

Drinking Water Quality Management Plan (DWQMP) report

For the financial year: 2015-2016

Scheme: COOKTOWN

Cook Shire Council

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COOK SHIRE COUNCIL - DRINKING WATER QUALITY MANAGEMENT PLAN ANNUAL REPORT

Glossary of terms

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
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
MPN/100mL	Most probable number per 100 millilitres
<	Less than
>	Greater than
NATA Lab	Accredited by the National Association of Testing Authorities of Australia

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1. Introduction

This report documents the performance of Cook 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).

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

Cooktown's Water is sourced from the Annan River which originates high in the rainforest from the North or North western sides of Mount Misery, Poverty and Mt Romeo which is North North West of Bloomfield. The catchment area of approx. 37,350 ha is in pristine rainforest and due to the terrain has very limited human impact apart from the ex Collingwood Tin Mine.

Water is pumped up from the Annan river to the T/Plant site where it undertakes the following treatment processes

- Coagulation & Flocculation
- Sedimentation
- Filtration
- Chlorination
- Fluoridation

The treated water is pumped to a 2ML Reservoir on site, and then gravity feeds to the Cooktown High Level Reservoir, in Cooktown, as required via telemetry signals. The Cooktown Reservoir directly supplies water to the Cooktown reticulation after being re-chlorinated

Cooktown currently has 930 Service connections which can be broken down to approximately:

Residential 80%

Commercial / Industrial 10%

With the remaining 10% being Government, Council, Institutional or Other

Cooktown's water has historically been a very safe and reliable water supply and given its origins in the rainforest is also pleasant tasting as well. This same water won the Queensland Water Directorate's "Best Tasting Tap Water in Queensland" in 2013

3. Actions taken to implement the DWQMP

The water sampling schedule is now more rigorously adhered to than prior to the plan being approved, a database was set up with all the schedule details in it, this was given to all that collect samples. By typing in the "Week start date" a list of the required samples for that week is displayed, and can be printed. It tells the sample collectors the following information

- Week Commencing Date
- Type of sample to be collected e.g. E.coli & Total Coliforms, Fluoride, Reticulation Metals - (Suite of 15) etc
- Scheme e.g. Cooktown, Lakeland or Laura
- Who the sample is to be analysed by e.g. CSC Annan Lab., or NATA Lab.
- A description e.g. 3 Samples from Reticulation - Sample sites listed, 1 T/Plant Final Water Sample
- Sample Site - displays where the sample is to be taken from

A copy of the Sampling Matrix was sent to the NATA Lab, they now supply the appropriate sample bottles for each week as well as each scheme month by month. At approx the 3rd week of every month we receive the entire sample bottles for the following month. This seems to be working well

Implementation of the DWQMP Risk Management Improvement Program is well under way with the major item being bought forward from a stated completion year of 2018 this item is now completed.

Revisions made to the operational monitoring program to assist in maintaining the compliance with water quality criteria in verification monitoring.

To date there has been no revisions to the operational monitoring since the DWQMP was approved

Amendments made to the DWQMP

A thorough review of the DWQMP was conducted with some extensive alterations being made to the original plan.

The revised plan was submitted to the Regulator on 26th April 2016

The revised plan, as submitted, was approved by the Regulator on 27th July 2016

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4. Compliance with water quality criteria for drinking water

Table 1.0A Summary of All Treated Water quality details – Sampled from: Cooktown Reticulation, Analysed by: SGS - Cairns (NATA Certified)

Sample Period 1/7/2015 - 30/6/2016

Physical and Chemical Characteristics

Parameter	Unit	No of Samples collected	Summary of Results			ADWQ Guidelines Value (2011)	No of Samples exceeding ADWG	
			Max. Value	Min. Value	Avg. Value		Health	Aesthetic
Alkalinity	mg/L as CaCO ₃	36	68	16	47.8	-	-	-
Calcium	mg/L	36	22	7.5	17.4	-	-	-
Chloride	mg/L	36	20	15	17.1	< 250 - mg/L	-	0
Colour	HU	36	10	<5	5.6	< 15 - HU	-	0
Electrical Conductance	µs/cm	36	180	110	159.7	-	-	-
Fluoride	mg/L	42	0.81	0.6	0.71	< 1.5 - mg/L	0	-
Magnesium	mg/L	36	1.1	0.4	0.9	-	-	-
pH	pH units	36	8.2	7.5	7.8	6.5-8.5	-	0
Potassium	mg/L	36	1.4	0.9	1.1	-	-	-
Salinity	mg/L	36	120	73	104.3	-	-	-
SAR		36	1.2	0.7	0.9	-	-	-
Silica Soluble	mg/L	36	13	9.6	11.5	< 80 - mg/L	-	0
Sodium	mg/L	36	15	11	13.3	< 180 - mg/L	-	0
Sulphate	mg/L	35	12	6.2	8	< 250 - mg/L	0	0
Total Dissolved Solids	mg/L	36	110	68	95.8	< 600 - mg/L	-	0
Total Hardness	mg/L as CaCO ₃	36	58	20	47.1	< 200 - mg/L	-	0
Turbidity	NTU	22	2.6	<0.5	0.7	< 5 - NTU	-	0

* - Indicates no guideline value set for this parameter

Samples collected from set sample points throughout the Reticulation including high and low flow areas.

Each month samples are collected from 3 locations, systematically rotated to ensure all sample points are captured

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Table 1.0B Summary of All Treated Water quality details – Sampled from: Cooktown Reticulation, Analysed by: SGS - Cairns (NATA Certified)
Sample Period 1/7/2015 - 30/6/2016

Metals

Parameter	Unit	No of Samples collected	Summary of Results			ADWQ Guidelines Value (2011)	No of Samples exceeding ADWG	
			Max. Value	Min. Value	Avg. Value		Health	Aesthetic
Arsenic	mg/L	13	0.008	0.003	0.0034	0.01-mg/L	0	-
Barium	mg/L	13	0.006	< 0.005	0.005	< 2 - mg/L	0	-
Beryllium	mg/L	13	0.0001	< 0.0001	< 0.0001	< 0.006 - mg/L	0	-
Cadmium	mg/L	13	0.0001	< 0.0001	< 0.0001	< 0.002 - mg/L	0	-
Chromium	mg/L	13	0.0001	< 0.0001	< 0.0001	< 0.05 - mg/L	0	-
Cobalt	mg/L	13	0.001	< 0.001	< 0.001	-	-	-
Copper	mg/L	13	0.004	< 0.001	0.0064	< 2 - mg/L	0	0
Iron	mg/L	13	0.016	< 0.005	< 0.0058	< 0.3 - mg/L	-	0
Lead	mg/L	13	0.001	< 0.001	< 0.001	< 0.01 - mg/L	0	-
Manganese	mg/L	13	0.005	< 0.005	< 0.005	< 0.1 - mg/L	0	0
Mercury	mg/L	13	<0.00005	<0.00005	<0.00005	< 0.001 -mg/L	0	-
Nickel	mg/L	13	0.001	< 0.001	< 0.001	< 0.02 - mg/L	0	-
Selenium	mg/L	13	0.003	< 0.003	< 0.003	< 0.01 - mg/L	0	-
Vanadium	mg/L	13	0.005	< 0.001	0.0041	-	-	-
Zinc	mg/L	13	0.005	< 0.005	< 0.005	< 3.0 - mg/L	-	0

* - Indicates no guideline value set for this parameter

Samples collected from set sample points throughout the Reticulation including high and low flow areas.
Each month samples are collected from 3 locations, systematically rotated to ensure all sample points are captured

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**Table 1.1 Summary of All E.coli & Coliforms monitoring – Sampled from: Annan T/Plant Final water and Cooktown Reticulation
Sample Period 1/7/2015 - 30/6/2016**

	Parameter	Sampling Location	Time Period	No of samples taken in time period	Summary of results		Australian Drinking Water Guidelines guideline value (2011)	No of samples exceeding Australian Drinking Water Guidelines value
					E.coli detected	No of Coliforms detected		
E.coli and Coliforms	E.coli – MPN/100ml	Various set Locations within the Cooktown Reticulation and the Annan Final Treated water	July 2015	233	0	-	0	0
	Coliforms – MPN/100ml		– June 2016	233	-	0	-	-

Table 1.2 Summary of All Fluoride monitoring – Sampled from: Annan T/Plant Final water and Cooktown Reticulation

	Parameter	Sampling Location	Time Period	No of samples taken in time period	Summary of results			Australian Drinking Water Guidelines guideline value (2011)	No of samples exceeding Australian Drinking Water Guidelines value
					Max. Value	Avg. Value	Min. Value		
Fluoride	Fluoride – mg/L Analysed By SGS Cairns - (NATA Certified) – Treatment Plant	Various set Locations within the Cooktown Reticulation and the Annan Water T/Plant	July 2015 – June 2016	24	0.80	0.71	0.61	1.5 mg/L	0
	Fluoride – mg/L Analysed By SGS Cairns - (NATA Certified) – Reticulation			24	0.84	0.71	0.65		0
	Fluoride – mg/L Analysed By Cook Shire Council – Treatment Plant			365	0.85	0.69	0.60		0
	Fluoride – mg/L Analysed By Cook Shire Council - Reticulation			100	0.78	0.70	0.62		0

These are dedicated Fluoride samples, Fluoride is also captured as part of the Physical / Chemical sampling

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Table 1.3 Location of sampling sites within Cooktown's water reticulation network.

Sample Location Name	Street Name	Site Chosen Because	GPS Coordinates *
Mobil Service Stn	Endeavour Valley Road	Towards the end of the line.	15°28'21.81"S - 145°13'13.98"E
Powder Magazine	Webber Esplanade	Towards the end of the line.	15°27'27.49"S - 145°15'14.33"E
Lions Park	Charlotte St	Ease of access	15°27'51.65"S - 145°15'2.91"E
Cooktown Library	Helen St	Centrally located in Residential area	15°28'16.08"S - 145°14'57.80"E
Simmo's	Furneaux St	Residential area	15°28'13.02"S - 145°15'22.46"E
Water Depot	Boundary St	Towards the end of the line.	15°28'29.80"S - 15°28'29.80"S
Cemetery	Charlotte	Ease of access	15°28'38.90"S - 145°14'30.40"E
Cooktown Hospital	Hope St	Close to Hospital & Medical Services	15°28'40.87"S - 145°14'58.82"E
Cooktown Kindergarten	Charles St	Close to Kindergarten and Schools	15°28'52.40"S - 145°15'10.27"E
Royce's Paddock	Ida St	Towards the end of the line.	15°28'51.64"S - 145°15'31.98"E
Ambrose old Service Racecourse Rd	Racecourse Rd	Centrally located in Residential area	15°28'51.85"S - 145°14'22.21"E
Peninsular Pump Station	Howard St	Towards the end of the line.	15°28'34.25"S - 145°15'26.40"E

All reticulation sampling for all parameters are collected from these fixed sites for the reasons listed

Table 1.0A and Table 1.0B

All Samples collected and analysed complied with the Australian Drinking Water Guidelines 6 (2011)

Table 1.1

No E.coli or coliforms were detected from the samples collected and analysed in the reporting period

Table 1.2

All Fluoride samples complied with the AWDG for Fluoride

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

For the financial year 2015-2016 there were nil instances where the Regulator needed to be notified under sections 102 or 102A of the Act. There was no detection of E. coli – an organism that may not directly represent a hazard to human health, in any samples but indicates the presence of recent faecal contamination. There were nil incidents that required a “Boil Water Alert” to be issued, or “Do not drink Water” notices displayed in the community.

6. Customer complaints related to water quality

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

Cook Shire maintains a “Register of Complaints” which includes Water & Wastewater. Customer Services officers generally receive the initial complaints, which if it’s in the form of a letter, or email, then it is then filed in the “TRIM” Database, a Task is then generated from “Authority” and dispersed to the relevant officer/s for actioning. The relevant officer/s must record the actioned details in “Authority” to complete the Task. So a record of the complaint and the action taken to rectify the problem is all recorded. At the end, the complainant is notified of the outcome of the original complaint

A search of both the “Trim” database and the CRM (Customer Request Management) in “Authority” for the financial year 2015-2016 has located 1 only Customer Complaints regarding Water Quality.

An investigation found that the customer had recent plumbing work carried out within the property, and that “dirt” had entered the plumbing and ended up in the toilet cistern, upon flushing the toilet dirty water was noticed. The complaint was not a Cook Shire water quality issue.

Suspected Illness

Cook Shire Council (Water & Wastewater) are not aware of any customers who suspect their water from the Cooktown Reticulated Water Supply may in some way be associated with an illness or sickness they are experiencing.

Discoloured water

Cook Shire Council had not had any Discoloured water incidents / complaints from the Cooktown Reticulated Water Supply in this reporting period

Taste and odour

Cook Shire Council had not had any Taste & Odour water incidents / complaints for the Cooktown Reticulated Water Supply in this reporting period.

7. Findings and recommendations of the DWQMP auditor

Cook Shire Council was not required to conduct a regular audit of the approved DWQMP during the current reporting period, 2015/2016

The first regular audit of Cook Shire’s DWQMP’s must be conducted by 30th June 2017

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

Cook Shire Council's first review of the DWQMP's was completed prior to 31st March 2016.

Michael Lawrence was engaged through Blich Tanner to conduct the first review, in conjunction with Cook Shire Officers. Michael is highly qualified and experienced to perform these reviews, which in our case was quite extensive with some major changes to the original plan

The revised plans were submitted to the Regulator on 26/4/2016.

A notification of approval of the "As submitted" plan was received on the 3/8/2016

Appendix A – Summary of compliance with water quality criteria

Cook Shire Council has a Water sampling Schedule which shows which samples are to be collected and sent off for analysis on a weekly basis. This is broken up into the 4 water Schemes. The Coen operator is responsible for the collection and dispatch of all the Coen Sampling, whilst the Cooktown Reticulation team is responsible for the collection and dispatch of all the Cooktown, Lakeland and Laura Samples. The Annan Treatment plant operators collect and dispatch the Raw and Final Treated water sampling from the Treatment plant

Verification monitoring has generally been carried out as per the stated program; some samples have had to be collected on the week before, or after, the dates in the Water Sampling Schedule, due to operational issues / commitments

Being in a remote location, the nearest NATA laboratories are located in Cairns which is over 300km from Cooktown, this has presented various challenges over the years in getting samples to the laboratory.

In the past samples collected have:

- Been taken to the airport only to be told that the flight was cancelled (This seriously affects bacteriological samples)
- Courier company in Cairns fails to pick up the samples
- Courier company in Cairns picks up samples but fails to deliver on time
- Airline or Courier Company completely loses esky containing water samples

So despite our best intentions, not all samples that are collected get to be analysed due to reasons beyond our control. This becomes a huge inconvenience and cost to council to have to re-sample particularly from the even more remote schemes of Lakeland and Laura

Verification monitoring is a tool to verify that the water we are producing and supplying to consumers is a Safe drinking water and that it complies with the ADWG's

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9. Verification Monitoring Results

**Table 1.4 - Verification monitoring results - Physical Chemical (Analysed by NATA Lab and Cook Shire (Annan Lab) (Raw Water)
Sample Period 1/7/2015 - 30/6/2016**

Scheme component	Parameter Physical / Chemical	Units	Total No. samples collected	Analysed by NATA Lab (SGS)			Analysed by CSC Annan Lab			Comments
				Min	Max	Average	Min	Max	Average	
Raw Water	Alkalinity as CaCO ₃	mg/L as CaCO ₃	6	8.0	11.0	8.7	7.0	12.0	10.7	Cook Shires Annan Lab results are quite close to NATA Lab results
	Colour Apparent	HU	6	28	318	79.8	15	70	35	Cook Shires Annan Lab results are not as close to NATA Lab results
	Conductivity @ 25°C	uS/cm	6	56	76	66.8	60.4	80.6	71.5	Cook Shires Annan Lab results are quite close to NATA Lab results
	Fluoride, by ISE	mg/L	6	0.04	0.07	0.05	0.05	0.07	0.06	Cook Shires Annan Lab results are quite close to NATA Lab results
	pH	pH units	6	6.9	7.1	7.0	6.1	7.0	6.5	Cook Shires Annan Lab results are quite close to NATA Lab results
	TDS	mg/L	6	33	46	39.5	41	51.4	46.3	Cook Shires Annan Lab results are quite close to NATA Lab results
	Total Hardness	mg/L as CaCO ₃	6	7	11	9.0	5	12	8	Cook Shires Annan Lab results are quite close to NATA Lab results
	Turbidity	NTU	6	1.6	37	7.7	1.6	36	7.8	Cook Shires Annan Lab results are quite close to NATA Lab results

Cook Shires Annan Lab is now using a Spectrophotometer for determining Colour concentrations

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Table 1.5 - Verification monitoring results - Physical Chemical (Analysed by NATA Lab and Cook Shire (Annan Lab) (Final Water)

Sample Period 1/7/2015 - 30/6/2016

Scheme component	Parameter Physical / Chemical	Units	Total No. samples collected	Analysed by NATA Lab (SGS)			Analysed by CSC Annan Lab			Comments
				Min	Max	Average	Min	Max	Average	
Final Water	Alkalinity as CaCO ₃	mg/L as CaCO ₃	12	11	55	42.9	40	54	46.5	Cook Shires Annan Lab results are close to NATA Lab results except the Min Value
	Colour Apparent	HU	12	<5.0	5	<5	0	3.0	0.6	Cook Shires Annan Lab results are close to NATA Lab results
	Conductivity @ 25°C	uS/cm	12	100	170	150	152.6	183.9	172.2	Cook Shires Annan Lab results are not as close to NATA Lab results
	Fluoride, by ISE	mg/L	12	0.64	0.75	0.69	0.63	0.75	0.69	Cook Shires Annan Lab results are quite close to NATA Lab results
	pH	pH units	12	7.1	7.8	7.5	6.6	7.1	6.8	Cook Shires Annan Lab results are not as close to NATA Lab results
	TDS	mg/L	12	60	100	89.8	94	119.3	105.9	Cook Shires Annan Lab results are not as close to NATA Lab results
	Total Hardness	mg/L as CaCO ₃	12	14	53	43.5	38	52	45	Cook Shires Annan Lab results are close to NATA Lab results except the Min Value
	Turbidity	NTU	12	<0.5	0.7	<0.5	0.10	0.5	0.2	Cook Shires Annan Lab results are quite close to NATA Lab results

Cook Shire has now refined its method of verification sampling, post this sample period a single larger sample is collected, split in half with Cook Shire analysing one half whilst the other half is sent off to a NATA Lab for analysis. This method ensures we are comparing the same water sample. This method was not used in the above sample period.

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Table 1.6 Summary of Treated Water Metals – Sampled from: Cooktown Treatment Plant, Analysed by: SGS - Cairns (NATA Certified)

Sample Period 1/7/2015 - 30/6/2016

Metals

Parameter	Unit	No of Samples collected	Summary of Results			ADWQ Guidelines Value (2011)	No of Samples exceeding ADWG	
			Max. Value	Min. Value	Avg. Value		Health	Aesthetic
Arsenic	mg/L	3	<0.003	<0.003	<0.003	0.01-mg/L	0	-
Barium	mg/L	3	0.007	0.005	0.006	< 2 - mg/L	0	-
Beryllium	mg/L	3	<0.0001	<0.0001	<0.0001	< 0.006 - mg/L	0	-
Cadmium	mg/L	3	<0.0001	<0.0001	<0.0001	< 0.002 - mg/L	0	-
Chromium	mg/L	3	<0.001	<0.001	<0.001	< 0.05 - mg/L	0	-
Cobalt	mg/L	3	<0.001	<0.001	<0.001	-	-	-
Copper	mg/L	3	<0.001	<0.001	<0.001	< 2 - mg/L	0	0
Iron	mg/L	3	<0.005	<0.005	<0.005	< 0.3 - mg/L	-	0
Lead	mg/L	3	<0.001	<0.001	<0.001	< 0.01 - mg/L	0	-
Manganese	mg/L	3	0.019	0.005	0.010	< 0.1 - mg/L	0	0
Mercury	mg/L	3	<0.00005	<0.00005	<0.00005	< 0.001 -mg/L	0	-
Nickel	mg/L	3	<0.001	<0.001	<0.001	< 0.02 - mg/L	0	-
Selenium	mg/L	3	<0.003	<0.003	<0.003	< 0.01 - mg/L	0	-
Vanadium	mg/L	3	0.005	0.001	0.0037	-	-	-
Zinc	mg/L	3	<0.005	<0.005	<0.005	< 3.0 - mg/L	-	0

* - Indicates no guideline value set for this parameter

Samples collected from set sample points throughout the Reticulation including high and low flow areas.

Each month samples are collected from 3 locations, systematically rotated to ensure all sample points are captured

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**Table 1.7 - Verification monitoring results Coliforms / E.coli – Cooktown Reticulation & Treatment Plant (Analysed by NATA Lab and Cook Shire (Annan Lab)
Sample Period 1/7/2015 - 30/6/2016**

Scheme component	Parameter Physical / Chemical	Units	Total No. samples collected	Analysed by CSC Annan Lab		Analysed by NATA Lab		Comments
				No. of samples in which parameter was detected	No. of samples exceeding water quality criteria	No. of samples in which parameter was detected	No. of samples exceeding water quality criteria	
Cooktown Reticulation	Coliforms	MPN / 100 ml	12	0	0	0	0	Cook Shires Annan Lab results are the same as the NATA Lab results
	E.coli		12	0	0	0	0	
Annan T/Plant (Final Water)	Coliforms		4	0	0	0	0	
	E.coli		4	0	0	0	0	

Analysed by CSC at the Annan T/Plant Lab. and SGS Cairns

**Table 1.8 - Verification monitoring results – (Fluoride) Cooktown Reticulation & Treatment Plant (Analysed by NATA Lab and Cook Shire (Annan Lab)
Sample Period 1/7/2015 - 30/6/2016**

Scheme component	Parameter Physical / Chemical	Units	Total No. samples collected	Analysed by CSC Annan Lab			Analysed by NATA Lab			Comments
				Min	Max	Avg.	Min	Max	Avg.	
Cooktown Reticulation	Fluoride	mg/L	24	0.65	0.84	0.71	0.64	0.76	0.69	Cook Shires Annan Lab results are very close to the NATA Lab results
Annan T/Plant (Final Water)	Fluoride		12	0.64	0.76	0.69	0.61	0.80	0.71	

Analysed by CSC at the Annan T/Plant Lab. and SGS Cairns

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Table 2 - Reticulation *E. coli* verification monitoring - Rolling Average

Drinking water scheme: Cooktown

Year	2014/15											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	16	20	20	16	16	24	16	18	20	16	20	20
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	212	212	210	210	210	218	214	216	220	214	218	222
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

CALCULATE PERCENTAGE USING A TWELVE (12) MONTH 'ROLLING' ANNUAL VALUE

The *Public Health Regulation 2005* (the regulation) 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).

Cooktown's rolling average for *E.coli* compliance is 100%, in every month of the reporting period

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Appendix B – Implementation of the DWQMP Risk Management Improvement Program

Progress in implementing the risk management improvement program

Existing Risk Management Improvement Program with “Status” column added

Scheme Component / Sub-component	Hazard/ Hazardous event	Priority	Action(s)			Target date/s	Progress to Completion	Status
			interim	short-term	long-term			
Sodium Hypochlorite dosing	Only one dosing pump No duty / Standby arrangement	High	Maintain monitoring of Chlorine Residual at Treatment Plant	Maintain a new pump on site at all times and maintain stocks of spare parts	Install a second dosing pump with associated wiring, switchboard alterations and integration into the PLC and SCADA	Short term – Costings June 2014 (Inclusion in 2015-16 Budget) Completion - May 2016	Maintaining the Interim and Short term actions as listed Currently in discussions with the manufacturer for a dual pump dosing skid, have previously had discussions with PLC programmer for integration into existing PLC program and the SCADA.	In Progress – Not Yet Completed
Loss of Mains Power (No power utility network damage)	Periods of loss of mains power	High	Rely on the Ergon Energy Generators located in Cooktown		Purchase of suitable sized generator / investigate alternative power sources	June 2018	Due to 2 Cyclones in 2 years , (the first since 1949) the long term solution to these problems has been bought forward from June 2018. Cook Shire has purchased and installed a permanently mounted generator at the Annan Water Treatment Plant. This generator is sized to supply all the power requirements of the entire plant and will eliminate the reliance on having to obtain, at short notice, an alternative power supply.	Completed
Loss of Mains Power (Due to natural Disaster/s)	Extended periods of No mains Power due to power utilities distribution network severely damaged	High	N.A.	Hire of suitable sized generator if power not available at the Treatment Plant	Purchase of suitable sized generator / installation of alternative power sources	June 2018		Completed
Staff	Loss of Key & Trained Staff	High	Maintain existing recruitment practices	Offer further training within their field to try and encourage employees to develop and attain certification certificates so that positions can be filled from “In House”		On Going	A recent Council “Restructure” saw 3 Water operations staff members with nearly 30 years combined experience, including 2 with Cert 3 in “Water & Wastewater Operations” lost to Redundancy	7 Employees currently undertaking the Cert 3 in “Water & Wastewater Operations” course
Operational & Maintenance Procedures	N.A	Medium	Identify outdated procedures, update and obtain approval and implement	Identify new procedures needed, develop and obtain approval and implement		Dec 2016- Ongoing	Some procedures have been developed, but still more are required	CSC Recently rolled out the new SafePlan throughout the Shire

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Appendix C – Implementation of the 2016/17 Budgeted Capital Works Improvement Program

Progress in implementing the 2016/17 Budget Capital Works improvement program

Capital Works Item	Priority	Completion Target Date	Progress to Completion
Replace Annan Clean Water Reservoir Galvanised Ladders & Cage with 316 Stainless Steel	High	Completion - June 2017	Started, not yet Completed
Replace Cooktown HL Clean Water Reservoir's Galvanised Ladders & Cage with 316 Stainless Steel	High.	Completion - June 2017	Started, not yet Completed
Replace 80mm AC water main in Walker St., with 100mm uPVC	High	Completion - June 2017	Not yet Started
Switchboard upgrade to increase capacity for future additions	Med	Completion - June 2017	In Progress
Install Auto –Dialler at the Annan T/Plant with associated Alarming	High	Completion - June 2017	In Progress
Replace Sedimentation Tank Shade Sail	Med.	Completion - June 2017	Not yet Started
Valve and Fire Hydrant replacement of aging infrastructure	Med.	Completion - June 2017	Started, not yet Completed