IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Sydney Catchment Authority Operational Audit 2012/13

Report to the Minister

Water — Compliance Report
December 2013

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The Tribunal members for this review are:

Dr Peter J Boxall AO, Chairman

Mr Simon Draper, Part Time Member

Dr Paul Paterson, Part Time Member

Inquiries regarding this document should be directed to a staff member:

Maria Morahan (02) 9113 7752

Shweta Shrestha (02) 9113 7735

Independent Pricing and Regulatory Tribunal of New South Wales
PO Box Q290, QVB Post Office NSW 1230
Level 8, 1 Market Street, Sydney NSW 2000

T (02) 9290 8400 F (02) 9290 2061

www.ipart.nsw.gov.au

Contents

Executive summary

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) has completed the audit of Sydney Catchment Authority's (SCA) compliance with the requirements of its 2012-2017 operating licence (the licence). This audit covers the period from 1 July 2012 to 30 June 2013.

The audit is the main regulatory instrument that we use to assess compliance with the licence. We applied a risk based approach to the audit. Under this approach, we assess the risk of non-compliance with a licence obligation to determine an appropriate audit frequency for that requirement. We audit those clauses that we consider to be 'high risk' more frequently, while low risk clauses are audited less frequently. We audit all requirements of the operating licence at least once during the 5-year term of the licence.

Further, in determining the scope of the audit we consult with the NSW Ministry of Health (NSW Health) and seek public submissions. This year, NSW Health did not identify any areas of interest and we received no public comment. We also engaged a specialist auditing firm (BBTech Consulting) to assist with the 2012/13 operational audit.

Adopting a risk based approach has improved the effectiveness and efficiency of the auditing process, without increasing risks to the community. The approach allows audit resources to be targeted to areas of higher risk. It also reduces the overall burden of compliance for the utility.

Overview of audit findings

This year SCA demonstrated a high level of compliance with its operating licence. The auditor awarded Full Compliance to 13 of the 15 clauses audited and High Compliance for the remaining 2 clauses. In summary, the audit found that SCA achieved:

- **Full Compliance** with requirements relating to licence details
- **High Compliance** with requirements relating to water quality
- **Full Compliance** with requirements relating to water supply sufficiency
- **Full Compliance** with requirements relating to catchment
- **Full Compliance** with requirements relating to assets

- **Full Compliance** with requirements relating to customers
- **Full Compliance** with requirements relating to environment
- **Full Compliance** with requirements relating to performance monitoring.

SCA's compliance is summarised in Table 1 below.

Table 1 SCA's compliance in 2012/13, the 1st year of its 2012-2017 Operating Licence

Licence Part	Number of audited clauses	Compliance grade awarded		
		Full	High	Adequate
Part 1 – Licence details	1	1	-	-
Part 2 – Water quality	2	-	2	-
Part 3 – Water supply sufficiency	2	2	-	-
Part 4 – Catchment	1	1	-	-
Part 5 – Assets	1	1	-	-
Part 6 – Customers	4	4	-	-
Part 7 – Environment	2	2	-	-
Part 8 – Performance monitoring	2	2	-	-
Total	**15**	**13**	**2**	**0**

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November, 2013.

Annual statement of compliance

In preparing this report we have also reviewed SCA's annual Statement of Compliance (Appendix D). This is an exception based report certified by the CEO and the Chairman of the SCA Board. It lists any licence breaches that occurred during the year. Further, any remedial action taken, or in the process of being taken, is reported. This year SCA reported no breaches of its operating licence.

Our recommendations

The auditor prepared a final audit report detailing its findings and recommendations (Appendix C). We endorse all of these findings. There were 2 clauses for which the auditor did not award Full Compliance. We make 5 recommendations based on the auditor's recommendations. These are outlined below.

Recommendations

1 The SCA should further develop the Water Quality Management System to:
   - further address preventive measures and Critical Control Points (CCPs)
   - revise emergency information and formalise the emergency information revision process
   - clearly define event based monitoring
   - develop a specific drinking water quality policy.

2 The SCA should:
   - formally identify and implement appropriate preventive measures for raw water supplied, particularly those of high importance and any designated as CCPs
   - develop explicit, validated process control tables for each CCP
   - ensure appropriate (ideally continuous) frequency of operational monitoring for identified target criteria (including critical limits for CCPs).

3 The SCA should:
   - formally identify and implement appropriate preventive measures for drinking water supplied to its recreational areas (picnic areas), including those designated as CCPs
   - develop explicit, validated process control tables for each CCP
   - ensure appropriate (ideally continuous) frequency of operational monitoring for identified target criteria (including critical limits for CCPs).

4 The SCA should ensure logical alignment of data between the Raw Water Quality Incident Response Plan (RWQIRP), Water Monitoring Program, Raw Water Supply Agreements, and process control tables, particularly for CCPs.

5 The SCA should ensure that the RWQIRP is kept up to date.

Subject to your endorsement, we will request SCA provide a progress report to us by 31 March 2014.

Finally, we note that SCA has addressed all outstanding recommendations from previous operating audits.

1 Introduction and scope

The SCA's primary role is to manage and protect drinking water catchments, and maintain the dams and other water supply infrastructure in Greater Sydney. These roles and responsibilities, as well as SCA's objectives, are prescribed by the *Sydney Water Catchment Management Act 1998* (NSW) (the Act) and the licence issued to SCA under part 4, division 1 of the Act.

IPART has completed the annual operational audit of SCA's compliance with the obligations outlined in its licence.

We do this by receiving and reviewing reports, interviewing utility staff and undertaking site visits. At the completion of the audit we publish the audit report and report our findings to the Minister for Primary Industries.

We applied a risk based approach to the audit of SCA, as outlined in the Executive Summary. Further, we assess compliance by reviewing an annual statement of compliance prepared by SCA (Appendix D). This is an exception based report listing any licence breaches that occurred during the year and what remedial action has been taken, or is being taken, to resolve the matter.

1.1 Purpose and structure of this report

The purpose of this report is to inform the Minister for Primary Industries of SCA's performance against its audited licence obligations for the audit period and to set out recommendations in response to these findings.

- Chapter 1 explains the scope of the audit review and the process followed in undertaking the audit
- Chapter 2 presents a summary of the audit findings and recommendations
- Chapter 3 summarises the progress by SCA to address and implement recommendations from previous audits
- Appendix A contains the table of compliance grades used for this audit
- Appendix B contains the audit scope
- Appendix C provides the auditor's detailed audit report
- Appendix D provides SCA's annual statement of compliance.

1.2 Audit scope

This audit covers the period from 1 July 2012 to 30 June 2013.

The audit scope for this year included obligations relating to:

- Licence details (Part 1) – requirements relating to public availability of SCA's operating licence.
- Water quality (Part 2) – requirements relating to a Water Quality Management System (WQMS), operating in line with the Australian Drinking Water Guidelines (ADWG).
- Water supply sufficiency (Part 3) – requirements relating to catchment infrastructure being operated and managed in line with the Design Criteria.
- Catchment (Part 4) – requirements relating to catchment management consistent with the Act.
- Assets (Part 5) – requirements relating to the development of SCA's Asset Management System.
- Customers (Part 6) – requirements relating to agreements with customers other than Sydney Water, and complaints handling procedures.
- Environment (Part 7) – requirements relating to SCA's programs to manage environmental risks, and monitoring and reporting on Environmental Indicators in line with the relevant reporting manual.
- Performance monitoring (Part 8) – requirements relating to SCA's compliance reporting and record keeping.

Prior to the audit, SCA provided a statement of compliance certified by the CEO and the Chairman of the SCA Board (Appendix D of this report). This statement reports that SCA has fully complied with its licence in 2012/13 (including the clauses subsequently audited this year).

1.3 The audit process

We engaged BBTech Consulting (BBTech) to assist with the 2012/13 audit of SCA. The auditor was required to undertake the following tasks:

1. Liaise with NSW Health and other relevant departments to determine the agencies' views on SCA's licence compliance and whether any licence obligations should receive special focus as part of the audit.
2. Receive stakeholder submissions and comments for inclusion in the audit scope.
3. Prepare an information request (questionnaire), setting out all information and evidence requirements, 2 weeks prior to the commencement of audit interviews.

4. Review reports and documents provided by SCA in response to the questionnaire.
5. Conduct face-to-face interviews with SCA staff at its offices.
6. Conduct site visits to view a physical asset or facility and assess the implementation of SCA's systems and procedures.
7. Assess the level of compliance achieved by SCA against each of the obligations of the licence set out in IPART's risk-based audit scope, providing supporting evidence for this assessment and reporting compliance according to IPART's compliance grades (Appendix A).
8. Assess and report on progress by SCA in addressing any comments made by the relevant Minister and/or recommendations endorsed by IPART pertaining to previous audits, providing supporting evidence for these assessments.
9. Verify the calculation of performance indicators associated with requirements of the relevant operating licence and undertake an assessment of any underlying trends in performance arising from these indicators.
10. Provide the drafts of the audit report to IPART and address comments from SCA and IPART regarding the draft audit findings.
11. Prepare a final report on the findings of the audit.

As part of the audit process, we sought submissions from the public on any matter related to the operating licence prior to the commencement of the audit interviews. We advertised for public submissions in the Sydney Morning Herald and The Daily Telegraph on 29 May 2013. No submissions from the public were received.

BBTech contacted NSW Health and Sydney Water prior to the audit interview to seek its views on compliance, or any other areas which should be reviewed as part of this audit. NSW Health and Sydney Water did not advise the auditor of any specific issues it required to be addressed during the audit (refer to Appendix C for more details).

The auditor adopted an audit methodology that was consistent with the following standards:

- ISO 19011:2011 Guidelines for auditing management systems
- ASAE 3100: Compliance Engagements, Auditing and Assurance Standards Board
- Auditing and Assurance Standard AUS 110 Assurance Engagements other than Audits or Reviews of Historical Financial Information, Australian Accounting Research Foundation, June 2004.

The guidelines contained within the above standards set out a systematic approach to defining the requirements of an audit, ensuring that it is conducted in accordance with an established and recognised audit protocol.

The auditor also carried out the audit according to our Audit Guideline for Public Water Utilities.[1] Under this guideline, auditors can either make recommendations or suggest opportunities for improvement opportunities for improvement. Where we support an auditor's recommendation, we follow up the matter to ensure that it is addressed.

Where auditors have suggested opportunities for improvement, we take a different approach. The utility can decide whether to implement an opportunity, based on its own assessment of whether the improvement is a prudent and efficient way to achieve its outcomes. We take this approach to balance improved performance with the investment required to achieve it. That is, we want the utility to consider the pricing implications of continued improvement and value for money, before the utility implements further improvements. As a consequence, we do not follow up these matters.

We held a project start up meeting with the auditors on 29 July 2013, to agree on the project milestones and timing of the audit as well as outline IPART's expectations of the audit. We also held an audit inception meeting with SCA and BBTech on the first day of the audit interviews, 18 September 2013. At this meeting mutual understanding and expectations of the audits were established and protocols for the conduct of the audits were agreed. All parties adhered to the agreed protocols throughout the audit.

The operating licence audit interviews were conducted from 18 to 19 September 2013 at SCA's offices in Penrith. On 20 September 2013, the auditor also undertook a site visit to the Upper Canal between Broughtons Pass Weir and Prospect Reservoir.

SCA's compliance with the relevant requirements of the operating licence was assessed according to the compliance grades outlined in Appendix A.

1 IPART, *Audit Guideline – Public Water Utilities*, May 2013. This Audit Guideline is on our website (www.ipart.nsw.gov.au).

2 Summary of audit findings and recommendations

This chapter provides a summary of the auditor's findings and recommendations for each of the audited clauses of the licence. The 2012/13 audit is the first audit of the 2012-2017 licence.

Each section includes a table providing a comparison of SCA's audit performance during its licence period. However, comparison data will only be available from 2014 onwards as this is the first year of the new operating licence.

Compliance grades in the tables are abbreviated according to the following convention:

- **Full** = Full Compliance; **High** = High Compliance; **Adeq =** Adequate Compliance; **NC** = Non-Compliant; **NR =** No requirement.

Following each table, we discuss compliance and reasoning for the grade. We also discuss the recommendations and opportunities for improvement.

2.1 Licence details

SCA achieved Full Compliance for the audited clause.

Part 1 of the licence outlines the obligations for providing the operating licence to the public, free of charge. Under the risk based auditing framework, we consider that this part of the licence poses a low risk with respect to both the likelihood and consequence of non-compliance.

Table 2.1 Summary of compliance with Part 1 of the licence – licence details

Clause	Requirement	Compliance Grading				
1	**Licence details**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**
1.4.1	Licence freely available to members of the public	Full	-	-	-	-

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

The auditor found that SCA has complied with the requirement to make the operating licence available to the public. The auditor noted that SCA's operating licence was available on its website and that SCA office staff could provide a free copy of the licence to members of the public who requested it. As a result, the auditor awarded Full Compliance for clause 1.4.1 and no recommendation or opportunities for improvement were identified.

2.2 Water quality

SCA achieved High Compliance for both of the clauses audited.

Part 2 of the licence outlines the obligations related to the development and implementation of a Water quality Management System (WQMS) that is in line with the Australian Drinking Water Guidelines 2011 (ADWG). Under the risk based auditing framework, we consider that this part of the licence poses a high risk with respect to both the likelihood and consequence of non-compliance.

Table 2.2 Summary of compliance with Part 2 of the licence – water quality

Clause	Requirement	Compliance Grading				
2	**Water quality**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**
2.1.1	Maintain a WQMS in line with ADWG	High	-	-	-	-
2.1.2	WQMS fully implemented & activities conducted in line with WQMS	High	-	-	-	-

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

Clause 2.1.1 Maintain a Water Quality Management System

The auditor reported that SCA has established excellent water quality management practices, consistent with the ADWG framework. The auditor found that although the SCA has a high-level framework outlining initiatives for each element of the ADWG, there were shortcomings in some supporting documents. These included:

- incomplete Critical Control Limit and Control Point Matrix that set out preventive measures, critical control points (CCPs), and target criteria
- out-dated Raw Water Quality Incident Response Plan
- unclear event-based monitoring procedures in the Water Monitoring Program
- lack of a specific water quality management policy, required to conform with the ADWG.

The auditor reported that there was a compliance gap related to completeness of documentation, rather than the water quality management practices, and noted that despite these shortcomings SCA exhibited compliance with the ADWG in

the field. The auditor noted that many of SCA's water quality management activities were extensive, comprehensive, and at benchmark levels for Australia. Accordingly, the auditor awarded SCA High Compliance for clause 2.1.1.

Clause 2.1.2 Fully implement the Water Quality Management System

SCA supplies raw water to Sydney Water and other customers. In addition, SCA supplies drinking water to its recreational (picnic) areas. The auditor identified that drinking water supplied to SCA's recreational areas is not filtered and that water is tankered to some sites (eg, Fitzroy Falls) to avoid algal concerns. The auditor identified that critical turbidity levels were not appropriate for drinking water at SCA's recreational areas. The auditor outlined that concerns relating to SCA's drinking water supply fell under 3 elements of the ADWG, namely: preventative measures for drinking water quality management; management of incidents and emergencies; and documentation and reporting. SCA had not prepared finalised process control tables for key preventative measures (eg, CCPs at SCA's designated recreational areas) or conducted operational monitoring at a sufficient frequency.

The auditor found that SCA has a Raw Water Quality Incident Response Plan (RWQIRP), but noted that the document was out dated and referenced an old version of the ADWG. The auditors also identified misalignment between other documents related to the RWQIRP – ie, the Water Monitoring Program, Raw Water Supply Agreements, and process control tables. Further, the auditor identified concerns that these supplementary documents weren't descriptive enough to appear without additional context.

During a site visit to the Upper Canal, the auditor found that the effectiveness of the preventative measures being taken by SCA, against contamination of its raw water supply, required validation. The auditor found that siltation of stormwater channels used to conduct runoff away from the Upper Canal may have deteriorated over time. The auditor noted that this could make the canal more prone to runoff from adjacent grazing properties.

Accordingly, the auditor awarded SCA High Compliance for clause 2.1.2.

We make 5 recommendations in relation to clauses 2.1.1 and 2.1.2, based on the auditor's recommendations.

Recommendations

1 The SCA should further develop the Water Quality Management System to:
   - further address preventive measures and Critical Control Points (CCPs)
   - revise emergency information and formalise the emergency information revision process
   - clearly define event based monitoring

- develop a specific drinking water quality policy.

2 The SCA should:

- formally identify and implement appropriate preventive measures for raw water supplied, particularly those of high importance and any designated as CCPs
- develop explicit, validated process control tables for each CCP
- ensure appropriate (ideally continuous) frequency of operational monitoring for identified target criteria (including critical limits for CCPs,).

3 The SCA should:

- formally identify and implement appropriate preventive measures for drinking water supplied to its recreational areas (picnic areas), including those designated as CCPs
- develop explicit, validated process control tables for each CCP
- ensure appropriate (ideally continuous) frequency of operational monitoring for identified target criteria (including critical limits for CCPs).

4 The SCA should ensure logical alignment of data between the Raw Water Quality Incident Response Plan (RWQIRP), Water Monitoring Program, Raw Water Supply Agreements, and process control tables, particularly for CCPs.

5 The SCA should ensure that the RWQIRP is kept up to date.

The auditor also provided 2 opportunities for improvement for clauses 2.1.1 and 2.1.2. These opportunities addressed development of SCA's WQMS and validation of the effectiveness of preventative measures for diverting runoff from entering the Upper Canal (raw water supply system). Further details of the opportunities for improvement are available in the auditor's report in Appendix C.

2.3 Water supply sufficiency

SCA achieved Full Compliance for both clauses audited.

Part 3 of the licence outlines the obligations for operating and managing catchment infrastructure in line with the Design Criteria. Under the risk based auditing framework, we consider that clause 3.1.1 poses a high risk and 3.1.2 poses a low risk with respect to both the likelihood and consequence of non-compliance.

Table 2.3 Summary of compliance with Part 3 of the licence – water supply sufficiency

Clause	Requirement	Compliance Grading				
3	**Water supply sufficiency**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**
3.1.1	Catchment infrastructure management consistent with the Design Criteria	Full	-	-	-	-
3.1.2	Public availability of the Design Criteria	Full	-	-	-	-

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

The SCA Design Criteria has 3 constraints, security, robustness, and reliability of the dams. During the audit period, total storage in the dams was greater than 90% at all times. The auditor noted that SCA demonstrated systems to manage, plan and forecast catchment infrastructure requirements in a manner consistent with its Design Criteria. Based on this evidence, the auditor awarded Full Compliance for clause 3.1.1.

The auditor found that SCA's Design Criteria was publicly available on its website and in all offices. Accordingly, the auditor awarded Full Compliance for clause 3.1.2.

The auditor did not make any recommendations in relation clauses 3.1.1 or 3.1.2 as SCA was awarded Full Compliance.

The auditor provided 1 opportunity for improvement for clause 3.1.2. The opportunity addressed the SCA's current website layout and methods for making finding the documents easier. Further information on this opportunity for improvement is available in the auditor's report in Appendix C.

2.4 Catchment

SCA achieved Full Compliance with the clause audited.

Part 4 of the licence outlines the obligations for managing and protecting the catchment area in accordance with the Act. Under the risk based auditing framework, we consider that this part of the licence poses a high risk with respect to both the likelihood and consequence of non-compliance.

Table 2.4 Summary of compliance with Part 4 of the licence – catchment

Clause	Requirement	Compliance Grading				
4	**Catchment**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**
4.1.1	Catchment management & protection	Full	-	-	-	-

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

The auditor noted that SCA has organised catchment management actions into a Healthy Catchments Strategy (HCS). The auditor assessed the HCS to be appropriate for the management and protection of mixed catchments. The auditor noted that the SCA has implemented catchment management activities through its HCS, aligned with objectives and functions set out in the Act. Accordingly, the auditor awarded Full Compliance for clause 4.1.1.

The auditor did not make any recommendations or identify opportunities for improvement in relation to clause 4.1.1.

2.5 Assets

SCA achieved Full Compliance for the clause audited.

Part 5 of the licence outlines the obligations for SCA to demonstrate it is developing a suitable Asset Management System (AMS) by 30 June 2015. Under the risk based auditing framework, we consider that this part of the licence poses a high risk with respect to both the likelihood and consequence of non-compliance.

Table 2.5 Summary of compliance with Part 5 of the licence – assets

Clause	Requirement	Compliance Grading				
5	**Assets**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**
5.1.3	AMS is being developed in line with clause 5.1.1 of SCA's operating licence[a]	Full	-	-	-	-

[a] By 30 June 2013, SCA must develop a Management System that is consistent with:
a) the BSI PAS 55:2008 (PAS 55) Asset Management standard
b) the Water Services Association of Australia's Aquamark benchmarking tool, or
c) another asset management standard agreed to by IPART, (Asset Management System).

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

The auditor noted that SCA:

- has elected to implement an AMS aligned with British Asset Management Standard BSI PAS 55:2008
- is currently a participant in the WSAA Aquamark process benchmarking project.

The auditor identified that the Asset Management System Implementation Plan proved to be feasible, given SCA's monetary, management and resourcing intent. Based on this evidence, the auditor awarded Full Compliance for clause 5.1.3.

The auditor did not make any recommendations or identify opportunities for improvement in relation to clause 5.1.3.

2.6 Customers

SCA achieved Full Compliance for all 4 clauses audited.

Part 6 of the licence outlines the obligations relating to agreements with customers other than Sydney Water, and complaint handling procedures. Under the risk based auditing framework, we consider that the main parts of this licence clause pose a moderate risk with respect to both the likelihood and consequence of non-compliance.

Table 2.6 Summary of compliance with Part 6 of the licence – customers

Clause	Requirement	Compliance Grading				
6	**Water quality**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**
6.1.1	Terms and conditions for supplying water to customers other than Sydney Water	Full	-	-	-	-
6.1.2	Minimum requirements of the terms and conditions in clause 6.1.1	Full	-	-	-	-
6.2.1	Maintaining complaint handling procedure in line with relevant AS ISO 10002:2006[a]	Full	-	-	-	-
6.2.2	Making the complaints handling procedure available to customers	Full	-	-	-	-

[a] Customer satisfaction – Guidelines for complaints handling in organisations (ISO 10002:2004, MOD).

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

The auditor sighted raw water supply agreements with SCA's large, non-Sydney Water customers (Wingecarribee Shire Council, Shoalhaven City Council, and Goulburn Mulwaree Council). The auditor noted that these agreements included terms and conditions for raw water supply. The auditor also noted that SCA had developed a Retail Customer Policy for its 63 small retail customers. Based on this evidence, the auditor awarded SCA Full Compliance for clause 6.1.1.

The auditor found that SCA's terms and conditions for supply to customers other than Sydney Water included:

- standard of water quality supplied
- continuity of water supplied
- costs to be paid by the customer for the supply of water to them
- dispute resolution and complaint handling procedures.

Based on this evidence, the auditor awarded SCA Full Compliance for clause 6.1.2.

The auditor found that SCA's complaint handling process conformed to AS ISO 10002:2006 and awarded full compliance for clause 6.2.1.

The auditor found that SCA made information about the complaint handling procedure available to all customers through its website and all offices. Further, the auditor noted that during this audit period, the SCA posted information about the complaints handling process to all retail customers with the annual pricing determination letter. Based on this evidence, the auditor awarded SCA Full Compliance for clause 6.2.2.

The auditor did not make any recommendations or identify opportunities for improvement in relation to clauses 6.1.1, 6.1.2, 6.2.1, and 6.2.2.

2.7 Environment

SCA achieved Full Compliance for both clauses audited.

Part 7 of the licence outlines the obligations for managing environmental risks, and associated monitoring and reporting. Under the risk based auditing framework, we consider that this part of the licence poses a low risk with respect to both the likelihood and consequence of non-compliance

Table 2.7 Summary of compliance with Part 7 of the licence – environment

Clause	Requirement	Compliance Grading				
7	Environment	2012/13	2013/14	2014/15	2015/16	2016/17
7.1.4	Maintain programs to manage risks to the environment until the Environmental Management System has been developed	Full	-	-	-	-
7.2.1	Monitoring & recording environmental indicator data for reporting	Full	-	-	-	-

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

The auditor found that SCA manages environmental risks with a range of activities, aligned with the Environmental Management Program 2012-2015. Based on this evidence, the auditor awarded SCA Full Compliance for clause 7.1.4.

The auditor noted that SCA has processes allowing it to monitor, record and compile environmental indicator data. The auditor found that SCA had a comprehensive program to monitor all energy use by crosschecking vehicle odometer readings and electricity usage against invoices. The auditor noted that SCA also conducted cross checks of emissions using databases programed with calculation methods published by the Australian National Greenhouse Accounts. Based on this evidence, the auditor awarded SCA Full Compliance for clause 7.2.1.

The auditor did not make any recommendations or identify opportunities for improvement in relation to clauses 7.1.4 and 7.2.

2.8 Performance monitoring

SCA achieved Full Compliance for both clauses audited.

Part 8 of the licence outlines the obligations for SCA's compliance reporting and recordkeeping systems. Under the risk based auditing framework, we consider that this part of the licence poses a low risk with respect to both the likelihood and consequence of non-compliance.

Table 2.8 Summary of compliance with Part 8 of the licence – performance monitoring

Clause	Requirement	Compliance Grading				
8	**Performance monitoring**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**
8.2.1	Compliance with obligations identified in the Reporting Manual	Full	-	-	-	-
8.2.2	Maintain records for compliance purposes	Full	-	-	-	-

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

The auditor sighted evidence showing that SCA had reported to all relevant bodies in this reporting period in accordance with obligations set out in the Reporting Manual. The auditor noted that SCA made all relevant documents available to members of the public. Based on this evidence, the auditor awarded SCA Full Compliance for clause 8.2.1.

The auditor found that SCA upgraded a new document management and control system in March 2013 (eTRIM). The auditor noted that the eTRIM system can be customised to assist SCA with compliance monitoring and reporting. Based on this evidence, the auditor awarded SCA Full Compliance for clause 8.2.2.

The auditor did not make any recommendations or identify opportunities for improvement in relation to clauses 8.2.1 and 8.2.2, as SCA was awarded Full Compliance for these licence clauses.

3 Progress on previous audit recommendations

A previous audit in 2011 identified areas where SCA's performance with its licence obligations did not receive Full Compliance. We previously made recommendations to the Minister to address these issues.[2] The following table outlines SCA's progress in implementing these recommended actions.

Table 3.1 SCA's progress in 2012/13 to address IPART's recommendations from the 2010/11 audit

	Recommendation	Progress
1	SCA should further refine its documentation when reviewing the Water Quality Management Framework, to comprehensively address the requirements of the Australian Drinking Water Guidelines consistent with the catchment to tap risk management approach.	Addressed The auditor found that SCA actively participated in the 2012 Review of the Catchment to Tap Risk Assessment with Sydney Water and NSW Health. The resulting document addressed all the issues included in ADWG (2011).
2	SCA should demonstrate catchment management program strategies are measurable and timely. The effectiveness of actions taken to manage and protect water quality must be assessed and documented.	Addressed The auditor found that SCA's catchment management strategy documents (Draft Annual Catchment Management Report 2012-2013, Healthy Catchments Program 2012-2013, and the Healthy Catchments Strategy 2012-2016) all identified measureable and timely catchment management strategies. The auditor found that on-going assessment of the effectiveness of these strategies was being documented by SCA, with reasons given for variation between planned and undertaken activities.

Source: BBTech, *Independent Pricing and Regulatory Tribunal Operational Audit of SCA*, November 2013.

2 IPART, *Sydney Catchment Authority Operational Audit 2010/11 Report to the Minister,* 2011

Appendices

A IPART Compliance Grades

Compliance grades for public utilities

Grades of compliance	Description
Full Compliance 	Sufficient evidence to confirm that the requirements have been fully met.
High Compliance 	Sufficient evidence to confirm that the requirements have generally been met apart from **very few minor shortcomings** which do not compromise the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
Adequate Compliance 	Sufficient evidence to confirm that the requirements have generally been met apart from **a number of minor shortcomings** which do not compromise the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes
Non compliant 	Sufficient evidence has **not** been provided to confirm that all major requirements are being met and the deficiency adversely impacts the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
No Requirement 	The requirement to comply with the licence condition does not occur within the audit period or there is no requirement for the utility to meet this assessment criterion.

A IPART Compliance Grades

B 2012/13 Audit Scope

B 2012/13 Audit Scope

Sydney Catchment Authority – Operating Licence 2012-2017

Risk based audit program 2012-2013Audit

Peter Burgess

Sydney Catchment Authority – 2012-2013 Audit scope

Key to Table 1

Requirement	Meaning
Audit"	Clause to be audited for 2012-2013. Note for this year these subclauses are denoted Audit/SC so there is no confusion as to the need to also provide a statement of compliance.
SC	Clause where IPART will rely on the utilities statement of compliance. As below, all clauses require a Statement of Compliance unless there is a designation No requirement.
NR	No requirement (for audit or statement of compliance).

Auditors should note any Tribunal directions shown as comments column.

This scope is based on the audit schedule determined for the new licence 2012 -2017 Trim Record Number D13/10016.

Recommendations from previous years

Outstanding audit recommendations from previous years are shown in table 2. These recommendations are reviewed to determine progress and are reported on separately within the audit report.

Statement of Compliance

By 1 September each year, the utility is required to provide a Statement of Compliance (SC) signed by the Managing Director and a Board Member for all licence clauses (no matter whether they are scheduled to be audited or not in that year). We may request evidence or an interview to assess compliance with any clause in more detail.

Table 2 – Audit Scope for 2012-2103

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
1	**Licence details**		
1.1	**Objectives of this Licence**		
1.1.1	The objective of this Licence is to set out the terms and conditions under which SCA is to: a) meet the objectives and other requirements imposed on it in the Act; b) provide, construct, operate, manage and maintain efficient and co-ordinated viable systems and services for supplying Raw Water; c) b) comply with the quality and performance standards specified in this Licence; d) c) compile and report against indicators on the direct impact of its activities on the environment, or other matters as determined by IPART; e) recognise the rights given to Customers; and f) be subject to Operational Audits.	NR	Definition clause does not require audit
1.2	**Duration of Licence**		
1.2.1	The term of this Licence is 5 years from the Commencement Date. *[Note: This Licence starts on 1 July 2012, which means that it will end on 30 June 2017.]*	NR	Definition clause does not require audit
1.3	**Non-exclusive Licence**		
1.3.1	This Licence does not prohibit a person from supplying water (whether Raw Water or otherwise) in the Area of Operations if the person is lawfully entitled to do so.	NR	Definition clause does not require audit unless there is a concern
1.4	**Availability of Licence**		
1.4.1	SCA must make this Licence available free of charge: a) on its website for downloading by any person; and b) at its offices for access or collection by any member of the public.	Audit/SC	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
1.5	**Area of Operations**		
1.5.1	This Licence enables SCA to exercise its functions in or in respect of an area in or outside the Area of Operations.	NR	Definition clause does not require audit
2	**Water Quality**		
2.1	**Water Quality Management System**		
2.1.1	SCA must maintain a Management System that is consistent with: a) the Australian Drinking Water Guidelines; or b) if NSW Health specifies any amendment or addition to the Australian Drinking Water Guidelines that applies to SCA, the Australian Drinking Water Guidelines as amended or added to by NSW Health, (**Water Quality Management System**). *[Note: It is generally expected that SCA will develop a system consistent with the Australian Drinking Water Guidelines**,** including the Water Quality Framework. However, where NSW Health considers it appropriate, the application of those Guidelines may be amended or added to, to take account of SCA's circumstances and/or Drinking Water quality policy and practices within New South Wales. SCA must also manage the Raw Water Supply System in light of its knowledge of the Drinking Water Supply System. That is, SCA must have adequate systems and processes in place to manage Raw Water quality, taking into account the implementation of planning and risk management across the Drinking Water Supply System.]*	Audit/SC	Audit each year will be a combination of risk based adequacy and implementation Audit will be also informed by consultation with NSW Health and outcomes of previous audits
2.1.2	SCA must ensure that the Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the System, including to the satisfaction of NSW Health.	Audit/SC	As for 2.1.1 audit each year Audit will be informed by consultation with NSW Health and outcomes of previous audits

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
2.1.3	SCA must obtain NSW Health's approval for any significant changes that SCA proposes to make to the Water Quality Management System before implementing or carrying out its activities in accordance with them	SC	Matter will be discussed with NSW Health to determine whether any audit of this subclause is required.
2.1.4	SCA must advise IPART of any significant changes that it proposes to make to the Water Quality Management System in accordance with the Reporting Manual.	SC	**Prior notice of change** IPART to be advised of any changes prior to finalisation of audit scopes. Audit if triggered by an event.
3	**Water Supply Sufficiency**		
3.1	**Catchment Infrastructure management**		
3.1.1	SCA must ensure that the Catchment Infrastructure is operated and managed consistent with the Design Criteria.	Audit/SC	
3.1.2	SCA must make the Design Criteria available to the public in accordance with the Reporting Manual.	Audit/SC	
3.2	**Re-calculating Water Supply System Yield**		
3.2.1	SCA must re-calculate the Water Supply System Yield on the occurrence of any one or more of the following events: a) the conclusion of any drought event; b) the commencement of any major modification or augmentation to the Catchment Infrastructure or the Water Supply System Infrastructure which will have a significant impact on SCA's supply of water; c) any material change to the operating rules of the Catchment Infrastructure; or any material change to the Design Criteria.	SC	**Prior notice of change** IPART to be advised of any changes prior to finalisation of audit scopes. Audit if triggered by an event in the last 12 months.

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
3.2.2	SCA must advise the Minister: a) of any changes to the Water Supply System Yield from the previous Water Supply System Yield (including reasons for the change) following a re-calculation under clause 3.2.1; or b) if SCA considers that future demand for Raw Water may exceed the Water Supply System Yield, in accordance with the Reporting Manual.	SC	**Prior notice of change** IPART to be advised of any changes prior to finalisation of audit scopes. Audit if triggered by a recalculation of yield
3.2.3	As soon as practicable after advising the Minister of any changes to the Water Supply System Yield under clause 3.2.2(a), SCA must make those changes and reasons for those changes available to the public in accordance with the Reporting Manual.	SC	**Prior notice of change** IPART to be advised of any changes prior to finalisation of audit scopes
3.3	**Reviewing the model for Water Supply System Yield**		
3.3.1	By 30 June 2016, SCA must retain an independent expert to: a) review its model and procedure for calculating the Water Supply System Yield; b) test the robustness of the model, the key assumptions used in the model, and the process for calculating the Water Supply System Yield, including the appropriate frequency of yield calculation and the appropriateness of the trigger events in clause 3.2.1; and c) advise SCA on whether it should re-calculate the Water Supply System Yield based on the findings of the test conducted in clause 3.3.1(b).	NR	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
3.3.2	During the independent expert's review under clause 3.3.1, SCA must consult with: d) Sydney Water; e) stakeholders and regulators as agreed with IPART; and f) any other persons reasonably expected to have an interest in the review of the model under clause 3.3.1.	NR	
3.3.3	SCA must report: a) the findings of the independent expert's review under clause 3.3.1; and b) SCA's response to those findings, in accordance with the Reporting Manual.	NR	
4	**Catchment**		
4.1	**Catchment management**		
4.1.1	SCA must manage and protect the Catchment Area consistent with its objectives and functions under the Act.	Audit/SC	
4.2	**Information on Catchment Area**		
4.2.1	SCA must: *a) make available information collected by SCA on water quality relevant to the Catchment Area; and* b) *provide data in relation to the Catchment Health Indicators* to the Catchment Auditor, in accordance with the Reporting Manual.	SC	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
5	**Assets**		
5.1	**Asset Management System**		
5.1.1	By 30 June 2015, SCA must develop a Management System that is consistent with: a) the *BSI PAS 55:2008 (PAS 55) Asset Management standard*; b) the Water Services Association of Australia's Aquamark benchmarking tool; or c) another asset management standard agreed to by IPART, (**Asset Management System**).	NR	
5.1.2	SCA must ensure that by 1 July 2015, the Asset Management System is fully implemented and that all relevant activities are carried out in accordance with the System.	NR	
5.1.3	Until the Asset Management System has been developed in accordance with clause 5.1.1, SCA must take steps towards developing a Management System that will meet the requirements of clause 5.1.1 by 30 June 2015.	Audit/SC	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
6	**Customers**		
6.1	**Customer agreement – Customers other than Sydney Water**		
6.1.1	SCA must establish terms and conditions for the supply of Raw Water to all of its Customers other than Sydney Water.	Audit/SC	Other than SWC.SCA has 36 customers who are supplied raw (untreated) water by agreement.
6.1.2	The terms and conditions under clause 6.1.1 must at a minimum include: a) the standard of the quality of the water supplied; b) the continuity of the water supplied; c) the costs to be paid by the Customers for the supply of water to them; and d) dispute resolution and complaint handling procedures. *[Note: SCA must enter into arrangements with Sydney Water regarding the terms and conditions of supply of water under section 22 of the Act.]*	Audit/SC	
6.2	**Complaints**		
6.2.1	SCA must maintain a procedure for receiving, responding to, and resolving Complaints, which is consistent with the *Australian Standard AS ISO 10002-2006: Customer satisfaction – Guidelines for complaints handling in organizations* (ISO 10002:2004, MOD) (**Complaints Handling Procedure**).	Audit/SC	
6.2.2	SCA must provide to Customers information concerning the Complaints Handling Procedure which explains how to make a Complaint and how Complaints are managed. SCA must make the information available free of charge: a) on its website for downloading by any person; and b) at its offices for access or collection by any member of the public.	Audit/SC	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
7	**Environment**		
7.1	**Environment management**		
7.1.1	By 30 June 2015, SCA must develop a Management System which is consistent with the *Australian Standard AS/NZS ISO 14001:2004: Environmental management systems – Requirements with guidance for use* (**Environmental Management System**).	NR	
7.1.2	SCA must ensure that by 1 July 2015, the Environmental Management System is fully implemented and that all relevant activities are carried out in accordance with the System.	NR	
7.1.3	SCA must ensure that: a) by 30 June 2017, the Environmental Management System is certified by an appropriately qualified third party to be consistent with the *Australian Standard AS/NZS ISO 14001:2004: Environmental management systems – Requirements with guidance for use*; and b) once the Environmental Management System is certified under clause 7.1.3(a), the certification is maintained during the remaining term of this Licence.	NR	
7.1.4	Until the Environmental Management System has been developed and implemented in accordance with clauses 7.1.1 and 7.1.2, SCA must maintain programs to manage risks to the environment from carrying out its activities and must ensure that all its activities are carried out in accordance with those programs.	Audit/SC	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
7.2	**Environmental Indicators**		
7.2.1	SCA must: a) monitor, record and compile data on the Environmental Indicators; and b) report on the Environmental Indicators in accordance with the Reporting Manual.	Audit/SC	Auditing this clause evaluates calculation method
8	**Performance monitoring**		
8.1	**Operational Audits**		
8.1.1	a) IPART may undertake, or may appoint an Auditor to undertake, an audit on SCA's compliance with: this Licence; b) the Reporting Manual; c) and any matter required by the Minister, **(Operational Audit).**	NR	
8.1.2	SCA must provide IPART or any Auditor with all information in or under its possession, custody or control which is necessary to conduct the Operational Audit, including whatever information is reasonably requested by IPART or an Auditor.	NR	
8.1.3	SCA must provide any information requested under clause 8.1.2 within a reasonable time of it being requested.	NR	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
8.1.4	For the purposes of any Operational Audit or verifying a report on an Operational Audit, SCA must, within a reasonable time of being required by IPART or an Auditor, permit IPART or the Auditor to a) have access to any works, premises or offices occupied by SCA; b) carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices;: c) take on to any such premises, works or offices any person or equipment necessary for the purposes of performing the Operational Audit or verifying any report on the Operational Audit; d) inspect and make copies of, and take extracts from, any books and records of SCA that are maintained in relation to the performance of SCA's obligations under this Licence; and e) discuss matters relevant to the Operational Audit or any report on the Operational Audit with SCA, including any of SCA's officers and employees.	NR	
8.2	**Reporting**		
8.2.1	SCA must comply with its reporting obligations set out in the Reporting Manual, which include: a) reporting to IPART, NSW Health, the Minister, and the Catchment Auditor; and b) making reports and other information publicly available,	Audit/SC	
8.2.2	SCA must maintain sufficient record systems that enable it to report accurately in accordance with clause 8.2.1.	Audit/SC	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
8.3	**Provision of information**		
8.3.1	If IPART requests that SCA provide information relating to the performance of its obligations under clause 8.2, SCA must provide the information requested within a reasonable time of IPART's request, including providing IPART with physical access to the records required to be kept under clause 8.2 and providing physical and/or electronic records.	NR	
8.3.2	SCA must provide IPART with such information as is reasonably required to enable IPART to conduct any review or investigation of SCA's obligations under this Licence.	NR	
8.3.3	If SCA contracts out any of its activities to third parties (including a subsidiary), it must take all reasonable steps to ensure that, if required by IPART or an Auditor, any such third parties provide information and do the things specified in this clause 8 as if that third party were SCA	NR	
8.3.4	If IPART or an Auditor requests information under this clause 8 which is confidential, the information must be provided to IPART or the Auditor, subject to IPART or the Auditor entering into reasonable arrangements to ensure that the confidential information remains confidential.	NR	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
9.	**Memorandum of Understanding**		
9.1	**Memorandum of Understanding**		
9.1.1	SCA must maintain a Memorandum of Understanding in accordance with section 36 of the Act, with each of the following: a) Director-General of the Ministry of Health; and b) Environment Protection Authority. [Note: Section 36(1) of the Act requires SCA to enter into a Memorandum of Understanding with the Director-General of the Department of Health. The name of the Department of Health was changed to the Ministry of Health on 5 October 2011.]	SC	**Prior notice of change** IPART to be advised of any changes prior to finalisation of audit scopes
9.1.2	The purpose of a Memorandum of Understanding is to form the basis for co-operative relationships between the parties to the memorandum. In particular: a) the Memorandum of Understanding with Ministry of Health is to recognise Ministry of Health's role in providing advice to the NSW Government in relation to water quality standards and public health. b) the Memorandum of Understanding with Environment Protection Authority is to recognise the role of the Environment Protection Authority in protecting the environment of New South Wales.	NR	

Licence Clause	*Operating Licence Obligations*	*2012/13*	*Comments*
10	**End of term review**		
10.1	**End of Term Review**		
10.1.1	It is anticipated that a review of this Licence will commence in the first quarter of 2016 to investigate: a) whether this Licence is fulfilling its objectives; and b) any issues which have arisen during the term of this Licence, which may affect the effectiveness of this Licence, (**End of Term Review**). *[Note: In the event that IPART undertakes the End of Term review, IPART intends to:* *a) commence the end of term review (including undertaking public consultation) in the first quarter of 2016;* *b) report to the Minister by 30 April 2017 on:* *i. the findings of the End of Term Review,* *ii. any recommendations for conditions to be included in a new licence, and* *iii. any recommendations for amending any law that adversely impacts on this Licence; and* c) *make the report to the Minister publicly available after the End of Term Review.]*	NR	
10.1.2	SCA must provide to the person undertaking the End of Term Review such information as is reasonably required to enable the person to undertake the End of Term Review.	NR	

Table 2 - Recommendations / Outstanding items from previous audits

Recommendation number	**Operational issue (Licence reference where applicable)**	IPART Recommendation to Minister	Progress at 2011/12 Audit	Guidance for 2012/13 Audit
2010/11 - 1	Bulk Raw Water Quality (clause 3) Adequacy of Water Quality Management Framework addressing the requirements of the ADWG New licence clause 2.1	Further refine SCA's documentation when reviewing the Water Quality Management Framework, to comprehensively address the requirements of the Australian Drinking Water Guidelines consistent with the catchment to tap risk management approach. The processes and documentation should allow a third party (such as an Auditor) to clearly see how research and operational experience has informed any risk assessment or management approach. All assessments, processes and documents will relate only to the areas within SCA's responsibility in the catchment to tap risk management approach.	Not complete. The auditor found that the WQMF had been reviewed and updated within the audit period, and went some way to satisfying IPART's requirements. The WQMF could be improved by inclusion in an appendix of all sources of scientific and operational experience/ personnel / tools, including the use of historical pollutant indicator data that have informed the catchment-to-tap risk assessments and the selection of specific or control measures to mitigate each risk.	Auditor to check SCA's progress to closing out this issue.
2010/11-2	Bulk Raw Water Quality (clause 3) New licence clause 2.1 and 4.1	Demonstrate catchment management program strategies are measurable and timely. The effectiveness of actions taken to manage and protect water quality must be assessed and documented	Not complete. Neither the Draft Healthy Catchment Strategy 2012-2016 (Strategy) nor the Healthy Catchments Program 2012-13 (Program) contain specific measures and timelines to the detail that would be expected to allow measurement of effectiveness for the level of spending allocated. SCA should include detailed project descriptions for all strategies/actions that are documented in the Strategy and the Program, containing specific quantifiable measures and timelines. The Strategy should be an overarching document for all strategies, providing short descriptions of specific actions/projects, quantifiable measures and timelines.	Auditor to check SCA's progress to closing out this issue.

C Operational Audit Report 2012/13 – Sydney Catchment Authority

BBTech Consulting

in association with

Water Futures **and** David Hope & Associates

Independent Pricing and Regulatory Tribunal

Sydney Catchment Authority 2012/13 Operational Audit

Final Report

29 November 2013

Revision	Details	Date	Authority
00	Original	10 Oct 2013	BB
01	QA and Peer Review	10 Oct 2013	DD
02	First Draft	10 Oct 2013	BB
03	Second Draft	7 Nov 2013	BB
04	QA and Peer Review	28 Nov 2013	JS
05	Final Report	29 Nov 2013	BB

Contents

Executive Summary

Auditor Declaration

The Independent Pricing and Regulatory Tribunal of NSW (IPART) commissioned BBTech Consulting (BBTech) to undertake an operational audit of the Sydney Catchment Authority (SCA) covering the period 1 July 2012 to 30 June 2013 (audit period).

IPART's instructions for this audit included an audit scope which set out a selection of clauses from the SCA's 2012 – 2017 Operating Licence and certain National Water Initiative (NWI) indicators that IPART has chosen for detailed assessment. The audit of NWI indicators was conducted at the same time as this audit by BBTech, but this audit has been separately reported to IPART. The audit scope also identifies certain matters from previous audits that IPART requires BBTech to examine. Our task as auditors is to express an opinion on the SCA's compliance during the audit period with those Operating Licence obligations that have been included in the audit scope, to report on the calculated NWI indicators, and to express an opinion on the SCA's progress in addressing matters from previous audits that have been identified by IPART.

The BBTech audit team declare that we:

- have seen sufficient evidence on which to base our conclusions;
- confirm that the audit findings set out in this report accurately reflect our professional opinion;
- have conducted the audit, determined the audit findings and prepared this report in accordance with IPART's *Audit Guideline – Public Water Utilities – May 2013* and the audit deed; and
- confirm that the audit findings have not been unduly influenced by the SCA or any of its associates.

We have exercised due and customary care in preparing this report and have endeavoured to provide objective, accurate and reliable analysis, commentary and conclusions. We have prepared this report from material provided by the SCA, discussions held with SCA personnel and stakeholders, and other sources as referenced. We have accepted information provided to us as accurate and complete and have not independently verified such information, except where specifically stated.

Due to the inherent limitations of the information available to us and our evidence gathering procedures, it is possible that fraud, error or non compliance may occur and not be detected. An operational audit is not designed to detect all instances of non compliance with an Operating Licence, as it is not performed continuously throughout the audit period and the audit procedures are employed on a test basis and in conformance with IPART's risk based audit scope. The conclusions expressed in this report have been formed on this basis.

Major findings

We consider that the SCA has performed well against the audited clauses of the Operating Licence. We found that the SCA was fully compliant with 13 of the 15 individual Operating Licence sub-clauses that we audited. Our review confirmed the SCA's enviable reputation in the management of water supply catchments and catchment infrastructure.

In our opinion, the SCA's day-to-day practice of water quality management is conducted to a high standard. The SCA has experienced personnel with a deep knowledge of water quality

management. The organisation continues to develop a comprehensive water quality control system based on the use of SCADA and telemetry automated processes. Current practice provides effective management of short term risks to water quality. There are a collection of procedures to address most of the water quality issues that are likely to arise.

However, we consider that the principal shortcoming of this Water Quality Management System (WQMS) is that some elements need further development.

We found that the documentation of preventive measures, critical control points (CCPs), and target criteria was incomplete. There were also inconsistencies between parameters in the control procedures and those in other WQMS documents. Effectively documented and implemented control procedures represent the first line of water quality protection in catchments and are required for conformity with the *Australian Drinking Water Guidelines 2011* (ADWG 2011). They provide timely warning of any impairment in water quality and so decrease the reliance on downstream treatment to provide safe drinking water to consumers. Alignment between the parameters in control procedures and other WQMS documentation is essential to avoid confusion and errors.

We also found that event based processes were not well defined in the monitoring plan. Water quality is often severely impaired during unusual or abnormal catchment conditions. Well-defined monitoring procedures are important to identify, characterise and control water quality hazards during these abnormal catchment conditions.

The emergency response procedure, while comprehensive, had not been updated for some time. The ADWG 2011 notes that effective communication is vital in managing incidents and emergencies and specifically requires that contact lists should be regularly updated (e.g. six-monthly) to ensure they are accurate. Out-of-date contact information can lead to time consuming confusion during a water quality emergency.

Finally, a specific drinking water quality policy had not been separated from the framework document as a stand alone document. While no specific water quality risks are associated with this matter, a formal policy is required for conformity with the ADWG 2011. We note that the SCA's *WQMS Framework* document includes many of the elements of a formal drinking water policy.

Recommendations

We have provided the following recommendations to improve the SCA's compliance. However, we consider that the **key recommendation** is recommendation 2.1.

Recommendation 2.1 – Clause 2.1.1 – Maintain water quality management system.

The SCA should further develop the Water Quality Management System to address shortcomings in preventive measures and critical control points; to formalise a more frequent revision of emergency information; to better define event based monitoring; and develop a specific drinking water quality policy.

The comprehensive implementation of Recommendation 2.1 would address the substantive elements of the following three Recommendations 2.2, 2.3 and 2.4.

Recommendation 2.2 – Clause 2.1.2 – Implement water quality management system.

The SCA should identify and implement appropriate preventive measures, including, but not limited to, those designated as Critical Control Points (CCPs); develop fully explicit, validated process control tables for each; and ensure sufficiently frequent (for CCPs, this often means continuous, on line) operational monitoring of the identified target criteria (including for CCPs, critical limits).

Recommendation 2.3 – Clause 2.1.2 – Implement water quality management system.

The SCA should ensure the logical alignment between the Raw Water Quality Incident Response Plan, the Water Monitoring Program, the Raw Water Supply Agreements and the process control tables, particularly for CCPs.

Recommendation 2.4 – Clause 2.1.2 – Implement water quality management system.

The SCA should ensure that the currency of the Raw Water Quality Incident Response Plan is maintained.

1 Introduction

1.1 Objectives

The Independent Pricing and Regulatory Tribunal of NSW (IPART) commissioned BBTech Consulting (BBTech) to undertake an operational audit of the Sydney Catchment Authority (SCA) covering the period 1 July 2012 to 30 June 2013 (audit period).

The objective of this audit was to assess the SCA's compliance over the audit period with matters included in IPART's Audit Scope. This is the first audit of the SCA's compliance with the requirements of its 2012 - 2017 Operating Licence (the Operating Licence or the Licence) and the audit has been conducted pursuant to clause 8.1.1 of that Licence.

1.2 Audit method

1.2.1 Audit scope

For some years IPART has adopted a risk based approach to compliance assessment. This means that each year, IPART determines a subset of Operating Licence obligations for which compliance will be assessed through a formal audit process of detailed investigation. IPART also obtains a certified self-assessment report from the SCA that declares compliance with all Operating Licence obligations. The risk-based approach to auditing is explained in more detail in IPART's *Audit Guideline – Public Water Utilities – May 2013* (2013 IPART Audit Guideline). Apart from these selected Operating Licence obligations, IPART may also include audit of National Water Initiative (NWI) Indicators and investigations to monitor progress on outstanding matters from previous audits within the audit scope.

For this audit, IPART determined that the operational audit should examine and assess compliance with the following SCA Operating Licence obligations:

Clause	Detail	Special Conditions
1.4.1	Availability of the Operating Licence	
2.1.1	Maintain Water Quality Management System	NSW Health comments
2.1.2	Implement Water Quality Management System	
3.1.1	Manage Infrastructure consistent with Design Criteria	
3.1.2	Design Criteria available to public	
4.1.1	Catchment management	
5.1.3	Develop Asset Management System	
6.1.1	Customer agreement	
6.1.2	Terms of Customer agreement	
6.2.1	Maintain Complaints Handling Procedure	
6.2.2	Information about Complaints procedure	
7.1.4	Environmental Management System	
7.2.1	Environmental Indicators	Evaluate calculation method
8.2.1	Comply with Reporting obligations	
8.2.2	Maintain records	

IPART also determined that the audit must include an investigation to monitor progress on the following outstanding matters from previous audits:

1. Recommendation 2010/11 – 1 from the 2010/11 Operational Audit; and
2. Recommendation 2010/11 – 2 from the 2010/11 Operational Audit.

Finally, IPART required an audit of some NWI indicators. The NWI audit was conducted at the same time as the Operating Licence audit but has been separately reported to IPART.

1.2.2 Audit standard

In conducting this audit, we have adopted the audit standard ISO 19011:2011 *Guidelines for auditing management systems*. This standard provides a systematic and reliable approach to defining the requirements of the audit, planning audit activities, interpreting Licence conditions, collecting audit evidence, objectively assessing the evidence and reporting in a clear, fair, comprehensive and accurate manner. It also ensures that the audit is conducted in accordance with an established and recognised audit protocol.

We were also guided by the following standards, especially where these provided specific detail that was particularly appropriate to this audit.

- *Standard on Assurance Engagements ASAE 3100 Compliance Engagements, Auditing and Assurance Standards Board, reissued September 2008; and*
- *Auditing and Assurance Standard AUS 110 Assurance Engagements other than Audits or Reviews of Historical Financial Information*, Australian Accounting Research Foundation, June 2004.

1.2.3 Audit steps

The steps that we have followed in conducting this audit were aligned to the guidance set out in the 2013 IPART Audit Guideline and the audit methods set out in Appendix C. These may be summarised as follows:

Stage 1 Project establishment and audit questionnaire

- Participated in telephone meeting with IPART's water licensing team to confirm the scope, approach and schedule of the project;
- Reviewed the Operating Licence, previous audit reports and relevant matters outstanding from previous audits to generate an audit questionnaire so that the SCA could provide information prior to audit, thereby improving the smoothness and efficiency of the audit interview process;
- Checked the questionnaire to ensure that questions were reasonable and relevant to the audit scope and our audit objectives; and
- Contacted NSW Health, as requested by IPART, to seek the views of relevant officers on any areas of concern that relate to the SCA's Licence compliance. We also contacted personnel at Sydney Water.

Stage 2 Preparation for audit Interviews

- Reviewed documentation provided by the SCA that detailed its compliance with its obligations under the Operating Licence. This documentation informed our audit meetings and requests for further records; and
- Prepared an audit plan, contributed to the development of a schedule for the audit interviews and discussed relevant venues for site visits where the implementation of management systems and the preparation of operational data could be observed.

Stage 3 Inception meeting, interviews and site visit with SCA

- Participated in the inception meeting with the SCA and IPART to introduce the BBTech audit team and meet the SCA regulatory compliance team, discussed the general audit process and timetable, and established appropriate protocols for the audit;
- Interviewed SCA staff and reviewed documents and records to demonstrate that procedures were established, were being followed, and that associated activities were consistent with the procedures, the Operating Licence, and relevant obligations;
- Discussed general compliance for each area included in the audit scope;
- Reviewed progress in addressing recommendations made by IPART and outstanding matters resulting from previous audits;
- Agreed that a closing meeting to identify outstanding information and future actions was not required; and
- Accompanied SCA representatives on a tour of the Upper Canal, and discussed the practical application of water quality and asset management procedures with operational staff.

Stage 4 First Draft Operational Audit Report

- Carried out investigations, analysis and assessment of the audit interview findings and other evidence that we had collected;
- Clarified some outstanding issues from the audit interview meetings with the SCA;
- Identified any factors that may have affected the SCA's performance in relation to the audited obligations during the audit period;
- Considered recommendations on how the SCA could improve its compliance or opportunities for improvement to maintain compliance;
- Prepared the First Draft Audit Report in accordance with the 2013 IPART Audit Guideline, including the assignment of preliminary compliance grades, performance recommendations, requests for outstanding evidence and assessment of the SCA's progress in addressing outstanding matters from previous audits; and
- Submitted the First Draft Audit Report to IPART and the SCA for comment.

Stage 5 Second Draft Operational Audit Report

- Considered comments and additional evidence from IPART and the SCA in response to the First Draft Audit Report and assigned final compliance grades; and
- Prepared and submitted the Second Draft Audit Report to IPART and the SCA for factual correction and editorial comment.

Stage 6 Final Report

- Provided the Draft Final Audit Report to Jim Sly, an IPART accredited lead auditor in a range of audit disciplines, for quality assurance review; and
- Prepared the Final Audit Report taking due account of any factual and editorial comments on the Second Draft Audit Report provided by IPART and the SCA and comments from the quality assurance review.

1.2.4 Audit team

This audit was led by Bob Burford, who is an IPART accredited lead auditor in water quality and retail supply. Bob Burford audited the SCA's compliance with Operating Licence availability, and Catchment Management, Environment Management, Customer and

Reporting obligations in the Operating Licence. Dr Dan Deere, an IPART accredited lead auditor in water quality, audited the SCA's compliance with Water Quality obligations in the Operating Licence. David Hope, an experienced asset management practitioner, audited the SCA's compliance with Design Criteria and Asset Management obligations in the Operating Licence. Dr Dan Deere and Bob Burford audited the SCA's progress in addressing outstanding recommendations from previous audits.

Each auditor reviewed the work of another auditor for quality control and fact checking. The draft Final Report was subjected to a quality assurance review by Jim Sly who is an experienced, IPART accredited, lead auditor in a range of audit disciplines.

Bob Burford attended all audit interviews to ensure consistency of audit approach and to ensure that audit protocols were observed.

1.2.5 Audit grades

We assessed the SCA's compliance with the various Operating Licence obligations and progress in addressing outstanding actions from previous audits and awarded grades for each requirement. The grades were awarded at the clause and sub-clause level to align with the approach recommended in the 2013 IPART Audit Guideline. The compliance grade scales are shown in the following table:

Compliance Grade	Description
Full Compliance	Sufficient evidence to confirm that the requirements have been fully met.
High Compliance	Sufficient evidence to confirm that the requirements have been generally met apart from very few minor shortcomings which do not compromise the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
Adequate Compliance	Sufficient evidence to confirm that the requirements have been generally met apart from a number of minor shortcomings which do not compromise the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
Non Compliance	Sufficient evidence has not been provided to confirm that all major requirements are being met and the deficiency adversely impacts the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
No Requirement	The requirement to comply with the Licence condition does not occur within the audit period or there is no requirement for the utility to meet this assessment criterion.

1.3 Regulatory regime

The SCA is a statutory corporation representing the Crown, wholly owned by the NSW Government. It was created in 1999 and is now aligned with NSW Trade and Investment. The SCA manages and protects Sydney's drinking water catchments and catchment infrastructure, and supplies raw water to its customers, including Sydney Water and a number of local councils.

The SCA's objectives are set out in section 14 of the *Sydney Water Catchment Management Act* 1998. These may be summarised as requiring that the SCA:

- Manages and protects the catchment area and catchment infrastructure to promote water quality;
- Protects public health and safety, and the environment;
- Ensures that the water it supplies is of appropriate quality;
- Operates according to the principles of ecologically sustainable development; and
- Manages catchment infrastructure works efficiently and economically.

Other regulatory instruments that govern the SCA's operations include:

- *Sydney Water Catchment Management Regulation 2008*.
- Operating Licence: The Licence is granted by the NSW Governor for a period of up to 5 years and is administered by IPART.
- Water Licences and Approvals package: The package was issued to the SCA on 1 May 2012, under the *Water Management Act 2000*, by the NSW Office of Water (NOW) on behalf of the Water Administration Ministerial Corporation. The package includes *Water Access Licences* and *Combined Water Supply Work and Water Use Approvals* required by the SCA to comply with the provisions of the *Water Sharing Plan for the Greater Metropolitan Region Unregulated Rivers Water Sources 2011*.
- Dam Safety: The NSW Dams Safety Committee (DSC) was constituted under the *NSW Dams Safety Act 1978* to ensure the safety of dams in NSW.
- Fisheries: Requirements under the *Fisheries Management Act 1994* are administered by Fishing and Aquaculture within the Department of Primary Industries.
- Memoranda of Understanding: The *Sydney Water Catchment Management Act 1998* requires the SCA to enter into memoranda of understanding with NSW Health and the NSW Environment Protection Authority.
- Water Supply Agreements: Under the *Sydney Water Catchment Management Act 1998*, the SCA must establish agreed terms and conditions for the supply of raw water to Sydney Water Corporation. Clause 6.1.1 of the Operating Licence requires the SCA to establish terms and conditions for the supply of raw water to each of its other customers.
- Catchment Audits: Audits of the health of catchment area in the Sydney drinking water catchment areas are required every three years by the *Sydney Water Catchment Management Act 1998.* Reports on these audits are provided to the SCA's portfolio Minister.
- Water Pricing: Pricing of the SCA's monopoly services is determined by IPART.

1.4 Quality assurance process

The audit was carried out in accordance with our quality management system, consistent with the International Standard on Quality Control (ISQC), 2009. The Project Director, Bob Burford, was responsible for overall quality assurance. He prepared a quality assurance plan identifying the required quality control processes, together with peer reviews of all audit judgements and recommendations.

The quality assurance plan included:

- Peer review of the audit questionnaires prior to submission to IPART;
- Processes to control all documents used in the audit;
- Accuracy checks of reported data and the completeness of audit trails;
- Peer review of findings and assessments in the First Draft Report;
- Peer review of the treatment of comments received on the draft report and the feasibility of recommendations and opportunities for continuous improvement; and
- Peer review of the draft Final Report by Jim Sly, an experienced IPART accredited lead auditor, and final quality review by Bob Burford.

This audit quality assurance methodology ensured that the accuracy of each section of the report was checked through quality control steps and all audit judgements, conclusions and recommendations were validated through peer review. Bob Burford reviewed the Final Report prior to release.

1.5 Stakeholder consultation

IPART requested that BBTech contact NSW Health and Sydney Water for feedback. We contacted NSW Health and Sydney Water and have attached the comments that we received in Appendix B.

IPART also advertised for submissions from the public but received no submissions.

2 Licence details

Part 1 of the Operating Licence sets out some introductory matters, specifically:

- The objectives of the Licence;
- Duration of the Licence;
- Non-exclusivity of the Licence;
- Availability of the Licence; and
- Area of operations

The audit scope for this part of the Licence included only clause 1.4.1, which requires the SCA to make the Licence freely available to the public on its web site and at its offices.

2.1 Summary of findings

Clause 1.4.1 – Full Compliance

We assessed the SCA's compliance with clause 1.4.1. We found that the SCA demonstrated that it had met these requirements. Accordingly, we assessed that the SCA was fully compliant with the requirements of clause 1.4.1.

We have set out our detailed audit findings in Appendix A, Table A.1.

2.2 Recommendations

Recommendations

We have made no recommendations relating to this part of the Operating Licence.

Opportunities for improvement

We have suggested no opportunities for improvement relating to this part of the Operating Licence.

2.3 Previous recommendations

There were no outstanding recommendations from previous years to be addressed.

3 Water quality

Part 2 of the Operating Licence requires that the SCA must:

- Maintain a Water Quality Management System (WQMS) consistent with the *Australian Drinking Water Guidelines 6* 2011 (ADWG 2011) as updated from time to time; the most recent revision of the ADWG was in 2011;
- Implement the WQMS;
- Obtain approval from NSW Health for any changes to this WQMS; and
- Advise IPART of any proposed changes to the WQMS.

The audit scope for this part of the Licence included clauses 2.1.1 and 2.1.2, which require the SCA to maintain (clause 2.1.1) and implement (clause 2.1.2) a WQMS.

3.1 Summary of findings

Our assessment of the SCA's performance for the two auditable sub-clauses of this Part of the Operating Licence is discussed below.

Clause 2.1.1 - High Compliance

This clause requires the SCA to maintain a WQMS that is consistent with ADWG 2011. The SCA has a high-level framework that outlines its initiatives for each element of the ADWG 2011. This framework is supported by a number of specific plans and programs that provide the detail required to address particular ADWG 2011 elements.

We found shortcomings in some of these supporting documents, as follows:

- *The Critical Limit and Control Point Matrix* that sets out preventive measures, Critical Control Points (CCPs), and target criteria was incomplete. It lacked clear, detailed and comprehensive processes, procedures and accountabilities. Preventive measures, CCPs, and target criteria in a catchment represent the first line of water quality protection and are required for conformity with ADWG 2011.[1] Clear definition and documentation of these control measures are important elements in the overall management of water quality in catchments. They provide timely warning of water quality impairment and therefore decrease the reliance on downstream treatment to provide safe drinking water to consumers. We have provided further comment on the matter of preventive measures, CCPs and target criteria in the discussion of clause 2.1.2 below.
- *The Raw Water Quality Incident Response Plan* had not been updated for some time (almost two years). To conform to the ADWG 2011, response plans should be regularly updated and contact details should be updated every six months.[2] This is particularly important because inaccuracies in contact details can cause delay and confusion in the event of a water quality emergency.
- The event-based monitoring procedures were unclear in the *Water Monitoring Program*. These procedures relate to monitoring during unusual or abnormal catchment conditions. The impairment to water quality during these conditions is often very severe.

[1] NHMRC, NRMMC (2011) *Australian Drinking Water Guidelines 6, National Water Quality Management Strategy*, Section 3.3, pages 3.9 – 3.13.
[2] Ibid, page 3-23.

Well-defined monitoring procedures are important to identify, characterise and control water quality hazards during important abnormal catchment conditions [3]

- The SCA did not have a specific drinking water quality management policy, as required for conformity with the ADWG 2011. The ADWG 2011 suggests that a formal policy is important in formalising the level of service to which a drinking water supplier is committed and in maintaining a strong focus on water quality management throughout the organisation. We note that the SCA's framework document includes many of the elements of a formal drinking water policy.

We have drafted Recommendation 2.1 to address these matters.

For these reasons, we assessed the SCA as demonstrating High Compliance for clause 2.1.1. The reason that we assessed this clause as High Compliance, and not lower, is because although the SCA has shortcomings with its documentation, to a great extent it complies with the ADWG 2011 in practice. The SCA carries out an extensive and comprehensive range of water quality management activities, many of which are at benchmark levels for Australia, and none of which are inadequate in practice.

Clause 2.1.2 – High Compliance

This clause requires the SCA to ensure that the WQMS is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health. We have already noted shortcomings with the WQMS documentation. In assessing compliance with this clause we focussed solely on the SCA's implementation of the ADWG 2011 management system.

Above all, we found that the SCA had not prepared finalised process control tables for key preventive measures, including, but not limited to, those designated as CCPs, which should then be reflected in day-to-day operations. We also found that some numerical values in the draft CCP tables were inconsistent with those in the RWQIRP and that the RWQIRP does not appear to have been updated for some time.

For these reasons, we assessed the SCA as demonstrating High Compliance for clause 2.1.2 and we have drafted Recommendations 2.2, 2.3 and 2.4 to address these matters.

We have also drafted two Opportunities for Improvement (OFI) that we suggest the SCA should consider. The first of these relates to the validation of the effectiveness of preventive measures to ensure that water quality in the Upper Canal is being maintained. The second OFI concerns the inclusion of more detail in the event based section of the WMP. We suggest that the events which trigger increased monitoring (such as extended rainfall and large inflows) should be better defined.

Detailed audit findings are presented in Appendix A, Tables A.2.1 and A.2.2.

3.2 Recommendations

Recommendations

We have formulated the following recommendations to assist SCA improve its compliance in areas where full compliance was not awarded.

[3] NHMRC, NRMMC (2011) *Australian Drinking Water Guidelines 6, National Water Quality Management Strategy*, Section 3.9.1, page 3-31.

Recommendation 2.1
The SCA should further develop the Water Quality Management System to address shortcomings in preventive measures and critical control points; to formalise a more frequent revision of emergency information; to better define event based monitoring; and develop a specific drinking water quality policy.

Recommendation 2.2
The SCA should identify and implement appropriate preventive measures, including, but not limited to, those designated as Critical Control Points (CCPs); develop fully explicit, validated process control tables for each; and ensure sufficiently frequent (for CCPs, this often means continuous, on line) operational monitoring of the identified target criteria (including for CCPs, critical limits).

Recommendation 2.3
The SCA should ensure the logical alignment of data between the Raw Water Quality Incident Response Plan, the Water Monitoring Program, the Raw Water Supply Agreements and the process control tables, particularly for CCPs.

Recommendation 2.4
The SCA should ensure that the currency of the Raw Water Quality Incident Response Plan is maintained.

Opportunities for improvement

We have identified the following opportunities for improvement (OFI) for the SCA to consider:

OFI 2.1
The SCA should validate the effectiveness of preventive measures along the Upper Canal to confirm that contaminated storm water and surface and subsurface spills and drainage are being effectively hydraulically excluded from the raw water supply.

OFI 2.2
The SCA should consider providing more explicit guidance on event-based monitoring as part of its Water Monitoring Program.

3.3 Previous recommendations

The audit scope included a requirement for us to investigate and report the SCA's progress in addressing the following outstanding matter from a previous audit:

Recommendation 2010/11-1 - Addressed

The SCA should further refine its documentation when reviewing the Water Quality Management Framework, to comprehensively address the requirements of the Australian Drinking Water Guidelines consistent with the catchment to tap risk management approach.

The previous auditor recommended that catchment specific risks be considered. We found that the SCA has effectively addressed this recommendation through the preparation of catchment-specific risk analyses. The SCA also has an ongoing participation in the joint Catchment-to-Tap Risk Assessment, undertaken with Sydney Water and observed by NSW Health. Finally, we note that the SCA has an active scientific, catchment management and operational research program which explores risk management issues.

Detailed findings of this review of action taken in response to this previous recommendation are presented in Appendix A, Table A.2.3.

4 Water supply sufficiency

Part 3 of the Operating Licence requires the SCA to efficiently manage its catchment infrastructure so that a reliable and sustainable water supply is provided to its customers. It also requires the SCA to recalculate the Water Supply System Yield and review the model for Water Supply System Yield in specific circumstances.

The audit scope for this part of the Licence included clause 3.1, which requires the SCA to operate and manage catchment infrastructure consistent with the Design Criteria (sub-clause 3.1.1) and make the Design Criteria available to the public (sub-clause 3.1.2).

4.1 Summary of findings

Clause 3.1 – Full Compliance

We assessed the SCA's compliance with both sub-clauses 3.1.1 and 3.1.2. We found that the SCA had operated and managed catchment infrastructure consistent with the Design Criteria. During the audit period there were no issues about any of the three constraints in the Design Criteria because the total storage in the SCA dams varied between 90% to overflowing (100%). While we found that the SCA had made the Design Criteria available to the public on its web-site, we found that it was difficult to find.

We have therefore assessed that the SCA was fully compliant with the requirements of both sub-clauses within clause 3.1 but we have suggested OFI 3.1 to address the lack of transparency of the Design Criteria on the SCA website.

We have set out our detailed audit findings in Appendix A, Tables A.3.1 and A.3.2.

4.2 Recommendations

Recommendations

We have made no recommendations relating to this part of the Operating Licence.

Opportunities for improvement

We have suggested the following opportunity for improvement (OFI) to address the lack of transparency of required content, such as the Design Criteria, on the SCA website.

OFI 3.1
The SCA should:

- *Provide a dedicated web page with links to individual regulatory requirements and summaries. Where there are a number of requirements and summary tables, such as in the SCA's Reporting Manual, these should be grouped in a list, with a detailed reference for each item.*
- *Add appropriate search key words to the metadata on each web page and any associated documents such as word, excel and pdf.*

4.3 Previous recommendations

There were no outstanding recommendations from previous years to be addressed.

5 Catchment

Part 4 of the Operating Licence requires the SCA to manage and protect catchment areas and make available information on water quality relevant to catchment areas

The audit scope for Part 4 included only clause 4.1, which requires the SCA to manage and protect catchment areas consistent with its objectives and functions under the Act.

5.1 Summary of findings

Clause 4.1 – Full Compliance

We assessed the SCA's compliance with clause 4.1. We found that the catchment management actions in the *Healthy Catchment Strategy 2012-2016* represent a balanced approach to catchment management and protection that is consistent with the objectives and functions in the Act. The SCA implemented the *Healthy Catchment Program 2012-2013* during the audit period that was consistent with this strategy. Consequently, we assessed that the SCA was fully compliant with the requirements of clause 4.1.

We have set out our detailed audit findings in Appendix A, Table A.4.1.

5.2 Recommendations

Recommendations

We have made no recommendations relating to this part of the Operating Licence.

Opportunities for improvement

We have suggested no opportunities for improvement relating to this part of the Operating Licence.

5.3 Previous recommendations

The audit scope required us to investigate and report the SCA's progress in addressing the following outstanding matter from a previous audit:

Recommendation 2010/11-2 - Addressed

The SCA should demonstrate catchment management program strategies are measurable and timely. The effectiveness of actions taken to manage and protect water quality must be assessed and documented.

We found that the SCA has effectively addressed this recommendation through the development of the HCS and the HCP. In these documents, the SCA has defined its catchment management strategies, the objectives and time frames for these strategies, and the results and costs of implementing these strategies over the audit period. By applying the methodology of ISO 14001:2004, they also demonstrate that catchment management strategies are measurable and timely and that the SCA can assess and document the effectiveness of actions taken.

Detailed findings of this review of action taken in response to this previous recommendation are presented in Appendix A, Table A.4.2.

6 Assets

Part 5 of the Operating Licence requires the SCA to take steps to develop an Asset Management System by 30 June 2015.

The audit scope for this part of the Licence included only sub-clause 5.1.3, which requires the SCA to take steps to develop the Asset Management System.

6.1 Summary of findings

Clause 5.1.3 – Full Compliance

We assessed SCA's compliance with clause 5.1.3. We found that the SCA had a comprehensive plan to develop an Asset Management System by 30 June 2015. We therefore assessed that the SCA was fully compliant with the requirements of clause 5.1.3.

We have set out our detailed audit findings in Appendix A, Table A.5.

6.2 Recommendations

Recommendations

We have made no recommendations relating to this part of the Operating Licence.

Opportunities for improvement

We have suggested no opportunities for improvement relating to this part of the Operating Licence.

6.3 Previous recommendations

There were no outstanding recommendations from previous years to be addressed.

7 Customers

Part 6 of the Operating Licence requires the SCA to establish specific terms and conditions for the supply of raw water to customers (clause 6.1, sub-clauses 6.1.1 and 6.1.2), to maintain a Complaints Handling Procedure (sub-clause 6.2.1) and provide customers with information about this Complaints Handling Procedure (sub-clause 6.2.2).

The audit scope for this part of the Licence included all clauses in Part 6.

7.1 Summary of findings

Clause 6.1 – Full Compliance

We assessed the SCA's compliance with both of the sub-clauses which comprise clause 6.1. We found that the SCA had established terms and conditions for the supply of raw water to all of its Customers other than Sydney Water (sub-clause 6.1.1) and that these terms and conditions met the minimum requirements set out in the Operating Licence (sub-clause 6.1.2). Consequently, we assessed that the SCA was fully compliant with the requirements of clause 6.1.

Clause 6.2 – Full Compliance

We assessed the SCA's compliance with both of the sub-clauses which comprise clause 6.2. We found that the SCA had established and maintained a Complaints Handling Procedure (sub-clause 6.2.1) and had provided customers with information about that Complaint Handling Procedure (sub-clause 6.2.2). Consequently, we assessed that the SCA was fully compliant with the requirements of clause 6.2.

We have set out our detailed audit findings in Appendix A, Tables A.6.1 – A.6.4.

7.2 Recommendations

Recommendations

We have made no recommendations relating to this part of the Operating Licence.

Opportunities for improvement

We have suggested no opportunities for improvement relating to this part of the Operating Licence.

7.3 Previous recommendations

There were no outstanding recommendations from previous years to be addressed.

8 Environment

Part 7 of the Operating Licence requires the SCA to establish an Environmental Management System by 30 June 2015, and, during the period prior to this date, to maintain programs to manage risks to the environment. This Part also requires the SCA to monitor, record, compile data and report Environmental Indicators that are set out in the Reporting Manual.

The audit scope for this Part of the Operating Licence included sub-clause 7.1.4, which requires the SCA to maintain programs to manage risks to the environment from carrying out its activities and must ensure that all its activities are carried out in accordance with those programs. The scope also included clause 7.2 (sub-clause 7.2.1), which requires the SCA to monitor, compile data and report the Environmental Indicators. Finally, the audit scope included a request that we evaluate the calculation method used to compile data for the Environmental Indicators.

8.1 Summary of findings

Clause 7.1.4 – Full Compliance

We assessed the SCA's compliance with sub-clause 7.1.4. We found that the SCA has established an *Environmental Management Program* for reporting against the Operating Licence requirements. The SCA provided us with an *Environmental Management Report*, which detailed the activities undertaken to comply with these requirements. Consequently, we assessed that the SCA was fully compliant with sub-clause 7.1.4.

Clause 7.2 – Full Compliance

We assessed the SCA's compliance with clause 7.2. The SCA provided us with the calculation method that it used to derive the Environmental Indicators and the updated *Report to IPART* that includes these indicators. We found that the calculation method was consistent with the methods published by Australian National Greenhouse Accounts. Consequently, we assessed that the SCA was fully compliant with sub-clause 7.2.

We have set out our detailed audit findings in Appendix A, Tables A.7.1 and A.7.2.

8.2 Recommendations

Recommendations

We have made no recommendations relating to this part of the Operating Licence.

Opportunities for improvement

We have suggested no opportunities for improvement relating to this part of the Operating Licence.

8.3 Previous recommendations

There were no outstanding recommendations from previous years to be addressed.

9 Reporting

Part 8 of the Operating Licence includes requirements for performance monitoring. It includes requirements concerning the Operational Audit, SCA reporting to IPART and the provision of information to IPART.

The audit scope for this part of the Licence included both sub-clauses of clause 8.2, which require SCA to comply with reporting obligations (clause 8.2.1) and maintain records to facilitate that reporting (clause 8.2.2).

9.1 Summary of findings

Clause 8.2 – Full Compliance

We assessed the SCA's compliance with clause 8.2. The SCA provided us with evidence that the required reporting was done and that the SCA's document management system was sufficient to maintain the appropriate records and facilitate the required reporting. Consequently, we assessed that the SCA was fully compliant with both sub-clauses of clause 8.2.

We have set out our detailed audit findings in Appendix A, Tables A.8.1 and A.8.2.

9.2 Recommendations

Recommendations

We have made no recommendations relating to this part of the Operating Licence.

Opportunities for improvement

We have suggested no opportunities for improvement relating to this part of the Operating Licence.

9.3 Previous recommendations

There were no outstanding recommendations from previous years to be addressed.

Appendices

A. Detailed audit findings

Table A.1 Detailed audit findings – Clause 1: Licence details

Sub clause	Requirement	Compliance grade
1.4.1	**SCA must make this Licence available free of charge:** **a) on its website for downloading by any person; and** **b) at its offices for access or collection by any member of the public.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a low risk. SCA should provide stakeholders with full details of its responsibilities.	The SCA demonstrates that it has made the Licence available as required by the Licence.

Evidence sighted

- Licence downloaded from the SCA web site by the auditor at http://www.sca.nsw.gov.au/__data/assets/pdf_file/0018/36351/SCA-Operating-Licence-2012-2017.pdf; and
- Audit interview with SCA nominated staff and management and IPART observers 18 September 2013.

Summary of reasons for grade

We found that the SCA made the Operating Licence available free of charge on its website and we were informed that SCA office staff were aware of the requirement to provide a copy of the Licence if requested by a member of the public.

Discussion and notes

We independently downloaded the Operating Licence from the SCA web site. The SCA advised that copies of the Licence were placed in all offices. The SCA also advised that office personnel are aware of the requirement to provide a copy of the Licence if requested by a member of the public.

Table A.2.1 Detailed audit findings – Clause 2: Water quality

Sub clause	Requirement	Compliance grade
2.1.1	**SCA must maintain a Management System that is consistent with:** **a) the Australian Drinking Water Guidelines (ADWG); or** **b) if NSW Health specifies any amendment or addition to the ADWG that applies to SCA, the ADWG as amended or added to by NSW Health.**	**High compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a high risk. The ADWG 2011 involves a multiple barrier approach to ensure that drinking water is safe. ADWG 2011 elements relevant to catchment and water resource managers are essential to ensure consistent water quality.	The SCA demonstrates that its Water Quality Management System is consistent with the ADWG 2011, including any amendments specified by NSW Health.

Evidence sighted

- *Australian Drinking Water Guidelines*, NHMRC and NRMMC, 2011;
- D 2013/53583 – email sent 19 June 2013 – includes attachment *Water Quality Framework Book Update June 2013*;
- D 2013/60040 – *Critical Limit and Control Point Matrix*;
- *2012/13 Water Quality Management System Report* – 1 September Report to IPART;
- CD 2004/183[v1] – *Raw Water Quality Incident Response Plan*;
- CD 2011/179 – *Water Monitoring Program 2010-2015*;
- D 2012/67917 –Water Supply Agreement with Sydney Water Corporation; and
- D 2013/59280 – email - NSW Health comment SCA WQMF – 26 June 2013.

Summary of reasons for grade

The SCA's Water Quality Management system is comprised of a high level *Framework* together with a number of specific plans that provide detail of the processes, procedures and accountabilities required to address particular elements of the ADWG 2011. We found that the *Critical Limit and Control Point Matrix* which defined preventive measures and CCPs was incomplete, the *Raw Water Quality Incident Response Plan* had not been updated for some time, that event monitoring was unclear in the *Water Monitoring Program* and the SCA did not have a specific *Drinking Water Quality Management Policy*.

While we consider that this documentation is deficient, we found that most of the operations and activities that need to take place in order to ensure systematic water quality management, are in fact taking place on the ground.

We awarded High Compliance to reflect that the compliance gap relates to documentation rather than a failure of systematic water quality management.

Discussion and notes

The Operating Licence defines a management system as:
"*a set of interrelated elements or components used by SCA to develop and implement its policies and to manage any of its activities, products or services, and includes organisational*

structure, planning activities, responsibilities, practices, procedures, processes and resources."

The SCA's Water Quality Management System (WQMS) comprises a *Framework* document which references a number of other plans and programs. These plans and programs address the details of particular requirements of the ADWG 2011. This is explained in the email (D 2013-53583) sent on 19 June 2013, which states

> *"as discussed briefly today, please find attached the final copy of SCA's Water Quality Management Framework (2012 - 2017) incorporating comments provided by NSW Health and customers. This is an overarching document showing SCA's initiatives under each element of the ADWG 2011 Framework. As discussed the SCA will be putting together a water quality management system to supplement this document."*

A previous email from NSW Health dated 16 May 2013 (contained on the same email, D 2013-53583), raises a number of issues related to the *Framework* document and its shortcomings as a WQMS, these are:

- *NSW Health asked:* "Appendix 1, can SCA reference the relevant supporting documents/plans under 'Current SCA strategies and actions'? For example Cyanobacteria plans, BWSA."

  Subsequent SCA response was: "Appendices have been removed but changes will be made in the Improvement Plan."

- *NSW Health asked:* "Appendix 5, is this the only reference to CCPs? If so more information is needed (and I understand there will be separate Quality Assurance Programs for picnic areas. Critical control points should include target criteria."

  Subsequent SCA response was: "Appendix removed and details will be included as part of WQMS development."

- *NSW Health asked:* "Why does the cyanobacteria CCP apply to only Kangaroo Valley? Should this CCP also consider the ADWG/WQRA triggers for cyanobacteria species other than microcystin. These have been adopted by the State Algal Advisory Group."

  Subsequent SCA response was: "All relevant sites will be included."

NSW Health later endorsed the *Framework* document (D 2013/59280) stating "*This [the Framework] is fine as an overarching document and I note that further information will be provided in the water quality management system*."

The above email exchange indicates that neither the SCA nor NSW Health considered that the *Framework* document was a WQMS. We agree with NSW Health that the *Framework* document is a satisfactory overarching document.

We looked at the component plans and programs that support this *Framework* document, as required by the Operating Licence definition. Many of the comments that apply to the documentation of issues in these plans and programs are dealt with in more detail in Table A.2.2 which deals with clause 2.1.2. To avoid repetition, we will only summarise our conclusions here and reference these more detailed discussions in Table A.2.2.

The principal shortcomings with the documentation of the drinking water quality management system are:

1. The ADWG 2011 requires a stand alone "Drinking Water Quality Policy" and sets out specific requirements for such a policy. The SCA has a "Quality Policy" that mentions drinking water, but does not address many of the requirements in the ADWG 2011. This matter is discussed more fully in Table A.2.2 under Element 1.
2. The documentation of preventive measures, critical control points, critical limits and target criteria in the *Critical Limit and Control Point Matrix* (D 2013/60040) is incomplete.

This matter is acknowledged in the SCA's *1 September Water Quality Management System Report to IPART*. This report notes that the ADWG requirement for element 3.2.3 is to "*Document the critical control points, critical limits and target criteria*". The SCA note that, as at 30 June 2013, "*Critical limits and control points for all systems will be documented to compliment the Water Quality Management System through internal reviews and workshops*". Further, some of the numerical values given in the draft CCP tables are inconsistent with those given in the *Raw Water Quality Incident Response Plan* (RWQIRP), the *Water Monitoring Program* and the *Raw Water Supply Agreements*. This matter is discussed more fully in Table A.2.2 under Element 3.

3. We found the documentation for event-based monitoring in the *Water Monitoring Program* to be unclear. This matter is discussed more fully in Table A.2.2 under Element 5. We should note that we clarified this matter with the SCA at interview and we found that the practical operation of the event-based monitoring program was adequate. This is a documentation issue.
4. Finally, we consider that the RWQIRP is a well developed and comprehensive document. While it was recently up-dated, the previous up-date was more than two years ago. We accept that two years is probably a reasonable review period for this type of document, however, it is important that regular up-dates be undertaken to maintain the currency of such matters as contact details. The ADWG 2011 recommends that contact details should be checked and updated at least on a six-monthly basis. This matter is discussed more fully in Table A.2.2 under Element 6.

On this first analysis, we concluded that the Water Quality Management System documentation has a number of deficiencies. However, upon more in depth consideration, we found that the SCA in fact practices most of the activities and functions that constitute a good WQMS. While some shortcomings exist in documentation, we consider that the water quality management practices are sound.

In fact, we consider that the SCA continues to develop a comprehensive water quality control system based on the use of SCADA and telemetry automated processes. Current practice provides good management of short term risks to water quality. There is a collection of procedures to address most water quality issues that are likely to arise. Indeed, in general, the SCA has some very advanced water quality management processes in place and sets the national benchmark in many areas of drinking water catchment and reservoir management for water quality protection.

Therefore, based on the total body of evidence reviewed, we consider that the appropriate compliance grade for this requirement is High Compliance.

Recommendation 2.1

The SCA should further develop the Water Quality Management System to address shortcomings in preventive measures and critical control points; to formalise a more frequent revision of emergency information; to better define event based monitoring; and develop a specific drinking water quality policy.

Table A.2.2 Detailed audit findings – Clause 2: Water quality

Sub clause	Requirement	Compliance grade
2.1.2	**SCA must ensure that the Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the System, including to the satisfaction of NSW Health.**	**High compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a high risk. The ADWG 2011 provides a multiple barrier framework to ensure that drinking water is safe. Elements of the ADWG 2011 that are relevant to catchment and water resource managers are essential to ensure consistent water quality.	The SCA demonstrates that all elements of its water quality management system are fully implemented to the satisfaction of NSW Health.

Summary of reasons for grade

For the most part, the SCA has demonstrated excellent practice in water quality management in a manner that is consistent with the ADWG 2011 Framework.

The single most significant omission is the lack of formally declared “preventive measures” and formally documented CCPs. Further omissions are the absence of relevant target criteria for each preventive measure (including critical limits for CCPs); operational monitoring of those criteria; and the formalisation of the operational accountability, standard operating procedures, corrective actions, and management and reporting processes to support them. The identification and reliable operation of CCPs are the core of the ADWG 2011 and need to be operationally addressed to benchmark standards.

We have made an overall assessment High Compliance for this clause to reflect these concerns and other matters which have less impact on water quality set out in the discussion of the ADWG 2011 elements in the following tables.

Discussion and notes

This clause requires compliance with the entire ADWG 2011 Framework. Compliance with each element is summarised in the following table.

Element	Title	Compliance
1	Commitment to drinking water quality management	Full
2	Assessment of the drinking water supply system	Full
3	Preventive measures for drinking water quality management	Adequate
4	Operational procedures and process control	Full
5	Verification of drinking water quality	Full
6	Management of incidents and emergencies	High
7	Employee awareness and training	Full
8	Community involvement and awareness	Full
9	Research and development	Full
10	Documentation and reporting	High
11	Evaluation and audit	Full
12	Review and continual improvement	Full

In the boxes below, we have provided the detail of our audit findings for each element.

Element 1 Commitment to drinking water quality management

Full Compliance

Evidence

- D 2012/155 - *Quality Policy*; and
- *Australian Drinking Water Guidelines*, NHMRC and NRMMC, 2011.

Commentary

The first "action" in the Framework section of the ADWG 2011 requires a water supplier to have a "drinking water quality policy". SCA doesn't have a "drinking water quality policy", but has a generic "Quality Policy" consistent with ISO 9001 certification. The Quality Policy identifies a quality objective to "*Protect and manage the quality and quantity of water supplied by the SCA in accordance with the Australian Drinking Water Guidelines and supply agreements*". This merely reiterates the Operating Licence obligation and is "buried" among other objectives.

On this basis, we consider that the Quality Policy does not comply with the ADWG 2011 requirement for a Drinking Water Quality Policy. We note that the SCA has formulated environmental and quality policies to comply with the relevant standards.

That said, we note that the SCA has addressed the issues that would normally be in such a policy in its *Water Quality Management Framework* (WQMF) document. Since the WQMF has been endorsed by the SCA Executive, the SCA Board, NSW Health and major customers, the SCA considers that it meets the intent of this ADWG 2011 requirement.

We acknowledge that it is not uncommon for organisations to demonstrate their drinking water quality commitment in a way that is equivalent to having a drinking water quality policy, without having a "drinking water quality policy". However, most organisations with the SCA's influence and gravitas within the industry have a stand-alone drinking water quality policy.

On the one hand, creating a standalone policy purely to "tick a box" may be construed as pedantic and unnecessary. On the other hand, the ADWG 2011 requires that the formulated policy "*is visible and is communicated, understood and implemented by employees*". The ADWG 2011 also notes (page 3-1):

> "*Development of a drinking water quality policy is an important step in formalising the level of service to which the drinking water supplier is committed and in increasing focus on water quality management throughout the organisation. The policy provides the basis on which all subsequent actions can be judged. It should define the organisation's commitments and priorities relating to drinking water quality.*"

However, the absence of a formal policy is not likely to present any water quality risks in emergency situations or other extraordinary circumstances. We concede that alignment of the organisation's actions and levels of service with its commitment to drinking water quality may be done without the formulation of a formal policy.

For these reasons, we have taken the view that there is sufficient evidence to demonstrate the SCA's commitment to drinking water quality management for full compliance to be awarded even in the absence of a standalone policy.

Element 2 Assessment of the drinking water supply system

Full Compliance

Evidence

- Risk assessment worksheets for each major system;
- D 2013/76830 - Minutes for *C2T review*, Sept 2012; and
- D 2013/40253 - Minutes JOG meeting, 20 February 2013 final draft.

Commentary

The SCA has completed risk assessments for the Sydney Water, Wingecarribee Shire Council and Shoalhaven City Council supplies; the most recent were signed off during 2009 to 2010. These processes were very thorough. The catchment management aspects of this element were also well implemented.

A mid-term review has been conducted for the Sydney Water systems in 2012 and although not conducted for the council systems, there is overlap between the supplies and risks. This review considered changes in the ADWG 2011, as well as a range of changed pressures in the catchment (particularly mining).

The picnic site supplies were assessed approximately ten years ago and that risk assessment was recently updated (August 2013). The picnic site risk assessments were allowed to become somewhat out-of-date by the end of this audit period (end June 2013). However, there is overlap between these small supplies given that the same sources are used to draw water for the larger water supplies.

We note that no explicit risk assessment, consistent with the ADWG 2011 approach, has been conducted for the Goulburn Mulwaree Council (GMC) water supply transfer pipeline. Since no water has been supplied during the audit period, other than small volumes of water used for operational purposes, we consider that no significant risk has arisen. However, we caution that water should not be supplied to GMC until an ADWG 2011-compliant source water risk assessment has been completed in liaison with council for this system.

For these reasons, we have assessed this element as Full Compliance.

Element 3 Preventive measures for drinking water quality management

Adequate Compliance

Evidence

- D 2012/75644 – Presentation to Board on multi-barrier approach
- D 2012/67917 - *Raw Water Supply Agreement with Sydney Water*;
- D 2013/60040 - *Critical Limit and Control Point Matrix*;
- D 2013/78318 - *Critical Limits and Control Points for Picnic Areas*;
- D 2011/179[v2] - *Water Monitoring Program 2010-2015* (WMP);
- D 2004/183[v1] - *Raw Water Quality Incident Response Plan* (RWQIRP);
- D 2012/97090 – NSW Health SCA meeting 28/06/2012; and
- D 2013/31839 – Comments from Stakeholders WQMF.

Commentary

The SCA has not prepared finalised process control tables for key preventive measures including, but not limited to, those designated as CCPs. Such tables need to be prepared, validated and available for day-to-day operations. The target criteria of these preventive measures (including the critical limits of CCPs) should be operationally monitored sufficiently frequently (for CCPs this often means continuous, on line monitoring) to demonstrate that the process is in control.

We note that NSW Health has requested progress in this area (D 2012/97090 and D 2013/31839). We also note that NSW Health expressed concern about this matter during consultation about the Water Quality Management Framework, discussed above in relation to clause 2.1.1 (D 2013/53583).

As a generalisation, all critical limits need to be monitored continuously on line, where practicable, and linked to rapid, automated, corrective actions. We accept that algal critical limits might be the exception to this generalisation – the rate of change in algal counts is such that sufficiently early warning detection may be achieved through regular monitoring

(once or twice per week) rather than continuous monitoring.

Some of the numerical values given in the draft CCP tables are somewhat inconsistent with those given in the *Raw Water Quality Incident Response Plan*, the *Water Monitoring Program* and the *Raw Water Supply Agreements*. At present the *Water Monitoring Program* and the *Raw Water Supply Agreements* are in good mutual alignment, but the other two documents are somewhat misaligned. In finalising the CCPs it is important to ensure logical alignment between those four key documents. This is also an issue in respect of Element 6.

Preventive measures and critical control points, which in a catchment provide the first line of water quality defences, need to be clarified and consolidated into a clear, detailed and comprehensive portfolio of processes, procedures and accountabilities which is referenced in the *Water Quality Management Framework*.

We note that the picnic site water supplies do not have filtration. Arguably, a filtration or UV disinfection system would be required to provide a validated CCP for the control of protozoan pathogens in the Fitzroy Falls water supply system. In practice, water has been tankered to the site for several years to address algal concerns. So, no undue risk has been presented to the public. The SCA is strongly encouraged to continue its longstanding and current approach of providing tanker supply to the Fitzroy Falls picnic site in the absence of either a validated CCP for protozoan pathogens, or validation that there is no need for such a CCP.

For the three fully protected water sources (Cataract, Avon, Cordeaux), it could be argued that there is no need for a CCP for protozoan pathogens for the picnic site water supplies, provided full catchment protection could be maintained.

We note that the critical limit for disinfection in the draft CCP process control tables for the picnic sites is set at 10 NTU (D 2013/78318). In general, disinfection requires a turbidity of less than one NTU. Where an exception is made to this generalisation there needs to be good justification. It would be difficult to justify (validate) a critical limit of 10 NTU. Such reference to turbidity requirements derived from the *WHO Guidelines for Drinking Water Quality* (critical limit of 10 NTU) is not appropriate for the picnic site water supplies (D 2013/78318). The Licence requirement cites the ADWG 2011. The SCA should use the ADWG 2011 as the guideline for managing all of its drinking water supplies.

The catchment management aspects of this element were well planned and well executed. However, in light of the grazing activities close to the Upper Canal, we consider that the effectiveness of preventive measures that have been put in place along the Upper Canal need to be validated. The operation of many of the drainage culverts appear to have been compromised over time by silting-up and many of the aqueducts that are intended to conduct storm water run-off away from the Upper Canal have deteriorated. We were also concerned that the deterioration of the canal structure would allow ingress of contaminated ground water. We note that the SCA has an extensive restoration project of this facility underway.

Due to the fundamental role of process control within the ADWG 2011, we have assessed the SCA's performance as Adequate Compliance. For Full Compliance, process control tables including, but not limited to, those designated as CCPs, need to be documented, validated, and applied. Full monitoring records should demonstrate that preventive measures, especially CCPs, are effective.

Recommendation 2.2

The SCA should identify and implement appropriate preventive measures, including, but not limited to, those designated as Critical Control Points (CCPs); develop fully explicit, validated process control tables for each; and ensure sufficiently frequent (for CCPs this often means continuous, on line) operational monitoring of the identified target criteria (including for CCPs, critical limits).

OFI 2.1

The SCA should validate the effectiveness of preventive measures along the Upper Canal to confirm that contaminated storm water and surface and subsurface spills and drainage are being effectively hydraulically excluded from the raw water supply.

Element 4 Operational procedures and process control

Full Compliance

Evidence

Various procedures including:

- CD 2011/590 – *How to Guide - Warragamba Dam – Collect water samples*;
- CD 2012/40 – *How to Guide – Measuring turbidity*;
- CD 2012/158 – *How to Guide – Water quality monitoring*;
- CD 2011/574 – *Warragamba Dam – Routine inspection and monitoring*;
- CD 2004/185 – *Monitoring and operation of Metro Dams Town Water*;
- SCA compliance procedures available on SCA intranet; and
- Sydney Water/SCA Bulk Water Supply Protocols.

Commentary

Although the preventive measures and CCPs are poorly defined and not entirely adequate, the on ground operational monitoring and corrective actions that would result from the effective operation of CCPs and other preventive measures are largely in place.

The SCA has good core operating procedures and process control. It is moving to formalise those procedures into an ISO 9001 quality management system. The document and records management system (eTRIM) is used to manage the documents and records, as discussed in respect of Element 10 and our audit of Part 8.

Element 5 Verification of drinking water quality

Full Compliance

Evidence

- D 2011/179[v2] - *Water Monitoring Program 2010-2015*; and
- D 2013/70307 - Edited final list pesticides and SOCs, 6 August 2013.

Commentary

The *Water Monitoring Program* (WMP) is well described and includes a sound verification program. The program has been endorsed by the SCA's customers and NSW Health.

We found it difficult to understand the event-based monitoring processes. The program discusses certain types of monitoring under certain events. However, it is difficult to assess whether event-based monitoring is adequate in the absence of more explicit guidance. As an example, when discussing the large inflows section of the event monitoring in the storages, the WMP requires additional monitoring in the event of "*extended rainfall which causes large inflows*". However, neither of these circumstances is defined. Monitoring is also required if there is "*significant inflow around the time of expected turnover*". Again the magnitude of "significant" is not defined.

Discussions with SCA staff demonstrated that the practice of event-based monitoring was indeed adequate. We have awarded Full Compliance for this element because the documentation shortcoming has already been assessed in clause 2.1.1 and the practice is satisfactory. That said, the SCA should provide more explicit guidance in this area as part of the WMP. We note that the SCA is currently revising the picnic site verification monitoring response targets – these are currently set too high with respect to tolerable *E. coli* levels.

We consider that the proposed revisions are appropriate.

On the face of it, the suite of metals, pesticides and organics selected for monitoring by the SCA during the revision of the monitoring program appears to be too narrow. The rationale used to narrow down the monitoring program, chemical by chemical, is scientifically logical. However, the approach does not appear to take full and equal account of analytical costs.

OFI 2.2

The SCA should consider providing more explicit guidance on event-based monitoring as part of its Water Monitoring Program.

Element 6 Management of incidents and emergencies

High Compliance

Evidence

- *Debrief Report* and *Post Exercise Report* for *Exercise Radiant Breach*;
- D 2004/183[v1] - *Raw Water Quality Incident Response Plan* (RWQIRP);
- D 2012/67917 –*Raw Water Supply Agreement* with Sydney Water Corporation (RWSA);
- D 2011/179[v2] - *Water Monitoring Program 2010-2015* (WMP);
- D 2013/60040 - *Critical Limit and Control Point Matrix*; and
- D 2013/78318 - *Critical Limits and Control Points for Picnic Areas*.

Commentary

The SCA has rehearsed emergency procedures through mock incidents (Exercise Radiant Breach) and has a *Raw Water Quality Incident Response Plan* (RWQIRP) that is a well-developed and thorough document. The only notable weakness of the RWQIRP relates to updating.

The document we were originally given was dated 2010 and still referred to the ADWG 2004. The ADWG has been revised since 2010. Further, many stakeholders, including Sydney Water, Sydney Water contractors, and NSW Health have changed in ways that would ideally have been reflected in revisions to relevant sections of the RWQIRP.

In practice, these changes are well known to the key operational SCA staff. However, for the RWQIRP to be a robust document, it should be useful in the worst case scenario, when key personnel are absent and control is left to less experienced personnel.

We also found that some of the numerical values given in the RWQIRP were inconsistent with those in the *Water Monitoring Program 2010-2015* (WMP) and the *Raw Water Supply Agreement* (RWSA). At present the WMP and the RWSA are in good mutual alignment, but the RWQIRP is somewhat misaligned. The draft CCP tables are also misaligned. It is important to ensure logical alignment between these four key documents.

The SCA provided us with a Draft RWQIRP on 26 September which addressed many of the above issues. This draft had not yet been entered into the document control system and had not been authorised. The ADWG 2011 notes that "*Incident and emergency response protocols should be regarded as a priority*".

We consider that the essential feature that this element is promoting is that the RWQIRP is regularly updated to maintain currency. The fact that this new draft RWQIRP was produced doesn't alter the fact that it had not been updated for some years. Conformity with this ADWG 2011 element is really about having an established procedure to maintain the currency of the RWQIRP.

Based on these considerations, we consider that the SCA has achieved High Compliance with this ADWG 2011 element.

Recommendation 2.3

The SCA should ensure the logical alignment of data between the Raw Water Quality Incident Response Plan, the Water Monitoring Program, the Raw Water Supply Agreements and the process control tables, particularly for CCPs.

Recommendation 2.4

The SCA should ensure that the currency of the Raw Water Quality Incident Response Plan is maintained.

Element 7 Employee awareness and training

Full Compliance

Evidence

- D 2012/88366 – *Executive Meeting Briefing of Conferences and Seminars attended by SCA staff*, 9 Oct 2012;
- D 2013/1359 – *Executive Meeting Briefing of Conferences and Seminars attended by SCA staff*, 21 Jan 2013;
- D 2013/17376 – *Executive Meeting Briefing of Conferences and Seminars attended by SCA staff*, 6 Mar 2013; and
- D 2013/48838 – *Executive Meeting Briefing of Conferences and Seminars attended by SCA staff*, 17 Jun 2013.

Commentary

We investigated the knowledge, skills, motivation and commitment of SCA employees and contractors. The SCA has an extensive induction process, on-going staff training and a program that allows SCA personnel to participate in external conferences.

We consider that these factors meet or exceed the requirements of the ADWG 2011 in this area.

Element 8 Community involvement and awareness

Full Compliance

Evidence

- D 2012/116206 – Local Government Reference Panel Minutes, 26 Nov 2012;
- D 2013/11714 - Local Government Reference Panel Minutes, 4 Feb 2013;
- D 2013/39357 - Local Government Reference Panel Minutes, 6 May 2013; and
- D 2013/80338 – *SCA Communications Strategy, 2012 - 2015*.

Commentary

The SCA has an active and well developed community involvement and awareness program. This is further explored in respect of Part 4 of the Licence which deals with Catchment Management.

We consider that the SCA exceeds the requirements of the ADWG 2011 in this area.

Element 9 Research and development

Full Compliance

Evidence

- *SCA Science Strategic Plan 2010-2015*; and
- D 2013/1671 – *Science Strategic Plan 2010-2015: Annual Evaluation Report 2012/13*.

Commentary

The SCA has a well developed and rounded science research and development program which considers a range of issues that are relevant to SCA operations. In many cases, the SCA is at the forefront of catchment management research.

We have explored the science program further in respect of Part 4 of the Licence which deals with Catchment Management.

Element 10 Documentation and reporting

High Compliance

Evidence

- Numerous catchment-to-tap risk assessments;
- D 2013/76830 - Minutes of a Catchment-to-Tap Review, September 2012; and
- eTrim training details 2012/13.

Commentary

The SCA demonstrated that it was compliant with the ADWG 2011 requirements for documents and records using its eTrim system. The main concern was that the documents themselves didn't always include descriptive version control information and often appeared as standalone documents with no obvious context or currency.

The ADWG 2011 notes:

> "*Appropriate documentation provides the foundation for the establishment and maintenance of effective drinking water quality management systems. Documentation should:*
>
> - *demonstrate that a systematic approach is established and is implemented effectively;*
> - *develop and protect the organisation's knowledge base;*
> - *provide an accountability mechanism and tool;*
> - *facilitate review and audits by providing written evidence of the system;*
> - *establish due diligence and credibility.*"

However, we note that eTrim has been in operation for a number of years and the above comment is most relevant to documents that were put into eTrim during the early stages of implementation. We have awarded High Compliance because we understand that better training has improved the more recent implementation of this system.

Element 11 Evaluation and audit

Full Compliance

Evidence

- D 2013/90414 – *Draft Annual Catchment Management Report to IPART 2012 – 2013*;
- D 2012/68458 – *Healthy Catchments Program 2012 – 2013*;
- D 2013/33378 – *Healthy Catchments Strategy 2012 – 2016*;
- *Raw Water Supply Agreements* (RWSA) with Sydney Water for nine WFPs and Shoalhaven City Council and Wingecarribee Shire Council WFPs; and
- Water Quality Annual reports and State of the Catchment reports.

Commentary

The SCA undertakes a substantial amount of reporting related to water quality and the state of the catchment. It also produces a significant amount of trend reporting and analysis.

Ideally, to undertake comprehensive evaluation, there would be:

- Measurable parameters that are related to drinking water quality, ideally based around operational and verification monitoring results;
- Performance objectives; and
- Objective evidence of performance against those objectives.

In many cases, there is no simple way to apply this direct performance management approach to the management of water supply catchments. The ADWG 2011 recognises that the irreducible background variability and uncertainty is so great that intermediate or proxy indicators and inference is required in many cases rather than simple performance measurement.

Notwithstanding these issues, the SCA has gone a long way to identify outputs and goals in the *Healthy Catchments Strategy* (D 2013/33378). It reports planned activities, outcomes and expenditure in the *Healthy Catchments Program* (D 2012/68458). It has provided further details of planned and actual activities, outcomes and expenditure in the *Draft Catchment Management Report to IPART for 2012 – 2013* (D 2013/90414). It also provides some very appropriate targets in the RWSA and provides trend reporting in its *Annual Water Quality Monitoring Report* and *Catchment Audit Reports*.

We consider that the SCA meets the requirements of the ADWG 2011 in this area. This matter is discussed in more detail in the Catchment Management section of this report.

Element 12 Review and continual improvement

Full Compliance

Evidence

- D 2012/88708 – Executive Meeting 9 October 2012 – Review of the Water Quality Management Framework;
- D 2012/51052 – Chief Executive Report to Board – Review of the Water Quality Management Framework;
- D 2012/52144 – Integrated Business Management Systems diagram; and
- D 2013/55202 – Exec Paper for a Management Review Process.

Commentary

The SCA has sound processes to review and implement continual improvement.
D 2012/88708 and D 2012/51052 indicate that the Executive and the Board are involved and kept informed about water quality management issues. The SCA is currently developing an integrated business management system to further improve this aspect of its operations.

We consider that the SCA has robust processes of review and continual improvement.

Table A.2.3 Detailed audit findings – Prior Year issues

Clause 2: Water Quality

Reference	Recommendation	Finding
Rec 2010/11-1	**Water Quality Management System** **SCA should further refine its documentation when reviewing the Water Quality Management Framework, to comprehensively address the requirements of the Australian Drinking Water Guidelines consistent with the catchment to tap risk management approach.**	**Addressed**

Evidence sighted

- D 2013/76830 – Minutes of Catchment to Tap Review, September 2012;
- *Catchment to Tap Risk Register*, Appendices 9-25;
- D 2011/814 – *Cyanobacteria Risk Profile*;
- *PSAT Implementation Plan 2012 - 2016*;
- D 2013/79267 – *Interim advice on Cryptosporidium infectivity testing*;
- *Trial evaluation of Gully Erosion*;
- D 2012/98601 – *On-site sewage disposal evaluation study*;
- D 2013/37996 – *Validation of Grazing Evaluation Model*;
- D 2012/115247[v2] – *Examining Water Quality changes from the upgrade of Lithgow and Braidwood STPs*; and
- D 2013/64191 - *Trend analysis – Farmers Creek, Lithgow*.

Summary of reasons for finding

The SCA has addressed recommendation 2010/11-1 by demonstrating active participation in the *2012 Review of the Catchment to Tap Risk Assessment* with Sydney Water, which was observed by NSW Health. We identified other issues with the *Water Quality Management Framework* which we have presented in Tables A.2.1 and A.2.2.

Discussion and notes

In its 2011/12 Report to the Minister, IPART recommended that:

> "*SCA should further refine its documentation when reviewing the Water Quality Management Framework (WQMF), to comprehensively address the requirements of the Australian Drinking Water Guidelines consistent with the catchment to tap risk management approach.*
>
> *The processes and documentation should allow a third party (such as an Auditor) to clearly see how research and operational experience has informed any risk assessment or management approach. All assessments, processes and documents will relate only to the areas within SCA's responsibility in the catchment to tap risk management approach.*"

In reporting progress on this recommendation in 2011/12, the auditor suggested that the WQMF could be improved by inclusion in an appendix of all sources of scientific and operational experience/personnel/tools, including the use of historical pollutant indicator data that have informed the catchment-to-tap risk assessments and the selection of specific or control measures to mitigate each risk.

During this audit, we found that the SCA and Sydney Water held a review of the *Catchment to Tap Water Quality Risk Assessment* (D 2013/76830) which was attended by a representative of NSW Health. This document demonstrates the SCA's active participation in this review, which addressed the entire range of issues included within ADWG 2011.

In particular, the SCA's contribution included work on addressing the expanded list of pesticides in ADWG 2011, developing improved protocols for notification of cyanobacteria in raw water, work on Cryptosporidium and Giardia. This meeting also considered catchment-specific risk registers for all the SCA water supply systems.

In addition to this "conventional" risk assessment work, the SCA has either completed or has in progress a quite comprehensive range of scientific, catchment management and operational studies that have explored, and in many cases, expanded the scientific knowledge that underpins risk assessment in water supply systems. These include:

- *Cyanobacteria Risk Profile* (D 2011/814)
- Pollution Source Assessment Tool, described in the *PSAT Implementation Plan* 2012 - 2016.
- *Interim advice on Cryptosporidium infectivity testing* (D 2013/79267)
- *Trial evaluation of Gully Erosion*
- *On-site sewage disposal evaluation study* (D 2012/98601)
- *Validation of Grazing Evaluation Model* (D 2013/37996)
- *Examining Water Quality changes from the upgrade of Lithgow and Braidwood STPs*. (D 2012/115247[v2])
- *Trend analysis – Farmers Creek, Lithgow* (D 2013/64191)

These documents describe matters that are purely related to the SCA's activities and responsibilities and have been used, either directly or indirectly, to complete the Catchment to Tap Risk Assessment process.

Based on the above evidence, we consider that the SCA has addressed recommendation 2010/11-1.

Table A.3.1 Detailed audit findings – Clause 3: Water supply sufficiency

Sub clause	Requirement	Compliance grade
3.1.1	**SCA must ensure that the Catchment Infrastructure is operated and managed consistent with the Design Criteria.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a high risk. The design criteria ensure the continuity of water supply.	SCA demonstrates that water supply was operated and managed during the audit period in a manner that was consistent with the Design Criteria.

Evidence sighted

- *Greater Sydney's Sustainable Water supply – Yield, SCA 2012*;
- D 2013/7865 - System nomograph - 10 December 2012;
- D 2013/78662 - System nomograph - 27 June 2013;
- D 2013/12487 – *Draft Upper Nepean Shoalhaven Configuration Schedule 13 February, 2013*; and
- D 2013/32567 – Email - *SCA Planned Pumping For The Next 4 Weeks,* 17 April 2013.

Summary of reasons for grade

The SCA demonstrated that systems were in place to meet the three Design Criteria and optimise the use of SCA water resources. No non-compliance was reported during the audit period.

Discussion and notes

The Design Criteria aim to ensure that the SCA's water supply system operates within three constraints:

- Security (restrictions on the amount of time that storages approach 5% empty);
- Robustness (restrictions are not too frequent); and
- Reliability (restrictions last no longer than 3% of the time on average).

The SCA's systems provide drinking water in tandem with the Sydney Desalination Plant (SDP), as well as environmental flows. The SDP Operating Rules require that the plant should operate when total dam storage levels drop to 70% full and continue to operate until total dam storage levels reach 80 % full. During the audit period, the total dam storage was above this level and the SDP was off-line.

The SCA provided two actual example "system nomographs" (excel spreadsheets) which are tools used for operational system management. These are distributed to relevant staff periodically. Nomographs include a chart for each water supply dam, showing capacity (%) and volume available for the full range of water levels for each dam from full to empty. Coloured shading showed current levels and a comparison for the levels on two relevant earlier occasions. Constraints on various supply modes are also shown. Comments on the impact of issues such as water quality and reasons for supply source choices were provided.

The SCA also discussed two samples of emails distributed to appropriate staff:

- *Upper Nepean & Shoalhaven Configuration Schedule 13 February 2013*.
  This document was distributed to appropriate staff in the SCA, and is generally issued weekly. It provides information on Bureau of Meteorology rainfall forecasts; Sydney

Water operational matters; system outages due to maintenance, etc; changes to optimising strategies such as water quality in relation to storage balancing; and supply source arrangements for the water treatment plants.

- *SCA Planned Pumping For The Next 4 Weeks,* 17 April 2013
  This document was distributed to operations personnel advising of times for the operation of pumps in the Shoalhaven system over the next four weeks.

During the audit period the total storage in SCA dams varied from above 90% to overflowing (100%). As a result, there were no issues or concerns about any of the three constraints in the Design Criteria. The management and technical systems in place concentrated on optimising water quality and storage balancing requirements, and provided compliance during the audit period. The SCA demonstrated that water supply was operated and managed during the audit period in a manner that was consistent with the Design Criteria.

For the longer term, during the interview and through material provided, the SCA demonstrated that it currently has the management, planning and forecasting capacity to optimally manage its catchment infrastructure in a manner consistent with the Design Criteria. It also demonstrated the capacity to provide Government and customers with timely advice and cooperation as required during periods when storage levels deplete to levels requiring notification, action or recommendations.

For these reasons, we have assessed the SCA to be fully compliant with this Operating Licence obligation.

We note that weekly bulk water storage and supply reports previously available at www.sca.nsw.gov.au/dams-and-water/weekly-storage-and-supply-reports appear to be unavailable on the SCA site. This information would be of interest to people seeking information on Sydney's Water Supply Sufficiency. The SCA has advised that reports relating to past periods will be soon available on its new website.

Table A.3.2 Detailed audit findings – Clause 3: Water supply sufficiency

Sub clause	Requirement	Compliance grade
3.1.2	**SCA must make the Design Criteria available to the public in accordance with the Reporting Manual.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a low risk. SCA should provide stakeholders with full details of its responsibilities.	SCA demonstrates that the Design Criteria were available to the public in accordance with the Reporting Manual.

Evidence sighted

- *Review of Sydney's Water Supply System Yield – 2012;* http://www.sca.nsw.gov.au/__data/assets/pdf_file/0006/4866/2012-Yield-report-update.pdf

Summary of reasons for grade

The Design Criteria are available in the pdf document listed above, in the Policy section of the SCA web site - Pages 2, 3 and 4.

Printed copies may not be in stock at all SCA offices, but personnel have been instructed to print this document on demand if required.

Discussion and notes

Making the Design Criteria publicly available is required under section 3.4 "Publicly available documents" of IPART's *Reporting Manual for the SCA*. There are other requirements for making information publicly available throughout the manual.

A person, having consulted the Reporting Manual and looking for the Design Criteria, either by searching the internet or the SCA's own website, does not find a document called "Design Criteria", as this information is provided within the pdf document referenced above - *"Review of Sydney's Water Supply System Yield – 2012".*

Further, there is no link that takes the person to a web page such as "Regulatory Documents" where all regulatory items, including "publicly available documents" could be accessed via links. When searching on the SCA's website for the Design Criteria the information was found at the second item on the list as follows:

> SUSTAINABLE WATER SUPPLY
> raw water, within the constraints of the system **design criteria**. Estimates of yield take into consideration...**design criteria**, taking into account other supply sources such as desalinated water.
> http://www.sca.nsw.gov.au/__data/assets/pdf_file/0006/4866/2012-Yield-report-update.pdf

From this search summary, it is unclear to the searcher whether the Design Criteria are actually included in this document, or are just referred to. Inspection of the pdf file on the internet shows that there are no key words in the metadata for this file which would make finding it easier.

This issue was discussed at the interview, and although the SCA has met the requirements, the SCA indicated that ease of finding this publicly available information will be improved in the planned upgrade of the SCA website. We have suggested OFI 3.1 to address the lack of transparency of required content, such as the Design Criteria, on the SCA website.

OFI 3.1

That SCA give consideration to:

- *Providing a dedicated web page with links to individual regulatory requirements and summaries. Where there are a number of requirements and summary tables, such as in the SCA Reporting Manual, these should be grouped in a list, with a detailed reference for each item e.g. "Section 3.4".*
- *Adding appropriate search key words to the metadata on each web page and any associated documents such as word, excel and pdf.*

Table A.4.1 Detailed audit findings – Clause 4: Catchment

Sub clause	Requirement	Compliance grade
4.1.1	**SCA must manage and protect the Catchment Area consistent with its objectives and functions under the Act.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a high risk. Effective catchment management and protection are key components of the objectives and functions set for SCA in the Act.	SCA demonstrates that its catchment management and protection activities are fully consistent with the objectives and functions set out in the Act.

Evidence:

The following evidence relates to all sections included in this table:

- *Science Strategic Plan 2010-2015*;
- D 2012/68458 – *Healthy Catchments Program 2012 – 2013* (HCP);
- D 2013/33378 – *Healthy Catchments Strategy 2012 – 2016* (HCS); and
- D 2013/90414 – *Draft Annual Catchment Management Report 2012 - 13*.

Summary of reasons for grade

The catchment management actions that have been organised into the HCS represent a balanced, well rounded approach to catchment management and protection that is consistent with the objectives and functions set out in the Act. The SCA has demonstrated that a comprehensive program was undertaken during the audit period that was consistent with this strategy.

Discussion and notes

The SCA's objectives and functions that are defined by the Act (Sections 14 and 16) and relate to management and protection of catchment areas are:

- to ensure that the catchment areas and the catchment infrastructure works are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment, (Principal objective);
- to ensure that water supplied by it complies with appropriate standards of quality, (Principal objective);
- where its activities affect the environment, to conduct its operations in compliance with the principles of ecologically sustainable development contained in section 6 (2) of the *Protection of the Environment Administration Act 1991*, (Principal objective);
- to minimise risks to human health, (Special objective);
- to prevent the degradation of the environment, (Special objective);
- to manage and protect the catchment areas and the catchment infrastructure works vested in or under the control of the SCA, (Specific function);
- to protect and enhance the quality of water controlled by the SCA, (Specific function);
- to undertake research on catchments generally, and in particular on the health of the SCA's catchment areas, (Specific function).

Apart from the annual IPART audit (this audit); the state of health of the catchment is assessed in the triennial Catchment Audit that is conducted by a nominee of the Minister using a range of gazetted catchment health indicators (the most recent Catchment Audit was conducted in 2013).

For the purpose of compliance assessment, the objectives and functions set out above may be summarised as:

- to manage and protect the catchment area and catchment infrastructure to promote water quality; to protect public health and safety, and the environment;
- to ensure that the water supplied is of appropriate quality;
- to operate according to the principles of ecologically sustainable development;
- to efficiently and economically manage catchment infrastructure works; and
- to undertake research on catchments generally, and in particular on the health of the SCA's catchment areas.

To assess whether the SCA has complied with the requirements of this clause, the audit needs to consider whether:

- the range of activities undertaken by the SCA comprehensively addresses all of the relevant objectives and functions in the Act; and
- the broad allocation of effort across these activities indicates that each of the objectives and functions have been addressed to a satisfactory extent.

Effort is the sum of human resource input, financial input (in the form of community and landowner grants, etc) and purchases of goods and equipment. The budget is a monetarised summary of all the components of effort that the SCA has applied to its various catchment management activities.

There is no "International Standard" or other formal guidance against which a set of activities designed to manage and protect catchment areas, ensure water quality, and maintain environmental sustainability can be assessed. Nonetheless, the range of resource management practices necessary to manage and protect catchment areas and ensure water quality and environmental sustainability in areas with land uses that are similar to those in the SCA catchment areas is quite well understood (for example, practices documented in the *Victorian Waterway Management Strategy*, *SEQ Healthy Waterways Strategy*, *Hunter Water Catchment Management Plan*, *Gippsland Region Sustainable Water Strategy*). These practices typically include activities to address:

- Point source pollution (including sewage collection and management, intensive agriculture, derelict mines and industrial facilities) and appropriate enforcement of pollution prevention legislation and regulation;
- Land management through statutory development and land use controls, fire control, promotion of good grazing and agricultural practice, erosion control, diffuse pollution control (both nutrients and agricultural chemicals) and control of mining;
- Protection of water quality through protection of riparian zones, control of noxious plants and feral animals, and control of grazing access to waterways;
- Protection of ecological integrity, biodiversity and native vegetation;
- Community partnerships to promote catchment protection and provide resources to assist land-holders; and
- Monitoring and research to review progress and provide input for future evidence-based catchment planning decisions.

Apart from the specific requirements to protect and efficiently operate catchment infrastructure, the SCA's catchment management activities should have a strong overlap with these typical resource management activities in order to comprehensively address its objectives and functions as defined by the Act.

The SCA has developed a rounded plan of catchment management activities that are consistent with those typically applied to mixed catchments. This plan is outlined in the HCS document which describes seven logical catchment management activities that comprehensively address the SCA's objectives and functions. Each of these initiatives, which incorporate the typical catchment management activities identified above, is discussed in more detail below.

The SCA provided us with the draft *Annual Catchment Management Report 2012-13* (D 2013/90414). This draft document reports on planned activities, outcomes and expenditure for the 2012/13 year, consistent with the activities and initiatives identified in the HCS. The final report will be released on 30th November 2013.

The total budget for the 2012/13 HCP in the draft report to IPART was $22.6 million and the actual expenditure was $19.6 million. The components of these totals are set out in the following table.

	HCP Initiative	**Budget $m**	**Budget %**	**Actual $m**	**Actual %**
1	Catchment Science	4.1	18	2.9	15
2	Active communities	2.0	9	1.7	9
3	Setting the example	10.9	48	10.4	53
4	Ensuring legislation (regulatory actions)	1.2	5	0.9	4
5	Maintaining sustainable catchments	1.5	7	1.4	7
6	Targeting high risk pollution sources	2.9	13	2.4	12
7	Managing emerging catchment issues	0	0	0	0
	TOTAL	22.6	100	19.6	100

Note: Totals in the above table may not add due to rounding.

In the boxes below, we have assessed the budget and actual expenditure applied to each of the HCP initiatives to understand the broad allocation of effort across these initiatives. We have used this data to qualitatively assess whether the SCA has effectively addressed each of the objectives and functions requires by the Act.

Quantitative assessment of the effectiveness of catchment management activities has proven to be challenging. Such an assessment of catchment activities would involve:

- Identifying defined, measurable features of catchment health;
- Developing performance objectives expressed in terms of these parameters; and
- Measuring quantified, objective performance against these objectives.

However, there is no simple way to apply this linear performance management approach to most water catchment management. A healthy water catchment is the result of myriad complex inter-relationships and ecological balances, many of which are understood at only a basic level. Consequently, in most cases, we have only a basic qualitative understanding of specific benefits that may be expected from specific unit inputs or activities.

AS/NZS ISO 14001:2004 *Environmental management systems - Requirements with guidance for use,* the international standard guiding environmental management systems, has addressed the problems created when linear performance management relationships can't be defined (a common problem in environmental management situations) through the promotion and use of the methodology known as Plan-Do-Check-Act (PDCA). PDCA may be described as follows.

- *Plan*: establish the objectives and processes necessary to deliver results in accordance with the desired outcomes.
- *Do*: implement the processes.
- *Check*: monitor and measure processes against objectives and targets, and report the results.
- *Act*: take actions to continually improve performance of the management system.

The HCS and the HCP use a methodology that is similar to this PDCA approach. We have provided detailed comments on the SCA's activities within each of the individual HCP initiatives in the following boxes.

Initiative 1 Catchment science

Commentary

One of the "specific functions" required by the Act is to undertake research on catchments generally and in particular on the health of the SCA's catchment areas. In response to this specific function, the SCA has developed a comprehensive program of science research initiatives, *Science Strategic Plan 2010-2015*.

This program includes the following topics:

- Catchment impacts;
- Reservoir dynamics;
- Climate change impacts;
- Science data and information quality;
- Modelling for decision-making;
- Stakeholder, industry and community engagement; and
- Solutions-driven science culture, which includes program implementation and building science capability;

The individual projects included in this program are all relevant to the SCA's catchment management activities. While some long-term projects are not scheduled for completion until 2016, the budget and actual results in the annual report to IPART suggest a solid commitment to this work. The SCA has recorded good achievements in important projects that expand the knowledge base of catchment management.

Projects undertaken during the audit period included monitoring key catchment information (including water quality), trend analysis, updating the Pollution Source Assessment Tool (PSAT) and specific studies into such issues as erosion, evaluation of STP operation, on-site waste water management systems and grazing.

Initiative 2 Active communities

Commentary

The Active Communities element combines two broad initiatives: an outreach program to connect with stakeholders who live or work in catchment areas, and communication with the broader Sydney area community to build and maintain confidence in the SCA's work. These areas are widely acknowledged to be significant catchment management functions. They are significant both in the implementation of ESD principles (particularly the outreach programs) and addressing elements 1.3 and 8 of the ADWG 2011.

We consider the relative effort devoted to these activities by the SCA to be reasonable at about 9% of budget and actual HCP expenditure.

The outreach program aims to improve knowledge, skills and attitudes to promote positive behaviors in catchment areas. During the audit period, this included providing courses and guidance programs dealing with sustainable grazing and pasture, development within catchment areas, sewage and storm-water management, farm dams, and erosion and sediment control.

Strengthening the bonds with the broader Sydney community was improved through the audit period through Streamwatch programs, community grants, providing educational resources, hosting visits to SCA facilities, and community engagement on specific projects.

Both the outreach and communication elements are very long term initiatives. It is widely acknowledged that measuring specific defined benefits from this work is quite challenging.

Initiative 3 Setting the example

Commentary

Setting the example collects a wide range of activities where the SCA is actively managing its catchment areas, both through its own efforts and those of the National Parks and Wildlife Service (NPWS). During the audit period, these activities included fire management, control of weeds and feral animal pests, erosion control, road maintenance, protection of heritage items and specific protection works in the Special Areas adjacent to some drinking water supply reservoirs.

The components of this element of the HCP are not only key water quality protections, but also represent work to address the significant environmental impacts associated with disturbances in catchment areas. The SCA is looking to employ a more targeted program for some of these controls, such as developing four year control programs to enable a prioritised, programmed approach, rather than simply an annual approach. For such a program as feral animal control, this would allow more detailed consideration of riparian impacts, pathogen prevalence and pathogen deposition.

At about 50% of the budget and actual expenditure, this is a reasonable allocation for this most important and resource intensive component of catchment management.

Initiative 4 Ensuring legislation protects our catchments

Commentary

Regulatory activities associated with this initiative undertaken during the audit period included patrols, surveillance and inspections, issuing and processing infringement notices and participation in compliance operations with other enforcement agencies.

These activities are related to the SCA's regulatory and compliance role under the *Sydney Water Catchment Management Act*, 1998, and the *Protection of the Environment Operations Act* 1997. They are designed to reduce the risk of water pollution in catchment areas resulting from illegal activities or public access to restricted areas.

During 2012/13, the SCA conducted 290.5 hours of targeted inspections of 35 different issues/sites; 12 investigations resulting of these inspections; 2,942 hours of surveillance in Special Areas; and four joint compliance operations with its partners (NPWS, NSW Police).

Initiative 5 Maintaining sustainable catchments

Commentary

The SCA has quite extensive powers to influence development in catchment areas. This initiative incorporates the SCA activities in influencing the approval of new residential, commercial, industrial and agricultural developments and activities, especially those that have significant impacts on water quality.

The ADWG 2011 recognises that effective catchment management and source water protection often requires "*a coordinated approach with relevant agencies such as planning authorities, catchment boards, environmental and water resources regulators, road authorities and emergency services*"(ADWG 2011 section 3.3, page 3-10). It includes the use of planning and environmental regulations to regulate potential water-polluting developments (e.g. urban, agricultural, industrial, mining and forestry) and the use of industry codes of practice and best practice management as important preventive measures for the protection of surface water catchments.

The SCA works with local government bodies, developers and land owners to improve the assessment of developments; develops Current Recommended Practice (CRP) guides for specific activities; provides guidance on planning instruments, such as Development Control

Plans and Local Environment Plans (DCPs and LEPs); and provides advice to State Government agencies on relevant matters. However, the performance of the fifteen local government areas in the catchment is variable. The SCA is using education, legislation, incentives and tools to help encourage councils to use best practice in these activities.

We note that the SCA reports that it monitors the progress of specific developments and activities in the Special Areas that have been identified as high risk to ensure that these activities continue to have a neutral or beneficial effect on water quality. We consider this activity to be consistent with the discussion of the use of planning instruments as a preventive measure to ensure water quality in ADWG 2011.

This area of activity is quite resource intensive but is directed to address issues that are recognised as among the most significant threats to water quality and catchment health.

Initiative 6 Targeting high risk pollution sources

Commentary

SCA research has identified four priority pollutants that have the most significant impacts on waterways: nitrogen, phosphorus, pathogens and suspended solids. This initiative is designed to address diffuse and point sources of water pollution that have been identified as priorities for additional action by the SCA's *Pollution Source Assessment Tool* (PSAT).

The SCA has used PSAT to assess the relative risks associated with the priority pollutants. Sewage, urban stormwater and rural lands, including grazing and agriculture, have been identified by PSAT as high risk pollution sources.

Sewage management represents a high risk to water quality in catchment areas, both from a public health and nutrient pollution perspective. The SCA has undertaken inspection activities to address this matter and specific research to inform and improve sewage management practice.

The SCA uses a mixture of grants and partnerships to achieve catchment outcomes related to sewage management, grazing and agriculture. At the interview, the SCA indicated that at present, there is a priority of around 4,000 km of riparian areas. The SCA is focusing working gradually for culture change. Graziers must sign a ten-year agreement for assistance for such things as fencing. In new subdivisions, the SCA's development control function has the potential to make fencing an ongoing consent condition.

From a risk perspective, the ideal situation is full fencing, with a credible setback distance and a functional vegetated zone, along the entire riparian interface between waterways and diffusely polluting landholdings. The SCA's work in this area is commended. Where this ideal cannot be achieved, risk-based targeting (e.g. of more vulnerable or rapidly eroding areas, or of high risk pollution sources, such as juvenile stock animals), provides a good second best goal with a high benefit:effort ratio.

The resource allocation for this initiative is about 12% of the budget and actual expenditure. We consider the resources allocated to these activities to be reasonable.

Initiative 7 Managing emerging catchment issues

Commentary

This initiative seeks to manage challenges thrown up by the community's changing environmental, social and economic needs. These changes need to be managed to minimise short and long term risks to water quality and quantity.

The SCA does this by providing input to decisions that may affect stored water, the water supply assets, the catchments or Special Areas. There is no specific budget allocation for this initiative because it is covered in allocations for other initiatives.

In our interviews, we questioned the SCA on its anticipation, analysis and management of emerging risks in general. Items discussed included increased pressures from hunters, recreators and various types of extractive industry. In all cases, the SCA demonstrated a good understanding of the extent of these pressures, of the objective, scientific evidence regarding the associated risks, and of its response. The SCA is working to better understand and manage these risks and capably protecting the catchment from them.

Conclusion

This analysis of the HCP initiatives demonstrates that the SCA effectively implements a program of catchment management activities that are consistent with those typically applied to mixed catchments having characteristics similar to those managed by the SCA. Furthermore, based on the expenditure incurred, the level of effort allocated to each initiative/activity is deemed to be of an appropriate order. Accordingly, we consider that the SCA has implemented catchment management activities that effectively address the relevant objectives and functions as defined by the Act.

Table A.4.2 Detailed audit findings – Prior Year issues

Clause 4: Catchment

Reference	Recommendation	Finding
Rec 2010/11-2	**Catchment Management** **SCA should demonstrate catchment management program strategies are measurable and timely. The effectiveness of actions taken to manage and protect water quality must be assessed and documented.**	**Addressed**

Evidence sighted

- D 2013/90414 – *Draft Annual Catchment Management Report 2012 – 2013* (Draft ACMR);
- D 2012/68458 – *Healthy Catchments Program 2012 – 2013* (HCP); and
- D 2013/33378 – *Healthy Catchments Strategy 2012 – 2016* (HCS).

Summary of reasons for finding

Taken together, the Draft ACMR (D 2013/90414), the HCS (D 2013/33378), and the HCP (D 2012/68458) set out a range of catchment management strategies that are measurable and timely. While it is difficult to assess the effectiveness of actions taken to manage and protect water quality, particularly over a short time horizon, the on-going expectations for each initiative and the component activities have been provided and the progress of these actions has been documented with discussion of any variation between planned and actual activities.

We consider that the SCA has adequately addressed this matter.

Discussion and notes

In its 2011/12 Report to the Minister, IPART recommended that:

> 9.4 "*SCA should demonstrate catchment management program strategies are measurable and timely. The effectiveness of actions taken to manage and protect water quality must be assessed and documented.*"

In reporting progress on this recommendation in 2011/12, the auditor suggested that the SCA should include detailed project descriptions for all strategies/actions that are documented in the HCS and the HCP, containing specific quantifiable measures and timelines. The auditor further suggested that the HCS should be an overarching document for all strategies, providing short descriptions of specific actions/projects, quantifiable measures and timelines.

We have reviewed the Draft ACMR, the HCS and the HCP. The HCS sets out a general goal and the criteria that the SCA suggests to measure progress towards that goal for each of the seven initiatives. This document then presents a long term plan of inputs, activities, outputs, intermediate outcomes and goal outcomes for each initiative. It enables the auditor to "*match the strategies directly with each of the detailed project descriptions and enable a complete trail upon which the effectiveness of each project and strategy may be assessed*" as suggested by the 2011/12 auditor.

The HCP sets out a group of programs for each initiative, a range of activities planned to implement each of these programs and the planned outcomes that the SCA expects to see from these programs. The budgeted expenditure is provided for each initiative.

For each of the initiatives, the Draft ACMR then sets out the range of actual activities that were undertaken to implement each of the planned activities and details of the results achieved for each activity. This document also provides planned versus actual expenditure, comments to explain any variation in expenditure or work plan, and a summary of supporting material, such as documentation references, specific outcomes for individual activities, and breakdowns for expenditure on specific grants and sponsorships.

Through these documents, we consider that the SCA has set out its catchment management strategies, the time frames for these strategies, and the results and costs of implementing these strategies over the audit period. These documents provide a sound basis for review of the strategy and the development of any required corrective action. They also conform to the suggestions of the 2011/12 auditor.

We discussed the difficulties of assessing the effectiveness of actions taken to manage and protect catchments and water quality in Table A.4.1. These difficulties apply in this instance.

In that table we discussed the use of the PDCA methodology promoted in ISO 14001:2004 "*Environmental Management Systems – Requirements with guidance for use*". This international standard recommends that these difficulties are best addressed by:

- Using science to identify areas of concern within the catchment, including existing point source and diffuse pollutants and catchment degradation. These are the objectives of the catchment management process.
- Formulating strategies to deal with the areas of concern in the catchments. This is the implementation of the catchment management process.
- Developing mechanisms to monitor specific, strategic areas of catchment health and critically analyse the results of the strategies that have been implemented, particularly comparing actual against expected results. This is the monitoring of the catchment management process.
- Finally, reviewing the results and implementing corrective actions where the actual results did not meet expectations. This is the adjustment of the catchment management process.

The HCS and HCP apply an approach that is similar to this widely accepted process. However, as the Act has directed, the SCA is also undertaking research on catchments generally and in particular on the health of the SCA's catchment areas (Specific function). Through these endeavours, the SCA is, in many ways, setting the benchmark for catchment management and making substantial material improvements to the science. We suggest that these considerations add support to our view that the HCS and HCP constitute measurable and timely strategies that allow the effectiveness of catchment protection and water quality management measures to be assessed and documented.

Based on this analysis, we consider that the SCA has satisfactorily addressed recommendation 2010/11–2.

Table A.5 Detailed audit findings – Clause 5: Assets

Sub clause	Requirement	Compliance grade
5.1.3	**Until the Asset Management System has been developed in accordance with clause 5.1.1, SCA must take steps towards developing a Management System that will meet the requirements of clause 5.1.1 by 30 June 2015.** [Clause 5.1.1 requires that, by 30 June 2015, SCA must develop a Management System that is consistent with: (a) BSI PAS 55:2008 Asset Management standard; (b) the Water Services Association of Australia's (WSAA) Aquamark benchmarking tool; or (c) another asset management standard agreed to by IPART,]	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a high risk. The development of an Asset Management System is an extensive and effort intensive process.	SCA demonstrates that its progress towards the development of a complying Asset Management System is consistent with full implementation by the due date.

Evidence sighted

- D 2013/88917 – 2012/13 Operating Audit Inception Meeting Presentation;
- D 2013/68364 - 29 August 2013 – Asset Reliability – the SCA Approach;
- Presentation – *Asset Management in SCA*;
- *Celebrating-125-years-of-the-Upper-Nepean-Scheme* (supported field inspection);
- CD 2011/271 - *Asset Management Policy*;
- CD 2011/543 - *Asset Management Strategy*;
- D 2013/73398 - Overview of AMPs (Example of an Asset Management Plan – pipelines);
- D 2013/68329 - 29 August 2013 - *Dam Safety Management in the SCA*;
- *Asset Management System Implementation Plan*;
- D 2012/45847 - State of the Assets Report – Template (with some draft content);
- D 2013/31804 Board Standing Committee – AMS Update;
- D 2013/64755 – Board Meeting 26 July 2013 – Managing Asset Risks – Item 5.2; and
- D 2013/4645 - *2012 IWA WSAA Asset Management Performance Improvement Report*.

Summary of reasons for grade

The SCA has elected to implement an Asset Management System (AMS) complying with the British Standard BSI PAS 55:2008 *Asset Management* to meet the requirements of its Operating Licence.

The SCA has an *Asset Management System Implementation Plan* which we tested for feasibility from a time perspective; the SCA's management intent and provision of resources; and the potential quality of the final result. The SCA provided evidence of progress to date, and was able to support its proposed program leading up to the deadline of June 2015. SCA reports progress on this project to the Board; has assigned management responsibility for delivery of the program to a General Manager; and has a dedicated Project Manager.

The 2012 external WSAA Aquamark assessment reported that the SCA's asset management processes are at "*a mature level in asset management with strong results across all Aquamark functions*".

Based on this evidence, we consider that the SCA has the management and technical skills to produce a quality product within the set timeframe.

Discussion and notes

The SCA has elected to implement an AMS complying with the British Standard BSI PAS 55:2008 *Asset Management*. This standard consists of many elements that are similar to AMSs which have been developing over 25 or more years in the Australian water industry. PAS 55 is currently in the process of transitioning to a new international standard, the ISO 55000 series (www.assetmanagementstandards.com).

The SCA is implementing a system which includes 13 classes or categories of assets. This includes:

- Water delivery assets - dams, pumping stations, pipelines, canals, dosing facilities, monitoring equipment, and SCADA (remote monitoring and control).
- Other assets – land, recreational areas, information and communications technology, building, working plant and equipment, and heritage assets.

The SCA supplied an *Implementation Plan* with completion dates against the 28 elements of the *PAS 55 Management System Structure* which includes all 13 asset classes or categories. We found that the implementation plan is capable of being substantially complete to a satisfactory standard by the due date (30 June 2015) if current project plans are diligently adhered to. The program is being implemented progressively and there is an opportunity to recover from any slippages in timeframes should they occur.

There is still considerable work to be done to produce PAS 55 compliant documentation and to undertake other activities such as familiarisation and training. However, the SCA has a large body of existing work, including quality systems, processes and procedures to support this program. In our interview, the SCA confirmed that it had both the budget and resources to complete the program on time.

The SCA has reporting mechanisms in place, including to the Board. It has assigned responsibility for delivery of the program to a General Manager (Level 2), and has a dedicated Project Manager.

Our only concern is that a relatively minor aspect of the program, namely "4.5.2 Tools, facilities and equipment" is currently scheduled to be completed three months beyond the due date. SCA personnel are aware of this fact and expressed the view that all required resources would be applied to this project during the final phases. We consider that this program element will be addressed within the existing timeline.

Supplementary notes to support our Findings

The documents and information presented were found to be of adequate or better quality and the SCA's representatives displayed a good understanding of the contents and the underlying strategies.

During the interview process, all 28 components of the PAS 55 management system were traversed in turn, along with the documentation listed above, and questions on other SCA activities which were relevant. In addition, a field inspection was undertaken to the Upper Canal. This gave us the opportunity to observe the SCA's asset management practices.

The SCA has been a long term participant in the rigorous WSAA Aquamark process benchmarking project. The 2012 external WSAA Aquamark Report (D2013/4645) is a detailed 65 page report which states that the SCA's asset management processes are at "*a mature level in asset management with strong results across all Aquamark functions, where*

it rates well above median results for the overall participant group". Lower results were still rated "*near or above the median of the overall benchmarking group*". This independent assessment, and the fact that the SCA has been involved with the Aquamark Program since 2004, gives confidence that it has the management and technical skills to implement the BSI PAS 55:2008 *Asset Management* standard. It also indicates that the SCA has a large body of high quality work and expertise already in place to go towards the implementation of PAS 55 by target date of June 2015.

The SCA's overall approach was described in evidence (D 2013/88917, D 2013/68364 and the presentation *Asset Management in the SCA*) and a presentation at the interview. SCA also provided us with details of the existing AMS (CD 2011/271, CD 2011/543 and C 2013/73398). These demonstrated to us that the SCA has a realistic understanding of the task to implement the PAS 55 management system.

The AMS has been formulated as a standardised management system which anticipates the requirements of the future international standard on asset management - ISO 55001; incorporating regular reporting and auditing; continuous improvement; and risk management and profiling techniques across all lifecycle phases. The AMS will likely be integrated within a broader business management system to align common elements (auditing, reporting, risk management, document control etc) with other management systems (i.e. quality, environmental, WHS, information security etc).

We reviewed two examples of regular reporting to the SCA Board on asset management issues (D 2013/31804 and D 2013/64755). These underline the importance placed by the Board on asset issues which is necessary if PAS 55 is to be implemented and continued into the future. These regular reports include discussion of dam safety. We reviewed an example report to the Board on Dam Safety (D 2013/68329). Dam operations are regulated by the NSW Dams Safety Committee (DSC). The SCA has robust systems, processes, procedures and reporting mechanisms for all its assets, including dams, which have been in operation for many years, originating before the formation of the SCA. This body of work has been well tested by the DSC over many years and will underpin the production of a PAS 55 style Dams Asset Management Plan under clause 4.3.3 of PAS 55.

The SCA is introducing an *Annual State of the Assets Report* (SotAR) and a template with some draft details was provided to us. The first edition of SotAR is scheduled for June 2014. The intent is to provide the Board and the organisation with "*a performance snapshot of the AMS and each asset category within the SCA asset portfolio*". The SCA intends that the SotAR will also be used as a communication tool to regulators and other external stakeholders.

The SotAR is an important document in that it provides systematic accountability and transparency annually on the physical state of the assets, financial information, and information on the progress of business improvement initiatives across all categories of the SCA's asset stock.

Table A.6.1 Detailed audit findings – Clause 6: Customers

Sub clause	Requirement	Compliance grade
6.1.1	**SCA must establish terms and conditions for the supply of Raw Water to all of its Customers other than Sydney Water.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a moderate risk. The SCA should be transparent in its dealings with customers.	SCA demonstrates that it has established terms and conditions for the supply of raw water to all of its Customers other than Sydney Water.

Evidence sighted

- *Bulk Water Supply Agreement – Shoalhaven City Council,* 5 January 2010;
- D 2011/38123 *Bulk Water Supply Agreement – Wingecarribee Shire Council*, 1 June 2010;
- D 2012/97095 *Raw Water Supply Agreement – Goulburn Mulwaree Council*, 1 October 2012;
- D 2013/50930 Sample Copy *Retail Customer Agreement*; and
- CD 2007/82[v2] *Retail Customer Policy*.

Summary of reasons for grade

We consider that the SCA has fulfilled the requirements of clause 6.1.1 because we found that the SCA could demonstrate that it has established terms and conditions for the supply of Raw Water to all of its Customers other than Sydney Water.

Discussion and notes

The SCA supplies bulk Raw Water to Wingecarribee Shire Council, Shoalhaven City Council, and Goulburn Mulwaree Council. It also supplies 63 small retail customers.

Concerning the large Raw Water customers, we sighted Raw Water supply agreements between the SCA and Wingecarribee Shire Council (D2011/38123), Shoalhaven City Council, and Goulburn Mulwaree Council (D2012/97095). These agreements include terms and conditions for the supply of Raw Water to these customers.

Concerning small retail customers, we sighted evidence that the SCA has developed a *Retail Customer Policy* (CD 2007/82) and we sighted a sample copy of a *Retail Customer Agreement* that includes terms and conditions for the supply of Raw Water to these customers.

Table A.6.2 Detailed audit findings – Clause 6: Customers

Sub clause	Requirement	Compliance grade
6.1.2	**The terms and conditions under clause 6.1.1 must at a minimum include:** **a) the standard of the quality of the water supplied;** **b) the continuity of the water supplied;** **c) the costs to be paid by the Customers for the supply of water to them; and** **d) dispute resolution and complaint handling procedures.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a moderate risk. SCA should have transparent dealings with customers.	SCA demonstrates that its terms and conditions for the supply of Raw Water to all of its Customers other than Sydney Water include the required elements.

Evidence sighted

- *Bulk Water Supply Agreement – Shoalhaven City Council*, 5 January 2010;
- D 2012/53997 *Notification of 2012/13 prices to Shoalhaven City Council*;
- D 2011/38123 *Bulk Water Supply Agreement – Wingecarribee Shire Council*, 1 June 2010;
- D 2012/54092 *Notification of 2012/13 prices to Wingecarribee Shire Council*;
- D 2012/97095 *Raw Water Supply Agreement – Goulburn Mulwaree Council*, 1 October 2012;
- D 2012/54119 *Notification of 2012/13 prices to Goulburn Mulwaree Council*;
- D 2013/50930 Sample Copy *Retail Customer Agreement*; and
- D 2012/64225 Letters notifying retail customers of SCA water prices for 2012/13.

Summary of reasons for grade

We consider that the SCA has fulfilled the requirements of clause 6.1.2 because we found that the terms and conditions for the supply of raw water included the required matters.

Discussion and notes

We sighted evidence that:

- the raw water supply agreements between the SCA and Wingecarribee Shire Council (D2011/38123), Shoalhaven City Council, and Goulburn Mulwaree Council (D2012/97095) each included terms and conditions related to quality of water supplied, continuity of water supplied, and dispute resolution clauses.
- the SCA had formally advised these bulk raw water customers of the costs of water supplied as per IPART price determination (D 2012/53997, D 2012/54092, D 2012/54119).
- A sample *Retail Customer Agreement* included terms and conditions related to quality of water supplied, continuity of water supplied, and dispute resolution clauses.
- each retail customer had been formally advised of the costs of water supplied as per IPART price determination and details of the complaint handling procedure (D 2012/64225).

This evidence confirms that the SCA has established terms and conditions for the supply of raw water to customers other than Sydney Water and that these terms and conditions include:

a) the standard of the quality of the water supplied;
b) the continuity of the water supplied;
c) the costs to be paid by the Customers for the supply of water to them; and
d) dispute resolution and complaint handling procedures.

Table A.6.3 Detailed audit findings – Clause 6: Customers

Sub clause	Requirement	Compliance grade
6.2.1	**SCA must maintain a procedure for receiving, responding to, and resolving Complaints, which is consistent with the Australian Standard AS ISO 10002-2006: Customer satisfaction – Guidelines for complaints handling in organizations (ISO 10002:2004, MOD)**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a moderate risk. The SCA should be responsive to its stakeholders.	SCA demonstrates that it has established and maintained a Complaints Handling Procedure consistent with the standard.

Evidence sighted

- AS ISO 10002:2006 *Customer satisfaction – Guidelines for complaints handling in organisations*;
- CD 2011/591 - *SCA Complaint Handling Policy*, May 2012;
- CD 2007/13 - *SCA Complaint Management Procedure*, May 2012;
- CD 2012/154 – *How to Guide – Complaints and Compliments Management*;
- *SCA Complaints Brochure* August 2013;
- SCA Complaints and Compliments Handling Training Presentation, June 2013; and
- SCA Overview and Complaints Handling – Induction Presentation, September 2013.

Summary of reasons for grade

We consider that the SCA has met the requirements of clause 6.2.1 because it demonstrated conformity with the required standard.

Discussion and notes

In the following tables, we have documented the SCA's complaint handling process conformity with the guiding principles and other requirements of AS ISO 10002:2006.

Guiding Principle (clause 4 elements)	SCA conformity
Visibility (cl 4.2)	Conforms – Information is well publicised.
Accessibility (cl 4.3)	Conforms – Procedure is easy to use, translation service is offered to complainants on the SCA web site.
Responsiveness (cl 4.4)	Conforms – Procedure specifies prompt acknowledgement and action.
Objectivity (cl 4.4)	Conforms – Procedure requires impartiality.
Charges (cl 4.5)	Conforms – SCA process involves no cost to complainant.
Confidentiality (cl 4.6)	Conforms – Procedure specifies confidentiality.
Customer-focus (cl 4.7)	Conforms – Information on the process welcomes feedback.
Accountability (cl 4.8)	Conforms – Procedure has clear roles.
Continual improvement (cl 4.9)	Conforms – Policy and procedure provide for improvement.

The complaints handling framework should include the following specific elements, as specified in AS ISO 10002:2006, clause 5:

Clause 5 Element	SCA conformity
Commitment	Conforms – SCA Board has approved the framework.
Policy	Conforms – Explicit SCA policies exist and operate.
Responsibility & Authority	Conforms – SCA has established clear responsibilities and authorities.

The complaint processes should be structured and include the following planning and design elements, as specified in AS ISO 10002:2006, clause 6:

Clause 6 Element	SCA conformity
Objectives	Conforms – SCA objectives have been set.
Activities	Conforms – Explicit SCA complaint handling activities have been defined.
Resources	Conforms – SCA complaint handling process is adequately resourced.

The organisation must demonstrate that the operation of the complaint handling process includes the following elements, as specified in AS ISO 10002:2006, clause 7:

Clause 7 Element	SCA conformity
Communications	Conforms – SCA process is well communicated to complainants.
Complaint receipt	Conforms – SCA complaints data are adequately recorded.
Complaint tracking	Conforms – SCA complaints are tracked.
Complaint acknowledgement	Conforms – SCA provides for prompt receipt of complaint.
Initial assessment	Conforms – SCA procedure provides for initial assessment.
Investigation	Conforms – SCA procedure provides for investigation.
Response	Conforms – SCA procedure provides for response to complainant.
Decision communication	Conforms – SCA procedure provides for communication of decision.
Closing	Conforms – SCA procedure provides for closure of complaint.

The organisation must be able to demonstrate that the complaint handling process is maintained and used for organisational improvement, as specified in AS ISO 10002:2006, clause 8:

Clause 8 Element	SCA conformity
Information collection	Conforms – SCA procedure provides for information collection.
Analysis	Conforms – SCA procedure provides for analysis of complaints.
Satisfaction with process	Conforms – SCA procedure provides for periodic review.
Monitoring of process	Conforms - SCA procedure provides for monitoring of process.
Auditing of process	Conforms - SCA procedure provides for internal audit.
Management review	Conforms - SCA procedure provides for management review.
Link to continual improvement	Conforms - SCA procedure provides for continual improvement.

The above tables demonstrate that the SCA's complaint handling process conforms to each requirement of each clause of AS ISO 10002:2006. Therefore, we have assessed that the SCA's complaint handling process is consistent with AS ISO 10002:2006.

Table A.6.4 Detailed audit findings – Clause 6: Customers

Sub clause	Requirement	Compliance grade
6.2.2	**SCA must provide to Customers information concerning the Complaints Handling Procedure which explains how to make a Complaint and how Complaints are managed. SCA must make the information available free of charge:** **a) on its website for downloading by any person; and** **b) at its offices for access or collection by any member of the public.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a moderate risk. The SCA should be responsive to its stakeholders.	SCA demonstrates that it has made the information about the Complaint Handling Process available to Customers as required by the requirement.

Evidence sighted

- D 2012/64225 Letters notifying retail customers of SCA water prices for 2012/13;
- D 2013/50930 Sample copy *Retail Customer Agreement*;
- CD 2007/13 *SCA Complaint Management Procedure*, May 2012;
- *SCA Complaints Brochure* August 2013; and
- http://www.sca.nsw.gov.au/about/engage/community/complaints-and-compliments.

Summary of reasons for grade

We consider that the SCA has fulfilled the requirements of clause 6.2.2 because it has made information about the Complaint Handling Procedure available to customers as required by the requirement.

Discussion and notes

During the audit period, SCA wrote to each of its retail customers. While the primary purpose of these letters was to inform customers about IPART's pricing determination, each letter included information about the Complaints Handling Procedure.

Further, clause 20 of the retail supply agreement deals with Complaint handling and the Complaints information is easily found on the SCA web site under the "About Us" page.

The Complaints Handling Procedure includes a direction to staff that information about making a Complaint should be available to any member of the public at SCA offices.

Table A.7.1 Detailed audit findings – Clause 7: Environment

Sub clause	Requirement	Compliance grade
7.1.4	**Until the Environmental Management System has been developed and implemented in accordance with clauses 7.1.1 and 7.1.2, SCA must maintain programs to manage risks to the environment from carrying out its activities and must ensure that all its activities are carried out in accordance with those programs.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a moderate risk. The Licence requires the SCA to maintain programs to manage risks to the environment from carrying out its activities and ensure that all its activities are carried out in accordance with those programs.	SCA must demonstrate that it has maintained programs to manage risks to the environment from carrying out its activities and must ensure that all its activities are carried out in accordance with those programs.

Evidence sighted

- D 2013/72964 – *Environmental Management Report to IPART 1 September 2013*;
- D 2012/83576 – *Environmental Program for reporting against Operating Licence 2012 - 2016*;
- CD 2011/114 – *SCA Environmental Impact Assessment Policy*;
- *Environmental Compliance Audit 2012/13 Project list*;
- *SCA Environmental Compliance Final Report 2013*, Deloitte; and
- NSW Office of Water Review of 2011/12 Annual Compliance Report.

Summary of reasons for grade

The SCA has maintained programs to manage risks to the environment from carrying out its activities, has taken steps to ensure that its activities are carried out in accordance with those programs and has reported on its environmental activities.

Discussion and notes

The *Environmental Program* (D 2012/83576) provides a summary of the activities that are undertaken by the SCA to manage risks to the environment that result from its operations and meet the requirements of the Operating Licence.

Where the data is required by another regulator, the frequency of reporting to the other regulator determines the frequency of reporting. This means that some reports to IPART will contain additional information and commentary when these coincide with other Government reporting requirements.

The following table sets out the range of environmental activities that have been reported by the SCA. These have been grouped into three principal objectives.

The SCA commissioned Deloitte to audit some areas of environmental management. The Deloitte report considered the SCA's compliance with its *Environmental Impact Assessment Policy* and investigated three projects. These matters are included among the activities defined for Objective One. The results of the Deloitte audit have been incorporated into the following table.

Summary of the SCA Environmental Program and results for environmental activities

Item	Activity	Reported result
Objective One - minimise environmental impacts of SCA's activities		
1.1	Comply with Environmental Impact Assessment (EIA) Policy	Deloitte found two of three projects complied with the EIA and the conditions imposed. In the remaining project, works commenced prior to SCA environmental assessment approval.
1.2	Increase environmental performance of contractors	Deloitte found that all projects had environmental conditions in the contract documentation, but only two (of three) contractors met these conditions.
1.3	Environmental audit report issues addressed	Deloitte found that all actions proposed in the prior year report were addressed.
1.4	Environmental inspection program issues addressed	All findings of the environmental inspection program were addressed.
1.5	SCA staff awareness of environmental responsibilities	All new staff participated in the SCA Induction Program which includes an environmental awareness component.
1.6	Environmental flows from SCA storages	The SCA advised that NOW confirmed that SCA has complied with environmental flow requirements in 2012/13. The Deloitte Report made a similar finding.
Objective Two - manage and minimise resource use and waste generation		
2.1	Conduct biennial waste audit	SCA engaged A Prince Consulting to undertake the audit, 15 – 22 February 2013.
2.2	Waste audit recommendations addressed	The 2012/13 audit report provided twelve recommendations which have been implemented or are in progress.
2.3	Implement waste reduction as in WRAPP Plan	SCA advised that the report was sent to OEH.
2.4	Report on progress of the SCA WRAPP Plan biennially	Not Applicable; report is due outside audit period.
Objective three - minimise environmental impact of SCA's use of energy		
3.1	Determine SCA carbon footprint	The SCA advised us that its carbon footprint in 2012/13 was 34,153 tonnes of carbon dioxide equivalent (CO2-e), down from 53,100 tonnes in 2011/12.
3.2	Minimise energy consumption	The SCA provided the following information: • Electricity consumption of 10,105,670kWh during 2012/13 represents a reduction of 63.8% from the 27,904,875kWh consumed during 2011/12. • 8,518 tonnes of carbon dioxide equivalent (CO2-e) greenhouse gas emissions during 2012/13, down 65.5% from the 24,692 tonnes CO2-e recorded in 2011/12. • 10% green power was used during the audit period, which is in excess of the Government target of 6%.

		• 960kWh was generated from the SCA sites and solar street lights in the Warragamba area.
3.3	Report on NGERS indicators annually	SCA personnel confirmed that this report was submitted.
3.4	Report energy consumption NSW Trade and Investment	Last year report sighted; SCA advised that it is on track to meet this year's report deadline.
3.5	Report energy consumption to WSAA	Last year report sighted; SCA advised that it is on track to meet this year's report deadline.
3.6	Report to IPART	SCA personnel confirmed that this report was sent.

In summary, the SCA has conducted a comprehensive range of activities to manage risks to the environment that result from its operations. These are consistent with the *Environmental Management Program 2012 - 2015*. We consider that this constitutes sufficient evidence that the SCA is maintaining programs for environmental management, as required by the Operating Licence.

Table A.7.2 Detailed audit findings – Clause 7: Environment

Sub clause	Requirement	Compliance grade
7.2.1	**SCA must:** **a) monitor, record and compile data on the Environmental Indicators; and** **b) report on the Environmental Indicators in accordance with the Reporting Manual.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a moderate risk. The SCA should keep stakeholders informed of its activities.	SCA demonstrates that it has monitored, recorded, compiled data and reported Environmental Indicators as required by the obligation.

Evidence sighted

- Presentation from SCA personnel; and
- *Australian National Greenhouse Accounts - National Greenhouse Accounts Factors*, Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, July 2013.

Summary of reasons for grade

The SCA has a comprehensive process to monitor, record and compile data for the Environmental Indicators. We assessed full compliance because the SCA demonstrated that it had met all requirements of this clause of the Operating Licence.

Discussion and notes

IPART's Reporting Manual identifies the Environmental Indicators as those indicators that are included in the Environment Section of the NWI suite of indicators. These all relate to greenhouse gas emissions, as follows:

- E 9.1 Greenhouse gas emissions – bulk utility water (tonnes CO2-equivalents/ML)
- E 11.1 Net greenhouse gas emissions – other – bulk utility (net tonnes CO2-equivalents/ML)
- E 12.1 Total net greenhouse gas emissions – bulk utility (net tonnes CO2-equivalents/ML)

IPART also required an evaluation of the method used to calculate these indicators. We found that the SCA has a comprehensive program to capture and validate all energy use. Vehicle odometer readings are checked against invoices, electricity usage is also checked against invoices. The SCA procedure then enters these data into an excel spreadsheet which has inbuilt cross-checks and calculates greenhouse gas emissions according to formulae that are consistent with those published by Australian National Greenhouse Accounts. We confirmed that the emission factors used by the SCA were consistent with those published in the Australian National Greenhouse Accounts.

Based on this work, we assessed full compliance with the requirements of the Operating Licence clause and we confirm that the calculation methodology used by the SCA is consistent with that presented in the *Australian National Greenhouse Accounts - National Greenhouse Accounts Factors*, published by the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, July 2013.

Table A.8.1 Detailed audit findings – Clause 8: Reporting

Sub clause	Requirement	Compliance grade
8.2.1	**SCA must comply with its reporting obligations set out in the Reporting Manual, which include:** **a) reporting to IPART, NSW Health, the Minister, and the Catchment Auditor; and** **b) making reports and other information publicly available,** **in the manner set out in the Reporting Manual.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a low risk. This requirement is monitored by IPART.	SCA demonstrates that it has complied with the reporting obligations in the Reporting Manual.

Evidence sighted

- 1 September Report to IPART 2011/12 and 2012/13;
- 30 November report to IPART 2012;
- 31 March 2013 Report to IPART; and
- Discussions with IPART and SCA personnel.

Summary of reasons for grade

We assessed full compliance with the requirements of clause 8.2.1 because the SCA demonstrated that it complied with the obligations in the Reporting Manual.

Discussion and notes

We sighted the reports that had been sent to IPART and we checked these against the requirements in the Reporting Manual. We discussed the provision of these reports with IPART and SCA personnel at the audit meeting. We found that the SCA has satisfactorily complied with the reporting obligations set out in the Reporting Manual and has made relevant reports and other information publicly available.

Table A.8.2 Detailed audit findings – Clause 8: Reporting

Sub clause	Requirement	Compliance grade
8.2.2	**SCA must maintain sufficient record systems that enable it to report accurately in accordance with clause 8.2.1.**	**Full compliance** See Section 1.2.5 for Compliance grades.

Risk	Target for full compliance
This clause represents a low risk. This requirement is monitored by IPART.	SCA demonstrates that it has maintained records as required by the obligation.

Evidence sighted

- Discussions with IPART and SCA personnel.

Summary of reasons for grade

We assessed full compliance with the requirements of clause 8.2.2 because the SCA had demonstrated that it had maintained records as required by the Operating Licence obligation.

Discussion and notes

SCA has a comprehensive system for document management and control (eTRIM). This system was upgraded in March 2013. We discussed the details of this document management system with SCA personnel during the interviews for Element 4 of the Water Quality audit and separately after interviews were complete. Based on these discussions, we consider that this upgrade has permitted customisation to manage compliance monitoring and reporting.

B. Stakeholder Responses

NSW GOVERNMENT Health

ENVIRONMENTAL HEALTH BRANCH

Mr Bob Burford
[redacted]

Dear Mr Burford

I refer to your request for comments on Sydney Catchment Authority's (SCA) performance against the Operating Licence during the 2012-2013 audit period.

NSW Health maintains an effective and open relationship with the SCA at officer and strategic levels. Regular meetings provide the opportunity to discuss matters of mutual concern and to ensure the provisions of the Operating Licence and Memorandum of Understanding (MoU) are met.

The SCA provides water quality reports to NSW Health and notifies incidents in accordance with agreed protocols. The incidents included detection of *Escherichia coli*, *Cryptosporidium*, heavy rain and elevated turbidity affecting some water filtration plants. The SCA responded promptly to requests for additional information on catchment conditions. NSW Health is satisfied that the incidents reported did not present a risk to public health.

In September 2012, NSW Health, the SCA and Sydney Water Corporation participated in a mid-term review of the *Catchment to Tap Risk Assessment*. The SCA also consulted NSW Health on its risk assessment for pesticides and synthetic organic compounds. The SCA is continuing to work with NSW Health and Sydney Water to assess the risk of *Cryptosporidium* in each catchment and determine how turbidity targets should be applied to water filtration plants.

In November 2012, NSW Health participated in a water contamination exercise with the SCA, Sydney Water and other agencies. The scenario involved a heavy rainfall event resulting in detection of *Cryptosporidium* in the water supply.

During 2012-2013, NSW Health also reviewed the SCA's *Water Quality Management Framework*. NSW Health noted that this was an overarching document that required additional supporting information in a water quality management system, including critical control points.

In conclusion NSW Health is satisfied that the SCA has met its obligations under the Operating Licence and MoU. Thank you for the opportunity to contribute to the audit process. Should you require further information please contact Dr Paul Byleveld, Manager Water Unit on [redacted].

Yours sincerely

22/10/13

Dr Wayne Smith
Director, Environmental Health

Health Protection NSW
ABN: 95 885 087 830
Locked Mail Bag 961- North Sydney NSW 2059
Telephone (02) 9391 9939 Fax (02) 9391 9960

Website www.health.nsw.gov.au

Bob Burford

From: SPARGO, SANDRA [SANDRA.SPARGO@sydneywater.com.au]
Sent: Wednesday, 9 October 2013 2:34 PM
To: 'Bob Burford'
Subject: RE: SWC feedback - SCA Operational Audit 2012/13

Dear Bob,

Sydney Water and the Sydney Catchment Authority (SCA) generally work cooperatively to meet the broader objectives of both the organisations. There are regular forums such as the Strategic Liaison Group and Joint Operational Group where both organisations fully engage and contribute to resolve issues that impact drinking water.

Sydney Water has no issues to raise with respect to the SCA's performance against its Operating Licence in 2012/13.

Regards,

Sandra Spargo Corporate Compliance Manager

Business Strategy and Resilience | Sydney Water
1 Smith St Parramatta NSW 2150
sydneywater.com.au

C. Audit methods

Audit methods we employ include:

Principle	Definition	Example of method
Inspection	Examine records, documents or physical assets; consider the source of documentation for differing degrees of reliability.	Reconcile an item of evidence back to the Licensee's internal record keeping system.
Observation	Observe processes and procedures being performed by the Licensee. Generally, this audit procedure is conducted to confirm that processes and procedures are correctly implemented.	Observe field processes and the application of documented procedures.
Inquiry and confirmation	Seek appropriate information from staff or people outside the organisation. The response to an inquiry to corroborate information contained in the records.	Inquire about details of the application of the Complaint Handling Procedure. Detailed consultation with NSW Health.
Computation	Check the accuracy of source documents and accounting records; perform independent calculations.	Confirm calculation of Greenhouse Gas records.
Analytical procedures	Investigate and analyse data fluctuations and relationships to determine whether there are inconsistencies with other relevant information, or deviations from predicated amounts.	Cross check evidence against alternate sources of information.

We consider that various factors affect the reliability of audit evidence, including:

- independence of evidence - evidence from outside the organisation is generally considered more reliable than evidence generated internally;
- knowledge and lack of bias of the person providing the evidence to the auditor, and the attention paid to the auditor's request for evidence;
- the directness in which it is obtained - evidence received directly by the auditor is generally considered to be more reliable than evidence received indirectly; and
- control systems – evidence prepared by utilities under systems of strong internal control is considered more reliable than evidence prepared under ad hoc systems.

We adopted an attitude of professional objectivity throughout the audit in order to ensure information provided is accurate and complete.

D. Glossary

Acronym/Term	Description
Act	*Sydney Water Catchment Management Act, 1998* (NSW)
ADWG (2011)	*National Water Quality Management Strategy, Australian Drinking Water Guidelines 6 (2011)*, National Health and Medical Research Council and Natural Resource Management Ministerial Council. The previous version of the ADWG was published in 2004.
Audit period	1 July 2012 to 30 June 2013
CCP	Critical Control Point
CRP	Current Recommended Practices
ESD	Ecologically Sustainable Development
HCP	Healthy Catchments Program 2012-2013
HCS	Healthy Catchments Strategy 2012-2016
IPART	Independent Pricing and Regulatory Tribunal (NSW)
ISO 14001:2004	AS/NZS ISO 14001:2004 *Environmental management systems – Requirements with guidance for use*. An international standard that specifies requirements for environmental management systems.
Minister	The Minister responsible for administering the provisions of the *Sydney Water Catchment Management Act 1998* relating to this Licence.
NOW	NSW Office of Water
NPWS	National Parks and Wildlife Service of NSW
NSW Health	NSW Department of Health
NWI	National Water Initiative (Chaired by the National Water Commission)
NWI Indicators	Performance measures adopted by the NWI parties and reported in the National Performance Report
OEH	NSW Office of Environment and Heritage
Operating Licence	The SCA 2012-17 Operating Licence.
PSAT	Pollution Source Assessment Tool
Raw Water	Water which has not been treated in any way or water that has been treated for quality, whether by chemical treatment or otherwise, but not treated at a water filtration plant (as per Section 12 of the 2012-17 Operating Licence)
RWQIRP	Raw Water Quality Incident Response Plan
RWSA	Raw Water Supply Agreement
SCA	Sydney Catchment Authority
SCADA	Supervisory Control and Data Acquisition, usually a computer based control system.

STP	Sewage Treatment Plant
Sydney Water	Sydney Water Corporation
WHS	Workplace Health and Safety
WMP	Water Monitoring Program
WQMF	Water Quality Management Framework
WQMS	Water Quality Management System

D Sydney Catchment's Statement of Compliance

SYDNEY CATCHMENT AUTHORITY

PO Box 323 Penrith NSW 2750
Level 4, 2-6 Station Street
Penrith NSW 2750
Tel 1300 722 468 Fax 02 4725 2599
Email info@sca.nsw.gov.au
Website www.sca.nsw.gov.au

Ref: D2013/76005

The Chief Executive Officer
Independent Pricing and Regulatory Tribunal of NSW
PO Box Q290
QVB Post Office NSW 1230

Statement of Compliance 1 September 2013

For 2012-13

Submitted by the Sydney Catchment Authority

The Sydney Catchment Authority reports as follows:

1. This statement documents compliance during 2012-13 with all requirements to which the Sydney Catchment Authority is subject by virtue of its operating licence.

2. This report has been prepared by the Sydney Catchment Authority with all due care and skill to the best of our knowledge of conditions to which it is subject under the Sydney Water Catchment Management Act 1998.

3. Schedule A provides information on all requirements with which the Sydney Catchment Authority did not comply during 2012-13. No issues have been identified.

4. Other than the information provided in Schedule A, the Sydney Catchment Authority has complied with all conditions to which it is subject. It should be noted that the SCA has sought approval from IPART to submit information required under 7.2.2 of the Reporting Manual by 31 October 2013.

5. This compliance report has been approved by the Chief Executive and the Chairman of the Board of Sydney Catchment Authority.

Signed:

Ross Young

Chief Executive

29.08.2013

Date:

Signed:

Mark Bethwaite

Chairman SCA Board

29.08.2013

Date:

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Schedule A: Non-Compliances for the Sydney Catchment Authority

List of requirements breached	Description of non-compliance
Nil	Nil