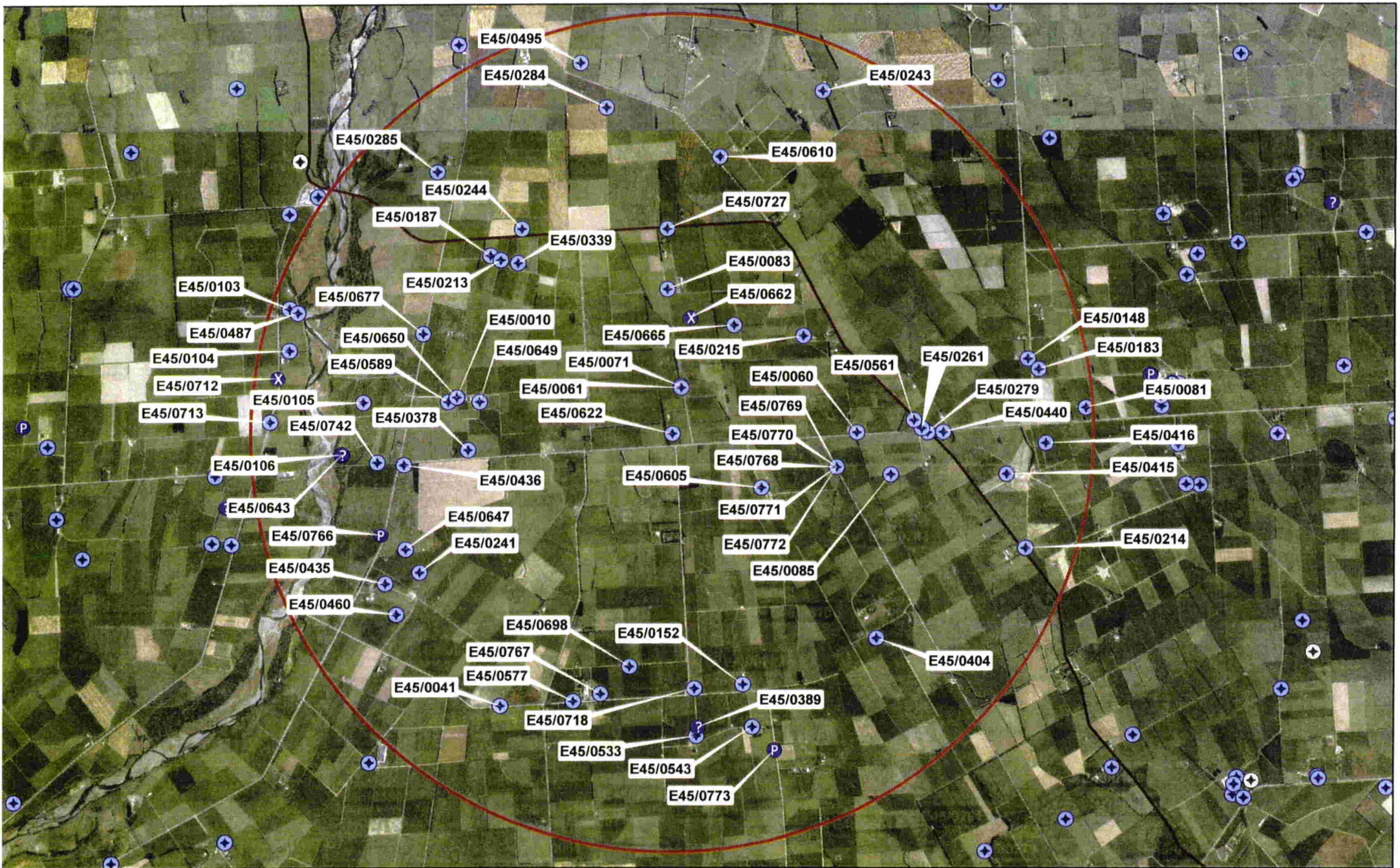


*WW1&2 consent application*


# *Appendix C*



**Bore Search 4000 m 1225067E 4888309N**

Monday, 18 June 2018

 Wells

  
 1:46,486

**DISCLAIMER**  
 While every effort has been made to ensure the content is correct. Environment Southland cannot guarantee the accuracy of the data. This information should not be reused in any manner without consultation.  
 Aerial Photography dated 5/2/2007 to 24/03/2011.  
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ES data for bore testing :

E45/0622 (WW1)

E45/0665 (WW2 monitoring bore)

E45/0768 (Boyle road monitoring bore - 3m depth)

Site Name	Time	E-Coli <MPN> (mpn/100 ml)	Nitrogen (Nitrate Nitrite) (g/m3)
E45/0768	12-May-2005 09:10:00	1.00	12.00
E45/0768	15-Nov-2005 14:50:00	3.00	6.50
E45/0768	24-Jan-2006 10:00:00	<1.00	6.30
E45/0768	31-Mar-2006 12:30:00	<1.00	7.30
E45/0768	19-May-2006 09:31:00	42.00	8.00
E45/0768	20-Jul-2006 14:50:00	1.00	8.00
E45/0768	29-Aug-2006 12:55:00	<1.00	9.20
E45/0768	02-Mar-2007 11:09:00	<1.00	7.30
E45/0768	22-May-2007 00:00:00	<1.00	10.00
E45/0768	22-May-2007 11:57:00	<1.00	10.00
E45/0768	26-Jul-2007 00:00:00	6.00	16.00
E45/0768	26-Jul-2007 13:10:00	6.00	16.00
E45/0768	11-Oct-2007 08:25:00	<1.00	15.00
E45/0768	13-Nov-2007 08:40:00	2.00	14.00
E45/0768	13-Feb-2008 13:25:00	<1.00	14.00
E45/0768	22-Apr-2008 00:00:00	80.00	13.00
E45/0768	22-Apr-2008 09:49:00	80.00	13.00
E45/0768	24-Jun-2008 00:00:00	4.00	14.00
E45/0768	24-Jun-2008 10:35:00	4.00	14.00
E45/0768	15-Aug-2008 12:13:00	<1.00	15.00
E45/0768	15-Aug-2008 12:30:00	<1.00	15.20
E45/0768	04-Nov-2008 09:16:00	<1.00	13.00
E45/0768	04-Nov-2008 10:16:00	<1.00	13.00
E45/0768	27-Jan-2009 11:26:00	<1.00	13.20
E45/0768	29-Apr-2009 00:00:00		
E45/0768	29-Apr-2009 11:18:00	1.00	13.10
E45/0768	17-Jul-2009 10:30:00	<1.00	10.70
E45/0768	23-Sep-2009 10:50:00	<1.00	11.00
E45/0768	21-Oct-2009 15:30:00		10.70
E45/0768	20-Nov-2009 00:00:00		11.00
E45/0768	16-Dec-2009 08:55:00		12.80
E45/0768	21-Jan-2010 00:00:00		12.70
E45/0768	21-Jan-2010 11:30:00		12.70
E45/0768	15-Feb-2010 13:55:00		10.80
E45/0768	16-Mar-2010 00:00:00		11.00
E45/0768	16-Mar-2010 10:30:00		11.00
E45/0768	20-Apr-2010 00:00:00		11.00
E45/0768	20-Apr-2010 11:36:00		11.00
E45/0768	30-Jun-2010 12:34:00		11.20
E45/0768	27-Jul-2010 12:43:00		10.00
E45/0768	18-Aug-2010 00:00:00		10.00
E45/0768	18-Aug-2010 09:40:00		10.00
E45/0768	15-Sep-2010 00:00:00		10.90
E45/0768	15-Sep-2010 12:55:00		10.90
E45/0768	14-Oct-2010 09:40:00	<1.00	10.70
E45/0768	16-Nov-2010 11:59:00		10.40

E45/0768	16-Dec-2010 08:25:00		11.90
E45/0768	20-Jan-2011 08:40:00		13.90
E45/0768	22-Feb-2011 09:30:00		13.80
E45/0768	23-Mar-2011 09:18:00		13.60
E45/0768	19-Apr-2011 13:21:00		14.40
E45/0768	25-May-2011 10:22:00		13.60
E45/0768	24-Jun-2011 14:35:00		11.60
E45/0768	22-Aug-2011 16:10:00		14.80
E45/0768	20-Sep-2011 09:49:00		13.80
E45/0768	20-Oct-2011 09:18:00		13.00
E45/0768	21-Nov-2011 11:30:00	<1.00	13.80
E45/0768	14-Dec-2011 10:35:00		12.60
E45/0768	26-Jan-2012 08:52:00		12.90
E45/0768	07-Mar-2012 12:10:00		14.30
E45/0768	20-Mar-2012 12:26:00		14.10
E45/0768	16-May-2012 13:38:00		14.30
E45/0768	16-Jul-2012 09:49:00		14.20
E45/0768	18-Mar-2013 09:28:00	<1.00	12.30
E45/0768	26-Jun-2013 12:11:00	<1.00	10.90
E45/0768	12-Sep-2013 10:26:00	<1.00	10.00
E45/0768	16-Dec-2013 10:06:00	<1.00	11.80
E45/0768	18-Mar-2014 08:12:00	2.00	12.30
E45/0768	16-Jun-2014 11:16:00	<1.00	11.50
E45/0768	25-Sep-2014 12:15:00	<1.00	11.50
E45/0768	19-Dec-2014 12:25:00	<1.00	10.00
E45/0768	19-Mar-2015 11:08:00	<1.00	11.40
E45/0768	09-Jun-2015 11:37:00	<1.00	11.10
E45/0768	16-Sep-2015 11:07:00	<1.00	8.90
E45/0768	18-Dec-2015 10:17:00	<1.00	8.00
E45/0768	18-Mar-2016 10:40:00	<1.00	9.10
E45/0768	17-Jun-2016 11:33:00	<1.00	8.90
E45/0768	21-Sep-2016 11:27:00	<1.00	9.00
E45/0768	21-Dec-2016 11:15:00	<1.00	9.50
E45/0768	21-Mar-2017 10:09:00	<1.00	10.60
E45/0768	20-Jun-2017 11:04:00	<1.00	9.40
E45/0768	27-Sep-2017 11:14:00	<1.00	12.20
E45/0768	15-Dec-2017 11:52:00	5.00	9.90
E45/0768	21-Mar-2018 09:52:00	<1.00	10.30
E45/0622	01-May-2013 09:08:00	3.00	1.53
E45/0622	29-Nov-2013 12:00:00	25.00	4.30
E45/0622	09-Apr-2014 12:20:00	137.00	2.00
E45/0622	05-Nov-2014 08:20:00	2.00	6.20
E45/0622	08-Apr-2015 13:59:00	<1.00	1.59
E45/0622	11-Nov-2015 12:57:00	2.00	0.00
E45/0622	14-Apr-2016 11:55:00	<1.00	2.20
E45/0622	01-Nov-2016 13:50:00	397.00	15.40
E45/0622	07-Apr-2017 12:17:00	3.00	1.22
E45/0622	09-Nov-2017 12:52:00	3.00	2.10
E45/0622	26-Apr-2018 13:34:00	3.00	2.00
E45/0665	30-Apr-2015 12:25:00	<1.00	9.10

E45/0665	11-Nov-2015 11:59:00	<1.00	8.60
E45/0665	14-Apr-2016 11:05:00	<1.00	7.60
E45/0665	01-Nov-2016 12:50:00	38.00	7.70
E45/0665	07-Apr-2017 11:06:00	1.00	7.20
E45/0665	09-Nov-2017 12:00:00	548.00	8.80
E45/0665	26-Apr-2018 12:01:00	<1.00	8.10



## WATER TESTING LABORATORY

Lake Street Invercargill  
ph(03) 216 2189 fax (03) 216 2789

19-Feb-18

Lab Reference Number: B 21264

### Water Test Report:

Name:

Heddon Bush School

Address:

233 Hall Road RD3 Winton 9783

Order No:

Date Received:

15/02/2018 4:00 p.m.

Date Sampled:

15/02/2018 12:35 p.m.

Sample Description:

Bore Water

### BACTERIOLOGICAL

Total Coliform: \*(Method: APHA 9223B 23rd Ed.) less than 1 MPN per 100ml

Escherichia coli: \*(Method: APHA 9223B 23rd Ed.) less than 1 MPN per 100ml

A. Cocker  
Lab Manager

Ministry of Health Approved Laboratory Registration No. 1023

\* Tests reported herein have been performed in accordance with the laboratory's scope of certification.

Results relate to samples as received.



## WATER TESTING LABORATORY

Lake Street Invercargill  
ph(03) 216 2189 fax (03) 216 2789

08-Nov-17

Lab Reference Number: B 21024

### Water Test Report:

Name: Cleanflo Filtration

Address: PO Box 5118 Invercargill

Order No: PO 3831

Date Received: 2/11/2017 14:50

Date Sampled: 2/11/2017

Sample Description: Heddon Bush School - Bore

### Bacteriological Analysis

Test	Result	Units	Method
Total Coliform:	less than 1	Colony Forming Units per 100ml	(APHA 23ed 9222 B)
Faecal Coliform:	less than 1	Colony Forming Units per 100ml	(APHA 23ed 9222 D)
Enterococci:	less than 1	Colony Forming Units per 100ml	(APHA 23ed 9230 C)
<i>Escherichia coli</i> :	less than 1	Colony Forming Units per 100ml	(APHA 23ed 9222 G)

A. Cocker  
Lab Manager

# Watercare

## Laboratory Services

**Auckland**  
52 Aintree Ave,  
PO Box 107028,  
Auckland Airport,

Tel: (09) 539 7614  
Fax: (09) 539 7601

**Invercargill**  
142 Esk Street,  
PO Box 747  
Invercargill 9840

Tel: (03) 214 4040  
Fax: (03) 214 4041

**Queenstown**  
74 Glenda Drive,  
PO Box 2614,  
Wakatipu,

Tel: (03) 409 0559

www.watercarelabs.co.nz

clientsupport@water.co.nz

### Certificate of Analysis

#### Laboratory Reference: 171218-143

Attention: John Scandrett  
Client: JOHN.SCANDRETT  
Address: PO Box 5003, Invercargill, 9840  
Client Reference: Potable Water  
Purchase Order: Not Supplied

Final Report: 255884-0  
Report Issue Date: 17-Jan-2018  
Received Date: 18-Dec-2017  
Sampled By: JS  
Quote Reference: 4446

#### Sample Details

Lab Sample ID: 171218-143-1  
Client Sample ID:  
Sample Date/Time: 18/12/2017 14:00  
Description: H B School

#### Chemistry Detailed

##### Anions by Ion Chromatography (0.45 µm Filtered)

Nitrate (as N) mg/L 2.0

#### Microbiology

##### Escherichia coli by MPN(Colilert-18)

Escherichia coli MPN/100 mL <1.0 \*

Results marked with \* are not accredited to International Accreditation New Zealand

Where samples have been supplied by the client they are tested as received. A dash indicates no test performed.

#### Reference Methods

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

Analyte	Method Reference	MDL	Samples	Location
<b>Chemistry Detailed</b>				
<b>Anions by Ion Chromatography (0.45 µm Filtered)</b>				
Nitrate (as N)	In House based on APHA (online edition) 4110 B and EPA 300.0	0.002 mg/L	All	Auckland
<b>Microbiology</b>				
<b>Escherichia coli by MPN(Colilert-18)</b>				
Escherichia coli	APHA (online edition) 9223 B Colilert Quantitray	1 MPN/100 mL	All	Invercargill

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 Operations 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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**IANZ**  
ACCREDITED LABORATORY

Report Signatory 17/01/2018

A handwritten signature in black ink, appearing to read "Zum Nguyen".

Zum Nguyen  
KTP Signatory

# Watercare

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52 Aintree Ave,  
PO Box 107028,  
Auckland Airport,

Tel: (09) 539 7614  
Fax: (09) 539 7601

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Wakatipu,

Tel: (03) 409 0559

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clientsupport@water.co.nz

### Certificate of Analysis

#### Laboratory Reference: 180112-124

<b>Attention:</b>	John Scandrett	<b>Final Report:</b>	255886-0
<b>Client:</b>	JOHN.SCANDRETT	<b>Report Issue Date:</b>	18-Jan-2018
<b>Address:</b>	PO Box 5003, Invercargill, 9840	<b>Received Date:</b>	12-Jan-2018
<b>Client Reference:</b>	Nitrate/Ecoli Samples	<b>Sampled By:</b>	JS
<b>Purchase Order:</b>	Not Available	<b>Quote Reference:</b>	4446

Sample Details	WATERS	WATERS	WATERS	WATERS
<b>Lab Sample ID:</b>	180112-124-1			
<b>Client Sample ID:</b>	1			
<b>Sample Date/Time:</b>	12/01/2018			
<b>Description:</b>	HB School			
<b>Chemistry Detailed</b>				
<b>Anions by Ion Chromatography (0.45 µm Filtered)</b>				
Nitrate (as N)	mg/L	1.8		
<b>Microbiology</b>				
<b>Escherichia coli by MPN(Colilert-18)</b>				
Escherichia coli (Colilert-18)	MPN/100 mL	<1.0		

Sample Details	WATERS
<b>Lab Sample ID:</b>	
<b>Client Sample ID:</b>	
<b>Sample Date/Time:</b>	
<b>Description:</b>	
<b>Chemistry Detailed</b>	
<b>Anions by Ion Chromatography (0.45 µm Filtered)</b>	
Nitrate (as N)	mg/L
<b>Microbiology</b>	
<b>Escherichia coli by MPN(Colilert-18)</b>	
Escherichia coli (Colilert-18)	MPN/100 mL

Results marked with \* are not accredited to International Accreditation New Zealand

Where samples have been supplied by the client they are tested as received. A dash indicates no test performed.

Analyte	Method Reference	MDL	Samples	Location
<b>Reference Methods</b>				
The sample(s) referred to in this report were analysed by the following method(s)				
<b>Chemistry Detailed</b>				
<b>Anions by Ion Chromatography (0.45 µm Filtered)</b>				
Nitrate (as N)	In House based on APHA (online edition) 4110 B and EPA 300.0	0.002 mg/L	All	Auckland
<b>Microbiology</b>				
<b>Escherichia coli by MPN(Colilert-18)</b>				
Escherichia coli (Colilert-18)	APHA (online edition) 9223 B Colilert Quantitray	1 MPN/100 mL	All	Invercargill
<b>Preparations</b>				
Membrane Filtration (0.45 µm)	APHA (online edition) 4500-P B (preliminary filtration)		All	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 Operations 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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Report Signatory 18/01/2018

A handwritten signature in black ink, appearing to read 'Zum Nguyen', written over a horizontal line.

Zum Nguyen  
KTP Signatory

# Watercare

## Laboratory Services

**Auckland**  
52 Aintree Ave.  
PO Box 107028,  
Auckland Airport,  
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PO Box 2614,  
Wakatipu,  
(03) 409 0559

www.watercarelabs.co.nz

clientsupport@water.co.nz

### Certificate of Analysis

#### Laboratory Reference: 180314-158

<b>Attention:</b>	John Scandrett	<b>Final Report:</b>	263054-0
<b>Client:</b>	JOHN.SCANDRETT	<b>Report Issue Date:</b>	15-Mar-2018
<b>Address:</b>	PO Box 5003, Invercargill, 9840	<b>Received Date:</b>	14-Mar-2018
<b>Client Reference:</b>	Bore Waters	<b>Sampled By:</b>	JS
<b>Purchase Order:</b>	Not Available	<b>Quote Reference:</b>	4446

Sample Details	WATERS	WATERS	WATERS	WATERS
<b>Lab Sample ID:</b>	180314-158-1			
<b>Client Sample ID:</b>	HB School			
<b>Sample Date/Time:</b>	14/03/2018 12:10			
<b>Description:</b>	Ground water			
<b>General Testing</b>				
Nitrate Nitrogen (as N)	mg/L	1.8		
<b>Microbiology</b>				
<b>Escherichia coli by MPN(Colilert-18)</b>				
Escherichia coli (Colilert-18)	MPN/100 mL	<1.0		

Sample Details	WATERS
<b>Lab Sample ID:</b>	
<b>Client Sample ID:</b>	
<b>Sample Date/Time:</b>	
<b>Description:</b>	
<b>General Testing</b>	
Nitrate Nitrogen (as N)	mg/L
<b>Microbiology</b>	
<b>Escherichia coli by MPN(Colilert-18)</b>	
Escherichia coli (Colilert-18)	MPN/100 mL

Results marked with \* are not accredited to International Accreditation New Zealand

Where samples have been supplied by the client they are tested as received. A dash indicates no test performed.

Reference Methods				
The sample(s) referred to in this report were analysed by the following method(s)				
Analyte	Method Reference	MDL	Samples	Location
<b>General Testing</b>				
Nitrate Nitrogen (as N) by Colorimetry/Discrete Analyser	Nitrate-N Calculation: (Nitrate-N + Nitrite-N) - Nitrite-N	0.010 mg/L	All	Invercargill
<b>Microbiology</b>				
<b>Escherichia coli by MPN(Colilert-18)</b>				
Escherichia coli (Colilert-18)	APHA (online edition) 9223 B Colilert Quantitray	1 MPN/100 mL	All	Invercargill
<p>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</p> <p>For more information please contact the Operations Manager</p>				



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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Report Signatory 15/03/2018

A handwritten signature in black ink, appearing to read 'Tonia Bulling', written over a white background within a rectangular box.

Tonia Bulling  
KTP Signatory