



Client:	Pacific Water Developments Ltd	Lab No:	1296191	SPV1
Contact:	A Findlay Pacific Water Developments Ltd PO Box 569 WHAKATANE 3158	Date Registered:	08-Jul-2014	
		Date Reported:	15-Jul-2014	
		Quote No:		
		Order No:		
		Client Reference:		
		Submitted By:	A Findlay	

Sample Type: Aqueous						
Sample Name:		Get Fresh 500ml				
		03-Jul-2014				
Lab Number:		1296191.1				
Individual Tests						
Apparent Hazen Colour	Hazen units	< 5	-	-	-	-
Turbidity	NTU	0.13	-	-	-	-
pH	pH Units	7.0	-	-	-	-
Total Hardness	g/m ³ as CaCO ₃	10.0	-	-	-	-
Electrical Conductivity (EC)	mS/m	7.6	-	-	-	-
Total Solids (TS)	g/m ³	117	-	-	-	-
Permanganate Value*	g/m ³ as O ₂	< 0.10	-	-	-	-
Aluminium	g/m ³	0.004	-	-	-	-
Antimony	g/m ³	< 0.0002	-	-	-	-
Barium	g/m ³	0.020	-	-	-	-
Boron	g/m ³	0.008	-	-	-	-
Dissolved Calcium	g/m ³	2.2	-	-	-	-
Hexavalent Chromium	g/m ³	< 0.0010	-	-	-	-
Iron	g/m ³	< 0.02	-	-	-	-
Dissolved Magnesium	g/m ³	1.07	-	-	-	-
Manganese	g/m ³	< 0.0005	-	-	-	-
Total Mercury	g/m ³	< 0.00008	-	-	-	-
Dissolved Potassium	g/m ³	4.6	-	-	-	-
Selenium	g/m ³	< 0.0010	-	-	-	-
Silver	g/m ³	< 0.00010	-	-	-	-
Dissolved Sodium	g/m ³	8.5	-	-	-	-
Bromide	g/m ³	0.05	-	-	-	-
Bromate	g/m ³	0.006	-	-	-	-
Total Cyanide	g/m ³	< 0.0010	-	-	-	-
Chloride	g/m ³	3.6	-	-	-	-
Fluoride	g/m ³	0.10	-	-	-	-
Total Ammoniacal-N	g/m ³	< 0.010	-	-	-	-
Nitrite-N	g/m ³	< 0.002	-	-	-	-
Nitrate-N	g/m ³	1.58	-	-	-	-
Nitrate-N + Nitrite-N	g/m ³	1.58	-	-	-	-
Total Kjeldahl Nitrogen (TKN)	g/m ³	< 0.10	-	-	-	-
Dissolved Reactive Phosphorus	g/m ³	0.026	-	-	-	-
Phosphate	g/m ³	0.081	-	-	-	-
Reactive Silica	g/m ³ as SiO ₂	71	-	-	-	-
Sulphate	g/m ³	2.9	-	-	-	-
Total Organic Carbon (TOC)	g/m ³	< 0.5	-	-	-	-
Heavy metals Potable (As,Cd,Cr,Cu,Ni,Pb,Zn)						



Sample Type: Aqueous						
Sample Name:		Get Fresh 500ml 03-Jul-2014				
Lab Number:		1296191.1				
Heavy metals Potable (As,Cd,Cr,Cu,Ni,Pb,Zn)						
Arsenic	g/m ³	< 0.0010	-	-	-	-
Cadmium	g/m ³	< 0.00005	-	-	-	-
Chromium	g/m ³	< 0.0005	-	-	-	-
Copper	g/m ³	< 0.0005	-	-	-	-
Lead	g/m ³	< 0.00010	-	-	-	-
Nickel	g/m ³	< 0.0005	-	-	-	-
Zinc	g/m ³	< 0.0010	-	-	-	-

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
Heavy metals Potable (As,Cd,Cr,Cu,Ni,Pb,Zn)	Analysed as received (after acid preservation, if required), ICP-MS, trace level.	0.00005 - 0.0010 g/m ³	1
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter.	-	1
Total Kjeldahl Digestion	Sulphuric acid digestion with copper sulphate catalyst.	-	1
Total Cyanide Distillation	Distillation following the addition of sulphuric acid, alkaline trapping solution. APHA 4500-CN·C (modified) 22 nd ed. 2012.	-	1
Apparent Hazen Colour	Determined on original sample without filtration or centrifugation, determination by Lovibond colorimeter. APHA 2120 B 22 nd ed. 2012.	5 Hazen units	1
Turbidity	Analysis using a Hach 2100N, Turbidity meter. APHA 2130 B 22 nd ed. 2012.	0.05 NTU	1
pH	pH meter. APHA 4500-H+ B 22 nd ed. 2012.	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
Electrical Conductivity (EC)	Conductivity meter, 25°C. APHA 2510 B 22 nd ed. 2012.	0.1 mS/m	1
Total Solids (TS)	Gravimetric. APHA 2540 B 22 nd ed. 2012.	10 g/m ³	1
Permanganate Value*	Addition of standard potassium permanganate solution, incubation at 27°C for 4 hours, iodometric titration.	0.10 g/m ³ as O ₂	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
Aluminium	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.003 g/m ³	1
Antimony	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.0002 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
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
Dissolved Calcium	Filtered sample, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.05 g/m ³	1
Hexavalent Chromium	Diphenylcarbazide colorimetry. Discrete Analyser. APHA 3500 Cr B (modified from manual analysis) 22 nd ed. 2012.	0.0010 g/m ³	1
Iron	Analysed as received (after acid preservation, if required), ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.02 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
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
Dissolved Potassium	Filtered sample, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.05 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
Silver	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 Sodium	Filtered sample, ICP-MS, trace level. APHA 3125 B 22 nd ed. 2012.	0.02 g/m ³	1

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Bromide	Filtered sample. Ion Chromatography. APHA 4110 B 22 nd ed. 2012.	0.05 g/m ³	1
Bromate	Sample analysed as received, filtered if required. Ion Chromatography. US EPA Method 300.1 Part B.	0.005 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
Total Ammoniacal-N	Filtered sample. Phenol/hypochlorite colorimetry. Discrete Analyser. (NH ₄ -N = NH ₄ +N + NH ₃ -N). APHA 4500-NH ₃ F (modified from manual analysis) 22 nd ed. 2012.	0.010 g/m ³	1
Nitrite-N	Automated Azo dye colorimetry, Flow injection analyser. APHA 4500-NO ₂ ⁻ I 22 nd ed. 2012.	0.002 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.	0.002 g/m ³	1
Total Kjeldahl Nitrogen (TKN)	Total Kjeldahl digestion, phenol/hypochlorite colorimetry. Discrete Analyser. APHA 4500-N _{org} D. (modified) 4500 NH ₃ F (modified) 22 nd ed. 2012.	0.10 g/m ³	1
Dissolved Reactive Phosphorus	Filtered sample. Molybdenum blue colorimetry. Discrete Analyser. APHA 4500-P E (modified from manual analysis) 22 nd ed. 2012.	0.004 g/m ³	1
Phosphate from DRP	Calculation: from Dissolved Reactive Phosphorus * 3.065.	0.007 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
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.

This report must not be reproduced, except in full, without the written consent of the signatory.



Peter Robinson MSc (Hons), PhD, FNZIC
Client Services Manager - Environmental Division