



**BLIGH
TANNER**

Drinking Water Quality Management Plan Audit Report

Diamantina Shire Council

Date: 12 APRIL 2022

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BLIGH TANNER

+ DOCUMENT

Drinking Water Quality Management Plan Audit Report

+ JOB NUMBER

2021.0821 RAPADWSA Audits

+ WQMS AUDITOR

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Exemplar Global Certification #129230

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+ WATER SERVICE PROVIDER

Diamantina Shire Council

+ PROVIDER CONTACT

Infrastructure Manager

Executive Summary

Diamantina Shire Council is a drinking water service provider, providing potable water services across the Birdsville and Bedourie drinking water schemes. Bligh Tanner was engaged to undertake the regular audit of Diamantina Shire Councils Drinking Water Quality Management Plan (DWQMP) as required under the DWQMP approval. The audit was completed in March 2022.

The scope of the DWQMP audit requires the auditor to:

- + verify whether or not the monitoring and performance data given to the regulator under the plan is accurate,
- + assess the provider's compliance with the plan and its conditions; and
- + assess the plan's relevance to the water service

The audit template and this report were structured to align with the 12 element 'Framework for Management of Drinking Water Quality' as outlined in the Australian Drinking Water Guidelines 2011 (NHMRC). The specific requirements above are embedded into the relevant sections of the audit. For each audit element, findings were graded either as Conforms, Improvement Opportunity or Non-conformance.

Both schemes were visited during the course of the on-site component of the audit, and this report documents the findings.

Audit Findings

The audit has identified that the schemes are generally low risk, and that the operational actions are generally sufficient to ensure a safe drinking water supply. However, the audit needs to assess compliance with the DWQMP. As a result, a number of improvement actions and a few non-conformances have been identified.

The non conformances with the DWQMP are as follows:

- + Reservoir inspections are not undertaken weekly as stated
- + Not all of the procedures stated in the plan are available and/or used
- + Operational monitoring is not undertaken exactly as stated.
- + Verification monitoring is not undertaken exactly as stated.
- + Records of operational monitoring are not kept.
- + Improvement items stated in the DWQMP have not been completed in the stated timeframes.

Improvement actions have been identified, and in some cases these are simply minor changes to the DWQMP, and for others, they recommend additional procedures to support the implementation of the plan. For example, in Birdsville, it is recommended that a specific response procedure is developed for resolving microbial contamination using the heat of the bore water to sterilise the scheme. If this is considered by council to be appropriate, it will be important to ensure that the community is simultaneously made aware of the increased water temperature that may come out of their taps.

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Drinking Water Quality Management Plan Audit

Context

Diamantina Shire Council is a remote council in Central West Queensland bordering South Australia to the south, and the Northern Territory to the west. The council area is the second largest in the State, but has a population of around 300. It is a remote Council with limited resources (including human resources).

Diamantina Shire Council is a drinking water service provider, operating drinking water schemes in Birdsville and Bedourie. Diamantina Shire Council currently operates under an approved Drinking Water Quality Management Plan (DWQMP). The plan describes that the drinking water sources are deep artesian bores that flow under pressure to the communities. In Birdsville, the source water is very hot (99°C).

As these schemes are low risk, the DWQMP is relatively simple. Nonetheless, the audit is required to assess the implementation of the actions stated within the plan. The audit was conducted on site by Michael Lawrence on 14 March 2022.

Audit requirements:

Section 108 of the Act prescribes the requirements of the auditor, the scope of the audit and the content of the audit report. Under these requirements, the auditor is required to:

- + verify whether or not the monitoring and performance data given to the regulator under the plan is accurate
- + assess the provider's compliance with the plan and its conditions; and
- + assess the plan's relevance to the water service

The audit report must also be prepared in accordance with any guidelines made by the regulator. At the time of the audit, the applicable audit guideline was the '*Drinking Water Quality Management Plan Review and Audit Guideline June 2019*' (State of Queensland, 2019). This document provides further guidance around specific areas on which the auditor must focus.

Audit plan and details

Details of the audit are provided below.

Aspect	Details
Field audit dates	14 March 2022
Schemes audited	Birdsville and Bedourie
DWQMP versions within audit scope	DWQMP September 2016, (approved 2 Mar 2017) DWQMP June 2018, (approved 6/7/2018) DWQMP December 2020, (amendment by agreement 12/2/2021) DWQMP March 2022 (approved)

Aspect	Details
Completion of audit date	Statutory Declaration Signed Date

Date / Location	Time	Focus
7 March 2022	10:00am	Auditor Opening Meeting - Teams
15 March 2022	8 am - 10:30 am	Onsite audit Birdsville
	11:30 pm - 3:00 pm	On site audit Bedourie.
		Closing meeting.

Audits, by their nature often draw the focus to items that are not met as required. However, it is important to note that on the evidence audited, the water quality provided to customers meets the water quality criteria, except for fluoride in Bedourie. This statement is justified on the basis of in house *E. coli* monitoring that has for demonstrated good compliance, supported by a 6 monthly external verification monitoring program.

Audit Requirement #1: Verification of monitoring and performance data

Verification data was compared to the stated monitoring frequency and the results compared between annual reports and the data provided via the external consultant. The annual reports reflect the water quality data that is tested, and have indicated in the past that there are missed samples.

Audit Requirement #2: Compliance with the DWQMP

The assessment of the compliance with the DWQMP was undertaken by determining whether the ADWG requirements as stated in the DWQMP have been met. Where a commitment is made in the plan, and confirmed by evidence as being met in practice, these criteria are assessed as "Conforms". If an item was stated in the plan, but was evidently not met in practice, these criteria were assessed as "Non conformance". Non conformances with the DWQMP may increase the potential for a public health risk to arise. There are non-conformances with the plan that are identified in the next section of this report.

In instances where the ADWG best practice guidance was not met, this was assessed as either N/A (if no commitment is made in the DWQMP of the component is not required under the Act) or as an improvement opportunity where some commitment was made in the DWQMP. Improvement opportunities are identified based on the auditor's knowledge of water quality management and reflects his opinion. Council should read these broadly, and as appropriate, respond to the intent of the improvement opportunity, not necessarily the suggested action.

Audit Requirement #3: Compliance with the DWQMP approval conditions

There are 2 standard conditions directly relevant to this requirement.

- + **Condition 1 Water Quality Criteria** - (paraphrased) *the verification monitoring program in the approved DWQMP must be implemented; and any non-compliance with the water quality criteria must be reported*

The verification monitoring program has missed some samples.

- + **Condition 2 Additional Reporting Requirements** - (paraphrased) *an event, or detection of a parameter with no water quality criteria must be reported to the Regulator if you believe or are concerned that public health may be impacted*

There were no events identified by Council or the audit that should have been reported.

Audit Requirement 4: Relevance of the DWQMP

The DWQMP is generally relevant and appropriate. However, the non-conformances identified include actions such as reservoir inspections that are not conducted as stated. Given the main expected route of contamination into the Birdsville scheme is through the high level reservoir (if integrity is not maintained), this represents the most significant issue.

Audit statement

This audit report is a true and accurate reflection of the findings of the audit, and the opinions of the auditor; the audit outcomes are based on the review of sufficient information for the auditor to make an informed decision for each criteria. However, as is the case for any audit, only a portion of all possible information was assessed. As such, components of the audit may have been assessed differently had different information been reviewed.

All staff interviewed during the audit participated willingly, and provided information transparently.

Documents audited

The documents and records provided to the auditor by Diamantina Shire Council and their external consultant are listed below. Additional records were sighted during the site-based component of the audit as per the photographs provided.

- + DSC DWQMP Annual Report 2018-19.pdf
- + DSC DWQMP Annual Report 2019-2020.pdf
- + DSC DWQMP Annual Report 2020-2021.pdf
- + DSC DWQMP Regular Review 2018{2}19 (ID 334964).pdf
- + DSC DWQMP Review 2021 (ID 401979).pdf
- + DSC-DWQMP-Annual-Report-2017-18.pdf
- + Diamantina DWQMP Amendment 2017 (ID 279288).pdf
- + Diamantina DWQMP Amendment 2020 (ID 237171).pdf
- + DSC DWQMP Amendment 2018.pdf
- + DSC DWQMP Amendment 2022 (ID 408933).pdf
- + 20220310 DW_s99(1)(b)_DWQMP_Amendment_Information_Note_for_the_Decision_Diamantina Shire Council.pdf
- + Feb 2021 Notice for the Decision.pdf
- + July 2018 Notice for the Decision.pdf
- Bedourie
- + 1. Copy of Microbiology Sample BD January 2018.xlsx
- + 10. Copy of Microbiology Sample October 2018.xlsx
- + 11. Copy of Microbiology Sample November 2018.xlsx
- + 12. Copy of Microbiology Sample December 2018.xlsx
- + 2. Copy of Microbiology Sample BD February 2018.xlsx
- + 3. Copy of Microbiology Sample BD March 2018.xlsx
- + 4. Copy of Microbiology Sample April 2018.xlsx
- + 5. Copy of Microbiology Sample MAY 2018.xlsx
- + 6. Copy of Microbiology Sample June 2018.xlsx
- + 7. Copy of Microbiology Sample July 2018.xlsx
- + 8. Copy of Microbiology Sample August 2018.xlsx
- + 9. Copy of Microbiology Sample September 2018.xlsx
- + 1. Copy of Microbiology Sample January 2019.xlsx
- + 10. Copy of Microbiology Sample October 2019.xlsx
- + 11. Copy of Microbiology Sample November 2019.xlsx
- + 12. Copy of Microbiology Sample December 2019.xlsx
- + 2. Copy of Microbiology Sample February 2019.xlsx
- + 3. Copy of Microbiology Sample March 2019.xlsx
- + 4. Copy of Microbiology Sample April 2019.xlsx
- + 5. Copy of Microbiology Sample May 2019.xlsx
- + 6. Copy of Microbiology Sample June 2019.xlsx
- + 7. July 2019.xlsx
- + 8. Microbiology Sample August 2019.xlsx

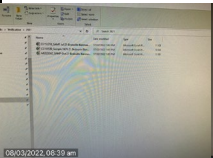
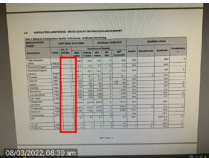
- + 9. Copy of Microbiology Sample September 2019.xlsx
- + 1. Copy of Microbiology Sample Jan 2020.xlsx
- + 12. Copy of Microbiology Sample DECEMBER 2020. xlsx
- + 2. Copy of Microbiology Sample Feb 2020.xlsx
- + 4. Copy of Microbiology Sample April 2020.xlsx
- + 8. Copy of Microbiology Sample August 2020.xlsx
- + Copy of Microbiology Sample June 2020.xlsx
- + Copy of Microbiology Sample March 2020.xlsx
- + Copy of Microbiology Sample May 2020.xlsx
- + Copy of Microbiology Sample november 2020.xlsx
- + Copy of Microbiology Sample OCTOBER 2020.xlsx
- + Copy of Microbiology Sample September 2020.xlsx
- + Copy of Microbiology Sample APRIL 2021.xlsx
- + Copy of Microbiology Sample AUGUST 2021.xlsx
- + Copy of Microbiology Sample FEB 2021.xlsx
- + Copy of Microbiology Sample JANUARY 2021.xlsx
- + Copy of Microbiology Sample JULY 2021.xlsx
- + Copy of Microbiology Sample JUNE 2021.xlsx
- + Copy of Microbiology Sample MARCH 2021.xlsx
- + Copy of Microbiology Sample MAY 2021.xlsx
- + Copy of Microbiology Sample OCTOBER 2021.xlsx
- + Copy of Microbiology Sample SEPTEMBER 2021.xlsx
- + 10. Copy of Microbiology Sample October 2019.xlsx
- + 11. Copy of Microbiology Sample November 2019. xlsx
- + 3. Copy of Microbiology Sample March 2019.xlsx
- + 4. Copy of Microbiology Sample BV April 2019.xlsx
- + 5. Copy of Microbiology Sample BV May 2019.xlsx
- + 6. Copy of Microbiology Sample BV June 2019.xlsx
- + 7. Copy of Microbiology Sample July 2019.xlsx
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- + Copy of Microbiology Sample JANUARY 2021 BV.xlsx
- + Copy of Microbiology Sample JULY 2021 BV.xlsx
- + Copy of Microbiology Sample JUNE 2021 BV.xlsx
- + Copy of Microbiology Sample MARCH 2021 BV.xlsx
- + Copy of Microbiology Sample MAY 2021BV.xlsx
- + Copy of Microbiology Sample OCTOBER 2021 BV.xlsx
- + Copy of Microbiology Sample SEPTEMBER 2021 BV.xlsx
- Verification
- + SE180556_SAMP Jun 18 Birdsville Biannual.XLSX
- + SE187001_SAMP DEC 18 Bedourie Biannual.XLSX

Birdsville

- + CE143639_SAMP DEC 19 Bedourie Biannual .XLSX
- + CE143640_SAMP DEC 19 Bedourie Biannual new Bore.XLSX
- + SE194547_SAMP JUL 19 Bedourie Biannual.XLSX
- + SE194548_SAMP Jul 19 Birdsville Biannual.XLSX
- + CE143894_SAMP JUL 20 Birdsville Biannual.XLSX
- + CE146688_SAMP JUL 20 Bedourie Biannual.XLSX
- + CE146723_SAMP Jun 20 Birdsville Biannual.XLSX
- + CE149045_SAMP NOV 20 Bedourie Biannual.XLSX
- + CE153318_SAMP Jul 21 Birdsville Biannual.XLSX
- + CE155539_Sample NOV 21 Bedourie Biannual.XLSX
- + ME323262_SAMP Oct 21 Birdsville Biannual.XLSX
- + RE_ Operating Plans.msg
- + SWIM for Water & Sewer Main Works (ID 179193).docx

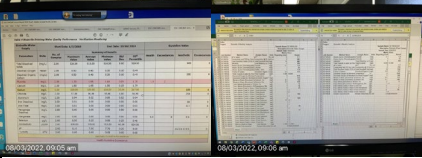
Summary of Non-conformances and Improvement Actions

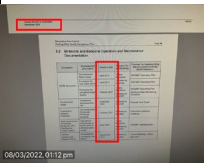
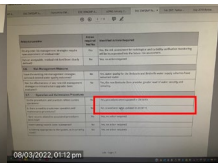
Question	Response	Details
Is there evidence the preventive measure is effectively implemented?	Non-conformance	The reservoirs at Birdsville are not easily accessed safely. The high reservoir has multiple vertical ladders that definitely require harnesses, and there are radio frequency hazards on the reservoir that require permit access. This not only isn't being done weekly, but it is also not feasible to inspect the reservoirs weekly due to the staffing requirements and need to shut off the communications networks while doing it. Drone surveys may be possible if the vicinity to the airport and the RF hazard can be avoided.
Document all procedures and compile into an operations manual.	Non-conformance	The DWQMP lists the DWQMP Operating plan as the procedure to manage several risks. No one interviewed was aware of this document, and even if it exists, it is not used.
Does the monitoring undertaken during the audit period match the monitoring plan?	Non-conformance	The operational monitoring (bore pressure, temperature monitoring, reservoir inspections) are not undertaken in accordance with the plan and are not documented. In the case of Birdsville, the plant is visually inspected, and it is apparent the bore pressure is sufficient due to the overflow into the cooling ponds. Therefore, the lack of monitoring and recording of the bore pressure does not increase the risk to the service. The inspection of the integrity of the Reservoirs represents the main issue to be solved as the access constraints limit the ability to inspect the roof. Drones may be appropriate.
Was the verification monitoring program implemented as stated?	Non-conformance	The verification monitoring was not undertaken as stated as there was a 6 monthly sample for Bedourie that has been missed in or around July 2021. As this was 6 monthly, the auditors view is that a catch-up sample could have been taken to remain in compliance. Not all <i>E. coli</i> samples (listed in the plan as operational monitoring) have

Question	Response	Details
		<p>been taken in each audit year. This can be seen from the list of documents where some months are missing in Birdsville.</p> <p>The associated annual report also records a single sample, corroborating the finding. A Birdsville 6 monthly sample was also missed in 2019. Improvement opportunity to relocate the verification monitoring samples. Locations currently being used in Birdsville are better distributed to manage the risk. Location are clinic, 14 Mickering St, and council depot. Bedourie sites are appropriate.</p>
<div>   </div> <div> <div>Image 3</div> <div>Image 4</div> </div>		
Establish a records management system and ensure that employees are trained to fill out records.	Non-conformance	There is no record of the operational monitoring stated in the DWQMP.
Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.	Non-conformance	<p>As there were no unacceptable risks identified, these RMIP actions are best practice, and not actually required to be documented under the Act and Guidelines. However, as they are part of the approved DWQMP, they are subject to the audit. There are dates for improvement actions that have not been met by a significant period of time.</p> <p>This was identified in the 2021 review, and the 2022 DWQMP has updated the dates.</p>
Were all high priority actions undertaken in the timeframes committed?	Non-conformance	Actions that were determined to be high priority were also not completed within years of the stated dates.
Review requirements periodically to reflect any changes.	Improvement Action	Page 1 identifies the Public Health Regulation 2005. This was superseded in 2018 and should be updated in the next review. Similarly the Plumbing and Drainage Act has been updated.

Question	Response	Details
	Improvement Action	The list of procedures identified should be reviewed to ensure that it is complete for the inspections required. For example, the heat exchanger requires dismantling and cleaning 6 monthly, but this is not documented.
Develop monitoring protocols for operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results.		Birdsville, bore pressure weekly, reservoir integrity weekly. No records are kept for the pressure and reservoir integrity is not inspected by climbing to view the roof integrity.
 <p>Image 1</p>		
Ensure that equipment performs adequately and provides sufficient flexibility and process control.	Improvement Action	Heat exchanger sometimes faults out. Relies on customers to inform if there is an issue. The heat exchanger may be undersized and consideration should be given to a larger unit.
 <p>Image 2</p>		
Establish a program for regular inspection and maintenance of all equipment, including monitoring equipment.	Improvement Action	There is an asset management strategy, and there is knowledge of the actions that are required, but there are not specific tasks identified. E.g., there is no documented timeline for cleaning the heat exchanger.
Are calibration solutions available and in date?	Improvement Action	The calibration solutions are out of date, but new solutions have been ordered. In this case, a turbidity of 5 NTU is the appropriate turbidity to respond to, and at this point the sample is visually turbid, so while not ideal, does not impact significantly on operation of the schemes.

Question	Response	Details
Develop a public and media communications strategy.	Improvement Action	As above re fluoride notification.
Identify training needs and ensure resources are available to support training programs.	Improvement Action	The town foreman in Birdsville is relatively new to the position and is not fully aware of the way that the drinking water system operates. This is mitigated by the fact that the plumber travels from Bedourie for most works. However, it is advisable that more training is provided to the Foreman.
Develop a comprehensive strategy for community consultation.	Improvement Action	The ongoing messaging around fluoride is the most significant requirement.
Use information to improve management of the water supply system.	Improvement Action	The recent review indicates that there was a determination that uranium and radiological parameters needed to be assessed. It is noted that the audit timeframe extends back to 2017 and that at this time uranium was part of the verification monitoring program and it is stated was removed in the 2018 plan as the risk was understood to not be significant (non detect for uranium and many other metals). The bore in Birdsville was constructed in 1961, and changes in water chemistry are highly unlikely. The new Bedourie bore should be monitored to confirm the water chemistry is unchanged from the old bore
Document information pertinent to all aspects of drinking water quality management.	Improvement Action	The operation of the Birdsville scheme in particular should be better documented to support the Town Foreman.
Periodically review documentation and revise as necessary.	Improvement Action	The DWQMP while mostly correct should be updated to be more practically relevant to the scheme. For example, in Birdsville an appropriate response to a microbial detection would be to utilize the heat of the bore water to sterilize the town reservoir. This would result in the need to notify the community that hot water would be passing through the reticulation network.

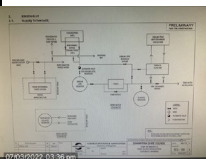








Question	Response	Details
Was the information provided in the annual report accurate?	Improvement Action	To the extent that this can be cross checked against laboratory results, the annual reports are accurate. However, there are 2 samples included in the annual report for Birdsville for the 18/19 financial year, but only one lab report was provided for the audit. The immediately prior results for the previous financial year are not included in the wrong year as the results don't match. The 17/18 report includes the more extensive list of results that were included in the annual report and demonstrate that uranium is not of concern for these schemes.
 <div>Image 5 Image 6</div>		
Senior executive review of the effectiveness of the management system.	Improvement Action	The DWQMP has been prepared by an external consultant and it is not clear it has been comprehensively reviewed by council prior to acceptance. It is important that the plan is councils plan, not the consultants so that it is fully understood and implemented.
Evaluate the need for change.	Improvement Action	<p>Reviews are required every 2 years under the information notice. The review for 2019 was completed on 28/11/2019 ahead of the required date of 31 Dec 2019. This review identified some changes that needed to be made after the commissioning of the new bore. As the other changes identified were minor, delaying the amendment of the DWQMP until after commissioning of the new bore is logical.</p> <p>The review from 2021 is clearly documented and identifies the areas of the plan that require change. These match the on the ground observations. The improvement action relates to the connections between the 2019 review and the amendment by agreement for the 2020 version of the DWQMP approved in Feb 2021. The new Bedourie bore was completed on 8 Nov 2020, and an amendment by</p>

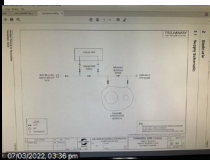





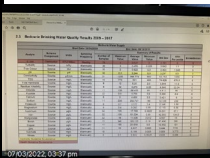
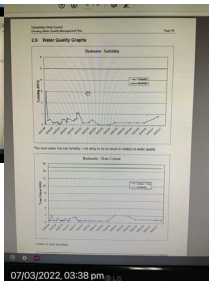
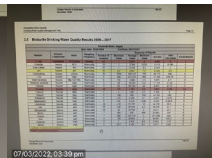
Question	Response	Details
		<p>agreement to the DWQMP was applied for on 18 Dec 2020. While the delay to updates to the DWQMP intimated in the 2019 review is accepted, the change in infrastructure should have triggered an amendment of the relevant aspects given the infrastructure had changed. Other actions such as updating the stakeholder list were made although these are not identified in the changes to the plan or in the amendment by agreement approval.</p> <p>The 2021 review indicates that the procedures were updated in 2018/19, yet the table of procedures refers to versions of the documents from 2013, 2015 and 2017. This should have been included in the 2020 version of the DWQMP. This was also not amended in the 2022 DWQMP. The most current procedures should be documented.</p>
 <p>Image 7</p>		 <p>Image 8</p>

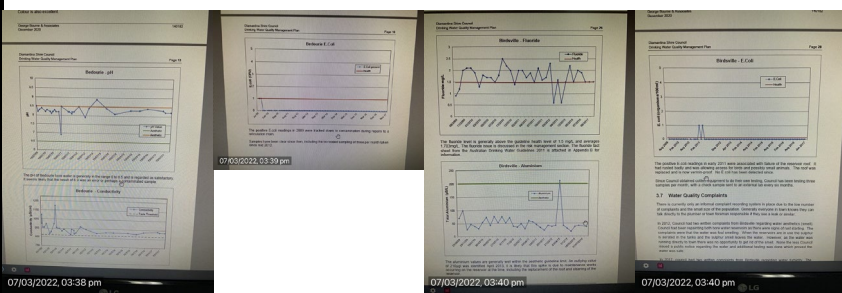
Element 1: Commitment to Drinking Water Quality

Question	Response	Details
Drinking Water Quality Policy		
Formulate a drinking water quality policy, endorsed by senior executive, to be implemented throughout the organisation.	N/A	No commitment
Ensure that the policy is visible and is communicated, understood and implemented by employees.	N/A	No commitment
Regulatory and Formal Requirements		
Identify and document all relevant regulatory and formal requirements.	Conforms	Described in section 1.2 of each DWQMP.
Ensure responsibilities are understood and communicated to employees.	Conforms	Staff interviewed were aware of their responsibilities.
Review requirements periodically to reflect any changes.	Improvement Action	Page 1 identifies the Public Health Regulation 2005. This was superseded in 2018 and should be updated in the next review. Similarly the Plumbing and Drainage Act has been updated.
Engaging Stakeholders		
Identify all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier.	Conforms	Table 1.8 contains a suitable list including contact names and numbers for external stakeholders.
Develop appropriate mechanisms and documentation for stakeholder commitment and involvement.	N/A	No commitment
Regularly update the list of relevant agencies.	Conforms	The list is appropriate and appears up to date.

Element 2: Assessment of the Drinking Water Supply System

Question	Response	Details
Water supply system analysis		
Assemble a team with appropriate knowledge and expertise.	Conforms	The identified team is appropriate
Assemble pertinent information and document key characteristics of the water supply system to be considered.	Conforms	The key aspects of both schemes have been described.
Periodically review the water supply system analysis.	Conforms	The Bedourie system includes the recently drilled bore.
Birdsville		
Construct a flow diagram of the water supply system from catchment to consumer.	Conforms	Birdsville schematic in the DWQMP is accurate.
<div>       </div> <div>    </div>		
<div>Image 9</div> <div>Image 10</div> <div>Image 11</div> <div>Image 12</div> <div>Image 13</div> <div>Image 14</div> <div>Image 15</div> <div>Image 16</div> <div>Image 17</div>		

Question	Response	Details			
Bedourie					
	Conforms	The Bedourie schematic in the DWQMP is accurate. Prior schematics appear to have matched the scheme at the time.			
<div><div></div><div></div><div></div><div></div><div></div><div></div></div>					
Image 18	Image 19	Image 20	Image 21	Image 22	Image 23
Does the schematic accurately reflect the scheme?	Conforms	The schematic is accurate, the old bore is capped, and the reservoirs are offline. It was stated that the reservoirs are empty.			
Assessment of water quality data					
	Conforms	Data from 2009 to 2017 is provided and most parameters are stable over the entire time period. The latest amended plan (not approved when assessment commenced) has updated the data to 2020, with E. Coli data updated to end of 2021. The recently approved plan has more up to date data.			
<div><div></div><div></div><div></div></div>					
Image 24	Image 25	Image 26			
List and examine exceedances.	Conforms	Few exceedances in the parameters tested. There is discussion of fluoride which is an open incident.			


Question	Response	Details
 <p>Image 27 Image 28 Image 29 Image 30</p>		
Assess data using tools such as control charts and trends analysis to identify trends and potential problems.	Conforms	As above, water quality is graphed in the DWQMP and the 2022 plan has some data updated to 2021.
Hazard identification and risk assessment		
Define the approach and methodology to be used for hazard identification and risk assessment.	Conforms	The risk assessment approach is defined in the DWQMP
Identify and document hazards, sources and hazardous events for each component of the water supply system.	Conforms	An appropriate list of hazards and hazardous events appears to have been identified.
Estimate the level of risk for each identified hazard or hazardous event.	Conforms	Both unmitigated and mitigated risk have been assessed consistently.
Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty.	Conforms	Uncertainty is listed in the risk assessment tables.
Determine significant risks and document priorities for risk management.	Conforms	All risks identified have been reduced to medium 12 or below. The acceptable risk define for Diamantina Shire is medium. No RMIP items are required under the Act.
Periodically review and update the hazard identification and risk assessment to incorporate any changes.	Conforms	A comparison from the 2017 2018 and 2020 versions of the DWQMP do show a progressive change in the risk assessment including improvement items that have since been completed and removed from the RMIP table.

Element 3: Preventive Measures for Drinking Water Quality Management



Question	Response	Details
Preventive measures and multiple barriers		
Identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and estimate the residual risk.	Conforms	Control measures have been identified for each of the hazards and hazardous events.
Evaluate alternative or additional preventive measures where improvement is required.	Conforms	Improvement actions have been identified even though in this case none are defined as required.
Preventive Measures		
What preventive measure is being audited	Security fencing around reservoir in Birdsville.	
Is there evidence the preventive measure is effectively implemented?	Conforms	The site is fenced and locked. Reservoir ladders are also secured.
What preventive measure is being audited	Hygienic work practices	
Is there evidence the preventive measure is effectively implemented?	Conforms	This is assessed as compliant based on interview responses.
What preventive measure is being audited	Chlorination of affected section of main for repair	
Is there evidence the preventive measure is effectively implemented?	Conforms	This is assessed as compliant based on interview responses.

Question	Response	Details
What preventive measure is being audited	"Ongoing inspections" of reservoir integrity.	
Is there evidence the preventive measure is effectively implemented?	Non-conformance	The reservoirs at Birdsville are not easily accessed safely. The high reservoir has multiple vertical ladders that definitely require harnesses, and there are radio frequency hazards on the reservoir that require permit access. This not only isn't being done weekly, it is not feasible to inspect the reservoirs weekly due to the staffing requirements and need to shut off the communications networks while doing it. Drone surveys may be possible if the vicinity to the airport and the RF hazard can be avoided.
Critical control points		
Assess preventive measures from catchment to consumer to identify critical control points.	N/A	These are simple systems and in effect system integrity is the only barrier to protect the water quality. As system integrity cannot be monitored in real time this does not fit a typical CCP definition.

Element 4: Operational Procedures and Process Control

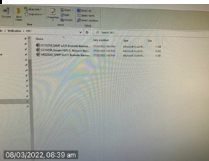
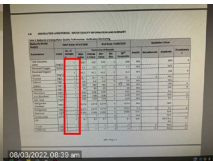
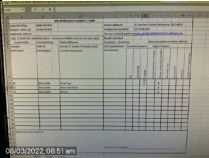

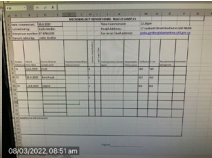
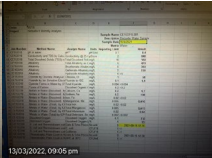



Question	Response	Details
Operational procedures		
Identify procedures required for processes and activities from catchment to consumer.	Improvement Action	The list of procedures identified should be reviewed to ensure that it is complete for the inspections required. For example, the heat exchanger requires dismantling and cleaning 6 monthly, but this is not documented.
Document all procedures and compile into an operations manual.	Non-conformance	The DWQMP lists the DWQMP Operating plan as the procedure to manage several risks. No one interviewed was aware of this document, and even if it exists, it is not used.
Procedures		
What preventive measure is being audited	Mains repair procedure	
Is there evidence the preventive measure is effectively implemented?	Conforms	Infrastructure Manager described a process during interview that is consistent with the procedure.
What procedure is being audited?	SWMS main repair	
Is the procedure available, current and being used?	Conforms	This procedure was provided.
Operational monitoring		
Develop monitoring protocols for operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results.	Improvement Action	Birdsville, bore pressure weekly, reservoir integrity weekly. No records are kept for the pressure and reservoir integrity is not inspected by climbing to view the roof integrity.
 <p>Image 1</p>		

Question	Response	Details
Document monitoring protocols into an operational monitoring plan.	Conforms	Operational monitoring is documented in the plan. It includes temperatures, pressure and bore head integrity which are the only true operational monitoring undertaken. This is stated as a weekly frequency.
Does the monitoring undertaken during the audit period match the monitoring plan?	Non-conformance	The operational monitoring (bore pressure, temperature monitoring, reservoir inspections) are not undertaken in accordance with the plan and are not documented. In the case of Birdsville, the plant is visually inspected, and it is apparent the bore pressure is sufficient due to the overflow into the cooling ponds. Therefore, the lack of monitoring and recording of the bore pressure does not increase the risk to the service. The inspection of the integrity of the Reservoirs represents the main issue to be solved as the access constraints limit the ability to inspect the roof. Drones may be appropriate.
Did any events occur that had the potential to impact public health?	No	The most recent information notice for the decision has altered the reporting requirements such that an event no longer requires a public health consequence. Council should seek advice regarding what is required to be reported, and this advice should be of equal stature to the information notice (email clarification that attempts to limit the scope of the reporting condition is not sufficient.) At present, no parameters have been measured in the scheme since the approval triggering the reporting requirements, and no finding is made for reporting against these new conditions.
Corrective action		
Establish and document procedures for corrective action to control excursions in operational parameters.	Conforms	Operators were able to describe the appropriate escalation of an issue.
Were corrective actions undertaken as expected?	Conforms	Fluoride is reported by the external consultant.

Question	Response	Details
Establish rapid communication systems to deal with unexpected events.		All interviewees understood the escalation process.
Equipment capability and maintenance		
Ensure that equipment performs adequately and provides sufficient flexibility and process control.	Improvement Action	Heat exchanger sometimes faults out. Relies on customers to inform if there is an issue. The heat exchanger may be undersized and consideration should be given to a larger unit.
 <p>Image 2</p>		
	Improvement Action	There is an asset management strategy, and there is knowledge of the actions that are required, but there are not specific tasks identified. E.g. there is no documented timeline for cleaning the heat exchanger.
Are there regular internal calibrations of monitoring equipment?	Conforms	Calibration solutions were sighted, and operators indicated that the instruments are regularly calibrated.
 <p>Image 31</p>		
Are calibration solutions available and in date?	Improvement Action	The calibration solutions are out of date, but new solutions have been ordered. In this case, a turbidity of 5 NTU is the appropriate turbidity to respond to, and at this point the sample is visually turbid, so while not ideal, does not impact significantly on operation of the schemes.

Element 5: Verification of Drinking Water Quality

Question	Response	Details
Drinking water quality monitoring		
Determine the characteristics to be monitored in the distribution system and in water as supplied to the consumer.	Conforms	The verification monitoring is described in section 6 of the DWQMP. The amendment application for 2022 includes additional parameters. Uranium and radiological parameters have been added to the 6 monthly. Once baseline levels are established the frequency could reduce to every 2 years as per the ADWG Table 9.5.
Establish and document a sampling plan for each characteristic, including the location and frequency of sampling.	Conforms	There is an established sampling plan. It is noted that the microbial sampling listed in the operational monitoring table is actually verification monitoring. The distinction may not matter if the new conditions of approval remain in that any missed monitoring triggers an event if not caught up in the relevant timeframe.
Was the verification monitoring program implemented as stated?	Non-conformance	<p>The verification monitoring was not undertaken as stated as there was a 6 monthly sample for Bedourie that has been missed in or around July 2021. As this was 6 monthly, the auditors view is that a catch-up sample could have been taken to remain in compliance.</p> <p>Not all <i>E. coli</i> samples (listed in the plan as operational monitoring) have been taken in each audit year. This can be seen from the list of documents where some months are missing in Birdsville.</p> <p>The associated annual report also records a single sample, corroborating the finding. A Birdsville 6 monthly sample was also missed in 2019. Improvement opportunity to relocate the verification monitoring samples. Locations currently being used in Birdsville are better distributed to manage the risk. Location are clinic, 14 Mickering St, and council depot. Bedourie sites are appropriate.</p>

	Response	Details
 Image 3  Image 4		
	Conforms	<p>The samples for E. coli are taken at multiple locations. The six monthly sample is at a single location, but the parameters are not expected to change significantly from the bore. There is a good record keeping process for the in house E. coli testing. This could be improved by taking photos of the quantitrays after reading.</p> <p>The external results for microbiological parameters were collected have been analysed outside the holding times and are not reliable. There is almost no point in sending a sample to a NATA lab if they cannot analyse the sample in time. It is not within the lab accreditation to provide a result for these samples.</p>
 Image 32  Image 33  Image 34  Image 35  Image 36  Image 37		
 Image 38		
Consumer satisfaction		
Establish a consumer complaint and response program, including appropriate training of employees.	Conforms	<p>The DWQMP indicates that customers report directly to town foreman. Minimal complaints across either scheme.</p>

Question	Response	Details
Short-term evaluation of results		
Establish procedures for the daily review of drinking water quality monitoring data and consumer satisfaction.	Conforms	Colilert done internally. Could take photos of quantitrays.
Were any exceedances identified and reported immediately?	Conforms	Fluoride exceedances occur in Birdsville on each external test.
Develop reporting mechanisms internally, and externally, where required.	Conforms	Use external consultant

Element 6: Management of Incidents and Emergencies

Question	Response	Details
Communication		
Define communication protocols with the involvement of relevant agencies and prepare a contact list of key people, agencies and businesses.	Conforms	Public notices - recommend fluoride notice be updated annually as is stated in improvement item S2.
Develop a public and media communications strategy.	Improvement Action	As above re fluoride notification.
Incident and emergency response protocols		
Define potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies.	Conforms	There is a defined 5 level response plan that includes incident types
Train employees and regularly test emergency response plans.	Conforms	Interviews indicated that staff are aware of the reporting process - it is noted the 5 level emergency response plan is overly complicated for the schemes.

Element 7: Employee Awareness and Training

Question	Response	Details
Employee awareness and involvement		
Develop mechanisms and communication procedures to increase employees' awareness of and participation in drinking water quality management.	N/A	No statement made in the plan. See below.
Employee training		
Ensure that employees, including contractors, maintain the appropriate experience and qualifications.	Conforms	A qualified plumber undertakes works on the drinking water systems.
Identify training needs and ensure resources are available to support training programs.	Improvement Action	The town foreman in Birdsville is relatively new to the position and is not fully aware of the way that the drinking water system operates. This is mitigated by the fact that the plumber travels from Bedourie for most works. However, it is advisable that more training is provided to the Foreman.

Element 8: Community Involvement and Awareness

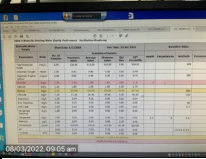
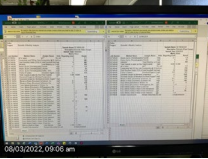
Question	Response	Details
Community consultation		
Assess requirements for effective community involvement.	Conforms	The most recent Improvement plan indicates a need to update the community with fluoride messaging.
Develop a comprehensive strategy for community consultation.	Improvement Action	The ongoing messaging around fluoride is the most significant requirement.
Communication		
Develop an active two-way communication program to inform consumers and promote awareness of drinking water quality issues.	N/A	Nothing stated

Element 9: Research and Development

Question	Response	Details
Investigative studies and research monitoring		
Establish programs to increase understanding of the water supply system.	N/A	The recent review indicates that there was a determination that uranium and radiological parameters needed to be assessed. It is noted that the audit timeframe extends back to 2017 and that at this time uranium was part of the verification monitoring program and it is stated was removed in the 2018 plan as the risk was understood to not be significant (based on the repeated non-detects for uranium and many other metals).
Use information to improve management of the water supply system.	Improvement Action	The bore in Birdsville was constructed in 1961, and changes in water chemistry are highly unlikely. The new Bedourie bore should be monitored to confirm the water chemistry is unchanged from the old bore.
Validation of processes		
Validate processes and procedures to ensure that they are effective in controlling hazards.	N/A	No commitment made
Design of equipment		
Validate the selection and design of new equipment and infrastructure to ensure continuing reliability.	N/A	No commitment made, but the heat exchanger in Birdsville appears undersized.

Element 10: Documentation and Reporting

Question	Response	Details
Management of documentation and records		
Document information pertinent to all aspects of drinking water quality management.	Improvement Action	The operation of the Birdsville scheme in particular should be better documented to support the Town Foreman.
Establish a records management system and ensure that employees are trained to fill out records.	Non-conformance	There is no record of the operational monitoring stated in the DWQMP.
Periodically review documentation and revise as necessary.	Improvement Action	The DWQMP while mostly correct should be updated to be more practically relevant to the scheme. For example, in Birdsville an appropriate response to a microbial detection may be to utilize the heat of the bore water to sterilize the town reservoir. This would result in the need to notify the community that hot water would be passing through the reticulation network.
Reporting		
Establish procedures for effective internal and external reporting.	Conforms	External consultant used for annual report.
Produce an annual report to be made available to consumers, regulatory authorities and stakeholders.	Conforms	Annual reports have been produced for each reporting period.

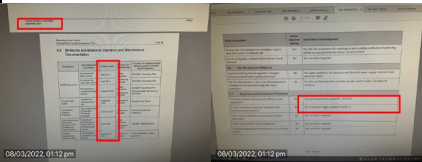
Question	Response	Details
Was the information provided in the annual report accurate?	Improvement Action	To the extent that this can be cross checked against laboratory results, the annual reports are accurate. However, there are 2 samples included in the annual report for Birdsville for the 18/19 financial year, but only one lab report was provided for the audit. The immediately prior results for the previous financial year are not included in the wrong year as the results don't match. The 17/18 report includes the more extensive list of results that were included in the annual report and demonstrate that uranium is not of concern for these schemes.
<div>   </div> <div> Image 5 Image 6 </div>		

Element 11: Evaluation and Audit

Question	Response	Details
Long-term evaluation of results		
Collect and evaluate long-term data to assess performance and identify problems.	Conforms	The external consultant maintains graphs of water quality, and the amendment application includes the latest results. The approved plan was not updated last review, but was approved as acceptable.
Document and report results.	Conforms	Results are assessed annually in the DWQMP report.
Audit of drinking water quality management		
Establish processes for internal audits.	N/A	No commitment
Are external audits conducted as required?	Conforms	External audits were arranged in 2017 and in 2022 ahead of the required dates.
Document and communicate audit results.	Conforms	The audit outcomes were documented in the immediately following annual report as required.

Element 12: Review and Continual Improvement

Question	Response	Details
Review by senior executive		
Senior executive review of the effectiveness of the management system.	Improvement Action	The DWQMP has been prepared by an external consultant and it is not clear it has been comprehensively reviewed by council prior to acceptance. It is important that the plan is councils plan, not the consultants so that it is fully understood and implemented.
Evaluate the need for change.	Improvement Action	<p>Reviews are required every 2 years under the information notice. The review for 2019 was completed on 28/11/2019 ahead of the required date of 31 Dec 2019. This review identified some changes that needed to be made after the commissioning of the new bore. As the other changes identified were minor, delaying the amendment of the DWQMP until after commissioning of the new bore is logical.</p> <p>The review from 2021 is clearly documented and identifies the areas of the plan that require change. These match the on the ground observations. The improvement action relates to the connections between the 2019 review and the amendment by agreement for the 2020 version of the DWQMP approved in Feb 2021. The new Bedourie bore was completed on 8 Nov 2020, and an amendment by agreement to the DWQMP was applied for on 18 Dec 2020. While the delay to updates to the DWQMP intimated in the 2019 review is accepted, the change in infrastructure should have triggered an amendment of the relevant aspects given the infrastructure had changed. Other actions such as updating the stakeholder list were made although these are not identified in the changes to the plan or in the amendment by agreement approval.</p> <p>The 2021 review indicates that the procedures were updated in 2018/19, yet the table of procedures refers to</p>

Question	Response	Details
		versions of the documents from 2013, 2015 and 2017. This should have been included in the 2020 version of the DWQMP. This was also not amended in the 2022 DWQMP. The most current procedures should be documented.
 <p>Image 7 Image 8</p>		
Drinking water quality management improvement plan		
Develop a drinking water quality management improvement plan.	Conforms	There is an improvement plan identified in the DWQMP.
Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.	Non-conformance	As there were no unacceptable risks identified, these RMIP actions are best practice, and not actually required to be documented under the Act and Guidelines. However, as they are part of the approved DWQMP, they are subject to the audit. There are dates for improvement actions that have not been met by a significant period of time. This was identified in the 2021 review, and the 2022 DWQMP has updated the dates.
Were all high priority actions undertaken in the timeframes committed?	Non-conformance	Actions that were determined to be high priority were also not completed within years of the stated dates.
RMIP Actions		

Images



Image 1



Image 2

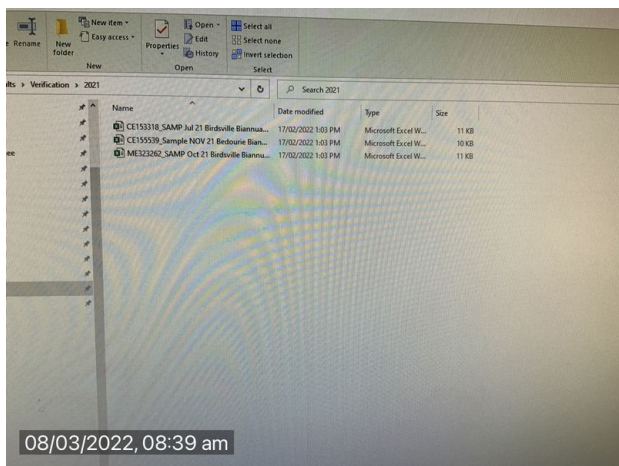


Image 3

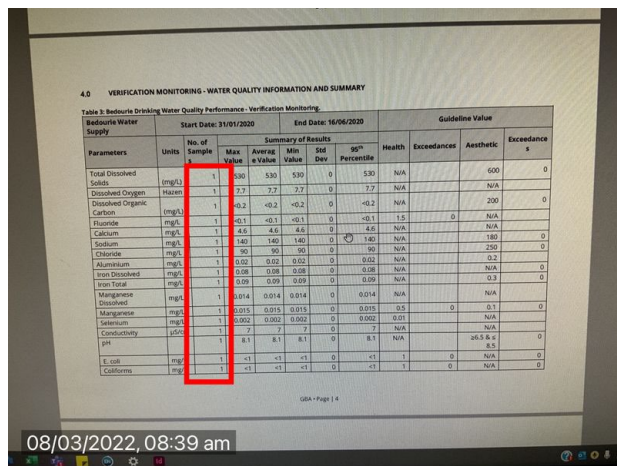


Image 4

08/03/2022, 09:05 am

Table 4 Birdsville Drinking Water Quality Performance - Verification Monitoring

Start Date: 1/7/2019 End Date: 30/06/2019

Parameters	Units	No. of Samples	Summary of Results					Health	Exceedances	Aesthetic	Exceedances
			Maximum Value	Average Value	Minimum Value	Std Dev	95th Percentile				
Total Dissolved Solids	mg/L	2.00	520.00	515.00	510.00	5.00	515.50			600	0
Dissolved Oxygen	mg/L	2.00	0.50	0.40	0.30	0.10	0.49			200	0
Dissolved Organic Carbon	mg/L	2.00	0.50	0.40	0.30	0.10	0.49				
Fluoride	mg/L	2.00	1.70	1.65	1.60	0.05	1.70	1.5	2		
Calcium	mg/L	2.00	1.80	1.65	1.50	0.15	1.79				
Sodium	mg/L	2.00	220.00	190.00	160.00	30.00	217.00			180	1
Chloride	mg/L	2.00	57.00	56.00	55.00	1.00	56.90			250	0
Aluminium	mg/L	2.00	0.04	0.02	0.00	0.02	0.04				
Iron Dissolved	mg/L	2.00	0.01	0.00	0.00	0.00	0.00			80	0
Iron Total	mg/L	2.00	0.01	0.00	0.00	0.00	0.01			0.3	0
Manganese Dissolved	mg/L	2.00	0.00	0.00	0.00	0.00	0.00				
Manganese	mg/L	2.00	0.00	0.00	0.00	0.00	0.00	0.5	0	0.1	0
Selenium	µg/L	2.00	0.50	0.25	0.00	0.25	0.48				
Conductivity	µS/cm	2.00	820.00	770.00	710.00	60.00	824.00				
pH		2.00	8.10	7.90	7.70	0.20	8.08			25.5 ≤ pH ≤ 8.5	0
Turbidity	NTU	2.00	0.05	0.05	0.05	0.00	0.05				

Aesthetic Guidelines Exceedance
Health Guidelines Exceedance

Image 5

08/03/2022, 09:06 am

Table 4 Birdsville Drinking Water Quality Performance - Verification Monitoring

Start Date: 1/7/2019 End Date: 30/06/2019

Parameters	Units	No. of Samples	Summary of Results					Health	Exceedances	Aesthetic	Exceedances
			Maximum Value	Average Value	Minimum Value	Std Dev	95th Percentile				
Total Dissolved Solids	mg/L	2.00	520.00	515.00	510.00	5.00	515.50			600	0
Dissolved Oxygen	mg/L	2.00	0.50	0.40	0.30	0.10	0.49			200	0
Dissolved Organic Carbon	mg/L	2.00	0.50	0.40	0.30	0.10	0.49				
Fluoride	mg/L	2.00	1.70	1.65	1.60	0.05	1.70	1.5	2		
Calcium	mg/L	2.00	1.80	1.65	1.50	0.15	1.79				
Sodium	mg/L	2.00	220.00	190.00	160.00	30.00	217.00			180	1
Chloride	mg/L	2.00	57.00	56.00	55.00	1.00	56.90			250	0
Aluminium	mg/L	2.00	0.04	0.02	0.00	0.02	0.04				
Iron Dissolved	mg/L	2.00	0.01	0.00	0.00	0.00	0.00			80	0
Iron Total	mg/L	2.00	0.01	0.00	0.00	0.00	0.01			0.3	0
Manganese Dissolved	mg/L	2.00	0.00	0.00	0.00	0.00	0.00				
Manganese	mg/L	2.00	0.00	0.00	0.00	0.00	0.00	0.5	0	0.1	0
Selenium	µg/L	2.00	0.50	0.25	0.00	0.25	0.48				
Conductivity	µS/cm	2.00	820.00	770.00	710.00	60.00	824.00				
pH		2.00	8.10	7.90	7.70	0.20	8.08			25.5 ≤ pH ≤ 8.5	0
Turbidity	NTU	2.00	0.05	0.05	0.05	0.00	0.05				

Aesthetic Guidelines Exceedance
Health Guidelines Exceedance

Image 6

08/03/2022, 01:12 pm

George Bourne & Associates
December 2020

Diamantina Shire Council
Drinking Water Quality Management Plan

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5.2 Birdsville and Bedouie Operation and Maintenance Documentation

Document	Documented procedure	Version date	Process for implementing the procedure (Activity and Frequency)
SWM Document	Procedure for Maintaining	April 2013	DWQMP Operating Plan
	Procedure for new water service	April 2013	DWQMP Operating Plan
	Procedure for Sampling Water Quality	October 2017	DWQMP Operating Plan
Fluoride Fact Sheet	Operational procedures for Fluoride	Estimated 1996	Fluoride Fact Sheet
Diamantina Network Drainage	Operational procedures for Drainage	October 2017	Diamantina Network Drainage
Risk Assessment Workshop: Bedouie CRC	Operational procedures of Bedouie CRC	April 2015	DWQMP Operating Plan
Options Assessment Bedouie Bore	Procedure for managing bore failure	September 2015	Council Meetings, Action plan

Image 7

08/03/2022, 01:12 pm

Diamantina Shire Council
Drinking Water Quality Management Plan

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5.3 Risk Management Measures

Area to consider	Action required Yes/No	Identified Actions Required
Do any new risk management strategies require a new assessment of residual risk?	Yes	Yes, the risk assessment for radiological and turbidity verification monitoring will be incorporated into the future risk assessment.
Has an acceptable residual risk level been clearly defined?	No	Yes, no action required.
5.4. Risk Management Measures		
Have the existing risk management strategies achieved desired water quality outcomes?	No	Yes, water quality for the Bedouie and Birdsville water supply schemes have remained stable.
Has the effectiveness of any new risk management strategies or infrastructure upgrades been assessed?	No	Yes, the new Bedouie Bore provides greater level of water security and certainty.
5.7. Operation and Maintenance Procedures		
Do the procedures and practices reflect current operational?	No	Yes, procedures were updated in 2018/19.
Is there a need to create new operation and maintenance procedures?	No	No, procedures were updated in 2018/19.
Have records related to associated procedures been kept?	No	Yes, no action required.
Have training records been maintained?	No	Yes, no action required.
Is training appropriate to the system, as it currently exists?	No	Yes, no action required.

Image 8

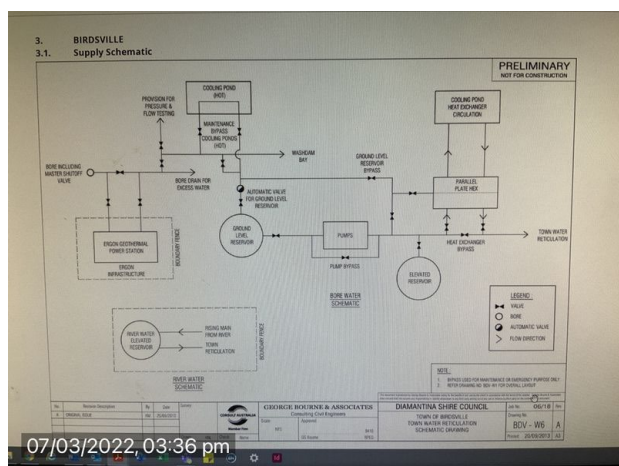




Image 13



Image 14



Image 15



Image 16



Image 17

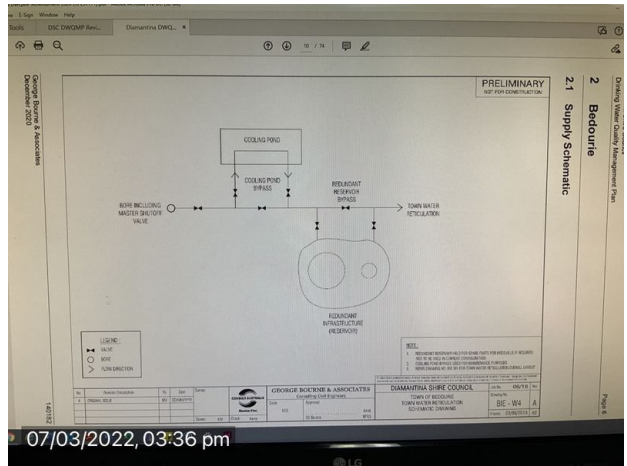


Image 18



Image 19



Image 20



Image 21



Image 22



Image 23

2.5 Bedourie Drinking Water Quality Results 2009 – 2017

Start Date: 28/08/2009 End Date: 09/12/2017

Analyte	Schema Component	Units	Sampling Frequency	Number of Samples	Maximum Value	Average Value	Minimum Value	Std Dev	95th Percentile	Exceedances
E. coli	Distribution	CFU/100mL	Monthly	1	0.007	0	0.161	0	0	2
Turbidity	Source	NTU	Biannually	30	3	0.455	0.025	0.542	1.1	0
Total Chlorine	Source	mg/L	Biannually	32	2	0.622	0.5	0.463	1.945	0
pH	Source	µS/cm	Biannually	32	5.9	8.244	6.9	0.297	8.5	3
Conductivity	Source	µS/cm	Biannually	31	1200	846.774	880	63.163	1020	0
TDS	Source	mg/L	Biannually	30	770	59	460	74.626	675.5	0
Total Hardness	Source	mg/L	Biannually	9	12	6.25	2.5	3.849	11.3	0
Residual Alkalinity	Source	mg/L	Biannually	9	32	6.278	0.05	8.865	22.24	0
Chloride	Source	mg/L	Biannually	11	100	38.455	81	4.612	95	0
Fluoride	Source	mg/L	Biannually	32	0.9	0.768	0.6	0.090	0.9	0
Calcium	Source	mg/L	Biannually	8	8	4.488	0.5	3.421	8	0
Sodium	Source	mg/L	Biannually	11	200	305.727	190	12.128	220	0
Potassium	Source	mg/L	Biannually	9	3.7	3.122	2.4	0.346	3.58	0
Magnesium	Source	mg/L	Biannually	9	0.4	0.242	0.05	0.113	0.36	0
Aluminum	Source	µg/L	Biannually	32	180	17.789	0.0025	33.691	67.1	0
Iron	Source	µg/L	Biannually	32	150	61.604	0.05	42.603	134.5	0
Manganese	Source	µg/L	Biannually	32	18	11.536	0.012	4.907	18	0
Boron	Source	µg/L	Biannually	11	340	188.125	0.19	97.490	290	0
Copper	Source	µg/L	Biannually	11	180	21.618	0.5	42.862	101	0
Zinc	Source	µg/L	Biannually	11	13	2.637	0.005	3.444	7.75	0
Sulphate	Source	mg/L	Biannually	10	1	0.188	0.005	0.303	0.775	0
Nitrate	Source	mg/L	Biannually	9	0.1	0.022	0.0028	0.033	0.084	0

Asbestos Guidelines Exceedance
Health Guidelines Exceedance

07/03/2022, 03:37 pm

Image 24

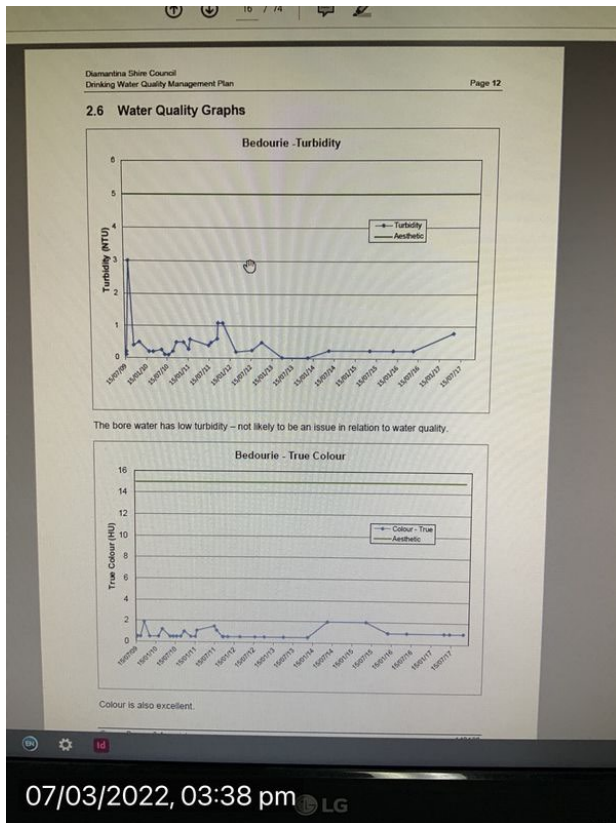


Image 25

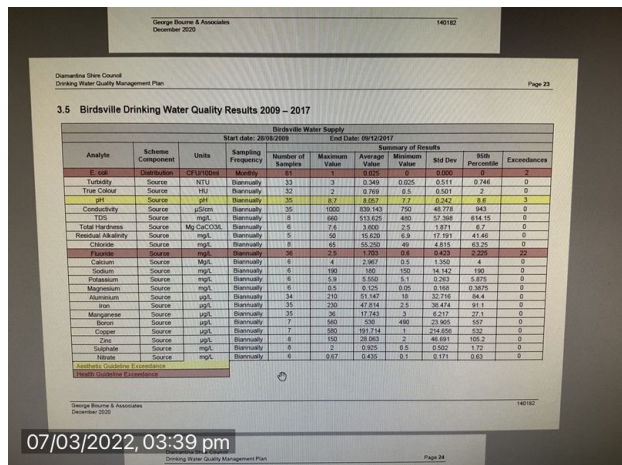


Image 26

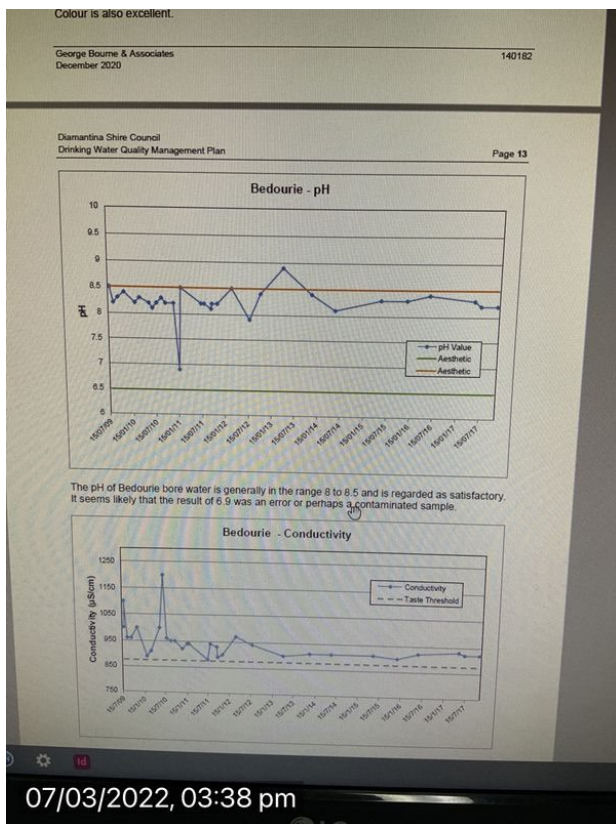


Image 27

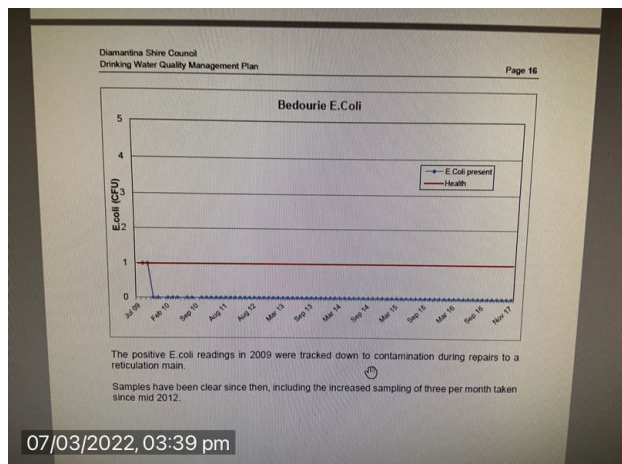
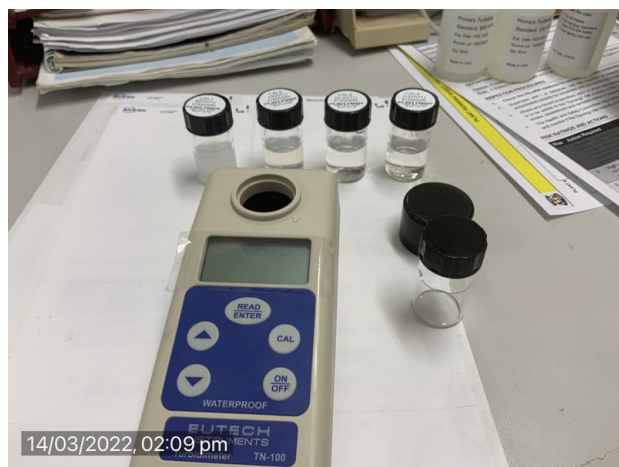
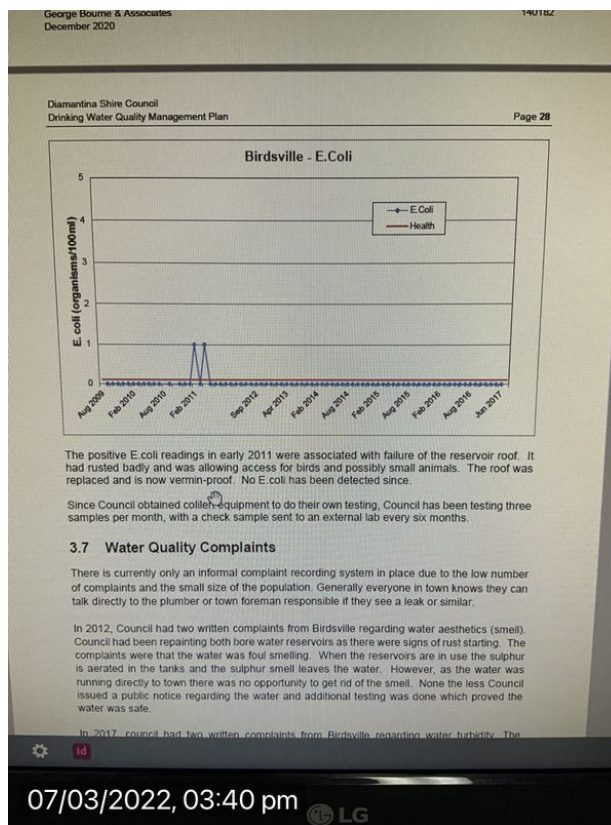
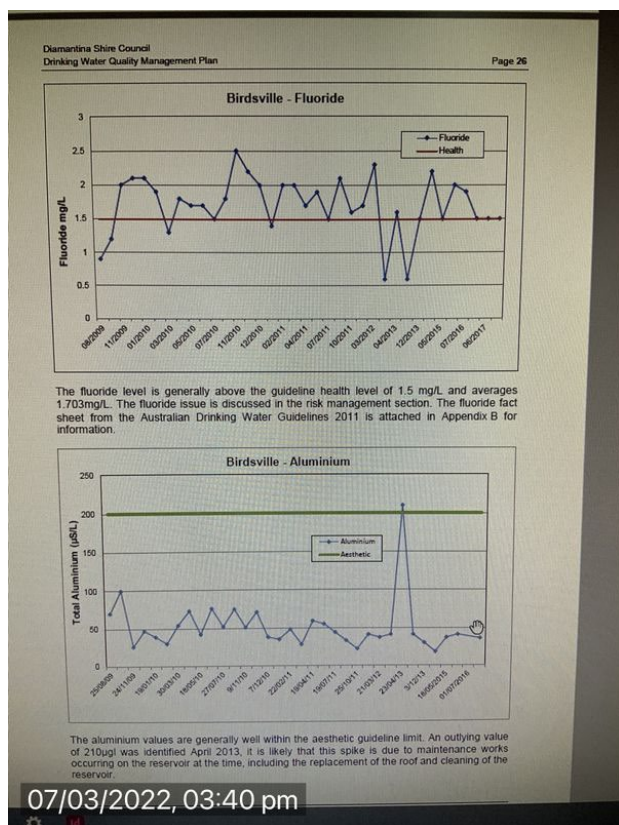


Image 28



H10																
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		
MICROBIOLOGY SAMPLE FORM																
1	Submitted by:			Jodie Girdler			Postal address:			17 Heribert Street Bedourie QLD 4829						
2	Sample taken by:			Jodie Girdler			Telephone number:			07 47461202						
3	Duplicate sent to:						Fax no or Email address:			jodie_girdler@disiamantina.qld.gov.au						
4	Type of analysis required: (Note - minimum of 100ml required for each type)															
5	Escherichia			Enterococcus			Total coliforms			Presence / Absence			Most probable number (MPN)			
6	Sample			Date & time taken			Source of water / Sample point (include description)			GPS coordinates (if available)			Treatment details Type of water			
7	Reference															
8																
9	51	18.8.2020			Oral Tap											
10	52	18.8.2020			Bore head tap											
11	53	18.8.2020			Depot											
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10 PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. Enable Editing

1 Tested by: Jodie Girdler

2 Date Commenced: 18.8.2020

3 Arrival time of Sample: 12.20pm

4 Sample condition: ☒ OK ☐ Not OK

5 Comments

Sample Reference	Test Used	Method Used	Test Times	Incubator Temperature	Analysis Results	Comments
7						
8	X	X	12.30-6.40	30.1	37.6	NO
9	X	X	12.30-6.40	30.1	37.6	NO
10	X	X	12.30-6.40	30.1	37.6	NO
11	X	X	12.30-6.40	30.1	37.6	NO
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14 Additional Comments:

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08/03/2022, 08:51 am

Image 33

1 MICROBIOLOGY REPORT FORM - WATER SAMPLES

2 Date commenced: 18.8.2020

3 Submitted by: Jodie Girdler

4 Telephone number: 07 47461202

5 Sample taken by: Jodie Girdler

6 Time Commenced: 12.30pm

7 Postal Address: 17 Herbert Street Bedourie QLD 48269

8 Fax no or Email address: jodie.girdler@diamantina.qld.gov.au

Sample Reference	Date	Source of water	Treatment details (Pond measurements)	Matrix	Indicate other sample types	Microbiological Colony count	Coliforms	E.coli	Pseudomonas aeruginosa	Comments
8	18.8.2020	Oval		X						
9	18.8.2020	Stonehead		X						
10	18.8.2020	Depot		X						
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20 Additional Information:

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Statutory Declaration: Auditor

Oaths Act 1867

Statutory Declaration

QUEENSLAND
TO WIT

I,

of in the State of Queensland

do solemnly and sincerely declare that

I am currently certified under the Exemplar Global Drinking Water Quality Management System Auditor Certification Scheme (#129230, Expiry 20 August 2022).

To the best of my knowledge, information, and belief I have not knowingly:

- Included any false, misleading, or incomplete information in the report.
- Failed to reveal any relevant information or document to the regulator.

I certify that the report addresses the relevant matters for evaluation and is factually correct and that the opinions expressed in the report are honestly and reasonably held.

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act 1867.



Signature of declarant/deponent

Taken and declared before me at

this day of


MATTHEW MARTIN

A Justice of the
Peace/Commissioner for
Declarations.

M.I. ENGINEERS AUSTRALIA
3492717

Statutory Declaration:

Diamantina Shire Council

Oaths Act 1867

STATUTORY DECLARATION

QUEENSLAND }
TO WIT

I, **Leon Love** of **1 Herbert Street Bedourie 4829**, in the State of Queensland do solemnly and sincerely declare that,


I, Leon Love from Diamantina Shire Council of 1 Herbert Street Bedourie 4829, in the State of Queensland, do solemnly and sincerely declare that:

I am the Chief Executive Officer of Diamantina Shire Council, ABN number 87 774 161 836.

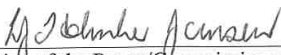
Through the course of the regulator audit of the drinking water quality management plan (DWQMP) by Bligh Tanner for the audit period ending 2022; which has resulted in this regular audit report dated 12/04/2022; the officers and employees of Diamantina Shire Council and Bligh Tanner have not knowingly given any false or misleading information. And have provided all relevant information to the auditor who conducted the regular audit of the DWQMP mentioned above.

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act of 1867

Taken and declared before me at **Bedourie Qld 4829** this **11th** day of **May 2022**.


(Signature of Declarant)

(Signature of Declarant)


(Justice of the Peace/Commissioner for Declarations)



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QLD 4006, Australia

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