



Central Park Water

Operational Audit

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Independent Pricing and Regulatory Tribunal

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Independent Pricing and Regulatory Tribunal

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1. Executive Summary

1.1 Auditor Declaration

This report presents the findings of an Operational Audit of Central Park Water Pty Ltd's compliance with the requirements of its Network Operator's Licence (Licence No: 12_022) and the relevant provisions of the *Water Industry Competition (General) Regulation 2008* as they relate to the drinking water, sewerage and recycled water schemes at Central Park.

The auditor confirms that:

- the auditor was provided with sufficient evidence on which to base the conclusions reached during the audit;
- the audit findings accurately reflect the professional opinion of the auditor;
- the auditor has conducted the audit, determined the audit findings and prepared this report in accordance with the requirements of the *WIC Act Audit Guidelines*¹ and the provisions of the Audit Deed; and
- the audit findings have not been unduly influenced by the Licensee and/or any of its associates and express the auditor's opinion as to whether the Licensee has met the Licence conditions and regulatory requirements as specified in the scope.

1.2 Major Findings

The Licensee, Central Water Pty Ltd, was found to be operating and maintaining the audited drinking water, sewerage and recycled water schemes in full compliance with the assessed audit criteria. No non-compliances were identified and the infrastructure was found to be operating safely.

1.3 Recommendations

No recommendations have been made as a result of this audit.

Five (5) opportunities for improvement, which the Licensee may wish to consider, have been identified in the body of the report.

¹ IPART, *Audit Guideline for Greenfield Schemes; Water Industry Competition Act 2006 (NSW)*, July 2013.

2. Introduction

2.1 Objectives

This report presents the findings of an Operational Audit undertaken for the Independent Pricing and Regulatory Tribunal (IPART) under the provisions of the *Water Industry Competition Act 2006*.

The objective of the audit was to assess compliance of the Licensee, Central Park Water Pty Ltd (Central Park Water), in meeting the requirements of the relevant legislation (the *Water Industry Competition Act 2006* and *Water Industry Competition (General) Regulation 2008*) and its Network Operator's Licence (Licence No: 12_022) for the drinking water, sewerage and recycled water schemes currently in operation at Central Park.

It is noted that the audit was undertaken in conjunction with an Operational Audit of Discovery Point Water schemes.²

2.2 Licensee's Infrastructure, Systems and Procedures

The infrastructure, systems and procedures subject to audit are those related to the Central Park Water drinking water, sewerage and recycled water schemes (the Schemes) (refer <http://centralparkwater.com.au>). The infrastructure includes a water recycling plant that treats raw sewage using extensive filtration and purification processes including membrane bioreactor, ultra violet, reverse osmosis and chlorination processes to produce recycled (non-potable) water of a quality suitable for the authorised uses.

Central Park Water Pty Ltd (ACN 151 072 838) is the Licensee, holding Network Operator's Licence No: 12_022. As Licensee, Central Park Water is responsible for the ongoing operation and maintenance of parts of the drinking water network, sewerage network, the treatment plant and the recycled water network in accordance with its Licence Plans including:³

- Scheme Management Plan – Flow, *Central Park Scheme Management Plan (Scheme MP) (Revision 4)*, 18 May 2017;

which must be read in conjunction with:

- Infrastructure Operating Plan – Flow, *Infrastructure Operating Plan IOP (Revision 8)*, 21 December 2016;
- Drinking Water Quality Plan – Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016;
- Recycled Water Quality Plan – Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016; and
- Sewage Management Plan – Flow, *Sewage Management Plan (Sewage MP) (Revision 4)*, 18 May 2017; and
- other relevant supporting documentation.

² Both Central Park Water and Discovery Point Water are fully owned by Flow Systems Pty Ltd.

³ Latest versions of the Licence Plans are listed; versions current during the audit period are referenced later in this report.

2.3 Audit Method

2.3.1 Audit Scope

The audit comprised an Operational Audit conducted pursuant to the *WIC Act Audit Guidelines*.⁴ The specific scope of the audit was as defined in IPART's letter to Flow (reference D17/3747) dated 19 April 2017. The nominated scope addresses selected requirements of:

- the *Water Industry Competition (General) Regulation 2008*; and
- Network Operator's Licence No: 12_022.

2.3.2 Audit Standard

The audit has been undertaken in accordance with the principles/guidance presented in:

- ISO 19011:2011 *Guidelines for auditing management systems*; and
- IPART, *Audit Guideline for Greenfield Schemes; Water Industry Competition Act 2006 (NSW)*, July 2013 (WIC Act Audit Guidelines).

2.3.3 Audit Steps

The audit has been undertaken generally in accordance with the procedure outlined in the *WIC Act Audit Guidelines*.

Following approval of an *Audit Proposal* by IPART, an *Audit Agenda* and *Information Request* were sent to both the Licensee and IPART one week prior to the audit fieldwork being undertaken. Audit fieldwork comprising a site inspection of the infrastructure and a desktop audit of relevant documentation/records and was undertaken on 13/14 June 2017. Some additional evidence was requested and subsequently provided.

A draft audit report was prepared and submitted to the Licensee for review, before being finalised and issued to both the Licensee and IPART.

The audit process involved seeking objective evidence that the Licensee had complied with the obligations identified for audit by IPART. Evidence was obtained through interview, review of relevant documentation and records, and site inspection.

2.3.4 Audit Team

The audit was conducted by Jim Sly and Dr Dan Deere, both of whom hold Lead Auditor accreditation in respect of Licence and regulatory compliance on IPART's Technical Services and Water Licensing Panel. The two auditors collectively addressed the various components of the audit.

Quality assurance review of the audit reports was undertaken by each auditor reviewing the other auditor's work.

Central Park Water was represented by Laura Dixon and Andrew Horton. IPART representatives Shweta Shrestha and Jayden Bregu⁵ attended as observers during the audit fieldwork.

⁴ IPART, *Audit Guideline for Greenfield Schemes; Water Industry Competition Act 2006 (NSW)*, July 2013.

⁵ Jayden Bregu attended on 13 June 2017 only.

2.3.5 Audit Grades

Audit grades have been awarded in accordance with guidance presented in the *WIC Act Audit Guidelines*. The compliance grades applicable for the purposes of this audit were as identified in **Table 2.1**.

Table 2.1 Audit Compliance Grades

Compliance Grade	Description
Compliant	Sufficient evidence has been provided in the audit on which to make a judgment on all requirements, and all requirements have been met.
Non-compliant Insignificant	There is a deficiency in compliance, however, it does not adversely impact on the ability of the Licensee to achieve defined objectives or assure controlled processes, products or outcomes.
Non-compliant Significant	There is a deficiency in compliance which adversely impact on the ability of the Licensee to achieve defined objectives or assure controlled processes, products or outcomes.
No Requirement	There was no requirement to comply with the Licence condition during the audit period.

2.4 Regulatory Regime

The Central Park Water schemes operate in accordance with the provisions of a Network Operator's Licence (Licence No: 12_022) issued under the *Water Industry Competition Act 2006* (NSW). Other relevant regulatory instruments and standards/guidelines include:

- *Water Industry Competition (General) Regulation 2008* (NSW);
- IPART, *Audit Guideline for Greenfield Schemes; Water Industry Competition Act 2006* (NSW), July 2013;
- *Australian Drinking Water Guidelines* (2011);
- *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) 2006*;
- *Plumbing Code of Australia*;
- *Plumbing and Drainage Act 2011* (NSW); and
- NSW and national water industry and environmental regulations and codes of practice as applicable.

2.5 Quality Assurance Process

The quality of this audit report was assured through a professional review process. The report has been independently reviewed by a Lead Auditor who holds relevant accreditation on IPART's Technical Services and Water Licensing Panel.

2.6 Audit Findings

Audit findings are summarised in the following **Sections 3 to 7**, and are presented in full detail in **Appendices A to E**.

3. General Obligations of a Network Operator

3.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to the *General Obligations of a Network Operator*. Detailed assessment in respect of these clauses is presented in **Appendix A**.

3.2 Review of Actions

The Licensee has not made any suggestions for corrections or clarifications following issue of the draft report and prior to the final report being issued.

3.3 Opportunities for Improvement

The following opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *General Obligations of a Network Operator*.

- **OFI-CPW2017.01:** It is suggested that the Emergency Contact List is reviewed on a more regular basis (at least annually) and the version control (document date) updated accordingly. [*Note: an equivalent opportunity for improvement has been identified in relation to Discovery Point Water.*]
- **OFI_CPW2017.02:** It is suggested that Central Park Water follows up on the anomalous Na result reported in the recycled water sample collected during February 2017.

4. Water Supply Infrastructure

4.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to *Water Supply Infrastructure*. Detailed assessment in respect of these clauses is presented in **Appendix B**.

4.2 Review of Actions

The Licensee has not made any suggestions for corrections or clarifications following issue of the draft report and prior to the final report being issued.

4.3 Opportunities for Improvement

The following opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *Water Supply Infrastructure*:

- **OFI-CPW2017.03:** It is suggested that Flow (Central Park Water) takes action to ensure that information recorded on equipment/instrument servicing stickers is accurate and kept up-to-date.
[Note: an equivalent opportunity for improvement has been identified in relation to Discovery Point Water.]
- **OFI-CPW2017.04:** It is suggested that Central Park Water takes action to repair the sodium hypochlorite connection for final water “top-up” chlorination, thereby eliminating the existing pipework corrosion.
- **OFI-CPW2017.05:** It is suggested that Flow (Central Park Water) uses its Real Asset Management (RAM) maintenance management system to manage and record all maintenance activities, including those undertaken by external service providers, with maintenance records captured (via links) within the system.
[Note: an equivalent opportunity for improvement has been identified in relation to Discovery Point Water.]

5. Non-Potable Water Supply Infrastructure

5.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to *Non-Potable Water Supply Infrastructure*. Detailed assessment in respect of these clauses is presented in **Appendix C**.

5.2 Review of Actions

The Licensee has not made any suggestions for corrections or clarifications following issue of the draft report and prior to the final report being issued.

5.3 Opportunities for Improvement

No opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *Non-Potable Water Supply Infrastructure*.

6. Sewerage Infrastructure

6.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to *Sewerage Infrastructure*. Detailed assessment in respect of these clauses is presented in **Appendix D**.

6.2 Review of Actions

The Licensee has not made any suggestions for corrections or clarifications following issue of the draft report and prior to the final report being issued.

6.3 Opportunities for Improvement

No opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *Sewerage Infrastructure*.

7. Schedule B to the Network Operator's Licence

7.1 Summary of Findings

There were no identified non-compliances in respect of the audited clauses of *Schedule B to the Network Operator's Licence*. Detailed assessment in respect of these clauses is presented in **Appendix E**.

7.2 Review of Actions

The Licensee has not made any suggestions for corrections or clarifications following issue of the draft report and prior to the final report being issued.

7.3 Opportunities for Improvement

No opportunities for improvement have been identified in respect of the audited clauses of *Schedule B to the Network Operator's Licence*.

Appendix A Detailed Audit Findings – General Obligations of a Network Operator

Detailed audit findings in respect of the *General Obligations of a Network Operator* are presented in this Appendix.

Table A.1 General Obligations – WIC Reg Sched 1 cl.1(2)(a), (b), (c), (d) and (e)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.1(2)(a), (b), (c) and (e)	<p>[1(2)(a)] The licensee must immediately notify IPART of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.</p> <p>[1(2)(b)] The licensee must immediately notify the Minister administering the <i>Public Health Act 2010 (NSW)</i> and the <i>Public Health Regulation 2012 (NSW)</i> of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.</p> <p>[1(2)(c)] The licensee must immediately notify the Minister administering Part 2 of the <i>Water Industry Competition Act 2006 (NSW)</i> of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.</p> <p>[1(2)(e)] The licensee must immediately notify any licensed network operator or public water utility whose infrastructure is connected to the licensed network operator's infrastructure of any incident in the conduct of its activities that threatens, or could threaten, water quality, public health or safety.</p>	No Requirement
Risk	This requirement reflects a high operational risk. It is essential that relevant stakeholders are made aware of incidents that threaten, or could threaten, water quality, public health or safety.	Target for Full Compliance
In the event that a notifiable incident has occurred, evidence that the Licensee provided the required notifications.		
Evidence sighted	<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Central Park development on 13 June 2017. ▪ Sample of SCADA data trends for water quality operational parameters. ▪ <i>Central Park Monthly Analysis Summaries</i> for January, February, March and April 2016. ▪ Central Park Water, <i>Network Operator's Report; Annual Compliance Report; August 2015/16</i>, signed 30 August 2016. ▪ Flow, <i>Monitoring and Sampling Plan (MSP) (Revision 6)</i>, 22 November 2016. ▪ Flow, <i>Incident Management Plan (Revision 6)</i>, 14 October 2016. ▪ Flow, <i>Incident Notification Protocol with NSW Health for Supply of Drinking Water and Supply of Recycled Water (Revision 2)</i>, 15 January 2015. ▪ Flow, <i>Emergency Contact List (Reference: FS-WAT-NSW-FM-INC-1231-1)</i>, 19 June 2015. 	
Summary of reasons for grade	No notifiable incidents occurred during the audit period; accordingly, there was “No Requirement” in respect of these obligations.	

Discussion and notes

The auditors questioned whether there had been any incidents arising from the conduct of the network operator's activities during the audit period that threatened, or could have threatened, water quality, public health or safety and, if so, whether IPART, the Minister administering the *Public Health Act 2010 (NSW)* and the *Public Health Regulation 2012 (NSW)*, the Minister administering Part 2 of the *Water Industry Competition Act 2006 (NSW)* and any connected network operator or public water utility had been notified as required.

Central Park Water advised that there had been no such incidents in respect of drinking water quality, recycled water quality or sewage spills during the audit period.

Procedures in relation to the management of incidents and notification requirements remain documented in the *Incident Management Procedure* and *Incident Notification Protocol*. The requirement to notify the NSW Health Public Health Unit, the Metropolitan Water Directorate and IPART, as well as other relevant stakeholders including the Public Water Utility, is clearly documented. Review of the *Emergency Contact List*⁶ for Central Park Water revealed that, although not updated since June 2015, the contacts appear to remain reasonably current. Nonetheless, as an opportunity for improvement (**OFI-CPW2017.01**) it is suggested that the *Emergency Contact List* is reviewed on a more regular basis (at least annually) and the version control (document date) updated accordingly.

Review of a sample of SCADA data trends for selected recycled water operational parameters across the audit period did not reveal any contrary evidence; nor did a review of compiled laboratory test results for drinking or recycled water as presented in a sample of *Monthly Summary Spreadsheets*.⁷ Similarly, the *2015/16 Annual Compliance Report*,⁸ which covers part of the audit period, did not identify that there had been any incidents during 2015/16.

By way of example:

- SCADA trend for chlorine CT factor showed a minimum value of 50 mg-min/L compared to a limit of 20 mg-min/L;
- SCADA trend for MBR turbidity showed a maximum value of 0.01 NTU (instantaneous) compared to a maximum value for 0.2 NTU;
- January, February, March and April 2017 laboratory test results for drinking water revealed values within the limits for verification parameters identified in the *Monitoring and Sampling Plan*⁹ with monthly results for CaCO₃ hardness, total dissolved solids, pH, turbidity, Al, Ca, Mg, B, As, Cd, Cu, Pb, Mn, Zn, NO_x-N, F⁻, SO₄, *E. coli* and total coliforms all being within both safe and aesthetically acceptable limits as per the *Australian Drinking Water Guidelines*. It is noted that the February 2017 report appeared to contain a unit error for the Na result. As an opportunity for (**OFI-CPW2017.02**), it is suggested that Central Park Water follows up on this anomalous result. It is important to understand the root cause of the error and put in measures to minimise future recurrences since errors in units of reporting could lead to water quality exceedances being missed; and
- January, February, March and April 2017 laboratory test results for recycled water revealed *E. coli* values of less than one (<1) per 100 ml (i.e. none detected) for each weekly test. Monthly results for other parameters, including biological oxygen demand, total dissolved solids, Cl⁻, Ca, Mg, Na, NO₂, NO₃ and P (total and reactive), were also within both safe and aesthetically acceptable limits.

Recommendations

There are no recommendations in respect of these obligations.

⁶ Flow, *Emergency Contact List* (Reference: FS-WAT-NSW-FM-INC-1231-1), 19 June 2015.

⁷ *Central Park Monthly Analysis Summaries* for January, February, March and April 2016.

⁸ Central Park Water, *Network Operator's Report; Annual Compliance Report; August 2015/16*, signed 30 August 2016.

⁹ *Monitoring and Sampling Plan*, table 7.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of these obligations:

- **OFI-CPW2017.01:** It is suggested that the *Emergency Contact List* is reviewed on a more regular basis (at least annually) and the version control (document date) updated accordingly.
[Note: an equivalent opportunity for improvement has been identified in relation to Discovery Point Water.]
 - **OFI CPW2017.02:** It is suggested that Central Park Water follows up on the anomalous Na result reported in the recycled water sample collected during February 2017.
-

Table A.2 General Obligations – WIC Reg Sched 1 cl.2(1), 2(2)(a) and 2(2)(b)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.2(1), 2(2)(a) and 2(2)(b)	<p>[2(1)] The licensee must not bring any new water or sewerage infrastructure into commercial operation without the written approval of the Minister.</p> <p>[2(2)(a)] The licensee must provide to the Minister a report, prepared by an approved auditor that indicates that the infrastructure complies with the requirements of the Regulation and any licence conditions.</p> <p>[2(2)(b)] The licensee must provide to the Minister a report, prepared by an approved auditor that indicates that the infrastructure is capable of operating safely and in accordance with its infrastructure operating plan and its water quality or sewerage management plan, as the case requires.</p>	<p>Clause 2(1) Compliant</p> <p>Clauses 2(2)(a) and 2(2)(b) <u>No Requirement</u></p>
Risk	<p>This requirement reflects a high operational risk. The Minister’s written approval is only provided when the Licensee has demonstrated that the infrastructure complies and can be operated in accordance with the relevant requirements. Accordingly, the absence of the Minister’s written approval may mean that the infrastructure has not been so assessed.</p>	Target for Full Compliance
<p>Evidence that the written approval of the Minister was obtained prior to bringing new water or sewerage infrastructure into service.</p>		
Evidence sighted	<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Central Park development on 13 June 2017. ▪ Flow, <i>Central Park Scheme Management Plan (Scheme MP) (Revision 4)</i>, 18 May 2017.¹⁰ ▪ New South Wales Government, Network Operator’s Licence No: 12_022. ▪ Minister for Finance and Services, <i>Notice of approval to bring new infrastructure into commercial operation</i>, 23 January 2014. ▪ Minister for Natural Resources, Lands and Water, <i>Notice of approval to bring new infrastructure into commercial operation</i>, 28 February 2015. 	
Summary of reasons for grade	<p>No new infrastructure (drinking water, sewerage or recycled water) had been brought into commercial operation during the audit period; accordingly, Central Park Water was assessed as being compliant with the provisions of clause 2(1). Furthermore, as no new infrastructure had been brought into operation, there was “No Requirement” for compliance with the provisions of clauses 2(2)(a) or 2(2)(b) during the audit period.</p>	

¹⁰ Revisions 1 (dated 1 December 2015), 2 (dated 1 August 2016) and 3 (dated 8 August 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

Discussion and notes

Central Park Water advised that no new infrastructure (drinking water, sewerage or recycled water) had been brought into commercial operation during the audit period. Although the infrastructure had been extended to service an additional building (Building 8) in the northern precinct of the development during the audit period, based on the definition in WIC Reg Sched 1 cl.2(3), this was not deemed to constitute “new infrastructure”.

Observations made during inspection of the infrastructure at the Central Park development revealed no evidence to the contrary. Furthermore, the infrastructure in service at the time of the audit remained consistent with that identified in the *Network Operator’s Licence*¹¹ and referenced in the *Notices of approval to bring new infrastructure into commercial operation* in relation to drinking water and sewerage infrastructure¹² and recycled water infrastructure.¹³

Accordingly, it was evident that Central Park Water had not brought any new infrastructure into commercial operation without the approval of the Minister and was therefore compliant with clause 2(1). Furthermore, there was no requirement for any action under the provisions of clause 2(2).

Recommendations

There are no recommendations in respect of these obligations.

Opportunities for improvement

No opportunities for improvement have been identified in respect of these obligations.

¹¹ New South Wales Government, Network Operator’s Licence No: 12_022, Tables 1.2, 2.2 and 3.2.

¹² Minister for Finance and Services, *Notice of approval to bring new infrastructure into commercial operation*, 23 January 2014.

¹³ Minister for Natural Resources, Lands and Water, *Notice of approval to bring new infrastructure into commercial operation*, 28 February 2015.

Table A.3 General Obligations – WIC Reg Sched 1 cl.3(c)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.3(c)	The licensee must ensure that its water or sewerage infrastructure is properly designed and constructed, operated in a safe and reliable manner and maintained in a proper condition, having regard to any publicly available standards or codes relating to its design, construction, operation and maintenance.	Compliant

Risk

This requirement reflects a high operational risk. Proper design and construction, safe and reliable operation, and maintenance of infrastructure in proper condition is essential to the effective (safe and reliable) delivery of agreed levels of service.

Target for Full Compliance

Evidence that the Licensee has procedures in place for ensuring that practices are kept up to date with changes to such standards or codes.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Central Park development on 13 June 2017.
- Minister for Finance and Services, *Notice of approval to bring new infrastructure into commercial operation*, 23 January 2014.
- Minister for Natural Resources, Lands and Water, *Notice of approval to bring new infrastructure into commercial operation*, 28 February 2015.
- Flow/Central Park Water, *Certificate of Compliance under the Water Industry Competition (General) Regulation 2008 (NSW)* in relation to Central Park Block 8, dated 18 November 2016.
- Flow, *Developer Infrastructure Works Inspection, and Certification Procedure for High Rise Developments (Revision 1.0)*, 10 September 2015.
- Flow Systems, *Operation & Maintenance Manual; Contract No: WI Group Job No: WT1253 (Version 2)*, 26 November 2014.
- Water Infrastructure Group, *Central Park Water Factory; Central Park Recycled Water Plant; Functional Description (Version 1)*, 29 October 2014.
- Flow, *Central Park Scheme Management Plan (Scheme MP) (Revision 4)*, 18 May 2017.¹⁴
- Flow, *Infrastructure Operating Plan (IOP) (Revision 8)*, 21 December 2016.¹⁵
- Flow, *Asset Management Plan (AMP) (Revision 2)*, 22 November 2016.
- Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016.¹⁶
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.¹⁷
- Flow Systems, *Compliance Management Procedure (Revision 1)*, 2 July 2015.

¹⁴ Revisions 1 (dated 1 December 2015), 2 (dated 1 August 2016) and 3 (dated 8 August 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

¹⁵ Revisions 6 (dated 25 May 2016) and 7 (dated 21 October 2016) of the *Infrastructure Operating Plan* were also in place during parts of the audit period.

¹⁶ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

¹⁷ Revision 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* was also in place during parts of the audit period.

Summary of reasons for grade

Central Park Water demonstrated that the infrastructure was properly designed and constructed, operated in a safe and reliable manner and maintained in a proper condition, having regard to any publicly available standards or codes relating to its design, construction, operation and maintenance. It also demonstrated that it has procedures in place that require confirmation of the currency of standards and codes at the time of use.

Accordingly, Central Park Water was assessed as having demonstrated full compliance with this obligation.

Discussion and notes

The auditors checked for evidence that water (in this case drinking and non-potable water) or sewerage infrastructure was properly designed and constructed, operated in a safe and reliable manner and maintained in a proper condition, having regard to any publicly available standards or codes relating to its design, construction, operation and maintenance. These aspects were assessed as follows:

Design and Construction of Infrastructure:

The majority of infrastructure at Central Park has been operational:

- Drinking water and sewerage infrastructure – since January 2014, following issue of a *Notice of approval to bring new infrastructure into commercial operation*,¹⁸ and
- Recycled water infrastructure – since February 2015, following issue of a further *Notice of approval to bring new infrastructure into commercial operation*.¹⁹

Such approval was based, in each case, on “... a report prepared by an “approved auditor” ...”, which had assessed that the infrastructure had been properly designed and constructed.

As reported in Table A.2, although no “new infrastructure” was constructed during the audit period, the infrastructure had been extended to service an additional building (Building 8). Central Park Water provided a copy of a *Certificate of Compliance*²⁰ in relation to these works, which had been issued pursuant to the Flow Systems *Developer Infrastructure Works Inspection, and Certification Procedure for High Rise Developments*.²¹ As this procedure identifies the relevant standards with which the infrastructure works must comply and the testing regime that is to be implemented, the *Certificate of Compliance* is, for the purposes of this audit, taken as evidence that the extended infrastructure is compliant with the relevant codes and standards.

Operation and Maintenance of Infrastructure:

Operation and maintenance of the recycled water treatment plant and associated infrastructure is undertaken in accordance with the general principles outlined in the *Infrastructure Operating Plan* and *Asset Management Plan*, and the more detailed requirements set out in the *Operation and Maintenance Manual*²² and the *Central Park Recycled Water Plant; Functional Description*.²³ The reticulated distribution (drinking water and recycled water) and collection (sewerage) schemes comprise of passive assets which require only minimal

¹⁸ Minister for Finance and Services, *Notice of approval to bring new infrastructure into commercial operation*, 23 January 2014.

¹⁹ Minister for Natural Resources, Lands and Water, *Notice of approval to bring new infrastructure into commercial operation*, 28 February 2015.

²⁰ Flow/Central Park Water, *Certificate of Compliance under the Water Industry Competition (General) Regulation 2008 (NSW)* in relation to Central Park Block 8, dated 18 November 2016.

²¹ Flow, *Developer Infrastructure Works Inspection, and Certification Procedure for High Rise Developments (Revision 1.0)*, 10 September 2015.

²² Flow Systems, *Operation & Maintenance Manual; Contract No: WI Group Job No: WT1253 (Version 2)*, 26 November 2014.

²³ Water Infrastructure Group, *Central Park Water Factory; Central Park Recycled Water Plant; Functional Description (Version 1)*, 29 October 2014.

ongoing maintenance.

Further guidance in respect of operation and maintenance of the infrastructure is provided in the *Drinking Water Quality Plan*²⁴ and *Recycled Water Quality Plan*.²⁵

Whilst there is limited specific reference to relevant standards and codes in the abovementioned documentation, there are general references to documentation including, but not limited to:

- *Australian Drinking Water Guidelines 6 (2011)*;
- *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) 2006*;
- Relevant Water Services Association of Australia publications, including:
 - *Water Supply Code of Australia (WSA 03)*; and
 - *Pressure Sewer Code of Australia (WSA 07)*; and
- PAS 55 *Asset Management* (still available as a reference document).

During the audit site inspection, the chemical storage containment bunds were inspected to check that their capacity had not been compromised. In all cases, including the bunds within the plant room and the truck unloading bay, these were clear of any obstructions. The unloading bay drains to an oil separator before draining to sewer; the plant room floor drains to the trade waste tank.

All labelling on pipework, equipment and storages was in place and in good condition. Clear “Do Not Drink” recycled water signs were evident on taps within the treatment plant. This demonstrates compliance with guidance provided in AS/NZS 3500 *Plumbing and Drainage Code*.

Further discussion in relation to operation and maintenance of the infrastructure is presented in Table B.1.

On the basis of observations made during the audit site inspection it was apparent that the infrastructure had been/was being operated in a safe and reliable manner and maintained in a proper condition. Furthermore, on the basis of the auditor’s experience, it appeared that such operation and maintenance had been/was being undertaken having regard to relevant publicly available standards and/or codes.

Currency of Standards and Codes:

Central Park Water referenced the Flow Systems *Compliance Management Procedure*²⁶ as evidence that it has a procedure for ensuring that it remains up to date with relevant publicly available standards and codes. This document outlines the requirement to confirm the currency of all guidance used, including (for example) checking SAI Global website to confirm currency of standards and codes.

Flow has advised that it is currently preparing a business case with the intent of subscribing to the SAI Global Standards Online Service to ensure that it has ready access to current standards and codes.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

²⁴ *Drinking Water Quality Plan*, section 2.

²⁵ *Recycled Water Quality Plan*, section 5.

²⁶ Flow Systems, *Compliance Management Procedure* (Revision 1), 2 July 2015.

Appendix B Detailed Audit Findings – Water Supply Infrastructure

Detailed audit findings in respect of the obligations related to *Water Supply Infrastructure* are presented in this Appendix.

Table B.1 Water Supply Infrastructure – WIC Reg Sched 1 cl.6(2)(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.6(2)(a)	The licensee must ensure that the infrastructure operating plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with that plan.	Compliant

Risk

This requirement reflects a high operational risk. Implementation of the *Infrastructure Operating Plan* ensures the effective (safe and reliable) delivery of agreed levels of service.

Target for Full Compliance

Evidence that the *Infrastructure Operating Plan* is fully implemented and the Licensee’s activities are carried out in accordance with that *Plan*; evidence that the *Plan* is kept under regular review.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Central Park development on 13 June 2017.
- Flow, *Central Park Scheme Management Plan (Scheme MP) (Revision 4)*, 18 May 2017.²⁷
- Flow, *Infrastructure Operating Plan (IOP) (Revision 8)*, 21 December 2016.²⁸
- Flow, Asset Management Plan (AMP) (Revision 2), 22 November 2016.
- Flow Systems, *Operation & Maintenance Manual; Contract No: WI Group Job No: WT1253 (Version 2)*, 26 November 2014.
- Water Infrastructure Group, *Central Park Water Factory; Central Park Recycled Water Plant; Functional Description (Version 1)*, 29 October 2014.
- Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016.²⁹
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.³⁰
- Various maintenance records as referenced.

Summary of reasons for grade

Central Park Water demonstrated that it is fully implementing, and that its activities are being carried out in accordance with principles documented in, the *Infrastructure Operating Plan*. This was evident from the effective operation of the infrastructure and the implementation of maintenance practices.

Central Park Water also demonstrated that the *Infrastructure Operating Plan* is kept under regular review, and that it has arrangements in place to ensure that it continues to do so.

Accordingly, Central Park Water was assessed to have demonstrated full compliance with this obligation.

²⁷ Revisions 1 (dated 1 December 2015), 2 (dated 1 August 2016) and 3 (dated 8 August 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

²⁸ Revisions 6 (dated 25 May 2016) and 7 (dated 21 October 2016) of the *Infrastructure Operating Plan* were also in place during parts of the audit period.

²⁹ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

³⁰ Revision 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* was also in place during parts of the audit period.

Discussion and notes

[*Note: for the purposes of this audit, this discussion relates to both water supply (WTC Reg Sched 1 cl.6(2)(a)) and sewerage (WTC Reg Sched 1 cl.13(2)(a)) infrastructure. The discussion is not repeated at Table D.1.*]

The auditors checked for evidence that the *Infrastructure Operating Plan* was fully implemented and kept under regular review and that all of the Network Operator's activities are carried out in accordance with that Plan.

It is noted that the *Infrastructure Operating Plan* must be read in conjunction with the *Scheme Management Plan*. Four (4) versions of the *Infrastructure Operating Plan* and three (3) versions of the *Scheme Management Plan* were in place during the audit period, as follows:

- *Infrastructure Operating Plan* – Revision 5 (dated 8 September 2015), Revision 6 (dated 25 May 2016), Revision 7 (dated 21 October 2016) and Revision 8 (dated 21 December 2016); and
- *Scheme Management Plan* – Revision 1 (dated 1 December 2015), Revision 2 (dated 1 August 2016) and Revision 3 (dated 8 August 2016).

Review of these *Plans* revealed that there had been minimal change to the content presented therein. Revisions have captured minor edits and corrections only, some of which have been made in response to previous audit findings.

Design and Construction:

As reported in Table A.2 and Table A.3, during the audit period construction activity was limited to extension of the existing infrastructure to service an additional building (Building 8). As also reported in Table A.2, the infrastructure extensions were deemed to be compliant with the relevant codes and standards (design criteria) as required by the *Infrastructure Operating Plan*.³¹

Furthermore, design and construction of the infrastructure extensions had been undertaken by the developer, under the supervision of Flow/Central Park Water.³²

It is therefore apparent that design and construction has been undertaken in accordance with the arrangements set out in the *Infrastructure Operating Plan*.

Operation and Maintenance:

Operation and maintenance of the recycled water treatment plant and associated infrastructure is undertaken in accordance with the general principles outlined in the *Infrastructure Operating Plan* and *Asset Management Plan*, and the more detailed requirements set out in the *Operation and Maintenance Manual*³³ and the *Central Park Recycled Water Plant; Functional Description*.³⁴ The reticulated distribution (drinking water and recycled water) and collection (sewerage) schemes comprise of passive assets which require only minimal ongoing maintenance.

Further guidance in respect of operation and maintenance of the infrastructure is provided in the *Drinking Water Quality Plan*³⁵ and *Recycled Water Quality Plan*.³⁶

Inspection of the infrastructure (principally at the recycled water treatment plant) led to the assessment that it is being safely operated and well maintained. Observations made during the site inspection included:

- Safety shower/eye wash installations were appropriately located.

³¹ *Infrastructure Operating Plan*, section 2.3.

³² *Infrastructure Operating Plan*, sections 2.4, 4.4.1, 4.4.2.3 and 4.4.4.3.

³³ Flow Systems, *Operation & Maintenance Manual; Contract No: WI Group Job No: WT1253 (Version 2)*, 26 November 2014.

³⁴ Water Infrastructure Group, *Central Park Water Factory; Central Park Recycled Water Plant; Functional Description (Version 1)*, 29 October 2014.

³⁵ *Drinking Water Quality Plan*, section 2.

³⁶ *Recycled Water Quality Plan*, section 5.

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- No odour was observed within the plant room, which is located in the building basement; this indicated that effective air flow and odour management measures are in place.
 - For all critical limit monitoring instruments (e.g. free chlorine and turbidity) service contractor Premier Calibrations had placed stickers as evidence of the most recent (May 2017), and next planned (August 2017) quarterly instrument check, service and calibration. However, for non-critical instruments (e.g. dissolved oxygen), some of the stickers indicated a check was due May 2017 but those stickers were still in place at the time of the audit (conducted in mid-June 2017). This issue was also observed at Discovery Point.

A subsequent review of maintenance certificates covering work undertaken by Premier Calibrations revealed that the scheduled services had been completed; this indicated that there had been a failure by the service contractor to update the stickers. As an opportunity for improvement (**OFI-CPW2017.03**), it is suggested that Flow (Central Park Water) takes action to ensure that information recorded on equipment/instrument servicing stickers is accurate and kept up-to-date.

- The air gap on the potable water top-up at the entry to the recycled water storage tank is clear of any wrapping (such as at Discovery Point), thereby eliminating any potential compromise of the air gap (refer Figure B.1.1).
- Corrosion was identified on the sodium hypochlorite connection for final water “top-up” chlorination. Whilst this was not an indication of failure, it is suggested that Central Park Water takes action to repair the connection; an opportunity for improvement (**OFI-CPW2017.04**) has been identified in respect of this issue.

A number of maintenance records were sighted, including (for example):

- Turbidity meter AE4574 (Hach 1720E) – was serviced by Premier Calibrations on 25 August 2016. The record indicates that the instrument was cleaned and calibrated.
- pH and ORP analyser AE4076 – was serviced by Premier Calibrations on 25 August 2016. The record indicates that the probe was cleaned and calibrated, and that it should be replaced soon. A subsequent record indicates that a new probe was installed and calibrated on 6 December 2016.
- Blowers and compressors – service docket numbers 48960, 48957 and 48958 for blower servicing undertaken on 23 November 2016 and 24 November 2016 and compressor servicing undertaken on 13 November 2016 respectively were sighted.
- Cranes and associated equipment – all equipment at Central Park, including (for example) the 230kg electric hoist, safety harnesses (2No) and 11mm x 10 metre rope line, was inspected by Bullivants Electronic Asset Management on 1 July 2016. The next inspection was due on 1 January 2017.

It was noted that a site log book is used to document site inspections of the plant and associated infrastructure, including manually taken instrument readings (a sample of records was sighted). It was noted that the site is visited at least weekly; SCADA and CCTV enables remote monitoring of the treatment plant at any time.

On the basis of evidence sighted and observations made during the site inspections, it is apparent that the infrastructure is being operated and maintained in accordance with the *Infrastructure Operating Plan*.

Asset Management System:

Flow/Central Park Water has recently implemented a new asset management/computerised maintenance management system (CMMS) called Real Asset Management (RAM). Demonstration of the new system revealed that information captured included (for example) asset details and records of maintenance activity. Maintenance schedules, typically based on manufacturer’s recommendations, are programmed and the system is used to generate work orders.

Records for Process Blower No 1 (BL3051) were sighted as an example of the detail captured.

Whilst it is acknowledged that the new system is still being implemented, it is noted that maintenance management is limited to activities undertaken by in-house staff. Servicing/maintenance undertaken by

external service providers (e.g. instrument calibration) is still separately programmed and maintenance records separately filed. It is suggested that RAM should be used to manage and record all maintenance activities, with maintenance records captured (via links) within the system; an opportunity for improvement (**OFI-CPW2017.05**) has been identified accordingly.

Capability and Training:

Evidence of the skills and capability of the personnel engaged in operation and maintenance of the infrastructure, together with a sample of the training implemented by Flow/Central Park Water during the audit period, is discussed in detail in the report³⁷ on the Discovery Point Operational Audit conducted in conjunction with this audit. It was assessed that through Flow Systems (an Authorised Person under the respective Licences and parent company of both Central Park Water and Discovery Point Water), Central Park Water maintained the technical and organisational capacity to carry out the activities authorised by the Licence during the audit period (and subsequently); this assessment is equally applicable to Central Park Water.

Regular Review of Infrastructure Operating Plan:

As noted above, several versions of both the *Infrastructure Operating Plan* and the scheme specific *Scheme Management Plan* were in place during the audit period, and the *Scheme Management Plan* has subsequently been revised again (Revision 6 dated 18 May 2017). Whilst there was minimal change in each case, this demonstrates that the *Infrastructure Operating Plan/Scheme Management Plan* have been kept under regular review.

This is consistent with Flow's *Document Control Procedure*,³⁸ which indicates that Plans are to be reviewed at intervals of: "1 years or as required by change, internal audit, incident etc." This requirement is further noted in the *Central Park Scheme Management Plan* (section 2.1.3) and all management plans (including the *Infrastructure Operating Plan, Asset Management Plan, Sewage Management Plan, Drinking Water Quality Plan, Recycled Water Quality Plan, Incident Management Plan* and *Monitoring and Sampling Plan*) (in each case section 1.1.3).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

The following opportunities for improvement have been identified in respect of this obligation:

- **OFI-CPW2017.03:** It is suggested that Flow (Central Park Water) takes action to ensure that information recorded on equipment/instrument servicing stickers is accurate and kept up-to-date. [*Note: an equivalent opportunity for improvement has been identified in relation to Discovery Point Water.*]
- **OFI-CPW2017.04:** It is suggested that Central Park Water takes action to repair the sodium hypochlorite connection for final water "top-up" chlorination, thereby eliminating the existing pipework corrosion.
- **OFI-CPW2017.05:** It is suggested that Flow (Central Park Water) uses its Real Asset Management (RAM) maintenance management system to manage and record all maintenance activities, including those undertaken by external service providers, with maintenance records captured (via links) within the system. [*Note: an equivalent opportunity for improvement has been identified in relation to Discovery Point Water.*]

³⁷ Cobbitty Consulting/Water Futures, *Discovery Point Water; Operational Audit (Reference: #14053-10-001)*, July 2017.

³⁸ Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016, table 3.



Figure B.1.2 Air gap on the potable water top-up at the entry to the recycled water storage tank is clear of any wrapping.

Table B.2 Water Supply Infrastructure – WIC Reg Sched 1 cl.7(4)(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(4)(a)	The licensee must ensure that its water quality plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with that plan.	Compliant

Risk

This requirement reflects a high operational risk. Implementation of the *Water Quality Plan* ensures that the water supplied complies with the specified quality requirement.

Target for Full Compliance

Evidence that the *Water Quality Plan* is fully implemented and the Licensee’s activities are carried out in accordance with that *Plan*; evidence that the *Plan* is kept under regular review.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Central Park development on 13 June 2017.
- Flow, *Central Park Scheme Management Plan (Scheme MP) (Revision 4)*, 18 May 2017.³⁹
- Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016.⁴⁰
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.⁴¹
- Flow, *Monitoring and Sampling Plan (MSP) (Revision 6)*, 22 November 2016.
- Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)*, dated to 2013.
- *Central Park Monthly Analysis Summaries* for January, February, March and April 2016.
- Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016.

Summary of reasons for grade

Central Park Water demonstrated that it is fully implementing, and is carrying out its water quality management activities in accordance with principles documented in, the *Drinking Water Quality Plan* and *Recycled Water Quality Plan* as applicable. This was evident from the effective monitoring and testing processes that are being implemented.

Central Park Water also demonstrated that the *Water Quality Plans* kept under regular review, and that it has arrangements in place to ensure that it continues to do so.

Accordingly, Central Park Water was assessed to have demonstrated compliance with this obligation.

Discussion and notes

The auditors checked for evidence that the *Drinking Water Quality Plan* and *Recycled Water Quality Plan* were fully implemented and kept under regular review and that all of the Network Operator’s activities are carried out in accordance with those Plans.

It is noted that the *Water Quality Plans* must be read in conjunction with the *Scheme Management Plan*. Two (2) versions of the *Drinking Water Quality Plan*, and three (3) versions of both the *Recycled Water Quality Plan*

³⁹ Revisions 1 (dated 1 December 2015), 2 (dated 1 August 2016) and 3 (dated 8 August 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁴⁰ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

⁴¹ Revision 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* was also in place during parts of the audit period.

and *Scheme Management Plan* were in place during the audit period, as follows:

- *Drinking Water Quality Plan* – Revision 4 (dated 8 September 2015) and Revision 5 (dated 22 November 2016);
- *Recycled Water Quality Plan* – Revision 4 (dated 5 May 2015), Revision 5 (dated 25 May 2016) and Revision 6 (dated 21 October 2016); and
- *Scheme Management Plan* – Revision 1 (dated 1 December 2015), Revision 2 (dated 1 August 2016) and Revision 3 (dated 8 August 2016).

Review of these *Plans* revealed that there had been minimal change to the content presented therein. Revisions have captured minor edits and corrections only, some of which have been made in response to previous audit findings.

Operational Monitoring:

Central Park Water undertakes operational monitoring of water quality in accordance with the *Monitoring and Sampling Plan*, which outlines the requirements in relation to both drinking water⁴² and recycled water.⁴³

Operational monitoring of drinking water quality comprises testing of grab samples using hand held instruments; results are recorded in the site log book. Records of drinking water operational monitoring were not sought or sighted during the audit; water is supplied by Sydney Water under the provisions of a *Utility Services Agreement* (refer Table E.3).

Operational monitoring of recycled water quality comprises continuous on-line monitoring of relevant parameters. Review of a sample of SCADA data trends for selected recycled water operational parameters indicated that water quality remained compliant across the audit period. By way of example:

- the SCADA trend for chlorine CT factor showed a minimum value of 50 mg-min/L compared to a limit of 13.6 mg-min/L; and
- the SCADA trend for MBR turbidity showed a maximum value of 0.04 NTU (instantaneous) compared to a maximum value for 0.2 NTU (set to divert flow after 60 Seconds above 0.2 NTU).

Monitoring Systems:

Servicing and calibration of operational monitoring instruments, which includes hand held instruments, is discussed in Table B.1. In summary, calibration of the instruments was maintained throughout the audit period although there was an issue with service stickers fixed to some instruments.

To confirm that key operational monitoring parameters were being actively monitored as required under the *Recycled Water Quality Plan* and *Monitoring and Sampling Plan*, and to assess data consistency between the monitoring instrument and SCADA system, readings were taken at a sample of monitoring instruments and the corresponding SCADA records subsequently checked. A summary of these checks is as follows:

Parameter	Instrument	Time	Reading	SCADA Consistent?
MBR Permeate Turbidity	AE2573	10:30am	0.0175 NTU	✓
MBR Permeate Turbidity	AE2673	10:30am	0.0143 NTU	✓
UV Transmittance	AE2771	10:30am	67.7%	Simulated value
Final Water Turbidity (post RO)	AE4575	10:30am	0.0855 NTU	✓
Final Water Free Chlorine (post recycled water storage)	AE4572	10:30am	0.9 mg/L	✓

These checks confirmed consistency between the instrument readings and the SCADA display, thereby validating the SCADA system as the primary mechanism for ongoing performance monitoring. They also

⁴² *Monitoring and Sampling Plan*, section 4.4.

⁴³ *Monitoring and Sampling Plan*, section 6.3.

confirmed that, on the day of the audit, the processes were operating in accordance with the requirements (operating range) set out in the *Recycled Water Quality Plan*.

Readings for recycled water parameters were consistent with the targets identified in the document *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)*,⁴⁴ as follows:

- Turbidity post MBR – 0.0175 and 0.0143 NTU compared to target <0.1 NTU (alert limit 0.15 NTU and critical limit 0.2 NTU); and
- Free Chlorine post chlorine contact tank – 0.9 mg/L compared to target 1.0 to 1.2 mg/L (critical limit < 0.7 mg/L or > 5 mg/L).

Verification Monitoring:

Central Park Water undertakes verification monitoring of water quality in accordance with the *Monitoring and Sampling Plan*, which outlines the requirements in relation to both drinking water⁴⁵ and recycled water.⁴⁶ Test results in a sample of *Monthly Summary Spreadsheets*⁴⁷ indicate that Central Park Water undertakes microbial (*E. coli*) testing of recycled water on a weekly basis and testing of a broader suite of parameters for both drinking water and recycled water on a monthly basis.

Review of the compiled laboratory test results for drinking water and recycled water for January, February, March and April 2017 revealed:

- January, February, March and April 2017 laboratory test results for drinking water revealed values within the limits for verification parameters identified in the *Monitoring and Sampling Plan*⁴⁸ with monthly results for CaCO₃ hardness, total dissolved solids, pH, turbidity, Al, Ca, Mg, B, As, Cd, Cu, Pb, Mn, Zn, NO_x-N, F⁻, SO₄, *E. coli* and total coliforms all being within both safe and aesthetically acceptable limits as per the *Australian Drinking Water Guidelines*. It is noted that the February 2017 report appeared to contain a unit error for the Na result, which has resulted in the identification of an opportunity for improvement (OFI CPW2017.02) as discussed in more detail in Table A.1; and
- January, February, March and April 2017 laboratory test results for recycled water revealed *E. coli* values of less than one (<1) per 100 ml (i.e. none detected) for each weekly test. Monthly results for other parameters, including biological oxygen demand, total dissolved solids, Cl⁻, Ca, Mg, Na, NO₂, NO₃ and P (total and reactive), were also within both safe and aesthetically acceptable limits.

Sampling for Central Park is undertaken by GHD and verification testing is undertaken by ALS Environmental, as reported in more detail in Table E.2.

Regular Review of Water Quality Plans:

As noted above, several versions of the *Drinking Water Quality Plan*, the *Recycled Water Quality Plan* and the scheme specific *Scheme Management Plan* were in place during the audit period, and the *Scheme Management Plan* has subsequently been revised again (Revision 6 dated 18 May 2017). Whilst there was minimal change in each case, this demonstrates that the *Infrastructure Operating Plan/Scheme Management Plan* have been kept under regular review, nominally at annual intervals.

As reported in Table B.1 in relation to the *Infrastructure Operating Plan*, this is consistent with Flow's *Document Control Procedure*,⁴⁹ which indicates that Plans are to be reviewed at intervals of: "1 years or as required by change, internal audit, incident etc." This requirement is further noted in the *Central Park Scheme Management Plan* (section 2.1.3) and all management plans (including the *Infrastructure Operating Plan*, *Asset Management Plan*, *Sewage Management Plan*, *Drinking Water Quality Plan*, *Recycled Water Quality Plan*, *Incident Management Plan* and *Monitoring and Sampling Plan*) (in each case section 1.1.3).

⁴⁴ Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)*, dated to 2013.

⁴⁵ *Monitoring and Sampling Plan*, section 4.3.

⁴⁶ *Monitoring and Sampling Plan*, section 6.2.

⁴⁷ *Central Park Monthly Analysis Summaries* for January, February, March and April 2016.

⁴⁸ *Monitoring and Sampling Plan*, table 7.

⁴⁹ Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016, table 3.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Table B.3 Water Supply Infrastructure – WIC Reg Sched 1 cl.8

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.8	<p>[8(1)] Any water meter that is connected to a licensee’s water main must comply with the requirements of the document entitled the <i>Plumbing Code of Australia</i>.</p> <p>[8(2)(a)] While water is being supplied to premises in respect of which a water meter has been installed, the licensee must ensure that the water meter is properly maintained and periodically tested.</p> <p>[8(2)(b)] While water is being supplied to premises in respect of which a water meter has been installed, the licensee must ensure that the water meter is read at intervals of no more than 4 months.</p> <p>[8(2)(c)] While water is being supplied to premises in respect of which a water meter has been installed, the licensee must ensure that written notice of each meter reading is sent to the relevant licensed retail supplier.</p>	Compliant
Risk	<p>This requirement represents medium business risk. Non-compliant and/or inaccurate water meters may result in incorrect water consumption readings which are then reflected in customer billing.</p>	Target for Full Compliance
<p>Evidence that meters are compliant with the <i>Code</i>. Documented procedures for management of the meter fleet and/or evidence that performance monitoring and maintenance (when required) is undertaken. Evidence that meters are read at the required interval and that readings are passed on to the relevant retail supplier.</p>		
Evidence sighted	<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Central Park development on 13 June 2017. ▪ Flow, <i>Central Park Scheme Management Plan (Scheme MP) (Revision 4)</i>, 18 May 2017.⁵⁰ ▪ Flow, <i>Infrastructure Operating Plan (IOP) (Revision 8)</i>, 21 December 2016.⁵¹ 	
Summary of reasons for grade	<p>Central Park Water has previously demonstrated that water meters connected to its drinking water and recycled water mains comply with the <i>Plumbing Code of Australia</i>, and confirmed that they continue to do so. It has also documented its approach to water meter maintenance, testing and renewal, which is generally consistent with industry practice.</p> <p>Central Park Water also demonstrated that meters are read monthly (i.e. more regularly than required under the Regulation) and, given that its parent company, Flow Systems Pty Ltd holds the Retail Supplier Licence in respect of the Central Park Water drinking and recycled water schemes, notification of meter reading is not, in practice required.</p>	

⁵⁰ Revisions 1 (dated 1 December 2015), 2 (dated 1 August 2016) and 3 (dated 8 August 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁵¹ Revisions 6 (dated 25 May 2016) and 7 (dated 21 October 2016) of the *Infrastructure Operating Plan* were also in place during parts of the audit period.

Discussion and notes

Meter Compliance (clause 8(1)):

Although no customer meters were sighted during the audit, Central Park Water confirmed that meters connected to its water mains are NMI (National Measurement Institute) rated; they are the same meters as used by Sydney Water. The *Infrastructure Operating Plan* indicates that:⁵²

“All meters meet the Metrological and Technical requirements of NMI R 49-1: Water Meters Intended for the Metering of Cold Potable Water and Hot Water and are Standards Mark certified to AS 3565.1 by SAI Global under Licence No: SMK20052.”

The auditors have previously inspected the meters and reviewed a *Product Specification*,⁵³ and are satisfied with respect to their compliance.

Whilst the specific requirements of the *Plumbing Code of Australia* are difficult to identify, and are typically expressed as “deemed to comply”, the auditor is satisfied that given the water meters are NMI rated they, can be deemed to meet the requirements of the Code.

Maintenance and Testing (clause 8(2)(a)):

Central Park Water advised that meters are not maintained on a regular basis, but are tested and, if necessary, replaced in response to a customer enquiry or complaint. This approach, which is documented in the *Infrastructure Operating Plan*,⁵⁴ is consistent with the approach typically adopted by water utility operators; although in many cases meter accuracy is addressed by periodical meter replacement (typically on a ten to fifteen (10-15) year cycle).

Meter Reading (clause 8(2)(b)):

Central Park Water advised that meters are read (and customers invoiced) on a monthly basis. Monthly meter reading (and billing), which is more regular than required under the Regulation, is aimed at minimising potential “bill shock”.

Meter reading records for December 2016 were sighted during the audit. These records showed individual consumption readings by apartment and building, with “common areas” separately identified. Bulk meter readings for February and March 2017 were also sighted. Discrepancies between bulk meter and totalised customer meter readings are assessed as an indication of potential meter failure and/or unaccounted water.

Notification to Retail Supplier (clause 8(2)(c)):

Flow Systems Pty Ltd (Central Park Water’s parent company) holds the Retail Suppliers Licence in respect of the Central Park Water drinking water and recycled water infrastructure; accordingly notification of meter readings is, in practice, not required as the Network Operator and Retail Supplier are, for purposes of this requirement, the same entity.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

⁵² *Infrastructure Operating Plan*, section 2.5.1.

⁵³ Elster, *Product Specification; V100 (PSM-T) Volumetric Cold Potable Water Meters*, undated.

⁵⁴ *Infrastructure Operating Plan*, section 2.5.1.

Appendix C Detailed Audit Findings – Non-Potable Water Supply Infrastructure

Detailed audit findings in respect of the obligations related to *Non-Potable Water Supply Infrastructure* are presented in this Appendix.

Table C.1 Non-Potable Water Supply Infrastructure – WIC Reg Sched 1 cl.10(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.10(a)	The licensee under a licence for water infrastructure to supply non-potable water for a particular purpose must ensure that the water supplied is fit for that purpose.	Compliant

Risk	Target for Full Compliance
This requirement reflects a high operational risk. It is essential from a safety viewpoint that water supplied for a particular purpose is fit for that purpose.	Evidence that the water supplied is fit for purpose.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Central Park development on 13 June 2017.
- Flow, *Central Park Scheme Management Plan (Scheme MP) (Revision 4)*, 18 May 2017.⁵⁵
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.⁵⁶
- Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)*, dated to 2013.

Summary of reasons for grade

Review of operational monitoring data and water quality verification test results indicated that recycled water supplied during the audit period was fit for the nominated purposes. Accordingly, Central Park Water was assessed as having demonstrated compliance with this obligation.

Discussion and notes

The purposes for which the non-potable (recycled) water is to be used are identified in the *Scheme Management Plan*⁵⁷ and *Recycled Water Quality Plan*.⁵⁸ These purposes, which include cooling tower, toilet flushing, washing machines, general purposes wash down, carwash use, irrigation and treatment plant service water, are consistent with the “Authorised purposes” nominated in the Network Operator’s Licence.

Water quality targets/control parameters at Critical Control Points (CCPs) and Quality Control Points (QCPs) are documented in the *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)*.⁵⁹ As reported in Table B.2, review of a sample of SCADA data traces, instrument readings taken during the site inspection and verification testing results indicates that recycled water quality compliant with the documented parameter targets.

As also report in Table A.1, there were no reportable incidents in which the specified water quality had been compromised during the audit period.

Accordingly, it was assessed that that recycled water supplied during the audit period was fit for the nominated purposes.

⁵⁵ Revisions 1 (dated 1 December 2015), 2 (dated 1 August 2016) and 3 (dated 8 August 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁵⁶ Revision 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* was also in place during parts of the audit period.

⁵⁷ *Scheme Management Plan*, section 6.1.1.2.

⁵⁸ *Recycled Water Quality Plan*, section 3.1.2.

⁵⁹ Flow Systems, *Central Park Water, Water Quality Plan (Drinking Water and Recycled Water)*, dated to 2013.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Appendix D Detailed Audit Findings – Sewerage Infrastructure

Detailed audit findings in respect of the obligations related to *Sewerage Infrastructure* are presented in this Appendix.

Table D.1 Sewerage Infrastructure – WIC Reg Sched 1 cl.13(2)(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.13(2)(a)	The licensee must ensure that the infrastructure operating plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with that plan.	Compliant
Risk	Target for Full Compliance	
This requirement reflects a high operational risk. Implementation of the <i>Infrastructure Operating Plan</i> ensures the effective (safe and reliable) delivery of agreed levels of service.	Evidence that the <i>Infrastructure Operating Plan</i> is fully implemented and the Licensee’s activities are carried out in accordance with that <i>Plan</i> ; evidence that the <i>Plan</i> is kept under regular review.	
Evidence sighted		
<ul style="list-style-type: none"> Refer list of evidence in Table B.1. 		
Summary of reasons for grade		
[As noted in Table B.1 ...]		
Central Park Water demonstrated that it is fully implementing, and that its activities are being carried out in accordance with principles documented in, the <i>Infrastructure Operating Plan</i> . This was evident from the effective operation of the infrastructure and the implementation of maintenance practices.		
Central Park Water also demonstrated that the <i>Infrastructure Operating Plan</i> is kept under regular review, and that it has arrangements in place to ensure that it continues to do so.		
Accordingly, Central Park Water was assessed to have demonstrated full compliance with this obligation.		
Discussion and notes		
For the purposes of this audit, discussion in relation to the <i>Infrastructure Operating Plan</i> applicable to both water supply (WIC Reg Sched 1 cl.6(2)(a)) and sewerage (WIC Reg Sched 1 cl.13(2)(a)) infrastructure is presented in Table B.1.		
Recommendations		
There are no recommendations in respect of this obligation.		
Opportunities for improvement		
For opportunities for improvement identified in respect of this obligation, please refer to Table B.1.		

Table D.2 Sewerage Infrastructure – WIC Reg Sched 1 cl.13(2)(a)

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.14(3)(a)	The licensee must ensure that its sewage management plan is fully implemented and kept under regular review and, in particular, that all of its activities are carried out in accordance with that plan.	Compliant

Risk

This represents high operational risk. Implementation of the *Sewage Management Plan* ensures the effective (safe and reliable) operation of the sewerage infrastructure without detrimental effect to the environment.

Target for Full Compliance

Evidence that the *Sewage Management Plan* is fully implemented and the Licensee’s activities are carried out in accordance with that Plan; evidence that the Plan is kept under regular review.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Central Park development on 13 June 2017.
- Flow, *Central Park Scheme Management Plan (Scheme MP) (Revision 4)*, 18 May 2017.⁶⁰
- Flow, *Sewage Management Plan (Sewage MP) (Revision 4)*, 18 May 2017.⁶¹
- Sydney Water, *Consent to discharge industrial trade wastewater*, dated 30 May 2017 (for discharge of Reuse - Biomass to Sewer (ZM02) at Central Park).
- Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016.

Summary of reasons for grade

Central Park Water demonstrated that it is fully implementing, and that its activities are being carried out in accordance with principles documented in, the *Sewage Management Plan*. This was evident from the effective operation of the infrastructure and the implementation of maintenance practices.

Central Park Water also demonstrated that the *Sewage Management Plan* is kept under regular review, and that it has arrangements in place to ensure that it continues to do so.

Accordingly, Central Park Water was assessed to have demonstrated full compliance with this obligation.

Discussion and notes

The auditors checked for evidence that the *Sewage Management Plan* was fully implemented and kept under regular review and that all of the Network Operator’s activities are carried out in accordance with that Plan.

It is noted that the *Sewage Management Plan* must be read in conjunction with the *Scheme Management Plan*. Two (2) versions of the *Sewage Management Plan* and three (3) versions of the *Scheme Management Plan* were in place during the audit period, as follows:

- *Sewage Management Plan* – Revision 2 (dated 30 January 2015) and Revision 3 (dated 23 February 2016); and
- *Scheme Management Plan* – Revision 1 (dated 1 December 2015), Revision 2 (dated 1 August 2016) and

⁶⁰ Revisions 1 (dated 1 December 2015), 2 (dated 1 August 2016) and 3 (dated 8 August 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁶¹ Revisions 2 (dated 30 January 2015) and 3 (dated 23 February 2016) of the *Sewage Management Plan* were in place during parts of the audit period.

Revision 3 (dated 8 August 2016).

Review of these *Plans* revealed that there had been minimal change to the content presented therein.

Odour Management:

Odour at the treatment plant site is managed using an activated carbon based biofilter; filtered air is discharged above the top of the multi-storey building in which the plant is accommodated. During the audit, odour (H₂S) monitoring was checked for the air leaving the biofilter. Analyser AIT3677 was found to be reading 0.0ppm both on the instrument display and on the SCADA system. This provides good evidence of H₂S and odour control.

No odour was observed within the plant room, which is located in the building basement; this further indicated that effective air flow and odour management measures are in place.

Trade Waste:

Screenings, waste activated sludge and reverse osmosis concentrate is discharged to sewer under a load-based *Trade Waste Agreement*,⁶² a copy of which was provided to the auditors.

Site Drainage:

Chemical storage containment bunds were inspected to check that their capacity had not been compromised. As reported in Table A.3, these were found to be clear of any obstacles.

It is understood that the treatment plant room floor drains to trade waste, thereby protecting the environment in the unlikely event of a bund failure/overflow or any other contamination.

Regular Review of Sewage Management Plan:

As noted above, several versions of the *Sewage Management Plan* and the scheme specific *Scheme Management Plan* were in place during the audit period, and the *Scheme Management Plan* has subsequently been revised again (Revision 4 dated 18 May 2017). Whilst there was minimal change in each case, this demonstrates that the *Sewage Management Plan/Scheme Management Plan* have been kept under regular review, nominally at annual intervals.

As reported in Table B.1 and Table B.2 in relation to the *Infrastructure Operating Plan* and *Water Quality Plans*, this is consistent with Flow's *Document Control Procedure*,⁶³ which indicates that Plans are to be reviewed at intervals of: "1 years or as required by change, internal audit, incident etc." This requirement is further noted in the *Central Park Scheme Management Plan* (section 2.1.3) and all management plans (including the *Infrastructure Operating Plan, Asset Management Plan, Sewage Management Plan, Drinking Water Quality Plan, Recycled Water Quality Plan, Incident Management Plan* and *Monitoring and Sampling Plan*) (in each case section 1.1.3).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

⁶² Sydney Water, *Consent to discharge industrial trade wastewater*, dated 30 May 2017 (for discharge of Reuse - Biomass to Sewer (ZM02) at Central Park).

⁶³ Flow Systems, *Document Control Procedure (Revision 3)*, 3 February 2016, table 3.

Appendix E Detailed Audit Findings **– Schedule B to the Network Operator’s Licence**

Detailed audit findings in respect of the obligations under *Schedule B to the Network Operator’s Licence* are presented in this Appendix.

Table E.1 Schedule B to the Network Operator’s Licence – Clause B6.1

Clause	Requirement	Compliance Grade
Network Operator’s Licence cl.B6.1	The Licensee must prepare and submit reports in accordance with the Reporting Manual.	Compliant
Risk	Target for Full Compliance	
Non-compliance with this requirement presents no significant risk to the operational safety of the scheme.	Evidence that the Licensee has prepared and submitted the requisite reports to IPART in accordance with the <i>Reporting Manual</i> .	
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Central Park development on 13 June 2017. ▪ IPART, <i>Network Operator’s Reporting Manual under the Water Industry Competition Act 2006</i>, June 2016. ▪ Email dated 30 August 2016 from Flow Systems to IPART with Annual Compliance Reports for all Flow Systems’ schemes attached. ▪ Central Park Water, <i>Network Operators Report; Annual Compliance Report 2015/16</i>, signed 30 August 2016. 		
Summary of reasons for grade		
<p>Central Park Water provided evidence that it had prepared and submitted reports in accordance with the <i>Reporting Manual</i>; principally its <i>Annual Compliance Report</i>. Audit of a number of obligations in respect of which immediate reporting may potentially be required revealed that there had been no requirement to submit such reports during the audit period.</p> <p>Accordingly, Central Park Water is assessed as being “Compliant” with this obligation.</p>		
Discussion and notes		
<p>The auditors sought evidence that the Licensee had prepared and submitted reports in accordance with the <i>Reporting Manual</i>.⁶⁴ The <i>Reporting Manual</i> requires the submission of an <i>Annual Compliance Report</i> comprising of an Annual Compliance Report Certification, a Non-Compliance Schedule (Schedule A) and a report in relation to Performance Indicators (Schedule B); the report is to be submitted to IPART no later than 31 August each year.</p> <p>The auditors sighted a copy of an email to IPART, sent 30 August 2016, with 2015/16 Annual Compliance Reports for all Flow Systems’ schemes attached. Review of the <i>Central Park Annual Compliance Report</i>⁶⁵ confirmed that it was signed on 30 August 2016 by the Managing Director/Chief Executive and Deputy Managing Director. The report was prepared in accordance with the IPART template and contained the requisite information including details of two non-compliances that had been identified during the reporting period.</p> <p>The <i>Reporting Manual</i> also requires immediate reporting in the event that such requirement is triggered. Audit of a number of obligations in respect of which reporting may potentially be required has revealed that there was no requirement to report in respect of those obligations during the audit period (refer</p>		

⁶⁴ IPART, *Network Operator’s Reporting Manual under the Water Industry Competition Act 2006*, June 2016.

⁶⁵ Central Park Water, *Network Operators Report; Annual Compliance Report 2015/16*, signed 30 August 2016.

Tables A.1, F.4, F.5 and F.6).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Table E.2 Schedule B to the Network Operator's Licence – Clauses B8.1, B8.2 and B8.3

Clause	Requirement	Compliance Grade
Network Operator's Licence cl.B8.1, B8.2 and B8.3	<p>[B8.1] The Licensee must undertake any monitoring that is required for the purposes of this Licence, any Plan, the Act or the Regulation in accordance with this clause B8.</p> <p>[B8.2] The Licensee must keep the following records of any samples taken for monitoring purposes specified in the Water Quality Plan:</p> <ul style="list-style-type: none"> (a) the date on which the sample was taken; (b) the time at which the sample was collected; (c) the point or location at which the sample was taken; and (d) the chain of custody of the sample (if applicable). <p>[B8.3] The Licensee must ensure that analyses of all samples taken for the purposes of Verification Monitoring are carried out by a laboratory accredited for the specified tests by an independent body that is acceptable to NSW Health, such as the National Association of Testing Authorities or an equivalent body.</p>	Compliant
Risk	<p>This requirement reflects a high operational risk. It is essential that:</p> <ul style="list-style-type: none"> ▪ detailed sample records are maintained to ensure traceability in the event of a non-compliance; and ▪ testing is undertaken by an accredited laboratory to ensure credibility of results. 	Target for Full Compliance
		<p>Evidence that:</p> <ul style="list-style-type: none"> ▪ the required records have been kept in respect of collected samples; and ▪ sample analysis has been undertaken by NATA accredited laboratory (or equivalent).
Evidence sighted.		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Central Park development on 13 June 2017. ▪ Flow, <i>Drinking Water Quality Plan (DWQP) (Revision 5)</i>, 22 November 2016.⁶⁶ ▪ Flow, <i>Recycled Water Quality Plan (RWQP) (Revision 6)</i>, 21 October 2016.⁶⁷ ▪ Flow Systems, <i>Monitoring and Sampling Plan (MSP) (Revision 6)</i>, 22 November 2016. ▪ ALS Environmental, <i>Analytical Report No: 165152</i> dated 24 January 2017 (for samples taken 13 January 2017). ▪ https://www.nata.com.au/nata/labsearchresults (search for ALS). 		

⁶⁶ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

⁶⁷ Revision 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* was also in place during parts of the audit period.

Summary of reasons for grade

Central Park Water demonstrated that it was collecting data and retaining records in accordance with the requirements; the records included details of the date, time, location and sampler. The analysis, laboratory and analyst were accredited for the specified tests by the National Association of Testing Authorities (NATA) for the specified tests.

Accordingly, Central Park Water was assessed to be compliant with these requirements.

Discussion and notes

Central Park Water undertakes verification monitoring of water quality in accordance with the *Monitoring and Sampling Plan*, which outlines the requirements in relation to both drinking water⁶⁸ and recycled water.⁶⁹ Test results in sample of *Monthly Summary Spreadsheets*⁷⁰ indicate that Central Park Water undertakes microbial (*E.coli*) testing of recycled water on a weekly basis and testing of a broader suite of parameters for both drinking water and recycled water on a monthly basis, consistent with the requirements of the *Monitoring and Sampling Plan*.

Sampling for Central Park is undertaken by GHD and verification testing is undertaken by ALS Environmental. A sample laboratory report (Report No: 165152) dated 24 January 2017, for which samples had been taken on 13 January 2017 was sighted during the audit. Test procedures were cited and the report signed by a NATA signatory.

ALS Environmental holds Accreditation No: 825 for *Biological Testing* and *Chemical Testing* – *Public testing service*.⁷¹

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

⁶⁸ *Monitoring and Sampling Plan*, section 4.3.

⁶⁹ *Monitoring and Sampling Plan*, section 6.2.

⁷⁰ *Central Park Monthly Analysis Summaries* for January, February, March and April 2016.

⁷¹ Refer: <https://www.nata.com.au/nata/labsearchresults> (search for ALS).

Table E.3 **Schedule B to the Network Operator’s Licence – Clause B10.1, B10.2, B10.3 and B10.4**

Clause	Requirement	Compliance Grade
Network Operator’s Licence cl.B10.1, B10.2, B10.3 and B10.4	<p>[B10.1] If a code of conduct has not been established under Clause 25 of the Regulation, the Licensee must (by a date specified by IPART) establish a code of conduct (Licensee’s Code of Conduct) in accordance with this clause B10.</p> <p>[B10.2] The Licensee’s Code of Conduct must set out the respective responsibilities of:</p> <ul style="list-style-type: none"> (i) the Licensee; and (ii) each licensed network operator, licensed retail supplier and/ or public water utility that constructs, maintains or operates any water industry infrastructure in the Specified Area of Operations. <p>by, at a minimum, providing for:</p> <ul style="list-style-type: none"> (iii) if the Specified Water Industry Infrastructure is connected to any other water industry infrastructure, who is responsible for repairing, replacing or maintaining any pipes, pumps, valves, storages or other infrastructure connecting the Specified Water Industry Infrastructure to the other water industry infrastructure; (iv) who is responsible for water quality; (v) who is liable in the event of the unavailability of water; (vi) who is liable in the event of failure of the Specified Water Industry Infrastructure; (vii) the fees and charges payable in respect of the use of the Specified Water Industry Infrastructure; and (viii) who is responsible for handling customer complaints. <p>[B10.3] Before the Licensee brings the Specified Water Industry Infrastructure into commercial operation, the Licensee’s Code of Conduct must be agreed in writing between the Licensee and the other licensed network operators, licensed retail suppliers and/or public water utilities referred to in clause B10.2.</p> <p>[B10.4] The Licensee must not contravene the Licensee’s Code of Conduct to the extent that it makes the Licensee responsible or liable for the matters set out in it.</p>	Compliant

Risk

This requirement reflects a high operational risk. In the absence of a clear definition of responsibilities, there is no guarantee that the licensed services will continue to be delivered in a safe and effective manner.

Target for Full Compliance

Evidence that, in the absence of a gazetted Water Industry Code of Practice, there is an agreement setting out the respective responsibilities of the Licensee and the party(ies) that are responsible for connected infrastructure.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
 - *Interim Utility Services Agreement; General Terms and Conditions (reference SW275 02/13)*, dated 22 May 2013, as extended by a series of letter agreements including letters dated 30 July 2014, 2 October 2014, 4 February 2015, 3 June 2015, 2 March 2016 and 9 September 2016.
 - *Interim Utility Services Agreement – Extension*. Letter dated 9 September 2016 from Sydney Water to Flow Systems.
-

Summary of reasons for grade

In the absence of a Code of Conduct being established under clause 25 of the Regulation, Flow/Central Park Water and Sydney Water have put in place a *Utility Services Agreement* which addresses the requirements of clauses B10.1, B10.2 and B10.3 of the Network Operator's Licence. There was no evidence that Central Park Water had contravened the terms of the Utility Services Agreement during the audit period (or otherwise).

Accordingly, Central Park Water was assessed as being compliant with these obligations.

Discussion and notes

In the absence of a Code of Conduct being established under clause 25 of the Regulation, Flow/Central Park Water and Sydney Water have put in place a *Utility Services Agreement*⁷² which addresses the requirements of clauses B10.1, B10.2 and B10.3 of the Network Operator's Licence. The current *Agreement* was signed on 16 February 2017.

Review of the Agreement reveals that the requisite matters are addressed as follows:

- Repair, replacement and maintenance of infrastructure – Schedule 2, clause 2.5 *Maintenance of Connection Infrastructure* (in relation to drinking water infrastructure) and Schedule 3, clause 2.5 *Maintenance of Connection Infrastructure* (in relation to sewerage infrastructure)
- Water quality – Schedule 2, clause 2.7 *Responsibility for Drinking Water Quality*;
- Unavailability of water – Schedule 2, clause 2.8 *Unavailability of Drinking Water*;
- Infrastructure failure – Schedule 2, clause 2.10 *Infrastructure Failure* (in relation to drinking water infrastructure) and Schedule 3, clause 2.7 *Infrastructure Failure* (in relation to sewerage infrastructure);
- Fees and charges – Clause 7 *Charges*;
- Customer complaints – Schedule 4, clause 5 *Customer Services*.

Prior to execution of the current (February 2017) version, Central Park Water was operating under an *Interim Utility Services Agreement*,⁷³ originally signed in May 2013. The term of the *Interim Agreement* was extended by a series of letter agreements; letters dated 2 March 2016 and 9 September 2016 covered the

⁷² *Utility Services Agreement; Central Park* between Sydney Water Corporation and Flow Systems Pty Ltd, dated 16 February 2017.

⁷³ *Interim Utility Services Agreement; General Terms and Conditions (reference SW275 02/13)*, dated 22 May 2013, as extended by a series of letter agreements including letters dated 30 July 2014, 2 October 2014, 4 February 2015, 3 June 2015, 2 March 2016 and 9 September 2016.

majority if not all of the audit period prior to current *Agreement* being in place. On this basis, it is assessed that a *Utility Services Agreement* (Code of Conduct) was in effectively in place throughout the audit period.

Central Park Water advised that it had not contravened the terms of the *Utility Services Agreement* during the audit period. The auditors identified no evidence to the contrary.

Recommendations

There are no recommendations in respect of these obligations.

Opportunities for improvement

No opportunities for improvement have been identified in respect of these obligations.

Table E.4 Schedule B to the Network Operator's Licence – Clause B11.1

Clause	Requirement	Compliance Grade
Network Operator's Licence cl.B11.1	If the Licensee proposes to operate the Specified Water Industry Infrastructure to supply water for an end-use which is not set out in the most recent Water Quality Plan provided to IPART, the Licensee must notify IPART in writing at least 3 months before commencing such operation.	No Requirement

Risk

Non-compliance with this requirement presents a low risk. Notification to IPART is required so that it can assess whether the water to be supplied is suitable for the proposed new end-use.

Target for Full Compliance

In the event that the Licensee proposes to operate the Specified Water Industry Infrastructure to supply water for a new end-use, evidence that it provided the requisite notification to IPART.

Evidence sighted

- Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017.
- Site inspection of infrastructure at the Central Park development on 13 June 2017.
- Flow, *Central Park Scheme Management Plan (Scheme MP) (Revision 4)*, 18 May 2017.⁷⁴
- Flow, *Drinking Water Quality Plan (DWQP) (Revision 5)*, 22 November 2016.⁷⁵
- Flow, *Recycled Water Quality Plan (RWQP) (Revision 6)*, 21 October 2016.⁷⁶

Summary of reasons for grade

Central Park Water did not, during the audit period or subsequently, commence distribution of water for an end-use that is not set out in the most recent *Drinking Water Quality Plan* or *Recycled Water Quality Plan*, as applicable. Accordingly, there was “No Requirement” for compliance with this obligation during the audit period.

Discussion and notes

Central Park Water advised that it had not commenced (or proposed to commence) operation of the Specified Water Industry Infrastructure to supply water for an end-use which is not set out in its *Drinking Water Quality Plan* or its *Recycled Water Quality Plan* most recently supplied to IPART during the audit period or subsequently. No evidence to the contrary was identified during the audit.

As indicated in the *Scheme Management Plan*⁷⁷ and *Drinking Water Quality Plan*,⁷⁸ drinking water complies with the *Australian Drinking Water Guidelines*⁷⁹ and is suitable for drinking (potable use) purposes.

The *Scheme Management Plan*⁸⁰ and *Recycled Water Quality Plan*⁸¹ identify purposes for which the recycled water will be used. These include cooling tower, toilet flushing, washing machines, general purposes wash

⁷⁴ Revisions 1 (dated 1 December 2015), 2 (dated 1 August 2016) and 3 (dated 8 August 2016) of the *Scheme Management Plan* were in place during parts of the audit period.

⁷⁵ Revision 4 (dated 8 September 2015) of the *Drinking Water Quality Plan* was also in place during parts of the audit period.

⁷⁶ Revision 5 (dated 25 May 2016) of the *Recycled Water Quality Plan* was also in place during parts of the audit period.

⁷⁷ *Scheme Management Plan*, section 8.

⁷⁸ *Drinking Water Quality Plan*, section 2.1.

⁷⁹ *Australian Drinking Water Guidelines 6 (2011)*.

⁸⁰ *Scheme Management Plan*, section 6.1.1.2.

⁸¹ *Recycled Water Quality Plan*, section 3.1.2.

down, carwash use, irrigation and treatment plant service water. Whilst not all of these end uses were observed during the audit, there was no evidence of any other uses.

On the basis of Central Park Water's advice and the absence of any evidence to the contrary, it was assessed that there was no requirement for compliance with this obligation.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Table E.5 **Schedule B to the Network Operator’s Licence – Clause B12.1**

Clause	Requirement	Compliance Grade
Network Operator’s Licence cl.B12.1	If an Authorised Person ceases, proposes to cease or receives notification to cease providing any of the services relating to the activities authorised by this Licence, the Licensee must provide IPART with written notice as soon as practicable but no later than 28 days before the date of cessation of the services. The written notice must include details of how the services previously undertaken by the Authorised Person will continue to be undertaken.	No Requirement
Risk	This requirement reflects a high operational risk. It is essential that, in the event that an Authorised Person ceases to provide services, alternative arrangements are in place for the provision of such services. Notification to IPART forms part of a mechanism of ensuring that service provision continues and that the licensed activities are fully and effectively implemented.	Target for Full Compliance Evidence that, in the event of an Authorised Person ceasing, proposing to cease or receiving notice to cease providing services related to activities authorised by the Licence, the Licensee has provided written notice to IPART within 28 days of the change occurring.
Evidence sighted		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Central Park development on 13 June 2017. ▪ New South Wales Government, Network Operator’s Licence No: 12_022. 		
Summary of reasons for grade		
None of the Authorised Persons ceased, proposed to cease, or received notification to cease providing services relating to the activities authorised by the Licence during the audit period. Accordingly, there was “No Requirement” for compliance with this obligation.		
Discussion and notes		
The Licence specifies the following “Authorised Persons”: ⁸²		
<ul style="list-style-type: none"> ▪ Water Factory Company Pty Ltd, now Flow Systems Pty Ltd (ACN 28 136 272 298) in respect of the provision of sewerage services, non-potable (recycled) water supply and drinking water supply; and ▪ Permeate Partners Pty Ltd (ACN 54 130 112 257) in respect of the provision of sewerage services and non-potable (recycled) water supply. 		
Central Park Water confirmed that Flow Systems and Permeate Partners had continued in the role of Authorised Persons under the Licence throughout the audit period. This was supported by observations made and evidence sighted during the audit.		
Flow Systems is the parent company of Central Park Water and the primary source of service provision (personnel and equipment) for operation and maintenance of the infrastructure at Central Park Water. Flow Systems continued to provide services throughout the audit period (and subsequently) and, given the company arrangements, there is no reason to believe that this may change.		
Permeate Partners is available, under the provisions of a period contract, to provide		

⁸² *Network Operator’s Licence*, Schedule A (tables 1.1, 2.1 and 3.1).

professional/operational support services as required. Permeate Partners was observed to be remotely accessing the SCADA system during the site inspection.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Table E.6 **Schedule B to the Network Operator’s Licence – Clause B13.1**

Clause	Requirement	Compliance Grade
Network Operator’s Licence cl.B13.1	The Licensee must notify IPART in writing that it has brought the Specified Water Industry Infrastructure into commercial operation within 10 days of the Licensee bringing the Specified Water Industry Infrastructure into commercial operation.	No Requirement
<p>Risk</p> <p>This presents a relatively low operational risk. Whilst it is essential that the Licensee has approval to bring new infrastructure into commercial operation before doing so, there is a lesser risk associated with failing the notify IPART that it has brought that infrastructure into operation.</p>		<p>Target for Full Compliance</p> <p>Evidence that the Licensee has notified IPART in writing within 10 days of bringing any Specified Water Industry Infrastructure into operation.</p>
<p>Evidence sighted</p>		
<ul style="list-style-type: none"> ▪ Interviews with Flow personnel (Andrew Horton and Laura Dixon) on 13/14 June 2017. ▪ Site inspection of infrastructure at the Central Park development on 13 June 2017. 		
<p>Summary of reasons for grade</p>		
<p>Central Park Water did not bring any additional Specified Water Industry Infrastructure into commercial operation during the audit period. Accordingly, there was “No Requirement” for compliance with this obligation.</p>		
<p>Discussion and notes</p>		
<p>As previously noted in Table A.2, the Licensee did not bring any Specified Water Industry Infrastructure into commercial operation during the audit period. Although the infrastructure was extended to service an additional building (Building 8) during the audit period, this did not constitute “new infrastructure” for which approval is required prior to being brought into commercial operation and notification to IPART is required in accordance with the <i>Reporting Manual</i>.⁸³</p>		
<p>Accordingly, there was no requirement for the Licensee to notify IPART that any additional Specified Water Industry Infrastructure into commercial operation.</p>		
<p>Recommendations</p>		
<p>There are no recommendations in respect of this obligation.</p>		
<p>Opportunities for improvement</p>		
<p>No opportunities for improvement have been identified in respect of this obligation.</p>		

⁸³ IPART, *Network Operator’s Reporting Manual under the Water Industry Competition Act 2006*, June 2016, section 2.6.8.

