

Independent Pricing and Regulatory Tribunal

Hunter Water Corporation Operational Audit 2014-15

Report to the Minister

Water — Compliance Report March 2016



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Executive summary

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) has completed the third operational audit (the audit) of Hunter Water Corporation's (Hunter Water) compliance with the requirements of its 2012-2017 Operating Licence (the licence). This audit covers the period from 1 July 2014 to 30 June 2015 (2014-15). We have engaged a specialist auditing firm (Viridis Consultants Pty Ltd (Viridis), in partnership with Cobbitty Consulting Pty Ltd), to assist with the audit. We have prepared this report to summarise the audit findings for the Minister for Lands and Water (the Minister).

The 2014-15 audit findings demonstrate that Hunter Water has shown a high level of compliance with its licence and has improved its compliance performance in water quality, for both drinking water and recycled water. Hunter Water has shown that it has made best endeavours to implement recommendations from previous audits, thereby improving its performance. We have made recommendations for Hunter Water to continue to improve, and generally maintain, compliance with its licence.

Overview of audit findings

The 2014-15 audit found that Hunter Water demonstrated a high level of compliance with its licence. This is the third audit in the 5-year term of the licence. No non-compliances were identified by the audit.

The compliance grades that we applied to the audit are explained in Appendix A. Hunter Water achieved Full Compliance with 17 of the 20 clauses audited, and was assigned High Compliance for two clauses. One clause was deemed 'No Requirement', as no notifiable changes had been made to the Customer Contract. In summary, the audit found that Hunter Water was assigned:

- Full Compliance with all auditable requirements relating to:
 - licence and licence authorisation (clause 1.6.1)
 - water quality drinking water (clauses 2.1.1 & 2.1.2)
 - water quality recycled water (clause 2.2.1)
 - asset management (clause 4.1.2)
 - customers and consumers (all audited clauses in Part 5)
 - environment (clause 6.1.5)

- quality management (clause 7.1.3), and
- performance monitoring (clauses 8.3.5 and 8.4.1).
- High Compliance with requirements relating to:
 - water quality recycled water (clause 2.2.2) in regards to the implementation of the Recycled Water Quality Management System, and
 - asset management (clause 4.1.1) in regards to the maintenance of an Asset Management System.
- No Requirement in regards to the update of the pamphlet, as no variation is made to the Customer Contract (clause 5.2.2).

Hunter Water's compliance is summarised in Table 1.

Table 1Hunter Water's compliance in 2014-15, the third year of its
2012-2017 Operating Licence

Licence part	Number of	Comp	liance g	rade ass	igned
	audited clauses	Full	High	Adeq	NR
Part 1 – Licence and Licence authorisation	1	1	-	-	-
Part 2 – Water quality (Drinking Water & Recycled Water)	6	5	1	-	-
Part 3 – Water Quantity	-	-	-	-	-
Part 4 – Assets	2	1	1	-	-
Part 5 – Customers & Consumers	7	6	-	-	1
Part 6 – Environment	1	1	-	-	-
Part 7 – Quality management	1	1	-	-	-
Part 8 – Performance monitoring	2	2	-	-	-
Total	20	17	2	-	1

Note: Full = Full Compliance; High = High Compliance; Adeq = Adequate Compliance; NR = Not Required. **Source:** Viridis Consultants, *2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report*, February 2016.

Annual statement of compliance

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

Our recommendations

The auditor prepared a final audit report detailing its findings and recommendations (Appendix C). We endorse all of these findings. There were two clauses for which the auditor did not assign Full Compliance. Our recommendations are listed below.

Recommendations

Water Quality - Recycled Water Quality Management System Implementation (Clause 2.2.2)

- 1 Hunter Water should implement interim Critical Control Points (CCPs), and finalise the validation program (by 30 September 2016).
- 2 Hunter Water should seek and facilitate endorsement of the validation program outcomes by NSW Health, and adjust or refine CCPs in accordance with the outcomes (by 31 March 2017).

Assets – Asset Management System (clause 4.1.1)

- 3 Hunter Water should continue to implement improvement initiatives in respect of:
 - the development and implementation of a holistic approach to maintenance management
 - the complete capture of all asset and related maintenance information in its Enterprise Resource Planning (Asset/ Maintenance Management) System
 - criticality and condition assessment, and
 - review and update of operational and maintenance procedures

across the whole portfolio (by 30 June 2017).

Subject to the Minister's endorsement of the recommendations, we will request Hunter Water provides us with a report on its progress in implementing these recommendations by 16 May 2016.

Progress with previous recommendations

Finally, we note that Hunter Water has completed nine out of 15 outstanding recommendations from previous operating audits. Six recommendations were ongoing. We will continue to monitor and report on progress against each of these ongoing recommendations during each future audit.

1 | Introduction and scope

Hunter Water Corporation (Hunter Water) is a State Owned Corporation, wholly owned by the NSW State Government. Hunter Water's principle functions are to provide, construct, operate, manage and maintain systems and services for supplying water, providing sewerage and drainage services and disposing of wastewater in its Area of Operations.¹ These roles and responsibilities, as well as Hunter Water's objectives, are prescribed by the *State Owned Corporations Act 1989* (NSW), the *Hunter Water Act 1991* (NSW) (the Act) and the Operating Licence (licence) issued to Hunter Water under Section 12 of the Act.

We have completed the 2014-15 annual operational audit of Hunter Water's compliance with obligations outlined in its licence. We do this by receiving and reviewing reports, attending audit interviews with utility staff, and undertaking field verification to investigate how effectively requirements of the licence are met in practice. At the completion of the audit we publish the audit report and report our findings to the Minister for Lands and Water (the Minister).

We applied a risk based approach to the Hunter Water audit. Further, we assessed compliance by reviewing an annual statement of compliance prepared by Hunter Water (Appendix D). This is an exception based report listing any licence breaches that occurred during the year. This statement also includes what remedial action has been taken, or is being taken, to resolve any reported breaches.

1.1 Purpose and structure of this report

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

- ▼ This chapter (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 Hunter Water to address and implement recommendations from previous audits.

¹ As defined in Schedule B of Hunter Water's Licence.

- Appendix A contains the table of compliance grades used for this audit.
- Appendix B contains the audit scope.
- Appendix C provides the auditor's detailed audit report.
- Appendix D provides Hunter Water's annual statement of compliance.

1.2 Audit scope

This audit covers the period from 1 July 2014 to 30 June 2015.

The audit scope for this year included obligations relating to:

- Licence and Licence authorisation (Part 1) requirements relating to the connection of services.
- Water quality (Part 2) requirements relating to the maintenance and implementation of the Drinking Water and Recycled Water Management Systems.
- Assets (Part 4) requirements relating to the maintenance and implementation of the Asset Management System.
- Customers and Consumers (Part 5) requirements relating to provision and availability of information, and the implementation and availability of the Consultative Forum.
- Environment (Part 6) requirements relating to environmental management systems.
- Quality management(Part 7) requirements relating to implementation of quality management systems
- Performance monitoring (Part 8) requirements relating to reporting and the provision of performance indicators.

No clauses from Part 3 (water quantity) were audited this year, following the risk-based approach used in the auditing program.

We consulted with the NSW Ministry of Health (NSW Health) and sought public submissions in determining the scope of the audit. The audit scope is provided in Appendix B. This year, NSW Health identified the following areas of interest² which were included in the audit:

- Drinking water reticulation disinfection optimisation (considered in the review of licence clause 2.1.1).
- Response and debrief of East Coast Low storm event (April 2015) (considered in the review of licence clause 2.1.1).

² Letter, Prof D. Durrheim, NSW Health, 13 October 2015.

1 Introduction and scope

- Medowie developments/planning and water quality impacts for Grahamstown Dam (considered in the review of licence clause 2.1.1).
- Recycled Water Quality Management Plans for each of the recycling schemes (considered in the review of licence clause 2.2.2).

We sought submissions from the public on matters related to the licence prior to the audit interviews. We advertised for public submissions in the Sydney Morning Herald and The Daily Telegraph on 26 August 2015, and The Land on 27 August 2015. We received no public submissions.

1.3 The audit process

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

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

We engaged Viridis Consultants Pty Ltd (Viridis), in partnership with Cobbitty Consulting Pty Ltd, to assist with the 2014-15 audit of Hunter Water. The auditor was required to undertake the following tasks:

- 1. Consider stakeholder submissions and comments for inclusion in the audit scope.
- 2. Prepare an information request (questionnaire) to Hunter Water, setting out all information and evidence requirements, two weeks prior to the commencement of audit interviews.
- 3. Review reports and documents provided by Hunter Water in response to the questionnaire.
- 4. Conduct face-to-face interviews with Hunter Water staff at its offices.
- 5. Conduct field verification and assess the implementation of Hunter Water's systems and procedures.
- 6. Assess the level of compliance that Hunter Water achieved against each of the identified obligations in the licence, (as per our risk-based audit scope), provide supporting evidence for this assessment and report the level of compliance according to our compliance grades (Appendix A).

- 7. Assess and report on progress by Hunter Water in addressing any comments made by the relevant Minister and/or recommendations endorsed by us following previous audits, and provide supporting evidence for these assessments.
- 8. Verify the calculation of performance indicators associated with requirements of the relevant licence and undertake an assessment of any underlying trends in performance arising from these indicators.
- 9. Provide drafts of the audit report to us and address any comments from Hunter Water and us regarding draft audit findings.
- 10. Prepare a final report outlining audit findings.

The auditor adopted an audit methodology that was consistent with *ISO* 19011:2011 *Guidelines for Auditing Management Systems*. This guideline sets 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 Public Water Utilities June 2015.*³ Under this guideline, the auditor can make recommendations or suggest opportunities for improvement. Where we support the auditor's recommendation, we follow up the matter to ensure that it is addressed.

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

We held a project start up meeting (teleconference) with the auditor on 18 August 2015 to agree on the project milestones, audit timing, and outline our expectations. We also held an audit inception meeting with Hunter Water and the auditor on the first day of the audit interviews, on 19 October 2015. At this meeting, expectations and protocols for the conduct of the audit were agreed. All parties adhered to the agreed protocols throughout the audit.

³ Available on our website (www.ipart.nsw.gov.au).

1 Introduction and scope

The licence audit interviews were conducted from 19 to 21 October 2015 at Hunter Water's office in Newcastle. On 20 October 2015, the auditor also undertook a site visit to the following locations:

- Grahamstown Dam spillway
- Campvale pump station
- Grahamstown Water Treatment Plant (WTP)
- Mayfield West Advanced Water Treatment Plant and Kooragang Industrial Water Scheme, and
- ▼ Edgeworth Wastewater Treatment Plant (WWTP).

Hunter Water's compliance with the relevant requirements of the licence was assessed according to the compliance grades in Appendix A.

2 Summary of audit findings and recommendations

This chapter provides a summary of the auditor's findings and recommendations for each of the audited clauses of the licence. The 2014-15 audit is the third audit of the 2012-2017 licence.

Each section includes a table providing a comparison of Hunter Water's audit performance during its licence period. Compliance grades are abbreviated according to the following convention:

- ▼ **Full** = Full Compliance
- ▼ **High** = High Compliance
- Adeq = Adequate Compliance
- NC = Non Compliant, and
- NR = No Requirement.

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

2.1 Licence and licence authorisation

Hunter Water achieved Full Compliance for the audited clause.

Part 1 of the licence, 'Licence and licence authorisation', outlines the objectives, authorisations, duration, limits and obligations of the Hunter Water Licence. Under the risk based auditing framework, we consider that this part of the licence poses a low level of risk with respect to likelihood and consequence of non-compliance.

	licence authoris	ation				
Clause Requirement		Compliance grading				
1	licence and licence authorisation	2012-13 a	2013-14 a	2014-15 ^b	2015-16	2016-17
1.6.1	Connection of services - availability of services on request to any property	-	-	Full		

 Table 2.1
 Summary of compliance with Part 1 of the licence – Licence and licence authorisation

^a IPART, Hunter Water Corporation Operational Audit 2013/14 - Report to the Minister – Compliance Report, December 2014.

b Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report, February 2016.

The auditor found that Hunter Water had demonstrated that it maintains and implements a process for managing applications for the provision of services to properties situated in its area of operations. Furthermore, Hunter Water demonstrated that it manages the application process through its internal document management system in which all documents are logged. Hunter Water advised that, whilst in some cases approval to provide services may be conditional, a positive response was provided to all applications. No evidence of rejection of applications was found by the auditor.

Accordingly, Hunter Water achieved Full Compliance for this licence clause, and no recommendations were made.

2.2 Water Quality

Hunter Water achieved Full Compliance for five of the six audited clauses. One clause was assigned High Compliance.

Part 2 of the licence outlines Hunter Water's obligations relating to Drinking Water and Recycled Water Quality Management Systems. Under the risk based auditing framework, we consider that this part of the licence poses a high risk with respect to both the likelihood and consequence of non-compliance.

The Drinking Water and Recycled Water Quality Management Systems were subject to a 'systems audit'. In summary, the auditor did not have prescriptive water quality objectives on which to assess compliance but rather was required to consider whether the Water Quality Management Systems that Hunter Water had in place were consistent with the relevant Australian Drinking Water Guidelines (ADWG) and the Australian Guidelines for Water Recycling (AGWR). Both guidelines incorporate a Quality Management Framework (Framework). In making its assessment, the auditor was directed by the elements, components and actions of the Framework, but also relied on their own experience.

Clause	Requirement	Complianc	e grading		
2	Water quality	2012-13 a	2013-14 a	2014-15 ^b 2015-16 2016-17	7
2.1.1	Maintain Drinking Water Quality Management System	Adeq	Adeq	Full	
2.1.2	Fully implemented system	Adeq	High	Full	
2.1.3	Notification of significant changes	-	-	Full	
2.1.4	Obtain NSW Health's approval for any significant changes	-	-	Full	
2.2.1	Maintain Recycled Water Quality Management System	Full	High	Full	
2.2.2	Fully implemented system	Adeq	High	High	

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

^a IPART, Hunter Water Corporation Operational Audit 2013/14 - Report to the Minister – Compliance Report, December 2014.

b Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report, February 2016.

Drinking water quality

The auditor found that Hunter Water achieved Full Compliance for clauses 2.1.1, 2.1.2, 2.1.3 and 2.1.4 related to drinking water management in the licence.

- Clause 2.1.1 of the licence requires Hunter Water to maintain a Management System that is consistent with the Australian Drinking Water Guidelines.
- Clause 2.1.2 requires Hunter Water to ensure that the Drinking Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the system.
- Clause 2.1.3 requires Hunter Water to notify IPART and NSW Health of any significantly changes it proposes to make to the Drinking Water Quality Management System in accordance with the Reporting Manual.
- Clause 2.1.4 requires Hunter Water to obtain NSW Health's approval for any significant changes it proposes to make to the Drinking Water Quality Management System before implementing or carrying out its activities in accordance with them.

Overall, the auditor found that the Drinking Water Quality Management System (DWQMS) has been implemented, consistent with the 12 elements of the ADWG.

During the audit period (in October 2014), Hunter Water awarded a contract to Veolia Water (Veolia) to operate and maintain all its water and wastewater treatment plants. A requirement to establish and implement a DWQMS within 12 months of contract commencement was included in the contract scope.

The auditor found that the DWQMS's prepared by Hunter Water and Veolia are consistent with the requirements of ADWG, display a high level of integration between the two organisations and are consistent with site operations.

NSW Health was generally satisfied with the performance of Hunter Water during the audit period.⁴ Any significant changes proposed by Hunter Water to the DWQMS have been discussed and approved by NSW Health prior to implementation. With regards to the specific issues identified by NSW Health for review, the auditor noted the following:

- Disinfection optimisation the strategy's targets were achieved by September 2014.
- ▼ East Coast Low the auditor was satisfied that both Hunter Water and Veolia took appropriate action to minimise the effects of the storm, which washed away part of the Chichester Trunk Gravity Main, and caused the loss of power to 10 wastewater treatment plants. Communication protocols were established with relevant staff and stakeholders such as NSW Health. A debrief report to NSW Health identifies the processes used during the incident, the post incident follow-up and the recommendations that came out of the incident.
- Medowie developments/planning and water quality impacts for Grahamstown Dam – pumping of collected stormwater from the Medowie area is non-discretionary and mandatory under the licence issued by DPI Water, to minimise localised flooding. Development is controlled through local government development controls. Hunter Water is a concurrence agency for any significant development in the catchment. This allows Hunter Water to manage risks to drinking water quality and operations.

The auditor identified two opportunities for improvement for clauses 2.1.1 and 2.1.2. One was related to standardisation of risk assessment methodology by Veolia and Hunter Water. The other was related to including a close-out procedure to address the outcomes of risk assessments. Further details of the opportunities for improvement are available in the audit report in Appendix C.

⁴ Letter – Prof D. Durrheim, NSW Health, 13 October 2015.

Recycled water quality

The auditor found that Hunter Water achieved Full Compliance for clause 2.2.1, and was assigned High Compliance for clause 2.2.2 of the Recycled Water Quality Management System (RWQMS) clauses of the licence.

Clause 2.2.1 requires Hunter Water to maintain a Management System that is consistent with the AGWR.

Clause 2.2.2 requires Hunter Water to ensure that the RWQMS is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health.

Overall, the auditor found that the Recycled Water Quality Management Plan (RWQMP) has been implemented and is consistent with the AGWR. As noted, Hunter Water awarded a contract to operate and maintain its wastewater treatment facilities to Veolia. Both Hunter Water and Veolia are well advanced in establishing and maintaining a RWQMS consistent with the AGWR.

In addition, Hunter Water achieved certification of its Quality Management System (QMS) and its Environmental Management System (EMS) during the audit period.

There is a high degree of integration between the two systems. Supporting documentation to facilitate the establishment of the RWQMS was also developed. This included monitoring plans, training and awareness packages, validation programs, communication protocols, incident and emergency response, reporting and operational procedures. Veolia also established scheme specific recycled water quality management plans for each site providing recycled water.

The auditor assigned Full Compliance for clause 2.2.1 for maintaining a RWQMS consistent with AGWR.

For clause 2.2.2, the auditor noted that both Veolia and Hunter Water were well advanced in the implementation of the RWQMS. However a number of key elements of the AGWR are yet to be implemented, including the establishment and implementation of critical control point (CCP) limits and alarms. The implementation of critical limits and alarms is linked to the finalisation of the validation program and the endorsement of the critical limits by NSW Health. These issues are captured in the Improvement Plan which will not be completed until November 2015. For this reason, the auditor assigned a grade of High Compliance for this clause. NSW Health requested that Hunter Water maintain RWQMPs for each of the recycling schemes. Scheme specific RWQMPs have been developed for each site over the audit period. Evidence for two of the scheme specific RWQMPs were submitted to the auditor. NSW Health has also requested the auditor undertake a rolling review of these plans, spread over the five year licence period, but a schedule is yet to be finalised.

The auditor found that Hunter Water should commence the implementation of the CCPs as soon as possible and finalise the recycled water validation program. The implementation of the critical limits and alarms is linked to finalisation of the validation program and the endorsement of these limits by NSW Health. Once the validation program is completed and the outcomes endorsed by NSW Health, CCPs should be adjusted or refined in accordance with the outcomes.

We make the following recommendations in relation to clauses 2.2.1 and 2.2.2 that build on the progress made on the previous year's recommendation (number 2013-14-02).

Recommendation

- 2014-15-01 Hunter Water should implement interim Critical Control Points (CCPs) as soon as possible and finalise the validation program within six months (by 30 September 2016).
- 2014-15-02 Hunter Water should seek and facilitate endorsement of the validation program outcomes by NSW Health, and adjust or refine CCPs in accordance with the outcomes within 12 months (by 31 March 2017).

The auditor also identified four opportunities for improvement for clauses 2.2.1-2.2.2. These were related to improving document control, water quality data review, and use of this data during the risk assessment process. Further details of the opportunities for improvement are available in the audit report in Appendix C.

2.3 Assets

Hunter Water achieved Full Compliance for clause 4.1.2 and was assigned High Compliance for clause 4.1.1.

Part 4 of the licence, 'Assets', outlines the obligations for Hunter Water's Asset Management System and its System Performance Standards. Under the risk based auditing framework, we consider that the asset management system clauses of the licence pose a high risk with respect to likelihood and consequence of non-compliance.

Clause Requirement		Complian	Compliance grading			
4	Assets	2012-13 a	2013- 14 ^a	2014-15 ^b	2015-16	2016-17
4.1.1	Maintain Asset Management System standard	High	High	High		
4.1.2	Asset Management System implementation	Full	Full	Full		

Table 2.3 Summary of compliance with Part 4 of the licence – Assets

^a IPART, Hunter Water Corporation Operational Audit 2013/14 - Report to the Minister – Compliance Report, December 2014;

b Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report, February 2016.

The auditor found that Hunter Water has continued to maintain and actively improve its Asset Management System through implementation of the initiatives identified in the *IWA-WSAA 2012 Asset Management Performance Improvement Project*. The identified improvements have either been largely completed or substantial progress has been made towards completion. Full implementation of the changes across the whole of the asset portfolio is expected to be completed by July 2017, ready for Hunter Water's proposed ISO 55001 accreditation.

For this reason, clause 4.1.1 was assigned High Compliance rather that Full Compliance.

The auditor was satisfied that Hunter Water had implemented its existing asset management practices in accordance with the requirements of the current asset management system, and assigned Hunter Water Full Compliance for clause 4.1.2.

We have made the following recommendation in relation to clause 4.1.1, that builds on the progress made on the previous year's recommendation (number 2013-14-20).

Recommendation

- 2014-15-03 Hunter Water should continue to fully implement improvement initiatives identified as part of its 2012 Benchmarking Program including:
 - the development and implementation of a holistic approach to maintenance management
 - the complete capture of all asset and related maintenance information in its Enterprise Resource Planning (Asset/ Maintenance Management) System
 - criticality and condition assessment, and
 - review and update of operational and maintenance procedures

across the whole of the asset portfolio (by 30 June 2017).

The auditor identified two opportunities for improvement. These were related to corrosion protection assessment and repair of specific items identified during the audit. Further details of the opportunities for improvement are available in the audit report in Appendix C.

2.4 Customers and consumers

Hunter Water achieved Full Compliance for six of the seven 'Customers and consumers' clauses audited. One clause was assessed as having No Requirement.

Hunter Water's obligations towards its customers and consumers are outlined in Part 5 of the licence. This includes obligations relating to its Customer Contract, provision of information to customers, procedures dealing with financial hardship, consultation, complaints handling and dispute resolution. Under the risk based auditing framework, we consider that this part of the licence poses a low to moderate risk with respect to likelihood and consequence of noncompliance.

Clause 5.2.2 requires Hunter Water to update the pamphlet identifying variations to the Customer Contract. As there had been no changes made to the Customer Contract, there was no requirement in respect of this obligation.

Clause	Requirement	Compliar	nce grading			
5	Customers and consumers	2012-13 a	2013-14 a	2014-15 ^b	2015-16	2016-17
5.2.2	Update the pamphlet explaining the Customer contract	-	-	No Requirement		
5.5.1	Regularly consult through Consultative Forum	-	-	Full		
5.5.2	Utilise Consultative Forum advice consistent with Charter	-	-	Full		
5.5.3	Membership in accordance with Charter; and use best endeavours to include a person from each of the 10 nominated interests	-	-	Full		
5.5.4	Maintain Charter	-	-	Full		
5.5.5	Provide information to Consultative Forum	-	-	Full		
5.5.6	Make publicly available Charter and meeting minutes	-	-	Full		

 Table 2.4
 Summary of compliance with Part 5 of the licence – Customers and consumers

^a IPART, Hunter Water Corporation Operational Audit 2013/14 - Report to the Minister – Compliance Report, December 2014.

b Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report, February 2016.

With regards to the remaining clauses in Part 5, Hunter Water demonstrated that it:

- maintains and regularly consults with its Customers and Consumers through a Consultative Forum
- ▼ maintains a Charter that addresses all ten of the nominated issues in the licence,⁵ and
- ▼ uses advice provided by the Forum, and provides necessary information to the Forum.

The auditor sighted evidence that demonstrated published minutes, calls for agenda items, and emails related to the operation of the Consultative Forum. The auditor also sighted evidence that Hunter Water had used its best endeavours to include representatives from each of the nominated interest groups in the Consultative Forum.

We did not make any recommendations in relation to clauses in Part 5, as Hunter Water achieved Full Compliance for the licence clauses.

The auditor identified two opportunities for improvement. These were related to revising the Consultative Forum Charter to improve its functionality, and to document guidance on assessing whether information provided to the Consultative Forum may be privileged or confidential. Further details of the opportunities for improvement are available in the audit report in Appendix C.

2.5 Environment

Hunter Water achieved Full Compliance for clause 6.1.5.

Part 6 of the licence, 'Environment', outlines Hunter Water's obligations for developing and implementing an Environmental Management System (EMS), and the programs to manage risks to the environment from carrying out its activities. Under the risk based auditing framework, we consider that this part of the licence poses a moderate risk with respect to both the likelihood and consequence of non-compliance.

Clause 6.1.5 requires that Hunter Water must notify IPART of any significant changes that it proposes to make to the EMS in accordance with the Reporting Manual.

⁵ Hunter Water Corporation Operating Licence 2012-2017, cl 5.5.4.

Clause	Requirement	Compliance grading				
6	Environment	2012-13 a	2013-14 ª	2014-15 ^b	2015-16	2016-17
6.1.5	Notify IPART of any changes to EMS	-	-	Full		

Table 2.5 Summary of compliance with Part 6 of the licence – Environment

^a IPART, Hunter Water Corporation Operational Audit 2013/14 - Report to the Minister – Compliance Report, December 2014.

b Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report, February 2016.

The auditor found that the significant change made was to inform IPART that its EMS had achieved ISO 14000 certification. Hunter Water's "*Report on Significant Changes to Operating Licence*", dated 31 March 2015 notified IPART that certification was achieved within the audit period. Hunter Water achieved Full Compliance for this clause.

No recommendations or opportunities for improvement were identified.

2.6 Quality management

Hunter Water achieved Full Compliance for clause 7.1.3.

Part 7 of the licence, 'Quality Management', outlines Hunter Water's responsibility in developing and implementing a Quality Management System (QMS), certified to the appropriate standard.⁶ Under the risk based auditing framework, we consider that this part of the licence poses a moderate risk with respect to likelihood and consequence.

 Table 2.6
 Summary of compliance with Part 7 of the licence – Quality management

Clause	Requirement	Compliand	ce grading			
7	Quality management	2012-13 a	2013-14 a	2014-15 ^b	2015-16	2016-17
7.1.3	QMS is fully implemented	-	-	Full		

^a IPART, Hunter Water Corporation Operational Audit 2013/14 - Report to the Minister – Compliance Report, December 2014;

b Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report, February 2016.

Hunter Water achieved Full Compliance for this clause as it achieved certification of the QMS under ISO 9000, demonstrating that the system is implemented in accordance with the standard.

No recommendations or opportunities for improvement were identified.

⁶ AS/NZS ISO 9001 - Quality Management Systems.

2.7 Performance monitoring

Hunter Water achieved Full Compliance for both of the audited clauses under *Performance monitoring*.

Part 8 of the licence, 'Performance monitoring', outlines the obligations for audits, provision of information, reporting and performance indicators. Under the risk based auditing framework, we consider that this part of the licence poses a low to moderate level of risk with respect to likelihood and consequence of non-compliance.

 Table 2.7
 Summary of compliance with Part 8 of the licence – Performance monitoring

Clause	Requirement	Complian	ce grading			
8	Performance monitoring	2012-13 a	2013-14 a	2014-15 b	2015-16	2016-17
8.3.5	Provide water quality information to NSW Health	-	-	Full		
8.4.1	Maintain sufficient record systems to enable accurate measure of performance against indicators	-	Full	Full		

^a IPART, Hunter Water Corporation Operational Audit 2013/14 - Report to the Minister – Compliance Report, December 2014;

b Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report, February 2016.

Regarding clause 8.3.5, NSW Health made three requests for information on the quality of water supplied by Hunter Water.⁷ Hunter Water provided the requested information within reasonable timeframes.

For clause 8.4.1, the auditor concluded that Hunter Water has good systems in place to accurately measure its performance against performance indicators specified in the Reporting Manual.

The auditor identified one opportunity for improvement to clause 8.4.1, focusing on improved documentation of procedures used to extract data and calculate indicators, and documentation for specific processes to ensure captured data are consistent with the definitions in the Performance Indicators. Further details of the opportunity for improvement are available in the audit report in Appendix C.

⁷ Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation, Final Audit Report, February 2016. Refer Table 28 for details of correspondences between Hunter Water and NSW Health.

3 Progress on previous audit recommendations

The previous audits in 2012-13 and 2013-14 identified areas where Hunter Water's performance with its licence obligations did not receive Full Compliance. We previously made recommendations to the Minister to address these issues.^{8,9} The following table outlines Hunter Water's progress in implementing these recommended actions.

Hunter Water has completed nine out of 15 outstanding recommendations from previous audits. Six recommendations were ongoing.

Where a recommendation is ongoing in Table 3.1, it will be followed up in 2015-16, together with the recommendations from this year's audit.

⁸ IPART, Hunter Water Corporation Operational Audit 2012/13 - Report to the Minister – Compliance Report, 2013.

⁹ IPART, Hunter Water Corporation Operational Audit 2013/14 - Report to the Minister – Compliance Report, 2014.

	Recommendation	Progress
1	2012-13-02	Completed
•	Clause 2.2 - water quality management system Hunter Water should develop and implement water quality awareness	Hunter Water has developed an online training module for employees and contractors and is currently rolling it out. Evidence was provided of 980 contractors having been inducted into the program.
	training for contractors (by December 2014).	
2	2013-14-01	Completed
	Clause 2.1.1 & 2.2.1 – water quality management systems Within 12 months Hunter Water should develop an internal audit program that reviews the implementation of the DWQMS and the RWQMS (by December 2015)	Currently all internal and external management system audits for EMS, WHSMS and QMS are tracked within the <i>Management System Audit</i> <i>Programme – 2015.</i> These form the Integrated Quality Management System (IQMS). The draft <i>Triennial Internal Quality Audit Program (2015- 2018)</i> has been provided and shows that drinking and recycled water management have been included in the programme. The various sub- elements of the management systems have been scheduled over a three year period. The schedule has been risk-based and the frequency varies from one to seven times over the period.
		The audit found that this recommendation had been addressed.
3	2013-14-02	Completed for drinking water.
	 Clause 2.1.1, 2.1.2, 2.2.1 & 2.2.2 - water quality management systems Within 6 months, Hunter Water should review CCPs for each treatment plant, including: a) review all CCP critical limits (including alarm delays), and monitoring points to ensure they 	Ongoing for recycled water. A review of the drinking water CCPs was undertaken in June 2015. The revised CCPs are documented in a CCP register. The audit found that CCPs for drinking water have been implemented across the site that was subject to audit (Grahamstown WTP) and necessary documentation has been developed to meet the requirements of the recommendation.
	reflect current practice, as agreed with NSW Health	Critical and alert limits have been implemented into the supervisory control and data acquisition
	 b) develop a process to ensure critical limits are only altered with supervisory consent and there is a failsafe process to ensure that they are reinstated before water quality is compromised 	(SCADA) system for drinking water. Critical limits have been hardcoded in the PLC set in SCADA. Changes to these limits require specific access. Automatic shutdowns are applied at all CCPs monitored continuously in SCADA. A new SCADA user group has been established to restrict the permissions of staff who can alter
	c) revise and review CCP documentation to clearly state location, parameters, target criteria, monitoring frequency, critical limits, corrective actions and responsibilities for each CCP	automatic shutdown setpoints. Veolia's HACCP Response Procedure was provided for evidence that there is a system in place to manage an excursion of a CCP limit and document corrective and preventative actions.
	 d) develop a process to record and document corrective actions, and preventive measures to reduce risks 	A recycled water Validation Program has been developed and is currently being implemented to validate the proposed recycled water CCPs. The Validation program is due to be completed in

Table 3.1 Hunter Water's progress in 2014-15 to address recommendations from previous audits

	Recommendation	Progress
	e) operational and critical limits must be set in SCADA as alarms, including delay times where appropriate.	November 2015, and once the CCPs and associated limits and alerts have been endorsed by NSW Health, they will be implemented into SCADA system.
	(by June 2015)	We are recommending a revised due date of 30 September 2016.
4	2013-14-03	Completed
	Clause 2.1.2 & 2.2.2 - water quality management systems Within 12 months, a process needs to be implemented to ensure that documents required under the DWQMS and RWQMPs are appropriately reviewed and kept up to date. Hunter Water also needs to ensure that it's Operations and	Hunter Water now has a certified ISO 9000 IQMS. Document control is undertaken through the Integrum database. Review dates are programmed, and rolled out 60 days before the review due date. Veolia documentation relating to the contract requirements is accessible to Hunter Water. During the audit, the document control systems of both Veolia and Hunter Water were demonstrated to the auditor's satisfaction.
	Maintenance Contractor uses up to date procedures for these activities (by December 2015).	
5	2013-14-04	Ongoing
	Clause 2.1.1 & 2.2.1 - water quality management systems	Since the previous audit Veolia has developed plant operating manuals for the each of the WTPs.
	Within 18 months, Hunter Water should define and identify significant risks, determine the preventive measures that manage significant risks, and implement a plan to document the preventive measures and consequent corrective measures (by June 2016).	Using the Grahamstown Risk Register a preventive measure is 'Ability to stop return water flow during high risk events e.g. after heavy rainfall'. I f this is followed through into the manual, section 8.7.1 provides instructions on how to either waste or recover the backwash. It is currently up to the knowledge of the operator to undertake the action. An improvement to this would be to include a section in the manual for significant hazardous events and provide references to the section in the manual on the implementation of the preventive or corrective actions used to manage the risk.
		During the audit period risk assessments have been undertaken for the Tomaree Catchment and Dungog and Grahamstown WTPs. These risk assessment document preventive measures and further risk treatments where current preventive measures do not reduce the risk to an acceptable level.
		The recommendation is in progress and a schedule is in place to complete it – to be completed by 30 June 2016. The risk assessments must continue to be reviewed per the audit calendar and the Operation and Maintenance Manuals updated. Also, any preventive measures relied upon in the catchment or distribution not covered by Veolia's manual must also ensure that appropriate documentation is maintained.

	Recommendation	Progress
6	2013-14-05 Clause 2.1.1 – drinking water quality management systems Within 12 months, Hunter Water should develop a process to inform customers who receive unfiltered water from the Chichester Trunk Gravity Main about the quality and use of that water. (It was noted that the non-standard agreement for customers receiving this service does not currently provide information on the quality of the water and therefore material is required to educate and inform these customers.) (by December 2015)	Ongoing and due for completion by December 2015. A cross divisional stakeholder group within Hunter Water has been formed to ultimately achieve the audit outcomes. Data gathering and reconciliation from multiple systems to develop customer profiles of those customers impacted in this area has been completed and will form the Customer List for process and communication purposes to be completed over the coming months. A proposal dated September 2015 outlining Hunter Water's approach to these customers, specifically around public health requirements and information to be supplied to consumers was presented to NSW Public Health (Sep Quarterly Liaison Meeting) for feedback purposes. This feedback from NSW Health is currently being processed by Hunter Water. Business processes for the deployment of any customer correspondence (initial and ongoing) is also being developed at this time.
7	2013-14-06 Clause 2.1.2 – drinking water quality management systems Within 12 months, the Dungog Water Treatment Plant (WTP) risk assessment needs to be reviewed in light of the changes to the plant, including updating the process flowchart and risk assessment to reflect the upgraded WTP (by December 2015).	Completed Risk assessment workshop was undertaken on 22-23 June 2015. The risk assessment report, briefing paper and risk register provided as evidence. The risk report states that the flow diagram for Dungog WTP was confirmed during the risk assessment workshop in June 2015.
8	2013-14-07 Clause 2.1.2 – drinking water quality management systems Recommendations from the Grahamstown Catchment WTP Health Based Target (HBT) Assessment need to be addressed. It is suggested they be added to the DWQIP as the appropriate mechanism. Whilst not committing Hunter Water to implementing each of the recommendations, it does provide a means of recording the response to each item and closing them out (by December 2014).	Completed The draft WSAA Health Based Target guideline was applied to assess Grahamstown Dam and WTP and the assessment has been completed. Recommendations arising from the HBT assessment have been added to the Improvement Plan.

	Recommendation	Progress
9	2013-14-08 Clause 2.1.1 – drinking water quality management systems Within 12 months, Hunter Water should implement a process to formally review the effectiveness of the DWQMS by the executive management team (for example, this could be done by tabling a performance report at a meeting of the executive team, which covers the requirements of the ADWG and how Hunter Water's DWQMS are meeting these elements) (by December 2015).	Ongoing and due for completion by December 2015. Hunter Water conducts an Integrated Management System Review Meeting with senior management to review all aspects of the individual systems of the Integrated Management System (ie; AS/NZS 4801; ISO 14001; ISO 9001). These are conducted twice per year, and the purpose is to review the implementation and effectiveness of the individual management systems. The requirements of the ADWG and AGRW are currently being incorporated into the standard meeting agenda and presentation pro- forma and the relevant data will be presented at the next meeting scheduled for October 2015.
10	2013-14-09 Clause 2.1.2 - drinking water quality management systems Within one month, Hunter Water should ensure that equipment calibration records are being maintained (by December 2014).	Completed Veolia's spreadsheets were provided with equipment QA section to demonstrate that calibration records are being maintained
11	 2013-14-10 Clause 2.2.2 – recycled water quality management systems Within 12 months, Hunter Water should review the following matters in respect to the Clarence Town Wastewater Treatment Works: The effectiveness of the CCPs. If the corrective action can be undertaken in a timely manner, and it reduces risk, then implement the CCPs as soon as possible. The risk assessment at Clarence Town Wastewater Treatment Works to take account of irrigation-water ponding at the site. (by December 2015) 	 Ongoing and due for completion by December 2015. Hunter Water report the following progress in implementing this recommendation: The lagoon process is nominated as a CCP for the control of helminths. Hunter Water sought guidance from relevant authorities (DPI Water) in order to confirm that the proposed CCP would meet the guideline for helminths and is awaiting final endorsement. Veolia Water is completing a report on the minimum residence time at the plant, including the impact of taking one of the two oxidation ponds offline (when required for future desludging). Veolia Water is undertaking a sludge survey of the ponds to record and monitor the level of sludge and the impact of sludge build up on residence time which will be included the above report. Veolia Water is modifying the plant spreadsheet to include a rolling average daily flow to monitor the residence time in the ponds and alert the operators when irrigation should be ceased if the residence time drops below 25 days. Veolia Water will request a modification to SCADA to alert operators of a potential reduction in residence time due to high flows. A contractor has been engaged to undertake

	Recommendation	Progress
		minor earthworks on the irrigation site to direc ponded water to a drain.
		This is in progress, and based on the evidence will be completed by the due date, pending endorsement by DPI-Water, and completion of internal assessment of operating parameters.
12	2013-14-11	Completed
	Clause 2.2.1 – recycled water quality management systems Within 12 months, Hunter Water should systematically identify operational procedures required to operate recycled water schemes and prioritise a program to develop them. This should include a documented corrective action procedure/s to re- establish process control where there is an excursion from target criteria or critical limits (by December 2015).	Veolia Water has prepared operational procedur manuals for each of the wastewater treatment works. The manuals for Edgeworth and Mayfield West were provided as examples and contain detailed procedures for re-establishing process control for excursions from target criteria and critical limit.
13	2013-14-12	Completed
	Clause 2.2.1– recycled water quality management systems Within 18 months, Hunter Water should develop, for each scheme, an operational monitoring plan consistent with section 2.4.2 of the AGWR (by June 2016).	The Edgeworth and Kooragang Island WWTP RWQMPs were provided as examples and contain tables with operational monitoring identified, which include monitoring locations, parameters, and frequency.
14	2013-14-13	Completed
	Clause 2.2.1 – recycled water quality management systems Within 12 months, Hunter Water should develop a procedure to report water quality and water quality incidents to all levels of the business (by December 2015).	Veolia's contract requires that it reports water quality breaches to Hunter Water as soon as practicable. Veolia is also required to send weekly water quality reports highlighting any breaches. This weekly report is sent to relevant stakeholders within Hunter Water and Veolia Water. Veolia's procedures for recycled water quality and incidents are contained in the Incident and Emergency Management Manual. It documents the practices and procedures for managing and responding to incidents and emergencies including, but not limited to CCP response and recycled water quality and interruptions. The Recycled Water Quality Monitoring and Communication Standard also discusses inciden reporting involving communication from Veolia. Hunter Water has developed a new recycled water incident report within Hunter Water's incident reporting program (Integrum). Upon entering an incident into Integrum, a number of stakeholders are notified including the relevant Executive Managers. Hunter Water has updated the Recycled Water Quality Incident Response Procedure with the addition of the Integrum

Recommendation	Progress
	notification. This procedure is yet to be endorsed by NSW Health. Recycled Water incidents have also been added to the monthly corporate report for increased visibility by the Executive Management Team.
15 2013-14-14 Clause 4.1.1 – asset management system	 Ongoing – well advanced. Hunter Water demonstrated that it has: continued the development of a holistic
Hunter Water should continue implementing the five improvement initiatives identified as part of its 2012 Benchmarking Program including: – develop a holistic approach to asset maintenance – the complete capture of all asset and related maintenance information in its Ellipse Asset/ Maintenance Management System. (It was noted that these initiatives should be fully implemented by July 2017, consistent with Hunter Water's ISO 55001 implementation program). (by July 2017)	 approach to asset maintenance; and continued to upgrade/develop its Ellipse Asset/ Maintenance Management platform. Initiatives related to "Alignment of Capability with Objectives" and "Challenging of Business Cases" are considered to have been substantially addressed and substantial progress has been made in respect of the remaining initiatives related to "Consistent Maintenance Management", Consistent Management and Operation of Critical Assets" and "Review and Update of Operations and Maintenance Procedures. Full implementation of the resultant changes across the whole of the asset portfolio will, however, take time and Hunter Water's forecast of July 2017 completion (in readiness for proposed ISO 55001 accreditation) is considered realistic. This recommendation is carried through with Recommendation 2014-15-03 in the 2015-16

Source: Viridis Consultants, 2014-15 Operational Audit of Hunter Water Corporation – Final Audit Report, February 2016.

The auditor found that nine of the 15 previous recommendations were complete.

- ▼ Three of the nine recommendations, 2012-13-02, 2013-14-07, and 2013-14-09, were completed during 2014-15 as planned in accordance with the due dates.
- Six of the nine completed recommendations (2013-14-01, 2013-14-03, 2013-14-06, 2013-14-11, 2013-14-12, 2013-14-13), were found to be complete during the 2014-15 audit, before the due dates, with five of these recommendations having completion dates of December 2015, and one with a completion date of June 2016.

Hunter Water has demonstrated significant effort in completing the audit recommendations early.

The remaining six recommendations are ongoing. Five recommendations have due dates beyond the 2014-15 audit period. One recommendation (2013-14-02) has a due date of June 2015. This recommendation required Hunter Water to review CCPs for each treatment plant. Whilst the drinking water component was found to be complete, the recycled water component was incomplete. The audit found that Drinking Water CCPs were reviewed and implemented, and documentation was developed to meet the requirements of this recommendation. However, the implementation of the proposed Recycled Water CCPs had not been completed by the due date. We are recommending a revised due date of 30 September 2016. In addition, the auditor made two new recommendations in the 2014-15 audit report to address this outstanding issue with Recycled Water Quality Management System.

All of the six ongoing recommendations will be assessed in the 2015-16 audit.

Appendices

A Compliance grades

Compliance grades for public utilities

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

Source: IPART, Audit Guideline – Public Water Utilities, June 2015.

A Compliance grades

B 2014-15 audit scope

B 2014-15 audit scope

Hunter Water Corporation 2014-15 audit scope

Requirement	Meaning
Audit/Review	Condition to be audited/reviewed for 2014-15
SC	Condition where IPART will rely on the utility's statement of compliance. As below, all conditions require a Statement of Compliance unless there is a "No requirement" designation.
NR	No requirement (for audit or statement of compliance).

This package includes the following tables:

Table 1: Audit scope 2014-15 Hunter Water Corporation

Table 2: Recommendations / Outstanding items from previous audits

Table 3: IPART Indicators to be audited in 2014-15

Table 4: Past field verification site visits for Hunter Water Corporation

Audit scope 2014/15

Auditors should note any directions shown in the comments column of Table 1.

This scope is based on the audit program determined for the Hunter Water Corporation Operating Licence 2012 -2017 (IPART reference D15/1775).

Recommendations from previous years

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

Statement of Compliance

By 1 September each year, the utility is required to provide a Statement of Compliance (SC) signed by the Managing Director and a Board Member. The Statement of Compliance is an exception report that lists any non-compliance of licence conditions during the financial year. It also outlines what remedial action has or is being taken in respect to these non-compliances. The SC covers all licence conditions (regardless of whether they are scheduled to be audited or not in that year). Where non-compliances are reported this may lead to a late variation to the audit scope to enable a matter to be reviewed if considered warranted.

Development and implementation of new management systems

Where a system is required to be developed and/or implemented by a date outside of the audit period, we have requested the utility provide a verbal update on progress during the audit interviews. The purpose of this update is to inform IPART and the auditor of progress that has been made in developing an effective management system by the due date set out in the licence.

The auditor is requested to provide a summary of this update and whether in the auditor's view sufficient progress has been made to meet the future licence requirement. For Hunter Water's licence this applies to the development of a certified EMS and QMS by 30 June 2017. This opinion should be provided in the cover letter to the audit report.

Table 1 – Audit scope 2014-2015 Hunter Water Corporation

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
1	Licence and Licence authorisation		
1.1	Objectives of this Licence		
1.1.1	 The objective of this Licence is to enable and require Hunter Water to provide the Services within its Area of Operations. Consistent with this objective, this Licence requires Hunter Water to: a) meet the objectives and other requirements imposed on it in the Act and other applicable law; b) comply with the System Quality and Performance Standards; c) recognise the rights given to Customers and Consumers; and d) be subject to Operational Audits. 	NR	Definition condition - does not require audit.
1.2	Licence authorisation		
1.2.1	This Licence is granted to enable and require Hunter Water to provide, construct, operate, manage and maintain efficient, co-ordinated and commercially viable systems and Services for supplying water, providing sewerage Services, and disposing of Wastewater throughout the Area of Operations.	NR	This is a general authorisation condition it does not require audit as aspects of performance are covered through individual conditions.
1.3	Provision of a drainage system		
1.3.1	Hunter Water must provide, operate, manage and maintain a drainage service as described in section 13(1)(b) of the Act.	NR	This is a general authorisation condition it does not require audit as aspects of performance are covered through individual conditions.
1.4	Duration of Licence		
1.4.1	The term of this Licence is 5 years from the Commencement Date. [Note: This Licence starts on 1 July 2012, which means that it will end on 30 June 2017.]	NR	Definition condition - does not require audit.
1.5	Licence amendment	·	
1.5.1	Subject to the Act and condition 1.5.2, this Licence may be amended by the Governor by notice in the NSW Government Gazette. The amendment takes effect on the date the notice is published in the NSW Government Gazette, or on such other date specified in the notice.	NR	IPART would be involved in any amendments to the licence. An amendment would precipitate a review of the audit program. This condition sets out a process and does not require audit.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
1.5.2	Before any notice of an amendment to this Licence is published in the NSW Government Gazette, the Minister must give Hunter Water reasonable notice of the proposed amendment to enable it to comply with the amendment (if relevant) upon its commencement.	NR	See comment above.
1.6	Connection of Services		
1.6.1	Subject to Hunter Water continuing to comply with any applicable law, Hunter Water must ensure that the Services are available on request for connection to any Property situated in the Area of Operations.	Audit	This condition has not been audited before in the current operating licence.
1.6.2	Connection to the Services is subject to any conditions Hunter Water may lawfully impose to ensure the safe, reliable and financially viable supply of the Services to Properties in the Area of Operations in accordance with this Licence.	NR	Definition condition - does not require audit.
1.7	Non-exclusive Licence		
1.7.1	This Licence does not prohibit another person from providing any Services in the Area of Operations that are the same as, or similar to, the Services, if the person is lawfully entitled to do so.	NR	Definition condition - does not require audit.
1.8	Availability of Licence		
1.8.1	Hunter Water must make this Licence available free of charge: a) on its website for downloading by any person; and b) to the public on request.	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
1.9	Pricing		
1.9.1	Hunter Water must set the level of fees, charges, and other amounts payable for the Services subject to the terms of this Licence, the Act and the maximum prices and methodologies for the Services determined from time to time by IPART under the IPART Act.	NR	Pricing is monitored through the pricing team and is not subject to a licence audit.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
2	Water Quality		
2.1	Drinking Water		
2.1.1	 Hunter Water must maintain a Management System that is consistent with: a) the Australian Drinking Water Guidelines; or b) if NSW Health specifies any amendment or addition to the Australian Drinking Water Guidelines that applies to Hunter Water, the Australian Drinking Water Guidelines as amended or added to by NSW Health, (Drinking Water Quality Management System). [Note: It is generally expected that Hunter Water will develop a system consistent with the Australian Drinking Water Guidelines, including the Drinking Water Quality Framework. However, where NSW Health considers it appropriate, the application of those Guidelines may be amended or added to, to take account of Hunter Water's circumstances and/or Drinking Water Quality policy and practices within New South Wales.] 	Audit	Audit will include a risk based adequacy audit of the system, and implementation of the system. This condition was last audited in 2013-14 and was awarded an adequate compliance grade in that audit. See Table 2.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
2.1.2	Hunter Water must ensure that the Drinking Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health.	Audit	Audit will include a risk based adequacy audit of the system, by element, and implementation of the whole system. Based on this risk assessment and in consultation with IPART, the auditor will then determine what elements of the ADWG will be the main focused of the audit.
			The scheme/ sites to be visited for field verification will be determined by auditor in consultation with IPART. This decision will also take into account any advice from NSW Health. Past field verification sites are listed in Table 4.
			IPART will write to NSW Health regarding its satisfaction with Hunter Water's management of Drinking Water Quality prior to audit.
			This condition was last audited in 2013-14 and was awarded a high compliance grade in that audit. See Table 2.
2.1.3	Hunter Water must notify IPART and NSW Health of any significant changes that it proposes to make to the Drinking Water Quality Management System in accordance with the Reporting Manual.	Audit	Hunter Water reported three significant changes in DWQMS on 31 March 2015.
2.1.4	Hunter Water must obtain NSW Health's approval for any significant changes proposed to be made to the Drinking Water Quality Management System before implementing or carrying out its activities in accordance with them.	Audit	IPART will write to NSW Health regarding its approval for these significant changes prior to audit.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
2.2	Recycled Water		
2.2.1	 Hunter Water must maintain a Management System that is consistent with: a) the Australian Guidelines for Water Recycling; or b) if NSW Health specifies any amendment or addition to the Australian Guidelines for Water Recycling that applies to Hunter Water, the Australian Guidelines for Water Recycling as amended or added to by NSW Health, (Recycled Water Quality Management System). [Note: It is generally expected that Hunter Water will develop a system consistent with the Australian Guidelines for Water Quality Framework. However, where NSW Health considers it appropriate, the application of those Guidelines may be amended or added to, to take account of Hunter Water's circumstances and/ or Recycled Water Quality policy and practices within New South Wales.] 	Audit	Audit will include a risk based adequacy audit of the system, and implementation of the system. This condition was last audited in 2013-14 and was awarded a high compliance grade in that audit. See Table 2.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
2.2.2	Hunter Water must ensure that the Recycled Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health.	Audit	Audit will include a risk based adequacy audit of the system, and implementation of the system. Based on this risk assessment and in consultation with IPART, the auditor will then determine what elements of the AGWR will be the main focused of the audit. The scheme/ sites to be visited for field verification will be
			determined by auditor in consultation with IPART. This decision will also take into account any advice from NSW Health. Past field verification sites are listed in Table 4.
			IPART will write to NSW Health regarding its satisfaction with Hunter Water's management of Recycled Water Quality prior to audit.
			This condition was last audited in 2013-14 and was awarded a high compliance grade in that audit. See Table 2.
2.2.3	Hunter Water must notify IPART and NSW Health of any significant changes that it proposes to make to the Recycled Water Quality Management System in accordance with the Reporting Manual.	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.
2.2.4	Hunter Water must obtain NSW Health's approval for any significant changes proposed to be made to the Recycled Water Quality Management System before implementing or carrying out its activities in accordance with them.	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
3	Water Quantity		
3.1	Water Conservation Target		
3.1.1	Hunter Water must ensure that the 5 year rolling average for annual residential water consumption calculated for each financial year during the term of this Licence is equal to or less than 215 kilolitres per year for each Property used for residential purposes (Water Conservation Target).	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.
3.1.2	Hunter Water must report its compliance with the Water Conservation Target to IPART in accordance with the Reporting Manual.	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.
3.2	Economic Level of Leakage		
3.2.1	By 31 January 2014, Hunter Water must: a) complete a review to determine the Economic Level of Leakage from its Drinking Water Network; and b) submit a report on this review to IPART in accordance with the Reporting Manual.	NR	Obligation met
3.2.2	Hunter Water must provide to IPART, for its approval, the proposed methodology for determining the Economic Level of Leakage in accordance with the Reporting Manual.	NR	Obligation met
3.2.3	When determining the Economic Level of Leakage from the Drinking Water Network for the purposes of condition 3.2.1, Hunter Water must use the methodology approved by IPART under condition 3.2.2.	SC	This condition has not been audited before in the current operating licence.
3.3	Roles and responsibilities protocol		
3.3.1	Hunter Water must use its best endeavours to: a) develop and agree a Roles and Responsibilities Protocol with the Metropolitan Water Directorate for the development of the Lower Hunter Water Plan; and b) maintain and comply with any Roles and Responsibilities Protocol that has been agreed and developed under condition 3.3.1(a).	SC	A new protocol was executed in 2013-14. No changes to the protocol were made in 2014-15. IPART will write to MWD to check if there are any issues.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
4	Assets		
4.1	Asset Management System		
4.1.1	Hunter Water must maintain a Management System that is consistent with: a) the BSI PAS 55:2008 (PAS 55) Asset Management standard; or b) the Water Services Association of Australia's Aquamark benchmarking tool; or c) another asset management standard agreed to by IPART, (Asset Management System).	Audit	Hunter Water currently has asset management system which is based on the Aquamark benchmarking tool. This condition was last audited in 2013-14 and was awarded a high compliance grade in that audit. See Table 2. IPART has agreed to Hunter Water's AMS moving to system consistent with ISO 55001 by July 2017 (date nominated by Hunter Water). The audit should consider the progress in migration to ISO 55001.
4.1.2	Hunter Water must ensure that the Asset Management System is fully implemented and that all relevant activities are carried out in accordance with the system.	Audit	The auditor in consultation with the IPART will select 1 or 2 classes of asset/ facilities to check implementation of the framework. A list of assets/facilities visited in the past is included in Table 4 at the end of this scope. Note: adequacy of some elements of the system may be assessed if issue arises or is required for checking implementation. This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
4.1.3	Hunter Water must notify IPART of any significant changes that it proposes to make to the Asset Management System in accordance with the Reporting Manual.	SC	Hunter Water reported that it is developing an asset management system that is consistent with ISO55001. There is no need to audit this condition in 2014/15.
4.2	Water pressure, water continuity and Wastewater Overflow Standards		
4.2.1	 Interpretation of standards a) For the purposes of the Water Pressure Standard and Water Continuity Standard, each separately billed or separately occupied part of a Multiple Occupancy Property is considered to be 1 Property. [Note: for example, a block of 5 townhouses or apartments is counted as 5 Properties, and a block of land on which there is a house and a granny flat is counted as 2 Properties.] b) For the purposes of the Wastewater Overflow Standard, a Multiple Occupancy Property is considered to be 1 Property. [Note: for example, a block of 5 townhouses or apartments is counted as 2 Properties.] b) For the purposes of the Wastewater Overflow Standard, a Multiple Occupancy Property is considered to be 1 Property. [Note: for example, a block of 5 townhouses or apartments is counted as 1 Property, and a block of land on which there is a house and a granny flat is counted as 1 Property.] c) In the case of any ambiguity in the interpretation or application of any of the standards set out in this condition 4.2, IPART's interpretation of the relevant standard or assessment of its application will prevail. 	NR	
4.2.2	 Water Pressure Standard a) Hunter Water must ensure that no more than 4,800 Properties experience a Water Pressure Failure in a financial year (Water Pressure Standard). b) A Property is taken to have experienced a Water Pressure Failure at each of the following times: i) when a person notifies Hunter Water that the Property has experienced a Water Pressure Failure and that Water Pressure Failure is confirmed by Hunter Water; or ii) when Hunter Water's systems identify that the Property has experienced a Water Pressure Failure. c) Despite condition 4.2.2(b), a Property will not be taken to have experienced a Water Pressure Failure if that Water Pressure Failure occurred only because of: i) a Planned Water Interruption or Unplanned Water Interruption; ii) water usage by authorised fire authorities in the case of a fire; or iii) a short term or temporary operational problem (such as a main break) which is remedied within 4 days of its occurrence. 	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
4.2.3	 Water Continuity Standard a) Hunter Water must ensure that in a financial year: i) no more than 10,000 Properties experience an Unplanned Water Interruption that lasts more than 5 continuous hours; and ii) no more than 5,000 Properties experience 3 or more Unplanned Water Interruptions that each lasts more than 1 hour, (Water Continuity Standard). b) For the purposes of condition 4.2.3(a), Hunter Water must use the best available data (taking account of water pressure data where that data is available) to determine: i) whether a Property has experienced an Unplanned Water Interruption; and ii) the duration of the Unplanned Water Interruption. c) If a Property experiences an Unplanned Water Interruption that was caused by a third party, that Property is taken not to have experienced an Unplanned Water Interruption for the purposes of condition 4.2.3(a). 	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
4.2.4	 Wastewater Overflow Standard a) Hunter Water must ensure that in a financial year: i) no more than 5,000 Properties (other than Public Properties) experience an Uncontrolled Wastewater Overflow in dry weather; and ii) no more than 45 Properties (other than Public Properties) experience 3 or more Uncontrolled Wastewater Overflows in dry weather, (Wastewater Overflow Standard). 	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
5	Customers and Consumers		
5.1	Customer Contract		
5.1.1	Hunter Water must publish a copy of the Customer Contract and any variations to it on Hunter Water's website for downloading free of charge, and must provide it to any Customer or Consumer free of charge upon request.	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
5.1.2	Hunter Water must notify IPART of any significant changes that it proposes to make to the Customer Contract in accordance with the Reporting Manual.	SC	Audit following any notice of change. We were not notified of any changes in 31 March report 2015.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
5.2	Providing information		
5.2.1	Hunter Water must prepare a pamphlet that: a) briefly explains the Customer Contract; b) summarises the key rights and obligations of Customers under the Customer Contract; c) refers to the types of account relief available for Customers experiencing financial hardship; d) outlines the Customer's obligations and rights to claim a rebate; and e) contains information about how to contact Hunter Water by telephone, email, postal mail or in person.	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
5.2.2	Hunter Water must update the pamphlet prepared under condition 5.2.1 when variations are made to the Customer Contract.	SC	Audit following any notice of change. No changes to the contract have been made. IPART would be notified of any changes as this would require an amendment to the operating licence.
5.2.3	Hunter Water must provide the pamphlet prepared under condition 5.2.1 and any updates made under condition 5.2.2 free of charge to: a) Customers at least annually with their Bills; and b) any other person on request.	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
5.2.4	Hunter Water must advertise in a local newspaper at least once annually on: a) the types of account relief available for Customers experiencing financial hardship; b) the Customer's obligations and rights to claim a rebate.	SC This condition was last audited in 2013-14 and was awarded a full compliance grade in the audit.	
5.3	Consumers		
5.3.1	 Hunter Water's obligations under the Customer Contract relating to: a) complaint handling and complaint resolution procedures; and b) the Procedure for Payment Difficulties and Actions for Non-payment, are extended to Consumers as if Consumers were parties to the Customer Contract. 	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
5.4	Procedure for financial hardship, payment difficulties, water flow restriction and disconnection		
5.4.1	 Hunter Water must maintain and fully implement procedures relating to financial hardship, payment difficulties, water flow restriction and disconnection (Procedure for Payment Difficulties and Actions for Non-payment), which must include: a) a financial hardship policy that helps residential Customers experiencing financial hardship better manage their current and future Bills; b) procedures relating to a payment plan for residential Customers who are responsible for paying their Bills and who are, in Hunter Water's opinion, experiencing financial hardship; c) conditions for disconnection of supply or water flow restriction; and d) provisions for self-identification, identification by community welfare organisations and identification by Hunter Water of residential Customers experiencing financial hardship. 	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
5.4.2	Hunter Water must set out the Procedure for Payment Difficulties and Actions for Non-payment in the Customer Contract.	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
5.4.3	 Hunter Water must provide an explanation of the Procedure for Payment Difficulties and Actions for Non- payment free of charge to: a) residential Customers, at least annually with their Bills; b) residential Customers whom Hunter Water identifies as experiencing financial hardship; and c) any other person who requests it. 	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
5.4.4	Hunter Water must publish the Procedure for Payment Difficulties and Actions for Non-payment on its website for downloading free of charge.	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
5.5	Consultative Forum		
5.5.1	Hunter Water must maintain and regularly consult with its Customers and Consumers through a Consultative Forum.	Audit	
5.5.2	Hunter Water may utilise the Consultative Forum to, among other things, provide it with advice on the interests of Hunter Water's Customers and Consumers, the Customer Contract and such other key issues related to Hunter Water's planning and operations as Hunter Water may determine, consistent with the Consultative Forum Charter	Audit	

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
5.5.3	Hunter Water must: a) ensure that at all times the membership of the Consultative Forum is appointed and determined by Hunter Water in accordance with the Consultative Forum Charter; and b) use its best endeavours to include a person representing each of the following interests as members of the Consultative Forum: i) business and Consumer groups; ii) organisations representing low income households; iii) people living in rural and urban fringe areas; iv) residential Consumers; v) environmental groups; vi) local government; vii) older people; viii) people with disabilities; ix) Aboriginal people; and x) people from non-English speaking backgrounds.	Audit	
5.5.4	 Hunter Water and members of the Consultative Forum must for the term of this Licence maintain a charter (Consultative Forum Charter) that addresses all of the following issues: a) the role of the Consultative Forum; b) selection criteria on how members will be drawn from the community, and information on how vacancies for membership will be advertised; c) the procedure for appointment of members; d) the term for which members are appointed; e) information on how the Consultative Forum will operate; f) a description of the type of matters that will be referred to the Consultative Forum and how those matters may be referred;. g) procedures for the conduct of Consultative Forum meetings, including the appointment of a chairperson; h) procedures for tracking issues raised and ensuring appropriate follow-up of those issues; and j) funding and resourcing of the Consultative Forum by Hunter Water. 	Audit	
5.5.5	Hunter Water must provide the Consultative Forum with information in its possession or under its control necessary to enable the Consultative Forum to discharge the tasks assigned to it, other than information or documents that are confidential or privileged	Audit	
5.5.6	Hunter Water must make: a) a copy of the Consultative Forum Charter; and b) minutes from proceedings of the Consultative Forum, available free of charge: c) on its website for downloading; and d) available at its offices for access or collection by any member of the public.	Audit	

Licence Condition	Operating Licence Obligations Require ment 2014-15		Comments		
5.6	Internal Dispute Resolution Process				
5.6.1	Hunter Water must maintain a procedure for receiving, responding to and resolving Complaints, which is consistent with the Australian Standard AS ISO 10002- 2006: Customer satisfaction - Guidelines for complaints handling in organizations (ISO 10002:2004, MOD) (Internal Complaints Handling Procedure).	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.		
5.6.2	Hunter Water must ensure that the Internal Complaints Handling Procedure is fully implemented and that all relevant activities are carried out in accordance with the procedure.	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.		
5.6.3	Hunter Water must provide to Customers at least annually with their Bills information concerning the Internal Complaints Handling Procedure which explains how to make a Complaint and how the Internal Complaints Handling Procedure works.	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.		
5.7	External dispute resolution scheme				
5.7.1	Hunter Water must be a member of the Energy and Water Ombudsman NSW for the resolution of disputes between Hunter Water and its Customers and its Consumers.	SC	IPART will check EWON membership		
5.7.2	Hunter Water must: a) prepare a pamphlet that explains the operation of the dispute resolution service provided by the Energy and Water Ombudsman NSW including any rights to have a Complaint or dispute referred to the Energy and Water Ombudsman NSW and how it can be accessed; and b) provide that pamphlet: i) to Customers at least once a year with their Bills; and ii) free of charge to the public on request.	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.		
6	Environment				
6.1	Environmental Management				
6.1.1	By 30 June 2017, Hunter Water must develop a Management System which is consistent with the Australian Standard AS/NZS ISO 14001:2004: Environmental Management Systems - Requirements with guidance for use (Environmental Management System).	NR	Obligation met.		

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
6.1.2	Hunter Water must ensure that: a) by 30 June 2017, the Environmental Management System is certified by an appropriately qualified third party to be consistent with the <i>Australian Standard</i> <i>AS/NZS ISO 14001:2004: Environmental Management</i> <i>Systems - Requirements with guidance for use</i> ; and b) once the Environmental Management System is certified under condition 6.1.2(a), the certification is maintained during the remaining term of this Licence.	SC	Obligation met.
6.1.3	Hunter Water must ensure that by 30 June 2017, the Environment Management System is fully implemented and that all relevant activities are carried out in accordance with the system.	SC	The next EMS surveillance audit is scheduled for 27 to 31 July 2015. It will be an integrated audit covering surveillance for WHS and EMS, and Certification of the QMS.
6.1.4	Until the Environmental Management System has been developed and certified in accordance with conditions 6.1.1 and 6.1.2, Hunter Water must: a) maintain programs to manage risks to the environment from carrying out its activities; and b) ensure that all its activities are carried out in accordance with those programs.	NR	Certified EMS now in place effective from October 2014.
6.1.5	Hunter Water must notify IPART of any significant changes that it proposes to make to the Environmental Management System in accordance with the Reporting Manual.	Audit Hunter Water reporter significant change to EMS on 31 March 20	
7	Quality management		
7.1	Quality Management System		
7.1.1	By 30 June 2017, Hunter Water must develop a Management System that is consistent with the Australian Standard AS/NZS ISO 9001:2008: Quality Management Systems – Requirements (Quality Management System).	NR	
7.1.2	Hunter Water must ensure that: a) by 30 June 2017, the Quality Management System is certified by an appropriately qualified third party to be consistent with the Australian Standard AS/NZS ISO 9001:2008: Quality Management Systems – Requirements; and b) once the Quality Management System is certified under condition 7.1.2(a), the certification is maintained during the remaining term of this Licence.	NR	

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
7.1.3	Hunter Water must ensure that by 30 June 2017, the Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the system.	Review	Hunter Water's Quality Management System will be subject to a full certification audit in July 2015.
_			Review progress if certification has not been obtained at the time of the audit.
7.1.4	Hunter Water must notify IPART of any significant changes that it proposes to make to the Quality Management System in accordance with the Reporting Manual.	NR	
8	Performance monitoring		
8.1	Operational Audits		
8.1.1	 IPART may undertake, or may appoint an Auditor to undertake, an audit on Hunter Water's compliance with: a) this Licence; b) the Reporting Manual; and c) any matters required by the Minister, (Operational Audit). 	NR	
8.1.2	Hunter Water must provide IPART or any Auditor with all information in or under its possession, custody or control which is necessary to conduct the Operational Audit, including whatever information is reasonably requested by IPART or an Auditor.	SC	Can be verified by IPART and no audit is required.
8.1.3	Hunter Water must provide the information requested under condition 8.1.2 within a reasonable time of it being requested.	SC	Can be verified by IPART and no audit is required.
8.1.4	For the purposes of any Operational Audit or verifying a report on a Operational Audit, Hunter Water must, within a reasonable time of being required by IPART or an Auditor, permit IPART or the Auditor to: a) have access to any works, premises or offices occupied by Hunter Water; b) carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices; c) take on to any such premises, works or offices any person or equipment necessary for the purposes of performing the Operational Audit or verifying any report on the Operational Audit; d) inspect and make copies of, and take extracts from, any books and records of Hunter Water that are maintained in relation to the performance of Hunter Water's obligations under this Licence; and e) discuss matters relevant to the Operational Audit or any report on the Operational Audit with Hunter Water, including any of Hunter Water's officers and employees.	SC	Can be verified by IPART and no audit is required.

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
8.2	Reporting		
8.2.1	Hunter Water must comply with its reporting obligations set out in the Reporting Manual, which include: a) reporting to IPART and NSW Health in accordance with the Reporting Manual, and b) making reports and other information publicly available, in the manner set out in the Reporting Manual.	SC	This condition was last audited in 2012-13 and was awarded full compliance in that audit.
8.2.2	Hunter Water must maintain sufficient record systems that enable it to report accurately in accordance with condition 8.2.1.	SC	This condition was last audited in 2012-13 and was awarded full compliance in that audit.
8.3	Provision of Information		
8.3.1	If IPART requests that Hunter Water provide information relating to the performance of its obligations under condition 8.2, Hunter Water must provide the information requested within a reasonable time of IPART's request, including providing IPART with physical and electronic access to the records required to be kept under condition 8.2.	SC	This item is self-checking and there is no need to audit for compliance.
8.3.2	Hunter Water must provide IPART with such information as is reasonably required to enable IPART to conduct any review or investigation of Hunter Water's obligations under this Licence.	SC	This item is self-checking and there is no need to audit for compliance.
8.3.3	If Hunter Water contracts out any of its activities to third parties (including a subsidiary) it must take all reasonable steps to ensure that, if required by IPART or an Auditor, any such third parties provide information and do the things specified in this condition 8 as if that third party were Hunter Water.	SC	This item is self-checking and there is no need to audit for compliance.
8.3.4	If IPART or an Auditor requests information under this condition 8 which is confidential, the information must be provided to IPART or the Auditor, subject to IPART or the Auditor entering into reasonable arrangements to ensure that the confidential information remains confidential.	SC	This item is self-checking and there is no need to audit for compliance.
8.3.5	If NSW Health requests that Hunter Water provide information relating to water quality, Hunter Water must provide the information requested in the manner and form specified by NSW Health. Hunter Water must provide the information requested within a reasonable time of NSW Health's request. [Note: Under section 19 of the Public Health Act 2010 (NSW), the Director General of NSW Ministry of Health may require Hunter Water to produce certain information.]	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required. This condition was last audited in 2012-13 and was awarded full compliance in that audit.
8.4	Performance indicators		

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
8.4.1	 a) Hunter Water must maintain sufficient record systems to enable it to measure accurately its performance against the performance indicators specified in the Reporting Manual. b) In the case of any ambiguity in the interpretation or application of any performance indicators specified in the Reporting Manual, IPART's interpretation or assessment of the indicators will prevail. 	Audit	Audit to check calculation methods of a sample of IPART performance indicators. Indicators to be audited are in Table 3.
9	Memorandum of Understanding		
9.1	NSW Health		
9.1.1	Hunter Water must: a) use its best endeavours to maintain a Memorandum of Understanding with NSW Health; and b) comply with any Memorandum of Understanding maintained with NSW Health under condition 9.1.1(a).	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.
9.1.2	The purpose of a Memorandum of Understanding is to form the basis for cooperative relationships between the parties to the memorandum. In particular, the purpose of the Memorandum of Understanding with NSW Health is to recognise NSW Health's role in providing advice to the NSW Government in relation to Drinking Water quality standards and the supply of water which is safe to drink.	NR	Definition clause no requirement to audit
9.1.3	The Memorandum of Understanding with NSW Health must include a procedure for Hunter Water to report to NSW Health any information or events in relation to any of Hunter Water's systems or Services which may have risks for public health.	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.
9.1.4	Condition 9.1.1 does not limit the persons with whom Hunter Water may have a Memorandum of Understanding.	NR	Definition clause no requirement to audit

Licence Condition	Operating Licence Obligations	Require ment 2014-15	Comments
10	End of term review		
10.1	End of Term Review		
10.1.1	 It is anticipated that a review of this Licence will commence in the first quarter of 2016 to investigate: a) whether this Licence is fulfilling its objectives; and b) any issues which have arisen during the term of this Licence, which may affect the effectiveness of this Licence, (End of Term Review). [Note: In the event that IPART undertakes the end of term review, IPART intends to: commence the end of term review (including undertaking public consultation) in the first quarter of 2016; report to the Minister by 30 April 2017 on: the findings of the end of term review, any recommendations for conditions to be included in a new Licence, and any recommendations for amending any law that adversely impacts on this Licence; and make the report to the Minister publicly available after the end of term review.] 	NR	
10.1.2	Hunter Water must provide to the person undertaking the End of Term Review such information as is reasonably required to enable the person to undertake the End of Term Review.	NR	

Recommendation number	Operational issue (Licence reference where applicable)	IPART Recommendation to the Minister	Findings from 2013-14 audit, and status as reported in 31 March 2015	Guidance for 2014/15 Audit
2012-13-2	Water Quality Management System Condition 2.2	Hunter Water should develop and implement water quality awareness training for contractors.	HWC is well advanced with the implementation of this recommendation. HWC has implemented an online training module for employees and contractors and is currently rolling it out.	Auditor to check whether this is complete and whether Hunter Water or Veolia is responsible for this.
2013-14-10 2013-14-19	Water Quality Management Systems Condition 2.1.1 & 2.2.1	Within 12 months, Hunter Water should develop an internal audit program that reviews the implementation of the DWQMS and the RWQMPs.	An Aquality audit of the DWQMS will be undertaken biennially from 2015. An Internal Management System Audit Program for the RWQMS is being developed in 2015. Planned Completion – December 2015.	Auditor to check progress
2013-14-03 2013-14-04 2013-14-06 2013-14-13	Water Quality Management Systems Conditions 2.1.1, 2.1.2, 2.2.1 & 2.2.2	 Within 6 months, Hunter Water should review Critical Control Points (CCPs) for each treatment plant, including: a) review all CCP critical limits (including alarm delays), and monitoring points to ensure they reflect current practice, as agreed with NSW Health b) develop a process to ensure critical limits are only altered with supervisory consent and there is a failsafe process to ensure that they are reinstated before water quality is compromised c) revise and review CCP documentation to clearly state location, parameters, target criteria, monitoring frequency, critical limits, corrective actions and responsibilities for each CCP d) develop a process to record and document corrective actions, and 	A water quality expert will be engaged to facilitate a DWQMS CCP review workshop, including relevant external stakeholders. Hunter Water and Veolia are currently working towards determining CCPs and associated limits to be included in the RWMPs, in consultation with NSW Health. A validation program will be conducted to finalise the RWQMS CCPs. Recommendations relating to documentation and operational procedures will be addressed by Hunter Water's Treatment Operations and Maintenance provider (Veolia) for all treatment plant and internal operators for the water distribution network. Planned completion June 2015.	Auditor to check completeness.

Table 2 - Recommendations / Outstanding items from previous audits where further action is required

Recommendation number	Operational issue (Licence reference where applicable)	IPART Recommendation to the Minister	Findings from 2013-14 audit, and status as reported in 31 March 2015	Guidance for 2014/15 Audit
		preventive measures to reduce risks e) operational and critical limits must be set in SCADA as alarms, including delay times where appropriate.		
2013-14-09 2013-14-17	Water Quality Management Systems Conditions 2.1.2 & 2.2.2	Within 12 months, a process needs to be implemented to ensure that documents required under the DWQMS and RWQMPs are appropriately reviewed and kept up to date. Hunter Water also needs to ensure that its Operations and Maintenance Contractor uses up to date procedures for these activities.	This recommendation will be addressed by implementation of Hunter Water's Integrated QMS, development of a recycled water actions register and Veolia's document management system. Planned Completion – December 2015.	Auditor to check progress.
2013-14-05	Water Quality Management Systems Conditions 2.1.1 & 2.2.1	Within 18 months, Hunter Water should define and identify significant risks. Determine the preventive measures that manage significant risks, and implement a plan to document the preventive measures and consequent corrective measures.	This will occur following staged risk assessment updates, which are scheduled for completion by June 2016. Planned Completion – June 2016.	Auditor to check progress.
2013-14-01	Drinking Water Quality Management Systems Condition 2.1.1	Within 12 months, Hunter Water should develop a process to inform customers who receive unfiltered water from the Chichester Trunk Gravity Main about the quality and use of that water. (It was noted that the non-standard agreement for customers receiving this service does not currently provide information on the quality of the water and therefore material is required to educate and inform these customers.)	Planned completion December 2015.	Auditor to check progress.
2013-14-02	Drinking Water Quality	Within 12 months, the Dungog Water Treatment Plant (WTP) risk assessment needs to be	Dungog WTP risk assessment will be reviewed by Veolia, in consultation with Hunter Water	Auditor to check progress.

Recommendation number	Operational issue (Licence reference where applicable)	IPART Recommendation to the Minister	Findings from 2013-14 audit, and status as reported in 31 March 2015	Guidance for 2014/15 Audit
	Management Systems Condition 2.1.2	reviewed in light of the changes to the plant, including updating the process flowchart and risk assessment to reflect the upgraded WTP.	and NSW Health. Planned completion December 2015.	
2013-14-08	Drinking Water Quality Management Systems Condition 2.1.2	Recommendations from the Grahamstown Catchment WTP Health Based Target (HBT) Assessment need to be addressed. It is suggested they be added to the DWQIP as the appropriate mechanism. Whilst not committing Hunter Water to implementing each of the recommendations, it does provide a means of recording the response to each item and closing them out.	Completed.	Audit to check completeness.
2013-14-11	Drinking Water Quality Management Systems Condition 2.1.1	Within 12 months, Hunter Water should implement a process to formally review the effectiveness of the DWQMS by the executive management team (for example, this could be done by tabling a performance report at a meeting of the executive team, which covers the requirements of the ADWG and how Hunter Water's DWQMS are meeting these elements).	Agreed Planned completion December 2015.	Auditor to check progress.
2013-14-07	Drinking Water Quality Management Systems Condition 2.1.2	Within one month, Hunter Water should ensure that equipment calibration records are being maintained.	Veolia is already maintaining equipment calibration records, as required contractually. Internal operators are maintaining records for the water network chlorinators, with continuing refinements planned. Completed.	Audit to check completeness.
2013-14-14	Recycled Water	Within 12 months, Hunter Water should review the	Hunter Water and Veolia, in consultation with	Auditor to check

Recommendation number	Operational issue (Licence reference where applicable)	IPART Recommendation to the Minister	Findings from 2013-14 audit, and status as reported in 31 March 2015	Guidance for 2014/15 Audit
2013-14-12	Quality Management System Condition 2.2.2	 following matters in respect to the Clarence Town Wastewater Treatment Works: The effectiveness of the CCPs. If the corrective action can be undertaken in a timely manner, and it reduces risk, then implement the CCPs as soon as possible. The risk assessment at Clarence Town Wastewater Treatment Works to take account of irrigation-water ponding at the site. 	NSW Health, are currently working towards determining CCP and associated limits to be included in the recycled water management plans. Planned completion December 2015.	progress.
2013-14-15	Recycled Water Quality Management System Condition 2.2.2	Within 12 months, Hunter Water should systematically identify operational procedures required to operate recycled water schemes and prioritise a program to develop them. This should include a documented corrective action procedure/s to re-establish process control where there is an excursion from target criteria or critical limits.	Veolia will develop operational procedures as part of recycled water management plan creation. Planned completion December 2015.	Auditor to check progress.
2013-14-16	Recycled Water Quality Management System Condition 2.2.2	Within 18 months, Hunter Water should develop, for each scheme, an operational monitoring plan consistent with section 2.4.2 of the AGWR.	Veolia will develop operational procedures as part of recycled water management plan creation. Planned completion June 2016.	Auditor to check progress.
2013-14-18	Recycled Water Quality Management System Condition 2.2.2	Within 12 months, Hunter Water should develop a procedure to report water quality and water quality incidents to all levels of the business.	The process will be finalised in association with implementation of CCPs and critical limits. Planned completion December 2015.	Auditor to check progress.

Recommendation number	Operational issue (Licence reference where applicable)	IPART Recommendation to the Minister	Findings from 2013-14 audit, and status as reported in 31 March 2015	Guidance for 2014/15 Audit
2013-14-20	Asset Management System Condition 4.1.1	 Hunter Water should continue implementing the five improvement initiatives identified as part of its 2012 Benchmarking Program including: develop a holistic approach to asset maintenance the complete capture of all asset and related maintenance information in its Ellipse Asset/ Maintenance Management System. (It was noted that these initiatives should be fully implemented by July 2017, consistent with Hunter Water's ISO 55001 implementation program). 	Continuous improvement is occurring across the five areas identified as part of the transition to ISO 55001 certification. Asset information will be captured through Civil Mobility and Data Capture projects. Planned completion by July 2017.	Auditor to check progress.

Table 3IPART indicators to be audited in 2014/15

IPART Indicator No.	Indicator detail	Definitions
11	The number of properties affected by an unplanned water interruption duration of more than 1 hour and less than or equal to 5 hours.	 Property means any real property to which either or both of the following conditions apply: a. the real property is connected to the water utility's drinking water supply system, to the water utility's sewerage system or to the water utility's recycled water system and a charge for the services provided by one or more of those systems is levied on the owner of the real property; b. the real property is within a declared stormwater drainage area for which the utility is means the current the super the services of real property.
12	Occurrence of water interruptions to affected properties (ie, the number of properties experiencing 3 or more Planned and Unplanned water interruptions) of more than one hour duration).	 utility imposes a stormwater charge upon the owner of real property in that area. Water Interruption means any event causing a total loss of water supply due to any cause. Water interruption excludes those caused by bursts or leaks in the service connection to internal plumbing or planned meter replacements. All interruptions not subject to notification caused by third parties or a power failure should be included. Exclude instances of reduced service levels due to, for example, low pressure. If a property experiences more than one interruption
13	Events leading to planned or unplanned water interruption where 250 or more properties experience an interruption of over 5hrs duration.	 then it should be counted for each event. A water supply interruption, which causes loss of supply to 100 customers, is counted as 100 customer interruptions. Planned water interruption – water interruption initiated by the water utility for which at least 24 hours notice has been given to the customer. Unplanned water interruption means an interruption in which an occupier of a property has not received at least 24 hours notification of the interruption or an interruption that has occurred prior to the expiry of any notice provided to an occupier advising of an interruption. It also includes outages where the duration exceeds that originally notified. In this case the entire outage is classed as unplanned.
I 4 (H)	The number of residential properties affected by planned water supply interruptions in peak hours (5am - 11pm).	 Property as per I 1. Planned water interruption as per I 1 Notes: 1. For the purpose of this indicator, property refers to only residential properties. 2. Interruptions spanning any part of the peak period are to be included.

IPART Indicator No.	Indicator detail	Definitions
15	The number of properties in the utility's drinking water supply network experiencing a water pressure failure which is occasional or recurrent, but not permanent.	 Property as per I 1. A property experiences a water pressure failure if a pressure of less than 20 metres head is experienced for a continuous period of 30 minutes or more measured at the point of connection of the property to the water supply system (usually at the point of connection known as the 'main tap'), but does not include a situation in which the property experiences low water pressure on a day when peak day demand exceeds 370 megalitres per day. For the purpose of this indicator: (a) where connected properties are in multiple occupancy, each separately billed or occupied part shall be counted as one connected property. Connected properties currently unoccupied shall be included. (b) a Property is taken to have experienced a water pressure failure at each of the following times: (i) when a person notifies the water utility that the Property has experienced a water pressure failure and that water pressure failure is confirmed by the water utility; or (ii) when the water utility's systems identifies that the Property has experienced a water pressure failure occurred only because of: (i) a planned water interruption or unplanned water interruption; (ii) water usage by authorised fire authorities in the case of a fire; or a short term or temporary operational problem (such as a main break) which is remedied within 4 days of its occurrence. Occasional or recurrent, but not permanent water pressure failure includes one off failure sites. Properties with a permanent low water pressure failure refers to properties that record a failure for every day of the year and is calculated through the water utility's Water Pressure Reporting Proforma.

IPART Indicator No.	Indicator detail	Definitions
16	Number of High Priority sewage overflows per 100 km of sewer main responded to in a year	 High Priority sewage overflow is an event assessed by the water utility as: (a) a public health concern (b) likely to amount to significant damage to property (c) likely to have a significant environmental impact (d) an interruption of the sewerage service. Medium Priority sewage overflow is an event assessed by the water utility as likely to amount to: (a) minor property damage
17	Number of Medium Priority sewage overflows per 100 km of sewer main responded to in a year	 (b) minor environmental impact (including unpleasant odours) not posing a significant health risk. The utility has defined problem codes of 'sewerage surcharge', 'plumber confirmed choke' or 'internal surcharge'. The number of events to be used is the number recorded under these codes determined to be priority High or Medium jobs. Note: High Priority is equivalent to a Priority 6 for Sydney Water or Priority 1 for Hunter Water. Medium Priority is equivalent to a Priority 5 for Sydney Water or Priority 2 for Hunter Water.
18	Number of residential customers' dwellings affected by sewer spills not contained within 1 hour of notification.	 Residential customer means a customer who: owns real property which is used as a principal place of residence. Property as per I 1. Sewer spills refers to a sewer spill caused by a fault in the water utility's sewerage system that discharges to a customer's dwelling. It does not include spills caused by faults in the service connection or house connection branch and the house service line. Contained means the sewage spill has ceased or has been alleviated. It does not include so that does a customer's pipes.

Audit year	Location	Facility
2013-14	Chichester	Dam
	Dungog	Water Treatment Plant
	Clarence Town	Wastewater Treatment Works
	Boags Hill	Inlet
	Seaham	Weir
	Balickera	Water Pumping Station
2012-13	Branxton	Recycled Water Treatment Plant
	Grahamstown	Water Treatment Plant
2011-12	Port Stephens	Lemon Tree Passage Water Treatment Plant
	Grahamstown	Dam
	Campvale	Pumping Station
	Between Newcastle and Port Stephens	Tomago Sandbeds
	Karuah	Sewage Treatment Plant

Table 4 Past field verification site visits for Hunter Water

C Operational audit report 2014-15 – Hunter Water

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2014/15 Operational Audit of Hunter Water Corporation Final Audit Report

March 2016





2014/15 Operational Audit of Hunter Water Corporation

Final Audit Report

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Executive Summary

Auditor declaration

Viridis Consultants Pty Ltd (Viridis) has been engaged by the Independent Pricing and Regulatory Tribunal of NSW (IPART) to undertake the operational audit of Hunter Water Corporation's (Hunter Water) Operating Licence for the period of 1 July 2014 to 30 June 2015. The audit was undertaken in partnership with Cobbitty Consulting Pty Ltd (Cobbitty).

The audit team confirms that:

- the auditors have seen sufficient evidence on which to base their conclusions
- the audit findings accurately reflect the professional opinion of the auditors
- the lead auditor and team members have conducted the audit, determined audit findings and prepared this report in accordance with the requirements of the *Audit Guideline Public Water Utilities June 2015* and IPART's *Request for Quote*
- the audit findings have not been unduly influenced by the utility and/or any of its associates.

Major findings

The audit team found that Hunter Water demonstrated a high level of performance over the audit period. An improvement in the level of compliance was observed by the auditors, especially in the area of water quality, which was achieved through a committed implementation of previous recommendations. Improvement plans have been developed to implement the elements of the management systems and to progress outstanding recommendations from previous audits.

Hunter Water has awarded the contract to operate its water and sewage treatment, including recycled water, to Veolia Water Australia and New Zealand (Veolia) within the audit period. In addition to the operation of the water and sewage treatment plants, Veolia is also required, under the contract, to prepare relevant documentation for its area of operations, including the management systems for the drinking water and recycled water treatment plants. The audit noted good integration and communication between the two organisations and significant progress in developing and implementing management systems by the two organisations for their respective area of responsibility. The management systems audited aligned well and there were no gaps in responsibility noted.

Twenty (20) clauses of the Operating Licence were audited in this audit period. Full compliance was awarded to Hunter Water for seventeen (17) clauses. One clause was assessed as having no requirement. High compliance was given to two (2) clauses, that relate to the development and implementation of new management systems for recycled water and assets. It is noted that development and implementation of the management systems for recycled water and assets are well underway.

Licence obligation category	Licence clause	Major findings
Connection to services	1.6.1	Full Compliance awarded.
Water quality – drinking water	2.1.1 2.1.2 2.1.3 2.1.4	Full Compliance awarded. Both Hunter Water and Veolia have prepared Drinking Water Quality Management Systems (DWQMS) and associated documents for their respective areas of operations that are consistent with the Australian Drinking Water Guidelines (ADWG). Positive outcomes as a result of the new contract were noted during the audit including knowledge transfer, integrated management systems and the use of established procedures and processes. A high level of integration between the two organisations was noted, despite the relationship being in its infancy.

Major findings of the audit are summarised in the table below.



Water quality – recycled water	2.2.1 2.2.2	2.2.1 – Full Compliance awarded 2.2.2 – High Compliance
	2.2.2	 During the audit period, a Corporate Recycled Water Quality Management Plan (RWQMP), that documents Hunter Water's recycled water operations and its interactions with Veolia was established. Veolia has established scheme specific RWQMPs, the Edgeworth and Kooragang Industrial Water Scheme (KIWS) RWQMPs were provided as examples. In the audit period, supporting documentation to facilitate the establishment of the Recycled Water Quality Management System (RWQMS) was also developed including monitoring plans, training and awareness packages, validation programs, communication protocols, incident and emergency response protocols, reporting mechanisms and operational procedures. Hunter Water and Veolia are well advanced in the implementation of the RWQMS. Whilst the RWQMS is being established, a number of key elements of the Australian Guidelines for Water Recycling (AGWR) are yet to be implemented, including the establishment and implementation of the critical control point (CCP) limits and alarms. The implementation of the critical limits and alarms is linked to the finalisation of the validation program is due to be completed by November 2015.
Asset management	4.1.1 4.1.2	 4.1.1 - High Compliance Hunter Water demonstrated that it has continued to maintain and actively improve its Asset Management System through implementation of the initiatives identified through its participation in the <i>IWA-WSAA 2012 Asset Management Performance Improvement Project</i>. Full implementation of the resultant changes across the whole of the asset portfolio will, however, take time and Hunter Water's forecast of July 2017 completion (in readiness for proposed ISO 55001 accreditation) is considered realistic. 4.1.2 – Full Compliance
Providing information	5.2.2	No requirement
Consultative forum	5.5.1 5.5.2 5.5.3 5.5.4 5.5.5 5.5.6	Full Compliance awarded.
Environmental management	6.1.5	Full Compliance awarded.
Quality management systems	7.1.3	Full Compliance awarded.
Provision of information	8.3.5	Full Compliance awarded.
Performance indicators	8.4.1	Full Compliance awarded.

The NSW Health Chief Health Officer was requested to provide feedback on the performance of Hunter Water over the audit period. In response, the Service Director – Health Protection of the New England Local Health District indicated that they were generally satisfied with Hunter Water's performance over the operational period. NSW Health requested that the audit gauge the progress on four aspects identified in previous audits:

- drinking water reticulation disinfection optimisation
- response to and debrief of the East Coast Low storm event (April 2015)
- Medowie developments/planning and water quality impacts for Grahamstown Dam
- Recycled Water Quality Management Plans for each of the recycling schemes.

These aspects were generally well addressed and taken into consideration when assessing compliance with the relevant licence clauses.



Recommendations

Licence obligation category	Licence clauses	Recommendation	Recommendation Reference	Timeframe	
Water quality	2.2.2	It is recommended that Hunter Water commence the implementation of the interim CCPs as soon as possible and finalise validation program.	2014/15 - 01	6 months	
	2.2.2	It is recommended that Hunter Water finalise its validation program and facilitate endorsement of the outcomes by NSW Health. CCPs should then be adjusted or refined in accordance with the outcomes.	2014/15 - 02	12 months	
Assets	4.1.1	 It is recommended that Hunter Water continues to fully implement improvement initiatives in respect of: the development and implementation of a holistic approach to maintenance management the complete capture of all asset and related maintenance information in its Enterprise Resource Planning (Asset/ Maintenance Management) System criticality and condition assessment review and update of operational and maintenance procedures across the whole of the asset portfolio. 	2014/15 - 03	18 months	

The recommendations from the audit are summarised in the table below.

Hunter Water has addressed recommendations from the previous audit as follows:

- Water Quality Drinking Water [Clauses 2.1.1 and 2.1.2] The previous audit found that whilst Hunter Water was developing its drinking water management system, it was still in the process of developing and linking some system components and further implementing the critical control points. This audit found that the new contract with Veolia has increased the available resources, the management systems are being revised and new documentation is being developed by Veolia for its area of operation. Full compliance has been awarded to Hunter Water for these clauses in this audit.
- Water Quality Recycled Water [Clauses 2.2.1 and 2.2.2] The previous audit found that, like the drinking water management system, Hunter Water continues to improve its recycled water management system. Full compliance has been awarded to Hunter Water in respect of Clause 2.2.1, High Compliance has been awarded in respect of Clause 2.2.2 as Hunter Water continue to implement the recycled water management system.
- Assets [Clause 4.1.1] The previous audit found that Hunter Water was continuing to action asset management opportunities but was yet to fully implement all of the initiatives. Full implementation of the asset management system is expected to be completed in 2017, therefore Hunter Water was awarded High Compliance in respect of this clause.



1. Introduction

1.1. Objectives

The objective of this audit was to conduct an operational audit of Hunter Water Corporation's (Hunter Water's) performance against specified clauses of its *Operating Licence* and any ministerial requirements for the period from 1 July 2014 to 30 June 2015.

1.2. Audit method

1.2.1. Audit scope

The audit scope was determined by the Independent Pricing and Regulatory Tribunal (IPART) using a riskbased approach to identify the *Operating Licence* clauses to be audited during the 2014/15 audit period. The clauses within the scope for this audit period are identified in Table 1. Hunter Water was required to provided a Statement of Compliance (SC) for the licence clauses that were not audited.

Prior to the audit, IPART sought advice from NSW Health Chief Health Officer (CHO) regarding Hunter Water's's performance relevant to the licence requirements over the audit period. The CHO recommended that the audit gauge progress on the following aspects from previous audits:

- drinking water reticulation disinfection optimisation (considered in the review of licence clause 2.1.1, Table 13)
- response to and debrief of the East Coast Low storm event (April 2015) (considered in the review of licence clause 2.1.1, Table 13)
- Medowie developments/planning and water quality impacts for Grahamstown Dam (considered in the review of licence clause 2.1.1, Table 13)
- Recycled Water Quality Management Plans for each of the recycling schemes (considered in the review of licence clause 2.2.1 and 2.2.2, Table 16)

Outstanding items/recommendations from previous audits were also reviewed and the status of the required actions determined.

Description	Licence clause	Type of audit	IPART comments
Connection of Services	1.6.1	Audit	This condition has not been audited before in the current operating licence.
Availability of Licence	1.8.1	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
Drinking Water	implementation of the system.		This condition was last audited in 2013-14 and was awarded an adequate
Drinking Water	2.1.2	Audit	Audit will include a risk based adequacy audit of the system, by element, and implementation of the whole system. Based on this risk assessment and in consultation with IPART, the auditor will then determine what elements of the ADWG will be the main focus of the audit. The scheme/ sites to be visited for field verification will be determined by auditor in consultation with IPART. This decision will also take into account any advice from NSW Health. Past field verification sites are listed in Table 4. IPART will write to NSW Health regarding its satisfaction with Hunter Water's management of Drinking Water Quality prior to audit. This condition was last audited in 2013-14 and was awarded a high

Table 1 Operating licence audit scope



Description	Licence clause	Type of audit	IPART comments	
			compliance grade in that audit.	
Drinking Water	2.1.3	Audit	Hunter Water reported three significant changes in DWQMS on 31 March 2015.	
Drinking Water	2.1.4	Audit	IPART will write to NSW Health regarding its approval for these significant changes prior to audit.	
Recycled Water	2.2.1	Audit	Audit will include a risk based adequacy audit of the system, and implementation of the system. This condition was last audited in 2013-14 and was awarded a high compliance grade in that audit.	
Recycled Water	2.2.2	Audit	Audit will include a risk based adequacy audit of the system, and implementation of the system. Based on this risk assessment and in consultation with IPART, the auditor will then determine what elements of the AGWR will be the main focus of the audit. The scheme/ sites to be visited for field verification will be determined by auditor in consultation with IPART. This decision will also take into account any advice from NSW Health. Past field verification sites are listed in Table 4. IPART will write to NSW Health regarding its satisfaction with Hunter Water's management of Recycled Water Quality prior to audit. This condition was last audited in 2013-14 and was awarded a high compliance grade in that audit.	
Recycled Water	2.2.3	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.	
Recycled Water	2.2.4	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.	
Water Conservation Target	3.1.1	Audit	This condition was last audited in 2013-14 and was awarded full compliance in that audit.	
Water Conservation Target	3.1.2	Audit	This condition was last audited in 2013-14 and was awarded full compliance in that audit.	
Economic Level of Leakage	3.2.3	SC	This condition has not been audited before in the current operating licence.	
Roles and responsibilities protocol	3.3.1	SC	A new protocol was executed in 2013-14. No changes to the protocol were made in 2014-15. IPART will write to DPI Water to check if there are any issues.	
Asset Management System	4.1.1	Audit	-	
Asset Management System	4.1.2	Audit		
Asset Management System	4.1.3	SC	Hunter Water reported that it is developing an asset management system that is consistent with ISO55001. There is no need to audit this condition in 2014-15.	
Water pressure, water continuity and Wastewater Overflow Standards	4.2.2	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.	



Description	Licence clause	Type of audit	IPART comments
Water pressure, water continuity and Wastewater Overflow Standards	4.2.3	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
Water pressure, water continuity and Wastewater Overflow Standards	4.2.4	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
Customer Contact	5.1.1	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
Customer Contact	5.1.2	SC	Audit following any notice of change. We were not notified of any changes in 31 March report 2015.
Providing information	5.2.1	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
Providing information	5.2.2	SC	Audit following any notice of change. No changes to the contract have been made. IPART would be notified of any changes as this would require an amendment to the operating licence.
Providing information	5.2.3	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
Providing information	5.2.4	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
Consumers	5.3.1	SC	This condition was last audited in 2013-14 and was awarded a full compliance grade in that audit.
Procedure for financial hardship, payment difficulties, water flow restriction and disconnection	5.4.1	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
Procedure for financial hardship, payment difficulties, water flow restriction and disconnection	5.4.2	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
Procedure for financial hardship, payment difficulties, water flow restriction and disconnection	5.4.3	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
Procedure for financial hardship, payment difficulties, water flow restriction and disconnection	5.4.4	SC	This condition was last audited in 2012-13 and was awarded a full compliance grade in that audit.
Consultative Forum	5.5.1	Audit	No specific comment
Consultative Forum	5.5.2	Audit	No specific comment
Consultative Forum	5.5.3	Audit	No specific comment
Consultative Forum	5.5.4	Audit	No specific comment
Consultative Forum	5.5.5	Audit	No specific comment
Consultative Forum	5.5.6	Audit	No specific comment
Internal Dispute Resolution Process	5.6.1	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.
Internal Dispute Resolution Process	5.6.2	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.



Description	Licence clause	Type of audit	IPART comments
Internal Dispute Resolution Process	5.6.3	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.
External Dispute Resolution Scheme	5.7.1	SC	IPART will check EWON membership
External Dispute Resolution Scheme	5.7.2	SC	This condition was last audited in 2013-14 and was awarded full compliance in that audit.
Environmental Management	6.1.2	SC	Obligation met.
Environmental Management	6.1.3	SC	The next EMS surveillance audit is scheduled for 27 to 31 July 2015. It will be an integrated audit covering surveillance for WHS and EMS, and Certification of the QMS.
Environmental Management	6.1.5	Audit	Hunter Water reported significant change to its EMS on 31 March 2015.
Quality Management System	7.1.3	Review	Hunter Water's Quality Management System will be subject to a full certification audit in July 2015. Review progress if certification has not been obtained at the time of the audit.
Operational Audits	8.1.2	SC	Can be verified by IPART and no audit is required.
Operational Audits	8.1.3	SC	Can be verified by IPART and no audit is required.
Operational Audits	8.1.4	SC	Can be verified by IPART and no audit is required.
Reporting	8.2.1	SC	This condition was last audited in 2012-13 and was awarded full compliance in that audit.
Reporting	8.2.2	SC	This condition was last audited in 2012-13 and was awarded full compliance in that audit.
Provision of Information	8.3.1	SC	This item is self-checking and there is no need to audit for compliance.
Provision of Information	8.3.2	SC	This item is self-checking and there is no need to audit for compliance.
Provision of Information	8.3.3	SC	This item is self-checking and there is no need to audit for compliance.
Provision of Information	8.3.4	SC	This item is self-checking and there is no need to audit for compliance.
Provision of Information	8.3.5	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.
Performance Indicators	8.4.1	Audit	Audit to check calculation methods of a sample of IPART performance indicators.
NSW Health	9.1.1	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.
NSW Health	9.1.3	SC	Audit following any notice of change. IPART will write to NSW Health to determine whether audit is required.

The audit scope included three days of staff interviews and site inspections. These were undertaken between the 19 October and 21 October 2015. The timetable and sites visited were as follows:

- 19 October 2015– staff interviews
- 20 October 2015 site inspections:
 - Grahamstown Spillway
 - Campvale Pump Station
 - Grahamstown Water Treatment Plant (WTP)



- Mayfield West Advanced Water Treatment Plant (AWTP) and Kooragang Industrial Water Scheme (KIWS)
- Edgeworth Wastewater Treatment Works (WWTW)
- 21 October 2015 staff interviews

1.2.2. Audit standard

The IPART *Audit Guideline Public Water Utilities June 2015* (Audit Guideline) formed the standard for the Operational Audit. *ISO 19011:2011 Guidelines for Auditing Management Systems* was also relied upon to ensure good audit practice.

1.2.3. Audit steps

The audit steps are identified in the Audit Guideline and are reproduced in Table 2. The audit interviews and field verification site visits were undertaken on the 19 - 21 October 2015.

Table 2 Audit steps

Step	Description	Responsibility
1	Audit scoping	IPART
2	Appointment of auditor	IPART
3	Audit preparation	Auditor/Utility/IPART
4	Audit interview	Auditor/Utility
5	Field verification site visits	Auditor/Utility
6	Wrap up and close out meetings	Auditor/Utility
7	Assessing and reporting	Auditor/Utility/IPART
8	Reporting to Minister	IPART
9	Reporting on recommendations	Utility

1.2.4. Audit team

The audit team was co-led by James Howey from Viridis and Jim Sly from Cobbitty. Roles for each team member are detailed in Table 3.





Team member	Organisation	Certifications	Role
James Howey	Viridis	Lead Water Quality Management Systems Auditor – Drinking and Recycled Water (Exemplar Global) Technical Services and Water Licencing Audit Panel: • drinking water quality • recycled water quality	Project Manager Drinking Water – Lead Auditor Recycled Water – Lead Auditor
Karen Pither	Viridis	Lead Water Quality Management Systems Auditor – Drinking and Recycled Water (Exemplar Global) Technical Services and Water Licencing Audit Panel: • drinking water quality • recycled water quality	Drinking Water - Auditor Recycled Water - Auditor
Jim Sly	Cobbitty	Technical Services and Water Licencing Audit Panel: infrastructure performance retail supply	Infrastructure Performance – Lead Auditor Retail Supply – Lead Auditor
Bob Burford	Cobbitty	Technical Services and Water Licencing Audit Panel: infrastructure performance retail supply	Infrastructure Performance –Auditor Retail Supply –Auditor

Table 3 Audit team details

Hunter Water staff and contractors and IPART attended the interviews and site verification visits. Details of audit participation are shown in Table 4.

Name	Position	Organisation	Participation
Jennifer Pritchard	Community Engagement Coordinator	Hunter Water Corporation	Auditee
Kirsty Jones	Asset Management System Engineer	Hunter Water Corporation	Auditee
Stuart Horvath	Manager Asset Management	Hunter Water Corporation	Auditee
Emma Turner	Regulatory Economist	Hunter Water Corporation	Auditee
Geoff Dyce	Senior Economist	Hunter Water Corporation	Auditee
Kirby Morrison	Manager Water Planning	Hunter Water Corporation	Auditee
Jordi Bates	Team Leader – Water Resources Planning	Hunter Water Corporation	Auditee
Pam O'Donoghue	Engineer, Treatment Operations	Hunter Water Corporation	Auditee
Wade Delforce	Engineer, Water Resource Planning	Hunter Water Corporation	Auditee
Kathy McDermott	Quality Manager	Hunter Water Corporation	Auditee
Bob Jennar	Process Engineer - Wastewater	Hunter Water Corporation	Auditee
Vikas Shah	Treatment Operations Engineer	Hunter Water Corporation	Auditee
John Stanmore	Manager Water Network Operations	Hunter Water Corporation	Auditee
Colin Hancock	Manager Wastewater Network Operations	Hunter Water Corporation	Auditee
Ian Hiles	Senior Civil Asset Engineer	Hunter Water Corporation	Auditee
Peter Shields	Manager Regulatory Policy	Hunter Water Corporation	Auditee
Ken Moore	Treatment Operations Engineer	Hunter Water Corporation	Auditee
Greg Mason	Ranger	Hunter Water Corporation	Auditee

Table 4 Audit participants



Name	Position	Organisation	Participation
John Peel	Team Leader Dams & Catchments	Hunter Water Corporation	Auditee
Martin Robards	Team Leader Recycled Water Compliance	Hunter Water Corporation	Auditee
Andrew Theaker	Team Leader Reporting & Database Support	Hunter Water Corporation	Auditee
Caitlin Cooper	Cadet Engineer	Veolia Water Australia	Auditee
Dan Slocombe	Water Treatment Manager	Veolia Water Australia	Auditee
David Kingsland	Laboratory Technician	Veolia Water Australia	Auditee
James Morrison	Operator Water	Veolia Water Australia	Auditee
Karen Arkinstall	Manager Systems Risk Compliance & Reporting	Veolia Water Australia	Auditee
Marie Jourden	Wastewater Process Manager	Veolia Water Australia	Auditee
Shannon Davies	Cadet Engineer	Veolia Water Australia	Auditee
Kim Sheree	Operator Water	Veolia Water Australia	Auditee
Deanne Pope	Biosolids & Reuse Officer	Veolia Water Australia	Auditee
David Turner	Wastewater Supervisor - South	Veolia Water Australia	Auditee
Liam Kilcullen	Wastewater Treatment Manager	Veolia Water Australia	Auditee
Tim Park	Operator Wastewater (S1)	Veolia Water Australia	Auditee
Jamie Luke	Principal Analyst	IPART	Regulator
Robert Aposhian	Principal Analyst	IPART	Regulator
James Howey	Director	Viridis	Lead Auditor
Jim Sly	Director	Cobbitty	Lead Auditor
Bob Burford	Consultant	Cobbitty	Auditor
Karen Pither	Consultant	Viridis	Auditor

1.2.5. Audit grades

Compliance grades are identified in the IPART Audit Guidelines and are reproduced in Table 5.

Table 5 Compliance grades

Grade 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.

1.3. Regulatory regime

Hunter Water is a state owned corporation that is wholly owned by the NSW State Government. The Hunter Water Act 1991 and the State Owned Corporations Act 1989 establishes the functions, roles and



responsibilities of Hunter Water. The Hunter Water *Operating Licence 2012 – 2017* is the overarching regulatory instrument, issued under Section 12 of the *Hunter Water Act 1991*.

1.4. Quality assurance process

This audit was carried out in accordance with the Viridis Quality Manual, consistent with ISO 9001:2015. The audit team leader James Howey was the Project Manager for the audit and responsible for ensuring the quality of the deliverables. Quality assurance activities undertaken during the audit comprised of:

- compliance with the Viridis Quality Manual
- internal peer review of documents by an Auditor on the IPART Technical Services and Water Licencing Audit Panel
- quality review of supplied documents
- document control and approval processes.





2. Section 1 - licence and licence authorisation

2.1. Summary of findings

Clause 1.6.1 – Full Compliance

This sub-clause requires Hunter Water, whilst complying with any applicable law, to ensure that the Services (supply of water, provision of sewerage and drainage services, and disposal of wastewater) are available on request for connection to any Property situated in the Area of Operations.

Hunter Water demonstrated that it maintains, and implements, a process for managing applications for the provision of Services to properties situated in the Area of Operations. Furthermore, it demonstrated that it manages the application process through its TRIM document management system and a Schedule 50 Diary in which all documents are logged.

Whilst Hunter Water was not able to specifically demonstrate that it had provided (or offered to provide) services in all cases where requested, there was no evidence to the contrary.

Detailed assessment in respect of this sub-clause is presented in Table 8 (refer Appendix A).

2.2. Recommendations

No recommendations are made in respect of this section of the Operating Licence as a result of the Audit.

2.3. Opportunities for improvement

No opportunities for improvement have been identified in respect of this section of the *Operating Licence* as a result of the Audit.





3. Section 2 – water quality

3.1. Summary of findings

3.1.1. Drinking water

Clause 2.1.1 – Full Compliance

This sub-clause requires Hunter Water to maintain a Drinking Water Quality Management System (DWQMS) that is consistent with the 12 elements of the Australian Drinking Water Guidelines (ADWG) and any amendment to the ADWG that NSW Health specifies, and that apply to Hunter Water.

NSW Health has not specified any amendments to the ADWG that apply to Hunter Water.

Hunter Water awarded the operation and maintenance of its water and sewage treatment works, including recycled water to Veolia Water Australia and New Zealand (Veolia) on July 2014. The contract is for a duration of 10 years. Under the contract, Veolia is required to develop management documentation for the drinking water treatment plants consistent with the DWQMS. Hunter Water is responsible for the documentation and management systems covering the raw water supply and distribution of the treated water.

Both Hunter Water and Veolia have prepared a DWQMS and associated documents for their respective areas of operations that are consistent with the ADWG. Positive outcomes, as a result of the new contract, were noted during the audit including knowledge transfer, integrated management systems and the use of established procedures and processes. A high level of integration between the two organisations was noted, despite the relationship being in its infancy.

Previous recommendations have been or are being progressed within the identified timeframes.

The CHO recommended that the audit gauge progress on identified aspects of the drinking water system arising from previous audits, which were considered in the review of this licence clause and are detailed below.

Disinfection optimisation

Stage 1 of the Disinfection Optimisation Strategy (DOS) was implemented in December 2014. Chlorine residuals were increased earlier than planned under the DOS due to the East Coast Low extreme weather event. Trending of the disinfection residuals as part of the DOS showed that Hunter Water achieved its target of disinfection improvement by September 2014. Stage 2 of the DOS has been proposed, a timeline has been developed, funding has been allocated and the DOS is currently with the Delivery Team for implementation.

Response and debrief of East Coast Low storm event (April 2015)

On 20-21 April 2015 the Sydney, Central Coast, and Hunter regions of New South Wales experienced an East Coast Low extreme weather event with very heavy rain, gale-force winds with gusts up to 130 km per hour, and waves of up to 11 metres in height. By 12:30 pm on Tuesday 21 April, ten wastewater treatment works were without power, and five could not be accessed. Veolia and Hunter Water cooperated in the sharing and prioritisation of locating generator plant, also, bore water pumps were often not working due to power outages.

The Chichester Trunk Gravity Main (CTGM) was washed away in several sections, preventing raw water supply to the Dungog WTP. High turbidity in raw water sources required enhanced coagulation treatment, increased chlorine dosing and wasting (instead of return) of backwash waters were wasted instead of returned. Bottled drinking water was provided to Dungog residents. Extra testing for *Cryptosporidium* and *Giardia* was undertaken. Operators were in attendance at the Grahamstown and Dungog WTPs 24 hours per day, and an hourly water quality and treatment performance report for Grahamstown WTP was provided to Hunter Water.



Communication protocols were established to ensure staff safety and to maintain communication with relevant stakeholders such as NSW Health. The debrief report identifies the processes implemented during the incident, the post incident follow up and the recommendations that came out of the incident.

Medowie developments/planning and water quality impacts for Grahamstown Dam

Due to localised flooding potential in the Medowie residential development, pumping at the Campvale pump station is non discretionary and mandatory under the licence issued by DPI Water and must be maintained to minimise localised flooding.

Currently development within the catchment is controlled through local government planning policies and development controls, however the area is considered to be a potential residential development growth site. Hunter Water is a concurrence agency for any significant development in the catchment and manage risks to the drinking water quality and operations though development area controls.

Detailed assessment in respect of this sub-clause is presented in Table 9 (refer Appendix A).

Clause 2.1.2 – Full Compliance

This sub-clause requires Hunter Water to ensure that the DWQMS is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health.

The audit interviews and site verification inspections noted that the DWQMS prepared by both Hunter Water and Veolia are fully implemented at the sites that were subject to the audit.

During the audit interviews and site verification visits records relating operational and verification monitoring, incident management and reporting were sighted demonstrating the implementation of the 12 elements of the DWQMS. In addition, Hunter Water received certification for its Quality Management System, providing further evidence that the DWQMS is implemented under a certified quality management system.

The site inspection noted that Critical Control Points (CCPs) are being implemented in accordance with the management systems and practice notes established under the Contract. CCP alarming and notifications between the organisations was demonstrated during the site inspection, with automatic notifications made to Hunter Water, where a CCP limit was reached.

Detailed assessment in respect of this sub-clause is presented in Table 10 (refer Appendix A).

Clause 2.1.3 – Full Compliance

This sub-clause requires Hunter Water to notify IPART and NSW Health of any significant changes that it proposes to make to the Drinking Water Quality Management System in accordance with the Reporting Manual.

Hunter Water's Report on Significant Changes to Operating Licence dated 31 March 2015 notified IPART of three changes to the Drinking Water Quality Management System within the audit period. The changes related to the Water Treatment Contract, Laboratory Services Contract and CCP review. NSW Health was notified of the three significant changes at the December 2014 and March 2015 NSW Health liaison meetings.

The audit did not identify any additional changes to the DWQMS that were not notified to NSW Health. The changes that were notified to NSW Health were documented in the minutes to the meetings and within the Report on Significant Changes to Operating Licence.

The significant changes relate to the new contract with Veolia that was established during the audit period. The new contractual arrangements require Veolia to develop the DWQMS for the treatment plants. Hunter Water is responsible for establishing the overarching DWQMS and including management of the raw water supply and treated water distribution systems.

Detailed assessment in respect of this sub-clause is presented in Table 11 (refer Appendix A).



Clause 2.1.4 – Full Compliance

This sub-clause requires Hunter Water to obtain NSW Health's approval for any significant changes proposed to be made to the Drinking Water Quality Management System before implementing or carrying out its activities in accordance with them.

The following changes have been made in response of the DWQMS:

- New treatment operations contract An intranet page dedicated to the new treatment operations contract has been developed, it is linked to Hunter Water's DWQMS intranet page and is accessible to all staff. Hunter Water's current DWQMS manual includes reference to Veolia's DWQMP as being a subset of Hunter Water's DWQMS.
- New laboratory contract An intranet page dedicated to the new laboratory contract has been developed, it is linked to Hunter Water's DWQMS intranet page and accessible to all staff. Hunter Water's current DWQMS manual also includes reference to ALS as Hunter Water's new laboratory services provider under Element 5.
- CCP review A number of documents and management systems relating to CCPs collectively form part of Hunter Water's CCP management within the DWQMS. Updates were made to all the relevant documents and systems including Hunter Water's live DWQMS page, CCP register, Standard for Establishing and Reviewing CCPs and SCADA.

The proposed significant changes are currently in the process of being implemented. NSW Health has approved the change to the operational and laboratory contract. The changes to the DWQMS are underway, and NSW Health has been involved in the implementation of the proposed changes.

NSW Health has supported via email the significant change related to the new treatment operations contract on 11th August 2014. While NSW Health has not formally approved the significant changes to the DWQMS, its representatives have been heavily involved throughout each of the change processes and have provided verbal agreement. NSW Health has been involved in the process and representatives have attended the four most recent quarterly liaison meetings and the CCP review workshop in June 2015.

Detailed assessment in respect of this sub-clause is presented in Table 12 (refer Appendix A).

3.1.2. Recycled water

Clause 2.2.1 – Full Compliance

This sub-clause requires Hunter Water to maintain a Recycled Water Quality Management System (RWQMS) that is consistent with the Australian Guidelines for Water Recycling (AGWR) and any amendment or addition to the AGWR that NSW Health specifies that applies to Hunter Water.

At the time of the audit NSW Health had not specified any amendments or additions to the AGWR that apply to Hunter Water.

During the audit period, Hunter Water awarded the contract to operate its drinking and wastewater treatment plants, including the recycled water treatment plants to Veolia. Under the contract Veolia is required to produce all the necessary documentation relating to its area of operations.

Hunter Water and its contractor Veolia are well advanced in establishing and maintaining a RWQMS that is consistent with the AGWR. There is a high degree of integration between the documentation prepared by the two organisation despite the contract being in its first year of establishment. In addition, during the audit period, Hunter Water achieved certification of its Quality Management System and Environmental Management System.

During the audit period, a Corporate Recycled Water Quality Management Plan, that documents Hunter Water's recycled water operations and its interactions with Veolia was established. Veolia has established scheme specific Recycled Water Quality Management Plans (RWQMPs); the Edgeworth and KIWS RWQMPs were provided as examples.



In the audit period, supporting documentation to facilitate the establishment of the RWQMS was also developed including monitoring plans, training and awareness packages, validation programs, communication protocols, incident and emergency response protocols, reporting mechanisms and operational procedures.

Detailed assessment in respect of this sub-clause is presented in Table 14 (refer Appendix A).

Clause 2.2.2 – High Compliance

This sub-clause requires Hunter Water to ensure that the RWQMS is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health.

The site verification visit observed that Hunter Water and Veolia are well advanced in the implementation of the RWQMS. Whilst the RWQMS is being established, a number of key elements of the AGWR are yet to be implemented, including the establishment and implementation of the critical control point (CCP) limits and alarms. The implementation of the critical limits and alarms is linked to the finalisation of the validation program and the endorsement of the critical limits by NSW Health. The validation program is due to be completed by November 2015. The CCPs and other key elements to be implemented under the RWQMS are captured in the Improvement Plan, however because CCP limits and alerts have not been fully implemented, a grade of High Compliance was awarded for sub-clause 2.2.1.

Detailed assessment in respect of this sub-clause is presented in Table 15 (refer Appendix A).

3.2. Recommendations

3.2.1. Drinking water

No recommendations in respect of clauses 2.1.1, 2.1.2, 2.1.3 and 2.1.4.

3.2.2. Recycled water

Recommendations in respect of clauses 2.2.1 and 2.2.2 are documented in Table 6.

Table 6 Recycled water recommendations

Recommendation	Reference	Timeframe
It is recommended that Hunter Water commence implementation of the interim CCPs as soon as possible and finalise the validation program.	2014/15 - 01	6 months
It is recommended that Hunter Water finalise its validation program and facilitate endorsement of the outcomes by NSW Health. CCPs should then be adjusted or refined in accordance with the outcomes.	2014/15 - 02	12 months

3.3. Opportunities for improvement

3.3.1. Drinking water

The following opportunities for improvement have been identified in respect of clause 2.1.1.

• [Sub-clause 2.1.1] It would be useful if the risk assessments all followed the same methodology. The risk assessments undertaken by Hunter Water and Veolia have different risk assessment criteria and assess risk at different points. For example, Veolia assesses the risk at the end of each treatment process, whilst Hunter Water assesses the risk of the impact of a hazardous event on the final water quality. Whilst both methods are appropriate and meet the requirement of the ADWG, it would be more transparent from a risk management approach to apply the same methodology across the whole system.



• [Sub-clause 2.1.2] It would be useful for Hunter Water to include a close out process to address the outcomes of any health based target assessments undertaken to assess drinking water risks.

3.3.2. Recycled water

The following opportunities for improvement have been identified in respect of clauses 2.2.1 and 2.2.2:

- [Sub-clause 2.2.1] Hunter Water should ensure draft documents are finalised within the next audit period.
- [Sub-clause 2.2.2] Hunter Water should ensure that all SCADA alarm limits are visible to operators and CCPs documented in a format that can be reviewed for accuracy regardless of whether they are editable or protected (for example in the ACMM).
- [Sub-clause 2.2.2] Hunter Water should ensure that data analysis and trending is undertaken prior to the risk assessment and utilised during the risk assessment process to inform the assessment and quantify the risk.
- [Sub-clause 2.2.2] Hunter Water should ensure that the long-term review of water quality data and system performance is undertaken at least annually.





4. Section 4 – assets

4.1. Summary of findings

Clause 4.1.1 – High Compliance

This clause requires Hunter Water to maintain an Asset Management System consistent with an appropriate standard; Hunter Water has adopted the guidance provided by WSAA's Aquamark benchmarking tool.

Hunter Water demonstrated that it has continued to maintain and actively improve its Asset Management System through implementation of the initiatives identified through its participation in the *IWA-WSAA 2012* Asset Management Performance Improvement Project.

Improvement initiatives related to "Alignment of Capability with Objectives" and "Challenging of Business Cases" are considered to have been substantially addressed and substantial progress has been made in respect of the remaining initiatives related to "Consistent Maintenance Management", "Consistent Management and Operation of Critical Assets" and "Review and Update of Operations and Maintenance Procedures". Specific actions that still need to be completed (these are currently in progress) in order to fully implement these remaining initiatives include:

- capture of asset and related maintenance information for all assets in the Asset/Maintenance Management System
- completion of detailed asset risk profiling across all asset classes
- completion of the review and update of operational and maintenance procedures.

Full implementation of the resultant changes across the whole of the asset portfolio will, however, take time and Hunter Water's forecast of July 2017 completion (in readiness for proposed ISO 55001 accreditation) is considered realistic.

Detailed assessment in respect of this sub-clause is presented in Table 17 (refer Appendix A).

Clause 4.1.2 – Full Compliance

This clause requires Hunter Water to ensure that the Asset Management System is fully implemented.

Hunter Water demonstrated through the provision of sample documentation, auditor observations during the audit interviews and field verification site inspections, and discussions with its treatment plant operation and maintenance service provider that the Asset Management System, as it currently stands, is fully implemented and activities are carried out in accordance with the system.

Detailed assessment in respect of this sub-clause is presented in Table 18 (refer Appendix A).

4.2. Recommendations

The recommendation in respect of sub-clause 4.1.1 is documented in Table 7.

Table 7 Assets recommendation

Reco	ommendation	Reference	Timeframe
It is recommended that Hunter Water continues to fully implement improvement initiatives in respect of:		2014/15-03	18 months
•	the development and implementation of a holistic approach to maintenance management		
•	the complete capture of all asset and related maintenance information in its Enterprise Resource Planning (Asset/ Maintenance Management) System		
•	criticality and condition assessment		
• acro	review and update of operational and maintenance procedures ss the whole of the asset portfolio.		



4.3. **Opportunities for improvement**

The following opportunities for improvement have been identified in respect of this section of the *Operating Licence* as a result of the Audit:

- [Sub-clause 4.1.2] It would be prudent for Hunter Water to investigate and repair corrosion on:
 - steel corbels on the outside of the building at the Campvale Pumping Station; and
 - on the Stage 1 clarifier rake drive equipment at the Grahamstown Water Treatment Plant.

Furthermore, it is suggested that Hunter Water reviews its procedures to ensure that the condition of corrosion protection systems is kept under constant review, and that maintenance is undertaken when required, for all assets and asset components that may be subject to corrosion.





5. Section 5 – customers and consumers

5.1. Summary of findings

Clause 5.2.2 – No Requirement

This sub-clause requires Hunter Water to update the pamphlet prepared under clause 5.2.1 when variations are made to the *Customer Contract*.

Hunter Water advised, and the auditors confirmed, that there had been no changes made to the *Customer Contract* during the audit period. Accordingly, there was no requirement in respect of this obligation.

Detailed assessment in respect of this sub-clause is presented in Table 19 (refer Appendix A).

Clause 5.5.1 – Full Compliance

This sub-clause requires Hunter Water to maintain and regularly consult with its Customers and Consumers through a Consultative Forum.

Hunter Water demonstrated that it has maintained and regularly consulted with its Customers and Consumers through a Consultative Forum during the audit period. This was evidenced by notification of meetings and calls for agenda items, and published minutes of each of three meetings held during the period.

Detailed assessment in respect of this sub-clause is presented in Table 20 (refer Appendix A).

Clause 5.5.2 – Full Compliance

This sub-clause requires Hunter Water to utilise the Consultative Forum to, among other things, provide it with advice on the interests of Hunter Water's Customers and Consumers, the Customer Contract and such other key issues related to Hunter Water's planning and operations as Hunter Water may determine, consistent with the *Consultative Forum Charter*.

Hunter Water demonstrated that during the audit period it had has used the Consultative Forum to provide it with advice on the interests of its Customers and Consumers and a range of issues related to its planning and operations. Furthermore, through the results of a survey, it demonstrated that Consultative Forum members are of the view that the Forum is effective in meeting its objectives.

Detailed assessment in respect of this sub-clause is presented in Table 21 (refer Appendix A).

Clause 5.5.3 – Full Compliance

This sub-clause requires Hunter Water to ensure that at all times the membership of the Consultative Forum is appointed and determined by Hunter Water in accordance with the Consultative Forum Charter; and that Hunter Water uses its best endeavours to include a person representing each of ten nominated interests as members of the Consultative Forum.

Hunter Water demonstrated that:

- membership of the Consultative Forum has been appointed in accordance with the *Consultative Forum Charter*
- it has either included, or has used its best endeavours to include, representatives of the nominated interests as members of the Consultative Forum.

Detailed assessment in respect of this sub-clause is presented in Table 22 (refer Appendix A).

Clause 5.5.4 – Full Compliance

This sub-clause requires Hunter Water and members of the Consultative Forum to maintain a charter (Consultative Forum Charter) that addresses all of nine nominated issues.

Hunter Water demonstrated that it (and the members of the Consultative Forum) has maintained a *Community Consultative Forum Charter* that addresses the issues nominated under this obligation.



Detailed assessment in respect of this sub-clause is presented in Table 23 (refer Appendix A).

Clause 5.5.5 – Full Compliance

This sub-clause requires Hunter Water to provide information in its possession or under its control necessary to enable the Consultative Forum to discharge the tasks assigned to it, other than information or documents that are confidential or privileged.

Hunter Water demonstrated that it provides the Consultative Forum with information necessary to enable the Consultative Forum to discharge the tasks assigned to it. Furthermore, it demonstrated by way of an example that, whilst it does not have formally documented guidance in place (it relies on management discretion), it does not provide information that is confidential or privileged.

Detailed assessment in respect of this sub-clause is presented in Table 24 (refer Appendix A).

Clause 5.5.6 – Full Compliance

This sub-clause requires Hunter Water to make copies of the *Consultative Forum Charter* and minutes of meetings of the Consultative Forum available on its website and at its offices.

Hunter Water demonstrated that a copy of *Consultative Forum Charter* and minutes of meetings held during the audit period were available for downloading from its website. Furthermore, it demonstrated that a copy of the *Charter* could be obtained free of charge at its Newcastle office upon request.

Detailed assessment in respect of this sub-clause is presented in Table 25 (refer Appendix A).

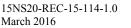
5.2. Recommendations

No recommendations are made in respect of this section of the Operating Licence as a result of the Audit.

5.3. Opportunities for improvement

The following opportunities for improvement have been identified in respect of this section of the *Operating Licence* as a result of the Audit:

- [Sub-clause 5.5.4] Hunter Water may wish to consider revising the *Community Consultative Forum Charter* such that it more directly aligns with the issues nominated under this obligation; this could be achieved by including sections (with headings) specific to each issue. Procedures for tracking issues raised and ensuring appropriate follow-up of those issues should also be more specifically addressed.
- [Sub-clause 5.5.5] It is suggested that Hunter Water consider formally documenting guidance for use in assessing whether information requested by, or that may otherwise be provided to, the Consultative Forum is confidential or privileged.







6. Section 6 - environment

6.1. Summary of findings

Clause 6.1.5 – Full Compliance

This sub-clause requires Hunter Water to notify IPART of any significant changes that it proposes to make to the Environmental Management System (EMS) in accordance with the *Reporting Manual*.

The significant change that was notified to IPART was to inform IPART that the EMS achieved ISO 14000 certification. Evidence of correspondence was provided as evidence of the notification. Hunter Water's Report on Significant Changes to Operating Licence dated 31 March 2015 notified IPART that ISO 14000 certification was achieved within the audit period.

Detailed assessment in respect of this sub-clause is presented in Table 26 (refer Appendix A).

6.2. Recommendations

No recommendations are made in respect of this section of the Operating Licence as a result of the Audit.

6.3. Opportunities for improvement

No opportunities for improvement have been identified in respect of this section of the *Operating Licence* as a result of the Audit.





7. Section 7 - quality management

7.1. Summary of findings

Clause 7.1.3– Full Compliance

This sub-clause requires Hunter Water to ensure that by 30 June 2017, the Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the system.

Full compliance in respect of this clause is awarded due to the certification of the Quality Management System (QMS) under ISO 9000, demonstrating that the system is implemented in accordance with the standard. The certificate issued by DNV-GL indicates that the QMS has been certified by an independent certification organisation as meeting the requirements of the standard.

Detailed assessment in respect of this sub-clause is presented in Table 27 (refer Appendix A).

7.2. Recommendations

No recommendations are made in respect of this section of the Operating Licence as a result of the Audit.

7.3. Opportunities for improvement

No opportunities for improvement have been identified in respect of this section of the *Operating Licence* as a result of the Audit.





8. Section 8 – performance monitoring

8.1. Summary of findings

Clause 8.3.5 – Full Compliance

This sub-clause requires Hunter Water to provide information requested by NSW Health relating to water quality in the manner and form specified by NSW Health. Hunter Water must provide the information requested within a reasonable time of NSW Health's request.

NSW Health made two requests regarding lead concentrations in drinking water supplied by Hunter Water and one regarding total dissolved solids / conductivity in drinking water supplied to Cessnock. Email correspondence provided by Hunter Water demonstrates that the information requested by NSW Health was provided within a reasonable timeframe.

Detailed assessment in respect of this sub-clause is presented in Table 28 (refer Appendix A).

Clause 8.4.1 – Full Compliance

This sub-clause requires Hunter Water to maintain sufficient record systems to enable it to measure accurately its performance against the performance indicators specified in the *Reporting Manual*.

Hunter Water was able to demonstrate, based on the audited sample (specifically indicators I1 to I8), that it has sufficient record systems and processes in place to enable it to measure accurately its performance against the performance indicators specified in the *Reporting Manual*. Furthermore, it demonstrated that in a case where there had been ambiguity in the interpretation of one of the indicators, it had sought clarification as required.

Detailed assessment in respect of this sub-clause is presented in Table 29 (refer Appendix A).

8.2. Recommendations

No recommendations are made in respect of this section of the Operating Licence as a result of the Audit.

8.3. Opportunities for improvement

The following opportunity for improvement has been identified in respect of this section of the *Operating Licence* as a result of the Audit:

• [Sub-clause 8.4.1] Whilst it is apparent that Hunter Water maintains sufficient records systems to enable it to measure accurately its performance against the performance indicators specified in the *Reporting Manual*, there is opportunity for improved documentation of the procedures used to extract relevant data and calculate the indicators. A more descriptive procedure, which captures the definition of the indicator and identifies the source records, the specific data required from each source and how the data is used to calculate the indicator would be useful. It would also be prudent to further document specific processes such as (in respect of Indicator I5) the processes implemented to ensure that reported water pressure failures are captured (where confirmed) consistent with the indicator definition.





9. Section 9 - memorandum of understanding

Hunter Water stated that there was no change to the Memorandum of Understanding with NSW Health therefore clauses 9.1.1 and 9.1.3 are not auditable.





10. Outstanding recommendations

Hunter Water's progress in respect to previous recommendations was assessed in conjunction with the audit. A summary of the findings is provided below, with detailed findings in Table 30 (refer Appendix B).

10.1. IPART recommendation to the Minister - 2012/13-2

HWC should develop and implement water quality awareness training for contractors.

Hunter Water has developed an online training module for employees and contractors and is currently rolling it out. A Damstra CSV file was provided that contained the names and dates that contractors completed the online training induction module. 980 data points were provided indicating 980 contractors were inducted into the programme.

The audit found that this recommendation has been addressed.

10.2. IPART recommendation to the Minister - 2013/14-10 & 19

Within 12 months, Hunter Water should develop an internal audit program that reviews the implementation of the DWQMS and the RWQMPs.

Currently all internal and external management system audits for EMS, WHSMS and QMS are tracked within the *Management System Audit Programme - 2015 (calendar year)*. These form the Integrated Management System (IMS).

The draft *Triennial Internal Quality Audit Program (2015 – 2018)* has been provided and shows that drinking and recycled water management have been included in the programme. The various sub-elements of the management systems have been scheduled over the three year period. The schedule has been risk-based and the frequency varies from once to seven times over the period.

An example *IQMS Internal Audit Report*, which shows the results of an internal audit of the following scope, was provided as evidence:

- Standard Monitoring and Measuring Equipment
- Procedure Monitoring and Measuring Equipment
- Register Monitoring and Measuring Equipment
- Quality Control Processes including SCADA review, operational controls, sampling, testing and reporting by Veolia and / or Australian Laboratory Services (ALS)
- Critical Control Points
- Operating Licence
- Integrum Database reporting
- Procedure NCR, Corrective and Preventive Action
- Standard Incident Management
- Procedure Incident Investigation and Root Cause Analysis.

The audit found that this recommendation has been addressed.

10.3. IPART recommendation to the Minister - 2013/14-03, 04, 06 & 13

Within 6 months, Hunter Water should review Critical Control Points (CCPs) for each treatment plant, including:

a) review all CCP critical limits (including alarm delays), and monitoring points to ensure they reflect current practice, as agreed with NSW Health



b) develop a process to ensure critical limits are only altered with supervisory consent and there is a failsafe process to ensure that they are reinstated before water quality is compromised

c) revise and review CCP documentation to clearly state location, parameters, target criteria, monitoring frequency, critical limits, corrective actions and responsibilities for each CCP

d) develop a process to record and document corrective actions, and preventive measures to reduce risks

e) operational and critical limits must be set in SCADA as alarms, including delay times where appropriate.

A review of the drinking water CCPs was undertaken in June 2015 through a workshop process in which NSW Health, Veolia and Hunter Water attended. This was documented in the *Critical Control Point Review* report that was provided as evidence. The revised CCPs are documented in a CCP register. The audit found that CCPs for drinking water have been implemented across the site that was subject to audit (Grahamstown WTP) and necessary documentation has been developed to meet the requirements of the recommendation.

Critical and alert limits have been implemented into the supervisory control and data acquisition (SCADA) system for drinking water. Critical limits have been hardcoded in the PLC set in SCADA; changes to these limits require specific access. Automatic shutdowns are applied at all CCPs monitored continuously in SCADA. A new SCADA user group has been established to restrict the permissions of staff who can alter automatic shutdown setpoints.

Veolia's HACCP Response Procedure was provided as evidence that there is a system in place to manage an excursion of a CCP limit and document corrective and preventative actions.

A recycled water Validation Program has been developed and is currently being implemented to validate the proposed recycled water CCPs. The Validation Program is due to be completed in November 2015, and once the CCPs and associated limits and alerts have been endorsed by NSW Health, they will be implemented into SCADA system.

The audit found that this recommendation has been addressed for drinking water and in progress for recycled water. Hunter Water will fulfil this obligation once endorsement has been received from NSW Health.

10.4. IPART recommendation to the Minister – 2013/14-09-17

Within 12 months, a process needs to be implemented to ensure that documents required under the DWQMS and RWQMPs are appropriately reviewed and kept up to date. Hunter Water also needs to ensure that its Operations and Maintenance Contractor uses up to date procedures for these activities.

Hunter Water have an IMS that includes the ISO 9001 certified Quality Management System. Document control is undertaken through the Intergrum database. Review dates are programmed as part of the metadata for documents as part of the review process. The review alert is rolled out 60 days before the review due date. Veolia documentation relating to the contractual requirements are accessible to Hunter Water.

During the audit interviews, the document control systems of both Veolia and Hunter Water were demonstrated, with records of email notifications, monitoring and reports retrieved for review.

The audit found that this recommendation has been addressed.

10.5. IPART recommendation to the Minister - 2013/14-05

Within 18 months, Hunter Water should define and identify significant risks. Determine the preventive measures that manage significant risks, and implement a plan to document the preventive measures and consequent corrective measures.



The ADWG requires that significant risks be determined and the priorities for risk management be identified. The purpose of this is to ensure that those preventive measures that manage the greatest risks are given the utmost priority.

Since the previous audit Veolia has developed plant operating manuals; the *Plant Operating Manual Grahamstown WTP* was provided as evidence. These are comprehensive manuals for each of the WTPs. During interviews, the point was made that all preventive measures identified in the risk assessments are taken seriously and implemented with due care and attention. The plant operating manuals are a significant improvement over the audit period, in terms of risk management.

Using the *Grahamstown Risk Register* a preventive measure is 'Ability to stop return water flow during high risk events e.g. after heavy rainfall'. If this is followed through into the manual, section 8.7.1 provides instructions on how to either waste or recover the backwash. It is currently up to the knowledge of the operator to undertake the action. An improvement to this would be to include a section in the manual for significant hazardous events and provide references to the section in the manual on the implementation of the preventive or corrective actions used to manage the risk.

During the audit period risk assessments have been undertaken for the Tomaree Catchment and Dungog and Grahamstown WTPs. These risk assessments document preventive measures and further risk treatments where current preventive measures do not reduce the risk to an acceptable level.

The *Drinking Water Quality Risk Assessment Calendar Extract* identifies the schedule for undertaking the risk assessments for the drinking water service. It is expected that the risk assessments will continue to be reviewed as per the calendar, the Operation and Maintenance Manuals will be updated and any preventive measures relied upon in the catchment or distribution not covered by Veolia's manual will be documented.

The audit found that this recommendation is in progress and a schedule is in place to complete it. As detailed in the Drinking Water Quality Risk Assessment Calendar Extract all risk assessments are due to be completed by the 2016/2017 financial year, in accordance with the timeframes agreed with IPART.

10.6. IPART recommendation to the Minister - 2013/14-01

Within 12 months, Hunter Water should develop a process to inform customers who receive unfiltered water from the Chichester Trunk Gravity Main about the quality and use of that water. (It was noted that the non-standard agreement for customers receiving this service does not currently provide information on the quality of the water and therefore material is required to educate and inform these customers.)

A cross-divisional stakeholder group within Hunter Water has been formed to ultimately achieve the audit outcomes. Data gathering and reconciliation from multiple systems to develop customer profiles of those customers impacted in this area has been completed and will form the Customer List for process and communication purposes.

A proposal dated September 2015 outlining Hunter Water's approach to these customers, specifically around public health requirements and information to be included in the Agreement and Communication Plan was presented to NSW Health (September Quarterly Liaison Meeting) for feedback purposes. Feedback from NSW Health is currently being processed within the business to shape a revised Agreement and Communication Plan to inform customers about the quality and use of water. Information as part of the Agreement and customer communication will be approved by NSW Health prior to deployment. Business processes for the deployment of the Agreement and supporting customer correspondence (initial and ongoing) is also being developed at this time.

The audit found that this recommendation is in progress. Hunter Water will fulfil this obligation once endorsement has been received from NSW Health.

10.7. IPART recommendation to the Minister - 2013/14-02

Within 12 months, the Dungog Water Treatment Plant (WTP) risk assessment needs to be reviewed in light of the changes to the plant, including updating the process flowchart and risk assessment to reflect the upgraded WTP.



A risk assessment workshop was undertaken on 22-23 June 2015. The risk assessment report, briefing paper and risk register were provided as evidence. The risk report states that the flow diagram for Dungog WTP was confirmed during the risk assessment workshop in June 2015.

The audit found that this recommendation has been addressed.

10.8. IPART recommendation to the Minister - 2013/14-08

Recommendations from the Grahamstown Catchment WTP Health Based Target (HBT) Assessment need to be addressed. It is suggested they be added to the DWQIP as the appropriate mechanism. Whilst not committing Hunter Water to implementing each of the recommendations, it does provide a means of recording the response to each item and closing them out.

The draft WSAA Health Based Target guideline was applied to assess Grahamstown Dam and WTP and the assessment has been completed. Recommendations arising from the HBT assessment have been added to the Improvement Plan.

The audit found that this recommendation has been addressed.

10.9. IPART recommendation to the Minister – 2013/14-11

Within 12 months, Hunter Water should implement a process to formally review the effectiveness of the DWQMS by the executive management team (for example, this could be done by tabling a performance report at a meeting of the executive team, which covers the requirements of the ADWG and how Hunter Water's DWQMS are meeting these elements).

Hunter Water conducts an Integrated Management System Review Meeting with senior management to review all aspects of the individual systems of the Integrated Management System (ie; AS/NZS 4801; ISO 14001; ISO 9001). These are conducted twice per year, and the purpose is to review the implementation and effectiveness of the individual management systems. The requirements of the ADWG and AGRW are currently being incorporated into the standard meeting agenda and presentation pro-forma and the relevant data will be presented at the next meeting scheduled for October 2015.

The audit found that this recommendation is in progress and based on the evidence will be addressed by the due date.

10.10. IPART recommendation to the Minister – 2013/14-07

Within one month, Hunter Water should ensure that equipment calibration records are being maintained.

Veolia's spreadsheets were provided with "Equipment QA" section to demonstrate that calibration records are being maintained.

The audit found that this recommendation has been addressed.

10.11. IPART recommendation to the Minister – 2013/14-14 & 12

Within 12 months, Hunter Water should review the following matters in respect to the Clarence Town Wastewater Treatment Works:

– The effectiveness of the CCPs. If the corrective action can be undertaken in a timely manner, and it reduces risk, then implement the CCPs as soon as possible.

– The risk assessment at Clarence Town Wastewater Treatment Works to take account of irrigation-water ponding at the site.

Hunter Water reported that the following progress has been made in implementing this recommendation:



- The lagoon process is nominated as a CCP for the control of helminths. Hunter Water sought guidance from relevant authorities (DPI Water) in order to confirm that the proposed CCP would meet the guideline for helminths and is awaiting final endorsement.
- Veolia is completing a report on the minimum residence time at the plant, including the impact of taking one of the two oxidation ponds offline (when required for future desludging).
- Veolia is undertaking a sludge survey of the ponds to record and monitor the level of sludge in the pond and the impact of sludge build up in the ponds at the plant on residence time which will be included in the above report.
- Veolia is modifying the plant spreadsheet to include a rolling average daily flow to monitor the residence time in the ponds and alert the operators when irrigation should be ceased if the residence time drops below 25 days.
- Veolia will request a modification to SCADA to alert operators of a potential reduction in residence time due to high flows.
- A contractor has been engaged to undertake minor earthworks on the irrigation site to direct ponded water to a drain.

The audit found that this recommendation is in progress, and based on the evidence it appears that this obligation will be completed on time.

10.12. IPART recommendation to the Minister – 2013/14-15

Within 12 months, Hunter Water should systematically identify operational procedures required to operate recycled water schemes and prioritise a program to develop them. This should include a documented corrective action procedure/s to re-establish process control where there is an excursion from target criteria or critical limits.

Veolia has prepared operational procedure manuals for each of the wastewater treatment works. The manuals for Edgeworth and Mayfield West AWTP were provided as examples and contain detailed procedures for re-establishing process control for excursions from target criteria and critical limit.

The audit found that this recommendation has been addressed.

10.13. IPART recommendation to the Minister – 2013/14-16

Within 18 months, Hunter Water should develop, for each scheme, an operational monitoring plan consistent with section 2.4.2 of the AGWR.

The Edgeworth and KIWS RWQMPs were provided as examples. They contain tables with operational monitoring identified, which include monitoring locations, parameters and frequency.

The audit found that this recommendation has been addressed.

10.14. IPART recommendation to the Minister – 2013/14-18

Within 12 months, Hunter Water should develop a procedure to report water quality and water quality incidents to all levels of the business.

Practice Note 110 of the Treatment Operations Contract requires Veolia to report water quality breaches to Hunter Water as soon as practicable. The practice note also requires Veolia to send weekly water quality reports highlighting any breaches. This weekly report is sent to relevant stakeholders within Hunter Water and Veolia.

Veolia's procedures for recycled water quality and incidents are contained in the *Incident and Emergency Management Manual*. It documents the practices and procedures for managing and responding to incidents and emergencies including but not limited to; CCP response and recycled water quality and interruptions.



The *Recycled Water Quality Monitoring and Communication Standard* also discusses incident reporting involving communication from Veolia.

Hunter Water has developed a new recycled water incident report within Hunter Water's incident reporting program (Integrum). Upon entering an incident into Integrum, a number of stakeholders are notified including the relevant Executive Managers. Hunter Water has updated the *Recycled Water Quality Incident Response Procedure* with the addition of the Integrum notification. This procedure is yet to be endorsed by NSW Health. Recycled Water incidents have also been added to the monthly corporate report for increased visibility by the EMT. During the audit interviews, email reporting of incidents was observed.

The audit found that this recommendation has been addressed.

10.15. IPART recommendation to the Minister – 2013/14-20

Hunter Water should continue implementing the five improvement initiatives identified as part of its 2012 Benchmarking Program including:

– develop a holistic approach to asset maintenance

– the complete capture of all asset and related maintenance information in its Ellipse Asset/ Maintenance Management System.

(It was noted that these initiatives should be fully implemented by July 2017, consistent with Hunter Water's ISO 55001 implementation program).

Hunter Water demonstrated that it has:

- continued the development of a holistic approach to asset maintenance
- continued to upgrade/develop its Ellipse Asset/ Maintenance Management platform.

Initiatives related to "Alignment of Capability with Objectives" and "Challenging of Business Cases" are considered to have been substantially addressed and substantial progress has been made in respect of the remaining initiatives related to "Consistent Maintenance Management", "Consistent Management and Operation of Critical Assets" and "Review and Update of Operations and Maintenance Procedures".

Full implementation of the resultant changes across the whole of the asset portfolio will, however, take time and Hunter Water's forecast of July 2017 completion (in readiness for proposed ISO 55001 accreditation) is considered realistic.

Accordingly, it is assessed that Hunter Water is well advanced with the implementation of this recommendation.







11. Glossary

Acronym	Description
ACMM	Automatic Control and Monitoring Manual
ADWG	Australian Drinking Water Guidelines, 2011
AGWR	Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) (2006)
ALS	Australian Laboratory Services
AMS	Asset Management System
AOMS	Asset Operations Maintenance System
ASAP	As soon as possible
AWTP	Advanced Water Treatment Plant
ССР	Critical Control Point
СНО	NSW Health Chief Health Officer
CIS	Customer Information Centre
CRWMP	(Draft) Corporate Recycled Water Management Plan
CWT	Clear Water Tank
CTGM	Chichester Trunk Gravity Main
DNV-GL	DNV GL is an international certification body and classification society with main expertise in technical assessment, advisory, and risk management.
DOS	Disinfecting Optimisation Strategy
DPI Water	NSW Department of Primary Industries Water
DWQMP	Drinking Water Quality Management Plan
DWQMS	Drinking Water Quality Management System
EMR	Emergency Management Response
EMS	Environmental Management System
EMT	Executive Management Team
EPL	Environmental Protection Licence
EWON	Energy and Water Ombudsman
НАССР	Hazard Analysis and Critical Control Point
HBT	Health Based Targets
HSMS	Health and Safety Management System
HWA	Hunter Water Australia
HWC	Hunter Water Corporation
Infor EAM	Infor Enterprise Asset Management Software
IPART	Independent Pricing and Regulatory Tribunal
IMS	Integrated Management System (also referred to as Integrated Quality Management System)
IQMS	Integrated Quality Management System (also referred to as Integrated Management System)
ISO	International Organization for Standardisation
KIWS	Kooragang Industrial Water Scheme
KPI	Key Performance Indicator
LIMS	Laboratory Information Management System
LRV	Log Removal Value



MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
NSW Health	NSW Department of Health
NWC	National Water Commission
PLC	Programmable Logic Controller
PMF	Probable maximum flood
PPE	Personal protective Equipment
QA	Quality Assurance
QMS	Quality Management System
R & D	Research and Development
RABQSA	RABQSA International, formed 2005/01/01 by merger of Registrar Accreditation Board personnel certification programs and Quality Society of Australasia (now Exemplar Global)
RA	Risk Assessment
RIVO	Risk management software used by Veolia
RWQIP	Recycled Water Quality Improvement Plan
RWQMP	Recycled Water Quality Management Plan
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
SWMS	Safe Work Method Statement
TRIM	Total Records and Information Management
WQ	Water Quality
WHS	Workplace Health and Safety
WHSMS	Workplace Health and Safety Management System
WTP	Water Treatment Plant
WSAA	Water Services Association of Australia
WWT	Wastewater Treatment
WWTW	Wastewater Treatment Works





Term	Description
Aquamark	Asset management benchmarking framework developed by WSAA
Catchment	Area of land that collects rainfall and contributes to surface water (streams, rivers, wetlands) or to groundwater.
Chemwatch	Service provider specialising in maintaining a database of MSDS
Consultative Forum	A meeting that facilitates and provides an opportunity for community involvement in issues relevant to the performance of Hunter Water's obligations under the Operating Licence.
Consumer	Any person who consumes or uses the Services and includes, but is not limited to, a tenant or occupier of a Property
Critical control point	A point, step or procedure at which control can be applied and which is essential to prevent or eliminate a hazard or reduce it to an acceptable level.
Critical limit	A prescribed tolerance that must be met to ensure that a critical control point effectively controls a potential health hazard; a criterion that separates acceptability from unacceptability (adapted from Codex Alimentarius).
C.t.	The product of residual disinfectant concentration (C) in milligrams per litre determined before or at taps providing water for human consumption, and the corresponding disinfectant contact time (t) in minutes.
Customer	Any person who is taken to have entered into a Customer Contract under section 36 of the <i>Hunter Water Act 1991</i> , or to have entered into a contract on terms relating to the imposition of charges under section 43 of the <i>Hunter Water Act 1991</i> .
Disinfection	The process designed to kill most microorganisms in water, including essentially all pathogenic (disease-causing) bacteria. There are several ways to disinfect, with chlorine being most frequently used in water treatment.
Distribution system	A network of pipes leading from a treatment plant to customers' plumbing systems.
Drinking Water	Water intended primarily for human consumption but which has other personal, domestic or household uses such as bathing and showering.
Drinking water supply system	All aspects from the point of collection of water to the consumer (can include catchments, groundwater systems, source waters, storage reservoirs and intakes, treatment systems, service reservoirs and distribution systems, and consumers).
Ellipse	Software for information management
Hazard	A biological, chemical, physical or radiological agent that has the potential to cause harm.
Hazardous event	An incident or situation that can lead to the presence of a hazard (what can happen and how).
Inherent risk	The risk in the source water without treatment barriers in place.
Management system	A set of interrelated elements or components used to develop and implement policies and to manage any activities, products or Services, and includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources.
Maximum risk	Risk without existing barriers in place for example, treatment and/or disinfection. This is the maximum level of risk and in most instances it is the same as the inherent risk. However, there are a number of parameters whereby the treatment process adds to the risk, these include hazards such as trihalomethanes and chlorine. Therefore maximum risk is the total of the inherent risk and the additional risks added during treatment.
Multiple barriers	A series of barriers that ensure contaminants are at an acceptable level
Preventive measure	Any planned action, activity or process that is used to prevent hazards from occurring or reduce them to acceptable levels.
Quality assurance	All the planned and systematic activities implemented within a quality system, and demonstrated as needed, to provide adequate confidence that an entity will fulfil requirements for quality (e.g. AS/NZS ISO 8402:1994).
Recycled Water	Water that has been treated to a standard suitable for its intended end use such as industrial, commercial and/or household applications but is not intended for use as Drinking Water.
Requality	Water quality framework developed by WSAA



Residual risk	The risk remaining after consideration of existing preventive measures.
Reporting Manual	Hunter Water Corporation Reporting Manual dated July 2012
Risk	The likelihood of a hazard causing harm in exposed populations in a specified time frame, including the magnitude of that harm.
Services	Supply of water, provision of sewerage and drainage services, and disposal of wastewater.
Source water	Water in its natural state, before any treatment to make it suitable for drinking.
Validation	The substantiation by scientific evidence (investigative or experimental studies) of existing or new processes and the operational criteria to ensure capability to effectively control hazards.
Verification	Assessment of the overall performance of the water supply system and the ultimate quality of drinking water being supplied to consumers; incorporates both drinking water quality monitoring and monitoring of consumer satisfaction.





Appendix A: Detailed audit findings

36 CobbittyConsulting Engineering and Advisory Services



Section 1 - licence and licence authorisation

Table 8 Connection to services (clause 1.6.1)

Sub-clause	Requirement		Compliance grade
1.6.1	Subject to Hunter Water continuing to comply with any applicable law, Hunter Water must ensure that the Services are available on Full Compliance		Full Compliance
Risk		Target for full compliance	
	with the requirements of this clause poses a high risk that services may to properties that require them. Ultimately, this may present a risk to e environment.	Evidence that Hunter Water has ensured that Services are available any Property situated in the Area of Operations.	ole on request for connection to
Evidence sighted			
Sample document MSExcel Spreads Document (extrac	ation related to a Sewer Main Extension (refer Hunter Water, <i>Response to</i> ation related to a Subdivision (refer Hunter Water, <i>Response to 2014/15 At</i> heet: <i>Clause 1.6.1 - Statistical Data – 201415.</i> t): <i>Int 1.6.1 Section 50 Application Diary 19 Oct 2015</i> mpliance and Performance Report 2014-15, September 2015.		
Summary of reas	ons for grade		
demonstrated that Whilst Hunter Wa	nonstrated that it maintains, and implements, a process for managing appli it manages the application process through its TRIM document management ter was not able to specifically demonstrate that it had provided (or offered ter Water was assessed as being fully compliant with this obligation.	ent system and a Schedule 50 Diary in which all documents are logge	ed.
processed w growth acro	ised that: /15 Hunter Water processed approximately 1,686 development assessment ithin 60 days in accordance with the Hunter Water Act and connection po ss its area of operation and moderates timing and delivery of works to sup	ermitted where economically viable to do so. Hunter Water continu	
and that:			
Hunter Wate and construe	sewer network services are normally extended by the developer at the ti er provides a Notice-of-Requirements under Section 50 Act, stipulating on ct network extensions to provide a point of connection to sewer within eac then issued a 'Section 50 Compliance Certificate' to then create the subdi	what basis the development can be served. Typically, Hunter Water h lot and frontage to a standard water main. Upon completions of th	requires the developer to design
	Section 50 approval process is outlined on the Hunter Water website. Rele		
	vided example documentation, which demonstrated the "end-to-end' proce	ss for: (1) a sewer main extension; and (2) a subdivision. In each cas	e, documentation addressed:
 Section 50 A 	Application		

- Design Assessment and Contract Formulation
- Contract Delivery
- SWIMS Plan (Hunter Water digitally based spatial recording system)
- Receipts.

Hunter Water provided a spreadsheet showing the proportion of applications assessed within Regulatory and Corporate (Internal) timeframes. The total number of applications received and total number processed is recorded, however, the spreadsheet does not provide any indication as to the number of applications rejected. During the audit interviews, Hunter Water advised that whilst in some cases approval to provide services may be conditional, a positive response is provided for all applications.

Hunter Water further advised that where a development is remote (greater than 2 kilometres) from existing services, it will provide an initial estimate of cost and ask the developer if they want to continue before developing a detailed Notice of Requirements.

In response to a query regarding tracking of applications, Hunter Water:

- advised that each application is assigned a TRIM (records management system) number
- provided a copy of its Section 50 Diary, which showed a listing of live applications as at 19 October 2015.

In an endeavour to identify any failure to provide (or offer to provide) services where requested, the auditors reviewed information related to Customer Complaints as reported in Hunter Water's *Compliance and Performance Report 2014-15*. Whilst water and sewer service complaints are discussed in the report, there is no indication that any complaints related to a failure to provide services upon request.

Recommendations

There are no recommendations in respect of this sub-clause.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this sub-clause.



Section 2 – water quality

Table 9 Drinking water (clause 2.1.1)

Sub-clause	Requirement		Compliance grade
2.1.1	 Hunter Water must maintain a Management System that is consistent with: a) the Australian Drinking Water Guidelines; or b) if NSW Health specifies any amendment or addition to the Australian Drinking Water Guidelines that applies to HWC, the Australian Drinking Water Guidelines as amended or added to by NSW Health, (Drinking Water Quality Management System). [Note: It is generally expected that HWC will develop a system consistent with the Australian Drinking Water Guidelines, including the Drinking Water Quality Framework. However, where NSW Health considers it appropriate, the application of those Guidelines may be amended or added to, to take account of HWC circumstances and/or Drinking Water Quality policy and practices within New South Wales.] 		Full compliance
Risk		Target for full compliance	
	with this clause poses a significant risk to public health and may result in vater supplied to customers.	A Drinking Water Quality Management System that is complian <i>Heath Act 2010</i> .	nt with the ADWG and Public
Evidence sighted	1		
Drinking Water Q Operational Man Extract of Treatm Treatment Operation Integrated Manag	Quality Management System Sept 2015 (Hunter Water) Quality Management Plan PL-HW-20-7211-2 25/9/2015 (Veolia) agement Plan PL-HW-1-7100 (Veolia) ment Operations Contract CS0341 tions Contract Practice Note PN111 Drinking Water Standards gement System Manual - Version 2 mee detailed in Table 13.		
Summary of reas	sons for grade		
ADWG.	e audit, NSW Health had not specified any amendments or additions to the		
maintained on an	s established a Drinking Water Quality Management System (DWQMS) that intranet site that was demonstrated during the audit. The intranet site conta	ins links to relevant supporting documents, procedures, records and f	forms.
Management Syst prepared a Drinki	contracted by Hunter Water for the operation and maintenance of the WTPs tem assessed by an independent RABQSA Drinking Water Quality Manage ing Water Quality Management Plan (DWQMP) for the Hunter Water Treat n (OMP) PL-HW-1-7100, which forms the framework of the Integrated Ma	ement System Auditor no later than 12 months after the Services Con attment Operations Contract CS0341 in conjunction with the current I	nmencement Date. Veolia has
	epared by Hunter Water and Veolia are consistent with the requirements of red during the site visit.	the ADWG, display a high level of integration between the two organ	nisations and are consistent with



Discussion and notes

Detailed discussion and notes for Clause 2.1.1 and Clause 2.1.2 have been combined and are presented in Table 14.

Recommendations

No recommendations are made in respect of this clause.

Opportunities for improvement

No opportunities for improvement are identified in respect of this clause.

Table 10 Drinking water (clause 2.1.2)

Sub-clause	Requirement		Compliance grade
2.1.2	Hunter Water must ensure that the Drinking Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health.		Full Compliance
Risk		Target for full compliance	
	with this clause poses a significant risk to public health and may result in ater supplied to customers.	A Drinking Water Quality Management System that is fully implemen organisation.	ted throughout the
Evidence sighted			
 Grahamstown Campvale Pur Grahamstown Letter: NSW Health Evidence also as d Summary of reas NSW Health was a 	np Station Water Treatment Plant (WTP) h to Viridis Consultants P/L – Hunter Water Corporation 2014 – 2015 Lie etailed in Table 13. ons for grade usked to comment on Hunter Water's performance over the audit period. I		ed with the performance of
Hunter Water Corporation for the 2014 – 2015 operational period.' The site inspection and staff interviews confirmed that the DWQMS is implemented across the sites that were observed and there was a high degree of integration between Veolia and Hunter Water's systems. CCPs were implemented as documented in the DWQMS documentation. Notification and communication protocols between the organisations were demonstrated at audit.			
Discussion and no	otes		
Detailed discussion	n and notes for Clause 2.1.1 and Clause 2.1.2 have been combined and are	e presented in Table 14.	
Recommendation	s		
No recommendation	ons are made in respect of this clause.		



Opportunities for Improvement

It would be useful if the risk assessments all followed the same methodology. The risk assessments undertaken by Hunter Water and Veolia have different risk assessment criteria and assess risk at different points. For example, Veolia assess the risk at the end of each treatment process, Hunter Water assess the risk of the impact of a hazardous event on the final water quality. Whilst both methods are appropriate and meet the requirement of the ADWG, it would be more transparent from a risk management approach to apply the same methodology across the whole system.

Table 11 Drinking water (clause 2.1.3)

Sub-clause	Requirement		Compliance grade
2.1.3	Hunter Water must notify IPART and NSW Health of any significant changes that it proposes to make to the Drinking Water Quality Management System in accordance with the Reporting Manual.		Full Compliance
Risk		Target for full compliance	
	th this clause poses a significant risk to public health and may result in er supplied to customers.	Significant changes reported within the timeframes nominated in the R	eporting Manual.
Evidence sighted			
Report on Significan Minutes - NSW Hea Minutes - NSW Hea Letter - Request for Summary of reason Hunter Water's Rep period. This is in ac three significant cha	ort on Significant Changes to Operating Licence dated 31 March 2015 is cordance with the Reporting Manual. The changes related to the Water inges at the December 2014 and March 2015 NSW Health liaison meetir	notified IPART of three changes to the Drinking Water Quality Manager Treatment Contract, Laboratory Services Contract and CCP review. NSV	
Discussion and not	es		
The audit did not identify any additional changes to the DWQMS that were not notified to NSW Health. The changes that were notified to health were documented in the minutes to the meetings and within the Report on Significant Changes to Operating Licence. The significant changes relate to the new contract with Veolia that was established during the audit period. The new contractual arrangements require Veolia to develop the DWQMS for the treatment plants.			
Recommendations			
No recommendation	as are made in respect of this clause.		
Opportunities for 1	Improvement		
No opportunities for	improvement are made in respect of this clause.		



Table 12 Drinking water (clause 2.1.4)

Sub-clause	Requirement		Compliance grade
2.1.4	Hunter Water must obtain NSW Health's approval for any significant changes proposed to be made to the Drinking Water Quality Management System before implementing or carrying out its activities in accordance with them.Full Cont		Full Compliance
Risk		Target for full compliance	
	with this clause poses a significant risk to public health and may result in ater supplied to customers.	Significant changes to the DWQMS are not made prior to approval	from NSW Health.
Evidence sighted			
Minutes - NSW H Minutes - NSW H Agenda - NSW H Standard - Establi Grahamstown WT	Health 11th August 2014 feedback re re Treatment Operations Contract lealth Liaison Meeting - December 2014 lealth Liaison Meeting - March 2015 ealth Hunter Water Liaison Meeting September 2015 shing and Reviewing CCPs IP Example of SCADA control 1 of 2 IP Example of SCADA control 2 of 2		
Summary of reas	sons for grade		
	ificant changes are currently in the process of being implemented. NSW I wolved in the implementation of these proposed changes.	Health has approved the change to the contract. The changes to the DW	QMS are underway, and NS
Discussion and n	otes		
Contract to ALS i NSW Health has changes to the DV process and repres The following hav New treatme accessible to New Laborat Hunter Wate	s to the DWQMS include: Treatment Operations Contract – Veolia com n December 2014; CCP review workshop undertaken in June 2015 and re- supported via email the significant change related to the new treatment op WQMS, its representatives have been heavily involved throughout each of sentatives have attended the four most recent quarterly liaison meetings an <i>ve</i> been undertaken to facilitate the changes: nt operations contract - An intranet page dedicated to the new treatment of all staff. Hunter Water's current DWQMS manual includes reference to V tory contract - An intranet page dedicated to the new laboratory contract h r's current DWQMS manual also includes reference to ALS as Hunter Wa - A number of documents and management systems relating to CCPs colle nt documents and systems including Hunter Water's live DWQMS page.	vised CCPs presented to NSW Health September 2015. berations contract on 11 th August 2014. While NSW Health has not fo of the change processes and have provided verbal agreement. NSW H d the CCP review workshop in June 2015. operations contract has been developed, it is linked to Hunter Water's Yeolia's DWQMP as being a subset of Hunter Water's DWQMS. as been developed, it is linked to Hunter Water's DWQMS intranet pa ter's new laboratory services provider under Element 5. ectively form part of Hunter Water's CCP management within the DW	rmally approved the significa Health has been involved in t s DWQMS intranet page and tge and is accessible to all sta QMS. Updates were made to
Recommendation		cer register, standard for Establishing and Reviewing CCFs and SCP	лил.
	ons are made in respect of this clause.		
1 to recommendati	ons are made in respect of this clause.		



Opportunities for Improvement

No opportunities for improvement are made in respect of this clause.

Table 13 Detailed discussion and notes on the ADWG 12 elements

Element 1 - Commitment to drinking water quality management				
Discussion and notes	Evidence	Recommendations and OFI		
Drinking Water Quality PolicyThe Drinking Water Quality Policy is dated May 2015 and is signed by Managing Director Kim Wood. The policy outlines Hunter Water's commitment to water quality and implementing a Drinking Water Quality Management System consistent with the ADWG.Regulatory and Formal RequirementsThe Legal and Risk Register, with a print date of 14/9/15, was implemented during the audit period. The register identifies legal requirements and how they are relevant to Hunter Water's drinking water service.Legal and other requirements are communicated through water quality awareness training materials.Engaging StakeholdersFile note HW2006-2906/3/5.001 dated 30 January 2015 identifies internal and external stakeholders and how Hunter Water interacts with them. The Drinking Water Quality Key Stakeholder Register (ref HW2006- 2903/3/5.003) identifies relevant stakeholders and the engagement protocols.	Drinking Water Quality Management System Sept 2015 Drinking water policy Legal and Risk Register File note - Engaging Stakeholders.doc Register - Drinking Water Quality Key Stakeholders	N/A		
Element 2 - Assessment of the drinking water supply system				
Discussion and notes	Evidence	Recommendations and OFI		
 Water Supply System Analysis The Catchment Risk Assessment Background Paper for Tomaree and the HACCP Workshop Briefing Paper for Dungog and Grahamstown include flow diagrams of the supply systems. A line item in the agenda for the Tomaree background paper includes confirmation of the flow diagram. The risk report for Grahamstown and Dungog states that the flow diagrams were confirmed at the risk workshops. The documents also include descriptions of the system and additional figures and diagrams to describe the system. The field verification visits included Grahamstown Spillway, Campvale pump station and the Grahamstown WTP. The audit did not note any discrepancies in the documentation. Assessment of Water Quality Data The assessment of water quality data is presented in the Catchment Risk Assessment Background Paper for Tomaree and the HACCP Workshop Briefing Paper for Dungog and Grahamstown. Data analysis includes descriptive statistics and trending of performance over time. Hazard Identification and Risk Assessment Hunter Water assess risks under the Enterprise Risk Management Framework (HW2008-704/17). The Framework is Board approved and includes a set of risk criteria tools used in the risk assessment process. The 	DWQMS 2015 Drinking Water Quality Risk Assessment Calendar Extract Tomaree Catchment Risk Assessment 2015 Background Tomaree Risk Assessment Worksheet Extract Tomaree Catchment Risk Assessment 2015 Summary HACCP Workshop Briefing Paper_Dungog_FINAL VEO_HWO_HACCP_ RR_Dungog HACCP Workshop Briefing Paper Grahamstown FINAL -	Opportunity for Improvement It would be useful if the risk assessments all followed the same methodology. The risk assessments undertaken by Hunter Water and Veolia have different risk assessment criteria and assess risk at different points. For example, Veolia assess the risk at the end of each treatment process, Hunter Water assess the risk of the impact of a hazardous event on the final water quality. Whilst both methods are appropriate and meet the requirement of the ADWG, it would be more transparent from a risk management approach to apply the same		



consequence descriptors include a specific theme dedicated to water quality impacts. This descriptor sits alongside financial, regulatory/legal, safety, environmental, reputational, business continuity and service continuity consequences and ensures risk assessment discussions consider and rate any potential water quality impacts. The DWQMS (Sept 2015) states that risk assessments have been undertaken for all water supply systems in accordance with the <i>Drinking Water Quality Risk Assessment Calendar Extract</i> . Risk reports were provided for the risk assessments due to be undertaken in the audit period. <i>Drinking Water Quality Risk Assessment Calendar Extract</i> indicates the agreed dates with IPART for undertaking the risk assessments. Risk assessment evidence was provided for Tomaree, Dungog and Grahamstown as examples of risk assessments completed. The risk assessment summary and risk assessment worksheet extract for Tomaree shows the result of the risk assessment process. The workshops for Dungog and Grahamstown were undertaken in June 2015, with the final report finalised in July 2015. Risk registers were provided as evidence of the outcomes of the risk assessment. Risks were summarised in the risk reports. Maximum and inherent risk were assessed and given a risk score. Veolia is responsible for the treatment risk registers. The Grahamstown and Dungog risk registers were prepared by Veolia and have a slightly different layout. The risk is assessment assess the risk of a hazardous event based on the impact on the final treated water. Both risk methodologies are considered appropriate and meet the requirements of the ADWG. Whilst no gaps were identified during the audit, it would be advantageous from a risk management perspective, to apply the same methodology across the drinking water system. This would assist in	VEO_HWO_HACCP RR_Grahamstown - 201415 VEO_HWO_HACCP report13072015- 201415	methodology across the whole system.
assuring that there are no gaps in risk management.		
Element 3 - Preventive measure for drinking water quality management Discussion and notes	Evidence	Recommendations and OFI
	Enterprise Risk Management	N/A
 Preventive Measures and Multiple Barriers Preventive measures are identified and assessed under the ERM framework (HW2008-704/17). Risk registers for Tomaree, Dungog and Grahamstown demonstrate the identification and assessment of preventive measures and multiple barriers. The Tomaree risk register shows that where high residual risk remains, additional controls or improvements are identified. Under the contract, Veolia is required to produce management documentation covering drinking water quality and recycled water quality management for the plants and to meet contractual performance obligations including those related to water quality. Veolia has produced Operating Manuals for the WTPs, the <i>Grahamstown WTP Plant Operating Manual</i> was supplied as evidence. These manual document the implementation of the preventive measures for the treatment plants. Critical Control Points Risk Registers identify process steps that are CCPs. <i>Proposed Drinking Water Critical Control Points</i> (ref: TRIM HW2006-2906/7/5.015) lists the CCPs for each scheme. Critical limits and operational targets are also identified for each CCP. The critical limits identified in the Hunter Water plans, following the workshops with NSW Health, are being implemented by Veolia. All critical limits for CCPs have been hardcoded in the PLC set in SCADA. 	framework (HW2008-704/17) Tomaree Catchment Risk Assessment 2015 Background Tomaree Risk Assessment Worksheet Extract Tomaree Catchment Risk Assessment 2015 Summary HACCP Workshop Briefing Paper_Dungog_FINAL VEO_HWO_HACCP_ RR_Dungog HACCP Workshop Briefing Paper_Grahamstown_FINAL - VEO_HWO_HACCP_ RR_Grahamstown - 201415 VEO_HWO_HACCP	



A change to critical limit alarms would need to go through a SCADA change request and field staff need to physically attend site to alter the alarms. Automatic shutdowns are applied at all CCPs monitored continuously in SCADA. A new SCADA user group has been established to restrict the permissions of staff who can alter automatic shutdown setpoints. The implementation of critical limits at the Grahamstown WTP was demonstrated during the site verification visit. CCP tables, including critical and other relevant alert levels were displayed at the WTP, along with corrective actions. For network rechlorinators the automatic shutdowns are hardcoded in the PLC, and setpoints cannot be altered without attending site (not verified during site inspections). Veolia has developed the <i>HACCP Response Procedure</i> that covers the response to all of the identified CCPs. <i>CS0341 Treatment Operations Contract Practice Not PN111 Drinking Water Standards</i> outline the contractual requirements around the establishment and implementation of CCPs.	report13072015- 201415 Proposed Drinking Water Critical Control Points TRIM HW2006- 2906/7/5.015 CS0341 Treatment Operations Contract Practice Not PN111 Drinking Water Standards MN-HWT-20-7808 Grahamstown WTP Plant Operating Manual	
Discussion and notes	Evidence	Recommendations and OFI
 Operational Procedures Operational control of CCPs is implemented through Hunter Water's corporate SCADA system. Network CCPs are managed by Hunter Water internally through standard operational response procedures, and water treatment plant CCPs are managed by Veolia. Hunter Water has a suite of procedures for Network Operations and Maintenance available through the intranet. These were reviewed onsite and the sample of procedures were considered to be appropriate. Veolia document - Operational Management Plan for the Hunter Water Treatment Operations Contract CS0341 - June 2015 in Section 13 identifies how Veolia will operate the water supply system including: notifications to Hunter Water roles and responsibilities monitoring and actions to SCADA alarms procedures for corrective actions monitoring testing, calibration, chemical handling continual improvement. Veolia has also developed Operating Manuals for the WTPs, the Grahamstown WTP Plant Operating Manual was supplied as evidence. These manuals document the implementation of the preventive measures for the treatment plants. Operational Monitoring The Water Quality Monitoring Plan August 2015 has been progressively updated since 2013 and contains details of operational monitoring undertaken, including raw water sampling and online operational monitoring for 1June 	DWQMS Veolia HACCP Response 17.09.2015 Online Water Quality Performance and WTPs spreadsheet Veolia document - Operational Management Plan for the Hunter Water Treatment Operations Contract CS0341 - June 2015 Water Quality Monitoring Plan August 2015 Proposed Drinking Water Critical Control Points (ref: TRIM HW2006-2906/7/5.015) Technical specification bulk chemical supply – sodium hypochlorite. MN-HWT-20-7808 Grahamstown WTP Plant Operating Manual Water quality database – LabData Plant run sheet – 21 October 2015 (sighted during verification visit.	N/A



2015 - 30 June 2015 and demonstrates that operational monitoring is undertaken and records are kept. <i>E. coli</i> results were interrogated in the LabData database at sites in the distribution system and these aligned with the		
monitoring requirements.		
Corrective Actions		
<i>Proposed Drinking Water Critical Control Points</i> (ref: TRIM HW2006-2906/7/5.015) identifies the procedures for corrective actions for each CCP.		
The plant spreadsheets generate notification emails where non-CCP operational monitoring exceeds target criteria. The current version of the plant spreadsheet was sighted during the site verification (dated 21/10/15) as an example to demonstrate the record keeping and CCP reporting process. Whilst the spreadsheet date is outside the audit period, it had been used to confirm that the reporting process is implemented.		
Materials and Chemicals		
Laboratory Methods Manual MN-HW-24-7872-1 dated 17.06.2015 identifies calibration of Veolia equipment.		
The DWQMS identifies contracts for chemical supply. As current contracts with Hunter Water expire, Veolia is negotiating its own contracts in accordance with internal procedures. Veolia manages the contracts.		
The technical specification for the bulk supply of sodium hypochlorite was provided as evidence of a new contract for treatment chemicals. The specification includes requirements for testing and confirming the quality of the product received.		
Element 5 – Verification of Drinking Water Quality		
Discussion	Evidence	Recommendations and OFI
Drinking Water Quality MonitoringHW2006-2906/2/6.006 Drinking Water Quality Monitoring Plan August 2015 identifies the verificationmonitoring required for the system. It outlines the methodology for determining locations, number of samplesper population and frequency.Hunter Water currently has a contract for laboratory services with Australian Laboratory Services (ALS).	Water Quality Committee Meeting Minutes Monthly Water Quality Report Network Operations Water Quality Report	N/A

Discussion	Evidence	Recommendations and OFI
Communication Corporate Emergency Management Plan (Version 5, December 2014) provides guidance on how to establish a Communications Coordination Team and to maintain proactive communications with all key stakeholders during incidents or emergencies. HV2011-662/14/5.002 Emergency Response Communications Plan further details the steps to undertake during an emergency and the requirements for communication during an incident or emergency. Incident and Emergency Response Protocols Within its Integrated Management System (IMS) Hunter Water has defined a corporate, standardised approach for managing all incident types, including drinking water. This approach is documented within the document <i>Standard – Incident Management</i> which specifies that all identified incidents (of all severity types) are reported both internally and externally, recorded and investigated and that the root causes are to be identified with the aim to prevent recurrence. The standard also defines that where any incident is deemed a "Major or Emergency Level Incident" the Emergency Management process is triggered and takes precedence until the reicident is no longer classified as an 'Emergency', it then returns to the incident management process. This Standard references the underpinning procedures that define the specific notification and response required for each incident type. Drinking Water Quality Incidents are defined within 'Criteria for Notification to NSW Health' which sets out events of potential public health significance that are notifiable to NSW Health. Major simulated emergency management discussion exercises. NSW Health, in its letter to IPART recommended that the audit include a review of the response and debrief to the East Cost Low weather event with very heavy rain, gale-force winds with guts up to 130 km per hour, and waves of up to 11 metres in height. By 12:30 pm on Tuesday 21 April, ten wastewater treatment works were without power, and five could not be accessed. Veolia and Hunter Water cooperated in	Integrated Management System (IMS) Report - Hunter Water NSW Health Debrief April 2015 Super Storm 20150630 East Coast Low Severe Weather Debrief Corporate Emergency Management Plan Emergency Response Communications Plan Criteria for Notification to NSW Health	N/A

Element 7 – Employee Awareness and Training		
Discussion	Evidence	Recommendations and OFI
 Employee Awareness and Involvement The Corporate Induction Programme, for all staff focuses on delivering information on Hunter Water's QMS and requirements including drinking water and the requirements of the ADWG. During the induction programme all Hunter Water employees are made aware of the Quality, Drinking Water Quality, and Recycled Water Quality Policies. All policies are available on the Hunter Water website and the 'policies' intranet page. In addition, the Quality Policy is displayed on the noticeboard outside the lifts on each floor, and the Drinking Water Quality Policy and the Recycled Water Quality Policy are available of their respective intranet pages. Employee Training All Hunter Water staff and contractors complete the Drinking Water Quality Training and Awareness Program. This program includes awareness of the Australian Drinking Water Guidelines and compliance requirements Hunter Water is required to adhere to in order to protect public health and continue to provide safe and reliable drinking water. The Drinking Water Quality Management System is hosted on Hunter Water's intranet for all staff to view. 	Employees - August 2014 – 201415 Edmore Material Drinking Water Quality Awareness Assessment and answers – 201415 Presentation - Quality Induction Training_Employees – 201415	N/A

Element 8 – Community Involvement and Awareness

Discussion	Evidence	Recommendations and OFI
Community consultation is undertaken through Hunter Water's Community Consultative Forum. Minutes were provided as evidence of meetings. Minutes document attendees, presentations, various reports, and discussion items. An example invitation to a meeting about the Tillegra Riparian Improvement Project the was provided as evidence of consultation with the public. Communication A Factsheet for the Tillegra Riparian Improvement Project was provided as evidence of communication on projects undertaken in the community, which contains questions and answers on the project. Media releases on the fencing of Williams River and the use of additional chlorine dosing following storms demonstrates how Hunter Water uses the media to communicate issues to the public.	MinutesCommunity- Consultative-Forum-3-February- 2015 FAQ - Community Information Morning Dungog Tillegra Riparian Improvement Project Questions Answers Sheet Australian-First-Fencing-of- Williams-River-to-Continue- Despite-Tillegra-Land-Sales Media-ReleaseExtra-Chlorine- used-to-Disinfect-Water- Following-April- Tillegra Riparian Improvement Project Consultation Meeting invitation 2 December 2014	N/A

Element 9 – Research and Development		
Discussion	Evidence	Recommendations and OFI
 Investigative Studies and Research Monitoring The Disinfection Optimisation Strategy (DOS) is a project that was progressed in the audit period. A Planning Review Committee Paper (30 September 2014) was provided as evidence of progression on the project. The business case of Stage 1B of the DOS was also provided to demonstrate progress on the project. The following documents provide evidence of Hunter Water's participation in research and development projects: Letter of commitment was provided as evidence of participation in a project investigating the fate of cyanobacteria metabolites and a research project regarding remote sensing and smart monitoring with Water Research Australia. Letter of confirmation of participation in a research project regarding microbial source tracking was provided as evidence to demonstrate participation in investigative studies. File note: Request to participate in a source catchment water quality treatment assets project (Ref TRIM: HW2009-1367/3/21). An agreement with WSAA dated June 2015 was provided as evidence of participation in a project regarding emerging pathogens. Letter of confirmation for Water Quality in Campvale Canal Honours Project. Meeting minutes of the innovation meeting between Veolia and Hunter Water. Validation of Processes The DOS was completed in 2014 with the objective of improving the persistence of a disinfection residual (free chlorine) within the distribution system. Stage 1B business case is the next step in implementing the findings from the initial investigation. Previous audit found that HWC participated in WSAA's HBT pilot program, in part to close out recommendation 2012/13-4 to assess the risk from the Medowic catchment. The HBT methodology developed by WSAA was used to determine the log reduction value (LRVs) required for the Dungog and Grahamstown WTPs. The assessments showed a shortfall in the LRV achieved when compar	Disinfection Optimisation Strategy - PRC Paper Disinfection Optimisation Strategy - Stage 1B - Preliminary Business Case Emerging Pathogens - WSAA Participation Agreement Fate of Cyanobacterial Metabolites - Letter of Commitment - Water Research Australia Microbial Source Tracking - HWC signed letter of support Remote Sensing & Smart Monitoring - HWC Letter of support Source Catchments as Water Quality Treatment Assets - Approval to Participate Water Quality in Campvale Canal Honours Project - Confirmation of Funding Innovation Meeting Minutes	Opportunity for Improvement It would be useful for Hunter Water to include a close out process to address the outcomes of any health based target assessments undertaken to assess drinking water risks.
Element 10 – Documentation and Reporting	·	
Discussion	Evidence	Recommendations and OFI
Management of Documents and Records Hunter Water uses HP Records Manager (TRIM) as a record management system.	HP Records Manager (TRIM) Standard – Corporate Document	N/A



Data and microleway, and microleway definition of the constrained and microleway definition of the constrained of t	During staff interviews, the intranet site was demonstrated and included locations for:	Control HW2013-421/22.002	
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ALS uses a commercial-off-the-shelf system developed by LabWare to record and report samples and test results. Updated dual from LabWare is provided daily to update Hunter Water's in-house developed LabData System. Requirements. Standard - Corporate Document Control HW2013-421/22.002 and Procedure - Manage Document Control HW2013-430(67 2015 Quarterly) Stradagie Risk Update Reports W2012-441/9.1002 form Hunter Water Sourcement control framework. W2013-430(67 2015 Quarterly) Stradagie Risk Update Reports Veolia has its own document management system, 'On Tap' that is used for all of its Australian and New Zealand operations, which is based on SharePoint. The document manager. HW2013-430(67 2015 Quarterly) W2006-1417 Water Quality Critical Committee) Reporting The Compliance Calendar identifies external reporting requirements. HW2013-430(67 2015 Quarterly Strategic Risk Update Reports. Quarterly Risk Indicators provided to the Beceutive Management Team (EMT) HW2014-1179 Performance at Drinking Water Quality Critical Control Points. HW2006-1417 Water Quality Committee). HW2006-1417 Water Quality Critical Control Points. HW2006-1417 Water Quality Critical Control Points. HW2006-1417 Water Quality Committee). HW2006-1417 Water Quality Critical Control Points. HW2006-1417 Water Quality Committee). HW2006-1417 Water Quality Committee). HW2006-1417 Water Quality Committee). HW2006-1417 Water Quality Committee). HW2006-1417 Water Quality Committee). HW2006-1417 Water Quality Committee).<	1 2		
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of online monitoring performance, water quality exception reporting and zone means and network operations Monitoring & Measurement of	previous 12 months for relevant parameters in each system.	Meeting Notes (16 July 2015)	



Audit of Drinking Water Quality Management External audits are undertaken by IPART annually and audit records are kept on TRIM. An internal AQUALITY audit of Hunter Water's water supply system was commenced in May 2015, and is currently being finalised. The last completed AQUALITY audit was completed in October 2012. This is documented at HW2006-2906/9/6.012 AQUALITY Review 2012. Hunter Water has an <i>Internal Management System Audit Program</i> developed annually, taking into consideration the status and importance of the activities and areas to be audited as well as results from previous audits	DRAFT Report Aquality Review 2015	
Element 12 – Review and Continual Improvement Discussion	Evidence	Recommendations and OFI
Review by Senior Executive System's performance data is tabled at meetings of the <i>Water Quality Committee</i> (HW2006-1417 Water Quality Committee) in accordance with <i>Procedure – IQMS Management Review Meeting</i> HW2013-421/11.006. Drinking Water Quality Management Improvement Plan <i>Drinking Water Quality Management Improvement Plan</i> HW2006-2906/10/2.005 2014-17 identifies the improvement actions from the risk assessments, sources of the actions, due dates and responsibilities. IPART recommendations are also included in the improvement plan extract. The <i>Annual Compliance and Performance Report</i> is reviewed by senior executives and includes proposed, current (ie underway) and recently completed improvements to drinking water quality management.	Water Planning Monthly Report - August 2015 Annual Compliance and Performance Report Drinking Water Quality Management Improvement Plan and extract	N/A



Table 14 Recycled water (clause 2.2.1)

Sub-clause	Requirement	Compliance grade
2.2.1	 Hunter Water must maintain a Management System that is consistent with: a) the Australian Guidelines for Water Recycling; or b) if NSW Health specifies any amendment or addition to the Australian Guidelines for Water Recycling that applies to HWC, the Australian Guidelines for Water Recycling as amended or added to by NSW Health, (Recycled Water Quality Management System). [Note: It is generally expected that HWC will develop a system consistent with the Australian Guidelines for Water Recycling, including the Recycled Water Quality Framework. However, where NSW Health considers it appropriate, the application of those Guidelines may be amended or added to, to take account of HWC's circumstances and/or Recycled Water Quality policy and practices within New South Wales.] 	Full Compliance
Risk	Target for full compliance	
	a this clause poses a significant risk to public health and the environment of specification recycled water supplied to customers or discharged to the Government requirements.	the AGWR and any NSW
Evidence sighted		
Edgeworth Recycled KIWS RWQMP RWQMP for Edgewo	Hunter Water KIWS (Veolia)	
Summary of reason	s for grade	
During the audit peri- required to produce a Hunter Water and its <i>Water Recycling</i> (AC addition, during the a During the audit per Veolia has establishe In the audit period, programs, communic	dit NSW Health had not specified any amendments or additions to the AGWR that apply to Hunter Water. od, Hunter Water awarded the contract to operate its drinking and wastewater treatment plants, including the recycled water schemes to Veolia. Il the necessary documentation relating to its area of operations. contractor Veolia are well advanced in establishing and maintaining a Recycled Water Management System (RWQMS) that is consistent with GWR). There is a high degree of integration between the documentation prepared by the two organisations despite the contract being in its f udit period, Hunter Water achieved certification of its Quality Management System and Environmental Management System. iod, a Corporate Recycled Water Quality Management Plan was established, that documents Hunter Water's recycled water operations and d scheme specific RWQMPs, the Edgeworth and KIWS RWQMPs were provided as examples. supporting documentation to facilitate the establishment of the RWQMS was also developed including monitoring plans, training and aw ation protocols, incident and emergency response protocols, reporting mechanisms and operational procedures. varded for the establishment of the RWQMS.	he Australian Guidelines for rst year of establishment. In its interactions with Veolia



Discussion and notes

Detailed discussion and notes for Clauses 2.2.1 and 2.2.2 have been combined and documented in Table 17.

Recommendations

No recommendations are made in respect of this clause.

Opportunities for Improvement

Hunter Water should ensure draft documents are finalised within the next audit period.



Table 15 Recycled water (clause 2.2.2)

Sub-clause	Requirement		Compliance grade
2.2.2	Hunter Water must ensure that the Recycled Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health.		High Compliance
Risk		Requirement for full compliance	
	this clause poses a significant risk to public health and the environment of specification recycled water supplied to customers or discharged to the	A recycled water management system that is fully implement operations.	ted cross Hunter Water
Evidence sighted			
EdgeworthKIWS, include	uding the Mayfield West AWTP o Viridis Consultants P/L – Hunter Water Corporation 2014 – 2015 Licence	e Plan Audit dated 13 October 2015.	
Summary of reasons	for grade		
Whilst the RWQMS is implementation of the be completed by Nov	risit observed that Hunter Water and Veolia are well advanced in the implet s being established, a number of key elements of the AGWR are yet to be c critical limits and alarms is linked to the finalisation of the validation pro- ember 2015. The CCPs and other key elements to be implemented under t mented, a grade of High Compliance was awarded for for sub-clause 2.2.1.	implemented, including the establishment and implementation of the gram and the endorsement of the critical limits by NSW Health. The	validation program is due
Discussion and notes	3		
Detailed discussion a	nd notes for Clauses 2.2.1 and 2.2.2 have been combined and documented i	n Table 17.	
Recommendations			
	commence implementation of the CCPs as soon as possible and finalise va then be adjusted or refined in accordance with the outcomes.	lidation program. Once the validation program is completed and the o	outcomes endorsed by NSV
Opportunities for In	nprovement		
Hunter Water should editable or protected (unities for improvement were identified in respect of this clause: ensure that all SCADA alarm limits are visible to operators and CCP sho (for example in the Automatic Control and Monitoring Manual (ACMM)). ensure that data analysis and trending is undertaken prior to the risk asses		
risk.	ensure that the long-term review of water quality data and system performa		1

Table 16 Detailed discussion and notes on the AGWR 12 elements

Discussion and notes	Evidence	Recommendations an OFI
Responsible Use of Recycled Water Tables 1-2 and 1-3 of the Corporate RWQMP identify the internal and external stakeholders with expertise to ensure the responsible use of recycled water. Regulatory and Formal Requirements Table 1-3 of the Corporate RWQMP identifies a basic list of relevant legal and other requirements for recycled water. Regulatory requirements are generally identifies in the Corporate RWQMP (Table 1-3). Hunter Water utilise a compliance calendar, which sits under the Legal and Risk team and is referred to under the ISO9000 certified Quality Management System. The Legal and Risk Team notifies and sends out emails about regulatory reporting dates, this was demonstrated during audit interviews, notifications include owners, due dates, status, completion date. All corporate requirements are captured in the compliance calendar, and during audit interviews the quarterly reporting requirements were observed. The Legal and Risk Team follows up on completion. The Scheme RWQMPs for KIWS and Edgeworth identify legal and other requirements for the respective scheme. Customer-specific recycled water user agreement outline that each customer should communicate responsibilities and accountabilities to all staff, contractors and visitors to the site. Partnerships and engagement of stakeholders Tables 1-2 and 1-3 of the Corporate RWQMP identify the internal and external stakeholder with expertise to ensure the responsible use of recycled water. The Consultative forum is used for wider engagement with community and the website contains fact sheets and general recycled water. WQMP's identify partnerships and agreements with recycled water users in Table 1-2. Scheme RWQMP's have been developed over the audit period	Corporate Recycled Water Quality Management Plan Edgeworth Recycled Water Quality Management Plan Kooragang Industrial Water Scheme RWQMP Veolia's RWQMP for Edgeworth WWTW (draft with track changes) Veolia's RWQMP for KIWS Site inspection reports Oceanic coal Waratah golf Course Orica Customer Supply Agreements: Oceanic Coal Recycled Water Agreement Waratah Golf Club Recycled Water Agreement Orica Recycled Water Agreement	N/A
Element 2 – Assessment of the Recycled Water System	·	
Discussion and notes	Evidence	Recommendations and OFI
Sources, Routes of Exposure, Receiving Environments and Intended Uses The scheme specific RWQMPs (Edgeworth RWQMP was provided as an example) contain a description of the sources. The risk	Corporate Recycled Water Quality	Opportunity for Improvement



assessment briefing paper includes an assessment of exposure and intended uses, including a log reduction estimate. Recycled Water System Analysis The risk assessment briefing papers provide comprehensive description of the system. The system analyses for the Edgeworth and KIWS RWQMPs were reviewed during the site verification visits. The scheme specific RWQMP (Edgeworth RWQMP was provided as an example) contain a description of the treatment processes. The Edgeworth WWTP flow diagram is to be updated, as indicated in the improvement plan, once CCPs have been finalised. The improvement plan has items to review and update flow diagrams once CCPs are finalised, this will be an initial one off update and will then be undertaken annually. Assessment of Water Quality Data Simple data analysis is provided in the scheme specific RWQMP (Edgeworth RWQMP). Trending of water quality was not undertaken for the risk assessments but will be part of the annual review as noted in the Improvement Plan register. Hazard Identification and Risk Assessment Risk assessments have been incorporated into site-based RWQMPs which are with NSW Health for endorsement. The risk assessments associated with the scheme RWQMPs have been completed. Edgeworth and KIWS RWQMPs were provided and reviewed as part of the audit. NSW Health has requested a rolling review of these be spread out during the 5 year operating licence, however a schedule is yet to be finalised. The RWQMP (including schematics) will be reviewed as the CCP's are finalised following the validation process as identified in the Improvement Plan.	Management Plan Edgeworth WWTW RWQMP risk assessment briefing paper Edgeworth WWTW RWQMP risk assessment workshop handout Edgeworth WWTW risk workshop attendance Edgeworth WWTW risk assessment workshop Edgeworth WWTW risk assessment report - Oceanic Coal Edgeworth WWTW risk assessment report - Oceanic Coal Edgeworth WWTW risk assessment report - Waratah Golf Club	Hunter Water should ensure that data analysis and trending should be undertaken prior to the risk assessment and utilised during the risk assessment process to inform the assessment and quantify the risk.
Element 3 – Preventive measure for recycled water management		
Discussion and notes	Evidence	Recommendations and OFI
Preventive Measures and Multiple BarriersCCP's have been identified for all recycled water schemes and are detailed within scheme RWQMPs. Interim target and critical limits have been developed (for existing schemes) and will be finalised as part of the Hunter Water Validation Program. NSW Health have endorsed this process. Edgeworth and KIWS RWQMPs were provided as evidence.Edgeworth Log Reduction Assessment was provided as an example of assessment of preventive measures and multiple barriers. Log reductions required for the proposed end uses have been estimated and the barriers assessed to determine if there is adequate treatment to meet the log reductions, this is documented in the risk assessment summary report. Unacceptable risk is discussed in the risk assessment summary reports. Where the residual risk has not been reduced to an acceptable level recommendations have been made in the risk registers and summary reports.Assess Preventive Measures and Identify Critical Control Points Establishment and Review of Recycled Water CCP Standard (dated August 2015) documents the process for identifying CCPs, and the process for having them approved. KIWS RWQMP identifies CCPs and the process for determining them in the HACCP Plan (Appendix B).Critical limits have been reviewed but have not yet been updated in SCADA. The aim is to have the SCADA updated by end of financial year. Hunter Water engage the subcontractors to update SCADA, Veolia are in the process of requesting the hard coding for KIWS from Hunter Water.Some critical limits are already entered into SCADA but the documentation to confirm what has been coded is not available. Currently	Corporate Recycled Water Quality Management Plan Establishment and Review of Recycled Water CCP Standard (August 2015) KIWS RWQMP Edgeworth RWQMP Edgeworth WWTW Log Reduction Assessment	Recommendation It is recommended that Hunter Water commence the implementation of the CCPs as soon as possible and finalise validation program. Once the validation program is completed and the outcomes endorsed by NSW Health, CCPs should then be adjusted or refined in accordance with the outcomes. Opportunity for Improvement







the only way to review the hardwiring is to observe the process while it is being coded. At audit it was identified that the next step of the SCADA review is to have hardcoding documented in the ACMM.		Hunter Water should ensure draft documents are finalised within the next audit period. Hunter Water should ensure that all SCADA alarm limits should be visible to operators and CCP should be documented in a format that can be reviewed for accuracy regardless of whether they are editable or protected (for example in the ACMM).
Element 4 - Operational Procedures and Process Control		
Discussion and notes	Evidence	Recommendations and OFI
Operational Procedures The scheme RWQMPs identify operational procedures. The KIWS RWQMP identifies operational procedures in Section 4.4.1. Operational procedures are retained by Veolia in its document control system. Veolia is developing their detailed operational procedures, building on the existing Hunter Water procedures, for the operations and maintenance of the WWTWs and recycled water schemes. Operational Monitoring The AGWR require that monitoring protocols to be developed for the operational performance of the system, including operational parameters and criteria and document that the protocols are documented in an operational monitoring plan. Operational monitoring plans are contained with the scheme RWQMP. Both the Edgeworth and KIWS RWQMPs contain tables that	Corporate Recycled Water Quality Management Plan KIWS RWQMP Edgeworth RWQMP Laboratory Methods Manual MN-HW-24-	N/A
identify the operational monitoring required under the scheme, including location, parameters frequency (mostly online) and targets. Veolia has prepared a calendar and guide sheets for operational monitoring. The monitoring run sheet was sighted during the audit interview (dated 21/10/15). Run sheets are sent to a shared mail box that the technical team manages. Scheduling is facilitated through the contract. Schedule 9 relates to the monitoring plan and was used to develop the guide sheets. Where a scheduled sample has not been taken, an alert is sent by the laboratory. Any unreceived sample alerts sent by ALS, flows through to Veolia and Hunter Water. An unreceived sample report was sighted at audit interviews (dated 19/10/15).	7872-1 Extract of <i>Treatment</i> <i>Operations Contract</i> <i>CS0341</i> Technical specification bulk chemical supply –	
Weekly exceedences reports are sent by ALS, generated with a list of target values that are reported against. A report is also sent within 24 hours of an exceedence.	sodium hypochlorite.	
A weekly microbiological exceedences report was sighted at audit interview (dated 14/10/2015). Additional evidence included the recycled water report spreadsheet prepared by Veolia.		



is in the process of rebuilding macros for alerts and reporting.		
The Kurri plant spreadsheet was sighted at audit interview; at present there is no schedule for operational monitoring however that is being reviewed and rolled out. There is review of the results that may note where sampling may have been missed.		
Operational Corrections		
The KIWS RWQMP identifies operational corrections for CCPs in the HACCP plan (Appendix B). Non critical operational corrections are contained with in SOPs on the document control system.		
Table 4-1 of the Edgeworth RWQMP provides a summary of Hunter Water's corrective actions for the Oceanic Coal and Waratah Golf Course. Veolia is developing more detailed corrective action procedures, building on the existing HWA procedures, for the operations and maintenance of the WWTW.		
Equipment Capability and Maintenance		
The suitability of equipment is assessed during construction specification development and the tender processes. An installation procedure, prepared by the Contracts Manager, is implemented to ensure the suitability of the supplied equipment materials. Procurement is evaluated during the ISO 9000 QMS processes and approved products and suppliers are identified on the Hunter Water website.		
Material and Chemicals		
<i>Laboratory Methods Manual</i> MN-HW-24-7872-1 dated 17.06.2015 identifies calibration of Veolia equipment. Under the contract, Veolia is required to establish contract for chemical supply as the Hunter Water contracts expire. Veolia will negotiate and manage its own contracts in accordance with internal procedures.		
The technical specification for the bulk supply of sodium hypochlorite was provided as evidence of a new contract for treatment chemicals. The specification includes requirements for testing and confirming the quality of the product received.		
Ordering delivery and testing procedures have been developed for each of the chemical types. There is a chemical delivery tab on the plant spreadsheet, which includes the delivery number and batch number for tracking purposes.		
Element 5 – Verification of Recycled Water Quality and Environmental Performance		
Discussion and notes	Evidence	Recommendations and OFI
Recycled Water Quality Monitoring	Corporate Recycled	N/A
The <i>Recycled Water Quality Monitoring Plan April 2015</i> identifies the verification monitoring for each scheme. Where there is a non-conformance, reporting notifications procedures are implemented.	Water Quality Management Plan	
Application Site and Receiving Environment Monitoring	Recycled Water Quality	
Any impacts to the application site and environment are assessed during the risk assessment process and are discussed in the site RWQMPs. The annual site audits conducted at customer sites includes an assessment of the general environment and application site.	Monitoring Plan April 2015	
Documentation and Reliability	KIWS RWQMP	
The sampling is documented in the <i>Recycled Water Quality Monitoring Plan April 2015</i> .	Edgeworth RWQMP	
Satisfaction of Users of Recycled Water	Recycled Water Report for Mayfield West	
The Connerge RWOMP identifies how Hunter Water raview the estisfaction of recurds water users. During the annual site visite	ior wayneid west	

The *Corporate RWQMP* identifies how Hunter Water review the satisfaction of recycle water users. During the annual site visits, customer satisfaction is assessed and reported in the recycled water report. The Mayfield West report was provided as an example. The protocol for notifications by customers are identified in the customer agreements. In addition, Hunter Water has an established Customer



Oceanic Coal Recycled Water Agreement



Contact Centre. Call centre staff are trained in handling complaints. Monthly contract report contains results of complaints – an example report was shown at audit interviews. Short-Term Evaluation of Results A Recycled Water Report for Mayfield West for 10/2/2015 - 3/3/2015 demonstrated short term evaluation of results. Corrective Responses Procedures for corrective responses are documented in the operational procedures located within the Hunter Water and Veolia documents and records management systems. Corrective responses for critical and alert limit exceedences are captured on the CCP tables, located and displayed at the treatment plant (Tables at Mayfield West AWTP were viewed during the site verification visit). Hunter Water is emailed of wastewater quality exceptions from its Contract upon the identification of a result above the target levels for its Recycled Water Schemes and also for its EPA Licence requirements. Veolia Water is provided with data from Hunter Water's contract laboratory daily. This information is loaded into a database which can be extracted to produce a number of weekly and monthly reports	Waratah Golf Club Recycled Water Agreement Orica Recycled Water Agreement	
Element 6 – Management of Incidents and Emergencies		'
Discussion and notes	Evidence	Recommendations and OFI
Communication	HW2008-1592/8/2	N/A
Communication and notifications are detailed in the <i>Recycled Water Quality Incident Response Procedure</i> which includes a flow chart for notifications and reporting. The procedure includes contacts for Hunter Water, Veolia, the local hospital, EPA and NSW Health.	Recycled Water Quality Incident Response	
Incident and Emergency Response Protocols	Standard Operating Procedure	
Incidents and emergency procedures are detailed within the <i>Recycled Water Quality Incident Response Procedure</i> which sets out the procedures to be adopted to identify and respond to events that are outside those normally expected and to escalate the event to an incident. Veolia maintains an incident register which records events including CCP excursions and recycled water supply interruptions	Report to NSW Health re: CCP failure at KIWS	
and quality issues. These events are also recorded in Veolia's RIVO system. Reports relating to the KIWS CCP incident were provided to demonstrate the implementation of the incident response protocol.	Veolia report regarding KIWS CCP incident	
Element 7 – Operator, Contractor and End User Awareness and Training		
Discussion and notes	Evidence	Recommendations and OFI
 Operator, Contractor and End User Awareness and Involvement Recycled water policy and CCP tables are displayed at WWTWs and AWTPs. KIWS CCP tables and policies were sighted during the site verification visits. Awareness for end users is facilitated through the risk assessment process, customer contracts and site audits. For example, Orica operators were given an overview of the KIWS system. The RWQMS intranet workspace also serves as a platform for staff awareness and access to recycled water documentation, policies and procedures. Operator, Contractor and End User Training A recycled water training presentation was provided as evidence of the training program. The presentation was comprehensive with scheme specific information. The training register was provided showing the certifications and competencies of operational staff, identifying where requirements were met and not met. Records of training undertaken by Veolia were provided for July – August, identifying training in the Environmental Protection Licence 	Recycled Water Awareness Training Training Register Attendance sheets Screen shot of RWQMS workspace Oceanic Coal Recycled Water Agreement Waratah Golf Club Recycled Water	N/A



and Reuse.	Agreement Orica Recycled Water Agreement Oceanic Coal Site Inspection 24/11/14 Waratah Golf Club Site Inspection 15/5/15 Orica Site Inspection 30/6/15	
Element 8 - Community Involvement and Awareness Discussion and notes	Evidence	Recommendations and OFI
Consultation with users of recycled water and the community Site inspection records were provided for Orica (30/6/15) and Oceanic Coal (24/11/14). These documented discussions such as using recycled water for firefighting and undertaking exposure assessments. Community consultation is undertaken through Hunter Water's Community Consultative Forum. Minutes were provided as evidence of meetings. Minutes document attendees, presentations, various reports, and discussion items. In addition, the Community Liaison Officer is starting to review options for school tours around Mayfield West AWTP. Communication and Education Recycled Water customers are made aware of their obligations via their individual customer agreements. Hunter Water also hold an annual formal site inspection, where customer obligations are discussed. The recycled water customers were involved in the risk assessment process and have their own RWQMP.	Oceanic Coal Recycled Water Agreement Waratah Golf Club Recycled Water Agreement Orica Recycled Water Agreement Oceanic Coal Site Inspection 24/11/14 Waratah Golf Club Site Inspection 15/5/15 Orica Site Inspection 30/6/15 MinutesCommunity- Consultative-Forum-3- February-2015	N/A
Element 9 – Validation, Research and Development		
Discussion and notes	Evidence	Recommendations and OFI
Validation of processes Validation testing program for water recycling schemes (June 2015) has been prepared and is currently being implemented. The validation program will be undertaken to demonstrate the pathogen log reduction achieved by wastewater treatment works. During the audit interviews it was stated that validation monitoring has commenced, and event monitoring will be undertaken when conditions allow (e.g. rainfall events). Once the validation testing is completed (scheduled for finalisation by the end of November 2015) and endorsed by NSW Health, the findings will be implemented on site (critical limit alarms for CCPs). An email to NSW Health was provided as evidence to demonstrate that NSW Health has been notified of the program which has been	Validation testing for recycled water schemes (June 2015) Email to NSW Health regarding Validation Program KIWS RWQMP	N/A



developed to fill evidence gaps relating to pathogen reduction at wastewater treatment works.	Minutes - Innovation	
Design of Equipment	Committee meeting for	
The KIWS RWQMP includes a validation report in Appendix E, which demonstrates that treatment performance has been considered in the design and construction of new infrastructure.	29 June 2015	
Investigative Studies and Research Monitoring		
An innovation committee has been established as required under the Contract to facilitate research and development and the investigation of new and emerging issues. Minutes of the Innovation Committee meeting for 29 June 2015 were provided as evidence.		
Element 10 – Documentation and Reporting		
Discussion and notes	Evidence	Recommendations
	2,140100	and OFI
Management of Documentation and Records Hunter Water's QMS is now certified under ISO 9000 and forms part of the IMS. Document control is undertaken through the Intergrum database. Review dates are programmed as part of the metadata for documents as part of the review process. The review alert is rolled out of days before the review due date. Veolia documentation relating to the contractual requirements are accessible to Hunter Water. During the audit interviews, the document control systems of both Veolia and Hunter Water were demonstrated, with records of email notifications, monitoring and reports retrieved for review. Veolia has its own document management system "On Tap" for all of its Australian and New Zealand operations, which is based on SharePoint. The document management system comprises of mandatory reads and scheduled review periods. All copies are reviewed by Hunter Water. Document review is managed through HP document manager. Reporting Internal A weekly Recycled Water Quality Summary Report (email provided 4/3/15) is distributed to key Hunter Water and Veolia personnel. This report displays recycled water quality results and flags results that may need further investigation. Veolia prepares a monthly report during the month at any of Hunter Water's WWTW. Daily operating data is readily available from the WWTW operational spread sheets and monthly recycled water use figures are distributed to key personnel throughout Hunter Water. Under the INS, internal reporting also includes monthly, quarterly, divisional and Executive Management Team reporting as well as some dashboard reporting. Minutes of a Monthly Recycled Effluent Meeting (3/2/15) were provided as further evidence of internal reporting. External Hunter Water holds quarterly Liaison Meetings with NSW Health with a scheduled agenda item that discusses recycled water development and issues as well as annual reporting of recycled water quality data from the WWTW to EPA as part of Licence Annual Returns. Hunter Water is required to NSW Health.	Recycled Water Quality Summary Report Corporate RWQMP Monthly Recycled Effluent Meeting (3/2/15)	N/A
Element 11 – Evaluation and audit		
Discussion and notes	Evidence	Recommendations and OFI
Long term evaluation of results	Recycled Water	Opportunity for





 Long term trending of performance is captured in the Improvement Plan register and a procedure will need to be developed for the long term review of data, which ideally should be undertaken annually. Audit of Recycled Water Quality Management The Corporate RWQMP states that the recycled water management system will be audited in accordance with Hunter Water's <i>Procedure – Determine Annual Management Systems Audit Programme</i>. Veolia has undertaken internal and external auditing of sites. Under the contract, Veolia Water as required to achieve and maintain certification of various management systems for the duration of the contract. In July 2015 Veolia Water achieved certification for: ISO 22000 - Food Safety Management Systems ISO 22000 - Food Safety Management Systems ISO 14001 - Environmental Management Systems AS4801 - Occupational Health and Safety Management Systems. The auditing schedule spreadsheet was provided as evidence of the audit program. An example internal audit report provided as evidence <i>(IQMS Internal Audit Report July 2015)</i>. This audited the implementation of Management System: Production & service provision Control of monitoring & measurement devices Control of nonconforming product. 	Improvement Plan register Corporate RWQMP Determine Annual Management Systems Audit Programme IQMS Internal Audit Report July 2015 Auditing Schedule Spreadsheet	Improvement Hunter Water should ensure that the long- term review of water quality data and system performance is undertaken at least annually.
Element 12 – <i>Review and continuous improvement</i> Discussion and notes	Evidence	Recommendations
Discussion and notes	Evidence	and OFI
Review by Senior Management The Corporate RWQMP states that on-going improvement and review is currently facilitated through many processes including: • quarterly Hunter Water and NSW Health Liaison Committee Meetings • Recycled Water Steering Committee meetings • monthly Operational Recycled Water meetings with Veolia. Quality review on the compliance schedule includes a 6 monthly review of components of all systems. Recycled Water Quality Management Improvement Plan Table 12.1 of the Corporate RWQMP identifies the proposed improvements and the Improvement Program Spreadsheet contains a detailed list of all improvements required, including responsibilities, due dates and links to the evidence of actions. Review of the improvement plan indicates that where gaps in the management system exist, an improvement action is attributed with a due date for completion. A number of actions have been completed by the due date.	Recycled Water Improvement Plan register Corporate RWQMP	N/A



2014/15 Operational Audit of Hunter Water Corporation - Final Audit Report

Section 4 – assets

Table 17 Asset management system (clause 4.1.1)

Sub-clause	Requirement		Compliance grade	
4.1.1	 Hunter Water must maintain a Management System that is consistent with: a) the BSI PAS 55:2008 (PAS 55) Asset Management standard; or b) the Water Services Association of Australia's Aquamark benchmark c) another asset management standard agreed to by IPART, (Asset Management standard agreed to by IPART) 		High Compliance	
Risk		Requirement for full compliance		
	with the requirements of this clause poses a high level of operational risk in health, the environment and the ability of Hunter Water to meet its business	Evidence to demonstrate that Hunter Water has maintained an Asse consistent with the adopted guidance (in this case the Aquamark be		
Evidence sighte	d			
Evidence sighted Hunter Water, Response to 2014/15 Audit Questionnaire, 25 September 2015. Hunter Water, Asset Management Framework (Revision 2), 17 November 2010. Hunter Water, Asset Management Policy: Version 1, June 2012. Hunter Water, Asset Management Policy: Version 1, June 2012. Hunter Water, Asset Management Policy: Version 2 (druft), September 2015. Hunter Water, Compliance and Performance Report 2014-15, September 2015. Hunter Water, Enterprise Risk Management Framework (Version 3.0), February 2013. Hunter Water, Ourofielo Management Guide, May 2012. Hunter Water, Rusiness Case Template. Hunter Water, Guideline – Capital Project Programs (QG043). Hunter Water, Cuideline – Capital Projects Post Completion Review Guideline (Version 2.3), September 2014. Hunter Water, Enterprise Risk Management Framework (Version 3.0), February 2013. Jacobs, WWPS Risk Profile Assessment; Hunter Water - WWPS Dry. Weather Overflow Risk Assessment Methodology (Revision 1), 31 August 2015. Hunter Water, Dungog WTP - Electrical Inspection, Engineering Report, 4 December 2014. Hunter Water, Quitoin Assessment; Burvood Beach WWTW (Revision 0), September 2014. Hunter Water, Quitoin Assessment; Burvood Beach WWTW (Revision 0), September 2014. Hunter Water, Quitoin Assessment; Burvood Beach WWTW (Revision 0), September 2014. Hunter Water, Quitoin Assessment; Burvood Beach WWTW (Revision 0), September				

Hunter Water, QAI 005 - Asset Information Standard 5 - Ellipse Work Groups.

Hunter Water, Work Instruction 001 – Working on Potable Water Mains and Fittings.

Hunter Water, Work Instruction 002 - Working on Gravity Sewer Mains and Sewer Fittings.

Hunter Water, Integrated Asset Management System – Implementation Plan (Planning Review Committee Paper), 24 February 2014.

QEM Consulting, ISO 55001: Gap Analysis Report, 30 March 2015.

Summary of reasons for grade

Hunter Water demonstrated that it has continued to maintain and actively improve its Asset Management System through implementation of the initiatives identified through its participation in the IWA-WSAA 2012 Asset Management Performance Improvement Project.

Improvement initiatives related to "Alignment of Capability with Objectives" and "Challenging of Business Cases" are considered to have been substantially addressed and substantial progress has been made in respect of the remaining initiatives related to "Consistent Maintenance Management", "Consistent Management and Operation of Critical Assets" and "Review and Update of Operations and Maintenance Procedures". Specific actions that still need to be completed (these are currently in progress) in order to fully implement these remaining initiatives include:

- capture of asset and related maintenance information for all assets in the Asset/Maintenance Management System
- completion of detailed asset risk profiling across all asset classes
- completion of the review and update of operational and maintenance procedures.

Full implementation of the resultant changes across the whole of the asset portfolio will, however, take time and Hunter Water's forecast of July 2017 completion (in readiness for proposed ISO 55001 accreditation) is considered realistic.

Accordingly, it is assessed that Hunter Water has demonstrated a high level of compliance with this obligation.

Discussion and notes

Overview:

The Auditor undertook a detailed review of Hunter Water's Asset Management System as part of the 2012/13 Operational Audit, and a further review as part of the 2013/14 Operational Audit. As a consequence, this year's audit has again been more focused on reviewing and gaining an understanding of changes that have occurred during the audit period (ie. the 2014/15 financial year). It has, however, also sought to ensure that the key elements of the Asset Management System have been maintained.

Hunter Water advised that it was one of 37 water sector utilities that:

"... used the Water Services Association of Australia's Aquamark benchmarking tool as part of the IWA-WSAA 2012 Asset Management Performance Improvement Project."

Under the WSAA Benchmarking Program, independent validation of water utilities' self-assessments (undertaken using the Aquamark benchmarking tool) in respect of the management of their assets is undertaken on a four yearly cycle. Assessed performance is then benchmarked against industry peers and opportunities for improvement identified for each utility.

Hunter Water advised that its Asset Management Framework, which is aligned to Aquamark:

"... provides the architecture for Asset Management related plans, processes and practices and helps identify the linkages between the Strategic Business Plan, divisional business activities and the initiatives being undertaken within each activity. Asset Management at Hunter Water incorporates the full life cycle, from initial customer service and environmental impact assessment, through planning, creation, operation, maintenance and renewal to asset disposal."

Hunter Water reiterated its previous advice that:

"In 2014 Hunter Water made a commitment to implement the ISO55000 series of asset management standards, as part of the Integrated Quality Management System (IQMS) project. The aim of the initial implementation plan is an asset management system consistent with ISO55000 by 30 June 2017. The initial phase of the implementation plan, the Gap analysis, has been completed."

also noting that:

"Hunter Water continues to develop, review and update, where necessary, existing Asset Management documentation in response to the ISO55001 Gap analysis and as part of the transition process to an ISO55000 consistent Asset Management System with a focus on ensuring asset management practices are aligned with corporate objectives."

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By way of example, Hunter Water provided copies of its existing Asset Management Policy and a draft replacement.

Improvement Initiatives:

Whilst moving to develop its system such that it is consistent with ISO 55001, Hunter Water has continued to improve its Asset Management System in accordance with the recommendations arising from the 2012 WSAA Aquamark Benchmarking Program during 2014/15.

As in the previous year, recommendations arising from the Benchmarking Program continue to be implemented through the identified five (5) key initiatives. Progress in respect of each of these, which is reported in more detail in the *Compliance and Performance Report 2014-15*, is summarised as follows:

Initiative 1 – People and capability – alignment of capability with objectives:

This initiative requires the alignment of organisational asset management capability with asset management objectives. It involves a change of emphasis from asset creation to asset life cycle management, affordability and value for money. Divisional and functional restructures undertaken in 2012 addressed resource allocation, role clarification and competency development aspects of this initiative.

Strategic programs being implemented to improve corporate asset management capability include:

- transition to a ISO 55001 complaint Asset Management System (see further discussion below)
- integrating the Asset Management System with the other components of Hunter Water's Integrated Quality Management System (IQMS), the Work Health and Safety, Environmental and Quality components of which were certified in December 2013, October 2014 and August 2015 respectively.
- Initiative 2 Rigorous business case challenging:

As noted in the 2013/14 Operational Audit report, Hunter Water has revised and improved its internal governance processes in relation to business case development and approval. It continues to implement these processes, which are aimed at ensuring efficient expenditure across the full life cycle of its assets. A sample of relevant process/guideline documentation includes:

- o Capital Portfolio Management Guide
- o Gateway Approval Process Guideline
- o Business Case Template
- Project Plan Template
- o Guideline Capital Project Programs
- o Guideline Capital Projects Post Completion Review.

An example of process implementation related to the Grahamstown Dam Wall Protection Works project is discussed in Table 18.

• Initiative 3 – Maintenance management:

Hunter Water has continued to implement initiatives to ensure a more consistent maintenance management approach across its civil, mechanical and electrical assets. Improvement initiatives include the transfer of all maintenance activities to the corporate Enterprise Resource Planning (ERP) application, Ellipse; a centralised control centre and dispatch service; and an integrated management system (work practices) for quality, environment and safety.

A centralised operational control centre and maintenance dispatch function commenced operation in 2015. This centralisation will enable consistency in maintenance management processes and implementation of appropriate work practices and support improvements in maintenance related reporting and analysis. This new centre was inspected and its operation explained during the audit interviews.

All maintenance work practice documentation (including safe work method statements, standards and work instructions) is being progressively updated and version-controlled as part of the IQMS, thereby improving accuracy, relevance and consistency. Work Instructions WI 001 *Working on Potable Water Mains and Fittings* and WI 002 *Working on Gravity Sewer Mains and Sewer Fittings* were provided as examples.

• Initiative 4 – Critical asset operation and resilience:

Hunter Water is implementing programs to effectively manage critical assets. Asset criticality is determined using risk assessment tools consistent with the corporate *Enterprise Risk Management Framework*; the assessed criticality is aligned with the consequences of potential asset failure.



Hunter Water has completed preliminary criticality assessments for all physical assets. A draft asset risk profile methodology for sewer pumping stations (*WWPS Risk Profile Assessment*) was prepared in 2014/15 and recently finalised. Detailed asset risk profiling has also commenced for water network mains and fittings, rising mains, carrier mains and dams. Programs have also been developed/implemented in respect of:

o assets subject to statutory or legislative compliance in respect of safety or environmental impact

- implementation of procedures to manage operational change, including emergency/incident management and contingency planning, with a progressive implementation in respect of wastewater pumping stations and rising mains during 2014/15
- implementing condition assessment/monitoring procedures and preventative maintenance programs, undertaking failure analysis and developing business cases for critical asset improvements, with a focus on dams, treatment plants and electrical assets in 2014/15.

Condition assessments completed during 2014/15 have included:

- o Dungog Water Treatment Plant Civil and Mechanical Condition Assessment and Electrical Engineering Condition Inspection
- o Burwood Beach Wastewater Treatment Plant Civil and Mechanical Condition Assessment and Electrical Engineering Condition Inspection.
- Initiative 5 Operations and maintenance procedures:

This initiative is aimed at ensuring that procedures are current, accessible and managed within a formal quality management system. Hunter Water has been progressively updating operational and maintenance work practices into IQMS templates that incorporate operational change, contingency plans and maintenance work practices which take into account environmental, health and safety obligations in conjunction with asset management obligations. The key areas completed are electrical safety; treatment plant operation protocols; environmental sampling procedures; and inspection procedures for the Chichester Trunk Gravity Main (CTGM) and catchment. In 2014/15, contingency plans and key information summary documents were reviewed or developed for all critical waste water pump station sites and uploaded onto the internal intranet system. Examples of updated documentation include:

- Operational Change Permit for Critical Wastewater Pumping Stations (template)
- o Contingency Plan for Belmont 6 Wastewater Pumping Station.

Hunter Water also conducted a major review of work practices and procedures for electrical safety, which have now been incorporated into the electrical safety management system. Work practices related to hazardous chemical sites were reviewed in 2014/15 and are being updated.

Veolia Water commenced operation and maintenance of Hunter Water's treatment plants under a new "Treatment Operations" contract in October 2014. The contract includes a requirement that a complete review of Hunter Water's preventive maintenance program be undertaken by Veolia within 12 months after the services commencement date. Hunter Water advised that Veolia has undertaken the required review and its recommendations are now being considered in combination with the outcomes of condition assessments by Hunter Water.

Maintenance Management:

As noted above in respect of improvement Initiative 3, Hunter Water has been working towards the transfer of all of its civil maintenance activities from its *Asset Operations and Maintenance System* (AOMS) to the Ellipse ERP application; mechanical and electrical maintenance is already managed via Ellipse. During the audit interviews, Hunter Water advised that an upgrade of Ellipse (as reported in the 2013/14 Operational Audit Report) had been completed during the audit period.

Hunter Water further advised that it is now reassessing the benefit of integrating AOMS across to the Ellipse platform. The intent in transferring to Ellipse was to enable a move to a mobility solution, however, that option is no longer available via Ellipse. A disadvantage of AOMS in comparison to Ellipse is that it does not capture financial information at a suitably disaggregated level.

In conjunction with the upgrade of Ellipse (and as part of the improvement initiatives), Hunter Water has developed a series of Asset Information Standards, which set out requirements/guidelines in respect of (for example): QAI 001 Equipment Identifiers and Groups; QAI 002 Equipment Hierarchy and Descriptions; QAI 003 Equipment Nameplates; QAI 004 Equipment Classifications; and QAI 005 Ellipse Work Groups.

As also noted above, Hunter Water has centralised operational control centre with maintenance dispatch functionality. Working in conjunction with the control centre are maintenance planners, who have a broader understanding of whole of system maintenance requirements, and system controllers whose roles include triage of problems as they arise and making risk based assessments based on their understanding of broader system performance.

In respect of maintenance planning, there has been a move to proactive rather than reactive maintenance (in line with the strategic direction).



Asset Management Plans:

Hunter Water advised that it had continued to develop its Asset Class Management Plans during 2014/14. These plans link asset management requirements for groups of similar assets with corporate objectives. The *Asset Class Management Plan – Sewer Rising Mains* was provided as an example. Review of this document revealed that it addresses aspects that would normally be expected, including: Levels of Service; Asset Inventory; Asset Condition; Risk Profile; Asset Operation; Asset Maintenance; Asset Planning; Asset Reliability; and Asset Management (Improvement) Planning.

ISO 55001 Compliance:

In respect of the move towards an ISO 55001 compliant Asset Management System, Hunter Water has developed a *Preliminary Implementation Plan* which sets out an initial program for achieving this objective. The implementation program, which is to be refined following completion of a gap analysis, was as follows:

- Stage 1 Gap and Overlap Analysis (February June 2014)
- Stage 2 Review of current situation (July October 2014)
- Stage 3 Development of a detailed implementation plan (November December 2014)
- Stage 4 Consultation and preparation of draft documentation (2015)
- Stage 5 Finalisation of documentation (January June 2016)
- Stage 6 Training and full implementation (July December 2016).

A gap analysis, the objective of which was to "assess (at high-level) compliance with ISO 55001:2014 with a view to confirming realistic 3rd Party Certification intentions for 2017" was completed in April 2015. This analysis will:

"... support the development of a detailed and targeted implementation plan to ensure the asset management system meets the asset management objectives of customer service and asset compliance while balancing affordability and financial sustainability. Implementation of the new standard will be developed through [integration] with the IQMS project, which will create consistency of management systems across Hunter Water".

Summary:

Hunter Water has continued to maintain and actively improve its Asset Management System through implementation of the initiatives identified through its participation in the IWA-WSAA 2012 Asset Management Performance Improvement Project.

Improvement initiatives related to "Alignment of Capability with Objectives" and "Challenging of Business Cases" are considered to have been substantially addressed, although it is likely that further improvement will occur as Hunter Water moves towards ISO 55001 certification.

Substantial progress has also been made in respect of the remaining initiatives related to "Consistent Maintenance Management", "Consistent Management and Operation of Critical Assets" and "Review and Update of Operations and Maintenance Procedures", with strategic directions identified and structural changes developed and partially implemented. Full implementation across the whole of the asset portfolio will, however, take time and Hunter Water's forecast of July 2017 completion (in readiness for proposed ISO 55001 accreditation) is considered realistic.

Recommendations

It is recommended that Hunter Water continues to fully implement improvement initiatives in respect of:

- the development and implementation of a holistic approach to maintenance management
- the complete capture of all asset and related maintenance information in its Enterprise Resource Planning (Asset/ Maintenance Management) System
- criticality and condition assessment
- review and update of operational and maintenance procedures

across the whole of the asset portfolio.

Opportunities for improvement

No opportunities for improvement were identified for this sub-clause.



Table 18 Asset management system (clause 4.1.2)

Sub-clause	Requirement		Compliance grade
4.1.2	Hunter Water must ensure that the Asset Management System is fully imp with the system.	unter Water must ensure that the Asset Management System is fully implemented and that all relevant activities are carried out in accordance ith the system.	
Risk		Requirement for full compliance	
	with the requirements of this clause poses a high level of operational risk in health, the environment and the ability of Hunter Water to meet its business	Demonstrated implementation of asset management practices requirements of the Asset Management System.	in accordance with the
Evidence sighte	d		
Hunter Water, A Hunter Water, M Hunter Water, M Document: Int 4 Document: Clau Document: Clau Document: Clau Hunter Water, B Hunter Water, F Hunter Water, B Document: Clau Document: Clau Document: Clau Document: Clau	esponse to 2014/15 Audit Questionnaire, 25 September 2015. sset Management Plan; Grahamstown Dam (Version 2.0), 11 June 2014. York Instruction 022 – GRH Dam – Dam Safety Inspections. York Instruction 025 – GRH Dam – Piezometer Levels. 1 - 2015-03-13_grahamstown dam inspection form. 1 - 2015 03 19 Piezometer Readings Grahamstown Dam. Sse 4.1.2 - Gateway 1.1 Grahamstown Dam Wall Protection Works – 201415. Sse 4.1.2 - Gateway 1.1 Grahamstown Dam Wall Protection Works – 201415. Sse 4.1.2 - Gateway 3 - Grahamstown Dam Wall Protection Works – 201415. Sse 4.1.2 - Gateway 3 - Grahamstown Dam Wall Protection Works – 201415. Sse 4.1.2 - Gateway 3 - Grahamstown Dam Wall Protection Works – 201415. Susiness Case; Grahamstown Dam Wall Protection Works – 201415. Susiness Case; Grahamstown Dam Wall Protection Works – 201415. Susiness Case; Grahamstown Dam Wall Protection Works, 23 T065: Gateway Approval Process Guideline (Revision 2.0). Susiness Case Template. Sse 4.1.2 - Early Warning Report of Process water pipe failure at Grahamstown Sse 4.1.2 - Notification of Shutdown Grahamstown WTP to repair process water Sse 4.1.2 - Operations Handover Portal - Grahamstown WTP shutdown – 20141 mologies, Edgeworth WWTW UV Disinfection Operation and Maintenance Mar	June 2015. <i>WTP</i> – 201415. <i>pipe</i> – 201415. 5.	
Summary of re	с		
treatment plant of system.	monstrated through the provision of sample documentation, auditor observat peration and maintenance service provider that the Asset Management System s assessed that Hunter Water has fully complied with this obligation.		
Discussion and	notes		
1	of the Asset Management System was assessed by: a sample of implementation related documentation		

- consideration of explanations provided during audit interviews
- observations made during field verification site inspections
- discussions with representatives of Hunter Water's treatment plant operation and maintenance service provider, Veolia.

Asset Management Planning and Implementation:

Hunter Water provided a copy of the Grahamstown Dam Asset Management Plan for review. Whilst Hunter Water develops Asset Class Management Plans in respect of the majority of its assets (for example, for Sewer Rising Mains and Drive Controllers), it has developed site specific Asset Management Plans for its dams.

Review of the *Grahamstown Dam Asset Management Plan* revealed that it addresses aspects that would normally be expected, including: Levels of Service; System Description; Asset Inventory; Asset Condition; Asset Criticality; Risk Profile; Asset Operation; Asset Maintenance; Asset Planning; Asset Reliability; and Asset Management Planning (including dam safety, operational and maintenance improvements, and renewals).

Implementation of Asset Management Plans is supported by procedural documentation such as (for example): Work Instructions WI 022 *GRH Dam – Dam Safety Inspections* and WI 025 *GRH Dam – Piezometer Levels*. It is noted that these documents have been prepared in the new format pursuant to Improvement Initiative 5 (refer Table 17).

The requirement for dam safety inspections (daily; reporting) and piezometer readings (3 monthly) at Grahamstown Dam is specified in the Asset Management Plan. Evidence that these activities are carried out was provided by the following records:

- Weekly Routine Dam Safety and Maintenance Inspections report for 13 March 2015
- Reading of Piezometer Levels on 19 March 2015.

These are consistent with the inspection and reporting requirements documented in the Asset Management Plan.

Capital Investment:

Hunter Water provided documentation associated with the Grahamstown Dam Wall Protection Works project as an example of its capital investment related processes. This included:

- Gateway 1 Project Initiation approval
- Gateway 2 Request for Development Funding approval
- Gateway 3 Request for Delivery Funding approval
- Business Case (Revised)
- Post Completion Review Report.

Review of this documentation revealed that it appeared to have been completed in accordance with the relevant procedural guidance, including the Gateway Approval Process Guideline and Business Case Template.

Site Inspections:

As part of the audit, site inspections were made of a number of assets including:

- Grahamstown Dam Spillway
- Campvale Pumping Station
- Grahamstown Water Treatment Plant (WTP)
- Mayfield West Advanced Water Treatment Plant
- Edgeworth Wastewater Treatment Plant.

A summary of observations made at and/or in respect of each facility is as follows:

- Grahamstown Dam Spillway:
 - o This is a PMF rated Labyrinth Spillway; it follows a "zig zag" alignment in order to achieve the required spillway length within the confines of the site.
 - o There is an adjacent gated outlet which is used for reservoir level control only; it is usually opened in parallel with an overflow event.



- Piezometers are in place to monitor pore pressures under the spillway. The adjacent saddle dam is monitored for seepage.
- An ultrasonic level meter located at the end of the spillway (and adjacent to the outlet gate house) is used to monitor reservoir level. A subsequent check of SCADA records confirmed consistent readings (SCADA and site) at the time of inspection.
- Crane hoists (WCGRAIRRCR03/04) for drop board installation/removal are installed in the gate house. Review of Ellipse records confirmed that these hoists are scheduled for 3 monthly and annual inspections, which is consistent with the requirement documented in the *Grahamstown Dam Asset Management Plan*. These inspections are scheduled by the Maintenance Planner on a monthly basis with the task assigned to the relevant service contract manager.
- A diesel generator (WCGRAIRRGE01) located at the site is scheduled, in Ellipse, for maintenance on the first Wednesday of each month. The maintenance activity includes: visual inspection; check fuel and oil levels; run under load; and return to auto setting.
- All assets at the site appeared to have been well maintained and were in good condition.
- Campvale Pumping Station:
 - This pumping station has a function which is primarily drainage related. As the Grahamstown Dam, when constructed, interrupted a natural drainage path, Hunter Water was required to manage the stormwater flows; these are pumped into the adjacent reservoir.
 - The facility comprises four (4) pumpsets each of 1,520L/sec capacity. The pumps start incrementally as required in response to incoming stormwater flows.
 - Other assets at the site include electrical and control equipment and a crane (within the building). It is noted that Hunter Water owns its own high voltage power supply network in the area, which supplies this installation.
 - It is possible to remove the roof of the building if required for access purposes.
 - o Mechanical and electrical equipment were in good condition (an overhaul of the pumpsets has recently been undertaken).
 - The building is in need of painting. A number of steel corbels on the outside of the building (purpose not apparent) were severely corroded and in need of attention.
- Grahamstown Water Treatment Plant (WTP):
 - o Operation and maintenance of this facility is undertaken under contract by Veolia (refer further discussion below).
 - Veolia's Asset Management Policy (amongst others) was displayed in the office area; this can be taken to demonstrate a commitment to effective asset management practices.
 - A new chemical dosing facility was being constructed (nearing completion) in order to maintain hazardous chemical compliance. This will enable removal of existing chemical storage tanks which were in need of maintenance.
 - Currently active and potential Work Orders were displayed on a notice board in the office area. They included (for example):
 - Stage 1 Filter 7 inlet valve fails
 - Stage 2 Tank 2 offline (observed during inspection)
 - Stage 2 Rake 1 Rusted Roller.
 - o The Instrument Calibration Checklist for the week commencing 19 October 2015 (outside the audit period) was sighted.
 - As an example of operational control, Hunter Water provided documentation related to shutdown of the plant to enable repair of a process water pipe. Documentation included: an Early Warning Report notification from Veolia to Hunter Water; a Notification of Change from Veolia to Hunter Water and an extract from Hunter Water's Operations Handover Portal.
 - Areas of corrosion were observed on some outdoor equipment (including clarifier rake drive equipment) and some handrails around the plant.
 - Otherwise the plant was in generally well maintained and in good condition.
- Mayfield West Advanced Water Treatment Plant:
 - o This recycled water treatment plant is a relatively new facility; it is operated and maintained by Veolia under contract (refer discussion below).
 - o A brief inspection of this facility revealed that it appeared to comply with relevant design standards applicable in respect of recycled water and that it is well maintained.
- Edgeworth Wastewater Treatment Plant:



- o This wastewater treatment plant produces effluent for reuse as well as discharge to the Toronto Wastewater Treatment Plant.
- o Assets appeared to be generally well maintained and in good condition.
- A question arose in respect of replacement requirements for the UV lamps. Review of the UV Disinfection Operation and Maintenance Manual revealed that lamp replacement is required after 12,000 hours operation. Procedures for disassembly and reassembly of the lamp are included in the manual.

Veolia Operation and Maintenance Services:

As noted in Table 17, Veolia Water has been engaged to undertake operation and maintenance of Hunter Water's treatment plants under a contract arrangement, commencing in October 2014. During the site inspections, discussions were held with Veolia's maintenance supervisor (who is based at the Mayfield West Advanced Water Treatment plant) to gain an appreciation of the arrangements that are now in place. A summary of observations arising from the discussion is as follows:

- Veolia has a team of eight (8) technicians and two (2) apprentices undertaking Hunter Water maintenance activities. This resource can be supplemented by panel contractors with whom Veolia has extensive prior experience.
- Veolia has undertaken an extensive review of the maintenance regime currently being implemented (specified by Hunter Water) and has submitted recommended changes for consideration by Hunter Water. The objective is to implement a regime that is efficient and optimises asset life cycle costs.
- Veolia is seeking to develop its personnel into operator/maintainer roles rather than engaging maintenance tradespersons. Key contractors will maintain some specific items of equipment under monthly work orders issued by Veolia.
- Details of all breakdown, scheduled and reactive work orders will be captured back into Hunter Water's Ellipse maintenance management platform. Work orders will be generated through Veolia's maintenance management system (Infor EAM) and transmitted to field computer tablets. Details will be captured via the tablets for collation and subsequent uploading to Ellipse. At this stage, the upload to Ellipse is a manual process, however, there is potential for direct upload. Hunter Water advised that a recent check had confirmed that information is being uploaded.
- It is noted that the information provided by Veolia includes costing for each work order.
- Copies of all relevant Operation and Maintenance Manuals are available at Veolia's maintenance depot/office at Mayfield West (sighted during the interview) and the specific sites.
- In respect of training of Veolia personnel:
 - o All personnel undertake typical workplace training (bullying, etc)
 - Statutory and safety training is undertaken as appropriate
 - Product training, provided by technical staff from equipment suppliers, is undertaken as appropriate (eg. pump training by Xylem; instrument training by Endress and Houser).
 - o Relevant licensing/certification must be held; Veolia retains copies of licences/certificates and undertakes competency assessments
 - All operators are either Certificate 2 or 3 water/wastewater accredited
 - Updates on new technology are provided.
- In respect of service boundaries, it was noted that Veolia does not maintain high voltage equipment, only low voltage. SCADA hardware is maintained by Veolia, however, Hunter Water manages the software.
- As an example of process, response to a reactive maintenance problem is as follows (this process is subject to audit):
 - A work order is raised in Infor EAM (by anyone)
 - The work order is validated by a supervisor
 - A maintenance planner or supervisor reviews, prioritises and assigns the activity (including a time allocation)
 - The work order is assigned to an individual and added to their work list
 - The job is scoped, parts ordered, etc
 - The job is completed and changed to "reported state" in Infor EAM
 - Financial details are assigned before being "closed out" in Infor EAM

- The work order details are loaded into Ellipse.
- All information, including costs, is reported back into Ellipse, thereby making the information available for the overall management of the assets. It is noted that Veolia has been assigned a separate area within Ellipse.
- There is information sharing across the boundaries between the two parties.
- The transition process has been deemed to have been well implemented. Veolia personnel "shadowed" Hunter Water Australia for a period prior to contract commencement; there had been a three (3) month period between Veolia winning the contract and going "live".

Based on observations made during the audit interviews and field verification inspections, it was evident (in the opinion of the auditors) that there has been benefit to Hunter Water as a result of the engagement of Veolia Water to undertake the operation and maintenance of its treatment facilities. Specific points of note are:

- the transition to Veolia appears to have been very well managed
- there has been a benefit resulting from Veolia's management approach
- the capture of financial information related to maintenance activities will be a valuable input for future asset management renewal planning.

Conclusion:

On the basis of the discussion presented above, it is apparent that Hunter Water fully implements, and manages its assets in accordance with, its Asset Management System.

Recommendations

There are no recommendations in respect of this sub-clause.

Opportunities for improvement

It would be prudent for Hunter Water to investigate and repair corrosion on:

- steel corbels on the outside of the building at the Campvale Pumping Station
- on the Stage 1 clarifier rake drive equipment at the Grahamstown Water Treatment Plant.

Furthermore, it is suggested that Hunter Water reviews its procedures to ensure that the condition of corrosion protection systems is kept under constant review, and that maintenance is undertaken when required, for all assets and asset components.



Section 5 – customers and consumers

Table 19 Providing information (clause 5.2.2)

Sub-clause	Requirement		Compliance grade		
5.2.2	Hunter Water must update the pamphlet prepared under condition 5.2.1 when variations are made to the Customer Contract.		No Requirement		
Risk	Risk Requirement for full compliance				
1	the pamphlet presents a high risk of Customers and Consumers not being rights and obligations under the Customer Contract.	Evidence that the pamphlet prepared under clause 5.2.1 of the Lie variation has been made to the Customer Contract.	cence has been updated if a		
Evidence sighted					
	Hunter Water, <i>Response to 2014/15 Audit Questionnaire</i> , 25 September 2015 Hunter Water, <i>Customer Contract</i> , 1 July 2011.				
Summary of reasons for grade					
Hunter Water advis this obligation.	Hunter Water advised, and the auditors confirmed, that there had been no changes made to the Customer Contract during the audit period. Accordingly, there was no requirement to comply with this obligation.				
Discussion and notes					
Hunter Water advised that: <i>"There were no changes to the Customer Contract in 2014-15."</i> The auditors reviewed the current version of the <i>Customer Contract</i> as published on Hunter Water's website and confirmed that the 1 July 2011 version remains effective.					
Recommendations					
There are no recon	There are no recommendations in respect of this sub-clause.				
Opportunities for	Opportunities for improvement				
No opportunities for	No opportunities for improvement have been identified in respect of this sub-clause.				



Table 20 Consultative forum (clause 5.5.1)

Sub-clause	Requirement		Compliance grade	
5.5.1	Hunter Water must maintain and regularly consult with its Customers and Consumers through a Consultative Forum.		Full Compliance	
Risk		Requirement for full compliance		
operations. In	sult with its Customers and Consumers poses a moderate risk to Hunter Water's the absence of Customer and Consumer input, Hunter Water may not be aware nd Consumer perceptions of issues relevant to its performance.	Evidence that Hunter Water has maintained and regularly con Consumers through a Consultative Forum.	nsulted with its Customers an	
Evidence sigh	ited			
Hunter Water, Forum-Minute Hunter Water, Consultative-F Hunter Water, Consultative-F	Response to 2014/15 Audit Questionnaire, 25 September 2015. Meeting Minutes; Community Consultative Forum, 16 September 2014: http:// se-September-2014.pdf Meeting Minutes; Community Consultative Forum, 3 February 2015: http: Forum-3-February-2015.pdf Meeting Minutes; Community Consultative Forum, 26 May 2015: http: Forum-26-May-2015.pdf	p://hunterwater.com.au/Resources/Documents/consultative-forum	-papers/MinutesCommunit	
Consultative F to members - C Summary of f Hunter Water notification of	Hunter Water to Consultative Forum Members regarding Hunter Water Community Forum - Call for Agenda Items September 2014; Clause 5.5.1 - Email to members Community Consultative Forum - Call for QON May 2015 meeting). reasons for grade demonstrated that it has maintained and regularly consulted with its Customers remeetings and calls for agenda items, and published minutes of each of three meeting t is assessed that Hunter Water has fully complied with this obligation	- Community Consultative Forum - Call for QON 3 Feb 2015 me and Consumers through a Consultative Forum during the audit	eeting; and Clause 5.5.1 - Em	
Consultative F to members - C Summary of f Hunter Water notification of	Forum - Call for Agenda Items September 2014; Clause 5.5.1 - Email to members Community Consultative Forum - Call for QON May 2015 meeting). reasons for grade demonstrated that it has maintained and regularly consulted with its Customers meetings and calls for agenda items, and published minutes of each of three meeti t is assessed that Hunter Water has fully complied with this obligation.	- Community Consultative Forum - Call for QON 3 Feb 2015 me and Consumers through a Consultative Forum during the audit	eeting; and Clause 5.5.1 - Emo	

As evidence, Hunter Water provided copies of emails notifying Consultative Forum Members of the next meeting and calling for agenda items. Each notification, which was issued approximately four (4) weeks prior to each meeting, included words to the effect: "Please let me know if you have any items to include on the agenda, or any questions on notice, by close of business on ..." The agenda and meeting papers were subsequently issued approximately two (2) weeks prior to the meeting.

As noted above and reiterated by Hunter Water, The *Community Consultative Forum Charter* requires that there are at least three regular meetings per annum. Minutes for the three meetings held during the audit period (16 September 2014, 3 February 2015 and 26 May 2015) are published on Hunter Water's website. Review of the minutes revealed that agenda items typically include (refer also to Table 21):

- Agenda Overview and Conflicts of Interest
- Presentations
- Minutes of Previous Meeting and Business Arising
- Questions on Notice
- Managing Director's Report
- Specific Discussion Items
- General Business.

On the basis of the evidence reviewed, it is apparent that Hunter Water has maintained and regularly consulted with its Customers and Consumers through a Consultative Forum.

Recommendations

There are no recommendations in respect of this sub-clause.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this sub-clause.



Table 21 Consultative forum (clause 5.5.2)

Sub-clause	Requirement		Compliance grade
5.5.2	Hunter Water may utilise the Consultative Forum to, among other things, provide it with advice on the interests of Hunter Water's Customers and Consumers, the Customer Contract and such other key issues related to Hunter Water's planning and operations as Hunter Water may determine, consistent with the Consultative Forum Charter.		Full Compliance
Risk		Requirement for full compliance	
Hunter Water's ope	effective use of the Consultative Forum poses a moderate risk to erations. In the absence of Customer and Consumer input, Hunter Water re of Customer and Consumer perceptions of issues relevant to its	Evidence that Hunter Water has utilised the Consultative Forum f consistent with the <i>Consultative Forum Charter</i> .	or the nominated purposes
Evidence sighted			
Charter-Endorsed-t Hunter Water, <i>Resp</i> Hunter Water, <i>Mee</i> Forum-Minutes-Sep Hunter Water, <i>Me</i>	mmunity Consultative Forum Charter, 1 November 2013: <u>http://hunterw</u> by-the-Board-of-HW-1-November-2013.pdf ponse to 2014/15 Audit Questionnaire, 25 September 2015. eting Minutes; Community Consultative Forum, 16 September 2014: <u>http://ptember-2014.pdf</u> reting Minutes; Community Consultative Forum, 3 February 2015: <u>http://ptembar-3-February-2015.pdf</u>	hunterwater.com.au/Resources/Documents/consultative-forum-paper	s/Community-Consultative
Consultative-Forum	eeting Minutes; Community Consultative Forum, 26 May 2015: <u>http n-26-May-2015.pdf</u> 5.5.2 - Data - Complete Survey Outcomes Community Consultative Forum 20		pers/MinutesCommunity
Summary of reaso		114 2015.	
Hunter Water demo related to its plannin objectives.	onstrated that during the audit period it had has used the Consultative Forum to ng and operations. Furthermore, through the results of a survey, it demonstrate ssessed that Hunter Water has fully complied with this obligation.		
Discussion and not	tes		
 Seek consulta Disseminate i Review consulta Promote compared to the second sec	<i>onsultative Forum Charter</i> (refer Table 23 for further discussion) states that the attion on emerging operational issues information on Hunter Water's efforts at improving water supply and wastewa altation strategies, programs and activities being undertaken and/or proposed munity engagement in decision-making ommendations to management in relation to the above, as appropriate.		

Hunter Water advised that the following topics had been discussed at Consultative Forum Meetings held during the audit period:

• 16 September 2014:

- Upgrade to Dungog WWTW (of interest to Dungog residents)
- Biobanking (of interest to customers with an environmental focus) [Note: this is a scheme that creates credits for biodiversity, such as weed eradication, and these credits can be offset against other environmental activities, such as mining]
- o Hunter Water's partnerships with the University of NSW (raised by a Forum member)
- o The IPART Price Path Submission Process (of interest to customers)
- o Impact of Water Wise Rules (a key Hunter Water program)
- Sale of Tillegra Land (of particular interest to Dungog customers)
- o Tillegra Riparian Improvement Project (of interest to customers with an environmental focus, of interest to Dungog customers)
- o Hunter Water has no plans to privatise (of interest to all customers)
- Sale of non-core assets (of interest to all customers).

• 2 February 2015

- o Tillegra Riparian Improvement Project (of interest to customers with an environmental focus, of interest to Dungog customers)
- o Price Path Submissions Process (of interest to customers)
- o Campvale Canal (of interest to Port Stephens residents, Councillor representatives)
- o AGL Coal Seam Gas Flowback water (of interest to customers with an environmental focus, key issue for Hunter Water)
- o Sale of Tillegra Land (of particular interest to Dungog customers, key issue for Hunter Water).

• 26 May 2015

- Stage 3 Upgrade of Burwood Beach WWTW (major project with cost ramifications for all customers)
- Illegal Stormwater Connections (of interest to all customers)
- Disaster Management Plan (of interest to all customers)
- Costs relating to East Coast Low Super-storm (of interest to all customers)
- Pool Backwash Policy (of interest to customers with an environmental focus)
- o Review of Customer Contract to begin in mid-2016 (of interest to all customers)
- o Sale of Tillegra Land (of particular interest to Dungog customers, key issue for Hunter Water).

Review of minutes for each of these meetings confirms that these topics were discussed. It is also noted that these topics were of interest to Hunter Water's Customers and Consumers (as noted above), and many were relevant to Hunter Water's ongoing planning and operations, thereby fulfilling the requirements of this obligation.

Hunter Water advised that, as part of a Review of the Community Consultative Forum, members were asked to complete an anonymous questionnaire. A sample of responses was as follows:

- "Do you feel Hunter Water creates an environment that encourages Forum members to contribute during meetings?" response was 100% positive
- "Do you feel the Forum is functioning well as a way for Members to raise issues with Hunter Water?" response was 100% positive
- "Do you feel the Forum is functioning well as a way for Hunter Water to gain community input and perspectives on the various issues raised by Hunter Water?" response was 90% positive.

These responses indicate that members are generally of the view that the Consultative Forum operates effectively. Review of the full results of the survey indicate that members were canvassed on range of matters related to the operation of the Consultative Forum and member interaction with the community; the results indicate that members would generally not support changes to the manner in which the Forum operates.



Recommendations

There are no recommendations in respect of this sub-clause.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this sub-clause.



Table 22 Consultative forum (clause 5.5.3)

Sub-clause	Requirement		Compliance grade
5.5.3	 Hunter Water must: a) ensure that at all times the membership of the Consultative Forum is Consultative Forum Charter; and b) use its best endeavours to include a person representing each of the fi) business and Consumer groups; ii) organisations representing low income households; iii) people living in rural and urban fringe areas; iv) residential Consumers; v) environmental groups; vi) local government; vii) older people; viii) people with disabilities; ix) Aboriginal people; and x) people from non-English speaking backgrounds. 		Full Compliance
Risk		Requirement for full compliance	
Forum poses a mod	representatives of the nominated interests as members of the Consultative derate risk. Hunter Water needs to consult across its customer and consumer issues relevant to its performance are fully captured.	 Evidence that: membership of the Consultative Forum has been appointe <i>Consultative Forum Charter</i>; and Hunter Water has included, or has used its best endeavours to the nominated interests as members of the Consultative Forum 	o include, representatives of
Evidence sighted			
Charter-Endorsed-b Hunter Water's Con Hunter Water, Resp Hunter Water's Con for-Consultative-Fo Document (TRIM I Email from Hunter	mmunity Consultative Forum Charter, 1 November 2013: <u>http://hunterv</u> py-the-Board-of-HW-1-November-2013.pdf mmunity Consultative Forum; Our Members webpage: <u>http://hunterwater.com</u> poonse to 2014/15 Audit Questionnaire, 25 September 2015. mmunity Consultative Forum; Nominate for Consultative Forum Membersh porum-Membership.aspx listing of correspondence): Clause 5.5.3 Membership & Correspondence CCF Water to Consultative Forum Members dated 19 August 2014 regarding Com 5.5.2 - Data - Complete Survey Outcomes Community Consultative Forum 20	a.au/Community/Community-Consultative-Forum/Our-Members.asp ip webpage: <u>http://hunterwater.com.au/Community/Community-Cor</u> Pre 2015 (HW2011-662-5-11). munity Consultative Forum - Member Survey.	<u>K</u>
Summary of reaso	ons for grade		
Hunter Water	onstrated that: of the Consultative Forum has been appointed in accordance with the <i>Consult</i> r has either included, or has used its best endeavours to include, representative ssessed that Hunter Water has fully complied with this obligation.		



Discussion and notes

The Community Consultative Forum Charter directly reflects the Licence obligation in respect of the interests that should, to the extent practicable, be represented as members of the Consultative Forum. The Charter further notes that:

"Members of the Forum may represent one or more of the above interests or be representatives of an organisation which does so. The Forum will also include senior management representatives of Hunter Water."

Members of the Consultative Forum are identified (by organisation) on Hunter Water's Community Consultative Forum; Our Members webpage. These include:

- Cessnock City Council
- Hunter Local Land Services
- Maitland Masonic Centre
- Dungog Shire Council
- Hunter Region Botanic Gardens
- Newcastle City Council
- Hunter Business Chamber
- Williams River Water Users Association
- Wetlands Environmental Education Centre
- No Tillegra Dam Group
- Lake Macquarie City Council
- Newcastle Older Women's Network
- Save the Williams River Coalition
- Property Owners Association
- Port Stephens Shire Council
- Medowie Progress Association
- University of Newcastle.

Hunter Water advised that it does not currently have members that represent the following interests:

- People with a disability
- People from a culturally and/or linguistically diverse background
- People identifying as Aboriginal.

Hunter Water did, however, advise that it had used its best endeavours to identify and enlist members to represent these categories, as follows:

- Expressions of Interest for members to fill these positions were open for the entire audit period, by way of invitation published on Hunter Water's *Community Consultative Forum;* Nominate for Consultative Forum Membership webpage.
- In May 2014, Hunter Water had requested Expressions of Interest for members to fill these positions by writing to the following organisations:
 - Community Activities Lake Macquarie
 - Maryland Neighbourhood Centre
 - Connected Communities Jesmond
 - The Place Charlestown

- Belmont Neighbourhood Centre
- Northern Settlement Services
- Lambton Multicultural Neighbourhood Centre
- Post Stephens Child and Family Network
- o Newcastle Child and Family Interagency
- Maitland City Interagency
- Cessnock Interagency
- Lake Macquarie Interagency
- o Lake Macquarie City Council.
- As part of a Review of the Community Consultative Forum, members were asked via an anonymous survey questionnaire to provide suggestions as to how Hunter Water can attract new members to represent these interests. Existing members were also asked for feedback on any barriers that exist in Hunter Water's process that may unnecessarily prevent new members joining to take up these vacant positions.

Whilst some suggestions were made by existing Forum members, no new members were identified as a result of these actions during the audit period. Notwithstanding, it is apparent that Hunter Water has used its best endeavours to include representatives of these interests as members of the Consultative Forum.

Recommendations

There are no recommendations in respect of this sub-clause.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this sub-clause.



Sub-clause	Requirement		Compliance grade
5.5.4	 Hunter Water and members of the Consultative Forum must for the term of addresses all of the following issues: a) the role of the Consultative Forum; b) selection criteria on how members will be drawn from the communadvertised; c) the procedure for appointment of members; d) the term for which members are appointed; e) information on how the Consultative Forum will operate; f) a description of the type of matters that will be referred to the Consultative Forum g) procedures for the conduct of Consultative Forum meetings, including the outcome of the Consultative Forum i) procedures for tracking issues raised and ensuring appropriate follow j) funding and resourcing of the Consultative Forum by Hunter Water. 	Inity, and information on how vacancies for membership will be Itative Forum and how those matters may be referred;. In the appointment of a chairperson; m's work to Hunter Water;	Full Compliance
Risk		Requirement for full compliance	
moderate risk that	ain a charter that addresses the requirements of this obligation poses a t the Consultative Forum may not be effective in enabling Hunter Water to ustomers and Consumers.	Evidence that Hunter Water and members of the Consultative Foru (Consultative Forum Charter) that addresses the nominated issues.	im has maintained a charter
Evidence sighted			
Charter-Endorsed Hunter Water, Res Document: Int Cla	ommunity Consultative Forum Charter, 1 November 2013: <u>http://hunterv</u> - <u>-by-the-Board-of-HW-1-November-2013.pdf</u> sponse to 2014/15 Audit Questionnaire, 25 September 2015. ause 5.5 responses to interview QON. view of Community Consultative Forum: Operations and Membership, January		nunity-Consultative-Forum-
Summary of reas	sons for grade		
	nonstrated that it (and the members of the Consultative Forum) has maintained dingly, it is assessed that Hunter Water has demonstrated full compliance with		ominated under this
Discussion and n	otes		
Review of the Cha a) the role of th b) selection cri page 3	ised that the <i>Community Consultative Forum Charter</i> has remained in place sin arter reveals that it addresses the required issues as follows: he Consultative Forum – under the heading "Purpose" on page 1 teria on how members will be drawn from the community, and information o re for appointment of members – under the heading "Selection Process" on pag	n how vacancies for membership will be advertised – under the head	

Table 23 Consultative forum (clause 5.5.4)



- d) the term for which members are appointed under the heading "Membership of the Forum" on page 2
- e) information on how the Consultative Forum will operate under the heading "Forum Protocol" on page 2
- f) a description of the type of matters that will be referred to the Consultative Forum and how those matters may be referred under the headings "Purpose" and "Objectives" on page 1
- g) procedures for the conduct of Consultative Forum meetings, including the appointment of a chairperson under the headings "Meetings", Quorum" and "Forum Protocol" on page 2
- h) procedures for communicating the outcome of the Consultative Forum's work to Hunter Water under the heading "Reporting Responsibilities" on page 3
- i) procedures for tracking issues raised and ensuring appropriate follow-up of those issues under the heading "Reporting Responsibilities" on page 3 (refer further discussion below)
- j) funding and resourcing of the Consultative Forum by Hunter Water under "Forum Protocol; Hunter Water Commitments" on page 2; the issue of sitting fees paid to members is addressed under the heading "Meetings" on page 1.

In respect of "procedures for tracking issues raised and ensuring appropriate follow-up of those issues", Hunter Water noted that the *Charter* requires that minutes of each meeting are recorded and made available to members (refer "Reporting Responsibilities"). It further noted that: "*All items raised and discussed are included in the minutes to confirm the item is addressed or listed to be discussed at a future meeting*". Review of minutes of Consultative Forum meetings held during the audit period (refer Table 20) confirmed that they do provide for the follow up of issues raised. Given that this approach aligns with typical practice, it is deemed that the requirement to prepare and distribute minutes effectively addresses the requirement for tracking and follow-up of issues for the purposes of this obligation.

Hunter Water advised that, as part of a Review of the Community Consultative Forum undertaken during 2014/15, it was identified that additional procedures were required to guide Hunter Water in managing the Forum membership and appointing new members. The reported outcomes of this review confirm this observation; the report also indicates that:

"There is no requirement to amend the current Community Consultative Forum Charter, as endorsed by the Board of Hunter Water Corporation on 1 November 2013."

The auditors are of the view that, whilst the Charter addresses the issues nominated under this obligation, there is an opportunity for improvement in the manner in which it does so.

Recommendations

There are no recommendations in respect of this sub-clause.

Opportunities for improvement

Hunter Water may wish to consider revising the *Community Consultative Forum Charter* such that it more directly aligns with the issues nominated under this obligation; this could be achieved by including sections (with headings) specific to each issue. Procedures for tracking issues raised and ensuring appropriate follow-up of those issues should also be more specifically addressed.



Table 24 Consultative forum (clause 5.5.5)

Sub-clause	clause Requirement		Compliance grade	
5.5.5	5.5.5 Hunter Water must provide the Consultative Forum with information in its possession or under its control necessary to enable the Consultative Forum to discharge the tasks assigned to it, other than information or documents that are confidential or privileged.		Full Compliance	
Risk	Requirement for full compliance			
	e information poses a moderate risk. In the absence of suitable information, Forum would be unable to provide effective input in respect of the issues	Evidence that Hunter Water has provided information in its poss necessary to enable the Consultative Forum to discharge the tasks a		
Evidence sighted	l i i i i i i i i i i i i i i i i i i i			
Document: Claus Document: Claus Document: Claus Hunter Water, M Forum-Minutes-S Hunter Water, M Consultative-Foru Hunter Water, M Consultative-Foru	sponse to 2014/15 Audit Questionnaire, 25 September 2015. e 5.5.5 Email attachment - 21May2015 - Agenda CCF 26 May 2015. e 5.5.5 Email attachment - 28Jan2015 - CCF_Agenda and Meeting Papers. e 5.5.5 Email attachment - 21May2015 - Agenda CCF 26 May 2015. eeting Minutes; Community Consultative Forum, 16 September 2014: <u>http://</u> heptember-2014.pdf Meeting Minutes; Community Consultative Forum, 3 February 2015: <u>http:// 10.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5</u>	p://hunterwater.com.au/Resources/Documents/consultative-forum-pa	pers/MinutesCommunit	
Summary of rea	· ·			
demonstrated by or privileged.	nonstrated that it provides the Consultative Forum with information necessary t way of an example that, whilst it does not have formally documented guidance assessed that Hunter Water has demonstrated full compliance with this obligati	in place (it relies on management discretion), it does not provide info		
Discussion and n	otes			
Information Forum men Members m Hunter Water pro 3 February 2015 a	rised that: the provides information to members by way of Agenda papers. These Agenta sufficient to enable the Consultative Forum to discharge the tasks assigned to abers may request further information by emailing, telephoning, or meeting way also telephone or email [the Community Engagement Coordinator]." wided copies of the Agenda and Meeting Papers (which include minutes of and 26 May 2015. Review of these documents revealed that relevant information nutes of meetings held on 16 September 2014 and 3 February 2015 (as example	it is provided, as per the Operating Licence. ith [the Chief Executive Officer], for example regarding the sale of the previous meeting) as issued via email prior to the meetings h n had been provided.	f the Tillegra landholding eld on 16 September 2014	
	nutes of meetings held on 16 September 2014 and 3 February 2015 (as example im to discharge the tasks assigned to it. Hunter Water provided the following in		s of the Consultative F	

- A report on the Upgrade of the Dungog Wastewater Treatment Plant, including responses to questions and comments from Consultative Forum members (16 September 2014).
- Responses to a series of questions on notice relating to the sale of land at Tillegra (16 September 2014 and 3 February 2015).
- A response to a question on notice about plans to privatise Hunter Water (16 September 2014).
- Response to the impact of Water Wise Rules (16 September 2014).
- A quite detailed presentation on the Tillegra Riparian Improvement Project in response to a question on notice from the 16 September 2014 meeting (3 February 2015).
- Information about the IPART Price Path Determination process (3 February 2015).
- Information and discussion of Campvale Canal, a water quality issue in the Grahamstown Dam catchment (3 February 2015).
- Consultative Forum members discussed the review of the Community Consultative Forum (3 February 2015).

In response to a question as to how Hunter Water assesses whether documents are deemed to be confidential or privileged, Hunter Water advised that:

"The mechanism for determining if information or documents are confidential or privileged is management discretion. Only once in the audit period has a document been determined confidential."

Hunter Water advised that there had been one incidence when a Forum member had requested information that Hunter Water declined to provide. As documented in the minutes of the Consultative Forum meeting held on 26 May 2015:

"Disaster Management Plan

Question: Does Hunter Water have a Disaster Management Plan? If yes is it available for public viewing and is it located on the Hunter Waters web site?

Answer: Hunter Water has a multitude of emergency management, emergency response, business continuity and disaster recovery related frameworks, policies, standards, plans and protocols.

These documents are typically internal documents due to the following reasons:

- They contain information about key organisational vulnerabilities
- They contain personal contact details of employees, key external stakeholders (e.g. ministers, regulators), key suppliers and emergency service organisation personnel
- They contain information about NSW critical infrastructure
- They contain information / location diagrams of chemical storage facilities etc.

A publically available incident management webpage and incident response management plan is available on HW's public website that outlines our rationale and approach to managing any incident that occurs within our area of operations:

http://www.hunterwater.com.au/Water-and-Sewer/Incident-Response-Management/"

The auditors are of the view that "management discretion" is a valid approach to assessing confidentiality or privilege given the experience of the personnel involved (typically the Chief Executive Officer or delegate). It would, however, be prudent to have some documented guidance in this respect.

Recommendations

There are no recommendations in respect of this sub-clause.

Opportunities for improvement

It is suggested that Hunter Water consider formally documenting guidance for use in assessing whether information requested by, or that may otherwise be provided to, the Consultative Forum is confidential or privileged.



Table 25 Consultative forum (clause 5.5.6)

Sub-clause	Requirement	Compliance grade
5.5.6	 Hunter Water must make: a) a copy of the Consultative Forum Charter; and b) minutes from proceedings of the Consultative Forum, available free of charge: c) on its website for downloading; and d) available at its offices for access or collection by any member of the public. 	Full Compliance
Risk	Requirement for full compliance	
	with this obligation poses low (if any) operational risk; however, it poses a t Hunter Water may not gain the full extent of potential input from its insumers.	
Evidence sighted		
Charter-Endorsed- Hunter Water, Me	<i>mmunity Consultative Forum Charter</i> , 1 November 2013: <u>http://hunterwater.com.au/Resources/Documents/consultative-forum-papers/Coby-the-Board-of-HW-1-November-2013.pdf</u> <i>eting Minutes; Community Consultative Forum</i> , 16 September 2014: <u>http://hunterwater.com.au/Resources/Documents/consultative-forum-papers/comptember-2014.pdf</u>	
Consultative-Foru	evening Minutes; Community Consultative Forum, 3 February 2015: <u>http://hunterwater.com.au/Resources/Documents/consultative-forum-n-3-February-2015.pdf</u>	
	<i>leeting Minutes; Community Consultative Forum</i> , 26 May 2015: <u>http://hunterwater.com.au/Resources/Documents/consultative-forum-n-26-May-2015.pdf</u>	papers/winutesCommunity
Hunter Water's Co	ommunity Consultative Forum webpage: http://hunterwater.com.au/Community/Community-Consultative-Forum/Community-Forum/Community-Forum/Community-Forum/Community-Forum/Community-Forum/Community-Forum/Communi	<u>n.aspx</u>
Summary of reas	ons for grade	
demonstrated that	onstrated that a copy of <i>Consultative Forum Charter</i> and minutes of meetings held during the audit period were available for downloading from a copy of the <i>Charter</i> could be obtained free of charge at its Newcastle office upon request. assessed that Hunter Water has demonstrated full compliance with this obligation.	its website. Furthermore, it
Discussion and n	ites	
are available on an Upon arrival at Hu	rmed that copies of the <i>Community Consultative Forum Charter</i> and minutes of Consultative Forum meetings held on 16 September 2014, 3 Feb d can be downloaded from Hunter Water's website. These can be accessed via the <i>Community Consultative Forum</i> webpage. nter Water's Newcastle office/Customer Centre, the auditors requested a copy of the <i>Community Consultative Forum Charter</i> . Whilst a copy of he receptionist made an internal enquiry and provided a copy after a few minutes.	
Recommendation	s	
There are no record	nmendations in respect of this sub-clause.	
Opportunities for	improvement	
No opportunition (or improvement have been identified in respect of this sub-clause.	



Section 6 – environment

Table 26 Environmental management (clause 6.1.5)

Sub-clause	Requirement		Compliance grade		
6.1.5	Hunter Water must notify IPART of any significant changes that it proposes to make to the Environmental Management System in accordance with the Reporting Manual.		Full Compliance		
Risk		Requirement for full compliance			
	Non-compliance with this clause poses a risk to the environment through inadequate Evidence of notification to IPART of any change to the EMS environmental management.				
Evidence sighted					
Email - Turner to Aj Email - Luke (IPAR	Signed MD letter to IPART - Report on Significant Changes to Operating Licence - 31 March 2015 Email - Turner to Aposhian (IPART) - Notification - EMS Certification Email - Luke (IPART) to Turner - EMS surveillance audit				
Summary of reason	Summary of reasons for grade				
The significant chan	The significant change that was notified to IPART was to inform IPART that the EMS achieved ISO certification. Evidence of correspondence was provided as evidence of the notification.				
Discussion and notes					
Hunter Water's Rep	ort on Significant Changes to Operating Licence dated 31 March 2015 notified	ed IPART that ISO certification was achieved within the audit period			
Recommendations					
No recommendation	No recommendations are made in respect of this clause.				
Opportunities for I	Opportunities for Improvement				
No opportunities for	improvement are made in respect of this clause.				



Section 7 – quality management

Table 27 Quality management systems (clause 7.1.3)

Sub-clause	Requirement		Compliance grade		
7.1.3	Hunter Water must ensure that by 30 June 2017, the Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the system.		Full Compliance		
Risk		Requirement for full compliance			
Non-compliance with this clause poses a risk to public health and the environment through inadequate quality management. Evidence that the Quality Management System is fully implement activities are carried out in accordance with the system.		ented and that all relevant			
Evidence sighted					
Letter DNV to HWC – Granted certification Letter Appendix DNV to HWC – Granted certification 9001 certificate – 201415					
•	Summary of reasons for grade				
Full compliance is awarded as a result of certification of the QMS to ISO 9001 Quality Management Systems, demonstrating that the system is implemented in accordance with the standard. Discussion and notes					
	The certification certificate issued by DNV-GL indicates that the QMS has been certified by an independent certification organisation as meeting the requirements of the standard.				
Recommendations					
No recommendation	No recommendations are made in respect of this clause.				
Opportunities for	Dpportunities for Improvement				
No opportunities for	to opportunities for improvement are made in respect of this clause.				



Section 8 – performance monitoring

Table 28 Provision of information (clause 8.3.5)

Sub-clause	Requirement		Compliance grade
8.3.5	If NSW Health requests that Hunter Water provide information relating to water quality, Hunter Water must provide the information requested in the manner and form specified by NSW Health. Hunter Water must provide the information requested within a reasonable time of NSW Health's request.		Full compliance
Risk Requirement for full compliance			
operational perform	Non-compliance with this clause poses a moderate level of risk in respect of Hunter Water's operational performance. Accurate measurement against performance indicators is a key tool in assessing the effectiveness of a utility's operations.		alth.
Evidence sighted			
Email Attachment Email Hunter Wat Email Attachment Email NSW Healt Email Hunter Wat Email NSW Healt Email Hunter Wat Email Hunter Wat	er to NSW Health Lead in treated waters Nov 2009 to Oct 2014 - 14Nov2014. -14Nov2014 - Lead in HWC treated waters and distribution system Nov 2009 er to NSW Health lead in treated waters 2014 - 30Jan2015 - 30Jan2015 - Hunter Water lead in distribution systems and treated waters 20 h to HWC Drinking water TDS Cessnock - 18June2015 er to NSW Health - drinking water TDS - 18June2015.pdf - 18June2015 - Total Solids Grahamstown & Dungog CWT.xls h to HWC - ack receipt - drinking water TDS - 19June2015 er to NSW Health conductivity Cessnock - 19June2015 - 19June2015 - Conductivity Cessnock, Total Solids Grahamstown & Dungog h internal forward - lead - 30Jan2015	to Oct 2014.xls 14	
Summary of reas	ons for grade		
Email corresponde	ence provided by Hunter Water demonstrates that the information requested by	NSW Health was provided within a reasonable timeframes.	
Discussion and no	otes		
NSW Health made Cessnock. Emails	e two requests regarding lead concentrations in drinking water supplied by Hun to and from NSW Health provide evidence that information requested was sen	ter Water and one regarding total dissolved solids / conductivity in d t to NSW Health within a reasonable period of time.	rinking water supplied to
Recommendation	s		
No recommendation	ons are made in respect of this clause.		
Opportunities for	· Improvement		
No opportunities f	or improvement are made in respect of this clause.		



Table 29 Performance indicators (clause 8.4.1)

Sub-clause	Requirement		Compliance grade
8.4.1	 8.4.1 Hunter Water must maintain sufficient record systems to enable it to measure accurately its performance against the performance indicators specified in the Reporting Manual. In the case of any ambiguity in the interpretation or application of any performance indicators specified in the Reporting Manual, IPART's interpretation or assessment of the indicators will prevail. 		Full Compliance
Risk		Requirement for full compliance	
operational per	ce with this clause poses a moderate level of risk in respect of Hunter Water's rformance. The ability to accurately measure performance against specified key tool in assessing the effectiveness of a utility's operations.	Evidence that Hunter Water maintains sufficient records to enable report its performance against the specified indicators, consistent w	
Evidence sight	ted		
Hunter Water, . Email correspo Hunter Water, . Hunter Water,	Procedure; New Licence Reporting Parameters II – I8, undated. Response to 2014/15 Audit Questionnaire, 25 September 2015. Indence between Hunter Water and IPART dated 8 August 2014 regarding HWC I File Note; Clarification for operational audit, IPART indicators II and I2 – water Water Model Update Manual, May 2013. erating Licence – A14, I6, I7 and I8 – Procedure for Extracting Data.		
	easons for grade		
accurately its p of one of the in	was able to demonstrate, based on the sample audited (specifically indicators erformance against the performance indicators specified in the <i>Reporting Manual</i> dicators, it had sought clarification from IPART as required.	11 to 18), that it has sufficient record systems and processes in pla Furthermore, it demonstrated that in a case where there had been an	ace to enable it to measu abiguity in the interpretati
Discussion and	d notes		
review as part of Hunter Water r procedure whice	reported its 2014/15 performance against the indicators specified in the <i>Reporti</i> of this audit are Infrastructure Indicators I1 to I8; these are reported in section 7.4 relies heavily on its <i>Asset Operations and Maintenance System</i> (AOMS) to capture ch outlines the process (coding) for extraction of data from AOMS was provided a from AOMS is used in conjunction with data derived from the GIS or <i>Customer I</i>	of the <i>Compliance and Performance Report 2014-15</i> . e data required to fulfil its reporting obligations in respect of the Infra is evidence.	structure Indicators. A
	espect of each indicator is as follows:		
	per of properties affected by an unplanned water interruption duration of more t	han 1 hour and less than or equal to 5 hours:	
	eported that 40,900 properties had been affected by an unplanned water supply in	terruption of more than 1 hour and less than 5 hours duration during 2	2014/15.
	ed as follows: anned interruption is defined as an outage where the customer has not been given in the notice.	24 hours written notice and/or where the repair was not completed w	vithin the time/date range
15NS20-REC- March 2016	15-114-1.0	CobbittyConsulting	

The number of properties impacted is measured with GIS tools and the status and eligibility of properties, i.e. property type and whether connected at the time is sourced from CIS. On more complex discontinuity events, the Water Network Operations Team carry out a more detailed analysis (as per the procedure contained in the evidence package) to uses information from various sources including computer hydraulic models, SCADA, field operative commentary and customer call information, to determine the area's/properties impacted by discontinuity events.

The shutdown period is calculated from the time the HWC became aware the supply was off until supply is resumed, i.e. the last valve is opened which is also recorded in AOMS. Jobs with a shutdown period great than 60 minutes and less than or equal to 300 minutes are included in this calculation."

Hunter Water provided evidence to demonstrate that it had consulted with IPART to confirm its interpretation of the definition of an "unplanned interruption", specifically when work extended beyond the notified time and/or duration of a planned interruption.

Sample documentation related to unplanned interruptions was provided as follows:

- Records for AOMS Job No: 416510, which involved replacement of a fire plug valve on a DN100 main at 28 Tuloa Street, Wangi Wangi were provided. Recorded details included the timing of the interruption and the areas affected.
- Investigation records for AOMS Job No: 343345, which involved an unplanned interruption to enable repacking of a hydrant. In this case, a Water Discontinuity Report, which provided more extensive assessment of the timing and impact of the interruption, was prepared.

This documentation provided evidence that the data required to enable calculation of the indicator is effectively collated and/or determined. Accordingly, it was assessed that sufficient record systems are maintained to enable calculation and reporting of this indicator.

12 – Occurrence of water interruptions to affected properties (ie, the number of properties experiencing 3 or more Planned and Unplanned water interruptions) of more than one hour duration:

Hunter Water reported that 3,392 properties had been affected by three or more water supply interruptions (planned or unplanned) of more than 1 hour duration during 2014/15.

The procedure used to calculate this indicator is essentially the same as for Indicator I1, but with different sort criteria. As advised by Hunter Water:

"All AOMS jobs with a shutdown period greater than 60 minutes are included in the calculation.

All properties affected by 3 or more of the identified jobs are included in this calculation."

It was assessed that Hunter Water maintains sufficient record systems to enable calculation and reporting of this indicator.

13 – Events leading to planned or unplanned water interruption where 250 or more properties experience an interruption of over 5hrs duration:

Hunter Water reported that there had been 12 unplanned water supply interruptions where 250 or more properties had experienced an interruption of more than 5 hours duration during 2014/15. The procedure used to calculate this indicator is essentially the same as for Indicator I1, but again with different sort criteria. In this case:

"All AOMS jobs with a shutdown period greater than 300 minutes and with 250 or more properties affected are included in the calculation."

Records for AOMS Job No: 446080 were provided for review. This job was: "Logged to process water continuity resulting from AOMS job 443892"; duration of the interruption and related complaints were documented. The record also identified valve numbers that were shut down; this would enable determination of the number of properties affected using GIS and/or more extensive investigations.

It was assessed that sufficient record systems are maintained to enable calculation and reporting of this indicator.

14 (H) – The number of residential properties affected by planned water supply interruptions in peak hours (5am - 11pm):

Hunter Water reported that 10,935 properties had been affected by a planned interruption in peak hours during 2014/15.

The procedure used to calculate this indicator is again similar to that used for Indicator I1, but with different sort criteria

Hunter Water further advised that:

"The reporting process identifies jobs during Peak Hours as any job where the water was turned off or on during 5am to 11pm. It also includes any job with a duration over 18 hours. All planned AOMS jobs during Peak Hours are included in this calculation, if the shutdown period is greater than 10 minutes."

It is noted that Hunter Water adopts a minimum period of 10 minutes after shutdown before an interruption is recorded on the basis that system is still under pressure during that period (as residual pressure decays).



As an example, records for AOMS Job No: 455913 were provided. These indicated that the interruption commenced at 11:54am on 15 April 2015; it also nominated properties affected (by street).

It was assessed that sufficient record systems are maintained to enable calculation and reporting of this indicator.

15 - The number of properties in the utility's drinking water supply network experiencing a water pressure failure which is occasional or recurrent, but not permanent:

Hunter Water reported that 905 properties experienced a non-permanent water pressure failure during 2014/15.

Hunter Water advised that:

"Hunter Water uses computer hydraulic models to determine which properties will receive poor pressure based on system demands.

Models are calibrated against actual performance as recorded on SCADA, plus have carried out field tests for pressure. The models were not updated to incorporate field test results in 2014-15."

The *Water Model Update Manual* outlines the procedure for updating the hydraulic model to incorporate updated asset details and reflect available recorded performance data and field pressure tests. It is understood that the hydraulic model is then used to identify areas in which water pressure failures have occurred; the number of affected properties can then be determined using the GIS.

Determination of the number of properties affected by a non-permanent water pressure failure using the hydraulic model is dependent on capturing relevant pressure and demand data, and the effective calibration of the model using that data. This approach can be deemed to capture instances "when the water utility's systems identifies that the Property has experienced a water pressure failure" as SCADA captured data is used to calibrate the model on an annual basis.

It is not apparent that Hunter Water's approach to the determination of this indicator includes an assessment to ensure that instances "when a person notifies the water utility that the Property has experienced a water pressure failure and that water pressure failure is confirmed by the water utility" have been captured. However, given that Hunter Water would use the hydraulic model to confirm a reported water pressure failure, it is likely that such instances have been captured.

On the basis of the evidence and explanation provided, it is assessed that Hunter Water does maintain sufficient records systems to enable calculation and reporting of this indicator. It may, however, be prudent to further document its processes so as to ensure that reported water pressure failures are captured (where confirmed) consistent with the indicator definition.

16 – Number of High Priority sewage overflows per 100km of sewer main responded to in a year:

Hunter Water reported that it had responded to 24.0 High Priority sewage overflows per 100km of sewer main during 2014/15.

It also advised that:

"Incidents are identified by customer calls or on site employees on site and recorded in AOMS. Details recorded included the asset and property types affected and whether evidence of surcharge was apparent. Sewer jobs are audited by a QA role to ensure the flags are used for reporting are true to the job comments.

High Priority jobs are identified as jobs with an AOMS priority of 1. Priority 1 jobs are those jobs where a response is required within 1 hour and rectification required within 4 hours.

Length of sewer main are extracted from the GIS system."

Hunter Water further indicated that the majority of spills are Priority 1; Medium Priority spills are those confined to a customer property (to which it also always responds).

A procedure which outlines the process for extraction of data from AOMS and GIS was provided as evidence, together with records for AOMS Job No: 437985, which identified "*raw sewer running down the stormwater drain* ...". Details of the incident were recorded, including the manhole from which surcharging had occurred and the action taken. The job was identified as Priority 1.

On the basis of the evidence provided, it was assessed that Hunter Water maintains sufficient record systems to enable calculation and reporting of this indicator.

17 – Number of Medium Priority sewage overflows per 100km of sewer main responded to in a year.

Hunter Water reported that it had responded to 62.4 Medium Priority sewage overflows per 100km of sewer main during 2014/15.

The procedure for determining this indicator is the same as for Indicator I6, except that data is extracted for Priority 2 (Medium Priority) jobs. Records for AOMS Job No: 437817 reveal that the job, which had relatively minor impact, was identified as Priority 2.

Accordingly, it is assessed that Hunter Water maintains sufficient record systems to enable calculation and reporting of this indicator.

18 - Number of residential customers' dwellings affected by sewer spills not contained within 1 hour of notification.



Hunter Water reported that 1,415 residential customers' dwellings had been affected by sewage spills not contained within 1 hour of notification during 2014/15. It also advised that:

"The method described in 16 for identifying overflows applies to 18, except a query is also run to ensure that the overflow is affecting private property. This data is recorded in AOMS. Following verification that the incident is affecting private property the time taken to contain the spill is determined by subtracting Time Job Logged from the Cessation Time."

Records for AOMS Job No: 441586 indicate that this job involved a sewage spill within a residential property, and that the time taken to contain the spill was approximately 4 hours 50 minutes. It was assessed that sufficient record systems are maintained to enable calculation and reporting of this indicator.

Recommendations

There are no recommendations in respect of this sub-clause.

Opportunities for improvement

Whilst it is apparent that Hunter Water maintains sufficient records systems to enable it to measure accurately its performance against the performance indicators specified in the Reporting Manual, there is opportunity for improved documentation of the procedures used to extract relevant data and calculate the indicators. A more descriptive procedure, which captures the definition of the indicator and identifies the source records, the specific data required from each source and how the data is used to calculate the indicator would be useful. It would also be prudent to further document specific processes such as (in respect of Indicator I5) the processes implemented to ensure that reported water pressure failures are captured (where confirmed) consistent with the indicator definition.



Appendix B: Recommendations/outstanding items from previous audits



Reference	Audit finding	Discussion	Evidence	Status
2012/13-2	Hunter Water should develop and implement water quality awareness training for contractors.	The audit found that this recommendation has been addressed. Hunter Water has implemented an online training module for employees and contractors and is currently rolling it out. A Damstra CSV file was provided that contained the names and dates that contractors completed the online training induction module. 980 data points were provided indicating 980 contractors were inducted into the programme.	Damstra Material_Presentation - Quality Induction Training - Contractor Damstra Material_Drinking Water Quality Awareness for Contractors 2014 FINAL - 201415 Damstra Report -Induction Sheet – 201415	Addressed
2013/14- 10 2013/14- 19	Within 12 months, Hunter Water should develop an internal audit program that reviews the implementation of the DWQMS and the RWQMPs.	Currently all internal and external management system audits for EMS, WHSMS and QMS are tracked within the "Management System Audit Programme - 2015 (calendar year)". This program was approved in May 2015. The Draft Audit schedule 2015-2018 shows the internal audit schedule. The Management Systems Audit Programme - 2015 (calendar year) shows the schedule for the quality management system An internal audit report dated 28 May 2015 shows results of an internal audit of: • Standard – Monitoring and Measuring Equipment • Procedure – Monitoring and Measuring Equipment Register – Monitoring and Measuring Equipment • Quality Control Processes – including SCADA review, operational controls, sampling, testing and reporting by Veolia and / or Australian Laboratory Services (ALS) • Critical Control Points • Operating Licence • Integrum Database reporting • Procedure – NCR, Corrective and Preventive Action Standard – Incident Management • Procedure – Incident Investigation and Root Cause Analysis	Annual Management Systems Audit Programme - 2015_filtered for Quality audits DRAFT Internal Audit Schedule -Triennial Quality Programme_2015-18 - 201415 Example Quality Audit - Monitoring & Measurement of Product, Process - May 2015 - 201415	Addressed

Table 30 Recommendations/outstanding items from previous audits

Reference	Audit finding	Discussion	Evidence	Status
2013/14- 03 2013/14- 04 2013/14- 06 2013-14- 13	 Within 6 months, Hunter Water should review Critical Control Points (CCPs) for each treatment plant, including: a) a review all CCP critical limits (including alarm delays), and monitoring points to ensure they reflect current practice, as agreed with NSW Health b) develop a process to ensure critical limits are only altered with supervisory consent and there is a failsafe process to ensure that they are reinstated before water quality is compromised c) revise and review CCP documentation to clearly state location, parameters, target criteria, monitoring frequency, critical limits, corrective actions and responsibilities for each CCP d) develop a process to record and document corrective actions, and preventive measures to reduce risks e) operational and critical limits must be set in SCADA as alarms, including delay times where appropriate. 	The audit found that CCPs for drinking water have been implemented across the site that was subject to audit (Grahamstown WTP) and necessary documentation has been developed to meet the requirements of the recommendation. The establishment of CCPs for recycled water is linked to the validation plan, which is currently being implemented and is due to be completed in November 2015. Once the validation program is completed and the CCPs are endorsed by NSW Heath, Hunter Water and Veolia will implement the changes, including the input of limits and alarms into SCADA. A Drinking Water CCP Review report, prepared by Dan Deere, dated Sept 2015 was provided. The CCP review workshop was held on 15 June 2015 and was attended by NSW Health, Veolia and Hunter Water. The CCP register has been provided as evidence and is in the process of implemented into the supervisory control and data acquisition SCADA system for drinking water. The revised critical and alert alarms have been implemented into the supervisory control and data acquisition SCADA system for drinking water were developed in consultation with NSW Health and were discussed with them at the September 2015 quarterly Liaison meeting. The CCP documentation has also been submitted to relevant NSW Health representatives. A standard for establishing and reviewing CCPs was developed in July 2015. A recycled water Validation Program has been developed and is currently being implemented to validate the proposed recycled water CCPs. The Validation program is due to be completed in November 2015, and once the CCPs and associated limits and alerts have been endorsed by NSW Health, they will be implemented into SCADA system.	Drinking WaterStandard - Establishing and Reviewing CCPsProposed Drinking Water Quality Critical Control PointsCCP Review ReportVeolia HACCP ResponseExample CCP Procedure Grahamstown ChlorinationGrahamstown WTP Example of SCADA control 1of2 – 201415Grahamstown WTP Example of SCADA control 2of2 – 201415Recycled Water KIWS HACCP PlanEdgeworth WWTW risk assessmentKIWS Recycled Water Quality Management Plan with AppendixEdgeworth WWTW Recycled Water Quality Management Plan - DraftWWTW recycled water existing schemes validation programKIWS validation reportValidation Program Testing Results June-Sept 2015Establishment and Review of Recycled Water CCP Standard	Drinking water – addressed Recycled water – in progress
2013/14-	Within 12 months, a process needs to be implemented to ensure that documents required under the DWQMS	Hunter Water has an IMS that includes the ISO 9001 certified Quality Management System. Document	Procedure - Manage Document Control	Addressed





Reference	Audit finding	Discussion	Evidence	Status
)9 2013/14- 17	and RWQMPs are appropriately reviewed and kept up to date. Hunter Water also needs to ensure that its Operations and Maintenance Contractor uses up to date procedures for these activities.	control is undertaken through the Intergrum database. Review dates are programmed into the database as part of the review process. The review alert is rolled out 60 days before the review due date. Veolia documentation relating to the contractual requirements are accessible to Hunter Water. During the audit interviews, the document control systems of both Veolia and Hunter Water were demonstrated, with records of email notifications, monitoring and reports retrieved for review.	Recycled Water Improvement Actions Register Screenshots of Veolia Document Management System_OnTap Standard - Corporate Document Control	
2013/14-)5	Within 18 months, Hunter Water should define and identify significant risks. Determine the preventive measures that manage significant risks, and implement a plan to document the preventive measures and consequent corrective measures.	The ADWG requires that significant risks be determined and the priorities for risk management be identified. The purpose of this is to ensure that those preventive measures that manage the greatest risks are given the utmost priority. Since the previous audit Veolia has developed plant operating manuals, the <i>Plant Operating Manual</i> <i>Grahamstown WTP</i> was provided as evidence. These are comprehensive manuals for the each of the WTPs. During interviews the point was made that all preventive measures identified in the risk assessments are taken seriously and implemented with due care and attention. The plant operating manuals are a significant improvement over the audit period, in terms of risk management. Using the <i>Grahamstown Risk Register</i> a preventive measure is 'Ability to stop return water flow during high risk events e.g. after heavy rainfall'. If this is followed through into the manual section 8.7.1 provides instructions on how to either waste or recover the backwash. It is currently up to the knowledge of the operator to undertake the action. An improvement to this would be to include a section in the manual for significant hazardous events and provide references to the section in the manual on the implementation of the preventive or corrective actions used to manage the risk.	Drinking Water Quality Risk Assessment Calendar Extract HACCP Workshop Briefing Paper_Grahamstown_FINAL VEO_HWO_HACCP_ RR_Grahamstown HACCP Workshop Briefing Paper_Dungog_FINAL VEO_HWO_HACCP_RR_ VEO_HWO_HACCPreport13072015_FINAL Tomaree Catchment Risk Assessment 2015 Background Tomaree Risk Assessment Worksheet Extract Tomaree Catchment Risk Assessment 2015 Summary - 201415 MN-HWT-20-7808 Grahamstown WTP Plant Operating Manual	In progress



Reference	Audit finding	Discussion	Evidence	Status
		undertaken for the Tomaree Catchment and Dungog and Grahamstown WTPs. These risk assessment document preventive measures and further risk treatments where current preventive measures do not reduce the risk to an acceptable level. The Drinking Water Quality Risk Assessment Calendar Extract identifies the schedule for undertaking the risk assessments for the drinking water service. It is expected that the risk assessments will continue to be reviewed as per the calendar, the Operation and Maintenance Manuals will be updated and any preventive measures relied upon in the catchment or distribution not covered by Veolia's manual will be documented. The audit found that this recommendation is in progress and there is a schedule in place to complete it.		
2013/14- 01	Within 12 months, Hunter Water should develop a process to inform customers who receive unfiltered water from the Chichester Trunk Gravity Main about the quality and use of that water. (It was noted that the non-standard agreement for customers receiving this service does not currently provide information on the quality of the water and therefore material is required to educate and inform these customers.)	The audit found that Hunter Water was progressing this recommendation. A cross divisional stakeholder group within Hunter Water has been formed to ultimately achieve the audit outcomes. Data gathering and reconciliation from multiple systems to develop customer profiles of those customers impacted in this area has been completed and will form the Customer List for process and communication purposes to be completed over the coming months.	Memo - Proposal for NSW Health RE Non Standard Customers Dungog Untreated Water Agreement - TEMP WATER SERVICE AGRMT - DRAFT CTGM NORTH OF DUNGOG Agenda - NSW Health Hunter Water Liaison Meeting September 2015 - 201415	In progress
		A proposal dated September 2015 outlining Hunter Water's approach to these customers, specifically around public health requirements and information to be included in the Agreement and Communication Plan was presented to NSW Health (Sep Quarterly Liaison Meeting) for feedback purposes. This feedback from NSW Health is currently being processed within the business to shape a revised Agreement and Communication Plan to inform customers about the quality and use of water. Information as part of the Agreement and customer communication will be		



Reference	Audit finding	Discussion	Evidence	Status
		approved by NSW Health prior to deployment. Business processes for the deployment of the Agreement and supporting customer correspondence (initial and ongoing) is also being developed at this time.		
2013/14- 02	Within 12 months, the Dungog Water Treatment Plant (WTP) risk assessment needs to be reviewed in light of the changes to the plant, including updating the process flowchart and risk assessment to reflect the upgraded WTP.	The audit found that this recommendation has been addressed. A risk assessment workshop was undertaken on 22-23 June 2015. The risk assessment report, briefing paper and risk register were provided as evidence. The risk report states that the flow diagram for Dungog WTP was confirmed during the risk assessment workshop in June 2015.	HACCP Workshop Briefing Paper_Dungog_FINAL VEO_HWO_HACCPreport13072015 VEO_HWO_HACCP_ RR_Dungog – 201415	Addressed
2013/14- 08	Recommendations from the Grahamstown Catchment WTP Health Based Target (HBT) Assessment need to be addressed. It is suggested they be added to the DWQIP as the appropriate mechanism. Whilst not committing Hunter Water to implementing each of the recommendations, it does provide a means of recording the response to each item and closing them out.	The audit found that this recommendation has been addressed. The draft WSAA Health Based Target guideline was applied to assess Grahamstown Dam and WTP and the assessment has been completed. Recommendations arising from the HBT assessment have been added to the Improvement Plan.	PRC Paper - Grahamstown Dam & WTP Health-Based Targets Assessment	Addressed
2013/14- 11	Within 12 months, Hunter Water should implement a process to formally review the effectiveness of the DWQMS by the executive management team (for example, this could be done by tabling a performance report at a meeting of the executive team, which covers the requirements of the ADWG and how Hunter Water's DWQMS are meeting these elements).	The audit found that this recommendation is still in progress. Hunter Water conducts an Integrated Management System Review Meeting with senior management to review all aspects of the individual systems of the Integrated Management System (ie; AS/NZS 4801; ISO 14001; ISO 9001). These are conducted twice per year, and the purpose is to review the implementation and effectiveness of the individual management systems. The requirements of the ADWG and AGRW are currently being incorporated into the standard meeting agenda and presentation pro-forma and the relevant data will be presented at the next meeting scheduled for October 2015.	Integrated Management System Review Meeting Minutes_2 April	In progress
2013/14- 07	Within one month, Hunter Water should ensure that equipment calibration records are being maintained.	The audit found that this recommendation has been addressed. Veolia's spreadsheets were provided with	Data - Anna Bay WTP	Addressed



Reference	Audit finding	Discussion	Evidence	Status
		Equipment QA section to demonstrate that calibration records are being maintained.	Data - Chichester Dam Data - Dungog Data - Grahamstown WTP Data - Gresford WTP Data - Lemon Tree Passage WTP Data - Nelson Bay WTP Lab Methods Manual and Calibration Schedule - EMES December 12 2014 Preventative Maintenance Work Order Job Cards - 11214-31215	
2013/14- 14 2013/14- 12	 Within 12 months, Hunter Water should review the following matters in respect to the Clarence Town Wastewater Treatment Works: The effectiveness of the CCPs. If the corrective action can be undertaken in a timely manner, and it reduces risk, then implement the CCPs as soon as possible. The risk assessment at Clarence Town Wastewater Treatment Works to take account of irrigation-water ponding at the site. 	 The audit found that this recommendation is in progress. Hunter Water reported that the following progress has been made in implementing this recommendation: The ponding process is nominated as a CCP for the control of helminths. Hunter Water sought guidance from relevant authorities (DPI Water) in order to confirm that the proposed CCP would meet the guideline for helminths and is awaiting final endorsement. Veolia is completing a report on the minimum residence time at the plant, including the impact of taking one of the two oxidation ponds offline (when required for future desludging). Veolia is undertaking a sludge survey of the ponds to record and monitor the level of sludge in the pond and the impact of sludge build up in the ponds at the plant on residence time which will be included in the above report. Veolia is modifying the plant spreadsheet to include a rolling average daily flow to monitor the 	Clarence Town RWQMP - Draft	In progress



Reference	Audit finding	Discussion	Evidence	Status
		 residence time in the ponds and alert the operators when irrigation should be ceased if the residence time drops below 25 days. Veolia will request a modification to SCADA to alert operators of a potential reduction in residence time due to high flows. A contractor has been engaged to undertake minor earthworks on the irrigation site to direct ponded water to a drain. 		
2013/14- 15	Within 12 months, Hunter Water should systematically identify operational procedures required to operate recycled water schemes and prioritise a program to develop them. This should include a documented corrective action procedure/s to re-establish process control where there is an excursion from target criteria or critical limits.	The audit found that this recommendation has been addressed. Veolia has prepared operational procedure manuals for each of the wastewater treatment works. The manuals for Edgeworth and Mayfield West were provided as examples and contain detailed procedures for re-establishing process control for excursions from target criteria and critical limit.	Veolia's Operational Procedures for Edgeworth WWTW MN-HWW-20-7806 Veolia's Operational Procedures for Mayfield West AWTP MN-HWR-20-7814	Addressed
2013/14- 16	Within 18 months, Hunter Water should develop, for each scheme, an operational monitoring plan consistent with section 2.4.2 of the AGWR.	The audit found that this recommendation has been addressed. The Edgeworth and KIWS RWQMPs were provided as examples. They contain tables with operational monitoring identified, which include monitoring locations, parameters and frequency.	Edgeworth WWTW Recycled Water Quality Management Plan – Draft KIWS Recycled Water Quality Management Plan CS0341 Contract Schedule 9	Addressed
2013/14- 18	Within 12 months, Hunter Water should develop a procedure to report water quality and water quality incidents to all levels of the business.	The audit found that this recommendation has been addressed. Practice Note 110 of the Treatment Operations contract requires Veolia to report water quality breaches to Hunter Water as soon as practicable. The practice note also requires Veolia to send weekly water quality reports highlighting any breaches. This weekly report is sent to relevant stakeholders within Hunter Water and Veolia. Veolia's procedures for recycled water quality and incidents are contained in the Incident and Emergency	Recycled Water Quality Monitoring and Communication Standard Recycled Water Quality Incident Response Procedure Draft Update Veolia's Incident and Emergency Management Manual 2013-14-18-MN-HW-9- 710	Addressed



Reference	Audit finding	Discussion	Evidence	Status
		Management Manual document. It documents the practices and procedures for managing and responding to incidents and emergencies including but not limited to; Critical Control Point Response and Recycled Water Quality and Interruptions. The Recycled Water Quality Monitoring and Communication Standard also discusses incident reporting involving communication from Veolia.		
		Hunter Water has developed a new recycled water incident report within Hunter Water's incident reporting program (Integrum). Upon entering an incident into Integrum, a number of stakeholders are notified including the relevant Executive Managers. Hunter Water has updated the Recycled Water Quality Incident Response Procedure with the addition of the Integrum notification. This procedure is yet to be endorsed by NSW Health. Recycled Water incidents have also been added to the monthly corporate report for increased visibility by the EMT. During the audit interviews, email reporting of incidents were observed.		
2013/14- 20	 Hunter Water should continue implementing the five improvement initiatives identified as part of its 2012 Benchmarking Program including: develop a holistic approach to asset maintenance the complete capture of all asset and related maintenance information in its Ellipse Asset/Maintenance Management System. (It was noted that these initiatives should be fully implemented by July 2017, consistent with Hunter Water's ISO 55001 implementation program). 	In its March 2015 Report to IPART, Hunter Water indicated that: "Continuous improvement is occurring across the five areas identified as part of the transition to ISO 55001 certification. Asset information will be captured through Civil Mobility and Data Capture projects. Planned completion by July 2017." Hunter Water provided more specific detail of the improvements made in respect of the recommended initiatives in its Compliance and Performance Report 2014-15. The improvements implemented/actions taken by Hunter Water are reviewed in Table 17 of this report. Hunter Water demonstrated that it has:	 Hunter Water, <i>Response to 2014/15 Audit Questionnaire</i>, 25 September 2015, page 24. Hunter Water, <i>Compliance and Performance Report 2014-15</i>, September 2015, section 4.3. 	In progress
		• continued the development of a holistic approach to asset maintenance, having (for example) implemented a centralised operational control		



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Reference	Audit finding	Discussion	Evidence	Status
		 centre with maintenance dispatch functionality; and continued to upgrade/develop its Ellipse Asset/ Maintenance Management platform through the creation of a new series of asset information standards. These standards will support improved capture of asset technical and performance information and the optimisation of operational and maintenance practices. Initiatives related to "Alignment of Capability with Objectives" and "Challenging of Business Cases" are considered to have been substantially addressed, although it is likely that further improvement will occur as Hunter Water moves towards ISO 55001 certification. Substantial progress has also been made in respect of the remaining initiatives related to "Consistent Maintenance Management", Consistent Management and Operation of Critical Assets" and "Review and Update of Operations and Maintenance Procedures", with strategic directions identified and structural changes developed and partially implemented. Full implementation across the whole of the asset portfolio will, however, take time and Hunter Water's forecast of July 2017 completion (in readiness for proposed ISO 55001 accreditation) is considered realistic. 		

15NS20-REC-15-114-1.0 March 2016





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D Hunter Water's statement of compliance

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Statement of compliance

For 2014-15

Submitted by Hunter Water

To: The Chief Executive Officer Independent Pricing and Regulatory Tribunal of NSW PO Box K35 Haymarket Post Shop NSW 1240

Hunter Water reports as follows:

- 1. This statement documents compliance during 2014-15 with all obligations to which Hunter Water is subject by virtue of its operating licence.
- This report has been prepared by Hunter Water with all due care and skill to the best of our knowledge 2. of conditions to which it is subject under the Hunter Water Act 1991.
- 3. Schedule A provides information on all obligations with which Hunter Water did not comply during 2014-15.
- 4. Other than the information provided in Schedule A, Hunter Water has complied with all conditions to which it is subject.
- This compliance report has been approved by the Chief Executive Officer (or equivalent) and the 5. Chairman of the Board of Directors of Hunter Water/ Duly authorised Board Member of Hunter Water.

DATE: DATE: Signed: Signed: KIM WOOD Name:

Name:

Designation:

Managing Director

TERRY LAWLER

Designation:

Chairman

Schedule A	Non Compliances ¹	
Table #	List clauses breached, including a brief description of each licence clause	Describe: i Date or period of non-compliance ii Nature and extent of non-compliance (including whether and how many customers have been affected) iii Results of any monitoring (where applicable) iv Reasons for non-compliance v Remedial action taken vi Actual/anticipated date of full compliance
	None	None

1 Utilities should report only non-compliances that were identified during the reporting period.

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