



Independent Pricing and Regulatory Tribunal

Sydney Catchment Authority Operational Audit 2011/12

Report to the Minister

Water — Compliance Report
January 2013



Independent Pricing and Regulatory Tribunal

Sydney Catchment Authority Operational Audit 2011/12

Report to the Minister

Water — Compliance Report
January 2013

© Independent Pricing and Regulatory Tribunal of New South Wales 2013

This work is copyright. The *Copyright Act 1968* permits fair dealing for study, research, news reporting, criticism and review. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgement of the source is included.

ISBN 978-1-922127-57-0 CP75

The Tribunal members for this review are:

Dr Peter J Boxall AO, Chairman

Mr James Cox PSM, Chief Executive Officer and Full Time Member

Mr Simon Draper, Part Time Member

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

Gary Drysdale (02) 9290 8477

Maria Morahan (02) 9113 7752

Jessica Hanna (02) 9113 7715

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	1
Overview of audit findings	1
IPART's recommendations	2
1 Introduction and scope	4
1.1 Purpose and structure of this report	5
1.2 Audit scope	5
1.3 The audit process	6
2 Overview of audit findings and recommendations	8
2.1 Bulk raw water quality	9
2.2 Catchment management and protection	10
2.3 The environment	11
2.4 Management of catchment infrastructure works and water conservation	12
2.5 Customers	12
3 Progress on previous audit recommendations	14
Appendices	17
A Auditor's audit report	19
B SCA's statement of compliance	93
C Summary of opportunities for improvement	101

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 2011 - 2012 operating licence (the licence). This audit covers the period from 1 July 2011 to 30 June 2012. IPART engaged Parsons Brinckerhoff Australia (Parsons Brinckerhoff) to assist with the 2011/12 operational audit.

Overview of audit findings

This year SCA has demonstrated that it continues to manage Sydney's raw water Catchments and Dams to a high level. The auditor awarded 'full compliance' to 14 of the 15 auditable clauses.

The auditor's findings confirm that the SCA is working collaboratively with Sydney Water, its customers, NSW Health, NSW Office of Water (NOW), local councils, stakeholder groups and IPART to achieve their water quality objectives and water supply functions through their catchment management activities and operations.

In summary, this audit found that SCA achieved:

- ▼ **Full compliance** with all audited responsibilities relating to catchment management and protection, the environment, management of catchment infrastructure works and customers.
- ▼ **High to full compliance** with its requirements relating to raw water quality.

SCA's compliance with audited licence sub-clauses for the audit period is illustrated in the following table.

Table 1 Summary of SCA's 2011/12 compliance

Licence Clause	No of auditable subclauses	Compliance grade awarded	
		Full	High
Part 3 – Bulk Raw Water Quality	4	3	1
Part 4 – Catchment management and protection activities	1	1	-
Part 5 – The environment	2a	2	-
Part 6 – Management of catchment infrastructure works	5	5	-
Part 8 – Customers	3	3	-
	Total	15	14

a 3 clauses were considered for Part 5 - the Environment, however 1 clause was not triggered and therefore not an auditable clause.

Note: Audit scope required 17 clauses to be audited, sub-clause 4.2.1 was removed from the scope prior to the audit and sub clause 5.1.2 was not triggered during the audit period.

Source: Parsons Brinckerhoff, *Sydney Catchment Authority Operational Audit 2011-12*, 7 December 2012.

The auditor also considered recommendations endorsed by IPART from past audits. They found that SCA has made progress in addressing recommendations arising in the 2010/11 operating licence audit, and the recommendation that was outstanding from the 2009/10 audit. The auditor has provided a status update on each recommendation and, where appropriate, made follow-up recommendations to address outstanding matters. All follow up recommendations are discussed in chapter 3 of this report.

The auditor's report is in Appendix A.

IPART's recommendations

IPART has no key recommendations in relation to the 2011/12 operational audit.

The only part of the licence where full compliance was not awarded was related to Sydney Water's endorsement of the revised specific water characteristics, under the Raw Water Quality licence clause. In line with our audit guidelines,¹ the auditor made a recommendation to address compliance with this clause. The recommendation relates to seeking endorsement from Sydney Water on the SCA's Specific Water Characteristics within the SCA's Water Monitoring Program. This is a minor process issue and is considered a low risk to water quality.

¹ The Audit guidelines require auditors make recommendations to how the utility could improve its compliance with every clause where full compliance was not awarded. IPART, *Audit Guideline – Public Water Utilities*, May 2012.

In respect of the auditor's recommendation, we note that the new SCA 2012-17 operating licence has moved to a less prescriptive instrument, which has a focus on process and outcomes. The older clause to which the recommendation was made has not been carried over into the new licence, as it is anticipated that the SCA should be able to determine the most efficient and effective methods to meet raw water quality needs under its Water Quality Management System. We have therefore changed the auditor's recommendation to become an opportunity for improvement for SCA's consideration.²

The auditor has also identified opportunities where SCA's practices or procedures could be improved. For a full list of the opportunities for improvement see Appendix C. SCA will be requested to consider the benefits of implementing the opportunities for improvement.

We will request that the SCA provide us with a status update on all outstanding recommendations from past audits by 31 March 2013. The status update should set out the actions and timelines for implementation. The SCA is not required to report on opportunities for improvement.

² These are suggestions that may further improve processes and practices. The utility can decide whether to implement such opportunities, based on their own assessment. We expect pricing implementation of continual improvement and value for money to the customer should be considered in determining whether to implement such opportunities.

1 Introduction and scope

Sydney's drinking water comes from a mix of sources including a complex network of storage dams (also known as reservoirs) as well as the Sydney Desalination Plant. Rainfall that falls in Sydney's catchment areas collects in dams, and the best quality water is drawn off and sent to water utilities and councils to treat and distribute to customers.

SCA is responsible for managing and protecting the drinking water catchments of Greater Sydney and maintaining the dams and other water supply infrastructure.

SCA was established in July 1999 with the legislative objectives to promote water quality, protect public health and protect the environment. SCA's primary responsibility is to supply bulk water to Sydney Water Corporation (Sydney Water), small councils and about 60 small retail customers. SCA draws bulk water from the catchments of 4 major river systems – the Warragamba, Upper Nepean, Woronora and Shoalhaven. These functions come from the *Sydney Water Catchment Management Act 1998* (the Act) and the licence issued to SCA under section 25 of the Act.

We conduct annual operational audits to monitor SCA's compliance with its licence obligations. We use a risk-based approach to auditing. The risk-based auditing process assesses the risk of non-compliance with a licence obligation. Those clauses deemed as 'high risk' are audited more frequently these include clauses dealing with water quality, catchment health and the management of catchment infrastructure works. Other clauses, such as those dealing with customer contracts, have been deemed low risk and are therefore audited less frequently. The audit program ensures that all clauses of the licence are audited at least once during the term of the licence.

Taking a risk-based approach improves the effectiveness and efficiency of the auditing process without increasing risks to the community. It allows audit resources to be targeted to areas of higher risk while reducing the overall burden of compliance.

In addition, SCA provides a Statement of Compliance, signed by the Chief Executive and the Chairman of the Board, for all licence clauses (Appendix B).

This year's operational audit is the second audit against the interim SCA licence which spans the period 8 April 2011 to 20 June 2012. This licence is an extension of the 2006-2011 operating licence. Only minor changes were made to the licence, which allows us to track compliance over a 7-year period. This is the last audit of the 2011-2012 licence.

The new SCA licence came into effect in July 2012. A number of older prescriptive clauses have not been carried over into the new licence, which has had a bearing on the recommendations to come out to this year's audit. The new licence has shifted to be process and outcomes focused. This form of licensing allows the SCA to determine the most efficient and effective manner for managing its business.

This audit report covers the period from 1 July 2011 to 30 June 2012.

1.1 Purpose and structure of this report

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

1.2 Audit scope

This audit covers the period from 1 July 2011 to 30 June 2012. The 2011/12 audit scope audited clauses in the following sections of the licence:

- ▼ Raw water quality (Part 3)
- ▼ Catchment management and protection (Part 4)
- ▼ The environment (Part 5)
- ▼ Management of catchment infrastructure works and water conservation (Part 6)
- ▼ Customers (Part 8).

In accordance with our risk-based audit program, the following sections of the licence were not audited in 2011/12:

- ▼ Asset management (part 7)
- ▼ Pricing (part 9)
- ▼ Liability issues (part 10).

Compliance with these sections has been included in SCA's statement of compliance (Appendix B of this report). The statement of compliance indicates that SCA has fully complied with the requirements of all licence clauses in 2011/12.

1.3 The audit process

We engaged Parsons Brinckerhoff Australia (Parsons Brinckerhoff) to assist with the 2011/12 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. 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 risk-based audit scope.
5. 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.
6. 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.
7. Provide the drafts of the audit report to IPART and address comments from SCA and IPART regarding the draft audit findings.
8. 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 licences prior to the commencement of the audit interviews. We advertised for public submissions in the Sydney Morning Herald, The Daily Telegraph and The Land on 15 August 2012. We did not receive any submissions from the public.

Parsons Brinckerhoff contacted NSW Health and Sydney Water prior to the audit interview to seek their views on compliance or any other areas of concern. NSW Health reported to the auditor that it was satisfied that the SCA had met its obligations under the operating licence. (NSW Health's letter is Appendix C of Parsons Brinckerhoff's report, which is appendix A of this report.)

The auditor adopted an audit methodology that was consistent with the Standard on Assurance Engagements ASAE 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information. These guidelines 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*. Under this guideline, auditors can either make recommendations or suggest 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, particularly if it relates to an area where full compliance of the licence requirement has been awarded. 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 improve it. That is, we want the utility to consider the pricing implications of continued improvement and value for money before the utility implementing further improvement.

We held a project start up meeting with the auditors on 6 September 2012 to agree on project milestones and timing of the audit, as well as review the questionnaire with the auditors. We also held an inception meeting with the auditors and SCA representatives on the first day of the audit interviews, 10 October 2012. At this meeting a mutual understanding and expectations of the audits was established and protocols for the conduct of the audits were agreed to. All parties adhered to the agreed protocols throughout the audits.

The operating licence audit interviews were conducted from 10 to 12 October 2012 at the SCA's offices in Penrith.

SCA's compliance with the relevant requirements of the operating licence was assessed according to the compliance grades outlined in section 1.2.5 of Parsons Brinckerhoff's report, which is Appendix A of this report.

2 Overview of audit findings and recommendations

Presented in this chapter is a summary of the auditor's findings and recommendations for each of the audited clauses and sub-clauses of the licence.

For each of the audited licence clauses, we have included a table comparing SCA's performance in audits since its first operational audit in 2006. The historic compliance tables in each section that follows shows SCA's compliance with each clause. Most clauses are made up of a number of sub-clauses, at which the compliance grade is awarded.

The sources of data for these tables are the audit reports listed below:

- ▼ 06/07 audit grades - Halcrow - *2007 Operational Audit of Sydney Catchment Authority*, December 2007
- ▼ 07/08 audit grades - Parsons Brinckerhoff - *Sydney Catchment Authority Operational Audit 2008*, November 2008
- ▼ 08/09 audit grades - Parsons Brinckerhoff - *Sydney Catchment Authority Operational Audit 2009*, November 2009
- ▼ 09/10 audit grades - Halcrow - *2010 Operational Audit of Sydney Catchment Authority Audit Report*, November 2010
- ▼ 10/11 audit grades - Halcrow - *2011 Operational Audit of Sydney Catchment Authority Audit Report*, November 2011
- ▼ 11/12 audit grades - Parsons Brinckerhoff - *Sydney Catchment Authority Operational Audit 2011 - 12*, December 2012. (Appendix A of this report.)

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

- ▼ **Full** = Full Compliance; **High** = High Compliance; **Mod** = Moderate Compliance; **Low** = Low Compliance; **NC** = Non Compliance; **Insuff** = Insufficient information; **-** = No requirement/not audited, **NA**= non-auditable clause.

Following the table, we discuss those clauses where SCA received less than full compliance and the auditor's reasoning for the grade. We also discuss the recommendations and opportunities for improvement to address the issues that have resulted in less than full compliance.

2.1 Raw water quality

SCA achieved **full compliance** with 3 of the 4 audited clauses, and **high** compliance with 1 clause.

Part 3 of the licence outlines the obligations for monitoring and reporting on the water quality within the catchment and the quality of water supplied by SCA from treatment by its customers. Under the risk-based auditing framework, we consider that this section of the licence poses a moderate to high risk with respect to both likelihood and consequence of non-compliance. This year 4 clauses were audited.

Table 2.1 Summary of compliance with Part 3 of the licence - raw water quality

Clause	Requirement	Compliance Grading					
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
3.1	Specific Water Characteristics	Full	-	High	Full	-	High
3.2	Health related Water Quality Characteristics	Full	-	High	Full	-	-
3.4	Water supplied for water treatment	Full	Full	Full	Full	Full	Full
3.5	Catchment and system management	Full	Full	Full	Full	Full	Full
3.6	Water quality monitoring and reporting	Full	High - Full	Mod-Full	Mod-Full	High-Full	Full
3.7	Water quality planning	Full	Full	High - Full	Insuff/Mod-Full	Mod-Full	-

The auditor found that the SCA's water monitoring program contained a list of specific water characteristics. The auditor noted that the program had been reviewed twice within the audit period and had been updated to review health guideline values following the release of the new ADWG (2011). The auditor sighted sufficient evidence to conclude that the list achieved its purpose set out in clause 3.1.1. The auditor also noted that SCA had provided evidence of cooperation and communication with NSW Health and Sydney Water about the list, however no record or evidence of endorsement by Sydney Water was provided. For this reason the auditor awarded high compliance. The auditor made a recommendation that SCA seek written endorsement of the Water Monitoring Program from Sydney Water.

In respect of the auditor's recommendation, we note that the new SCA 2012-17 operating licence has moved to a less prescriptive instrument, which has a focus on process and outcomes. The older clause to which the recommendation was made has not been carried over into the new licence, as it is anticipated that the SCA should be able to determine the most efficient and effective methods to meet raw water quality needs under its Water Quality Management System. We have therefore changed the auditor's recommendation to become an opportunity for improvement for SCA's consideration.

The auditor also identified an opportunity for improvement for the Water Quality Management Framework (Clause 3.5). The auditor suggested the SCA include more detailed descriptions of specific preventative measures or controls in each water supply system, and associate these with the particular water quality risks being mitigated (for further details see Appendix C).

2.2 Catchment management and protection

SCA achieved **full compliance** with sub-clauses imposed on the SCA under the *Drinking Water Catchments Regional Environmental Plan No 1 (REP)*.

Part 4 of the licence outlines the SCA's obligations with respect to managing and protecting catchment management areas, adherence to specific plans and providing relevant information to the public. Under the risk-based auditing framework, we consider that this section of the licence poses a high risk of likelihood and consequence of non-compliance. This year only 1 sub-clause under this part of the licence was audited.

Sub-clause 4.2.1 was mistakenly included in the original audit scope. An outstanding recommendation related to sub-clause 4.2.1 was to be audited only. As it is not a requirement that has been carried over to the new licence we only require the auditor to follow up on outstanding matters detailed in recommendation R2009/10-2 (see Chapter 3 Progress on previous audit recommendations). Prior to the commencement of the audit interviews it was removed from the 2011/12 audit.

Table 2.2 Summary of compliance with catchment management and protection part of the licence

Clause	Requirement	Compliance Grading					
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
4.1	Manage and protect Catchment areas	High-Full	Full	Full	Mod-Full	Full	-
4.2	Plans of management – special areas	Full	Full	Full	Mod	Full	-
4.3	Regional Environmental Plan	High-Full	Full	Full	Full	Full	Full
4.5	Provision of information	-	-	-	-	Full	-

The auditor noted that the REP³ had since been replaced by a State Environmental Planning Policy (SEPP).⁴ In assessing compliance the auditor considered whether there was evidence to show that:

1. SCA supported the maintenance or achievement of the water quality objectives
2. Current Recommended Practices and Performance Standards (CRPs) were incorporated into development assessment and approval processes
3. copies of the CRPs are available on the SCA website or for inspection at the offices without cost
4. SCA has engaged with councils on Neutral or Beneficial Effect (NorBE) criteria.

The auditor identified an opportunity for improvement suggesting that the SCA set documented control triggers for each CRP in order to trigger reviews and prepare responses if required prior to the annual review in a timely manner. This opportunity for improvement is discussed in Appendix C.

2.3 The environment

SCA achieved **full compliance** with 2 of the 3 sub-clauses within clause 5.1. The remaining sub-clause 5.1.2 was deemed to be **not auditable** as it was not triggered during the audit period.⁵

Part 5 of the operating licence outlines the SCA's obligations towards environmental management and information monitoring, recording and reporting requirements. Under the risk-based auditing framework, we consider this section of the licence poses a low risk. This year, 2 sub-clauses under this part of the licence were audited.

Table 2.3 Summary of compliance with the environment part of the licence

Clause	Requirement	Compliance Grading					
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
5.1	Environment Plan	Full	-	Full	-	-	Full
5.2	Environmental indicators	High-Full	-	Full	-	Full	-

³ REP, *Drinking Water Catchments Regional Environmental Plan No 1*.

⁴ SEPP, *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011*.

⁵ Clause 5.1.2 requires SCA to consult on any review of its environmental programs. As there was no review conducted in the audit period the clause was deemed to be No Requirement and was not audited in detail.

The auditor identified an opportunity for improvement for sub-clause 5.1.3(a). The auditor suggested that SCA produce a greenhouse gas reduction cost curve and energy reduction and project tracker. This could be used to track project viability. This opportunity for improvement is discussed in Appendix C.

2.4 Management of catchment infrastructure works and water conservation

SCA achieved **full compliance** with all of the audited clauses in this section.

Part 6 of the licence addresses the SCA's obligations with respect to the management of its catchment infrastructure works, the water supply system yield model and water conservation activities. Under the risk-based auditing framework, we consider that the consequence and likelihood of non-compliance with this section of the licence, poses a moderate to high risk. This year, 5 sub-clauses within Clauses 6.1 and 6.2 were audited.

Table 2.4 Summary of compliance with the management of catchment infrastructure works and water conservation part of the licence

Clause	Requirement	Compliance Grading					
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
6.1	Management of Catchment Infrastructure Works	Full	Full	Full	Full	Full	Full
6.2	Water Supply System Yield	High – Full	-	NR	-	Full	Full
6.3	Review of the model	-	-	Insuff-Full	Full	Full	-
6.4	Water conservation	Full	High-Full	Full	-	Full	-

2.5 Customers

SCA achieved **full compliance** with the 3 sub-clauses audited within Clause 8.3 relating to complaints management.

Part 8 of the licence outlines the SCA's responsibilities and obligations towards customers, customer and community complaints and consultation obligations, as well as the related reporting obligations. Under the risk-based auditing framework, we consider that this section of the licence poses low to moderate risk. This year, 3 sub-clauses under this part of the licence were audited.

Table 2.5 Summary of compliance with the customers part of the licence

Clause	Requirement	Compliance Grading					
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
8.1	Customer – Sydney Water Corporation	-	-	Full	-	-	-
8.2	Customers – other than Sydney Water Corporation	-	-	Full	-	-	-
8.3	Complaints	-	-	High-Full	-	-	Full
8.4	Consultation	-	-	High-Full	-	-	-

3 Progress on previous audit recommendations

Previous audits identified licence areas where:

- ▼ SCA’s performance was assessed as less than full compliance.
- ▼ SCA’s performance could be improved, even though high grades of compliance were awarded.

We made recommendations to address these issues.

SCA has made some progress in addressing recommendations arising in the 2010/11 operating licence audit, and the recommendation that was outstanding from the 2009/10 audit. The auditor has provided a status update on each recommendation and, where appropriate, made follow-up recommendations to address outstanding matters. The table below presents SCA’s progress towards addressing these recommendations.

We request that the SCA provide us with a status update on all outstanding recommendations by 31 March 2013. The status update should set out the actions and timelines for implementation. We will continue to monitor and audit any outstanding recommendations until they are completed.

Table 3.1 Progress on previous audit recommendations

Ref #	Recommendation	Progress
R2010/11-1	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.	<p>Not complete.</p> <p>The auditor found that the WQMF had been reviewed and updated within the audit period, and went some way to satisfying IPART’s requirements.</p> <p>Follow up Recommendation</p> <p>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.</p>

Ref #	Recommendation	Progress
R2010/11-2	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	<p>Not complete.</p> <p>The auditor found that the project descriptions with specific, quantifiable measures and timelines, were not given for all projects. The auditor found that this recommendation had been partially completed and issued a follow up recommendation for its completion.</p> <p>Follow up recommendation</p> <p>Neither the Draft Healthy Catchment Strategy 2012-2016 (Strategy) or 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.</p>
R2010/11-3	Fully develop and implement asset management processes under the Asset Management Framework in line with good practice asset management standards (for example PAS55). Continue to fully implement all elements of the revised Asset Management Framework across the whole portfolio of assets.	<p>Not complete.</p> <p>The auditor reported that the SCA is working towards developing an Asset Management System and participated in an industry benchmarking exercise. The auditor found that progress against the recommendation is partially complete and that further follow up will be required during subsequent audits.</p>
R2009/10-2	Review its outstanding actions in relation to the implementation of the Wingecarribee Swamp and Special Area Plan of Management (2007) (WSSAPoM) and that it develops a revised program for implementation of this Plan of Management. Outstanding actions should be prioritised for implementation. These priorities should be reviewed and agreed with the WSSAPoM Joint Intergovernmental and Interdivisional Working Groups.	<p>Not complete.</p> <p>The auditor found that approximately 90% of the SASPoM items were completed as at 30 May 2012. The auditor found action item 2.8 of the WSSAPoM was still outstanding, and recommended that the completion of the outstanding WSSAPoM item be followed up by IPART next audit period.</p>



Appendices

A Auditor's audit report

Sydney Catchment Authority Operational Audit 2011-12

7 December 2012

IPART

**PARSONS
BRINCKERHOFF**

*Parsons Brinckerhoff Australia Pty Limited
ABN 80 078 004 798*

*Level 15
28 Freshwater Place
Southbank VIC 3006
Australia*

*Telephone +61 3 9861 1111
Facsimile +61 3 9861 1144
Email melbourne@pb.com.au*

*Certified to ISO 9001, ISO 14001, AS/NZS 4801
A+ GRI Rating: Sustainability Report 2010*

Revision	Details	Date	Amended By
00	Original	2 Nov 2012	S. Feaver
00	Peer Reviewed	2 Nov 2012	P. Walshe
01	First Draft	2 Nov 2012	S. Feaver
02	Second Draft	23 Nov 2012	S. Feaver
03	Final	7 Dec 2012	P. Walshe

©Parsons Brinckerhoff Australia Pty Limited [2012].

Copyright in the drawings, information and data recorded in this document (the information) is the property of Parsons Brinckerhoff. This document and the information are solely for the use of the authorised recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that for which it was supplied by Parsons Brinckerhoff. Parsons Brinckerhoff makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.

Author: Sheree Feaver, Eladio Perez, Ramesh Seneviratne

Reviewer: Peter Walshe

Approved by: Peter Walshe

Signed: 

Date: 7 Dec 2012

Distribution: SCA, IPART

Contents

	Page number
Auditor's statement	iii
1. Introduction	1
1.1 Objectives	1
1.2 Audit method	1
1.2.1 Audit scope	1
1.2.2 Audit standard	1
1.2.3 Audit steps	2
1.2.4 Audit team	3
1.2.5 Audit grades	3
1.3 Regulatory regime	4
1.4 Quality assurance process	5
1.5 Stakeholder consultation	5
2. Licence part 3 – raw water quality	6
2.1 Summary of findings	6
2.2 Recommendations	7
2.2.1 Recommendations	7
2.2.2 Opportunities for improvement	7
3. Licence part 4 – catchment management and protection	8
3.1 Summary of findings	8
3.2 Recommendations	8
3.2.1 Recommendations	8
3.2.2 Opportunities for improvement	8
4. Licence part 5 – environmental management	10
4.1 Summary of findings	10
4.2 Recommendations	10
4.2.1 Recommendations	10
4.2.2 Opportunities for improvement	11
5. Licence part 6 – management of catchment infrastructure works	12
5.1 Summary of findings	12
5.2 Recommendations	12
5.2.1 Recommendations	12
5.2.2 Opportunities for improvement	13

6.	Licence part 8 – customers	14
6.1	Summary of findings	14
6.2	Recommendations	14
6.2.1	Recommendations	14
6.2.2	Opportunities for improvement	14
7.	Previous audit recommendations and outstanding actions	15
7.1	Previous audit recommendations	15
7.2	Previous audit outstanding actions	17

List of tables

		Page number
Table 1	SCA Operating Licence 2011/2012 Audit Scope	1
Table 2	Compliance grades for public utilities	4
Table 3	Summary of compliance for Part 3 of the Operating Licence	6
Table 4	Summary of compliance for Part 4 of the Operating Licence	8
Table 5	Summary of compliance for Part 5 of the Operating Licence	10
Table 6	Summary of compliance for Part 6 of the Operating Licence	12
Table 7	Summary of compliance for Part 8 of the Operating Licence	14

Appendices

Appendix A	Glossary
Appendix B	Detailed Audit Findings
Appendix C	Stakeholder Responses

Auditor's Statement

Parsons Brinckerhoff was engaged by the Independent Pricing and Regulatory Tribunal (IPART) to undertake the 2011-12 Operational Audit of the Sydney Catchment Authority (SCA). The SCA is a Statutory Corporation representing the Crown. Its roles and responsibilities include providing raw water services to Sydney Water Corporation, Wingecarribee Shire Council and Shoalhaven City Council.

Parsons Brinckerhoff's responsibility is to express an opinion in relation to the SCA's performance against its 2011-12 Operating Licence, in accordance with the compliance grades specified in the IPART Audit Guideline – Public Utilities May 2012 (Audit Guideline), during the audit period 1 July 2011 – 30 June 2012.

In accordance with the Audit Guideline, Parsons Brinckerhoff:

- has seen sufficient evidence on which to base its conclusions
- confirms that the audit findings accurately reflect its professional opinion
- has prepared this report in accordance with the Audit Guideline and the audit deed
- confirms that the audit findings have not been unduly influenced by the utility and/or any of its associates.

In our opinion, the SCA performed well against the audited clauses of its 2011-12 Operating Licence. Parsons Brinckerhoff found that the SCA was fully compliant in 14 of the 16 auditable clauses or sub-clauses. In all cases where full compliance was not achieved, Parsons Brinckerhoff found that there were 'very few minor shortcomings' and that the SCA had achieved a high level of compliance. Consequently Parsons Brinckerhoff recommends relatively minor corrective actions necessary to improve compliance. We also followed up on the recommendations made in previous audits.

In summary, our audit recommendations are as follows:

Clause 3.1.1 – Specific Water Characteristics – the SCA should seek written endorsement from the Sydney Water Corporation of the current version of the SCA Water Monitoring Program 2010-2015, dated 2 December 2011, as endorsement of the revised list of Specific Water Characteristics.

Clause 3.7.3 – Water Quality Management Framework – The additional information included in the Draft WQMF goes some way to satisfy IPART's requirements that 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. Compliance could be further 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 preventive or control measures to mitigate each risk. This may take the form of a table or a flow chart.

Clause 4.1 – Catchment Management and Protection Activities – Neither the *Draft Healthy Catchment Strategy 2012-2016 (Strategy)* or the *Healthy Catchments Program 2012-13 (Program)* contain specific measures and timelines to the detail that would be expected 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.

Clause 4.2.1 - Plans of Management – Special Areas – The completion of the few outstanding actions (items 2.8, 4.4 and 5.4) under the *Wingecarribee Swamp & Special Area Plan of Management 2007* should be followed up by IPART during the next audit period.

Clause 7.1 – Asset Management – The auditor found that progress in establishing an asset management system is partially complete and recommends that further follow-up will be required during subsequent audits to follow progress against the 2010/11 IPART recommendation.

Yours sincerely



Sheree Feaver
Lead Auditor
Parsons Brinckerhoff Australia Pty Limited

1. Introduction

1.1 Objectives

The objective of the audit was to assess the Sydney Catchment Authority's (SCA) performance against its 2011-12 Operating Licence and any Ministerial requirements for the period 1 July 2011 – 30 June 2012.

1.2 Audit method

1.2.1 Audit scope

Using the rationale of risk based audits, IPART selected the specific clauses of the SCA Operating Licence to be subject to a detailed audit in 2011/12. These clauses are listed in Table 1. All clauses of the Licence were also subject to a Statement of Compliance by the SCA, which was provided to IPART.

Table 1 SCA Operating Licence 2011/2012 Audit Scope

		Clause	Audit Type
3	Raw Water Quality		
3.1	Specific Water Characteristics	3.1.1	AUDIT
3.4	Water supplied for water treatment	3.4(a) & (b)	AUDIT
3.5	Catchment and system management	3.5	AUDIT
3.6	Water quality monitoring and reporting	3.6.5	AUDIT
4	Catchment Management and Protection		
4.2	Plans of Management – Special areas	4.2.1	(see note)
4.3	Regional Environment Plan	4.3.1	AUDIT
5	The Environment		
5.1	Environmental Management	5.1.1-3	AUDIT
6	Management of catchment infrastructure works and water conservation		
6.1	Management of catchment infrastructure works	6.1.1–2	AUDIT
6.2	Water Supply System yield	6.2.4–6	AUDIT
8	Customers		
8.3	Complaints	8.3.1-3	AUDIT

Note: The audit of clause 4.2.1 was removed from the audit scope. An update on progress against the Plans of Management is included in Section 7.

1.2.2 Audit standard

The audit process was guided by the Standard on Assurance Engagements ASAE 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information.

1.2.3 Audit steps

Parsons Brinckerhoff undertook the following steps during the audit process:

Stage 1: Project kick-off and information request / audit questionnaire

- meeting with IPART's water licensing team to confirm the scope, approach and schedule of the project
- conducted a detailed review of the Operating Licence, previous audit reports and any ministerial advice to develop an information request or audit questionnaire for the SCA to provide as pre-audit information, to facilitate a more efficient audit interview process
- as agreed with IPART, contacted NSW Health and the Sydney Water Corporation (SWC) to seek their views on SCA's licence compliance and particular areas of concern

Stage 2: Preparation for audit Interviews

- reviewed all documentation provided by IPART, SCA, NSW Health, other regulatory stakeholders and submissions from the public, including documented procedures and data that detail how the SCA meets its obligations under the operating licence. This formed the basis for requesting further records and conducting staff interviews.
- prepared an audit plan (and interview schedule) in advance of the audit interviews to guide the process and indicate the likely site visit(s) where a review of implemented systems and data was predicted to be required

Stage 3: Inception meeting and interviews with the SCA

- inception meeting with the SCA and IPART to introduce the audit team and corresponding SCA team, discuss the general audit process, any key areas of focus identified and the post-interview process
- interviewed SCA staff including the review of a sufficient sample of records to satisfy the auditor that procedures are being followed and that the quality and value of the output complies with the procedures, the operating licence, and other relevant obligations, and to assess compliance
- identification and discussion of any potential areas of non-compliance
- assess any progress made by the SCA in addressing recommendations made by IPART during the previous audit and outstanding actions identified by the previous auditors on the auditable clauses, by relevant Ministers or regulatory bodies pertaining to previous audits

Stage 4: First draft operational audit report

- findings of the audit interviews and investigations compiled into the first draft operational audit report, including the assignment of preliminary compliance grades, performance recommendations, requests for outstanding evidence

and assessment of the progress of the SCA with respect to outstanding recommendations and actions from previous audits

- in preparing the performance recommendations Parsons Brinckerhoff identified any factors that it was aware may have affected SCA's performance during the audit period in relation to the audited clauses
- made recommendations on how the SCA could improve its compliance or opportunities for improvement to maintain compliance
- prepared the operational audit report in accordance with the IPART Public Water Utility Audit Guideline (May 2012)
- submitted the first draft to IPART and the SCA for comment and additional evidence

Stage 5: Second draft operational audit report

- prepared the second draft report considering comments and additional evidence from IPART and the SCA in response to the first draft report and assigned the final compliance grades
- submitted the second draft report to IPART and the SCA for comment

Stage 6: Tribunal briefing

- optional presentation of high level findings and recommendations of the audit to the Tribunal, but IPART advised that this would not be required

Stage 7: Final Reports

- finalised the operational audit report taking due account of the comments provided by IPART and the SCA in relation to second draft report

1.2.4 Audit team






The audit was led by water quality lead auditor Sheree Feaver. Auditor Eladio Perez audited the Environment and Catchment Management licence categories. Technical professional Ramesh Seneviratne assisted the lead auditor to audit the Infrastructure Performance licence category. All audit reports were quality reviewed by experienced lead auditor Peter Walshe.

The lead auditor was present during all audit interviews at the request of IPART to ensure that a sufficient and appropriate level of questioning and sampling occurred and that there was consistent audit conduct.

1.2.5 Audit grades

The auditor assessed the adequacy or compliance that the SCA has achieved for each licence requirement and awarded grades for each requirement. With agreement from IPART, the grades were awarded at the clause and sub-clause level to align with the approach taken during previous audits under the SCA Operating Licence. The compliance grade scales are shown in Table 2.

Table 2 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.

Source: IPART Audit Guideline – Public Water Utilities – May 2012

Parsons Brinckerhoff assessed the operational risk posed by each auditable clause and provided guidance on what constitutes full compliance. Parsons Brinckerhoff assessed the SCA’s compliance against this guidance. These guidelines for compliance are detailed in Appendix B.

1.3 Regulatory regime

The SCA’s roles, functions and objectives are defined by the Sydney Water Catchment Management Act 1998 (the Act).

Other instruments that govern the way the SCA operates include:

- Sydney Water Catchment Management Regulation 2008
- Operating licence
- Water management licence
- Memoranda of understanding with NSW Health and the EPA
- Bulk water supply agreements
- Catchment audits
- Operational audits
- Price determination currently applying from July 2009 to July 2012

The SCA were also subject to the water quality standard ADWG (2004 and 2011) during the audit period.

1.4 Quality assurance process

Parsons Brinckerhoff's standard quality assurance process includes the review of draft and final reports prior to release to ensure the integrity of the information provided. Our audit team included an experienced lead auditor who quality reviewed all deliverables.

1.5 Stakeholder consultation

Under Part 11 of SCA's Operating Licence IPART may undertake any public consultation it considers appropriate, and as such requested that Parsons Brinckerhoff contact NSW Health and the Sydney Water Corporation for feedback.

Parsons Brinckerhoff received responses to this request and these responses are included in Appendix C. No issues were raised by these stakeholders regarding the SCA's performance with respect to the Operating Licence.

SCA notes that in previous years, other Regulators and key stakeholders such as Dam Safety Committee (Assets), NSW Office of Water (Water Quality and Quantity), Wingecarribee Shire Council and Shoalhaven City Council (Customers) were also consulted.

2. Licence part 3 – raw water quality

Part 3 of the Operating Licence requires the SCA to comply with specific raw water quality requirements. This is to ensure that the SCA identifies the water characteristics that should be monitored to protect human health, work with customers to monitor and manage the level of these water quality characteristics, and manage the catchment infrastructure works and catchment area to minimise the risk of poor raw water quality.

2.1 Summary of findings

All five of the clauses and sub-clauses assigned to Parsons Brinckerhoff to audit were deemed to be auditable in 2011/12. The audit process found that the SCA fully complied with four of the clauses and sub-clauses and achieved high compliance for one clause. A summary of the compliance grades assigned to these clauses can be found in Table 3 and an explanation of 'non-full' compliance grades can be found below.

Compared to the SCA's performance in the previous 2010/11 and 2009/10 audits, when the clauses were last audited, its performance on the same clauses in 2011/12 has remained the same, except for clause 3.1.1 for which performance has dropped from Full compliance in 2009/10 and for clause 3.6.5 for which performance has improved from High compliance in 2010/11.

Table 3 Summary of compliance for Part 3 of the Operating Licence

		Clause	Compliance Grade
3	Raw Water Quality		
3.1	Specific Water Characteristics	3.1.1(a) & (b)	High Compliance
3.4	Water supplied for water treatment	3.4(a)	Full Compliance
		3.4(b)	Full Compliance
3.5	Catchment and system management	3.5	Full Compliance
3.6	Water quality monitoring and reporting	3.6.5	Full Compliance

Clause 3.1.1 - Specific Water Characteristics – High compliance

The SCA must maintain to the satisfaction of NSW Health and Sydney Water Corporation, a list of Specific Water Characteristics. The list of Specific Water Characteristics was reviewed during the audit period as part of work to align the health guideline values with those of the ADWG (2011). This review occurred as part of the wider review of the SCA *Water Monitoring Program 2010-2015*, dated 2 December 2011. The auditor found that the SCA has obtained written endorsement of the revised current version of the *Program* and, hence, the revised list of Specific Water Characteristics, from NSW Health, but not from the Sydney Water Corporation. The auditor considers this a minor shortcoming consistent with the High compliance audit grade.

The detailed findings of the 2011/12 audit are presented in **Appendix B**.

2.2 Recommendations

2.2.1 Recommendations

This sub-section contains recommendations for how the SCA could improve its compliance with each clause where full compliance was not awarded.

Clause 3.1.1 – Specific Water Characteristics

The auditor recommends that the SCA seeks written endorsement from the Sydney Water Corporation of the current version of the SCA *Water Monitoring Program 2010-2015*, dated 2 December 2011, as endorsement of the revised list of Specific Water Characteristics. This is necessary for completeness of the audit trail and to satisfy the specific requirements for full compliance of this clause: the list of Specific Water Characteristics be to the satisfaction of the Sydney Water Corporation.

2.2.2 Opportunities for improvement

This sub-section contains any 'opportunities for improvement' identified for the SCA to ensure that compliance is maintained.

Clause 3.5 – Catchment and System Management

The SCA must comply with the ADWG (2011) relating to the management of the Catchment Area and the Catchment Infrastructure Works. The SCA's *Raw Drinking Water Quality Management Framework (RDWQMF) 2007-12* and the subsequent revision during the audit period - *Draft SCA Water Quality Management Framework (WQMF) 2012-17* - contain the SCA's overarching framework that describes the SCA activities, processes and procedures that combine to form a multi-barrier approach to managing the catchment area and catchment infrastructure works to minimise the risk to human health from the bulk raw water it supplies. The auditor found that the *Draft WQMF* addresses each of the 12 elements of the ADWG (2011) at a high level. As an opportunity for improvement the WQMF would benefit from reference to more detailed descriptions of specific preventive measures or controls in each water supply system. It would be logical to associate these with the particular water quality risks that are being mitigated. This could be done by referencing the catchment-to-tap risk assessment for the supply system and ensuring that preventive or control measures are aligned with each of the risks.

The previous auditors found that for each of the catchment-to-tap risk assessments, it should be possible to easily identify specific operational controls for high risks. During the audit period the SCA documented the *Generic Hazard Event List & Controls*, which contains generic hazards and controls for a generic supply system. This list goes some of the way to achieving the opportunity for improvement identified above, but it would benefit from some customisation for the water supply system and to the catchment-specific risks. It is recommended that this be referenced in the *WQMF*.

3. Licence part 4 – catchment management and protection

Part 4 of the Operating Licence requires the SCA to provide information to IPART on its catchment management and protection activities. This is to ensure that the SCA undertakes certain activities agreed with IPART, and that the outcomes of the actions are documented. Under Part 4, the SCA must comply with their obligations under the Regional Environment Plan.

3.1 Summary of findings

Clause 4.3.1 assigned to Parsons Brinckerhoff to audit was deemed to be auditable in 2011/12. The audit process found that the SCA fully complied with the clause. A summary of the compliance grades can be found in Table 4.

Compared to the SCA's performance in the previous 2010/11 audit, when the clause was last audited, its performance has remained the same.

Table 4 Summary of compliance for Part 4 of the Operating Licence

		Clause	Compliance Grade
4	Catchment Management and Protection		
4.3	Regional Environment Plan	4.3.1	Full Compliance

The detailed findings of the 2011/12 audit are presented in **Appendix B**.

3.2 Recommendations

3.2.1 Recommendations

There are no recommendations for improved compliance for this part of the licence

3.2.2 Opportunities for improvement

This sub-section contains any 'opportunities for improvement' identified for the SCA to ensure that compliance is maintained.

Clause 4.3.1 - Regional Environment Plan

Clause 4.3.1 requires that the SCA must comply with any obligations imposed on it under the *Regional Environmental Plan*, now the *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (SEPP)*, its successor. The *SEPP* requires that any development or activity proposed should incorporate the Authority's current recommended practices and standards or should demonstrate to the satisfaction of the consent authority or determining authority how the practices and performance

standards proposed to be adopted will achieve outcomes not less than those achieved by the Authority's current recommended practices and standards. An endorsed list of CRP's appears on the SCA website and these are reviewed annually. The auditor suggests that a documented control trigger be set for each CRP in order that reviews may be triggered and a response prepared if required prior to the annual review in a timely manner.

4. Licence part 5 – environmental management

Part 5 of the Operating Licence requires the SCA to provide information to IPART on its management of the environment. This is to ensure that the SCA maintains programs of environmental management that minimise the environmental impacts from its activities and that ecologically sustainable development principals are complied with. The outcomes of these programs are to be documented and that consultation is conducted during any reviews, targets and timetables are set and that these environmental management programs are recognised in SCA's business plan.

Also under Part 5, the SCA must monitor and report on Environmental Performance Indicators.

4.1 Summary of findings

Clauses 5.1.1 and 5.1.3 assigned to Parsons Brinckerhoff to audit were deemed to be auditable in 2011/12. Clause 5.1.2 was not triggered during the audit period, so was deemed not to be auditable. The audit process found that the SCA fully complied with the auditable clauses. A summary of the compliance grades assigned to these clauses can be found in Table 5.

Clause 5.1.1 was last audited in 2006/07. SCA's performance on the same clause in 2011/12 has remained the same (full compliance). Clause 5.1.4 was last audited in 2005/06 where the compliance assessment was N/A, as SCA was in the process of establishing an Environment Plan at the time.

Table 5 Summary of compliance for Part 5 of the Operating Licence

		Clause	Compliance Grade
5	The Environment		
5.1	Environmental Management	5.1.1	Full Compliance
		5.1.2	No Requirement
		5.1.3(a)-(d)	Full Compliance

The detailed findings of the 2011/12 audit are presented in **Appendix B**.

4.2 Recommendations

4.2.1 Recommendations

There are no recommendations for improved compliance for this part of the licence.

4.2.2 Opportunities for improvement

This sub-section contains any 'opportunities for improvement' identified for the SCA to ensure that compliance is maintained.

Clause 5.1.3(a) – Programs for Environmental Management – Greenhouse emissions

The auditor identified an opportunity for improvement in the SCA's process for determining and setting greenhouse gas (GHG) reduction targets. It is recommended that the SCA produce a GHG reduction cost curve and energy reduction and GHG project tracker to track project viability like the mini-hydro and others. The purpose of the GHG Reduction Project Tracker would be to collect GHG reduction project information from the SCA business units and to identify cost effective projects, to support the clause 5.1.3(a) objectives and the SCA in setting GHG emission reduction targets over the next few years. Once energy and GHG emission targets have been established (as required by 5.1.3(d)), the Tracker may be used by the SCA to monitor the implementation of projects and support communication of energy and GHG reduction activities through the Annual Report or a separate Annual Sustainability Report.

5. Licence part 6 – management of catchment infrastructure works

Part 6 requires the SCA to comply with specific licence obligations concerning its management of Catchment Infrastructure Works and Water Conservation. It requires that the SCA manage its infrastructure to minimise risk to human health and ensure that it is operated consistent with the design criteria. It must also re-calculate and report changes to the water supply system yield in response to specific events. This part of the licence also requires the SCA to minimise its losses and to conserve water where possible, whilst also meeting its obligations under any plan or strategy, such as, the Metropolitan Water Plan.

5.1 Summary of findings

Five of the seven clauses and sub-clauses assigned to Parsons Brinckerhoff to audit were deemed to be auditable in 2011/12. Clause 6.2.4 (a) and (b) were not triggered during the audit period, so were deemed not to be auditable. The audit process found that the SCA fully complied with all of the auditable clauses. A summary of the compliance grades assigned to these clauses can be found in Table 6.

Compared to the SCA's performance in the previous 2010/11 and 2009/10 audits, when the clauses were last audited, its performance on the same clauses in 2011/12 has remained the same.

Table 6 Summary of compliance for Part 6 of the Operating Licence

		Clause	Compliance Grade
6	Management of catchment infrastructure works and water conservation		
6.1	Management of catchment infrastructure works	6.1.1	Full Compliance
		6.1.2	Full Compliance
6.2	Water Supply System yield	6.2.4 (a)	No requirement
		6.2.4 (b)	No requirement
		6.2.4 (c)	Full Compliance
		6.2.5	Full Compliance
		6.2.6	Full Compliance

The detailed findings of the 2011/12 audit are presented in **Appendix B**.

5.2 Recommendations

5.2.1 Recommendations

There are no recommendations for improved compliance for this part of the licence.

5.2.2 Opportunities for improvement

There were no clause-specific improvement opportunities identified for this part of the licence.

6. Licence part 8 – customers

Part 8 of the Operating Licence requires the SCA to establish water supply agreements with its customers, complaints handling procedures and provide IPART with evidence of regular customer and community consultation. This is to ensure that customer expectations of the SCA are clearly defined, that complaints are appropriately resolved and an appropriate forum for communicating with customers and the community is established.

6.1 Summary of findings

All three of the clauses assigned to Parsons Brinckerhoff to audit were deemed to be auditable in 2011/12. The audit process found that the SCA fully complied with all three of the clauses. A summary of the compliance grades assigned to these clauses can be found in Table 3.

Table 7 Summary of compliance for Part 8 of the Operating Licence

		Clause	Compliance Grade
8	Customers		
8.3	Complaints	8.3.1	Full Compliance
		8.3.2	Full Compliance
		8.3.3	Full Compliance

The detailed findings of the 2011/12 audit are presented in **Appendix B**.

6.2 Recommendations

6.2.1 Recommendations

There were no recommendations for improved compliance identified for this part of the licence.

6.2.2 Opportunities for improvement

There were no clause-specific improvement opportunities identified for this part of the licence.

7. Previous audit recommendations and outstanding actions

7.1 Previous audit recommendations

IPART requested that Parsons Brinckerhoff review the SCA's progress on the following key recommendations made by IPART to the Minister in response to the 2010/11 Operational Audit:

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.
2. 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 (see section 2.1 of the report for further details).
3. Fully develop and implement asset management processes under the Asset Management Framework in line with good practice asset management standards (for example PAS55). Continue to fully implement all elements of the revised Asset Management Framework across the whole portfolio of assets (see section 2.4 of the report for further details).

The auditor found the following progress had been made by the SCA during the 2011/12 audit period:

Recommendation 1 - Water Quality Management Framework (Clause 3.7.3)

(a) 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 SCA reviewed the *Raw Drinking Water Management Framework (RWQMF) 2007-12* during the audit period to align with the ADWG (2011). The *Draft Water Quality Management Framework (WQMF) 2012-17* was completed in June 2012 and according to the SCA has gone to its customers and Board for comment. The auditor reviewed the *Draft WQMF* under clause 3.5 (refer to Appendix B and Section 3 for more detail) and found that it covered all 12 elements at a high level. The auditor found that Element 2 – System Analysis and Management, would benefit from reference to more detailed descriptions of specific preventive measures or controls in each water supply system and this could be done by aligning the catchment-to-tap risk assessment with the specific controls to mitigate each risk.

(b) *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:*

To satisfy this requirement the auditor expects to clearly see evidence that the inputs into the catchment-to-tap risk assessments (comprehensive review in 2010 and the less comprehensive mid-term review conducted in September 2012) included:

- Results of detailed long term trend analyses of pollutant indicators
- Scientific studies into pollutant sources, fate and transport
- Involvement of appropriate staff (including operational staff) from the SCA, NSW Health, Sydney Water Corporation and other Customers.

The *Draft WQMF* states that representatives from the SCA, Sydney Water, Wingecarribee Shire and Shoalhaven City councils and NSW Health identified and assessed the risk of hazard events in each barrier (Catchment – Distribution system) for each water supply system during the comprehensive review in 2010. The *WQMF* also states that the latest risk assessment processes have confirmed the four priority pollutants are pathogens (specifically *Cryptosporidium* and *Giardia*), nitrogen and phosphorus and suspended solids (observed as turbidity), and these were confirmed by the *State of the Science Catchment Impacts Summary Report (August 2011)*, which also suggested further investigation of metals. The *WQMF* also states that through use of the Pollution Source Assessment Tool (PSAT), the SCA has analysed the relative risk of the four priority pollutants being produced from 13 land use activities or “modules” in contaminating local water courses. The results of this analysis have been used to prioritise targeted intervention programs under the *Healthy Catchments Strategy 2012-16*. The *PSAT Implementation Plan 2012-2016* indicates that metals (Aluminium, Iron and Manganese) will be included as a new priority pollutant in selected modules over the 2013-2015 period.

Partial Completion - Follow-up Recommendation:

The auditor found that the above information included in the *Draft WQMF* goes some way to satisfy IPART’s requirements, but it 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 preventive or control measures to mitigate each risk. This may take the form of a table or a flow chart. If the SCA has not done this in the past, then it is recommended that this approach be taken, and sufficient evidence documented, during the next comprehensive review of the catchment-to-tap risk assessments.

Recommendation 2 - Catchment Management and Protection Activities (Clause 4.1)

The SCA’s *Draft Healthy Catchment Strategy (Strategy) 2012-2016* has recently been publicly exhibited and is expected to be finalised by December 2012. The Strategy itself is written as a high level document for public consumption and does not assign measures and timelines to specific actions that would allow the strategy’s effectiveness to be measured. The auditor sighted the SCA *Healthy Catchments Program (Program) 2012-13* and found that it contains further breakdown of these actions, but does not contain specific measures and timelines to the detail that would

be expected for the level of spending allocated. The auditor also sighted the *Science Strategic Plan Biannual Report* for July-Dec 2011 and Jan-June 2012, which contains more detail for some specific projects.

Partial Completion - Follow-up Recommendation:

The auditor expects to see detailed project descriptions for all strategies/actions that are documented in the *Strategy* and the *Program* containing specific quantifiable measures and timelines. The auditor also expects to see an overarching document for all strategies in the *Strategy* providing short descriptions of specific actions/projects, quantifiable measures and timelines. This would enable an 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 could be assessed. It is recommended that the above gaps be filled and adopted as standard practice for the SCA with respect to its catchment management actions.

Recommendation 3 – Asset Management (Clause 7.1)

The SCA provided evidence of a paper submitted to its Board on 29 July 2011 outlining the status of its development of an Asset Management System (AMS). The attachments to the paper indicate that at 29 July 2011:

- the SCA is developing an AMS based on the asset management standard PAS55 and the SCA is taking a systematic approach to tracking the development of its AMS against the requirements of PAS55 using a traffic light approach
- organisational units across the whole of the SCA have roles and responsibilities allocated in the AMS
- the AMS is intended to cover the entire asset life cycle and the whole SCA asset portfolio.

The SCA also reported that during 2012 it participated in an Asset Management Performance Improvement Project benchmarking exercise organised by IWAW/WSAA, where it was found that the “Sydney Catchment Authority is at a mature level in asset management with strong results across all functions where it rates well above median results for the overall participant group”.

Partial Completion - Follow-up Recommendation:

The auditor found that the recommendation is partially complete and that further follow-up will be required during subsequent audits to follow progress against the 2010/11 IPART recommendation.

7.2 Previous audit outstanding actions

IPART requested that under the 2011/12 Operational Audit of clause 4.2.1 the auditor review the outstanding actions from the 2009/10 and subsequent 2010/11 Operational Audits. The Halcrow 2010/11 Operational Audit Report of the SCA (p. 66) states the following:

- “the SCA reassessed progress and provided a copy of its review of the implementation of the WSSAPoM. The SCA review identified that many actions were actually completed and within the WSSAPoM, SCA and OEH each have one action outstanding (SCA internal report, 4.2 WSSAPoM Implementation Strategy 2010-2011 for Auditors). The SCA has also identified that a detailed review of remaining actions will take place as part of the required Plan of Management review for the WSSAPoM to be completed by 30 June 2012.”

Outstanding Actions - Plans of Management - Special Areas (Clause 4.2.1)

There were two Plans of Management in place for the audit period:

- Special Area Strategic Plan of Management (2007) (SASPoM), and
- Wingecarribee Swamp and Special Area Plan of Management (2007) (WSSAPoM).

SCA advised the auditor that the SASPoM has 56 actions of which 50 (89%) were complete as at 2011-12 and the WSSAPoM has 36 actions of which 33 (92%) were complete as at 2011-12.

In accordance with the guidance notes provided by IPART, the auditor focused on the implementation of the WSSAPoM, a 10 year plan of which the SCA is 5 years into the life of this plan. The auditor sighted the review of WSSAPoM implementation and notes that the review confirms that 92% of the 2007 WSSAPoM actions to be complete, as of 30 May 2012. The outstanding actions are listed below:

- ACTION 2.8: “The SCA, in consultation with DEC and the working group referred to in action 8.1, will develop and review options for the rehabilitation of Wingecarribee Swamp including ecological, hydrological, operational, financial and engineering implications, and determine appropriate rehabilitation strategies”. In the WSSAPoM this action is due for completion by the end of Year 5 (2011/12). As of 30 May 2012, the reviewers reported the action to be on track as options had been developed and planning for the Future Directions Workshop was underway, where the action would be discussed. The SCA advised that this workshop was originally scheduled for 2011/12, but that it did not occur until 6 August 2012. The action was outstanding as at the end of the audit period.
- ACTION 4.4: “The SCA, in consultation with DEC and other relevant stakeholders, will develop and implement a Cultural Heritage Strategy for the ongoing identification, protection and conservation of Aboriginal and historic cultural sites in the Wingecarribee Swamp”. In the WSSAPoM this action is due for completion by the end of Year 2 (2008/09). As of 30 May 2012, the reviewers reported the draft to be complete and with other agencies for review.
- ACTION 5.4: “The DEC, in collaboration with the SCA, will lead research into the likely impact of the fire exclusion policy on floristic composition and structure of the Swamp”. In the WSSAPoM this action is due for completion by the end of Year 3 (2009/10). As of 30 May 2012, the reviewers reported this action as not completed and that this action has been

raised in the Working Group (action 8.1) and via formal correspondence with no action from OEH.

The auditor considers that at the end of the audit period action 4.4 was essentially complete, action 5.4 was out of the SCA's full control and action 2.8 was still outstanding. Action 2.8 was reported to be on track as options had been developed and planning for the Future Directions Workshop (where the action would be discussed) was underway. The SCA advised that this workshop was originally scheduled for 2011/12, but that it was rescheduled for 6 August 2012.

The SCA advises that it is currently undertaking a review of the Plans of Management. As a part of this review process, the SCA has completed a review of the outstanding WSSAPoM actions. The review will be finalised later this year (2012).

Partial Completion:

The auditor recommends that the completion of the few outstanding actions under the WSSAPoM be followed up by IPART during the next audit period. The auditor notes that IPART may choose to do this by audit or require the SCA to provide a Statement of Compliance.

Appendix A

Glossary

Abbreviations

Acronym	Description
ADWG (2004)	Australian Drinking Water Guidelines (2004), National Health and Medical Research Council and Agriculture and Resource Management Council
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
CRP	Current Recommended Practices
CSG	Coal Seam Gas
DEC	Department of Environment and Conservation
DPI	Department of Planning and Infrastructure
EPA	Environment Protection Authority
ESD	Ecologically Sustainable Development
GHG	Greenhouse Gas
HRWQC	Health Related Water Quality Characteristics
IPART	Independent Pricing and Regulatory Tribunal (NSW)
NorBE	Neutral or Beneficial Effect
NOW	NSW Office of Water
NSW Health	NSW Department of Health
OEH	NSW Office of Environment and Heritage
PSAT	Pollution source assessment tool
REP	Drinking Water Catchments Regional Environmental Plan
RWQIRP	Raw Water Quality Incident Response Plan
SASPoM	Special Areas Strategic Plan of Management 2007
SCA	Sydney Catchment Authority
SEPP	State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
SWC	Sydney Water Corporation
WATHNET	Water Headworks Network (model)
WEM	Wastewater Effluent Module
WFP	Water Filtration Plant
WQMF	Water Quality Management Framework
WSSAPoM	Wingecarribee Swamp & Special Area Plan of Management 2007

General Terms and Conditions

Term	Definition
Act	Sydney Water Catchment Management Act, 1998
Area of Operations	As specified in section 20 and 41 of the Act and described in Section 13 of the 2011-12 Operating Licence.
Audit period	1 July 2011 to 30 June 2012.
Auditor	Parsons Brinckerhoff
Raw Water	Water which has not been managed in any way or water that has been managed for quality, whether by chemical treatment or otherwise, but not treated at a water filtration plant (as per Section 13 of the 2011-12 Operating Licence)
Commencement Date	08 April 2011 (as per Section 13 of the 2011-12 Operating Licence)
Customer	As per Section 13 of the 2011-12 Operating Licence
Function	Means a power, authority or duty.
Licence expiry date	30 June 2012
Minister	The Minister responsible for administering the provisions of the Sydney Water Catchment Management Act 1998 relating to this licence.
Operating Licence	The SCA 2011-12 Operating Licence covering the period 08 April 2011 and 30 June 2012.

Appendix B

Detailed Audit Findings

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
3.1	Specific water characteristics					
3.1.1	<p>The SCA must maintain, to the satisfaction of NSW Health and Sydney Water Corporation, a list of Specific Water Characteristics for the purpose of:</p> <p>(a) identifying the water characteristics which should be monitored and reported in order to protect human health; and</p> <p>(b) seeking to prevent water quality from degrading over time.</p>	High	<p>Sufficient evidence that the list is kept up-to-date.</p> <p>Sufficient evidence that the list was to the satisfaction of NSW Health and SWC during the audit period.</p> <p>Sufficient evidence that any update requests were made to the satisfaction of NSW Health and SWC.</p> <p>Sufficient evidence that the list is for the purpose of monitoring, i.e. is monitored by the SCA.</p> <p>Sufficient evidence that the list is for the purpose of reporting, i.e. is reported by the SCA.</p> <p>Sufficient evidence that the list is for the purpose of protecting human health, i.e. has been derived from the ADWG (2011).</p> <p>Sufficient evidence that the list is for the purpose of seeking to prevent water</p>	<p>This presents a medium risk to water quality, since the maintenance of a list of Specific Water Characteristics is key to the monitoring of parameters to prevent degradation of water quality and to protecting human health.</p>	<p>The auditor sighted the list of Specific Water Characteristics that was current in the second half of the audit period: all of Table 1 (p. 5) in the <i>SCA Water Monitoring Program 2010-2015 (Program)</i>, dated 2 December 2011.</p> <p>The <i>Program</i> was reviewed twice in 2011/12: in September 2011 being the first significant revision mainly of event and investigative monitoring; and in December 2011 to incorporate the new ADWG (2011), including a review of the health guideline values for the list of Specific Water Characteristics.</p> <p>This list was compared to the list published in the <i>Annual WQ Monitoring Report 2010-11</i> (p. 21), which was the list of Specific Water Characteristics current at the beginning of the audit period, to confirm that the list has changed during the 2011-12 audit period.</p> <p>Given that the health guideline values for the list of Specific Water Characteristics were reviewed as part of the review of the <i>Program</i> during the audit period, the auditor sighted the following evidence of endorsement of the reviewed <i>Program</i> by NSW Health and the SWC as evidence of endorsement of the list of Specific Water Characteristics during the audit period:</p> <p><i>NSW Health:</i></p> <ul style="list-style-type: none"> ▪ Email from the SCA to NSW Health dated 25 August 2011 providing the revised <i>Program</i> moving away from non-routine monitoring to event and investigative monitoring ▪ Email from NSW Health to the SCA dated 5 September 2011 endorsing the reviewed <i>Program</i>, ie. the September 2011 version of the <i>Program</i>, and reminding the SCA of the need to update the cyanobacteria triggers in accordance with the yet to be published ADWG (2011) 	<p>SCA 2010-15 Water Monitoring Program, 2 Dec 2011</p> <p>Annual WQ Monitoring Report 2010-11</p> <p>Email from SCA to NSW Health, 25 Aug 2011</p> <p>Email from NSW Health to the SCA, 5 Sept 2011</p> <p>Email from SCA to NSW Health, 23 Jan 2012</p> <p>Email from NSW Health to the SCA, 23 Jan 2012</p> <p>Email from SCA to SWC, 25 March 2011</p> <p>Email from SWC to SCA, 11 April 2011</p> <p>Letter from SCA to the SWC, 9 Dec 2011</p> <p>3.1.1 Summary of changes to the WM P 2010-2015 Sydney Water comments.doc, 8 April 2011</p> <p>Draft SCA Annual Water Quality Monitoring Report 2011/12, 21 Sept 2012</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
			quality from degrading over time, i.e. is used for long term trend analyses.		<ul style="list-style-type: none"> ▪ Email from the SCA to NSW Health dated 23 January 2012 referring to a CD sent by the SCA containing the revised <i>Program</i> including updates to the guideline values for the Specific Water Characteristics in-line with the new ADWG (2011), ie. the December 2011 version of the <i>Program</i> ▪ Email from NSW Health to the SCA dated 23 January 2012 endorsing the revised <i>Program</i> commencing 2 December 2011 and noting that the SCA will be amending the Raw Water Quality Incident Response Plan to include the updated cyanobacteria triggers in accordance with the new ADWG (2011) <p><i>Sydney Water Corporation:</i></p> <ul style="list-style-type: none"> ▪ Prior to the audit period – Email from the SCA to SWC dated 25 March 2011 providing a draft version of the <i>Program</i> ▪ Prior to the audit period - Email from SWC to the SCA dated 11 April 2011 providing comments on a draft version of the <i>Program</i> ▪ Letter from the SCA to the SWC dated 9 December 2011 enclosing the December 2011 revision of the <i>Program</i> <p>The SCA was unable to provide communication from the SWC as evidence of endorsement of the current (December 2011) version of the <i>Program</i> and the list of Specific Water Characteristics. The auditor recommends that the SCA seek this for completeness of the audit trail and to satisfy the specific requirements for full compliance of this clause: the list of Specific Water Characteristics be to the satisfaction of Sydney Water Corporation.</p> <p>Clause 3.1.1 requires that the list of Specific Water Characteristics be for the purpose of monitoring and reporting on in order to protect human health. The auditor sighted the <i>Draft SCA Annual Water Quality Monitoring Report 2011/12</i>, which contains a</p>	SCA Annual Water Quality Monitoring Report 2010/11, published 30 Jan 2012.

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>summary of the monitored Specific Water Characteristics including the compliance or exceedances during the audit period. The auditor also verified a sample of the monitored parameters in the SCA water quality database. See clause 3.4 for more detail.</p> <p>Clause 3.1.1 requires that the list of Specific Water Characteristics be for the purpose of seeking to prevent water quality from degrading over time. The auditor sighted evidence of many of the Specific Water Characteristics being used to assess trends in water quality over time in the <i>SCA Annual Water Quality Monitoring Report 2010/11</i>, which was published during the audit period.</p> <p>Clause 3.1.1 requires that the list of Specific Water Characteristics be for the purpose of protecting human health. The list of Specific Water Characteristics contains pesticides, synthetic organic compounds, radiological parameters and heavy metals that have been previously identified as relevant to the SCA water supply systems and which are unlikely to be significantly removed through conventional water treatment. The <i>SCA Water Monitoring Program 2010-2015</i> contains guideline values for these parameters that are consistent with the ADWG (2011). It also includes pathogens, toxin producing cyanobacteria and parameters that may affect the performance of water treatment.</p> <p>In summary, the auditor found that the SCA demonstrated compliance with all aspects of the clause except for the requirement to provide sufficient evidence that the list of Specific Water Characteristics was to the satisfaction of the SWC during the audit period. The auditor awarded high compliance, because it considers that 'the requirements were generally met apart from very few minor shortcomings which do not compromise the ability of the SCA to achieve defined objectives or assure controlled processes, products or outcomes'.</p>	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
3.4	Water supplied for Water Treatment					
3.4	In relation to the supply of Raw Water by the SCA to Customers for Water Treatment, the SCA must comply with the following provisions:			This represents a high risk to human health. The risk is usually managed by appropriate monitoring, system management, incident response and regular communication with Customers re water quality issues.		
3.4(a)	(a) the concentration or level of the Health Related Water Quality Characteristics must not exceed the health guideline values in the Australian Drinking Water Guidelines 2004 for those characteristics; and	Full	<p>Sufficient evidence of results from monitoring of Health Related Water Quality Characteristics in raw water supplied to Customers during the audit period.</p> <p>Sufficient evidence that the concentration of the Health Related Water Quality Characteristics did not exceed the ADWG (2011) health guideline values or guidance protocols where provided.</p> <p>Where there is no ADWG (2011) health guideline value or guidance protocols then sufficient evidence of compliance with best practice</p>		<p>The auditor sighted the list of Health Related Water Quality Characteristics (HRWQC) that was current during the audit period: the upper (yellow) section of Table 1 (p. 5) in the <i>SCA Water Monitoring Program 2010-2015</i>, dated 2 December 2011. This list contains pesticides, synthetic organic compounds, radiological parameters and heavy metals that have been previously identified as relevant to the SCA water supply systems. The health guideline values for drinking water from the ADWG are applied to these parameters in raw water because conventional water treatment methods are not designed to remove these compounds from raw water.</p> <p>The <i>SCA Water Monitoring Program 2010-2015</i> dated 2 December 2011 was revised to include any updated health guideline values in the new ADWG (2011) for these parameters.</p> <p>The <i>Draft SCA Annual Water Quality Monitoring Report 2011/12</i> states that there was 100% compliance of the HRWQC with the ADWG health guideline values at the inlets to the water filtration plants, with all of the results either below the limit of reporting, or well below problematic concentrations. Gross alpha and gross beta were not detected. Even though there were detections for some pesticides and heavy metals during the audit period, none of the detections exceeded the ADWG health guideline values during the audit period.</p> <p>Subsequently, SCA advised that In the recent</p>	<p>SCA 2010-15 Water Monitoring Program, 2 Dec 2011</p> <p>Draft SCA Annual Water Quality Monitoring Report 2011/12, 21 Sept 2012</p> <p>Raw Water Quality Incident Response Plan, Aug 2010</p> <p>SCA water quality database on 11/10/12</p> <p>Wingecarribee (HW11) Triclopyr Notifications</p> <p>Notification summary for exceedances in Quarter 2 2011-12</p> <p>Incident Response Plan for the detection levels of Triclopyr in Wingecarribee Reservoir, Dec 2007</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
			incident response protocols.		<p>verification of data undertaken in finalising the <i>Annual Water Quality Monitoring Report 2011-12</i>, it has come to the SCA's attention that gross alpha and gross beta were inadvertently not tested for in the annual water sample for the Illawarra WFP only (one of the ten WFPs). It states that while it is unlikely that these characteristics would have presented an issue, given they have not previously been detected in the past at this site, additional samples will be collected in 2012-13 to ascertain whether they remain below screening levels. Procedures will also be reviewed to ensure this issue is not repeated. The auditor notes that the sampling failure occurred at a time when the SCA was in incident mode (many Dams were spilling distracting key staff). It agrees with SCA that the level of gross alpha and gross beta would not have exceeded the health guideline values, given that they have not previously been detected in the past at this site. Hence the auditor considers that the lack of reporting does not impact on the audit grade.</p> <p>The auditor sought to verify the SCA's compliance with the health guideline values by sighting a sample of the raw data in the SCA water quality database:</p> <p><u>HWI1 inlet to Wingecarribee WFP- triclorpyr, 1/7/11 – 30/6/12</u>: The monthly sample results for the audit period were below the guideline value. However the <i>Raw Water Quality Incident Response Plan (RWQIRP) – Appendix A Table 1</i> - requires that the SCA notify NSW Health verbally and follow up with online electronic notification if any of the HRWQC are detected. Detections were sighted in samples taken on 18/7/11, 16/4/12, 21/5/12 and 12/6/12 and were attributed to known weed control operations in the area and the long residence time of triclorpyr in peat. The auditor sighted the online notifications to NSW Health.</p> <p>These detections were treated as a minor incident in the <i>Draft SCA Annual Water Quality Monitoring Report 2011/12 – Appendix D Incidents</i>, which states that each detection should be treated as a Minor</p>	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>Incident under the <i>Incident Response Plan for the detection levels of Triclopyr in Wingecarribee Reservoir</i>.</p> <p>The SCA advised that the <i>RWQIRP</i> is under review such that notification of HRWQC will only be when half the guideline value is reached. The SCA stated that there is not an increasing trend in concentrations of triclopyr, so no actions are being taken to reduce the use of this chemical, although monitoring continues. The SCA advised that NSW Health previously endorsed the use of this chemical.</p> <p><u>HCSR inlet to Cascade WTP - Atrazine, Hexazinone, Triclorpyr 1/7/11 – 30/6/12</u>: The monthly sample results for the audit period were all below the detection limit and well below the guideline value.</p> <p><u>HWO1-A inlet to Woronora WTP - Barium 1/7/11 – 30/6/12</u>: The monthly sample results for the audit period showed detections every month at this location, with all below the guideline value. The <i>RWQIRP – Appendix A Table 1</i> - requires that the SCA notify NSW Health verbally and follow up with online electronic notification if any of the HRWQC are detected. The SCA advised that due to an error in the triggers automatic electronic notifications to NSW Health and auto exceedance emails to customers were not going out upon detection of heavy metals until late in the third quarter of 2012.</p> <p>One of these detections, 10/4/12 was listed as a minor incident in the <i>Draft SCA Annual Water Quality Monitoring Report 2011/12 – Appendix D Incidents</i>. The auditor notes that according to the <i>RWQIRP</i> this should not have been declared as a minor incident.</p> <p><u>HMAC1 inlet to Macarthur WFP - all heavy metals 1/7/11 – 30/6/12</u>: The monthly sample results for the audit period showed detections of boron and barium occasionally, but no exceedances of the guideline values. The <i>RWQIRP – Appendix A Table 1</i> - requires that the SCA notify NSW Health verbally and follow up with online electronic notification if any</p>	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>of the HRWQC are detected. The SCA advised that due to an error in the triggers automatic electronic notifications to NSW Health and auto exceedance emails to customers were not going out upon detection of heavy metals until late in the third quarter of 2012.</p> <p>-----</p> <p>Although not a HRWQC, the auditor also viewed the raw data in the SCA water quality database for a pathogen incident reported in the <i>Draft SCA Annual Water Quality Monitoring Report 2011/12 – Appendix D Incidents</i> to verify the SCA’s response to pathogen detections:</p> <p><u>COMP14 (Upper Canal, Prospect, Warra pipeline) – Cryptosporidium and Giardia, 1/7/11 – 30/6/12:</u> The composite sample result on 9/12/11 indicated 33 DAPI in 20L. The result adjusted for volume and recovery was 23 oocysts in 10L, which led to a minor incident being raised in accordance with the <i>RWQIRP – Appendix G Cryptosporidium and Giardia Response Plan</i>. The auditor sighted the online notifications for the incident. The SCA communicated with the SWC on 10/12/11 who confirmed that the filtered turbidity was <0.1 NTU and there were no pathogen detections in the treated water. The component samples were found to be clear except for Upper Canal, which was 3 DAPI in 10L. NSW Health was notified on 11/12/11. The Upper Canal and composite were resampled 15 and 16 Dec and found to be clear, with the incident closed after two clear composite samples.</p> <p>In summary, the auditor found that there was sufficient evidence that the concentration of the Health Related Water Quality Characteristics did not exceed the health guideline values for those characteristics in the ADWG (2011) during the audit period. For this reason the auditor awarded full compliance.</p>	
3.4(b)	(b) where	Full	Evidence of		The SCA has developed <i>Bulk Water Supply</i>	SWC & SCA Bulk

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
	necessary, the SCA must liaise, cooperate and where possible agree on cost-effective strategies (and the timing of their implementation) with Customers to ensure treated water consumed by humans is not harmful to human health.		<p>adherence with Bulk Water Supply Agreements and Protocols.</p> <p>Sufficient evidence of notification of Customers of water quality issues including exceedances.</p> <p>Sufficient evidence of communications re incident response actions and strategies for improvement of water quality management.</p>		<p><i>Agreements and Protocols</i> with its customers to assist in the management of the water supply to meet the agreed water quality and quantity targets.</p> <p>The SCA is obligated to provide the SWC information as detailed in the <i>Bulk Water Supply Protocols</i>, including the following areas.</p> <ul style="list-style-type: none"> ▪ raw water quality information ▪ operation of system infrastructure ▪ incident and general communications ▪ maintenance and shutdown. <p>Reporting requirements and frequencies are summarised in <i>SCA Procedure for Bulk Water Compliance Reporting (SAP-BWD-ALL-009)</i>. In accordance with this <i>Procedure</i> the auditor sighted a sample of monthly Compliance Reports provided by the SCA to the SWC during the audit period, containing the routine monitoring results as well as the HRWQC. The December 2011 Cryptosporidium minor incident discussed under clause 3.4(a) was present in this report.</p> <p>Exceedances are notified to Customers and NSW Health using an online notification system, in accordance with the <i>Raw Water Quality Incident Response Plan</i>. Evidence was sighted of this occurring during the incidents evaluated above, in clause 3.4(a).</p> <p>The SCA liaises with the SWC as part of the quarterly Strategic Liaison Group (SLG) and the quarterly Joint Operational Group (JOG) together with NSW Health to discuss strategic water quality issues and operational issues relating to water quality. The auditor sighted agendas and minutes for the JOG meetings and minutes for the SLG meetings during the audit period, during which water quality incidents, updates to the <i>Water Monitoring Program</i> and updates to the <i>Raw Water Quality Management Framework</i> were discussed. Recent examples of</p>	<p>Water Supply Agreement, April 2006.</p> <p>SWC & SCA Bulk Water Supply Protocols, Dec 2006.</p> <p>SAP-BWD-ALL-009 Procedure for Bulk Water Compliance Reporting, Ver. 8.</p> <p>Monthly Compliance Reports to SWC, Oct, Nov and Dec 2011.</p> <p>Agendas and Minutes Joint Operational Group meetings, 1 Aug 11, 31 Oct 11, 27 Feb 12, 3 May 12.</p> <p>Minutes Strategic Liaison Group meetings, 15 Sept 11, 6 Dec 11, 29 Mar 12, 18 June 12.</p> <p>Email communication between SCA and SWC Sept 2011, re Lake Burragorang offtake level changes.</p> <p>Email communication between SCA and SWC May 2012, re Lake Burragorang offtake level changes.</p> <p>Initial Report – Upper Canal Pathogens September / October provided to the Board</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>communication regarding operational changes that have the potential to impact water quality between the SCA and the SWC were sighted: 1) a proposed outlet configuration change at Lake Burragorang in September 2011, 2) a proposed outlet configuration change at Lake Burragorang in May 2012, and 3) investigations into Pathogen detections at the Upper Canal in September and October 2011.</p> <p>Both the Upper Canal and Warragamba pipelines were taken offline at the same time in May 2012 for maintenance and capital works and the pipelines would continue to be alternately offline through to August 2012. This was the first time that the pipeline had been offline for some 20 years. The auditor sighted evidence of extensive planning and contingency planning between the SCA and SWC to prepare for and manage the outages. The auditor sighted evidence that a detailed risk assessment was conducted with an external consultant involving SWC, SCA, Degrémont and Transfield. Treatment trials of Prospect Reservoir water were also conducted prior to taking the Upper Canal and Warragamba pipeline offline.</p> <p>The auditor sighted a sample of monthly compliance reports provided by the SCA to the Wingecarribee and Shoalhaven City Councils, containing the routine monitoring results required to be met by their respective <i>Raw Water Supply Protocols</i>, as well as the HRWQC. The auditor also sighted agendas and minutes for meetings between the SCA and the Wingecarribee and Shoalhaven City Councils respectively during the audit period, during which water quality issues were discussed.</p> <p>In summary, the auditor found that there was sufficient evidence that the SCA liaised with Customers to ensure treated water consumed by humans is not harmful to human health during the audit period. This included adherence with bulk water protocols, notification of water quality issues, including exceedances, and liaison regarding</p>	<p>on 28 Oct 2011.</p> <p>Upper Canal and Pipelines Winter Outage 2012 090412.ppt</p> <p>SKM Warragamba / Prospect Major Planned Works 2012: Risk Assessment, Workshop Summary and Recs., 5 June 2012</p> <p>Outage Report – No. 9, Winter Outage 2012, 14 June 2012 – 1400 hrs</p> <p>Warragamba Pipelines Outage 2012, Warragamba Pipelines and Prospect Major Works Contingency Plans, June 2012</p> <p>WSP012 Operational Use of Prospect Reservoir, April 2012</p> <p>Monthly Compliance Reports to Wingecarribee Shire Council, Oct, Nov and Dec 2011 and April 2012.</p> <p>Monthly Compliance Report to Shoalhaven City Council, Oct, Nov and Dec 2011.</p> <p>Shoalhaven City</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					strategies for improvement of water quality management. For this reason the auditor awarded full compliance.	<p>Council and SCA Raw Water Supply Protocols – WSP01 Communication and WSP04 Exchange of Information.</p> <p>Wingecarribee Shire Council and SCA Raw Water Supply Protocols – WSP01 Communication and WSP04 Exchange of Information, June 2009.</p> <p>Agenda and minutes SCC 20 July 11, 15 Nov 11 and 2 April 12.</p> <p>Agenda and minutes WSC Meeting 25 Jul 11, 12 Dec 11 and 26 March 12.</p>
3.5	Catchment and system management					
3.5	SCA must comply with the Australian Drinking Water Guidelines 2004 relating to the management of the Catchment Area and the Catchment Infrastructure Works.	Full	<p>Sufficient evidence during the audit period of:</p> <ol style="list-style-type: none"> Preventive management practices and a multi-barrier approach being in place to minimise the risk of contamination of bulk raw water, that is consistent with the ADWG (2011). That these measures have 	This presents a moderate risk to water quality. This is usually addressed by implementing a multi-barrier to minimise risk to water quality.	<p>1. Preventive management practices and a multi-barrier approach in place that is consistent with the ADWG (2011)</p> <p><i>Framework for preventive management practices and a multi-barrier approach and planning processes:</i></p> <p>The <i>Raw Drinking Water Quality Management Framework (RDWQMF) 2007-12</i> was current during the audit period. The <i>RDWQMF</i> contains the SCA's overarching framework that describes the SCA activities, processes and procedures that combine to form a multi-barrier approach to managing the catchment area and catchment infrastructure works to minimise the risk to human health from the raw water it supplies. These activities include catchment-to-tap risk assessments, the <i>Regional Environment Plan</i> (discussed in clause 4.2.1), water quality</p>	<p>SCA Raw Drinking Water Quality Management Framework 2007-2012, May 2009.</p> <p>Draft SCA Water Quality Management Framework 2012-17, June 2012.</p> <p>Water Quality Management Framework Review Meeting Minutes with NSW Health, 28 June 2012.</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
			<p>been implemented and effective during the audit period, for example appropriate and effective responses to exceedances of the HRWQC against the guideline values in the ADWG (2011) and responses to incidents.</p>		<p>monitoring, water supply and strategic operations planning, catchment planning processes and catchment actions, <i>Bulk Raw Water Supply Protocols</i> and <i>Standard Operating Procedures</i>, and the <i>Bulk Raw Water Quality Incident Response Plan</i>.</p> <p>The <i>RDWQMF</i> is aligned with the requirements of clause 3.7.3 in the previous operating licence.</p> <p>During the audit period the <i>RDWQMF</i> underwent a review to better align it with the 12 elements of the ADWG (2011) and the <i>Draft SCA Water Quality Management Framework 2012-17(WQMF)</i> was completed in June 2012. The revised framework is structured according to the 12 elements of the ADWG (2011), which fit into 4 general areas of activity: Commitment to Water Quality Management; System Analysis and Management; Supporting Requirements; and Review. The <i>WQMF</i> Appendix 1 also contains a Water Quality Improvement Plan to track actions over the next 2-3 years.</p> <p>The SCA stated that the draft <i>WQMF</i> is with the SCA management and stakeholders for comment.</p> <p>The auditor sighted minutes of a meeting with NSW Health in June 2012 to discuss the <i>Draft WQMF</i>. NSW Health commented that it "would like to see more work on documenting critical control points and critical limits when the framework is translated in a quality management system".</p> <p>The auditor found that the <i>Draft WQMF</i>, version dated June 2012, addresses each of the 12 elements of the ADWG at a high level. As an opportunity for improvement the <i>WQMF</i> would benefit from reference to more detailed descriptions of specific preventive measures or controls in each water supply system. It would be logical to associate these with the particular water quality risks that are being mitigated. This could be done by referencing the catchment-to-tap risk assessment for the supply system and ensuring that preventive or control measures are aligned with each of the risks.</p>	<p>Generic Hazard Event List & Controls June 2012</p> <p>SCA 2010-15 Water Monitoring Program, 2 Dec 2011</p> <p>Raw Water Quality Incident Response Plan (RWQIRP), Aug 2010.</p> <p>Minutes of Strategic Liaison Group Meeting, December 2011</p> <p>Minutes of Strategic Liaison Group Meeting, June 2012</p> <p>Evidence of review of RWQIRP (including supporting emails and letters with review comments – (as supplied by SCA on October 17 2012)</p> <p>Draft SCA Annual Water Quality Monitoring Report 2011/12, 21 Sept 2012</p> <p>Letter from DPI to SCA re state significant planning protocols, dated 5 Aug 2011.</p> <p>Practice Note EIA Procedures For DECC and SCA</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>The previous auditors found that for each of the catchment-to-tap risk assessments, it should be possible to easily identify specific operational controls for high risks. During the audit period the SCA documented the <i>Generic Hazard Event List & Controls</i>, which contains generic hazards and controls for a generic supply system. This list goes some of the way to achieving the opportunity for improvement identified above, but it would benefit from some customisation for the water supply system and to the catchment-specific risks. It is recommended that this be referenced in the <i>WQMF</i>.</p> <p><i>Water quality monitoring:</i></p> <p>The SCA <i>Water Monitoring Program 2010-2015</i> Dec 2011 contains details of the SCA's current water quality monitoring activities, including routine, event and investigative monitoring in the catchment through to the WTP's. The program contains the latest health guideline values for managing risks to water quality from the ADWG (2011), but further revisions are proposed, as described in detail in clause 3.6.5.</p> <p><i>Liaison with SCA's customers to manage catchment infrastructure:</i></p> <p>The SCA has regular communication with its customers regarding the operation of its catchment infrastructure to minimise risks to raw water quality. These communications are structured around the <i>Bulk Water Supply Agreements</i> and <i>Protocols</i> and forums such as the Strategic Liaison Group meetings and Joint Operational Group meetings. These processes and examples of specific activities occurring during the audit period are discussed in detail in clause 3.4(b).</p> <p><i>General ongoing catchment management activities:</i></p> <p>The SCA <i>Draft 2011-12 Annual Catchment Management Report</i> describes the catchment management activities during the audit period. These include programs to work with or fund local</p>	<p>Lands In the Special Areas, May 2009</p> <p>Healthy Catchments Strategy 2009-2012, Draft 3 – version 0.1, 30 July 2009.</p> <p>Draft 2011-12 Annual Catchment Management Report</p> <p>Healthy Catchments Program 2011-12</p> <p>Healthy Catchments Strategy 2012-16, Draft for Public Exhibition, Aug 2012</p> <p>Board Standing Committee on Asset Management – Proposed Changes to the Hydrometric Renewals Program Budget (incl. Static Profiler), 25 Aug 2011</p> <p>Cyanobacteria Management Strategy 2012 – 2015, Draft Version 8, Feb 2012</p> <p>Accelerated Sewerage Program-completion dates, undated</p> <p>State of the Science Catchment Impacts Summary Report August 2011 – PSAT</p> <p>The Design of Hydrological and</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>businesses, land owners and catchment management groups to minimise the impact on raw water quality from dairy waste, stock access to riparian areas, grazing practices, derelict mines, erosion, on-site wastewater systems, fire, weeds and pest control, etc.</p> <p>These catchment management activities are outlined each year in the SCA <i>Healthy Catchments Program 2011-12</i>, which is aligned with the longer term <i>Healthy Catchments Strategy 2009-12</i>. The SCA new <i>Healthy Catchments Strategy 2012-16</i> was completed during the audit period and is now in draft for public exhibition.</p> <p><i>Specific catchment management and catchment infrastructure works activities during the audit period:</i></p> <p>The auditor sighted evidence of the following examples of specific catchment management and catchment infrastructure works activities that went towards improving the SCA's multi-barrier approach to minimising the risks to raw water quality during the audit period:</p> <ul style="list-style-type: none"> ▪ Static Profiler in Lake Burragorang - The SCA installed a new Static Profiler at DWA 2 (500m from the dam wall) in May/June 2012 to sample dissolved oxygen, conductivity, turbidity and pH to supplement the thermistor chain data and to assist in verifying the reservoir behaviour predicted by the SCA Reservoir Management System (SCARMS). ▪ Upper Canal and Warragamba pipeline maintenance – Both infrastructure were offline at the same time in May 2012 for maintenance and capital works. This was the first time that the pipeline had been offline for some 20 years, so it involved considerable planning with the SWC. This is discussed in more detail in clause 3.4(b). ▪ Cyanobacteria management strategy – this strategy was developed during the audit period and outlines the actions to maintain the SCA's 	<p>Hydrogeological Monitoring</p> <p>J Jankowski and A Madden, 'The Design of Hydrological and Hydrogeological Monitoring Programs to Assess the Impact of Longwall Mining on Water Resources', Groundwater in the Sydney Basin Symposium, International Association of Hydrogeologists, Sydney, 2009.</p> <p>Presentation to LGRP: Monitoring Program, Longwall Mining and Coal Seam Gas, Dr Jerzy Jankowski, 1 Aug 2011.</p> <p>Letter SCA to Planning Assessment Commission re Apes Exploration Drilling Project – Application D084/11, estimate Nov 2011.</p> <p>Planning Assessment Commission Approval of Additional Exploration Borehole (in Darkes Forest) – Apex Energy, estimate Nov 2011</p> <p>SCA Mining and</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>preparedness and response capability for Cyanobacteria incidents, and to increase the SCA's understanding and knowledge of Cyanobacteria within its water storages. The Strategy is proposed to be implemented through a three year cyanobacteria action plan (detailed with timeframes for actions in Section 6) and an annual cyanobacteria risk forecast and operational response plan that will be specific to each algal season. A cyanobacteria risk profile has been developed for each reservoir and will be updated every three years.</p> <ul style="list-style-type: none"> ▪ Sewage Treatment Plant (STP) upgrades – The SCA provided funding assistance towards the now completed upgrades of the Lithgow and Wallerawang STP's and the Kangaroo Valley and Robertson STP's, for which construction is ongoing. ▪ Pollution source assessment (GIS) tool (PSAT) – developed in 2008 the tool is used to determine potential (relative hazards) for parts of catchment to generate, mobilise and transport pollutants to streams, including Cryptosporidium and Giardia. During the audit period the tool was run to inform the development of the <i>Draft Healthy Catchments Strategy 2012-16</i>. ▪ Mining activities – State significant developments and Part 3A projects - The auditor sighted evidence of the SCA and the Department of Planning and Infrastructure (DPI) developing an agreed protocol, '<i>DPI Major Project Assessments - Protocol for Consultation with the SCA on Relevant Applications</i>', within the drinking water catchment and on land adjacent to SCA infrastructure, which applies to mining activities, Coal Seam Gas (CSG) activities, utilities and quarries. ▪ The auditor sighted evidence of the SCA's liaison with the Planning Assessment 	<p>Utility Working Group Meeting Agenda 08 09 2011</p> <p>Technical Working Group Meeting Agendas: BHP Billiton 9 Sept 2011, 25 Nov 2011, 17 Feb 2012, 1 June 2012; Pacific Peabody 14 Dec 2011, 24 May 2012.</p> <p>SCA letter to Department of Planning and Infrastructure re Environmental Assessment Berrima Coal Project, 27 June 2011.</p> <p>SCA letter to EMGA Mitchell McLennan re Submissions Report on Berrima Colliery and Cement Works, 21 Oct 2011.</p> <p>SCA email to IEC re Berrima Colliery Water Management Plan, 18 Sept 2012.</p> <p>Email from Parsons Brinckerhoff to the SCA re Preliminary summary of tracer study results in Woronoora catchment, July 2012.</p> <p>Email from Minerals & Energy, Environmental</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>Commission during the audit period granting Apex conditional permission as a Part 3A project to conduct CSG exploration drilling at Oakdale (Darkes Forest) in February 2012. The SCA advised that it liaised with agencies during the assessment stage and will continue to liaise if the project proceeds and this is expected to include joint inspection with a focus on ensuring the management of erosion of water and extraction.</p> <ul style="list-style-type: none"> ▪ Berrima coal mine – recent expansion of this 80 year old mine has seen the involvement of the SCA in the assessment process and the management and water monitoring plan. The auditor sighted evidence of the SCA’s comments on the Environmental Assessment during the last audit period, on the Submissions report during the 2011/12 audit period and on the Water Management Plan after the current audit period. ▪ Cumulative impacts – The SCA considers longwall coal mining to constitute a greater risk to water supplies in its catchment areas than Coal Seam Gas. The auditor sighted evidence that the SCA has engaged a consultant to undertake tracer studies in the Woronora catchment to investigate the potential effects of stream bed cracks and the potential mobilisation of metals into the Woronora reservoir due to longwall mining. The SCA has developed a monitoring design pre and post longwall mining and the auditor sighted a paper and a presentation regarding this. ▪ Working groups – The SCA attends a technical working group with mining companies to discuss operational issues. Evidence of meeting agendas with BHP Billiton on a quarterly basis and with 	<p>Sustainability Branch Industry & Investment NSW to multiple agencies re schedule for joint agency meeting, 24 April 2012.</p> <p>Catchment Operations extract from Organisational Chart showing 1.5 FTE mining positions.</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>Peabody Pacific on a biennial basis was sighted by the auditor. The SCA also attends a multi-agency meeting convened by Minerals & Energy, Environmental Sustainability Branch, Industry & Investment NSW.</p> <ul style="list-style-type: none"> ▪ SCA staff – the SCA has 1.5 FTE staff dedicated to monitoring mining activities in its catchments: Manager Mining and Utilities (1 FTE) and Senior Catchment Officer (0.5 FTE). ▪ Land Development Assessment - The SCA provides frequent advice to planning authorities (both the Department of Planning and Infrastructure and local councils) on planning directions, strategies, instruments, site specific planning proposals and development control plans relevant to the drinking water catchment or affecting SCA infrastructure. The SCA's use of its Development Assessment Register used to track its response to development proposals, which was updated during the audit period, and the NorBE tool are discussed in detail under clause 4.3.1. <p>The management of SCA's Catchment Infrastructure Works is also discussed in clause 6.1.1.</p> <p>2. Effective responses to exceedances of the HRWQC against the guideline values in the ADWG (2011) and responses to incidents</p> <p>The SCA monitors the concentration of a list of Health Related Water Quality Characteristics (HRWQC) that includes pesticides, synthetic organic compounds, radiological parameters and heavy metals against the health guideline values for drinking water from the ADWG (2011) are applied to these parameters in raw water because conventional water treatment methods are not designed to remove these compounds from raw water. The SCA found there to be 100% compliance of the HRWQC with the ADWG</p>	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>health guideline values during the audit period. The auditor verified samples of raw data, as discussed in more detail in clause 3.4(a).</p> <p>The SCA manages its response to water quality incidents in accordance with the <i>Raw Water Quality Incident Response Plan (RWQIRP)</i>, including incidents of <i>Cryptosporidium</i> and <i>Giardia</i> detections and cyanobacteria. The auditor sighted evidence of discussion about the "Annual Review of Cryptosporidium and Giardia Incident Triggers" during the December 2011 Strategic Liaison Group meeting with NSW Health and the SWC, where NSW Health confirmed that the existing triggers were suitable for the detections observed in the SCA water supply system.</p> <p>The SCA advised that it commenced a scheduled review of the <i>RWQIRP</i> during the audit period to incorporate the updates in the ADWG (2011). The auditor sighted the minutes of the June 2012 Strategic Liaison Group meeting with NSW Health and the SWC, where changes to the ADWG (2011) and the review of the <i>RWQIRP</i> was discussed. The SCA intends to address the following areas:</p> <ul style="list-style-type: none"> ▪ Cyanobacteria – the ADWG (2011) contains detailed response protocols. The SCA advised that it has commenced a review of its <i>RWQIRP</i> in line with these changes. ▪ <i>Cryptosporidium</i> and <i>giardia</i> – the ADWG (2011) contains updated response guidelines, including the use of filtered turbidity as a surrogate. The SCA is developing an approach that assesses both the catchment risk of <i>Cryptosporidium</i> occurring and the risk of WFP filters failing to determine the risk of breakthrough in each supply system. This will inform an update of the <i>Incident Response Plan</i> based on risk, as well as real time measurements of surrogates such as turbidity. <p>Evidence was also sighted confirming review</p>	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>requests to the SCA's customers and responses from the following:</p> <ul style="list-style-type: none"> ▪ SCA (internal – 23 & 28 May 2012) ▪ Sydney Water (16 June 2012) ▪ OEH/EPA (28 May 2012) ▪ NSW Health (25 May 2012) ▪ Wingecarribee Shire Council (24 May 2012) ▪ Shoalhaven Water (14 May 2012) ▪ DPI: Office of Water (14 June 2012) ▪ Goulburn Mulwaree Council (13 August 2012) <p>The auditor reviewed a sample of incidents reported in the <i>Draft SCA Annual Water Quality Monitoring Report 2011/12 – Appendix D Incidents</i> to verify the SCA's response to pathogen detections. A minor incident of <i>Cryptosporidium</i> found in COMP14 (Upper Canal, Prospect, Warra pipeline) in December 2011 was reviewed and the auditor found the SCA's response to be in accordance with the <i>RWQIRP – Appendix G Cryptosporidium and Giardia Response Plan</i>. This is discussed in more detail in clause 3.4(a).</p> <p>It is noted that heavy rainfall in late February, March and April 2012 brought in large inflows to all storages resulting in the filling and spilling of Lake Burragorang twice and the management of a major incident for the SCA. The auditor was requested by IPART and the SCA not to investigate the response to this incident, due to a concurrent external review into the response to the incident.</p> <p>-----</p> <p>In summary, the auditor found that there was sufficient evidence that the SCA complied with the ADWG 2011 relating to the management of the Catchment Area and the Catchment Infrastructure Works during the audit period. This included preventive management practices and a multi-barrier</p>	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					approach being in place to minimise the risk of contamination of bulk raw water, which is consistent with the ADWG (2011). The auditor also found sufficient evidence that these measures were implemented and effective during the audit period, for example appropriate and effective responses to exceedances of the HRWQC against the guideline values in the ADWG (2011) and responses to incidents. For these reasons the auditor awarded full compliance.	
3.6	Water quality monitoring and reporting					
3.6.5	The SCA must, to the satisfaction of IPART, continue to comply with a strategy and timeframe to further improve its Monitoring Program. Improvements to the Monitoring Program may include such elements as capability to capture real-time information on water quality and water quantity variables specified by NSW Health and NOW.	Full	<p>Sufficient evidence of strategy and/or progress to improve its Monitoring Program.</p> <p>Sufficient evidence that strategy and progress is to the satisfaction of IPART.</p> <p>Sufficient evidence of compliance with strategy and timeframe.</p>	This presents a moderate environmental risk, given the importance of keeping a monitoring program up-to-date with changing risks to water quality and improvements in best practice.	<p>The <i>SCA Water Monitoring Program 2010-2015 (Program)</i> was implemented on 1 January 2011. The <i>Program</i> contains a requirement to undertake a review after the <i>Program</i> is in place for 12 months.</p> <p>The first review commenced in early 2011, being the first significant revision of the <i>Program</i>. The review looked at the adequacy of existing and new proposed monitoring locations based on risk and their appropriateness to confirm sources of diffuse pollutants. It also improved the process for initiation of event and investigative monitoring.</p> <p>A subsequent review of the <i>Program</i> followed, with an update to the guideline values for the HRWQC to match the new ADWG (2011). This was completed in December 2011.</p> <p>This clause requires that the SCA must continue to comply with a strategy and timeframe to further improve its Monitoring Program. The auditor found that the SCA met the timeframe for review stipulated in the <i>Program</i>, that it be reviewed within 12 months of the <i>Program</i> being in place.</p> <p>This clause also requires that this compliance with a strategy and timeframe (progress) be to the satisfaction of IPART. The auditor sighted the following evidence of communication between the SCA and IPART regarding progress on improvements to the <i>Program</i>:</p>	<p>SCA 2010-15 Water Monitoring Program, 2 Dec 2011</p> <p>Minutes of Strategic Liaison Group Meeting, June 2012</p> <p>Email from IPART to the SCA, 21 April 2011</p> <p>Letter from IPART to the SCA, 3 May 2011</p> <p>Email from IPART to the SCA, 2 June 2011</p> <p>Letter from SCA to IPART, 23 Dec 2011</p> <p>Email from NSW Health to the SCA, 23 Jan 2012</p> <p>Letter from NOW to SCA, 18 April 2011</p> <p>Letter from SCA to NOW, 20 May 2011</p> <p>Email from NOW to SCA, 6 Sept 2011</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<ul style="list-style-type: none"> ▪ Email from IPART to the SCA dated 21 April 2011 and subsequent letter dated 3 May 2011 with attached comments regarding the non-routine monitoring program. ▪ Email from the SCA to IPART dated 31 May 2011 providing the revised <i>Program</i> for meeting scheduled for the next day. ▪ Email from IPART to the SCA dated 2 June 2011 stating that happy with the <i>Program</i> (September 2011 revision) providing NSW Health and NOW are happy. ▪ Letter from the SCA to IPART dated 23 December 2011 enclosing the revised <i>Program</i> (December 2011 revision) stating that the revisions are based on advice from NSW Health and IPARTs' advice, including differentiation of non-routine monitoring as investigative and event-based, and changes due to ADWG (2011). <p>IPART, in its 2 June 2011 email, stipulated that the revised <i>Program</i> also needs to be endorsed by NSW Health and NOW. The auditor sighted the following communication from NSW Health:</p> <ul style="list-style-type: none"> ▪ Email from NSW Health to the SCA dated 23 January 2012 endorsing the revised <i>Program</i> commencing 2 December 2011 and noting that the SCA will be amending the Raw Water Quality Incident Response Plan to include the updated cyanobacteria triggers in accordance with the new ADWG (2011) <p>The auditor sighted the following communication between the SCA and NOW:</p> <ul style="list-style-type: none"> ▪ Letter from NOW to SCA dated 18 April 2011 responding to a revision of the <i>Program</i> provided by the SCA and indicating concern with the removal of four sites in lower Hawkesbury-Nepean. ▪ Letter from the SCA to NOW dated 20 May 	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>2011 providing the revised <i>Program</i> (September 2011 version) and indicating that the four lower Hawkesbury-Nepean sites will be retained for another 12 months.</p> <ul style="list-style-type: none"> ▪ Email from NOW to SCA dated 6 September 2011 endorsing the revised <i>Program</i> (September 2011 version). <p>The auditor accepts the above endorsement from NOW of the September 2011 revision of the <i>Program</i> as satisfying IPART's criteria in its 2 June 2011 email, that NOW also be 'happy' with the revised <i>Program</i>.</p> <p>The SCA provided evidence of regular communication regarding the improvements to the <i>Program</i> and evidence of IPART's endorsement of the September 2011 version of the <i>Program</i>. The auditor considers that the September 2011 revision, which was an extensive revision, constitutes the required revision within 12 months of the <i>Program</i> being in place. Hence, evidence of IPART's satisfaction with the September 2011 revision of the <i>Program</i> is sufficient evidence to award full compliance.</p> <p>Future revisions of the Program are intended to be every two years. The auditor sighted the minutes of the June 2012 Strategic Liaison Group meeting with NSW Health and the SWC, where a summary of the changes to the ADWG (2011) was provided and future improvements to the SCA's <i>Program</i> were discussed. The SCA intends to address the following areas:</p> <ul style="list-style-type: none"> ▪ Pesticides – the SCA is reviewing which of the additional pesticides in the ADWG (2011) are being used in its catchments. ▪ Cyanobacteria – the ADWG (2011) contains detailed response protocols. The SCA advised that it has commenced a review of its <i>RWQIRP</i> in line with these changes. ▪ <i>Cryptosporidium</i> and <i>giardia</i> – the ADWG (2011) 	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>contains updated response guidelines, including the use of filtered turbidity as a surrogate. The SCA is developing an approach that assesses both the catchment risk of <i>Cryptosporidium</i> occurring and the risk of WFP filters failing to determine the risk of breakthrough in each supply system. This will inform an update of the <i>Incident Response Plan</i> and a review of the <i>Program</i>, based on risk, as well as real time measurements of surrogates such as turbidity.</p> <ul style="list-style-type: none"> Total Dissolved Solids (TDS) – proposed movement to health-based targets based on ADWG (2011). 	
4.3	Regional Environmental plan					
4.3.1	The SCA must comply with any obligations imposed on it under the <i>Regional Environmental Plan</i> , applicable to its Functions under the Act and the Licence.	Full	<p>Sufficient evidence of the following during the audit period:</p> <ol style="list-style-type: none"> Support the maintenance or achievement of the water quality objectives (SEPP – 3(c)) Assessment and approval of development and activities to incorporate Current Recommended Practices and Performance Standards (CRP's)(SEPP – 9(1) and (2)). A copy of the 	This presents a moderate to high risk to water quality, as the obligations represent the primary phase of the multiple barrier approach to reducing risk to human health.	<p>The auditor notes that on 1 March 2011, the <i>Drinking Water Catchments Regional Environmental Plan (REP)</i> was repealed and replaced by the <i>State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (the SEPP)</i>.</p> <p>1. Support the maintenance or achievement of water quality objectives:</p> <p>The SCA advised that the water quality objectives (as referred to in the <i>SEPP</i>) are the 'water quality benchmarks for catchment streams' listed in Table 4.3 of the <i>Draft SCA Annual Water Quality Monitoring Report 2011-12</i> during the audit period.</p> <p>2. Assessment and approval of development activities to incorporate Current Recommended Practices and Performance Standards (CRP's):</p> <p>During the audit period, the SCA continued to work with council staff to apply the neutral or beneficial effect (NorBE) test to development applications in the drinking water catchments and has developed a process for providing regular updates regarding development assessment and planning matters to councils and consultants. The first issue of a three-monthly email update (called <i>NorBE Notes</i>) was provided to these stakeholders in April 2012 and the</p>	<p>State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011, < http://www.sca.nsw.gov.au/publications/publications/state-environmental-planning-policy-sydney-drinking-water-catchment-2011></p> <p>Drinking Water Catchments Regional Environmental Plan No 1</p> <p>Sydney Water Catchment Management Act 1998</p> <p>Annual Water Quality Monitoring Report 2011-12 Draft</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
			<p>SCA's CRP available for public inspection at the Offices without cost and on the SCA's website (SEPP – 9(3))</p> <p>4. The SCA's engagement with Councils of Neutral or Beneficial Effect on Water Quality (NorBE) criteria to empower Councils to appropriately grant consent and forward its determination to the SCA (SEPP – 3(b), 10)</p>		<p>auditor sighted an example of this.</p> <p>During the audit period, the SCA provided updates at four Local Government Reference Panel meetings on the implementation of aspects of the <i>REP</i> and the <i>SEPP</i>, including updates on NorBE Tool refresher training being provided to council staff and current recommended practices (CRP) being developed by the SCA including the 'Water Sensitive Design Guide for Rural Residential Subdivisions' and 'Designing and Installing On-Site Wastewater Systems' technical guide. The auditor sighted training notes and meeting minutes with local governments where these were discussed.</p> <p>During 2010/11 the SCA developed two documents to assist development proponents prepare their applications and provide adequate information to allow an assessment – '<i>Developments in Sydney's Drinking Water Catchment – Water Quality Information Requirements</i>' and '<i>Using a Consultant to Prepare Your Water Cycle Management Study</i>'. During 2011-12 these documents were promoted through catchment councils to encourage adoption. The SCA has an endorsed list of CRPs for a wide range of activities including agriculture, stormwater, roads, farming animals, and onsite sewage systems on the SCA website. The auditor sighted a sample of these: the <i>Draft CRP Keeping Horses in the Sydney Drinking Water Catchment</i> and the <i>Draft Earth moving CRP</i>.</p> <p>CRP's are reviewed annually, but the auditor noted that there is no written document control of what triggers a review outside the annual cycle.</p> <p>The auditor considers that during the audit period the above activities satisfy the <i>SEPP</i> – 9(1) and (2) requirement that any development or activity proposed should incorporate the Authority's current recommended practices and standards or should demonstrate to the satisfaction of the consent authority or determining authority how the practices and performance standards proposed to be adopted</p>	<p>SCA Developments in Sydney's Drinking Water Catchment Water Quality Information Requirements 2011</p> <p>Using a consultant to prepare your water cycle management study, < http://www.sca.nsw.gov.au/__data/assets/pdf_file/0010/17875/Using-a-consultant-to-prepare-your-WCMS.pdf></p> <p>Demonstration of the NorBE tool Version 5 in operation.</p> <p>Local Government Reference Panel 1 August 2011, 7 November 2011, 6th February 2011, 7th May 2012</p> <p>Copy of first issue of NorBE Notes email (that also shows distribution list), April 2012 – TRIM Reference D2011/35696</p> <p>NorBE Council Completed evaluation forms. 9D2012/65770).</p> <p>NorBE Training Notes for various councils;</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>will achieve outcomes not less than those achieved by the Authority's current recommended practices and standards.</p> <p>3. CRP's available for public inspection at the Offices without cost and on the SCA's website</p> <p>The SCA has an endorsed list of CRPs for a wide range of activities including agriculture, stormwater, roads, farming animals, and onsite sewage systems on the SCA website. The auditor considers that this satisfies the SEPP – 9(3)(a) requirement that a list of each of the Authority's current recommended practices and standards is published on the Authority's website.</p> <p>The SEPP - 9(3)(b) states that the "The Authority must ensure that a copy of each of the Authority's current recommended practices and standards is available for public inspection at the office of the Authority without cost during ordinary office hours". The SCA stated that its practice is to provide the most up to date and current versions of all documents from the SCA website. IPART stated that its position is that if a customer can enter an SCA office and obtain a copy of the CRP's from reception, then this satisfies this requirement. The auditor accepts that a copy can be provided by reception upon request and therefore considers the SCA to be compliant with this SEPP requirement.</p> <p>4. Engagement with Councils of Neutral or Beneficial Effect on Water Quality (NorBE) criteria:</p> <p>The SEPP requires that development consent cannot be granted unless there is neutral or beneficial effect on water quality and if the proposed development is one to which the NorBE Tool applies an assessment should be undertaken using that Tool. The auditor reviewed the SCA's activities during the audit period that support achieving these requirements.</p> <p>During the audit period the SCA involved the catchment councils in the implementation of the</p>	<p>Presentation to Upper Lachlan Council (D2012/74376)</p> <p>Presentation to Wingecarribee (D2012/74384)</p> <p>Presentation to Lithgow (D2012/74385)</p> <p>Presentation to Blue Mountains (D2011/74386)</p> <p>NorBE Consultant Workshop 24 August 2011(D2012/65768)</p> <p>NorBe Workshop Waste Water Effluent Module 2012</p> <p>CRP summary list 2012(SCA Web Site)</p> <p>Draft CRP Keeping Horses in the Sydney Drinking Water Catchment – A Guide to the Development of Stables and Other Facilities, Aug 2012</p> <p>Draft Earth moving CRP 2012</p> <p>2009-11 WRAPP Progress Report</p> <p>SCA Annual Report 2010/11.</p> <p>SCA 2011-12 Annual Report (pending tabling in Parliament)</p> <p>Presentation to</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>NorBE Tool, the use of which is now mandatory under the <i>SEPP</i>. Primary contacts from catchment councils were contacted and offered refresher training on the tool. The sessions provided an opportunity for the SCA to seek feedback from councils on their experiences using the tool and suggestions for improvements. The auditor sighted feedback forms from councils and consultants as evidence of this.</p> <p>Refresher training sessions were held with Blue Mountains Council, Lithgow Council, Wingecarribee and Wollondilly and Upper Lachlan Council during the audit period. Training notes were sighted by the auditor.</p> <p>The SCA stated that support and mentoring to individual council staff in their use of the NorBE Tool was also provided by the SCA on an 'as needs' basis, sometimes through its telephone support line.</p> <p>The SCA has consulted agencies, industry, community and other stakeholders on the approval process and the specifics of the approval criteria in the NorBE tool have been considered at workshops, and improvements have subsequently been made. The auditor sighted reference panel meeting minutes.</p> <p>The SCA reported that the NorBE tool has enabled the SCA to improve the percentage of development assessments that it completes within the allowed statutory period to 96.5% during the audit period, as reported in the <i>SCA 2011-12 Annual Report (pending tabling in Parliament)</i>.</p> <p>The auditor also reviewed the SCA's NorBE Wastewater Effluent Model (WEM), a tab module on the tool to assess nutrient transport.</p> <p>The auditor sighted evidence that the SCA delivered a program for consultants (Consultants Workshops) that operate in the drinking water catchment to help raise awareness of aspects of the <i>SEPP</i>, including the water quality information requirements, the</p>	<p>Consultants Workshop Mittagong RSL 24 August 2011 (D2012/65767)</p> <p>Agenda SCA NorBE workshop for consultants 24 August 2011, (D2012/65763)</p> <p>Completed Workshop for Consultants Evaluation forms Sept 2011 (D2012/6577)</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>NorBE and WEM tools, the application of CRP's and performance standards in development proposals, and other planning matters.</p> <p>Based on the above evidence the auditor found that the SCA has met the requirements of the SEPP – 3(b), 10.</p> <p>-----</p> <p>In summary, the auditor found the SCA fully compliant with its obligations under the SEPP during the audit period.</p>	
5.1	Environment Plan					
5.1.1	SCA must maintain programs for Environmental management.	Full	<p>Evidence that the <i>Environment Plan</i> is current and its elements have been implemented as per the Plan.</p> <p>Elements include:</p> <ol style="list-style-type: none"> 1.Principals of ecologically sustainable development 2.Environmental Objective, Targets and timeframes 3.Minimise the environmental impact of the use of SCA's energy 4.Manage and minimise resource use and waste generation 5.Manage heritage in accordance with ESD principles 	This presents a moderate to high environmental risk, and water quality risk.	<p>The SCA's programs for environmental management are documented in the SCA <i>Environment Plan 2006-2011</i>.</p> <p>The SCA stated that the <i>Environment Plan 2006-2011</i> (the <i>Plan</i>), developed to meet this clause requirement, has been extended to 2012. This <i>Plan</i> is currently under review, while the SCA develops an ISO 14001 style Environment Management System as required by the new licence. The auditor sighted the email from IPART outlining the extension of the <i>Plan</i>.</p> <p>The auditor reviewed the following evidence to assess the SCA's implementation of programs for environmental management during the audit period. This evidence is categorised according to the elements of the <i>Plan</i>:</p> <ol style="list-style-type: none"> 1. Ecologically sustainable development (ESD) – The auditor sighted evidence that ESD principles have been incorporated into the NorBE tool in a number of ways: <ol style="list-style-type: none"> a. The qualitative risk rating of consequences of various options weighted is in the tool. b. The related CRP's incorporate sustainability elements. c. The Wastewater Effluent Module (WEM) 	<ol style="list-style-type: none"> 1. SCA Environmental Plan 2006-2011. IPART email Tuesday, 5 April 2011 6:08 PM outlining the extension of environmental management the same as the plan until 2012. 2. SCA 2011-12 Annual Report (pending tabling in Parliament) WRAPP Progress Report 2011 D21134771 and D201134788, August 2011. 3. Energy Management

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
			6.Minimise the environmental impacts of SCA's infrastructure projects		<p>also includes the Neutral to beneficial effects test, also known as WEM module 3 nutrient/pollution migration module.</p> <p>2. Environmental Objective, Targets and timeframes - The SCA sets actions, targets and timeframes for each objective in the <i>Plan</i> and progress on these is reported in the <i>SCA 2011-12 Annual Report (pending tabling in Parliament)</i>, the <i>1 September 2012 report</i> and the <i>WRAPP Progress Report</i> biannually.</p> <p>3. Minimise the environmental impact of the use of SCA's energy - The SCA provided the following information regarding its energy performance during 2011/12 in its <i>1 September 2012 report</i> and further detail in its <i>SCA 2011-12 Annual Report (pending tabling in Parliament)</i>:</p> <ul style="list-style-type: none"> ▪ 27,904,875 kWh electricity consumption during 2011/12 on a par with 2010/11 levels. Office buildings has reduced by more than 54.6% since 2007-08. ▪ 24,693 tonnes of carbon dioxide equivalent (CO2-e) greenhouse gas emissions during 2011/12, down slightly on 2010/11 levels. ▪ 10% green power was used during the audit period in-line with the SCA's target, which is in excess of the government's required 6% under the <i>2006-2011 Energy Management Plan</i> ▪ 960 kWh of energy was generated from SCA sites from the solar street lights in the Warragamba Dam precinct ▪ the SCA's carbon footprint was 53,100 tonnes of carbon dioxide equivalent (CO2-e) in 2011-12, up from 51,500 tonnes the previous year and down approximately 60% from the 2008-09 level. <p>The auditor also reviewed a Board Meeting</p>	<p>Plan 2006-11 1 Sept reporting to IPART – Environmental management programs</p> <p>SCA 2011-12 Annual Report (pending tabling in Parliament)</p> <p>Board Meeting Agenda item 11. 24th June 2011.</p> <p>4.</p> <p>1 Sept reporting to IPART – Environmental management programs</p> <p>5.</p> <p>1 Sept reporting to IPART – Environmental management programs</p> <p>SCA 2011-12 Annual Report (pending tabling in Parliament)</p> <p>6.</p> <p>Project and Program Management Framework, March 2012.</p> <p>Auditor shown CPO186 Wingecarribee Dam upgrade Business</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>agenda during the audit period and noted that the SCA Board deferred further consideration of the mini hydro project until there is greater clarity on renewable energy pricing.</p> <p>4. Manage and minimise resource use and waste generation - The SCA in its <i>1 September 2012</i> report to IPART provided an update on the indicators of its resource and waste reduction programs.</p> <p>5. Manage heritage in accordance with ESD principles - The SCA in its <i>1 September 2012</i> report to IPART provided an update on its heritage related activities for the audit period.</p> <p>The auditor noted that the <i>Annual Report 2010-11</i> Appendix 9 indicated that development of the Heritage conservation register was in progress in 2010/11. The <i>1 September 2012</i> report to IPART provides an update on this activity in 2011/12.</p> <p>6. Minimise the environmental impacts of SCA's infrastructure projects - The SCA assesses and manages the environmental impact of projects in accordance with the <i>SCA Project and Program Management Framework</i> and this is tracked using an electronic <i>Project Management and Information System (PMIS)</i>. The PMIS was introduced during the audit period. This process begins with a Project Starter Checklist and requires the preparation of a business case for the project, which is required before the project can progress. Projects are assessed using the Ready Reckoner process, where Project Managers are required to assess if an Environmental Impact Assessment and Environmental Management Plan are required.</p> <p>Risks are tracked using the SCA risk register generated in the PMIS, which is tracked and reported to Project manager and project sponsor (usually a member of the executive). The auditor</p>	<p>Case and request for Project Panel Review and Wingecarribee Dam Safety Upgrade and Warragamba Conference Centre and how environmental risk was managed through the project starter check list and business case process.</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>sighted two projects in the risk register as examples of projects with environmental risks being tracked: CPO186 Wingecarribee Dam upgrade Business Case and request for Project Panel Review and Warragamba Conference Centre.</p> <p>-----</p> <p>In summary, the auditor found there to be sufficient evidence that the SCA is maintaining programs for environmental management and that the elements of the <i>Environment Plan</i> were implemented during the audit period.</p>	
5.1.2	The SCA must engage in Public Consultation in any review of its programs for environmental management	No Requirement	Evidence that the SCA has engaged in Public Consultation in any review of SCA's programs for environmental management	Absence of consultation could present a moderate risk to environment and water quality as public consultation can raise issues that are important to the community and stakeholders that may otherwise be missed.	<p>The Programs for environmental management were not required to be reviewed during the audit period; hence public consultation was subsequently not undertaken.</p> <p>The SCA stated that the next review of the <i>Environment Plan</i> is scheduled in the 2012-2013 year and consultation will be undertaken as part of the review as required.</p>	N/A
5.1.3	<p>The SCA programs for environmental management must:</p> <p>(a) Include programs to manage and minimise the environmental impacts from its activities, such as (a) energy and (b) water consumption, (c) greenhouse emissions, (d)</p>	Full	<p>a) Evidence to show SCA programs for environmental management to manage:</p> <ul style="list-style-type: none"> ■ Energy ■ Water consumption, ■ Greenhouse emissions, 	This presents a low to moderate risk to the sustainability of SCA and its environment	<p>(a) Evidence of SCA programs for environmental management</p> <p>The auditor notes that these programs are part of the <i>Environment Plan 2006-2011</i>, which has been extended to the 2011-12 audit period. These programs were discussed in detail in Clause 5.1.1. Additional distinctions and findings are discussed below where applicable.</p> <ul style="list-style-type: none"> ■ Energy – The SCA's <i>Environment Plan 2006-11</i> objective 2 defines indicators and targets for energy. The SCA's <i>Progress on actions in programs for environmental management – 1 September Report to IPART</i> and the <i>SCA 2011-12 Annual Report</i> (pending tabling in Parliament) contain updates on these programs for 2011/12. These are discussed under clause 	<p>Environment Plan 2006-11</p> <p>1st September 2011 reporting to IPART - Environmental management programs</p> <p>SCA Corporate Sustainability Strategy 2010–2015</p> <p>SCA 2011-12 Annual Report (pending tabling in Parliament)SCA's Progress on actions in programs for</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
	<p>waste and (e) cultural heritage;</p> <p>(b) Comply with principles of ecologically sustainable development;</p> <p>(c) Be recognised in its business plans; and</p> <p>(d) Incorporate environmental improvement targets and timetables for the SCA to achieve over the term of its business plans.</p>		<ul style="list-style-type: none"> ■ Waste and ■ Cultural heritage <p>b) Evidence that SCA conduct its operations in compliance with the principles of ecological sustainable development contained in Sec 6(2) of the <i>Protection of the Environment Administration Act 1991</i></p> <p>c) Have environmental management programs recognised in the SCA business plan</p> <p>d) Evidence that environmental improvements targets and timetables for the SCA to achieve over the term of its business plans.</p>		<p>5.1.1.</p> <ul style="list-style-type: none"> ■ Water consumption - The SCA's <i>Environment Plan 2006-11</i> objective 1 addresses actions to conserve water and minimise water losses and indicators and targets are set. One target and timeframe during the period of audit is SCA proposal to reduce potable water consumption at Penrith office by 15% (from 2005/6 water consumption) by 2010/11. The SCA reports in its <i>2011-12 Annual Report</i> (pending tabling in Parliament) that this target has been reached in 2011/12 with potable water consumption reduced by 57% on 2005-6 levels. ■ Greenhouse emissions – The SCA's <i>Environment Plan 2006-11</i> objective 2 also defines indicators and targets for the reduction of greenhouse gas emissions (CO₂ Equivalent) resulting from consumption of electricity, fuel and gas. The SCA <i>Energy Management Plan</i> is reported to be implemented to reduce the organisation's energy consumption. Reported emissions levels were discussed under clause 5.1.1. <p>The SCA has conducted an investigation into mini and micro hydro plants on SCA dams (Board minutes sighted). The opportunity to generate renewable energy from Warragamba Dam environmental flow was investigated and SCA has had discussions with a number of contractors regarding the availability of new mini-hydro units on the market. It is reported in Board minutes that due to market price uncertainty SCA won't proceed (24th June 2011).</p> <p>The auditor found an opportunity for improvement in the process for determining and setting greenhouse reduction targets. It is recommended that the SCA produce a GHG reduction cost curve and project tracker to track project viability like the mini-hydro and others. The purpose of the GHG Reduction Project</p>	<p>environmental management – 1 September Report to IPART</p> <p>Board Meeting Agenda item - Mini and Micro Hydro Development – advice to the Board, 24 June 2011.</p> <p>Board Meeting Minutes, 24 June 2011.</p> <p>Executive Meeting Agenda Item - Part 5 Environmental Impact Assessment (EIA) Training – advice to Executive, 11 July 2012.</p> <p>SCA Mining Principles</p> <p>Meeting notes Executive Meeting, item 5.2, re principles for development proposed within and adjacent to the Upper Canal and Warragamba Pipelines Controlled Areas, 11 April 2012</p> <p>Climate Change Impact Assessment 2010</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>Tracker would be to collect GHG reduction project information from the SCA's business units and to identify cost effective projects, to support the SCA in setting GHG emission reduction targets over the next few years. Once targets have been established, the Tracker would be used to monitor the implementation of projects and support communication of reduction activities through the Annual Sustainability Report or Annual Report.</p> <ul style="list-style-type: none"> ▪ Waste - The <i>1 September Report to IPART</i> contains a summary of progress in 2011-12 against the <i>Environment Plan</i> actions, such as conduct an annual waste audit, purchase low waste products and products with recycled content. ▪ Heritage – The <i>1 September Report to IPART</i> contains a summary of progress in 2011-12 against the <i>Environment Plan</i> heritage actions. In 2011-12 the SCA continued to implement its heritage asset management strategy, through review and update draft SCA Heritage Register. This includes the preparation of Conservation Management Plans for items of State significance and preparation of Heritage Maintenance Schedules for state heritage items. <p>The SCA stated that between February and March 2012, 144 staff (more than half of SCA's staff) attended environmental training focusing on how to consider development activities that are approved under part 5 of the Environmental Planning and Assessment Act as well as the Heritage Act 1977 and the Fisheries Management Act 1994. Part 5 of the EP&A Act requires determining authorities (including the SCA) to consider the likely impacts of an activity on the environment. The auditor sighted an Executive meeting agenda item that described the training in detail.</p> <p>The auditor found that the SCA fully complies with the requirement that its programs for environmental</p>	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>management include programs to manage and minimise the environmental impacts from its activities, such as (a) energy, (b) water consumption, (c) greenhouse emissions, (d) waste and (e) cultural heritage.</p> <p>(b) Evidence that SCA conduct its operations in compliance with the principles of ESD</p> <p>The auditor found that the SCA conduct its operations in compliance with the principles of ESD through evidence provided under clause 5.1.1 (point 1) and in addition the following:</p> <p>In February 2012 the Board endorsed 6 mining principles (posted on the SCA website) that guide how mining proposals and activities are considered and managed. These were drafted with consideration to ESD principles, for example considering cumulative and long term impacts. The SCA advised that similar principles have also been endorsed by the Executive for development proposed within and adjacent to the Upper Canal and Warragamba Pipelines Controlled Areas.</p> <p>(c) Have environmental management programs recognised in the SCA business plan</p> <p>The SCA's <i>Corporate Sustainability Strategy 2010-15</i> makes reference to sustainable business outcomes and is the SCA's 5 year Corporate Plan. The auditor sighted in the <i>2011-12 Annual Report</i> (pending tabling in Parliament) the SCA <i>Corporate Sustainability Strategy 2010-2015</i>, which contains a key focus area '6-Resource Optimisation'. Under this the performance indicator is 'Reduction in ecological footprint', with four corresponding strategies. Under Section 2 - KRA 6 of the <i>2011-12 Annual Report</i> (pending tabling in Parliament) the SCA reports progress and future directions against these strategies.</p> <p>In 2010-11, the SCA completed a qualitative risk assessment to consider the broader implications of climate change adaptation on its infrastructure, water</p>	

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>supply and catchment land use, and the SCA's business planning. The outcome was the preparation of the <i>Climate Change Impact Assessment 2010</i>, which proposed ten overarching climate change actions. SCA reports in its <i>2011-12 Annual Report</i> (pending tabling in Parliament) that it has established a Climate Change Working Group to coordinate input on climate change initiatives and oversee the development of an overarching Climate Change Adaptation Strategy for the SCA, which will be completed by the end of 2012.</p> <p>The auditor found that the SCA fully complies with the requirement that its programs for environmental management be recognised in its business plans.</p> <p>(d) Evidence that environmental improvements targets and timetables for the SCA to achieve over the term of its business plans</p> <p>The <i>Environment Plan</i> contains targets and timeframes over the corporate planning cycle. These were indicated under item (a) above. The auditor found that the SCA fully complies with the requirement that its programs for environmental management incorporate environmental improvement targets and timetables for the SCA to achieve over the term of its business plans.</p> <p>-----</p> <p>In summary, the auditor found there to be sufficient evidence that the SCA met its requirements under clause 5.1.3 during the audit period.</p>	
6.1	Management of Catchment Infrastructure					
6.1.1	The SCA must manage and operate the Catchment Infrastructure Works to minimise risk to human health from the	Full	Evidence of management and operational practices of the catchment infrastructure to minimise risk to human health and that these activities	This presents a moderate to high risk to water quality as it represents the secondary phase of the multiple barrier approach to reducing risk to human health.	<p>The role of the <i>Raw Drinking Water Quality Management Framework (RDWQMF)</i> in managing and operating the SCA's catchment infrastructure to minimise risks to human health is discussed in detail under clause 3.5.</p> <p>The Standard Operating Procedures (SOPs) describe how the SCA operates its catchment infrastructure to</p>	<p>SWC & SCA Bulk Water Supply Agreement (13 April 2006)</p> <p>SWC & SCA Bulk Water Supply Protocols</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
	Raw Water it supplies.		occurred during the audit period.		<p>minimise the risks to human health from the water it supplies. The auditor reviewed a sample of these for evidence that revisions took place during the audit period, as well as dates for upcoming reviews:</p> <ul style="list-style-type: none"> ▪ Prospect RWPS – SCADA Production Mode Work Instruction – 11 May 2012 (review date May 2014) ▪ Upper Canal Scour Valve Operation – 16 September 2003 (review date October 2015) ▪ Warragamba Pipeline – Operation of Valve V40 – 11 May 2012 (review May 2014) ▪ Warragamba Dam – Outlet Stop Board and Screen Changes – 24 March 2011 (review March 2016) <p>The SCA also implements a range of catchment and operational management practices to ensure the quality of the raw water it supplies and minimise the risk to human health. This includes the SCA Reservoir Management System (SCARMS) model which is used to determine the impact and behaviour of inflows into Lake Burragorang and assist in the management of off-take levels at the dam wall to optimise water quality. The auditor sighted the output of SCARMS from its use to manage the high rainfall events impacting Lake Burragorang in February to April 2012.</p> <p>For details on specific management and operational activities using the catchment infrastructure to minimise risk to human health during the audit period refer to the findings under clause 3.5.</p> <p>Based on the evidence presented here and also discussed under clause 3.5, the auditor found there to be sufficient evidence that the SCA fully complied with the requirement of clause 6.1.1 that the SCA manage and operate the Catchment Infrastructure Works to minimise risk to human health from the Raw Water it supplies during the audit period.</p>	<p>(Rev 7 – Dec 2006)</p> <p>Licence agreement for the connection of a temporary private service to the SCA's works between SCA and the licensee (2 April 2012).</p> <p>Raw Drinking Water Quality Management Framework (2007-2012)</p> <p>Raw Water Quality Incident Response Plan (RWQIRP) (Rev 7 – August 2010)</p> <p>List of Water operations Standard Operating Procedures (SOPs)</p> <p>Samples of SOPs used in SCA's infrastructure operations:</p> <ul style="list-style-type: none"> • Prospect RWPS – SCADA Production Mode Work Instruction (11 May 2012) • Upper Canal Scour Valve Operation (16 September 2003) • Warragamba Pipeline – Operation of

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
						Valve V40 (11 May 2012) <ul style="list-style-type: none"> Warragamba Dam – Outlet Stop Board and Screen Changes (24 March 2011) SCA Asset Management Strategy, (Draft v4 – April 2012)
6.1.2	The SCA must ensure that the Catchment Infrastructure Works is operated and managed consistent with the Design Criteria. The SCA must make the design criteria available to the public.	Full	Evidence that management and operation practices are consistent with the Design Criteria. Evidence that the Design Criteria have been made available to the public.	This presents a moderate environmental risk as: i) it is largely based on medium to long term yield and ii) the SCA has implementation systems which connect the operations implementation plans to the medium to long term planning models.	The SCA estimates yield for its water supply system using a computer model called Water Headworks Network (WATHNET). The water supply system yield is the maximum annual average demand that can be supplied by the system whilst conforming to the design criteria. The design criteria are fundamentally built into the model as constraints, thereby ensuring that the calculation of the yield is consistent with the Design Criteria. The SCA carried out an iteration of the WATHNET model during the audit period, based on system operational changes derived from the <i>Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources 2011</i> . These allowed for daily releases from Warragamba Dam for: <ul style="list-style-type: none"> Dilution of effluent from Wallacia Sewage Treatment Plant (STP); Extractions at North Richmond Water Filtration Plant (WFP) A storage balance guide (system nomograph) is produced by WATHNET and used to optimise use of its system storages. Planned weekly pumping schedules are also produced for managing drawdown on a daily to weekly basis. The storage balance guide and the planned weekly pumping schedules are operational practices that are used to ensure that the system is consistent with the design criteria from a	Greater Sydney's Sustainable Water Supply – Yield (2012) Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources (2011) System Nomograph for marking current levels Tuesday (26 June 2012) Upper Nepean & Shoalhaven Configuration (23 May 2012) SCA Planned Weekly Pumping for the next 4 Weeks (2 November 2011) Link on SCA website to Greater Sydney's Sustainable Water Supply – Yield (2012) report

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					<p>medium to long term perspective.</p> <p>The auditor reviewed the <i>System Nomograph, Upper Nepean & Shoalhaven Configuration and Planned Weekly Pumping</i> schedules, as evidence that the SCA is operating infrastructure in accordance with the Design Criteria.</p> <p>The auditor found there to be sufficient evidence that the SCA fully complies with the clause requirement that the SCA ensure that the Catchment Infrastructure Works is operated and managed consistent with the Design Criteria during the audit period.</p> <p>The SCA stated that the Design Criteria did not change during the audit period.</p> <p>The SCA is required to make the Design Criteria publically available. The Design Criteria are documented within the <i>Greater Sydney's Sustainable Water Supply – Yield report (2012)</i>, which was made available to the public via the SCA website on 22 May 2012.</p> <p>The auditor found there to be sufficient evidence that the SCA fully complies with the clause requirement that the SCA make the design criteria available to the public during the audit period.</p>	<p>http://www.sca.nsw.gov.au/data/assets/pdf_file/0006/4866/2012-Yield-report-update.pdf</p> <p>Screenshot showing Yield report posted to SCA website on 22 May 2012.</p>
6.2	Water Supply System Yield					
6.2.4	SCA must recalculate the Water Supply System Yield on the occurrence of any one or more of the following events:			This presents a low risk, as 'yield' is a long term planning parameter.		
6.2.4(a)	the conclusion of any drought event;	No requirement	Evidence of timely recalculation at		The SCA advised that the lifting of water restrictions to signal the end of a drought event did not occur	Greater Sydney's Sustainable Water

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
			conclusion of drought event.		during the 2011-12 audit period.	Supply – Yield (2012)
6.2.4(b)	the commencement of any major modification or augmentation to the catchment Infrastructure works or the water supply system Infrastructure which will have a significant impact on SCA's supply of water	No requirement	Evidence of timely recalculation at commencement of Infrastructure works.		The SCA advised that no major infrastructure changes have occurred within the 2011-12 audit period.	Greater Sydney's Sustainable Water Supply – Yield (2012)
6.2.4(c)	any material change to the operating rules of the Catchment Infrastructure works (including Design Criteria)	Full	Evidence of timely recalculation upon change to the operating rules.		<p>In accordance with Clause 35 of the <i>Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources 2011</i>, the SCA were required to change their operating rules to reflect the inclusion of daily releases from Warragamba Dam for:</p> <ul style="list-style-type: none"> Dilution of effluent from Wallacia Sewage Treatment Plant (STP); Extractions at North Richmond Water Filtration Plant (WFP) <p>These releases were incorporated into the WATHNET model, resulting in a recalculation of the water supply yield in the 2011-12 audit period.</p> <p>The resulting changes to the yield were recorded in an updated version of the <i>Greater Sydney's Sustainable Water Supply – Yield Report (2012)</i>.</p> <p>The auditor found there to be sufficient evidence that the SCA fully complies with the clause requirement that the SCA recalculate the Water Supply System Yield on the occurrence of any material change to the operating rules of the Catchment Infrastructure works (including Design Criteria), during the audit period.</p>	<p>Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources (2011)</p> <p>Greater Sydney's Sustainable Water Supply – Yield Report (2012 update for model run 25)</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
6.2.5	The SCA must advise the Minister of any changes to the Water Supply Yield from the previous Water Supply System Yield following a recalculation under clause 6.2.4	Full	Evidence that the SCA advised the Minister of changes to the Water Supply Yield within the audit period.	This presents a low risk, as 'yield' is a long term planning parameter.	<p>The Minister was advised of the recalculation of yield on 20 February 2012 via a Ministerial Briefing to the Department of Primary Industries (DPI).</p> <p>The briefing was signed off and approved by Minister Hodgkinson on 9 March 2012.</p> <p>The <i>Greater Sydney's Sustainable Water Supply – Yield Report (2012)</i> is an updated version of the 2010 report previously submitted to IPART. It provides the updated estimate of the water supply system yield incorporating this change. This report was submitted to IPART with a covering letter from Sarah Dinning (Acting Chief Executive) on 20 April 2012.</p> <p>The auditor found there to be sufficient evidence that the SCA fully complies with the clause requirement that the SCA advise the Minister of any changes to the Water Supply Yield from the previous Water Supply System Yield following a recalculation under clause 6.2.4, during the audit period.</p>	<p>Email from Dominika Rajewski (SCA) to DPI advising of briefing for recalculation of water supply yield dated 20 February 2012.</p> <p>Ministerial Briefing dated 20 February 2012 and signed by Minister on 9 March 2012 (Ref: V12/264 BN12/588 M2012/21).</p> <p>Letter from Sarah Dinning (SCA) to James Cox (IPART) on water supply yield dated 20 April 2012 (Ref: D2012/10393)</p>
6.2.6	The SCA must make any changes to the Water Supply Yield available to the public, including reasons for the changes to the Water Supply System Yield, as soon as practicable after advising the Minister of those changes in clause 6.2.5	Full	Evidence of timely advice to the public of the changes to the water supply yield including the reasons for the change	This presents a low risk, as 'yield' is a long term planning parameter.	<p>The SCA advised that the <i>Greater Sydney's Sustainable Water Supply – Yield Report (2012)</i> was made public via the SCA's website on 22 May 2012.</p> <p>The auditor confirmed access to this report via the SCA website.</p> <p>It is a requirement of Clause 6.2.6 that the reasons for the changes to the water supply system yield be included in the public notice. Reference to the reasons for the change in yield was evident on page 18 of the <i>Greater Sydney's Sustainable Water Supply – Yield Report (2012)</i>, which can be accessed via the SCA website.</p> <p>The auditor found there to be sufficient evidence that the SCA fully complies with the clause requirement that the SCA make any changes to the Water Supply Yield available to the public, including reasons for the</p>	<p>Link on SCA website to Greater Sydney's Sustainable Water Supply – Yield (2012) report (see web address below)</p> <p>http://www.sca.nsw.gov.au/__data/assets/pdf_file/0006/4866/2012-Yield-report-update.pdf</p> <p>Screenshot showing Yield report posted to SCA website on 22 May 2012.</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
					changes to the Water Supply System Yield, as soon as practicable after advising the Minister of those changes in clause 6.2.5, during the audit period.	
8.3	Complaints					
8.3.1	The SCA must maintain internal complaints handling procedures for receiving, responding to and resolving Complaints it receives, which relate to any of its Functions, from Customers and the community.	Full	Sufficient evidence that the SCA has complaints handling procedures for receiving, responding to and resolving Complaints it receives.	This presents a low to moderate risk to water quality if the complaint(s) relate to water quality.	<p>The SCA has a <i>Complaint Handling Policy</i> and <i>Complaint Management Procedure</i> for receiving, responding to and resolving complaints from customers and the community.</p> <p>The SCA reported the complaints that it received during the audit period in its <i>1 September report on Complaints to IPART</i>.</p> <p>The auditor sighted the SCA's complaints recording tool that was current during the audit period and has been in use since 2000. A monthly report on progress on open complaints is provided to the Board via the Chief Executive.</p> <p>The SCA advised that it started developing a new complaints recording tool within the SCA's records management system E-TRIM during the audit period.</p> <p>Based on the above evidence the auditor found that the SCA fully complies with the requirement that it maintain internal complaints handling procedures for receiving, responding to and resolving Complaints it receives, which relate to any of its Functions, from Customers and the community.</p>	<p>SCA Complaint Handling Policy, May 2012, CD2011/591.</p> <p>SCA Complaint Management Procedure, May 2012, CD 2007/13.</p> <p>SCA Update on Complaints 2011-12 – 1 September Report to IPART</p> <p>Board Meeting Minutes (incl. complaints), 30 March 2012.</p>
8.3.2	The internal complaints handling procedures of the SCA must be based on the Australian Standard <i>AS10002-2006 Customer Satisfaction – Guidelines for Complaint Handling in Organisations</i> .	Full	Sufficient evidence that the SCA complaints handling procedures are based on the Australian Standard <i>AS10002-2006 Customer Satisfaction</i>	This presents a low risk to water quality as it is largely a compliance requirement.	<p>The SCA <i>Complaint Handling Policy</i> and <i>Complaint Management Procedure</i> were reviewed and updated by the SCA during the audit period to align them with the Australian Complaint Handling Standard ISO AS10002-2006. The auditor reviewed these updated documents to confirm that they are based on this standard.</p> <p>Based on the above evidence the auditor found that the SCA fully complied with the clause requirement.</p>	<p>SCA Complaint Handling Policy, May 2012, CD2011/591.</p> <p>SCA Complaint Management Procedure, May 2012, CD 2007/13.</p>

Clause	Requirement	Grade	Target for Full Compliance	Risk	Reasons for Grade (Audit Findings)	Evidence Sighted
8.3.3	The SCA must make available to Customers and the community information concerning its internal complaints handling procedures which explains how to make a Complaint and how the complaints handling procedure works.	Full	Sufficient evidence that information concerning its internal complaints handling procedures which explains how to make a Complaint and how the complaints handling procedure works has been made available to the SCA's customers and the community.	This presents a low to moderate risk to water quality if the complaint(s) relate to water quality.	<p>The SCA 'How to make a complaint or offer a compliment' brochure is available to the community in the SCA reception and on the SCA website.</p> <p>The link to the SCA website and a copy of the brochure was also mailed out to the SCA's 64 retail customers with the annual price notification letters, dated 28 July 2011.</p> <p>Based on the above evidence the auditor found that the SCA fully complied with the clause requirement.</p>	<p>How to Make a Complaint or Offer a Compliment, http://www.sca.nsw.gov.au/publications/publications/20, accessed Oct 2012.</p> <p>Print screen of older web link http://www.sca.nsw.gov.au/about-sca/complaints-and-compliments, last updated 25 May 2011.</p> <p>How to make a complaint or offer a compliment – Brochure, June 2010</p> <p>Letters from the SCA to 64 customers re prices and complaints handling procedure, 28 July 2011.</p>

Appendix C

Stakeholder Responses



Health

ENVIRONMENTAL HEALTH BRANCH

Ms Sheree Feaver
Parsons Brinckerhoff Australia Pty Limited
Level 15 28 Freshwater Place
SOUTHBANK VIC 3006

Dear Ms Feaver

I refer to Parson Brinckerhoff's request for comments on Sydney Catchment Authority's (SCA) performance against the Operating Licence during the 2011-2012 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 revised MoU was signed and commenced in September 2011.

The SCA provides water quality reports to NSW Health and notifies incidents in accordance with agreed protocols. The incidents included detection of cyanobacteria, *Cryptosporidium*, *Giardia*, elevated turbidity affecting the Macarthur Water Filtration Plant (July 2011) and heavy rain in the Nepean catchment with turbidity and colour impacts at some plants (from February/March 2012). The SCA responded promptly to NSW Health requests for additional information on catchment conditions. NSW Health is satisfied that the incidents reported during the audit period did not present a risk to public health.

The SCA discussed its *Water Monitoring Program 2010-2015* with NSW Health. The Program was subsequently updated to reflect the *Australian Drinking Water Guidelines 2011*. The SCA is working 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. The SCA also assisted NSW Health with the inter-agency Effluent and By-Product Steering Committee.

In March 2012, NSW Health participated in a flood exercise with the SCA, Sydney Water Corporation and other agencies. This was a very useful activity which identified a number of follow-up actions.

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 at NSW Health's Water Unit or [REDACTED]

Yours sincerely



25/10/12

Jeff Standen
A/Director, Environmental Health Branch

NSW Ministry of Health
ABN: 92 697 899 630

Locked Mail Bag 961- North Sydney NSW 2059
Telephone (02) 9391 9939 Fax (02) 9391 9960

Website www.health.nsw.gov.au

Feaver, Sheree

From: SPARGO, SANDRA <SANDRA.SPARGO@sydneywater.com.au>
Sent: Monday, 29 October 2012 10:29 AM
To: Feaver, Sheree
Subject: SWC feedback - SCA Operational Audit 2011/12

Dear Sheree,

I refer to your letter dated 3 October 2012 inviting feedback from Sydney Water on the performance of the Sydney Catchment Authority (SCA) against its obligations under Operating Licence clauses 3.1.1 and 3.4(b).

Sydney Water and 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 2011/12.

I apologise for the delay in our response. I am happy to provide a formal letter if preferred – please let me know if this is required.

Kind regards,
Sandra

Sandra Spargo | A/Corporate Compliance Manager

Business Strategy & Resilience | Sydney Water
Level 15, 1 Smith Street Parramatta NSW 2150
PO Box 399 Parramatta NSW 2124

(My work days are Mon-Thu)

sandra.spargo@sydneywater.com.au | sydneywater.com.au

tap™ is the original ecowater. Get sustainable. Drink tap. Visit tapsydney.com.au



NOTICE: This email is confidential. If you are not the nominated recipient, please immediately delete this email, destroy all copies and inform the sender. Sydney Water Corporation (Sydney Water) prohibits the unauthorised copying or distribution of this email. This email does not necessarily express the views of Sydney Water. Sydney Water does not warrant nor guarantee that this email communication is free from errors, virus, interception or interference.

B | SCA's statement of compliance

Annual Compliance Report for 2011-12

**Submitted by Sydney Catchment Authority
Statement of Compliance**

**To: Independent Pricing and Regulatory Tribunal of NSW (the Tribunal)
Level 8, 1 Market Street
Sydney NSW 2000**

Attention: The Chief Executive Officer

Sydney Catchment Authority reports as follows:

The Annual Compliance Report documents compliance during 2011-12 with the obligations in the Sydney Catchment Authority Operating Licence 2011-12. These obligations are listed by clause in Schedule A.

The Annual Compliance Report has been prepared by Sydney Catchment Authority with all due care and skill in full knowledge of the obligations to which it is subject and in compliance with the Tribunal's Monitoring and Reporting Protocol, if applicable.

Schedule B provides information on those licence obligations that the Sydney Catchment Authority did not fully comply during 2011-12. No issues have been identified.

Schedule C outlines any factors and emerging issues that may affect compliance with a licence clause in future years. No issues have been identified.

The Annual Compliance Report has been approved by the A/Chief Executive and the Chairman of the Board of Sydney Catchment Authority.


Signed: _____

Sarah Dinning

Name:
Sarah Dinning

A/Chief Executive

Title:

21/9/2012
Date: _____


Signed: _____

Robert Rollinson

Name:
ROBERT JOHN ROLLINSON

Chairman SCA Board

Title:

21. September 2012
Date: _____

Annual Compliance Report for 2011-12

Submitted by Sydney Catchment Authority

Schedule A: Licence obligations for Sydney Catchment Authority

Operating Licence Obligation	Clause	Compliance Yes/No
Memoranda of Understanding		
	2.3.1	Y
	2.3.2(a)	Y
	2.3.2.(b)	NR
	2.3.2(c)	Y
Water Quality		
Specific Water Characteristics	3.1.1	Y
	3.1.2	Y
	3.1.3	Y
	3.1.4	Y
Health-Related Water Quality Characteristics	3.2.1	Y
	3.2.2	Y
	3.2.3	Y
	3.2.4	Y
Obligations under 2000 Operating Licence	3.3	NR
Water supplied for Water Treatment	3.4(a)	Y
	3.4(b)	Y
Catchment and system management	3.5	Y
Water Quality Monitoring and Reporting	3.6.1	Y
	3.6.2	Y
	3.6.3	Y
	3.6.4	Y
	3.6.5	Y
	3.6.6	Y
	3.6.7	Y
	3.6.8	Y
	3.6.9	NR
	3.6.10	Y
	3.6.11	Y
Water Quality Planning – Water Quality Management Framework	3.7.1	Y
	3.7.2	NR
	3.7.3	Y
	3.7.4	Y
	3.7.5	Y
	3.7.6	Y

Annual Compliance Report for 2011-12

Submitted by Sydney Catchment Authority

Operating Licence Obligation	Clause	Compliance Yes/No
	3.7.7	Y
	3.7.8	Y
	3.7.9	Y
	3.7.10	Y
	3.7.11	Y
Environmental Water Quality	3.8	Y
Catchment Management and Protection		
SCA to manage and protect Catchment Areas	4.1.1	NR
	4.1.2	Y
	4.1.3	Y
Plans of Management – Special Areas	4.2.1	Y
	4.2.2	Y
Regional Environment Plan	4.3.1	Y
	4.3.2	Y
	4.3.3	Y
State Environmental Planning Policy	4.4	NR
Provision of Information	4.5	Y
The Environment		
Environment Plan	5.1.1	Y
	5.1.2	Y
	5.1.3	Y
	5.1.4	NR
	5.1.5	Y
Catchment and Environmental Performance Indicators	5.2.1	Y
	5.2.2	Y
	5.2.3	Y
Management of Catchment Infrastructure Works and Water Conservation		
Management of Catchment Infrastructure Works	6.1.1	Y
	6.1.2	Y
Water Supply System Yield	6.2.1	NR
	6.2.2	NR
	6.2.3	NR
	6.2.4	Y
	6.2.5	Y
	6.2.6	Y
Review of the model	6.3.1	NR
	6.3.2	NR
	6.3.3	NR
	6.3.4	NR

Annual Compliance Report for 2011-12

Submitted by Sydney Catchment Authority

Operating Licence Obligation	Clause	Compliance Yes/No
Water Conservation	6.4.1	Y
	6.4.2	Y
	6.4.3	NR
Asset Management		
Asset Management obligation	7.1	Y
Reporting on the management system of the Assets	7.2.1	NR
	7.2.2	NR
Auditing the management system of the Assets	7.3.1	NR
	7.3.2	NR
	7.3.3	NR
	7.3.4	NR
	7.3.5	NR
Customers		
Customer – Sydney Water Corporation	8.1	Y
Customers – Other than Sydney Water Corporation	8.2.1	Y
	8.2.2	Y
	8.2.3	NR
	8.2.4	Y
Complaints	8.3.1	Y
	8.3.2	Y
	8.3.3	Y
	8.3.4	Y
	8.3.5	Y
Consultation	8.4.1	Y
	8.4.2	Y
	8.4.3	NR
Pricing		
Sydney Water Corporation	9.1	Y
Wingecarribee Shire Council and Shoalhaven City Council	9.2	Y
Other Customers	9.3	Y

NR = No requirement within the audit period.

Annual Compliance Report for 2011-12

Submitted by Sydney Catchment Authority

Schedule B: Non-Compliances for Sydney Catchment Authority's licence

[Instruction: If a "no" response was provided in the compliance column for a licence clause in Schedule A, then a description of the non-compliance must be provided for that clause in Schedule B.]

Licence clause	Obligation	Description of non-compliance
N/A	N/A	N/A

Annual Compliance Report for 2011-12

Submitted by Sydney Catchment Authority

Schedule C: Issues that may affect compliance in future audits

[Instruction: If a “yes” response was provided in the compliance column for a licence clause in Schedule A and there are factors or emerging issues that may affect compliance in future audits, please describe these factors or issues in Schedule C.]

Licence clause	Obligation	Description of emerging issue
N/A	N/A	N/A

C Summary of opportunities for improvement

The auditor has identified a number of potential opportunities where SCA's compliance with the licence could be enhanced, or its practices and procedures could be improved. This appendix summarises the opportunity for improvements.

SCA should consider the prudence and efficiency of implementing these opportunities for improvement.

SCA is not required to report to us on opportunities for improvement. However if SCA chooses to provide a status update report to us by 31 March 2013, we will use this to assist us in developing the scope of the operational audit for that year. We will also provide this report to the auditor as audit evidence.

If provided, the status report should set out the actions and timelines for implementation, where State Water has found that the benefits outweigh the cost of adopting an opportunity for improvement.

Opportunity for improvements from auditor

1. **Clause 3.5 – Catchment and system management** – WQMF should reference detailed descriptions of specific preventive measures or controls in each water supply system, and associate these with the particular water quality risks being mitigated.

SCA must comply with the ADWG (2011) relating to the management of the Catchment Area and the Catchment Infrastructure Works. SCA's Raw Drinking Water Quality Management Framework (RDWQMF) 2007-12 and the subsequent revision during the audit period - Draft SCA Water Quality Management Framework (WQMF) 2012-17 - contain SCA's overarching framework that describes SCA activities, processes and procedures that combine to form a multi-barrier approach to managing the catchment area and catchment infrastructure works to minimise the risk to human health from the bulk raw water it supplies. The auditor found that the Draft WQMF addresses each of the 12 elements of the ADWG (2011) at a high level. As an opportunity for improvement, the WQMF would benefit from reference to more detailed descriptions of specific preventive measures or controls in each water supply system. It would be logical to associate these with the particular water quality risks that are being mitigated. This could be done by

referencing the catchment-to-tap risk assessment for the supply system and ensuring that preventive or control measures are aligned with each of the risks.

The previous auditors found that for each of the catchment-to-tap risk assessments, it should be possible to easily identify specific operational controls for high risks. During the audit period, SCA documented the Generic Hazard Event List & Controls, which contains generic hazards and controls for a generic supply system. This list goes some of the way to achieving the opportunity for improvement identified above, but it would benefit from some customisation for the water supply system and to the catchment-specific risks. It is recommended that this be referenced in the WQMF.

2. **Clause 4.3.1 - Regional environment plan** - a documented control trigger should be set for each CRP in order that reviews may be triggered and a response prepared if required prior to the annual review in a timely manner.

Clause 4.3.1 requires that the SCA must comply with any obligations imposed on it under the *Drinking Water Catchments Regional Environmental Plan No 1*, now the *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011* (SEPP), its successor. The SEPP requires that any development or activity proposed should incorporate the Authority's current recommended practices and standards or should demonstrate to the satisfaction of the consent authority or determining authority how the practices and performance standards proposed to be adopted will achieve outcomes not less than those achieved by the Authority's current recommended practices and standards. An endorsed list of CRPs appears on the SCA website, and these are reviewed annually. The auditor suggests that a documented control trigger be set for each CRP in order that reviews may be triggered and a response prepared if required prior to the annual review in a timely manner.

3. **Clause 5.1.3(a) - Programs for Environmental Management (greenhouse emissions)** - produce a greenhouse gas reduction cost curve and energy reduction and GHG project tracker.

The auditor identified an opportunity for improvement in SCA's process for determining and setting greenhouse gas (GHG) reduction targets. It is recommended that SCA produce a GHG reduction cost curve and energy reduction and GHG project tracker to track project viability like the mini-hydro and others. The purpose of the GHG Reduction Project Tracker (the Tracker) would be to collect GHG reduction project information from SCA business units and to identify cost effective projects, to support the objectives of clause 5.1.3(a) and SCA in setting GHG emission reduction targets over the next few years. Once energy and GHG emission targets have been established (as required by 5.1.3(d)), the Tracker may be used by SCA to monitor the implementation of projects and support communication of energy and GHG reduction activities through the Annual Report or a separate Annual Sustainability Report.

Opportunity for improvements from IPART

In relation to the issue of seeking endorsement from Sydney Water on SCA's Specific Water Characteristics within SCA's Water Monitoring Program, we have included an opportunity for improvement instead of a recommendation.

4. **Clause 3.1.1 - Specific water characteristics** - The SCA should seek written endorsement from the Sydney Water of the current version of the SCA water Monitoring Program 2010-15, as an endorsement of the revised list of specific water characteristics.

The SCA must maintain, to the satisfaction of NSW Health and Sydney Water Corporation, a list of Specific Water Characteristics. The list of Specific Water Characteristics was reviewed during the audit period as part of work to align the health guideline values with those of the ADWG (2011). This review occurred as part of the wider review of SCA Water Monitoring Program 2010-2015, dated 2 December 2011. The auditor found that the SCA has obtained written endorsement of the revised current version of the Program and, hence, the revised list of Specific Water Characteristics, from NSW Health, but not from Sydney Water Corporation.

