

## Appendix A: RSKSE and P-values

Table 3: Trends slopes for water quality parameters for 21 RWQMN sites with *p*-values from October 1996 to June 2010 or when records began

SITE	Dissolved oxygen		Conductivity		pH		Temperature		<i>Escherichia coli</i>		Turbidity		Visual clarity	
	P	RSKSE	P	RSKSE	P	RSKSE	P	RSKSE	P	RSKSE	P	RSKSE	P	RSKSE
Victoria	0.25	-0.21	0.08	0.06	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>-0.1</b>	0.60	-6.5	<b>0</b>	<b>0.01</b>	<b>0</b>	<b>-0.12</b>
Awanui (FNDC take)	<b>0.04</b>	<b>-0.98</b>	<b>0</b>	<b>0.13</b>	0.95	0	1.00	0	0.89	2.6	0.33	0.08	0.41	0
Awanui (Waihue)	<b>0</b>	<b>-0.73</b>	<b>0</b>	<b>0.12</b>	0.05	0.01	<b>0.01</b>	<b>-0.08</b>	1.00	-1.3	0.25	-0.1	0.12	0
Waitangi (Waimate)	1	0.06	0.11	0.05	0.17	0.01	0.30	0	1.00	3.8	0.27	0	0.96	0
Waitangi (Watea)	<b>0.01</b>	<b>0.08</b>	0.58	0.02	<b>0</b>	<b>0.01</b>	0.52	0	0.80	-3.7	0.1	0	0.85	0.01
Waipapa	0.46	-0.02	<b>0</b>	<b>0.05</b>	<b>0</b>	<b>0.01</b>	0.77	0.02	0.08	-9.9	<b>0</b>	<b>-0.06</b>	<b>0</b>	<b>0.1</b>
Punakitere	0.11	0.3	0.41	0.02	<b>0</b>	<b>0.03</b>	0.40	0.12	0.70	3.5	0.6	-0.09	<b>0.02</b>	<b>0.05</b>
Waiotu	0.49	0.41	0.95	-0.02	0.06	0.02	0.17	0.01	0.90	2.2	0.1	0.02	0.88	0.01
Whakapara	<b>0.01</b>	<b>0.59</b>	0.33	0.01	<b>0</b>	<b>0.03</b>	0.27	-0.02	0.80	0	0.86	-0.02	0.29	0.02
Mangahahuru (Main Rd)	0.83	-0.17	0.71	0.1	0.52	0	0.05	0.33	0.10	22.5	<b>0.02</b>	<b>0.43</b>	0.06	-0.13
Mangahahuru (Apotu)	<b>0</b>	<b>0.64</b>	<b>0</b>	<b>0.12</b>	<b>0</b>	<b>0.02</b>	0.29	-0.01	0.87	4.2	0.69	-0.1	<b>0.02</b>	<b>0.03</b>
Waiarohia (Whau Valley)	0.56	0.4	0.18	0.78	<b>0</b>	<b>0.07</b>	0.28	0.14	0.10	-58.9	<b>0.01</b>	<b>-0.65</b>	<b>0</b>	<b>0.23</b>
Waiarohia (Second Ave)	0.83	-0.07	0.72	<b>0.05</b>	<b>0.02</b>	<b>0.03</b>	0.72	0.14	0.08	-67.6	<b>0</b>	<b>-0.32</b>	<b>0</b>	<b>0.26</b>
Wairua	<b>0.04</b>	<b>0.53</b>	<b>0.04</b>	<b>0.05</b>	<b>0</b>	<b>0.02</b>	0.24	0	0.08	-9.7	0.18	-0.15	<b>0.02</b>	<b>0.02</b>
Mangakahia (Twin)	0.36	0.16	<b>0.05</b>	<b>0.07</b>	<b>0</b>	<b>0.04</b>	0.40	-0.02	0.20	-4.2	0.31	-0.03	0.15	0.03
Mangakahia (Titoki)	<b>0.01</b>	<b>-0.12</b>	0.13	0.05	0.86	0	0.61	0	0.34	16.5	0.81	0	0.83	0
Opouteke	0.34	0.08	<b>0.01</b>	<b>0.07</b>	<b>0</b>	<b>0.04</b>	0.44	0.02	<b>0.00</b>	<b>12.5</b>	0.19	-0.02	0.16	0.02
Mangere	<b>0</b>	<b>0.53</b>	0.45	0.03	<b>0</b>	<b>0.03</b>	<b>0.03</b>	<b>-0.06</b>	0.35	19.9	<b>0.03</b>	<b>-0.12</b>	<b>0</b>	<b>0.05</b>
Manganui	1	0.07	1	0.03	<b>0.01</b>	<b>0.04</b>	0.40	0.1	0.30	-3.5	0.16	0.15	0.67	0.01
Kaihu	<b>0.01</b>	<b>-0.81</b>	0.88	-0.03	0.3	0.01	0.40	0.07	0.90	1.9	0.31	-0.16	0.15	0.05
Waipoua	<b>0.04</b>	<b>-0.46</b>	0.16	-0.1	<b>0.03</b>	<b>-0.02</b>	0.43	0.06	0.42	-0.6	0.4	0.05	0.5	-0.03

Table 3 cont: Trends slopes for water quality parameters for 21 RWQMN sites with *p*-values from October 1996 to June 2010 or when records began

SITE	Dissolved reactive phosphorus		Total Phosphorus		Nitrate/Nitrite nitrogen (or Nitrate)		Total nitrogen		Ammoniacal nitrogen		Total Kjeldahl Nitrogen	
	P	RSKSE	P	RSKSE	P	RSKSE	P	RSKSE	P	RSKSE	P	RSKSE
Victoria	<b>0</b>	<b>-0.002</b>	<b>0</b>	<b>-0.002</b>	0.25	0	0.44	0	<b>0</b>	<b>-0.001</b>	0.52	0
Awanui (FNDC take)	0.32	0	0.65	0	0.89	0	0.89	-0.002	0.07	0	0.95	0
Awanui (Waihue)	<b>0</b>	<b>-0.01</b>	<b>0</b>	<b>-0.016</b>	0.1	0	0.66	-0.003	<b>0</b>	<b>-0.003</b>	0.66	0
Waitangi (Waimate)	0.5	0	0.46	-0.011	0.82	0	0.89	0	<b>0</b>	<b>-0.001</b>	0.68	0
Waitangi (Watea)	0.3	0	<b>0.01</b>	<b>0.0002</b>	0.53	0	0.22	0	0.95	0	<b>0</b>	<b>0.003</b>
Waipapa	<b>0</b>	<b>-0.0001</b>	<b>0</b>	<b>-0.0001</b>	<b>0</b>	<b>-0.001</b>	<b>0.01</b>	<b>-0.001</b>	<b>0</b>	<b>-0.0001</b>	0.47	0
Punakitere	<b>0</b>	<b>-0.002</b>	<b>0.02</b>	<b>-0.003</b>	0.26	-0.01	<b>0.01</b>	<b>-0.02</b>	<b>0</b>	<b>-0.002</b>	<b>0.04</b>	<b>-0.01</b>
Waiotu	0.48	0	0.28	-0.001	0.73	-0.01	0.28	-0.02	0.6	0	0.02	-0.01
Whakapara	<b>0.01</b>	<b>-0.001</b>	<b>0</b>	<b>-0.003</b>	0.03	-0.01	0.42	-0.007	0.07	0.22	0.69	0
Mangahahuru (Main Rd)	0.11	0	0.35	0	0.9	0	0.94	0.005	0.9	0	0.72	0
Mangahahuru (Apotu)	0	-0.003	<b>0</b>	<b>-0.006</b>	<b>0</b>	<b>-0.003</b>	0.88	-0.005	<b>0</b>	<b>-0.003</b>	0.76	0
Waiarohia (Whau Valley)	0.23	0	<b>0</b>	<b>-0.012</b>	<b>0.02</b>	<b>0.06</b>	0.36	-0.02	0.93	0	<b>0.02</b>	<b>-0.06</b>
Waiarohia (Second Ave)	<b>0.02</b>	<b>-0.002</b>	<b>0</b>	<b>-0.009</b>	0.72	0.002	0.36	-0.025	0.57	0	0.03	-0.016
Wairua	0.01	0	0.51	0	<b>0.01</b>	<b>-0.014</b>	<b>0.02</b>	<b>-0.016</b>	<b>0.04</b>	<b>-0.001</b>	0.53	0
Mangakahia (Twin)	<b>0</b>	<b>-0.004</b>	<b>0</b>	<b>-0.007</b>	0.26	0	0.41	-0.002	<b>0</b>	<b>-0.0001</b>	0.5	0
Mangakahia (Titoki)	<b>0</b>	<b>0.006</b>	0.59	0	<b>0</b>	<b>-0.003</b>	<b>0</b>	<b>-0.004</b>	<b>0.01</b>	<b>-0.0003</b>	0.87	0
Opouteke	<b>0</b>	<b>-0.005</b>	<b>0</b>	<b>-0.011</b>	<b>0</b>	<b>-0.001</b>	0.57	0	<b>0</b>	<b>-0.00004</b>	0.11	0
Mangere	<b>0</b>	<b>-0.008</b>	<b>0</b>	<b>-0.012</b>	<b>0</b>	<b>-0.027</b>	<b>0</b>	<b>-0.034</b>	<b>0</b>	<b>-0.006</b>	0.31	-0.005
Manganui	0.39	0	<b>0.03</b>	<b>-0.003</b>	0.36	-0.005	<b>0.01</b>	<b>-0.019</b>	0.09	0	0.14	-0.01
Kaihu	0.11	0	0.12	0	0.09	-0.01	0.27	-0.011	0	-0.001	0.64	0
Waipoua	0.24	0	0.7	0	0.35	0	0.7	0	<b>0</b>	<b>0</b>	0.7	0