



ANALYSIS REPORT

Client:	Real NZ Water	Lab No:	1756242	SPV1
Contact:	Kurt Schneider 949 South Keller St. Kennewick, WA 99336	Date Received:	10-Apr-2017	
		Date Reported:	21-Apr-2017	
		Quote No:	40779	
		Order No:		
		Client Reference:	Annual Water testing	
		Submitted By:	Kerry Rutherford	

Sample Type: Aqueous

Sample Name:		Real NZ Waters 7093 22-Feb-2017 9:46 am				
Lab Number:		1756242.1				
pH	pH Units	8.1	-	-	-	-
Total Hardness	g/m ³ as CaCO ₃	69	-	-	-	-
Total Dissolved Solids (TDS)	g/m ³	115	-	-	-	-
Arsenic	g/m ³	< 0.0010	-	-	-	-
Barium	g/m ³	0.0082	-	-	-	-
Borate (B ₄ O ₇)*	g/m ³	0.06	-	-	-	-
Boron	g/m ³	0.016	-	-	-	-
Cadmium	g/m ³	< 0.00005	-	-	-	-
Dissolved Calcium	g/m ³	21	-	-	-	-
Total Calcium	g/m ³	22	-	-	-	-
Hexavalent Chromium	g/m ³	< 0.010	-	-	-	-
Copper	g/m ³	< 0.0005	-	-	-	-
Lead	g/m ³	< 0.00010	-	-	-	-
Dissolved Magnesium	g/m ³	3.6	-	-	-	-
Total Magnesium	g/m ³	3.5	-	-	-	-
Manganese	g/m ³	< 0.0005	-	-	-	-
Total Mercury	g/m ³	< 0.00008	-	-	-	-
Total Potassium	g/m ³	0.92	-	-	-	-
Selenium	g/m ³	< 0.0010	-	-	-	-
Total Sodium	g/m ³	12.2	-	-	-	-
Zinc	g/m ³	0.0082	-	-	-	-
Total Cyanide	g/m ³	< 0.0010	-	-	-	-
Chloride	g/m ³	7.9	-	-	-	-
Fluoride	g/m ³	0.12	-	-	-	-
Nitrite-N	g/m ³	< 0.002	-	-	-	-
Nitrite	g/m ³	< 0.007	-	-	-	-
Nitrate-N	g/m ³	0.35	-	-	-	-
Nitrate-N + Nitrite-N	g/m ³	0.35	-	-	-	-
Nitrate	g/m ³	1.56	-	-	-	-
Reactive Silica	g/m ³ as SiO ₂	19.6	-	-	-	-
Total Sulphide	g/m ³	< 0.002	-	-	-	-
Sulphate	g/m ³	2.2	-	-	-	-
Total Organic Carbon (TOC)	g/m ³	0.7	-	-	-	-



SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Total Digestion	Nitric acid digestion. APHA 3030 E 22 nd ed. 2012 (modified).	-	1
Total Cyanide Distillation	Distillation following the addition of sulphuric acid, alkaline trapping solution. APHA 4500-CN ⁻ C (modified) 22 nd ed. 2012.	-	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; 101c Waterloo Road, Christchurch. APHA 4500-H ⁺ B 22 nd ed. 2012. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field.	0.1 pH Units	1
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B 22 nd ed. 2012.	1.0 g/m ³ as CaCO ₃	1
Total Dissolved Solids (TDS)	Filtration through GF/C (1.2 µm), gravimetric. Analysed at Hill Laboratories - Chemistry; 101c Waterloo Road, Christchurch. APHA 2540 C (modified; drying temperature of 103 - 105°C used rather than 180 ± 2°C) 22 nd ed. 2012.	10 g/m ³	1
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B 22 nd ed. 2012.	-	1
Arsenic	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0010 g/m ³	1
Barium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.00010 g/m ³	1
Borate (B ₄ O ₇)*	Calculation: from boron.	0.02 g/m ³	1
Boron	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.005 g/m ³	1
Cadmium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.00005 g/m ³	1
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.05 g/m ³	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.053 g/m ³	1
Hexavalent Chromium	Diphenylcarbazide colorimetry. Discrete Analyser. APHA 3500 Cr B (modified from manual analysis) 22 nd ed. 2012.	0.010 g/m ³	1
Copper	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0005 g/m ³	1
Lead	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.00010 g/m ³	1
Dissolved Magnesium	Filtered sample, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.02 g/m ³	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.021 g/m ³	1
Manganese	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0005 g/m ³	1
Total Mercury	Bromine Oxidation followed by Atomic Fluorescence. US EPA Method 245.7, Feb 2005.	0.00008 g/m ³	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.053 g/m ³	1
Selenium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0010 g/m ³	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.021 g/m ³	1
Zinc	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0010 g/m ³	1
Total Cyanide	Distillation, colorimetry. APHA 4500-CN ⁻ C (modified) & E (modified) 22 nd ed. 2012.	0.0010 g/m ³	1
Chloride	Filtered sample. Ferric thiocyanate colorimetry. Discrete Analyser. APHA 4500 Cl ⁻ E (modified from continuous flow analysis) 22 nd ed. 2012.	0.5 g/m ³	1
Fluoride	Direct measurement, ion selective electrode. APHA 4500-F ⁻ C 22 nd ed. 2012.	0.05 g/m ³	1
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO ₂ ⁻ I 22 nd ed. 2012 (modified).	0.002 g/m ³	1
Nitrite	Calculation from Nitrite-N.	0.007 g/m ³	1
Nitrate-N	Calculation: (Nitrate-N + Nitrite-N) - NO ₂ N. In-House.	0.0010 g/m ³	1
Nitrate-N + Nitrite-N	Total oxidised nitrogen. Automated cadmium reduction, flow injection analyser. APHA 4500-NO ₃ ⁻ I 22 nd ed. 2012 (modified).	0.002 g/m ³	1

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Nitrate	Calculation from Nitrate-N.	0.010 g/m ³	1
Reactive Silica	Filtered sample. Heteropoly blue colorimetry. Discrete analyser. APHA 4500-SiO ₂ F (modified from flow injection analysis) 22 nd ed. 2012.	0.10 g/m ³ as SiO ₂	1
Sulphide Distillation	Acid distillation of sample into alkaline trapping solution using Simple Distillation system. APHA 4500-S ²⁻ I 22 nd ed. 2012.	-	1
Total Sulphide	Sulphide distillation. Automated methylene blue colorimetry, discrete analyser. APHA 4500-S ²⁻ I (modified) 22 nd ed. 2012.	0.002 g/m ³	1
Sulphate	Filtered sample. Ion Chromatography. APHA 4110 B 22 nd ed. 2012.	0.5 g/m ³	1
Total Organic Carbon (TOC)	Supercritical persulphate oxidation, IR detection, for Total C. Acidification, purging for Total Inorganic C. TOC = TC -TIC. APHA 5310 C (modified) 22 nd ed. 2012.	0.5 g/m ³	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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