

Regional Rivers

WATER QUALITY MONITORING PROGRAMME

Data Report 2003

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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 9th since the implementation of the Regional Rivers Monitoring Programme (RERIMP) in 1993¹ and follows the format of the previous data report (Smith, 2003). 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 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 2003 summary statistics tabulated by parameter and reported together with 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, 2004 (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 2003. 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
Median enterococci (no./100 mL)	human health	<33	<6

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 (Byers, *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. $>x = x$).

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/healthyivers/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 2003. Section 3.2 compares the results with water quality guidelines and standards for compliance.

3.1 Regional Rivers Monitoring Programme

Summary Statistics

Location	Absorbance of filtered sample at 340 nm (units: cm ⁻¹)								Absorbance of filtered sample at 440 nm (units: cm ⁻¹)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Coromandel																
Hikutaia River @ Old Maratoto Rd	12	0.019	0.018	0.013	0.037	0.005	<u>2.08</u>	0.018	12	0.004	0.004	0.001	0.010	0.002	1.47	0.004
Kauaeranga River @ Smiths Cableway/Recorder	12	0.025	0.018	0.010	0.099	0.016	<u>2.56</u>	0.016	12	0.005	0.004	0.001	0.020	0.004	<u>2.28</u>	0.003
Ohinemuri River @ Queens Head	12	0.018	0.015	0.012	0.053	0.007	<u>2.50</u>	0.016	12	0.004	0.003	0.001	0.012	0.003	<u>1.78</u>	0.003
Ohinemuri River @ SH25 Br	12	0.013	0.009	0.007	0.050	0.005	<u>2.74</u>	0.010	12	0.003	0.003	0.001	0.011	0.004	1.50	0.002
Tairua River @ Morrisons Br Hikuai	12	0.021	0.017	0.011	0.074	0.008	<u>2.73</u>	0.017	12	0.005	0.004	0.001	0.014	0.002	<u>2.02</u>	0.004
Tapu River @ Tapu-Coroglen Rd	12	0.016	0.011	0.006	0.068	0.006	<u>2.64</u>	0.012	12	0.003	0.002	0.001	0.015	0.002	<u>2.60</u>	0.003
Waiau River @ E309 Rd Ford	12	0.019	0.012	0.009	0.085	0.003	<u>2.82</u>	0.014	12	0.004	0.003	0.001	0.018	0.002	<u>2.67</u>	0.003
Waitekauri River @ U/S Ohinemuri Conflu	12	0.014	0.011	0.008	0.056	0.003	<u>2.94</u>	0.012	12	0.003	0.003	0.001	0.012	0.002	<u>2.17</u>	0.003
Waiwawa River @ SH25 Coroglen	12	0.033	0.026	0.014	0.110	0.022	<u>2.14</u>	0.024	12	0.007	0.006	0.001	0.024	0.005	<u>1.97</u>	0.006
Wharekawa River @ SH25	12	0.022	0.018	0.014	0.069	0.007	<u>2.72</u>	0.019	12	0.005	0.004	0.001	0.015	0.002	<u>1.70</u>	0.004
Hauraki																
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.034	0.023	0.015	0.085	0.026	1.28	0.020	12	0.006	0.004	0.002	0.016	0.005	1.14	0.004
Oraka Stm @ Lake Rd	12	0.015	0.013	0.008	0.036	0.008	1.47	0.013	12	0.003	0.003	0.001	0.007	0.002	0.86	0.002
Piako River @ Kiwitahi	12	0.049	0.046	0.027	0.094	0.023	1.12	0.053	12	0.009	0.009	0.006	0.014	0.004	0.61	0.009
Piako River @ Paeroa-Tahuna Rd Br	12	0.075	0.074	0.037	0.149	0.022	1.43	0.076	12	0.013	0.013	0.006	0.022	0.005	0.63	0.013
Piakonui Stm @ Piakonui Rd	12	0.034	0.032	0.019	0.057	0.018	0.67	0.033	12	0.006	0.006	0.004	0.010	0.003	0.51	0.006
Waihou River @ Okauia	12	0.015	0.014	0.006	0.029	0.007	0.96	0.013	12	0.003	0.003	0.001	0.006	0.002	0.50	0.002
Waihou River @ Whites Rd	12	0.002	0.001	0.001	0.005	0.001	1.61	0.001	12	0.001	0.001	0.001	0.002	0.000	<u>3.02</u>	0.001
Waiohotu Stm @ Waiohotu Rd (Off SH5)	12	0.039	0.033	0.021	0.068	0.021	0.90	0.028	12	0.008	0.008	0.004	0.014	0.004	0.78	0.006
Waiomou Stm @ Matamata-Tauranga Rd	12	0.021	0.019	0.010	0.040	0.007	1.18	0.016	12	0.005	0.004	0.002	0.009	0.002	1.09	0.003
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.062	0.058	0.021	0.112	0.023	0.64	0.063	12	0.012	0.011	0.005	0.022	0.008	0.71	0.012
Waitoa River @ Landsdowne Rd Br	12	0.047	0.044	0.019	0.087	0.009	1.04	0.042	12	0.008	0.008	0.004	0.013	0.003	0.69	0.008
Waitoa River @ Mellon Rd Recorder	12	0.046	0.043	0.014	0.090	0.022	0.68	0.042	12	0.008	0.007	0.002	0.014	0.005	0.31	0.007
Tributaries to the lower Waikato River																
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.051	0.047	0.027	0.111	0.019	1.49	0.043	12	0.009	0.009	0.004	0.022	0.006	1.18	0.008
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.028	0.026	0.016	0.042	0.015	0.27	0.028	12	0.004	0.004	0.001	0.007	0.003	0.09	0.004
Karapiro Stm @ Hickey Rd Bridge	12	0.049	0.046	0.031	0.081	0.020	0.79	0.048	12	0.008	0.008	0.004	0.012	0.003	0.12	0.008
Kirikiriira Stm @ Tauhara Dr	12	0.050	0.051	0.019	0.080	0.015	-0.09	0.063	12	0.007	0.007	0.003	0.014	0.004	0.85	0.010
Komakorau Stm @ Henry Rd	12	0.098	0.088	0.074	0.210	0.023	<u>2.62</u>	0.105	12	0.014	0.013	0.008	0.029	0.005	<u>2.02</u>	0.016
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.016	0.012	0.004	0.039	0.015	0.92	0.010	12	0.003	0.003	0.001	0.008	0.004	0.74	0.002
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	0.273	0.237	0.091	0.509	0.232	0.25	0.200	12	0.047	0.042	0.015	0.085	0.040	0.20	0.035

Location	Absorbance of filtered sample at 340 nm (units: cm ⁻¹)								Absorbance of filtered sample at 440 nm (units: cm ⁻¹)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.034	0.030	0.018	0.054	0.021	0.50	0.027	12	0.009	0.007	0.003	0.026	0.004	2.22	0.006
Mangaone Stm @ Annebrooke Rd Br	12	0.050	0.052	0.036	0.072	0.015	0.37	0.048	12	0.009	0.009	0.006	0.011	0.003	-0.42	0.009
Mangaonua Stm @ Hoeka Rd	12	0.039	0.040	0.016	0.063	0.012	-0.07	0.039	12	0.007	0.007	0.002	0.008	0.003	-1.23	0.007
Mangaonua Stm @ Te Miro Rd	12	0.029	0.028	0.020	0.040	0.012	0.32	0.031	12	0.006	0.006	0.004	0.007	0.003	-0.07	0.006
Mangatangi River @ SH2 Maramarua	12	0.051	0.052	0.024	0.089	0.026	0.45	0.048	12	0.009	0.009	0.002	0.017	0.007	0.15	0.009
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.026	0.022	0.015	0.065	0.007	1.93	0.022	12	0.004	0.004	0.001	0.010	0.003	1.02	0.004
Mangawara Stm @ Rutherford Rd Br	12	0.111	0.113	0.067	0.203	0.038	1.29	0.120	12	0.019	0.019	0.009	0.033	0.006	0.89	0.020
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.131	0.102	0.037	0.268	0.141	0.39	0.111	12	0.021	0.018	0.006	0.041	0.022	0.31	0.019
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.064	0.062	0.039	0.106	0.021	0.71	0.070	12	0.011	0.011	0.006	0.018	0.007	0.41	0.013
Ohaeroa Stm @ SH22 Br	12	0.029	0.026	0.017	0.048	0.019	0.63	0.026	12	0.005	0.006	0.002	0.008	0.003	-0.29	0.005
Opuatia Stm @ Ponganui Rd	12	0.035	0.033	0.022	0.064	0.019	0.97	0.031	12	0.007	0.007	0.004	0.010	0.004	0.03	0.006
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	0.019	0.016	0.008	0.037	0.012	0.93	0.014	12	0.004	0.003	0.001	0.007	0.002	0.53	0.003
Waerenga Stm @ Taniwha Rd	12	0.029	0.027	0.020	0.050	0.011	1.28	0.028	12	0.006	0.006	0.003	0.009	0.004	0.38	0.006
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.158	0.140	0.069	0.265	0.111	0.33	0.127	12	0.025	0.023	0.011	0.045	0.020	0.33	0.021
Whakapipi Stm @ SH22 Br	12	0.039	0.036	0.029	0.056	0.012	0.87	0.037	12	0.007	0.007	0.005	0.010	0.003	0.39	0.007
Whakauru Stm @ U/S SH1 Br	12	0.031	0.025	0.014	0.058	0.017	0.89	0.024	12	0.006	0.006	0.001	0.011	0.003	0.08	0.005
Whangamarino River @ Island Block Rd	12	0.123	0.116	0.046	0.216	0.077	0.42	0.105	12	0.023	0.022	0.005	0.043	0.016	0.25	0.019
Whangamarino River @ Jefferies Rd Br	12	0.048	0.045	0.029	0.092	0.017	1.50	0.045	12	0.009	0.009	0.005	0.018	0.003	1.45	0.009
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.064	0.063	0.038	0.090	0.018	0.10	0.061	12	0.011	0.011	0.006	0.017	0.003	0.37	0.010
Waipa River and Tributaries																
Kaniwhaniwha Stm @ Wright Rd	12	0.033	0.032	0.010	0.061	0.008	0.63	0.028	12	0.007	0.006	0.002	0.012	0.002	0.57	0.006
Mangaohoi Stm @ South Branch Maru Rd	12	0.018	0.013	0.005	0.060	0.007	1.83	0.008	12	0.004	0.003	0.001	0.012	0.003	1.66	0.002
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.033	0.033	0.020	0.049	0.012	0.25	0.035	12	0.007	0.007	0.004	0.011	0.003	0.32	0.007
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.082	0.070	0.056	0.156	0.036	1.38	0.075	12	0.014	0.013	0.009	0.027	0.005	1.58	0.014
Mangapu River @ Otorohanga	12	0.027	0.026	0.017	0.040	0.005	0.75	0.026	12	0.005	0.005	0.001	0.008	0.002	-0.37	0.005
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.026	0.024	0.016	0.067	0.011	2.29	0.019	12	0.005	0.005	0.003	0.014	0.002	2.52	0.004
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.014	0.006	0.001	0.063	0.012	2.14	0.008	12	0.003	0.001	0.001	0.013	0.003	2.13	0.001
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.143	0.139	0.033	0.243	0.049	-0.08	0.149	12	0.023	0.021	0.004	0.046	0.010	0.59	0.024
Puniu River @ Bartons Corner Rd Br	12	0.037	0.035	0.024	0.070	0.013	1.46	0.031	12	0.007	0.007	0.004	0.011	0.003	0.58	0.006
Waipa River @ Mangaokewa Rd	12	0.054	0.051	0.034	0.081	0.034	0.44	0.046	12	0.011	0.010	0.007	0.027	0.007	1.74	0.009
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.031	0.030	0.015	0.049	0.008	0.40	0.028	12	0.006	0.006	0.001	0.010	0.001	-0.22	0.005
Waipa River @ SH3 Otorohanga	12	0.027	0.025	0.019	0.041	0.013	0.47	0.025	12	0.006	0.005	0.003	0.013	0.003	1.63	0.005
Waitomo Stm @ SH31 Otorohanga	12	0.024	0.019	0.012	0.057	0.016	1.49	0.019	12	0.004	0.004	0.001	0.010	0.002	1.07	0.004
Waitomo Stm @ Tumutumui Rd	12	0.017	0.012	0.009	0.044	0.010	1.58	0.012	12	0.003	0.002	0.001	0.008	0.002	1.29	0.002

Location	Absorbance of filtered sample at 340 nm (units: cm ⁻¹)								Absorbance of filtered sample at 440 nm (units: cm ⁻¹)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tributaries to the upper Waikato River																
Kawaunui Stm @ SH5 Br	12	0.038	0.035	0.020	0.066	0.023	0.62	0.029	12	0.009	0.008	0.003	0.015	0.006	0.25	0.006
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.032	0.028	0.016	0.053	0.021	0.45	0.027	12	0.006	0.005	0.002	0.010	0.004	0.37	0.005
Mangakara Stm (Reporoa) @ SH5	12	0.020	0.018	0.010	0.031	0.010	0.41	0.017	12	0.004	0.004	0.001	0.006	0.002	-0.48	0.004
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.014	0.013	0.005	0.028	0.008	0.77	0.012	12	0.003	0.004	0.001	0.005	0.002	-0.31	0.003
Otamakokore Stm @ Hossack Rd	12	0.034	0.030	0.017	0.066	0.017	1.01	0.029	12	0.008	0.007	0.003	0.014	0.004	0.66	0.006
Pueto Stm @ Broadlands Rd Br	12	0.011	0.011	0.006	0.017	0.005	0.03	0.010	12	0.003	0.003	0.001	0.007	0.003	0.99	0.002
Tahunaatara Stm @ Ohakuri Rd	12	0.035	0.032	0.018	0.070	0.015	1.16	0.027	12	0.008	0.007	0.003	0.015	0.004	0.80	0.006
Torepatutahi Stm @ Vaile Rd Br	12	0.013	0.013	0.005	0.021	0.003	0.07	0.011	12	0.003	0.002	0.001	0.007	0.002	1.41	0.002
Waiotapu Stm @ Campbell Rd Br	12	0.005	0.005	0.001	0.009	0.003	0.27	0.004	12	0.001	0.001	0.001	0.003	0.000	2.22	0.001
Waiotapu Stm @ Homestead Rd Br	12	0.025	0.023	0.013	0.056	0.004	2.25	0.021	12	0.004	0.004	0.001	0.010	0.002	1.57	0.004
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.015	0.015	0.007	0.027	0.006	0.75	0.012	12	0.003	0.003	0.001	0.005	0.001	-0.17	0.003
Whirinaki Stm @ Corbett Rd	12	0.005	0.005	0.001	0.017	0.006	1.54	0.003	12	0.001	0.001	0.001	0.003	0.000	2.22	0.001
West Coast																
Awakino River @ Gribbon Rd	12	0.017	0.008	0.003	0.057	0.024	1.22	0.006	12	0.004	0.001	0.001	0.021	0.005	2.06	0.001
Awakino River @ SH3 Awakau Rd Junction	12	0.016	0.013	0.008	0.027	0.012	0.50	0.012	12	0.004	0.003	0.001	0.013	0.004	1.91	0.002
Manganui River @ Off Manganui Rd	12	0.013	0.009	0.006	0.026	0.012	0.79	0.009	12	0.004	0.002	0.001	0.016	0.005	2.02	0.002
Mangaotaki River @ SH3 Br	12	0.020	0.016	0.011	0.040	0.012	1.13	0.015	12	0.005	0.004	0.002	0.020	0.002	2.59	0.003
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.025	0.018	0.011	0.055	0.021	1.01	0.017	12	0.005	0.004	0.001	0.012	0.005	0.85	0.003
Mokau River @ Awakau Rd	12	0.040	0.035	0.025	0.076	0.016	1.45	0.033	12	0.009	0.007	0.005	0.029	0.002	2.71	0.006
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.051	0.043	0.029	0.085	0.029	0.71	0.043	12	0.011	0.009	0.006	0.028	0.008	1.66	0.008
Mokau River @ Totoro Rd Recorder	12	0.029	0.029	0.019	0.038	0.008	0.16	0.029	12	0.006	0.005	0.003	0.016	0.002	2.39	0.005
Mokauiti Stm @ Three Way Point - Aria	12	0.049	0.050	0.029	0.071	0.026	0.19	0.046	12	0.010	0.009	0.005	0.022	0.006	1.60	0.009
Ohautira Stm @ Waingaro Te Uku Rd	12	0.026	0.022	0.016	0.046	0.016	0.85	0.022	12	0.005	0.005	0.001	0.008	0.003	-0.06	0.004
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.030	0.023	0.010	0.077	0.021	1.26	0.019	12	0.006	0.005	0.001	0.015	0.005	0.97	0.004
Tawarau River @ Off Speedies Rd	12	0.025	0.018	0.011	0.063	0.019	1.25	0.016	12	0.005	0.004	0.002	0.013	0.004	1.29	0.003
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.037	0.040	0.016	0.045	0.013	-1.19	0.038	12	0.006	0.007	0.001	0.012	0.003	0.02	0.007
Waitetuna River @ Te Uku-Waingaro Rd	12	0.029	0.026	0.017	0.055	0.017	0.99	0.026	12	0.005	0.005	0.001	0.011	0.003	0.31	0.005
Inflows to Lake Taupo																
Hinemaiaia River @ SH1	12	0.014	0.014	0.007	0.022	0.006	0.20	0.013	12	0.003	0.003	0.002	0.006	0.002	0.67	0.002
Kuratau River @ 43 Te Rae Street	12	0.021	0.020	0.009	0.034	0.008	0.27	0.020	12	0.005	0.005	0.002	0.011	0.004	1.03	0.004
Kuratau River @ SH41 Moerangi	12	0.016	0.017	0.010	0.021	0.002	-0.39	0.017	12	0.003	0.003	0.001	0.006	0.002	0.28	0.003
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.074	0.031	0.023	0.530	0.010	3.01	0.039	12	0.008	0.007	0.005	0.012	0.003	0.72	0.009
Tauranga-Taupo River @ Te Kono Slackline	12	0.007	0.008	0.002	0.011	0.004	-0.43	0.007	12	0.002	0.001	0.001	0.003	0.002	0.91	0.001

Location	Absorbance of filtered sample at 340 nm (units: cm ⁻¹)									Absorbance of filtered sample at 440 nm (units: cm ⁻¹)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	0.006	0.006	0.003	0.009	0.003	0.23	0.006	12	0.001	0.001	0.001	0.003	0.001	1.68	0.001	
Tokaanu Stm @ Off SH41 Turangi	12	0.002	0.001	0.001	0.004	0.002	1.03	0.001	12	0.001	0.001	0.001	0.002	0.000	<u>3.02</u>	0.001	
Waihaha River @ SH32	12	0.008	0.008	0.002	0.014	0.003	0.11	0.008	12	0.002	0.002	0.001	0.004	0.002	0.28	0.002	
Waitahanui River @ Blake Rd	12	0.004	0.004	0.001	0.007	0.003	0.34	0.003	12	0.001	0.001	0.001	0.003	0.001	1.68	0.001	
Whanganui Stm @ Lakeside Lake Taupo	12	0.013	0.014	0.006	0.019	0.003	-0.59	0.013	12	0.003	0.003	0.001	0.005	0.001	0.00	0.003	
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.016	0.016	0.009	0.019	0.004	-1.08	0.016	12	0.003	0.004	0.001	0.004	0.001	-1.16	0.003	
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.016	0.017	0.009	0.019	0.003	-1.67	0.017	12	0.003	0.003	0.001	0.004	0.001	-0.94	0.003	

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

Location	Count	Mean	Median	Black Disk (m)					Conductivity at 25 °C (mS m ⁻¹)								
				Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	
Coromandel																	
Hikutaia River @ Old Maratoto Rd	12	2.69	2.79	0.63	4.63	2.32	-0.12	2.84	12	8.1	8.3	6.3	9.1	1.1	-0.89	8.3	
Kauaeranga River @ Smiths Cableway/Recorder	12	2.51	1.80	0.18	6.08	2.96	0.69	3.77	12	7.7	8.4	3.6	9.1	1.8	-1.57	7.5	
Ohinemuri River @ Queens Head	12	2.47	2.67	0.34	4.13	1.26	-0.60	2.87	12	16.6	16.1	10.2	29.6	5.7	1.07	16.1	
Ohinemuri River @ SH25 Br	12	3.37	3.30	0.36	7.85	2.22	0.65	4.12	12	7.7	7.9	6.0	8.2	0.6	-1.58	7.9	
Tairua River @ Morrisons Br Hikuai	12	2.63	2.96	0.24	4.18	1.77	-0.67	2.94	12	5.9	6.3	3.6	6.6	0.8	-1.95	6.2	
Tapu River @ Tapu-Coroglen Rd	12	3.20	2.77	0.26	6.62	3.09	0.30	3.88	12	9.7	9.9	7.0	11.0	1.4	-1.11	10.2	
Waiau River @ E309 Rd Ford	12	2.16	2.31	0.11	3.63	1.85	-0.46	2.44	12	8.7	9.0	4.8	9.9	1.0	-2.12	9.3	
Waitekauri River @ U/S Ohinemuri Conflu	12	3.84	3.88	0.28	6.40	3.83	-0.21	4.33	12	11.3	10.4	7.3	20.0	3.2	1.54	11.0	
Waiwawa River @ SH25 Coroglen	12	2.68	3.01	0.24	4.08	1.75	-0.67	2.80	12	6.4	7.0	3.9	7.4	1.3	-1.27	6.9	
Wharekawa River @ SH25	12	2.08	2.03	0.35	3.50	1.34	-0.12	2.31	12	7.3	7.4	5.4	8.4	1.0	-1.01	7.4	
Hauraki																	
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	1.37	0.92	0.25	5.60	0.98	1.94	1.14	12	11.8	11.7	8.8	18.1	1.2	1.74	11.2	
Oraka Stm @ Lake Rd	12	1.24	1.28	0.41	1.92	0.98	-0.12	1.33	12	14.3	13.3	9.8	19.0	6.9	0.13	12.3	
Piako River @ Kiwitahi	12	2.09	1.86	0.16	3.73	1.73	0.08	1.57	12	14.9	15.1	13.1	17.2	1.7	0.18	14.8	
Piako River @ Paeroa-Tahuna Rd Br	12	0.84	0.85	0.07	1.89	0.48	0.74	0.94	12	21.2	21.4	17.4	23.3	2.1	-0.85	20.6	
Piakonui Stm @ Piakonui Rd	12	1.25	1.32	0.11	1.70	0.39	-1.75	1.26	12	7.9	7.8	6.3	9.9	1.9	0.35	7.8	
Waihou River @ Okauia	12	1.45	1.52	0.74	2.38	0.81	0.28	1.49	12	10.4	10.2	9.2	13.2	1.9	1.02	10.0	
Waihou River @ Whites Rd	12	6.43	6.60	4.65	7.98	1.74	-0.26	6.39	12	8.2	8.1	7.7	9.7	0.6	1.64	7.9	
Waiohotu Stm @ Waiohotu Rd (Off SH5)	-	-	-	-	-	-	-	-	12	5.9	5.9	5.2	7.1	0.4	1.11	5.7	
Waiomou Stm @ Matamata-Tauranga Rd	12	1.62	1.41	0.77	2.53	1.27	0.16	1.66	12	7.3	7.2	6.6	8.1	0.8	0.16	7.2	
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	1.03	1.05	0.20	1.90	0.64	0.13	0.89	12	16.0	16.4	10.9	20.0	3.6	-0.37	15.5	
Waitoa River @ Landsdowne Rd Br	12	1.02	0.95	0.52	1.82	0.43	0.89	1.82	12	16.5	16.7	13.8	19.0	2.2	-0.30	15.8	
Waitoa River @ Mellon Rd Recorder	12	1.27	1.10	0.60	2.24	0.78	0.83	1.14	12	33.5	34.0	20.5	54.0	18.4	0.39	30.8	
Tributaries to the lower Waikato River																	
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.32	0.31	0.15	0.70	0.15	1.42	0.42	12	24.2	23.0	20.9	30.6	5.4	0.75	24.9	
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	1.89	1.74	0.70	4.20	1.16	1.03	1.61	12	49.6	48.9	25.1	77.8	22.4	0.20	48.1	
Karapiro Stm @ Hickey Rd Bridge	12	1.56	1.57	0.05	3.00	0.78	0.20	1.53	12	13.2	13.3	10.5	16.1	3.2	0.06	13.0	
Kirikiroa Stm @ Tauhara Dr	11	0.42	0.45	0.09	0.79	0.28	-0.03	0.38	12	20.6	21.2	14.2	23.2	2.4	-1.54	20.9	
Komakorau Stm @ Henry Rd	12	0.21	0.20	0.12	0.37	0.03	1.66	0.19	12	25.4	24.8	21.0	31.4	6.3	0.23	25.1	
Little Waipa Stm @ Arapuni - Putaruru Rd	12	1.88	1.92	0.72	3.03	0.96	-0.06	2.37	12	9.5	9.6	8.8	10.1	0.8	-0.22	9.2	
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	0.42	0.50	0.07	0.63	0.24	-0.78	0.41	12	19.8	19.8	17.2	23.1	2.2	0.41	18.5	
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	1.22	1.23	0.20	1.85	0.51	-0.67	1.44	12	13.9	14.2	8.0	17.4	1.3	-1.29	14.5	

Location	Black Disk (m)								Conductivity at 25 °C (mS m ⁻¹)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangaone Stm @ Annebrooke Rd Br	12	0.92	0.91	0.28	1.37	0.24	-0.71	1.12	12	25.7	26.2	19.0	28.7	2.3	-1.61	26.0
Mangaonua Stm @ Hoeka Rd	12	1.45	1.42	0.27	2.62	0.75	0.04	1.10	12	19.2	19.7	17.3	20.4	1.4	-0.65	19.0
Mangaonua Stm @ Te Miro Rd	12	1.37	1.39	0.13	2.22	0.71	-0.56	1.43	12	10.0	10.1	8.6	11.5	1.2	0.23	9.9
Mangatangi River @ SH2 Maramarua	12	1.54	1.30	0.20	4.23	1.77	0.82	1.16	12	12.7	13.1	9.9	14.0	1.2	-1.36	13.0
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	1.86	2.14	0.20	3.38	1.88	-0.22	2.10	12	11.3	11.9	8.9	13.2	2.4	-0.27	11.6
Mangawara Stm @ Rutherford Rd Br	12	0.25	0.28	0.10	0.40	0.09	-0.23	0.23	12	20.7	20.0	16.6	24.9	3.4	0.22	21.2
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.30	0.32	0.12	0.46	0.13	-0.24	0.28	12	20.6	20.5	17.5	23.0	2.8	-0.20	19.9
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.38	0.33	0.21	0.98	0.18	2.15	0.30	12	13.2	13.3	10.3	15.2	1.5	-0.57	13.7
Ohaeroa Stm @ SH22 Br	12	1.00	0.92	0.15	2.65	0.91	1.00	0.85	12	15.7	16.2	13.2	18.9	2.9	-0.04	16.2
Opuatia Stm @ Ponganui Rd	12	0.84	0.73	0.06	2.40	0.70	1.14	0.92	12	17.1	16.7	11.9	26.2	3.1	1.42	16.4
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	1.69	1.79	0.50	2.45	0.89	-0.66	1.79	12	9.9	9.9	9.1	10.7	0.7	0.14	9.8
Waerenga Stm @ Taniwha Rd	12	1.20	1.27	0.12	1.73	0.67	-0.85	1.24	12	11.8	11.9	10.7	13.3	1.0	0.50	11.9
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.42	0.43	0.14	0.66	0.19	-0.37	0.38	12	20.0	20.1	17.3	22.3	1.9	-0.08	20.1
Whakapipi Stm @ SH22 Br	12	1.66	1.50	0.35	3.20	1.23	0.24	1.46	12	18.0	17.9	15.0	21.3	4.0	0.13	17.4
Whakauru Stm @ U/S SH1 Br	12	1.29	1.31	0.52	1.79	0.44	-0.63	1.41	12	6.8	6.7	5.9	7.7	0.5	-0.03	6.7
Whangamarino River @ Island Block Rd	12	0.25	0.26	0.13	0.43	0.14	0.33	0.20	12	16.1	16.2	14.3	17.5	1.8	-0.13	16.0
Whangamarino River @ Jefferies Rd Br	12	1.02	0.79	0.17	2.78	0.89	1.09	0.78	12	14.9	15.2	13.1	16.6	1.7	-0.25	15.4
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.32	0.28	0.11	0.76	0.11	1.43	0.60	12	20.7	20.5	16.8	26.8	5.6	0.49	20.3
Waipa River and Tributaries																
Kaniwhaniwha Stm @ Wright Rd	12	1.22	1.09	0.35	2.33	0.73	0.56	1.22	12	10.1	10.1	8.5	12.3	1.4	0.51	10.3
Mangaohoi Stm @ South Branch Maru Rd	12	1.17	1.19	0.45	1.93	0.47	-0.08	1.32	12	8.0	8.4	6.2	9.2	1.5	-0.65	8.4
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	1.22	1.19	0.29	2.13	1.28	0.06	1.14	12	16.2	16.0	10.9	22.9	7.4	0.22	14.4
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.76	0.64	0.11	1.52	0.53	0.40	0.99	12	18.9	18.4	13.1	21.9	3.5	-0.70	18.2
Mangapu River @ Otorohanga	12	1.25	1.32	0.21	2.62	1.66	0.24	0.83	12	18.9	18.2	15.0	24.0	5.6	0.29	17.7
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	1.47	1.47	0.11	3.60	1.44	0.61	1.94	12	6.4	6.4	5.0	7.8	0.5	0.15	6.6
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	3.69	4.16	0.11	5.95	2.48	-0.62	4.03	12	6.5	6.5	4.8	7.6	0.9	-0.54	6.8
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.88	0.88	0.46	1.35	0.20	0.35	0.73	12	18.6	18.4	17.3	20.4	1.5	0.72	18.6
Puniu River @ Bartons Corner Rd Br	12	1.32	1.23	0.11	3.00	1.26	0.43	1.79	12	8.3	8.4	7.3	9.1	1.1	-0.32	8.2
Waipa River @ Mangaokewa Rd	12	2.04	2.11	0.42	3.48	1.49	-0.04	1.75	12	5.3	5.4	4.4	6.2	0.8	0.01	5.0
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.92	0.83	0.13	2.47	1.05	0.81	0.80	12	11.7	11.4	10.0	13.7	1.4	0.39	11.6
Waipa River @ SH3 Otorohanga	12	1.38	1.04	0.24	3.43	1.90	0.55	1.40	12	8.4	7.9	7.1	10.6	2.2	0.53	8.0
Waitomo Stm @ SH31 Otorohanga	12	0.86	0.70	0.15	2.57	0.81	1.21	0.64	12	18.2	18.1	13.7	23.8	2.4	0.10	18.4
Waitomo Stm @ Tumutumumu Rd	12	1.22	0.94	0.21	3.03	1.56	0.80	1.13	12	18.1	18.1	14.7	22.5	2.4	0.43	18.3

Location	Black Disk (m)								Conductivity at 25 °C (mS m ⁻¹)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tributaries to the upper Waikato River																
Kawaunui Stm @ SH5 Br	12	1.01	0.85	0.27	2.64	0.52	1.44	1.22	12	14.9	15.2	11.7	17.9	2.2	-0.38	12.8
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	1.14	1.18	0.48	1.56	0.55	-0.40	1.40	12	9.0	8.9	8.3	10.6	0.6	1.24	8.4
Mangakara Stm (Reporoa) @ SH5	12	0.85	0.88	0.42	1.26	0.50	-0.16	1.10	12	9.0	9.0	8.2	9.7	0.7	-0.26	8.8
Mangakino Stm (Whakamaru) @ Sandel Rd	12	2.86	2.64	1.20	4.08	1.33	-0.25	2.53	12	6.5	6.7	5.4	7.2	0.8	-0.52	6.4
Otamakokore Stm @ Hossack Rd	12	1.25	1.24	0.84	1.68	0.52	0.11	1.52	12	40.6	41.3	35.5	44.3	4.3	-0.41	38.0
Pueto Stm @ Broadlands Rd Br	12	2.09	2.08	1.35	2.98	0.57	0.17	2.05	12	11.7	11.9	10.8	12.5	0.8	-0.45	11.5
Tahunaatara Stm @ Ohakuri Rd	12	1.81	1.95	0.63	2.78	0.97	-0.29	1.91	12	7.5	7.6	7.0	8.0	0.6	-0.12	7.4
Torepatutahi Stm @ Vaile Rd Br	-	-	-	-	-	-	-	-	12	8.8	8.9	8.2	9.7	0.6	0.29	8.8
Waiotapu Stm @ Campbell Rd Br	12	1.48	1.51	0.95	1.88	0.27	-0.49	1.49	12	73.5	72.9	68.7	79.4	6.1	0.20	68.7
Waiotapu Stm @ Homestead Rd Br	12	0.84	0.79	0.43	1.40	0.38	0.45	0.75	12	49.4	50.2	43.9	55.0	5.8	-0.06	47.1
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	1.42	1.26	0.73	2.23	0.71	0.35	1.41	12	36.5	36.4	33.5	39.8	3.2	0.15	35.2
Whirinaki Stm @ Corbett Rd	-	-	-	-	-	-	-	-	12	6.9	6.9	6.3	8.2	0.4	1.79	6.7
West Coast																
Awakino River @ Gribbon Rd	12	2.37	1.18	0.28	5.13	4.16	0.31	2.50	12	7.1	7.1	5.6	8.6	1.7	0.16	7.2
Awakino River @ SH3 Awakau Rd Junction	12	1.33	0.54	0.13	3.30	2.33	0.41	1.26	12	14.5	12.8	9.3	23.5	6.8	0.85	12.7
Manganui River @ Off Manganui Rd	12	1.39	0.58	0.09	4.18	2.57	0.59	1.25	12	11.2	10.7	8.2	15.5	3.9	0.58	10.8
Mangaotaki River @ SH3 Br	12	1.24	0.69	0.06	2.98	1.79	0.42	0.95	12	13.3	13.6	9.2	15.7	2.5	-0.80	13.6
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	1.29	1.13	0.22	3.38	1.78	0.66	1.22	12	13.3	13.7	10.6	16.5	3.7	-0.12	13.8
Mokau River @ Awakau Rd	12	0.49	0.24	0.09	1.08	0.78	0.47	0.37	12	14.0	13.2	9.3	21.2	6.9	0.62	12.5
Mokau River @ Mangaokewa Rd (Off SH30)	12	1.55	1.41	0.39	2.88	1.79	0.12	1.44	12	6.8	6.7	5.5	8.1	1.2	0.13	6.4
Mokau River @ Totoro Rd Recorder	12	1.10	0.79	0.09	2.72	1.86	0.41	0.77	12	12.4	12.5	9.6	15.3	3.4	0.21	11.8
Mokauiti Stm @ Three Way Point - Aria	12	0.65	0.69	0.13	1.86	0.68	1.02	0.60	12	11.8	10.8	9.4	18.4	2.9	1.41	10.7
Ohautira Stm @ Waingaro Te Uku Rd	12	0.63	0.80	0.15	1.06	0.61	-0.27	0.81	12	13.3	13.3	10.9	15.4	1.8	-0.15	13.6
Oparau River @ Langdon Rd (Off Okupata Rd)	12	1.51	1.59	0.05	2.70	1.69	-0.17	1.60	12	9.1	8.8	7.0	12.3	1.6	0.84	8.8
Tawarau River @ Off Speedies Rd	12	1.30	1.12	0.28	3.43	1.61	0.76	1.28	12	12.7	13.0	9.8	16.2	3.6	-0.01	13.0
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.78	0.71	0.16	1.32	0.66	-0.09	1.00	12	14.2	14.5	11.8	16.0	2.0	-0.27	14.5
Waitetuna River @ Te Uku-Waingaro Rd	12	0.75	0.85	0.13	1.60	0.70	0.28	0.91	12	10.6	10.1	8.8	16.1	1.0	2.26	10.2
Inflows to Lake Taupo																
Hinemaiaia River @ SH1	12	2.93	2.94	1.70	4.18	0.98	-0.01	3.23	12	6.1	6.1	4.8	7.4	1.0	0.02	6.2
Kuratau River @ 43 Te Rae Street	-	-	-	-	-	-	-	-	12	7.1	7.1	5.6	8.8	1.7	0.17	6.8
Kuratau River @ SH41 Moerangi	12	3.03	3.02	2.01	5.20	1.05	1.22	3.07	12	4.7	4.7	3.9	5.5	0.8	-0.09	4.4
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	1.52	1.52	1.08	1.98	0.41	0.04	1.36	12	12.0	12.1	11.1	12.5	0.7	-0.60	11.9
Tauranga-Taupo River @ Te Kono Slackline	12	4.02	4.18	1.40	6.00	2.65	-0.31	4.46	12	5.3	5.1	4.5	6.4	1.3	0.52	5.0

Location	Black Disk (m)								Conductivity at 25 °C (mS m ⁻¹)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	-	-	-	-	-	-	-	-	12	13.3	12.5	10.5	22.9	2.4	<u>2.31</u>	12.5
Tokaanu Stm @ Off SH41 Turangi	-	-	-	-	-	-	-	-	12	10.1	10.1	9.4	10.9	0.6	0.26	10.0
Waihaha River @ SH32	12	5.26	5.56	3.53	6.75	2.04	-0.32	5.54	12	5.1	5.1	4.2	6.0	1.0	0.00	4.9
Waitahanui River @ Blake Rd	12	4.05	4.01	2.93	5.28	1.57	0.03	4.11	12	7.4	7.4	6.7	8.1	0.4	0.14	7.2
Whanganui Stm @ Lakeside Lake Taupo	-	-	-	-	-	-	-	-	12	6.4	6.4	5.0	7.6	1.6	0.04	6.1
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	-	-	-	-	-	-	-	-	12	8.0	8.0	7.2	9.2	0.8	0.59	7.9
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	-	-	-	-	-	-	-	-	12	7.8	7.7	7.2	8.3	0.7	-0.02	7.7

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

Location	Dissolved Oxygen (% Saturation)								Dissolved Oxygen (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Coromandel																
Hikutaia River @ Old Maratoto Rd	12	96.8	96.7	92.0	101.5	5.1	0.01	94.9	12	10.3	10.2	8.4	12.2	1.5	0.08	9.9
Kauaeranga River @ Smiths Cableway/Recorder	12	99.2	99.1	93.0	103.2	3.2	-0.77	99.3	12	10.4	10.2	8.7	12.2	1.0	0.22	10.3
Ohinemuri River @ Queens Head	12	107.8	106.3	97.8	128.8	8.1	1.25	108.8	12	10.7	10.9	9.5	12.0	1.3	0.07	10.7
Ohinemuri River @ SH25 Br	12	104.0	102.9	97.3	112.6	4.5	0.44	106.0	12	10.4	10.4	9.5	12.3	0.9	1.06	10.6
Tairua River @ Morrisons Br Hikuai	12	98.7	98.4	95.1	107.8	3.9	1.45	98.2	12	10.1	10.1	8.6	12.0	0.7	0.72	10.0
Tapu River @ Tapu-Coroglen Rd	12	101.0	100.6	99.2	103.9	1.3	0.85	101.6	12	10.6	10.5	9.3	12.4	1.2	0.46	10.5
Waiau River @ E309 Rd Ford	12	102.4	102.6	98.1	109.0	5.4	0.38	102.2	12	10.8	10.8	9.6	12.6	1.3	0.46	10.8
Waitekauri River @ U/S Ohinemuri Conflu	12	105.1	104.1	98.8	116.6	6.2	0.98	104.5	12	10.7	10.8	9.8	12.3	1.1	0.49	10.6
Waiwawa River @ SH25 Coroglen	12	100.3	100.3	89.7	105.9	3.3	-1.48	102.0	12	10.5	10.4	9.2	12.2	1.3	0.60	10.5
Wharekawa River @ SH25	12	95.8	96.3	88.9	100.4	4.6	-0.48	96.8	12	9.9	9.8	8.0	12.1	1.2	0.35	9.9
Hauraki																
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	99.9	97.6	95.9	123.0	2.5	2.84	98.8	12	10.1	10.0	8.9	13.1	1.2	1.55	10.1
Oraka Stm @ Lake Rd	12	92.6	93.4	86.5	96.5	4.2	-0.70	92.8	12	9.6	9.6	8.2	11.3	1.0	0.23	9.5
Piako River @ Kiwitahi	12	76.7	82.1	40.3	103.0	25.4	-0.45	93.8	12	7.7	8.7	3.7	9.8	3.4	-0.61	9.4
Piako River @ Paeroa-Tahuna Rd Br	12	80.2	81.0	62.5	93.1	9.6	-0.43	81.8	12	8.2	8.0	5.8	11.2	1.6	0.44	8.2
Piakonui Stm @ Piakonui Rd	12	99.7	99.7	94.0	104.0	1.2	-0.44	101.0	12	10.6	10.5	9.7	11.4	1.0	0.23	10.6
Waihou River @ Okauia	12	93.6	94.5	89.0	97.0	4.5	-0.39	93.6	12	9.7	9.5	8.6	11.4	0.8	0.88	9.6
Waihou River @ Whites Rd	12	101.2	101.7	98.2	103.9	3.7	-0.41	102.7	12	10.5	10.6	10.0	10.9	0.3	-0.53	10.6
Waiohotu Stm @ Waiohotu Rd (Off SH5)	12	94.7	94.8	81.6	101.6	2.5	-1.74	95.2	12	10.3	10.0	9.1	12.5	1.1	0.97	10.2
Waiomou Stm @ Matamata-Tauranga Rd	12	95.3	94.6	91.5	98.3	3.0	-0.01	95.9	12	10.0	9.8	8.8	12.1	0.8	1.15	10.0
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	89.3	89.7	67.9	104.6	11.8	-0.47	90.3	12	8.9	8.9	6.1	10.7	2.0	-0.42	8.7
Waitoa River @ Landsdowne Rd Br	12	89.3	90.8	72.8	99.8	13.2	-0.68	85.4	12	9.1	9.5	6.7	10.6	1.6	-0.76	8.5
Waitoa River @ Mellon Rd Recorder	12	70.1	70.1	59.0	78.9	8.4	-0.31	75.8	12	7.1	7.0	5.3	9.4	1.2	0.46	7.4
Tributaries to the lower Waikato River																
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	99.8	98.6	72.3	124.5	23.6	-0.06	96.0	12	9.5	9.8	7.1	11.6	2.2	-0.20	9.3
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	86.4	86.9	76.3	96.4	9.6	-0.03	88.0	12	8.8	8.5	7.1	11.2	1.9	0.37	8.9
Karapiro Stm @ Hickey Rd Bridge	12	92.4	90.9	81.5	103.8	9.6	0.36	95.3	12	9.6	9.3	8.2	11.6	2.7	0.37	9.5
Kirikiroa Stm @ Tauhara Dr	12	68.4	67.7	57.9	83.1	11.1	0.41	70.3	12	7.0	6.8	5.7	8.6	1.9	0.24	7.0
Komakorau Stm @ Henry Rd	12	63.7	61.7	56.1	76.3	7.3	0.90	64.1	12	6.4	6.1	5.1	8.7	1.2	1.05	6.4
Little Waipa Stm @ Arapuni - Putaruru Rd	12	101.4	102.4	91.8	111.2	10.4	-0.16	97.7	12	10.4	10.4	9.1	12.0	1.1	0.40	10.2
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	86.5	86.2	81.0	92.4	8.2	0.17	90.4	12	8.9	8.6	8.0	10.2	1.5	0.57	9.1
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	103.2	103.9	97.7	109.2	6.1	-0.18	104.7	12	10.5	10.5	8.9	12.4	0.7	0.27	10.6

Location	Dissolved Oxygen (% Saturation)								Dissolved Oxygen (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangaone Stm @ Annebrooke Rd Br	12	77.5	75.5	66.8	93.2	6.8	0.88	74.3	12	8.2	8.0	6.5	10.2	1.5	0.36	7.7
Mangaonua Stm @ Hoeka Rd	12	72.5	73.6	58.0	88.9	16.5	0.02	83.1	12	7.5	7.6	5.6	9.8	2.6	0.16	8.5
Mangaonua Stm @ Te Miro Rd	12	99.6	99.5	92.2	105.4	2.7	-0.64	100.5	12	10.3	10.0	9.5	12.0	1.1	0.96	10.3
Mangatangi River @ SH2 Maramarua	12	86.3	86.1	70.9	95.1	12.3	-0.58	87.3	12	8.6	8.9	6.6	10.5	1.8	-0.07	8.7
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	106.8	106.4	96.8	125.8	8.8	0.87	109.6	12	10.6	10.2	9.0	13.6	1.1	1.23	10.6
Mangawara Stm @ Rutherford Rd Br	12	71.3	73.6	53.1	79.6	9.8	-1.14	72.2	12	7.0	7.1	5.3	8.6	2.0	-0.05	7.2
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	85.7	85.8	81.0	90.7	5.4	-0.06	85.0	12	9.0	8.7	7.9	10.1	1.2	0.27	8.6
Matahuru Stm @ Waiterimu Road Below Confluence	12	84.6	86.1	62.0	92.7	4.1	-2.07	86.7	12	8.5	8.5	6.1	10.4	1.6	-0.10	8.6
Ohaeroa Stm @ SH22 Br	12	99.5	99.1	92.0	108.2	10.0	0.10	98.8	12	10.2	10.2	9.2	11.9	1.3	0.54	10.2
Opuatia Stm @ Ponganui Rd	12	99.0	98.2	89.2	108.8	8.2	0.23	99.0	12	9.9	9.7	8.7	11.5	1.7	0.36	9.9
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	99.3	99.4	92.4	104.9	7.1	-0.23	97.9	12	10.3	10.3	8.8	12.2	0.8	0.32	10.2
Waerenga Stm @ Taniwha Rd	12	101.9	98.1	94.2	115.2	11.6	0.61	97.4	12	10.5	10.1	8.9	12.4	2.2	0.43	10.1
Waitawhiriwhiri Stm @ Edgecumbe Street	12	84.4	84.1	73.7	93.0	6.5	-0.31	84.3	12	8.4	8.5	7.1	9.7	1.1	-0.02	8.2
Whakapipi Stm @ SH22 Br	12	91.5	93.2	80.5	102.8	9.6	-0.09	89.7	12	9.3	9.5	7.5	11.1	1.6	-0.20	9.1
Whakauru Stm @ U/S SH1 Br	12	97.9	97.4	93.8	102.3	4.3	0.18	97.7	12	10.3	10.2	9.0	12.2	0.9	0.59	10.3
Whangamarino River @ Island Block Rd	12	38.8	31.8	1.4	125.0	14.3	2.08	48.6	12	3.8	3.2	0.1	11.2	1.4	1.76	4.7
Whangamarino River @ Jefferies Rd Br	12	71.9	73.4	52.5	90.8	16.1	-0.07	76.1	12	7.3	7.8	5.2	10.1	2.3	0.20	7.8
Whangape Stm @ Rangiriri-Glen Murray Rd	12	90.1	90.2	60.1	111.7	18.4	-0.51	86.8	12	8.9	8.7	5.3	11.1	2.6	-0.52	8.6
Waipa River and Tributaries																
Kaniwhaniwha Stm @ Wright Rd	12	87.9	88.8	75.4	94.2	7.5	-0.89	90.0	12	9.0	9.1	7.8	10.8	1.2	0.36	9.2
Mangaohoi Stm @ South Branch Maru Rd	12	99.5	100.1	92.0	103.1	2.8	-1.23	100.1	12	10.2	10.3	9.3	10.9	0.6	-0.42	10.2
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	94.1	96.0	82.5	97.0	4.0	-2.01	96.3	12	9.8	9.9	8.4	11.1	1.4	-0.14	10.2
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	79.8	79.9	64.0	90.5	11.7	-0.44	83.4	12	7.9	8.0	5.7	10.3	1.2	0.16	8.2
Mangapu River @ Otorohanga	12	95.6	94.5	84.0	119.4	13.4	1.03	92.8	12	9.5	9.5	8.0	11.2	1.1	0.37	9.5
Mangatutu Stm (Waikeria) @ Walker Rd Br	11	93.7	94.0	87.6	97.1	2.1	-1.00	94.5	11	9.7	9.8	8.3	11.2	1.6	-0.34	10.0
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	100.0	100.1	96.3	102.9	2.7	-0.29	99.9	12	10.6	10.6	9.6	11.6	0.6	-0.06	10.5
Ohote Stm @ Whatawhata/Horotiu Rd	12	46.8	47.9	11.0	84.8	27.0	0.10	48.1	12	4.8	5.1	1.1	8.8	2.9	0.25	4.5
Puniu River @ Bartons Corner Rd Br	12	92.8	93.0	77.4	109.3	12.0	0.20	96.2	12	9.1	9.3	6.9	10.7	0.5	-0.66	9.7
Waipa River @ Mangaokewa Rd	12	101.4	101.1	95.4	105.8	1.8	-0.34	101.5	12	10.3	10.1	9.4	11.4	1.4	0.51	10.3
Waipa River @ Pirongia-Ngutunui Rd Br	12	91.3	91.3	85.3	99.4	7.2	0.28	91.6	12	9.3	9.1	8.1	10.9	1.1	0.66	9.4
Waipa River @ SH3 Otorohanga	12	99.4	99.6	89.9	104.6	7.0	-0.63	99.8	12	10.0	9.9	8.6	11.4	0.7	0.14	10.2
Waitomo Stm @ SH31 Otorohanga	12	98.3	99.8	84.3	113.6	10.6	0.35	100.7	12	10.0	9.8	8.7	11.3	1.6	0.25	10.4
Waitomo Stm @ Tumutumumu Rd	12	99.3	99.4	94.2	104.2	3.8	0.09	100.0	12	10.3	10.3	9.5	11.5	0.8	0.62	10.4

Location	Dissolved Oxygen (% Saturation)								Dissolved Oxygen (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tributaries to the upper Waikato River																
Kawaunui Stm @ SH5 Br	12	80.4	82.5	67.8	93.2	14.0	-0.21	85.1	12	8.1	8.3	6.6	9.4	1.5	-0.54	8.4
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	93.6	93.4	89.1	97.1	2.1	-0.37	93.3	12	9.8	9.8	9.2	11.1	0.5	1.11	9.8
Mangakara Stm (Reporoa) @ SH5	12	92.2	92.6	87.0	96.9	2.3	-0.28	92.5	12	9.5	9.4	8.1	10.9	0.8	0.09	9.5
Mangakino Stm (Whakamaru) @ Sandel Rd	12	102.6	102.9	99.3	105.7	3.1	-0.35	102.8	12	10.9	10.7	10.2	12.0	0.9	0.60	10.9
Otamakokore Stm @ Hossack Rd	12	99.8	99.1	92.6	113.5	9.9	0.62	96.8	12	8.6	8.5	7.7	9.4	1.1	0.02	8.5
Pueto Stm @ Broadlands Rd Br	12	95.8	95.8	92.4	99.0	1.9	-0.12	95.8	12	9.7	9.7	9.2	10.9	0.3	1.53	9.6
Tahunaatara Stm @ Ohakuri Rd	12	105.3	105.5	100.5	114.2	5.4	0.81	103.2	12	10.9	10.8	9.5	12.5	0.5	0.53	10.6
Torepatutahi Stm @ Vaile Rd Br	12	102.7	101.9	94.1	117.4	7.4	0.85	101.0	12	10.3	10.0	9.2	11.7	1.2	0.59	10.2
Waiotapu Stm @ Campbell Rd Br	12	89.3	89.9	82.4	98.7	6.1	0.23	87.9	12	6.6	6.5	5.8	7.2	0.6	-0.06	6.5
Waiotapu Stm @ Homestead Rd Br	12	86.5	86.2	66.6	101.5	8.7	-0.50	86.2	12	7.8	8.0	5.6	9.0	1.1	-1.10	8.0
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	101.5	101.4	97.1	105.3	5.1	0.07	101.2	12	8.6	8.5	8.3	9.2	0.7	0.67	8.6
Whirinaki Stm @ Corbett Rd	12	98.4	98.3	96.4	100.3	2.0	0.05	98.0	12	10.3	10.3	9.9	10.8	0.2	0.67	10.2
West Coast																
Awakino River @ Gribbon Rd	12	100.8	100.3	93.2	107.8	4.2	-0.12	102.0	12	10.6	10.6	10.0	12.1	0.8	1.10	10.8
Awakino River @ SH3 Awakau Rd Junction	12	106.3	100.4	95.4	124.8	18.0	0.46	105.4	12	10.8	10.7	9.2	12.9	1.2	0.36	10.7
Manganui River @ Off Manganui Rd	12	99.6	97.9	92.8	112.2	8.9	0.69	102.0	12	10.2	10.3	9.0	11.9	1.0	0.35	10.5
Mangaotaki River @ SH3 Br	12	101.8	101.9	95.8	107.1	1.9	-0.46	102.1	12	10.5	10.6	9.7	11.8	0.8	0.60	10.6
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	103.0	101.9	94.6	115.8	3.4	0.77	103.5	12	10.7	10.8	9.0	12.1	1.3	-0.13	10.8
Mokau River @ Awakau Rd	12	93.0	93.3	85.9	98.0	5.2	-0.45	94.5	12	9.5	9.6	8.1	11.1	1.7	0.21	9.6
Mokau River @ Mangaokewa Rd (Off SH30)	12	100.4	100.6	93.2	105.6	3.2	-0.69	100.3	12	10.3	10.5	8.7	11.8	1.1	-0.26	10.4
Mokau River @ Totoro Rd Recorder	12	103.4	103.4	99.7	107.4	2.2	0.08	103.3	12	10.5	10.5	9.6	11.7	1.3	0.25	10.6
Mokauiti Stm @ Three Way Point - Aria	12	94.1	93.5	84.2	104.9	9.4	0.20	96.5	12	9.4	9.5	7.8	11.2	1.3	0.02	9.9
Ohautira Stm @ Waingaro Te Uku Rd	12	93.8	93.5	89.3	97.4	3.0	-0.16	94.0	12	9.9	9.9	8.5	11.6	1.2	0.31	9.9
Oparau River @ Langdon Rd (Off Okupata Rd)	12	104.3	102.3	95.1	114.0	7.1	0.38	102.9	12	10.7	10.5	9.4	14.0	1.1	1.51	10.5
Tawarau River @ Off Speedies Rd	12	103.4	103.1	99.1	110.1	4.3	0.53	103.1	12	10.7	10.6	9.8	12.0	1.1	0.40	10.7
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	91.3	92.0	79.8	100.4	8.2	-0.36	93.6	12	9.2	9.3	6.9	11.2	1.4	-0.15	9.5
Waitetuna River @ Te Uku-Waingaro Rd	12	95.4	95.6	88.1	99.2	4.1	-0.77	95.5	12	9.8	9.7	8.0	11.6	1.5	0.18	9.9
Inflows to Lake Taupo																
Hinemaiaia River @ SH1	12	101.8	101.5	99.0	106.3	3.6	0.61	101.0	12	10.9	10.7	9.6	12.8	1.0	0.75	10.7
Kuratau River @ 43 Te Rae Street	12	103.7	104.0	97.6	112.1	7.7	0.21	101.8	12	10.7	10.8	9.4	12.4	1.1	0.39	10.6
Kuratau River @ SH41 Moerangi	12	94.6	93.5	88.4	106.0	2.4	1.50	93.9	12	10.3	10.2	9.1	13.1	0.9	1.66	10.3
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	91.2	91.1	85.2	105.4	5.2	1.61	89.0	12	9.7	9.7	8.8	11.0	0.9	0.51	9.5
Tauranga-Taupo River @ Te Kono Slackline	12	101.8	101.8	99.6	104.2	1.7	0.10	101.3	12	11.1	11.0	10.2	12.7	1.0	0.85	11.0

Location	Dissolved Oxygen (% Saturation)								Dissolved Oxygen (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	98.6	98.1	92.3	105.6	8.4	0.15	99.6	12	10.1	10.2	9.0	11.6	1.1	0.18	10.4
Tokaanu Stm @ Off SH41 Turangi	12	82.1	82.3	78.4	84.0	1.6	-1.13	82.8	12	8.5	8.6	8.2	8.7	0.3	-0.53	8.6
Waihaha River @ SH32	12	102.7	102.8	95.3	108.0	3.8	-0.56	102.4	12	11.0	10.9	10.1	12.6	0.8	1.11	10.9
Waitahanui River @ Blake Rd	12	100.6	100.0	98.1	106.2	1.9	<u>1.69</u>	99.7	12	10.7	10.7	9.7	11.8	0.3	0.34	10.6
Whanganui Stm @ Lakeside Lake Taupo	12	103.6	103.0	97.3	111.3	5.2	0.36	102.0	12	11.1	11.0	10.1	12.6	0.6	0.81	11.0
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	97.9	98.4	93.7	102.1	2.5	-0.31	97.2	12	10.3	10.2	9.3	12.0	0.9	0.78	10.3
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	98.9	97.9	95.0	105.9	3.2	0.99	98.0	12	10.5	10.4	9.8	11.5	0.7	0.74	10.3

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

Location	Dissolved Reactive Phosphorus (g m ⁻³)								Total Phosphorus (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Coromandel																
Hikutaia River @ Old Maratoto Rd	12	0.006	0.006	0.002	0.011	0.004	0.32	0.006	12	0.016	0.013	0.006	0.040	0.009	1.29	0.013
Kauaeranga River @ Smiths Cableway/Recorder	12	0.005	0.005	0.002	0.012	0.005	0.70	0.002	12	0.021	0.008	0.002	0.141	0.011	2.77	0.004
Ohinemuri River @ Queens Head	12	0.017	0.013	0.005	0.038	0.011	0.90	0.018	12	0.056	0.032	0.024	0.150	0.036	1.42	0.040
Ohinemuri River @ SH25 Br	12	0.009	0.008	0.002	0.023	0.004	1.58	0.008	12	0.028	0.021	0.006	0.141	0.014	2.76	0.016
Tairua River @ Morrisons Br Hikuai	12	0.004	0.003	0.002	0.007	0.003	0.56	0.003	12	0.014	0.008	0.002	0.082	0.007	2.88	0.007
Tapu River @ Tapu-Coroglen Rd	12	0.004	0.005	0.002	0.007	0.004	0.01	0.004	12	0.012	0.007	0.002	0.072	0.007	2.77	0.005
Waiiau River @ E309 Rd Ford	12	0.004	0.005	0.002	0.007	0.002	-0.13	0.005	12	0.031	0.009	0.002	0.278	0.007	3.00	0.009
Waitekauri River @ U/S Ohinemuri Conflu	12	0.005	0.005	0.002	0.015	0.005	1.25	0.005	12	0.019	0.011	0.004	0.095	0.014	2.61	0.009
Waiwawa River @ SH25 Coroglen	12	0.003	0.002	0.002	0.006	0.001	1.43	0.002	12	0.014	0.007	0.002	0.090	0.006	2.90	0.006
Wharekawa River @ SH25	12	0.006	0.006	0.002	0.011	0.004	-0.03	0.006	12	0.014	0.013	0.002	0.050	0.009	2.18	0.010
Hauraki																
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.041	0.042	0.022	0.067	0.007	0.54	0.037	12	0.081	0.073	0.053	0.160	0.031	1.57	0.057
Oraka Stm @ Lake Rd	12	0.192	0.135	0.083	0.500	0.166	1.24	0.092	12	0.245	0.162	0.111	0.586	0.165	1.28	0.147
Piako River @ Kiwitahi	12	0.067	0.055	0.027	0.161	0.045	1.36	0.046	12	0.146	0.099	0.065	0.533	0.068	2.58	0.111
Piako River @ Paeroa-Tahuna Rd Br	12	0.168	0.176	0.049	0.311	0.105	0.28	0.141	12	0.340	0.305	0.149	0.778	0.194	1.45	0.280
Piakonui Stm @ Piakonui Rd	12	0.013	0.015	0.002	0.019	0.006	-1.18	0.016	12	0.056	0.032	0.018	0.335	0.013	2.98	0.034
Waihou River @ Okauia	12	0.086	0.074	0.051	0.148	0.032	1.06	0.070	12	0.109	0.089	0.077	0.188	0.042	1.22	0.094
Waihou River @ Whites Rd	12	0.088	0.089	0.076	0.096	0.007	-0.66	0.085	12	0.084	0.085	0.077	0.091	0.004	-0.28	0.084
Waiohotu Stm @ Waiohotu Rd (Off SH5)	12	0.023	0.021	0.016	0.037	0.008	1.05	0.020	12	0.044	0.043	0.026	0.064	0.021	0.03	0.034
Waiomou Stm @ Matamata-Tauranga Rd	12	0.030	0.028	0.017	0.044	0.010	0.25	0.028	12	0.054	0.049	0.036	0.086	0.026	0.72	0.044
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.026	0.025	0.015	0.042	0.014	0.41	0.023	12	0.099	0.079	0.053	0.257	0.015	2.11	0.082
Waitoa River @ Landsdowne Rd Br	12	0.028	0.026	0.014	0.046	0.019	0.24	0.028	12	0.091	0.084	0.056	0.153	0.049	0.56	0.074
Waitoa River @ Mellon Rd Recorder	12	0.492	0.350	0.076	2.040	0.559	1.80	0.400	12	0.673	0.465	0.170	2.930	0.543	2.31	0.514
Tributaries to the lower Waikato River																
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.020	0.007	0.002	0.084	0.018	1.57	0.006	12	0.102	0.058	0.015	0.318	0.103	1.26	0.045
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.005	0.003	0.002	0.017	0.006	1.32	0.002	12	0.018	0.012	0.002	0.043	0.018	0.71	0.013
Karapiro Stm @ Hickey Rd Bridge	12	0.039	0.045	0.019	0.062	0.028	-0.16	0.038	12	0.171	0.110	0.058	0.944	0.039	2.97	0.105
Kirikiroa Stm @ Tauhara Dr	12	0.014	0.013	0.005	0.028	0.005	0.93	0.013	12	0.115	0.087	0.070	0.279	0.053	1.67	0.098
Komakorau Stm @ Henry Rd	12	0.014	0.012	0.005	0.032	0.007	1.53	0.013	12	0.135	0.114	0.074	0.292	0.051	1.46	0.099
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.064	0.064	0.049	0.093	0.010	1.33	0.061	12	0.094	0.092	0.064	0.187	0.029	1.87	0.078
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	0.198	0.159	0.037	0.592	0.222	1.10	0.091	12	0.654	0.535	0.229	2.170	0.227	2.25	0.389
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.558	0.561	0.240	0.824	0.273	0.01	0.617	12	0.636	0.609	0.450	0.862	0.222	0.47	0.675

Location	Dissolved Reactive Phosphorus (g m ⁻³)								Total Phosphorus (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangaone Stm @ Annebrooke Rd Br	12	0.064	0.066	0.041	0.085	0.018	-0.10	0.067	12	0.174	0.170	0.129	0.302	0.056	1.41	0.148
Mangaonua Stm @ Hoeka Rd	12	0.013	0.014	0.009	0.019	0.004	0.36	0.013	12	0.071	0.058	0.028	0.218	0.025	2.49	0.065
Mangaonua Stm @ Te Miro Rd	12	0.016	0.016	0.008	0.025	0.006	0.35	0.021	12	0.050	0.033	0.024	0.251	0.011	2.98	0.040
Mangatangi River @ SH2 Maramarua	12	0.023	0.023	0.016	0.033	0.009	0.38	0.022	12	0.100	0.088	0.033	0.279	0.057	1.68	0.083
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.010	0.010	0.005	0.028	0.003	2.49	0.010	12	0.036	0.025	0.013	0.138	0.013	2.61	0.024
Mangawara Stm @ Rutherford Rd Br	12	0.033	0.026	0.011	0.071	0.021	1.03	0.031	12	0.283	0.241	0.169	0.602	0.137	1.42	0.251
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.048	0.036	0.013	0.129	0.055	0.79	0.024	12	0.262	0.221	0.097	0.805	0.173	1.92	0.200
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.025	0.027	0.018	0.031	0.009	-0.42	0.025	12	0.163	0.121	0.085	0.634	0.051	2.83	0.118
Ohaeroa Stm @ SH22 Br	12	0.010	0.010	0.002	0.021	0.003	0.97	0.008	12	0.063	0.035	0.014	0.170	0.084	0.98	0.032
Opuatia Stm @ Ponganui Rd	12	0.009	0.008	0.002	0.017	0.003	0.80	0.009	12	0.117	0.044	0.019	0.868	0.038	2.93	0.034
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	0.113	0.111	0.089	0.143	0.032	0.41	0.120	12	0.151	0.144	0.105	0.215	0.069	0.24	0.151
Waerenga Stm @ Taniwha Rd	12	0.030	0.028	0.015	0.050	0.017	0.39	0.023	12	0.072	0.058	0.038	0.211	0.026	2.55	0.053
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.037	0.029	0.014	0.071	0.026	0.73	0.027	12	0.153	0.161	0.073	0.325	0.062	1.23	0.133
Whakapipi Stm @ SH22 Br	12	0.016	0.016	0.009	0.029	0.008	0.67	0.011	12	0.065	0.060	0.033	0.170	0.022	2.29	0.047
Whakauru Stm @ U/S SH1 Br	12	0.025	0.025	0.018	0.035	0.004	0.74	0.022	12	0.036	0.033	0.022	0.066	0.015	1.18	0.031
Whangamarino River @ Island Block Rd	12	0.007	0.005	0.002	0.022	0.006	1.44	0.007	12	0.162	0.155	0.105	0.233	0.080	0.33	0.174
Whangamarino River @ Jefferies Rd Br	12	0.038	0.032	0.023	0.071	0.016	1.21	0.024	12	0.130	0.099	0.046	0.462	0.040	2.32	0.087
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.003	0.002	0.002	0.008	0.000	2.22	0.002	12	0.120	0.117	0.054	0.213	0.049	0.66	0.052
Waipa River and Tributaries																
Kaniwhaniwha Stm @ Wright Rd	12	0.008	0.008	0.002	0.017	0.004	0.62	0.007	12	0.041	0.036	0.019	0.100	0.023	1.43	0.032
Mangaohoi Stm @ South Branch Maru Rd	12	0.044	0.047	0.022	0.061	0.026	-0.43	0.049	12	0.072	0.071	0.034	0.171	0.022	2.00	0.063
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.017	0.016	0.011	0.030	0.006	1.26	0.015	12	0.054	0.045	0.032	0.103	0.030	1.05	0.042
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.223	0.183	0.057	0.593	0.260	0.87	0.142	12	0.413	0.388	0.193	0.731	0.245	0.48	0.316
Mangapu River @ Otorohanga	12	0.057	0.038	0.018	0.160	0.055	1.24	0.035	12	0.116	0.103	0.073	0.193	0.066	0.69	0.098
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.013	0.012	0.007	0.018	0.003	0.11	0.011	12	0.069	0.037	0.020	0.406	0.022	2.91	0.024
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.007	0.007	0.002	0.011	0.003	-0.21	0.007	12	0.034	0.009	0.007	0.229	0.005	2.54	0.008
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.014	0.014	0.008	0.023	0.006	0.56	0.015	12	0.089	0.094	0.041	0.133	0.056	-0.19	0.095
Puniu River @ Bartons Corner Rd Br	12	0.025	0.024	0.017	0.035	0.010	0.44	0.021	12	0.095	0.058	0.041	0.462	0.037	2.84	0.048
Waipa River @ Mangaokewa Rd	12	0.013	0.012	0.002	0.027	0.008	0.54	0.010	12	0.041	0.026	0.012	0.158	0.026	2.32	0.025
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.019	0.019	0.007	0.030	0.013	-0.03	0.017	12	0.093	0.061	0.034	0.189	0.089	0.73	0.063
Waipa River @ SH3 Otorohanga	12	0.012	0.011	0.005	0.022	0.007	0.57	0.009	12	0.060	0.042	0.017	0.151	0.071	0.83	0.035
Waitomo Stm @ SH31 Otorohanga	12	0.011	0.008	0.002	0.034	0.006	1.56	0.007	12	0.084	0.044	0.015	0.300	0.105	1.47	0.043
Waitomo Stm @ Tumutumumu Rd	12	0.012	0.010	0.007	0.025	0.004	1.62	0.010	12	0.057	0.055	0.017	0.123	0.069	0.39	0.028

Location	Dissolved Reactive Phosphorus (g m ⁻³)								Total Phosphorus (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tributaries to the upper Waikato River																
Kawaunui Stm @ SH5 Br	12	0.268	0.208	0.085	0.633	0.292	0.79	0.068	12	0.486	0.404	0.141	0.943	0.544	0.24	0.146
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.040	0.040	0.037	0.048	0.004	1.13	0.037	12	0.072	0.061	0.054	0.138	0.018	1.86	0.058
Mangakara Stm (Reporoa) @ SH5	12	0.060	0.059	0.051	0.075	0.006	1.01	0.057	12	0.102	0.099	0.080	0.145	0.029	0.84	0.085
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.047	0.045	0.033	0.072	0.017	0.72	0.041	12	0.052	0.050	0.037	0.069	0.015	0.12	0.054
Otamakokore Stm @ Hossack Rd	12	0.160	0.158	0.133	0.195	0.027	0.43	0.157	12	0.178	0.173	0.158	0.225	0.017	1.43	0.168
Pueto Stm @ Broadlands Rd Br	12	0.086	0.086	0.073	0.094	0.009	-0.54	0.082	12	0.118	0.117	0.106	0.139	0.009	0.89	0.112
Tahunaatara Stm @ Ohakuri Rd	12	0.040	0.038	0.033	0.057	0.010	1.04	0.037	12	0.059	0.056	0.036	0.097	0.025	0.69	0.052
Torepatutahi Stm @ Vaile Rd Br	12	0.086	0.086	0.076	0.096	0.008	-0.04	0.080	12	0.121	0.112	0.101	0.174	0.022	1.51	0.106
Waiotapu Stm @ Campbell Rd Br	12	0.030	0.031	0.021	0.036	0.007	-0.36	0.026	12	0.116	0.123	0.086	0.139	0.015	-0.68	0.110
Waiotapu Stm @ Homestead Rd Br	12	0.048	0.047	0.034	0.065	0.012	0.56	0.042	12	0.162	0.156	0.090	0.266	0.060	0.41	0.144
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.082	0.080	0.064	0.103	0.007	0.50	0.079	12	0.100	0.091	0.080	0.192	0.018	2.55	0.089
Whirinaki Stm @ Corbett Rd	12	0.084	0.076	0.065	0.189	0.008	2.89	0.071	12	0.088	0.073	0.065	0.192	0.005	1.92	0.071
West Coast																
Awakino River @ Gribbon Rd	12	0.015	0.015	0.007	0.019	0.006	-0.46	0.013	12	0.059	0.028	0.010	0.319	0.041	2.57	0.018
Awakino River @ SH3 Awakau Rd Junction	12	0.009	0.010	0.002	0.017	0.010	-0.10	0.009	12	0.073	0.047	0.012	0.256	0.079	1.38	0.023
Manganui River @ Off Manganui Rd	12	0.014	0.015	0.002	0.019	0.006	-1.20	0.013	12	0.126	0.067	0.008	0.404	0.214	0.88	0.025
Mangaotaki River @ SH3 Br	12	0.011	0.012	0.002	0.016	0.007	-0.69	0.013	12	0.121	0.046	0.013	0.750	0.099	2.61	0.032
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.014	0.014	0.006	0.020	0.004	-0.49	0.013	12	0.053	0.033	0.021	0.116	0.058	0.76	0.030
Mokau River @ Awakau Rd	12	0.007	0.007	0.002	0.011	0.004	-0.12	0.007	12	0.120	0.110	0.030	0.368	0.120	1.34	0.068
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.020	0.020	0.014	0.028	0.009	0.06	0.016	12	0.061	0.047	0.033	0.158	0.035	1.77	0.038
Mokau River @ Totoro Rd Recorder	12	0.010	0.010	0.002	0.017	0.004	-0.17	0.010	12	0.095	0.060	0.019	0.391	0.081	1.91	0.043
Mokauiti Stm @ Three Way Point - Aria	12	0.009	0.008	0.002	0.028	0.004	1.92	0.007	12	0.083	0.063	0.032	0.191	0.071	0.97	0.053
Ohautira Stm @ Waingaro Te Uku Rd	12	0.023	0.021	0.016	0.032	0.007	0.61	0.021	12	0.072	0.048	0.036	0.149	0.053	0.97	0.050
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.011	0.010	0.005	0.023	0.005	1.04	0.008	12	0.093	0.019	0.012	0.835	0.029	3.00	0.018
Tawarau River @ Off Speedies Rd	12	0.016	0.015	0.008	0.029	0.008	0.89	0.015	12	0.054	0.034	0.023	0.107	0.053	0.56	0.032
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.013	0.012	0.007	0.021	0.005	0.79	0.011	12	0.066	0.049	0.037	0.196	0.028	2.37	0.045
Waitetuna River @ Te Uku-Waingaro Rd	12	0.014	0.013	0.009	0.035	0.006	2.33	0.012	12	0.069	0.047	0.032	0.214	0.050	1.92	0.043
Inflows to Lake Taupo																
Hinemaiaia River @ SH1	12	0.033	0.033	0.021	0.044	0.007	-0.12	0.032	12	0.037	0.037	0.027	0.048	0.011	0.06	0.038
Kuratau River @ 43 Te Rae Street	12	0.025	0.012	0.008	0.168	0.006	2.96	0.011	12	0.030	0.015	0.009	0.194	0.007	2.99	0.015
Kuratau River @ SH41 Moerangi	12	0.007	0.007	0.002	0.010	0.004	-0.43	0.006	12	0.006	0.006	0.002	0.012	0.003	1.00	0.006
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.150	0.155	0.129	0.170	0.023	-0.21	0.136	12	0.176	0.177	0.158	0.194	0.011	0.09	0.172
Tauranga-Taupo River @ Te Kono Slackline	12	0.018	0.020	0.007	0.028	0.011	-0.09	0.017	12	0.022	0.022	0.013	0.030	0.011	-0.05	0.020

Location	Dissolved Reactive Phosphorus (g m ⁻³)									Total Phosphorus (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	0.010	0.011	0.002	0.013	0.006	-0.96	0.009	12	0.017	0.016	0.009	0.030	0.006	0.99	0.015	
Tokaanu Stm @ Off SH41 Turangi	12	0.079	0.081	0.068	0.088	0.007	-0.40	0.078	12	0.082	0.082	0.076	0.090	0.007	0.27	0.080	
Waihaha River @ SH32	12	0.024	0.021	0.013	0.039	0.012	0.49	0.021	12	0.025	0.023	0.015	0.037	0.016	0.26	0.025	
Waitahanui River @ Blake Rd	12	0.050	0.051	0.035	0.056	0.004	-1.55	0.051	12	0.051	0.051	0.046	0.056	0.004	0.40	0.052	
Whanganui Stm @ Lakeside Lake Taupo	12	0.015	0.015	0.007	0.024	0.008	0.14	0.014	12	0.016	0.017	0.007	0.024	0.009	-0.29	0.015	
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.027	0.026	0.019	0.037	0.005	0.73	0.024	12	0.037	0.036	0.031	0.044	0.003	0.67	0.037	
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.027	0.027	0.021	0.035	0.003	0.93	0.025	12	0.034	0.034	0.029	0.040	0.007	0.32	0.033	

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

Ammoniacal Nitrogen (g N m⁻³)

Nitrate/Nitrite (g m⁻³)

Location	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	0.01	0.02	0.01	0.03	0.02	0.29	0.01
Kauaeranga River @ Smiths Cableway/Recorder	12	0.01	0.01	0.01	0.02	0.02	0.52	0.01
Ohinemuri River @ Queens Head	12	0.06	0.06	0.01	0.13	0.06	0.52	0.02
Ohinemuri River @ SH25 Br	12	0.02	0.02	0.01	0.08	0.02	1.54	0.01
Tairua River @ Morrisons Br Hikuai	12	0.01	0.01	0.01	0.01	0.00	-1.15	0.01
Tapu River @ Tapu-Coroglen Rd	12	0.01	0.01	0.01	0.01	0.00	1.15	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	1.28	0.01
Waiwawa River @ SH25 Coroglen	12	0.01	0.01	0.01	0.03	0.00	3.02	0.01
Wharekawa River @ SH25	12	0.01	0.01	0.01	0.03	0.02	0.92	0.01
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.01	0.01	0.01	0.03	0.01	1.78	0.01
Oraka Stm @ Lake Rd	12	0.05	0.02	0.01	0.26	0.04	2.22	0.02
Piako River @ Kiwitahi	12	0.07	0.03	0.01	0.45	0.05	2.81	0.02
Piako River @ Paeroa-Tahuna Rd Br	12	0.11	0.10	0.01	0.30	0.14	0.70	0.05
Piakonui Stm @ Piakonui Rd	12	0.02	0.01	0.01	0.19	0.01	2.90	0.01
Waihou River @ Okauia	12	0.01	0.01	0.01	0.04	0.02	0.98	0.01
Waihou River @ Whites Rd	12	0.01	0.01	0.01	0.01	0.00	1.79	0.01
Waiohotu Stm @ Waiohotu Rd (Off SH5)	12	0.01	0.01	0.01	0.02	0.00	2.56	0.01
Waiomou Stm @ Matamata-Tauranga Rd	12	0.02	0.02	0.01	0.06	0.01	1.99	0.01
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.04	0.02	0.01	0.17	0.03	1.66	0.02
Waitoa River @ Landsdowne Rd Br	12	0.06	0.03	0.01	0.25	0.05	1.92	0.02
Waitoa River @ Mellon Rd Recorder	12	0.12	0.12	0.01	0.35	0.16	0.78	0.06
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.10	0.04	0.01	0.31	0.17	1.04	0.03
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.03	0.03	0.01	0.05	0.02	0.02	0.02
Karapiro Stm @ Hickey Rd Bridge	12	0.06	0.02	0.01	0.47	0.02	2.83	0.02
Kirikiroa Stm @ Tauhara Dr	12	0.35	0.31	0.17	0.70	0.19	0.95	0.41
Komakorau Stm @ Henry Rd	12	0.78	0.76	0.29	1.43	0.72	0.38	0.88
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.03	0.02	0.01	0.17	0.02	2.68	0.01
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	0.51	0.40	0.12	1.63	0.16	1.86	0.29
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.12	0.09	0.01	0.27	0.21	0.41	0.05

Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
12	0.086	0.082	0.001	0.237	0.082	0.72	0.049
12	0.066	0.057	0.001	0.181	0.089	0.67	0.019
12	0.849	0.837	0.182	1.440	0.292	-0.29	0.780
12	0.559	0.597	0.147	0.829	0.262	-0.68	0.535
12	0.053	0.061	0.003	0.101	0.058	-0.35	0.032
12	0.022	0.011	0.001	0.067	0.038	0.86	0.004
12	0.072	0.074	0.001	0.158	0.083	0.17	0.049
12	0.171	0.186	0.004	0.297	0.157	-0.49	0.164
12	0.024	0.025	0.003	0.049	0.031	-0.05	0.015
12	0.069	0.067	0.011	0.133	0.072	0.01	0.055
Hauraki							
12	0.317	0.340	0.105	0.391	0.100	-1.41	0.340
12	2.405	1.980	1.720	3.960	1.345	0.79	1.845
12	1.258	0.940	0.047	2.670	1.699	0.26	1.015
12	1.795	1.750	0.930	2.500	0.865	-0.16	1.450
12	0.308	0.235	0.120	0.615	0.343	0.65	0.220
12	1.117	1.095	0.955	1.430	0.197	0.82	1.015
12	0.595	0.599	0.564	0.624	0.032	-0.30	0.566
12	0.187	0.185	0.156	0.222	0.038	0.08	0.182
12	0.485	0.468	0.285	0.714	0.283	0.11	0.455
12	0.339	0.259	0.054	0.889	0.423	0.71	0.247
12	1.587	1.500	1.050	2.140	0.580	0.34	1.415
12	2.260	2.275	1.360	3.050	0.590	-0.30	2.310
Tributaries to the lower Waikato River							
12	1.056	0.966	0.108	1.940	0.665	-0.04	1.025
12	0.319	0.246	0.024	0.693	0.480	0.17	0.221
12	0.639	0.508	0.149	1.250	0.895	0.38	0.531
12	1.140	1.115	0.624	1.920	0.559	0.51	0.852
12	1.713	1.530	1.130	3.430	0.235	2.09	1.475
12	1.264	1.250	1.180	1.390	0.115	0.45	1.210
12	1.358	1.255	0.925	2.010	0.435	0.71	0.973
12	2.548	2.560	1.060	3.590	0.760	-0.51	2.785

Ammoniacal Nitrogen (g N m⁻³)Nitrate/Nitrite (g m⁻³)

Location	Ammoniacal Nitrogen (g N m ⁻³)								Nitrate/Nitrite (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangaone Stm @ Annebrooke Rd Br	12	0.04	0.03	0.01	0.12	0.02	2.02	0.03	12	2.443	2.420	1.660	2.880	0.430	-0.93	2.675
Mangaonua Stm @ Hoeka Rd	12	0.05	0.04	0.01	0.19	0.03	2.03	0.07	12	1.435	1.390	1.110	2.000	0.415	0.68	1.340
Mangaonua Stm @ Te Miro Rd	12	0.03	0.01	0.01	0.24	0.01	2.76	0.01	12	0.632	0.455	0.241	1.550	0.658	0.98	0.465
Mangatangi River @ SH2 Maramarua	12	0.03	0.01	0.01	0.16	0.02	2.34	0.01	12	0.307	0.187	0.008	0.783	0.461	0.60	0.293
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.01	0.01	0.01	0.05	0.02	1.93	0.01	12	0.080	0.063	0.003	0.295	0.114	1.32	0.084
Mangawara Stm @ Rutherford Rd Br	12	0.39	0.42	0.17	0.57	0.33	-0.20	0.38	12	0.984	0.992	0.488	1.370	0.279	-0.36	1.020
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.14	0.14	0.06	0.37	0.08	1.68	0.12	12	1.582	1.585	1.350	1.950	0.250	0.47	1.650
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.06	0.04	0.01	0.24	0.03	2.43	0.05	12	0.742	0.731	0.122	1.280	0.598	-0.02	0.799
Ohaeroa Stm @ SH22 Br	12	0.02	0.01	0.01	0.05	0.02	1.01	0.01	12	1.201	1.175	0.922	1.520	0.435	0.07	1.090
Opuatia Stm @ Ponganui Rd	12	0.02	0.01	0.01	0.05	0.03	1.09	0.01	12	0.577	0.593	0.224	0.822	0.208	-0.76	0.566
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	0.06	0.02	0.01	0.38	0.06	2.70	0.01	12	1.345	1.305	1.190	1.710	0.235	0.88	1.350
Waerenga Stm @ Taniwha Rd	12	0.02	0.02	0.01	0.05	0.02	1.12	0.01	12	0.701	0.720	0.298	1.020	0.480	-0.16	0.713
Waitawhiriwhiri Stm @ Edgecumbe Street	12	0.72	0.68	0.39	1.11	0.29	0.54	0.71	12	1.061	0.977	0.776	2.030	0.157	2.39	0.850
Whakapipi Stm @ SH22 Br	12	0.03	0.01	0.01	0.20	0.02	2.41	0.01	12	3.491	3.175	2.910	5.100	0.725	1.38	3.290
Whakauru Stm @ U/S SH1 Br	12	0.01	0.01	0.01	0.02	0.01	1.16	0.01	12	0.057	0.056	0.024	0.107	0.043	0.34	0.037
Whangamarino River @ Island Block Rd	12	0.08	0.08	0.01	0.18	0.14	0.25	0.05	12	0.183	0.043	0.002	1.220	0.212	2.48	0.132
Whangamarino River @ Jefferies Rd Br	12	0.06	0.03	0.01	0.28	0.06	1.89	0.03	12	0.666	0.529	0.004	1.490	0.789	0.47	0.745
Whangape Stm @ Rangiriri-Glen Murray Rd	12	0.01	0.01	0.01	0.04	0.01	1.94	0.01	12	0.030	0.003	0.001	0.305	0.009	2.99	0.023
Waipa River and Tributaries																
Kaniwhaniwha Stm @ Wright Rd	12	0.03	0.02	0.01	0.06	0.03	0.79	0.02	12	0.399	0.366	0.032	0.802	0.533	0.11	0.310
Mangaohoi Stm @ South Branch Maru Rd	12	0.01	0.01	0.01	0.04	0.01	1.85	0.01	12	0.293	0.257	0.140	0.557	0.204	0.66	0.257
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.01	0.01	0.01	0.02	0.02	0.17	0.02	12	0.492	0.421	0.206	0.934	0.373	0.60	0.435
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.11	0.05	0.01	0.35	0.17	1.02	0.09	12	2.199	2.095	1.280	4.050	0.780	1.12	2.215
Mangapu River @ Otorohanga	12	0.02	0.03	0.01	0.05	0.03	-0.03	0.03	12	0.699	0.677	0.130	1.460	0.608	0.32	0.825
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.03	0.01	0.01	0.10	0.04	1.26	0.01	12	0.311	0.274	0.073	0.808	0.304	0.84	0.250
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.01	0.01	0.01	0.01	0.00	1.79	0.01	12	0.158	0.171	0.063	0.216	0.083	-0.51	0.118
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.07	0.05	0.01	0.28	0.05	1.77	0.04	12	0.635	0.644	0.035	1.320	0.659	0.19	0.445
Puniu River @ Bartons Corner Rd Br	12	0.04	0.02	0.01	0.19	0.05	1.99	0.01	12	0.540	0.514	0.202	0.965	0.533	0.26	0.465
Waipa River @ Mangaokewa Rd	12	0.01	0.01	0.01	0.04	0.01	1.80	0.01	12	0.342	0.320	0.249	0.524	0.148	0.73	0.308
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.03	0.03	0.02	0.08	0.01	1.97	0.02	12	0.573	0.595	0.052	1.050	0.435	-0.05	0.594
Waipa River @ SH3 Otorohanga	12	0.02	0.01	0.01	0.06	0.02	1.80	0.01	12	0.438	0.368	0.152	0.947	0.342	0.78	0.330
Waitomo Stm @ SH31 Otorohanga	12	0.02	0.02	0.01	0.06	0.03	0.67	0.01	12	0.562	0.514	0.296	1.150	0.239	1.30	0.525
Waitomo Stm @ Tumutumumu Rd	12	0.01	0.01	0.01	0.03	0.01	1.38	0.01	12	0.612	0.624	0.492	0.751	0.110	0.09	0.559

Ammoniacal Nitrogen (g N m⁻³)

Location	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	0.39	0.25	0.01	1.57	0.53	1.42	0.02
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.01	0.01	0.01	0.05	0.01	2.50	0.01
Mangakara Stm (Reporoa) @ SH5	12	0.02	0.02	0.01	0.04	0.01	0.49	0.03
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.01	0.01	0.01	0.03	0.00	2.83	0.01
Otamakokore Stm @ Hossack Rd	12	0.01	0.01	0.01	0.06	0.01	2.64	0.01
Pueto Stm @ Broadlands Rd Br	12	0.01	0.01	0.01	0.02	0.01	0.82	0.01
Tahunaatara Stm @ Ohakuri Rd	12	0.01	0.01	0.01	0.03	0.00	1.95	0.01
Torepatutahi Stm @ Vaile Rd Br	12	0.01	0.01	0.01	0.02	0.01	0.92	0.01
Waiotapu Stm @ Campbell Rd Br	12	0.97	0.99	0.82	1.04	0.08	-1.10	0.87
Waiotapu Stm @ Homestead Rd Br	12	0.28	0.29	0.07	0.53	0.27	0.11	0.27
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.01	0.01	0.01	0.02	0.00	2.21	0.01
Whirinaki Stm @ Corbett Rd	12	0.01	0.01	0.01	0.01	0.00	1.79	0.01

West Coast

Awakino River @ Gribbon Rd	12	0.01	0.01	0.01	0.01	0.00	3.02	0.01
Awakino River @ SH3 Awakau Rd Junction	12	0.01	0.01	0.01	0.02	0.01	0.82	0.01
Manganui River @ Off Manganui Rd	12	0.01	0.01	0.01	0.02	0.00	1.59	0.01
Mangaotaki River @ SH3 Br	12	0.01	0.01	0.01	0.03	0.01	1.38	0.01
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.01	0.01	0.01	0.02	0.00	1.59	0.01
Mokau River @ Awakau Rd	12	0.02	0.02	0.01	0.05	0.02	0.73	0.02
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.01	0.01	0.01	0.01	0.01	0.71	0.01
Mokau River @ Totoro Rd Recorder	12	0.01	0.01	0.01	0.03	0.02	0.59	0.01
Mokauiti Stm @ Three Way Point - Aria	12	0.03	0.03	0.01	0.06	0.03	0.48	0.02
Ohautira Stm @ Waingaro Te Uku Rd	12	0.01	0.01	0.01	0.02	0.01	0.06	0.01
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.01	0.01	0.01	0.03	0.02	0.91	0.01
Tawarau River @ Off Speedies Rd	12	0.01	0.01	0.01	0.03	0.01	1.32	0.01
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.02	0.02	0.01	0.05	0.01	1.24	0.01
Waitetuna River @ Te Uku-Waingaro Rd	12	0.02	0.02	0.01	0.02	0.01	-0.88	0.01

Inflows to Lake Taupo

Hinemaiaia River @ SH1	12	0.01	0.01	0.01	0.04	0.01	2.21	0.01
Kuratau River @ 43 Te Rae Street	12	0.03	0.01	0.01	0.13	0.03	1.80	0.01
Kuratau River @ SH41 Moerangi	12	0.02	0.01	0.01	0.08	0.02	2.54	0.01
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.01	0.02	0.01	0.03	0.02	0.29	0.01
Tauranga-Taupo River @ Te Kono Slackline	12	0.01	0.01	0.01	0.05	0.00	2.95	0.01

Nitrate/Nitrite (g m⁻³)

Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
12	2.065	2.000	1.400	3.020	0.595	0.45	1.415
12	0.226	0.226	0.129	0.367	0.114	0.44	0.165
12	0.944	0.908	0.787	1.100	0.180	0.29	0.870
12	0.499	0.479	0.409	0.708	0.080	1.36	0.454
12	0.607	0.634	0.363	0.859	0.202	-0.12	0.567
12	0.344	0.345	0.309	0.376	0.028	0.02	0.334
12	0.434	0.444	0.275	0.586	0.141	-0.10	0.439
12	0.308	0.326	0.221	0.370	0.094	-0.45	0.258
12	0.778	0.793	0.680	0.872	0.115	-0.32	0.732
12	1.237	1.250	1.080	1.360	0.135	-0.43	1.190
12	0.654	0.638	0.553	0.876	0.055	1.58	0.610
12	0.571	0.585	0.453	0.617	0.038	-1.67	0.540

12	0.134	0.121	0.037	0.255	0.113	0.24	0.141
12	0.206	0.135	0.006	0.554	0.286	0.79	0.188
12	0.143	0.132	0.005	0.352	0.199	0.37	0.132
12	0.663	0.640	0.406	1.170	0.323	0.89	0.624
12	0.253	0.248	0.151	0.367	0.175	0.08	0.230
12	0.396	0.287	0.105	1.010	0.359	0.99	0.385
12	0.300	0.271	0.190	0.525	0.131	0.98	0.245
12	0.580	0.529	0.283	1.220	0.349	1.13	0.480
12	0.409	0.280	0.009	1.350	0.547	0.99	0.260
12	0.293	0.277	0.033	0.490	0.224	-0.06	0.256
12	0.138	0.080	0.020	0.418	0.194	0.91	0.100
12	0.293	0.294	0.163	0.395	0.150	-0.10	0.262
12	0.381	0.358	0.001	0.893	0.480	0.29	0.355
12	0.365	0.349	0.059	0.698	0.285	0.09	0.304

12	0.048	0.049	0.002	0.100	0.068	0.13	0.058
12	0.446	0.406	0.302	0.820	0.145	1.61	0.446
12	0.085	0.078	0.060	0.141	0.038	0.84	0.080
12	0.737	0.731	0.631	0.843	0.154	0.08	0.735
12	0.051	0.049	0.034	0.076	0.023	0.48	0.048

Ammoniacal Nitrogen (g N m⁻³)

Nitrate/Nitrite (g m⁻³)

Location	Ammoniacal Nitrogen (g N m ⁻³)								Nitrate/Nitrite (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	0.01	0.01	0.01	0.06	0.01	<u>2.08</u>	0.01	12	0.004	0.002	0.001	0.019	0.003	<u>2.46</u>	0.004
Tokaanu Stm @ Off SH41 Turangi	12	0.01	0.01	0.01	0.06	0.00	<u>2.94</u>	0.01	12	0.380	0.376	0.361	0.420	0.019	1.21	0.376
Waihaha River @ SH32	12	0.01	0.01	0.01	0.03	0.00	<u>2.67</u>	0.01	12	0.105	0.101	0.075	0.150	0.044	0.32	0.108
Waitahanui River @ Blake Rd	12	0.01	0.01	0.01	0.03	0.00	<u>2.67</u>	0.01	12	0.355	0.358	0.321	0.386	0.021	-0.53	0.330
Whanganui Stm @ Lakeside Lake Taupo	12	0.01	0.01	0.01	0.06	0.00	<u>2.66</u>	0.01	12	0.373	0.343	0.299	0.560	0.108	1.19	0.400
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.01	0.01	0.01	0.06	0.01	<u>2.91</u>	0.01	12	0.535	0.510	0.285	0.828	0.281	0.17	0.546
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.01	0.01	0.01	0.06	0.01	<u>2.41</u>	0.01	12	0.532	0.495	0.279	0.833	0.281	0.22	0.564

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

Location	Total Kjeldahl Nitrogen (g m ⁻³)								Total Nitrogen (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Coromandel																
Hikutaia River @ Old Maratoto Rd	12	0.12	0.10	0.08	0.19	0.06	0.95	0.10	12	0.20	0.19	0.11	0.43	0.08	1.49	0.17
Kauaeranga River @ Smiths Cableway/Recorder	12	0.11	0.09	0.03	0.31	0.04	1.54	0.07	12	0.18	0.14	0.07	0.43	0.17	0.96	0.10
Ohinemuri River @ Queens Head	12	0.49	0.48	0.19	0.84	0.39	-0.04	0.27	12	1.34	1.44	0.86	2.16	0.57	0.51	1.14
Ohinemuri River @ SH25 Br	12	0.15	0.13	0.03	0.50	0.09	2.04	0.14	12	0.71	0.72	0.24	1.00	0.22	-0.71	0.67
Tairua River @ Morrisons Br Hikuai	12	0.12	0.09	0.07	0.33	0.07	1.82	0.09	12	0.18	0.15	0.08	0.39	0.10	1.24	0.13
Tapu River @ Tapu-Coroglen Rd	12	0.10	0.07	0.03	0.34	0.08	1.70	0.07	12	0.12	0.09	0.03	0.36	0.12	1.27	0.08
Waiau River @ E309 Rd Ford	12	0.13	0.07	0.03	0.73	0.09	2.67	0.09	12	0.20	0.14	0.03	0.82	0.16	2.16	0.14
Waitekauri River @ U/S Ohinemuri Conflu	12	0.11	0.09	0.03	0.35	0.09	1.54	0.10	12	0.28	0.28	0.03	0.53	0.17	0.13	0.26
Waiwawa River @ SH25 Coroglen	12	0.11	0.11	0.05	0.31	0.08	1.73	0.09	12	0.14	0.13	0.06	0.34	0.09	1.50	0.11
Wharekawa River @ SH25	12	0.13	0.13	0.03	0.25	0.08	0.35	0.12	12	0.20	0.20	0.08	0.38	0.07	1.02	0.17
Hauraki																
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	0.21	0.15	0.06	0.51	0.18	1.01	0.13	12	0.53	0.49	0.33	0.88	0.19	0.85	0.46
Oraka Stm @ Lake Rd	12	0.38	0.32	0.06	0.83	0.26	0.77	0.29	12	2.79	2.37	1.83	4.40	1.66	0.67	2.17
Piako River @ Kiwitahi	12	0.57	0.46	0.25	2.09	0.13	2.77	0.44	12	1.83	1.47	0.30	4.76	1.84	0.93	1.46
Piako River @ Paeroa-Tahuna Rd Br	12	0.91	0.78	0.44	1.77	0.25	1.27	0.72	12	2.71	2.77	1.37	3.91	1.12	-0.28	2.21
Piakonui Stm @ Piakonui Rd	12	0.33	0.19	0.14	1.79	0.10	2.97	0.20	12	0.64	0.42	0.30	2.41	0.37	2.59	0.41
Waihou River @ Okauia	12	0.22	0.20	0.12	0.36	0.14	0.46	0.18	12	1.34	1.33	1.10	1.69	0.38	0.48	1.17
Waihou River @ Whites Rd	12	0.06	0.06	0.03	0.11	0.06	0.14	0.03	12	0.65	0.65	0.60	0.71	0.04	-0.06	0.60
Waiohotu Stm @ Waiohotu Rd (Off SH5)	12	0.17	0.16	0.03	0.35	0.11	0.48	0.13	12	0.36	0.34	0.24	0.56	0.11	0.86	0.31
Waiomou Stm @ Matamata-Tauranga Rd	12	0.18	0.21	0.09	0.33	0.10	0.36	0.15	12	0.67	0.68	0.42	1.04	0.38	0.23	0.64
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	0.44	0.33	0.13	1.40	0.11	1.78	0.37	12	0.78	0.50	0.33	2.29	0.58	1.54	0.64
Waitoa River @ Landsdowne Rd Br	12	0.55	0.49	0.30	0.93	0.23	0.77	0.42	12	2.13	1.99	1.54	3.07	0.72	0.67	1.85
Waitoa River @ Mellon Rd Recorder	12	0.71	0.69	0.40	1.09	0.43	0.26	0.52	12	2.97	3.08	1.82	3.79	0.73	-0.57	2.90
Tributaries to the lower Waikato River																
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	0.74	0.52	0.35	1.57	0.52	1.06	0.50	12	1.80	1.80	0.46	3.09	1.06	-0.14	1.73
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	0.28	0.27	0.16	0.47	0.11	0.63	0.26	12	0.60	0.56	0.18	1.16	0.49	0.32	0.53
Karapiro Stm @ Hickey Rd Bridge	12	0.64	0.36	0.25	3.93	0.13	3.00	0.31	12	1.28	0.89	0.42	5.13	0.90	2.49	0.87
Kirikiroa Stm @ Tauhara Dr	12	0.86	0.86	0.50	1.41	0.34	0.54	0.95	12	2.00	2.06	1.28	3.33	0.93	0.59	1.99
Komakorau Stm @ Henry Rd	12	1.85	1.85	1.01	3.07	0.98	0.29	1.89	12	3.57	3.39	2.56	5.99	1.28	1.17	3.30
Little Waipa Stm @ Arapuni - Putaruru Rd	12	0.25	0.21	0.08	0.76	0.15	2.16	0.15	12	1.52	1.47	1.37	2.10	0.15	2.18	1.39
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	12	1.86	1.61	0.54	4.79	0.50	1.55	1.26	12	3.21	3.06	1.63	6.78	1.06	1.57	2.19

Location	Total Kjeldahl Nitrogen (g m ⁻³)									Total Nitrogen (g m ⁻³)						
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	0.62	0.55	0.36	1.29	0.31	1.41	0.43	12	3.17	3.19	2.35	4.17	0.52	0.37	3.26
Mangaone Stm @ Annebrooke Rd Br	12	0.53	0.50	0.46	0.81	0.08	2.13	0.44	12	2.97	2.91	2.47	3.39	0.32	-0.20	3.05
Mangaonua Stm @ Hoeka Rd	12	0.41	0.33	0.25	0.94	0.23	1.64	0.36	12	1.85	1.69	1.37	2.59	0.69	0.51	1.70
Mangaonua Stm @ Te Miro Rd	12	0.33	0.22	0.16	1.41	0.06	2.93	0.24	12	0.96	0.71	0.45	2.96	0.70	2.11	0.77
Mangatangi River @ SH2 Maramarua	12	0.45	0.35	0.17	1.28	0.26	1.65	0.34	12	0.76	0.58	0.21	1.66	0.75	0.70	0.75
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	0.19	0.15	0.03	0.63	0.09	2.27	0.15	12	0.27	0.24	0.03	0.93	0.14	2.15	0.24
Mangawara Stm @ Rutherford Rd Br	12	1.24	1.25	0.63	2.26	0.77	0.56	1.25	12	2.22	2.28	1.12	3.50	1.08	0.22	2.41
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	0.90	0.83	0.41	2.10	0.47	1.35	0.76	12	2.49	2.35	1.86	3.77	0.82	0.97	2.43
Matahuru Stm @ Waiterimu Road Below Confluence	12	0.64	0.50	0.29	2.25	0.22	2.62	0.58	12	1.38	1.22	0.51	2.98	0.94	0.92	1.54
Ohaeroa Stm @ SH22 Br	12	0.41	0.30	0.19	0.80	0.38	0.88	0.29	12	1.61	1.55	1.22	2.23	0.40	0.66	1.42
Opuatia Stm @ Ponganui Rd	12	0.52	0.29	0.20	2.55	0.26	2.77	0.26	12	1.09	0.89	0.57	3.27	0.32	2.66	0.89
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	0.30	0.25	0.10	0.64	0.22	0.86	0.19	12	1.64	1.62	1.35	1.97	0.44	0.05	1.57
Waerenga Stm @ Taniwha Rd	12	0.29	0.24	0.17	0.81	0.09	2.22	0.24	12	0.99	0.99	0.51	1.76	0.55	0.52	0.99
Waitawhiriwhiri Stm @ Edgecumbe Street	12	1.45	1.47	0.91	2.26	0.40	0.66	1.37	12	2.51	2.47	1.90	4.29	0.51	2.04	2.22
Whakapipi Stm @ SH22 Br	12	0.50	0.44	0.38	1.00	0.12	2.27	0.41	12	3.99	3.85	3.29	5.54	0.77	1.22	3.83
Whakauru Stm @ U/S SH1 Br	12	0.17	0.15	0.10	0.30	0.12	0.64	0.12	12	0.23	0.22	0.14	0.35	0.16	0.32	0.17
Whangamarino River @ Island Block Rd	12	1.51	1.27	0.98	3.16	0.78	1.56	1.27	12	1.69	1.42	1.06	3.16	0.71	1.18	1.46
Whangamarino River @ Jefferies Rd Br	12	0.56	0.40	0.20	1.96	0.23	1.99	0.43	12	1.22	0.84	0.20	2.78	1.15	0.75	1.31
Whangape Stm @ Rangiriri-Glen Murray Rd	12	1.44	1.47	0.71	1.99	0.52	-0.41	0.70	12	1.47	1.48	1.02	1.99	0.51	0.02	0.91
Waipa River and Tributaries																
Kaniwhaniwha Stm @ Wright Rd	12	0.26	0.22	0.11	0.57	0.14	1.14	0.22	12	0.66	0.59	0.15	1.32	0.63	0.38	0.56
Mangaohoi Stm @ South Branch Maru Rd	12	0.28	0.20	0.11	0.97	0.20	2.00	0.15	12	0.57	0.50	0.26	1.20	0.27	1.09	0.45
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	0.37	0.23	0.12	1.49	0.25	2.41	0.25	12	0.87	0.65	0.39	2.00	0.56	1.28	0.70
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	0.87	0.78	0.41	1.75	0.46	0.98	0.72	12	3.07	3.03	2.00	5.03	0.82	1.04	3.10
Mangapu River @ Otorohanga	12	0.34	0.31	0.23	0.72	0.11	1.96	0.32	12	1.04	0.95	0.46	2.18	0.66	0.89	1.18
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	0.35	0.19	0.14	1.89	0.11	2.92	0.16	12	0.66	0.46	0.23	2.70	0.43	2.45	0.41
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	0.16	0.04	0.03	1.41	0.06	2.98	0.05	12	0.32	0.21	0.09	1.55	0.10	2.89	0.18
Ohote Stm @ Whatawhata/Horotiu Rd	12	0.78	0.80	0.48	1.06	0.19	-0.13	0.81	12	1.41	1.40	0.76	2.38	0.86	0.43	1.36
Puniu River @ Bartons Corner Rd Br	12	0.41	0.25	0.14	1.85	0.25	2.61	0.22	12	0.95	0.76	0.35	2.75	0.76	1.64	0.72
Waipa River @ Mangaokewa Rd	12	0.27	0.20	0.14	0.76	0.18	1.89	0.20	12	0.61	0.57	0.41	1.02	0.27	0.85	0.53
Waipa River @ Pirongia-Ngutunui Rd Br	12	0.37	0.29	0.13	0.65	0.36	0.48	0.29	12	0.94	0.89	0.22	1.59	0.76	-0.11	0.86
Waipa River @ SH3 Otorohanga	12	0.26	0.21	0.11	0.53	0.21	0.81	0.20	12	0.70	0.65	0.26	1.34	0.41	0.73	0.58
Waitomo Stm @ SH31 Otorohanga	12	0.37	0.21	0.12	1.33	0.35	1.98	0.24	12	0.93	0.83	0.44	2.48	0.45	1.96	0.78
Waitomo Stm @ Tumutumumu Rd	12	0.14	0.12	0.03	0.30	0.14	0.47	0.14	12	0.76	0.76	0.60	0.93	0.20	0.04	0.72

Location	Total Kjeldahl Nitrogen (g m ⁻³)									Total Nitrogen (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	
Tributaries to the upper Waikato River																	
Kawaunui Stm @ SH5 Br	12	1.14	0.98	0.22	2.98	1.33	0.81	0.36	12	3.20	3.03	1.62	5.30	2.14	0.37	1.74	
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	0.20	0.16	0.10	0.45	0.10	1.37	0.14	12	0.42	0.40	0.23	0.78	0.18	1.03	0.30	
Mangakara Stm (Reporoa) @ SH5	12	0.27	0.25	0.19	0.47	0.12	1.07	0.21	12	1.22	1.18	1.03	1.44	0.32	0.24	1.08	
Mangakino Stm (Whakamaru) @ Sandel Rd	12	0.09	0.10	0.03	0.16	0.04	-0.03	0.10	12	0.59	0.56	0.48	0.83	0.11	1.28	0.57	
Otamakokore Stm @ Hossack Rd	12	0.26	0.23	0.12	0.52	0.11	1.13	0.21	12	0.87	0.87	0.48	1.38	0.32	0.46	0.79	
Pueto Stm @ Broadlands Rd Br	12	0.10	0.11	0.05	0.14	0.04	-0.44	0.09	12	0.44	0.45	0.38	0.50	0.07	-0.38	0.42	
Tahunaatara Stm @ Ohakuri Rd	12	0.20	0.18	0.06	0.49	0.10	1.50	0.17	12	0.63	0.63	0.38	0.98	0.29	0.30	0.62	
Torepatutahi Stm @ Vaile Rd Br	12	0.11	0.12	0.03	0.19	0.06	-0.18	0.10	12	0.42	0.41	0.33	0.55	0.13	0.40	0.37	
Waiotapu Stm @ Campbell Rd Br	12	1.10	1.09	0.94	1.27	0.22	0.02	1.02	12	1.88	1.87	1.63	2.09	0.17	-0.07	1.74	
Waiotapu Stm @ Homestead Rd Br	12	0.62	0.59	0.28	1.06	0.33	0.50	0.58	12	1.85	1.81	1.56	2.31	0.26	0.72	1.70	
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	0.13	0.15	0.03	0.20	0.07	-0.80	0.11	12	0.79	0.79	0.62	1.02	0.14	0.40	0.72	
Whirinaki Stm @ Corbett Rd	12	0.09	0.07	0.03	0.23	0.08	1.16	0.06	12	0.66	0.66	0.48	0.85	0.10	0.06	0.59	
West Coast																	
Awakino River @ Gribbon Rd	12	0.14	0.10	0.03	0.61	0.08	2.47	0.07	12	0.28	0.22	0.11	0.80	0.19	1.89	0.20	
Awakino River @ SH3 Awakau Rd Junction	12	0.22	0.18	0.10	0.64	0.18	1.60	0.12	12	0.43	0.39	0.18	1.04	0.30	1.15	0.33	
Manganui River @ Off Manganui Rd	12	0.25	0.16	0.03	0.70	0.35	0.91	0.10	12	0.39	0.35	0.07	0.97	0.51	0.65	0.25	
Mangaotaki River @ SH3 Br	12	0.43	0.22	0.06	2.35	0.27	2.65	0.19	12	1.09	0.85	0.57	2.97	0.53	2.00	0.86	
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	0.21	0.13	0.07	0.43	0.26	0.60	0.14	12	0.46	0.45	0.24	0.75	0.37	0.30	0.39	
Mokau River @ Awakau Rd	12	0.41	0.40	0.18	0.75	0.25	0.57	0.31	12	0.81	0.74	0.41	1.76	0.52	1.19	0.69	
Mokau River @ Mangaokewa Rd (Off SH30)	12	0.30	0.24	0.12	0.76	0.24	1.19	0.21	12	0.60	0.53	0.33	1.13	0.32	0.92	0.47	
Mokau River @ Totoro Rd Recorder	12	0.40	0.29	0.16	1.15	0.35	1.38	0.26	12	0.98	0.78	0.45	2.00	0.66	0.93	0.74	
Mokauiti Stm @ Three Way Point - Aria	12	0.42	0.32	0.23	0.80	0.28	0.91	0.31	12	0.82	0.68	0.34	1.93	0.76	0.92	0.61	
Ohautira Stm @ Waingaro Te Uku Rd	12	0.22	0.18	0.03	0.51	0.19	0.67	0.18	12	0.52	0.51	0.16	1.00	0.37	0.32	0.44	
Oparau River @ Langdon Rd (Off Okupata Rd)	12	0.35	0.14	0.03	2.65	0.09	2.97	0.13	12	0.49	0.26	0.09	3.07	0.18	2.91	0.25	
Tawarau River @ Off Speedies Rd	12	0.20	0.16	0.08	0.45	0.16	1.02	0.14	12	0.49	0.50	0.30	0.80	0.25	0.37	0.40	
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	0.32	0.27	0.19	0.76	0.11	1.93	0.26	12	0.70	0.61	0.25	1.65	0.59	0.88	0.64	
Waitetuna River @ Te Uku-Waingaro Rd	12	0.28	0.23	0.11	0.61	0.22	0.88	0.20	12	0.64	0.56	0.27	1.31	0.40	0.82	0.51	
Inflows to Lake Taupo																	
Hinemaiaia River @ SH1	12	0.06	0.04	0.03	0.11	0.06	0.44	0.06	12	0.10	0.11	0.03	0.21	0.03	0.70	0.12	
Kuratau River @ 43 Te Rae Street	12	0.15	0.15	0.03	0.22	0.04	-1.15	0.15	12	0.59	0.57	0.44	0.97	0.06	1.90	0.57	
Kuratau River @ SH41 Moerangi	12	0.06	0.04	0.03	0.16	0.06	1.04	0.07	12	0.15	0.15	0.09	0.23	0.06	0.10	0.15	
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	0.17	0.18	0.08	0.24	0.08	-0.34	0.20	12	0.90	0.92	0.75	1.07	0.17	-0.04	0.94	
Tauranga-Taupo River @ Te Kono Slackline	12	0.04	0.03	0.03	0.09	0.05	0.89	0.03	12	0.09	0.07	0.06	0.16	0.06	0.64	0.08	

Location	Total Kjeldahl Nitrogen (g m ⁻³)									Total Nitrogen (g m ⁻³)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	0.11	0.10	0.03	0.23	0.10	0.59	0.08	12	0.11	0.10	0.03	0.25	0.10	0.68	0.08	
Tokaanu Stm @ Off SH41 Turangi	12	0.03	0.03	0.03	0.07	0.00	<u>1.86</u>	0.03	12	0.41	0.41	0.39	0.45	0.03	0.41	0.41	
Waihaha River @ SH32	12	0.04	0.03	0.03	0.08	0.04	0.82	0.06	12	0.15	0.15	0.10	0.18	0.03	-0.58	0.17	
Waitahanui River @ Blake Rd	12	0.05	0.04	0.03	0.12	0.05	0.84	0.05	12	0.41	0.39	0.38	0.46	0.05	0.72	0.38	
Whanganui Stm @ Lakeside Lake Taupo	12	0.08	0.09	0.03	0.14	0.07	-0.16	0.10	12	0.46	0.44	0.33	0.61	0.15	0.41	0.50	
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	0.12	0.12	0.07	0.21	0.03	1.01	0.14	12	0.66	0.61	0.39	0.98	0.34	0.23	0.72	
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	0.13	0.13	0.06	0.18	0.07	-0.09	0.13	12	0.66	0.61	0.39	0.97	0.33	0.09	0.71	

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

Location	Turbidity (NTU)								pH (pH units)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Coromandel																
Hikutaia River @ Old Maratoto Rd	12	2.7	1.8	0.9	7.2	1.9	1.39	1.6	12	7.1	7.1	6.9	7.4	0.3	0.13	7.1
Kauaeranga River @ Smiths Cableway/Recorder	12	5.8	3.1	0.5	26.5	6.4	1.93	1.2	12	7.0	7.0	6.3	7.2	0.2	-1.77	7.0
Ohinemuri River @ Queens Head	12	3.8	1.4	0.7	21.5	0.9	2.25	1.4	12	7.2	7.3	6.6	7.4	0.4	-1.01	7.2
Ohinemuri River @ SH25 Br	12	2.0	1.0	0.7	8.4	1.3	2.22	1.0	12	6.9	7.0	6.5	7.2	0.2	-0.63	7.0
Tairua River @ Morrisons Br Hikuai	12	2.6	1.2	0.7	14.9	0.9	2.80	1.3	12	6.8	6.8	6.4	7.0	0.3	-0.68	6.8
Tapu River @ Tapu-Coroglen Rd	12	4.7	2.4	0.5	19.6	5.4	1.65	1.4	12	7.4	7.5	7.0	7.6	0.3	-0.85	7.4
Waiau River @ E309 Rd Ford	12	10.1	2.9	2.0	78.5	4.4	2.96	2.8	12	7.2	7.3	6.6	7.4	0.3	-1.37	7.3
Waitekauri River @ U/S Ohinemuri Conflu	12	1.9	1.0	0.4	9.5	1.4	2.41	0.7	12	7.1	7.2	6.7	7.3	0.4	-0.63	7.2
Waiwawa River @ SH25 Coroglen	12	3.5	1.8	1.2	17.8	1.5	2.60	1.5	12	7.0	7.0	6.4	7.4	0.3	-0.33	7.1
Wharekawa River @ SH25	12	3.4	2.1	1.3	15.1	1.8	2.59	2.1	12	6.9	7.0	6.4	7.4	0.3	-0.22	6.9
Hauraki																
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	18.4	9.6	2.6	62.1	26.2	1.15	6.1	12	7.5	7.5	7.1	8.2	0.2	1.25	7.4
Oraka Stm @ Lake Rd	12	5.2	3.3	1.5	21.0	4.5	2.20	3.1	12	7.4	7.4	7.2	7.6	0.1	-0.20	7.3
Piako River @ Kiwitahi	12	7.4	3.5	0.8	55.5	3.2	2.96	3.9	12	7.1	7.1	6.6	7.5	0.4	-0.13	7.1
Piako River @ Paeroa-Tahuna Rd Br	12	16.6	9.2	2.9	103.0	7.4	2.92	8.7	12	7.2	7.3	6.8	7.8	0.5	0.09	7.2
Piakonui Stm @ Piakonui Rd	12	9.1	4.4	2.7	65.0	1.9	3.00	4.1	12	7.2	7.3	6.7	7.7	0.4	-0.52	7.3
Waihou River @ Okauia	12	3.1	2.4	1.1	9.3	1.9	1.84	3.1	12	7.4	7.4	7.2	8.1	0.3	1.73	7.3
Waihou River @ Whites Rd	12	0.6	0.3	0.2	3.6	0.3	2.91	0.4	12	7.1	7.0	6.7	7.5	0.3	0.36	7.0
Waiohotu Stm @ Waiohotu Rd (Off SH5)	12	9.3	6.1	3.5	18.9	10.5	0.61	4.0	12	7.2	7.1	6.8	7.6	0.3	0.25	7.1
Waiomou Stm @ Matamata-Tauranga Rd	12	3.3	2.9	1.2	6.9	3.6	0.50	2.6	12	7.2	7.1	7.1	7.4	0.2	1.00	7.1
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	14.7	4.9	3.7	70.7	8.9	2.08	8.4	12	7.4	7.4	6.9	7.6	0.2	-1.10	7.2
Waitoa River @ Landsdowne Rd Br	12	7.5	5.8	3.4	14.9	6.0	0.80	3.9	12	7.1	7.2	6.9	7.4	0.2	-0.14	7.1
Waitoa River @ Mellon Rd Recorder	12	6.8	5.7	2.8	12.9	5.1	0.57	6.6	12	7.3	7.4	6.8	7.8	0.6	-0.04	7.2
Tributaries to the lower Waikato River																
Awaroa River (Waiuku) @ Otatau Rd Br opp Moseley Rd	12	15.7	11.8	3.7	44.2	14.5	1.33	9.9	12	7.4	7.4	6.8	8.2	0.6	0.32	7.2
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	4.9	3.2	1.8	13.1	5.5	1.13	4.0	12	7.8	7.9	7.4	8.1	0.4	-0.42	7.7
Karapiro Stm @ Hickey Rd Bridge	12	14.7	4.4	2.3	124.0	3.5	3.00	4.4	12	7.2	7.3	6.8	7.5	0.3	-0.68	7.3
Kirikiroa Stm @ Tauhara Dr	12	42.9	29.0	18.6	108.0	22.1	1.44	31.7	12	6.9	6.9	6.5	7.3	0.2	-0.20	6.9
Komakorau Stm @ Henry Rd	12	69.8	78.7	22.7	88.3	22.2	-1.31	68.2	12	6.7	6.8	6.4	7.0	0.2	-0.37	6.7
Little Waipa Stm @ Arapuni - Putaruru Rd	12	1.9	1.3	0.5	8.2	1.3	2.47	1.3	12	7.1	7.1	6.9	7.5	0.3	0.49	7.0
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	29.7	24.9	12.5	106.0	15.3	2.53	26.9	12	7.0	6.9	6.3	7.4	0.6	-0.32	7.0

Location	Turbidity (NTU)								pH (pH units)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	6.0	3.0	1.5	41.7	1.9	<u>2.98</u>	2.7	12	7.5	7.6	7.0	7.8	0.3	-0.70	7.6
Mangaone Stm @ Annebrooke Rd Br	12	10.1	8.2	6.0	26.1	4.1	<u>2.14</u>	6.6	12	7.3	7.3	7.0	7.5	0.2	-0.70	7.2
Mangaonua Stm @ Hoeka Rd	12	8.5	7.8	3.5	23.1	4.0	<u>1.87</u>	9.6	12	6.9	6.9	6.7	7.2	0.3	0.29	6.9
Mangaonua Stm @ Te Miro Rd	12	8.8	3.9	2.2	62.4	2.8	<u>2.98</u>	3.7	12	7.3	7.4	6.9	7.6	0.3	-0.93	7.4
Mangatangi River @ SH2 Maramarua	12	14.6	4.8	1.2	80.5	11.3	<u>2.09</u>	6.3	12	7.3	7.2	6.9	7.8	0.3	0.73	7.2
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	9.6	2.9	1.2	54.4	9.3	<u>2.26</u>	3.3	12	7.5	7.5	7.1	7.9	0.2	0.00	7.5
Mangawara Stm @ Rutherford Rd Br	12	52.3	42.1	28.6	156.0	19.6	<u>2.35</u>	38.2	12	7.0	6.9	6.5	7.5	0.3	0.47	6.8
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	44.6	40.4	18.9	109.0	23.0	1.67	41.5	12	7.0	7.0	6.8	7.4	0.3	0.69	7.1
Matahuru Stm @ Waiterimu Road Below Confluence	12	43.4	22.1	6.5	302.0	16.9	<u>2.96</u>	25.6	12	7.3	7.3	6.7	7.6	0.2	-0.82	7.1
Ohaeroa Stm @ SH22 Br	12	17.5	5.8	2.3	60.8	27.8	1.12	7.5	12	7.6	7.7	7.2	7.8	0.3	-0.78	7.5
Opuatia Stm @ Ponganui Rd	12	49.1	10.5	2.0	434.0	18.9	<u>2.93</u>	8.3	12	7.7	7.7	7.2	7.9	0.2	-1.58	7.7
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	2.9	1.7	0.9	9.9	1.7	1.64	1.9	12	7.3	7.3	7.1	7.6	0.2	0.70	7.2
Waerenga Stm @ Taniwha Rd	12	11.1	4.0	1.8	64.4	3.9	<u>2.29</u>	4.6	12	7.5	7.4	7.1	7.9	0.3	0.39	7.3
Waitawhiriwhiri Stm @ Edgecumbe Street	12	31.8	31.8	19.4	47.7	9.9	0.44	31.7	12	7.1	7.1	6.6	7.4	0.3	-0.56	7.0
Whakapipi Stm @ SH22 Br	12	7.7	4.7	1.9	39.4	4.2	<u>2.65</u>	4.8	12	7.5	7.4	7.2	7.8	0.3	0.46	7.3
Whakauru Stm @ U/S SH1 Br	12	3.7	2.3	1.3	14.7	2.6	<u>2.45</u>	2.8	12	7.4	7.4	7.2	7.7	0.3	0.60	7.4
Whangamarino River @ Island Block Rd	12	31.4	27.9	14.9	62.0	16.7	0.90	46.0	12	6.9	6.9	6.5	7.2	0.3	-0.29	6.8
Whangamarino River @ Jefferies Rd Br	12	22.3	9.1	2.4	139.0	8.4	<u>2.52</u>	10.5	12	7.2	7.2	6.7	7.5	0.3	-0.71	7.1
Whangape Stm @ Rangiriri-Glen Murray Rd	12	23.5	22.7	12.6	33.7	14.7	0.01	11.5	12	7.7	7.7	7.1	8.3	0.3	0.11	7.7
Waipa River and Tributaries																
Kaniwhaniwha Stm @ Wright Rd	12	8.1	6.3	2.4	30.4	5.1	<u>2.31</u>	5.6	12	7.1	7.2	6.6	7.3	0.4	-0.98	7.1
Mangaohoi Stm @ South Branch Maru Rd	12	3.8	2.3	1.2	11.9	1.7	1.66	2.3	12	7.4	7.4	7.1	7.6	0.3	0.00	7.3
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	6.7	4.6	1.8	20.8	5.6	1.37	4.4	12	7.4	7.5	6.8	7.7	0.2	-1.19	7.3
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	17.9	14.2	2.7	77.6	12.9	<u>2.16</u>	8.3	12	7.3	7.3	6.7	7.6	0.3	-0.73	7.2
Mangapu River @ Otorohanga	12	11.6	4.6	1.9	43.5	16.1	1.36	6.8	12	7.7	7.8	7.1	8.2	0.5	-0.42	7.6
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	14.6	2.1	0.8	115.0	11.8	<u>2.85</u>	2.4	12	7.0	7.1	6.8	7.2	0.4	-0.43	7.1
Manguauka Stm @ Te Awamutu Borough W/S Intake	12	5.6	1.2	0.3	53.9	0.8	<u>3.01</u>	0.9	12	7.2	7.2	6.7	7.5	0.1	-1.49	7.3
Ohote Stm @ Whatawhata/Horotiu Rd	12	11.1	7.9	6.5	26.0	3.1	1.66	8.7	12	6.7	6.7	6.3	7.0	0.4	-0.33	6.6
Puniu River @ Bartons Corner Rd Br	12	13.3	3.4	1.0	106.0	7.1	<u>2.90</u>	2.7	12	7.1	7.1	6.9	7.4	0.3	0.36	7.1
Waipa River @ Mangaokewa Rd	12	3.4	2.7	0.9	13.3	1.9	<u>2.22</u>	2.1	12	7.1	7.2	6.8	7.3	0.2	-1.03	7.2
Waipa River @ Pirongia-Ngutunui Rd Br	12	20.6	10.0	2.2	103.0	24.8	<u>2.23</u>	10.7	12	7.2	7.3	6.8	7.4	0.2	-1.34	7.2
Waipa River @ SH3 Otorohanga	12	12.1	6.9	1.4	41.8	14.1	1.22	4.2	12	7.2	7.2	6.7	7.8	0.2	0.69	7.2
Waitomo Stm @ SH31 Otorohanga	12	23.8	11.4	2.4	87.1	34.6	1.21	10.3	12	7.7	7.7	7.3	8.1	0.5	-0.15	7.8
Waitomo Stm @ Tumutumu Rd	12	12.8	6.0	1.6	36.3	20.6	0.82	5.2	12	7.8	7.9	7.2	8.2	0.2	-1.13	7.9

Location	Turbidity (NTU)								pH (pH units)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tributaries to the upper Waikato River																
Kawaunui Stm @ SH5 Br	12	8.9	5.9	1.4	42.6	4.4	<u>2.62</u>	4.4	12	7.2	7.2	7.0	7.4	0.2	0.41	7.1
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	5.1	4.1	2.6	15.8	1.4	<u>2.49</u>	4.0	12	7.5	7.4	7.1	8.1	0.3	1.15	7.3
Mangakara Stm (Reporoa) @ SH5	12	5.4	4.0	1.5	14.3	4.5	1.13	4.3	12	7.2	7.2	7.1	7.4	0.1	1.29	7.1
Mangakino Stm (Whakamaru) @ Sandel Rd	12	1.2	1.2	0.6	2.4	0.5	0.82	1.3	12	7.4	7.4	7.2	7.6	0.1	0.34	7.3
Otamakokore Stm @ Hossack Rd	12	3.7	3.5	1.8	7.5	1.8	1.09	2.6	12	8.1	8.1	7.9	8.2	0.2	-0.36	8.0
Pueto Stm @ Broadlands Rd Br	12	2.3	2.0	1.3	5.7	1.0	<u>2.15</u>	2.1	12	7.6	7.6	7.3	7.8	0.2	-0.08	7.5
Tahunaatara Stm @ Ohakuri Rd	12	2.5	1.6	1.2	8.9	1.5	<u>2.25</u>	1.9	12	7.5	7.5	7.2	7.7	0.2	-0.62	7.5
Torepatutahi Stm @ Vaile Rd Br	12	1.1	1.1	0.6	1.9	0.7	0.18	0.8	12	7.4	7.4	7.2	7.6	0.1	0.00	7.3
Waiotapu Stm @ Campbell Rd Br	12	3.5	3.3	1.2	6.3	3.2	0.18	5.5	12	5.5	5.5	5.1	5.9	0.5	-0.13	5.5
Waiotapu Stm @ Homestead Rd Br	12	10.9	9.5	3.6	19.6	11.4	0.24	10.8	12	7.0	7.0	6.7	7.2	0.2	-0.40	6.8
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	3.1	2.8	1.3	8.1	1.8	1.68	3.1	12	7.7	7.7	7.6	7.9	0.2	0.50	7.6
Whirinaki Stm @ Corbett Rd	12	0.7	0.4	0.2	2.4	0.6	1.50	0.4	12	7.3	7.3	7.0	7.5	0.2	0.00	7.2
West Coast																
Awakino River @ Gribbon Rd	12	15.0	3.3	0.4	105.0	14.9	<u>2.54</u>	1.8	12	7.3	7.2	7.0	7.9	0.3	1.49	7.3
Awakino River @ SH3 Awakau Rd Junction	12	24.3	12.0	1.1	103.0	28.3	1.50	4.0	12	7.6	7.7	7.1	8.0	0.5	-0.28	7.6
Manganui River @ Off Manganui Rd	12	40.1	17.4	0.9	186.0	73.9	1.61	4.6	12	7.2	7.2	6.9	7.7	0.4	0.62	7.2
Mangaotaki River @ SH3 Br	12	38.8	10.8	1.0	273.0	31.3	<u>2.55</u>	6.0	12	7.7	7.7	7.4	7.9	0.3	-0.43	7.7
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	10.3	3.6	1.1	38.5	17.9	1.20	3.6	12	7.8	7.9	7.0	8.3	0.4	-1.07	7.9
Mokau River @ Awakau Rd	12	50.6	47.1	5.0	174.0	60.1	1.22	22.7	12	7.3	7.4	6.8	7.6	0.2	-1.37	7.3
Mokau River @ Mangaokewa Rd (Off SH30)	12	5.5	3.2	1.6	22.0	5.4	<u>1.93</u>	2.9	12	7.2	7.2	6.9	7.3	0.3	-0.73	7.2
Mokau River @ Totoro Rd Recorder	12	26.6	9.9	1.3	123.0	26.4	1.67	7.8	12	7.6	7.6	7.2	7.9	0.4	-0.34	7.6
Mokauiti Stm @ Three Way Point - Aria	12	26.8	14.2	3.5	91.6	27.3	1.32	12.6	12	7.3	7.3	6.5	8.0	0.6	0.06	7.3
Ohautira Stm @ Waingaro Te Uku Rd	12	24.8	12.8	5.1	76.7	34.2	0.99	10.7	12	7.2	7.3	6.9	7.5	0.4	-0.32	7.3
Oparau River @ Langdon Rd (Off Okupata Rd)	12	40.4	2.5	1.7	438.0	6.2	<u>3.01</u>	3.1	12	7.3	7.4	6.7	8.2	0.4	0.75	7.3
Tawarau River @ Off Speedies Rd	12	8.9	3.8	0.9	27.8	15.0	0.90	3.8	12	7.8	7.8	7.1	8.2	0.4	-0.80	7.9
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	20.6	11.6	5.3	80.4	14.6	<u>1.83</u>	8.9	12	7.4	7.4	6.9	7.9	0.4	0.20	7.4
Waitetuna River @ Te Uku-Waingaro Rd	12	20.5	8.6	3.3	100.0	19.1	<u>2.35</u>	8.6	12	7.2	7.3	6.7	7.7	0.2	-0.38	7.2
Inflows to Lake Taupo																
Hinemaiaia River @ SH1	12	1.0	1.0	0.7	1.4	0.3	0.39	1.0	12	7.4	7.4	7.2	7.5	0.2	-0.66	7.4
Kuratau River @ 43 Te Rae Street	12	1.1	1.0	0.6	2.1	0.3	<u>1.75</u>	1.0	12	7.5	7.5	7.3	7.9	0.2	1.21	7.4
Kuratau River @ SH41 Moerangi	12	1.4	1.2	0.2	3.0	0.9	0.78	1.5	12	7.0	6.9	6.7	7.4	0.2	0.91	6.9
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	2.6	2.5	1.5	4.0	1.1	0.20	3.0	12	7.5	7.5	7.3	7.8	0.1	1.02	7.4
Tauranga-Taupo River @ Te Kono Slackline	12	0.9	0.6	0.4	3.3	0.7	<u>2.19</u>	0.7	12	7.4	7.5	7.2	7.7	0.2	0.21	7.3

Location	Turbidity (NTU)									pH (pH units)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	1.2	1.1	0.9	1.9	0.6	0.78	1.0	12	7.5	7.5	7.2	7.7	0.1	-0.19	7.5	
Tokaanu Stm @ Off SH41 Turangi	12	0.1	0.1	0.1	0.3	0.1	0.87	0.1	12	7.3	7.3	7.0	7.6	0.3	0.33	7.2	
Waihaha River @ SH32	12	0.5	0.4	0.2	1.3	0.5	0.96	0.5	12	7.2	7.2	7.1	7.4	0.1	0.62	7.2	
Waitahanui River @ Blake Rd	12	0.4	0.4	0.3	0.6	0.1	-0.01	0.5	12	7.5	7.5	7.3	7.7	0.2	0.31	7.4	
Whanganui Stm @ Lakeside Lake Taupo	12	1.1	0.9	0.6	2.2	0.3	1.48	1.1	12	7.5	7.4	7.2	8.0	0.2	1.36	7.4	
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	2.3	2.3	1.1	4.6	0.8	1.38	2.7	12	7.5	7.5	7.3	7.7	0.2	0.47	7.4	
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	2.1	1.9	1.2	3.6	1.2	0.72	2.3	12	7.5	7.4	7.3	7.7	0.2	0.74	7.4	

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

Location	E. Coli (n/100mL)								Enterococci (n/100ml)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Coromandel																
Hikutaia River @ Old Maratoto Rd	4	572	233	23	1800	986	1.08	280	4	205	126	7	560	341	0.85	61
Kauaeranga River @ Smiths Cableway/Recorder	4	373	191	10	1100	685	0.91	89	4	135	89	2	360	250	0.63	28
Ohinemuri River @ Queens Head	4	1886	1313	17	4900	3729	0.44	120	4	1676	1352	1	4000	3348	0.20	12
Ohinemuri River @ SH25 Br	4	992	680	7	2600	1517	0.81	124	4	559	169	1	1900	1061	1.09	15
Tairua River @ Morrisons Br Hikuai	4	847	192	5	3000	1656	1.12	155	4	115	30	1	400	220	1.11	11
Tapu River @ Tapu-Coroglen Rd	4	781	108	8	2900	1509	1.15	150	4	1048	44	5	4100	2054	1.15	58
Waiau River @ E309 Rd Ford	4	919	134	10	3400	1782	1.14	135	4	680	59	1	2600	1319	1.15	83
Waitekauri River @ U/S Ohinemuri Conflu	4	1119	131	12	4200	2163	1.15	170	4	586	20	4	2300	1159	1.15	21
Waiwawa River @ SH25 Coroglen	4	518	135	3	1800	974	1.12	130	4	91	65	6	230	128	0.82	64
Wharekawa River @ SH25	4	829	450	16	2400	1242	1.02	255	4	929	148	19	3400	1783	1.14	47
Hauraki																
Mangawhero Stm (Kaihere) @ Mangawara Rd	4	58	58	40	76	20	0.00	88	4	176	137	1	430	278	0.57	170
Oraka Stm @ Lake Rd	4	950	700	200	2200	1300	0.72	1050	4	223	195	1	500	425	0.13	280
Piako River @ Kiwitahi	4	2938	2180	90	7300	5525	0.40	355	4	3160	785	70	11000	5880	1.13	96
Piako River @ Paeroa-Tahuna Rd Br	4	3259	440	155	12000	5983	1.15	505	4	2025	420	60	7200	3590	1.15	370
Piakonui Stm @ Piakonui Rd	4	1638	69	15	6400	3224	1.15	91	4	1025	200	1	3700	2000	1.13	105
Waihou River @ Okauia	4	593	235	200	1700	755	1.15	265	4	1088	125	1	4100	2055	1.15	100
Waihou River @ Whites Rd	4	34	34	1	66	43	-0.03	43	4	38	22	1	110	66	0.91	21
Waiohotu Stm @ Waiohotu Rd (Off SH5)	4	108	92	58	190	95	0.57	120	4	11	6	1	34	21	0.91	11
Waiomou Stm @ Matamata-Tauranga Rd	4	749	248	200	2300	1083	1.15	275	4	108	100	82	150	34	0.85	95
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	4	1895	250	79	7000	3495	1.15	225	4	592	67	35	2200	1084	1.15	80
Waitoa River @ Landsdowne Rd Br	4	1388	1450	150	2500	1825	-0.10	495	4	1353	345	20	4700	2585	1.11	300
Waitoa River @ Mellon Rd Recorder	4	591	433	100	1400	868	0.67	585	4	370	285	1	910	710	0.33	270
Tributaries to the lower Waikato River																
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	4	770	530	220	1800	810	1.00	285	4	172	180	10	320	286	-0.03	140
Karapiro Stm @ Hickey Rd Bridge	4	4654	770	75	17000	8793	1.15	530	4	1214	390	75	4000	2073	1.12	170
Kirikiroa Stm @ Tauhara Dr	4	4306	550	125	16000	8188	1.15	570	4	2169	420	35	7800	4003	1.14	485
Komakorau Stm @ Henry Rd	4	1750	1750	1400	2100	500	0.00	1350	4	1180	1160	800	1600	640	0.09	430
Little Waipa Stm @ Arapuni - Putaruru Rd	4	190	200	130	230	50	-0.76	195	4	167	88	43	450	246	1.01	59
Mangakotukutuku Stm (Rukuhia) @ Peacocks Rd	4	9244	900	175	35000	17713	1.15	1200	4	2155	685	250	7000	3590	1.13	490

Location	E. Coli (n/100mL)								Enterococci (n/100ml)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	4	2168	1085	500	6000	2965	1.10	670	4	2069	335	107	7500	3732	1.15	220
Mangaone Stm @ Annebrooke Rd Br	4	2160	950	140	6600	3480	1.08	850	4	1616	420	125	5500	2768	1.14	390
Mangaonua Stm @ Hoeka Rd	4	11183	750	230	43000	21835	1.15	1100	4	698	345	1	2100	1285	0.94	405
Mangaonua Stm @ Te Miro Rd	4	2361	245	55	8900	4478	1.15	360	4	1143	320	32	3900	2214	1.09	228
Mangatangi River @ SH2 Maramarua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mangatawhiri River @ Lyons Rd At Buckingham Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mangawara Stm @ Rutherford Rd Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	4	3738	1800	350	11000	5425	1.08	1200	4	1714	465	125	5800	2903	1.14	480
Matahuru Stm @ Waiterimu Road Below Confluence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ohaeroa Stm @ SH22 Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Opuatia Stm @ Ponganui Rd	4	3500	1350	300	11000	5900	1.10	650	4	1029	342	30	3400	1943	1.07	170
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	4	398	335	220	700	305	0.77	220	4	225	225	1	450	400	0.00	53
Waerenga Stm @ Taniwha Rd	4	1650	800	300	4700	2400	1.09	475	4	708	153	26	2500	1295	1.14	200
Waitawhiriwhiri Stm @ Edgecumbe Street	4	3013	875	300	10000	5375	1.12	750	4	1316	520	125	4100	2008	1.12	500
Whakapipi Stm @ SH22 Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Whakauru Stm @ U/S SH1 Br	4	490	510	140	800	390	-0.23	390	4	648	570	53	1400	854	0.40	130
Whangamarino River @ Island Block Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Whangamarino River @ Jefferies Rd Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Whangape Stm @ Rangiriri-Glen Murray Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waipa River and Tributaries																
Kaniwhaniwha Stm @ Wright Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mangaohoi Stm @ South Branch Maru Rd	4	386	275	25	970	698	0.50	70	4	111	63	16	300	179	0.90	35
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mangapu River @ Otorohanga	4	1155	950	220	2500	1590	0.48	495	4	289	261	32	600	483	0.11	66
Mangatutu Stm (Waikeria) @ Walker Rd Br	4	2128	660	190	7000	3545	1.13	230	4	1655	210	200	6000	2910	1.15	160
Mangauika Stm @ Te Awamutu Borough W/S Intake	4	33	13	8	100	51	1.12	13	4	12	8	2	29	20	0.60	11
Ohote Stm @ Whatawhata/Horotiu Rd	4	111	110	25	200	98	0.06	180	4	76	56	32	160	80	0.88	66
Puniu River @ Bartons Corner Rd Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waipa River @ Mangaokewa Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waipa River @ Pirongia-Ngutunui Rd Br	4	1325	1350	101	2500	1750	-0.05	435	4	199	56	36	650	322	1.15	78
Waipa River @ SH3 Otorohanga	4	1213	175	1	4500	2265	1.15	205	4	671	97	88	2400	1159	1.15	65
Waitomo Stm @ SH31 Otorohanga	4	2240	1050	160	6700	3720	1.04	770	4	975	430	38	3000	1601	1.07	205
Waitomo Stm @ Tumutumu Rd	4	883	610	110	2200	1135	0.90	515	4	379	355	5	800	463	0.23	180

Location	E. Coli (n/100mL)								Enterococci (n/100ml)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tributaries to the upper Waikato River																
Kawaunui Stm @ SH5 Br	4	4438	3200	350	11000	8125	0.44	1550	4	731	710	2	1500	969	0.09	445
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	4	460	450	240	700	380	0.06	195	4	200	196	67	340	241	0.02	76
Mangakara Stm (Reporoa) @ SH5	4	528	170	70	1700	855	1.14	180	4	210	235	20	350	230	-0.41	180
Mangakino Stm (Whakamaru) @ Sandel Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Otamakokore Stm @ Hossack Rd	4	328	335	140	500	215	-0.16	200	4	263	180	92	600	324	0.87	96
Pueto Stm @ Broadlands Rd Br	4	45	21	9	130	66	1.10	26	4	22	21	2	44	28	0.15	14
Tahunaatara Stm @ Ohakuri Rd	4	275	250	100	500	330	0.17	120	4	99	77	42	200	113	0.63	45
Torepatutahi Stm @ Vaile Rd Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waiotapu Stm @ Campbell Rd Br	4	5	4	1	9	6	0.24	2	4	15	15	7	24	10	0.12	6
Waiotapu Stm @ Homestead Rd Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waipapa Stm (Mokai) @ Tirohanga Rd Br	4	108	100	30	200	95	0.35	90	4	48	43	38	68	18	0.96	42
Whirinaki Stm @ Corbett Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West Coast																
Awakino River @ Gribbon Rd	4	430	182	54	1300	741	1.03	70	4	179	50	16	600	299	1.14	40
Awakino River @ SH3 Awakau Rd Junction	4	783	260	12	2600	1334	1.12	200	4	201	52	2	700	370	1.13	29
Manganui River @ Off Manganui Rd	4	1500	410	180	5000	2500	1.14	210	4	426	89	26	1500	748	1.15	43
Mangaotaki River @ SH3 Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marokopa River @ Speedies Rd (Off Te Anga Rd)	4	1383	470	93	4500	2534	1.08	225	4	300	138	24	900	520	1.01	61
Mokau River @ Awakau Rd	4	1192	1400	68	1900	1016	-0.81	940	4	376	435	34	600	418	-0.45	102
Mokau River @ Mangaokewa Rd (Off SH30)	4	893	175	22	3200	1654	1.14	150	4	298	88	14	1000	525	1.13	52
Mokau River @ Totoro Rd Recorder	4	1095	800	80	2700	1710	0.66	400	4	768	270	30	2500	1405	1.08	69
Mokauiti Stm @ Three Way Point - Aria	4	1493	485	300	4700	2335	1.14	300	4	415	105	50	1400	680	1.15	50
Ohautira Stm @ Waingarō Te Uku Rd	4	1705	800	120	5100	2890	1.03	480	4	154	168	10	270	223	-0.12	120
Oparau River @ Langdon Rd (Off Okupata Rd)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tawarau River @ Off Speedies Rd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waingarō River (Pukemiro) @ Ruakiwi Rd Off SH22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waitetuna River @ Te Uku-Waingarō Rd	4	1758	945	340	4800	2385	1.07	725	4	675	340	20	2000	1040	1.05	230
Inflows to Lake Taupo																
Hinemaiaia River @ SH1	4	26	23	3	54	34	0.37	30	4	7	6	1	16	12	0.33	2
Kuratau River @ 43 Te Rae Street	4	29	30	2	52	41	-0.09	38	4	29	26	8	54	27	0.41	23
Kuratau River @ SH41 Moerangi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	4	51	49	32	74	22	0.39	82	4	95	51	20	260	134	1.07	75
Tauranga-Taupo River @ Te Kono Slackline	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Location	E. Coli (n/100mL)								Enterococci (n/100ml)							
	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tokaanu Stm @ Off SH41 Turangi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waihaha River @ SH32	4	9	9	1	18	12	0.09	12	4	12	5	1	36	21	1.03	5
Waitahanui River @ Blake Rd	4	17	17	4	28	19	-0.07	31	4	6	4	2	12	7	0.69	5
Whanganui Stm @ Lakeside Lake Taupo	4	13	14	4	21	15	-0.10	21	4	19	14	3	46	29	0.68	3
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	4	66	64	24	111	60	0.12	96	4	41	28	7	100	67	0.61	38
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	4	53	52	28	80	30	0.15	62	4	42	38	20	72	37	0.39	40

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

Temperature (°C)

Location	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Coromandel								
Hikutaia River @ Old Maratoto Rd	12	12.9	13.1	5.9	20.1	5.1	0.01	13.4
Kauaeranga River @ Smiths Cableway/Recorder	12	13.6	13.6	6.4	21.1	5.0	0.05	14.5
Ohinemuri River @ Queens Head	12	15.6	15.3	9.3	22.2	5.2	0.10	16.3
Ohinemuri River @ SH25 Br	12	15.1	14.8	8.7	20.9	4.8	-0.10	15.6
Tairua River @ Morrisons Br Hikuai	12	14.5	14.4	8.4	21.0	4.5	0.10	15.1
Tapu River @ Tapu-Coroglen Rd	12	13.5	13.7	6.6	20.8	5.5	0.07	13.6
Waiau River @ E309 Rd Ford	12	13.2	13.7	6.8	19.0	4.4	-0.15	13.8
Waitekauri River @ U/S Ohinemuri Conflu	12	14.3	14.1	7.6	20.0	4.8	-0.20	14.9
Waiwawa River @ SH25 Coroglen	12	13.9	14.0	7.3	21.0	5.1	0.08	15.1
Wharekawa River @ SH25	12	14.4	14.0	7.6	21.0	4.5	0.00	14.8
Hauraki								
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	14.6	14.5	11.0	19.7	4.9	0.31	14.3
Oraka Stm @ Lake Rd	12	14.0	14.4	8.9	17.8	3.2	-0.55	13.9
Piako River @ Kiwitahi	12	15.2	15.5	9.1	20.1	6.2	-0.13	15.6
Piako River @ Paeroa-Tahuna Rd Br	12	14.8	15.0	7.8	20.2	6.1	-0.17	15.6
Piakonui Stm @ Piakonui Rd	12	12.5	12.7	8.7	16.2	4.9	-0.02	12.9
Waihou River @ Okauia	12	13.9	14.2	9.0	17.5	3.1	-0.58	14.0
Waihou River @ Whites Rd	12	13.3	13.3	12.5	14.3	0.9	0.28	13.2
Waiohotu Stm @ Waiohotu Rd (Off SH5)	12	10.5	11.3	4.5	14.2	3.5	-0.87	10.8
Waiomou Stm @ Matamata-Tauranga Rd	12	13.2	13.7	6.8	17.1	3.9	-0.79	13.1
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	12	16.0	15.4	10.1	21.3	6.1	-0.04	15.7
Waitoa River @ Landsdowne Rd Br	12	14.4	14.4	8.2	19.2	6.1	-0.18	15.0
Waitoa River @ Mellon Rd Recorder	12	15.3	15.6	8.5	20.1	6.2	-0.22	15.7
Tributaries to the lower Waikato River								
Awaroa River (Waiuku) @ Otaua Rd Br opp Moseley Rd	12	17.2	16.1	12.3	22.7	6.6	0.29	16.8
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	12	14.6	14.7	8.8	20.2	5.6	-0.05	14.7
Karapiro Stm @ Hickey Rd Bridge	12	14.2	14.2	9.1	18.9	5.8	0.01	15.1
Kirikiroa Stm @ Tauhara Dr	12	14.7	14.9	11.5	17.6	3.8	-0.02	15.6
Komakorau Stm @ Henry Rd	12	15.3	15.3	9.9	19.5	5.0	-0.24	15.3
Little Waipa Stm @ Arapuni - Putaruru Rd	12	14.1	14.3	11.1	17.5	2.4	0.16	14.1
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	14.5	14.6	10.2	18.8	4.7	0.07	15.2

Temperature (°C)

Location	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	13.2	14.2	7.1	18.2	5.1	-0.42	13.6
Mangaone Stm @ Annebrooke Rd Br	12	12.8	13.3	8.7	16.7	4.5	-0.04	13.7
Mangaonua Stm @ Hoeka Rd	12	14.0	14.2	9.1	18.4	5.4	-0.02	14.4
Mangaonua Stm @ Te Miro Rd	12	13.5	13.8	9.5	17.8	4.9	0.06	14.2
Mangatangi River @ SH2 Maramarua	12	15.9	15.4	10.7	20.5	5.9	-0.13	15.7
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	16.5	16.0	11.3	21.2	7.0	-0.06	16.8
Mangawara Stm @ Rutherford Rd Br	12	15.3	14.7	10.2	20.2	5.6	0.05	14.6
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	13.4	13.8	9.6	16.9	4.0	-0.09	14.3
Matahuru Stm @ Waiterimu Road Below Confluence	12	15.0	14.8	9.6	20.6	5.9	0.04	14.8
Ohaeroa Stm @ SH22 Br	12	14.5	14.7	8.9	18.5	3.7	-0.42	14.3
Opuatia Stm @ Ponganui Rd	12	15.1	14.7	9.3	19.7	5.3	-0.15	14.8
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	13.5	14.3	8.2	17.5	3.5	-0.53	13.7
Waerenga Stm @ Taniwha Rd	12	14.5	14.3	9.0	19.2	4.4	-0.04	13.9
Waitawhiriwhiri Stm @ Edgecumbe Street	12	15.8	15.9	12.3	19.3	3.9	0.05	16.2
Whakapipi Stm @ SH22 Br	12	15.2	14.9	10.6	19.2	4.2	-0.20	15.0
Whakauru Stm @ U/S SH1 Br	12	11.7	12.5	6.0	16.1	3.3	-0.60	12.2
Whangamarino River @ Island Block Rd	12	16.5	16.9	9.5	22.8	8.7	-0.16	16.7
Whangamarino River @ Jefferies Rd Br	12	14.9	14.2	9.2	20.2	5.3	0.10	14.2
Whangape Stm @ Rangiriri-Glen Murray Rd	12	16.8	16.4	10.0	22.8	7.1	-0.13	16.7
Waipa River and Tributaries								
Kaniwhaniwha Stm @ Wright Rd	12	14.6	14.6	9.3	19.9	5.9	0.02	14.3
Mangaohoi Stm @ South Branch Maru Rd	12	13.4	13.2	10.3	17.3	4.5	0.22	13.3
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	13.5	13.4	8.3	17.2	4.8	-0.18	13.0
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	12	16.1	15.0	10.0	21.7	6.8	0.11	15.7
Mangapu River @ Otorohanga	12	15.8	15.6	9.8	20.3	5.9	-0.13	15.0
Mangatutu Stm (Waikeria) @ Walker Rd Br	12	14.3	13.5	9.1	19.7	6.1	0.32	13.2
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	12.1	12.1	9.0	14.8	3.8	-0.14	12.1
Ohote Stm @ Whatawhata/Horotiu Rd	12	15.2	15.5	10.1	19.4	4.8	-0.22	15.6
Puniu River @ Bartons Corner Rd Br	12	15.8	14.1	10.4	21.7	8.2	0.36	14.7
Waipa River @ Mangaokewa Rd	12	12.7	13.5	7.2	16.3	3.9	-0.64	13.0
Waipa River @ Pirongia-Ngutunui Rd Br	12	14.8	14.7	9.3	20.4	5.8	0.02	15.1
Waipa River @ SH3 Otorohanga	12	15.3	15.8	9.4	20.1	5.8	-0.15	15.1
Waitomo Stm @ SH31 Otorohanga	12	14.7	14.6	10.2	18.5	5.2	-0.12	14.8
Waitomo Stm @ Tumutumumu Rd	12	13.5	13.7	10.6	16.5	2.9	-0.05	14.0

Temperature (°C)

Location	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tributaries to the upper Waikato River								
Kawaunui Stm @ SH5 Br	12	13.8	14.3	9.3	17.5	2.9	-0.43	14.1
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	12.1	12.8	7.6	15.7	2.7	-0.53	12.3
Mangakara Stm (Reporoa) @ SH5	12	12.6	13.4	7.4	16.6	3.4	-0.60	13.1
Mangakino Stm (Whakamaru) @ Sandel Rd	12	11.6	12.4	7.9	14.1	3.3	-0.45	12.0
Otamakokore Stm @ Hossack Rd	12	20.9	22.1	15.7	25.0	3.7	-0.40	20.8
Pueto Stm @ Broadlands Rd Br	12	13.3	13.5	9.6	16.3	2.8	-0.29	13.4
Tahunaatara Stm @ Ohakuri Rd	12	12.8	13.5	6.0	18.4	4.9	-0.42	13.2
Torepatutahi Stm @ Vaile Rd Br	12	13.9	14.3	10.9	17.6	3.7	-0.01	13.9
Waiotapu Stm @ Campbell Rd Br	12	29.3	29.7	25.6	32.6	3.3	-0.19	28.8
Waiotapu Stm @ Homestead Rd Br	12	19.0	19.7	13.7	22.2	4.5	-0.51	19.5
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	22.3	22.7	18.9	24.2	3.2	-0.54	22.2
Whirinaki Stm @ Corbett Rd	12	11.8	11.7	10.2	14.3	1.1	0.87	11.8
West Coast								
Awakino River @ Gribbon Rd	12	13.2	13.1	8.3	16.7	3.9	-0.19	12.6
Awakino River @ SH3 Awakau Rd Junction	12	14.8	14.4	9.9	19.5	5.4	0.18	14.1
Manganui River @ Off Manganui Rd	12	14.2	13.8	9.0	18.1	5.0	-0.18	13.6
Mangaotaki River @ SH3 Br	12	13.8	13.6	9.1	16.9	4.5	-0.20	13.1
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	13.7	14.0	9.5	17.0	5.0	-0.20	13.8
Mokau River @ Awakau Rd	12	15.0	14.3	9.6	21.3	6.0	0.25	14.5
Mokau River @ Mangaokewa Rd (Off SH30)	12	12.3	12.2	6.9	15.4	4.1	-0.50	12.0
Mokau River @ Totoro Rd Recorder	12	14.7	14.2	9.3	18.9	5.4	-0.07	13.8
Mokauiti Stm @ Three Way Point - Aria	12	15.1	15.0	8.7	20.0	5.8	-0.14	14.3
Ohautira Stm @ Waingaro Te Uku Rd	12	13.0	12.7	8.1	18.2	4.6	-0.06	13.2
Oparau River @ Langdon Rd (Off Okupata Rd)	12	14.7	14.8	9.1	19.4	6.0	-0.12	14.5
Tawarau River @ Off Speedies Rd	12	13.6	13.9	9.6	17.0	4.3	-0.16	13.5
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	12	15.4	14.9	8.5	21.4	6.0	-0.01	15.1
Waitetuna River @ Te Uku-Waingaro Rd	12	14.3	14.3	8.9	19.4	6.1	-0.04	14.2
Inflows to Lake Taupo								
Hinemaiaia River @ SH1	12	11.1	11.8	4.6	15.0	4.6	-0.62	11.6
Kuratau River @ 43 Te Rae Street	12	12.7	13.1	6.2	16.9	5.8	-0.38	12.9
Kuratau River @ SH41 Moerangi	12	8.6	9.1	3.8	11.2	3.3	-0.75	9.0
Mapara Stm (Lake Taupo) @ Off Mapara Rd (Whakaipo Res)	12	10.6	11.0	7.7	11.9	1.9	-0.84	10.8
Tauranga-Taupo River @ Te Kono Slackline	12	9.8	10.8	4.3	13.2	4.5	-0.53	10.5

Temperature (°C)

Location	Count	Mean	Median	Min	Max	IQR	Skew	99-03 Median
Tokaanu Power Station Tailrace Canal @ SH41 Bridge Over Canal	12	12.6	13.5	6.1	17.6	6.7	-0.34	12.8
Tokaanu Stm @ Off SH41 Turangi	12	11.9	11.8	11.5	12.1	0.4	-0.02	11.8
Waihaha River @ SH32	12	10.2	10.7	5.3	12.9	4.1	-0.57	10.4
Waitahanui River @ Blake Rd	12	10.5	10.6	8.1	12.8	1.3	-0.18	10.6
Whanganui Stm @ Lakeside Lake Taupo	12	10.6	11.7	4.9	13.7	4.3	-0.68	10.8
Whareroa Stm (Taupo District) @ Lakeside Lake Taupo	12	11.3	12.3	5.5	14.1	4.3	-0.77	11.7
Whareroa Stm (Taupo District) @ Whareroa Station Bridge	12	10.8	11.8	6.0	13.1	3.3	-0.90	11.3

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

3.2 Regional Rivers Monitoring Programme

Comparison with Water Quality Guidelines and Standards

Number of Samples (2003) that Comply with the Satisfactory Water Quality Standards and with the Excellent Water Quality Standards and Guidelines

Location	SATISFACTORY											EXCELLENT										
	ECOLOGICAL HEALTH					RECREATION						ECOLOGICAL HEALTH					RECREATION					
	DO	pH	Turb	NH4	Temp	TP	TN	BDisk	E.coli	E.coli-m	ENTm	DO	pH	Turb	NH4	Temp	TP	TN	BDisk	E.coli	E.coli-m	ENTm
Coromandel																						
Hikutaia River @ Old Maratoto Rd	12	12	10	12	10	11	12	9	3/4	N	N	12	9	7	12	7	3	0	3	1/4	N	N
Kauaeranga River @ Smiths Cableway/ Recorder	12	11	9	12	9	11	12	8	3/4	N	N	12	8	4	12	5	7	4	3	2/4	N	N
Ohinemuri River @ Queens Head	12	12	10	12	7	7	0	10	2/4	N	N	12	9	9	10	2	0	0	1	2/4	N	N
Ohinemuri River @ SH25 Br	12	12	11	12	7	11	2	10	2/4	N	N	12	6	9	12	4	2	0	5	1/4	N	N
Tairua River @ Morrisons Br Hikuai	12	11	11	12	7	11	12	11	3/4	N	Y	12	1	9	12	3	7	2	1	2/4	N	N
Tapu River @ Tapu-Coroglen Rd	12	12	9	12	10	11	12	9	3/4	Y	N	12	12	5	12	4	8	7	5	2/4	N	N
Waiau River @ E309 Rd Ford	12	12	8	12	11	11	11	9	3/4	N	N	12	10	1	12	6	8	4	0	2/4	N	N
Waitekauri River @ U/S Ohinemuri Conflu	12	12	11	12	8	11	11	10	3/4	N	Y	12	9	9	12	4	4	1	6	1/4	N	N
Waiwawa River @ SH25 Coroglen	12	11	10	12	9	11	12	9	3/4	N	N	11	6	7	12	3	9	5	3	1/4	N	N
Wharekawa River @ SH25	12	11	10	12	7	11	12	9	3/4	N	N	11	6	5	12	3	4	1	0	1/4	N	N
Hauraki																						
Mangawhero Stm (Kaihere) @ Mangawara Rd	12	12	3	12	10	0	6	2	4/4	Y	N	12	11	0	12	3	0	0	1	1/4	N	N
Oraka Stm @ Lake Rd	12	12	8	12	9	0	0	5	2/4	N	N	10	12	3	10	5	0	0	0	0/4	N	N
Piako River @ Kiwitahi	6	12	11	12	8	0	1	7	2/4	N	N	3	8	4	11	2	0	0	0	0/4	N	N
Piako River @ Paeroa-Tahuna Rd Br	7	12	2	12	9	0	0	1	3/4	N	N	2	9	0	6	2	0	0	0	0/4	N	N
Piakonui Stm @ Piakonui Rd	12	12	9	12	11	9	8	1	3/4	Y	N	12	9	0	11	8	0	0	0	2/4	N	N
Waihou River @ Okauia	12	12	10	12	9	0	0	4	3/4	N	N	11	11	4	12	7	0	0	0	0/4	N	N
Waihou River @ Whites Rd	12	12	12	12	7	0	0	12	4/4	Y	Y	12	9	11	12	7	0	0	12	3/4	N	N
Waiohotu Stm @ Waiohotu Rd (Off SH5)	12	12	3	12	12	4	11	0	4/4	Y	Y	11	11	0	12	11	0	0	0	0/4	N	Y
Waiomou Stm @ Matamata-Tauranga Rd	12	12	9	12	10	2	4	6	3/4	N	N	12	12	5	12	7	0	0	0	0/4	N	N
Waitakaruru River (Hauraki Plains) @ Coxhead Rd Br	11	12	6	12	6	0	7	2	3/4	N	N	6	10	0	10	2	0	0	0	0/4	N	N
Waitoa River @ Landsdowne Rd Br	10	12	4	12	10	0	0	1	1/4	N	N	7	10	0	10	3	0	0	0	0/4	N	N
Waitoa River @ Mellon Rd Recorder	0	12	5	12	8	0	0	3	2/4	N	N	0	11	0	6	2	0	0	0	0/4	N	N
Tributaries to the lower Waikato River																						
Awaroa R (Waiuku) @ Otatau Rd Br opp Moseley Rd	10	12	1	12	3	4	1	0	n/a	n/a	n/a	9	9	0	9	1	0	0	0	n/a	n/a	n/a
Awaroa Stm (Rotowaro) @ Sansons Br @ Rotowaro-Huntly Rd	10	12	8	12	9	11	5	7	3/4	N	N	4	9	1	12	5	4	0	1	0/4	N	N
Karapiro Stm @ Hickey Rd Bridge	12	12	8	12	10	0	1	6	2/4	N	N	7	11	0	10	3	0	0	0	0/4	N	N
Kirikiri Stm @ Tauhara Dr	1	12	0	12	8	0	0	0	2/4	N	N	0	5	0	0	3	0	0	0	0/4	N	N
Komakorau Stm @ Henry Rd	0	10	0	8	9	0	0	0	0/4	N	N	0	2	0	0	3	0	0	0	0/4	N	N
Little Waipa Stm @ Arapuni - Putaruru Rd	12	12	11	12	8	0	0	8	4/4	N	N	12	10	9	11	6	0	0	0	0/4	N	N
Mangakotukutuku Stm (Rukuhia) @ Peacockes Rd	12	11	0	10	9	0	0	0	1/4	N	N	4	6	0	0	3	0	0	0	0/4	N	N

Number of Samples (2003) that Comply with the Satisfactory Water Quality Standards and with the Excellent Water Quality Standards and Guidelines

Location	SATISFACTORY											EXCELLENT											
	ECOLOGICAL HEALTH					RECREATION						ECOLOGICAL HEALTH					RECREATION						
	DO	pH	Turb	NH4	Temp	TP	TN	BDisk	E.coli	E.coli-m	ENTm	DO	pH	Turb	NH4	Temp	TP	TN	BDisk	E.coli	E.coli-m	ENTm	
Mangamingi Stm (Tokoroa) @ Paraonui Rd Br	12	12	11	12	11	0	0	2	1/4	N	N	12	12	4	6	7	0	0	0	0/4	N	N	
Mangaone Stm @ Annebrooke Rd Br	3	12	0	12	11	0	0	0	1/4	N	N	1	12	0	11	8	0	0	0	0/4	N	N	
Mangaonua Stm @ Hoeka Rd	2	12	3	12	10	1	0	4	2/4	N	N	0	4	0	10	5	0	0	0	0/4	N	N	
Mangaonua Stm @ Te Miro Rd	12	12	9	12	11	11	3	4	3/4	N	N	12	11	0	11	6	0	0	0	1/4	N	N	
Mangatangi River @ SH2 Maramarua	10	12	7	12	8	1	5	5	n/a	n/a	n/a	5	11	3	11	2	0	0	1	n/a	n/a	n/a	
Mangatawhiri River @ Lyons Rd At Buckingham Br	12	12	9	12	6	10	11	7	n/a	n/a	n/a	12	12	4	12	1	0	1	0	n/a	n/a	n/a	
Mangawara Stm @ Rutherford Rd Br	0	12	0	12	9	0	0	0	n/a	n/a	n/a	0	4	0	0	2	0	0	0	n/a	n/a	n/a	
Mangawhero Stm (Cambridge) @ Cambridge-Ohaupo Rd	12	12	0	12	11	0	0	0	1/4	N	N	1	7	0	4	7	0	0	0	0/4	N	N	
Matahuru Stm @ Waiterimu Rd Br	11	12	0	12	8	0	0	0	n/a	n/a	n/a	2	10	0	11	3	0	0	0	n/a	n/a	n/a	
Ohaeroa Stm @ SH22 Br	12	12	5	12	10	8	0	1	n/a	n/a	n/a	12	12	0	12	5	0	0	0	n/a	n/a	n/a	
Opuatia Stm @ Ponganui Rd	12	12	4	12	10	5	0	1	1/4	N	N	11	12	0	12	3	0	0	0	0/4	N	N	
Pokaiwhenua Stm @ Arapuni-Putaruru Rd	12	12	10	12	10	0	0	7	3/4	N	N	12	12	8	11	7	0	0	0	0/4	N	N	
Waerenga Stm @ Taniwha Rd	12	12	7	12	10	1	0	4	1/4	N	N	12	12	2	12	4	0	0	0	0/4	N	N	
Waitawhiriwhiri Stm @ Edgecumbe Street	10	12	0	9	7	0	0	0	2/4	N	N	2	10	0	0	1	0	0	0	0/4	N	N	
Whakapipi Stm @ SH22 Br	12	12	6	12	9	2	0	5	n/a	n/a	n/a	7	12	1	11	2	0	0	0	n/a	n/a	n/a	
Whakauru Stm @ U/S SH1 Br	12	12	11	12	12	8	12	3	2/4	N	N	12	12	4	12	9	0	0	0	0/4	N	N	
Whangamarino River @ Island Block Rd	1	12	0	12	6	0	0	0	n/a	n/a	n/a	1	5	0	8	1	0	0	0	n/a	n/a	n/a	
Whangamarino River @ Jefferies Rd Br	3	12	3	12	8	0	2	3	n/a	n/a	n/a	1	10	0	10	4	0	0	0	n/a	n/a	n/a	
Whangape Stm @ Rangiriri-Glen Murray Rd	9	12	0	12	7	0	0	0	n/a	n/a	n/a	7	10	0	12	1	0	0	0	n/a	n/a	n/a	
Waipa River and Tributaries																							
Kaniwhaniwha Stm @ Wright Rd	11	12	4	12	10	7	6	2	n/a	n/a	n/a	5	9	0	12	5	0	0	0	n/a	n/a	n/a	
Mangaohoi Stm @ South Branch Maru Rd	12	12	10	12	10	1	6	2	3/4	N	N	12	12	3	12	4	0	0	0	2/4	N	N	
Mangaokewa Stm @ Te Kuiti Borough W/S Intake	12	12	6	12	10	6	2	4	n/a	n/a	n/a	11	11	1	12	5	0	0	0	n/a	n/a	n/a	
Mangapiko Stm (Pirongia/Te Awamutu) @ Bowman Rd	5	12	2	12	5	0	0	0	n/a	n/a	n/a	1	10	0	8	2	0	0	0	n/a	n/a	n/a	
Mangapu River @ Otorohanga	12	12	6	12	6	0	2	4	2/4	N	N	7	9	2	12	2	0	0	0	0/4	N	N	
Mangatutu Stm (Waikeria) @ Walker Rd Br	11	12	8	12	9	8	6	6	2/4	N	N	10	8	5	11	4	0	0	0	0/4	N	N	
Mangauika Stm @ Te Awamutu Borough W/S Intake	12	12	11	12	11	10	11	11	4/4	Y	Y	12	11	10	12	9	7	1	6	3/4	Y	N	
Ohote Stm @ Whatawhata/Horotiu Rd	1	9	0	12	9	0	0	0	4/4	Y	N	0	1	0	10	1	0	0	0	1/4	N	N	
Puniu River @ Bartons Corner Rd Br	11	12	7	12	6	0	2	4	n/a	n/a	n/a	7	11	4	11	2	0	0	0	n/a	n/a	n/a	
Waipa River @ Mangaokewa Rd	12	12	10	12	11	9	5	8	n/a	n/a	n/a	12	11	5	12	8	0	0	0	n/a	n/a	n/a	
Waipa River @ Pirongia-Ngutunui Rd Br	12	12	4	12	9	1	2	2	1/4	N	N	8	11	0	12	4	0	0	0	0/4	N	N	
Waipa River @ SH3 Otorohanga	12	12	6	12	8	6	4	5	3/4	N	N	11	10	3	12	2	0	0	0	1/4	N	N	
Waitomo Stm @ SH31 Otorohanga	12	12	5	12	10	5	2	2	1/4	N	N	10	11	0	12	2	0	0	0	0/4	N	N	
Waitomo Stm @ Tumutumu Rd	12	12	5	12	10	5	0	3	2/4	N	N	12	10	2	12	6	0	0	0	0/4	N	N	

Number of Samples (2003) that Comply with the Satisfactory Water Quality Standards and with the Excellent Water Quality Standards and Guidelines

Location	SATISFACTORY											EXCELLENT										
	ECOLOGICAL HEALTH					RECREATION						ECOLOGICAL HEALTH					RECREATION					
	DO	pH	Turb	NH4	Temp	TP	TN	BDisk	E.coli	E.coli-m	ENTm	DO	pH	Turb	NH4	Temp	TP	TN	BDisk	E.coli	E.coli-m	ENTm
Tributaries to the Upper Waikato River																						
Kawaunui Stm @ SH5 Br	7	12	4	10	9	0	0	2	2/4	N	N	2	12	2	5	7	0	0	0	0/4	N	N
Mangaharakeke Stm (Atiamuri) @ SH30 (Off Jct SH1)	12	12	10	12	12	0	10	0	2/4	N	N	11	11	0	12	9	0	0	0	0/4	N	N
Mangakara Stm (Reporoa) @ SH5	12	12	8	12	11	0	0	0	3/4	N	N	10	12	2	12	9	0	0	0	0/4	N	N
Mangakino River (Whakamaru) @ Sandel Rd	12	12	12	12	12	2	1	11	n/a	n/a	n/a	12	12	11	12	10	0	0	1	n/a	n/a	n/a
Otamakokore Stm @ Hossack Rd	12	12	11	12	0	0	1	2	4/4	N	N	12	4	2	12	0	0	0	0	0/4	N	N
Pueto Stm @ Broadlands Rd Br	12	12	11	12	11	0	12	10	4/4	Y	Y	12	12	5	12	7	0	0	0	3/4	Y	N
Tahunaatara Stm @ Ohakuri Rd	12	12	11	12	11	1	4	8	4/4	N	N	12	12	8	12	9	0	0	0	0/4	N	N
Torepatutahi Stm @ Vaile Rd Br	12	12	12	12	11	0	10	0	n/a	n/a	n/a	12	12	12	12	6	0	0	0	n/a	n/a	n/a
Waiotapu Stm @ Campbell Rd Br	12	0	9	1	0	0	0	4	4/4	Y	Y	6	0	4	0	0	0	0	0	4/4	Y	N
Waiotapu Stm @ Homestead Rd Br	11	12	3	12	2	0	0	0	n/a	n/a	n/a	3	8	0	1	0	0	0	0	n/a	n/a	n/a
Waipapa Stm (Mokai) @ Tirohanga Rd Br	12	12	11	12	0	0	0	5	4/4	Y	N	12	12	3	12	0	0	0	0	1/4	N	N
Whirinaki Stm @ Corbett Rd	12	12	12	12	12	0	1	0	n/a	n/a	n/a	12	12	11	12	7	0	0	0	n/a	n/a	n/a
West Coast																						
Awakino River @ Gribbon Rd	12	12	7	12	10	8	11	5	3/4	N	N	12	12	5	12	5	0	0	5	1/4	N	N
Awakino River @ SH3 Awakau Rd Junction	12	12	5	12	9	5	9	5	3/4	N	N	12	12	4	12	3	0	0	0	1/4	N	N
Manganui River @ Off Manganui Rd	12	12	5	12	9	5	8	5	3/4	N	N	12	11	4	12	4	1	4	1	0/4	N	N
Mangaotaki River @ SH3 Br	12	12	5	12	9	6	0	5	n/a	n/a	n/a	12	12	3	12	4	0	0	0	n/a	n/a	n/a
Marokopa River @ Speedies Rd (Off Te Anga Rd)	12	12	7	12	10	7	7	4	2/4	N	N	12	9	4	12	4	0	0	0	0/4	N	N
Mokau River @ Awakau Rd	12	12	0	12	9	4	3	0	1/4	N	N	10	11	0	12	3	0	0	0	0/4	N	N
Mokau River @ Mangaokewa Rd (Off SH30)	12	12	8	12	12	3	5	6	3/4	N	N	12	11	5	12	9	0	0	0	1/4	N	N
Mokau River @ Totoro Rd Recorder	12	12	5	12	9	5	1	4	2/4	N	N	12	12	3	12	4	0	0	0	0/4	N	N
Mokauiti Stm @ Three Way Point - Aria	12	12	2	12	8	2	5	1	2/4	N	N	9	9	0	12	2	0	0	0	0/4	N	N
Ohautira River @ Waingaro Te Uku Rd	12	12	0	12	11	1	6	0	2/4	N	N	11	11	0	12	6	0	0	0	0/4	N	N
Oparau River @ Langdon Rd (Off Okupata Rd)	12	12	8	12	10	8	10	6	n/a	n/a	n/a	12	10	4	12	4	0	1	0	n/a	n/a	n/a
Tawarau River @ Off Speedies Rd	12	12	7	12	10	7	6	4	n/a	n/a	n/a	12	10	4	12	5	0	0	0	n/a	n/a	n/a
Waingaro River (Pukemiro) @ Ruakiwi Rd Off SH22	11	12	0	12	7	1	5	0	n/a	n/a	n/a	8	11	0	12	3	0	0	0	n/a	n/a	n/a
Waitetuna River @ Te Uku-Waingaro Rd	12	12	2	12	10	5	5	1	1/4	N	N	11	11	0	12	5	0	0	0	0/4	N	N
Inflows to Lake Taupo																						
Hinemaiaia River @ SH1	12	12	12	12	12	8	12	12	4/4	Y	Y	12	12	12	12	12	0	6	1	4/4	Y	N
Kuratau River @ 43 Te Rae Street	12	12	12	12	12	11	2	0	4/4	Y	Y	12	12	11	11	9	1	0	0	4/4	N	N
Kuratau River @ SH41 Moerangi	12	12	12	12	12	12	12	12	n/a	n/a	n/a	11	5	10	12	12	11	3	1	n/a	n/a	n/a
Mapara Stm @ Off Mapara Rd (Whakaipo Res)	12	12	12	12	12	0	0	5	4/4	Y	N	7	12	3	12	11	0	0	0	3/4	N	N
Tauranga-Taupo River @ Te Kono Slackline	12	12	12	12	12	12	12	11	n/a	n/a	n/a	12	12	11	12	12	0	7	6	n/a	n/a	n/a

Number of Samples (2003) that Comply with the Satisfactory Water Quality Standards and with the Excellent Water Quality Standards and Guidelines

Location	SATISFACTORY												EXCELLENT											
	ECOLOGICAL HEALTH						RECREATION						ECOLOGICAL HEALTH						RECREATION					
	DO	pH	Turb	NH4	Temp	TP	TN	BDisk	<i>E.coli</i>	<i>E.coli-m</i>	ENTm	DO	pH	Turb	NH4	Temp	TP	TN	BDisk	<i>E.coli</i>	<i>E.coli-m</i>	ENTm		
Tokaanu Power Station Tailrace Canal @ SH41 Bridge	12	12	12	12	12	12	12	0	n/a	n/a	n/a	12	12	12	12	9	1	5	0	n/a	n/a	n/a		
Tokaanu Stm @ Off SH41 Turangi	11	12	12	12	11	0	12	0	n/a	n/a	n/a	0	12	12	12	7	0	0	0	n/a	n/a	n/a		
Waihaha River @ SH32	12	12	12	12	12	12	12	12	4/4	Y	Y	12	12	12	12	12	0	1	10	4/4	Y	Y		
Waitahanui River @ Blake Rd	12	12	12	12	12	0	12	12	4/4	Y	Y	12	12	12	12	10	0	0	6	4/4	Y	Y		
Whanganui Stm @ Lakeside Lake Taupo	12	12	12	12	12	12	9	0	4/4	Y	Y	12	12	11	12	12	2	0	0	4/4	Y	N		
Whareroa Stm @ Lakeside Lake Taupo	12	12	12	12	12	10	3	0	4/4	Y	Y	12	12	4	12	11	0	0	0	2/4	N	N		
Whareroa Stm @ Whareroa Station Bridge	12	12	12	12	12	11	3	0	4/4	Y	N	12	12	7	12	11	0	0	0	2/4	N	N		

E.coli-m refers to whether the 2003 sample median meets the Satisfactory median *E.coli* guideline value of <126/100 mL or the Excellent median guideline value of <23/100 mL for recreational use of water.

ENTm refers to whether the 2003 sample median meets the Satisfactory median enterococci guideline value of <33/100 mL or the Excellent median guideline value of <6/100 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.
Median enterococci	<33/100 mL	Department of Health (1992).

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
NH ₄ -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