



Green Square Water

# LICENCE PLAN AUDIT **REPORT**

**Altogether (formerly Flow Systems)**

May 2021

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# Executive Summary

## Audit scope

This report presents the findings of the licence plan audit of Green Square Water Pty Ltd, conducted in January 2021, consistent with the audit requirements set out in IPART's *Audit Guideline, Water Industry Competition Act 2006 (NSW)* (July 2020).

The audit scope includes the adequacy and currency of the Green Square Licence Plans.

An addendum has been added to this audit report on the adequacy of updates to Critical Control Point documentation as Appendix B. No changes have been made to version 3.0 of this report other than the addendum.

The licence plans subject to audit are the:

- Green Square Water Scheme Management Plan
- Recycled Water Quality Plan

## Audit findings

Flow Systems (now called Altogether) have a Recycled Water Quality Plan (RWQP) that details how the AGWR Framework elements, components and actions are met. The Plan structure is simple yet comprehensively documents how Flow Systems meets the requirements of the AGWR Framework. Documents specific to individual schemes are referenced in the Scheme Management Plan. As the overarching water quality plan (RWQP) was audited in November 2020 for the Cooranbong Licence plan audit, the scope of the Green Square audit was reduced to:

- Audit scheme specific documentation referenced in the RWQP, including the scheme management plans and relevant supporting documentation
- Confirmation of the process flow diagram on site
- Assess progress of the recommendations relating to the overarching RWQP.

A summary of compliance for the Green Square Water Quality Plan (recycled) is shown in Table i-i.

The Licence Plans as a whole are considered adequate, with a few deficiencies noted in relation to scheme descriptions and updating of documentation following scheme expansion. These are considered non-material. Recommendations have been included to address these shortcomings.

**Table i-i. Summary of compliance with Green Square Water Quality Licence Plans**

Requirement	Licence Plan	Compliance
WIC Regulation Schedule 1 clause 7(1) (b)	Water quality plan (recycled)	Non-compliant non material

## Recommendations

Three audit recommendations were made for the Green Square Water Quality Licence Plans, summaries of these can found in Section 4.1.3.

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# 1 Introduction

## 1.1 Objectives

This report presents the findings of the licence plan audit of Green Square Water Pty Ltd, consistent with audit requirements set out in IPART's *Audit Guideline, Water Industry Competition Act 2006 (NSW)* (July 2020).

## 1.2 Licensee's infrastructure, systems and procedures

Green Square Water Pty Ltd is wholly owned by Flow Systems Pty Ltd. On 12 January 2021 Flow Systems changed its name to Altogether. We refer to Flow Systems as the service provider throughout this report as it was Flow Systems' licence plans that were audited.

Flow Systems operations and obligations are managed through an integrated Business Management System (BMS), independently certified to:

- AS/NZS ISO 9001 Quality Management Systems
- AS/NZS ISO 14001 Environmental Management System
- AS/NZS 4801 Work Health and Safety Management Systems
- OHSAS 18001:2007 Occupational Health and Safety Management Systems.

The BMS is managed through a SharePoint site. As Flow Systems operate a number of schemes under the WIC Act it has a cross-functional approach to its systems and procedures. It has overarching documents including its:

- Drinking Water Quality Plan
- Recycled Water Quality Plan
- Infrastructure Operating Plan
- Incident Management Plan
- Asset Management Plan
- Monitoring and Sampling Plan

These are supported by both utility-wide and scheme-specific documentation. The documents that detail how Flow Systems meets their licence plan requirements are called up in these plans. We have recorded the documents we audited as part of these plans in Appendix A.

# 2 Audit method

## 2.1 Audit scope

The audit scope includes the adequacy and currency of the Green Square Water Licence Plans.

The licence plans subject to audit were the:

- Green Square Water Scheme Management Plan

- Recycled Water Quality Plan

Verification of onsite infrastructure to test the accuracy of the process flow diagram was conducted as part of this audit.

The following informed the audit criteria:

- Audit Guideline, *Water Industry Competition Act 2006* (NSW) (IPART July 2020)
- Water Industry Competition Regulation requirements
- AS/NZS 19011:2019 Guidelines for Auditing Management Systems.

**Table 2-1. Summary of licence plan audit requirements**

Requirement	Details
Audit Guidelines	<p><b>Water Quality Plan audit</b></p> <p>Audits the adequacy of a licensee’s Water Quality Plan, and its compliance with legislative requirements, in accordance with the requirements of Schedule 1 clause 7(1) of the WIC Regulation.</p> <p>A licensee’s Water Quality Plan for drinking water or non-potable water must be consistent with the actions outlined in the 12 framework elements of the ADWG (for drinking water) and the AGWR (for non-potable water).</p>
WIC Regulation Schedule 1 clause 7(1)	<p><b>7 Water quality plans</b></p> <p>(1) Before commencing to operate water infrastructure commercially, the licensed network operator for the infrastructure must prepare, and forward to IPART, a water quality plan, in relation to the water supplied from the infrastructure, that specifies:</p> <p>... (b) if the water so supplied is non-potable water, how the 12 elements of the framework for the management of recycled water quality and use, as detailed in the Australian Guidelines for Water Recycling, have been addressed and will be implemented and, having regard to those guidelines, the purposes for which the water may be used and the purposes for which the water may not be used.</p>

As the overarching water quality plans (RWQP) were audited in November 2020 for the Cooranbong Licence plan audit, the scope of the Green Square audit was reduced to:

- Audit scheme specific documentation referenced in the RWQP, including the scheme management plans and relevant supporting documentation (see Table 2-2)
- Confirmation of the process flow diagram on site
- Assess progress of the recommendations relating to the overarching RWQP

A summary of the elements and documents to be audited are shown in Table 2-2 for the RWQMP.

**Table 2-2. Recycled water licence plan audit reduced scope summary**

Elements	Component	Scope	System documents
1	Commitment to responsible use	1.1 Responsible use of recycled water	×

Elements	Component	Scope	System documents
and management of recycled water quality	1.2	Regulatory and Formal Requirements	✓ WICA Responsibilities and Authorities Matrix
	1.3	Partnerships and engagement of stakeholders (including the public)	✓ Stakeholder and emergency contact list
	1.4	Recycled water policy	×
2 Assessment of the recycled water system	2.1	Source of recycled water, intended uses, receiving environments and routes of exposure	✓ Risk assessment documentation System description Process flow diagram
	2.2	Recycled water system analysis	✓
	2.3	Assessment of Water Quality Data	✓
	2.4	Hazard Identification and Risk Assessment	✓
3 Preventive measures for recycled water management	3.1	Preventative Measures and Multiple Barriers	✓ Scheme risk register
	3.2	Critical Control Points	✓ Critical control point documentation
4 Operational procedures and process control	4.1	Operational Procedures	✓ O&M Manual Operational procedures
	4.2	Operational Monitoring	✓ Scheme specific monitoring and sampling programme
	4.3	Operational corrections	✓ Critical control point documentation Scheme - Out of Specification Corrective Action Work Instruction
	4.4	Equipment Capability and Maintenance	✓ O&M Manual
	4.5	Materials and Chemicals	✓ O&M Manual
5 Verification of recycled water quality and environmental performance	5.1	Recycled Water Quality Monitoring	✓ Scheme specific monitoring and sampling programme
	5.2	Application site and receiving environment monitoring	✓ Irrigation Management Plans
	5.3	Documentation and reliability	✓ Scheme specific monitoring and sampling programme
	5.4	Consumer Satisfaction	×

Elements	Component	Scope	System documents		
	5.5	Short-term Evaluation of Results	×		
	5.6	Corrective responses	×		
6	Management of incidents and emergencies	6.1	Communication	✓	Stakeholder and emergency contact list
		6.2	Incident and Emergency Response Protocols	✓	Scheme notification forms Scheme - Out of Specification Corrective Action Work Instruction Scheme emergency manual
7	Operator, contractor and end user awareness and training	7.1	Operator, contractor and end user awareness and involvement	×	
		7.2	Operator, contractor and end user training	×	
8	Community Involvement and awareness	8.1	Consultation with users of recycled water and the community	×	
		8.2	Communication and education	×	
9	Validation, research and development	9.1	Validation of processes	×	
		9.2	Design of equipment	×	
		9.3	Investigative studies and research monitoring	×	
10	Documentation and reporting	10.1	Management of Documentation and Records	×	
		10.2	Reporting	×	
11	Evaluation and audit	11.1	Long-Term Evaluation of Results	×	
		11.2	Audit of recycled Water Quality management	×	
12	Review and continual improvement	12.1	Review by senior managers	×	
		12.2	Recycled Water Quality Management Improvement Plan	×	

### 2.1.1 Audit standards

In conducting this audit, we adopted the audit standard *AS/NZS ISO 19011:2019 Guidelines for auditing management systems*. This standard ensures that the audit is conducted in accordance with an established and recognised audit protocol.

Regard was also given to the following standards/guidelines, especially where these provide specific detail that are appropriate to this audit:

- Audit Guideline, *Water Industry Competition Act 2006* (NSW) (IPART July 2020)
- ASAE 3100 (2017) Compliance Engagements issued by the Auditing and Assurance Standards Board
- ISO/IEC 17021-1:2015 Conformity Assessment – Requirements for bodies providing audit and certification of management systems (contains principles and requirements for the competence, consistency and impartiality of the audit and certification of management systems of all types).

## 2.2 Audit steps

A summary of audit steps is shown in Table 2-3.

**Table 2-3. Audit steps**

Step	Item	Details
Step 1	Initiation	Licensee initiates audit via WILMA (Water Industry Licence Management Application)
	Engagement of approved auditor	Licensee engages approved auditor to undertake audit
	Audit proposal	Auditor develops audit proposal and provides it to licensee for submission to IPART via WILMA
		Licensee submits the audit proposal to IPART for approval via WILMA IPART reviews proposal IPART approves audit proposal
Step 2	Opening meeting	Auditor conducts opening meeting
	Audit interviews	Auditor undertakes interviews
Step 3	Draft audit report	Auditor prepares draft audit report and submits it via WILMA
		Licensee and IPART review draft audit report Opportunity for comment on the draft audit report
	Final audit report	Auditor finalises audit report
	Final audit report submission	Auditor submits final report to IPART via WILMA
Step 4	Non-compliance matters	Non-compliance matters will be addressed in accordance with IPART's Compliance and Enforcement Policy

Source: Audit Guideline, *Water Industry Competition Act 2006* (NSW) (IPART, July 2020)

## 2.3 Audit grades

The audit grade definitions used in assessing the auditee's performance against the requirements are set out in Table 2-4.

**Table 2-4. Audit grades**

Grade	Detail
Compliant	Sufficient evidence is available to confirm that the requirements have been met.
Non-compliant (non-material)	Sufficient evidence is not available to confirm that the requirements have been met and the deficiency does not adversely impact the ability of the licensee to achieve defined objectives or assure controlled processes, products or outcomes.
Non-compliant (material)	Sufficient evidence is not available to confirm the requirements have been met and the deficiency does adversely impact the ability of the licensee to achieve defined objectives or assure controlled processes, products or outcomes.
No requirement	There is no requirement for the licensee to meet this criterion within the audit period.

Source: Audit Guideline, *Water Industry Competition Act 2006* (NSW) (IPART, July 2020)

## 2.4 Audit team

The audit team qualifications are shown in Table 2-5.

**Table 2-5. Audit team**

Team Member	Details
Dr Annalisa Contos Lead Auditor	<p>Dr Annalisa Contos holds the following auditor qualifications:</p> <ol style="list-style-type: none"> <li>1. A registered Exemplar Global lead auditor (Certificate No. 113465):             <ol style="list-style-type: none"> <li>a. Exemplar Global -DW (Drinking Water)</li> <li>b. Exemplar Global -RW (Recycled Water)</li> <li>c. Exemplar Global TL-AU (Lead Auditor)</li> </ol> </li> <li>2. NSW IPART (Independent Pricing and Regulatory Tribunal) qualified:             <ol style="list-style-type: none"> <li>a. Lead Auditor and Area Specialist Drinking Water Quality</li> <li>b. Lead Auditor and Area Specialist Licence and Regulatory Compliance</li> <li>c. Lead Auditor and Area Specialist Infrastructure Performance</li> <li>d. Lead Auditor and Area Specialist Recycled Water Quality</li> <li>e. Lead Auditor and Area Specialist Sewage Management</li> <li>f. Area Specialist Environmental Management</li> </ol> </li> </ol>

Team Member	Details
Natalie Crawford Auditor	Natalie Crawford holds the following auditor qualifications: <ol style="list-style-type: none"> <li>1. A registered Exemplar Global lead auditor (Certificate No. 130608):               <ol style="list-style-type: none"> <li>a. Exemplar Global -DW (Drinking Water)</li> <li>b. Exemplar Global -RW (Recycled Water)</li> <li>c. Exemplar Global TL-AU (Lead Auditor)</li> </ol> </li> <li>2. NSW IPART (Independent Pricing and Regulatory Tribunal) qualified:               <ol style="list-style-type: none"> <li>a. Auditor Licence and regulatory compliance</li> <li>b. Drinking Water Quality Auditor and Area Specialist</li> <li>c. Recycled Water Quality Auditor and Area Specialist</li> <li>d. Environmental management Auditor and Area Specialist</li> </ol> </li> </ol>
Steven Contos Peer Review	Steven Contos holds the following auditor qualifications <ol style="list-style-type: none"> <li>1. A registered Exemplar Global auditor (Certificate No. 122777):               <ol style="list-style-type: none"> <li>a. Exemplar Global -DW (Drinking Water)</li> <li>b. Exemplar Global -RW (Recycled Water)</li> <li>c. Exemplar Global -AU (Auditor)</li> </ol> </li> </ol>

## 2.5 Quality assurance process

Checks of information received were conducted and included aspects such as veracity of information, coverage of the subject area being audited and document adequacy. Professional scepticism (as per ASAE 3100) was applied as part of the document review. The quality assurance approach to this audit involved independent peer review from a qualified auditor (Steven Contos) who was not part of the audit, and review by the lead auditor.

## 3 Audit plan

The audit is shown in Table 3-1 for Green Square Water Licence Plan audit.

**Table 3-1 Green Square Water Scheme Management Plan licence plan audit plan**

Task	Details	Timeline
Task 1 Audit Preparation	Develop audit plan	1 December 2020
	Data request, Project management	11 January 2021
Task 2 Desktop Audit	Licence Plan provided to Auditor and IPART Information review and desktop audit	11 January 2021
Task 3 Audit Interviews/site visit	Site visit (verify PFD)	18 January 2021
	Interviews and close out meeting	19 & 20 January 2021
Task 4 Reporting	Draft Report to Flow Systems and IPART	29 January 2021
	Comments received	5 February 2021
	Final Report	12 February 2021

## 4 Audit findings

### 4.1 Recycled water quality plan

A summary of the water quality plan audit requirements and the compliance grade is shown in Table 4-1.

**Table 4-1. Recycled water quality plan audit requirements**

Ref	Requirement	Compliance
WIC Regulation Schedule 1 clause 7(1)	<p><b>7 Water quality plans</b></p> <p>(1) Before commencing to operate water infrastructure commercially, the licensed network operator for the infrastructure must prepare, and forward to IPART, a water quality plan, in relation to the water supplied from the infrastructure, that specifies:</p> <p>(b) if the water so supplied is non-potable water, how the 12 elements of the framework for the management of recycled water quality and use, as detailed in the Australian Guidelines for Water Recycling, have been addressed and will be implemented and, having regard to those guidelines, the purposes for which the water may be used and the purposes for which the water may not be used.</p>	Non-compliant (non-material)

#### 4.1.1 Summary of findings

Flow Systems have a Recycled Water Quality Plan (RWQP) that addresses the AGWR Framework elements, components and actions. A table is included for each component, that details how the requirement of each action is met (*Discussion* column). Evidence to meet the requirements is detailed for Documents, Records and Responsibly/Monitoring. This approach clearly and comprehensively documents how Flow System meets the requirements of the AGWR Framework. Documents specific to individual schemes are referenced in the Scheme Management Plan.

The overarching RWQP was audited as part of the Cooranbong Licence Plan Audit (November 2020). The adequacy of information specific to the Green Square Water scheme is discussed below.

The Licence Plan as a whole is considered adequate, with a few deficiencies noted in relation to document errors and processes relating to the updating of documentation following scheme expansion. These are considered non-material. Recommendations have been included to address these shortcomings.

### 4.1.2 Detailed findings

Adequacy of the overarching RWQP is discussed in the Cooranbong Licence Plan Audit (November 2020). The adequacy of information specific to the Green Square Water scheme is discussed in Table 4-2 for each relevant AGWR Framework element. A sample of documents referenced as evidence (in both the RWQP and Green Square Scheme Management Plan) were tested as part of the audit process. A summary of audit evidence is included in Appendix A.

Version 14.3 of the RWQP was audited for the Green Square Scheme. While the overarching RWQP was not reaudited, we checked that the scheme specific requirements set out in the RWQP are met. Elements with recommendations or opportunities for improvement from the Cooranbong Audit are also included in Table 4-2.

**Table 4-2. Audit findings against the AGWR Framework – reduced scope**

Element	Component	Audit findings	Evidence
Element 1 Commitment to responsible use and management of recycled water quality	Regulatory and formal requirements	The scheme specific documentation referenced in the RWQP for this component is adequate. Scheme governance is documented in the WICA Responsibilities and Authorities matrix. Responsibilities appear to be appropriate to the included areas.	RWQP Section 1.2 WICA Responsibilities and Authorities Matrix FS-WAT-AUS-FM-OPS-1316
	Partnerships and engagement of stakeholders	The scheme specific documentation referenced in the RWQP for this component is adequate. Stakeholders specific to the Green Square scheme are listed in the Scheme specific Stakeholder and Emergency Contact List. Public and environmental health stakeholders listed are appropriate and include IPART, NSW Health, NSW Department of Planning, Industry and Environment, NSW Environment Protection Authority and City of Sydney.	RWQP Section 1.3 Green Square Stakeholder and Emergency Contact List GS-WAT-NSW-RG-INC-3363
Element 2 Assessment of the recycled water system	Intended uses and source of recycled water	The scheme specific documentation referenced in the RWQP for this component is adequate. Intended uses are documented in Table 7-3 of the Green Square Scheme Management Plan with a reference to the Flow WICA Licences - Authorised Purposes Matrix. The approved end uses for Green Square in the authorised	RWQP Section 2.1 Green Square Scheme Management Plan CP-WAT-NSW-PL-OPS-1344 Flow WICA Licences - Authorised Purposes Matrix FS-WAT-NSW-RG-OPS-2918

Element	Component	Audit findings	Evidence
		<p>purposes matrix are consistent with the approved end users in the licence.</p>	<p>Network Operating Licence, 15_031 Green Square Water, dated 24 September 2020.</p>
	<p>Recycled water system analysis Assessment of water quality data</p>	<p>The scheme specific documentation referenced in the RWQP for this component is adequate, apart from an error noted on the process flow diagram. The process flow diagrams were generally correct, with the only error noted that 'Drying Green' Inputs (City of Sydney responsibility) are not current scheme inputs.</p> <p>Scheme characteristics are documented in the Green Square Scheme Management Plan. Consistent with this requirement, scheme characteristics including connections, source, treatment processes and distribution are included in Table 2-4 Recycled Water system overview description in the Green Square Scheme Management Plan.</p> <p>A process flow diagram was provided for the recycled water scheme consistent with requirements of the AGWR to outline steps and processes from source to application. The process flow diagram was verified onsite during the audit. Noting that not all infrastructure was able to be viewed; the wet wells, gross pollutant trap and extraction well were located currently within a construction site. The off-specification line prior to the centrifugal separator was located below the floor and was not able to be viewed. The SW Floor pipe works diagram (a cross section drawing showing physical pipe arrangements), was viewed as evidence to clarify that the location of the off-specification line was correct on the process flow diagram.</p> <p>An opportunity for improved is noted around some inconsistencies in language across the process flow diagram and the Scheme Management Plan, for example Raw stormwater (Northern Culvert) is also referred to as Shea's Creek stormwater culverts, and the</p>	<p>RWQP Section 2.2 and 2.3 Scheme Management Plan Section 7.3 Green Square Water Process Flow Diagram Recycled Water GS-WAT-NSW-DR-OPS-2619 Risk Assessment Briefing Pack FS-WAT-NSW-RE-OPS-3199</p>

Element	Component	Audit findings	Evidence
		<p>hydro-cyclone is referred to as a centrifugal separator on the process flow diagram.</p> <p>Assessment of water quality data was used to inform the risk assessment. The risk assessment workshop briefing pack was sighted as evidence during the Cooranbong audit and considered adequate as evidence of this requirement.</p> <p><b>Recommendation RW 2.1:</b> Review and update the Green Square process flow diagram to accurately reflect current raw water sources.</p> <p><b>OFI RW 2.1:</b> Fix inconsistencies in language across the process flow diagram and the scheme management plan overview description, including references (including Northern Culvert/Sheas Creek and centrifugal separator/hydro-cyclone).</p>	
	Hazard identification and risk assessment	<p>The scheme specific documentation referenced in the RWQP for this component is adequate.</p> <p>Briefing material for the Green Square Risk Assessment provided evidence during the Cooranbong Audit was consistent with the Risk Assessment Protocol for Water Products and Services.</p> <p>The risk register is satisfactory in terms of risks considered, control measures and assessment of uncertainty.</p>	<p>RWQP Section 2.4</p> <p>Green Square Scheme Risk Register GP-WAT-NSW-RG-OPS-2649</p> <p>Outcomes Summary, Risk Assessment Workshop – high rise, 27 August 2020</p>
Element 3	Preventive measures and multiple barriers	<p>The scheme specific documentation referenced in the RWQP for this component is adequate.</p> <p>General controls are included in Attachment B of the RWQP and all controls included in the scheme risk register. The Green Square Scheme Risk Register was provided as evidence for this component. Controls are included from source to end use for each hazardous event and categorised as either preventive, detective or reactive controls. The sample of controls reviewed are consistent with the</p>	<p>RWQP Section 3.1</p> <p>Green Square Scheme Risk Register GP-WAT-NSW-RG-OPS-2649</p>

Element	Component	Audit findings	Evidence
		AGWR. Additional control measures were identified in the risk assessment and documented in the 'Specific actions and ALARP considerations' column of the risk register.	
	Critical control points	<p>The scheme specific documentation referenced in the RWQP for this component is adequate.</p> <p>Critical control points are identified as part of the risk assessment process. Documentation of this assessment was confirmed in the Green Square Scheme Risk Register where CCPs and QCPs are recorded in the "CCP / QCP?" column.</p> <p>Critical control points for Green Square are documented in the Green Square Control Points Table. Critical control points in this table are consistent against those assessed in the risk register. The references used in the justification column are considered appropriate. It was confirmed that the CCP limits were consistent with those in SCADA.</p>	<p>RWQP Section 3.2</p> <p>Green Square Scheme Risk Register GP-WAT-NSW-RG-OPS-2649</p> <p>Green Square Control Points Table GS-WAT-NSW-PL-OPS-2577</p> <p>Green Square LWC – Log Reduction Values GS-WAT-NSW-PL-OPS-2826</p>
Element 4 Operational procedures and process control	Operational procedures	<p>The scheme specific documentation referenced in the RWQP for this component is adequate apart from minor deficiencies associated with document control and the procedure list.</p> <p>The RWQP states that schemes will be operated in accordance with the scheme operations and maintenance manual. A finalised Operations and Maintenance (O&amp;M) Manual – Green Square LWC Operation and Maintenance Manual was provided as evidence (Version 3, dated March 2020).</p> <p>SOPs and Work Instructions are documented in the register of operational procedures. There are inconsistencies in the procedure register for procedures marked as relevant to Green Square. Procedures relating to UV and Alum dosing are marked as applicable for 'all schemes', treatment processes that are not in place at Green Square.</p>	<p>RWQP Section 4.1</p> <p>Green Square LWC Operations and Maintenance (O&amp;M) Manual – GS-WAT-NSW-MN-OPS-2853</p> <p>Register of Operational Procedures FS-WAT-NSW-RG-OPS-2725</p>

Element	Component	Audit findings	Evidence
		<b>Recommendation RW 4.1:</b> Review the register of procedures to ensure only applicable procedures are marked for Green Square.	
	Operational monitoring	<p>The scheme specific documentation referenced in the RWQP for this component is adequate.</p> <p>The Monitoring and Sampling Plan does not specify operational monitoring parameters and frequency for stormwater systems. Operational monitoring for sewage is provided and the plan states that <i>“Variations will occur on a scheme by scheme basis, including stormwater recycling schemes. Refer to the MS Prog for the specific operational monitoring for each scheme”</i>. The Green Square Monitoring and Sampling program details online analysers and grab samples schedules. Appropriate online analysers are present for each of the critical and quality control points and weekly verification / calibrations undertaken.</p>	<p>RWQP Section 4.2</p> <p>Monitoring and sampling plan FS-WAT-AUS-PL-OPS-1288</p> <p>Green Square Monitoring and Sampling Program GS-WAT-NSW-PL-OPS-2421</p>
	Operational corrections	<p>The scheme specific documentation referenced in the RWQP for this component is adequate. Discussions on corrective actions are also included in Element 6 in the Incident and Emergency Response Protocols section.</p> <p>Critical control points summary corrective actions are included in the control point tables. The Green Square Control Points Table procedures for shutdown and off specification water diversion are appropriate.</p>	<p>RWQP Section 4.3</p> <p>Green Square Control Points Table GS-WAT-NSW-PL-OPS-2577</p>
	Equipment capability and maintenance	<p>The scheme specific documentation referenced in the RWQP for this component is adequate. The Green Square Operations and Maintenance Manual refers to Flow’s Computerised Maintenance Management System (CMMS) for maintenance schedules. A register of calibrations and control point inspections was provided as evidence of scheduling. Scheduling included organising annual calibration and quarterly and weekly calibrations and checklists. A</p>	<p>RWQP Section 4.4</p> <p>Green Square LWC Operations and Maintenance (O&amp;M) Manual – GS-WAT-NSW-MN-OPS-2853</p> <p>PPM Schedules Calibration and Control Points High Rise from RAM</p>

Element	Component	Audit findings	Evidence
		register of calibrations and control point inspections was provided as evidence of scheduling. Scheduling included annual, quarterly and weekly calibrations and checklist. An example of the Weekly Control Point Checklist for Green Square was provided as evidence of the parameters checked, which included calibrations and checks of CCP equipment included for pH, turbidity, chlorine and UVT.	Work Order Number 035105, Local Water Centre Green Square, Weekly Control Points Checklist Test New Checklist, Completed date: 7/12/202
	Materials and chemicals	The scheme specific documentation referenced in the RWQP for this component is adequate. Signage and labelling of chemical dosing points was noted during the site audit of Green Square. The Green Square Operations and Maintenance Manual specifies details of chemical dosing in the treatment process. Evaluating Products Materials and Chemical Procedure includes a requirement for materials that come into contact with recycled or drinking water to be AS/NZS 4020 compliant. No scheme specific documentation was audited in relation to material usage for Green Square.	RWQP Section 4.5 Green Square Scheme management plan Green Square LWC Operations and Maintenance (O&M) Manual – GS-WAT-NSW-MN-OPS-2853
Element 5 Verification of recycled water quality and environmental performance	Recycled water quality monitoring Documentation and reliability	The scheme specific documentation referenced in the RWQP for this component is adequate. Characteristics to be monitored are included within the overarching Monitoring and Sampling Plan. A check was carried out of the verification requirements in the Monitoring and Sampling Plan against the Green Square Monitoring and Sampling Program. Parameters and limits specific to stormwater are specified (Table 134 Recycled Water Quality – Verification parameters targets and critical limits (Stormwater source)) with the documents were consistent. The AGWR (2009) requires weekly <i>E. coli</i> testing, which is consistent with requirements the Green Square Monitoring and Sampling Program. While parameters and sampling points (PoU and PoS) are detailed in the sampling plan, frequency of monitoring for a stormwater system is not specified, referring to the scheme	RWQP Section 5.1 and 5.3 Monitoring and sampling plan FS-WAT-AUS-PL-OPS-1288 Green Square Monitoring and Sampling Program GS-WAT-NSW-PL-OPS-2421

Element	Component	Audit findings	Evidence
		<p>specific monitoring programmes for details of parameter frequency. This is considered appropriate.</p> <p>It was noted however that the date and version in the footer of the Monitoring and Sampling Plan were different to the latest version in the document control table.</p> <p><b>OFI RW 5.1:</b> Correct the date and version in footer of the Monitoring and Sampling plan to be consistent with document control.</p>	
	Application site and receiving environment	<p>The Cooranbong Water Quality Plan Licence audit identified a non-material deficiency in documenting the trigger process for updating the monitoring program following relevant scheme changes. The RWQP has been updated included to include <i>“Any updates required to the Monitoring and Sampling Plan and Program due to scheme changes will be triggered by the System Change checklist”</i>. This component is now considered adequate following completion of the identified recommendation.</p> <p>The Green Square Scheme Management Plan (Section 11.5 Recycled Water Irrigation Management) states that the Recycled Water Irrigation Management Plan (RWIMP) is not currently implemented as there are no designated irrigation zones, this is an appropriate approach for this scheme.</p>	<p>RWQP Section 5.2</p> <p>Green Square Scheme Management Plan</p>
Element 6 Management of incidents and emergencies	Communication	<p>The scheme specific documentation referenced in the RWQP for this component is adequate.</p> <p>The Green Square Scheme Management Plan references the Green Square stakeholder and emergency contact list and Figure 8-1 of this document sets out how incidents and emergencies are generally managed. Flow Systems has regulatory reporting obligations for incidents.</p>	<p>RWQP Section 6.1</p> <p>Green Square Stakeholder and Emergency Contact List GS-WAT-NSW-RG-INC-3363</p>

Element	Component	Audit findings	Evidence
		Key stakeholders for Green Square relevant to the recycled water supply include IPART, NSW Health, NSW Department of Planning, Industry and Environment, NSW Environment Protection Authority, Sydney Water and City of Sydney. The stakeholders listed are appropriate to the scheme.	
	Incident and emergency response protocols	<p>The scheme specific documentation referenced in the RWQP for this component is adequate apart from scheme specific reference to the WICA notification forms in the Green Square Scheme Management Plan.</p> <p>The RWQP refers to the Water Operations Incident Management, Reporting and Investigation Procedure and the Incident Notification and Response Protocol with NSW Health. These documents refer to scheme specific WICA Form A and B (which are the IPART Form A and B pre filled with relevant contact details). Scheme specific notification forms for Green Square (WICA Form A and B) were provided as evidence. The Green Square Scheme Management Plan does not currently include a reference to the scheme specific Green Square Incident Notification forms (Form A and B).</p> <p>The Recycled Water Out of Specification Work Instruction for Green Square (Ver 1.0, dated 19 November 2020) provided as evidence is adequate.</p> <p><b>Recommendation RW 6.1:</b> Reference scheme specific WICA incident notification forms in the Green Square Scheme Management Plan.</p>	<p>RWQP Section 6.2</p> <p>WICA Form A – Incident Initial Notification Green Square</p> <p>WICA Form B – Incident Initial Notification Green Square</p> <p>Green Square Recycled Water Out of Specification Work Instruction - GS-WAT-NSW-WI-OPS-3452</p>
Element 8 Community involvement and awareness	Consultation with users of recycled water and the community	The Cooranbong Water Quality Plan Licence audit identified an opportunity for improvement to include further information in RWQP Component 8.1 on the assessment process used in developing the customer communication program.	RWQP Section 8.1 and 8.2

Element	Component	Audit findings	Evidence
	Communication and education	<b>OFI RW 8.1:</b> Include further information in the RWQP documenting the assessment requirements for developing the consultation program.	
Element 9 Validation, research and development	Validation of processes Design of equipment Investigative studies and research monitoring	<p>The Cooranbong Water Quality Plan Licence audit assessed that the process for validation, research and development is adequately described in Section 9.1, 9.2 and 9.3 of the RWQP. An opportunity for improvement in the process for revalidation of equipment which occurs on system change. Processes to evaluate system change are assessed using the System Change Checklist and the WICA Change checklist. An observation was noted that while the WICA Change checklist refers to change that would require significant change to a licence plan, referencing to requirements for when revalidation should occur could be more explicit.</p> <p><b>OFI RW 9.1:</b> Detail more explicit requirements for when revalidation will need to occur in the RWQP.</p>	RWQP Section 9.1, 9.2 and 9.3 WICA Change checklist FS-WAT-NSW-FM-GOV-2690
Element 10 Documentation and reporting	Reporting	<p>The Cooranbong Water Quality Plan Licence audit identified a deficiency in the process as described in Section 10.2 with the RWQP being silent on annual reporting to end users. The RWQP has been updated to include that an annual report will be made available via the Flow website and be produced in concurrence with the annual IPART compliance report. This component is considered adequate.</p> <p>There is no procedure listed that describes the activities required to develop the reports. While there is no explicit requirement for this, we are unable to confirm that the Annual report contents would meet the requirements of this clause as the implementation of the licence plan is outside the scope of this audit. An area for improvement is to include further details on IPART compliance</p>	RWQP Section 10.2

Element	Component	Audit findings	Evidence
		reporting regulations, such as reference to the Network Operator Reporting Manual and Retail Supplier's Reporting Manual. <b>OFI RW 10.1:</b> Include reference to external reporting obligations in the RWQP.	
Element 11 Evaluation and audit	Long-term evaluation of results	The Cooranbong Water Quality Plan Licence audit identified a deficiency in the process described in Section 11.1 of the RWQP. The RWQP was silent on the assessment of recycled water quality performance as part of an annual review reporting process. Section 11.1 of the RWQP has been updated to include that an annual review of long-term water quality performance will be conducted at the same time as annual reporting and that this will be recorded in review meeting minutes and the risk review briefing pack. This component is now considered adequate following completion of the identified recommendation.	RWQP Section 11.1
	Audit of recycled water quality management	The Cooranbong Water Quality Plan Licence audit identified an opportunity for improvement in the Audit Procedure. Internal audits are conducted at a minimum annually. The internal audit program did not explicitly specify recycled water quality audits. It was confirmed in interviews that quality audits included recycled water. The Internal Audit Program for 2020-21 was provided as evidence of this process. <b>OFI RW 11.1.1:</b> Clarify that recycled water quality is covered under the internal audit objective for 'quality'.	RWQP Section 11.2 Audit Procedure FS-ALL-AUS-PR-GOV-1364

### 4.1.3 Summary of recommendations

A summary of recommendations for the Green Square recycled water quality plan is detailed below:

- Recommendation RW 2.1: Review and updated the Green Square process flow diagram to accurately reflect current raw water sources.
- Recommendation RW 4.1: Review the register of procedures to ensure only applicable procedures are marked for Green Square
- Recommendation RW 6.1: Reference scheme specific WICA incident notification forms in the Green Square Scheme Management Plan

### 4.1.4 Summary of opportunities for improvement

A summary of opportunities for improvement for the Green Square recycled water quality plan are detailed below:

- OFI RW 2.1: Fix inconsistencies in language across the process flow diagram and the scheme management plan overview description, including references (including Northern Culvert/Sheas Creek and centrifugal separator/hydro-cyclone)
- OFI RW 5.1: Correct the date and version in footer of the Monitoring and Sampling plan to be consistent with document control.
- OFI RW 8.1: Include further information in the RWQP documenting the assessment requirements for developing the consultation program
- OFI RW 9.1: Detail more explicit requirements for when revalidation will need to occur in the RWQP.
- OFI RW 10.1: Include reference to external reporting obligations in the RWQP
- OFI RW 11.1.1: Clarify that recycled water quality is covered under the internal audit objective for 'quality'.

## Appendix A Audit evidence

Document name and number	Version	Date
Recycled Water Quality Plan	14.3	19/01/2021
Green Square Water Scheme Management Plan	6.1	19/01/2021
Green Square Recycled Water Out of Specification Work Instruction - GS-WAT-NSW-WI-OPS-3452	1.0	19/11/2020
Green Square Control Points Table GS-WAT-NSW-PL-OPS-2577	3.1	20/11/2019
Green Square LWC – Log Reduction Values GS-WAT-NSW-PL-OPS-2826	2.0	29/10/2020
Green Square Water Process Flow Diagram Recycled Water GS-WAT-NSW-DR-OPS-2619	3	4/11/2019
Green Square LWC Operations and Maintenance (O&M) Manual – GS-WAT-NSW-MN-OPS-2853	3.0	23/03/2020
Green Square Monitoring and Sampling Program GS-WAT-NSW-PL-OPS-2421	1.4	18/09/2020
Green Square Scheme Risk Register GP-WAT-NSW-RG-OPS-2649	8.2	27/8/2020
Green Square Stakeholder and Emergency Contact List GS-WAT-NSW-RG-INC-3363	1.1	30/12/2020
Flow WICA Licences - Authorised Purposes Matrix FS-WAT-NSW-RG-OPS-2918	2	7/10/2020
Monitoring and sampling plan FS-WAT-AUS-PL-OPS-1288	13.1	16/12/2020
Register of Operational Procedures FS-WAT-NSW-RG-OPS-2725	3	1/10/2020
Responsibilities and Authorities Matrix FS-WAT-AUS-FM-OPS-1316	6.2	7/10/2020
WICA Form A – Incident Initial Notification Green Square	2.0	14/09/2020
WICA Form B – Incident Initial Notification Green Square	2.0	24/09/2020
Work Order Number 035105, Local Water Centre Green Square, Weekly Control Points Checklist Test New Checklist, Completed date: 7/12/202		7/12/2020

# Appendix B Addendum



# Addendum

## Green Square Water Licence Plan Audit

### 1 Introduction

The findings of the January 2021 licence plan audit for Green Square Water Pty Ltd, are presented in the licence plan audit report (Atom Consulting 2021). This audit was undertaken of the water quality plans in accordance with the requirements set out in IPART's *Audit Guideline, Water Industry Competition Act 2006 (NSW)* (July 2020).

Altogether Group have since proposed changes to critical control points for Green Square and have requested that these documents be audited. The findings of the review of these documents are presented in this addendum to the 2021 Green Square Licence Plan Audit report.

### 2 Audit method

#### 2.1 Audit scope

The overarching water quality plans (DWQP and RWQP) were audited in November 2020 for the Cooranbong Licence plan audit and the Green Square scheme specific documentation in January 2021.

The audit scope for this addendum was the adequacy of the updates to Critical Control Point and Log Reduction Value documentation referred to as part of the Green Square Water Licence Plans.

The licence plan document considered in this audit addendum is Green Square – Control Points.

### 3 Audit results

Evidence provided as part of the audit is included in Table 2-1.

**Table 2-1. Audit evidence**

Document name and number	Version	Date
Green Square Control Points Table GS-WAT-NSW-PL-OPS-2577	3.2	16/04/2021
Email to NSW Health 'Change Notice - CCP and Log Reduction'		16/04/2021
Change Notice Form: Green Square Ultrafiltration Control Point Review	1.0	22/03/2021
Memcor LRV control limit calculations, Dupont water solutions		19/05/2021

Critical control points for Green Square are documented in the Green Square Control Point table and referenced in the Scheme Management Plan. No change has been made to ultrafiltration as a control point consistent with the risk register. Amendments have been made to control point limits and justifications. Changes made and a discussion on these changes is included in Table 2-1.

**Table 2-2. Summary of amendments**

Control point	Document	Amendment	Commentary
Ultrafiltration (CCP 1)	Green Square Control points	Pressure decay test critical limit has decreased from $\geq 28$ kPa/min to $\geq 15.9$ kPa/min.  Target and Adjustment limit changes.  Reference to current validation report for Green Square updated.  Reference to Memcor LRV Control Limit Calculations added.	Basis for change is adequately documented in the Table 2 Change Assessment of the Change Notice Form. Limit amendments are more conservative and are in line with claimed log reductions values.  Frequency of testing is not recording on the CCP for Pressure Decay test.
	Green Square Control points	Trans membrane pressure has been removed as a monitoring point.	Basis for change is adequately documented in the Table 2 Change Assessment of the Change Notice Form
	Green Square Control points	Flux rate has been removed as a monitoring point.	Basis for change is adequately documented in the Table 2 Change Assessment of the Change Notice Form
Chlorination (CCP 3)	Green Square Control points	Reference to current validation report for Green Square updated.	Amendment is adequate.

Critical control points values are consistent across the Control Point Tables and the Log Reduction Value document. It was not confirmed as part of this review if the updated CCP limits were consistent with those in SCADA.

Evidence was provided of consultation with NSW Health, in the form of an email where updated documentation and the change notice form was provided.

### 3.1 Summary of findings

Changes to the critical control point value documentation for Green Square are adequate, apart from minor shortcomings around frequency not being recorded for pressure decay testing in the Green Square Control Point table.

#### Recommendation:

1. Ensure that a required monitoring frequency is recorded for the pressure decay test in the Ultrafiltration CCP