

Independent Pricing and Regulatory Tribunal

Hunter Water Corporation Operational Audit 2012/13

Report to the Minister

Water — Compliance Report December 2013



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Executive Summary

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) has completed 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 2012 to 30 June 2013.

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

Further, in determining the scope of the audit we consult with the NSW Ministry of Health (NSW Heath) and seek public submissions. This year, NSW Health identified the following areas of interest:

- the adequacy of the 'verification of water quality', which should consider:
 - whether the monitoring data are representative and reliable
 - sampling procedures
 - use of accredited labs
 - performance in inter-laboratory proficiency testing (where applicable)
 - laboratory QA/QC procedures
- monitoring and management of critical / control points and the management of incidents.

We received no public comment and NSW Health's areas of interest were included in the audit.

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

To assist us in the 2012/13 operational audit of Hunter Water, we engaged a specialist auditing firm (Risk Edge Pty Ltd).

Overview of audit findings

This year was the first audit of the new Hunter Water licence. Hunter Water demonstrated Adequate to Full Compliance with its operating licence. The auditor noted that Hunter Water had performed well, despite some areas that did not receive Full Compliance.

The audit indicates that Hunter Water is providing high quality water and is committed to providing customers with high quality water and sewerage services.

IPART endorses most of the auditor's findings and recommendations. For the clause related to the implementation of the Recycled Water Management System (clause 2.2.2), the auditor awarded 'Full Compliance'. In its Statement of Compliance, Hunter Water notified IPART that it was non-compliant with this clause. The difference in compliance grading is as a result of a difference in interpretation of the clauses between Hunter Water, IPART and the auditor.

IPART concurred with Hunter Water that it was non-compliant with clause 2.2.2 and in light of this we do not support the audit grade of Full Compliance. The audit indicated that while Hunter Water has not completed the implementation of the Recycled Water Management System to all its schemes, it had completed a significant amount of work. As result, we have adopted an audit grade of Adequate for this clause.

In summary, the audit found that Hunter Water achieved:

- ▼ Full Compliance with requirements relating to Licence and Licence Authorisation, Performance Monitoring, Customers and Consumers, Recycled Water Quality Management System and 1 of the Asset Management System clauses.
- High Compliance with requirements relating to Environmental Management, and the remaining Asset Management clause.
- Adequate Compliance for the clauses related to the Drinking Water Quality Management System and the implementation of the Recycled Water Quality Management System.

Licence Part	Number of	Compliance grade awarded			
	audited clauses	Full	High	Adequate	
1. Licence and Licence Authorisation	1	1	-	-	
2. Water Quality	4	1		3	
4. Asset Management	2	1	1		
5. Customers and Consumers	4	4	-	-	
6. Environment	1	-	1	-	
8. Performance Monitoring	3	3	-	-	
Total	15	10	2	3	

Hunter Water's compliance is summarised in the table below.

Table 1Hunter Water's compliance in 2012/13, the first year of its 2012 –2017 Operating Licence

It is important to note that the audit found no issues with the quality of water provided by Hunter Water. Hunter Water's Compliance and Performance Report¹ provides results of Hunter Water's drinking water monitoring program. The results also showed that high water quality was achieved in 2012/13.

As noted above the 2012/13 audit was the first audit of the new licence. A major change to the 2012 – 2017 operating licence is the introduction of less prescriptive, 'systems based' obligations. The new licence obligations require Hunter Water to develop and implement management systems in the areas of water quality, environment and asset management.

Adequate compliance grades were awarded for some of the management system obligations; however we note the significant progress made by Hunter Water to date in developing the management systems.

Finally it is important to note that the definition of 'Adequate Compliance' as per IPART's Audit guidelines is "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."

Annual Statement of Compliance

In preparing this report, we reviewed Hunter Water's annual Statement of Compliance (Appendix D). This is an exception report certified by the Chief Executive Officer and the Chairman of the Board of Directors that lists any licence breaches that occurred during the year. Further, it outlines any remedial action that has been taken, or is in the process of being taken.

¹ Hunter Water Corporation, Compliance and Performance Report 2012-2013, September 2013.

Hunter Water submitted a Statement of Compliance for all the licence obligations, including those which were audited. The Statement of Compliance indicated that it had complied with all of its licence obligations, except for 4 clauses. Two of these clauses are addressed directly in the main body of this report (see section 2.2 and 2.6). IPART is satisfied that the remaining 2 clauses have been satisfactorily dealt with and do not require any follow up (for further details, please see section 1.4).

IPART's recommendations

There were 5 clauses where we have not awarded Full Compliance. The Auditor made recommendations with respect to 4 of these clauses.

In order to improve compliance with the operating licence, we have made 6 recommendations. These are outlined below. Timeframes for the implementation of these recommendations are outlined in Chapter 2.

Changes required to the water quality management system

- 1 Hunter Water should develop within its Drinking Water Quality Management System the following in relation to its Critical Control Points (CCPs):
 - a. A formal procedure for the establishment and review of CCPs, critical limits and monitoring points for critical limits should be developed in consultation with NSW Health.
 - b. Changes to CCPs and critical limits should be considered a significant change to the Drinking Water Quality Management System and Recycled Water Quality Management System and thus trigger the relevant notification clauses 2.1.3 and 2.1.4 or 2.2.3 and 2.2.4 of the Operating Licence as appropriate.
 - c. CCPs and critical limits should be reviewed to ensure that parameters are measureable in a timely manner and that the CCPs and limits are consistent across documentation.
 - d. Audit procedures should be set up for any CCP that is procedure dependent.
- 2 Hunter Water should develop and implement water quality awareness training for contractors.
- 3 Given that the distribution system integrity is fundamental to maintaining 'fit for purpose' water; Hunter Water should ensure that systems are in place to protect the drinking water network from contamination by recycled water (including backflow prevention). Implementation of these systems should be subject to ongoing review.

4 Hunter Water should establish the risks presented by future development around Medowie and, in consultation with NSW Health, confirm the capability of the Grahamstown Reservoir and Grahamstown Water Treatment Plant to provide safe drinking water.

Document control across various management systems

- 5 The audit identified a number of issues related to document control which Hunter Water should correct. These include:
 - a. Embedding the importance of emergency and incident management within documents across the organisation. In particular, the Water Quality and Environmental Emergency Management Guidelines need to be reviewed in line with their designated review date. Consistent and up to date emergency contact information needs to be maintained across all documentation.
 - b. Hunter Water should take action to update all of its Asset Management System documentation and issue them as final versions. Finalising the documents will not prevent ongoing development and improvement, but will clearly establish plans and processes at a point in time.

Continued improvement across various management systems

- 6 Continual improvement is a requirement of all systems, but especially water quality and asset management systems. Hunter Water needs to ensure that its systems include continual improvement by:
 - a. Developing the Drinking Water Quality Improvement Plan as noted in p6 of the Annual Report on Implementation of the Five Year Water Quality Management Plan 2012, as required by Element 12 of the Australian Drinking Water Guidelines (2011).
 - b. Updating the risk assessments of its water supply systems from catchment to tap. A document summarising the risk assessment workshop should be prepared including the workshop participants, risk methodology, significant risks and priorities for risk management. The identified priorities should be assessed and prioritised for implementation as part of the development of the Drinking Water Quality Improvement Plan.
 - c. Actioning the 5 priority asset management improvement opportunities identified as a result of the 2012 WSAA Aquamark Benchmarking Program (refer also to the auditor's recommendation AR-2013/2 for a detailed list of actions).

Subject to the Minister's endorsement, IPART will request that Hunter Water provides a progress report to us by 31 March 2014.

Executive Summary

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1 Introduction and scope

Hunter Water Corporation (Hunter Water) is a State Owned Corporation, wholly owned by the NSW State Government. Its 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 (as defined in Schedule B of its Operating Licence). 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 issued to Hunter Water under Section 12 of the Act.

IPART has completed the annual operational audit of Hunter Water's compliance with the obligations outlined in its Operating Licence.

We do this by receiving and reviewing reports and engaging an auditor to undertake an audit, which includes interviewing utility staff and undertaking site visits. At the completion of the audit we publish the audit report and report our findings to the Minister.

We applied a risk based approach to the audit of Hunter Water, as outlined in the Executive Summary. Further, we assess 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 and what remedial action has been taken, or is being taken, to resolve the matter.

1.1 Purpose and structure of this report

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

- Chapter 1 explains the scope of the audit review and the process followed in undertaking the audit
- Chapter 2 presents a summary of the audit findings and recommendations
- Chapter 3 summarises the progress by Hunter Water to address and implement recommendations from previous audits
- Appendix A contains the table of compliance grades used for this audit

- Appendix B contains the audit scope
- Appendix C contains the auditor's detailed audit report
- Appendix D contains Hunter Water's annual Statement of Compliance.

1.2 Audit scope

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

The audit scope for this year included obligations relating to:

- ▼ Licence and Licence Authorisation (Part 1) requirements relating to availability of the licence.
- Water Quality (Part 2) requirements relating to the maintenance and implementation of the Drinking Water and Recycled Water Management Systems.
- Asset Management (Part 4) requirements relating to the maintenance and implementation of the Asset Management System.
- Customers and Consumers (Part 5) requirements relating to the procedures for financial hardship, payment difficulties, water flow restriction and disconnection.
- Environment (Part 6) requirements relating to environmental management programs and activities.
- Performance Monitoring (Part 8) requirements relating to reporting and the provision of information.

1.3 The audit process

We engaged Risk Edge to assist with the 2012/13 audit of Hunter Water. The auditor was required to undertake the following tasks.

- 1. Liaise with NSW Health and other relevant departments to determine the agencies' views on Hunter Water's licence compliance and whether the audit should focus on any specific licence obligations.
- 2. Receive stakeholder submissions and comments for inclusion in the audit scope.
- 3. Prepare an information request (questionnaire), setting out all information and evidence requirements, 2 weeks prior to the commencement of audit interviews.
- 4. Review reports and documents provided by Hunter Water in response to the questionnaire.
- 5. Conduct face-to-face interviews with Hunter Water staff at their offices.

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

As part of the audit process, we sought submissions from the public on any matter related to the operating licence prior to the commencement of the audit interviews. We advertised for public submissions in the Sydney Morning Herald, The Daily Telegraph and the Newcastle Herald on 29 May 2013 and The Land on 30 May 2013. No submissions from the public were received.

We contacted NSW Health prior to the audit interview to seek its views on compliance, or any other areas which should be reviewed as part of this audit. We also sought the views of the Metropolitan Water Directorate regarding Hunter Water's obligations relating to the Roles and Responsibilities Protocol between Hunter Water and the Metropolitan Water Directorate required in clause 3.3.1 of the Operating Licence. IPART was satisfied, after discussing the matter with the Metropolitan Water Directorate, that there was no need to include this clause in the audit scope.

NSW Health recommended that the audit of the management systems should include:²

- the adequacy of the 'verification of water quality', which should consider:
 - whether the monitoring data are representative and reliable
 - sampling procedures
 - use of accredited labs
 - performance in inter-laboratory proficiency testing (where applicable)
 - laboratory QA/QC procedures

² Email dated 16 May 2013, P. Byleveld (NSW Health) to P. Burgess (IPART).

 monitoring and management of critical / control points and the management of incidents.

For the first time, a representative from Hunter New England Local Health District also attended audit interviews relating to water quality clauses.

The auditor adopted an audit methodology that generally relied on 'ISO 1911:2011 Guidelines for auditing management systems', but also had regard to:

- ASAE 3100: Compliance Engagements issued by the Auditing and Assurance Standards Board.
- ISO 17021:2011 Conformity Assessment Requirements for bodies providing audit and certification of management systems.

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

The auditor also followed our Audit Guideline for Public Water Utilities.³ Under this guideline, auditors can either make recommendations or suggest opportunities for improvement. Where we support an auditor's recommendation, we follow up the matter to ensure that it is addressed.

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

We held a project start up meeting with the auditor on 29 July 2013 to agree on the project milestones and timing of the audit, as well as to outline IPART's expectations of the audit. We also held an audit inception meeting with Hunter Water and Risk Edge on the first day of the audit interviews, 16 September 2013. At this meeting a mutual understanding and expectations of the audit was established and protocols for the conduct of the audit were agreed. All parties adhered to the agreed protocols throughout the audit.

The operating licence audit interviews were conducted from 16 to 17 September 2013, at Hunter Water's offices in Newcastle.

³ IPART, *Audit Guideline – Public Water Utilities*, May 2013. This Audit Guideline is on our website (www.ipart.nsw.gov.au).

The auditor also undertook site visits at the following locations on 18 September 2013:

- Grahamstown Water Treatment Plant.
- ▼ Branxton Waste Water Treatment Plant.

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

1.4 Annual Statement of Compliance

In preparing this report, we reviewed Hunter Water's annual Statement of Compliance (Appendix D). This is an exception report certified by the Chief Executive Officer and the Chairman of the Board of Directors that lists any licence breaches that occurred during the year. Further, it outlines any remedial action that has been taken, or is in the process of being taken.

Hunter Water submitted a Statement of Compliance for all the licence obligations, including those which were audited. The Statement of Compliance indicated that it had complied with all of its licence obligations except for 4 clauses.

 Clause 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.

The impact of this non-compliance is addressed under Water Quality, section 2.2 of this report.

 Clause 5.2.3 – Hunter Water must provide the pamphlet⁴ prepared under clause 5.2.1 and any updates made under 5.2.2, free of charge to:

a) customers at least annually with their Bills; and

b) any other person on request.

 Clause 5.4.3 (a) – Hunter Water must provide an explanation of the Procedure for Payment Difficulties and Actions for Non-payment free of charge to residential customers, at least annually with their bills.

⁴ Clause 5.2.1 requires Hunter Water to prepare a pamphlet that explains the Customer Contract, summarises the key rights and obligations of customers, summarises the rights and obligations of Customers, refers to the types of account relief available for Customer experiencing financial hardship and provides contact information for Hunter Water. This must be carried out whenever a variation in the Customer Contract is made.

The required information was sent out to customers separately, not with their bills. For both the matters above, we are satisfied that the non-compliance was not significant and has been adequately addressed by Hunter Water.

 Clause 2.1.2 of the Reporting Manual - Hunter Water must submit a report on its fluoride monitoring to NSW Health for each month, which contains the information required by the Code of Practice for Fluoridation of Public Water Supplies. Hunter Water must submit the report within the first week of the following month.

The impact of this non-compliance is addressed under Performance Monitoring, section 2.6 of this report.

2 Summary of audit findings and recommendations

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

A major difference of the new licence has been the move towards less prescriptive 'systems based' obligations. While the overall procedure for auditing remains the same, the determination of compliance for a system differs from a prescriptive clause. The relevant sections of the licence that are systems based are Water Quality, Asset Management and Environment.

As this is the first year of the new licence, no compliance history has been included, however future years will compare back to 2012.

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

 Risk Edge, Hunter Water Corporation 2012/13 Operational Licence Audit (RFQ 13/180) for IPART, 22 November 2013 (see Appendix C).

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

▼ Full = Full Compliance; High = High Compliance; Adeq = Adequate Compliance; NC = Non-Compliant; NR = No Requirement.

Following the table, we discuss those clauses where Hunter Water received less than Full Compliance and the auditor's reasoning for the grade. We also discuss the recommendations and opportunities for improvement to address the issues that have resulted in less than Full Compliance. Recommendations are generally accompanied by timeframes for completion. Progress with the recommendations and the given timeframes will be checked at the next audit.

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.

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

Clause	Requirement	Compliance Grading				
1	Licence Authorisation	2012/13	2013/14	2014/15	2015/16	2016/17
1.8.1	Availability of licence	Full				

The auditor found that Hunter Water had placed a copy of the licence on the website, which was available for downloading free of charge. Data was provided to show that the licence had been downloaded within the licence period. The auditor was satisfied that this provided sufficient information to demonstrate that the obligations relating to the availability of the licence had been met.

The auditor noted that the font colour of the hyperlink to the operating licence may make it difficult to quickly see on some browsers; however this did not affect compliance.

The clause was awarded Full Compliance and no recommendations were made.

2.2 Water Quality

Hunter Water achieved Full Compliance with 1 of the 4 audited clauses and Adequate Compliance with the remaining 3 clauses.

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

The Drinking Water and Recycled Water Quality Management Systems were subject to a 'systems audit' for the first time this year. 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 or the Australian Guidelines for Water Recycling. 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. The Systems audit was not a comprehensive audit, but the auditor made a judgement about areas of the Framework on which to focus (based on their experience and discussions with NSW Health).

Clause Requirement			Compliance Grading				
2	Water quality	2012/13	2013/14	2014/15	2015/16	2016/17	
2.1.1	Drinking Water Quality Management System	Adeq					
2.1.2	Fully implemented system	Adeq					
2.2.1	Recycled Water Quality Management System	Full					
2.2.2	Fully implemented system	Adeq a					

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

^a 2012/13 The Auditor awarded full compliance for this clause, however IPART has disagreed with the 'target for compliance' which the auditor has used to award this compliance grade, and has instead awarded the implementation of the system Adequate compliance.

Drinking Water Quality Management Systems

Clause 2.1.1 of the licence requires that Hunter Water to maintain a Management System that is consistent with the Australian Drinking Water Guidelines.

Clause 2.1.2 requires that "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"

The auditor found that with respect to the Drinking Water Quality Management System, the requirements of the Guidelines and NSW Health were generally being met, with some shortcomings. The auditor identified the issues below:

- Formalising a procedure for the establishment and review of Critical Control Points (CCPs), and achieving consistency between documents.
- Emergency management guidelines review dates being allowed to lapse without necessary updates.
- Documentation of some risk assessment workshops missing details such as participants, methodology and context. Also missing was a prioritised actions list arising from the risk workshops.
- Lack of integration of the Framework elements to the Drinking Water Quality Management Improvement Plan.

The auditor also observed and noted that there was a lack of systematic linkages between the elements of the Framework.

With respect to the implementation of the Drinking Water Quality Management System, the auditor identified the following shortcomings:

- The risk assessment process is weak beyond the risk assessment spreadsheets.
- Limited monitoring and auditing of procedural CCPs.
- Water quality awareness training has not been developed or implemented for contractors.

The auditor also noted recurring issues with document control and review and continual improvement, including the frequency of review and subsequent updating of documents.

For these reasons, we awarded Adequate Compliance to both the Drinking Water Quality Management System clauses (2.1.1 and 2.1.2).

Recycled Water Quality Management Systems

The auditor awarded Full Compliance for both Recycled Water Quality Management System clauses of the licence.

Clause 2.2.1 requires Hunter Water to maintain a Management System that is consistent with the Australian Guidelines for Water Recycling.

Clause 2.2.2 requires that "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."

In Hunter Water's Statement of Compliance (Appendix D), Hunter Water reports that it has developed a Recycled Water Management Plan in consultation with NSW Health, which aims to achieve full compliance in 2015.

While the auditor considered that the target for Full Compliance was "A fully implemented system by 2015", IPART takes a different view. IPART acknowledges that both the auditor and NSW Health are satisfied that the utility is on track with its plan to achieve Full Compliance with this clause by 2015. Despite this, we consider that until all the actions are completed, Full Compliance cannot be awarded. At this point in time, we consider 'Adequate Compliance' is the appropriate compliance grade for this clause.

Water Quality recommendations

While the auditor has identified a number of minor shortcomings with the Water Quality requirements, the auditor was satisfied that they do not compromise the ability of Hunter Water to achieve defined water quality objectives or assure controlled processes, products or outcomes.

We have made the following recommendations in relation to the water quality clauses 2.1.1, 2.1.2 and 2.2.2. These were based on the Auditor's recommendations WQR-2013/1 to WQR2013/6.

Recommendations

Changes required to the water quality management system

- 1 Hunter Water should develop within its Drinking Water Quality Management System the following in relation to its Critical Control Points (CCPs):
 - a. A formal procedure for the establishment and review of CCPs, critical limits and monitoring points for critical limits should be developed in consultation with NSW Health. Timeframe: June 2014.
 - b. Changes to CCPs and critical limits should be considered a significant change to the Drinking Water Quality Management System and Recycled Water Quality Management System and thus trigger the relevant notification clauses 2.1.3 and 2.1.4 or 2.2.3 and 2.2.4 of the Operating Licence as appropriate.
 - c. CCPs and critical limits should be reviewed to ensure that parameters are measureable in a timely manner and that the CCPs and limits are consistent across documentation. Timeframe: June 2014.
 - d. Audit procedures should be set up for any CCP that is procedure dependent. Timeframe: June 2014.
- 2 Hunter Water should develop and implement water quality awareness training for contractors. Timeframe: June 2014.
- 3 Given that the distribution system integrity is fundamental to maintaining 'fit for purpose' water; Hunter Water should ensure that systems are in place to protect the drinking water network from contamination by recycled water (including backflow prevention). Implementation of these systems should be subject to ongoing review. Timeframe: June 2014.
- 4 Hunter Water should establish the risks presented by future development around Medowie, and in consultation with NSW Health, confirm the capability of the Grahamstown Reservoir and Grahamstown Water Treatment Plant to provide safe drinking water.

Document control across various management systems

- 5 The audit identified a number of issues related to document control which Hunter Water should correct. These include:
 - a. Embedding the importance of emergency and incident management within documents across the organisation. In particular, the Water Quality and Environmental Emergency Management Guidelines need to be reviewed in line with their designated review date. Consistent and up to date emergency contact information needs to be maintained across all documentation. Timeframe: Immediate and upon review cycle.

2 Summary of audit findings and recommendations

Continued improvement across various management systems

- 6 Continual improvement is a requirement of all systems, but especially water quality and asset management systems. Hunter Water needs to ensure that its systems include continual improvement by:
 - a. Developing the Drinking Water Quality Improvement Plan as noted in p6 of the Annual Report on Implementation of the Five Year Water Quality Management Plan 2012, as required by Element 12 of the Australian Drinking Water Guidelines (2011). Timeframe: June 2014.
 - b. Updating the risk assessments of its water supply systems from catchment to tap. A document summarising the risk assessment workshop should be prepared including the workshop participants, risk methodology, significant risks and priorities for risk management. The identified priorities should be assessed and prioritised for implementation as part of the development of the Drinking Water Quality Improvement Plan. Timeframe: June 2014.

2.3 Assets

We audited 2 clauses in the Assets section of the licence. We awarded 'Full Compliance' for one clause and 'High Compliance' for the remaining clause.

Part 4 of the licence, 'Asset Management', outlines the obligations for Hunter Water's Asset Management System as well as Hunter Water's 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			Com	pliance Gra	ading	
4	Assets	2012/13	2013/14	2014/15	2015/16	2016/17
4.1.1	Asset Management System standard	High				
4.1.2	Asset Management	Full				

Table 2.2	Summary of	oomplianco wi	ith Dart 1 of	the licence	Accete
Table 2.3	Summary of	compliance wi	ith Part 4 of	the licence –	Assets

The auditor found that whilst Hunter Water has a document management system, much of the key documentation has been in draft form for extended periods of time without being finalised, which the auditor considered was critical for the system to be effectively maintained.

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

The auditor was satisfied that Hunter Water was implementing its asset management practices in accordance with the requirements of the Asset Management System, and thus we awarded Hunter Water Full Compliance for clause 4.1.2.

The auditor noted that Hunter Water is considering redeveloping its Asset Management System to a system compliant with the ISO 55000 series standards and further noted that it would be a beneficial action. We also support such a change.

We have made the following recommendations in relation to clause 4.1.1, based on the auditor's recommendations AR-2013/1 and AR2013/2.

Recommendations

Document control across various management systems

- 5 The audit identified a number of issues related to document control, which Hunter Water should correct. These include:
 - b. Hunter Water should take action to update all of its Asset Management System documentation and issue them as final versions. Finalising the documents will not prevent ongoing development and improvement, but will clearly establish plans and processes at a point in time. Timeframe: December 2014.

Continued improvement across various management systems

- 6 Continual improvement is a requirement of all systems, but especially water quality and asset management systems. Hunter Water needs to ensure that its systems include continual improvement by:
 - c. Actioning the 5 priority asset management improvement opportunities identified as a result of the 2012 WSAA Aquamark Benchmarking Program (refer also to the auditor's recommendation AR-2013/2 for a detailed list of actions). Timeframe: December 2015.

2.4 Customers and Consumers

Hunter Water achieved Full Compliance for all 4 clauses audited.

Part 5 of the licence, 'Customers and Consumers', outlines Hunter Water's obligations towards their customers and consumers, including obligations relating to the Customer Contract, provision of information to customers, 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 non-compliance.

Clause	Requirement		Compliance Grading					
5	Customers and Consumers	2012/13	2013/14	2014/15	2015/16	2016/17		
5.4.1	Procedure for Payment Difficulties and Actions for Non-payment	Full						
5.4.2	Procedure in Customer Contract	Full						
5.4.3	Provide explanation of procedure	Fulla						
5.4.4	Publish procedure on website	Full						

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

^a Hunter Water's statement of compliance notes a minor non-compliance with respect to this clause. Both the auditor and IPART have decided to award full compliance after considering the explanation of Hunter Water regarding the nature of the non-compliance and the corrective action taken.

Hunter Water demonstrated that it maintains procedures relating to financial hardship, payment difficulties, water flow restriction and disconnection in accordance with the requirements of the operating licence. The auditor sighted evidence to demonstrate that the procedure was appropriately set out in the Customer Contract, communicated in newsletters and information packs and published on the Hunter Water Website, available for downloading free of charge.

The auditor noted that Hunter Water's Statement of Compliance indicates a noncompliance against clause 5.4.3 because information regarding the Procedure for Payment Difficulties and Actions for Non-payment was sent in an information pack and not with the bill as required by the clause. However, it was the auditors' opinion, which we support, that a grade of Full Compliance should be awarded as the breach noted by Hunter Water was not significant enough to reduce the grade from Full to High Compliance as it did not affect the customer (the customer was still provided with the information).

We did not make any recommendations in relation to clauses 5.4.1, 5.4.2, 5.4.3 or 5.4.4, as Hunter Water was awarded Full Compliance for these licence clauses.

2.5 Environment

Part 6 of the licence 'Environment Management' outlines the obligations for the Environmental Management System, 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.

Hunter Water achieved High Compliance for the only clause audited in this section. Clause 6.1.4 requires that, until Hunter Water's Environmental Management System has been developed and certified (30 June 2017) it must maintain programs to manage risks to the environmental from carrying out its activities, and ensure that all its activities are carried out in accordance with those programs⁵.

Clause	Requirement		Com	pliance Gra	ading	
6	Environment	2012/13	2013/14	2014/15	2015/16	2016/17
6.1.4	Programs to manage risks to the environment	High				

Table 2.5	Summary of	compliance with	Part 6 of the	licence - Environment
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The auditor found that, in general, Hunter Water has very good systems in place for managing and embedding its environmental commitments across the organisation (including contractors). The auditor sighted evidence of Hunter Water's work within the audit period on the environmental management plan, legal register, risk register and work towards energy savings. However, the auditor also noted that document control for incident and emergency management required improvement. For this reason, we awarded High Compliance and not Full Compliance.

We have made the following recommendation in relation to clause 6.1.4, based on the auditor recommendation ER-2013/1.

Recommendation

Document control across various management systems

- 6 The audit identified a number of issues related to document control which Hunter Water should correct. These include:
 - a. Embedding the importance of emergency and incident management within documents across the organisation. In particular, the Water Quality and Environmental Emergency Management Guidelines need to be reviewed in line with their designated review date. Consistent and up to date emergency contact information needs to be maintained across all documentation. Timeframe: Immediate and upon review cycle.

2.6 Performance Monitoring

Hunter Water achieved Full Compliance for all 3 clauses audited.

⁵ Until 30 June 2017 when the Licence requires the Environmental Management System to be fully developed and certified, this clause will not be audited used a systems based approach, instead the more prescriptive clause will apply.

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.

Clause	Requirement		Com	pliance Gra	ading	
8	Performance Monitoring	2012/13	2013/14	2014/15	2015/16	2016/17
8.2.1	Reporting	Full				
8.2.2	Maintaining record systems	Full				
8.3.5	Providing water quality information to NSW Health	Full				

 Table 2.6
 Summary of compliance with Part 8 of the licence – Performance Monitoring

The auditor sighted evidence to be satisfied that Hunter Water has good systems in place to support the planning for, collation of, recording of and tracking of information. The auditor was also satisfied with the quality assurance of information and that information is made publically available, where required, on the Hunter Water Website. Hunter Water was also able to provide evidence to demonstrate contact between Hunter Water and NSW Health on water quality issues. A representative from Hunter New England Local Health District attended the audits and no issues were raised by NSW Health relating to the provision of water quality information or compliance with clause 8.3.5.

For these reasons, we awarded Full Compliance.

IPART noted that Hunter Water raised a 'non-compliance' with respect to clause 2.1.2 of the Reporting Manual, in its Statement of Compliance. This noncompliance related to the reporting of Fluoride results to NSW Health. An email used in reporting was found to be missing an attachment. This was discovered some months after the event and rectified upon notification. While this noncompliance could have impacted the compliance of clause 8.2.1(a) of the operating licence (reporting in accordance with the Reporting Manual), IPART considers that appropriate corrective action was carried out. The incident was not significant enough to impact on the recommended compliance grade.

While we have considered the above error minor, we noted a similar issue relating to tracking of information sent to IPART, as discussed in the appendix of the auditor's report. The auditor noted an opportunity for improvement with respect to tracking of information, which we support.

3 Progress on previous audit recommendations

The previous audits in 2009/10, 2010/11 and 2011/12 identified areas where Hunter Water's performance with its licence obligations did not receive Full Compliance. We made recommendations to address these issues. The following table outlines Hunter Water's progress in implementing these recommended actions.

In particular, we note the recommendation below resulting from the auditor's review of Hunter Water's progress in implementing an earlier recommendation.

Recommendation

4 Hunter Water should establish the risks presented by future development around Medowie and in consultation with NSW Health, confirm the capability of the Grahamstown Reservoir and Grahamstown Water Treatment Plan, to provide safe drinking water.

	Recommendation	Progress
1	2011/12-2 Hunter Water should develop a guideline for consistency of approach to life cycle costing across different asset groups, including greater consideration of both asset and business associated risks with more definite linkages to corporate objectives. They should apply this to the planned asset management project covering electrical and mechanical equipment	Completed
2	2011/12 Out of Scope item regarding development around Medowie in the water supply catchment, which may affect drinking water quality in future. Minister informed that IPART intends to inform NSW Ministry of Health about this potential issue for their future investigation. We will also include this item in next year's operating audit.	The Auditor was satisfied that Hunter Water was making progress against this recommendation, however further recommended that: "HWC should establish the risks presented by future development around Medowie and, in consultation with NSW Health, confirm the capability of the Grahamstown Reservoir and Grahamstown Water Treatment Plant to provide safe drinking water." This Recommendation has been incorporated into Recommendation 4 of this report.
3	2010/11-1 Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011. (clause 3.2.1)	Auditor noted progress with respect to this recommendation but also observed some delays. The auditor recommended: "Completion of this action should be reviewed as part of the 2013/2014 audit"
4	2010/11-4 Develop an agreed timetable with NSW Ministry of Health for the full implementation of the framework outlined in the Australian Guideline for Water Recycling, including validation of critical limits and the development of notification criteria to NSW Ministry of Health for existing recycled water schemes (clause 3.6.3).	The Auditor noted that there had been good progress but recommended to: "Check progress at next audit as part of auditing Clause 2.2".
5	2009/10 – 3e Development of asset management plans for dams by 2012 audit (clauses 4.8 & 4.9).	Complete

Table 3.1Hunter Water's progress in 2012/13 to address IPART's
recommendations from previous audits

Appendices

A | IPART Compliance Grades

Compliance grades for public utilities

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

A IPART Compliance Grades

B 2012/13 Audit Scope

Hunter Water– Operating Licence2012-2017

2012-13 Audit Scope

Peter Burgess
HUNTER WATER CORPORATION - 2012-2013 AUDIT SCOPE

Key to Table 1

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

Auditors should note any Tribunal directions shown as comments column.

This scope is based on the audit schedule determined for the new licence 2012 -2017 Trim Record Number D13/9000.

Recommendations from previous years

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

Statement of Compliance

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

Table 1 – Audit scope 2012-2013 Hunter Water Corporation

Licence Clause	Operating Licence Obligations	Require ment 2012/13	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 clause 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 clause
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 clause.
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 clause does not require audit
1.5	Licence amendment		
1.5.1	Subject to the Act and clause 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	
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	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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.	SC	
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 clause 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 clause 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; andb) to the public on request.	Audit/SC	
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	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	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/SC	Audit each year will be a combination of risk based adequacy and implementation (2.1.1 & 2.1.2) Audit will also be informed by consultation with NSW Health and outcomes of previous audits
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/SC	As for 2.1.2 audit each year Audit will also be informed by consultation with NSW Health and outcomes of previous audits.
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 if there are any significant changes in the last 12 months.	Prior notice of change IPART to be informed of any changes prior to finalisation of audit scopes.
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.	SC	Prior notice of change As for subclause 2.1.3 audit if there are significant changes in the last 12 months.

Licence Clause	Operating Licence Obligations	Require ment 2012/13	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 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 Hunter Water's circumstances and/ or Recycled Water Quality policy and practices within New South Wales.]	Audit/SC	Audit each year will be a combination of risk based adequacy and implementation (2.2.1 & 2.2.2) Program agreed with NSW Health for Hunter Water to be fully compliant by 2015. Audit will check progress to full compliance.
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/SC	As for 2.2.1 Program agreed with NSW Health for Hunter Water to be fully compliant by 2015. Audit will check progress to full compliance.
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.	Audit if there are any significant changes in the last 12 months.	Prior notice of change IPART to be informed of any changes prior to finalisation of audit scopes
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	As for subclause 2.1.3 audit if there are significant changes.
3.0	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	
3.1.2	Hunter Water must report its compliance with the Water Conservation Target to IPART in accordance with the Reporting Manual.	SC	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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	
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	
3.2.3	When determining the Economic Level of Leakage from the Drinking Water Network for the purposes of clause 3.2.1, Hunter Water must use the methodology approved by IPART under clause 3.2.2.	NR	
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 clause 3.3.1(a)	SC	IPART will check with MWD and only audit if there are issues.
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/SC	Audit will be a combination of risk based adequacy and implementation (4.1.1 & 4.1.2)
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/SC	As for 4.1.1 audit each year.
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/ Audit if there are any significant changes in the last 12 months.	Prior notice of change IPART to be informed of any changes prior to finalisation of audit scopes

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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 1 Property is considered to be 1 Property.] c) In the case of any ambiguity in the interpretation or application of any of the standards set out in this clause 4.2, IPART's interpretation of the relevant standard or assessment of its application will prevail. 	NR	Definition clause does not require audit
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 clause 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	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	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 clause 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 clause 4.2.3(a). 	SC	
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	
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	
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	Prior notice of change IPART to be informed of any changes prior to finalisation of audit scopes. No changes have been reported for this year.
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	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
5.2.2	Hunter Water must update the pamphlet prepared under clause 5.2.1 when variations are made to the Customer Contract.	SC	Prior notice of change IPART to be informed of any changes prior to finalisation of audit scopes
5.2.3	Hunter Water must provide the pamphlet prepared under clause 5.2.1 and any updates made under clause 5.2.2 free of charge to: a) Customers at least annually with their Bills; and b) any other person on request.	SC	
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	
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	
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. 	Audit/SC	
5.4.2	Hunter Water must set out the Procedure for Payment Difficulties and Actions for Non-payment in the Customer Contract.	Audit/SC	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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.	Audit/SC	
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.	Audit/SC	
5.5	Consultative Forum		
5.5.1	Hunter Water must maintain and regularly consult with its Customers and Consumers through a Consultative Forum.	SC	
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	SC	
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.	SC	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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. 	SC	
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	SC	
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.	SC	
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 <i>Australian Standard AS ISO 10002- 2006: Customer satisfaction - Guidelines for complaints</i> <i>handling in organizations</i> (ISO 10002:2004, MOD) (Internal Complaints Handling Procedure).	SC	
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	
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	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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	
5.7.2	 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	
6	Environment	<u>.</u>	
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	Hunter Water to provide progress reports to enable IPART to plan their audit requirements.
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 AS/NZS ISO</i> 14001:2004: Environmental Management Systems - <i>Requirements with guidance for use</i> ; and b) once the Environmental Management System is certified under clause 6.1.2(a), the certification is maintained during the remaining term of this Licence	NR	
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.	NR	
6.1.4	Until the Environmental Management System has been developed and certified in accordance with clauses 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	Audit/SC	
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.	SC	Prior notice of change IPART to be informed of any changes prior to finalisation of audit scopes

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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 <i>Australian Standard AS/NZS ISO</i> <i>9001:2008: Quality Management Systems –</i> <i>Requirements</i> ; and b) once the Quality Management System is certified under clause 7.1.2(a), the certification is maintained during the remaining term of this Licence.	NR	
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.	NR	
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	Prior notice of change IPART to be informed of any changes prior to finalisation of audit scopes
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	
8.1.3	Hunter Water must provide the information requested under clause 8.1.2 within a reasonable time of it being requested.	SC	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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	
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.		
8.2.2	Hunter Water must maintain sufficient record systems that enable it to report accurately in accordance with clause 8.2.1.	Audit/SC	
8.3	Provision of Information		
8.3.1	If IPART requests that Hunter Water provide information relating to the performance of its obligations under clause 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 clause 8.2.	SC	
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	
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 clause 8 as if that third party were Hunter Water.	SC	
8.3.4	If IPART or an Auditor requests information under this clause 8 which is confidential, the information must be provided to IPART or the Auditor, subject to IPART or the Auditor entering into reasonable arrangements to ensure that the confidential information remains confidential.	SC	

Licence Clause	Operating Licence Obligations	Require ment 2012/13	Comments
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.]	Audit/SC	IPART will discuss audit with NSW Health each year.
8.4	Performance indicators		
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. 	SC	
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 clause 9.1.1(a).	SC	IPART will check with NSW Health and only audit if there are issues.
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	IPART will check with NSW Health and only audit if there are issues.
9.1.4	Clause 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 Clause	Operating Licence Obligations	Require ment 2012/13	Comments
10	End of term review		
10.1	End of Term Review		
10.1.1	 It is anticipated that a review of this Licence will commence in the first quarter of 2016 to investigate: a) whether this Licence is fulfilling its objectives; and b) any issues which have arisen during the term of this Licence, which may affect the effectiveness of this Licence, (End of Term Review). [Note: In the event that IPART undertakes the end of term review, IPART intends to: 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	

10 required				
Recomme ndation number	Operational issue (Licence reference where applicable)	IPART Recommendation to the Minister	Progress at 2011/12 Audit	Guidance for 2012/13 Audit
2011/12 - 1	Old Licence Clause 3.5 Water – Incident management. Incident trigger levels need to be clarified and agreed with NSW health to minimise the risk of under or over reporting. Incident management is no longer a specific licence requirement and is regulated by NSW Health.	Hunter Water should, in consultation with NSW Ministry of Health, clarify and more precisely define measurable and appropriate incident triggers within its incident management plan (Clause 3.5 Water – Incident management)	New recommenda tion	Discuss with NSW Health under clause 2.2 determine whether an issue remains and only audit if necessary.
2011/12 - 2	Clause 4.8 asset management requirements. Now Clause 4.1 of new licence Identified need to review asset management procedures for consistency of approach between asset groups, greater consideration of business risks and demonstration of linkages to corporate objective	Hunter Water should develop a guideline for consistency of approach to life cycle costing across different asset groups, including greater consideration of both asset and business associated risks with more definite linkages to corporate objectives. They should apply this to the planned asset management project covering electrical and mechanical equipment	New recommenda tion	Audit of Clause 4.1 Asset management is required every year. Auditor to check progress on the identified issues as part of that audit.
2011/12 Out of Scope Item	Drinking Water Quality (clause 2.1) The auditor noted that while outside of the scope of the audit, development around Medowie in the water supply catchment may affect drinking water quality in future.	Minister informed that IPART intends to inform NSW Ministry of Health about this potential issue for their future investigation. We will also include this item in next year's operating audit.	New Item	Hunter Water response to potential risks associated with pumping of storm runoff from the Medowie area into Grahamstown Reservoir is to be included in the audit
2010/11 - 1	Clause 3.2.1 Rapid response process to prevent out of specification water reaching customers not implemented	Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011. (clause 3.2.1)	Hunter Water is addressing this issue against completion dates developed in agreement with NSW Ministry of Health. As it is still in progress, it is	Check Progress

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

Recomme ndation number	Operational issue (Licence reference where applicable)	IPART Recommendation to the Minister	Progress at 2011/12 Audit	Guidance for 2012/13 Audit
			one of the reasons full compliance could not be awarded for clause 3.2 Water Quality.	
2010/11 – 4	Clause 3.6.3 Time table for implementing recycled water guidelines need to be agreed	Develop an agreed timetable with NSW Ministry of Health for the full implementation of the framework outlined in the Australian Guideline for Water Recycling, including validation of critical limits and the development of notification criteria to NSW Ministry of Health for existing recycled water schemes (clause 3.6.3).	Progress on the strategy agreed with NSW Ministry of Health is satisfactory and will be completed in 2015. As it is still in progress it is one of the reasons full compliance could not be awarded for clause 3.7 Water Quality.	Check Progress
2009/10 – 3e	Clause 4.8 and 4.9 Asset Planning for Dams considered insufficient	Development of asset management plans for dams by 2012 audit (clauses 4.8 & 4.9).	Progress is considered satisfactory by auditor and extension of deadline to June 2013 supported.	Check completion

C Operational Audit Report 2012/13 Hunter Water

C Operational Audit Report 2012/13 Hunter Water

Hunter Water Corporation 2012/13 Operational Licence Audit (RFQ 13/180) for IPART

Version: Final

22 November 2013 Risk Edge™ Project # 099

In conjunction with Atom Consulting, Cobbitty Consulting Pty Ltd and BBTech Consulting



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Document History

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Glossary

Item	DESCRIPTION	
ADWG	Australian Drinking Water Guidelines (2011)	
AGWR	Australian Guidelines for Water Recycling (2006)	
Aquality	WSAA's Framework for Management of Drinking Water Quality benchmarking tool.	
Aquamark	WSAA's asset management benchmarking tool.	
ССР	Critical control point (as defined in the Framework).	
CEO	Chief Executive Officer	
DWMS	Drinking Water Management System	
EPA	NSW Environment Protection Authority	
Framework	This term refers to either the Framework for Management of Drinking Water Quality or the Framework for Management of Recycled Water Quality and Use. Its meaning in situ depends on the context of the clause being assessed.	
Hunter Water or HWC	Hunter Water Corporation	
HWA	Hunter Water Australia	
IPART	Independent Pricing and Regulatory Tribunal	
ISQMS	Integrated Quality Management System	
ISO 14000	A family of standards relating to environmental management.	
ISO 31000	ISO 31000:2009 Risk Management – Principles and Guidelines. (adopted in Australia as AS/NZS ISO 31000:2009 (ISO 31000)	
ISO 55000	Standard for Asset Management. Currently in draft form. Expected release date February 2014. The ISO 55000 series standards will replace BSI PAS 55:2008 (PAS 55) Asset Management standard.	
Licence	Hunter Water Corporation Operating Licence 2012-2017	
MWD	Metropolitan Water Directorate	
NOW	NSW Office of Water.	
NWI	National Water Initiative	
O&M	Operation and Maintenance	
PAS 55	BSI PAS 55:2008 (PAS 55) Asset Management standard	
RWMS	Recycled Water Management System	
SOPs	Standard Operating Procedures	
Systems-based Audit	Where specific systems (such as the <i>Framework for Management of Drinking Water Quality</i>) and their adequacy and implementation are audited, rather than prescriptive licence clauses.	
WSAA	Water Services Association of Australia	
WTP	Water Treatment Plant	
WWTP	Wastewater Treatment Plant	

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Executive Summary

Audit Background

Through a tender process, the Risk Edge[™] audit team was awarded the contract, by the Independent Pricing and Regulatory Tribunal of NSW (IPART), to conduct the 2012/2013 Operating Licence (the Licence) audit of Hunter Water Corporation (Hunter Water or HWC). As part of this process, the Risk Edge[™] team was required to audit certain clauses of the Licence as determined by IPART. Of particular note for this audit were the following:

- This was the first audit of the new Licence period (being current for the years 2012-2017).
- This was the first audit of a 'systems-based' Licence.

The Risk Edge[™] team was also required to audit any existing recommendations outstanding from previous audits and express an opinion on progress to meeting or closing-out these recommendations, as well as the audit compliance of the auditable Licence clauses.

Auditor Statement

The audit team declares the following:

- It has seen sufficient evidence on which to base its conclusions. The evidence base included (but was not limited to):
 - o Pre-audit review of documentation (Excel spreadsheets, Powerpoint, pdf, Word documents and other files and the Hunter Water Corporation website, completed audit questionnaire).
 - o Face-to-face interviews over two days in the Hunter Water office.
 - o Inclusion of a NSW Health representative at the drinking water quality and recycled water quality component of the audit.
 - o One day of on site auditing at Grahamstown Water Treatment Plant and Branxton Wastewater Treatment Plant.
 - o Post-audit review of follow up supporting evidence requested at both the interviews and on site audit.
- The audit findings accurately reflect the professional opinion of the auditors.
- When conducting the audit, determining audit findings and preparing the report, the lead auditor and team members had regard to the audit guideline and the audit deed.
- The audit findings have not been unduly influenced by the utility and/or any of its associates.

While the Risk Edge[™] team has followed good auditing practice in requesting samples of information, following lines of questioning, and employing a range of audit techniques to arrive at its conclusions, the team notes that because of the inherent limitations of auditing, there may be areas where gaps, non-compliance, fraud or other may have occurred and may not have been detected by the auditing process. The team has accepted the evidence provided to it in good faith and together with information sought from external stakeholders (NSW Health), has formed its view of HWC's compliance against the selected clauses and recommendations for this 2012/2013 audit.

Major Findings

While HWC has performed well in the team's opinion, there are some areas, which did not receive full compliance. The summary findings for the Licence areas are shown below.

Licence Area	Major Findings
I. Licence and Licence Authorisation	Full compliance was achieved for the clause audited.
2. Water Quality	As part of its requirement for Drinking Water, HWC must maintain a Management System consistent with the Australian Drinking Water Guidelines (ADWG) and the Framework for Management of Drinking Water Quality (Framework). Evidence was provided that the requirements have generally been met and that the system HWC has in place is generally consistent with the requirements of the Framework. However, a lack of systematic linkages of HWC's practices and processes to the Framework was observed. In particular, there existed a lack of clarity as to how risks identified in the risk assessments were being managed and how actions identified from the risk assessment were prioritised and actioned. The auditor noted that HWC undertook a broad range of actions towards water quality improvements. However, the lack of a clearly articulated Drinking Water Quality Improvement Plan (incorporating actions identified through risk assessments, major incident and incident training debriefs, internal audits and senior management and stakeholder meetings), was noted as an area for attention. HWC has to ensure the Drinking Water Management System (DWMS) is fully implemented and all activities are carried out in accordance with the system. Sufficient evidence was provided that the requirements have generally been met. Sound implementation of operational and verification procedures was noted. Document control including consistency across documentation, version control and timely revision was noted as an area for attention. In particular, of concern are the following: The fact that the Emergency Management Guidelines have not been updated since May 2011 and are now eight months past the review due date. Discrepancies between Critical Control Points (CCPs) and limits across documentation. For recycled water, HWC is making good progress towards a fully implemented management system by 2015 as evidenced by the <i>Recycled Water S Year Implementation Project Plan</i> , progress made in the implementation of the <i>Recycled Water 5 Year Improveme</i>
4. Asset Management	 Whilst Hunter Water has a documented asset management system, much of the key documentation is in draft form and has been for some time; this infers that the system is not effectively maintained. For the purposes of this clause, 'maintaining' the Management System is taken to mean that it is complete (in respect of its coverage), kept up-to-date and reflective of actual practice currently being implemented. Furthermore, Hunter Water's self-assessment of performance using the Water Services Association of Australia (WSAA's) Aquamark benchmarking tool (which has been independently validated) shows a significant reduction in performance from 2008 to 2013, and an effective performance score of approximately 65 percent against benchmark best practice.
5. Customers and Consumers	Full compliance was achieved for the requirements of this part of the Licence.
6. Environment	While HWC has very good procedures and systems in place for managing and embedding its environmental commitments across the organisation (including contractors), there are some areas, which could be improved. In particular, it is recommended that attention be paid to document control for incident and emergency management, especially as this is also an area repeated in water quality management where emergency contact details were found to be out of date.
8. Performance Monitoring	Full compliance was achieved for the clauses audited.

Recommendations

There are several recommendations for improved compliance arising from the audit. The recommendations are provided below against each Licence section, where they arise (noting that recommendations are not to be made where a grade of 'full' compliance has been awarded).

I. Licence and Licence Authorisation

Specific Clauses / Sub-clauses Audited		Compliance	Recommendations (where made)
1.8	1.8.1(a)		
Availability of Licence	I.8.I(b)	Full	No recommendations made, as clause was fully compliant.

2. Water Quality

Specific Clauses / Sub-clauses		Compliance	Recommendations (where made)
AUDITED			
	2.1.1	Adequate	 Overarching recommendations made for water quality are as follows: WQR-2013/1 Critical Control Points (CCPs)1: A formal procedure for the establishment and review of CCPs, critical limits and monitoring points for critical limits should be established in consultation with NSW Health. Timeframe: Within 6 months Changes to CCPs and critical limits should be considered as a significant change to the Drinking Water Management System (DWMS) and Recycled Water Management System (RWMS) and thus trigger clause 2.1.3 and 2.1.4 or 2.2.3 and 2.2.4 of the Operating Licence as appropriate. Timeframe: Immediate. CCPs and critical limits should be reviewed to ensure that parameters are measurable in a timely manner and that the CCPs and limits are consistent across documentation. Timeframe: Within 6 months. Audit procedures should be established for any CCP that is procedure dependant (for example Backflow Prevention). Timeframe: Within 6 months.
2.1 Drinking Water	2.1.2	Adequate	 ensure that the Emergency Management Guidelines are reviewed in line with their designated review date. Timeframe: Immediate and upon review cycle. HWC should ensure that consistent and up-to date emergency contact information is maintained across all documentation. Timeframe: Immediate and upon review cycle. WQR-2013/3 Risk Assessment3: HWC should update the risk assessments of its water supply systems from catchment to tap. A document summarising the risk assessment workshop should be prepared including the workshop participants, risk methodology, significant risks and priorities for risk management. Timeframe: Completed risk assessments by June 2016. The identified priorities should be assessed and prioritised for implementation as part of the Drinking Water Quality Improvement Plan. Timeframe: June 2014. WQR-2013/4 Contractor training4: HWC should develop and implement water quality awareness training for contractors. Timeframe: June 2014. WQR-2013/5 Drinking Water Quality Improvement Plan5: HWC should resource, promote and further develop the Drinking Water Quality Improvement Plan 2012. Timeframe: Within 6 months. WQR-2013/6 Backflow Prevention6: Given that distribution system integrity is fundamental to maintaining 'ft for purpose' water, systems to protect HWC's drinking water system from contamination by recycled water should be established and their implementation subject to on-going review. Timeframe: June 2014
2.2	221	Full	2011.
Z.Z Rocurled	۲.۷.۱	FUII	No recommendations made, as clause was fully compliant.
Water 2.2.2 Full			

¹ Largely a DWMS development issue.

⁶ DWMS development issue.



² Implementation issue.

^a Indicementation issue. ³ Lack of workshop outcomes' documentation is a DWMS issue whereas addressing the outcomes from the risk assessment workshop is an implementation issue. ⁴ Lack of contractor training is a DWMS development issue.

⁵ DWMS development issue.

4. Asset Management

Specific Clauses / Sub-clauses Audited		Compliance	Recommendations (where made)
4.1 Asset Management System	4.1.1	High	 AR-2013/1 Update of Documentation: Hunter Water should take action to update all of its Asset Management System documentation and issue it as final versions. This will not prevent ongoing development and improvement, but will clearly establish plans and processes at a point in time. Timeframe: Within 12 months. AR-2013/2 Continuance of Implementing Improvement Opportunities: Hunter Water should continue to implement the five (5) priority improvement opportunities identified as a result of the 2012 WSAA Aquamark Benchmarking Program, specifically: To align organisational asset management capability with asset management objectives. Business cases need rigorous challenging to confirm their ability to meet business objectives and investment requirements. Holistic approach to maintenance management and operation of critical assets for both planning of service improvement/reliability and contingency planning. Operations and maintenance (O&M) procedures review and updating to reflect current business objectives and manage risk, including configuration documentation where warranted. Timeframe: Within 2 years.
	4.1.2	Full	No recommendations made, as clause was fully compliant.

5. Customers and Consumers

Specific Clauses / Sub-clauses Audited		Compliance	Recommendations (where made)
5.4 Procedure for financial	5.4.1	Full	No recommendations made, as clause was fully compliant.
hardship, payment difficulties, water flow restriction and disconnection	5.4.2	Full	No recommendations made, as clause was fully compliant.
	5.4.3	Full	No recommendations made, as clause was fully compliant.
	5.4.4	Full	No recommendations made, as clause was fully compliant.

6. Environment

Specific Clauses / Sub-clauses Audited		Compliance	Recommendations (where made)
6.1 Environmental Management	6.1.4(a) 6.1.4(b)	High	• ER-2013/1 Emergency and Incident Management: Given the findings in water quality (that the emergency contact details are not up to date), and that an internal audit found issues with documentation control for environmental incident management, the auditors endorse the need to further integrate and embed the importance of emergency and incident management within the organisation. Timeframe: Immediate and upon review cycle.

8. Performance Monitoring

Specific Clauses / Sub-clauses Audited		Compliance	Recommendations (where made)
8.2 Reporting	8.2.1(a) 8.2.1(b) 8.2.2	Full	No recommendations made, as clause was fully compliant.
8.3 Provision of Information	8.3.5	Full	No recommendations made, as clause was fully compliant.

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1 Introduction

1.1 Objectives

The objective of this audit was to conduct an audit of Hunter Water Corporation's (Hunter Water or HWC) operations:

- Consistent with the "Public Water Utility Audit Guideline Revision 4" (May 2013) (Audit Guideline 2013) and interpretation of the audit requirements against:
 - o The Hunter Water "Operating Licence 2012 -2017" and
 - o The Hunter Water Act 1991 (NSW).

It should be noted that:

- The audit is not of the full Licence but against specific clauses, which are selected by IPART on a risk-basis.
- This is the first audit of HWC's new Licence.
- This is the first 'systems-based' audit (i.e. where specific systems (such as the *Framework for Management of Drinking Water Quality*) and their adequacy and implementation are assessed, rather than prescriptive clauses).

1.2 Audit Method

I.2.1 Audit Scope

The scope for the 2012/2013 audit is shown in Table 1-1 including any considerations to be taken into account as instructed by IPART.

In addition, several Recommendations/Outstanding Items from the previous audits were also included as part of the scope (Table 1-2).

Table I-I. Cl	auses audited for the	2012/2013 operational	licence audit of Hunte	r Water Corporation

LICENCE SECTION / SPECIFIC CLA AUDITED		s / Sub-clauses	Considerations to be taken into Account (where relevant)
I. LICENCE AND LICENCE AUTHORISATION	I.8 Availability of Licence	1.8.1(a) and (b)	N/A
2. WATER	2.1 Drinking Water	2.1.1	The audit of this clause is to be based on a combination of a risk-based adequacy approach and an assessment of HWC's implementation of this clause. At NSW Health's request, the Consultant is to audit: • Verification of water quality • Monitoring/management of critical control points • Management of incidents The audit of this clause is also to be informed by further consultation with NSW Health, the outcomes of previous audits and further discussion with IPART. The audit of this clause is to be informed by further consultation with NSW Health and the outcomes of
		2.1.2	previous audits.
	2.2 Recycled Water	2.2.1	The audit of this clause is to be based on a combination of a risk-based adequacy approach and an assessment of HWC's implementation of this clause. The program agreed with NSW Health and HWC is for HWC to be fully compliant with this clause by 2015. The Consultant is to ascertain HWC's progress towards full compliance with this clause. At NSW Health's request, included in the audit of this

Licence Section / Name	Specific Clause Audited	s / Sub-clauses	Considerations to be taken into Account (where relevant)
			clause will be: • Verification of water quality • Monitoring/management of critical control points • Management of incidents The audit of this clause is also to be informed by further consultation with NSW Health, the outcomes of previous audits and further discussion with IPART.
		2.2.2	The audit of this clause is to be based on a combination of a risk-based adequacy approach and an assessment of HWC's implementation of this clause. The program agreed with NSW Health and HWC is for HWC to be fully compliant with this clause by 2015. The Consultant is to ascertain HWC's progress towards full compliance with this clause.
4 ASSETS	4.1 Asset Management System	4.1.1	The audit of this clause is to be based on a combination of a risk-based adequacy approach and an assessment of HWC's implementation of this clause.
1, 7,00210		4.1.2	The audit of this clause is to be based on a combination of a risk-based adequacy approach and an assessment of HWC's implementation of this clause.
5. CUSTOMERS AND CONSUMERS	5.4 Procedure for financial hardship, payment difficulties, water flow restriction and disconnection	5.4.1 (a), (b), (c) and (d) 5.4.2 5.4.3(a), (b) and (c) 5.4.4	N/A
6. ENVIRONMENT	6.1 Environmental Management	6.1.4(a) and (b)	N/A
8. PERFORMANCE MONITORING	8.2 Reporting 8.3 Provision of Information	8.2.1(a) and (b) 8.2.2 8.3.5	N.A

Note that while clause 3.3.1 was included in the contract with the Risk Edge™ team, IPART advised the Risk Edge™ team that this clause was not required for auditing (based on advice from the Metropolitan Water Directorate to IPART).
Recommendation / Operational Issue (Licence Reference Where Applicable)		IPART RECOMMENDATION TO THE MINISTER	2012/2013 Operational Audit
Recommendation 2011/12-2	Clause 4.8 asset management requirements. Now Clause 4.1 of new licence Identified need to review asset management procedures for consistency of approach between asset groups, greater consideration of business risks and demonstration of linkages to corporate objective.	Hunter Water should develop a guideline for consistency of approach to life cycle costing across different asset groups, including greater consideration of both asset and business associated risks with more definite linkages to corporate objectives. They should apply this to the planned asset management project covering electrical and mechanical equipment.	The Consultant is to ascertain HWC's progress in addressing the issues identified as part of the 2011/2012 operational audit.
2011/12 Out of Scope Item	Drinking Water Quality (clause 2.1) The auditor noted that while outside of the scope of the audit, development around Medowie in the water supply catchment may affect drinking water quality in future.	Minister informed that IPART intends to inform NSW Ministry of Health about this potential issue for their future investigation. We will also include this item in next year's operating audit.	The Consultant is to ascertain HWC's response to potential risks associated with pumping of storm runoff from the Medowie area into Grahamstown Reservoir.
2010/11-1	Clause 3.2. I Rapid response process to prevent out of specification water reaching customers not implemented.	Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011.	The Consultant is to ascertain HWC's progress in implementing this recommendation.
2010/11-4	Clause 3.6.3 Time table for Implementing recycled water guidelines needs to be agreed.	Develop an agreed timetable with NSW Ministry of Health for the full implementation of the framework outlined in the Australian Guidelines for Water Recycling, including validation of critical limits and the development of notification criteria to NSW Ministry of Health for existing recycled water schemes.	The Consultant is to ascertain HWC's progress in implementing this recommendation.
2009/10 -3e	Clause 4.8 and 4.9 Asset Planning for Dams considered insufficient.	Development of asset management plans for dams by 2012 audit.	The Consultant is to ascertain HWC's progress in implementing this recommendation by 2013.

	Table	I-2.	Recommendations/oper	ational licence	issue for	r inclusion ii	n 2012/2013	audit scope.
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I.2.2 Audit Standard

While IPART's Audit Guideline 2013 was the primary source of guidance for the audit, the team generally relied on 'ISO 19011:2011 Guidelines for auditing management systems' and also had regard to the following standards:

- ASAE 3100 (2008) Compliance Engagements issued by the Auditing and Assurance Standards Board
- ISO 17021:2011 Conformity Assessment Requirements for bodies providing audit and certification of management systems (contains principles and requirements for the competence, consistency and impartiality of the audit and certification of management systems of all types)

I.2.3 Audit Steps

The audit steps taken were largely as set out in the Audit Guideline 2013 (as relevant to the audit team; Table 1-3).

Table 1-3. Steps involved in the 2012/2013 audit of Hunter Water Corporation (Source: Audit Guideline 2013).

Step	Description	Responsibility
Step 1	Audit Scoping	IPART
Step 2	Appointment of auditor	IPART
Step 3	Audit preparation	Auditor/Utility/IPART
Step 4	Interview	Auditor/Utility
Step 5	Site visits	Auditor/Utility
Step 6	Assessing and reporting	Auditor/Utility/IPART
Step 7	Reporting to Minister	IPART
Step 8	Reporting on recommendations	Utility

I.2.4 Audit Team

The audit team and the roles of each member are provided in Table 1-4.

	Table	1-4.	Audit	team	members	and	their	roles.
--	-------	------	-------	------	---------	-----	-------	--------

Team Member	Role In Project
	 Project Manager (overall responsibility for development of report and quality assured outcomes)
	Auditor Services responsible in particular for:
	o Lead Auditor Environment
Dr Annette Davison	o Lead Auditor Performance Monitoring
	o Lead Auditor Licence and Licence Authorisation
	o Support for Recycled Water and Water Quality
	o (Support for NWI Criteria)
	Auditor Services responsible in particular for:
Dr Annalisa Contos	o Lead Auditor Water Quality (Recycled Water and Drinking Water)
	o Support for Environment
	Auditor Services responsible in particular for:
Mr lim Slv	o Lead Auditor Asset Management
T II JIITI SIY	o Lead Auditor Customers and Consumers
	o (Lead Auditor NWI Criteria)
Bob Burford	Specific review of audit deliverables to provide Quality Assured Outcomes

1.2.5 Audit Grades

The audit grade definitions used in assessing the licensee's performance against the requirements are set out in Table 1-5.

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.

Table 1-5. Compliance grades for public utilities (Source: Table C.1, Audit Guideline 2013).

1.3 Regulatory Regime

In order to fully articulate the regulatory regime for HWC, the following are described in this section:

- System context
- Stakeholder context
- Legal and Regulatory Context

1.3.1 System Context⁷

HWC is a State Owned Corporation providing water and wastewater services to over half a million people in the Lower Hunter region. There are 230,140 properties connected to the water network and 218,459 connected to the wastewater network. HWC's area of operation covers 5,366km with a population of 567,526. Summarised 'system context' information is presented in Table 1-6 and Figure 1-1.

Table	I-6.	System	context -	summarised	information	(Source:	Hunter	Water Co	orporation.	20127).
1 4010		0/000111	001100/00	Sammariooa		(0000.001	1 Turreor	114001 0	, por acron	2012)

Ітем	Description	
Local government areas in Hunter Water Corporation area of operation:	Cessnock Lake Macquarie Maitland Newcastle	Port Stephens Dungog Small parts of Singleton.
Hunter Water's raw water storages:	Grahamstown Dam (189,991 ML) Chichester Dam (21,500 ML)	Tomago Sandbeds (60,000 ML) Anna Bay Sandbeds (16,024 ML)

⁷ http://www.hunterwater.com.au/Resources/Documents/Annual-Report-Current/Annual-Report-2011-12.pdf.



1.3.2 Stakeholder Context

Stakeholders are an important component of the operating context as they may impact on, or be impacted by Hunter Water's activities including key legal and formal instruments such as Acts, contracts and Memoranda of Understanding.

Key stakeholders⁸ for HWC include those set out in Table 1-7.

Table 1-7. Key stakeholders for HWC, in the context of the operating licence.

Source	Key Stakeholders				
	NSW Government including:				
	Premier (overarching oversight)				
	Dams Safety Committee (safety aspects for 'prescribed dams')				
	 Department of Finance and Services (financial aspects of Hunter Water's operations and includes the Metropolitan Water Directorate) 				
	Department of Premier and Cabinet				
	NSW EPA (regulation and oversight of environmental aspects)				
External	NSW Health (oversight of water quality relating to public health issues)				
	IPART (operating licence aspects and pricing)				
	NSW Office of Water (regulation of water use)				
	NSW Treasury (financial aspects of Hunter Water's operations)				
	Customers and consumers (key stakeholders in the operating licence)				
	Public (may be impacted by Hunter Water's operations in general)				
	External consultants and contractors with Hunter Water Australia (HWA) being a key contractor (provision of services on Hunter Water's behalf)				
Internal	CEO (responsibility for the running and successful operation of the Corporation)				
inconta	Staff (responsible for operation and management of the Corporation)				

1.3.3 Legal and Regulatory Context

HWC operates largely in a NSW context but must also have regard to matters outside of that jurisdiction, where those matters may impact on how HWC does business. A summary of the key legal and regulatory instruments for HWC is provided in Table 1-8.9

⁸ A reference to a NSW agency or department also implies a reference to the Minister/Director-General of that agency or department as a key stakeholder.

⁹ Intended to be illustrative, not exhaustive, for the purposes of this report.



Figure 1-1. Hunter Water Corporation's area of operations.¹⁰

Table 1-8. Key legal and formal	instruments for Hunter	Water Corporation i	n the context of the
operating licence.11			

INSTRUMENT	Relevance
Competition and Consumer Act 2010 (Cth)	An Act for the promotion of competition and fair trading and provision for consumer protection. Could apply to the 'fitness for purpose' of drinking water and recycled water.
Dams Safety Act 1978 (NSW)	Component of the safe management of 'prescribed dams'.
Hunter Water Act 1991 (NSW)	Sets out the specific operating context for HWC.

¹⁰ http://www.hunterwater.com.au/Resources/Documents/Diagrams/HUNTER-WATER-MAP.pdf

¹¹ Where legislation is identified in this table, a reference to that legislation should be taken to include any Regulation/s made pursuant to it. Note that Hunter Water Corporation employs contractors, such as Hunter Water Australia, to deliver some of its key roles. However, while contracts giving effect to the use of other parties are a key part of Hunter Water Corporation's operating context, they are not covered in this operating context section but are considered in the delivery of the operating licence at the relevant sections of this report.



Instrument	Relevance
Hunter Water Corporation Operating Licence 2012-2017	A licence written by IPART (and issued by the NSW government), which enables HWC to provide relevant services within its area of operations. This licence also gives effect to the operational audits (this audit) to which HWC is subject.
Independent Pricing and Regulatory Tribunal Act 1992 (NSW)	Allows for the regulation of utilities such as HWC including the setting of licences, pricing functions and the auditing of licences.
Memorandum of Understanding with NSW Health	Sets out the requirements between NSW Health and HWC.
Public Health Act 2010 (NSW)	Sets out requirements for risk-based drinking water protection.
Protection of the Environment Operations Act 1997 (NSW)	This Act sets out the environmental operating context for HWC including, where relevant, the need to gain and operate under an Environmental Protection Licence for its facilities.
State Owned Corporations Act 1989 (NSW)	Sets out the operating context for a state owned corporation.
Water Management Act 2000 (NSW) and Water Act 1912 (NSW)	Sets out water resource management requirements.

1.4 Quality Assurance Process

I.4.1 Information

Our quality assurance approach to this audit involved peer review and audit team leader responsibility for all material outputs from the Risk Edge[™] team, commencing from the development and submission of the audit questionnaires through to the various levels of reporting. In particular, a non-auditing team member (see below) was assigned to peer review both the draft and final reports. Checks of information received were conducted and included aspects such as dates for audit scope compliance, veracity of information, coverage of the subject area being audited and depth of implementation. Auditors liaised frequently within the team including having 'shadow' or 'support' auditors for subject areas where the audit load was heavy.

The auditors also had regard to the approach used in the Water Supply Association of Australia's (WSAA's) Aquality Tool (Figure 1-2), which includes the aspects of how well processes have been developed, how mature the documentation is, how well covered all areas of the agency are and how frequently the measures are implemented in practice.





¹² Donlon, P., Davison, A. and Deere, D. (2006) Sleeping well at night. Implementing Continuous Improvement in Water Quality Management using Aquality. WSAA *Journal*. Issue No. 6 November 2006. Note that this approach is also used in the National Water Commission's *Requality* Tool.



I.4.2 Reporting

Throughout the audit report writing process, the documentation was proofed and cross-checked by the audit team members as well as undergoing a separate quality assurance from a non-auditing team member (Mr Bob Burford). The audit team leader (Dr Davison) had overall responsibility for the veracity and quality of the report's content.

2 Section 1: Licence and Licence Authorisation

2.1 Summary of Findings

2.1.1 Approach

For this licence section, the following audit approach was used:

- Review of documentation provided before the site visit.
- Query of information via the interviews.
- Interviews with key personnel.
- Requests for further information where required post the site visit.
- Auditor team conference for discussion of veracity of material provided where required.

2.1.2 Findings

Clause 1.8 Availability of Licence - Full Compliance

Detailed assessment in respect of this clause is provided in Appendix A.I.

As a requirement of this clause, HWC must make this Licence available free of charge: (a) on its website for downloading by any person and (b) to the public on request.

HWC has made the Licence available free of charge on its website and the Licence was easy to locate when the website was reviewed by the auditor. HWC also provided evidence of Licence downloads undertaken within the scope dates of the audit.

2.2 Recommendations

2.2.1 Recommendations

There are no recommendations for this clause.

2.2.2 Opportunities for Improvement

On a minor note, on the auditor's web browser, it was difficult to see where the Licence could be downloaded because the font colour on 'Operating Licence' was not sufficiently different to the background text to make the hyperlink obvious, especially compared to some of the other hyperlinks. This hyperlink issue may make it difficult for some users to find the licence but as stated, it is a minor issue.

2.2.3 Previous Recommendations

There are no outstanding recommendations for this licence clause.

3 Section 2: Water Quality

3.1 Summary of Findings

3.1.1 Approach

For this licence section, the following audit approach was used:

- Review of documentation provided before the site visit. In particular, information constituting HWC's DWMS and RWMS was used as the base information and then each element (development and implementation) of the *Framework for Management of Drinking Water Quality* and *Framework for Management of Recycled Water Quality and Use* was tested using the supporting documentation provided.
- Where available, system elements were tested using previously conducted assessment¹³.
- Spot checks and query of content of information via the interviews.
- Site checks at the Grahamstown WTP and Branxton WWTP.
- Interviews with key personnel.¹⁴
- Requests for further information where required post the site visit.
- Auditor team conference for discussion of veracity of material provided where required.

3.1.2 Findings

Clause 2.1 – Adequate Compliance (for both parts of this clause i.e. 2.1.1 and 2.1.2)

Detailed assessment in respect of this clause is provided in Appendix A.2 (specifically A.2.1 to A.2.13).

Clause 2.1.1 requires Hunter Water to 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 [ADWG] that applies to Hunter Water, the Australian Drinking Water Guidelines as amended or added to by NSW Health.

This requirement is termed a Drinking Water Management System (DWMS).

A further note in the licence states that:

"It is generally expected that Hunter Water will develop a system consistent with the Australian Drinking Water Guidelines, including the Drinking Water Quality Framework [the 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."

Further instruction from IPART was provided in auditing this clause:

"At NSW Health's request, the auditor should also consider:

- verification of water quality
- monitoring / management of critical control points
- management of incidents

The audit will be informed by further consultation with NSW Health, the outcomes of previous audits and further discussion with IPART."

¹⁴ Noting that a representative from the Hunter Area Health Service was also present as an observer during these interviews.



¹³ For example, the WSAA Aquality Tool.

Accordingly, most of the focus for auditing of this section was placed on the above three components of the Framework as applied to the DWMS and also its implementation.

Evidence was provided that the requirements have generally been met, with some shortcomings, and that the system HWC has in place is generally consistent with the requirements of the Framework. A lack of systematic linkages between elements in the Framework was observed.

In particular, there existed a lack of clarity as to how risks identified in the risk assessments were being managed and how actions identified from the risk assessment were prioritised and actioned. The auditor noted that HWC undertook a broad range of actions towards water quality improvements. However, the lack of a clearly articulated Drinking Water Quality Improvement Plan (incorporating actions identified through risk assessments, major incident and incident training debriefs, internal audits and senior management and stakeholder meetings), was noted as an area for attention.

An element by element assessment was undertaken and a summary, including key issues noted against each element, is provided in Table 3-1.

Element	Compliance Grade	Key Issues
Element 1: Commitment to Drinking Water Quality Management	Adequate	Limited identification of key stakeholders. Limited evidence surrounding documentation of broad regulatory and formal obligations.
Element 2: Assessment of the Drinking Water Supply System	Adequate	Outputs from the Tomago risk assessment, undertaken in June 2012 had not been finalised.
Element 3: Preventive Measures for Drinking Water Quality Management	Adequate	CCPs are not consistent across documents. Some CCPs are not appropriately established.
Element 4: Operational Procedures and Process Control	High	Evidence for the appropriate specification of materials in contact with water was not provided.
Element 5: Verification of Drinking Water Quality	Full	No comment required.
Element 6: Management of Incidents and Emergencies	Adequate	The emergency management guidelines were 9 months beyond their review date and the emergency contact details within them had not been updated.
Element 7: Employee Awareness and Training	High	Awareness of and participation in drinking water quality management is not formalised.
Element 8: Community Involvement and Awareness	Full	No comment required.
Element 9: Research and Development	High	Evidence was not provided on how processes are validated. The identification and prioritisation of investigative studies could not be established.
Element 10: Documentation and Reporting	Adequate	Key documents overdue for review (including emergency management guidelines and SOPs).
Element 11: Evaluation and Audit	Adequate	Lack of an audit schedule.
Element 12: Review and Continual Improvement	Adequate	There is an apparent lack of integration of the Framework elements in developing a drinking water quality management improvement plan.

Table 3-1. Element by element audit grade summary for Clause 2.1.1.

Clause 2.1.2 of the Licence states that Hunter Water must ensure that the DWMS is fully implemented and that all relevant activities are carried out in accordance with the system, including to the satisfaction of NSW Health.

Sufficient evidence was provided that the requirements have generally been met, with some shortcomings. An element by element assessment was undertaken and a summary, including key issues noted against each element, is provided in Table 3-2.

While sound implementation of operational and verification procedures was noted, there were also areas where implementation was lacking. Document control including consistency across documentation, version control and timely revision was noted as an area for attention. Of particular concern are the following:

- The fact that the Emergency Management Guidelines have not been updated since May 2011 and are now eight months past the review due date.
- Discrepancies between Critical Control Points (CCPs) and limits across documentation.

Therefore after consideration of the implementation aspects of all the Framework elements, particularly in relation to critical aspects of drinking water quality management a grade of adequate rather than high was awarded.

Table	3-2.	Element	bv	element	audit	grade	summary	/ for	Clause	2.1.2.
rabic	J-Z.	Liement	<i>U</i> ,	cicilicit	audit	grade	Summary	101	Clause	2.1.2.

Element	Compliance Grade	Key Issues
Element 1: Commitment to Drinking Water Quality Management	High	While identification of stakeholders and key legal and formal requirements could be improved, in practice, evidence did exist for implementation e.g. key stakeholder (NSW Health) engagement and dissemination of the drinking water quality policy.
Element 2: Assessment of the Drinking Water Supply System	Adequate	Beyond the risk assessment spreadsheets, evidence surrounding the risk assessment process was weak.
Element 3: Preventive Measures for Drinking Water Quality Management	Adequate	Evidence was not provided to demonstrate monitoring and auditing of procedural CCPs.
Element 4: Operational Procedures and Process Control	High	SOPs are not reviewed at the frequency specified in the SOP register.
Element 5: Verification of Drinking Water Quality	Full	No comment required.
Element 6: Management of Incidents and Emergencies	Adequate	The implementation of improvements identified following incident de-brief could not be verified.
Element 7: Employee Awareness and Training	Adequate	Water quality awareness training has not been developed or implemented for contractors
Element 8: Community Involvement and Awareness	Full	No comment required.
Element 9: Research and Development	High	Evidence was not provided on how processes are re- validated when changes or variations in conditions occur.
Element 10: Documentation and Reporting	Adequate	Lack of document control information on key document and the number of operational documents overdue for review
Element 11: Evaluation and Audit	High	Limited evidence of auditing associated with procedurally based CCPs. Limitations in how the Aquality audit was undertaken.
Element 12: Review and Continual Improvement	Adequate	There was limited evidence to establish how improvement actions identified from the risk assessments, incident de-briefs, audits and other avenues were recorded, prioritised for action and implemented if appropriate.

Clause 2.2 – Full Compliance¹⁵

Detailed assessment in respect of this clause is provided in **Appendix A.2.14**.

As part of its requirement for this clause, HWC must maintain a Management System consistent with the AGWR. HWC is making good progress towards a fully implemented management system by 2015 as evidenced by the *Recycled Water Implementation Project Plan*, progress made in the implementation of the *Recycled Water 5 Year Improvement Plan* and on-going development of the *Recycled Water Workspace*. The auditor has no reason to suspect that HWC will be unable to meet this timeline.

¹⁵ While HWC's 'Statement of Compliance' notes a 'non-compliance' against this clause, it is the auditors' opinion that progress towards implementation of the RWMS is the key element for the compliance test at this point in time, which is why a grade of 'full compliance' has been awarded.



3.2 Recommendations

3.2.1 Recommendations

A number of recommendations have been made. Where possible, recommendations have been rolled up into groups, largely where they relate to specific elements of the Framework. While the auditors acknowledge that 'full' compliance does not warrant the awarding of 'recommendations', it would be prudent for HWC to consider those drinking water recommendations that relate to recycled water and that will also facilitate sound development of the RWMS.

WQR-2013/1 Critical Control Points (CCPs)¹⁶:

- A formal procedure for the establishment and review of CCPs, critical limits and monitoring points for critical limits should be established in consultation with NSW Health. **Timeframe:** Within 6 months
- Changes to CCPs and critical limits should be considered as a significant change to the Drinking Water Management System (DWMS) and Recycled Water Management System (RWMS) and thus trigger clause 2.1.3 and 2.1.4 or 2.2.3 and 2.2.4 of the Operating Licence as appropriate. Timeframe: Immediate.
- CCPs and critical limits should be reviewed to ensure that parameters are measurable in a timely manner and that the CCPs and limits are consistent across documentation. Timeframe: Within 6 months.
- Audit procedures should be established for any CCP that is procedure dependant (for example Backflow Prevention). **Timeframe:** Within 6 months.

WQR-2013/2 Emergency Management¹⁷: HWC should ensure that the:

- Emergency Management Guidelines are reviewed in line with their designated review date. **Timeframe:** Immediate and upon review cycle.
- HWC should ensure that consistent and up-to date emergency contact information is maintained across all documentation. **Timeframe:** Immediate and upon review cycle.

WQR-2013/3 Risk Assessment¹⁸: HWC should update the risk assessments of its water supply systems from catchment to tap. A document summarising the risk assessment workshop should be prepared including the workshop participants, risk methodology, significant risks and priorities for risk management. Timeframe: Completed risk assessments by June 2016. The identified priorities should be assessed and prioritised for implementation as part of the Drinking Water Quality Improvement Plan. Timeframe: June 2014.

WQR-2013/4 Contractor Training¹⁹: HWC should develop and implement water quality awareness training for contractors. Timeframe: June 2014.

WQR-2013/5 Drinking Water Quality Improvement Plan²⁰: HWC should resource, promote and further develop the Drinking Water Quality Improvement Plan as noted in p6 of the Annual Report on Implementation of the *Five Year Water Quality Management Plan 2012*. Timeframe: Within 6 months.

WQR-2013/6 Backflow Prevention²¹: Given that distribution system integrity is fundamental to maintaining 'fit for purpose' water, systems to protect HWC's drinking water system from contamination by recycled water should be established and their implementation subject to on-going review. Timeframe: June 2014.



¹⁶ Largely a DWMS development issue.

¹⁷ Implementation issue.

¹⁸ Lack of workshop outcomes' documentation is a DWMS issue whereas addressing the outcomes from the risk assessment workshop is an implementation issue.

¹⁹ Lack of contractor training is a DWMS development issue.

²⁰ DWMS development issue.

²¹ DWMS development issue.

3.2.2 Opportunities for Improvement

A number of opportunities for improvement were identified.

3.2.2.1 Overarching Opportunities for Improvement

- Improve Alignment with the Framework: The identified areas where alignment with the Framework can be improved are:
 - o Optimise operation of distribution system chlorinators.
 - o Develop and implement water quality awareness training for contractors.
 - o Migrate water treatment documentation to Knowledge Management System.
 - o Document responsibility / resourcing for development and implementation of water quality management plan.
 - o Document responsibility / resourcing for review of risk assessments and critical control points.
 - o Promote and further develop the Water Quality Improvement Plan.

3.2.2.2 Drinking Water-Specific Opportunities for Improvement

- **Operating Context:** HWC could improve the way in which it manages its legal and formal context surrounding drinking water production and supply by going back to first principles and articulating the products and services it produces/provides, identifying the relevant stakeholders for each of its products and services and then cross-referencing legal and formal requirements to each stakeholder.
- **Stakeholder Register:** Formalise a stakeholder register (or registers) for drinking water and ensure it is maintained.
- Legal Register: Adapt the environmental legislative register to document all regulatory and formal requirements for drinking water relevant to HWC including reporting requirements and frequency.
- Human Factors in Water Safety: When the risk assessments are updated, consideration should be given to the contribution of human factors to the occurrence, prevention and management of hazardous events. Examples include having good procedures in place but staff choosing not to follow the procedure.
- **Contractor Oversight:** Review how HWC ensures that its contractor meets the obligations of this element. For example, ensuring that SOPs are reviewed at the frequency specified in the SOP register (over 40% are currently marked *"Review Overdue"*).
- Future Contracts: Ensure that future contracts contain clauses that ensure that HWC's contractors meet the DWMS licence obligations as appropriate and that HWC reserves the right to audit the implementation of these obligations to ensure compliance.
- Embedding of Water Quality Awareness: Embed water quality awareness within the workplace, for example through toolbox meetings with reviews of incidents and using the drinking water quality policy as part of the induction for all staff and contractors.
- Validation of Critical Limits: HWC could consider documenting the basis of the critical limits for each plant.
- Investigative Studies: The investigative studies could be more closely integrated to other aspects of the DWMS including the Drinking Water Quality Improvement Plan and risk assessments.
- Water Quality Leading Indicators: Leading indicators could be developed for reporting on *Non compliance with agreed water quality standard.* These indicators could include critical limit exceedances or critical limit shutdowns.

3.2.2.3 Recycled Water-Specific Opportunities for Improvement

- Operating Context: HWC could improve the way in which it manages its legal and formal context surrounding recycled water production and supply by going back to first principles and articulating the products and services it produces/provides, identifying the relevant stakeholders for each of its products and services and then cross-referencing legal and formal requirements to each stakeholder. Figure 1 of the *Recycled Water Quality Management Plan* should be updated to reflect the current operating context.
- Legal Register: HWC could adapt the environmental legislative register to document all regulatory and formal requirements for recycled water relevant to HWC including reporting requirements and frequency.
- Recycled Water Use Agreements and Site Management Plans: HWC should ensure the recycled water use agreements clearly articulate the approved uses. HWC should consider which information is most appropriate within the recycled water use agreements and which information should be contained within the site management plans.

3.3 Previous Recommendations

Three recommendations were reviewed in the water quality section of the audit.

3.3.1 2011/12 Out of Scope Item: Drinking Water Quality (Appendix A.2.16)

Auditor Recommendation	IPART Recommendation to the Minister	Guidance for 2012/13 Audit
The auditor noted that while outside of the scope of the audit, development around Medowie in the water supply catchment may affect drinking water quality in future.	Minister informed that IPART intends to inform NSW Ministry of Health about this potential issue for their future investigation. We will also include this item in next year's operating audit.	Hunter Water response to potential risks associated with pumping of storm runoff from the Medowie area into Grahamstown Reservoir is to be included in the audit.

Hunter Water has met with NSW Health and Port Stephens Council to discuss water quality risk associated with the development at Medowie. HWC has been working closely with Port Stephens Council as part of the Port Stephens Council Medowie Flood Study. HWC is contributing to the study.

The auditor was satisfied that HWC was making progress against this recommendation.

Auditor's Recommendation: HWC should establish the risks presented by future development around Medowie and in consultation with NSW Health, confirm the capability of the Grahamstown Reservoir and Grahamstown Water Treatment Plant, to provide safe drinking water.

3.3.2 2010/11-1: Clause 3.2.1 (Appendix A.2.15)

Auditor Recommendation	IPART Recommendation to the Minister	Guidance for 2012/13 Audit
Rapid response process to prevent out of specification water reaching customers not implemented.	Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011.	Check Progress

Auto shutdown is in place for Anna Bay, Nelson Bay and Gresford WTPs and auto-shutdown for key water quality parameters was implemented during 2012/13 for Lemon Tree Passage and Dungog. HWC noted in the pre-audit questionnaire that implementation at Grahamstown WTP was delayed by a PLC upgrade however, implementation is scheduled for completion by December 2013.

Auditor's Recommendation: Completion of this action should be reviewed as part of the 2013/2014 audit.

3.3.3 2010/11-4 (Appendix A.2.17)

Auditor Recommendation	IPART Recommendation to the Minister	Guidance for 2012/13 Audit
Timetable for implementing recycled water guidelines needs to be agreed.	Develop an agreed timetable with NSW Ministry of Health for the full implementation of the framework outlined in the Australian Guidelines for water Recycling, including validation of critical limits and the development of notification criteria to NSW Ministry of Health for existing recycled water schemes (clause 3.6.3).	Check Progress

As a further note to the above, the finding from the 2011/2012 audit was as follows:

"The Progress on the strategy agreed with NSW Ministry of Health is satisfactory and will be completed in 2015. As it is still in progress it is one of the reasons full compliance could not be awarded for clause 3.7 Water Quality."

Consequently, the auditors reviewed recommendation 2010/11-4 with the above statement in mind, rather than as a binary 'yes' or 'no' as to whether NSW Health had agreed on the timetable or not, as is stated in the original recommendation.

HWC is making good progress towards a fully implemented management system by 2015 as evidenced by the *Recycled Water Implementation Project Plan*, progress made in the implementation of the *Recycled Water 5 Year Improvement Plan* and on-going development of the *Recycled Water Workspace*.

Because HWC is now operating under a systems-based licence however, this recommendation is now somewhat covered by the requirements under that licence to implement a *Framework for the Management of Recycled Water Quality and Use* management system, specifically under Element 12 of that Framework. However, because of the importance of meeting the 2015 timeline, it is recommended that progress towards implementation is again checked at the 2013/2014 audit.

Auditor's Recommendation: Check progress at next audit as part of auditing Clause 2.2.

4 Section 4: Assets

4.1 Summary of Findings

4.1.1 Approach

For this licence section, the following audit approach was used:

- Review of documentation provided before the site visit. In particular, information constituting HWC's asset management system was used as the base information and then each component of the system was tested using the supporting documentation provided.
- Where available, system components were tested using previously conducted assessments²².
- Spot checks and query of content of information via the interviews.
- Site checks at the Grahamstown WTP and Branxton WWTP.
- Interviews with key personnel.
- Requests for further information where required post the site visit.
- Auditor team conference for discussion of veracity of material provided where required.

4.1.2 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 the Water Services Association of Australia's (WSAA's) Aquamark benchmarking tool.

It was found that, whilst Hunter Water has a documented asset management system, much of the key documentation is in draft form and has been for some time; this infers that the system is not effectively maintained. For the purposes of this clause, 'maintaining' the Management System is taken to mean that it is complete (in respect of its coverage), kept up-to-date and reflective of actual practice currently being implemented.

Furthermore, Hunter Water's self-assessment of performance using WSAA's Aquamark benchmarking tool (which has been independently validated) shows a significant reduction in performance from 2008 to 2013, and an effective performance score of approximately 65 percent against benchmark best practice.

Detailed assessment in respect of this clause is presented in Appendix A.3.1.

Clause 4.1.2 – Full Compliance

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

Detailed assessment in respect of this clause is presented in **Appendix A.3.2**.

4.2 Recommendations

4.2.1 Recommendations

AR-2013/1 Update of Documentation: Hunter Water should take action to update all of its Asset Management System documentation and issue it as final versions. This will not prevent ongoing development and improvement, but will clearly establish plans and processes at a point in time. Timeframe: Within 12 months.

²² For example, the 2012 WSAA Aquamark Benchmarking Program.

AR-2013/2 Continuance of Implementing Improvement Opportunities: Hunter Water should continue to implement the five (5) priority improvement opportunities identified as a result of the 2012 WSAA Aquamark Benchmarking Program, specifically:²³

- I. To align organisational asset management capability with asset management objectives.
- 2. Business cases need rigorous challenging to confirm their ability to meet business objectives and investment requirements.
- 3. Holistic and approach to maintenance management.
- 4. A proactive and holistic approach to management and operation of critical assets for both planning of service improvement/reliability and contingency planning.
- 5. Operations and maintenance (O&M) procedures review and updating to reflect current business objectives and manage risk, including configuration documentation where warranted.

Timeframe: within 2 years.

4.2.2 Opportunities for Improvement

The following opportunities have been identified:

- Hunter Water is encouraged to proceed with updating its Asset Management System into a system compliant with the ISO 55000 series standards as part of the Integrated Quality Management System (IQMS).
- Hunter Water may wish to consider the provision of lifebuoys adjacent to water storages fitted with flexible membrane floating covers, such as that at the Branxton WWTP, as a safety precaution. This practice has been adopted at other similar installations.

4.3 Previous Recommendations

Two previous recommendations were reviewed in the assets section of the audit.

4.3.I	2011/12-2	Approach	to	Life	Cycle	Costing	Across	Different	Asset	Groups
	(Appendi>	(A.3.3)								

Auditor Recommendation IPARI R	Recommendation to	to the	
		lo line	Guidance for 2012/13 Audit
Minister			
Clause 4.8 asset management Hunter Wo requirements. Now Clause 4.1 of new for consiste licence Identified need to review asset management procedures for consistency of approach between asset groups, greater consideration of business risks and more def demonstration of linkages to corporate objective. planned covering equipment.	ater should develop a g ency of approach to li cross different asset greater consideration c business associated ris înite linkages to co They should apply this asset management electrical and med	guideline life cycle groups, of both isks with corporate is to the project echanical	The Consultant is to ascertain HWC's progress in addressing the issues identified as part of the 2011/2012 operational audit.

Hunter Water's *Business Case Handbook* contains effective guidance in respect of business case preparation. Provided this guidance is implemented across the organisation, consistent robust business cases that address life cycle costing, risk and alignment with corporate objectives should result.

A review of the Business Case, Mechanical Electrical Renewals (i.e. the planned asset management project covering electrical and mechanical equipment) reveals that corporate alignment, business risk and financial aspects are effectively addressed.

Detailed assessment in respect of this recommendation is presented in Appendix A.3.3.

²³ Initiatives extracted from: IWA-WSAA, 2012 Asset Management Performance Improvement Project; Draft Utility Report for Hunter Water Corporation, September 2012, section 7.



4.3.2 2009/10-3e Asset Planning for Dams (Appendix A.3.4)

Auditor Recommendation	IPART Recommendation to the Minister	Guidance for 2012/13 Audit
Clause 4.8 and 4.9 Asset Planning for Dams considered insufficient.	Development of asset management plans for dams by 2012 audit.	The Consultant is to ascertain HWC's progress in implementing this recommendation by 2013.

Although finalised subsequent to the Audit Period (i.e. in August 2013), Asset Management Plans for Hunter Water's two dams are now complete.

Detailed assessment in respect of this recommendation is presented in Appendix A.3.4.

5 Section 5: Customers and Consumers

5.1 Summary of Findings

5.1.1 Approach

For this licence section, the following audit approach was used:

- Review of documentation provided before the site visit.
- Spot checks and query of content of information via the interviews.
- Interviews with key personnel.
- Requests for further information where required post the site visit.
- Auditor team conference for discussion of veracity of material provided where required.

5.1.2 Findings

The audited clauses under Section 5 of the Operating Licence relate to a maintenance and implementation of a Procedure for financial hardship, payment difficulties, water flow restriction and disconnection. These were assessed as follows:

Clause 5.4.1 – Full Compliance

Clause 5.4.2 – Full Compliance

Clause 5.4.3 – Full Compliance²⁴

Clause 5.4.4 – Full Compliance

Detailed assessment in respect of these clauses is presented in Appendix A.4.

5.2 **Recommendations**

5.2.1 Recommendations

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

5.2.2 Opportunities for Improvement

No opportunities for improvement are identified in respect of this section of the Licence as a result of the Audit.

5.3 Previous Recommendations

There were no outstanding recommendations from previous Audits related to Licence obligations in respect of Customers and Consumers.

²⁴ HWC's 'Statement of Compliance' notes a 'non-compliance' against this clause because information regarding the Procedure for Payment Difficulties and Actions for non-payment was sent in an information pack and not with the bill as required by the clause. However, it is the auditors' opinion that a grade of 'full compliance' should be awarded as the breach noted by HWC, did not actually demote compliance from 'full' to 'high' as it did not affect the customer (the customer was still provided with the information) and it did not constitute more than one shortcoming – noting that the test for a grade of 'high compliance' requires 'very few minor shortcomings'.



6 Section 6: Environment

6.1 Summary of Findings

6.1.1 Approach

For this licence section, the following audit approach was used:

- Review of documentation provided before the site visit. In particular, information constituting HWC's environment management system was used as the base information and then each component of the system was tested using the supporting documentation provided.
- Where available, system components were tested using internal and external environment system audit documents produced during the audit scope.
- Spot checks and query of content of information via the interviews.
- Interviews with key personnel.
- Requests for further information where required post the site visit.
- Auditor team conference for discussion of veracity of material provided where required.

6.1.2 Findings

Clause 6.1 Environmental Management – High Compliance

Detailed assessment in respect of this clause is provided in Appendix A.5.

As part of its requirement for this clause, HWC must maintain programs to manage risks to the environment from carrying out its activities and ensure that all its activities are carried out in accordance with those programs.

While HWC has very good procedures and systems in place for managing and embedding its environmental commitments across the organisation (including contractors), there are some areas, which could be improved. In particular, it is recommended that attention be paid to document control for incident and emergency management, especially as this is also an area repeated in water quality management where emergency contact details were found to be out of date. While document control and management is not necessarily an interesting area in and of itself, ensuring that everyone is using the correct versions of emergency procedures and contact details during an emergency is crucial to responding to and managing an event in a timely and considered manner and in bringing the system back under control. It is for this reason that document control relating to emergency management has been provided as a recommendation rather than an opportunity for improvement.

6.2 **Recommendations**

6.2.1 Recommendation

ER-2013/I Emergency and Incident Management: Given the findings in water quality (that the emergency contact details are not up to date), and that an internal audit found issues with documentation control for environmental incident management, the auditors endorse the need to further integrate and embed the importance of emergency and incident management within the organisation. **Timeframe:** Immediate and upon review cycle.

6.2.2 Opportunities for Improvement

Several opportunities for improvement were identified:

• Legal Register:

o Revise to improve understanding of HWC responsibilities including relevant sections of the legal and formal documents, reporting requirements and frequency.

- Ensure that the Legal Register includes recycled water obligations including Australian Guidelines for Water Recycling 2006.
- Ensure that consistency in the Legal Register is addressed e.g. that the Work Health and Safety Act 2011 (NSW), ISO 31000 etc are consistent across the different worksheets, that legislation is correctly referenced by jurisdiction e.g. Industrial Chemicals (Notification and Assessment) Act 1989 (Cth).
- **Risk Register:** The way that the risk events are articulated could be improved e.g. Risk No. 22 'Rain gauges not operating correctly resulting in early warning system for floods.' The wording should probably read: 'Rain gauges not operating correctly resulting in **lack of** early warning system for floods.'
- Document Control: Some of the documents have editing and document control issues, which will need to be addressed. It is understood that HWC is putting in place an Integrated Quality Management System, which should address this document control issue. A due diligence training attendance record was provided post interview but did not include the date for attendance at the training. The Water Stress Monitoring Program: Development Framework Tomago and Tomaree Groundwater Sources was dated September 2013 but the document history was undated and therefore, while it is assumed that development of the program was within the audit scope, it is not explicit.
- **Operating Context:** Hunter Water could improve the way in which it manages its environmental legal and formal context by going back to first principles and articulating the products and services it produces/provides, identifying the relevant stakeholders for each of its products and services and then cross-referencing legal and formal requirements back to each stakeholder.
- System Transition: The transition from managing actions in the *Planning and Operations Divisional Workspace* to Integrum, will have to be managed carefully to ensure that actions are not lost and that staff are trained in use of the new software.

6.3 Previous Recommendations

There are no outstanding recommendations for this licence clause.

7 Section 8: Performance Monitoring

7.1 Summary of Findings

7.1.1 Approach

For this licence section, the following audit approach was used:

- Review of documentation provided before the site visit. In particular, the 2012-2013 Compliance Report²⁵ was used as the base document and then each section was tested using the supporting documentation provided.
- Spot checks and query of content of information via the interviews.
- Interviews with key personnel (noting that some of the information gathered for the other licence sections was also counted as evidence for this section).
- Confirmation with IPART where required e.g. for the receipt of information by IPART from HWC.
- Requests for further information where required.
- Auditor team conference for discussion of veracity of material provided where required.

7.1.2 Findings

Clause 8.2 Reporting – Full Compliance

Detailed assessment in respect of this clause is provided in Appendix A.6.1.

This clause has two components. For clause 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.

For clause 8.2.2, Hunter Water must maintain sufficient record systems that enable it to report accurately in accordance with clause 8.2.1.

Clause 8.3 Provision of Information – Full Compliance

Detailed assessment in respect of this clause is provided in Appendix A.6.2.

For this clause, 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 also provide the information requested within a reasonable time of NSW Health's request.

HWC was able to provide evidence of contact on water quality matters between NSW Health and HWC. Further, a NSW Health representative attended the Water Quality interview. No issues were raised by NSW Health relating to the provision of information or this licence sub-clause in general.

7.2 Recommendations

7.2.1 Recommendations

There are no recommendations for these clauses.

7.2.2 Opportunities for Improvement

There is only one opportunity for improvement:

²⁵ Hunter Water Corporation Report - Compliance and Performance - 2012-13 V10.pdf

• Tracking of Information Receipt by IPART: HWC should consider implementing improvements in the way that it tracks information submissions to ensure that they have been received by IPART and not rely on the fact that information has 'left' HWC's responsibility.

7.3 Previous Recommendations

There are no previous recommendations for this Licence area.

APPENDIX A. Detailed Audit Findings

A.1 Section 1: Licence and Licence Authorisation

A.1.1 Availability of Licence (sub-clause 1.8)

Sub-clause	Requirement				
1.8 Availability of Licence	1.8.1: Hunter Water (a) on its website fo on request.	r must make this Licence available free of charge: r downloading by any person and (b) to the public	Compliance Grade Full compliance		
Risk		Target for Full Compliance			
The risk posed to pub environment by non-c clause is minimal.	lic health and compliance of this	A copy of the Licence on Hunter Water's website record of requests that have been made for the Lic how they were resolved.	which is easy to locate. A ence / parts of the Licence, and		
Evidence Sighted ²⁶					
Interview with Carly R	eid Small, 17 Septeml	per 2013.			
Information provided Hunter Water's websi	pre-audit te at <u>http://www.hunt</u>	erwater.com.au/About-Us/Our- Organisation/Goven	nance/Operating-Licence.aspx		
Information provided 029.ipart_enquiries.xls Clause I - Google An Clause I - ISSUU doc	post-audit × alytics.doc ument downloads.doc	:			
Summary of Reaso	ns for Grade				
Clause 1.8.1(a) has be through HWC provid	en met through the C ing evidence to show	Operating Licence being available on the website. Clau downloads of the Operating Licence from its website	use 1.8.1(b) has been met e.		
Discussion and No	otes				
Prior to the audit, the auditor was able to locate the Licence on Hunter Water's website by typing 'operating licence' into the search box. However, on a minor note, on the auditor's web browser, it was difficult to see where the Licence could be downloaded because the font colour on 'Operating Licence' was not sufficiently different (see first screen shot below) to the background text to make the hyperlink obvious, especially compared to some of the other hyperlinks (see second screen shot below).					
Operating	Operating Licence				
Hunter Water delivers services under an Operating Licence granted by the NSW Government. The Licence protects consumers by prescribing minimum standards of service that Hunter Water must meet in relation to: Hunter Water's current Operating Licence came into operation on 1 July 2012. This licence was issued after a comprehensive public review of the previous licence, which was in force					
from 1 July 2007 to 30 June 2012. The review was carried out by the Independent Pricing and Regulatory Tribunal (IPART). View a copy of the review report on IPART's website.					
It was possible to download the Licence from the website and HWC provided evidence to show downloads from the website.					

²⁶ Note for all of the sections, 'Evidence Sighted' includes Hunter Water's responses to the audit questionnaire uploaded to IPART's FTP site.

A.2 Section 2: Water Quality

A.2.1 Drinking Water (sub-clause 2.1)

Sub-clause	Requirement		
2.1 Drinking Water	 2.1.1 Hunter Water must maintain consistent with: a) the Australian Drinking Water G b) if NSW Health specifies any ame Australian Drinking Water Guidelin the Australian Drinking Water Guidelin SW Health 	a Management System that is juidelines; or endment or addition to the les that applies to Hunter Water, delines as amended or added to by	Compliance Grade Adequate compliance
Risk		Target for Full Compliance	
The risk posed to public health by non-compliance with this clause could be very significant.		A management system that is comp	lete and up to date

Evidence Sighted

- Interviews with Pam O'Donoghue, Mark Coleman (HWA), Glen Robinson, Colin Cribb, John Stanmore (17 September 2013).
- Site visit with Mark Coleman (HWA) and Pam O'Donoghue (19 September 2013)

See element by element breakdown below.

Summary of Reasons for Grade

As part of its requirement for this clause, HWC must maintain a Management System consistent with the ADWG. Evidence was provided that the requirements have generally been meet. A lack of systematic linkages of HWC's practices and processes to the Framework for Management of Drinking Water Quality was observed. In particular, there was a lack of clarity as to how risks identified in the risks assessments were being managed and how actions identified from the risk assessment were prioritised and actioned. The auditor noted that HWC undertook a broad range of actions towards water quality improvements. However, there was a lack of a clearly articulated water quality improvement plan incorporating actions identified through:

- risk assessments
- major incident and incident training debriefs
- internal audits
- senior management and stakeholder meetings

Addressing the above points would help to further enhance the DWMS.

Discussion and Notes

See element-by-element breakdown.

Sub-clause	Requirement		
2.1 Drinking Water	2.1.2 Hunter Water must ensure that the Dr Management System is fully implemented and are carried out in accordance with the syster satisfaction of NSW Health.	Compliance Grade Adequate compliance	
Risk		Target for Full Comp	iance
The risk posed to public health by non-compliance with this clause could be very significant.		A fully implemented syste	m
Evidence Sighted			

Evidence Sighted

See Element by Element breakdown following

Summary of Reasons for Grade

This licence clause requires HWC to ensure the DWMS is fully implemented and all activities are carried out in accordance with the system. Evidence was provided that the requirements have generally been met. Sound implementation of operational and verification procedures was noted. However, systematic approaches to document control across the elements of the Framework elements were lacking. Issues noted included consistency across documentation, version control and timely revision. In particular, the fact that the Emergency Management Guidelines have not been updated since May 2011 and were now eight months past their due review date and discrepancies between critical control points and limits across documentation were of concern. Therefore after consideration of the implementation aspects of all the Framework elements, particularly in relation to critical aspects of drinking water quality management, a grade of adequate rather than high was awarded.

Discussion and Notes

See Element by Element breakdown.

A.2.2 Element 1 Commitment to Drinking Water Quality Management

Requirement	Compliance
C1.1 Drinking Water Quality Policy	Grade
 Formulate a drinking water quality policy, endorsed by senior executives, to be implemented throughout the organisation. Ensure that the policy is visible and is communicated, understood and implemented by employees. C1.2 Regulatory and formal requirements 	2.1.1: Adequate compliance 2.1.2: High
 Identify and document all relevant regulatory and formal requirements. Ensure responsibilities are understood and communicated to employees. Review requirements periodically to reflect any changes. C1.3 Engaging stakeholders 	compliance
 Identify all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier. Develop appropriate mechanisms and documentation for stakeholder commitment and involvement. Regularly update the list of relevant agencies. 	
Evidence Sighted	
Information provided Dirinking Water Quality Policy was sighted on the HWC website and at Grahamstown WTP. Framework - A 1.2.2 - Position Description_Water Treatement Plant Operator_Scott Schofield_II Framework - Engaging Stakeholders - 201213.DOC Framework - MOU between NSW Health and Hunter Water - January 2013 - 201213.PDF Framework - Position Description - Manager Treatment Operations - Sep-2012 - 201213.pdf Framework - A 1.2.2 - Position Description_WT Team Leader_Mark Coleman_1008 - 201213.ddf Framework - A 1.2.2 - Position Description_Operations Manager_Darren Bailey_1208 - 201213.ddf Framework - Screenshot - Comquest - 201213.doc Framework - Screenshot - Comquest - 201213.doc Monthly Corporate Compliance Reports - June 13.xls CLAUSE6.1.4.a - Legal Register -201212.XLS Minutes - Water Quality Committee - August 2012.doc Minutes - Water Quality Committee - December 2012.doc Minutes - Water Quality Committee - February 2013.doc Minutes - Water Quality Committee - July 2013.doc Minutes - Water Quality Committee - March 2013.doc Minutes - Water Quality Committee - March 2013.doc Minutes - Water Quality Committee - March 2013.doc Minutes - Water Quality Committee - July 2012.doc Minutes - Water Quality Committee - March 2013.doc Minutes - Water Quality Committee - Sept	203 - 201213.doc
Drinking Water Quality Policy: There is a drinking water policy available on the website and it was disc	played at
Grahamstown WTP.	,

Regulatory and formal requirements: Regulatory requirements are documented and tracked using COMQUEST.²⁷ From the evidence provided, COMQUEST does not appear to include all aspects of drinking water quality management (contrast this with the register produced for environmental legislation and safety legislation which is relatively inclusive of requirements for that area including specific areas of the legal and formal requirements.)

Engaging stakeholders: The *Engaging Stakeholders* document was limited in what would be considered key stakeholders e.g. the plumbing regulator was not listed. The document also lacks detail in terms of the mode of communication including type of communication, listing of internal and external representatives and frequency of communication. Sound evidence was provided for engagement with NSW Health.

HWC meets the broad intent of this element through the evidence listed above.

Element I is fundamental to understanding the operational context of HWC and underpins the remaining elements. As there are a number of minor shortcomings this element has been considered 'adequate' compliance for clause 2.1.1 and 'high' compliance for clause 2.1.2.

 $^{^{27}}$ A data warehousing package that is in use at HWC which allows for indicators and data to be stored and checked, depending on relevant responsibilities.

Discussion and Notes

Regulatory and formal requirements: HWC recorded in the questionnaire that regulatory requirements are documented and tracked using COMQUEST and the Compliance Calendar. Evidence was not provided to demonstrate that HWC had documented broader regulatory and formal obligations e.g. 'fitness for purpose' issues arising in the *Competition and Consumer Act 2010* (Cth). However, 'Regulatory Issues' is noted as a standing item on the Water Quality Committee Agenda and the *Water Quality Committee Meeting Minutes July 2013* did include discussions regarding the proclamation of the *Public Health Act 2010* (NSW). It is also noted that discussions were held regarding the availability of templates and guidance produced by NSW Health²⁸ for local water utilities to facilitate preparation of drinking water plans and that these may be helpful to HWC (Water Quality Committee December 2012).

The position descriptions reviewed as part of the evidence for this element were missing document control information. In addition, some job descriptions refer to superseded government departments. For example: HWC Manager Treatment operations position description still refers to DECCW rather than EPA.

Engaging stakeholders: Documentation regarding stakeholders was limited. In the *Engaging Stakeholders* document, HWC noted: "*Hunter Water's process is through a review by the HWC water quality committee*". Auditor review of the committee minutes revealed *ad hoc* references to stakeholders (e.g. Councils, NPWS, DRMS, State forests and other land users in relation to pesticide use May 2013) rather than the systematic requirements of the Framework.

HWC itself acknowledged in the audit questionnaire that the "Stakeholder list requires review / update".

Opportunity for Improvement

- **Operating Context:** HWC could improve the way in which it manages its legal and formal context surrounding drinking water production and supply by going back to first principles and articulating the products and services it produces/provides, identifying the relevant stakeholders for each of its products and services and then cross-referencing legal and formal requirements to each stakeholder.
- Stakeholder Register: Formalise a stakeholder register (or registers) for drinking water and ensure it is maintained.
- Legal Register Adapt the environmental legislative register to document all regulatory and formal requirements for drinking water relevant to HWC including reporting requirements and frequency.

²⁸ http://www0.health.nsw.gov.au/PublicHealth/environment/water/water_utilities.asp

A.2.3 Element 2: Assessment of the Drinking Water Supply System

Req	luirement	Compliance Grade:
C2, I	Water supply system analysis	2.1.1: Adequate
•	Assemble a team with appropriate knowledge and expertise.	compliance
•	Construct a flow diagram of the water supply system from catchment to consumer.	2 2: Adequate
•	Assemble pertinent information and document key characteristics of the water supply system	compliance
	to be considered.	compliance
•	Periodically review the water supply system analysis.	
CZ.2	Assessment of water quality data	
•	Assemble historical data from source waters, treatment plants and linished water supplied to	
•	List and examine exceedances	
•	Assess data using tools such as control charts and trends analysis to identify trends and	
	potential problems.	
C2.3	B: Hazard identification and risk assessment	
•	Define the approach and methodology to be used for hazard identification and risk assessment.	
•	Identify and document hazards, sources and hazardous events for each component of the	
	water supply system.	
•	Estimate the level of risk for each identified hazard or hazardous event.	
•	Evaluate the major sources of uncertainty associated with each hazard and hazardous event and	
	consider actions to reduce uncertainty.	
•	Determine significant risks and document priorities for risk management	
•	Periodically review and update the hazard identification and risk assessment to incorporate any	
Evic	changes.	
	resting annulad	
Intoi	• Clause 2 L L - F2 - C2 23- Hazards - Tomago Sandheds - 201213 pdf	
	Framework - Long Term Trends - Allyn-Paterson Rivers - 201213.XLS	
	Framework - Long Term trends - Amoebae - 201213.XLSX	
	 Framework - Long Term Trends - Boags Hill - 201213.XLS 	
	Framework - Long Term Trends - Campvale Canal @ Ferodale Road - 201213.X	LS
	 Framework - Long Term Trends - Campvale Canal PS Inlet R9 - 201213.XLSX Emmework - Long Term Trends - Chickester Dam - 201212 XLSX 	
	Framework - Long Term Trends - Chichester Dain - 201213,XLSX	
	 Framework - Long Term Trends - Giardia - 201213.XLSX 	
	 Framework - Long Term Trends - Grahamstown dam - R12 - 201213.XLSX 	
	 Framework - Long Term Trends - Grahamstown Dam - R2 - 201213.XLSX 	
	Framework - Long Term Trends - Grahamstown Dam - R6 - 201213.XLSX	
	 Framework - Long Term Trends - Station 4 - Groundwater - 201213,XLS Emmowork - Mosting Agondo Workshop L Tomago Pick Assessment June 2012 	
	 Framework - Meeting Agenda Workshop 1 Tomago Risk Assessment June 2013. Framework - Meeting Agenda Workshop 2 Tomago Risk Assessment June 2013. 	
	 Framework - Meeting Agenda Workshop 2 Tomago Risk Assessment June 2013. 	DOCX
	Framework - Process Flow Diagram - Anna Bay WTP - 201213.PDF	
	 Framework - Process Flow Diagram - Grahamstown No 3 WTP Flow Chart- DR 	AFT - 201213.pdf
	Framework - Process Flow Diagram - Gresford Clear Water Tannk (Catchment t	o Tap) - 201213.pdf
	Framework - Process Flow Diagram - Lemon Tree Passage WTP - 201213.PDF	
	 Framework - Process flow Didgiani - Nelson Day WTP - 201213, PDF Framework - Risk Assessment - Anna Nelson Bay W/TPs - 201213 XIS 	
	 Framework - Risk Assessment - Chichester Dam - 201213.XLS 	
	 framework - Risk Assessment - Chlorinators - 201213,XLS 	
	 Framework - Risk Assessment - Coalfields Dist - 201213.XLS 	
	Framework - Risk Assessment - Dungog WTP - 201213.XLS	
	Framework - Risk Assessment - Grahamstown Dam - 201213.XLS	
	Framework - Risk Assessment - Gresford W/TP Risk Assessment 01 - 201213 XI	ç
	Framework - Risk Assessment - GTown WTP - 201213 XLS	5
	Framework - Risk Assessment - Tomago Tomaree Catchment - 201213.XLS	
	Framework - Zone Mean Trends - WQ Committee Zone Means_2 - 201213.XL	SX
	Anna Bay WTP workbook charts 2012_13.xlsx	
	Dungog WTP workbook charts 2012_13.xlsx	
	Lemon Tree Passage WTP workbook charts 2012_13.xlsx	
	 INVESTIGATION OF THE WORKDOOK CHARTS 2012_13,XISX Framework - A 2 2 - Chichester System Flow Chart FINIAL VSD - 201213 pdf 	
	 Framework - A 2.1.3 - Catchment Presentation AllvnPaterson - 201213.pdf 	
	Framework - A 2.1.3 - Gresford Catchment and Raw Pres for Risk Assessment -	201213.pptx
	 Framework - A 2.1.3 - Presentation - Tomago Sandbed Catchment Risk Assessm 	ent 2012 - 201213.ppt

•	Anna	Bay WTP	workbook	charts	2012_1	3.xlsx

- Dungog WTP workbook charts 2012_13.xlsx
 - Lemon Tree Passage WTP workbook charts 2012_13.xlsx
 - Nelson Bay WTP workbook charts 2012_13.xlsx
 - Major Risks Gresford Catchment Raw.doc
 - Major Risks Gresford Treatment and Distribution.doc
 - Board Paper 24th April 2013 Flooding Impacts on Water and Wastewater Treatment Plants final.docx
 Board Paper Appendix A Catchment Improvement Program.DOCX
 - Framework Annual Report on the Implementation of the Five Year Water Quality Management Plan
 - 2012 201213.PDF

Summary of Reasons for Grade

Water supply system analysis: Team lists could not be provided for some risk assessments. Flow diagrams were provided for all schemes but did not always have the flow direction clearly articulated on them. Information regarding key system characteristics was provided for some schemes,²⁹ however the information was not synthesised into a briefing paper (a requirement, for instance, in the NSW Health DWMS guidance).

Assessment of water quality data: Sound evidence was provided that HWC collects and reviews historical data from source waters, treatment plants and finished water supplied to consumers.³⁰

Hazard identification and risk assessment: Excel workbooks of the risk assessments were provided as evidence. Outputs from BowTie XP were provided for Tomago (but not the Bow tie diagram). A copy of outcomes from the Tomago Risk Assessment was requested by the auditor. HWC noted that the Tomago risk assessment had not yet been finalised (even though it had been undertaken a year ago).

Risk Assessment Review: HWC noted in the audit questionnaire that "*Risk assessments (except for Tomago) are due for review – revision Water Quality risk assessments to be undertaken starting from 13/14 fin year*". The discrepancy between the questionnaire and a document of the outcomes from the Tomago risk assessment is noted. It was difficult to establish how the outcomes of the risk assessment were carried into the other Framework elements, for example, the quality improvement plan or the establishment of the CCPs. Due to the extent of minor non-compliances, this element is assessed as adequate compliance for clause 2.1.1 and clause 2.1.2. Rolling revisions of the risk assessments should be scheduled as part of HWC's risk review process (full blown risk assessments for every system every time are not warranted). It is a better approach to finish the risk assessments with a degree of uncertainty attached and actions in place to address the uncertainty, rather than never finish the risk assessments.

Discussion and Notes

It is noted that the Excel-based spreadsheet risk assessments were undertaken prior to the audit period. As part of the Drinking Water Management System, they are a crucial step in establishing the adequacy of the treatment plants for managing risk. While the workbooks capture the detail of the risk assessment, within the workbooks there was no:

- context or descriptor for the risk matrix (e.g. Dungog)
- synthesis of the top risk events
- prioritised action list

A number of risk assessments did not have a participant list. There was no explicit definition of methodology in the evidence provided. Much of the information provided lacked document control information.

As the risk assessments are updated, HWC should ensure that the risk assessment process specifically addresses each of the actions within the Framework and in the NSW Health guidance as it applies to HWC.

During the interview the risk assessment of the Tomago sandbeds was discussed. The workshops associated with this risk assessment were undertaken from 25 June 2012 – 28 June 2012 (based on agendas provided). A copy of the risk assessment outcome was requested. The auditor was advised the risk assessment had not been finalised.

The need to document responsibility / resourcing for review of risk assessments and critical control points was noted in HWC's Annual Report on the Implementation of the Five Year Water Quality Management Plan 2012 - 2013.

Recommendation

• WQR-2013/3 Risk Assessment³¹: HWC should update the risk assessments of its water supply systems from catchment to tap. A document summarising the risk assessment workshop should be prepared including the workshop participants, risk methodology, significant risks and priorities for risk management. Timeframe: Completed risk assessments by June 2016.

The identified priorities should be assessed and prioritised for implementation as part of the Drinking Water Quality Improvement Plan. **Timeframe:** June 2014.

Opportunity for Improvement

Human factors in product safety: When the risk assessments are updated, consideration should be given to the contribution of human factors to the occurrence, prevention and management of hazardous events.

³¹ Lack of workshop outcomes' documentation is a DWMS issue whereas addressing the outcomes from the risk assessment workshop is an implementation issue.



²⁹ e.g. Framework - A 2.1.3 - Gresford Catchment and Raw Pres for Risk Assessment - 201213.pptx

³⁰ Framework - Long Term Trends - Allyn-Paterson Rivers - 201213.XLS and Framework - Long Term Trends - Station 4 - Groundwater - 201213.XLS are two examples

A.2.4 Element 3: Preventive Measures for Drinking Water Quality Management

Requirement	Compliance
C3.1 Preventive measures and multiple barriers	Grade
• Identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and estimate the residual risk.	2.1.1 Adequate compliance
 Evaluate alternative or additional preventive measures where improvement is required. 	2.1.2 Adequate
• Document the preventive measures and strategies into a plan addressing each significant risk.	compliance
C3.2 Critical control points	
• Assess preventive measures from catchment to consumer to identify critical control points.	
Establish mechanisms for operational control.	
 Document the critical control points, critical limits and target criteria. 	
Evidence Sighted	
The following files were reviewed in addition to those listed for Element 2 that also apply to Element 3.	

- Critical Limits for CCPs documented in Tables 2.1 to 2.5 of 2012/13 Performance and Compliance Report.
 - Framework CCPs all systems Draft 201213.XLS
 - Framework CCPs Chichester System CCPs Draft 2011 201213.XLS
 - Framework CCPs Grahamstown System CCPs Draft 2011 201213.XLS
 - Framework CCPs Gresford CCPs Draft Sept 2011 201213.XLS
 - Framework CCPs Port Stephens CCPs Draft Sept 2011 201213.XLS
 - 007.Extracts from Treatment Operations Contract re water quality and notification requirement.doc
- 058.Criteria for Notification to NSW Health.xls

Summary of Reasons for Grade

Preventive measures and multiple barriers: This component is closely linked to the Hazard Identification and Risk Assessment component in Element 2. A report of the outcomes from the Tomago risk assessment report was requested at the audit but to date this has not been provided because it had not been finalised.

Critical control points: Critical control points, their limits and monitoring points are a crucial component of the Framework as they define the essential barriers and the measurement of their effectiveness for the safe provision of water. Discrepancies in CCP information across the various CCP documents provided were apparent pointing to a lack of consistency and clarity in CCP development and assignation.

The procedures and processes in place to manage the water quality aspects of the *Treatment Operations Contract* ensure adequate control and monitoring of most of the CCPs associated with water treatment. However some of the network CCPs were not appropriately monitored. It is for these reasons (and the fact that NSW Health required an audit focus on CCPs), that this element is considered 'adequate' compliance for both clause 2.1.1 and 2.1.2.

Discussion and Notes

Critical control points, their limits and monitoring points are a crucial component of the Framework as they define the essential barriers and the measurement of their effectiveness for the safe provision of water. The auditor noted discrepancies in CCPs across the different documents provided, for example, *Framework CCPs all Systems Draft 201213.xls* and the *Framework CCPs Plant name CCPs – Draft – 20911 – 201213.xls* and Table 2.1 – 2.5 of 2012/13 Performance and Compliance Report.

Some critical limits were stated as being 'ADWG limits' rather than parameters that could be monitored in a timely manner. 'ADWG limits' are indeed very broad and do not match the contemporary application of critical limits within water supply systems. Critical limits need to be exact, indicative of the hazard being controlled (can be a surrogate e.g. turbidity for pathogens), able to be monitored and monitored at a frequency to match the speed with which the barrier can fail. Not all of the critical limits stated for HWCs systems met these criteria.

The critical limits of:

- Fully enclosed distribution system and storages
- Backflow prevention policy and procedures
- Maintenance and repair protocols
- Construction protocols and procedures

lacked evidence to show that they have been monitored.

All of the above bullet points largely relate to distribution system infrastructure. Distribution system integrity, including backflow prevention is a fundamental component of maintaining and supplying fit for purpose water. There are many examples where lack of distribution system integrity has led to waterborne outbreaks including being responsible for some deaths, three important publications being:

• Craun, G.F. and Calderon, R.L. (2001) Waterborne disease outbreaks caused by distribution system deficiencies *American Water Works Association. Journal.* 93 (9): 64-75.

- USEPA (2001) Potential Contamination Due to Cross-Connections and Backflow and the Associated Health Risks. Office of Water (4601M) Office of Ground Water and Drinking Water. Distribution System Issue Paper. 27 September 2001.
- CDC (2013) Surveillance for Waterborne Disease Outbreaks Associated with Drinking Water and Other Nonrecreational Water — United States, 2009–201 Morbidity and Mortality Weekly Report September 6, 2013 / 62(35);714-720.

The monitoring of the critical limit for the disinfection CCP could also benefit from a review. For instance, during the site visit of Grahamstown WTP, the monitoring location of the critical limit for disinfection was described as being prior to the chlorine contact tank. For the C.t calculation, C.t should be based on the free chlorine residual after the appropriate contact time. Typically, the free chlorine residual at the outlet of the chlorine contact tank is used as the monitoring point for the critical limit. Monitoring of the chlorine residual prior to the tank provides information on chlorine dosing. It does not provide information on disinfection efficacy.

Deficiencies and improvements in the areas of risk assessment and CCPs are acknowledged by HWC with the need to document responsibility / resourcing for review of risk assessments and critical control points being noted in HWCs Annual Report on the Implementation of the Five Year Water Quality Management Plan 2012 – 2013. It would appear that HWC is currently not implementing its own advice, with risk assessments and CCP management still requiring work.

Recommendation

- WQR-2013/1 Critical Control Points (CCPs)³²:
 - A formal procedure for the establishment and review of CCPs, critical limits and monitoring points for critical limits should be established in consultation with NSW Health. **Timeframe:** Within 6 months
 - Changes to CCPs and critical limits should be considered as a significant change to the Drinking Water Management System (DWMS) and Recycled Water Management System (RWMS) and thus trigger clause 2.1.3 and 2.1.4 or 2.2.3 and 2.2.4 of the Operating Licence as appropriate. Timeframe: Immediate.
 - CCPs and critical limits should be reviewed to ensure that parameters are measurable in a timely manner and that the CCPs and limits are consistent across documentation. **Timeframe:** Within 6 months.
 - o Audit procedures should be established for any CCP that is procedure dependant (for example Backflow Prevention). **Timeframe:** Within 6 months.
- WQR-2013/6 Backflow Prevention³³: Given that distribution system integrity is fundamental to maintaining 'fit for purpose' water, systems to protect HWC's drinking water system from contamination by recycled water should be established and their implementation subject to on-going review. Timeframe: June 2014.

³³ DWMS development issue.



³² Largely a DWMS development issue.

A.2.5 Element 4: Operational Procedures and Process Control

Pequirement	Compliance
C4 Operational Procedures	Grade
 Identify procedures required for processes and activities from catchment to consumer 	2.1.1 High
 Document all procedures and compile into an operations manual. 	compliance
C4.2 Operational Monitoring	2 2 High
• Develop monitoring protocols for operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results.	compliance
Document monitoring protocols into an operational monitoring plan.	
C4.3 Corrective Action	
Establish and document procedures for corrective action to control excursions in operational	
parameters.	
Establish rapid communication systems to deal with unexpected events.	
C4.4 Equipment capability and maintenance	
• Ensure that equipment performs adequately and provides sufficient flexibility and process control.	
• Establish a program for regular inspection and maintenance of all equipment, including monitoring	
equipment.	
Ensure that only approved materials and chemicals are used	
Ensure that only approved materials and chemicals are used. Establish documented procedures for evaluating chemicals, materials and suppliers	
Establish documented procedures for evaluating chemicals, materials and suppliers.	
Information provided	
 Framework - SOP Register - 201213,xlsm 	
 Framework - A 4.2.1 - HWC SCADA Chlorinator Alarm Limits - 201213.xls 	
 Framework - A 4.2.1 - WTP Water Quality Parameters SCADA Alarm Limits - 201213.xlsx 	
 Framework - Procedure - Reporting Significant Events - 201213.doc 	
 Framework - Screenshot - Procedures - Water Quality Management and Exceptions - 201213.pdf 	
 Framework - A 4.5.1 - Tender Specification CS0019 - Carbon Dioxide - 201213.DOC 	
 Framework - A 4.5.1 - Tender Specification CS0123 - Bulk Chemicals - 201213.DOC 	
 Framework - A 4.5.1 - Tender Specification CS0174 - Hydrated Lime - 201213.DOC 	
 A4.1.1 - Chlorine residual monitoring in SCADA - 201213.xls 	
 A4.1.1 - Example SCADA information Buttai Reservoir - 201213.doc 	
C4.3 - WQ Exception Reporting Procedure - 201213.doc	
 C4.4 - Strategic Asset Management Plan - Water Treatment 2012 (Draft) - 201213.DOCX 	
HWA SOP NotificationWaterQualityProblems.doc	
HWA Grahamstown Instrumentation Calibration Maintenance Schedule.xlsx	
Approved Products and Manufacturers Water (<u>http://www.hunterwater.com.au/Resources/Documer</u>	nts/Approved-
Designers-Suppliers-Contractors/Approved-Products-and-Manufacturers/GuidelineApproved-Prod	uctsWater-rev-
<u>2.511Oct13.PDF</u>)	
Specification - Polymers.pdf	
Summary of Reasons for Grade	
HWC's DWMS largely meets the intent of the Framework for this element because it has formalised chemical	and material
procurement processes and its contractor (HWA) has formalised procedures and checklists in place including a	a searchable SOP
register (including currency checks, operational monitoring including maintenance and calibration schedules).	
However, it was not clear how HWC ensures that its contractor is meeting the obligations for this element on	HWC's behalf.
Some opportunities for improvement include:	
• Reviewing how HWC ensures its contractor meets the obligations of this element. For example, ens	uring that SOPs
are reviewed at the frequency specified in the SOP register (over 40% are currently marked "Review	Overdue").
Ensuring that future contracts contain clauses that ensure HWC's contractors meet the DWMS licen	ice obligations as
appropriate and that HWC reserves the right to audit the implementation of these obligations to en	sure compliance.
It was clear from the site visit that diligent and experienced operators are employed. However, the risks in pat	updating
no was clear month the site visit that unigent and experienced operators are employed, mowever, the fisks in hot procedures include:	upuaning
Undocumented improvements in work practices	
Variations / discremancies in work practices between operators	
 Possible entreprincies in work practices between operators Possible entrepriment of incorrect work practices (noting that this was one of the issues in the \A/all 	kerton Ontario
Canada outbreak)	Norton, Ontano,

For the above reasons this element is assessed as 'high' compliance for both clause 2.1.1 and 2.1.2.

Discussion and Notes

Operational Procedures: A register of HWAs SOPs was provided as evidence for this component. The availably of these SOPs to operators was demonstrated during the site visits to Grahamstown WTP and Branxton WWTP. There were 489 water treatment SOPs listed in *SOP Register - 201213.xlsm*, which covered areas including:

- selection of water sources (DQS10.03.01_GRE_Gresford.Raw.Water.Source.Changeover.docx)
- plant operation (DQS05.04.02_DUN_C&F.Change Coag Setpoints.doc))
- monitoring and testing (DQF06.04.01_GRA_ACH Jar Testing Report.pdf)

Two hundred WTP SOPs were marked 'due for review' and only fifty-three had been modified in the last three years. This raises concerns about currency and implementation of the procedures. The UK Health and Safety Executive (HSE) notes that procedures represent an "agreed safe way of doing things". HSE includes 'Procedures' as one of their 12 key human factor topics:

"Problems with procedures are linked to numerous incidents and frequently cited as one of the causes of major accidents. The inadequate management of procedures ha[s] not only contributed to disasters such as Bhopal, Piper Alpha and Clapham Junction, but also to fatalities, personal injuries and ill health. The main causes are too much reliance placed on procedures to control risk, a failure to follow safe working procedures or the use of inadequate procedures."³⁴

Given that operator diligence and experience was evident during the site visits, the lack of SOPs currency is noted as an opportunity for improvement rather than a recommendation.

Operational Monitoring: Sound evidence exists for the daily testing and monitoring of the plant both in the information provided and from observations made during the site visit. The auditor sighted that the Excel spreadsheet used to capture the daily testing information has built in checks and automation to alert the user to any non-compliances. While following up data entry into the spreadsheet during the site visit, a transcription error was noted. The built in checks provide some risk mitigation for data transcription errors but not all. SCADA (used by HWA) may provide another point of risk mitigation. However, display discrepancies were also noted between the filtered water meter and the SCADA display (0.12 NTU on meter vs 0.14 on SCADA).

Corrective Action: Procedures for corrective actions were noted in the SOP register.

Equipment capability and maintenance: This item is covered by the evidence provided in *HWA Grahamstown Instrumentation Calibration Maintenance Schedule.xlsx* and observed during the Grahamstown WTP site visit. Asset management was audited as part of clause 4.

Materials and Chemicals: Tender specifications have been developed for Hydrated Lime (CS0174), Carbon Dioxide (CS0019) and Bulk Chemicals (CS0123). Hunter Water maintains a register of authorised products and materials published on its website.³⁵

Recommendation

• WQR-2013/6 Backflow Prevention³⁶: Given that distribution system integrity is fundamental to maintaining 'fit for purpose' water, systems to protect HWC's drinking water system from contamination by recycled water should be established and their implementation subject to on-going review. Timeframe: June 2014.

Opportunity for Improvement

- Contractor Oversight: Review how HWC ensures that its contractor meets the obligations of this element. For example, ensuring that SOPs are reviewed at the frequency specified in the SOP register (over 40% are currently marked "Review Overdue").
- **Future Contracts:** Ensure that future contracts contain clauses that ensure that HWC's contractors meet the DWMS licence obligations as appropriate and that HWC reserves the right to audit the implementation of these obligations to ensure compliance.

³⁶ DWMS development issue.



³⁴ <u>http://www.hse.gov.uk/humanfactors/topics/procedures.htm</u>

³⁵ http://www.hunterwater.com.au/Building-and-Development/Approved-Designers-Suppliers-andContractors/Approved-Products-and-Manufacturers.aspx

A.2.6 Element 5 Verification of Drinking Water Quality

Requirement	Compliance Grade
C5.1 Drinking water quality monitoring	2.I.I Full
• Determine the characteristics to be monitored in the distribution system and in water as supplied	compliance
 Establish and document a sampling plan for each characteristic, including the location and frequency of sampling 	2.1.2 Full compliance
 Ensure monitoring data is representative and reliable. C5.2 Consumer satisfaction 	
Establish a consumer complaint and response program, including appropriate training of	
employees.	
 Establish procedures for the daily review of drinking water quality monitoring data and consumer satisfaction. 	
• Develop reporting mechanisms internally, and externally, where required. C5.4 Corrective action	
 Establish and document procedures for corrective action in response to non-conformance or consumer feedback. 	
Establish rapid communication systems to deal with unexpected events.	
Evidence Sighted	
Information provided	
Framework - Annual Water Quality Monitoring Plan - 201213.pdf	
 Framework - Annual Water Quality Report 2011_12 - 201213.pdf Emmowork - Notifications to NSW/ Health 2012_13 XLS 	
 Framework - Notifications to Not With Health 2012-13, XED Framework - Service Fault Training - Customer Responses - 201213 pdf 	
 Framework - Service fault training - Water Quality Problem - Chlorine - Customer Complaint 	Response -
201213.doc	
 Framework - Service fault training - Water Quality Problem - Dirty Water - Customer Compl 201213.doc 	aint Response -
Framework - Service fault training - Water Quality Problem - Health - Customer Complaint R	esponse - 201213.doc
Framework - Service fault training - Water Quality Problem - Other - Customer Complaint Re	esponse - 201213.doc
Framework - Service fault training - Water Quality Problem - Taste_Odour - Customer Comp	olaint Resopnse -
201213.doc (sic) • Extract from HIVAA W/T Exants List vlov	
Summary of Reasons for Grade	
HWC has sound evidence to meet the intent of this element of the Framework including water quality is	monitoring programs
customer water quality requests.	iuling to and tracking
Discussion and Notes	
Drinking water quality monitoring: Sound evidence was provided for the routine distribution mor	nitoring system.37
Consumer satisfaction: Customer requests can be received via 24 hour call line as well as via the fro	ont counter. Information
training sheets for the customer service officers demonstrated the information that could be provided to water quality issues and the appropriate HWC escalation processes. While the call centre is run under control over the training and the production environment. Staff cannot work in the production environment completed the training.	o customers regarding ontract HWC maintains nent until they have
Short term evaluation of results: Water quality monitoring data is reviewed and recorded daily at daily routine, with automatic compliance checks built in (see previous element). Customer satisfaction is	the plant as part of the tracked through AOMS
and was reviewed as part of Section 5. Notifications to NSW Health are undertaken in a timely manner 8.	as reviewed in Section
Corrective action: Corrective actions are described by the Water Quality Problem Customer Complain: Procedures for documenting the corrective actions are detailed in the Water Quality Problem Customer C	t Response documents ³⁸ . omplaint Response

 $^{^{\}rm 37}$ Framework - Annual Water Quality Monitoring Plan - 201213.pdf

documents.

 ²⁷ Framework - Annual Water Quality Monitoring Fran - 201213.paj
 ³⁸ Framework - Service Fault Training - Customer Responses - 201213.pdf
 ³⁸ Framework - Service fault training - Water Quality Problem - Chlorine - Customer Complaint Response - 201213.doc
 ³⁸ Framework - Service fault training - Water Quality Problem - Dirty Water - Customer Complaint Response - 201213.doc
 ³⁹ Framework - Service fault training - Water Quality Problem - Health - Customer Complaint Response - 201213.doc
 ³⁰ Framework - Service fault training - Water Quality Problem - Health - Customer Complaint Response - 201213.doc
 ³¹ Framework - Service fault training - Water Quality Problem - Other - Customer Complaint Response - 201213.doc

Framework - Service fault training - Water Quality Problem - Taste_Odour - Customer Complaint Resopnse - 201213.doc (sic)

A.2.7 Element 6 Management of Incidents and Emergencies

Requirement	Compliance Grade	
C6.1 Communication	2.1.1 Adequate	
• Define communication protocols with the involvement of relevant agencies and prepare a	compliance	
contact list of key people, agencies and businesses.	2.1.2 Adequate	
Develop a public and media communications strategy	compliance	
C6.2 Incident and emergency response protocols	· ·	
Define potential incidents and emergencies and document procedures and response plans with the involvement of relevant against		
Train employees and regularly test emergency response plans		
 Train employees and regularly test emergency response plans Investigate any incidents or emergencies and revise protocols as possessant 		
Evidence Sighted		
Information provided		
Framework - Emergency Response Communications Plan.pdt		
 Framework - File note - DAM SAFETT DISCUSSION EXERCISE - JUNE 2013 - ACTION NOTES.doc.doc 	PLAN & MEETING	
Framework - Memo re Incident Communication Protocol - 201213.doc		
 Framework - Notifications to NSW Health 2012-13.XLS 		
 Framework - Procedure - HWC_EM_Guidelines_MAY2011_03.doc 		
 Framework - Procedure - Reporting Significant Events - 201213.doc 		
 Framework - Report - Booragul WQ Incident Debrief.docx 		
 Framework - Report - Debrief - Chichester Turbidity Event - February 2012.doc 		
 Framework - Report - HWC - Ex Poseidon 2011 - Post Exercise Report FINAL.PDF 		
 Framework - Report - SITREP2 - Rutherford Reservoir 31 May 2013.docx 		
 Framework - SOP Register - 201213.xlsm (filterable by emergency response plans) 		
 e-mail from HWC Manager Treatment Operations to HWA re Incident Notification Proto 	col 8_2_2013.msg	
HWA SOP NotificationWaterQualityProblems.doc		
File note - Hunter Water Communications Contacts.DOC		
Internal contact list emergency response.doc		
Notes to auditors - Resilience Coordinator.doc		
Register - External Communications Contacts.DOC		
 Schedule - Media schedule and contacts.XLS Delais Cheve a March - EDNECO Terrational and contacts.XLS 		
Debrief Report Maryland DINSUU Trunk Main Break 031112,DOC		
 Evidence of practical application of the Incident Communication Protocol for Water Quality Incidents.doc Extract from HWA W/T Events List view 		
 Framework - A 4.3.1 - Blue-Green Algae Contingency Plan Potable Water Sources updated November 2011 - 201213 DOC 		
Summary of Reasons for Grade		
Flamente 4 and 6 are critical to the day to day provision of cafe water. The auditors were concerned	that the Emergency	
Management Guidelines were last undated in November 2011 and according to the document control	ol information the	
document was due for review in December 2012. While updated contact information has been issue	d in a separate document	
(Framework - Memo re Incident Communication Protocol - 201213.doc), the presence of out of date	e information in an	
Emergency Document is concerning. The ADWG Framework states that "contact lists should be regula	arly updated (e.g. six-	
monthly) to ensure they are accurate".		
Further, the auditors were unable to verify how improvements identified following incident de-brief were actioned. For these		
reasons an adequate compliance grade was awarded rather than high compliance.		
Discussion and Notes		
Communication: HWC has a public and media communications strategy (<i>Emergency Response Cor</i> 2011). This document references key support information including external communication contact contact list but evidence of the adequacy of these underlying documents was not verified. HWC has	nmunication Plan December list and major customers a formal notification	
protocol with NSW Health (see Section 8), HWC has engaged with relevant agencies as demonstrat	ed through exercises such	

Incident and emergency response protocols: The SOP register includes documents relevant to this element and is filterable by 'emergency response plans'⁴¹. However, the auditor noted that the *Emergency Management Guidelines* were due for review in December 2012 but had not yet been reviewed. Further, the emergency contact list contained within the document

as Poseidon³⁹ and the dam safety discussion exercise.⁴⁰

⁴¹ Framework - SOP Register - 201213.xlsm



³⁹ Framework - Report - HWC - Ex Poseidon 2011 - Post Exercise Report FINAL.PDF

⁴⁰ Framework - File note - DAM SAFETY DISCUSSION EXERCISE - JUNE 2013 - ACTION PLAN & MEETING NOTES.doc.doc

was out of date (including members of the general management team). The auditor noted that a memo with updated contact information (Framework - Memo re Incident Communication Protocol - 201213.doc) has been circulated and implemented (Evidence of practical application of the Incident Communication Protocol for Water Quality Incidents.doc). Poor emergency management governance and procedures have contributed to high profile water quality incidents including Sydney Water's *Cryptosporidium* and *Giardia* event and the UK South West Water Authority's Camelford aluminium incident (1988 with repercussions still on-going; Hrudey presentation on behalf of NSW Health 1st October 2013).

The desktop and scenario training provides sound evidence for the training and testing action within this component.

Investigate any incidents or emergencies and revise protocols as necessary: HWC provided evidence of debrief reports included the following key headings:

- What worked well during the incident response?
- What could have been done better?
- Key lessons learnt
- Recommended actions (short term 3-6 months)
- Recommended actions (medium long term 6 months +)
- Recommended additional investigations / research / studies / literature reviews

However, what is not clear is how identified actions are selected for implementation, prioritised and actioned (including responsibility assigned and tracking of progress and success).

Recommendation

- WQR-2013/2 Emergency Management⁴²: HWC should ensure that the
 - o Emergency Management Guidelines are reviewed in line with their designated review date. **Timeframe:** Immediate and upon review cycle.
 - HWC should ensure that consistent and up-to date emergency contact information is maintained across all documentation. **Timeframe:** Immediate and upon review cycle.
A.2.8 Element 7: Employee Awareness and Training

Requirement	Compliance Grade:						
 C 7.1: Employee awareness and involvement Develop mechanisms and communication procedures to increase employees awareness of and participation in drinking water quality management C 7.2: Employee training Ensure that employees, including contractors, maintain the appropriate experience and qualifications Identify training needs and ensure resources are available to support training programs Document training and maintain records of all employee training 	2.1.1 Adequate compliance 2.1.2 High compliance						
 Document training and maintain records of all employee training Evidence Sighted Framework - Water Quality Awareness Training records - 201213.pdf Framework - A 1.2.3 - Training Record - Adam Mason - 201213.pdf Framework - A 1.2.3 - Training Records - Rebecca Mayo - 201213.pdf e-mail from HWC Manager Treatment Operations to HWA re Incident Notification Protocol 8_2_2013.msg Clause 2.1.1 - Aquality Review 2012 - 201213.XLS Framework - Annual Report on the Implementation of the Five Year Water Quality Management Plan 2012 - 201213.PDF Framework - Position Description - Manager Treatment Operations - Sep-2012 - 201213.pdf Framework - A 1.2.2 - Position Description _WT Team Leader_Mark Coleman_1008 - 201213.doc Framework - A 1.2.2 - Position Description_Operations Manager_Darren Bailey_1208 - 201213.doc Framework - Position Description - Water Quality Engineer, Treatment Operations - 201213. 049_Director Induction Guide July 2013.pdf Examples of Incidents discussed at Toolbox.xlsx 							
While somewhat informal, HWC does appear to meet the intent of this element of the Framework. However, deficiencies were acknowledged by HWC (<i>Annual Report on the Implementation of the Five Year Water Quality Management Plan</i>) and noted by the auditor in the way that subcontractors are trained in water quality and awareness. Because training deficiencies have been pivotal in major waterborne outbreaks it is for this reason that clause 2.1.1 has been awarded adequate compliance and clause 2.1.2 has been awarded high compliance.							

Discussion and Notes

Employee awareness and involvement: Awareness of and participation in drinking water quality management is undertaken on an informal basis (audit questionnaire). Position descriptions are also used to increase awareness of water quality. For instance Manager Treatment Operations has a requirement to implement the Australian Drinking Water guidelines and ensure compliance with drinking water quality regulatory requirements. The Drinking Water Quality Policy was displayed at the Grahamstown WTP and observed during the auditors' site visit.

Employee training: HWC has undertaken water quality awareness training for its network operation and asset management staff. HWA training records provide evidence of operators having undertaken Certificate II in Water Operations although this may not have included unit NWP279, which relates to understanding of the Framework.

The ADWG also requires training of contractors. The training provided to the customer service staff has been noted in element 5. The auditor notes that as part of the Aquality review HWC has identified the need to "Develop and implement water quality awareness training for contractors". The auditor is concerned that this improvement was not carried through to the Additional Water Quality Improvement Actions in the Annual Report on the Implementation of the Five Year Water Quality Management Plan especially as gaps in training have been contributory factors in key major waterborne outbreaks including Walkerton.

Recommendation

• WQR-2013/4 Contractor training⁴³: HWC should develop and implement water quality awareness training for contractors. Timeframe: June 2014.

Opportunity for Improvement

Embed water quality awareness within the workplace, for example using the drinking water quality policy as part of the induction for all staff and contractors.

⁴³ Lack of contractor training is a DWMS development issue.

A.2.9 Element 8: Community Involvement and Awareness

Requirement	Compliance Grade							
 C 8.1: Community consultation Assess requirements for effective community involvement. 	2.1.1 Full							
• Develop a comprehensive strategy for community consultation.	compliance							
C 8.2: Communication	2.1.2 Full							
 Assess requirements for effective community involvement. Develop an active two way communication program to inform consumers and promote awareness. 	Compliance							
of drinking water quality issues.								
Evidence Sighted								
Framework - A 8.1.2 - Catchment Management Plan Brochure - 201213.pdf								
 Framework - A 8.2.1 - Brochure - Where does your water come from - 2012.pdf 								
Framework - A 8.2.1 - Dams and Catchments - Hunter Water Website - 201213.mht								
 Framework - A 8.2.1 - Tocal Field Days - 201213.mht Framework - A 8.2.1 - Water Source - Where Does Your Water Come From Hunter Water W 	Vehsite 201213 mbt							
Summary of Reasons for Grade	vebsite - 201215,1111t							
HWC has sound evidence to meet the intent of this element of the Framework including water quality inf	ormation available							
through its website and opportunities for customers to interact through a variety of media.								
Discussion and Notes								
Community consultation: HWC communicates through its website, customer focus groups, communi inserts, open days and television commercials (Aquality)	ty newsletters, letter							
HWC seeks advice from community representatives from across their area of operations through the Hunter Water Community Consultative Forum, which provides HWC with advice on customer and consumer interests. The meeting summaries and papers are published on the website. ⁴⁴ Meeting summaries were not available for any meeting held in 2013. HWC also noted in the Aquality audit that planned upgrades have community consultation programs. This was not verified by the auditor for drinking water (evidence was provided for recycled water).								
Communication : The HWC website is used as a means of communicating with the public on water qua Water quality information is available on the website including:	lity management.							
 an interactive page where customers can enter their postcode to find out which catchment their from 	r water is sourced							
water catchment information pages								
 water quality pages including fact sheets on chlorination, fluoridation, hardness and sodium monthly dripting water quality summary and the Compliance and Performance Papert 2012, 2012. 								
Thomany ormanic water quality summary and the Compliance and renormalice Report 2012-20								
The public can contact HWC via phone, e-mail letter or in person. The auditor noted that while HWC has a Twitter account, it is not active.								

Based on the information provided and the desktop assessment, HWC fulfils the requirements of this element.

⁴⁴ <u>http://www.hunterwater.com.au/Community/Community-Consultative-Forum/Meeting-Papers.aspx</u>

A.2.10 Element 9: Research and Development

Requirement	Compliance
C 9.1: Investigative studies and research monitoring	Grade
• Establish programs to increase understanding of the water supply system.	2.1.1.High
 Use information to improve management of the water supply system. C 9.2: Validation of processes 	compliance
 Validation of processes Validate processes and procedures to ensure that they are effective at controlling bazards 	2.1.2 High
 Revalidate processes periodically or when variations in conditions occur. 	compliance
C 9.3: Design of Equipment	
Validate the selection and design of new equipment and infrastructure to ensure continuing	
reliability.	
Evidence Signted	
Framework - Examples of Investigative Studies - 201213.doc	
C9.1 - Project Plan - Disinfection Optimisation Strategy - July 2013 - 201213.DOCX	
 058.Critera for Notification to NSW Health.xls (sic) 	
Minutes - Water Quality Committee - April 2013.doc	
 Minutes - Water Quality Committee - August 2012.doc 	
 Minutes - Water Quality Committee - December 2012.doc 	
 Minutes - Water Quality Committee - February 2013.doc 	
 Minutes - Water Quality Committee - July 2012,doc 	
Minutes - Water Quality Committee - June 2013.doc	
Minutes - Water Quality Committee - March 2013.doc	
Minutes - Water Quality Committee - May 2013.doc	
Minutes - Water Quality Committee - November 2012.doc	
Minutes - Water Quality Committee - October 2012.doc	
Minutes - Water Quality Committee - September 2012.doc	

Summary of Reasons for Grade

Sound evidence was presented to show that investigative studies and research monitoring is undertaken, monitored and reviewed. However it could not be clearly established by the auditor how the investigative studies were identified and prioritised. In particular, links from the outcomes of the risk assessment, reviews of long-term water quality data incident debriefs and other reports to the research priorities could not be established. There was also limited evidence provided on how processes are validated and re-validated when variations in conditions occur. It is for this reason that both clause 2.1.1 and 2.1.2 are awarded high compliance.

Discussion and Notes

Investigative studies and research monitoring: Sound evidence was provided that HWC is undertaking programs to increase understanding of the water supply system. Research and emerging issues is a standing item on the Water Quality Committee Monthly Agenda. The disinfection optimisation project is a project specific example. Evidence of progress of this project was provided through the Water Quality Committee minutes. See also evidence presented in relation to water quality risks potentially emerging from the Medowie area as part of addressing previous audit recommendations.

Validation of processes: The *Critera for Notification to NSW Health* (sic) spreadsheet was taken as evidence of desktop validation of the existing processes. Limited evidence was provided on how processes are re-validated when variations in conditions occur.

Opportunity for Improvement

Validation of critical limits: HWC could consider documenting the basis of the critical limits for each plant.

Investigative studies: The investigative studies could be more closely integrated to other aspects of the DWMS including the Drinking Water Quality Improvement Plan and risk assessments.

A.2.11 Element 10: Documentation and Reporting

Requirement	Compliance Grade							
CIO I Management of desumentation and records								
CTO, I Management of documentation and records Document information portioned to all aspects of dripking water quality management								
Develop a document control system to ensure current versions are in use								
 Establish a records management system and ensure that employees are trained to fill out 	2.1.2 Adequate							
records.	compliance							
 Periodically review documentation and revise as necessary. 								
C10.2 Reporting								
 Establish procedures for effective internal and external reporting. 								
 Produce an annual report to be made available to consumers, regulatory authorities and 								
stakeholders.								
Evidence Sighted								
 Framework - Annual Report on the Implementation of the Five Year Water Quality Mana, 201213.PDF 	gement Plan 2012 -							
 Framework - Quarterly Risk Indicators - Key Strategic Risk Update - 27 Jun 2013.DOC 								
Framework - Quarterly Risk Indicators - Key Strategic Risk Update - water quality - May 20	013.DOC							
 Framework - A 1.2.3 - Water Quality Committee - Standing Agenda - 201213.DOC 								
 Framework - A 1.2.3 - Water Quality Committee Terms of Reference - 201213,DOC 								
Framework - A 10.2.1 - Monthly Performance Report - June 2013 - 201213.pdf								
Framework - A 5.3.2 - Network Operations Water Quality report September 2012 - 201	213.DOC							
EIU - July 2013 Water Quality Committee Meeting - 201213,DOCX								
EIU - VVQ Committee Zone Means_2 - 201213,xisx								
Iminutes - Water Quality Committee - April 2013.doc								
 Minutes - Water Quality Committee - August 2012.000 Minutes - Water Quality Committee - December 2012 doc 								
 Minutes - Water Quality Committee - December 2012,doc Minutes - Water Quality Committee - Enhrung 2013 doc 								
 Minutes Water Quality Committee - Lebidary 2013,000 Minutes Water Quality Committee - July 2012 doc 								
 Minutes - Water Quality Committee - July 2012.doc Minutes - Water Quality Committee - June 2013 doc 								
 Minutes - Water Quality Committee - June 2015.000 Minutes - Water Quality Committee - March 2013 doc 								
 Minutes - Water Quality Committee - May 2013 doc 								
 Minutes - Water Quality Committee - November 2012.doc 								
Minutes - Water Quality Committee - October 2012.doc								
Minutes - Water Quality Committee - September 2012.doc								
• Presentation - MD Presentation to Feb 2013 Board - from PO - water quality slide.pptx								
OI5. HWC Monthly Performance Report to the Board - Feb 2013 - Page 27 only.pdf								
Summary of Reasons for Grade								
The implementation of this component ensures that information is kept up to date, maintained in a usable form and valid. HWC has committed to achieving certification to ISO9001 by June 2015 and the Integrated Quality Management System will incorporate drinking water (evidence provided in the audit questionnaire).								
The lack of document control information on key documents is why a grade of adequate compliance has been awarded for clause 2.1.1. The extent of documentation overdue for review is a system maintenance and implementation issue and a grade of adequate compliance has been demonstrated for clause 2.1.2.								
HWC was assessed as being fully compliant with clause 2.1.1 and 2.1.2 for the reporting component of this element based on the annual reports and internal corporate reporting.								
Discussion and Notes								
Management of documentation and records: Issues relating to document management and	control were noted							

throughout the audit, and included the following areas of significance:

- Conflicts in what was considered a CCP and lack of document control information surrounding CCPs.
- Emergency contact details in the Emergency Management Guidelines were out of date. Evidence was provided of a memo issued to update this information.
- The delay in updating the Emergency Management Guidelines.
- A significant proportion of SOPs beyond their review date.
- The lack of output documentation for the Tomago risk assessment.

Reporting: Strong reporting procedures were noted through the Water Quality Committee and the Liaison Committee. The Water Quality Committee minutes provided high quality evidence of these processes.

HWC produces an annual report made available to consumers. It also produces seven additional reports as part of its licence compliance.

HWC have an Enterprise Risk Management Framework which is applied at all levels of the business to ensure consistent risk management practice. The Framework is Board approved and includes a set of risk criteria tools used in the risk assessment process. The consequence descriptors have been customised to the business and 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. Water quality is included in the Hunter Water Strategic Risk Profile. The profile has 24 high level risks with risk ratings approved by the Board and is actively monitored by Executive management and the Audit and Risk Committee throughout the year. One of the listed risk events is *Non compliance with agreed water quality standards*.

It was noted that the indicators for reporting on Non compliance with agreed water quality standards were all lagging indicators.

Recommendation

WQR-2013/1 Critical Control Points (CCPs)⁴⁵:

- A formal procedure for the establishment and review of CCPs, critical limits and monitoring points for critical limits should be established in consultation with NSW Health. **Timeframe**: Within 6 months
- Changes to CCPs and critical limits should be considered as a significant change to the Drinking Water Management System (DWMS) and Recycled Water Management System (RWMS) and thus trigger clause 2.1.3 and 2.1.4 or 2.2.3 and 2.2.4 of the Operating Licence as appropriate. Timeframe: Immediate.
- CCPs and critical limits should be reviewed to ensure that parameters are measurable in a timely manner and that the CCPs and limits are consistent across documentation. Timeframe: Within 6 months.
- o Audit procedures should be established for any CCP that is procedure dependant (for example Backflow Prevention). **Timeframe:** Within 6 months.
- WQR-2013/2 Emergency Management 46: HWC should ensure that the
 - Emergency Management Guidelines are reviewed in line with their designated review date.
 Timeframe: Immediate and upon review cycle.
 - HWC should ensure that **consistent and up-to date emergency contact information is maintained** across all documentation. **Timeframe:** Immediate and upon review cycle.

Opportunity for Improvement

Water Quality Leading Indicators: Leading indicators be developed for reporting on *Non compliance with agreed water quality standard*. These could include critical limit exceedances or critical limit shutdowns.

⁴⁶ Implementation issue.



⁴⁵ Largely a DWMS development issue.

A.2.12 Element 11 Evaluation and Audit

Requirement	Compliance Grade
 C II.I: Long term evaluation of results Collect and evaluate long-term data to assess performance and identify problems. Document and report results. CII.2: Audit of drinking water quality management Establish processes for internal and external audits. 	2.1.1 Adequate compliance 2.1.2 High compliance
Document and communicate audit results. Evidence Sighted	
 Evidence Sighted Clause 2.1.1 - Aquality Review 2012 - 201213,XLS Framework - Long Term Trends - Allyn-Paterson Rivers - 201213,XLS Framework - Long Term Trends - Amoebae - 201213,XLS Framework - Long Term Trends - Boags Hill - 201213,XLS Framework - Long Term Trends - Campvale Canal @ Ferodale Road - 201213,XLS Framework - Long Term Trends - Campvale Canal @ Ferodale Road - 201213,XLS Framework - Long Term Trends - Campvale Canal PS Inlet R9 - 201213,XLSX Framework - Long Term Trends - Chichester Dam - 201213,XLSX Framework - Long Term Trends - Gryptosporidium - 201313,XLSX Framework - Long Term Trends - Gryptosporidium - 201313,XLSX Framework - Long Term Trends - Grahamstown dam - R12 - 201213,XLSX Framework - Long Term Trends - Grahamstown Dam - R2 - 201213,XLSX Framework - Long Term Trends - Grahamstown Dam - R6 - 201213,XLSX Framework - Long Term Trends - Grahamstown Dam - R6 - 201213,XLSX Framework - Long Term Trends - WQ Committee Zone Means_2 - 201213,XLSX Annual Report on Implementation of Five year plan - Dec 2012 Minutes - Water Quality Committee - April 2013,doc Minutes - Water Quality Committee - February 2013,doc Minutes - Water Quality Committee - February 2013,doc Minutes - Water Quality Committee - July 2012,doc Minutes - Water Quality Committee - July 2013,doc Minutes - Water Quality Committee - July 2013,doc Minutes - Water Quality Committee - March 2013,doc Minutes - Water Quality Committee - March 2013,doc Minutes - Water Quality Committee - July 2013,doc Minutes - Water Quality Committee - March 2013,doc Mi	
Minutes - Water Quality Committee - October 2012.doc Minutes - Water Quality Committee - September 2012 dos	
Iminutes - water Quality Committee - September 2012.doc	

The implementation of this component ensures that 'slow burn' (see definition on page 59) issues are considered, the effectiveness of the drinking water management system implementation is evaluated and continual improvement is embedded.

HWC was assessed as being fully compliant with clause 2.1.1 and 2.1.2 for the Long term evaluation of results component of this element based on the long term trend monitoring and reporting through the Water Quality Committee and the Joint Operational Group.

The limitations of the Aquality audit, lack of an audit schedule and audit evidence associated with procedure-based CCPs is why a grade of adequate compliance has been awarded for clause 2.1.1. The implementation of the Aquality audit supports a grade of high compliance for this component for clause 2.1.2.

Discussion and Notes

Long term evaluation of results: Sound evidence was provided for the long term evaluation of water quality trends in both the raw water and in the water quality zones. The minutes of the Water Quality Committee and the oversight provided by the Joint Operational Group are taken as evidence of documentation and reporting of the evaluation of long term trends

Audit of drinking water quality management: Audits are an essential component to confirming the appropriate implementation of the system and can identify system implementation strengths and weaknesses. The yearly review of the implementation of the DWMS using Aquality provides an opportunity to review progress and further develop the Water Quality Improvement Plan.

Aquality, as a tool, can provide a drinking water utility with a good overview on how it is performing in terms of formalising and implementing the Framework. The auditor notes that HWC performed an Aquality audit, in October 2012, the results of which were provided as evidence. However, the auditor notes some shortcomings in HWC's use of Aquality. In particular:

- Undertaking a partial audit of selected measures chosen on the basis of significant changes or identified deficiencies in the October 2012 review rather than a full system audit may result in 'slow burn'⁴⁷ and emerging system wide issues being missed.
 - Given the results of this licence audit, the Aquality self-assessment appears to be somewhat optimistic for some elements.
 - The Aquality audit results were published in Annual Report on Implementation of Five Year Plan Dec 2012.

The auditor could not establish how the audit findings were evaluated and improvements carried forward for implementation. This is discussed further in Element 12.

There was limited evidence surrounding HWC's audit processes for the implementation of procedures and processes associated with the CCPs. This includes the lack of an audit schedule. The lack of evidence for the assessment of customers that posed a high risk for backflow and auditing of these sites was a concern for system integrity (see Element 3).

Recommendation

- WQR-2013/1 Critical Control Points (CCPs)48:
 - A formal procedure for the establishment and review of CCPs, critical limits and monitoring points for critical limits should be established in consultation with NSW Health. Timeframe: Within 6 months
 - Changes to CCPs and critical limits should be considered as a significant change to the Drinking Water Management System (DWMS) and Recycled Water Management System (RWMS) and thus trigger clause 2.1.3 and 2.1.4 or 2.2.3 and 2.2.4 of the Operating Licence as appropriate. Timeframe: Immediate.
 - o CCPs and critical limits should be reviewed to ensure that parameters are measurable in a timely manner
 - and that the CCPs and limits are consistent across documentation. Timeframe: Within 6 months.
 Audit procedures should be established for any CCP that is procedure dependant (for example Backflow Prevention). Timeframe: Within 6 months.
- WQR-2013/5 Drinking Water Quality Improvement Plan⁴⁹: HWC should resource, promote and further develop the Drinking Water Quality Improvement Plan as noted in p6 of **the** Annual Report on Implementation of the Five Year Water Quality Management Plan 2012. **Timeframe:** Within 6 months.

⁴⁹ DWMS development issue.



⁴⁷ An event that is likely to have a long lead-time before becoming an issue. Examples of slow burn risks include:

[•] Currency of training, or training itself, is allowed to lapse over a period of time resulting in operators who are not operating at current practice in water treatment operations or whom are not aware of their actions in a drinking water quality protection context. This issue was a part contributor to the Walkerton Outbreak in Canada in 2000 in which 7 people died from drinking contaminated water.

[•] Document control and records are not kept up to date and then when an emergency occurs, it is unclear which emergency management plan or documentation is current, resulting in mis-management and potential exacerbation of the situation.

⁴⁸ Largely a DWMS development issue.

A.2.13 Element 12: Review and Continual Improvement

Requirement	Compliance
CI2.I Review by senior executive	Grade
• Senior executive review of the effectiveness of the management system.	2.1.1 Adequate
• Evaluate the need for change.	compliance
C12.2 Drinking water quality management improvement plan	
 Develop a drinking water quality management improvement plan. 	
• Ensure that the plan is communicated and implemented, and that improvements are monitored for	compliance
Enectiveness.	
2012/12 Conselling and Defension Departmented in any second dependent of the second second dependent of the second dependent o	
 2012/13 Compliance and Performance Report – planned improvements are documented in Table Dripking Water Quality Mapagement Activities and Programs 	e 2.9 Proposed
Network Operations Water Quality Report Sentember 2012 (Water Quality Improvements Pro	naram)
Fytract from HWA WT Events List visy	
Five Year Water Quality Management Plan 2012	
 Framework - ERM Tools (incl water guality descriptors) - 201213.doc 	
Minutes - Water Quality Committee - April 2013.doc	
 Minutes - Water Quality Committee - August 2012.doc 	
 Minutes - Water Quality Committee - December 2012.doc 	
Minutes - Water Quality Committee - February 2013.doc	
Minutes - Water Quality Committee - July 2012.doc	
Minutes - Water Quality Committee - June 2013.doc	
 Minutes - Water Quality Committee - March 2013.doc 	
 Minutes - Water Quality Committee - May 2013.doc 	
 Minutes - Water Quality Committee - November 2012.doc 	
 Minutes - Water Quality Committee - October 2012.doc 	
 Minutes - Water Quality Committee - September 2012.doc 	
 Board Paper - Appendix A - Catchment Improvement Program.DOCX 	
 Board Paper - May 2013 - Catchment Improvement Program.DOC 	
trim endorsement screenshot.doc	
MD and senior management approval of of Annual Report on Imp Five Year Water Quality Plar	n.pdf
Summary of Reasons for Grade	D
The auditor was concerned at the apparent lack of integration of the Framework elements in developing a	Drinking Water
Quality Management improvement Man. There was limited evidence to establish now improvement action risk assessments, incident de briefs, audits and other avenues were recorded, prioritised for action and improve	lemented if
appropriate.	
Discussion and Mater	
Discussion and Notes	
Review by senior executive: As stated in the ADVVG Framework element 12.1 In order to ensure coll the highest levels of the organisation should maintain everyight of the effectiveness of the drinking water quality of	nunual improvement,
and evaluate needs for change" While evidence was provided that senior executive reads the material there	was limited evidence
of senior executive review of the effectiveness of the management system. For example, the areas for imp	rovement identified in
HWC Annual Report on Implementation of the Five Year Water Quality Management Plan 2012 (page 5) are	not carried through
to 'Section 2 Additional water quality improvement actions' and there is no discussion on why this was not do	ne.
Drinking water quality management improvement plan: Evidence was provided for a range of d	rinking water quality
improvements from short term ⁵⁰ through to long term projects. ⁵¹ Progress against water quality actions id	entified at the Water
Quality Committee meetings was evidenced by meeting minutes.	
The auditor observed a lack of a systematic approach to the implementation of a water quality improvement	ent plan. This
observation is in-line with HWCs own Aquality assessment where alignment with this component was ran	ked at only 40%. The

observation is in-line with HWCs own Aquality assessment where alignment with this component was ranked at only 40%. The HWC Annual Report on Implementation of the Five Year Water Quality Management Plan 2012 notes that alignment with the framework could be further improved in this area. The Compliance and Performance Report included high-level improvements underway, completed and proposed. A number of actions were tracked through the monthly Water Quality Committee and the quarterly Liaison Meeting with NSW Health. The Water Quality Committee minutes provided high quality evidence of these processes.

Recommendation

• WQR-2013/5 Drinking Water Quality Improvement Plan⁵²: HWC should resource, promote and further develop the Drinking Water Quality Improvement Plan as noted in p6 of **the** Annual Report on Implementation of the *Five Year Water Quality Management Plan 2012*. **Timeframe:** Within 6 months.

⁵² DWMS development issue.



⁵⁰ Extract from HWA WT Events List.xlsx

⁵¹ C9.1 - Project Plan - Disinfection Optimisation Strategy - July 2013 - 201213.DOCX

A.2.14Recycled Water (sub-clause 2.2)

Sub-clause	Sub-clause Requirement							
2.2 Recycled Water	 2.2.1 Hunter Water must maintain a Manage consistent with: a) the Australian Guidelines for Water Recyc b) if NSW Health specifies any amendment of Australian Guidelines for Water Recycling that Water, the Australian Guidelines for Water Fadded to by NSW Health. 	2.1 Hunter Water must maintain a Management System that is insistent with: the Australian Guidelines for Water Recycling; or if NSW Health specifies any amendment or addition to the ustralian Guidelines for Water Recycling that applies to Hunter fater, the Australian Guidelines for Water Recycling as amended or ided to by NSW Health						
Risk		Target for Full Compliance						
The risk posed to pub could be very significa	lic health by non-compliance with this clause nt.	Being on track to have a f Water Management syste	ully implemented Recycled m by 2015.					
Evidence Sighted ⁵³		I						
See 'evidence' under o	clause 2.2.							
Summary of Reasons for Grade								
See 'reasons' under clause 2.2.2.								
Discussion and Notes								
See Element by Element breakdown below.								

Sub-clause	Requirement	Compliance Grade				
2.2 Recycled Water	2.2.2 Hunter Water must ensure that the Re Management System is fully implemented and are carried out in accordance with the system satisfaction of NSW Health.	Full compliance				
Risk		Target for Full Compl	iance			
The risk posed to pub could be very significat	lic health by non-compliance with this clause nt.	A fully implemented system by 2015.				

Evidence Sighted

Interviews with Martin Robards and Victor Prassad (17 September 2013).

Site visit to Branxton WWTP (19 September 2013).

Evidence provided through the IPART file sharing site is listed below for Clause 2.2.1 and 2.2.2. The auditor reviewed this evidence provided against the 12 elements of the AGWR as noted below.

Evidence	Overarching	Element I	Element 2	Element 3	Element 4	Element 5	Element 6	Element 7	Element 8	Element 9	Element 10	Element	Element 12
Clause 2.2 Recycled Water Quality Management Plan.doc	\checkmark												
Clause 2.2.1 HACCP Analysis for Branxton Recycled Water Scheme.pdf			\checkmark	\checkmark									
Clause 2.2.1 HACCP Analysis for the Kooragang Island Recycled Water			~	~									
Scheme.pdf													
Clause 2.2.1 Recycled Water Management Plan for the Vintage Scheme.doc	\checkmark												
Clause 2.2.1 Validation Report for the Branxton Recycled Water										\checkmark			
Scheme.pdf													1
Clause 2.2.2 Document Checklist and Receipt Notification.pdf											\checkmark		
Clause 2.2.2 Minutes - Non-potable Supply Agreement Quarterly Meeting											\checkmark		
Minutes 13 03 13.VMBX													
Clause 2.2.2 NSW Health Data - Notifications.XLS					\checkmark		\checkmark						
Clause 2.2.2 Recycled Water 5 Year Improvement Plan.doc													\checkmark
2012 Annual site visit.doc												\checkmark	
Agricultural Recycled Water Schemes Risk Assessments.xls			\checkmark										

⁵³ Note for all of the sections, 'Evidence Sighted' includes Hunter Water's responses to the audit questionnaire uploaded to IPART's FTP site.

Evidence	Overarching	Element I	Element 2	Element 3	Element 4	Element 5	Element 6	Element 7	Element 8	Element 9	Element 10	Element I I	Element 12
Andrew Graham - Farley.pdf		\checkmark			\checkmark		\checkmark						
Audit reports - Branxton Golf Club.pdf												\checkmark	
Audit Reports - Terry Wickham (Farmer).pdf												\checkmark	
Audit Reports - The Vintage.pdf												\checkmark	
Branxton Process and Validation Strategy Excerpts.doc										\checkmark			
Branxton Recycled Water Annual Report.doc	√										\checkmark	\checkmark	
Branxton Recycled Water Management Plan.doc	√												
Branxton Recycled Water operations presentation.pptx											\checkmark		\checkmark
Branxton Recycled Water Scheme - website snapshot.mht									\checkmark				
Branxton WWTW Validation.docx											\checkmark		
CCP workshop outcomes.xls				\checkmark									
Chair Workshop Details.pdf					\checkmark								
Chair Workshop Hazard Register.xlsx					\checkmark								
Community engagement plan.pdf									\checkmark				
Community factsheets.pdf									\checkmark			\neg	
Community Information factsheet.pdf									\checkmark			$\neg \uparrow$	
Community Information night invitation.pdf									\checkmark			\neg	
Community Information presentation.pptx									\checkmark				
Community open day plan.pdf									\checkmark				
Coorei (Farmer) - Dungog.pdf		\checkmark			\checkmark		\checkmark						
Draft Farley WWTW Commissioning Performance Test Effluent													
Quality.docx						~							
Draft Recycled Water Reporting requirements business rules.doc							\checkmark						
East's Golf Club - Morpeth.pdf		\checkmark			\checkmark		\checkmark						
Eraring Annual Repoort 2012.docx (sic)			\checkmark									\checkmark	\checkmark
Eraring Energy - Dora Creek.pdf		\checkmark											
04 Eraring Energy Recycled Water Management Plan.pdf												-	
HACCP Report.pdf			\checkmark	\checkmark									
hazardous Chemical Manual Approved Products List.mht					\checkmark								
Hazardous Chemical Manual.doc					\checkmark								
HAZOP action register.xlsx					\checkmark					\checkmark			
HAZOP workshop details.docx					\checkmark					\checkmark			
Hunter Treatment Alliance Team details.doc			\checkmark										
Hunter Water Australia Employee Details.xlsx								\checkmark					
Hunter Water Intranet Site - Asset Standards mbt					\checkmark					\checkmark			
Hunter Water Recycled Water Website mbt								./	./			\rightarrow	
HWA Recycled Water Standard Operating Procedure doc (Monitoring								•	•				
effluent quality for reuse)					√	\checkmark	\checkmark						
HWA skill matrix and training xlsx								\checkmark					
Industrial Recycled Water Schemes Risk Assessments xls	_		\checkmark	\checkmark									
Integrated Systems Directory pptx	√				\checkmark	√	\checkmark						
Kurri Kurri Golf Club - Kurri Kurri odf		√			\checkmark		\checkmark						
Kurri Kurri TAFF - Kurri Kurri pdf		\checkmark											
McColls - Morpeth.pdf		\checkmark			\checkmark		\checkmark						
Minutes - Plan - meeting minutes Feb 2012 DOC											\checkmark		
Minutes - SRWSC Action List {May-13} DOC											\checkmark	\checkmark	\checkmark
Minutes - Strategic Recycled water committee meeting - April 2012 DOC											\checkmark	\checkmark	~
Minutes of DoH HWC Quarterly Meetings - March 2013 docx	1										\checkmark	\checkmark	~
Monitoring sample results xlsx						\checkmark							
Monthly Corporate Compliance Reports - June 13 xls	1	✓										\rightarrow	
Monthly Effluent Reuse Report.xls						✓					\checkmark	-+	
Municipal Recycled Water Schemes Risk Assessments xls			✓	\checkmark								+	
NSW Health Memorandum of Understanding.pdf		✓										+	
NSW Health Notification.doc	1										\checkmark	\rightarrow	
NSW Health Quarterly Reports.doc											\checkmark	+	
Oceanic Coal - Edgeworth.pdf		\checkmark										+	
Operational Spreadsheet Example.pdf	1				\checkmark							+	
Peter Bowe (Farmer) - Morpeth.pdf		\checkmark			\checkmark		\checkmark					+	
Recycled Water Actions Register.xlsx												$\neg \uparrow$	\checkmark

Evidence	Overarching	Element I	Element 2	Element 3	Element 4	Element 5	Element 6	Element 7	Element 8	Element 9	Element 10	Element I I	Element 12
Recycled Water AGWR awareness presentation.pptx								\checkmark					
Recycled Water Implementation Project Plan.doc		\checkmark										\checkmark	\checkmark
Recycled Water Incident Response Procedure.doc					\checkmark		\checkmark	\checkmark					
Recycled Water Monitoring Plan 2012-13.doc						√							
Recycled Water Policy.pdf		\checkmark											
Recycled Water Quality Five Year Improvement Plan.doc												\checkmark	\checkmark
Recycled Water Quality Monitoring and Communication procedure.doc					~	>	✓						
Recycled Water Workspace (Internal) Integrated Systems Directory.pptx	\checkmark										\checkmark		
Recycled Water Workspace - Home.mht	\checkmark										\checkmark		
SCADA example.doc					\checkmark								
Screen Shots of Ellipse Maintenance Model.doc					\checkmark								
Stonebridge Golf Club - Cessnock.pdf		\checkmark			\checkmark		\checkmark						
Terry Wickham (farmer) Recycled Water Agreement.pdf		\checkmark			\checkmark		\checkmark						
The Branxton Golf Club Recycled Water Agreement.pdf		\checkmark			\checkmark		\checkmark						
The Vintage Plan Management Meeting Minutes.pdf		\checkmark									\checkmark		
The Vintage Recycled Water Agreement.pdf		\checkmark											
The Vintage risk assessment.xlsx			\checkmark	\checkmark									
Oceanic Site Plan.doc		✓											
t0OCRTE0.pdf		√											
branxton noncompliance AGWR and backflow letter.pdf				✓								\checkmark	
cessnock new agreement.pdf	_	✓	L										
Old cessnock agreement.pdf	_	✓											
RT STBRA130923 23Sep2013.xls		1	1		\checkmark					1			1

Summary of Reasons for Grade

As part of its requirement for this clause, HWC must maintain a Management System consistent with the AGWR. HWC is making good progress towards a fully implemented management system by 2015 as evidenced by the *Recycled Water Implementation Project Plan*, progress made in the implementation of the *Recycled Water 5 Year Improvement Plan* and on-going development of the *Recycled Water Workspace*. The auditor has no reason to suspect that HWC will not be able to meet the 2015 target for full Recycled Water Management System implementation.

Discussion and Notes

The auditor was impressed with the approach to the implementation of the Recycled Water Management System (RWMS). The project methodology outlined in the *Recycled Water Implementation Project Plan* demonstrates a strong understanding of the preventative approach to risk management underlying the Framework for Management of Recycled Water Quality and Use. The identified project tasks show a logical progress through the Framework. The linkages between the Framework, activities, documents and stakeholders are well articulated for the RWMS. This approach could be adapted to the DWMS to improve linkages between the DWMS and the Framework elements.

While it is not essential to have an overarching document for each recycled water scheme, by mapping how HWC complies (or is planning to comply) with the AGWR gaps, the auditor could easily understand the identified gaps and planned actions to complete them.

The recycled water meeting with NSW Health demonstrates the organisation's commitment to engage with its key stakeholder.

As was noted in Drinking Water and the Environment sections, the *Emergency Management Guidelines* were due for review in December 2012.

Recycled water user agreements and site management plans were noted as an area for attention. The auditor would expect the site management plans to clearly articulate the recycled water users' obligations to manage and use the water safely. Typically these documents include references to plumbing requirements, plumbing diagrams, emergency contact information, incident management procedures and irrigation schedules (where relevant). The auditor noted some recycled water user agreements contained emergency information, water quality information and end use controls.

The auditor understands a backflow policy has been drafted. The auditor recommends the implementation of processes to protect HWC's drinking water system from contamination by recycled water.

The site visit to Branxton Wastewater Treatment Plant gave further confidence that HWC understands the issues associated with the production and supply of recycled water.

Recommendation

While no recommendations are eligible under a 'full compliance' grade, the auditor nonetheless, would like HWC to pay attention to the recommendations made for the DWMS surrounding CCPs, Emergency Management and backflow prevention,

all of which have a bearing on the sound development and implementation of the RWMS.

Opportunity for Improvement

- **Operating Context:** HWC could improve the way in which it manages its legal and formal context surrounding recycled water production and supply by going back to first principles and articulating the products and services it produces/provides, identifying the relevant stakeholders for each of its products and services and then cross-referencing legal and formal requirements to each stakeholder. Figure 1 of the *Recycled Water Quality Management Plan* should be updated to reflect the current operating context.
- Legal Register HWC could adapt the environmental legislative register to document all regulatory and formal requirements for recycled water relevant to HWC including reporting requirements and frequency.
- Recycled Water Use Agreements and Site Management Plans: HWC should ensure the recycled water use agreements clearly articulate the approved uses. HWC should consider which information is most appropriate within the recycled water use agreements and which information should be contained within the site management plans.

A.2.15 Drinking Water Quality - Recommendation 2010/11-1

Reference	Recommendation	Finding							
2010/11-1	Implement automated rapid response processes for all plants to prevent water being supplied to consumers if not treated to within critical limit specifications as recommended in the ADWG 2011.	Review completion of recommendation at next audit							
Evidence Sighte	d								
 Audit Questionnaire Information provided pre-audit Framework - A 4.2.1 - WTP Water Quality Parameters SCADA Alarm Limits - 201213.xlsx Recommendation 2010-11-1 E-mail from HWA re Lemon Tree Passage auto shutdown.msg Recommendation 2010-11-1 E-mail from HWA re Dungog WTP auto shutdown.msg Intenview with Pam O'Donourbe and Mark Coleman (HWA) (17 September 2013) 									
Summary of Rea	asons for Finding								
While progress has been made towards implementation of most of the rapid responses processes, completion of implementation for Grahamstown WTP should be reviewed as part of the next audit.									
Discussion and Notes									
This recommendation arose from the 2010/2011 audit.									
Auto shutdown is already in place for Anna Bay, Nelson Bay and Gresford WTPs and auto-shutdown for key water quality parameters was implemented during 2012/13 for Lemon Tree Passage and Dungog.									
HWC noted that December 2013.	implementation at Grahamstown WTP was delayed by a PLC upgrade. T	his is scheduled for completion by							

Reference	Recommendation	Finding	
2011/12-2 HWC should establish the risks presented by future development around Medowie and confirm the capability of the Grahamstown Reservoir and treatment plant to provide safe drinking water.		Check progress at next audit.	
Evidence Sighte	d		
 Audit Questionnaire Recommendation 201112 Out of scope item Recommendation 201112 Out of scope item - email to Port Stephens Council regarding the Medowie Flood Study Options - 201213.htm Recommendation 201112 Out of scope item - Meeting Minutes, Medowie Campvale meeting, HWC PSC DoH, 5 Jul 2013 - 201213.DOCX Recommendation 201112 Out of scope item - Meeting Minutes, NSW Health Meeting with Hunter Water Managing Director - 201213.DOCX Summary of Reasons for Finding Because there are still 'flow on' affects from this recommendation, HWC should establish the risks presented by future development around Medowie and confirm the capability of the Grahamstown Reservoir and treatment plant to provide safe dripling water 			
Discussion and	Notes		
This recommendation arose as an out of scope item from the 2011/2012 audit.			
Hunter Water has met with NSW Health and Port Stephens Council to discuss water quality risk associated with the development at Medowie. HWC has been working closely with Port Stephens Council as part of the Port Stephens Council Medowie Flood Study.			
HWC has undertaken a risk assessment workshop (August 2013 – outside scope) associated with stormwater from Medowie entering Grahamstown Dam. A report on the workshop has not been finalised.			
The auditor was sa	tisfied that HWC was making progress against this recommendation.		

A.2.17 Recycled Water Quality – Recommendation 2010/11-4

Reference	Recommendation	Finding
2010/11-4	Develop an agreed timetable with NSW Ministry of Health for the full implementation of the framework outlined in the Australian Guidelines for water Recycling, including validation of critical limits and the development of notification criteria to NSW Ministry of Health for existing recycled water schemes (clause 3.6.3).	Check progress at next audit as part of auditing Clause 2.2.

Evidence Sighted

• See evidence for recycled water (sub-clause 2.2) above.

Summary of Reasons for Finding

HWC is making good progress towards a fully implemented management system by 2015 as evidenced by the Recycled Water Implementation Project Plan, progress made in the implementation of the Recycled Water 5 Year Improvement Plan and on-going development of the Recycled Water Workspace.

Discussion and Notes

Because HWC is now operating under a systems-based licence, this recommendation is somewhat covered by the requirements under that licence to implement a *Framework for the Management of Recycled Water Quality and Use* management system, specifically under Element 12 of that Framework. However, because of the importance of meeting the 2015 timeline, it is recommended that progress towards implementation is again checked at the 2013/2014 audit.

A.3 Section 4: Assets

A.3.1 Asset Management System (sub-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 benchmarking tool; or c) another asset management standard agreed to by IPART. 		High compliance
	(Asset Management System).		
Risk		Target for Full Complia	nce
Non-compliance v high level of oper environment and business objectives	with the requirements of this clause poses a rational risk in respect of public health, the the ability of Hunter Water to meet its s.	Finalise all system documentation and implement all of the recommended improvement initiatives identified as a result of the 2012 WSAA Aquamark Benchmarking Program.	
Evidence Sighte	d		
 Evidence Sighted Hunter Water, Hunter Water Policies; Asset Management Policy Version 1, 1 June 2012. Hunter Water, Asset Management Framework (Draft), November 2010. Hunter Water, Strategic Asset Management Plan; Raw Water (including Dams and Weirs) (Draft), February 2012. Hunter Water, Strategic Asset Management Plan; Water Treatment (Draft), July 2012. Hunter Water, Strategic Asset Management Plan; Water Network (Draft), November 2010. Hunter Water, Strategic Asset Management Plan; Water Network (Draft), November 2010. Hunter Water, Strategic Asset Management Plan; Wastewater Network (Draft), November 2010. Hunter Water, Strategic Asset Management Plan; Wastewater Treatment (Draft), July 2012. Hunter Water, Strategic Asset Management Plan; Wastewater Treatment (Draft), July 2012. Hunter Water, State of the Assets Report 2012 (Draft), April 2012. Hunter Water, Asset Class Management Plan (Draft), February 2011. Hunter Water Corporation, Enterprise Risk Management Framework Version 3.0, February 2013. Hunter Water Corporation, Capital Portfolio Management Guide, May 2012. Hunter Water Corporation, QM005: Business Case Handbook (Version 1.3), May 2013. Hunter Water, Reservoir Cleaning Procedure, 27 May 2010. Hunter Water, Reservoir Cleaning Procedure, 27 May 2010. Hunter Water, Corporation, May 2012. IWA-WSAA, 2012 Asset Management Performance Improvement Project; Validation (Benchmarking) Report for Hunter Water Corporation, May 2012. IWA-WSAA, 2012 Asset Management Performance Improvement Project; Volume 1 – Industry Report, Final Version 3, December 2012. IWA-WSAA, 2012 Asset Management Performance Improvement Project; Volume 1 – Industry Report, Final Version 3, December 2012. Hunter Water Corporation, Compliance and Performance Report 2012-13. September 2013. 			
Summary of Reasons for Grade			
Whilst Hunter Water has a documented asset management system, much of the key documentation is in draft form and has been for some time, which infers that the system is not effectively maintained. Furthermore, Hunter Water's self-assessment of performance using the Water Services Association of Australia's Aquamark benchmarking tool (which has been independently validated) shows a significant reduction in performance from 2008 to 2013, and an effective performance score of approximately 65 percent against benchmark best practice.			
Discussion and Notes			
Hunter Water has used the Water Services Association of Australia's (WSAA's) Aquamark benchmarking tool to "brovide			

Hunter Water has used the Water Services Association of Australia's (WSAA's) Aquamark benchmarking tool to "provide independent assurance that Asset Management at Hunter Water is carried out to an appropriate quality and to help continually improve functions of asset management".⁵⁴ Under the WSAA Benchmarking Program,⁵⁵ independent validation of water utilities' self-assessments in respect of the management of their assets is undertaken on a four yearly cycle; Hunter Water participates in this process (results discussed below).

Given that the guidance provided by Aquamark is only available to subscribing members of WSAA, it is not possible to directly assess consistency with its requirements. For the purposes of this audit, assessment of Hunter Water's asset management system is made in comparison with accepted basic principles of asset management, which are reflected in its system



 ⁵⁴ Hunter Water response to Audit Questionnaire (*Hunter Water 2012/13 Operational Audit for NSW IPART*) page 8.
 ⁵⁵ IWA-WSAA Asset Management Performance Improvement Project.

documentation.

Hunter Water's commitment to an asset management business discipline is reflected in its Asset Management Policy Statement.⁵⁶ The policy statement indicates that the asset management process is overseen by the Capital Works Committee, a sub-committee of the Board of Directors; the primary objective of Hunter Water's commitment to asset management is to:

"Optimise physical assets life cycle management to provide sustainable water services to existing and future customers at acceptable levels of risk."

This objective is also reflected in Hunter Water's Asset Management Framework,⁵⁷ which provides the overarching architecture of its approach to asset management. It outlines the key strategies and business processes used by Hunter Water in managing its assets through the full lifecycle, from initial customer service and environmental impact assessment through planning, creation, operation, maintenance and renewal, to asset disposal. More specifically, it addresses:

- Background context to asset management as implemented by Hunter Water;
- Service Management the identification of customer and environmental service parameters in relation to service components;
- Asset Lifecycle Management addressing the planning, creation, operation, maintenance and renewal/disposal phases of the lifecycle;
- Knowledge Management including service knowledge, asset lifecycle knowledge, asset management processes, knowledge management integration, and asset creation and asset operation knowledge management flagships (cross business working groups tasked with oversight of process improvements);
- Value Governance an overview of strategic objectives, decision principles (risk, lifecycle and sustainability value management) and decision governance (business case development, gateway approval process, technical advisory group and management working groups);
- Asset Management Planning Process;
- Asset Management Implementation addressing organisation structure, governance, performance, capability, continuous improvement, and communication and development.

During interviews,⁵⁸ Hunter Water advised that a restructure implemented in 2012 had resulted in the grouping of asset management related functions (planning, infrastructure delivery, systems operations and maintenance services) under a Chief Operating Officer. It is expected that this change will enhance the management of Hunter Water's assets by promoting a shared/common focus.

The Asset Management Framework is supported by a series of *Strategic Asset Management Plans* whilst knowledge of the asset portfolio is captured in a *State of the Assets* report.⁵⁹ *Strategic Asset Management Plans* have been prepared in respect of:

- Raw Water;60
- Water Treatment;61
- Water Network;⁶²
- Wastewater Network;63 and
- Wastewater Treatment.⁶⁴

It is noted that an Asset Management Plan for the Stormwater Network was not provided (although existence was not questioned as part of the Audit).

A review of these Strategic Asset Management Plans revealed that, consistent with accepted principles of asset management, they generally address issues including:

- Levels of Service including business, regulatory and legislative requirements;
- Our Assets including system description, asset inventory, asset criticality, asset performance and asset condition;
- Asset Risk Profile in terms of capacity, reliability, quality, safety and environmental risk;
- Service Management as applicable to the particular asset class (e.g. water quality, dam safety, growth, forward capability);
- Asset Lifecycle Management addressing the planning, creation, operation, maintenance and renewal/disposal phases of the lifecycle;
- Knowledge Management including service knowledge, and asset lifecycle knowledge and processes; and
- Optimised Service Management service direction, financial directions and asset directions.

⁶⁴ Hunter Water, Strategic Asset Management Plan; Wastewater Treatment (Draft), July 2012.



⁵⁶ Hunter Water, Hunter Water Policies; Asset Management Policy Version 1, 1 June 2012.

⁵⁷ Hunter Water, Asset Management Framework (Draft), November 2010.

⁵⁸ Personal comment during interviews conducted on 16/17 September 2013.

⁵⁹ Hunter Water, State of the Assets Report 2012 (Draft), April 2012.

⁶⁰ Hunter Water, Strategic Asset Management Plan; Raw Water (including Dams and Weirs) (Draft), February 2012.

⁶¹ Hunter Water, Strategic Asset Management Plan; Water Treatment (Draft), July 2012.

⁶² Hunter Water, Strategic Asset Management Plan; Water Network (Draft), November 2010.

⁶³ Hunter Water, Strategic Asset Management Plan; Wastewater Network (Draft), November 2010.

The approach to asset life cycle management is defined on the basis of criticality and risk; this is defined in the Asset Class Management Plan.⁶⁵ Risk is assessed in accordance with the Enterprise Risk Management Framework,⁶⁶ which is based on the ASINZS ISO 31000:2009 Risk Management model.

The State of the Assets⁶⁷ report provides more detail in respect of the asset portfolio. More specifically it outlines:

- Managing Service Performance in respect of legislation, industry standards and guidelines, community engagement, employee knowledge/skills/experience and strategies for achieving performance requirements;
- Weather Performance an overview of the impact of weather in respect of demand and the provision of service;
- Asset Portfolio an overview thereof; and
- For each Asset Class (Raw Water, Water Treatment, Water Network, Wastewater Network, Wastewater Treatment and Stormwater Assets) system description, asset inventory, description, performance condition and risk, and service/licence performance (as appropriate).

A review of the *State of the* Assets report identified some questionable performance trends, however, upon questioning, Hunter Water advised⁶⁸ that the report is at a 'work in progress' stage and does not reflect latest performance data. The longer term reduction in failures (ignoring recent data) is considered to be the result of a strong renewals program.

Hunter Water's capital investment program is managed in accordance with its *Capital Portfolio Management Guide*⁶⁹ which outlines processes in respect of capital planning, prioritisation, delivery and governance. The prioritisation process takes into consideration the constraints impacting the investment (either mandating or limiting), compliance requirements, strategic value of the investment and, ultimately, complexity and risk. Business cases, prepared in accordance with the *Business Case Handbook*⁷⁰ (refer to Appendix A.3.4 for more detailed discussion), are a key element of the governance arrangements in respect of capital investments. It is also noted that Hunter Water has implemented an AS/NZS ISO 9001 compliant and certified quality management system in respect of its asset creation activities.

Hunter Water's treatment plants are operated under contract by Hunter Water Australia. Hunter Water advised that the contract is currently under review and will be market tested to ensure that value for money is being delivered.⁷¹ Non-treatment assets are operated internally; operation and maintenance procedures are embedded into the Workplace Health and Safety System. The Work Instruction for *Repair of Burst Mains*,⁷² *Reservoir Cleaning* Procedure⁷³ and the *Temporary Operational Change*⁷⁴ form are examples.

Hunter Water manages its maintenance activities related to its mechanical and electrical assets through its Enterprise Resource Planning (Ellipse) system, whilst activities of the Civil Works Group are managed using its (spreadsheet based) AOMS works management system.⁷⁵ The Ellipse system is currently undergoing an upgrade during which the functionality currently provided by AOMS will be incorporated into a single system. Operational management using unsupported software and platforms has been identified as a corporate risk.

Asset details are captured in Ellipse (point assets) and SWMS GIS (linear assets).⁷⁶ Asset condition is assessed in accordance with the Asset Condition Assessment Management Plan (in development),⁷⁷ which outlines procedures for asset condition assessment and renewal planning. Processes are dependent on assessed asset criticality.

The Asset Management Framework⁷⁸ highlights the importance of asset management capability and training. During interview,⁷⁹ Hunter Water indicated that training was undertaken on the job (approximately 70 percent), by observation (20 percent) and through formal training (10 percent). On the job training is achieved through:

- exposure to process;
- involvement in 'building the systems', including writing the plans (under guidance);
- project workshops;
- AIMS training course;
- acting in planning/operations roles and interaction with customer service groups.

Hunter Water's Manager, Asset Management is an active participant in the WSAA Asset Management arena. This involves input to WSAA programs and activities and, more importantly, interaction with other asset management organisations.

⁶⁵ Hunter Water, Asset Class Management Plan (Draft), February 2011.

⁶⁶ Hunter Water Corporation, Enterprise Risk Management Framework Version 3.0, February 2013.

⁶⁷ Hunter Water, State of the Assets Report 2012 (Draft), April 2012.

⁶⁸ Personal comment during interviews conducted on 16/17 September 2013.

⁶⁹ Hunter Water Corporation, *Capital Portfolio Management Guide*, May 2012.

⁷⁰ Hunter Water Corporation, QM005: Business Case Handbook (Version 1.3), May 2013.

⁷¹ Hunter Water response to Audit Questionnaire (Hunter Water 2012/13 Operational Audit for NSW IPART) page 9.

⁷² Hunter Water, Work Instruction 2; Repair of Burst Mains (Version 3.0), 4 July 2013.

⁷³ Hunter Water, Reservoir Cleaning Procedure, 27 May 2010.

⁷⁴ Hunter Water, Temporary Operational Change Permit (Version 1.0), undated.

⁷⁵ Hunter Water response to Audit Questionnaire (Hunter Water 2012/13 Operational Audit for NSW IPART) page 9.

⁷⁶ Hunter Water response to Audit Questionnaire (Hunter Water 2012/13 Operational Audit for NSW IPART) page 10.

⁷⁷ Hunter Water, Asset Condition Assessment Management Plan, undated.

⁷⁸ Hunter Water, Asset Management Framework (Draft), November 2010, section 8.

⁷⁹ Personal comment during interviews conducted on 16/17 September 2013.

Collectively, these activities are considered to constitute an effective approach to asset management training.

In summary, it is noted that much of Hunter Water's asset management system documentation is in draft form and, in some cases, dates back to 2010. Some documentation is clearly not complete (eg. Optimised Asset Management section of the *Water Network Strategic Asset Management Plan*⁸⁰), whilst other documentation is out of date (eg. the organisational structure shown in the Asset Management Framework⁸¹). Whilst Hunter Water claimed that the documentation is approximately 90 percent complete and plans are being actively implemented, it is recommended that all documentation be updated and issued as final versions. This will not prevent ongoing development and improvement, but will clearly establish plans and processes at a point in time.

As noted above, Hunter Water has participated in the WSAA Aquamark Benchmarking Program, having subscribed in both 2008 and 2012. The Aquamark benchmarking tool enables assessment of asset management practices and performance against seven (7) primary functions, as follows:

- I. Corporate policy and business planning;
- 2. Asset capability forward planning;
- 3. Asset acquisition;
- 4. Asset operation;
- 5. Asset maintenance;
- 6. Asset replacement and rehabilitation;
- 7. Business support systems.

Review of the 2012 results presented in the *Performance Improvement Report*,⁸² which differ from those presented in the *Validation Report*,⁸³ reveals that:

- In comparison with the overall benchmarking group, Hunter Water's performance was assessed to be at or marginally above median performance for three functional areas, and at a higher level in respect of Corporate Policy and Business Planning, Asset Capability Forward Planning and Asset Replacement and Rehabilitation; performance was, however, lower than median in respect of Business Support Systems.⁸⁴
- In comparison with its peer benchmarking group (medium sized water and wastewater utilities, Hunter Water's performance was assessed to be at or greater than median performance in all but one functional area; its highest relative performances were again in respect of Corporate Policy and Business Planning, Asset Capability Forward Planning and Asset Replacement and Rehabilitation, and lowest in respect of Business Support Systems.⁸⁵
- In comparison with the 2008 results, assessed performance has fallen in all functional areas, with the relative change varying from approximately 10-23 percent; average performance across all functional areas has fallen from approximately 80 to 65 percent.^{86,87}

During interviews, Hunter Water indicated⁸⁸ that the lower results were reflective of a more honest appraisal in 2012; the internal assessment was undertaken at a lower level in the organisation (i.e. by practitioners) and in respect of a broader range of assets (not just key expenditure items). Whilst this explanation is to some degree plausible, the magnitude of the change in the validated internal assessment gives cause for concern.

The greatest reduction in performance and lowest assessed performance in 2012 relates to the Asset maintenance functional area. *"Holistic and consistent approach to maintenance management"* was one of five priority improvement initiatives identified as a result of the 2012 WSAA Benchmarking Program.⁸⁹ As a result, Hunter Water has:^{90,91}

- Improved its maintenance planning function by increasing the proportion of planned maintenance (both civil and mechanical/electrical) using a common computerised maintenance management system; and
- Introduced the use of performance KPIs to measure/monitor the completion of maintenance tasks; target completion is 90% for compliance related activities and 80% for other activities.

Hunter Water advised that it will consider redeveloping its Asset Management System into a system compliant with the ISO 55000 series standards (scheduled for release in 2014) as part of the Integrated Quality Management System (IQMS) project.^{92,93} The Auditor is of the view that this would be a beneficial action, and notes that:

83 IWA-WSAA, 2012 Asset Management Performance Improvement Project; Validation (Benchmarking) Report for Hunter Water Corporation,

May 2012.

90 Ibid.

⁹³ Hunter Water Corporation, Compliance and Performance Report 2012-13, September 2013, section 4.6.



⁸⁰ Hunter Water, Strategic Asset Management Plan; Water Network (Draft), November 2010, section 8.

⁸¹ Hunter Water, Asset Management Framework (Draft), November 2010, section 8.1.

⁸² IWA-WSAA, 2012 Asset Management Performance Improvement Project; Draft Utility Report for Hunter Water Corporation, September 2012.

⁸⁴ IWA-WSAA, 2012 Asset Management Performance Improvement Project; Draft Utility Report for Hunter Water Corporation, September 2012, Figure 1.

⁸⁵ IWA-WSAA, 2012 Asset Management Performance Improvement Project; Draft Utility Report for Hunter Water Corporation, September 2012, Figure 3.

⁸⁶ IWA-WSAA, 2012 Asset Management Performance Improvement Project; Draft Utility Report for Hunter Water Corporation, September 2012, Figure 11.

⁸⁷ Percentage of performance and change interpreted from Ibid, Figure 9.

⁸⁸ Personal comment during interviews conducted on 16/17 September 2013.

⁸⁹ Hunter Water Corporation, Compliance and Performance Report 2012-13, September 2013, section 4.3.

⁹¹ Personal comment during interviews conducted on 16/17 September 2013.

⁹² Hunter Water response to Audit Questionnaire (Hunter Water 2012/13 Operational Audit for NSW IPART) page 8.

- The ISO 55000 series standards will replace BSI PAS 55:2008 (PAS 55) Asset Management standard, which is one of the standards nominated in Hunter Water's Operating Licence, one of which its asset management system must be consistent with; and
 - The WSAA Aquamark tool, which Hunter Water uses to assess its asset management practices (refer page 66), is currently based on/consistent with PAS 55, but is likely to be realigned with the ISO 55000 series standards once released.

Recommendation

- AR-2013/1 Update of Documentation: Hunter Water should take action to update all of its Asset Management System documentation and issue it as final versions. This will not prevent ongoing development and improvement, but will clearly establish plans and processes at a point in time. Timeframe: Within 12 months.
- AR-2013/2 Continuance of Implementing Improvement Opportunities: Hunter Water should continue to implement the five (5) priority improvement opportunities identified as a result of the 2012 WSAA Aquamark Benchmarking Program, specifically:
 - I. To align organisational asset management capability with asset management objectives.
 - 2. Business cases need rigorous challenging to confirm their ability to meet business objectives and investment requirements.
 - 3. Holistic approach to maintenance management.
 - 4. A proactive and holistic approach to management and operation of critical assets for both planning of service improvement/reliability and contingency planning.
 - 5. Operations and maintenance (O&M) procedures review and updating to reflect current business objectives and manage risk, including configuration documentation where warranted.

Timeframe: Within 2 years.

A.3.2	Asset Management System	(sub-clause 4.1.2)
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Sub-clause	Sub-clause Requirement		Compliance Grade
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.		Full compliance
Risk		Target for Full compliar	ice
Non-compliance with the requirements of this clause poses a high level of operational risk in respect of public health, the environment and the ability of Hunter Water to meet its business objectives.		Demonstrated implementation of asset management practices in accordance with the requirements of the Asset Management System. Full compliance achieved in 2012/13.	
Evidence Sighte	d		
 Hunter Water, Business Case; Belmont 6 Rising Main Renewal, November 2012. Hunter Water, Business Case; Waratah West WWPS Upgrade, February 2013. Hunter Water, Business Case; Non-Critical Water Main Renewals – 2013/17 Price Path Provision, June 2013. Hunter Water Corporation, QM005: Business Case Handbook (Version 1.3), May 2013. Screenshot: 4.1.2 Farley WWTW Maintenance Plan in Ellipse. Screenshot: 4.1.2 Maintenance Schedule for flow meter calibration. Hunter Water Australia, Hunter Water Corporation; Farley WWTP; Strategy Development Procedure; Version 1, May 2013. Document: 4.1.2 Calibration Records. Hunter Water Corporation, Asset KPI Report, May 2013. Spreadsheet: 068.RT_STBRA130923_23Sep2013 (Sample weekly routine maintenance schedule for Brownetor MAMER) 			
Summary of Reasons for Grade			
Hunter Water has demonstrated through the provision of sample documentation and auditor observations during the audit interviews and site visits that its asset management practices are implemented in accordance with the requirements of the Asset Management System.			
Discussion and Notes			
Implementation of e	f the asset management plan was assessed by xplanations provided at interview and observa	v reviewing a sample of imple tions made during site visits to	mentation related documentation, o operational facilities.
Business cases for	a number of capital projects and/or programs	were provided for review, inc	luding:
 Belmont 6 Rising Main Renewal;⁹⁴ Waratah West WWPS Upgrade;⁹⁵ Non-Critical Water Main Renewals – 2013/17 Price Path Provision;⁹⁶ and Mechanical Electrical Renewals – 2013/17 Price Path Provision (refer Appendix A.3.3). 			3).
A review of these documents revealed that, in each case, a robust business case consistent with the requirements of Hunter Water's <i>Business Case Handbook</i> ⁹⁷ had been prepared. In the case of the Belmont 6 Rising Main Renewal project, the Risk Assessment section had not been populated, however, upon closer review there was reference to a risk assessment undertaken by a consultant as part of the options assessment; the relevant document was referenced (although not sighted as part of this audit).			
A sample of asset	records was sighted via on-line interrogation o	of Ellipse; these included:	
 ST-BUR-IW1-PS2-FIT2200, a Secondary Effluent Flow Meter at the Burwood Beach WWTP. Records indicated that the flow meter was last calibrated on 23 April 2013; it is scheduled for calibration annually; and there was a link available to the calibration procedure; WT-DUN-RW-PD-P1 – Raw Water Polymer Dosing Pump No1. Records were sighted in respect of a mechanical 			



 ⁹⁴ Hunter Water, Business Case; Belmont 6 Rising Main Renewal, November 2012.
 ⁹⁵ Hunter Water, Business Case; Waratah West WWPS Upgrade, February 2013.
 ⁹⁶ Hunter Water, Business Case; Non-Critical Water Main Renewals – 2013/17 Price Path Provision, June 2013.
 ⁹⁷ Hunter Water Corporation, QM005: Business Case Handbook (Version 1.3), May 2013.

service; and

• A Residual Chlorine Analyser at Grahamstown Water Treatment Plant (details not captured).

Ellipse screenshots showing the following were provided:

- Farley WWTP forward maintenance schedule with links to a sample job card;⁹⁸ and
- Maintenance schedule for calibration of flow meter ST-SHO-BHP-FM.99

A maintenance *Strategy Development Procedure¹⁰⁰* for the Farley WWTP was also provided. This outlined the identification of maintainable items, the Ellipse equipment register, maintenance task development, database report, standard job development and maintenance scheduling.

Completed Work Order Job Cards and flow meter calibration certificates were provided in respect of:101

- Work Order No: 20094528 Calibration of Flow Meter (Equipment No: STTOR-TLUFMI) at Belmont Treatment Works, 23 May 2013;
- Work Order No: 20094529 Calibration of Flow Meter (Equipment No: STTOR-TLUFM2) at Belmont Treatment Works, 23 May 2013;
- Work Order No: 20085504 6-monthly mechanical service of Sludge Dewatering System Sludge Treatment Handling (Equipment No: ST-TOR-STH-SDS) at Toronto WWTW, 8 February 2013;
- Work Order No: 20085471 annual mechanical service of Return Activated Sludge System Aeration Bioreactor (Equipment No: ST-TOR-ABR-RAT) at Toronto WWTW, 27 February 2013;
- Work Order No: 20085476 annual mechanical service of Effluent Pump Station Effluent Disposal System (Equipment No: ST-TOR-EDS-PSI) at Toronto WWTW, 27 February 2013;
- Work Order No: 20085503 1-monthly mechanical service of Sludge Dewatering System Sludge Treatment Handling (Equipment No: ST-TOR-STH-SDS) at Toronto WWTW, 26 February 2013; and
- Work Order No: 20085474 6-monthly mechanical service of Grit Removal System Inlet Works (Equipment No: ST-TOR-IW1-GRS) at Toronto WWTW, 18 February 2013.

Performance in respect of completion of maintenance activities is reported monthly to Divisional Management and the Board, as per the sample Asset KPI Report for May 2013.¹⁰² These reports provide an analysis of monthly preventative maintenance and work order completion. Review of the sample report revealed that over the audit period, performance was predominantly, although not in all cases, in excess of target. In cases where performance fell, there was generally a subsequent improvement.

A site visit to the Grahamstown Water Treatment Plant revealed that the facility was well maintained and in generally good condition; plant operation and routine maintenance is undertaken under contract by Hunter Water Australia. Some observations included:

- Structures are in good condition; some minor non-structural repairs were evident;
- There was some minor corrosion evident on handrails around the plant, however, this was principally of aesthetic impact;
- It was apparent that maintenance has been completed on control gates and valves;
- Inspection of the clear water storage revealed that roof sealing may not be fully effective against the entry of birds or other bodies, although there was evidence that sheet end flashings had been replaced. This was not considered to be an issue from an asset management perspective, but may present a risk from a water quality perspective.

Discussion with the lead operator provided an overview of routine (daily to weekly) and less frequent operational and maintenance activities; these were considered to be in line with expectations. Spreadsheet based schedules are used to manage completion of the routine activities.

A site visit was also made to the Branxton Wastewater Treatment Plant (WWTP), from which recycled water is supplied to a number of customers. This is a relatively new plant, which was commissioned in 2011, which is again operated under contract by Hunter Water Australia. No apparent issues in respect of maintenance were identified. A copy of the weekly task schedule¹⁰³ showing operational activities for the week commencing 23 September 2013 was subsequently provided (whilst this lies outside the audit period, it provided an indication of the daily and weekly activities to be undertaken); review indicated that appropriate tasks are scheduled.

One observation made at the Branxton WWTP was that there were no lifebuoys available around the storage basin fitted with a floating cover; this is a safety practice adopted at other similar installations and could be considered by Hunter Water.



⁹⁸ Screenshot: 4.1.2 Farley WWTW Maintenance Plan in Ellipse.

⁹⁹ Screenshot: 4.1.2 Maintenance Schedule for flow meter calibration.

¹⁰⁰ Hunter Water Australia, Hunter Water Corporation; Farley WWTP; Strategy Development Procedure; Version 1, May 2013.

¹⁰¹ Document: 4.1.2 Calibration Records.

¹⁰² Hunter Water Corporation, Asset KPI Report, May 2013.

¹⁰³ Spreadsheet: 068.RT_STBRA130923_23Sep2013.

A.3.3 Asset Management System – Recommendation 2011/12-2

Reference	Recommendation	Finding
2011/12-2	Hunter Water should develop a guideline for consistency of approach to life cycle costing across different asset groups, including greater consideration of both asset and business associated risks with more definite linkages to corporate objectives. They should apply this to the planned asset management project covering electrical and mechanical equipment.	Addressed

Evidence Sighted

- Hunter Water Corporation, QM005: Business Case Handbook (Version 1.3), May 2013.
- Hunter Water Corporation, Business Case, Mechanical Electrical Renewals; 2013/17 Price Path Provision, June 2013.
 - Hunter Water Corporation, QG029: Value Management (Version 3.0), April 2013.

Summary of Reasons for Finding

Hunter Water's *Business Case Handbook* contains effective guidance in respect of business case preparation. Provided this guidance is implemented across the organisation, consistent robust business cases that address life cycle costing, risk and alignment with corporate objectives should result.

A review of the Business Case, Mechanical Electrical Renewals (ie. the planned asset management project covering electrical and mechanical equipment) reveals that corporate alignment, business risk and financial aspects are effectively addressed.

Discussion and Notes

This recommendation arose from the 2011/12 audit of Part 4 of the 2007-2012 Operating Licence.¹⁰⁴

Hunter Water advised that a standard business case template and guideline are used for all projects with capital expenditure in excess of \$0.3 million. Business cases are required to demonstrate the justification for, and economic/financial analysis undertaken in respect of, the project.

Review of Hunter Water's *Business Case Handbook*,¹⁰⁵ initially developed in 2011, reveals that it contains effective guidance in respect of business case preparation and a detailed outline as to what a business case should contain. Required content includes:

- Basic Project Information project name and identifier, business case owner and author, etc;
- Document Control;
- Business Case Purpose;
- Project Objective;
- Business Case Summary including need for project, risk of the 'do nothing' option, options considered, and identification of preferred option (which must include a summary of capital and operating cost impacts);
- Recommendation comprising identification (description) of preferred option, estimated delivery timing, estimated capital expenditure, and estimated change in operating expenditure (and the timeframe over which it will be realised);
- Definition of the Problem/Opportunity;
- Project Objectives and Strategic Fit including project objective, alignment with Hunter Water's Statement of Corporate Intent (how the project contributes to drivers, strategic initiatives and objectives), benefits, and impacts on other capital projects;
- Options option identification, assumptions and constraints, overview of options, economic analysis, option assessment (quantitative and qualitative), identification and scoping of the preferred option, and benefits realisation should all be addressed;
- Procurement identification of both internal and external resource requirements and outline of a procurement plan strategy;
- Stakeholder Consultation internal and external stakeholders are to be identified and key stakeholder issues and a consultation plan addressed;
- Project Risk Management including the identification of critical success factors,
- Financial Aspects including capital and operating expenditure, and revenue impact;
- Other Considerations/Comments; and
- Supporting References.

Provided this guidance is implemented across the organisation, consistent robust business cases that address life cycle costing,

¹⁰⁵ Hunter Water Corporation, QM005: Business Case Handbook (Version 1.3), May 2013.



¹⁰⁴ IPART, Hunter Water Corporation; Operating Audit 2011/2012; Report to the Minister, December 2012, page 11.

risk and alignment with corporate objectives should result. Hunter Water notes that its approach is consistent with NSW Treasury guidelines for business cases and economic analysis;¹⁰⁶ this is acknowledged (relevant documentation is referenced) in the Business Case Handbook.¹⁰⁷

A review of the Business Case, Mechanical Electrical Renewals¹⁰⁸ reveals that corporate alignment, business risk and financial aspects are effectively addressed. Operating expenditure is not forecast to change as a result of the capital spend; this is not unexpected in the case of an ongoing renewals project.

Hunter Water further advised¹⁰⁹ that a guide to economic analysis has been drafted and is due for release by June 2014, and referred to its Value Management Guide.¹¹⁰ Review of this document reveals reference to "Appendix B of the Sustainable Decision-Making Process - Guidebook" which provides an overview of the various tools available to support completion of the Economic Analysis section of a business case.

¹⁰⁶ Hunter Water response to Audit Questionnaire (Hunter Water 2012/13 Operational Audit for NSW IPART) page 32.

¹⁰⁷ Hunter Water Corporation, QM005: Business Case Handbook (Version 1.3), May 2013, page 24.

¹⁰⁸ Hunter Water Corporation, Business Case, Mechanical Electrical Renewals; 2013/17 Price Path Provision, June 2013. ¹⁰⁹ Hunter Water response to Audit Questionnaire (Hunter Water 2012/13 Operational Audit for NSW IPART) page 32.

¹¹⁰ Hunter Water Corporation, QG029: Value Management (Version 3.0), April 2013.

A.3.4 Asset Management System – Recommendation 2009/10-3e

Reference	Recommendation	Finding
2009/10-3e	Development of asset management plans for dams by 2012 audit (clauses 4.8 & 4.9)	Addressed
	Note: Progress at 2011/12 audit was considered satisfactory by the auditor and extension of deadline to 2013 supported.	

Evidence Sighted

- Hunter Water Corporation, Asset Management Plan; Grahamstown Dam, August 2013.
- Hunter Water Corporation, Asset Management Plan; Chichester Dam, August 2013.

Summary of Reasons for Grade

Although finalised subsequent to the Audit Period (ie. in August 2013), Asset Management Plans for Hunter Water's two dams are now complete.

Discussion and Notes

This recommendation arose from the 2009/10 audit of Part 7 of the 2007-2012 Operating Licence. In part, IPART's recommendation, as presented in the 2009/10 Compliance Report,¹¹¹ included:

"We recommend that Hunter Water implement the following actions:

3 Dam Asset Management

Improve management, operating, monitoring, actioning and reporting on dam asset management issues, including:

(e) Development of asset management plans for dams."

An interim plan, utilising currently available information, was to be prepared by 30 March 2011 and a full asset management plan completed for audit in 2012. A review as part of the 2011/12 Operational Audit assessed that satisfactory progress had been made; IPART agreed that extension of the deadline for completion to June 2013 was warranted.

A review of the Asset Management Plans provided by Hunter Water in respect of Grahamstown Dam¹¹² and Chichester Dam¹¹³ revealed that they address the relevant issues, including:

- Levels of Service including business, regulatory and legislative requirements;
- Our Assets including system description, asset inventory, asset criticality and asset condition;
- Asset Risk Profile both in terms of dam classification and facility component risk;
- Asset Operation addressing resources and stakeholders, dam safety management, water quality monitoring management, security management, conservation management and reporting;
- Asset Maintenance outlines maintenance strategy including safety and scheduling; and
- Asset Management Planning in respect of dam safety, capacity planning, operational improvements, maintenance improvements and an asset renewal plan.

It was noted that in both cases, the next review of the Plan is scheduled for August 2015.

Although finalised subsequent to the Audit Period (i.e. in August 2013), Asset Management Plans for Hunter Water's two dams are now complete.

¹¹³ Hunter Water Corporation, Asset Management Plan; Chichester Dam, August 2013.



¹¹¹ IPART, Hunter Water Corporation; Operational Audit 2009/2010; Report to the Minister, November 2010, pages 3/4.

¹¹² Hunter Water Corporation, Asset Management Plan; Grahamstown Dam, August 2013.

A.4 Section 5: Customers and Consumers

A.4.1 Procedures for Financial Hardship, Payment Difficulties, Water Flow Restriction and Disconnection (sub-clause 5.4.1)

Sub-clause	Requirement		Compliance grade
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:		Full compliance
	 a financial hardship policy that he experiencing financial hardship better future Bills; 	a financial hardship policy that helps residential Customers experiencing financial hardship better manage their current and future Bills:	
	 b) procedures relating to a payment pla who are responsible for paying their f Water's opinion, experiencing financial 	dures relating to a payment plan for residential Customers ure responsible for paying their Bills and who are, in Hunter r's opinion, experiencing financial hardship;	
	c) conditions for disconnection of suppl and	y or water flow restriction;	
	d) provisions for self-identification, ide welfare organisations and identificat residential Customers experiencing fin	entification by community ion by Hunter Water of ancial hardship.	
Risk		Target for Full Complia	nce
Non-compliance low (if any) risk however, it poses relations and the business.	with the requirements of this clause poses (to public health and the environment; (s a high level of risk in respect of customer (e financial management of Hunter Water's	Demonstrated implementa financial hardship, payment and disconnection. Full compliance achieved in	ation of procedures relating to difficulties, water flow restriction 2012/13.
Evidence Sighte	ed		
 Custom http://w Services Custom Governa 'Accoun Assistan Procedu http://w August2 'Paymer Assistan Debts a Disconn Code o' http://w disconnei 	er Contract (Full Version) dated I July 2011: ww.hunterwater.com.au/Resources/Document i/CustomerContract_Mar2011_FINAL.pdf er Contract Summary: http://www.hunterwate ance/customer-contract-summary-1-july-2011, it Assistance Program': http://www.hunterwate ce/Payment-Assistance.aspx ure for Payment Difficulties Fact Sheet (dated Ju ww.hunterwater.com.au/Resources/Document 2013_web.pdf nt Assistance Scheme': http://www.hunterwater.com ecc/Payment-Assistance-Scheme.aspx nd Disconnection: http://www.hunterwater.com ecction/ f Practice and Procedure on Debt and Disconr ww.hunterwater.com.au/Resources/Document ection-Nov2012.pdf	s/Policies/Customer- r.com.au/Resources/Documer odf r.com.au/Your-Account/Mana uly 2013): s/Policies/Customer-Services/ r.com.au/Your-Account/Managing m.au/Your-Account/Managing nection Fact Sheet (dated No s/GuidelinesManuals/Code-o	nts/Legislation-and- ging-Your-Account/Payment- Payment-difficulties- ging-Your-Account/Payment- -Your-Account/Debts vember 2012): of-practice-on-debt-and-
Business Business Presenta	 Business Rules Document Account Assistance (Version 1.3, TRIM HW2012-821/1/5, dated 17 December 2012) Business Rules Document Credit Management (Version 1.1, TRIM HW2012-821/1/5, dated October 2012) Presentation 2012-13 Operational Audit of Hunter Water Corporation; Billing and Collections, September 2013 		

Summary of Reasons for Grade

Hunter Water provided evidence to demonstrate that it maintains procedures relating to financial hardship, payment difficulties, water flow restriction and disconnection (Procedure for Payment Difficulties and Actions for Non payment) in accordance with the requirements of this clause (clause 5.4.1). More specifically, the procedures include:

- a financial hardship policy;
- procedures relating to payment plans for residential customers who are, based on Hunter Water's assessment criteria, experiencing financial hardship;
- conditions for water flow restriction and disconnection; and
- provisions for identification of residential Customers who are experiencing financial hardship.

Statistical reporting indicates that the policy is being implemented.

Discussion and Notes

Sections 5 and 6 (page 8) of the *Customer Contract* provide information in respect of "What to do if I am unable to pay my account?" and the "Restriction or disconnection of water and wastewater services [for non-payment]". This information is summarised in the *Customer Contract Summary* (page 4).

Hunter Water implements an Account Assistance Program, details of which are available on its website. This program, which is open to home owners concerned about how they will pay water bills for their current residence, provides several options for support, including:

- Payment Assistant Scheme;
- Flexible Payment Options;
- Direct Debit Application; and
- Ongoing Assistance.

The procedures that are implemented for customers that are experiencing financial hardship are outline in Hunter Water's *Procedure for Payment Difficulties* Fact Sheet.

The Payment Assistance Scheme operates through registered community welfare agencies with staff trained to assist customers experiencing hardship. Participating welfare agencies are listed on Hunter Water's website.

Hunter Water's Code of Practice and Procedure on Debt and Disconnection Fact Sheet outlines what happens if customers do not pay their bills.

The Account Assistance Business Rules (internal policy) Document provides guidance in respect of providing assistance and arranging flexible payment options for customers identified to be experiencing financial hardship. Hunter Water defines a customer in hardship as "someone who is willing to pay their water bills on time, but is unable to do so, due to temporary or ongoing financial hardship".¹¹⁴ The document:

- sets out criteria which must be met for a customer to be identified for support under the 'Account Assistance Program';
- outlines the ways in which hardship can be identified;
- outlines the types of assistance that may be provided; and
- identifies staff training requirements, which includes training in empathy and sensitivity, case management, communication and relationship building, and budgeting tips and information (a number of these training modules are provided by Lifeline).

During interviews, it was noted¹¹⁵ that Hunter Water has based its hardship guidelines on policy guidelines published by the Australian Energy Regulator (AER).

The *Credit Management* Business Rules (internal policy) Document provides extensive guidance in respect of the management of customer credit/debt. It outlines the incremental process that is to be followed for different categories of customer, including referral to the Hardship and Credit Risk Team for Account Assistance in cases where financial hardship is identified.

Hunter Water is currently pursuing a focus on aged debt reduction. In doing so, Hunter Water has adopted an approach whereby engagement with its Customers is crucial to debt management; such engagement is being sought through any interfacing with the customer. The Account Assistance Program has been implemented more extensively as a result of this focus.

In respect of the identification of Customers in financial hardship, Hunter Water implements a three (3) pronged approach:

- Self-identification is being promoted through the distribution of information (refer discussion and notes in respect of clause 5.4.3).
- Identification by community welfare organisations Hunter Water maintains regular contact with the relevant

¹¹⁴ Business Rules Document Account Assistance (Version 1.3, TRIM HW2012-821/1/5, dated 17 December 2012), pg.10. ¹¹⁵ Personal Comment.



organisations, including conduct of an annual forum. It was noted during the audit interviews that the group of affiliated welfare agencies has been extended to include community houses (and other similar agencies); these have less associated stigma than the more traditional agencies.

• Identification by Hunter Water – identification is made when engaging with Customers in response to a complaint (e.g. high water bill) or when pursuing payment of debts. Specific 'scripts' have been developed for use by customer service officers, thereby assisting them to identify cases of hardship.

It was noted during the audit interviews that the Energy and Water Ombudsman (EWON) is increasingly becoming a source of information. Customers contact the Ombudsman's office to lodge a complaint regarding an 'excessive bill', however, upon investigation the real issue is found to be an inability to pay the bill (ie. financial hardship).

It was also noted that Customer assistance initiated through welfare agencies has historically involved the use of a 'voucher system'. This approach has now been phased out in favour of direct contact whilst the Customer is with the welfare officer. Under the new arrangement, the welfare officer makes telephone contact with Hunter Water whilst the Customer is present and arrangements are made via the telephone call. This approach again promotes direct engagement with the Customer.

Information was provided¹¹⁶ in respect of credit management for the 2012/13 financial year; as shown in the following table; this demonstrates that the policies are being implemented.

Meters read	658,324
Bills sent	722.985
Querdue notices sent	186.869
Portrictions completed [#]	1.192
Active at Commercial Personany Agency	1,172
	(24
	624
Payment plans/extensions commenced	24,814
Hardship cases active as at 30 June 2013	995
Customers assisted with payment vouchers [%]	962

Note: [#] consistent with sum of NWI Indicators C13 (residential) and C14 (non-residential), customers on whom flow restrictions have been imposed.

[%] this support mechanism (use of payment vouchers) is being phased out in favour of a mechanism involving immediate adjustment to accounts in response to community agency advice.

During interviews, Hunter Water also identified a number of related achievements that were realised during the 2012/13 financial year; these included:

- Updating of policies, business rules and procedures;
- Payment Assistance Scheme process improvements;
- Implementation of a new Account Assistance case management tool;
- Implementation of an Essential Plumbing policy for hardship customers;
- Implementation of a Stakeholder engagement program;
- Dedicated hardship resource and training; and
- Introduction of the 'Centrepay' facility in June 2013.

Whilst not all actions were verified as part of the Audit, it is noted that:

- Both the Account Assistance and Credit Management Business Rules were noted to have been revised during 2012/13;
- It was explained that the Essential Plumbing Policy provides funded repair of leaks for hardship customers.
- The introduction of Centrepay to Hunter Water was identified as being under consideration at the time the Account Assistance Business Rules were updated (i.e. December 2012). Access to the Department of Human Services, Centrelink website¹¹⁷ confirms that Hunter Water Corporation is a 'Centrepay organisation'.

¹¹⁶ Presentation 2012-13 Operational Audit of Hunter Water Corporation; Billing and Collections, September 2013, slide 2. ¹¹⁷ https://www.centrelink.gov.au/wps/portal/clk_common/TPS accessed 29 September 2013.

A.4.2 Procedures for Financial Hardship, Payment Difficulties, Water Flow Restriction and Disconnection (sub-clause 5.4.2)

Sub-clause	Requirement		Compliance Grade	
5.4.2	Hunter Water must set out the Procedure for Payment Difficulties and Actions for Non-payment in the Customer Contract.		Full compliance	
Risk		Target for Full Complia	nce	
Non-compliance with the requirements of this clause poses low (if any) risk to public health and the environment; however, it poses a high level of risk in respect of customer relations and the financial management of Hunter Water's business.		Inclusion of details of the Procedure for Payment Difficulties and Actions for Non-payment in the Customer Contract. Full compliance achieved in 2012/13.		
Evidence Sighte	d			
 Customer Contract (Full Version) dated 1 July 2011: http://www.hunterwater.com.au/Resources/Documents/Policies/Customer- Services/CustomerContract_Mar2011_FINAL.pdf Customer Contract Summary: http://www.hunterwater.com.au/Resources/Documents/Legislation-and- Governance/customer-contract-summary-1-july-2011.pdf Debts and Disconnection: http://www.hunterwater.com.au/Your-Account/Managing-Your-Account/Debts Disconnection/ Code of Practice and Procedure on Debt and Disconnection Fact Sheet (dated November 2012): http://www.hunterwater.com.au/Resources/Documents/GuidelinesManuals/Code-of-practice-on-debt-and- disconnection-Nov2012.pdf 				
Summary of Reasons for Grade				
The Procedure for Payment Difficulties and Actions for Non-payment are set out in the Customer Contract as required.				
Discussion and Notes				
Sections 5 and 6 (page 8) of the <i>Customer Contract</i> provide information in respect of "What to do if I am unable to pay my account?" and the "Restriction or disconnection of water and wastewater services [for non-payment]". This information is summarised in the <i>Customer Contract Summary</i> (page 4).				
The Customer Contract indicates that Code of Practice and Procedure on Debt and Disconnection is available on Hunter Water's website; this can be accessed via the Debt and Disconnection website page.				

A.4.3 Procedures for Financial Hardship, Payment Difficulties, Water Flow Restriction and Disconnection (sub-clause 5.4.3)

Sub-clause	Requirement		Compliance Grade
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. 		Full compliance
Risk		Target for Full Complia	nce
Non-compliance with the requirements of this clause poses low (if any) risk to public health and the environment; however, it poses a high level of risk in respect of customer relations and the financial management of Hunter Water's business.		Provision of evidence that a Payment Difficulties and Ad provided to Customers and Full compliance achieved in	n explanation of the Procedure for ctions for Non-payment has been other persons free of charge. 2012/13.
Evidence Sighted			
 Making Waves Customer Newsletter July-October 2012 Making Waves Customer Newsletter November 2012-February 2013 			

- Making Waves Customer Newsletter March-June 2013
- Customer Contract Summary brochure June Mail Out (dated 13 June 2013)
- Account Assistance Program brochure June Mail Out (dated 13 June 2013)
- Code of Practice Debt and Disconnection brochure June Mail Out (dated 13 June 2013)
- Customer Charges Effective | July 2013 to 30 June 2014 brochure June Mail Out (dated 13 June 2013)
- Account Assistance Program: http://www.hunterwater.com.au/Your-Account/Managing-Your-Account/Payment-Assistance.aspx
- Procedure for Payment Difficulties Fact Sheet (dated July 2013): http://www.hunterwater.com.au/Resources/Documents/Policies/Customer-Services/Payment-difficulties-August2013_web.pdf

Summary of Reasons for Grade

Hunter Water demonstrated that it provides explanations of its Procedure for Payment Difficulties and Actions for Non-payment in accordance with the requirements of this clause (clause 5.4.3).

Discussion and Notes

Hunter Water's *Making Waves* Customer Newsletters (.July-October 2012, November 2012-February 2013 and March-June 2013 editions) all include information regarding the options available if customers are experiencing payment difficulties. This information is presented under the headers "Financial help available", "Having Difficulty Paying Your Bill?" and "Payment assistance" respectively on the face page of each edition. The Newsletter was distributed with each billing issue (ie. three (3) times during the 2012/13 year).

The *Customer Contract Summary* brochure presents information regarding options available/approaches that can be made by customers that are experiencing financial hardship; the *Account Assistance Program* brochure provides summary details of Hunter Water's Account Assistance Program; and the *Code of Practice – Debt and Disconnection* brochure informs that the Code of Practice "explains how we can help you if you are having difficulty paying your bill. It also outlines what will happen if you do not pay."

The *Customer Charges Effective 1 July 2013 to 30 June 2014* brochure provides information in respect of customer accounts including billing frequency and charges. It also refers to the Account Assistance Program, and provides contact details for further information.

The Customer Contract Summary, Account Assistance Program, and the Code of Practice – Debt and Disconnection brochures were issued to Customers, together with the Customer Charges Effective 1 July 2013 to 30 June 2014 brochure, as an information package in June 2013. The notification of new charges provided an opportunity to inform (reiterate to) Customers of Hunter Water's processes in respect of debt management and account assistance.

Details of Hunter Water's Account Assistance Program and its *Procedure for Payment Difficulties* Fact Sheet are available on its website.

A.4.4 Procedures for Financial Hardship, Payment Difficulties, Water Flow Restriction and Disconnection (sub-clause 5.4.4)

Sub-clause	Requirement		Compliance Grade			
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.					
Risk		Target for Full Complia	nce			
Non-compliance with the requirements of this clause poses low (if any) risk to public health and the environment; however, it poses a high level of risk in respect of customer relations and the financial management of Hunter Water's business.		Publication of the Procedure for Payment Difficulties and Actions for Non-payment on the website and availability for downloading free of charge. Full compliance achieved in 2012/13.				
Evidence Sighte	ed					
 Account Assistance Program: http://www.hunterwater.com.au/Your-Account/Managing-Your-Account/Payment- Assistance/Payment-Assistance.aspx . Procedure for Payment Difficulties: http://www.hunterwater.com.au/Resources/Documents/Policies/Customer- Services/Payment-difficulties-August2013_web.pdf 						
Summary of Re	asons for Grade					
Full compliance is assessed as Hunter Water publishes the required information on its website, and the information can be downloaded free of charge.						
Discussion and	Notes					
Evidence provideo	d includes direct links to:					
The AccThe Pro	 The Account Assistance Program page of Hunter Water's website; and The Procedures for Payment Difficulties fact sheet. 					
The Procedures for	Payment Difficulties fact sheet can be easily for	und by navigating as follows:				
➡ Home page	;					
↦ Your Accou	Account;					
➡ Payment As Financial Ha	Payment Assistance, which provides details of the Account Assistance Program and contact details in the event of Serious Financial Hardship?					
The Account Assistance Program section of this page provides a link to the Procedures for Payment Difficulties fact sheet. The fact sheet can be downloaded free of charge.						
Information regarding Actions for Non-payment can be found by navigating as follows:						
➡ Home page	→ Home page;					
↦ Your Accou	Your Account;					
➡ Debts & D Recovery A	Debts & Disconnection, which provides links to the Code of Practice and Procedure on Debt and Disconnection and the Recovery Action page (what will happen if you don't pay).					

A.5 Section 6: Environment

A.5.1 Environmental Management (sub-clause 6.1)

Sub-clause	Requirement					
6.1 Environmental Management	6.1.4: Ur and certi must: (a) maint out its ac (b) ensu program	till the Environmental Management System has been developed fied in accordance with clauses 6.1.1 and 6.1.2, Hunter Water tain programs to manage risks to the environment from carrying ctivities; and re that all its activities are carried out in accordance with those s.	Compliance Grade High compliance			
Risk		Target for Full Compliance				
The risk posed to public health and environment by non-compliance of this clause could be significant as the EMS applies to key activities such as sewage management and discharge and recycled water provision.		Documentation showing commitment to understanding and managing environmental issues. System assessment documentation noting clear scope for the environmental management system. Risk register (or aspects and impacts register) or similar for environmental impacts. Enterprise Risk Management framework; specifically environmental impact components including risk assessment tools, and risk appetite statements for managing environmental risks. Evidence of the controls/programs implemented to manage identified risks (could be described within the risk register).				
Evidence Sighted						
Interview with Angus	Seberry, N	Meredith Thomas, Greg Bone and Joanne Preston (17 September 20	13)			
Information provided p	ore-site vis	it				
 Information provided pre-site visit Audit and Risk Management Internal Audit Report Environmental Audit of Treatment Plant Chemical Storage and Stormwater Management 30 October 2012 Board paper HW2013-830.001 Community and Environment Committee Business Paper 26 September 2013 (draft, prepared in scope of audit date for meeting to be held out of scope) Community and Environment Policy (CLAUSE 6.1.4.a - Community and Environment Policy -201213.DOC) Due Diligence and Environmental Obligations Training for Managers and Supervisors (Powerpoint sighted at interview) Environmental Audit Report Orangeville Waste Contract May 2013 EP001 Environmental Management System Scope (TRIM: HW2012-738/6.001) (CLAUSE 6.1.4.a - EMS Scope- 201213.DOC) Internal Audit Report EMS Implementation Progress Audit (undated) Internal Audit Report EMS Implementation Progress Audit (undated) Internal Audit Report Environmental Compliance of Capital Works June 2013 Legal Register 8 May 2013 (CLAUSE 6.1.4.a - Legal Register -201213.XLS) Online Environmental Management Awareness Training developed by Edmore (sighted at interview) Risk Register (revised 2012) SKM (2013) Hunter Water Morpeth WWTP Energy Audit Report Final Report 31/07/13 Statement of Corporate Intent (http://www.hunterwater.com.au/Resources/Documents/Legislation-and- Governance/Statement-of-Corporate-Intent-2012-17.pdf) Training Needs Analysis (online at interview) Other specific examples of evidence are referenced, where relevant, below. 						
Information provided post-interviews						
 040_ Plan - Environmental Management Representative Role and Responsibility Rev 01 - CURRENT.DOC 041_EMR site inspection report example.doc 042_Example EnvComplianceAudit_WaratahWestEmergStorageUpgrade_121012_HWA.xlsx 043_Extract from Treatment Ops Contract Clause 13.doc 044_Due diligence training HWA attendee record.doc 045_ Manual - WHSMS Manual - CURRENT(2).DOC 045_draft Position Description for Manager E&S - Sept 2013.DOCX 045_EMS roles and responsibilities.doc 046_Manager-Infrastructure-Delivery-June-2012.pdf 046_Manager-System-Operations-June-2012.pdf 046_Manager-Treatment-Operations-Sep-2012.pdf 046_Operations-Team-Leader-March-13.pdf 						

- 047_Angus Seberry 1213 AP review vers 3 (June 13).doc
- 048_Environmental awareness lesson review screenshot.doc
- 049_Director Induction Guide July 2013.pdf
- 049_List of regulatory instruments provided to new Directors.pdf
- 050_Environmental compliance and enforcement policy.doc
- 051_Report Tomago & Tomaree Groundwater Source Ecological Baseline Monitoring ~ September 2013.DOC
- 05 I_Report Water Stress Monitoring Program Development Framework Tomago & ~ September 2013.DOC
- 052_ Letter Letter to Defence including results from inspection 11 03 13.PDF
- 052_ Minutes Defence liaison meeting July 2011.DOC
- 052_RAAF INSPECTION HW2007-1003 10.038 Letter Inspection 17 July 2012.DOC
- 053_impact of carbon pricing_IPART.pptx
- 054_ Board Paper Item 2.3_Greenhouse Gas and Energy Management Update July 2013.DOCX
- 054_Appendix A_GHG and Energy Management Policy July 2013.DOC
- 055_ Report Environmental Incident Management Audit August 2013.DOCX

Summary of Reasons for Grade

While Hunter Water has very good procedures and systems in place for managing and embedding its environmental commitments across the organisation (including contractors), there are some areas, which could be improved. In particular, it is recommended that attention be paid to document control for incident and emergency management, especially as this is also an area repeated in water quality management where emergency contact details were found to be out of date. While document control and management is not necessarily an interesting area in and of itself, ensuring that everyone is using the correct versions of emergency procedures and contact details during an emergency is crucial to responding to and managing an event in a timely and considered manner and in bringing the system back under control. It is for this reason that document control relating to emergency management is the reason that we have awarded high compliance rather than full compliance. Accordingly, this has been provided as a recommendation rather than an opportunity for improvement.

Discussion and Notes

Environmental commitment is clearly stated in the Community and Environment Policy.¹¹⁸ The policy applies to all Hunter Water Corporation employees, contractors and consultants. HWC ensures employee accountability for the policy through avenues such as training (online training module viewed at interview) and incorporation of environmental aspects and obligations in position descriptions and roles and responsibilities documents (the Position Descriptions for Manager Environment and Sustainability, Manager Infrastructure Delivery, Manager Planning, Manager System Operations, Manager Treatment Operations, Operations Team Leader and EMS roles and responsibilities were viewed post interview). A Training Needs Analysis was viewed at the interview clearly showing how environmental training needs are captured and for whom and how they are addressed. The Work Health and Safety Manual (provided post interview) includes information on roles and responsibilities for key personnel (including environment) as part of Hunter Water's Integrated Quality Managerent System.¹¹⁹ Performance and development reviews have clear environmental targets and obligations within them (review for Manager Environment and Sustainability viewed post interview). Note that a 'New Director Induction Guide' was viewed post interview and while outside of the audit scope, would have commenced within audit scope and does include an overview of Hunter Water's operating context including environmental commitments.¹²⁰ A list of regulatory instruments provided to new directors was viewed post interview and covers the key instruments of relevance for the directors.¹²¹ Environmental commitment is also clearly articulated in Hunter Water's Environmental Compliance and Enforcement Policy.¹²²

Scope: The scope of the EMS is for all of HWC's activities for the areas of Wastewater treatment aspects, Water supply aspects and Land management and miscellaneous items. The EMS and related aspects were sighted via the intranet at the interview.

The Legal Register provides a useful summary of information, however, it will need to be revised to improve understanding of HWC responsibilities including relevant sections of the legal and formal documents, reporting requirements and frequency. It is understood that the Legal Register has replaced a more comprehensive document and the current Legal Register represents a good format and should be continued (with the opportunities for improvement noted above).

Further, there appears to be no recognition of recycled water in the legal register (as part of the service chain) for which the Australian Guidelines for Water Recycling 2006 form a key instrument, and which needs to be recognised. Revision of the register also needs to include attention to jurisdiction and consistency in documentation. For instance, some instruments are noted as being Commonwealth (*National Greenhouse and Energy Reporting Act 2007* (Commonwealth)) and some are not (*Industrial Chemicals (Notification and Assessment) Act 1989*). Attention also needs to be paid to consistency between the worksheets as the superseded *Occupational Health and Safety Act 1983* is stated within the 'Environmental Legislation' worksheet but stated correctly as NSW *Work Health and Safety Act 2011* (WHS Act) within the Safety Legislation worksheet (although cited incorrectly). Also superseded is 'AS 4360:2004 Risk management' which has been replaced with AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines. Given that the register was compiled in May 2013, the new standard should have been cited. Hunter Water ensures that environmental legal and formal responsibilities are communicated to staff and contractors via a range of measures. Compliance audits are conducted annually. Hunter Water receives updates from

¹²² 050_Environmental compliance and enforcement policy.doc



¹¹⁸ Community and Environment Policy (CLAUSE 6.1.4.a - Community and Environment Policy -201213.DOC)

^{119 045}_ Manual - WHSMS Manual - CURRENT(2).doc

¹²⁰ 049_Director Induction Guide July 2013.pdf

¹²¹ 049_List of regulatory instruments provided to new Directors.pdf

LawLex.

Training: Hunter Water has a range of environmental training tools in place. *Due Diligence and Environmental Obligations Training for Managers and Supervisors* was sighted as well as the Online Environmental Management Awareness Training developed by Edmore. Hunter Water's *Environmental Training Needs Analysis* was sighted at the interview. A due diligence training attendance record was provided post interview but did not include the date for attendance at the training.

Recently, Hunter Water has engaged an Environmental Management Representative (EMR) to oversight works and other activities, which may have environmental impacts. EMRs report back to Hunter Water on findings (EMR Roles and Responsibilities document sighted post interview). EMR findings (including photographs) are recorded in a comprehensive report.¹²³

EMR findings, and any other corrective actions generated from whatever source, are tracked by Hunter Water via the *Planning and Operations Divisional Workspace* (viewed on line at interview). The Workspace tracking will eventually be replaced by Integrum, software, which will be installed as part of the Integrated Quality Management System development. Transition from Workspace to Integrum will have to be managed carefully to ensure that actions are not lost and the staff are trained in use of the new software. The Integrum software will also have a portal for contractors, which will help to integrate contractor involvement and compliance within Hunter Water's business operations. Hunter Water uses an environmental compliance tracking procedure for capital works to ensure that contractors comply with all contractual obligations relating to environmental impacts (example sighted post interview, level of compliance is tracked on a percentage basis – example for an inspection undertaken 12/10/12 was viewed).

Environment Management Plan 2013-2017: This EMP is stated as a key component of Hunter Water's EMS (EMS had its inception at Hunter Water in 1995). Several of the Goals were discussed at the interview to follow through progress of actions and targets that were within, or had originated within, the audit scope dates.

Goal I: Protection of Drinking Water Catchments. Hunter Water consults with RAAF and Newcastle airport in relation to specific water quality risks arising from the proximity of these facilities to the Grahamstown Dam and Tomago sandbeds catchments. This action had a date of 'annually'. Evidence to support this goal was provided post interview and included 052_Letter - Letter to Defence including results from inspection 11 03 13.PDF and 052_RAAF INSPECTION HW2007-1003 10.038 Letter - Inspection 17 July 2012.DOC. The evidence supports the fact that the goal is being addressed and embedded into Hunter Water's environmental and drinking water commitments.

Goal 2: Reliable Supply of Drinking Water with Minimal Environmental Impacts. An action within this goal was to develop an ecological monitoring program to assess the effects of groundwater extraction on the ecology of ground water dependent ecosystems, due December 2013. The Tomago & Tomaree Groundwater Source Ecological Baseline Monitoring Program (dated September 2013 but with development during the scope of the audit) and Water Stress Monitoring Program: Development Framework Tomago and Tomaree Groundwater Sources were provided post interview as evidence. Note that the Water Stress Monitoring Program: Development Framework Tomago and Tomaree Groundwater Sources was dated September 2013 but the document history was undated and therefore, while it is assumed that development of the program was within the audit scope, it is not explicit.

Goal 7: Investigations into understanding Clean Energy Future obligations were presented to IPART in October 2012 and a Powerpoint presentation was provided as evidence post interview (053_impact of carbon pricing_IPART.pptx). Hunter Water also keeps its board appraised of clean energy issues and a board paper was provided as evidence of this post interview.¹²⁴ A Greenhouse and Energy Management Policy (provided post interview) has also just been implemented.¹²⁵

Goal 9: Emergency preparedness and response is stated as being a priority for the organisation with the statement that crossbusiness emergency response preparedness and training should be implemented. The following was provided post interview 'Internal Audit Report Environmental Incident Management August 2013'. Arising from this audit report was:

"Actions for improvement largely focus on review of documentation to improve consistency with other systems including the WHS and integration with IQMS and increasing the awareness of environmental incident management across the broader organisation."

While document control and management is not interesting in an off itself, along with training, it is absolutely fundamental to good systems management. It also noted that the internal audit report cited above did itself not include a document control and history sheet. Hence, coupled with the findings in water quality (that the emergency contact details are not up to date), the auditors endorse the need to further integrate and embed the importance of emergency and incident management within the organisation.

Goal II (page I3): Improvement of environmental management practices: One of the objectives is to periodically undertake audits of environmental performance. Environmental Audit Report Orangeville Waste Contract May 2013, Internal Audit Report Environmental Compliance of Capital Works June 2013, Internal Audit Report EMS Implementation Progress Audit (undated) and Audit and Risk Management Internal Audit Report Environmental Audit of Treatment Plant Chemical Storage and Stormwater Management 30 October 2012 were sighted. The Internal Audit Report EMS Implementation Progress Audit noted that not all the environmental aspects of the business are yet covered and that while "the framework exists, Hunter Water's EMS requires additional work to ensure that it addresses actual or potential system, environmental, certification or stakeholder issues." It is understood that this issue will be addressed as part of the ISO 14000 certification goal for 2014-2015.

¹²⁴ 054_ Board Paper - Item 2.3_Greenhouse Gas and Energy Management Update - July 2013.DOCX – note that the date of the paper is just outside the audit scope but was developed within scope and includes information relating to 2012/2013 environmental achievements. ¹²⁵ 054_Appendix A_GHG and Energy Management Policy - July 2013.DOC



 $^{^{\}rm 123}$ Example for Lochinvar and Cessnock Reservoir works 16/01/13 was sighted.

The Orangeville Audit Report also highlighted issues with contractor management and contract operating context. However, with evidence provided post interview and via the audit interviews, it appears that Hunter Water is well on top of managing its contractors (e.g. Compliance Tracking Procedure Waratah Emergency Storage Upgrade, Environment Clauses in Treatment Operations contract).

Risk assessment: Community and Environment Committee Business Paper (draft produced for meeting on 26 September 2013) showed the high and extreme controlled risks. The Risk Register (revised 2012) was also viewed. The way that the risk events are articulated could be improved e.g. Risk No. 22 'Rain gauges not operating correctly resulting in early warning system for floods.' – it is not clear what this event really means. It may also be possible to roll up some of the events to make the register more manageable. Overall the Risk Register satisfied the fundamental requirements for an environmental risk register. It is understood that the board is increasingly asking for more information on environmental risks (board paper HW2013-830.001, on inclusion of environmental non-compliance to the strategic risk profile was noted, but outside of scope), which will help cement commitment to environmental risk management. Actions arising from the risk assessment process are captured in the

Energy savings: The SKM (2013) report noted that Hunter Water could make substantial energy savings resulting in \$ and Greenhouse gas emission savings.

Document control and editing issues were noted in some of the documents. For instance, the EMP page numbers seem to be incorrect i.e. not sequential, the *Internal Audit Report EMS Implementation Progress Audit* is undated and has no page numbers or document history table. The SKM (2013) audit report provides an excellent example of document history that Hunter Water could consider for its documents. In the Orangeville Waste Contract Audit Report, the incorrect date is used on the *Environmental Planning and Assessment Act* – it should be 1979 but 1977 is quoted. While this inconsistency may seem minor, this coupled with other issues such as errors in the Legal Register, speak to the need to address consistency in the legal and formal context.

Recommendation

• ER-2013/1 Emergency and Incident Management: Given the findings in water quality (that the emergency contact details are not up to date), and that an internal audit found issues with documentation control for environmental incident management, the auditors endorse the need to further integrate and embed the importance of emergency and incident management within the organisation. Timeframe: Immediate and upon review cycle.

Opportunity for Improvement

- Legal Register: Revise to improve understanding of HWC responsibilities including relevant sections of the legal and formal documents, reporting requirements and frequency.
- Legal Register: Ensure that Legal Register includes recycled water obligations including Australian Guidelines for Water Recycling 2006.
- Legal Register: Ensure that consistency in the Legal Register is addressed e.g. that the Work Health and Safety Act 2011 (NSW), ISO 31000 etc are consistent across the different worksheets, that legislation is correctly referenced by jurisdiction e.g. Industrial Chemicals (Notification and Assessment) Act 1989 (Cth).
- Risk Register: The way that the risk events are articulated could be improved e.g. Risk No. 22 'Rain gauges not operating correctly resulting in early warning system for floods.' The wording should probably read: 'Rain gauges not operating correctly resulting in lack of early warning system for floods.'
- **Document Control:** Some of the documents have editing and document control issues, which will need to be addressed. It is understood that HWC is putting in place an Integrated Quality Management System, which should address this document control issue. A due diligence training attendance record was provided post interview but did not include the date for attendance at the training. The Water Stress Monitoring Program: Development Framework Tomago and Tomaree Groundwater Sources was dated September 2013 but the document history was undated and therefore, while it is assumed that development of the program was within the audit scope, it is not explicit.
- **Operating Context:** Hunter Water could improve the way in which it manages its environmental legal and formal context by going back to first principles and articulating the products and services it produces/provides, identifying the relevant stakeholders for each of its products and services and then cross-referencing legal and formal requirements back to each stakeholder.
- System Transition: The transition from managing actions in the *Planning and Operations Divisional Workspace* to Integrum, will have to be managed carefully to ensure that actions are not lost and that staff are trained in use of the new software.

A.6 Section 8: Performance Monitoring

A.6.1 Reporting (sub-clause 8.2)

•	• •	,	1		
Sub-clause	Requirement				
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				
	b) making reports and other information publicly available, in the manner		Full compliance		
	8.2.2 Hu	nter Water must maintain sufficient record systems that enable it			
	to repor	t accurately in accordance with clause 8.2.1.			
Risk		Target for Full Compliance			
The risk posed to public		8.2.1 (a)			
health and environment by		Report to IPART for the relevant period and description of how it complies with the			
non-compliance of this clause		Report to NSW Health for the relevant period and description of h	now it complies with the		
could be significant as this		Reporting Manual obligations.	low it comples with the		
clause relates to the timely		8.2.1(b)			
and accurate reporting of		Evidence to show what information and how that information has b	been made publicly		
burn' and 'high velocity	/	available including website availability.			
impacts such as water	quality	0.2.2 Evidence of records management (e.g. TRIM SCADA data etc) incl	uding internal audit		
incidents as well as tim	nely	schedules to check data veracity and backups of data.	duling internal addit		
reporting and liaison w	vith key	Evidence to show that Hunter Water has appropriate records for t	he management of what is		
agencies such as INSVV	Health.	now a diversity of data with which utilities must be familiar including	g electronic and hard copy		
		information.			
Evidence Sighted		Evidence of how Hunter Water interrogates its records for reportin	ng purposes.		
Interviews 16 Septemb	ber 2013: ⁻	Tony McClymont (Water Quantity as part of the NWI audit)			
Interviews 17 Septemb	per 2013: (Carly Reid Small (Compliance Report), Pam O'Donoghue and Mark	Coleman (Drinking Water		
Quality), Martin Robar	ds (Recycl	ed Water Quality), Ray Cheng, Colin Cribb (Assets and Customers)	Belinda Jones		
(Customers), Angus Se	eberry, Me	eredith Thomas, Greg Bone (as part of the Environment audit).			
Pope Katie Jones Mar	tin Robarc	ram O Donognue, Mark Coleman (Granamstown Vvater Treatment Is (Branxton Wastewater Treatment Plant site visit)	Plant site visit), Deanne		
rope, Ratie Jones, mai	un nobare	brankton wastewater meatment hand site visity.			
Information provided p	ore-site vis	it			
 Report - Co 	mpliance a	and Performance - 2012-13 V10.pdf			
 Audit recom 	mendatio	ns [sic] letter to IPART.pdf			
 Significant ch 	nanges rep	ort to IPART.pdf			
Statement o	f Compliai	nce 2012-13.pdf Marca Caracter Starter and Parallelia, 21.1.1, 2012 and 5			
Letter to IPA Elupridation	ART from	Manager Corporate Strategy and Regulation 31 July 2013 on Econor	nic Level of Leakage		
Fmail notific:	ations to N	NSW Health confirming that water quality results were sent			
Notifications	to NSW	Health 2012-13.xls			
Letter to IPA	ART from	Managing Director on Significant Changes to Operating Licence 26 N	1arch 2013		
• 8.2.2 Aquam	nark Utility	Report.pdf			
8.2.2 Asset KPI Report (May 2013).pdf					
 8.2.2 Asset Management Results - May 2013.pptx 					
8.2.2 Customers and consumers monthly divisional reporting.PDF					
 8.2.2 Key Performance Indicators Definitions Handbook 2012-13.DOC 8.3.2 Maintenance Management Device March 2012) DOCY 					
 8.2.2 Maintenance Management Review Meeting (June 2013),DOCX 8.2.2 W/8 Revidential Water Consumption via 					
 822 W8 M 	0.2.2 vvo residential vvaler Consumption.xis 82.2 W8 Water Consumption Report Interface DOC				
 8.2.2 W8 W 	 8.2.2 W8 Water Consumption Report Output - Sample txt 				
• 8.2.2 W8 W	8.2.2 W8 Water Consumption Report Specification.doc				
• 8.2.2 W12 F	8.2.2 W12 Properties Connected Report.pdf				
• Clause 8.2.2	Clause 8.2.2 - Eflow - 201213.pdf				
• Clause 8.2.2	Clause 8.2.2 - Environmental Data source summary-201213.xls				
 Clause 8.2.2 	Clause 8,2,2 - HRNILSresults1 - 201213,PDF				
• Clause 8.2.2	Clause 8.2.2 - HRNILSresults2 - 201213.PDF				
• Clause 8.2.2	Clause 8.2.2 - HKNILSresults3 - 201213.PDF				

• Clause 8.2.2 - ShowerHeadExchange - 201213.xlsx

Clause 8.2.2 - SMEC - 201213.PDF Clause 8.2.2 - SoMo - 201213.pdf Clause 8.2.2 - system performance dashboard screenshots.doc ٠ Clause 8.2.2 - system performance data Graphs.xlsx Clause 8.2.2 - YieldCalc - 201213.pdf Clause 8.2.2 - YieldServiceLevels - 201213.pdf Clause 8.2.2 NSW Health Data - Notifications.XLS Clause 8.2.2. - yield75email - 201213.htm Email - Compliance and Performance Reports - Quality Assurance.VMBX Email - Quality Assurance Team Comments.VMBX Email - RE Compliance and Performance Reports - Quality Assurance.VMBX Email - to NSW Health - Feedback from Hunter Water - NHMRC Public consultation on disinfection information sheets.VMBX Email - Updated timeframes and information re Compliance Report process.VMBX LHWP Final Protocol_Roles and Responsibiilities_signed.pdf Information provided post interview 056.063.email to IPART with Compliance and Perf report and Statement of Complianc.pdf (sic) 057.Email to Health - Water Quality Notice - Lochinvar Reservoir - 9.11.2012.PDF 057.Emails to and from Health re Karuah Water Quality.PDF 057.img-health notification northwood st adamstown heights.pdf 058.Critera for Notification to NSW Health.xls 059.Extract from Lab Contract re NATA accreditation.doc 059.HWA Laboratory NATA Scope and Methods at June 2013.DOC 060.HW2009-427 6 10.005 File note - WATER DISCONTINUITY REPORT - Hampstead Way, Rathmines (406025).DOC 061.HW2009-427 6 10.004 File note - WATER DISCONTINUITY REPORT - Rawson Street, Aberdare (406193).DOC 062.brokenpayplans.xlsx 063.email to ipart re end of year reporting requirements.pdf 064.Significant changes report.pdf Summary of Reasons for Grade From the evidence provided and from discussions with HWC staff, it is clear that HWC has good systems in place to support the planning for, collation of information, recording of information, tracking of information, guality assurance of the veracity of information and reporting on its compliance and performance in accordance with the Reporting Manual. Information is made publicly available where required including posting of information on the website. This position is further supported from discussion with NSW Health, a representative of which was present at the water quality section of the audit. Discussion and Notes Hunter Water must report on a range of aspects of its business, namely: I. Water Quality 2. Water Ouantity 3. Assets 4. Customers and Consumers 5 Environment Quality Management 6 7 Performance Monitoring The Compliance and Performance Report was available on Hunter Water's website (viewed 10 September 2013) and aligned with the aspects identified above, apart from 'Quality Management' for which there is no obligation to report until a certified QMS is in place by June 2017. Clause¹²⁶ 2.1.1: Monthly water quality monitoring reports are required. Although out of scope, the August 2013 Water Quality Monitoring Report was available on Hunter Water's website (viewed 10 September 2013) and reports (as Drinking Water Quality Summary) in scope were provided by Hunter Water as follows: September 2012, October 2012, November 2012, December 2012, January 2013, February 2013, March 2013, April 2013, May 2013. July 2012 and August 2012 and June 2013 were viewed at the interview. Clause 2.1.2: Monthly fluoride reports are to be made to NSW Health containing the information required by the Code of Practice for Fluoridation of Public Water Supplies. The following were provided by Hunter Water: Data - HWC Fluoride Results Aug 2012.XLS Data - HWC Fluoride December 2012.XLS

¹²⁶ Where 'clause' is used in this section, it refers to the clause in the Reporting Manual.

- Data HWC Fluoride January 2013.XLS
- Data HWC Fluoride February 2013.XLSX
- Data HWC Fluoride March 2013.XLSX
- Data HWC Fluoride April 2013.XLSX
- Data HWC Fluoride May 2013.XLSX
- Data HWC Fluoride June 2013.XLSX

July 2012, September 2012, October 2012, November 2012 and the NSW Health quarterly monitoring results were viewed at the interview. The July 2012 results were checked for provision to NSW Health. An email supporting the provision of the July 2012 information to the 'waterqual' NSW Health email address on 2 August 2012 was viewed at the interview.

Clause 2.2.1 Drinking and Recycled Water Quality: Hunter Water must submit a Compliance and Performance Report on its management of the quality of Drinking Water and Recycled Water to IPART for each financial year, by I September 2013. The report was sighted and complied with the required reporting parameters. An email was provided as evidence of provision to IPART (063.email to ipart re end of year reporting requirements.pdf).

Clause 2.3.1: Hunter Water must immediately report to NSW Health any incident in the delivery of its Services which may adversely affect public health. Hunter Water provided an Excel document as its record of notifications to NSW Health (Framework - Notifications to NSW Health 2012-13.xls). While the register of notifications includes relevant and detailed information, it does not include who provided the information to whom and when. However, information on the provision of information was viewed at the interview. A specific example (*E. coli* presence at Karuah, Old Pacific Highway) was taken from the register and followed up by checking emails. All the required information was present.

Clause 2.4: Hunter Water must make the Monthly Water Quality Monitoring Report, and the compliance and performance report on Drinking Water and Recycled Water quality management (referred to in section 2.2.1 of the Reporting Manual) available free of charge (via website or for collection by members of the public).

Although out of scope, the August 2013 Water Quality Monitoring Report was available on Hunter Water's website (viewed 10 September 2013). It was checked at interview that Hunter Water only has the current month's water quality report on the website each time. Reports (as Drinking Water Quality Summary) in scope were provided by Hunter Water as follows: September 2012, October 2012, November 2012, December 2012, January 2013, February 2013, March 2013, April 2013, May 2013. Reports for July 2012 and August 2012 and June 2013 were sighted at the interview.

Clause 3 Water Quantity: The Compliance and Performance Report contains information relevant to Water Quantity (commencing page 31) and is clearly available on Hunter Water's website. The source of information and its veracity were discussed with Tony McClymont at the NWI interview; no issues of concern were noted. Meter validity, data maintenance and checking all appear to be in order and within expected bounds. Further, Hunter Water's approach to yield calculations has been externally checked by SMEC (as a peer review commissioned by the Metropolitan Water Directorate (MWD)). The objectives of the peer review were to assure the MWD that:

- The Model had been developed using an appropriate approach and the best available information and that this Model was appropriate for long term water planning and drought planning.
- That the methods used by HWC to calculate yield were also appropriate for long term planning and drought planning.

SMEC reported (8 May 2013) that the way Hunter Water calculates yield estimates is reasonable and reflective of current practice in this area. Hunter Water also provided reports on its showerhead exchange programs and washing machine loans program, which appear to be in order. Clause 3.3.1 requires Hunter Water to report on the economic level of leakage (ELL) from its drinking water network using an understanding of the Long Run Marginal Cost of water to determine if investment is prudent. There are two aspects to this clause, firstly that the Manager Corporate Strategy and Regulation did report to IPART in the required timeframe on how it was handling ELL and secondly, that the Lower Hunter Water Plan is being used to help fill the gap on understanding of a future requirement for potential source augmentation. Evidence of working closely with the MWD to better understand water security for the region includes a 'Roles and Responsibilities Protocol for Developing the Lower Hunter Water Plan' that has been signed by Hunter Water (17 July 2013) and the MWD (17 June 2013).

It is was also noted during the NWI indicators interview session that whilst minor adjustments for metering accuracy are not taken into account for reporting purposes, they are taken into account for water loss (leakage) calculations.

Clause 4 Assets: The Compliance and Performance Report contains information relevant to Assets (commencing page 43) and is clearly available on Hunter Water's website. Ray Cheng and Colin Cribb were interviewed in relation to the AOMS (Asset Operations and Maintenance System is an in house built application for managing data associated with the management of civil assets). All data uploaded to AOMS are quality assured with a daily audit of the data (depending on the type of job). Hard copy files of each unplanned interruption and how it was dealt with, are kept and were sighted at the interview. Copies are scanned and uploaded at the end of the job. Management and monitoring of mechanical and electrical asset maintenance is undertaken using the Ellipse Enterprise Resource Planning System. Collectively these systems (AOMS and Ellipse) have the ability to record all maintenance activity; records are analysed to enable reporting against performance KPIs. Hunter Water is currently implementing a project to combine their functionality, which should lead to a more streamlined reporting process.

Hunter Water has a system performance dashboard which is located on the intranet. Information is updated automatically. Evidence of the dashboard and system performance graphs was provided and discussed at the interview. As with the customer information below, it was pleasing to see that information is reviewed on a regular basis to allow trends to be picked up early and to facilitate reporting.
Hunter Water has subscribed to the Water Services Association of Australia's Aquamark Asset Management Benchmarking Program to facilitate assessment of its overall asset management performance. The most recent (2012) exercise resulted in the identification of a number of improvement opportunities, as reported in the Compliance and Performance Report. The results of the benchmarking exercise are discussed in more detail in Appendix A.3.1.

Clause 5 Customers and Consumers: Compliance and Performance Report contains information relevant to Customers and Consumers (commencing page 52) and is clearly available on Hunter Water's website.¹²⁷

Hunter Water produces a monthly report¹²⁸ to facilitate keeping on top of customer issues such as payment issues. To produce the report, an extract is requested from the Customer Billing System. Reports can be tailored from the billing system but testing is always undertaken before implementation to ensure the veracity of the data generated. Weekly checks of payment plans are also undertaken to ensure that any issues arising are captured and dealt with quickly. This approach appears to be best practice. Hunter Water has also modelled its Hardship Policy on the Australian Energy Regulator guidelines – again this appears to be a best practice approach (refer Appendix A.4.1 for further discussion). Post interview, HWC provided *062.brokenpayplans.xlsx* as evidence and while the report was for 13 September 2013, it included dates within the audit scope. The report clearly showed evidence of payment criteria including Current Outstanding Balance, Last broken pay plan date, Latest payment date and Latest payment amount.

Clause 6: Compliance and Performance Report contains information relevant to Environment (commencing page 65) and is clearly available on Hunter Water's website. Hunter Water has chosen to report against the goals in its Environment Management Plan. The goals were checked and mapped against the input for the Compliance and Performance Report. This approach should facilitate integration of reporting, compliance and implementation of environmental management and performance tracking overall.

Clause 8: Compliance and Performance Report contains information relevant to Performance Monitoring (commencing page 111) and is clearly available on Hunter Water's website.

Clause 9.1: Hunter Water submitted a letter to IPART on 'Audit recommendations' arising from previous audits.¹²⁹ The letter was submitted on 12 March 2013 and met the 31 March requirement as well as the content requirement in terms of a status update on audit recommendations. The auditor confirmed with IPART at the interview that IPART had received the letter in the required timeframe. Evidence was produced to show that the receipt date had been logged as 15 March 2013.

Clause 9.2: The report stated that there was no reporting this period against 'Opportunities for Improvement' as identified in previous audit reports. This statement was verified with Carly Reid Small at the audit.

Clause 9.3: Hunter Water must report on any significant changes to the Operating Licence by 31 March each year. A letter to this effect from the Managing Director to the IPART CEO was viewed dated 26 March 2013.¹³⁰

Clause 9.4: Hunter Water must submit to IPART, Hunter Water's statement of compliance, which must be in accordance with IPART's PWU Audit Guideline (Table #). Hunter Water submitted a Statement of Compliance to IPART clearly stating that Table # had been followed.¹³¹ The Statement of Compliance was undated, a criterion which is required in the PWU Audit Guideline. However, an email from HWC to IPART was provided post interview as evidence of the date of provision.¹³²

Quality Assurance: In general, quality assurance of data and planning for the reporting process are well executed at Hunter Water. Examples include alignment with the Framework for Management of Recycled Water Quality and Use where compliance and reporting requirements are captured within the Recycled Water Improvement Plan (Element 12 of the Framework) and the recycled water action task spreadsheet (viewed at the interview as part of the Workspace site). Further alignment for reporting includes for exception reporting, which aligns with the Critical Control Point elements of the Frameworks (Drinking Water and Recycled Water). However, there appeared to be a disconnect between what is provided within CCP tables, what is reported in the Compliance and Performance Report and the Criteria for Notification to Health. When reviewed at the interviews, the auditors were informed that Hunter Water normally operates on what is within SCADA and that the limits in SCADA are more stringent than the Criteria for Notification to Health document (for operational reasons i.e. that it is important to know that a barrier may be moving towards non-compliant output well before a critical limit is met). SCADA and critical limit alignment were checked during the site visit of Grahamstown Water Treatment Plant and found to be acceptable. The licence water quality criteria are also reported against for key water quality monitoring parameters – in fact Hunter Water Australia has penalties associated with not meeting certain water quality criteria (and this was verified with information viewed at the site visit). The Water Quality Committee reviews information from Hunter Water Australia in relation to positive results and the following document was sighted at interview - Hunter Water Laboratories Details of Positive Results Against Licence Criteria Period 9 March 2013 (tabled at the Water Quality Committee). Hunter Water requires NATA

¹²⁷ The following were also sighted on Hunter Water's website:

- 2013: Meeting Agenda 28 May 2013, Community Consultative Forum Papers 29 January 2013
- 2012: Meeting Summary 25 September 2012, Community Consultative Forum Papers 25 September 2012
- Customer Contract (http://www.hunterwater.com.au/About-Us/Our-Organisation/Governance/Customer-Contract.aspx)
- Dispute Resolution information (http://www.hunterwater.com.au/Your-Account/Managing-Your-Account/Dispute-Resolution.aspx)

Payment Assistance Information (http://www.hunterwater.com.au/Your-Account/Managing-Your-Account/Payment-Assistance/)

¹²⁸ Customer Services Monthly Key Result Areas KPIs for June 2013.

¹²⁹ Audit reccommendations [sic] letter to IPART.pdf

- ¹³⁰ Significant changes report to IPART.pdf
- ¹³¹ Statement of Compliance 2012-13.pdf

¹³² 063.email to ipart re end of year reporting requirements.pdf



accreditation for all key water quality monitoring parameters. HWC provided evidence to support both the scope and the guality assurance requirements from its contract with Hunter Water Laboratories.¹³³

As well as storage of information, Hunter Water appears to use best practice approaches to monitoring and data synthesis, for instance, weekly and monthly reporting for Customer Payments are conducted.

While Environment and Recycled Water in particular have embraced the use of the Divisional Workspace for the tracking and reporting of actions, the Drinking Water Quality area could benefit from a more systematic approach to how it reviews and tracks actions - including those arising from the risk assessments (and other areas) and how they are prioritised and tracked. It is likely that the use of Integrum in the future will help to consolidate all lodging and tracking of actions.

In general, TRIM appears to be well used for the storage and retrieval of records.

Opportunity for Improvement

Tracking of Information Receipt by IPART: HWC should consider implementing improvements in the way that it tracks information submissions to ensure that they have been received by IPART and not rely on the fact that information has 'left' HWC's responsibility.

A.6.2 Provision of Information (sub-clause 8.3)

Sub-clause	Requirement				
8.3 Provision of Information	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.				
Risk		Target for Full Compliance			
The risk posed to public health and environment by non-compliance of this clause could be significant as this clause relates to the timely and accurate reporting of information to the primary NSW agency for public health, NSW Health, as and when		Evidence of being contacted by NSW Health on water quality matters during 2012/13 and how the contact was logged and dealt with internally by Hunter Water. Evidence to show how Hunter Water responded to NSW Health's request for information and whether the response complied with the required format and in a timely manner.			
requested.					

Evidence Sighted

Interview with Pam O'Donoghue, 17 September 2013.

Discussion with Philippe Porigneaux post Water Quality interview 16 September 2013.

Email - to NSW Health - Feedback from Hunter Water - NHMRC Public consultation on disinfection information sheets.VMBX Summary of Reasons for Grade

Hunter Water was able to provide evidence of contact on water quality matters between NSW Health and Hunter Water. Further, a NSW Health representative attended the Water Quality interview. No issues were raised by NSW Health relating to the provision of information or this licence sub-clause in general.

Discussion and Notes

At interview, it was clear that Hunter Water has a good relationship with NSW Health and responds to information requests when they arise. A recent example was a request from NSW Health to provide comment on information sheets for water treatment operators as part of the NHMRC Public Consultation on the same. An email was provided as evidence to show Hunter Water's response. In addition, a representative from NSW Health (Philippe Porigneaux) was present at the Water Quality interviews on 16 September 2013 and confirmed Hunter Water's position in relation to the provision of information when requested. There were no issues of note arising from NSW Health in relation to timely provision of information from Hunter Water.

^{133 059.}Extract from Lab Contract re NATA accreditation.doc; 059.HWA Laboratory NATA Scope and Methods at June 2013.DOC

¹³⁴ Note for all of the sections, 'Evidence Sighted' includes Hunter Water's responses to the audit questionnaire uploaded to IPART's FTP site.

D Hunter Water's Statement of Compliance



Statement of compliance

Statement of compliance 2013 For 2012/13

Submitted by Hunter Water Corporation

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

Hunter Water reports as follows:

- 1. This statement documents compliance during 2012-13 with all obligations to which Hunter Water is subject by virtue of its operating licence.
- 2. This report has been prepared by Hunter Water with all due care and skill to the best of our knowledge of conditions to which it is subject under the *Hunter Water Act 1991*.
- Schedule A provides information on all obligations with which Hunter Water did not comply during 2012-13.
- 4. Other than the information provided in Schedule A, Hunter Water has complied with all conditions to which it is subject.
- 5. This compliance report has been approved by the Managing Director and the Chairman of the Board of Directors of Hunter Water.

DATE:

Signed

Name: Terry Lawler

Designation: Chairman

DATE: Signed

Name:

Kim Wood

Designation: Managing Director

Schedule A Non Compliances1

Table #	List obligations breached, including a brief description of each obligation	Descril i Date ii Nate (inc cus iii Res app iv Rea v Ren v Ren vi Acte	be: e or period of non-compliance ure and extent of non-compliance luding whether and how many tomers have been affected) ults of any monitoring (where licable) sons for non-compliance nedial action taken ual/anticipated date of full compliance
1	Clause 2.2.2 (Operating Licence)	i. The Pla Pla It w wor The app is s ii. Not sch Aus (AC AG req Sch 1,6 iii. Not iv. Hu to b Yea v. Act with Rec per rec. with disc	e Recycled Water Quality Management n was accepted by NSW Health in 2009. vas agreed that Hunter Water would rk towards full compliance by June 2015. e five year Improvement Plan has been proved by the Department of Health and set to be completed by June 2015. t all of Hunter Water's recycled water nemes currently comply with the stralian Guidelines for Recycled Water SRW). There are 12 elements in the RW against which compliance is uired. Hunter Water's Recycled Water nemes are compliant with elements ,7,8,9 & 12 of the Framework only. t applicable. Inter Water put in place a detailed plan be compliant by 2015. This is the Five ar Improvement Plan. ive program to achieve full compliance n a dedicated Recycled Water Team. All cycled Water Schemes are audited as the guidelines and improvements ommended. Quarterly meetings are held n major Recycled Water customers to cuss results. ie 2015.
2	Clause 5.2.3 (Operating Licence)	i. 201 ii. Hur info ded via only cus ii. Not v. The bill.	2-13 reporting year. Inter Water provided certain customer rmation with bills. In addition to this a licated information brochure was issued direct mail. The non-compliance relates y to the insertion of brochures into tomer bills. All customers were affected. applicable. applicable.

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

		v. vi.	Given the importance of pending pricing changes due to a new pricing determination scheduled for June 2013, a communication plan was developed in May 2013 to ensure that customers received important information about new price structures together with the information required under the Operating Licence. This information was provided to customers in the 2012-13 period in a dedicated communication pack. This information was sent separately to the customer bill. Full compliance was not achieved due to the information being provided separately to customer bills.
3	Clause 5.4.3 (a) (Operating Licence)	i. ii. iv. v. vi.	2012-13 reporting year. Information regarding the Procedure for Payment Difficulties and Actions for non- payment was sent to customers in an information pack but not with the bill. Not applicable. The information was not included with the bill. In the context of the pricing determination and pricing changes a dedicated communication pack was prepared for customers as outlined in 2. This information was included in the information pack. This information was sent separately to the customer bill. Full compliance was not achieved due to the information being provided separately to customer bills.
	Clause 2.1.2 (Reporting Manual)	i. ii. ii. v. v. vi.	February 2013. The data file showing the fluoride results for February was prepared but not attached to the covering email that was sent to NSW Health on 5 February 2013. NSW Health advised Hunter Water that the attachment was missing on 3 April 2013. A return email was sent with the missing information on the same day. Not applicable. Operator error. Revise relevant system operator process to include a review of attached data. Not applicable.