

24 January 22

Sally McKinnon  
Senior Contaminated Land and Ground Water Scientist  
Gisborne District Council  
15 Fitzherbert Street  
PO Box 747  
Gisborne 4010

By e-mail: Sally.McKinnon@gdc.govt.nz

Dear Sally,

**Re: Matawhero Logyard Cell 3 bore monitoring: Consent - DL-2018-108538-00**

Please see below the results of the monitoring undertaken on 12 January 2022 as required by conditions 10 – 28 of consent DL-2018-108538-00.

All recorded parameters were below consent trigger limits.

Kind Regards,



Marie Knue  
Ecology Consultant  
4Sight Consulting Ltd

## Analysis Report

Customer: Eastland Port	Date Received: 12/01/2022 9:58 AM
Address: 1 Kaiti Beach Road	Date Completed: 19/01/2022 4:29 PM
Gisborne, 4010	
Attention: Marie Knue	Purchase Order #:

Sample Type: Water

	Units	2022000150 Bore GW02	2022000151 New Monitoring Bore
		12/01/2022 8:39	12/01/2022 9:40
<b>Test</b>			
Analytica Laboratories Report		22-00889	22-00889
Conductivity @25°C	µS/cm	842	1010
Dissolved Oxygen Field Test	g/m <sup>3</sup>	2.2	3.4
pH - Water		7.1	7.1
Salinity	ppt	0.4	0.4
Static Water Level	m	2.00	2.20
Temperature on Site	°C	18.2	16.6

Comments: These samples were also analysed by Analytica Laboratories. Please see attached report.

Test Standards:

Test	Methodology
Analytica Laboratories Report	Sub Contracted Tests
Conductivity @25°C	APHA 23rd Ed 2510 B
Dissolved Oxygen Field Test	APHA 23rd Ed 4500 OG
pH - Water	APHA 23rd 4500-H+ B. Unless stated, measured between 18-22°C
Salinity	APHA 23rd Ed 2520 B
Static Water Level	*
Temperature on Site	APHA 23rd Ed 2550 B

Authorised By:

Mel Moeller  
Laboratory Technician

Certified By:

Stephanie Brew  
Water Chemistry KTP  
Dipl. Biologist

*S. Brew*



Tests indicated as  
not accredited are outside  
the scope of the  
laboratory's accreditation

The NZ mark of competence  
Tohu Matatau Aotearoa

Methods marked with a \* are not IANZ accredited.

This report shall not be reproduced except in full, without written approval of the laboratory.

"Detailed activity" stating the start and completion dates and times of individual tests have not been recorded on this report. This information is available upon request.



## Certificate of Analysis

Linnaeus Laboratory Limited  
 4 Banks Street, Awapuni  
 Gisborne 4010

Attention: Sally Chappell  
 Phone: 06 867 8512  
 Email: sally@linnaeus.co.nz

Lab Reference: 22-00889  
 Submitted by: Linnaeus Laboratory Limited  
 Date Received: 13/01/2022  
 Testing Initiated: 13/01/2022  
 Date Completed: 18/01/2022  
 Order Number: 590  
 Reference:

Sampling Site: Matawhero Log Yard (Eastland Port)

### Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report. Specific testing dates are available on request.

### Elements in Water (Soluble)

Client Sample ID			2022000150 Bore GW02	2022000151 New Monitoring Bore
Date Sampled			12/01/2022	12/01/2022
Analyte	Unit	Reporting Limit	22-00889-1	22-00889-2
Copper	g/m <sup>3</sup>	0.0002	0.00024	<0.00020
Lead	g/m <sup>3</sup>	0.00005	<0.000050	<0.000050
Zinc	g/m <sup>3</sup>	0.001	0.0043	<0.0010

### Total Petroleum Hydrocarbons - Water

Client Sample ID			2022000150 Bore GW02	2022000151 New Monitoring Bore
Date Sampled			12/01/2022	12/01/2022
Analyte	Unit	Reporting Limit	22-00889-1	22-00889-2
C7-C9	g/m <sup>3</sup>	0.2	<0.2	<0.2
C10-C14	g/m <sup>3</sup>	0.2	<0.2	<0.2
C15-C36	g/m <sup>3</sup>	0.3	<0.3	<0.3
C7-C36 (Total)	g/m <sup>3</sup>	0.5	<0.5	<0.5

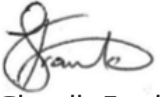
### Method Summary

#### Soluble Trace Elements

Samples were analysed as received by the laboratory using ICP-MS following a 0.45µm membrane filtration (except when field filtered). In house procedure based on US EPA 200.8.

#### TPH in Water

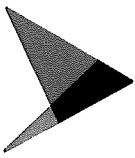
Solvent extraction, followed by GC-FID analysis (C7-C36). MFE Petroleum Industry Guidelines. (In accordance with in-house procedure based on US EPA 8015).



Sharelle Frank, B.Sc. (Tech)  
Technologist



Yuri Zubenko, Ph.D.  
Senior Technologist



# Groundwater Well Sampling Form

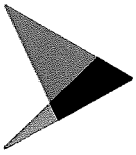
<b>Job Information</b>	
Date: <u>12.1.22</u>	Time: Arrive: <u>0800</u> Depart: <u>1000</u>
Project Name: EPL Outsourced Compliance Programme	Project Number: AA1146
Site Location: Matawhero Log Yard	Operator: <u>DW</u>
Well ID: GW02	Weather: <u>Fine</u>

<b>Equipment</b>	
Water quality equipment description: Dissolved Oxygen Probe <u>YSI PRO</u>	Calibration records filed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Interface Probe Number: <u>138</u>	Calibration records filed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Purging Equipment Type? (Please circle)	Bailer Type: Plastic Teflon Pump Type: Peristaltic <u>Submersible</u> Micro-purge Other:

<b>Well Gauging and Purge Volume Calculations</b>										
Casing Diameter	25mm	50mm	50mm	50mm	50mm	100mm	100mm	100mm	Volume of water in a well:	
Bore Diameter	50mm	100mm	125mm	150mm	200mm	125mm	200mm	250mm	V = π x r <sup>2</sup> x h	
Conversion Factor (L/m)	0.93	3.73	5.06	6.68	10.8	10.8	14.2	20.2	V = Volume in litres	
										π = 3.142
Total Well depth (-) Water Level (=) Water Column										r = radius in m
<u>4.22</u> - <u>2.00</u> = <u>2.22</u>										h = Height of water column in m
Water Column (x) Conversion Factor (=) Litres per 1 Well Volume										
_____ m x _____ = _____ L										

Water Quality Parameters										
Beginning Purging Time:			Ending Purging Time:				Fill Time:	Discharge Time:		
Litres	Time	DO (mg/L)	Cond. (µS/cm)	pH	Redox (mV)	Temp (°C)	DTW (mbTPC)	Comments		
<u>2</u>	<u>0839</u>	<u>2.21</u>	<u>842</u>	<u>7.1</u>		<u>15.2</u>		<u>Very Slow Recovery</u>		
<b>Stabilisation Criteria</b>		±10% <sup>1</sup>	±3% or ±5% if <100*	± 0.1*	± 10mV <sup>1</sup>	± 0.1*	Example Comments: <u>clear</u> / slightly cloudy / turbid / very turbid / colour / <u>no odour</u> / slight odour / strong odour / describe odour (hydrocarbon/solvent/organic)			
<sup>1</sup> Based on MfE National Protocol for SOE Groundwater Sampling in NZ, 2006, <sup>2</sup> Based on Vic EPA (Australia) 669. Low Flow: Max flow rate = 0.5 L/min Max drawdown = 0.2 cm -- Well stable when 3 consecutive readings (either 3 min or 0.5L apart)										
<b>Total Well Volume</b>							Did field parameters stabilise? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			
Actual amount of water removed prior to sampling							Was the well dry purged? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			

Field Quality Control Checks					
Was pre-cleaning sampling equipment used for these samples?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	Consistent with COC form?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Was pre-cleaning sampling equipment properly protected from contamination?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	COC Filled out?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Sampling has been undertaken in accordance with the Site Specific Sampling Protocol and SOPs?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	Signed:	<u>DW</u>	



# Groundwater Well Sampling Form

<b>Job Information</b>	
Date: 02.07.22 09:00	Time: Arrive: 08:10 Depart: 10:00
Project Name: EPL Outsourced Compliance Programme	Project Number: AA1146
Site Location: Matawhero Log Yard	Operator: EDW
Well ID: New Monitoring Bore	Weather: Fine

<b>Equipment</b>	
Water quality equipment description: Dissolved Oxygen Probe YSI Pro	Calibration records filed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Interface Probe Number: 138	Calibration records filed? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Purging Equipment Type? (Please circle)	Bailer Type: Plastic Teflon Pump Type: Peristaltic <u>Submersible</u> Micro-purge Other:

<b>Well Gauging and Purge Volume Calculations</b>									
Casing Diameter	25mm	50mm	50mm	50mm	50mm	100mm	100mm	100mm	<b>Volume of water in a well:</b> $V = \pi \times r^2 \times h$ $V =$ Volume in litres $\pi = 3.142$ $r =$ radius in m $h =$ Height of water column in m
Bore Diameter	50mm	100mm	125mm	150mm	200mm	125mm	200mm	250mm	
Conversion Factor (L/m)	0.93	3.73	5.06	6.68	10.8	10.8	14.2	20.2	
Total Well depth (-) Water Level (=) Water Column 4.50 - 2.20 = 2.30 Water Column (x) Conversion Factor (=) Litres per 1 Well Volume m x _____ = _____ L									

<b>Water Quality Parameters</b>										
Beginning Purging Time:				Ending Purging Time:				Fill Time:	Discharge Time:	Comments
Litres	Time	DO (mg/L)	Cond. (µS/cm)	pH	Redox (mV)	Temp (°C)	DTW (mbTPC)			
<del>60</del>	<del>09:00</del>	3.43	1010	7.1		16.6			10.2 12:00	
<b>Stabilisation Criteria</b>		±10% <sup>1</sup>	±3% or ±5% if <100*	± 0.1*	± 10mV <sup>1</sup>	± 0.1*	Example Comments: clear / slightly cloudy / turbid / very turbid / colour / no odour / slight odour / strong odour / describe odour (hydrocarbon/solvent/organic)			
*Based on MfE National Protocol for SOE Groundwater Sampling in NZ, 2006, <sup>1</sup> Based on Vic EPA (Australia) 669. Low Flow: Max flow rate = 0.5 L/min Max drawdown = 0.2 cm -- Well stable when 3 consecutive readings (either 3 min or 0.5L apart)										
<b>Total Well Volume</b>							Did field parameters stabilise?		<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Actual amount of water removed prior to sampling							Was the well dry purged?		<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

<b>Field Quality Control Checks</b>			
Was pre-cleaning sampling equipment used for these samples?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Consistent with COC form?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Was pre-cleaning sampling equipment properly protected from contamination?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	COC Filled out?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Sampling has been undertaken in accordance with the Site Specific Sampling Protocol and SOPs?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Signed:	EDW

