

# **Drinking Water Quality Management Plan Report**

Yarrabah Aboriginal Shire Council

**SPID: 152**

2017 - 2018

This report has been prepared in accordance with the Drinking Water Quality Management Plan Report Guidance Note.

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# 1 Introduction

This is the Drinking Water Quality Management Plan (DWQMP) report for Yarrabah Aboriginal Shire Council (YASC) for the financial year 2017-18.

YASC is a registered service provider with identification (SPID) number 152. YASC is operating under an approved DWQMP to ensure consistent supply of safe quality drinking water in order to protect public health. This is done through proactive identification and minimisation of public health related risks associated with drinking water.

This DWQMP report includes:

- the activities undertaken over the financial year in operating our drinking water service
- drinking water quality summary
- summary of our performance in implementing our approved DWQMP

This report is submitted to the Regulator to fulfil our regulatory requirement and is also made available to our customers through our website or for inspection upon request at council office.

## 2 Summary of scheme/s operated

Yarrabah potable water is sourced from 2 bores located on Bukki Road. The treatment comprises of disinfection and pH balancing.

The potable water is distributed through reticulated delivery mains as shown on the network plan (attachment 1).

YASC has future plans for raw water to again be sourced from the weir located on Reeves Creek. This requires further investigations into turbidity monitoring and shut off before implementation.

**Table 1 – Summary of schemes**

	<i>Water Source</i>	<i>Treatment processes</i>	<i>Treatment capacity</i>	<i>Town supplied</i>
Yarrabah	Bore #5 Bore #6	Chlorination disinfection and pH correction	1.7ML/d	Yarrabah township

### **3 DWQMP implementation**

The actions undertaken to implement the DWQMP are summarised below.

The actions undertaken to implement the DWQMP are summarised below. YASC water and sewerage staff meet every morning to discuss essential service delivery issues, review SCADA trends, and allocated maintenance and repair tasks.

The Verification monitoring used by YASC is to confirm that safe drinking water is delivered to customers and consumers in compliance with the Australian Drinking Water Guidelines and the Public Health Act.

The drinking water supply verification process includes, daily free chlorine testing at six sites in and around the community; weekly potable water sampling for ecoli analysis and quarterly potable water sampling for full analysis at the Cairns Water Laboratory.

Ensuring that operational procedures are carried out appropriately is the responsibility of the operators and the Essential Services Supervisor. Staff members are trained in procedures relevant to their role through induction and on the job training and guidance by the Essential Services Supervisor. It the responsibility of the Essential Services Supervisor to ensure that the procedures are understood and implemented by operational staff. To ensure staff understand and adhere to procedures, the Essential Services Supervisor undertakes visits to inspect work daily. The site inspections are done to check and ensure that procedures are been followed and to identify any emerging issues.

The actions undertaken to implement the risk management improvement program are discussed in Table 2.

**Table 2 – Risk management improvement program implementation status**

Scheme name	Ref	Component	Improvement actions	Target date	Actions taken to date	Status and revised target date	Responsible Officer / Position
Yarrabah		Source - Bore	Commission PB4a as additional water source. (Future demand – sustainability)	June 2019		Seeking funding. This is a long term goal. Amended Date: June 2022	EM- W&I
		Source – Reeves Creek	Investigate possibility of raw water turbidity testing and setting levels at which supply is ceased with respect to rainfall events.	Dec 2017	Automated valve has been installed. Turbidity monitoring and shut off is to be investigated and installed prior to use.	Seeking funding. Amended Date: June 2021	EM- W&I
		Disinfection	Investigate possibility for periodical testing of THM to re-assess risk level.	Dec 2017	To be reviewed prior to Reeves Creek is brought back on line.	Seeking funding. Amended Date: June 2021	Essential Services Supervisor
		Disinfection	Connect pumps to SCADA	Dec 2012		Completed	Essential Services Supervisor
		Reticulation and Distribution	Change AC in reticulation network to PVC.	Dec 2018	Majority of AC has been replaced. 2 sections remain.	Underway (80% complete)	EM- W&I
		Whole of Service	Investigate possibility of existing staff undertaking formal training	June 2018	Training completed by 3 existing staff	Completed	CEO
		Whole of Service	Investigate possibility of having an administrative assistant for data recording and storing in electronic format.	June 2013	Administration staff at Works Department provide support.	Ongoing	CEO EM- W&I
		Whole of Service	Investigate possibility of having at least 2 dedicated vehicles for use by Essential Services team.	June 2103	2 vehicles provided	Completed	CEO EM- W&I
		Whole of Service	Essential Services Supervisor needs a laptop with SCADA	Dec 2012	Dedicated desktop has been installed	Completed	CEO EM- W&I

Scheme name	Ref	Component	Improvement actions	Target date	Actions taken to date	Status and revised target date	Responsible Officer / Position
			installed for remote operations.				
		Whole of Service	Install flow meters at the water treatment plant	June 2013		Completed	CEO EM- W&I
		Whole of Service	Develop and maintain a complaints register specifically for the customer service standards.	June 2017	YASC has a complaints process	Completed	EM- W&I
		Whole of Service	Development of written operating procedures as identified in the operation and maintenance procedures section.	Dec 2017	SOP's need to be reviewed and amended.	Previously completed. Has been identified as still requiring additional review. Amended Date: March 2020	Essential Services Supervisor

## 4 Verification monitoring - water quality information and summary

This section discusses the compliance with the water quality criteria.

Operational Monitoring is carried out by YASC staff through a planned sequence of measurements and observations to ensure that the system is operating within the set performance limits and the process elements are controlled. Verification monitoring is carried out by Cairns Water Laboratory.

Note: Analysing authority: Cairns Water Lab – NATA accredited

**Table 3 – Drinking water quality performance - verification monitoring**

Scheme name	Parameter	No. of samples required to be collected (as per the approved DWQMP)	No. of samples actually collected and tested	Water quality criteria (i.e ADWG health guideline value)	No. of non compliant samples	Comments
Yarrabah	E. coli	52 <sup>1</sup>	305 <sup>2</sup>	< 1 cfu/100mL	0	
	Heterotrophic plate counts (HPC)	12	43	NA	9	Non-compliant samples were not reported to the regulator as it was discovered during review of water quality data for this report.
	pH	52	39	6.5-8.0 (not of health concern)	0	
	Turbidity	12	58	5 NTU (not of health concern)	4	Non-compliant samples were not reported to the regulator as it was discovered during review of water quality data for this report.
	Fluoride	12	0	1.5 mg/L	NA <sup>3</sup>	This item is to be updated in the DWQMP.

<sup>1</sup> 1 test per week at each sampling point

<sup>2</sup> Period of testing for the financial year 2017 – 2018 was 5/7/2017 – 28/6/2018

<sup>3</sup> YASC no longer doses potable water supply for Fluoride



**Table 4. E. coli compliance with annual value**

**Drinking water scheme:** Yarrabah

Year	2017 – 2018											
	Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
No. of samples collected	24	30	19	25	30	18	30	25	25	24	30	25
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	333	330	330	325	326	326	326	338	309	304	304	304
No. of failures for previous 12 month period	1	0	0	0	0	0	0	9	9	9	9	9
% of samples that comply	99.7%	100%	100%	100%	100%	100%	100%	97.3%	97.1%	97.04%	97.04%	97.04%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	NO

## 5 Incidents reported to the regulator

The incidents reported to the regulator and management actions undertaken over the financial year are provided in this section.

Nil incidents were reported to the regulator for the 2017-2018 financial year.

**Table 5 – Incidents reported to the regulator**

Incident date	Scheme / location	Parameter / issue	Preventive actions

## 6 Customer complaints

Yarrabah Aboriginal 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 6: Customer complaints about water quality (per 1000 customers)**

Scheme	Health concern	Dirty water	Taste and odour	Pressure
Yarrabah	0	0	0	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

### 6.1 Suspected Illness

Whilst no complaints have been received, often comments are made within the community. When there is a perception that customers suspect their water may be associated with an illness they are experiencing, Council investigates each instance. Typically, by testing the closest reticulation sampling point for the presence of *E. coli*.

Yarrabah Aboriginal Shire Council staff maintain close communication with both Qld Health staff and Health Clinic staff regarding comments made by patients where illness is perceived to be linked to water quality.

2017/18 there were NIL confirmed cases of illness arising from the water supply system.

### 6.2 Discoloured water

NIL customer complaints were received.

On occasion comments will be made from residents that they have discoloured water coming from the taps inside the house.

All instances were investigated by YASC staff and where warranted; the water mains with that area were flushed.

### 6.3 Taste and odour

NIL customer complaints were received.

### 6.4 Pressure

There was one (1) complaint related to low water pressure. The low pressure was found to be the residents' responsibility (residential side of the water meter).

## 7 DWQMP audit findings

In 2017, Viridis Consultants Pty Ltd (Viridis) was engaged by the Far North Queensland Regional Organisation of Councils (FNQROC), to undertake the first regular (external) audit of Yarrabah Aboriginal Shire Council's (YASC), service provider identification number 152, Drinking Water Quality Management Plan (DWQMP).

The objectives of the audit were to:

- undertake an audit of YASC's DWQMP to fulfil the requirements of the Act and approval notice
- conduct the audit in line with the *Drinking Water Quality Management Plan Review and Audit Guidelines 2013*.

A summary of the auditor's findings included:

YASC demonstrated an acceptable level of compliance with the audit area of plan compliance.

- There was six (6) compliances identified.
- There was one (1) major non-compliance identified relating to the relevance of the plan.
  - the schematic in the DWQMP is out dated
  - the risk management measures for the scheme needs to be reviewed to ensure protection of public health during dirty water events
- There were four (4) minor non-compliances identified, relating to the accuracy of data, implementation of procedures, implementation of monitoring plan and implementation of the risk management improvement program.
  - The results for *E. coli* (rolling annual value spreadsheet) in the annual report was not accurate.
  - The turbidity process control plan (procedure), which is part of the approved DWQMP, has not been followed as raw water turbidity is not tested (there is no turbidity meter to undertake the test).
  - The operational monitoring plan was not implemented as described in the approved plan and the status of the improvement actions need to be reviewed for accuracy.

A summary of the auditor's recommendations from the audit are as follows:

- Ensure that the data provided in the DWQMP annual report is accurate.
- Ensure that procedures associated with the DWQMP are implemented as documented, for example, the turbidity process control plan.
- The operational and verification monitoring plans should be reviewed, including parameters, locations, testing method and targets/limits.
- Ensure that the progress of the improvement actions is accurately captured and reported.
- Review and update the schematic in the DWQMP for currency and clarity.
- The auto shutdown for the Reeves Creek source should be linked also to raw water quality data, for example, shut down at turbidity >5 NTU or a validated turbidity value.
- Undertake routine raw water testing as part of operational monitoring to guide process control and risk management actions (e.g. raw water turbidity and pH), using grab and/or online analysers. Outline these in the operational monitoring plan.
- Establish CCPs with appropriate targets and limits to strengthen process control, for example, chlorination process will be a CCP. When the CCPs are established, investigate the option to set the CCP limit set points into SCADA, with alarms, notifications, shut downs (as possible) and trend charts.
- Purchase a potable turbidity meter and ensure that the turbidity control process plan is implemented, including testing of raw water from the bores.

- The risk from disinfection by-products (DBPs) for the scheme should be assessed and quantified through testing.

The actions undertaken to address the audit recommendations are outlined in Table 7.

**Table 7 – DWQMP audit findings and status**

Item	Recommendation or OFI	Action	Status of actions	Responsible Officer / Position
<b>Relevance of the plan – Service description and details of infrastructure reflect current circumstances</b>	<b>OFI</b>	Test the unfiltered raw water from Reeves Creek for <i>E. coli</i> and total coliform to establish baseline for bacterial load.	Not started. This is programmed for mid 2019.	Essential Service Supervisor
	<b>Recommendations</b>	YASC to complete amended DWQMP and submit to DEWS <ul style="list-style-type: none"> <li>▪ Review and update the schematic in the DWQMP for currency and clarity.</li> <li>▪ Reeves Creek Intake to be included in SCADA</li> </ul>	Ongoing	Executive Manager Works & Infrastructure
		Review & amend operational procedures <ul style="list-style-type: none"> <li>▪ Update testing checklist and data recording sheet</li> <li>▪ Link auto shutdown for the Reeves Creek source to raw water quality data</li> </ul>	Ongoing	Essential Service Supervisor
		Establish critical control points (CCPs) with appropriate targets and limits to strengthen process control, for example, chlorination process will be a CCP.	Ongoing. Telemetry is being upgraded.	Essential Service Supervisor
		Investigate the option to set the CCP limit set points into SCADA, with alarms,	Ongoing. Telemetry is being upgraded.	Essential Service Supervisor

Item	Recommendation or OFI	Action	Status of actions	Responsible Officer / Position
		notifications, shut downs (as possible) and trend charts.		
		Update testing checklist and data recording sheet	Ongoing. Telemetry is being upgraded.	Essential Service Supervisor
		Purchase a potable turbidity meter and implement a turbidity control process plan, including testing of raw water from the bores.	Not commenced	Essential Service Supervisor
		Assess the risk from DBPs and quantified through testing.	Not commenced	Essential Service Supervisor
<b>Compliance with the plan – Implementation of operational and maintenance procedures</b>	<b>OFI</b>	<ol style="list-style-type: none"> <li>1. Establish a SOP document register</li> <li>2. Develop a calibration schedule</li> <li>3. Document the reservoir inspection and cleaning program</li> <li>4. Document the chemical procurement, delivery and receipt process to ensure relevant risks are managed</li> </ol>	Ongoing	Essential Service Supervisor
	<b>Recommendation</b>	Review & amend operational procedures	Ongoing	Essential Service Supervisor
<b>Compliance with the plan – Implementation of operational and verification monitoring plan</b>	<b>OFI</b>	<ol style="list-style-type: none"> <li>1. Investigate the process to record all testing data electronically in an in-house excel spreadsheet</li> </ol>	Ongoing	Essential Service Supervisor

Item	Recommendation or OFI	Action	Status of actions	Responsible Officer / Position
		2. Establish adequate QA/QC for the proposed in-house Colilert testing 3. Record results for both total coliforms and E. coli		
	<b>Recommendation</b>	Review and amend operational and verification monitoring plans	Ongoing	Essential Service Supervisor
<b>Compliance with the plan – Implementation of risk management improvement program</b>	<b>OFI</b>	Develop the DWQMP improvement plan as an excel register.	Ongoing	Essential Service Supervisor
	<b>Recommendation</b>	Implement record management – Water Services	Not commenced	Essential Service Supervisor
<b>Accuracy of Monitoring and Performance Data – Verify accuracy of monitoring and performance data supplied to the regulator</b>	<b>OFI</b>	Obtain data for the reporting period from Cairns Water Laboratory	Completed	Executive Manager Works & Infrastructure
	<b>Recommendation</b>	Ensure that the data provided in the DWQMP annual report is accurate.	Completed	Executive Manager Works & Infrastructure
<b>Compliance with the plan – Provisions and conditions in the Approval Notice</b>	<b>OFI</b>	Ensure that the DWQMP annual report is submitted within the required timeframe of 120 business days from the end of the financial year.	Started	Completed
<b>Compliance with the plan – Implementation of preventive measures described in the plan</b>	<b>OFI</b>	Ensure that all preventive measures which control significant risks have documented processes and procedures.	Ongoing	Essential Service Supervisor



Item	Recommendation or OFI	Action	Status of actions	Responsible Officer / Position
<b>Compliance with the plan – Implementation of process for managing incidents and emergencies</b>	OFI	<ol style="list-style-type: none"> <li>1. Develop flow charts for incident management</li> <li>2. Review the incident and emergency management process</li> </ol>	Ongoing	Essential Service Supervisor
<b>Compliance with the plan – Undertaking reviews at the frequency specified in the Approval Notice</b>	OFI	Maintain records of review discussions undertaken and outcomes, including review team and meeting dates.	Ongoing	Essential Service Supervisor

## APPENDIX A – Summary of compliance with water quality criteria

Drinking water scheme: Yarrabah

Sample Site	Sample Type	Parameter	Units	LOR	Total No. Samples Collected	Min	Average	Max	Laboratory
Aged Persons Hostel	Potable	E. coli	CFU/100mL	<1	50	<1	<1	<1	CRC Laboratory
Aged Persons Hostel	Potable	Heterotrophic Plate Count	CFU/mL	<1	5	<1	0.2	1	CRC Laboratory
Aged Persons Hostel	Potable	Heterotrophic Plate Count	CFU/mL	<10	7	<10	1.4	10	CRC Laboratory
Council Office	Potable	Apparent Colour	Pt/Co units	<1	4	1.4	49.0	100	CRC Laboratory
Council Office	Potable	Calcium	mg/L	<0.20	4	5.2	6.45	7.9	CRC Laboratory
Council Office	Potable	Chloride	mg/L	<0.1	4	18	19.25	20	CRC Laboratory
Council Office	Potable	E. coli	CFU/100mL	<1	4	<1	<1	<1	CRC Laboratory
Council Office	Potable	Electrical Conductance	µS/cm	<1	4	160	167.5	170	CRC Laboratory
Council Office	Potable	Fluoride	mg/L	<0.02	4	0.3	0.3	0.34	CRC Laboratory
Council Office	Potable	Heterotrophic Plate Count	CFU/mL	<1	1	<1	<1	<1	CRC Laboratory
Council Office	Potable	Heterotrophic Plate Count	CFU/mL	<10	3	<10	13.3	40	CRC Laboratory
Council Office	Potable	ICPMS Copper	mg/L	<0.001	3	0.036	0.0	0.053	CRC Laboratory
Council Office	Potable	ICPMS Iron	mg/L	<0.01	3	0.117	3.1	4.89	CRC Laboratory
Council Office	Potable	ICPMS Lead	mg/L	<0.001	3	0.002	0.0	0.003	CRC Laboratory
Council Office	Potable	ICPMS Manganese	mg/L	<0.001	3	0.006	0.1	0.271	CRC Laboratory
Council Office	Potable	ICPOES Silicon	mg/ L SiO2	<0.10	3	56	57.0	59	CRC Laboratory
Council Office	Potable	ICPOES Silicon	mg/ L SiO2	<0.2	1	47	47.0	47	CRC Laboratory
Council Office	Potable	Magnesium	mg/L	<0.10	3	1	1.5	2	CRC Laboratory
Council Office	Potable	Magnesium	mg/L	<0.03	1	1.6	1.6	1.6	CRC Laboratory

Council Office	Potable	pH	.	<0.1	4	7.1	7.3	7.4	CRC Laboratory
Council Office	Potable	Potassium	mg/L	<0.10	3	3.7	3.9	4	CRC Laboratory
Council Office	Potable	Potassium	mg/L	<0.015	1	4.1	4.1	4.1	CRC Laboratory
Council Office	Potable	Sodium	mg/L	<1	3	22	23.7	25	CRC Laboratory
Council Office	Potable	Sodium	mg/L	<0.05	1	23	23	23	CRC Laboratory
Council Office	Potable	Sulphate	mg/L	<1	4	2.2	2.5	3	CRC Laboratory
Council Office	Potable	Total Alkalinity	mg CaCO3 / L	<1.5	4	44	47.5	52	CRC Laboratory
Council Office	Potable	Total coliforms	CFU/100mL	<1	4	<1	<1	<1	CRC Laboratory
Council Office	Potable	Total Dissolved Salts (calc)	mg/L	<1	4	130	137.5	140	CRC Laboratory
Council Office	Potable	Total Hardness	mg CaCO3 / L	<1	4	21	22.3	25	CRC Laboratory
Council Office	Potable	True Colour	Pt/Co units	<1	2	16	34.5	53	CRC Laboratory
Council Office	Potable	Turbidity	NTU	<0.1	4	<0.1	3.9	9.5	CRC Laboratory
Djenghi	Potable	E. coli	CFU/100mL	<1	50	<1	<1	<1	CRC Laboratory
Djenghi	Potable	Turbidity	NTU	<0.1	11	<0.1	0.2	0.6	CRC Laboratory
Jilgi	Potable	E. coli	CFU/100mL	<1	50	<1	<1	<1	CRC Laboratory
Jilgi	Potable	pH	.	<0.1	11	6.7	7.1	7.3	CRC Laboratory
Police Station	Potable	E. coli	CFU/100mL	<1	50	<1	<1	<1	CRC Laboratory
Police Station	Potable	6:2 Fluorotelomer sulphonate (6:2 FTS)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Police Station	Potable	8:2 Fluorotelomer sulphonate (8:2 FTS)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Police Station	Potable	N-Et-FOSA	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Police Station	Potable	N-Et-FOSE	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Police Station	Potable	N-Me-FOSA	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Police Station	Potable	N-Me-FOSE	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Police Station	Potable	Perfluorobutane sulphonate (PFBS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory

Police Station	Potable	Perfluorodecane sulphonate (PFDcS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluorodecanoic acid (PFDcA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluorododecanoic acid (PFDcA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluoroheptanoic acid (PFHpA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluorohexane sulphonate (PFHxS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluorohexanoic acid (PFHxA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluorononanoic acid (PFNA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluorooctane sulphonamide (PFOSA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluorooctane sulphonate (PFOS)	µg/L	nil	1	<0.01	<0.01	<0.01	CRC Laboratory
Police Station	Potable	Perfluorooctanoic acid (PFOA)	µg/L	nil	1	<0.01	<0.01	<0.01	CRC Laboratory
Police Station	Potable	Perfluorotetradecanoic acid (PFTeA)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Police Station	Potable	Perfluorotridecanoic acid (PFTriA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Police Station	Potable	Perfluoroundecanoic acid (PFUnA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	E. coli	CFU/100mL	<1	50	<1	<1	<1	CRC Laboratory
Primary School	Potable	Heterotrophic Plate Count	CFU/mL	<1	5	<1	0.2	1	CRC Laboratory
Primary School	Potable	Heterotrophic Plate Count	CFU/mL	<10	7	<10	<10	<10	CRC Laboratory
Primary School	Potable	6:2 Fluorotelomer sulphonate (6:2 FTS)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory

Primary School	Potable	8:2 Fluorotelomer sulphonate (8:2 FTS)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Primary School	Potable	N-Et-FOSA	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Primary School	Potable	N-Et-FOSE	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Primary School	Potable	N-Me-FOSA	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Primary School	Potable	N-Me-FOSE	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Primary School	Potable	Perfluorobutane sulphonate (PFBS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluorodecane sulphonate (PFDCS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluorodecanoic acid (PFDCa)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluorododecanoic acid (PFDoA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluoroheptanoic acid (PFHpA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluorohexane sulphonate (PFHxS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluorohexanoic acid (PFHxA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluorononanoic acid (PFNA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluorooctane sulphonamide (PFOSA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluorooctane sulphonate (PFOS)	µg/L	nil	1	<0.01	<0.01	<0.01	CRC Laboratory
Primary School	Potable	Perfluorooctanoic acid (PFOA)	µg/L	nil	1	<0.01	<0.01	<0.01	CRC Laboratory
Primary School	Potable	Perfluorotetradecanoic acid (PFTeA)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory

Primary School	Potable	Perfluorotridecanoic acid (PFTriA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Primary School	Potable	Perfluoroundecanoic acid (PFUnA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Work Office	Potable	Calcium	mg/L	<0.20	1	3	3	3	CRC Laboratory
Work Office	Potable	Magnesium	mg/L	<0.10	1	2	2	2	CRC Laboratory
Work Office	Potable	Total Hardness	mg CaCO3 / L	<1	1	16	16	16	CRC Laboratory
Work Office	Potable	E. coli	CFU/100mL	<1	1	<1	<1	<1	CRC Laboratory
Workshop Street	Potable	Apparent Colour	Pt/Co units	<1	11	<1	3.9	11	CRC Laboratory
Workshop Street	Potable	E. coli	CFU/100mL	<1	50	<1	<1	<1	CRC Laboratory
Workshop Street	Potable	pH	.	<0.1	11	6.7	7.1	7.5	CRC Laboratory
Workshop Street	Potable	6:2 Fluorotelomer sulphonate (6:2 FTS)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Workshop Street	Potable	8:2 Fluorotelomer sulphonate (8:2 FTS)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Workshop Street	Potable	N-Et-FOSA	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Workshop Street	Potable	N-Et-FOSE	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Workshop Street	Potable	N-Me-FOSA	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Workshop Street	Potable	N-Me-FOSE	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Workshop Street	Potable	Perfluorobutane sulphonate (PFBS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluorodecane sulphonate (PFDCS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluorodecanoic acid (PFDcA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluorododecanoic acid (PFDdA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluoroheptanoic acid (PFHpA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory

Workshop Street	Potable	Perfluorohexane sulphonate (PFHxS)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluorohexanoic acid (PFHxA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluorononanoic acid (PFNA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluorooctane sulphonamide (PFOSA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluorooctane sulphonate (PFOS)	µg/L	nil	1	<0.01	<0.01	<0.01	CRC Laboratory
Workshop Street	Potable	Perfluorooctanoic acid (PFOA)	µg/L	nil	1	<0.01	<0.01	<0.01	CRC Laboratory
Workshop Street	Potable	Perfluorotetradecanoic acid (PFTeA)	µg/L	nil	1	<0.05	<0.05	<0.05	CRC Laboratory
Workshop Street	Potable	Perfluorotridecanoic acid (PFTriA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory
Workshop Street	Potable	Perfluoroundecanoic acid (PFUnA)	µg/L	nil	1	<0.02	<0.02	<0.02	CRC Laboratory