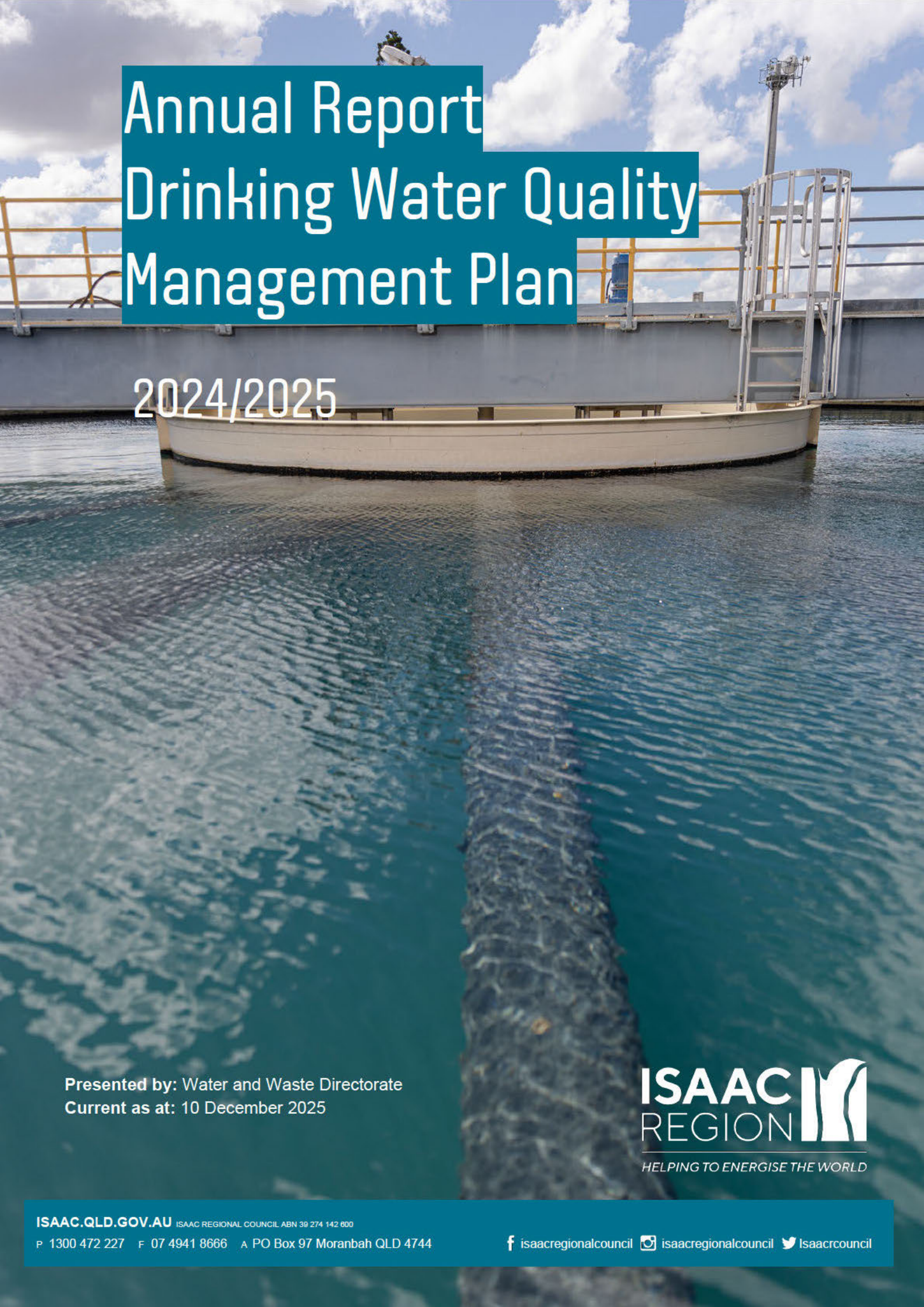
Annual Report Drinking Water Quality Management Plan

2024/2025



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INTRODUCTION

This report documents the performance of Isaac Regional Council's (IRC) drinking water service with respect to water quality and performance in implementing the actions detailed in the Drinking Water Quality Management Plan (DWQMP) as required under the *Water Supply (Safety and Reliability) Act 2008* (*the Act*). The approved DWQMP applies to the eight (8) drinking water supply schemes owned and operated by Isaac Regional Council:

- Carmila
- Clermont
- Dysart
- Glenden
- Middlemount
- Moranbah
- Nebo
- St Lawrence

SECTION 1: ACTIONS TAKEN TO IMPLEMENT THE DWQMP

REVISIONS MADE TO THE VERIFICATION MONITORING PROGRAM

No change

REVISIONS MADE TO THE OPERATIONAL MONITORING PROGRAM

No change

THE RISK MANAGEMENT IMPROVEMENT PROGRAM

IRC's Risk Management Improvement Program (RMIP) is aimed at implementing improvements and minimising risks in the provision of reliable and safe drinking water. Actions captured in the RMIP may originate from the following sources:

- Risk Assessments
- DWQMP reviews and audits
- Drinking water incidents
- Regulator feedback
- General Improvements.

The RMIP will be reviewed as part of the overall 2025 DWQMP review.

Implementation of the RMIP

Progress has been made across all water schemes to meet the requirements of the DWQMP.

The full improvement plan, including the actions taken to date, and the target completion date are included in Table 1 overleaf.

Table 1 IRC Improvement Plan, actions taken and target completion dates

SITE	REFERENCE	TREATMENT STAGE	IMPROVEMENT ACTION	ACTION TAKEN	TARGET DATE FOR COMPLETION
Carmila	CAR1	Raw Water Abstraction	Turbidity meter	Planning phase for filter turbidity and transition to SCADA	Jun-26
Carmila	CAR2	Raw water bypass	Disconnect or decommission the raw water bypass.	Disabled the raw water bypass	Complete
Carmila	CAR5 CAR9	Chemical Dosing Aluminium sulphate Chemical Dosing - polyelectrolyte	Turbidity meter	Planning phase for filter turbidity and transition to SCADA	Jun-26
Carmila	CAR11	Clarification	Investigate flow paced dosing and implement as achievable, Turbidity meter	Planning phase for capital upgrade	Jun-26
Carmila	CAR12	Filtration - Media filtration	Turbidity meter	Planning phase for filter turbidity and transition to SCADA	Jun-26
Carmila	CAR13	Filtration - Media	Investigate ability to waste on ripening and implement if achievable	Planning phase for capital upgrade	Jun-26
Clermont Middlemount Dysart Moranbah WTP Moranbah Boby	CLM1 CLM4 CLM20 MMT4 MMT8 DYS1 MBHW1 MBHB1	Multiple Treatment Processes	Review BGA management plan	BGA management plan implemented	Complete
Clermont	CLM2 & CLM3	Chlorine oxidation	Will require automation to reinstate.	Dosing capability restored	Complete
Clermont	CLM5.1	Chemical Dosing - Potassium permanganate	Reinstate online analysers	EZ Mn analyser operational.	Complete

SITE	REFERENCE	TREATMENT STAGE	IMPROVEMENT ACTION	ACTION TAKEN	TARGET DATE FOR COMPLETION
Clermont	CLM5.2	Chemical Dosing - Potassium permanganate	Require flowswitch for potassium permanganate to allow dosing into 2 ML raw water tank.	Contractor engaged for chemical upgrade	Jun-26
Clermont	CLM16 & CLM17	Bypass of flash mixer Bypass of clarification process	Lock out valves	Valves signed	Mar-26
Clermont	CLM21 & CLM22	Filtration - Media filtration	Investigate online turbidity meters for individual filters.	Installed and operational with alarms and interlocks for shutdown	Complete
Glenden	GLN1	Raw water sourcing	Ensure there is a process to engage with stakeholders to ensure access to Glencore Dam water.	Ongoing and dependent on ownership	Jun-26
Glenden	GLN11 & GLN12	Filtration - Media filtration	Instrument air and solenoid operation in SCADA upgrade	Maintenance of valves ongoing. Renewals included in the transition to SCADA project	Jan-26
Middlemount	MMT5	Supernatant return and storage	Identify the control philosophy for the waste stream and reroute so that clarifier sludge cannot directly enter Turkeys Nest.	Valve disabled	Complete
Middlemount	MMT12 MMT15	Chemical Dosing - Aluminium Chlorohydrate Clarification	[redacted]	Capital upgrade planning phase	Dec-26
Middlemount	MMT16	Filtration - Media filtration	Alarms to be checked to ensure operators are made aware at 0.2 NTU. [redacted]	Alarms and shutdown interlocks implemented for individual filters	Complete
Middlemount	MMT17	Filtration - Media filtration	Investigate feasibility of automated backwash and implement if possible	Capital upgrade planning phase	Dec-26
Middlemount	MMT18	Disinfection - chlorine gas	Investigate shutdown on high chlorine	Chlorine analyser installed at the treatment plant and configured with alarms and shutdown interlocks. Chlorine analyser installed at the treated water reservoir and configured with alarms	Complete
Dysart	DYS2	Supernatant return	Develop procedure to isolate supernatant return if raw water tank is offline. Is possible to discharge to sewer.	Work instruction developed and in use.	Complete

SITE	REFERENCE	TREATMENT STAGE	IMPROVEMENT ACTION	ACTION TAKEN	TARGET DATE FOR COMPLETION
Dysart	DYS3	Chemical Dosing - Aluminium Chlorohydrate (ACH)	Consider alarms for DAF turbidity meter	Alarms available for use when required	Complete
Dysart	DYS10	Chemical Dosing - Potassium permanganate	[redacted]	Corrected	Complete
Dysart	DYS14	Chemical Dosing - Aluminium Chlorohydrate (ACH)	Ensure alarms to operators at 5 NTU or shuts down plant. Reinstate all meters and other alarms.	Clarifier shutdown interlock at 5 NTU. All online analysers reinstated with alarms and shutdown interlocks.	Complete
Dysart	DYS17	Chemical Dosing- Chlorine gas	[redacted]	Alarms and interlock configured for treated water chlorine analyser	Complete
Dysart	DYS17.1	Chemical Dosing- Chlorine gas	Replace dosing lines with chemical compatible materials	Partial replacement of the chemical dosing line	March 2026
Dysart	DYS19 & DYS20	Filtration - Media filtration Filtration - Media	Service meters and reinstate shutdowns	Alarms and interlock configured for filtered water turbidity	Complete
Dysart	DYS24	Disinfection - chlorine gas	Chlorine meter to be reinstated, ideally recirculating in clearwater tank.	Chlorine analyser reinstated with alarms and interlock configured for low and high chlorine.	Complete
Moranbah WTP	MBHW13	Filtration - Media filtration	Actuators positioners and valve sets to be serviced/inspected/ repaired	Critical repairs and renewals continue.	Jun-26
Moranbah WTP	MBHW14	Filtration - Media filtration	Investigate improvements to actuators to allow for improved automation of processes.	Critical repairs and renewals continue.	Jun-26
Moranbah WTP	MBHW16 & MBHW17	Disinfection - chlorine gas	Install tapping into Clear water to allow installation of online chlorine meter	Tapping installed in Clear water (Reservoir 1)	Complete
Moranbah WTP	MBHW22	Disinfection - chlorine gas	Investigate necessity of bypass, review options for improved management of risk (e.g., valve lock, air gapping, installing a second valve, etc.)	In progress	Jun-26
Moranbah Boby	MBHB11	Clarification	Investigate improved automation of processes	Boby has been restarted, plant familiarisation and improvement continues.	Jun-26

SITE	REFERENCE	TREATMENT STAGE	IMPROVEMENT ACTION	ACTION TAKEN	TARGET DATE FOR COMPLETION
Moranbah Boby	MBHB12 & MBHB13	Filtration - Media filtration	Currently refurbishing filters at Boby treatment plant including filter replacement. Require online turbidity meters - include tappings for these meters in current project - need to investigate whether pairs of filters can be individual meters, or combined meter on pair.	Online turbidity analysers installed on individual filters	Complete
Moranbah Boby	MBHB15	Disinfection - chlorine gas	Install tapping into Clear water to allow installation of online chlorine meter	Tapping installed in Clear water (Reservoir 1)	Complete
Moranbah Boby	MBHB19	Disinfection - chlorine gas	Investigate necessity of bypass, review options for improved management of risk (e.g., valve lock, air gapping, installing a second valve, etc.)	In progress	Jun-26
Nebo	NBO5	Filtration - Media	Initiate backwash on turbidity trigger.	Controls review in progress currently trigger on time and DP with alarms for filter turbidity	Jun-26
Nebo	NBO9	Ultraviolet Disinfection	Confirm that UV changes over on failure to meet dose.	Confirmed through simulation	Complete
St Lawrence	STL1	Raw Water Abstraction	Consider ability to install turbidity meter and plant shut down on poor water quality.	Planning phase for capital upgrade	Jun-26
St Lawrence	STL4 & STL5	Chemical Dosing- Potassium permanganate	Planning for 0.5 ML raw water tank to smooth out variability in raw water	0.5 ML raw water tank installed and effectively reducing variability	Complete
St Lawrence	STL STL8 STL13	Chemical Dosing - soda ash Chemical Dosing Filtration – Media filtration	Consider ability to install turbidity meter and plant shut down on poor water quality	Planning phase for capital upgrade	Jun-26
St Lawrence	STL14	Filtration - Media filtration	Consider ability to install turbidity meter and plant shut down on poor water quality. Manual diversion of ripening water to waste.	Planning phase for capital upgrade	Jun-26
Reticulation and whole of system	WOS9	Cyber	Have commenced upgrades on SCADA.	GeoSCADA network has been designed with increased cyber security controls that shall be implemented during the upgrade.	Complete

SITE	REFERENCE	TREATMENT STAGE	IMPROVEMENT ACTION	ACTION TAKEN	TARGET DATE FOR COMPLETION
Reticulation and whole of system	WOS11	Whole of system	Maintain training for all operational staff.	2 yearly review of corporate inductions and work instructions with automated monitoring and reminders. 40 point induction process on employment. Monthly training at Operators meetings. Update of specialised licenses and tickets completed as required – with automatic monitoring and reminders.	Complete
Reticulation and whole of system	WOS17	Whole of system	Ageing Infrastructure.	Develop asset condition data base to inform future replacement programs	Jun-26

SECTION 2: COMPLIANCE WITH WATER QUALITY CRITERIA

IRC sends verification monitoring samples to the Mackay Regional Council Laboratory (MRCL) National Association of Testing Authorities (NATA) accredited Laboratory.

Detailed summaries of each supply system's verification monitoring and compliance with water quality criteria are included in the relevant Appendices.

While the vast majority of samples were fully compliant in the 2024/2025 with the water quality criteria, there have been 10 instances where incidents or events have been identified and reported to the Regulator.

Carmila:	1 event for low chlorine in reticulation
	1 event for detection of chlorate above Australian Drinking Water Guidelines (ADWG) in treated water and reticulation
Clermont:	No events or ADWG health exceedances
Dysart:	1 event for low chlorine in reticulation
Glenden:	1 detection of chlorate above ADWG in treated water and reticulation
Middlemount:	No events or ADWG health exceedances
Moranbah:	1 event for elevated turbidity in reticulation
	1 event for elevated turbidity in treated water
Nebo:	[redacted]
St Lawrence:	1 event for raw water main break resulting in tankering of potable water
	1 event for low chlorine in treated water reservoir and reticulation
	1 detection of chlorate above ADWG in reticulation

SECTION 3: NOTIFICATIONS TO THE REGULATOR

The following table provides details of each of the notifications made to the Department of Local Government, Water and Volunteers (DLGWV).

Table 2 IRC Notifications to the Regulator

INCIDENT DATE	DLGWV REFERENCE	SCHEME	LOCATION	PARAMETER	DESCRIPTION OF EVENT	IMPROVEMENT	STATUS WITH DLGWV
3/10/2024	DWI-486-24-11387	Moranbah	Network	Turbidity	Elevated network turbidity recorded at samples taken from fire hydrants after a truck mains break.	[redacted] A valve shutdown form has been introduced for use with the network plumbers and treatment plant operators for use during shutdowns.	Closed 28/7/2025
19/12/2024	DWI-486-24-11670	Dysart	Network	Free Chlorine	[redacted] This resulted in the chlorine in the network dropping below 0.2 mg/L on 19 December. Chlorine residual in the network returned to operational parameters on 20 December.	Dysart Water Treatment Plant has been set up on SWIMLocal for all plant and sampling data entry. The alert and notification functions of SWIMLocal are being used to eliminate late reporting of results which are outside specified target limits.	Closed 2/4/2025
20/1/2025	DWI-486-25-11762	St Lawrence	Raw Water	Main Break	The raw water main which supplies the St Lawrence WTP with water from St Lawrence Creek burst in the section which runs underneath the Bruce Highway on 19 January. IRC tankered 270kL of potable water to supplement the water supply from 20 to 26 January.	The final 620m of Raw Water Main from the Bruce Highway to the fenceline of the WTP will be replaced under a capital project. A documented process in the event where tankering of raw or potable water is required has been drafted.	Closed 13/6/2025

INCIDENT DATE	DLGWV REFERENCE	SCHEME	LOCATION	PARAMETER	DESCRIPTION OF EVENT	IMPROVEMENT	STATUS WITH DLGWV
5/2/2025	DWI-486-25-11838	St Lawrence	Network & Treated Water Reservoir	Free Chlorine	Between 5 February 2025 and 11 February 2025, 4 reticulation samples measured below the 0.2mg/L limit for Free Chlorine, and the TWR measured below the 1.5mg/L limit between 6 and 11 February. It was found that the demand from town had decreased, and the free chlorine was naturally dropping out in the TWR through decreased usage. It was identified that the chlorine dosing and or reservoir levels had not been adjusted accordingly to accommodate this.	St Lawrence is scheduled for a chemical and plant capital project upgrade in the 25/26 financial year. This upgrade includes a change to the use of Chlorine Gas for disinfection, and 3 points of chlorine dosing are planned (pre-oxidisation, disinfection and final trim).	Closed 28/7/2025
12/2/2025	DWI-486-25-11847	Nebo	Network	[redacted]	[redacted]	New fit for purpose sample tap was installed at the location.	Closed 13/6/2025
5/3/2025	DWI-486-25-11907	St Lawrence	Network	Chlorate	Elevated chlorate result in the Reticulation sample from St Lawrence WTP on 5 March 2025. This was found to be due to a change in raw water quality and increase in town demand. The plant at St Lawrence doses Calcium Hypochlorite (2%) into the filtered water. This is the only dosing point for chlorine in this plant.	A raw water tank has been installed to assist with managing variations in raw water quality. St Lawrence is scheduled for a chemical and plant capital project upgrade in the 25/26 financial year. This upgrade includes a change to the use of Chlorine Gas for disinfection.	Closed 13/6/2025
5/3/2025	DWI-486-25-11908	Glenden	Network & Treated Water	Chlorate	Elevated chlorate result in both the Treated Water and Reticulation sample from Glenden WTP on 5 March 2025. This was found to be due to the end of the batch of Sodium hypochlorite likely breaking down prior to the plant receiving the new delivery on 4 March 2025.	Investigate a transition to chlorine gas.	Closed 13/6/2025

INCIDENT DATE	DLGWV REFERENCE	SCHEME	LOCATION	PARAMETER	DESCRIPTION OF EVENT	IMPROVEMENT	STATUS WITH DLGWV
22/3/2025	DWI-486-25-11961	Carmila	Network	Free Chlorine	On 22 March 2025 the reticulation sample measured below the 0.2mg/L limit for Free Chlorine. The raw water coming into the plant from 17-20 March was highly turbid and unable to be treated resulting in no water being produced. Once treated water was produced and diverted back to the CWR on 21 March the chlorine increased and returned within specifications.	Carmila is scheduled for a chemical and plant capital project upgrade in the 25/26 financial year. This upgrade includes a change to the use of Chlorine Gas for disinfection, and 2 points of chlorine dosing are planned (pre-oxidisation and disinfection). Additionally, the installation of a raw water tank to manage varying raw water quality is being investigated.	Closed 13/6/2025
16/4/2025	DWI-486-25-12016	Moranbah	Treated Water	Turbidity	[redacted]	[redacted]	Closed 13/6/2025
4/6/2025	DWI-486-25-12111	Carmila	Treated Water & Network	Chlorate	Elevated chlorate result in both the Treated Water and Reticulation sample from Carmila WTP on 4 June 2025. This was found to be due to increased iron levels in the raw water supply. The plant at Carmila doses Calcium Hypochlorite (2%) into the raw water prior to the flash mixer. This is the only dosing point for chlorine in this plant and is used for both disinfection and as an oxidant. A primary oxidiser was introduced into the flash mixer to assist with the oxidation of the elevated iron levels in the raw water reducing the calcium hypochlorite dosing.	Carmila is scheduled for a chemical and plant capital project upgrade in the 25/26 financial year. This upgrade includes a change to the use of Chlorine Gas for disinfection, and 2 points of chlorine dosing are planned (pre-oxidisation and disinfection). Additionally, the installation of a raw water tank to manage varying raw water quality is being investigated.	Closed 17/9/2025

SECTION 4: CUSTOMER COMPLAINTS RELATED TO WATER QUALITY

Table 3 outlines the water quality complaints reported by consumers in the 2024/2025 reporting year. Complaints increased compared to the previous years.

Table 3 Summary of Water Quality Complaints

	Health Concern	Discoloured Water	Taste and Odour	Other	Total
CARMILA	0	0	0	0	0
CLERMONT	0	2	3	0	5
DYSART	1	1	1	0	3
GLENDEN	0	0	0	0	0
MIDDLEMOUNT	0	4	0	0	4
MORANBAH	0	11	1	0	12
NEBO	0	0	0	0	0
ST LAWRENCE	0	3	0	0	3
TOTAL	1	21	5	0	27

HEALTH CONCERN

One (1) complaint was received regarding the water quality in Dysart being [redacted]. IRC investigated the complaint as per the normal process and have reviewed the NATA Laboratory results which indicated that IRC have and continue to supply drinking water in accordance with the DWQMP and the ADWG.

AESTHETIC COMPLAINTS

When water quality complaints are received, the following standard responses are performed as appropriate. Between each action, the water is sampled to determine whether the situation has been rectified.

1. Localised flushing.
2. Mains flushing.
3. Samples collected for further investigation (if required, particularly if the cause of the complaint is unknown).

TASTE AND ODOUR

Taste and odour complaints can be related to the taste of chlorine in the water supply, or due to the inherent hardness of water in some schemes. During testing, staff explain to customers the importance of free chlorine in drinking water.

DISCOLOURED WATER

The majority of complaints for the current 2024/2025 reporting year related to discoloured water.

When a complaint is received relating to discoloured drinking water, the following investigations are conducted, and the corrective actions taken as considered appropriate according to the Water and Waste Customer Service Standards:

a. Conduct sampling and testing of the affected water.

b. Review treatment processes and chemical dosing systems.

c. Undertake flushing of network mains.

d. Take corrective actions and monitor water quality at a higher frequency.

SECTION 5: OUTCOME OF THE REVIEW OF THE DWQMP

No review was required or conducted during the FY24/25 financial year. A review of the DWQMP is due on the 11th of November 2025 with a submission 30 business days later on the 22nd of December 2025.

SECTION 6: FINDINGS AND RECOMMENDATIONS OF THE DWQMP AUDITOR

No audits were completed in this financial year FY24/25. The previous audit was conducted in 2022 and are conducted on a four (4) yearly cycle with the next audit for IRC due in 2026.

SECTION 7: SUMMARY OF COMPLIANCE WITH WATER QUALITY CRITERIA

All verification testing was obtained via the Mackay NATA accredited laboratory. These results were supplemented with operator collected data in accordance with the operational monitoring program as part of the DWQMP, and individual to the specific schemes. Some schemes do not operate every day, so daily sampling refers to days on which the plant was operational. ADWG health exceedances and Queensland Health (QH) exceedances are highlighted and counted in tables.

- Microbial values lower than the limit of detection (<LOR) are reported as 0.
- All other analyte values lower than the limit of detection (<LOR) are reported as 0.5 x LOR. This allows for a more reflective calculation of the median value where results that were less than detection limit contribute to the median calculation. This practice is in accordance with the recommendations of the ADWG.

The operational monitoring, verification monitoring for treated water, reticulation, E. coli, and algae for each of the eight supply systems is provided in the Appendices as follows:

- Appendix A – Carmila Supply System (No Algae testing as per DWQMP)
- Appendix B – Clermont Supply System
- Appendix C – Dysart Supply System
- Appendix D – Glenden Supply System
- Appendix E – Middlemount Supply System
- Appendix F – Moranbah Supply System
- Appendix G – Nebo Supply System (No Algae testing as per DWQMP)
- Appendix H – St Lawrence Supply System

APPENDIX A – CARMILA SUPPLY SYSTEM

CARMILA OPERATIONAL MONITORING

Table 4 Carmila Operator Tested Water Quality (Treatment Plant)

Parameter	Units	Count	Minimum	5th%ile	Median	Std Dev	95th%ile	Maximum
Alkalinity	(mg/L $CaCO_3$)	10	95	-	110	12	-	130
Free Chlorine	(mg/L)	245	0.20	1.21	2.10	0.68	3.08	4.85
pH		246	6.30	6.86	7.11	0.20	7.50	7.88
Total Al	(mg/L)	22	0.01	0.01	0.04	0.03	0.13	0.14
Total Fe	(mg/L)	116	0.00	0.00	0.09	0.06	0.18	0.23
Total Mn	(mg/L)	67	0.00	0.00	0.00	0.00	0.01	0.01
True Colour	HU	234	0.00	0.00	0.00	0.00	0.00	0.00
Turbidity	NTU	245	0.00	0.09	0.17	0.11	0.27	1.54
UVA		244	0.00	0.01	0.03	0.05	0.09	0.099

CARMILA VERIFICATION MONITORING – TREATED WATER, RETICULATION AND E. COLI

Table 5 Carmila Verification Monitoring (Treated Water)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	84	108	17	144	-	0
Aluminium (Total)	µg/L	12	12	10	29	30	117	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	102	131	21	175	-	0
Boron (Total)	µg/L	12	12	13	18	2	22	-	0
Bromate	µg/L	4	4	6.60	6.60	0	6.60	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Cadmium (Total)	µg/L	4	4	0.03	0.03	0	0.03	-	0
Calcium (Total)	mg/L	12	12	20	26	6	40	-	0
Carbonate	mg/L	12	12	0.03	0.10	0.09	0.30	-	0
Chlorate	mg/L	4	10	48	628	344	912	-	4 Exceedances reported in one event
Chloride	mg/L	4	9	31	38	4	42	-	0
Chlorite	µg/L	4	4	6.60	6.60	0	6.60	-	0
Chromium (Total)	µg/L	4	4	0.03	0.11	0.03	0.12	-	0
Colour - True	TCU	12	12	0.33	0.33	0.62	2.00	-	0
Conductivity	µS/cm	12	12	327	335	24	394	-	0
Copper (Total)	µg/L	12	12	0.33	0.33	1.17	3.56	-	0
Fluoride	µg/L	12	12	0.33	0.33	1.17	3.56	-	0
Free Carbon Dioxide	mg/L	12	12	5	11	3	15	-	0
Hardness	mg/L	12	12	86	110	25	171	-	0
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0
Iron (Total)	µg/L	12	17	12	81	66	304	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	8.2	10.9	2.7	17.6	-	0
Manganese (Total)	µg/L	12	12	1.4	5.1	7.2	29.0	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.10	0.37	0.16	0.59	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.10	7.28	0.21	7.68	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	0.57	0.81	0.18	1.20	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0	1.65	-	0
Sodium (Total)	mg/L	12	12	19	25	3	30	-	0
Sulphate	mg/L	12	12	2	9	6	22	-	0
Total Dissolved Solids	mg/L	12	12	196	201	14	237	-	0
Turbidity	NTU	12	12	0.11	0.28	0.32	1.13	-	0
Zinc (Total)	µg/L	12	12	1.8	2.4	1.4	6.1	-	0

Table 6 Carmila Verification Monitoring (Reticulation)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	86	103	17	144	-	0
Aluminium (Total)	µg/L	12	12	15	36	35	157	-	0
Arsenic (Total)	µg/L	4	4	<1	0.33	0	<1	-	0
Bicarbonate	mg/L	12	12	104	124	20	174	-	0
Boron (Total)	µg/L	12	12	14	19	2	21	-	0
Bromate	µg/L	4	4	<20	6.6	0	6.6	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Bromodichloromethane	µg/L	4	4	20	26	9	43	-	0
Bromoform	µg/L	4	4	<5	1.65			-	0
Cadmium (Total)	µg/L	4	4	<0.1	0.033			-	0
Calcium (Total)	mg/L	12	12	22	29	5	44	-	0
Carbonate	mg/L	12	12	0.2	0.5	0.2	0.8	-	0
Chlorate	µg/L	4	9	192	841	241	911	-	5 Exceedances reported in one event
Chloride	mg/L	4	9	30	38	4	42	-	0
Chlorite	µg/L	4	4	<20	6.6			-	0
Chloroform	µg/L	4	4	29	51	40	133	-	0
Chromium (Total)	µg/L	4	4	0.20	0.29	0.06	0.34	-	0
Colour - True	TCU	12	12	0.33	0.33	0.62	2.0	-	0
Conductivity	µS/cm	12	12	336	346	20	404	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Copper (Total)	µg/L	12	12	1.4	3.2	1.2	6.5	-	0
Dibromochloromethane	µg/L	12	4	10	11	2	15	-	0
E. coli	MPN/ 100mL	12	51	0	0	0	0	-	0
Fluoride	mg/L	12	12	0.033	0.033	0.034	0.126	-	0
Free Carbon Dioxide	mg/L	12	12	1.9	3.05	0.7	3.9	-	0
Free Chlorine Residual (Client tested)	mg/L	51	55	0.20	1.00	0.42	1.89	-	1 event reported
Hardness	mg/L	12	12	89	116	22	178	-	0
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0
Iron (Total)	µg/L	12	13	17	31	34	130	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	7.9	10.0	2.2	16.3	-	0
Manganese (Total)	µg/L	12	12	1.4	2.4	2.7	10.0	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.10	0.40	0.30	1.19	-	0
Nitrite	mg/L	12	12	0.13	0.13	0	0.13	-	0
pH		12	12	7.66	7.87	0.14	8.07	-	0
pH (Client tested)		51	55	7.04	7.65	0.21	8.25	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	0.62	0.83	0.16	1.20	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0	1.65	-	0
Sodium (Total)	mg/L	12	12	20	25	3	30	-	0
Sulphate	mg/L	12	12	2.7	9.4	5.9	21.6	-	0
Total Dissolved Solids	mg/L	12	12	202	207	12	242	-	0
Trihalomethanes (Total)	µg/L	4	4	64	92	46	186	-	0
Turbidity	NTU	12	12	0.03	0.35	0.59	2.35	-	0
Turbidity (Client tested)	NTU	51	55	0.10	0.18	0.06	0.40	-	0
Zinc (Total)	µg/L	12	12	1.4	2.3	0.5	2.9	-	0

Table 7 Carmila - *E. coli* Compliance

Financial Year	2024-2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	5	3	4	5	4	4	5	4	4	5	4	4
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 months	52	53	51	51	52	51	51	51	51	51	52	51
No. of failures in previous 12 months	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

APPENDIX B – CLERMONT SUPPLY SYSTEM

CLERMONT OPERATIONAL MONITORING

Table 8 Clermont Operator Tested Water Quality (Treatment Plant)

Parameter	Units	Count	Minimum	5th%ile	Median	Std Dev	95th%ile	Maximum
Alkalinity	(mg/L $CaCO_3$)	46	13	17	99	29	113	180
Free Chlorine	(mg/L)	352	0.55	1.35	1.94	0.44	2.80	3.10
pH		351	7.10	7.25	7.44	0.13	7.66	7.80
Total Al	(mg/L)	143	0.00	0.00	0.00	0.01	0.04	0.05
Total Fe	(mg/L)	296	0.00	0.00	0.00	0.02	0.03	0.30
Total Mn	(mg/L)	320	0.00	0.00	0.00	0.01	0.01	0.06
True Colour	HU	346	0.00	0.00	0.00	0.21	0.00	3.00
Turbidity	NTU	350	0.00	0.00	0.10	0.08	0.21	0.42
UVA		317	0.00	0.00	0.03	0.02	0.05	0.07

CLERMONT VERIFICATION MONITORING – TREATED WATER, RETICULATION, E. COLI AND ALGAE

Table 9 Clermont Verification Monitoring (Treated Water)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	65	104	19	123	-	0
Aluminium (Total)	µg/L	12	12	2	22	17	71	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	79	127	23	149	-	0
Boron (Total)	µg/L	12	9	26	40	7	52	[redacted]	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.853	-	0
Calcium (Total)	mg/L	12	12	13	21	4	26	-	0
Carbonate	mg/L	12	12	0.1	0.2	0.1	0.4	-	0
Chloride	mg/L	4	9	39	61	12	79	-	0
Chromium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Colour - True	TCU	12	12	0.33	1.00	0.83	3.00	-	0
Conductivity	µS/cm	12	12	243	415	83	491	-	0
Copper (Total)	µg/L	12	12	0.33	1.40	0.36	1.91	-	0
Fluoride	mg/L	12	12	0.033	0.033	0	0.199	-	0
Free Carbon Dioxide	mg/L	12	12	2.70	4.55	1.33	7.20	-	0
Hardness	mg/L	12	12	54	93	18	111	-	0
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Iron (Total)	µg/L	12	12	0.7	3.5	4.2	15.8	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	4.9	9.4	2.0	11.1	-	0
Manganese (Total)	µg/L	12	12	0.33	1.51	1.74	6.62	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	4	12	0.40	0.66	0.12	0.81	-	0
Nitrite	mg/L	4	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.48	7.61	0.10	7.79	-	0
Phosphate	mg/L	12	9	0.165	0.165	0	0.165	[redacted]	0
Potassium (Total)	mg/L	12	12	3.9	4.7	0.9	7.6	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0	1.65	-	0
Sodium (Total)	mg/L	12	12	22	35	9	61	-	0
Sulphate	mg/L	12	9	3	3	1	5	[redacted]	0
Total Dissolved Solids	mg/L	12	12	146	249	50	295	-	0
Turbidity	NTU	12	12	0.033	0.132	0.117	0.421	-	0
Zinc (Total)	µg/L	12	12	0.33	1.29	0.67	2.21	-	0

Table 10 Clermont Verification Monitoring (Reticulation)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	64	105	19	123	-	0
Aluminium (Total)	µg/L	12	12	1.65	22.47	15.06	66.26	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	78	127	23	149	-	0
Boron (Total)	µg/L	12	9	25	41	7	51	[redacted]	0
Bromide	mg/L	4	9	0.13	0.13	0	0.13	-	0
Bromodichloromethane	µg/L	4	4	21	33	11	51	-	0
Cadmium (Total)	µg/L	4	4	0.03	0.03	0	0.03	-	0
Calcium (Total)	mg/L	12	12	13.2	22.0	4.3	27.7	-	0
Carbonate	mg/L	12	12	0.10	0.30	0.13	0.50	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Chloride	mg/L	4	9	40	61	12	79	-	0
Chloroform	µg/L	4	4	39	58	31	117	-	0
Chromium (Total)	µg/L	4	4	0.03	0.03	0	0.03	-	0
Colour - True	TCU	12	12	0.33	0.67	1.07	4.00	-	0
Conductivity	µS/cm	12	12	244	416	84	498	-	0
Copper (Total)	µg/L	12	12	1.16	3.17	1.44	4.85	-	0
Dibromochloromethane	µg/L	4	4	9	15	9	32	-	0
E. coli	MPN/ 100mL	52	156	0	0	0	0	-	0
Fluoride	mg/L	12	12	0.03	0.03	0.07	0.19	-	0
Free Carbon Dioxide	mg/L	12	12	1.90	3.50	0.79	4.90	-	0
Free Chlorine Residual (Client tested)	mg/L	52	156	0.51	1.46	0.46	2.77	-	0
Hardness	mg/L	12	12	52	95	19	116	-	0
Hydroxide	mg/L	12	12	0.03	0.03	0	0.03	-	0
Iron (Total)	µg/L	12	12	0.66	5.00	3.95	12.61	-	0
Lead (Total)	µg/L	4	4	0.17	0.41	0.30	0.85	-	0
Magnesium (Total)	mg/L	12	12	5	9	2	11	-	0
Manganese (Total)	µg/L	12	12	0.33	1.42	1.35	5.26	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.39	0.65	0.12	0.78	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH	pH unit	12	12	7.54	7.73	0.12	7.95	-	0
pH (Client tested)	pH unit	52	156	6.84	7.53	0.16	7.84	-	0
Phosphate	mg/L	12	9	0.165	0.165	0	0.165	[redacted]	0
Potassium (Total)	mg/L	12	12	3.68	4.79	0.97	7.61	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0.00	1.65	-	0
Sodium (Total)	mg/L	12	12	22	35	9	61	-	0
Sulphate	mg/L	12	9	2.7	3.2	0.6	4.5	[redacted]	0
Total Dissolved Solids	mg/L	12	12	146	249	50	299	-	0
Trihalomethanes (Total)	µg/L	4	4	76	126	38	164	-	0
Turbidity	NTU	12	12	0.03	0.16	0.18	0.67	-	0
Turbidity (Client tested)	NTU	52	156	0.10	0.17	0.09	0.73	-	0
Zinc (Total)	µg/L	12	12	0.33	1.98	1.50	6.05	-	0

Table 11 Clermont - *E. coli* Compliance

Financial Year	2024-2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	15	12	12	15	12	12	15	12	12	15	12	12
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 months	104	109	117	126	131	138	146	154	156	159	156	156
No. of failures in previous 12 months	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 12 Clermont – Algae Raw Water

Parameter	Unit	Minimum frequency in DWQMP	Count	Maximum	Comment *if any samples missed
Cyanobacteria Total Cells	cells/mL	31	29	69560	IRC optimised the sample plan during the FY resulting in changes in targets. No missed samples.
Potentially Toxic	cells/mL	-	21	51190	
Potentially Toxic Biovolume	mm3/L	-	21	2.06	

Table 13 Clermont – Algae Treated Water

Parameter	Unit	Number of Samples triggering QH Toxin Testing	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Total Saxitoxins	µg/L	12	<2.0	-	0

APPENDIX C – DYSART SUPPLY SYSTEM

DYSART OPERATIONAL MONITORING

Table 14 Dysart Operator Tested Water Quality (Treatment Plant)

Parameter	Units	Count	Minimum	5th%ile	Median	Std Dev	95th%ile	Maximum
Alkalinity	(mg/L $CaCO_3$)	40	0.00	65.20	80.60	13.24	90.00	90.00
Free Chlorine	(mg/L)	325	1.13	1.29	1.86	0.30	2.28	2.90
pH		328	6.78	6.93	7.07	0.18	7.48	7.72
Total Al	(mg/L)	15	0	-	0.01	0.01	-	0.02
Total Fe	(mg/L)	262	0	0	0	0.01	0.01	0.04
Total Mn	(mg/L)	302	0	0	0	0.00	0.01	0.03
True Colour	HU	328	0	0	0	0.53	0.10	6.00
Turbidity	NTU	328	0	0	0.12	0.07	0.23	0.47

DYSART VERIFICATION MONITORING – TREATED WATER, RETICULATION, E.COLI AND ALGAE

Table 15 Dysart Verification Monitoring (Treated Water)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	47.4	79.1	15.6	102.0	-	0
Aluminium (Total)	µg/L	12	12	1.65	23.74	14.09	51.54	-	0
Antimony (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Arsenic (Total)	µg/L	4	4	0.330	0.330	0	0.330	-	0
Barium (Total)	µg/L	4	4	32.8	34.1	5.4	45.9	-	0
Beryllium (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Bicarbonate	mg/L	12	12	58.0	96.5	18.9	124.0	-	0
Boron (Total)	µg/L	12	12	29.6	38.4	5.7	52.0	-	0
Bromide	mg/L	12	12	0.132	0.132	0	0.132	-	0
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Calcium (Total)	mg/L	12	12	10.4	20.2	4.1	25.7	-	0
Carbonate	mg/L	12	12	0.100	0.150	0.064	0.300	-	0
Chloride	mg/L	12	12	26.9	50.5	11.9	64.6	-	0
Chromium (Total)	µg/L	4	4	0.033	0.033	0.036	0.117	-	0
Cobalt (Total)	µg/L	4	4	0.066	0.066	0	0.066	-	0
Colour - True	TCU	12	12	0.33	1.00	0.48	2.00	-	0
Conductivity	µS/cm	12	12	220	339	67	426	-	0
Copper (Total)	µg/L	12	12	3.6	6.7	1.3	8.6	-	0
Fluoride	mg/L	12	12	0.033	0.033	0.043	0.131	-	0
Free Carbon Dioxide	mg/L	12	12	3.40	4.30	1.30	7.70	-	0
Hardness	mg/L	12	12	52	86	18	113	-	0
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Iron (Total)	µg/L	12	16	0.165	1.387	5.217	14.923	-	0
Magnesium (Total)	mg/L	12	12	4.992	8.627	1.919	11.843	-	0
Manganese (Total)	µg/L	12	12	0.33	0.33	0.95	3.13	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Molybdenum (Total)	µg/L	4	4	0.33	0.33	0.35	1.14	-	0
Nickel (Total)	µg/L	4	4	0.557	0.591	0.044	0.674	-	0
Nitrate	mg/L	12	12	0.334	0.678	0.469	1.721	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.36	7.51	0.12	7.77	-	0
Phosphate	pH unit	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	4.305	6.159	0.750	7.177	-	0
Selenium (Total)	µg/L	4	4	1.650	1.650	0	1.650	-	0
Silver (Total)	µg/L	4	4	0.033	0.033	0.118	0.306	-	0
Sodium (Total)	µg/L	12	12	11.77	28.76	6.67	37.71	-	0
Strontium (Total)	µg/L	4	3	184.65	215.18	28.86	255.13	[redacted]	0
Sulphate	µg/L	12	16	1.91	5.82	2.27	10.24	-	0
Thallium (Total)	µg/L	4	3	0.165	0.165	0	0.165	[redacted]	0
Tin (Total)	µg/L	4	4	0.33	9.12	4.33	11.23	-	0
Titanium (Total)	µg/L	4	3	1.53	3.35	1.45	5.07	[redacted]	0
Total Dissolved Solids	µg/L	12	12	132	204	40	256	-	0
Turbidity	µg/L	12	12	0.03	0.24	0.10	0.35	-	0
Uranium (Total)	µg/L	4	4	0.17	0.37	0.23	0.65	-	0
Vanadium (Total)	µg/L	4	3	0.36	0.38	0.35	1.12	[redacted]	0
Zinc (Total)	µg/L	12	12	0.33	4.69	1.83	7.82	-	0

Table 16 Dysart Verification Monitoring (Reticulation)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	36	76	18	99	-	0
Aluminium (Total)	µg/L	12	12	2	26	18	68	-	0
Antimony (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Barium (Total)	µg/L	4	4	33	34	5	44	-	0
Beryllium (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Bicarbonate	mg/L	4	12	44	93	22	120	-	0
Boron (Total)	µg/L	12	12	31	39	5	50	-	0
Bromide	mg/L	12	12	0.132	0.132	0	0.132	-	0
Bromodichloromethane	µg/L	4	5	16	24	7	37	-	0
Bromoform	µg/L	4	5	2	2	2	7	-	0
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Calcium (Total)	mg/L	12	12	11	21	5	26	-	0
Carbonate	mg/L	12	12	0.10	0.20	0.06	0.30	-	0
Chloride	mg/L	12	12	28	51	12	67	-	0
Chloroform	µg/L	4	5	20	32	8	45	-	0
Chromium (Total)	µg/L	4	4	0.03	0.03	0.04	0.12	-	0
Cobalt (Total)	µg/L	4	4	0.066	0.066	0	0.066	-	0
Colour - True	TCU	12	12	0.33	0.67	0.49	2.00	-	0
Conductivity	µS/cm	12	12	178	327	76	421	-	0
Copper (Total)	µg/L	12	12	2	4	1	6	-	0
Dibromochloromethane	µg/L	4	5	7	20	7	27	-	0
E. coli	MPN/ 100mL	52	159	0	0	0	0	-	0
Fluoride	mg/L	12	12	0.03	0.03	0.03	0.13	-	0
Free Carbon Dioxide	mg/L	12	12	2	3	1	5	-	0
Free Chlorine Residual (Client tested)	mg/L	52	159	0.20	0.88	0.27	1.56	-	0
Hardness	mg/L	12	12	52	92	19	110	-	0
Hydroxide	mg/L	12	12	0	0	0	0	-	0
Iron (Total)	µg/L	12	12	1	3	8	26	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	5	9	2	11	-	0
Manganese (Total)	µg/L	12	12	0.3	0.3	0.8	2.5	-	0
Mercury (Total)	µg/L	4	4	0.2	0.2	0.0	0.2	-	0
Molybdenum (Total)	µg/L	4	4	0.3	0.3	0.3	1.1	-	0
Nickel (Total)	µg/L	4	4	0.2	0.6	0.2	0.6	-	0
Nitrate	mg/L	12	12	0.4	0.8	0.5	1.8	-	0
Nitrite	mg/L	12	12	0.1	0.1	0.0	0.1	-	0
pH		12	12	7.47	7.61	0.09	7.77	-	0
pH (Client tested)		52	159	7.00	7.16	0.15	7.62	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Potassium (Total)	mg/L	12	12	4	6	1	7	-	0
Selenium (Total)	µg/L	4	4	1.650	1.650	0	1.650	-	0
Silver (Total)	µg/L	4	4	0.03	0.03	0.09	0.25	-	0
Sodium (Total)	mg/L	12	12	12	30	7	38	-	0
Strontium (Total)	µg/L	4	3	199	224	23	256	[redacted]	0
Sulphate	mg/L	12	12	3.4	6.1	1.9	9.3	-	0
Thallium (Total)	µg/L	4	3	0.165	0.165	0	0.165	[redacted]	0
Tin (Total)	µg/L	4	4	0.3	9.5	4.4	11.6	-	0
Titanium (Total)	µg/L	4	3	1.3	2.8	1.7	5.5	[redacted]	0
Total Dissolved Solids	mg/L	12	12	107	196	45	253	-	0
Trihalomethanes (Total)	µg/L	4	5	56	74	18	108	-	0
Turbidity	NTU	12	12	0.03	0.27	0.19	0.72	-	0
Turbidity (Client tested)	NTU	52	159	0.03	0.16	0.09	0.69	-	0
Uranium (Total)	µg/L	4	4	0.17	0.35	0.22	0.68	-	0
Vanadium (Total)	µg/L	4	3	0.38	0.45	0.35	1.14	[redacted]	0
Zinc (Total)	µg/L	12	12	0.33	3.20	0.91	4.20	-	0

Table 17 Dysart - *E. coli* Compliance

Financial Year	2024-2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	15	12	12	15	12	15	15	12	12	15	12	12
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 months	77	87	97	110	120	134	147	158	159	162	159	159
No. of failures in previous 12 months	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 18 Dysart – Algae Raw Water

Parameter	Unit	Minimum frequency in DWQMP	Count	Maximum	Comment *if any samples missed
Cyanobacteria Total Cells	cells/mL	31	30	145640	IRC optimised the sample plan during the FY resulting in changes in targets. No missed samples.
Potentially Toxic	cells/mL	-	20	145640	
Potentially Toxic Biovolume	cells/mL	-	20	7.2884	

Table 19 Dysart – Algae Treated Water

Parameter	Unit	Number of Samples triggering QH Toxin Testing	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Cylindrospermopsin	µg/L	17	<0.2	-	0
Total Saxitoxins	µg/L	14	<2	-	0

APPENDIX D – GLENDEN SUPPLY SYSTEM

GLENDEN OPERATIONAL MONITORING

Table 20 Glenden Operator Tested Water Quality (Treatment Plant)

Parameter	Units	Count	Minimum	5th%ile	Median	Std Dev	95th%ile	Maximum
Alkalinity	(mg/L $CaCO_3$)	144	40	40.00	60	20.69	98.75	135
Free Chlorine	(mg/L)	363	0.70	1.00	1.40	0.32	1.98	2.30
pH		364	6.62	7.00	7.15	0.12	7.40	7.55
Total Al	(mg/L)	166	0.01	0.01	0.03	0.01	0.06	0.09
Total Fe	(mg/L)	296	0.00	0.00	0.01	0.01	0.03	0.10
Total Mn	(mg/L)	289	0.00	0.00	0.00	0.01	0.01	0.05
True Colour	HU	348	0.0	0.0	0.0	0.8	1.0	7.0
Turbidity	NTU	363	0.01	0.01	0.01	0.00	0.01	0.05
UVA		359	0.00	0.00	0.01	0.00	0.01	0.05

GLENDEN VERIFICATION MONITORING – TREATED WATER, RETICULATION, E.COLI AND ALGAE

Table 21 Glenden Verification Monitoring (Treated Water)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	34	48	7	53	-	0
Aluminium (Total)	µg/L	12	12	2	25	13	48	-	0
Arsenic (Total)	µg/L	12	12	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	41	59	9	64	-	0
Boron (Total)	µg/L	12	11	12	16	3	21	[redacted]	0
Bromate	µg/L	4	4	7	7	0	7	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Calcium (Total)	mg/L	12	12	9	16	4	23	-	0
Carbonate	mg/L	12	12	0.03	0.10	0.03	0.10	-	0
Chlorate	µg/L	4	5	184	263	234	824	-	One exceedance reported.
Chloride	mg/L	4	9	15	18	2	20	-	0
Chlorite	µg/L	4	4	6.6	6.6	0	6.6	-	0
Chromium (Total)	µg/L	4	4	0.03	0.03	0.06	0.17	-	0
Colour - True	TCU	12	12	0.33	0.67	0.34	1.00	-	0
Conductivity	µS/cm	12	12	169	205	17	214	-	0
Copper (Total)	µg/L	12	12	2.2	5.8	2.8	14.3	-	0
Fluoride	mg/L	12	12	0.033	0.033	0	0.033	-	0
Free Carbon Dioxide	mg/L	12	12	2	3	1	5	-	0
Hardness	mg/L	12	12	34	52	11	73	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0
Iron (Total)	µg/L	12	12	4	9	5	19	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	2.0	2.9	0.6	3.8	-	0
Manganese (Total)	µg/L	12	12	1.2	2.4	2.2	9.4	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.10	0.37	0.17	0.54	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.15	7.47	0.16	7.62	-	0
Phosphate	mg/L	12	11	0.165	0.165	0.199	0.857	[redacted]	0
Potassium (Total)	mg/L	12	12	0.974	1.295	0.274	1.829	-	0
Selenium (Total)	µg/L	4	4	1.650	1.650	0	1.650	-	0
Sodium (Total)	mg/L	12	12	13	15	2	20	-	0
Sulphate	mg/L	12	11	19.8	22.7	1.3	24.8	[redacted]	0
Total Dissolved Solids	mg/L	12	12	101	123	11	128	-	0
Turbidity	NTU	12	12	0.15	0.35	0.19	0.82	-	0
Zinc (Total)	µg/L	12	12	0.33	4.17	3.17	12.36	-	0

Table 22 Glenden Verification Monitoring (Reticulation)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	36	50	14	92	-	0
Aluminium (Total)	µg/L	12	12	2	24	13	45	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	44	61	17	112	-	0
Boron (Total)	µg/L	12	11	11	16	3	21	[redacted]	0
Bromate	µg/L	4	4	6.6	6.6	0	6.6	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Bromodichloromethane	µg/L	4	4	9.3	12.8	1.6	13.2	-	0
Bromoform	µg/L	4	4	1.650	1.650	0	1.650	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Calcium (Total)	mg/L	12	12	9.7	16.9	4.9	26.0	-	0
Carbonate	mg/L	12	12	0.03	0.10	0.08	0.30	-	0
Chlorate	µg/L	4	5	186	244	263	891	-	One exceedance reported.
Chloride	mg/L	4	9	14	18	2	20	-	0
Chlorite	µg/L	4	4	6.6	6.6	0	6.6	-	0
Chloroform	µg/L	4	4	12	21	5	26	-	0
Chromium (Total)	µg/L	4	4	0.11	0.12	0.03	0.19	-	0
Colour - True	TCU	12	12	0.33	1.00	0.58	2.00	-	0
Conductivity	µS/cm	12	12	176	212	49	369	-	0
Copper (Total)	µg/L	12	12	1.3	5.4	2.7	13.0	-	0
Dibromochloromethane	µg/L	4	4	5.3	5.5	0.6	6.9	-	0
E. coli	MPN/ 100mL	12	102	0	0	0	0	-	0
Fluoride	mg/L	12	12	0.033	0.033	0	0.033	-	0
Free Carbon Dioxide	mg/L	12	12	1.00	1.95	1.08	4.70	-	0
Free Chlorine Residual (Client tested)	mg/L	52	102	0.70	1.29	0.38	2.81	-	0
Hardness	mg/L	12	12	34	53	14	81	-	0
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0
Iron (Total)	µg/L	12	12	3.9	9.4	9.7	42.5	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	1.9	2.5	0.6	3.9	-	0
Manganese (Total)	µg/L	12	12	1.4	2.8	3.6	13.1	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.099	0.401	0.149	0.530	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.30	7.63	0.20	8.01	-	0
Phosphate	mg/L	12	11	0.165	0.165	0	0.165	[redacted]	0
Potassium (Total)	mg/L	12	12	1.0	1.3	0.3	1.8	-	0
Selenium (Total)	µg/L	4	4	1.650	1.650	0	1.650	-	0
Sodium (Total)	mg/L	12	12	13.5	15.9	2.0	20.3	-	0
Sulphate	mg/L	12	11	19.9	22.6	1.3	24.6	[redacted]	0
Total Dissolved Solids	mg/L	12	12	106	128	29	221	-	0
Trihalomethanes (Total)	µg/L	4	4	29	41	6	46	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Turbidity	NTU	12	12	0.11	0.29	0.27	0.95	-	0
Zinc (Total)	µg/L	12	12	0.33	3.31	1.24	5.06	-	0

Table 23 Glenden - *E. coli* Compliance

Financial Year	2024-2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	10	8	8	10	8	8	10	8	6	10	8	8
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 months	58	63	69	77	83	89	96	102	102	104	102	102
No. of failures in previous 12 months	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 24 Glenden- Algae Raw Water

Parameter	Unit	Minimum frequency in DWQMP	Count	Maximum	Comment *if any samples missed
Cyanobacteria Total Cells	cells/mL	31	30	21030	IRC optimised the sample plan during the FY resulting in changes in targets. No missed samples.
Potentially Toxic	cells/mL	-	12	2920	
Potentially Toxic Biovolume	mm3/L	-	12	0.118	

Table 25 Glenden- Algae Treated Water

Parameter	Unit	Number of Samples triggering QH Toxin Testing	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Cylindrospermopsin	µg/L	1	<0.2	-	0
Total Saxitoxins	µg/L	1	<2	-	0

APPENDIX E – MIDDLEMOUNT SUPPLY SYSTEM

MIDDLEMOUNT OPERATIONAL MONITORING

Table 26 Middlemount Operator Tested Water Quality (Treatment Plant)

Parameter	Units	Count	Minimum	5th%ile	Median	Std Dev	95th%ile	Maximum
Alkalinity	(mg/L $CaCO_3$)	51	46	50	79	15	106	120
Free Chlorine	(mg/L)	359	1.15	2.28	3.01	0.45	3.79	4.49
pH		362	6.52	7.04	7.32	0.18	7.57	7.88
Total Al	(mg/L)	45	0.00	0.00	0.02	0.02	0.06	0.06
Total Fe	(mg/L)	317	0.00	0.00	0.01	0.01	0.03	0.05
Total Mn	(mg/L)	359	0.00	0.00	0.00	0.01	0.03	0.06
True Colour	HU	359	0.0	0.0	0.0	1.0	1.0	11.0
Turbidity	NTU	359	0.08	0.10	0.19	0.08	0.36	0.60
UVA		355	0.00	0.03	0.05	0.01	0.07	0.13

MIDDLEMOUNT VERIFICATION MONITORING – TREATED WATER, RETICULATION, E.COLI AND ALGAE

Table 27 Middlemount Verification Monitoring (Treated Water)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	47	77	15	104	-	0
Aluminium (Total)	µg/L	12	12	1.7	12.8	11.6	41.2	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.85	0.98	2.72	-	0
Bicarbonate	mg/L	12	12	57	94	18	126	-	0
Boron (Total)	µg/L	12	12	28	39	8	58	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Calcium (Total)	mg/L	12	12	7.8	18.3	4.8	24.9	-	0
Carbonate	mg/L	12	12	0.10	0.20	0.10	0.40	-	0
Chloride	mg/L	4	9	27.8	46.8	11.0	60.7	-	0
Chromium (Total)	µg/L	4	4	0.03	0.03	0.04	0.13	-	0
Colour - True	TCU	12	12	0.33	1.00	0.65	2.00	-	0
Conductivity	µS/cm	12	12	215	321	60	426	-	0
Copper (Total)	µg/L	12	12	5.9	21.8	7.2	34.1	-	0
Fluoride	mg/L	12	12	0.033	0.033	0.045	0.139	-	0
Free Carbon Dioxide	mg/L	12	12	1.2	3.9	1.2	6.7	-	0
Hardness	mg/L	12	12	43	81	20	114	-	0
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0
Iron (Total)	µg/L	12	12	0.7	0.7	2.9	10.3	-	0
Lead (Total)	µg/L	4	4	0.2	0.2	0.7	1.7	-	0
Magnesium (Total)	mg/L	12	12	4.8	8.6	2.1	12.7	-	0
Manganese (Total)	µg/L	12	12	0.3	3.1	4.8	16.0	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.87	0.96	0.37	1.78	-	0
Nitrate	mg/L	12	12	0.10	0.50	0.48	1.65	-	0
Nitrite	mg/L	12	12	0.13	0.13	0.00	0.13	-	0
pH		12	12	7.36	7.61	0.18	8.02	-	0
pH (Client tested)		12	29	6.95	7.29	0.15	7.58	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	4.8	6.5	1.0	8.1	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0	1.65	-	0
Sodium (Total)	mg/L	12	12	18	29	6	37	-	0
Sulphate	mg/L	12	12	4.8	7.7	1.8	10.3	-	0
Total Dissolved Solids	mg/L	12	12	129	192	36	256	-	0
Turbidity	NTU	12	12	0.03	0.25	0.17	0.67	-	0
Zinc (Total)	µg/L	12	12	0.33	4.17	1.88	7.39	-	0

Table 28 Middlemount Verification Monitoring (Reticulation)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	48	75	15	105	-	0
Aluminium (Total)	µg/L	12	12	1.7	16.0	9.6	37.9	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.82	0.63	1.80	-	0
Bicarbonate	mg/L	12	12	59	91	18	128	-	0
Boron (Total)	µg/L	12	12	29	37	7	51	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Bromodichloromethane	µg/L	4	4	21	32	9	43	-	0
Bromoform	µg/L	4	4	1.65	1.65	0	1.65	-	0
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Calcium (Total)	mg/L	12	12	8	21	4	23	-	0
Carbonate	mg/L	12	12	0.10	0.25	0.11	0.50	-	0
Chloride	mg/L	4	9	30	47	10	62	-	0
Chloroform	µg/L	4	4	34	52	32	118	-	0
Chromium (Total)	µg/L	4	4	0.03	0.12	0.05	0.17	-	0
Colour - True	TCU	12	12	0.33	0.67	0.68	2.00	-	0
Conductivity	µS/cm	12	12	230	323	59	432	-	0
Copper (Total)	µg/L	12	12	1.6	4.2	1.3	6.1	-	0
Dibromochloromethane	µg/L	4	4	7	14	5	18	-	0
E. coli	MPN/ 100mL	52	207	0	0	0	0	-	0
Fluoride	mg/L	12	12	0.03	0.03	0.05	0.14	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Free Carbon Dioxide	mg/L	12	12	1.10	2.80	0.67	3.60	-	0
Free Chlorine Residual (Client tested)	mg/L	52	207	0.12	1.22	0.54	3.84	-	0
Hardness	mg/L	12	12	44	86	18	105	-	0
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0
Iron (Total)	µg/L	12	12	0.7	2.5	3.1	8.7	-	0
Lead (Total)	µg/L	4	4	0.17	0.17	0.29	0.84	-	0
Magnesium (Total)	mg/L	12	12	4.7	8.4	1.9	11.6	-	0
Manganese (Total)	µg/L	12	12	0.3	2.7	4.3	14.8	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.8	0.9	0.5	1.9	-	0
Nitrate	mg/L	12	12	0.10	0.49	0.50	1.72	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.53	7.75	0.14	8.06	-	0
pH (Client tested)		52	207	6.92	7.46	0.14	7.94	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	4.9	6.4	0.7	7.7	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0	1.65	-	0
Sodium (Total)	mg/L	12	12	21	31	5	37	-	0
Sulphate	mg/L	12	12	5.0	7.8	1.7	10.2	-	0
Total Dissolved Solids	mg/L	12	12	138	194	35	259	-	0
Trihalomethanes (Total)	µg/L	4	4	76	98	38	171	-	0
Turbidity	NTU	12	12	0.03	0.41	0.17	0.65	-	0
Turbidity (Client tested)	NTU	52	207	0.033	0.19	0.07	0.48	-	0
Zinc (Total)	µg/L	12	12	0.3	3.1	1.8	8.0	-	0

Table 29 Middlemount - *E. coli* Compliance

Financial Year	2024-2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	20	16	16	19	16	16	20	16	16	20	16	16
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 months	142	149	158	170	177	185	196	205	207	211	207	207
No. of failures in previous 12 months	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 30 Middlemount- Algae Raw Water

Parameter	Unit	Minimum frequency in DWQMP	Count	Maximum	Comment *if any samples missed
Cyanobacteria Total Cells	cells/mL	31	30	10750	IRC optimised the sample plan during the FY resulting in changes in targets. No missed samples.
Potentially Toxic	cells/mL	-	17	9960	
Potentially Toxic Biovolume	mm3/L	-	17	0.352	

Table 31 Middlemount- Algae Raw Water

Parameter	Unit	Number of Samples triggering QH Toxin Testing	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Cylindrospermopsin	µg/L	9	<0.2	-	0
Total Saxitoxins	µg/L	9	<2	-	0

APPENDIX F – MORANBAH SUPPLY SYSTEM

MORANBAH OPERATIONAL MONITORING

Table 32 Moranbah Operator Tested Water Quality (Treatment Plant)

Parameter	Units	Count	Minimum	5th%ile	Median	Std Dev	95th%ile	Maximum
Alkalinity	(mg/L $CaCO_3$)	45	32	40	50	19	65	160
Fluoride	(mg/L)	365	0.07	0.276	0.60	0.16	0.80	0.95
Free Chlorine	(mg/L)	365	1.01	1.254	1.56	0.17	1.86	2.05
pH		365	6.84	6.94	7.08	0.16	7.47	7.91
Total Al	(mg/L)	46	0.000	0.000	0.025	0.022	0.058	0.097
Total Fe	(mg/L)	46	0.00	0.00	0.01	0.01	0.04	0.05
Total Mn	(mg/L)	343	0.000	0.000	0.000	0.004	0.006	0.060
True Colour	HU	365	0.00	0.00	0.00	3.06	0.00	41.00
Turbidity	NTU	365	0.00	0.06	0.11	0.05	0.19	0.57
UVA		364	0.00	0.01	0.02	0.01	0.05	0.09

MORANBAH VERIFICATION MONITORING – TREATED WATER, RETICULATION, E.COLI AND ALGAE

Table 33 Moranbah Verification Monitoring (Treated Water)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	41	50	3	53	-	0
Aluminium (Total)	µg/L	12	12	2	23	12	44	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	50	61	4	65	-	0
Boron (Total)	µg/L	12	12	19	24	2	29	-	0
Bromide	mg/L	12	12	0.132	0.132	0	0.132	-	0
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Calcium (Total)	mg/L	12	12	3	10	2	11	-	0
Carbonate	mg/L	12	12	0.10	0.15	0.06	0.30	-	0
Chloride	mg/L	12	12	16	18	1	21	-	0
Chromium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Colour - True	TCU	12	12	0.3	0.3	0.6	2.0	-	0
Conductivity	µS/cm	12	12	149	165	24	248	-	0
Copper (Total)	µg/L	12	12	0.3	0.3	0.4	1.4	-	0
Fluoride	mg/L	52	52	0.0	0.4	0.2	0.7	-	0
Free Carbon Dioxide	mg/L	12	12	0.3	1.8	0.5	2.4	-	0
Hardness	mg/L	12	12	17	40	7	46	-	0
Hydroxide	mg/L	12	12	0.033	0.033	0	0.033	-	0
Iron (Total)	µg/L	12	12	0.7	4.3	5.4	19.8	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	2.2	4.0	0.6	4.7	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Manganese (Total)	µg/L	12	12	0.3	0.3	1.5	5.5	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.10	0.40	0.16	0.55	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.63	7.71	0.12	8.10	-	0
pH (Client tested)		12	28	6.94	7.09	0.17	7.55	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	2.1	2.3	0.3	3.0	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0	1.65	-	0
Sodium (Total)	mg/L	12	12	11	16	7	39	-	0
Sulphate	mg/L	12	12	1.2	1.5	4.2	16.7	-	0
Total Dissolved Solids	mg/L	12	12	89	99	15	149	-	0
Turbidity	NTU	12	12	0.03	0.21	0.16	0.52	-	One exceedance reported.
Zinc (Total)	µg/L	12	12	0.3	7.9	3.1	12.7	-	0

Table 34 Moranbah Verification Monitoring (Reticulation)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	41	50	4	54	-	0
Aluminium (Total)	µg/L	12	12	2	22	12	45	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	0.033	60	17	65	-	0
Boron (Total)	µg/L	12	11	18.4	23.7	2.5	28.3	[redacted]	0
Bromide	mg/L	12	12	0.13	0.13	0	0.13	-	0
Bromodichloromethane	µg/L	4	4	12.8	16.1	2.1	18.6	-	0
Bromoform	µg/L	4	4	1.65	1.65	0.0	1.65	-	0
Cadmium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Calcium (Total)	mg/L	12	12	3.3	9.9	2.1	11.9	-	0
Carbonate	mg/L	12	12	0.03	0.20	0.06	0.20	-	0
Chloride	mg/L	12	12	0.1	18.3	5.3	20.6	-	0
Chloroform	µg/L	4	4	1.7	32.9	18.5	50.4	-	0
Chromium (Total)	µg/L	4	4	0.033	0.033	0	0.033	-	0
Colour - True	TCU	12	12	0.33	0.33	0.62	2.00	-	0
Conductivity	µS/cm	12	12	151	163	6	170	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Copper (Total)	µg/L	12	12	1.2	1.8	1.9	8.2	-	0
Dibromochloromethane	µg/L	4	4	6.0	6.9	0.5	7.2	-	0
E. coli	MPN/ 100mL	64	453	0	0	0	0	-	0
Fluoride	mg/L	52	50	0.03	0.35	0.18	0.74	[redacted]	0
Free Carbon Dioxide	mg/L	12	12	0.33	1.75	0.53	2.80	-	0
Free Chlorine Residual (Client tested)	mg/L	52	151	0.37	1.21	0.30	1.98	-	0
Hardness	mg/L	12	12	17	42	8	49	-	0
Hydroxide	mg/L	12	12	0.03	0.03	0	0.03	-	0
Iron (Total)	µg/L	12	12	0.66	0.66	1.90	6.20	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	2.16	3.97	0.63	4.67	-	0
Manganese (Total)	µg/L	12	12	0.33	0.33	1.49	4.89	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.10	0.37	0.14	0.54	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.56	7.76	0.08	7.81	-	0
pH (Client tested)		52	151	7.00	7.20	0.19	7.96	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	2.16	2.47	0.23	3.07	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0	1.65	-	0
Sodium (Total)	mg/L	12	12	11.6	15.8	2.5	20.6	-	0
Sulphate	mg/L	12	12	1.25	1.53	0.38	2.62	-	0
Total Dissolved Solids	mg/L	12	12	91	98	4	102	-	0
Trihalomethanes (Total)	µg/L	4	4	24.2	55.8	19.7	76.2	-	0
Turbidity	NTU	12	12	0.03	0.26	0.20	0.67	-	0
Turbidity (Client tested)	NTU	52	151	0.03	0.13	0.08	0.83	-	0
Zinc (Total)	µg/L	12	12	0.33	4.93	2.22	7.89	-	0

Table 35 Moranbah - *E. coli* Compliance

Financial Year	2024-2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	14	11	12	14	11	12	14	11	12	15	12	12
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 months	85	92	102	113	129	140	147	148	152	150	150	150
No. of failures in previous 12 months	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 36 Moranbah – Algae Raw Water

Parameter	Unit	Minimum frequency in DWQMP	Count	Maximum	Comment *if any samples missed
Cyanobacteria Total Cells	cells/mL	56	55	87400	IRC optimised the sample plan during the FY resulting in changes in targets. No missed samples.
Potentially Toxic	cells/mL	-	55	15060	
Potentially Toxic Biovolume	mm^3/L	-	55	710	

Table 37 Moranbah – Algae Treated Water

Parameter	Unit	Number of Samples triggering QH Toxin Testing	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Cylindrospermopsin	µg/L	15	<0.2	-	0
Total Saxitoxins	µg/L	7	<2	-	0

APPENDIX G – NEBO SUPPLY SYSTEM

NEBO OPERATIONAL MONITORING

Table 38 Nebo Operator Tested Water Quality (Treatment Plant)

Parameter	Units	Count	Minimum	5th%ile	Median	Std Dev	95th%ile	Maximum
Alkalinity	(mg/L $CaCO_3$)	337	53	154	220	29	250	280
Conductivity	(uS/cm)	343	816	863	905	24	939	968
Free Chlorine	(mg/L)	343	1.16	1.22	1.38	0.10	1.55	1.71
Harndess	(mg/L $CaCO_3$)	336	135	147	159	10	180	189
pH		343	7.02	7.18	7.32	0.09	7.48	7.59
Total Al	(mg/L)	247	0.00	0.01	0.09	0.05	0.17	0.27
Total Fe	(mg/L)	275	0.00	0.00	0.01	0.01	0.03	0.10
Total Mn	(mg/L)	195	0.00	0.01	0.01	0.01	0.04	0.07
True Colour	HU	338	0.00	0.00	0.00	0.00	0.00	0.01
Turbidity	NTU	342	0.01	0.01	0.01	0.00	0.01	0.10

NEBO VERIFICATION MONITORING – TREATED WATER, RETICULATION AND E.COLI

Table 39 Nebo Verification Monitoring (Treated Water)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	152	167	7	176	-	0
Aluminium (Total)	µg/L	12	12	1.7	1.7	9.1	34.8	-	0
Arsenic (Total)	µg/L	4	1	<1				[redacted]	0
Bicarbonate	mg/L	12	12	185	203	9	213	-	0
Boron (Total)	µg/L	12	12	17	23	3	28	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Cadmium (Total)	µg/L	4	1	<0.1				[redacted]	0
Calcium (Total)	mg/L	12	12	27	35	5	44	-	0
Carbonate	mg/L	12	12	0.2	0.4	0	1.8	-	0
Chloride	mg/L	4	9	165	183	7	192	-	0
Chromium (Total)	µg/L	4	1	<0.1				[redacted]	0
Colour - True	TCU	12	12	0.3	0.3	0.6	2.0	-	0
Conductivity	µS/cm	12	12	875	925	24	952	-	0
Copper (Total)	µg/L	12	12	0.3	5.2	5.1	18.0	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Fluoride	mg/L	12	12	0.03	0.03	0.05	0.14	-	0
Free Carbon Dioxide	mg/L	12	12	1.5	8.7	3.1	14.0	-	0
Hardness	mg/L	12	12	150	170	21	219	-	0
Hydroxide	mg/L	12	12	0.03	0.03	0	0.03		0
Iron (Total)	µg/L	12	12	0.7	0.7	2.1	7.9		0
Lead (Total)	µg/L	4	1	<0.5				[redacted]	0
Magnesium (Total)	mg/L	12	12	19	20	2	26		0
Manganese (Total)	µg/L	12	12	0.33	0.33	0	0.33		0
Nickel (Total)	µg/L	4	1	<0.5				[redacted]	0
Nitrate	mg/L	12	12	1.8	2.1	0.2	2.4	-	0
Nitrite	mg/L	12	12	0.13	0.13	0	0.13	-	0
pH		12	12	7.37	7.59	0.23	8.31	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	0.60	0.78	0.10	0.92	-	0
Selenium (Total)	µg/L	4	1	<5				[redacted]	0
Silver (Total)	µg/L	4	1	<0.1				[redacted]	0
Sodium (Total)	mg/L	12	12	94	123	18	154	-	0
Strontium (Total)	µg/L	4	1	82				[redacted]	0
Sulphate	mg/L	12	12	7.1	8.8	0.9	10.3		0
Tin (Total)	µg/L	4	1	13.9				[redacted]	0
Titanium (Total)	µg/L	4	1	4.0				[redacted]	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Total Dissolved Solids	mg/L	12	12	525	555	14	571	-	0
Turbidity	NTU	12	12	0.0	0.2	0.4	1.3	-	0
Uranium (Total)	µg/L	4	1	0.64				[redacted]	0
Vanadium (Total)	µg/L	4	1	0.57				[redacted]	0
Zinc (Total)	µg/L	12	12	0.3	5.2	2.0	8.0	-	0

Table 40 Nebo Verification Monitoring (Reticulation)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	150	167	8	176	-	0
Aluminium (Total)	µg/L	12	12	2	2	2	9	-	0
Bicarbonate	mg/L	12	12	182	203	9	213	-	0
Boron (Total)	µg/L	12	12	16	23	3	27	-	0
Boron (Total)	µg/L	12	12	16	23	3	27	-	0
Bromide	mg/L	12	12	0.13	0.13	0.66	1.65	-	0
Bromodichloromethane^	µg/L	4	4	1.65	1.65	0	1.65	-	0
Bromoform^	µg/L	4	4	8.4	9.7	2.3	14.4	-	0
Calcium (Total)	mg/L	12	12	26	35	5	46	-	0
Carbonate	mg/L	12	12	0.2	0.4	0.1	0.6	-	0
Chloride	mg/L	4	12	2	184	79	192	-	0
Chloroform^	µg/L	4	4	1.65	1.65	0	1.65	-	0
Chloroform^	µg/L	4	4	1.65	1.65	0	1.65	-	0
Colour - True	TCU	12	12	0.33	0.33	0.62	2.00	-	0
Conductivity	µS/cm	12	12	873	920	23	948	-	0
Copper (Total)	µg/L	12	12	0	10	6	25	-	0
Dibromochloromethane^	µg/L	4	4	1.7	6.2	2.6	8.7	-	0
E. coli	MPN/100mL	12	105	0	0	1.4	14	-	One exceedance reported.
Fluoride	mg/L	12	12	0.03	0.03	0.05	0.15	-	0
Free Carbon Dioxide	mg/L	12	12	5.8	7.4	1.7	12.1	-	0
Free Chlorine Residual (Client tested)	mg/L	12	106	1.2	1.3	0.1	1.7	-	0
Hardness	mg/L	12	12	147	170	19	216	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Hydroxide	mg/L	12	12	0.03	0.03	0	0.03	-	0
Iron (Total)	µg/L	12	13	0.7	0.7	11.5	43.9	-	0
Magnesium (Total)	mg/L	12	12	18	20	2	25	-	0
Manganese (Total)	µg/L	12	12	0.3	0.3	0.9	3.5	-	0
Nitrate	mg/L	12	12	1.8	2.1	0.2	2.4	-	0
Nitrite	mg/L	12	12	0.13	0.13	0	0.13	-	0
pH		12	12	7.41	7.66	0.10	7.78	-	0
pH (Client tested)		12	106	7.13	7.45	0.13	7.70	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	0.59	0.75	0.11	1.01	-	0
Sodium (Total)	mg/L	12	12	92	122	18	159	-	0
Sulphate	mg/L	12	12	7.1	9.1	1.1	11.2	-	0
Total Dissolved Solids	mg/L	12	12	524	552	14	569	-	0
Trihalomethanes (Total)^	µg/L	4	4	7	14	9	27	-	0
Turbidity	NTU	12	12	0.03	0.24	0.17	0.59	-	0
Turbidity (Client tested)	NTU	12	106	0.03	0.03	0	0.03	-	0
Zinc (Total)	µg/L	12	12	0.3	5.2	3.3	14.5	-	0

Table 41 Nebo - *E. coli* Compliance

Financial Year	2024-2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	14	11	12	14	11	12	14	11	12	15	12	12
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0	0	1	0	0	0	0
No. of samples collected in previous 12 months	85	92	102	113	129	140	147	148	152	150	150	150
No. of failures in previous 12 months	0	0	0	0	0	0	0	1	1	1	1	1
% of samples that comply	100	100	100	100	100	100	100	99.3	99.3	99.3	99.3	99.3
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

APPENDIX H – ST LAWRENCE SUPPLY SYSTEM

ST LAWRENCE OPERATIONAL MONITORING

Table 42 St Lawrence Operator Tested Water Quality (Treatment Plant)

Parameter	Units	Count	Minimum	5th%ile	Median	Std Dev	95th%ile	Maximum
Alkalinity	(mg/L $CaCO_3$)	18	75.00	-	105.00	19.43	-	140.00
Free Chlorine	(mg/L)	331	0.48	0.96	1.70	0.54	2.79	4.10
pH		335	7.25	7.60	7.82	0.12	8.00	8.10
Total Al	(mg/L)	28	0.00	0.00	0.03	0.04	0.12	0.14
Total Fe	(mg/L)	63	0.00	0.00	0.01	0.02	0.06	0.06
Total Mn	(mg/L)	60	0.00	0.00	0.00	0.00	0.01	0.02
True Colour	HU	336	0.00	0.00	0.00	1.57	0.00	25.00
Turbidity	NTU	337	0.00	0.09	0.19	0.23	0.73	1.94
UVA		335	0.01	0.02	0.03	0.03	0.05	0.08

ST LAWRENCE VERIFICATION MONITORING – TREATED WATER, RETICULATION, E.COLI AND ALGAE

Table 43 St Lawrence Verification Monitoring (Treated Water)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	56	77	15	98	-	0
Aluminium (Total)	µg/L	12	12	2	37	17	75	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	67	93	18	118	-	0
Boron (Total)	µg/L	12	12	15	23	4	30	-	0
Bromate	µg/L	4	4	6.6	6.6	0	6.6	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Cadmium (Total)	µg/L	4	4	0.03	0.03	0	0.03	-	0
Calcium (Total)	mg/L	12	12	1.4	7.7	2.6	11.4	-	0
Carbonate	mg/L	12	12	0.20	0.45	0.14	0.70	-	0
Chlorate	µg/L	4	5	7	501	266	786	-	0
Chloride	mg/L	4	9	22	30	6	42	-	0
Chlorite	µg/L	4	4	6.6	6.6	0	6.6	-	0
Chromium (Total)	µg/L	4	4	0.03	0.13	0.10	0.24	-	0
Colour - True	TCU	12	12	0.3	0.3	1.0	4.0	-	0
Conductivity	µS/cm	12	12	221	254	18	278	-	0
Copper (Total)	µg/L	12	12	0.3	0.8	0.6	1.9	-	0
Fluoride	mg/L	12	12	0.03	0.03	0	0.03	-	0
Free Carbon Dioxide	mg/L	12	12	1.1	1.3	0.4	2.4	-	0
Hardness	mg/L	12	12	7	31	10	50	-	0
Hydroxide	mg/L	12	12	0.03	0.03	0	0.03	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Iron (Total)	µg/L	12	12	0.7	5.7	4.8	17.8	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	1.0	3.0	1.0	5.1	-	0
Manganese (Total)	µg/L	12	12	1.7	5.6	11.1	39.4	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.1	0.5	0.2	0.7	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	7.70	7.99	0.11	8.18	-	0
pH (Client tested)		12	29	7.50	7.85	0.11	8.00	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	1.3	1.7	1.0	4.7	-	0
Selenium (Total)	µg/L	4	4	1.65	1.65	0	1.65	-	0
Sodium (Total)	mg/L	12	12	30	41	8	56	-	0
Sulphate	mg/L	12	12	1.2	2.6	0.9	4.2	-	0
Total Dissolved Solids	mg/L	12	12	133	153	11	167	-	0
Turbidity	NTU	12	12	0.03	0.29	0.33	1.32	-	0
Zinc (Total)	µg/L	12	12	0.33	1.20	0.65	2.36	-	0

Table 44 St Lawrence Verification Monitoring (Reticulation)

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Alkalinity	mg/L	12	12	58	79	15	98	-	0
Aluminium (Total)	µg/L	12	12	2	44	18	77	-	0
Arsenic (Total)	µg/L	4	4	0.33	0.33	0	0.33	-	0
Bicarbonate	mg/L	12	12	69	95	18	119	-	0
Boron (Total)	µg/L	12	12	14	23	4	30	-	0
Bromate	µg/L	4	4	6.6	6.6	0	6.6	-	0
Bromide	mg/L	4	9	0.132	0.132	0	0.132	-	0
Bromodichloromethane	µg/L	4	4	20	24	4	30	-	0
Bromoform	µg/L	4	4	1.65	1.65	0	1.65	-	0
Cadmium (Total)	µg/L	4	4	0.03	0.03	0	0.03	-	0
Calcium (Total)	mg/L	12	12	1.7	12.3	4.0	16.1	-	0
Carbonate	mg/L	12	12	0.4	0.6	0.5	2.0	-	0
Chlorate	µg/L	4	5	174	501	239	839	-	One exceedance reported.
Chloride	mg/L	4	9	23	30	7	43	-	0
Chlorite	µg/L	4	4	6.6	6.6	0	6.6	-	0
Chloroform	µg/L	4	4	48	89	37	151	-	0

Parameter	Unit	Frequency required in DWQMP	FY24-25 Count	Minimum	Median	Std Dev	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Chromium (Total)	µg/L	4	4	0.03	0.15	0.08	0.24	-	0
Colour - True	TCU	12	12	0.3	0.3	1.3	5.0	-	0
Conductivity	µS/cm	12	12	221	260	16	284	-	0
Copper (Total)	µg/L	12	12	1.2	2.6	3.1	12.2	-	0
Dibromochloromethane	µg/L	4	4	1.7	6.5	6.7	19.6	-	0
E. coli	MPN/ 100mL	12	52	0	0	0	0	-	0
Fluoride	mg/L	12	12	0.03	0.03	0	0.03	-	0
Free Carbon Dioxide	mg/L	12	12	0.3	0.3	0.6	1.9	-	0
Free Chlorine Residual (Client tested)	mg/L	12	52	0.1	0.6	0.4	1.6	-	One event reported.
Hardness	mg/L	12	12	8	36	11	54	-	0
Hydroxide	mg/L	12	12	0.03	0.03	0.02	0.10	-	0
Iron (Total)	µg/L	12	12	0.7	9.4	9.8	29.0	-	0
Lead (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Magnesium (Total)	mg/L	12	12	0.7	2.2	1.0	4.0	-	0
Manganese (Total)	µg/L	12	12	1.0	4.3	13.6	46.7	-	0
Mercury (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nickel (Total)	µg/L	4	4	0.165	0.165	0	0.165	-	0
Nitrate	mg/L	12	12	0.10	0.43	0.15	0.59	-	0
Nitrite	mg/L	12	12	0.132	0.132	0	0.132	-	0
pH		12	12	8.02	8.14	0.18	8.61	-	0
pH (Client tested)		12	52	7.55	7.96	0.22	8.50	-	0
Phosphate	mg/L	12	12	0.165	0.165	0	0.165	-	0
Potassium (Total)	mg/L	12	12	1.4	1.8	0.7	3.3	-	0
Selenium (Total)	µg/L	4	4	1.650	1.650	0	1.650	-	0
Sodium (Total)	mg/L	12	12	30	38	7	57	-	0
Sulphate	mg/L	12	12	1.1	2.0	1.0	4.4	-	0
Total Dissolved Solids	mg/L	12	12	133	156	10	170	-	0
Trihalomethanes (Total)	µg/L	4	4	101	119	31	183	-	0
Turbidity	NTU	12	12	0.10	0.40	0.34	1.23	-	0
Turbidity (Client tested)	NTU	12	52	0.03	0.24	0.12	0.60	-	0
Zinc (Total)	µg/L	12	12	0.3	4.4	1.9	6.6	-	0

Table 45 St Lawrence - *E. coli* Compliance

Financial Year	2024-2025											
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
No. of samples collected	5	4	4	5	4	4	5	4	4	5	4	4
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 months	51	50	50	52	51	52	52	52	52	53	52	52
No. of failures in previous 12 months	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100	100	100	100	100	100	100	100	100	100	100	100
Compliance with 98% annual value	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 46 St Lawrence – Algae Raw Water

Parameter	Unit	Minimum frequency in DWQMP	Count	Maximum	Comment *if any samples missed
Cyanobacteria Total Cells	cells/mL	31	29	10170	IRC optimised the sample plan during the FY resulting in changes in targets. No missed samples.
Potentially Toxic	cells/mL	-	23	4530	
Potentially Toxic Biovolume	mm^3/L	-	10	0.1203	

Table 47 St Lawrence – Algae Treated Water

Parameter	Unit	Number of Samples triggering QH Toxin Testing	Maximum	Comment *if any samples missed	Number of Health exceedances to ADWG
Cylindrospermopsin	µg/L	5	<0.2	-	0
Total Saxitoxins	µg/L	5	<2	-	0