GLADSTONE
REGIONAL COUNCIL

ABN: 27 330 979 106

DRINKING WATER QUALITY MANAGEMENT PLAN REPORT

2019-20

SPID: 483

Gladstone Regional Council
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Glossary of terms

ADWG 2011	Australian Drinking Water Guidelines (2011). Published by the National Health and Medical Research Council of Australia
CFU/mL	Colony forming units per millilitre
E. coli	*Escherichia coli*, a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
DRDMW	Department of Regional Development, Manufacturing and Water
GAWB	Gladstone Area Water Board
GRC	Gladstone Regional Council
HU	Hazen Units
mg/L	Milligrams per litre
MPN/100mL	Most probable number per 100 millilitres
NTU	Nephelometric Turbidity Units
WTP	Water Treatment Plant
<	Less than
>	Greater than

1. Introduction

This report documents the performance of Gladstone Regional Council's (GRC) drinking water service with respect to water quality, and implementation of the drinking water quality management plan (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008* (the Act).

The report assists the Regulator to determine whether the approved DWQMP and any approval conditions have been complied with and provides a mechanism for providers to report publicly on their performance in managing drinking water quality.

2. Overview of Operations

The Gladstone Regional Council provides water to its residents through four water schemes:

- **Lake Awoonga Scheme.** Under this scheme the Gladstone Area Water Board (GAWB) collects and treats raw water harvested from the Lake Awoonga Dam. The water is treated through a conventional water treatment plant before being sold to Gladstone Regional Council at a number of reservoir and supply points throughout Gladstone, Boyne Island, Tannum Sands Calliope and Mt Larcom. GRC distributes the water to approximately 22,282 connections.
- **Bororen Scheme.** GRC sources water from two production bores located to the west of Lagoon Creek within the Baffle Creek catchment. The groundwater is treated at the Bororen Water Treatment Plant (WTP) and disinfected before being reticulated to 80 connections within the Bororen Township.
- **Miriam Vale Scheme.** GRC usually sources water from Baffle Creek (~80%) and the Thornes Road bore. The water is mixed and treated through a conventional treatment process and disinfected before being reticulated to approximately 192 connections.
- **Agnes Water/1770 Scheme.** GRC sources water from seawater and groundwater bores along Springs Road. The seawater is treated through a reverse osmosis desalination plant, and the bore water is treated through a conventional filtration plant. Disinfected water is supplied to approximately 1057 connections within the townships of Agnes Water and 1770. The treatment plant is operated and maintained under contract by Trility Pty Ltd.

GRC manages drinking water quality through an approved Drinking Water Quality Management Plan (DWQMP). This ensures that water supplied to its 23,611 total connections, which represents an estimated population of approximately 61,500 people, is safe and public health is maintained.

3. Compliance with water quality criteria for drinking water

A summary of water quality performance over the four schemes is summarised in Appendix A.

GRC have produced a consistent and safe water supply that meet the requirements set by the *Public Health Regulation 2018* for drinking water with 99.9% of the 932 drinking water samples tested free of *E. coli*.

The microbial, chemical and physical testing program included over 11,500 individual tests in drinking water. Only one of these test results exceeded a health guideline value in the Australian Drinking Water Guidelines 2011.

4. Notifications to the Regulator under sections 102 and 102A of the Act

There were four (4) instances during 2019-20 where the Regulator was notified under sections 102 or 102A of the Act.

PRESCRIBED INCIDENTS OR EVENTS AND CORRECTIVE AND PREVENTIVE ACTIONS UNDERTAKEN.

DWI-483-19-07960 - Event

Incident Description:
On 15/07/2019 the Miriam Vale WTP operator identified that a backwash had not occurred on the filter for 19 hours (last backwash performed at 1:00pm on 14/07/2019). Upon further inspection the operator noted that the Filtered Water Turbidity reading on the online instrumentation was 6.8NTU. The operator performed a verification check using a bench instrument (HACH 2100Q Turbidity Meter) which recorded a reading of 8.3 NTU. This was identified to be a failure of a Critical Control Point under the DWQMP. 23kL of water was transferred to the reservoir during the failure period (between 4:40pm and 8:04pm on the 14/07/2019)

Investigation and Cause:
The incident was found to be caused by the Batch Thickener Valve (FIL-VAL-024) failing. This failure did not interlock the plant or send an alarm to the oncall operator for them to address the issue. The High Set Point Filtered Water Turbidity was raised in the HMI however it was not communicated to the oncall operator. In addition, the High-High Set Point Filtered Water Turbidity Alarm was not raised by SCADA and send to the oncall operator.

Corrective and Preventative Actions:

- The Batch Thickener Valve(FIL-VAL-024) was reset and a backwash was performed twice.
- Clear Water Tanks isolated and cleaned
- Water Quality monitoring conducted at the WTP and in the reticulation
- WTP operated in Manual mode during the day and shut down at night while a comprehensive review was conducted
- Disconnected interconnecting pipes between process water tank and clear water tanks.
- Installed electrically interlocked pneumatic and non-return valve between process water inlet pipe and clear water inlet pipe. This was completed to ensure no cross-contamination of sources could occur.
- Installed two new Swan turbidity instruments for post filter control. These two instruments act a master and slave
- Completed PLC logic review and update to ensure program conforms with the functional specification
- DWQMP amended to reflect new scheme information.

DWI-483-19-07972 - Event

Incident Description:
On 10/08/2019 Water Program Delivery on-call staff discovered that the Lilly Hills Reservoir inlet and outlet valves had been closed by a third party without authorisation, resulting in loss of water to customers. There was no indication of any drinking water contamination or other water quality concerns however the incident was reported out of caution.

Investigation and Cause:
The Lilly Hills Reservoir compound (off Wanda Drive, Boyne Island) had been broken into, the grate over the valve pit opened and both the gate valves on the inlet and the outlet to the reservoir closed (the valves were not fully engaged in the off position as the staff could hear water movement).

Corrective and Preventative Actions:

- The on-call staff immediately fully isolated the Reservoir and tagged the valves out and swapped the reservoir zone valves so that the Boyne Island Reservoir could service households in the Lily Hills Zone.
- On-call staff contacted Qld Police
- Council also posted a notice on the GRC Facebook page advising customers as to what had happened, what was being done to ensure that water supply is resumed to all affected households and how what to do if dirty/cloudy water was encountered when water supply was resumed.
- The Manager - Water Program Delivery and the Water Quality and Monitoring Officer attended site to meet with the on-call staff and determine if the reservoir structure had been accessed. Upon inspection itwas identified that the reservoir was still secure and neither the lock on the reservoir access ladder or the roof top access hatch had been breached.
- On-Call staff performed Free Chlorine monitoring on Sunday 11/08/2019 (1.41mg/L) and Monday 12/08/2019 (1.52mg/L) to determine if there was any effect on residual levels in the reticulation from swapping reservoir zones.
- Reservoir was dosed with chlorine and returned to service on 28/08/2019.
- Wheels on the gate valves were removed
- Council continuing to investigate improvements to reservoir security as part of a long term project.
- Council has also contracted a audit and risk specialist consultant to perform an assessment of the risk maturity relating to critical asset failure.

DWI-483-20-08334 - Event

Incident Description:
On 17/02/2020 the Bororen WTP had a failure of the filtration process, which allowed some higher turbidity water into the clear water tank (>0.5NTU). This mixture of filtered and poorly filtered water was able to enter the reticulation system.

Investigation and Cause:
The incident was found to be caused by:

1. Errors within the programmable logic controller
2. Multiple failures of backwash cycles, and returning to normal operations, which ultimately caused filter breakthrough
3. Lack of an experienced Senior Operator

Corrective and Preventative Actions:

- Reservoir was drained
- Potable water tankers arranged to maintain water supply
- Manual backwashing carried out for a period of time
- SCADA team implemented CCP safeguards
- WTP brought back into safe operation
- External consultant engaged to undertake a root cause analysis
- External consultant's recommendations loaded into GRC's audit nonconformance tracking program and assigned to GRC personnel
- Instrumentation review initiated
- SCADA improvements initiated
- New Cert IV trained Operator employed

DWI-483-20-08376 – Non-Compliance with Water Quality Criteria

Incident Description:

On the 18/03/2020 whilst reviewing Microbiological Reports WQ & Env. Monitoring Officer identified that a sample collected from 12 Brennan Street, Miriam Vale (SP058) on the 11/03/2020 returned a positive E coli result of 1 MPN/100mL. Report was received late afternoon on Friday 13/03/2020 and was not entered into Council's Drinking Water Quality Management System until Monday 16/03/2020. The system is designed to flag all health guidelines and send out alerts via text and email. On this occasion, this did not occur as the data entered into the system incorrectly as a 0 instead of a 1.

Investigation and Cause:

- The Miriam Vale water supply system was being supplied via tanker deliveries from the Lake Awoonga scheme at the time of the incident. Chlorine residuals for every delivery are recorded, and this data showed no deliveries with less than 0.8mg/L of free chlorine (turbidity is also recorded, with no results greater than 0.3NTU). SCADA trends showed free chlorine leaving the Miriam Vale WTP site was between 0.8 - 1.5mg/L in the days leading up to the incident (a dip in the chlorine trend can be seen on the screenshot, however this occurred in the afternoon of the 11th after the sample in question had been collected, and was the result of a planned replacement of the treated water chlorine analyser). No mains breaks had occurred in the lead up to the incident.
- The sample tap was found to be potentially at risk of contamination due to its location, and the Drinking Water Sample Collection Procedure was found to be in need of an update.
- The resample was negative for *E. coli*, however returned a result of 224cfu/mL for HPC. This is not an unexpected result for the Brennan Street sample point, as it is some distance from the Water Treatment Plant and routinely returns low chlorine results when Miriam Vale water

usage is low (as it was at the time of the incident, with Council's recent community messaging around water conservation).

Corrective and Preventative Actions:

- The Sample Collection Procedure was updated
- The sample tap was replaced
- Longer term investigations initiated to improve chlorine performance through the Miriam Vale scheme.

5. Customer complaints related to water quality

Gladstone Regional Council is required to report on the number of complaints, general details of complaints, and the responses undertaken.

Throughout the year the following complaints about water quality were received:

Table 1 - Complaints Relating to Water Quality

Scheme	Suspected Illness	Discoloured water	Taste and Odour	Other	Total
Lake Awoonga	1	27	7	0	35
Agnes Water/1770	0	1	0	0	1
Miriam Vale	0	0	0	0	0
Bororen	0	0	1	0	1
Total	**1**	**28**	**8**	**0**	**37**

Suspected Illness

Gladstone Regional Council investigates each complaint relating to alleged illness from the water supply, typically by conducting *E. coli* analysis from the source tap and monitoring the levels of free chlorine present in the water.

During 2019-2020, there were no confirmed cases of illness arising from the water supply system.

Discoloured water

A total of 28 customer complaints were received related to discoloured water. In response to discoloured water complaints, Council staff flush the relevant mains until the water runs clear.

Council staff also makes contact with the customer to advise them of the actions taken. Council proactively flushes mains on a routine basis in areas with a history of discoloured water complaints. This has reduced the number of complaints received in the past year.

It is standard practice for Council to flush mains after breaks and in response to abnormal water quality sample results and low residual free chlorine.

Taste and odour

Gladstone Regional Council investigates taste and odour complaints and devise plans for prompt resolution, which may include flushing in the reticulation system. Investigation of each complaint found no public health risks. The taste and odour complaints are possibly due to variations in chlorine concentration throughout the year and/or other operational changes (i.e. setpoint increase).

6. Findings and recommendations of the DWQMP auditor

No DWQMP audits were required or undertaken in 2019-20.

7. Outcome of the review of the DWQMP and how issues raised have been addressed

The DWQMP was reviewed in early 2020, with an amendment application made in May 2020.

The key findings of the Review included:

- Changes in population serviced
- Changes in position titles
- Changes in stakeholder details
- Additional water quality data and incident investigations were available to inform hazard identification and risk assessment
- Minor changes in water treatment and supply operations
- Schematics required update
- Additional information available on Bororen groundwater characteristics
- Risk assessment had not been updated in 2 years
- Updates to procedures
- New requirements applicable under the DWQMP Guideline (cybersecurity)
- Minor changes needed for verification monitoring
- Sample point maps required update
- The Drinking Water Quality Incident Response and Reporting Procedure had been updated and finalised

The changes made as part of the DWQMP amendment included:

- Schematics and scheme descriptions updated
- Water quality data summaries updated
- Risk assessment updated
- Risk management improvement program updated
- Cybersecurity requirements addressed
- Procedure list updated
- Verification monitoring schedule updated
- New version of Drinking Water Quality Incident Response and Reporting Procedure attached
- New sample point maps created and attached
- Other changes as required to reflect updated operating circumstances (e.g. populations, positions, stakeholders)

The May 2020 amendment application was withdrawn due to significant operational changes implemented during the DWQMP assessment window. A revised DWQMP amendment was submitted in September 2020.

As of 27 November 2020, the amended DWQMP has not been approved by DNRME. Gladstone Regional Council expects to receive a response during December 2020.

8. Actions taken to implement the DWQMP

Actions taken by GRC to implement the DWQMP in 2019-20 included:

- Water Treatment Plant Return to Service Procedure developed
- Additional radiological monitoring undertaken at Agnes Water
- Miriam Vale WTP upgraded to take Process Tank out of sequence (now filtered water only goes to clear water tanks when turbidity <0.2NTU)
- Chain of authority process implemented for WTP chemical dose rate changes
- Planning works for Round Hill Reservoir roof replacement (replacement scheduled for 2020-21)
- 4 x Drinking Water Technical Committee meetings held including attendees from Gladstone Area Water Board and Queensland Health
- Chemical procurement contract updated with chemical quality specifications
- WTP Senior Operator position filled
- Mount Larcom residents surveyed to obtain better information on water usage and other private water supplies
- Sample tap replacements
- New hypochlorite management protocol in place at Bororen and Miriam Vale WTPs
- Standard Operating Procedures reviewed and updated
- Review of firefighting foam used within catchments and liaison with QFES to understand any new risks
- Additional HPC monitoring added to verification monitoring program

Appendix A – Summary of compliance with water quality criteria

The results from the verification monitoring program have been compared against the water quality criteria specified by the Regulator in the *DWQMP Amended Information Notice for the Decision (November 2018)*

Verification monitoring results - Lake Awoonga Scheme - Reticulation System

Parameter	Unit of Measure	Sample Results	Minimum	Average	Maximum	Non-compliances*
Alkalinity	mg/L as $CaCO_3$	71	60	70	82	0
Aluminium	mg/L	71	0.01	0.07	0.18	0
Antimony	mg/L	10	<	<	<	0
Arsenic	mg/L	10	<	<	0.003	0
Barium	mg/L	10	0.01	0.01	0.02	0
Boron	mg/L	10	<	<	<	0
Bromate	mg/L	59	<	<	<	0
Bromide	mg/L	59	<	0.019	0.054	0
Bromodichloromethane	mg/L	71	0.006	0.021	0.035	0
Cadmium	mg/L	10	<	0.0001	0.0007	0
Chlorate	mg/L	75	0.05	0.22	0.8	0
Chloride	mg/L	58	23	29	35	0
Chromium	mg/L	10	<	0.001	0.006	0
Copper	mg/L	10	<	0.002	0.005	0
Dibromochloromethane	mg/L	71	<	0.014	0.025	0
E. coli	mpn/100mL	704	<	<	<	0
Electrical Conductivity	µS/cm	710	268	311	399	0
Fluoride	mg/L	59	<	0.06	0.3	0
Free Chlorine	mg/L	709	<	1.0	2.3	0
HPC	cfu/mL	362	<	12	3000	0
Insoluble Manganese	mg/L	70	<	<	0.009	0
Iron	mg/L	71	<	0.05	1.7	0
Lead	mg/L	10	<	<	0.004	0
Mercury	mg/L	10	<	<	<	0
Molybdenum	mg/L	10	<	<	0.001	0
Nickel	mg/L	10	<	<	0.003	0
Nitrate	mg/L	59	0.01	0.10	0.19	0
Nitrite		59	<	<	0.06	0
pH	mg/L	710	6.8	7.5	9.3	0
Phosphate	mg/L	59	<	0.01	0.37	0
Selenium	mg/L	10	<	<	<	0
Soluble Manganese	mg/L	71	<	0.004	0.12	0
Sulfate	°C	58	26	29	32	0
Temperature	mg/L	710	16.9	26.2	35.1	0
Total Coliforms	mpn/100mL	703	<	<	<	0
Total Hardness	mg/L	70	65	80	101	0
Total Trihalomethanes	mg/L	71	0.013	0.065	0.117	0
Tribromomethane	mg/L	70	<	<	<	0
Trichloromethane	mg/L	71	<	0.030	0.059	0
True Colour	HU	710	<	<	13	0
Turbidity	NTU	710	<	0.09	1.7	0
Zinc	mg/L	10	<	<	0.006	0

*Non-compliances refers to non-compliances with the regulatory water quality criteria

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Verification monitoring results - Bororen Scheme – Treated water / reticulation System

Parameter	Unit of Measure	Sample Results	Minimum	Average	Maximum	Non-compliances*
Alkalinity	mg/L as $CaCO_3$	24	192	213	234	0
Aluminium	mg/L	67	<	0.03	0.58	0
Antimony	mg/L	1	<	<	<	0
Arsenic	mg/L	1	<	<	<	0
Barium	mg/L	1	0.022	0.022	0.022	0
Boron	mg/L	1	<	<	<	0
Bromate	mg/L	4	<	<	<	0
Bromide	mg/L	4	0.13	0.16	0.19	0
Bromodichloromethane	mg/L	8	<	0.004	0.008	0
Cadmium	mg/L	1	<	<	<	0
Chlorate	mg/L	8	0.19	0.30	0.43	0
Chloride	mg/L	4	137	141	145	0
Chromium	mg/L	1	<	<	<	0
Copper	mg/L	1	<	<	<	0
Dibromochloromethane	mg/L	8	0.006	0.015	0.022	0
E. coli	mpn/100mL	38	<	<	<	0
Electrical Conductivity	µS/cm	120	320	796	906	0
Fluoride	mg/L	4	<	0.08	0.1	0
Free Chlorine	mg/L	120	0.68	1.3	1.8	0
HPC	cfu/mL	2	<	0	0	0
Insoluble Manganese	mg/L	25	<	0.008	0.03	0
Iron	mg/L	118	<	0.02	0.16	0
Lead	mg/L	1	<	<	<	0
Mercury	mg/L	1	<	<	<	0
Molybdenum	mg/L	1	<	<	<	0
Nickel	mg/L	1	<	<	<	0
Nitrate	mg/L	4	<	0.02	0.05	0
Nitrite	mg/L	4	<	<	<	0
Pesticides	mg/L	1	<	<	<	0
pH		120	6.9	7.3	7.8	0
Phosphate	mg/L	4	<	<	<	0
Selenium	mg/L	1	<	<	<	0
Soluble Manganese	mg/L	117	<	0.006	0.088	0
Sulfate	mg/L	4	3	4	4	0
Temperature	°C	120	18.7	24.9	35.0	0
Total Coliforms	mpn/100mL	38	<	<	<	0
Total Hardness	mg/L	24	255	303	355	0
Total Trihalomethanes	mg/L	8	0.012	0.033	0.053	0
Tribromomethane	mg/L	8	0.006	0.014	0.023	0
Trichloromethane	mg/L	8	<	<	<	0
True Colour	HU	117	<	1	15	0
Turbidity	NTU	120	<	0.13	0.6	0
Zinc	mg/L	1	<	<	<	0

*Non-compliances refers to non-compliances with the regulatory water quality criteria

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Verification monitoring results - Miriam Vale Scheme – Treated water / reticulation System

Parameter	Unit of Measure	Sample Results	Minimum	Average	Maximum	Non-compliances*
Alkalinity	mg/L as $CaCO_3$	40	53	85	340	0
Aluminium	mg/L	59	<	0.05	0.59	0
Antimony	mg/L	2	<	<	<	0
Arsenic	mg/L	2	<	<	<	0
Barium	mg/L	2	0.05	0.06	0.06	0
Boron	mg/L	2	<	<	<	0
Bromate	mg/L	8	<	<	<	0
Bromide	mg/L	8	0.01	0.08	0.30	0
Bromodichloromethane	mg/L	16	<	0.021	0.038	0
Cadmium	mg/L	2	<	<	<	0
Chlorate	mg/L	18	<	0.28	0.78	0
Chloride	mg/L	8	26	84	194	0
Chromium	mg/L	2	<	<	<	0
Copper	mg/L	2	0.001	0.002	0.003	0
Dibromochloromethane	mg/L	16	<	0.025	0.100	0
E. coli	mpn/100mL	81	<	<	1	1
Electrical Conductivity	µS/cm	111	289	502	940	0
Fluoride	mg/L	8	<	0.04	0.1	0
Free Chlorine	mg/L	112	<	0.91	1.6	0
HPC	cfu/mL	32	<	18	300	0
Insoluble Manganese	mg/L	44	<	0.009	0.1	0
Iron	mg/L	84	<	0.01	0.3	0
Lead	mg/L	2	<	<	<	0
Mercury	mg/L	2	<	<	<	0
Molybdenum	mg/L	2	<	<	<	0
Nickel	mg/L	2	<	<	<	0
Nitrate	mg/L	8	0.06	0.13	0.20	0
Nitrite	mg/L	8	<	<	<	0
Pesticides	mg/L	1	<	<	<	0
pH		112	6.9	7.4	8.0	0
Phosphate	mg/L	8	<	<	<	0
Selenium	mg/L	2	<	<	<	0
Soluble Manganese	mg/L	84	<	0.004	0.1	0
Sulfate	mg/L	7	11	23	30	0
Temperature	°C	112	17.7	23.7	33.4	0
Total Coliforms	mpn/100mL	81	<	<	10	0
Total Hardness	mg/L	40	60	116	403	0
Total Trihalomethanes	mg/L	16	<	0.063	0.107	0
Tribromomethane	mg/L	16	<	0.005	0.017	0
Trichloromethane	mg/L	16	<	0.018	0.037	0
True Colour	HU	109	<	1	10	0
Turbidity	NTU	113	<	0.14	1.6	0
Zinc	mg/L	2	<	<	<	0

*Non-compliances refers to non-compliances with the regulatory water quality criteria

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Verification monitoring results - Agnes Water/1770 - Reticulation System

Parameter	Unit of Measure	Sample Results	Minimum	Average	Maximum	Non-compliances*
Alkalinity	mg/L as $CaCO_3$	16	5	42	51	0
Aluminium	mg/L	16	0.02	0.08	0.26	0
Antimony	mg/L	4	<	<	<	0
Arsenic	mg/L	4	<	<	<	0
Barium	mg/L	4	0.006	0.008	0.009	0
Boron	mg/L	4	1.0	1.1	1.3	0
Bromate	mg/L	16	<	<	<	0
Bromide	mg/L	16	0.12	0.59	0.80	0
Bromodichloromethane	mg/L	13	<	<	<	0
Cadmium	mg/L	4	<	<	0.0002	0
Chlorate	mg/L	12	0.07	0.13	0.28	0
Chloride	mg/L	16	142	185	222	0
Chromium	mg/L	4	<	<	<	0
Copper	mg/L	4	<	0.001	0.003	0
Dibromochloromethane	mg/L	13	<	<	<	0
E. coli	mpn/100mL	109	<	<	<	0
Electrical Conductivity	µS/cm	112	509	688	817	0
Fluoride	mg/L	16	<	<	0.1	0
Free Chlorine	mg/L	112	0.5	0.99	1.2	0
HPC	cfu/mL	52	<	7	128	0
Insoluble Manganese	mg/L	16	0.001	0.003	0.006	0
Iron	mg/L	16	<	0.01	0.10	0
Lead	mg/L	4	<	<	<	0
Mercury	mg/L	4	<	<	<	0
Molybdenum	mg/L	4	<	<	<	0
Nickel	mg/L	4	<	<	<	0
Nitrate	mg/L	16	<	0.01	0.09	0
Nitrite	mg/L	16	<	<	<	0
pH		112	7.1	8.1	8.5	0
Phosphate	mg/L	16	<	<	<	0
Selenium	mg/L	4	<	<	<	0
Soluble Manganese	mg/L	16	<	<	<	0
Sulfate	mg/L	16	2	4	6	0
Temperature	°C	112	18.4	26.6	33.8	0
Total Coliforms	mpn/100mL	110	<	<	<	0
Total Hardness	mg/L	16	29	54	210	0
Total Trihalomethanes	mg/L	13	<	0.004	0.019	0
Tribromomethane	mg/L	13	<	0.004	0.019	0
Trichloromethane	mg/L	13	<	<	<	0
True Colour	HU	112	<	<	12	0
Turbidity	NTU	112	<	0.11	0.56	0
Zinc	mg/L	4	<	0.004	0.008	0

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