

Analytical Report COA No: 23/04288-1

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Compliance of samples tested are assessed according to 'Water Services (Drinking Water Standards for New Zealand) Regulations 2022'

Date received: 17/07/2023 Time received: 16:05 Sampled by: Alby Shaw Sample date: 17/07/2023

Sample type: Source Order no.: 660125

Sample	Test	Result	Units	Comments	Uncertainty
23/04288-01	Sample time: 13:22				
Bunnythorpe Bore	Alkalinity - Total	120	g/m³ CaCO3		
G00914	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.02	g/m³	Complies with MAV of 0.7	
	Calcium - Total	37.8	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	29	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	120	g/m³ CaCO3	Within the GV range	
	Calcium Hardness Calculation	94	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	20.7	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	7.0	g/m³	Below GV of 100	
	Sodium - Total	14.0	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Sulfate	10.4	g/m³ SO4	Below GV of 250	
	Antimony - Total **	< 0.004	g/m³		

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Sample	Test	Result	Units	Comments	Uncertainty
23/04288-02	Sample time: 15:45				
Longburn Bore	Alkalinity - Total	130	g/m³ CaCO3		
G00259	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.01	g/m³	Complies with MAV of 0.7	
	Calcium - Total	37.5	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	33	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	130	g/m³ CaCO3	Within the GV range	
	Calcium Hardness Calculation	94	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	17.0	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	8.0	g/m³	Below GV of 100	
	Sodium - Total	13.7	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Sulfate	5.51	g/m³ SO4	Below GV of 250	
	Antimony - Total **	< 0.004	g/m³		
23/04288-03	Sample time: 12:11		C	order no.: 660109	
Ashhurst Bore	Alkalinity - Total	100	g/m³ CaCO3		
G00110	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	< 0.00	g/m³	Complies with MAV of 0.7	
	Calcium - Total	30.1	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	23	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	98	g/m³ CaCO3	Below GV of 100	
	Calcium Hardness Calculation	75	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	6.42	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	5.6	g/m³	Below GV of 100	
	Sodium - Total	7.9	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Sulfate	10.1	g/m³ SO4	Below GV of 250	
	Antimony - Total **	< 0.004	g/m³		

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Sample	Test	Result	Units	Comments	Uncertainty
23/04288-04	Sample time: 14:38				
Keith Street Bore 1	Alkalinity - Total	95	g/m³ CaCO3		
G01208	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.01	g/m³	Complies with MAV of 0.7	
	Calcium - Total	30.6	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	23	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	99	g/m³ CaCO3	Below GV of 100	
	Calcium Hardness Calculation	76	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	6.98	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	5.6	g/m³	Below GV of 100	
	Sodium - Total	10.6	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Sulfate	9.17	g/m³ SO4	Below GV of 250	
	Antimony - Total **	< 0.004	g/m³		
23/04288-05	Sample time: 14:57				
Papaioea Park Bore 1	Alkalinity - Total	110	g/m³ CaCO3		
G00104	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.01	g/m³	Complies with MAV of 0.7	
	Calcium - Total	38.3	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	29	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	120	g/m³ CaCO3	Within the GV range	
	Calcium Hardness Calculation	96	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	22.5	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	7.0	g/m³	Below GV of 100	
	Sodium - Total	15.4	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	

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g/m³ SO4

g/m³

Below GV of 250

10.9

< 0.004

Sulfate

Antimony - Total **

Sample	Test	Result	Units	Comments	Uncertainty
23/04288-06	Sample time: 14:59				
Papaioea Park Bore 2	Alkalinity - Total	84	g/m³ CaCO3		
G01412	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.01	g/m³	Complies with MAV of 0.7	
	Calcium - Total	26.4	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	20	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	86	g/m³ CaCO3	Below GV of 100	
	Calcium Hardness Calculation	66	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	5.89	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	4.8	g/m³	Below GV of 100	
	Sodium - Total	10.2	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Sulfate	10.0	g/m³ SO4	Below GV of 250	
	Antimony - Total **	< 0.004	g/m³		
23/04288-07	Sample time: 13:43				
Roberts Line Bore 1	Alkalinity - Total	98	g/m³ CaCO3		
G00106	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.02	g/m³	Complies with MAV of 0.7	
	Calcium - Total	28.7	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	20	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	91	g/m³ CaCO3	Below GV of 100	
	Calcium Hardness Calculation	72	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	6.99	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	4.7	g/m³	Below GV of 100	
	Sodium - Total	10.2	g/m³	Below GV of 200	

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< 0.008

< 0.001

< 0.004

11.0

g/m³

g/m³

g/m³

g/m³ SO4

Complies with MAV of 0.08

Complies with MAV of 0.01

Below GV of 250

Nickel - Total

Lead - Total

Antimony - Total **

Sulfate

Sample	Test	Result	Units	Comments	Uncertainty
23/04288-08	Sample time: 13:47				
Roberts Line Bore 2	Alkalinity - Total	89	g/m³ CaCO3		
G01736	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.01	g/m³	Complies with MAV of 0.7	
	Calcium - Total	27.6	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	21	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	90	g/m³ CaCO3	Below GV of 100	
	Calcium Hardness Calculation	69	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	7.09	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	5.0	g/m³	Below GV of 100	
	Sodium - Total	9.7	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Sulfate	9.59	g/m³ SO4	Below GV of 250	
	Antimony - Total **	< 0.004	g/m³		
23/04288-09	Sample time: 15:21				
Takaro Bore	Alkalinity - Total	95	g/m³ CaCO3		
G00105	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.01	g/m³	Complies with MAV of 0.7	
	Calcium - Total	27.8	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	24	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	93	g/m³ CaCO3	Below GV of 100	
	Calcium Hardness Calculation	70	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	9.64	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	5.8	g/m³	Below GV of 100	
	Sodium - Total	11.4	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	

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g/m³ SO4

g/m³

Below GV of 250

3.57

< 0.004

Sulfate

Antimony - Total **

Sample	Test	Result	Units	Comments	Uncertainty
23/04288-10	Sample time: 10:29		0	rder no.: 660122	
Turitea Dam	Alkalinity - Total	16	g/m³ CaCO3		
S00082	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.02	g/m³	Complies with MAV of 0.7	
	Calcium - Total	3.8	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	6	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	16	g/m³ CaCO3	Below GV of 100	
	Calcium Hardness Calculation	9	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	13.1	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	1.6	g/m³	Below GV of 100	
	Sodium - Total	9.3	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Sulfate	4.04	g/m³ SO4	Below GV of 250	
	Antimony - Total **	< 0.004	g/m³		
23/04288-11	Sample time: 14:09				
Railway Road Bore	Alkalinity - Total	89	g/m³ CaCO3		
G03043	Arsenic - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Barium - Total	0.02	g/m³	Complies with MAV of 0.7	
	Calcium - Total	28.5	g/m³	Below GV of 100	
	Magnesium Hardness Calculation	18	g/m³ CaCO3	Below GV of 100	
	Total Hardness Calculation	89	g/m³ CaCO3	Below GV of 100	
	Calcium Hardness Calculation	71	g/m³ CaCO3	Below GV of 100	
	Cadmium - Total	< 0.00006	g/m³	Complies with MAV of 0.004	
	Chloride	6.25	g/m³	Below GV of 250	
	Chromium - Total	< 0.001	g/m³	Complies with MAV of 0.05	
	Copper - Total	< 0.001	g/m³	Complies with MAV of 2	
	Mercury - Total **	< 0.0001	g/m³		
	Magnesium - Total	4.4	g/m³	Below GV of 100	
	Sodium - Total	10.6	g/m³	Below GV of 200	
	Nickel - Total	< 0.008	g/m³	Complies with MAV of 0.08	
	Lead - Total	< 0.001	g/m³	Complies with MAV of 0.01	
	Sulfate	12.6	g/m³ SO4	Below GV of 250	
	Antimony - Total **	< 0.004	g/m³		

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< is less than > is more than, g/m³ is equivalent to mg/L and ppm, MAV - Maximum Acceptable Value. GV - Guideline Value

Notes: ** This test has been outsourced. Subcontracted reports can be supplied on request.

Test Methodology:

Test Code	Test	Methodology	Detection Limit
Alk.001	Alkalinity - Total	APHA 23rd Ed. 2320 B	1 g/m³ CaCO3
As.079	Arsenic - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.001 g/m³
Ba.079	Barium - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.001 g/m³
Ca.079	Calcium - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.1 g/m³
Calc.003	Magnesium Hardness Calculation	Calculation: 4.118 x Magnesium	1 g/m³ CaCO3
Calc.006	Total Hardness Calculation	Calculation: Calcium Hardness + Magnesium Hardness	1 g/m³ CaCO3
Calc.013	Calcium Hardness Calculation	Calculation: 2.479 x Calcium	1 g/m³ CaCO3
Cd.079	Cadmium - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.00006 g/m ³
CI.002CG	Chloride	APHA 23rd Ed. 4110 B	0.1 g/m³
Cr.079	Chromium - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.001 g/m ³
Cu.079	Copper - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.001 g/m³
Hg.686	Mercury - Total	In house procedure based on US EPA 200.8, acid digestion.	g/m³
Mg.079	Magnesium - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.1 g/m³
Na.079	Sodium - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.1 g/m³
Ni.079	Nickel - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion	0.008 g/m³
Pb.079	Lead - Total	APHA 23rd Ed. 3125 B, Nitric acid digestion (sum of 206Pb, 207Pb and 208Pb)	0.001 g/m³
S.002CG	Sulfate	APHA 23rd Ed. 4110 B	0.05 g/m ³ SO4
Sb.689	Antimony - Total	In house procedure based on US EPA 200.8, acid digestion.	0.004 g/m³

Test analysis was initiated between 18/07/2023 and 26/07/2023. For start dates of individual analyses please contact the laboratory.

Report released by

Johan Bosch

Date: 28 July 2023

Principal Analyst

Key Technical Person:

Johan Bosch

Nishani Thennakoon

This Laboratory is accredited by International Accreditation New Zealand.

Tests and sampling procedures have been performed in accordance with the conditions of our accreditation.

Where not supplied test methods, detection limits and uncertainties are available on request.

When samples are collected by the client or an agent of the client, results reported apply only to samples as received at the Laboratory.

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