

Drinking Water Quality Management Plan

2014-2015 Report

Livingstone Shire Council

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Glossary of terms

ADWG 2004	Australian Drinking Water Guidelines (2004). Published by the National Health and Medical Research Council of Australia
ADWG 2011	Australian Drinking Water Guidelines (2011). Published by the National Health and Medical Research Council of Australia
<i>E. coli</i>	<i>Escherichia coli</i> , a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
HACCP	Hazard Analysis and Critical Control Points certification for protecting drinking water quality
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
MPN/100mL	Most probable number per 100 millilitres
CFU/100mL	Colony forming units per 100 millilitres
<	Less than
>	Greater than

1. Introduction

This report documents the performance of Livingstone Shire Council's drinking water service with respect to water quality and performance in implementing the actions detailed in the drinking water quality management plan (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008* (the Act).

Currently Livingstone Shire Council is awaiting the assessment by the Department of Energy and Water Supply (DEWS) - Water Supply and Regulation Section - of its amended Drinking Water Quality Management Plan (DWQMP) version No.01. The plan was submitted to DEWS in June 2015 and was in response to Information Requirement Notice sent to Livingstone Shire Council on 2 June 2015.

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.

This template has been prepared in accordance with the *Water Industry Regulatory Reform – drinking water quality management plan report factsheet* published by the Department of Energy and Water Supply, Queensland, accessible at www.dews.qld.gov.au.

2. Overview of Operations

Currently Livingstone Shire Council is awaiting the assessment by the Department of Energy and Water Supply (DEWS) - Water Supply and Regulation Section - of its amended Drinking Water Quality Management Plan (DWQMP) version No.01. The plan was submitted to DEWS in June 2015 and was in response to Information Requirement Notice sent to Livingstone Shire Council on 2 June 2015.

3. Actions taken to implement the DWQMP

Currently Livingstone Shire Council is awaiting the assessment by the Department of Energy and Water Supply (DEWS) - Water Supply and Regulation Section - of its amended Drinking Water Quality Management Plan (DWQMP) version No.01. The plan was submitted to DEWS in June 2015 and was in response to Information Requirement Notice sent to Livingstone Shire Council on 2 June 2015.

4. Compliance with water quality criteria for drinking water

See Appendix A - Table 2 & Table 3

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

This financial year there were three (3) instances where the Regulator was notified under sections 102 or 102A of the Act. At the same time both the Central Queensland Public Unit and Rockhampton Regional Council were notified of the Drinking Water Non Compliances.

Rockhampton Regional Council supplies treated water to three (3) drinking water supply schemes under the control of Livingstone Shire Council. These water supply schemes include Yeppoon (via Rockhampton to Yeppoon Pipeline), Mt Charlton & Nerimbera. After Cyclone Marcia on 20th February 2015 oxygen depleted raw water in the Fitzroy River led to manganese leaving the Rockhampton Regional Council Glenmore Water Treatment Plant. As a result of this manganese presence in the treated water and to mitigate risk, Livingstone Shire Council turned off the Rockhampton to Yeppoon potable water supply on Monday 9/3/2015. Livingstone Shire Council utilised the existing Woodbury Water Treatment to supply treated water to the Capricorn Coast until further notice.

Manganese, Iron & Trihalomethanes (THM's) testing were instigated in the Mt Charlton & Nerimbera Water Supply Schemes.

Samples were collected on 12/3/2015 for Manganese analyses in Nerimbera Water Supply Scheme @ 81 Nerimbera Road Rockhampton. The result was 3.09mg/L. This exceeded the ADWG Health Guideline for Manganese of 0.50mg/L. The Regulator was notified under sections 102 or 102A of the Act.

Samples were collected on 13/3/2015 for Manganese analyses in Mt Charlton Water Supply Scheme @ Mt Charlton MC2 Glendale Rd .The result was 3.76 mg/L. The Regulator was notified under sections 102 or 102A of the Act.

Samples were collected on 16/3/2015 for Manganese analyses in Mt Charlton Water Supply Scheme @ Mt Charlton MC3 Etna Ck Prison. The result was 0.998 mg/L. The regulator was notified under sections 102 or 102A of the Act.

Changes in Rockhampton Regional Council Raw Water Quality and Pre- Chlorination at their Glenmore Water Treatment Plant resulted in exceedance of ADWG Health Guideline value of 250ug/L for Trihalomethanes (THM's) in the Mt Charlton and Capricorn Coast Drinking Water Supply Schemes.

Samples were collected on 8/4/2015 for THM analyses in the Mt Charlton Water supply scheme @ MC2 - Glendale Road & MC3 - Bruce Highway Etna Creek Prison. The results were 257ug/L & 260ug/L respectively. The Regulator was notified under sections 102 or 102A of the Act.

Samples collected on 14/4/2015 for THM analyses in the Rockhampton to Yeppoon Pipeline @ YP1 Sawmill. The result was 305 ug/L. The Regulator was notified under sections 102 or 102A of the Act.

Livingstone Shire Council has no control over water quality as received from Bulk Water Service Provider Rockhampton Regional Council.

6. Customer complaints related to water quality

Livingstone Shire 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 about water quality

Scheme No	Scheme Location	Suspected Illness	Discoloured Water	Taste & Odour	Total
Scheme 1	Capricorn Coast	0	30	11	41
Scheme 2	Mt.Charlton	0	13	4	17
Scheme 3	Nerimbera	0	0	0	0
Scheme 4	Marlborough	0	3	0	3
Total		0	46	15	61

Suspected Illness

Livingstone Shire Council investigates each complaint relating to alleged illness from our water quality, typically by testing the customers tap and closest reticulation sampling point for presence of E.coli.

From 1/7/2014 to 30/6/2015 inclusive there were nil confirmed cases of illness arising from the drinking water supply system.

Discoloured water

A total of forty six (46) complaints related to discoloured water were received from within Livingstone Shire Council from 1/7/2014 to 30/6/2015 inclusive.

From Table 1 of these forty six (46) complaints thirty (30) were in the Capricorn Coast Drinking Water Supply Scheme & three (3) were in the Marlborough Drinking Water Supply Scheme. In both of these schemes water mains were flushed in the adjacent local area network.

After Cyclone Marcia on 20th February 2015 oxygen depleted raw water in the Fitzroy River led to manganese leaving the Rockhampton Regional Council Glenmore Water Treatment Plant. This resulted in twelve (12) complaints regarding discoloured water being received from the residents in the Mt.Charlton Drinking Water Supply Scheme. Initially water mains were flushed in the adjacent local area network with limited success. The remaining one (1) complaint in the Mt.Charlton Drinking Water Supply Scheme, which was received in July 2014, was for milky water. The water mains were flushed in the adjacent local area network and the problem was resolved.

Livingstone Shire Council has no control over water quality as received from Bulk Water Service Provider Rockhampton Regional Council.

Taste and odour

From Table 1 fifteen (15) customer complaints were related to taste & odour. Eleven (11) complaints were from residents in the Capricorn Coast Drinking Water Supply Scheme. The remaining four (4) complaints were from residents in the Mt.Charlton Drinking Water Supply Scheme. Complaints were investigated and where necessary appropriate testing was performed.

7. Findings and recommendations of the DWQMP auditor

Currently Livingstone Shire Council is awaiting the assessment by the Department of Energy and Water Supply (DEWS) - Water Supply and Regulation Section - of its amended Drinking Water Quality Management Plan (DWQMP) version No.01. The plan was submitted to DEWS in June 2015 and was in response to Information Requirement Notice sent to Livingstone Shire Council on 2 June 2015.

There were nil Audits conducted in the period 1/7/2014 to 30/6/2015.

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

Currently Livingstone Shire Council is awaiting the assessment by the Department of Energy and Water Supply (DEWS) - Water Supply and Regulation Section - of its amended Drinking Water Quality Management Plan (DWQMP) version No.01. The plan was submitted to DEWS in June 2015 and was in response to Information Requirement Notice sent to Livingstone Shire Council on 2 June 2015.

Appendix A – Summary of compliance with water quality criteria

The results from the verification monitoring program have been compared against the levels of the water quality criteria specified by the Regulator in the *Water Quality and Reporting Guideline for a Drinking Water Service*.

The reported statistics do not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result.

The verification monitoring was carried out as per the program stated in the DWQMP.

Table 2 - Verification monitoring results

Scheme Name	Scheme Location	System Component	Parameter	Units	Frequency of sampling	Total No. samples collected	No. of samples in which parameter was detected	No. of samples exceeding water quality criteria	Min	Max	Average (Mean)	Limit of Reporting	Laboratory Name
Capricorn Coast	Kelly's Offstream Storage	Source Water	Nitrate	mg/L	Monthly	12	12	0	<0.01	0.04	0.0075	0.01	ALS Group
			Sulphate	mg/L	Monthly	12	12	0	<1	3	2.16	1	ALS Group
			Fluoride (naturally occurring)	mg/L	Monthly	12	12	0	<0.1	0.4	0.03	0.1	ALS Group
			Aluminium (acid-soluble)	mg/L	Monthly	12	12	0	0.009	0.036	0.02	0.005	ALS Group
			Copper	mg/L	Monthly	12	12	0	0.002	1.76	0.227	0.001	ALS Group
			Iron	mg/L	Monthly	12	12	0	0.33	1.44	0.78	0.05	ALS Group
			Lead	mg/L	Monthly	12	12	0	<0.001	0.001	<0.001	0.001	ALS Group
			Manganese	mg/L	Monthly	12	12	0	0.003	0.029	0.013	0.001	ALS Group
			Zinc	mg/L	Monthly	12	12	0	<0.005	0.132	0.016	0.005	ALS Group
			pH	pH Units	Monthly	12	12	0	6.25	7.37	6.78	0.01	ALS Group
			Turbidity	NTU	Monthly	12	12	0	0.6	4	2.4	0.1	ALS Group
			Alkalinity (Total as CaCO ₃)	mg/L	Monthly	12	12	0	3	10	6	1	ALS Group
			Calcium	mg/L	Monthly	12	12	0	<1	2	1	1	ALS Group
			Chloride	mg/L	Monthly	12	12	0	21	32	27	1	ALS Group
			Colour (True)	PCU	Monthly	12	12	0	25	60	41	1	ALS Group
			Conductivity	µS/cm	Monthly	12	12	0	110	140	127	1	ALS Group
Magnesium	mg/L	Monthly	12	12	0	2	3	2	1	ALS Group			
Nitrite	mg/L	Monthly	12	12	0	<0.01	<0.01	<0.01	0.01	ALS Group			

Capricorn Coast	Kelly's Offstream Storage	Source Water	Potassium	mg/L	Monthly	12	12	0	<1	<1	<1	1	ALS Group
			Sodium	mg/L	Monthly	12	12	0	16	20	17	1	ALS Group
			Total Dissolved Solids (TDS)	mg/L	Monthly	12	12	0	49	200	88	5	ALS Group
			Hardness (Total as CaCO ₃)	mg/L	Monthly	12	12	0	8	17	12	1	ALS Group
			Total Organic Carbon (TOC)	mg/L	Quarterly	3	3	0	<1	5	2	1	ALS Group
			Arsenic	mg/L	Yearly	6	6	0	<0.001	0.001	<0.001	0.001	ALS Group
			Cadmium	mg/L	Yearly	6	6	0	<0.0001	<0.0001	<0.0001	0.0001	ALS Group
			Chromium	mg/L	Yearly	6	6	0	<0.001	<0.001	<0.001	0.001	ALS Group
			Nickel	mg/L	Yearly	6	6	0	<0.001	<0.001	<0.001	0.001	ALS Group
			Selenium	mg/L	Yearly	6	6	0	<0.01	<0.01	<0.01	0.01	ALS Group
			Mercury	mg/L	Yearly	6	6	0	<0.0001	<0.0001	<0.0001	0.0001	ALS Group
			Pesticides: Ultra High Trace*	ug/L	Yearly	1	0	0	<LOR	<LOR	<LOR	LOR	ALS Group
			Radiological: Gross Alpha Activity	Bq/L	5 Yearly	1	0	0	<0.05	<0.05	<0.05	0.05	ALS Group
			Radiological: Gross Beta Activity	Bq/L	5 Yearly	1	0	0	<0.01	<0.01	<0.01	0.10	ALS Group
			pH	pH Units	Daily	349	349	0	5.9	7.4	6.45	0.01	Inhouse- Telemetry
	Turbidity	NTU	Daily	349	349	0	0.68	12.94	1.89	0.01	Inhouse- Telemetry		
	Woodbury Water Treatment Plant	Water Treatment Plant	Nitrate	mg/L	Monthly	12	12	0	<0.01	0.06	0.04	0.01	ALS Group
			Sulphate	mg/L	Monthly	12	12	0	26	34	28.5	1	ALS Group
			Trihalomethanes (THMs) (Total)	ug/L	Quarterly	4	4	0	26	47	35	5	ALS Group
			Fluoride (naturally occurring)	mg/L	Monthly	12	12	0	<0.1	0.3	<0.1	0.1	ALS Group
			Aluminium (acid-soluble)	mg/L	Monthly	12	12	0	0.005	0.148	0.05	0.005	ALS Group
			Copper	mg/L	Monthly	11	11	0	0.002	0.082	0.013	0.001	ALS Group
			Iron	mg/L	Monthly	12	12	0	<0.05	0.11	0.02	0.05	ALS Group
			Lead	mg/L	Monthly	12	12	0	<0.001	0.006	<0.001	0.001	ALS Group
			Manganese	mg/L	Monthly	12	12	0	0.002	0.019	0.008	0.001	ALS Group
			Zinc	mg/L	Monthly	12	12	0	<0.005	0.081	0.009	0.005	ALS Group
			pH	pH Units	Monthly	12	12	0	6.71	7.61	7.25	0.01	ALS Group
Turbidity			NTU	Monthly	12	12	0	0.2	2.1	0.9	0.1	ALS Group	
Alkalinity (Total as CaCO ₃)	mg/L	Monthly	12	12	0	10	39	17	1	ALS Group			
Calcium	mg/L	Monthly	12	12	0	2	14	11	1	ALS Group			
Chloride	mg/L	Monthly	12	12	0	22	35	28	1	ALS Group			
Colour (True)	PCU	Monthly	12	12	0	5	6	5	1	ALS Group			
Conductivity	µS/cm	Monthly	12	12	0	196	245	211	1	ALS Group			

Capricorn Coast	Woodbury Water Treatment Plant	Water Treatment Plant	Magnesium	mg/L	Monthly	12	12	0	2	3	2	1	ALS Group
			Nitrite	mg/L	Monthly	12	12	0	<0.01	0.01	<0.01	0.01	ALS Group
			Potassium	mg/L	Monthly	12	12	0	<1	<1	<1	1	ALS Group
			Sodium	mg/L	Monthly	12	12	0	20	46	24	1	ALS Group
			Total Dissolved Solids (TDS)	mg/L	Monthly	12	12	0	109	152	127	5	ALS Group
			Hardness (Total as CaCO3)	mg/L	Monthly	12	12	0	13	43	37	1	ALS Group
			Total Organic Carbon (TOC)	mg/L	Quarterly	3	3	0	1	2	2	1	ALS Group
			Arsenic	mg/L	Yearly	6	6	0	<0.001	<0.001	<0.001	0.001	ALS Group
			Cadmium	mg/L	Yearly	6	6	0	<0.0001	0.0003	<0.0001	0.0001	ALS Group
			Chromium	mg/L	Yearly	6	6	0	<0.001	<0.001	<0.001	0.001	ALS Group
			Nickel	mg/L	Yearly	6	6	0	<0.001	<0.001	<0.001	0.001	ALS Group
			Selenium	mg/L	Yearly	6	6	0	<0.01	<0.01	<0.01	0.01	ALS Group
			Mercury	mg/L	Yearly	6	6	0	<0.0001	<0.0001	<0.0001	0.0001	ALS Group
			Pesticides: Ultra High Trace*	ug/L	Yearly	1	0	0	<LOR	<LOR	<LOR	LOR	ALS Group
			Radiological: Gross Alpha Activity	Bq/L	5 Yearly	1	0	0	<0.05	<0.05	<0.05	0.05	ALS Group
			Radiological: Gross Beta Activity	Bq/L	5 Yearly	1	0	0	<0.01	<0.01	<0.01	0.10	ALS Group
			Chlorine (free)	mg/L	Weekly	49	49	0	0.87	2.46	1.81	0.01	Inhouse
		Chlorine (free)	mg/L	Daily	357	357	0	0.29	1.97	1.71	0.01	Inhouse- Telemetry	
		pH	pH Units	Daily	357	357	0	6.37	8.78	7.31	0.01	Inhouse- Telemetry	
		Escherichia coli (E.coli)	MPN/100ml	Weekly	49	49	0	<1	<1	<1	1	Ecoscope Environmental	
Reticulation	Chlorine (free)	mg/L	Weekly	343	343	0	0	2.2	0.68	0.01	Inhouse		
	pH	pH Units	Weekly	281	281	0	6.5	9.5	7.98	0.01	Inhouse		
	Turbidity	NTU	Weekly	263	263	0	0.11	15.3	0.38	0.1	Inhouse		
	Trihalomethanes (Total) Scofield Parade	µg/L	Quarterly	3	3	0	117	140	128	5	ALS Group		
	Trihalomethanes (Total) Pacific Heights	µg/L	Quarterly	3	3	0	68	109	89	5	ALS Group		
	Trihalomethanes (Total) The Caves	µg/L	Quarterly	3	3	0	123	134	127	5	ALS Group		
Marlborough	Marlborough Water Treatment Plant	Source Water	Nitrate	mg/L	Monthly	10	10	0	0.54	0.64	0.58	0.01	ALS Group
			Sulphate	mg/L	Monthly	10	10	0	22	34	25	1	ALS Group
			Fluoride (naturally occurring)	mg/L	Monthly	10	10	0	0.1	0.5	0.2	0.1	ALS Group
			Aluminium (acid-soluble)	mg/L	Monthly	10	10	0	<0.005	<0.005	<0.005	0.005	ALS Group
			Copper	mg/L	Monthly	10	10	0	0.002	0.022	0.0086	0.001	ALS Group
			Iron	mg/L	Monthly	10	10	0	<0.05	<0.05	<0.05	0.05	ALS Group
			Lead	mg/L	Monthly	10	10	0	<0.001	<0.001	<0.001	0.001	ALS Group

Marlborough	Marlborough Water Treatment Plant	Source Water	Manganese	mg/L	Monthly	10	10	0	<0.001	0.002	<0.001	0.001	ALS Group
			Zinc	mg/L	Monthly	10	10	0	<0.005	0.042	0.0231	0.005	ALS Group
			pH	pH Units	Monthly	10	10	0	7.62	8.56	7.972	0.01	ALS Group
			Turbidity	NTU	Monthly	10	10	0	0.1	2.5	1.1	0.1	ALS Group
			Alkalinity (Total as CaCO ₃)	mg/L	Monthly	10	10	0	411	462	445.1	1	ALS Group
			Calcium	mg/L	Monthly	10	10	0	22	26	23.6	1	ALS Group
			Chloride	mg/L	Monthly	10	10	0	176	192	182.4	1	ALS Group
			Colour (True)	PCU	Monthly	10	10	0	5	10	5.8	1	ALS Group
			Conductivity	µS/cm	Monthly	10	10	0	1260	1360	1305	1	ALS Group
			Magnesium	mg/L	Monthly	10	10	0	98	108	101.7	1	ALS Group
			Nitrite	mg/L	Monthly	10	10	0	<0.01	<0.01	<0.01	0.01	ALS Group
			Potassium	mg/L	Monthly	10	10	0	<1	1	0.7	1	ALS Group
			Sodium	mg/L	Monthly	10	10	0	103	118	109.3	1	ALS Group
			Total Dissolved Solids (TDS)	mg/L	Monthly	10	10	0	614	716	671.4	5	ALS Group
			Hardness (Total as CaCO ₃)	mg/L	Monthly	10	10	0	461	510	477.7	1	ALS Group
			Total Organic Carbon (TOC)	mg/L	Quarterly	4	4	0	<1	4	1.25	1	ALS Group
			Arsenic	mg/L	Yearly	6	6	0	<0.001	0.002	0.002	0.001	ALS Group
		Cadmium	mg/L	Yearly	6	6	0	<0.0001	<0.0001	<0.0001	<0.0001	ALS Group	
		Chromium	mg/L	Yearly	6	6	0	0.004	0.006	0.005	0.001	ALS Group	
		Nickel	mg/L	Yearly	6	6	0	0.003	0.007	0.003	0.001	ALS Group	
		Pesticides: Ultra High Trace*	ug/L	Yearly	1	0	0	<LOR	<LOR	<LOR	LOR	ALS Group	
		Radiological: Gross Alpha Activity	Bq/L	5 Yearly	1	0	0	<0.05	<0.05	<0.05	0.05	ALS Group	
		Radiological: Gross Beta Activity	Bq/L	5 Yearly	1	0	0	<0.01	<0.01	<0.01	0.10	ALS Group	
		Selenium	mg/L	Yearly	6	6	0	<0.01	<0.01	<0.01	0.01	ALS Group	
		Mercury	mg/L	Yearly	6	6	0	<0.0001	<0.0001	<0.0001	0.0001	ALS Group	
		Water Treatment Plant	Nitrate	mg/L	Monthly	10	10	0	0.32	0.39	0.347	0.01	ALS Group
			Sulphate	mg/L	Monthly	10	10	0	<1	11	7.9	1	ALS Group
			Trihalomethanes (THMs) (Total)	µg/L	Quarterly	4	4	0	<5	8	<5	5	ALS Group
Fluoride	mg/L		Monthly	10	10	0	<0.1	0.2	<0.1	0.1	ALS Group		
Aluminium (acid-soluble)	mg/L		Monthly	10	10	0	<0.005	<0.005	<0.005	0.005	ALS Group		
Copper	mg/L		Monthly	9	9	0	0.01	0.026	0.01711	0.001	ALS Group		
Iron	mg/L		Monthly	10	10	0	<0.05	<0.05	<0.05	0.05	ALS Group		
Lead	mg/L	Monthly	10	10	0	<0.001	<0.001	<0.001	0.001	ALS Group			

Marlborough	Marlborough Water Treatment Plant	Water Treatment Plant	Manganese	mg/L	Monthly	10	10	0	<0.001	<0.001	<0.001	0.001	ALS Group
			Zinc	mg/L	Monthly	10	10	0	<0.005	0.037	0.0115	0.005	ALS Group
			pH	pH Units	Monthly	10	10	0	7.68	8.51	8.001	0.01	ALS Group
			Turbidity	NTU	Monthly	10	10	0	0.2	5.3	1.42	0.1	ALS Group
			Alkalinity (Total as CaCO ₃)	mg/L	Monthly	10	10	0	159	196	181.3	1	ALS Group
			Calcium	mg/L	Monthly	10	10	0	8	11	9.1	1	ALS Group
			Chloride	mg/L	Monthly	10	10	0	63	90	74.7	1	ALS Group
			Colour (True)	PCU	Monthly	10	10	0	5	8	5.3	1	ALS Group
			Conductivity	µS/cm	Monthly	10	10	0	506	700	581.8	1	ALS Group
			Magnesium	mg/L	Monthly	10	10	0	32	47	39.5	1	ALS Group
			Nitrite	mg/L	Monthly	10	10	0	<0.01	<0.01	<0.01	0.01	ALS Group
			Potassium	mg/L	Monthly	10	10	0	<1	<1	<1	1	ALS Group
			Sodium	mg/L	Monthly	10	10	0	46	55	51.5	1	ALS Group
			Total Dissolved Solids (TDS)	mg/L	Monthly	10	10	0	270	384	304	5	ALS Group
			Hardness (Total as CaCO ₃)	mg/L	Monthly	10	10	0	152	221	185.3	1	ALS Group
			Total Organic Carbon (TOC)	mg/L	Quarterly	4	4	0	<1	3	<1	1	ALS Group
			Arsenic	mg/L	Yearly	6	6	0	<0.001	<0.001	<0.001	0.001	ALS Group
			Cadmium	mg/L	Yearly	6	6	0	<0.0001	<0.0001	<0.0001	0.0001	ALS Group
			Chromium	mg/L	Yearly	6	6	0	0.002	0.002	0.002	0.001	ALS Group
			Nickel	mg/L	Yearly	6	6	0	<0.001	0.002	<0.001	0.001	ALS Group
			Selenium	mg/L	Yearly	6	6	0	<0.01	<0.01	<0.01	0.01	ALS Group
			Pesticides: Ultra High Trace *	ug/L	Yearly	1	0	0	<LOR	<LOR	<LOR	LOR	ALS Group
			Radiological: Gross Alpha Activity	Bq/L	5 Yearly	1	0	0	<0.05	<0.05	<0.05	0.05	ALS Group
			Radiological: Gross Beta Activity	Bq/L	5 Yearly	1	0	0	<0.01	<0.01	<0.01	0.10	ALS Group
			Mercury	mg/L	Yearly	6	6	0	<0.0001	<0.0001	<0.0001	0.0001	ALS Group
			Chlorine (free)	mg/L	Daily	365	365	0	0.51	1.16	0.81	0.01	Inhouse- Telemetry
			pH	pH Units	Daily	365	365	0	6.9	7.71	7.39	0.01	Inhouse- Telemetry
			Turbidity	NTU	Daily	365	365	0	0.08	2	0.22	0.1	Inhouse- Telemetry
		Conductivity	µS/cm	Daily	365	365	0	282	511	399	1	Inhouse- Telemetry	
		Escherichia coli (E.coli)	MPN/100ml	Weekly	35	35	0	<1	<1	<1	1	Ecoscope Environmental	
		Reticulation	Chlorine (free)	mg/L	Weekly	40	40	0	0.08	1.3	0.64	0.01	Inhouse
			Trihalomethanes (THMs) (Total)	µg/L	Quarterly	4	4	0	<5	8	5.5	5	ALS Group

* Forty Four (44) parameters were tested for Pesticides Ultra High trace.

Table 3 - Reticulation *E. coli* verification monitoring

The Public Health Regulation 2005 requires that 98 per cent of samples taken in a 12 month period should contain no E.coli. This requirement is referred to as the 'annual value' in Schedule 3A of the regulation. This requirement comes into effect once you have 12 months data and should be assessed every month based on the previous 12 months data (so that it is a 'rolling' assessment).

Drinking Water Scheme:	Capricorn Coast - Woodbury Water Treatment Plant												
	Year	2014						2015					
		Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
No. of samples collected		4	4	5	4	3	5	4	3	5	4	4	4
No. of samples collected in which <i>E. coli</i> is detected (i.e. a failure)		0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period		30	34	39	43	47	52	52	51	51	51	51	50
No. of failures for previous 12 month period		0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply (monthly samples)		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value (previous 12 months)		NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	100%	100%

Drinking Water Scheme:	Capricorn Coast - Saint Faith's System												
	Year	2014						2015					
		Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
No. of samples collected		4	4	5	4	3	5	4	4	5	4	4	4
No. of samples collected in which <i>E. coli</i> is detected (i.e. a failure)		0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period		30	34	39	43	46	51	51	51	51	51	51	50
No. of failures for previous 12 month period		0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply (monthly samples)		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value (previous 12 months)		NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	100%	100%

Drinking Water Scheme:	Capricorn Coast - Taranganba and Lammermoor System												
	Year Month	2014						2015					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	4	4	5	4	3	5	4	4	5	4	4	4	
No. of samples collected in which E. coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0	
No. of samples collected in previous 12 month period	30	34	39	43	46	51	51	51	51	51	51	50	
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0	
% of samples that comply (monthly samples)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Compliance with 98% annual value (previous 12 months)	NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	100%	100%	

Drinking Water Scheme:	Capricorn Coast - Emu Park and Keppel Sands System												
	Year Month	2014						2015					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	8	8	9	8	6	10	8	8	10	8	8	8	
No. of samples collected in which E. coli is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0	
No. of samples collected in previous 12 month period	58	66	75	83	89	99	99	99	99	99	99	99	
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0	
% of samples that comply (monthly samples)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Compliance with 98% annual value (previous 12 months)	NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	100%	100%	

Drinking Water Scheme:	Capricorn Coast - Rockhampton to Yeppoon Pipeline												
	Year Month	2014						2015					
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	NA	NA	NA	NA	NA	NA	NA	1	2	4	1	4	
No. of samples collected in which E. coli is detected (i.e. a failure)	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0	
No. of samples collected in previous 12 month period	NA	NA	NA	NA	NA	NA	NA	1	3	7	8	12	
No. of failures for previous 12 month period	NA	NA	NA	NA	NA	NA	NA	0	0	0	0	0	
% of samples that comply (monthly samples)	NA	NA	NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	
Compliance with 98% annual value (previous 12 months)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Drinking Water Scheme:	Nerimbera												
	Year	2014						2015					
	Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected		NA	NA	NA	NA	NA	NA	4	4	5	4	4	4
No. of samples collected in which E. coli is detected (i.e. a failure)		NA	NA	NA	NA	NA	NA	0	0	0	0	0	0
No. of samples collected in previous 12 month period		NA	NA	NA	NA	NA	NA	4	8	13	17	21	25
No. of failures for previous 12 month period		NA	NA	NA	NA	NA	NA	0	0	0	0	0	0
% of samples that comply (monthly samples)		NA	NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value (previous 12 months)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Drinking Water Scheme:	Mount Charlton System												
	Year	2014						2015					
	Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected		4	4	5	4	4	5	4	4	5	4	4	4
No. of samples collected in which E. coli is detected (i.e. a failure)		0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period		30	34	39	43	47	52	52	52	52	52	52	51
No. of failures for previous 12 month period		0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply (monthly samples)		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value (previous 12 months)		NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	100%	100%

Drinking Water Scheme:	Marlborough Reticulation												
	Year	2014						2015					
	Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected		4	4	5	4	4	5	2	2	3	3	3	3
No. of samples collected in which E. coli is detected (i.e. a failure)		0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period		30	34	39	43	47	52	50	48	46	45	44	42
No. of failures for previous 12 month period		0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply (monthly samples)		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value (previous 12 months)		NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	100%	100%

Drinking Water Scheme:	Marlborough Water Treatment Plant												
	Year	2014						2015					
		Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
No. of samples collected		4	4	5	4	4	5	2	2	2	1	1	1
No. of samples collected in which E. coli is detected (i.e. a failure)		0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period		30	34	39	43	47	52	50	48	45	42	39	35
No. of failures for previous 12 month period		0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply (monthly samples)		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compliance with 98% annual value (previous 12 months)		NA	NA	NA	NA	NA	100%	100%	100%	100%	100%	100%	100%

Appendix B – Implementation of the DWQMP Risk Management Improvement Program

Currently Livingstone Shire Council is awaiting the assessment by Department of Energy and Water Supply (DEWS) - Water Supply and Regulation Section - of its amended Drinking Water Quality Management Plan (DWQMP) version No.01. The plan was submitted to DEWS in June 2015 and was in response to Information Requirement Notice received on 2 June 2015.