

### Certificate of Analysis

#### Laboratory Reference:230125-029

Attention:	Nz Queenstown Lab Results	Final Report:	496646-0	Replaces Report	494817-0
Client:	VEOLIA WATER	Report Issue Date:	16-Feb-2023		
Address:	74 Glenda Drive, Frankton, Queenstown, 9300	Received Date:	25-Jan-2023		
		Sampled By:	DH		
Client Reference:		Laboratory Activity Dates:	25-Jan-2023	-	02-Feb-2023
Purchase Order:	7300228298	Quote Reference :	48		

Amended report: Please note added metals results for sample 230125-029-1.

#### Sample Details

	WATERS	WATERS
Lab Sample ID:	230125-029-1	230125-029-2
Client Sample ID:	S93	ARR001AR
Sample Date/Time	25/01/2023 09:00	25/01/2023 08:45
Description:	Arrowtown Source	ARR001AR 11 Bedford Street - Arrowtown

#### Micro Summary View

Escherichia coli	MPN/100mL	<1.0	-
Total Coliforms	MPN/100mL	<1.0	-

#### Chemistry Detailed

Anions			
Chloride	mg/L	1.06 ± 0.053	-
Nitrate (as N)	mg/L	0.266 ± 0.019	-
Sulphate	mg/L	6.63 ± 0.46	-

#### Sample Parameters and Field Testing

Residual Free Chlorine (as Cl <sub>2</sub> )	mg/L	-	0.77 ± 0.039
Sampled by Watercare Laboratory Services		Yes	Yes

#### General Testing

Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	70	-
True Colour (Dissolved)	Hazen Units	<5.0 *	-

#### Metals

##### Total Metals by ICP-MS—Trace (Default Digest)

Antimony (Total)	mg/L	<0.001	-
Arsenic (Total)	mg/L	0.00018 ± 0.000038	-
Barium (Total)	mg/L	0.0071 ± 0.0012	-
Cadmium (Total)	mg/L	<0.00005	-
Calcium (Total)	mg/L	23 ± 3.7	-
Chromium (Total)	mg/L	<0.0005	-
Copper (Total)	mg/L	0.0054 ± 0.001	-
Iron (Total)	mg/L	<0.002	-
Lead (Total)	mg/L	0.0015 ± 0.00025	-
Magnesium (Total)	mg/L	3.3 ± 0.72	-
Manganese (Total)	mg/L	<0.0005	-
Mercury (Total)	mg/L	<0.00005	-
Nickel (Total)	mg/L	<0.0001	-
Sodium (Total)	mg/L	2.0 ± 0.41	-

Results marked with \* are not accredited to International Accreditation New Zealand. A dash indicates no test performed.

Where samples have been supplied by the client, they are tested as received.

The results of analysis contained in this report relate only to the sample(s) tested. Where sample collection was performed by the laboratory, the results of analysis contained in this report relate only to the sample(s) collected.



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## Analyst's Notes

The Nitrate (as N) analysis for sample Arrowtown Source commenced beyond the holding time of 2 Days

## Reference Methods

The sample(s) referred to in this report were analysed by the following method(s)

Analyte	Method Reference	MDL	Samples	Location
Micro Summary View				
Escherichia coli	APHA (online edition) 9223 B	1 MPN/100mL	1	Queenstown
Total Coliforms	APHA (online edition) 9223 B	1 MPN/100mL	1	Queenstown

## Chemistry Detailed

Anions				
Chloride	APHA (online edition) 4110 B	0.02 mg/L	1	Auckland
Nitrate (as N)	APHA (online edition) 4110 B	0.002 mg/L	1	Auckland
Sulphate	APHA (online edition) 4110 B	0.02 mg/L	1	Auckland

## Sample Parameters and Field Testing

Residual Free Chlorine (as Cl <sub>2</sub> )	APHA (online edition) 4500-Cl G	0.02 mg/L	2	At site
Sampled by Watercare Laboratory Services	AS/NZS 5667 Part 4 (Lakes), Part 5 (Drinking Water), Part 6 (Rivers/Streams), Part 7 (Boiler s), Part 9 (Marine), Part 10 (Waste Waters), Part 11 (Groundwaters) and In-House Methods		All	At site

## General Testing

Total Alkalinity (as CaCO <sub>3</sub> ) by Titration	APHA (online edition) 2320 B	1 mg/L	1	Auckland
True Colour (Dissolved) by Colour Comparator	APHA (online edition) 2120 B	5 Hazen Units	1	Auckland

## Metals

Total Metals by ICP-MS—Trace (Default Digest)				
Antimony (Total)	APHA (online edition) 3125 B by ICPMS	0.001 mg/L	1	Auckland
Arsenic (Total)	APHA (online edition) 3125 B by ICPMS	0.0001 mg/L	1	Auckland
Barium (Total)	APHA (online edition) 3125 B by ICPMS	0.0002 mg/L	1	Auckland
Cadmium (Total)	APHA (online edition) 3125 B by ICPMS	0.00005 mg/L	1	Auckland
Calcium (Total)	APHA (online edition) 3125 B by ICPMS	0.01 mg/L	1	Auckland
Chromium (Total)	APHA (online edition) 3125 B by ICPMS	0.0005 mg/L	1	Auckland
Copper (Total)	APHA (online edition) 3125 B by ICPMS	0.0002 mg/L	1	Auckland
Iron (Total)	APHA (online edition) 3125 B by ICPMS	0.002 mg/L	1	Auckland
Lead (Total)	APHA (online edition) 3125 B by ICPMS	0.0001 mg/L	1	Auckland
Magnesium (Total)	APHA (online edition) 3125 B by ICPMS	0.001 mg/L	1	Auckland
Manganese (Total)	APHA (online edition) 3125 B by ICPMS	0.0005 mg/L	1	Auckland
Mercury (Total)	APHA (online edition) 3125 B by ICPMS	0.00005 mg/L	1	Auckland
Nickel (Total)	APHA (online edition) 3125 B by ICPMS	0.0001 mg/L	1	Auckland
Sodium (Total)	APHA (online edition) 3125 B by ICPMS	0.1 mg/L	1	Auckland

## Preparations

Digest for Total Metals in Liquids	APHA 3030E Modified ( 4:1 Nitric:Hydrochloric Acid: 95°C 2 hours)		1	Auckland
Membrane Filtration (0.45 µm)	APHA (online edition) 4500-P B (preliminary filtration)		1	Auckland

*The method detection limit (MDL) listed is the limit attainable in a relatively clean matrix. If dilutions are required for analysis the detection limit may be higher. For more information please contact the Compliance and Projects Manager.*

Samples, with suitable preservation and stability of analytes, will be held by the laboratory for a period of two weeks after results have been reported, unless otherwise advised by the submitter.

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