0	7.5	8.1	0.3	-0.63	7.9

12	7.1	7.1	6.8	7.3	0.2	-0.30	7.1
12	7.3	7.4	7.2	7.5	0.2	-0.11	7.3
12	7.2	7.2	7.0	7.3	0.1	0.00	7.1
12	7.3	7.4	7.2	7.5	0.1	-0.13	7.4
12	7.9	8.0	7.4	8.1	0.2	<u>-1.75</u>	8.0
12	7.5	7.5	6.9	7.6	0.2	<u>-2.22</u>	7.5
12	7.4	7.4	7.0	7.5	0.2	-1.27	7.5
12	7.4	7.4	7.2	8.0	0.2	<u>1.94</u>	7.4
12	5.2	5.3	4.3	5.5	0.4	-1.45	5.5
12	6.9	6.9	6.6	7.3	0.4	0.15	6.9
12	7.6	7.7	7.5	7.7	0.1	-0.64	7.7
12	7.3	7.3	7.2	7.3	0.1	0.00	7.2

12	7.2	7.2	6.9	7.9	0.3	1.11	7.3
12	7.6	7.6	7.2	8.0	0.6	0.04	7.6
12	7.3	7.3	6.9	7.8	0.4	0.28	7.2
12	7.7	7.8	7.4	8.0	0.4	-0.20	7.7
12	7.8	7.9	7.4	8.1	0.4	-0.68	7.9
12	7.4	7.3	7.0	7.8	0.6	0.22	7.3
12	7.2	7.2	6.7	7.7	0.4	-0.05	7.2
12	7.6	7.5	7.2	8.0	0.6	0.21	7.6
12	7.2	7.2	6.8	7.6	0.6	0.16	7.3
12	7.3	7.3	6.9	7.5	0.3	-0.65	7.3
12	7.3	7.4	7.0	7.5	0.4	-0.47	7.3
12	7.8	7.9	7.4	8.1	0.3	-0.72	7.9
12	7.4	7.4	7.1	7.7	0.3	-0.22	7.4
12	7.2	7.2	7.0	7.5	0.3	0.25	7.2

12	7.4	7.4	7.1	7.6	0.2	-0.29	7.4
12	7.4	7.4	7.2	8.0	0.3	1.49	7.4
12	6.9	6.9	6.7	7.1	0.2	-0.18	6.9
12	7.5	7.5	7.2	7.6	0.2	-1.01	7.4
12	7.3	7.2	7.1	7.5	0.2	0.32	7.3
12	7.4	7.5	7.2	7.6	0.2	-0.55	7.5
12	7.3	7.3	7.0	7.5	0.2	-0.24	7.2
12	7.2	7.2	7.0	7.4	0.2	0.34	7.2
12	7.4	7.5	7.2	7.5	0.1	<u>-1.69</u>	7.4
12	7.3	7.3	7.0	7.5	0.1	-1.06	7.4
12	7.5	7.5	7.3	7.7	0.1	0.32	7.4
12	7.4	7.4	7.2	7.6	0.1	0.34	7.4

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

E. Coli (n/100mL)

Location								00-04
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	4	266	175	43	670	319	0.97	207
Kauaeranga River @ Smiths Cableway/Recorder	4	98	71	18	230	145	0.65	78
Ohinemuri River @ Queens Head	4	3616	519	27	13400	7148	1.14	100
Ohinemuri River @ SH25 Br	4	212	235	18	360	226	-0.42	133
Tairua River @ Morrisons Br Hikuai	4	142	75	16	400	200	1.06	89
Tapu River @ Tapu-Coroglen Rd	4	123	85	53	270	134	0.95	110
Waiau River @ E309 Rd Ford	4	140	130	48	250	171	0.11	95
Waitekauri River @ U/S Ohinemuri Conflu	4	120	86	7	300	189	0.69	109
Waiwawa River @ SH25 Coroglen	4	104	108	19	180	113	-0.14	115
Wharekawa River @ SH25	4	375	400	110	590	280	-0.40	305
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	4	52	18	14	160	76	1.15	66
Oraka Stm @ Lake Rd	4	953	1055	300	1400	895	-0.27	980
Piako River @ Kiwitahi	4	1660	1365	110	3800	3080	0.20	355
Piako River @ Paeroa-Tahuna Rd Br	4	5915	4690	280	14000	11170	0.26	700
Piakonui Stm @ Piakonui Rd	4	126	105	24	270	139	0.65	86
Waihou River @ Okauia	4	385	305	240	690	230	1.07	285
Waihou River @ Whites Rd	4	35	29	20	60	20	0.94	43
Waihotu Stm @ Waihotu Rd (Off SH5)	4	79	57	10	190	103	0.82	115
Waiomou Stm @ Matamata-Tauranga Rd	4	375	265	120	850	460	0.85	275
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	4	180	170	50	330	180	0.24	218
Waitoa River @ Landsdowne Rd Br	4	12068	7590	90	33000	23865	0.59	650
Waitoa River @ Mellon Rd Recorder	4	7240	1905	150	25000	13620	1.12	730
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otua Rd Br opp Moseley Rd	-	-	-	-	-	-	-	-
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	4	173	185	80	240	95	-0.57	215
Karapiro Stm @ Hickey Rd Bridge	4	1790	620	120	5800	3220	1.09	530
Kirikirihoa Stm @ Tauhara Dr	4	1190	340	180	3900	1870	1.15	540
Komakorau Stm @ Henry Rd	4	890	830	500	1400	720	0.22	1200
Little Waipa Stm @ Arapuni - Putaruru Rd	4	313	160	80	850	445	1.06	200
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	4	7188	1260	230	26000	13625	1.14	1200
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	4	1628	1170	170	4000	2645	0.61	570
Mangaone Stm @ Annebrooke Rd Br	4	4940	1200	360	17000	9020	1.13	850
Mangaonua Stm @ Hoeka Rd	4	2868	1650	170	8000	5265	0.77	1100
Mangaonua Stm @ Te Miro Rd	4	300	340	100	420	220	-0.64	360
Mangatangi River @ SH2 Maramarua	-	-	-	-	-	-	-	-
Mangatawhiri River @ Lyons Rd At Buckingham Br	-	-	-	-	-	-	-	-
Mangawara Stm @ Rutherford Rd Br	-	-	-	-	-	-	-	-
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	4	5988	1870	210	20000	11225	1.09	1200
Matahuru Stm @ Waiterimu Road Below Confluence	-	-	-	-	-	-	-	-
Ohaeroa Stm @ SH22 Br	-	-	-	-	-	-	-	-
Opuatia Stm @ Ponganui Rd	4	175	145	90	320	160	0.64	300
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	4	220	170	90	450	220	0.85	220
Waerenga Stm @ Taniwha Rd	4	733	385	160	2000	965	1.09	420
Waitawhiriwhiri Stm @ Edgecumbe Street	4	1718	540	190	5600	2965	1.12	650
Whakapipi Stm @ SH22 Br	-	-	-	-	-	-	-	-
Whakauru Stm @ U/S SH1 Br	4	465	470	100	820	690	0.00	455
Whangamarino River @ Island Block Rd	-	-	-	-	-	-	-	-
Whangamarino River @ Jefferies Rd Br	-	-	-	-	-	-	-	-
Whangape Stm @ Rangiriri-Glen Murray Rd	-	-	-	-	-	-	-	-

Enterococci (n/100ml)

Location								00-04
	Count	Mean	Median	Min	Max	IQR	Skew	Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	4	65	55	40	109	48	0.69	61
Kauaeranga River @ Smiths Cableway/Recorder	4	40	40	18	62	43	0.00	21
Ohinemuri River @ Queens Head	4	355	59	4	1300	698	1.14	10
Ohinemuri River @ SH25 Br	4	47	50	17	73	43	-0.17	26
Tairua River @ Morrisons Br Hikuai	4	38	32	6	81	44	0.59	14
Tapu River @ Tapu-Coroglen Rd	4	63	50	10	142	71	0.75	52
Waiau River @ E309 Rd Ford	4	66	78	16	94	42	-0.96	77
Waitekauri River @ U/S Ohinemuri Conflu	4	16	13	12	26	8	1.14	14
Waiwawa River @ SH25 Coroglen	4	56	49	41	85	29	0.86	52
Wharekawa River @ SH25	4	72	58	36	137	60	0.89	47
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	4	171	136	43	370	252	0.40	120
Oraka Stm @ Lake Rd	4	350	350	100	600	260	0.00	305
Piako River @ Kiwitahi	4	430	255	110	1100	620	0.93	175
Piako River @ Paeroa-Tahuna Rd Br	4	1118	875	320	2400	1565	0.46	420
Piakonui Stm @ Piakonui Rd	4	77	42	35	190	79	1.15	47
Waihou River @ Okauia	4	116	95	44	230	138	0.48	100
Waihou River @ Whites Rd	4	16	12	1	40	22	0.76	21
Waihotu Stm @ Waihotu Rd (Off SH5)	4	20	10	1	60	40	0.83	11
Waiomou Stm @ Matamata-Tauranga Rd	4	119	82	52	260	133	0.91	95
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	4	97	76	47	190	76	0.98	71
Waitoa River @ Landsdowne Rd Br	4	4767	1005	56	17000	9367	1.12	315
Waitoa River @ Mellon Rd Recorder	4	2910	255	130	11000	5540	1.15	390
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otua Rd Br opp Moseley Rd	-	-	-	-	-	-	-	-
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	4	82	75	50	130	46	0.70	91
Karapiro Stm @ Hickey Rd Bridge	4	457	240	46	1300	667	1.05	245
Kirikirihoa Stm @ Tauhara Dr	4	683	335	160	1900	935	1.11	425
Komakorau Stm @ Henry Rd	4	318	305	150	510	225	0.25	380
Little Waipa Stm @ Arapuni - Putaruru Rd	4	70	69	43	100	30	0.18	70
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	4	1540	890	380	4000	2220	0.96	490
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	4	248	250	70	420	305	-0.01	295
Mangaone Stm @ Annebrooke Rd Br	4	2555	575	70	9000	4630	1.14	450
Mangaonua Stm @ Hoeka Rd	4	1370	1100	180	3100	2360	0.28	405
Mangaonua Stm @ Te Miro Rd	4	117	122	14	210	187	-0.02	210
Mangatangi River @ SH2 Maramarua	-	-	-	-	-	-	-	-
Mangatawhiri River @ Lyons Rd At Buckingham Br	-	-	-	-	-	-	-	-
Mangawara Stm @ Rutherford Rd Br	-	-	-	-	-	-	-	-
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	4	4575	520	260	17000	8600	1.15	560
Matahuru Stm @ Waiterimu Road Below Confluence	-	-	-	-	-	-	-	-
Ohaeroa Stm @ SH22 Br	-	-	-	-	-	-	-	-
Opuatia Stm @ Ponganui Rd	4	37	41	11	56	34	-0.37	56
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	4	71	43	40	160	61	1.15	53
Waerenga Stm @ Taniwha Rd	4	46	38	27	80	31	0.93	108
Waitawhiriwhiri Stm @ Edgecumbe Street	4	1958	545	240	6500	3355	1.13	500
Whakapipi Stm @ SH22 Br	-	-	-	-	-	-	-	-
Whakauru Stm @ U/S SH1 Br	4	491	146	70	1600	771	1.15	156
Whangamarino River @ Island Block Rd	-	-	-	-	-	-	-	-
Whangamarino River @ Jefferies Rd Br	-	-	-	-	-	-	-	-
Whangape Stm @ Rangiriri-Glen Murray Rd	-	-	-	-	-	-	-	-

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

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	-	-	-	-	-	-	-	-
Mangaohoi Stm @ South Branch Maru Rd	4	245	43	13	880	457	1.14	68
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	-	-	-	-	-	-	-	-
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	-	-	-	-	-	-	-	-
Mangapu River @ Otorohanga	4	1583	1450	130	3300	2135	0.26	565
Mangatutu Stm (Waikeria) @ Walker Rd Br	4	543	275	23	1600	1014	0.88	230
Mangauika Stm @ Te Awamutu Borough W/S Intake	4	9	9	3	14	7	0.00	10
Ohote Stm @ Whatawhata/Horotiu Rd	4	4393	760	50	16000	8615	1.13	215
Puniu River @ Bartons Corner Rd Br	-	-	-	-	-	-	-	-
Waipa River @ Mangaokewa Rd	-	-	-	-	-	-	-	-
Waipa River @ Pirongia-Ngutunui Rd Br	4	245	170	70	570	280	0.96	305
Waipa River @ SH3 Otorohanga	4	2008	750	30	6500	3285	1.11	235
Waitomo Stm @ SH31 Otorohanga	4	138	145	60	200	95	-0.32	510
Waitomo Stm @ Tumutumu Rd	4	145	130	80	240	110	0.51	215

-	-	-	-	-	-	-	-	-
4	161	50	3	540	294	1.11	30	
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
4	888	55	43	3400	1684	1.15	62	
4	107	61	8	300	153	1.02	121	
4	24	27	10	32	15	-0.70	11	
4	1398	260	70	5000	2545	1.15	71	
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
4	129	105	47	260	112	0.83	78	
4	891	210	45	3100	1528	1.14	80	
4	37	34	23	56	23	0.47	93	
4	140	50	8	450	221	1.12	105	

Kawaunui Stm @ SH5 Br	4	328	300	130	580	225	0.50	625
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	4	3185	1845	50	9000	6130	0.73	255
Mangakara Stm (Reporoa) @ SH5	4	298	310	110	460	325	-0.03	165
Mangakino Stm (Whakamaru) @ Sandel Rd	-	-	-	-	-	-	-	-
Otamakokore Stm @ Hossack Rd	4	405	250	120	1000	450	1.07	230
Pueto Stm @ Broadlands Rd Br	4	28	23	16	50	20	0.96	21
Tahunaatara Stm @ Ohakuri Rd	4	208	195	90	350	175	0.30	150
Torepatutahi Stm @ Vaile Rd Br	-	-	-	-	-	-	-	-
Waiotapu Stm @ Campbell Rd Br	4	1	1	1	2	1	0.65	2
Waiotapu Stm @ Homestead Rd Br	-	-	-	-	-	-	-	-
Waipapa Stm (Mokai) @ Tirohanga Rd Br	4	93	92	50	140	74	0.06	90
Whirinaki Stm @ Corbett Rd	-	-	-	-	-	-	-	-

4	134	117	13	290	192	0.35	405
4	121	91	40	260	121	0.91	88
4	167	125	26	390	217	0.76	165
-	-	-	-	-	-	-	-
4	79	74	1	170	101	0.26	96
4	13	10	1	31	15	0.72	14
4	52	52	34	70	20	0.06	49
-	-	-	-	-	-	-	-
4	58	16	1	200	114	1.09	7
-	-	-	-	-	-	-	-
4	38	35	18	64	28	0.47	42
-	-	-	-	-	-	-	-

West Coast								
Awakino River @ Gribbon Rd	4	1823	590	110	6000	3355	1.09	110
Awakino River @ SH3 Awakau Rd Junction	4	5790	2555	50	18000	11420	0.92	180
Manganui River @ Off Manganui Rd	4	4558	3575	80	11000	8885	0.26	180
Mangaotaki River @ SH3 Br	-	-	-	-	-	-	-	-
Marokopa River @ Speedies Rd (Off Te Anga Rd)	4	88	86	50	130	74	0.03	140
Mokau River @ Awakau Rd	4	1510	1485	70	3000	2780	0.01	550
Mokau River @ Mangaokewa Rd (Off SH30)	4	1153	785	40	3000	2195	0.51	150
Mokau River @ Totoro Rd Recorder	4	15085	1085	170	58000	29830	1.15	350
Mokauiti Stm @ Three Way Point - Aria	4	6723	1920	50	23000	13155	1.08	270
Ohautira Stm @ Waingaro Te Uku Rd	4	468	450	70	900	765	0.02	445
Oparau River @ Langdon Rd (Off Okupata Rd)	-	-	-	-	-	-	-	-
Tawarau River @ Off Speedies Rd	-	-	-	-	-	-	-	-
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	-	-	-	-	-	-	-	-
Waitetuna River @ Te Uku-Waingaro Rd	4	273	285	200	320	85	-0.52	375

4	2657	1514	2	7600	5286	0.70	40
4	1830	1158	5	5000	3640	0.57	23
4	2808	2611	10	6000	5585	0.03	42
-	-	-	-	-	-	-	-
4	29	31	5	50	33	-0.16	39
4	537	515	18	1100	1026	0.01	44
4	853	504	3	2400	1695	0.66	58
4	5062	618	10	19000	10077	1.14	52
4	2838	667	20	10000	5624	1.10	47
4	61	61	21	100	69	-0.01	83
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4	90	77	46	160	64	0.82	130

Hinemaiaia River @ SH1	4	24	23	10	40	17	0.27	28
Kuratau River @ 43 Te Rae Street	4	46	47	40	50	6	-0.69	45
Kuratau River @ SH41 Moerangi	-	-	-	-	-	-	-	-
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	4	68	45	40	140	55	1.12	79
Tauranga-Taupo River @ Te Kono Slackline	-	-	-	-	-	-	-	-
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Cana	-	-	-	-	-	-	-	-
Tokaanu Stm @ Off SH41 Turangi	-	-	-	-	-	-	-	-
Waihaha River @ SH32	4	10	3	1	36	19	1.13	11
Waitahanui River @ Blake Rd	4	44	30	16	100	42	1.05	26
Whanganui Stm @ Lakeside Lake Taupo	4	88	20	10	300	155	1.14	21
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	4	286	55	32	1000	489	1.15	74
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	4	94	70	34	200	103	0.84	62

4	1	1	1	3	2	1.03	2
4	11	13	1	20	12	-0.40	18
-	-	-	-	-	-	-	-
4	95	71	1	240	149	0.67	88
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
4	4	3	1	8	7	0.13	4
4	6	5	1	15	9	0.74	5
4	48	30	1	130	75	0.89	6
4	53	45	1	120	75	0.44	39
4	25	25	1	48	39	-0.02	35

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

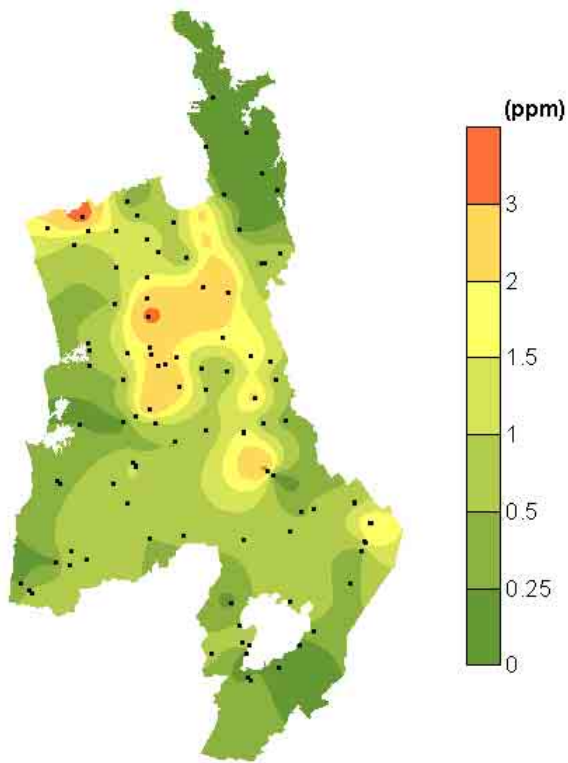
Temperature (°C)

Location	Count	Mean	Median	Min	Max	IQR	Skew	00-04 Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	13.1	12.3	5.7	21.1	6.2	0.06	13.3
Kauaeranga River @ Smiths Cableway/Recorder	12	13.7	12.2	6.2	23.1	8.3	0.32	13.9
Ohinemuri River @ Queens Head	12	15.5	14.9	9.4	24.0	6.0	0.48	16.0
Ohinemuri River @ SH25 Br	12	15.3	15.6	9.5	23.3	5.4	0.39	15.6
Tairua River @ Morrisons Br Hikuai	12	14.9	14.3	8.0	24.2	6.5	0.41	14.8
Tapu River @ Tapu-Coroglen Rd	12	13.5	13.0	5.3	22.0	7.0	-0.03	13.4
Waiau River @ E309 Rd Ford	12	13.5	13.0	6.8	20.4	6.1	-0.01	13.8
Waitekauri River @ U/S Ohinemuri Conflu	12	14.3	14.0	7.9	22.4	5.7	0.23	14.9
Waiwawa River @ SH25 Coroglen	12	14.3	13.6	7.9	23.5	7.5	0.41	15.0
Wharekawa River @ SH25	12	14.6	14.3	7.5	22.3	7.0	0.13	14.7
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	12.7	13.1	8.2	17.9	4.2	0.08	14.1
Oraka Stm @ Lake Rd	12	13.8	14.2	10.3	17.0	3.9	-0.21	13.9
Piako River @ Kiwitahi	12	14.7	14.4	7.0	23.5	6.3	0.20	15.2
Piako River @ Paeroa-Tahuna Rd Br	12	14.7	14.6	7.0	22.8	6.5	0.08	15.3
Piakonui Stm @ Piakonui Rd	12	12.4	12.2	7.4	17.7	4.0	0.13	12.7
Waihou River @ Okauia	12	13.8	14.3	10.4	16.9	3.9	-0.24	14.1
Waihou River @ Whites Rd	12	13.1	13.2	11.8	14.0	0.8	-0.50	13.2
Waihotu Stm @ Waihotu Rd (Off SH5)	12	10.6	11.0	7.1	14.2	3.3	0.01	10.8
Waiomou Stm @ Matamata-Tauranga Rd	12	13.0	13.7	9.5	16.8	3.9	-0.06	13.5
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	14.6	15.8	8.6	21.9	6.7	-0.03	15.7
Waitoa River @ Landsdowne Rd Br	12	14.5	14.4	7.0	22.6	6.6	0.10	14.6
Waitoa River @ Mellon Rd Recorder	12	14.9	14.8	7.7	22.7	6.3	0.11	15.0
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otua Rd Br opp Moseley Rd	12	15.6	16.9	9.7	22.7	7.6	-0.14	16.8
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	13.2	13.5	8.7	16.6	5.7	-0.18	14.7
Karapiro Stm @ Hickey Rd Bridge	12	13.9	13.9	6.6	20.8	6.4	-0.09	14.6
Kirikiriroa Stm @ Tauhara Dr	12	14.6	14.8	9.6	18.9	4.8	-0.25	15.2
Komakorau Stm @ Henry Rd	12	13.9	14.1	9.7	17.6	4.2	-0.18	14.6
Little Waipa Stm @ Arapuni - Putaruru Rd	12	13.7	14.1	10.3	16.4	3.2	-0.34	14.1
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	14.4	14.7	7.8	20.3	5.9	-0.22	14.9
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	13.0	13.1	9.1	18.3	4.1	0.31	13.6
Mangaone Stm @ Annebrooke Rd Br	12	13.0	13.5	7.1	17.8	5.0	-0.36	13.6
Mangaonua Stm @ Hoeka Rd	12	13.9	14.1	7.9	21.2	5.3	0.19	14.3
Mangaonua Stm @ Te Miro Rd	12	13.5	13.9	6.8	20.1	5.7	-0.08	14.2
Mangatangi River @ SH2 Maramarua	12	14.8	15.7	9.4	21.3	6.0	-0.02	15.8
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	15.6	17.0	10.0	23.6	5.9	0.11	16.8
Mangawara Stm @ Rutherford Rd Br	12	13.9	14.5	8.4	21.1	6.7	0.15	14.6
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	13.5	14.1	8.1	17.5	4.9	-0.36	14.3
Matahuru Stm @ Waiterimu Road Below Confluence	12	13.7	14.2	8.2	21.1	6.8	0.17	14.8
Ohaeroa Stm @ SH22 Br	12	13.2	14.0	8.0	19.6	6.4	-0.01	14.3
Opuatia Stm @ Ponganui Rd	12	13.4	14.4	7.5	20.6	7.0	-0.04	14.7
Pokaiwhenua Stm @ Arapuni - Putaruru Rd	12	13.3	13.7	9.6	17.6	3.7	0.01	13.8
Waerenga Stm @ Taniwha Rd	12	12.8	13.7	7.7	19.9	5.9	0.08	13.9
Waitawhiriwhiri Stm @ Edgecumbe Street	12	15.8	15.8	10.7	20.6	4.6	-0.16	16.1
Whakapipi Stm @ SH22 Br	12	14.3	15.2	9.5	19.6	5.6	-0.18	15.1
Whakauru Stm @ U/S SH1 Br	12	11.6	11.9	8.1	15.3	3.0	0.07	12.3
Whangamarino River @ Island Block Rd	12	15.8	17.1	8.8	23.6	7.5	-0.06	16.8
Whangamarino River @ Jefferies Rd Br	12	13.3	14.0	7.3	21.8	7.2	0.24	14.3
Whangape Stm @ Rangiriri-Glen Murray Rd	12	15.5	16.3	9.8	23.5	6.7	0.25	16.5

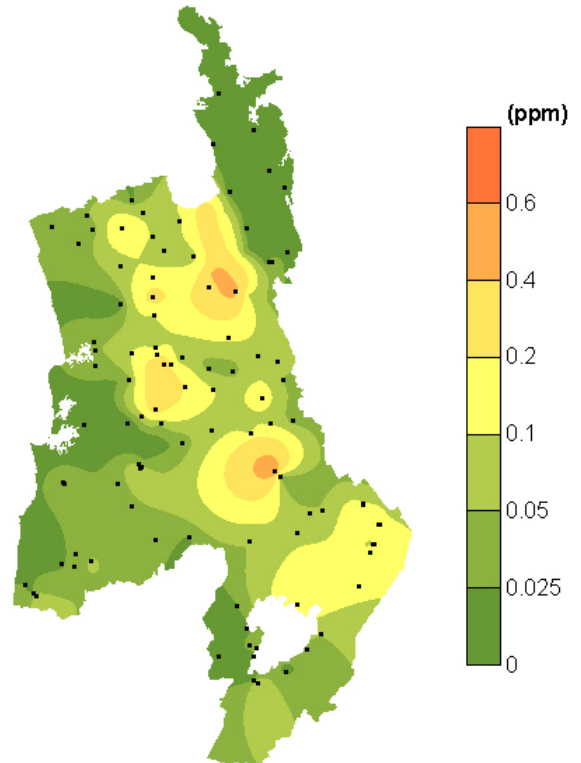
IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions

Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	13.1	13.4	8.6	16.2	4.2	-0.46	14.1
Mangaohi Stm @ South Branch Maru Rd	12	12.7	12.4	10.0	15.8	1.5	0.44	13.2
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	11.9	11.2	7.9	15.8	4.8	0.11	12.5
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	15.1	14.8	9.8	21.2	4.7	0.28	15.6
Mangapu River @ Otorohanga	12	14.1	13.9	9.4	19.3	5.1	0.12	14.6
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	13.0	13.1	8.2	16.9	3.9	-0.19	13.2
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	11.3	11.8	8.7	12.8	2.3	-0.54	12.0
Ohote Stm @ Whatawhata/Horotiu Rd	12	15.1	15.2	8.0	21.2	6.9	-0.18	15.3
Puniu River @ Bartons Corner Rd Br	12	14.2	14.1	9.2	19.7	4.5	0.09	14.5
Waipa River @ Mangaokewa Rd	12	11.8	11.5	7.7	16.4	4.9	0.17	12.3
Waipa River @ Pirongia-Ngutunui Rd Br	12	13.6	14.0	9.5	17.0	6.3	-0.13	14.8
Waipa River @ SH3 Otorohanga	12	13.7	13.2	8.5	19.2	5.4	0.22	14.7
Waitomo Stm @ SH31 Otorohanga	12	13.7	14.2	10.7	16.6	4.4	-0.18	14.8
Waitomo Stm @ Tumutumu Rd	12	13.0	13.2	10.7	15.9	2.9	0.14	13.7
Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	13.6	13.9	9.4	17.3	3.8	-0.17	14.1
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	12.1	12.4	9.1	15.0	2.9	-0.17	12.4
Mangakara Stm (Reporoa) @ SH5	12	12.7	12.9	9.3	15.9	2.8	-0.12	13.0
Mangakino Stm (Whakamaru) @ Sandel Rd	12	11.4	12.3	8.3	16.7	3.3	0.52	12.0
Otamakokore Stm @ Hossack Rd	12	19.8	19.9	14.5	25.1	3.5	-0.05	20.8
Pueto Stm @ Broadlands Rd Br	12	12.7	12.9	10.5	14.8	2.1	-0.12	13.3
Tahunaatara Stm @ Ohakuri Rd	12	12.7	13.1	8.8	17.1	4.8	-0.08	13.2
Torepatutahi Stm @ Vaile Rd Br	12	13.2	13.3	9.6	16.4	3.5	-0.23	13.9
Waiotapu Stm @ Campbell Rd Br	12	28.4	28.5	23.0	32.8	3.8	-0.33	28.7
Waiotapu Stm @ Homestead Rd Br	12	17.9	18.4	12.9	22.6	3.8	-0.20	19.4
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	21.5	21.5	17.0	25.7	2.2	-0.07	22.1
Whirinaki Stm @ Corbett Rd	12	11.8	11.9	10.2	12.9	1.3	-0.32	11.8
West Coast								
Awakino River @ Gribbon Rd	12	12.3	11.2	8.1	18.9	3.9	0.60	12.6
Awakino River @ SH3 Awakau Rd Junction	12	13.3	13.4	9.1	19.0	4.5	0.26	13.9
Manganui River @ Off Manganui Rd	12	12.8	13.0	8.1	17.6	4.9	-0.06	13.5
Mangaotaki River @ SH3 Br	12	12.3	11.7	8.4	16.1	4.4	0.02	13.1
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	12.6	12.4	9.0	15.6	3.7	-0.13	13.7
Mokau River @ Awakau Rd	12	13.3	13.8	9.1	18.5	4.8	0.01	14.4
Mokau River @ Mangaokewa Rd (Off SH30)	12	11.5	11.5	7.3	15.2	4.1	-0.08	12.0
Mokau River @ Totoro Rd Recorder	12	13.2	13.0	8.9	18.1	5.4	0.06	13.5
Mokauiti Stm @ Three Way Point - Aria	12	13.2	12.5	8.3	19.3	5.7	0.21	13.8
Ohautira Stm @ Waingaro Te Uku Rd	12	11.4	11.4	8.1	14.8	4.8	-0.06	12.6
Oparau River @ Langdon Rd (Off Okupata Rd)	12	12.8	13.1	8.7	16.7	3.4	-0.29	14.0
Tawarau River @ Off Speedies Rd	12	12.7	12.7	9.1	15.5	3.8	-0.21	13.3
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	13.7	14.4	9.2	18.1	6.9	-0.19	14.9
Waitetuna River @ Te Uku-Waingaro Rd	12	12.7	13.0	8.8	16.0	4.9	-0.20	13.9
Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	10.7	11.2	6.9	16.3	4.4	0.35	11.4
Kuratau River @ 43 Te Rae Street	12	11.8	12.2	7.5	17.5	5.6	0.14	12.6
Kuratau River @ SH41 Moerangi	12	8.5	8.7	5.7	12.6	3.0	0.30	8.9
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	10.5	11.0	8.2	12.9	2.5	-0.05	10.9
Tauranga-Taupo River @ Te Kono Slackline	12	9.3	9.6	6.0	15.2	4.0	0.61	9.7
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Cana	12	11.5	12.0	6.4	19.4	5.5	0.48	12.5
Tokaanu Stm @ Off SH41 Turangi	12	11.9	11.9	11.5	12.3	0.4	0.30	11.8
Waihaha River @ SH32	12	10.0	10.4	6.9	14.5	3.3	0.36	10.4
Waitahanui River @ Blake Rd	12	10.2	10.4	8.3	12.0	1.7	-0.23	10.5
Whanganui Stm @ Lakeside Lake Taupo	12	10.3	10.5	7.0	16.8	3.5	0.93	10.8
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	10.9	11.2	7.5	15.7	3.3	0.39	11.5
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	10.7	10.9	7.8	14.8	3.0	0.40	11.2

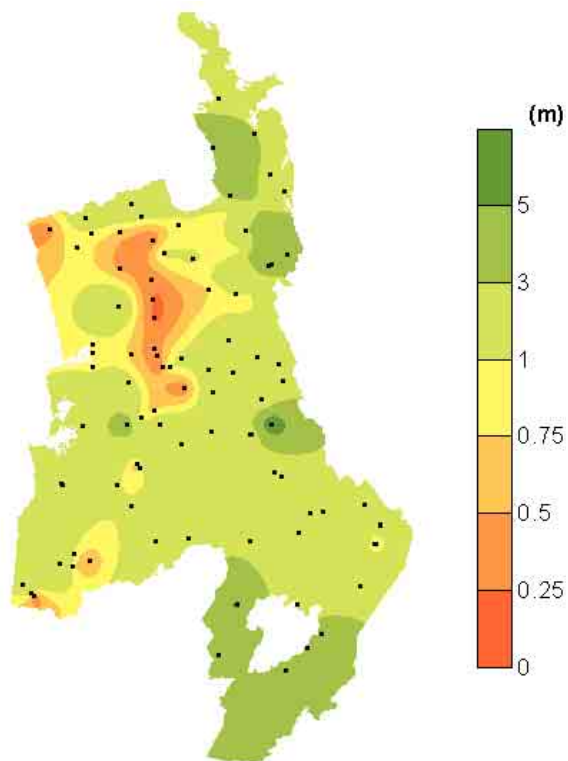
IQR = Inter quartile range; Underlined values indicate parameters having non-normal distributions



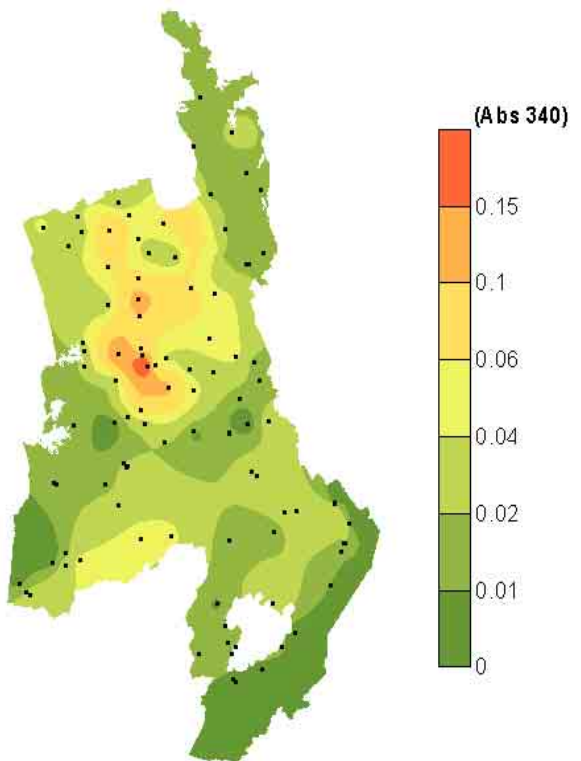
a: Total Nitrogen



b: Total Phosphorus



c: Black Disk



d: Dissolved Colour

Figure 2: Spatial contour plots of four water quality parameters (based on 5 year median values); a: Total Nitrogen, b: Total Phosphorus, c: Black disk, d: Dissolved colour (Abs 340).

3.2 Regional Rivers Monitoring Programme

Comparison with Water Quality Guidelines and Standards

Number of samples (2004) that comply with Satisfactory Water Quality Standards and with Excellent Water Quality Standards and Guidelines

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

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

Waipa River and Tributaries																				
Kaniwhaniwha Stm @ Wright Rd	12	12	6	12	11	8	5	1	n/a	n/a	8	10	0	12	7	0	0	0	n/a	n/a
Mangaohoi Stm @ South Branch Maru Rd	12	12	11	12	10	2	3	3	3/4	Y	12	11	7	12	7	0	0	0	2/4	N
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	12	7	12	12	5	0	1	n/a	n/a	12	11	1	11	9	0	0	0	n/a	n/a
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	10	12	0	12	7	0	0	0	n/a	n/a	4	10	0	6	4	0	0	0	n/a	n/a
Mangapu River @ Otorohanga	12	12	2	12	11	0	0	0	1/4	N	11	9	0	12	3	0	0	0	0/4	N
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	12	6	12	11	6	2	5	3/4	N	12	9	2	12	7	0	0	0	2/4	N
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	12	12	12	12	12	12	11	4/4	Y	12	11	12	12	8	7	0	7	4/4	Y
Ohote Stm @ Whatawhata/Horotiu Rd	0	11	0	12	9	0	0	0	2/4	N	0	3	0	7	4	0	0	0	1/4	N
Puniu River @ Bartons Corner Rd Br	11	12	4	12	10	1	0	1	n/a	n/a	9	9	0	11	5	0	0	0	n/a	n/a
Waipa River @ Mangaokewa Rd	12	12	12	12	12	12	1	10	n/a	n/a	12	9	8	12	10	1	0	0	n/a	n/a
Waipa River @ Pirongia-Ngutunui Rd Br	12	12	3	12	12	2	0	1	3/4	N	10	12	0	12	5	0	0	0	0/4	N
Waipa River @ SH3 Otorohanga	12	12	7	12	12	8	0	3	1/4	N	12	9	1	11	4	0	0	0	1/4	N
Waiitomo Stm @ SH31 Otorohanga	12	12	2	12	11	4	0	2	4/4	N	12	9	0	12	5	0	0	0	0/4	N
Waiitomo Stm @ Tumutumu Rd	12	12	3	12	11	7	0	2	4/4	N	12	10	0	12	7	0	0	0	0/4	N
Tributaries to the Upper Waikato River																				
Kawaunui Stm @ SH5 Br	11	12	8	11	10	0	0	2	3/4	N	3	10	0	8	6	0	0	0	0/4	N
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	12	5	12	12	1	3	0	2/4	N	12	12	0	12	9	0	0	0	1/4	N
Mangakara Stm (Reporoa) @ SH5	12	12	4	12	11	0	0	0	4/4	N	11	12	0	12	9	0	0	0	0/4	N
Mangakino River (Whakamaru) @ Sandel Rd	12	12	10	12	12	1	0	7	n/a	n/a	11	12	7	12	10	0	0	1	n/a	n/a
Otamakokore Stm @ Hossack Rd	11	12	10	12	1	0	0	4	3/4	N	9	9	2	11	0	0	0	0	0/4	N
Pueto Stm @ Broadlands Rd Br	12	12	12	12	11	0	9	11	4/4	Y	12	11	5	12	7	0	0	0	4/4	Y
Tahunaaata Stm @ Ohakuri Rd	12	12	9	12	12	1	0	5	4/4	N	12	12	4	12	9	0	0	0	0/4	N
Torepatutahi Stm @ Vaile Rd Br	12	12	12	12	10	0	4	n/a	n/a	n/a	11	12	12	12	7	0	0	n/a	n/a	n/a
Waiotapu Stm @ Campbell Rd Br	12	0	5	3	0	0	0	2	4/4	Y	4	0	0	0	0	0	0	0	4/4	Y
Waiotapu Stm @ Homestead Rd Br	11	12	0	12	5	0	0	0	n/a	n/a	2	5	0	0	0	0	0	0	n/a	n/a
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	12	7	12	0	0	0	1	4/4	Y	12	12	0	12	0	0	0	0	1/4	N
Whirinaki Stm @ Corbett Rd	12	12	12	12	11	0	0	n/a	n/a	n/a	12	12	12	12	7	0	0	n/a	n/a	n/a
West Coast																				
Awakino River @ Gribbon Rd	12	12	9	12	12	11	12	8	2/4	N	12	11	7	12	8	1	2	2	0/4	N
Awakino River @ SH3 Awakau Rd Junction	12	12	7	12	12	8	10	3	2/4	N	12	12	2	12	8	1	1	0	1/4	N
Manganui River @ Off Manganui Rd	12	12	6	12	11	6	12	5	2/4	N	12	11	3	12	9	0	1	0	0/4	N
Mangaotaki River @ SH3 Br	12	12	5	12	12	6	0	1	n/a	n/a	12	12	1	12	8	0	0	0	n/a	n/a
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	12	8	12	12	8	10	3	4/4	Y	12	11	3	12	9	0	0	0	2/4	N
Mokau River @ Awakau Rd	12	12	1	12	11	1	1	0	2/4	N	12	12	0	12	8	0	0	0	0/4	N
Mokau River @ Mangaokewa Rd (Off SH30)	12	12	9	12	12	7	5	6	2/4	N	12	10	2	12	11	0	0	0	1/4	N
Mokau River @ Totoro Rd Recorder	12	12	3	12	12	5	0	1	2/4	N	12	12	1	12	7	0	0	0	0/4	N
Mokauti Stm @ Three Way Point - Aria	12	12	0	12	12	2	3	1	2/4	N	11	8	0	12	5	0	0	0	1/4	N
Ohautira River @ Waingaro Te Uku Rd	12	12	1	12	12	6	6	0	2/4	N	12	11	0	12	11	0	0	0	0/4	N
Oparau River @ Langdon Rd (Off Okupata Rd)	12	12	8	12	10	9	11	5	n/a	n/a	12	12	1	12	8	0	0	0	n/a	n/a
Tawarau River @ Off Speedies Rd	12	12	8	12	12	8	8	3	n/a	n/a	12	11	2	12	9	0	0	0	n/a	n/a
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	12	1	12	11	3	3	0	n/a	n/a	10	12	0	12	6	0	0	0	n/a	n/a
Waitetuna River @ Te Uku-Waingaro Rd	12	12	1	12	12	7	5	1	4/4	N	12	12	0	12	9	0	0	0	0/4	N
Inflows to Lake Taupo																				
Hinemaia River @ SH1	12	12	12	12	12	10	12	10	4/4	Y	12	12	9	12	11	0	3	1	4/4	Y
Kuratau River @ 43 Te Rae Street	12	12	12	12	12	12	1	n/a	4/4	Y	12	12	10	12	10	1	0	n/a	4/4	N
Kuratau River @ SH41 Moerangi	12	12	12	12	12	12	12	11	n/a	n/a	12	5	10	12	12	9	0	4	n/a	n/a
Mapara Stm @ Off Mapara Rd (Whakaipo Res)	12	12	11	12	12	0	0	2	4/4	Y	4	12	0	12	12	0	0	0	3/4	N
Tauranga-Taupo River @ Te Kono Slackline	12	12	11	12	12	12	12	10	n/a	n/a	12	12	8	12	12	0	6	3	n/a	n/a
Tokaanu Power Station Tailrace Canal @ SH41 Bridge	12	12	11	12	12	12	12	n/a	n/a	n/a	12	12	9	12	11	0	2	n/a	n/a	n/a
Tokaanu Stm @ Off SH41 Turangi	12	12	12	12	12	0	9	n/a	n/a	n/a	0	12	12	12	7	0	0	n/a	n/a	n/a
Waihaha River @ SH32	12	12	12	12	12	12	12	11	4/4	Y	12	12	11	12	12	0	0	8	4/4	Y
Waitahanui River @ Blake Rd	12	12	12	12	12	1	12	11	4/4	Y	12	12	10	12	12	0	0	4	3/4	N
Whanganui Stm @ Lakeside Lake Taupo	12	12	11	12	12	11	3	n/a	4/4	Y	12	12	7	12	11	0	0	n/a	3/4	Y
Whareroa Stm @ Lakeside Lake Taupo	12	12	9	12	12	9	0	n/a	3/4	Y	12	12	2	12	11	0	0	n/a	2/4	N
Whareroa Stm @ Whareroa Station Bridge	12	12	9	12	12	10	0	n/a	4/4	Y	12	12	3	12	12	0	0	n/a	2/4	N

E.coli-m refers to whether the 2004 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)	Environment Waikato 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 median 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 Rivers Water Quality Monitoring Parameters

Water Quality Parameter	Reason For Monitoring	Parameter Monitored ¹	Comments ²
Dissolved Oxygen	<ul style="list-style-type: none"> - requirement for aquatic life - indicator of organic pollution - indicator of photosynthesis (plant growth) 	DO (conc.) DO (%sat.)	routine (field) routine (field)
Temperature	<ul style="list-style-type: none"> - indicator of biological activity - requirement for aquatic life - mixing processes - modelling studies (e.g. nutrient uptake) 	Temperature	routine (field)
Conductivity	<ul style="list-style-type: none"> - indicator of total salts dissolved in water 	Conductivity	routine
pH	<ul style="list-style-type: none"> - aquatic life protection - indicator of industrial discharges, mining 	pH	routine
Clarity - turbidity - black disk (visual clarity)	<ul style="list-style-type: none"> - aesthetic appearance - light availability for excessive plant growth - aquatic life protection - indicator of catchment condition, land use 	Turbidity Black disk	routine routine (field)
Colour - light absorption	<ul style="list-style-type: none"> - light availability for excessive plant growth - indicator of presence of organic matter 	Filtered Absorbance at: 340,440,780nm	routine
Nutrients (N and P)	<ul style="list-style-type: none"> - enrichment, excessive plant growth - nutrient limitation for plant/algal growth 	NO ₃ -N+NO ₂ -N NH ₄ -N,TKN DRP, TP	routine
Faecal Indicators - <i>E. coli</i> - enterococci - faecal coliforms	<ul style="list-style-type: none"> - indicator of pollution with faecal matter - disease risk for swimming etc. 	E.coli ENT FC	quarterly

¹ see the next table for the meaning of the abbreviations.

² routine means sampled monthly.

Regional Rivers Monitoring - Water Quality Parameters & Analytical Methods of Analysis

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
A780F	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 (WTW DO meter, model 340A)
DO (% Sat)	Dissolved Oxygen (percent saturation)	Field measurement (WTW DO meter, model 340A)
pH	pH	Lab Meter @ 25°C. APHA method 4500-H+B
TEMP	Temperature	Field measurement (WTW DO Meter, model 340A)
E. coli	Escherichia coli	Membrane Filtration (mFC Agar) confirmation by NA-MUG Agar. APHA method 9222G
ENT	Enterococci bacteria	Membrane Filtration (mE Agar) confirmation by EIA Agar. APHA method 9230
FC	Faecal Coliforms	Membrane Filtration (mFC Agar). APHA method 9222
NH₄-N	Ammoniacal Nitrogen	Phenol/Hypochlorite Colorimetry. Flow injection analyser. APHA method 4500-NC (modified)
NNN	Nitrite/Nitrate Nitrogen	Automated Cadmium reduction. Flow injection analyser. APHA method 4500 – NO ₃ (proposed).
TKN	Total Kjeldahl-Nitrogen	Acid digestion. Phenol/Hypochlorite Colorimetry. APHA method 4500-N _{org} C (modified)
TN	Total Nitrogen	Calculated from NNN + TKN (Nitrite/Nitrate Nitrogen + Total Kjeldahl-Nitrogen)
DRP	Dissolved Reactive Phosphorus	Molybdenum Blue Colorimetry. Flow injection analyser. APHA 4500 PG (proposed)
TP	Total Phosphorus	Persulphate digestion, Colorimetry. NAWASCO method 8.
TURB	Turbidity	Turbidity Meter. APHA method 2130B

¹ Parameter Id refers to Environment Waikato's water quality database (HYDROL) parameter short name