

**Water Corporation**

**2009 Drinking Water Quality  
Management Performance Review**

**August 2009**

# Contents

Executive summary	4
Introduction	4
Background	4
Overall observations and results	5
Methodology	7
Detailed findings	9
Objective 1	9
Objective 2	14
Objective 3	15
Objective 4	16
Observations and recommendations	17
Statement of responsibility	19
Appendix A Terms of reference (Objective and scope statement)	20
Appendix B Risk events, consultation & documents examined	21
Appendix C Table - Importance of recommendations	23

This report is intended solely for the information and internal use of the Water Corporation and the Department of Health in accordance with our letter of engagement of 6 May 2009, and is not intended to be and should not be used by any other person or entity. No other person or entity is entitled to rely, in any manner, or for any purpose, on this report. We do not accept or assume responsibility to anyone other than the Water Corporation and the Department of Health for our work, for this report, or for any reliance which may be placed on this report by any party other than the Water Corporation and the Department of Health.

## **About Deloitte**

Deloitte provides audit, tax, consulting, and financial advisory services to public and private clients spanning multiple industries. With a globally connected network of member firms in 140 countries, Deloitte brings world class capabilities and deep local expertise to help clients succeed wherever they operate. Deloitte's 150,000 professionals are committed to becoming the standard of excellence.

Deloitte's professionals are unified by a collaborative culture that fosters integrity, outstanding value to markets and clients, commitment to each other, and strength from diversity. They enjoy an environment of continuous learning, challenging experiences, and enriching career opportunities. Deloitte's professionals are dedicated to strengthening corporate responsibility, building public trust, and making a positive impact in their communities.

Deloitte refers to one or more of Deloitte Touche Tohmatsu, a Swiss Verein, and its network of member firms, each of which is a legally separate and independent entity. Please see [www.deloitte.com/au/about](http://www.deloitte.com/au/about) for a detailed description of the legal structure of Deloitte Touche Tohmatsu and its member firms.

## **About Deloitte Australia**

In Australia, Deloitte has 12 offices and over 4,500 people and provides audit, tax, consulting, and financial advisory services to public and private clients across the country. Known as an employer of choice for innovative human resources programs, we are committed to helping our clients and our people excel. Deloitte's professionals are dedicated to strengthening corporate responsibility, building public trust, and making a positive impact in their communities. For more information, please visit Deloitte's web site at [www.deloitte.com.au](http://www.deloitte.com.au).

Liability limited by a scheme approved under Professional Standards Legislation.

Confidential - this document and the information contained in it are confidential and should not be used or disclosed in any way without our prior consent.

© 2009 Deloitte Touche Tohmatsu. All rights reserved.

# Executive summary

## Introduction

On 18 July 2001 the Department of Health (**the Department**) and the Water Corporation (**the Corporation**) entered into a Memorandum of Understanding for Drinking Water (**MoU**) for managing drinking water quality in the Corporation's area of control. The MoU was reviewed and re-approved on 5 November 2007. Section 16.5 of the current MoU provides for the Department to conduct a performance review of the Corporation's systems and databases used to manage and report drinking water quality. In consultation with the Economic Regulatory Authority (**the Authority**), the Department commissioned this review to cover the three year period from 1 July 2006 to 30 June 2009, in line with the Corporation's Operating Licence audit.

In accordance with the Objective and Scope Statement<sup>1</sup> accepted by the Senior Policy Officer, Department of Health and the Manager Drinking Water Quality, Water Corporation, this report presents the results and conclusions of the performance review performed by Deloitte on behalf of the Department and the Corporation.

The performance review was conducted in accordance with the requirements of the Scope and Objective Statement signed on 6 May 2009, the Corporation's general conditions of contract for consultancy services to which Deloitte has agreed, and in relation to:

- Objectives 1 and 4 of this engagement, where a determination of compliance or an assessment of status was required, we conducted our work in accordance with Australian Standard on Assurance Engagements ASAE 3500 "Performance Engagements".
- Objectives 2 and 3 of this engagement, where consideration of adequacy and effectiveness was required, the procedures we performed did not constitute an assurance engagement in accordance with Australian Standards for Assurance Engagements, nor did they represent any form of audit under Australian Standards on Auditing and consequently, no assurance conclusion or audit opinion is provided.

This report should be read in the context of our Statement of responsibility<sup>2</sup>.

## Background

The Corporation's Drinking Water Quality Branch (**DWQB**) is custodian of water quality management from "catchment to tap". The role of DWQB is to facilitate the supply of safe drinking water, which complies with the requirements of the Department. As the consequence of contamination, water-borne illness and/or water-borne fatalities will always have the potential to be a catastrophic event. DWQB's approach is to implement measures which reduce the likelihood of such events.

Schedule 1 of the MoU sets out the drinking water quality requirements that the Corporation is required to meet.

Binding Protocols 2, 3 and 4 of the MoU set out the drinking water quality management Protocols and operating manuals that enable the Corporation to demonstrate compliance with Schedule 1 and any additional direction given by the Department.

---

<sup>1</sup> Refer to Appendix A

<sup>2</sup> Detailed at the end of this report

**Deloitte:** 2009 Drinking Water Quality Management Review

*This report is intended solely for the information and internal use of the Water Corporation and the Department of Health and should not be used or relied upon by any other person or entity.*

The principal drinking water quality management operating manuals used by the Water Corporation during the period subject to review were:

- *S010 - Drinking Water Quality Performance* (latest version dated 12 March 2009), which includes standards and guidelines used by the Corporation and reflects the requirements of the MoU
- *Drinking Water Sampling Procedures* (latest version dated July 2008), which includes work guidelines and work instructions used by the Corporation and reflects the requirements of the MoU.

A computerised Water Quality Management System (**WQMS**) is used throughout the Corporation to apply the requirements prescribed by S010. WQMS automates many aspects of water quality management and acts as the central database for all information on drinking water quality including sampling program design, sampling analysis, monitoring and reporting.

## Overall observations and results

### Objective 1

- **S010's interpretation and application of Drinking Water Guidelines and the Department's directions**
- **Regional compliance with S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 and 4 of the MoU**

Through our examination of key documents, discussions with key stakeholders, examination of WQMS, observations of related processes, procedures and operations, and sample testing, nothing came to our attention, except for the item in the observations and recommendations section of this report relating to sampler competency and accreditation, to indicate that in all material respects for the period 1 July 2006 to 30 June 2009, the Corporation's:

- "Drinking Water Quality Performance" S010 manual does not accurately interpret and apply the combined requirements of the:
  - Guidelines for Drinking Water Quality in Australia (1996)
  - Australian Drinking Water Guidelines (2004)
  - additional directions by the Department of Health
- nominated regions have not complied with:
  - S010 - Drinking Water Quality Performance
  - Drinking Water Sampling Procedures
  - Binding Protocols 2, 3 and 4 of the MoU as appropriate.

### Objective 2

#### **Adequacy and effectiveness of WQMS**

Through our examination and testing of WQMS and the key components of the Corporation's drinking water quality management processes as described at Objective 1 above, we observed that during the period 1 July 2006 to 30 June 2009, the Corporation:

- managed and reported on the requirements within S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 & 4 of the MOU, as appropriate
- monitored compliance in the regions with these requirements, as appropriate.

**Deloitte:** 2009 Drinking Water Quality Management Review

*This report is intended solely for the information and internal use of the Water Corporation and the Department of Health and should not be used or relied upon by any other person or entity.*

### Objective 3

#### **Adequacy and effectiveness of the management framework employed by DWQB**

Through our examination of key documents, discussions with key stakeholders, examination of WQMS, observations of related processes, procedures and operations, and sample testing, in relation to the management framework, we observed that the Corporation:

- continued to further strengthen its reporting and monitoring mechanism for its drinking water quality obligations
- maintained a resourced management structure and assigned responsibilities to staff for managing drinking water quality
- established and maintained processes and procedures which are designed to facilitate its compliance with the requirements of the MoU in relation to drinking water. The continued support and enhancement of WQMS has further consolidated the Corporation's ability to meet its drinking water quality objectives
- continued to demonstrate a strong commitment to monitoring and achieving its compliance with the requirements of the MoU in relation to drinking water.

### Objective 4

#### **Follow up of previous review recommendations**

Through discussions with key stakeholders and review of documentation, we observed that the one recommendation from the 2006 review has been addressed and closed out by the Corporation.

Further explanation of the nature of the assurances provided by this engagement is provided at the "Statement of responsibility" section of this report.

# Methodology

## Phase 1: Risk assessment

This performance review took into consideration the material and/or high risk components of the Corporation's drinking water quality management obligations, then focussed on and assessed those activities and management control systems in proportion to the materiality and risk relating to the requirements of the MoU and Departmental requirements.

## Phase 2: Testing and analysis

### Objective 1

- **S010's interpretation and application of Drinking Water Guidelines and the Department's directions**
- **Regional compliance with S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 and 4 of the MoU**

In conducting our work for Objective 1, our procedures were designed to provide limited assurance as defined by ASAE 3500 so that our results and conclusions fairly relate to the key aspects of the Corporation's activities during the period subject to review.

In order to establish the extent to which the Corporation demonstrated compliance with the combined requirements of the 1996 and 2004 Drinking Water Guidelines and Departmental directions during the review period, we:

- confirmed our understanding of and documented the drinking water quality management process as it is designed to comply with S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 and 4 of the MoU
- examined how this process flows through into performance reporting, particularly in relation to notifiable events
- performed walk-through and sample testing of key drinking water quality management activities and control systems.

### Objective 2

#### **Adequacy and effectiveness of WQMS**

We examined the adequacy and effectiveness of the WQMS to:

- manage and report on the requirements within S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 and 4, as appropriate
- enable the Water Corporation to monitor compliance in the regions with these requirements, as appropriate.

**Deloitte:** 2009 Drinking Water Quality Management Review

*This report is intended solely for the information and internal use of the Water Corporation and the Department of Health and should not be used or relied upon by any other person or entity.*

### Objective 3

#### **Adequacy and effectiveness of the management framework employed by DWQB**

In examining the adequacy and effectiveness of the management framework employed by DWQB, we considered the relevance of the DWQB's structure, plans, operations and Protocols to the expectations and requirements of the MoU and more broadly, to the 1996 and 2004 Drinking Water Guidelines.

We primarily focussed on the level of relevant competence displayed by the management and key personnel of the DWQB, Water Production Branch, Perth Region and Goldfields & Agricultural Region<sup>3</sup>.

We also specifically examined whether:

- the water quality management performance has been subjected to continual review
- water quality exceptions are adequately identified and evaluated
- remedial plans are appropriate and timely
- communication between the DWQB and the Department is adequate.

### Objective 4

#### **Follow up of previous review recommendations**

For the one recommendation from the 2006 review, we examined the relevance and significance to the objectives of this review and where appropriate, considered further progress made in closing out the recommendation.

### Acceptance of scope and methodology

The scope and methodology of this performance review was agreed in advance by the Senior Policy Officer, Department of Health, the Manager Drinking Water Quality, Water Corporation and the Manager Compliance, Water Corporation.

---

<sup>3</sup> Our examination focussed on:

- the Perth Region due to the high volume of drinking water services provided within the Region
- the Goldfields & Agricultural Region, as the country region nominated by the Department (noting that Mid West Region was included in the 2006 review and Great Southern Region was included in the 2004 review).

**Deloitte:** 2009 Drinking Water Quality Management Review

*This report is intended solely for the information and internal use of the Water Corporation and the Department of Health and should not be used or relied upon by any other person or entity.*

# Detailed findings

## Objective 1

**Determine whether “Drinking Water Quality Performance” S010 manual accurately interprets and applies the combined requirements of the:**

- **Guidelines for Drinking Water Quality in Australia (1996)**
- **Australian Drinking Water Guidelines (2004)**
- **additional directions given by the Department of Health.**

*Previous determinations on S010’s interpretation and application*

S010 (version 1.0) was initially developed by the Corporation in conjunction with the Department and formally implemented in 1998. S010 and the Corporation’s drinking water quality management processes were designed to adopt the 1996 Drinking Water Quality Guidelines.

In 2006, the performance review of the Corporation’s drinking water quality management requirements, conducted by Deloitte on behalf of the Department and Corporation, confirmed that S010 had continued to reflect the Department’s drinking water requirements as they are specified in the MoU, the 1987 Drinking Water Guidelines and relevant components of the 1996 Drinking Water Guidelines.

The most significant difference between the 1996 and the 2004 Drinking Water Guidelines is the latter’s reference to the “Framework of Management of Drinking Water Quality” (the Framework). The Framework is a combination of 12 elements which are considered good practice for systemic management of drinking water supplies. This change had no impact on the Corporation’s operational practices, which were subject to this performance review<sup>4</sup>.

*S010’s interpretation and application during the review period*

The Corporation’s current version of S010 is dated March 2009. The changes to S010 since the previous review in 2006 are minor, with changes made to the fluoride tables and formatting.

Via review and comparison of S010 to the guidelines we noted:

- the value guidelines for microbiological, chemical, physical and radiological monitoring requirements contained in S010 align with the Australian Drinking Water Guidelines (1996/2004), with the exception of copper, lead, zinc, nitrates/nitrites, pesticides, Hydrocarbons A and Hydrocarbons B monitoring requirements (each of which are chemical or physical). These variations were formally agreed with the Department in 1999
- the Corporation appears to have processes and systems in place to manage the various water service types outlined in section 5.1 and schedule 3 of the MoU and section 5.1.2 of S010.

---

<sup>4</sup> The scope of this performance review does not include an assessment of compliance with the Framework.

## Conclusion

Nothing has come to our attention to indicate that, in all material respects, S010 (version dated 9 March 2009) and the Corporation's drinking water quality management processes have not continued to effectively interpret and apply the combined requirements of the 1996 and 2004 Drinking Water Guidelines and Departmental directions.

### **Determine whether nominated regions comply with S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 and 4 of the MoU**

In assessing the Corporation's compliance with S010, Drinking Water Sampling Procedures and the MoU, we considered the application of the following activities performed by the DWQB, Water Production Branch, the Perth Region and the Goldfields & Agricultural Region.

#### *Adequacy, frequency and currency of sampling programs*

We observed that WQMS manages the adequacy, frequency and currency of sampling programs via inbuilt parameters for microbiological, chemical and radiological sampling in line with the requirements specified within S010.

Through our testing and discussions with staff, we also observed that the Corporation has applied sound procedures and processes for maintaining the adequacy, frequency and currency of its sampling programs, such as through the use of the monthly Governance report of selected results and performance measures distributed to all Regions and key stakeholders and through inbuilt controls in WQMS.

We also tested sampling programs' consideration of key characteristics in accordance with S010 and the mechanisms in place for reviewing and renewing sampling programs.

#### *Appropriateness of sampling locations*

'Assessable' sampling locations used throughout the review period were based on those that were initially established in 1995, with the following modifications:

- additions due to increases in locality population
- a small number of sampling locations discontinued for assessable sampling due to changes in the relevant water scheme, a reduction in locality population, or for safety reasons
- re-location of monitoring points resulting from ad hoc reviews and the implementation of Water Safety Plans.

S010 provides for the Corporation's management to assess the appropriateness of sampling locations. This is achieved via review of the adequacy of sampling programs and locations (at least every two years) to confirm that they continue to be representative of the supply to the consumer. Procedures are also applied for the introduction of new sampling points to meet changes in customer demographics.

During the previous review period, sampling point locations were determined via the competence and experience of local staff and Water Safety Plans. During this review period the process has been enhanced with maps being used such as Litespatial and Netmaps.

*Completeness of sampling, verification of samples actually taken and reporting of results*

Our observations and testing indicate that WQMS manages the Corporation's assessable sampling and test results process through its:

- scheduling processes, including re-scheduling in accordance with strict timeframes prescribed by S010 and enforced via inbuilt controls in WQMS
- laboratory results recording processes, including:
  - completeness checks to ensure all samples received by laboratories are analysed and results reported
  - interfaces and validation checks (via the Generic Laboratory Interface software) to minimise data entry error or manipulation prior to importing into WQMS
  - standard deviation testing of the integrity and reasonableness of results returned
- reporting capabilities.

WQMS' production of laboratory analysis request forms and sample bottle labels for sampling activity assists to minimise Corporation and laboratory staff error in handling samples. The use of exception reports also assists the Corporation to maintain the integrity of this process.

We also determined that for our test sample of drinking water quality samples performed:

- the Corporation's process for identifying, following up and reporting missed samples appears to be in accordance with the MoU
- samples were taken, analysed and the results reported in accordance with the requirements of Drinking Water Sampling Procedures and S010
- laboratories taking assessable samples were NATA accredited.

Note: Of all laboratories used by the Corporation, Dalcon Environmental Pty Ltd is not currently NATA accredited. Dalcon is used for algal monitoring, which does not relate to assessable samples and thus do not require NATA accreditation.

Further, the requirements of the Drinking Water Sampling Procedures appear to be well communicated to and understood by samplers and drinking water quality coordinators/managers.

*Result monitoring and remedial action taken*

Our observations and testing indicate that WQMS appears to manage the Corporation's compliance assessment and reporting requirements through:

- appropriate and timely reporting on missed samples, missed analyses and overdue samples
- appropriate and timely reporting of all positive results returned (known as "violations"), in accordance with the MoU and Binding Protocol 4
- the maintenance of an accurate licence range table to ensure violations are recognised and reported in accordance with S010 and Binding Protocol 4
- reporting incidents captured in Binding Protocol 4 to the Department for ultimate sign-off of the adequacy of the Corporation's remedial activity.

**Deloitte:** 2009 Drinking Water Quality Management Review

*This report is intended solely for the information and internal use of the Water Corporation and the Department of Health and should not be used or relied upon by any other person or entity.*

We note that no events have occurred during the review period that resulted in the need to implement the Joint Agency Coordination Plan (JACP). JACP training between the Department and the Corporation has taken place during the period, which is in accordance with Binding Protocol 3.

We also observed that S010 and Protocols established with the Department provide strong direction for initiating and reporting on remedial actions.

For a test sample of violations reported and corresponding remedial activity, we assessed that supporting documentation maintained reflects the requirements of S010 and notification to the Department was in accordance with the Protocols.

*Controls over modifications to WQMS data*

As part of the process of reviewing sample results for accuracy and validity, the Corporation occasionally identifies results which require correction within the WQMS database. The Corporation's procedures for making a change to laboratory data (both assessable and operational data) in WQMS includes:

- where the sample result incorrectly raises a violation, two senior DWQB staff present a formal request via a standard form to the Corporation's Business Services Group for processing the correction (DWQB does not have access to directly process changes)
- a monthly WQMS report of changes to laboratory data is subject to review by DWQB executive and the results included in the monthly Governance report distributed to all Regions and key stakeholders
- formal agreement by the Department, as evidenced in the minutes of the monthly Department/Corporation meetings.

In our sample testing of modifications to sample results and laboratory analyses, there was no evidence of assessable results being improperly manipulated.

*Treatment of notifiable events*

Through our examination of WQMS, we observed that WQMS accurately reflects the acceptable levels of microbiological, chemical and radiological traces in water samples, as prescribed by S010 and the MoU. Based on these acceptable levels, in the event of a violation being assessed as either level 1 or level 2 notifiable events, WQMS prompts users to initiate remedial action and report the violation via email to the prescribed Corporation representatives, who in turn notify Department representatives within the prescribed timeframe.

For the period 1 July 2006 to 30 June 2009, the Corporation reported 13 level 1 events and 76 level 2 events. Each of these events is reviewed at the monthly Department/Corporation audit meeting and ultimately will be closed out by the Corporation, to the satisfaction of the Department.

*Training, supervision, accreditation and competences of samplers*

The Corporation utilises its Water Sampling Procedures to facilitate uniform sample collections in the field. The Procedures require training to be provided to all samplers and be refreshed every three years. During the period subject to review, the Corporation used the SAP system's automated training module, SAP TEMS to monitor sampler accreditation.

### Opportunity to further strengthen system controls

The accreditation of a number of samplers in the North West Region (NWR) expired in May 2009 indicating that the Corporation was not in compliance with the requirements of S010 for water samples to be taken by accredited samplers. NWR and the DWQB were aware of the need for retraining, however deferred the scheduled training to avoid a clash with NWR's other operational priorities.

We acknowledge that accreditation is a formal process and does not necessarily align with the competence of samplers. In this case, DWQB had considered the relevant competence of NWR's samplers before deciding it was appropriate for samplers to continue taking assessable samples after expiry of their accreditation.

This matter is further detailed in the Observations and Recommendations section of this report.

### *Completeness and accuracy of reporting*

We observed that WQMS is designed to automatically report all violations and exceptions to key requirements as prescribed by S010 and the Binding Protocols of the MoU. The reporting process has been improved during this review period to be performed by an excel based application. This application draws out the required fields to be entered into the Corporate Management Report (CMR) without human intervention.

On a sample basis, we reconciled information contained in CMR reports and respective WQMS reports. For reports issued prior to April 2008, the CMR results were traced back to the WQMS report. For CMRs issued post April 2008, a walk through was undertaken to consider whether the data in WQMS accurately feeds into the reporting tool. No exceptions were noted.

### *Testing of Joint Agency Co-ordination Plan (JACP)*

We observed that no events occurred during the review period which required the employment of the JACP. We also observed that the JACP plan was successfully tested on two occasions, with JACP activities involving both internal and external stakeholders.

### **Conclusion**

Nothing has come to our attention to indicate that, in all material respects during the period 1 July 2006 to 30 June 2009, nominated regions did not effectively comply with S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 and 4 of the MoU.

## Objective 2

Assess the adequacy and effectiveness of the WQMS to:

- **manage and report on the requirements within S010, Drinking Water Sampling Procedures and Binding Protocols 2,3 and 4 as appropriate**
- **enable the Water Corporation to monitor compliance in the regions with these requirements, as appropriate.**

WQMS is used throughout the Corporation to apply the requirements prescribed by S010. WQMS automates many aspects of water quality management as prescribed by S010 and acts as the central database for all information on drinking water quality including sampling program design, sampling analysis, monitoring and reporting.

WQMS has been regularly modified since its implementation, introducing a number of additional controls and exception reports, which served to further strengthen the Corporation's Drinking Water Quality Management processes.

This engagement did not specifically test transactions processed against the rules and limits built into WQMS, as this was covered in the 2006 review. Reliance was placed on the work performed during that review, which observed compliance with S010 and the Department's requirements.

### Results and observations

Through our examination and testing of WQMS and the key components of the Corporation's drinking water quality management processes as described at Objective 1 above, we observed that during the period 1 July 2006 to 30 June 2009, the Corporation:

- managed and reported on the requirements within S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 and 4 of the MoU as appropriate
- monitored compliance in the regions with these requirements, as appropriate.

## Objective 3

**Assess the adequacy and effectiveness of the management framework employed by the Corporation's Drinking Water Quality Process Manager and the DWQB in the Perth and Goldfields & Agricultural regions.**

In examining the adequacy and effectiveness of the management framework employed by DWQB, we considered the relevance of the DWQB's structure, plans, operations, communication and Protocols to the expectations and requirements of the MoU and the 1996 and 2004 Drinking Water Guidelines.

We also specifically focussed on the level of competence displayed by the management and key personnel of the DWQB, Water Production Branch, Perth Region and the Goldfields & Agricultural Region.

### Results and observations

Through observation and discussion with key staff, we observed that:

- water quality exception results requiring notification to the Department are also notified to responsible line managers, including General Managers, Regional/Branch Managers and Service Delivery Managers via the WQMS email notification system, enabling their evaluation and resolution through remedial plans
- the Corporation and the Department communicate on a regular basis.

We are also aware of the number of projects, studies and initiatives in place to continue to enhance the Corporation's water quality management efforts, including:

- ongoing commitment to the implementation and effective management of water schemes using Water Safety Plans
- use of the AQUALITY review tool to ensure compliance with the 12 elements of the 2004 Australian Drinking Water Guidelines. We note that the most recent AQUALITY audit reported a number of potential improvements to the Corporation's framework, which the Corporation is currently considering to determine how they fit into existing plans and strategies for continuously improving drinking water quality
- use of "lessons learnt" briefing notes and brochures from incidents and exercises
- a comprehensive customer complaints process (which also monitors aesthetic water quality)
- use of governance reports to monitor compliance
- implementation of source protection strategies.

## Objective 4

### **Follow-up the implementation of the previous review recommendations**

The one recommendation from the 2006 review has now been effectively closed out as described below.

A Traccess database was used during the period subject to the 2006 review. SAP TEMS is now employed, which has automated controls to ensure that only samplers with current employee numbers will be listed as approved samplers. In the coming months, an updated Traccess database is expected to be re-implemented, providing more functionality than the older version, and addressing the previous review recommendation.

# Observations and recommendations

Reference/Subject	Observations	Recommendation	Risk Rating
<b>1. Sampler accreditation and competence</b>	<p><b>Criteria</b> Section 5.5.1 of the S010 manual requires that only persons accredited with the water quality samplers accreditation and who have been trained on the use of measuring instruments can carry out compliance sampling.</p> <p><b>Findings</b> At the time of our review a number of samplers' accreditation had expired, and some of those samplers (in the North West Region) had continued to take compliance samples. We acknowledge that accreditation is a formal process, which does not necessarily align with samplers' competence. Through the governance report, DWQB and Regions are aware of circumstances where samplers' accreditation expires and are able to make appropriate plans to ensure the samples continue to be taken by competent samplers. In the case observed by this review, DWQB has determined that samplers with expired accreditation should continue to take samples as they are more competent than other samplers who have not taken regular samples.</p> <p><b>Cause</b> The Corporation's existing practice for ensuring samplers' competence is not reflected in S010 requirements.</p> <p><b>Effect</b> The Corporation's sampling practice has technically not complied with its approved procedures.</p>	<p>To ensure that the Corporation's training programs continue to facilitate the accreditation of competent samplers, DWQB confirm the manner in which samplers are assessed to be competent for taking compliance samples, revise procedures and practices as appropriate and communicate those procedures and practices to all relevant personnel.</p>	<p><b>**</b></p>

**Management Comment/Action:**

Agreed: This is a requirement the Corporation has imposed on itself. Drinking Water Quality Branch will amend documentation to reflect current practices.

**Responsibility for Action:**

Manager DWQ Branch

**Accountable Manager:**

GM Water Technologies  
Division

**Target Date:**

December 2009

**Status As At:**
**Finalised:**

# Statement of responsibility

This report has been prepared in accordance with the requirements of the Scope and Objective Statement signed on 6 May 2009, the Corporation's general conditions of contract for consultancy services to which Deloitte has agreed, and subject to the following limitations:

- in relation to Objectives 1 and 4 of this engagement, where a determination of compliance or an assessment of status was required, we conducted our work in accordance with Australian Standard on Assurance Engagements ASAE 3500 "Performance Engagements". Our procedures were designed to provide limited assurance as defined by ASAE 3500, which recognises the fact that absolute assurance is rarely attainable due to such factors as the use of judgment in gathering and evaluating evidence and forming conclusions, and the use of selective testing, and because much of the evidence available to the auditor is persuasive rather than conclusive in nature
- in relation to Objectives 2 and 3 of this engagement, where consideration of adequacy and effectiveness was required, the procedures we performed did not constitute an assurance engagement in accordance with Australian Standards for Assurance Engagements, nor did they represent any form of audit under Australian Standards on Auditing and consequently, no assurance conclusion or audit opinion is provided
- because of the inherent limitations of any internal control structure, it is possible that errors or irregularities may occur and not be detected. Our procedures were not designed to detect all weaknesses in control procedures as they were not performed continuously throughout the period and the tests performed are on a sample basis
- any projection of the evaluation of the control procedures to future periods is subject to the risk that the systems may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate
- the matters raised in this report are only those which came to our attention during the course of performing our procedures and are not necessarily a comprehensive statement of all the weaknesses that exist or improvements that might be made. We cannot, in practice, examine every activity and procedure, nor can we be a substitute for management's responsibility to maintain adequate controls over all levels of operations and their responsibility to prevent and detect irregularities, including fraud. Accordingly, management should not rely on our report to identify all weaknesses that may exist in the systems and procedures under examination, or potential instances of non-compliance that may exist
- suggestions for improvement should be assessed by management for their full commercial impact before they are implemented.

All professional personnel involved in this engagement have met the independence requirements of the Australian Professional accounting bodies. Our team has the required competencies and experience for this engagement.

# Appendix A

**Terms of reference (Objective and scope statement)**



**Government of Western Australia**  
**Department of Health**  
Public Health

## **WATER CORPORATION AUDIT 2009**

### **OBJECTIVE AND SCOPE STATEMENT**

## Background

On 5<sup>th</sup> November 2007 the Department of Health and Water Corporation entered into a Memorandum of Understanding for Drinking Water (MoU).

Section 16.5 of the MoU states that the Department may conduct an audit of the Corporation's systems and data bases used to manage and report drinking water quality in relation to the following sections of the MoU:

- Section 4.0 Administration of drinking Water Quality
- Section 6.0 Systems Analysis and Management
- Section 7.0 Materials and Chemicals
- Section 8.0 Data Exchange
- Section 9.0 Events of public health significance

The audit report should include recommendations for improvements where appropriate.

Schedule 1 of the MoU sets out the Drinking Water Quality Requirements that the Water Corporation is formally required to meet in its Operating License with the Economic Regulation Authority. This audit should in part aim to fulfil this requirement.

Binding Protocol 2 of the MoU lists the Water Quality Management Processes and Procedures that enable the Water Corporation to demonstrate compliance with Schedule 1 and any additional direction given by the Department of Health.

The principal drinking water quality management operating manuals used by the Water Corporation are:

- S010 Drinking Water Quality Performance, and
- Drinking Water Sampling Procedures.

A computerised Water Quality Management System (WQMS) is used throughout the Water Corporation to apply the requirements prescribed by the manual Drinking Water Quality Performance S010.

The Chief Executive Officers shall endorse the audit report and timetable for improvements. The responsible officers (Director Environmental Health, Department of Health and Manager Drinking Water Quality, Water Corporation) shall provide regular progress reports.

## Objectives

1. To determine whether:
  - the “Drinking Water Quality Performance”, S010 manual accurately interprets and applies the combined requirements of the:
    - Guidelines for Drinking Water Quality in Australia as published in 1996,
    - Australian Drinking Water Guidelines as published in 2004; and any
    - additional directions given by the Department of Health
  - nominated regions comply with the directions contained within S010 to a locality or zone level;
  - nominated regions comply with Drinking Water Sampling Procedures
  - nominated regions comply with Binding Protocols 2, 3 and 4 of the MoU as appropriate.
2. To assess the adequacy and effectiveness of the Water Quality Management System (WQMS) to;
  - manage and report on the requirements within S010, Drinking Water Sampling Procedures and Binding Protocols 2, 3 and 4 of the MoU as appropriate;
  - enable the Corporation to monitor compliance in the regions with these requirements, as appropriate
3. To assess the adequacy and effectiveness of the management framework employed by the Water Corporation’s Drinking Water Quality Process Manager, the Drinking Water Quality Branch (DWQB)
4. To follow-up the implementation of the previous audit recommendations.

## Scope and Focus

The scope of the audit covers:

- the “Drinking Water Quality Performance”, S010 manual,
- visits to the **Goldfields and Agricultural Region and the Perth Region**,
- testing transactions over the period since the last audit,
- testing the reliability and integrity of Binding Protocol 2 reporting over the period 1 July 2006 to 30 June 2009
- the computerised Water Quality Management System (WQMS),
- the management framework administering
  - S010 “Drinking Water Quality Performance”,
  - the Water Quality Management System (WQMS); and

- Drinking Water Sampling Procedures, within the Water Corporation Drinking Water Quality Branch (DWQB) Central Office, the Goldfields and Agricultural Region and the Perth Region,
- the implementation of the 2006 Drinking Water Quality Management Audit recommendations and any relevant recommendations from the 2006 Operational Audit.

The audit will test whether:

- Under S010 and Binding Protocol 2:
  - sampling programs are consistent with S010,
  - samples are taken in accordance with the sampling programs,
  - remedial actions are taken when samples exceed guidelines,
  - sampling locations are appropriate,
  - samples are handled correctly; and
  - reporting is complete and accurate.
- Under Binding Protocol 3:
  - the coordination plan is up to date and tested.
- Under Binding Protocol 4:
  - exception protocols are followed
- The management framework administering:
  - water quality management performance is subjected to continual review,
  - water quality exceptions are adequately identified and evaluated,
  - remedial plans are appropriate and timely; and
  - communication between the Drinking Water Quality Branch and Department of Health is adequate.

# Appendix B

## Risk events, consultation & documents examined

### Risk events considered

Poor drinking water quality resulting in widespread illness within the community and potential fatality. Causes are classified as:

- Microbiological (the greatest and fastest-acting threat)
- Chemical (such as Arsenic, Nitrates and Pesticides)
- Radiological.

### Other relevant risks

- process risks, such as sampling
- competency, for example of employees, suppliers, contractors
- reporting systems risk (completeness, accuracy, validity, relevance of information reported)
- contingency plans in the event of a crisis/emergency
- any shared responsibilities, especially at critical control points.

### Consultation – key Corporation personnel

#### Drinking Water Quality Branch

- Andrew Bath, Water Quality Operations Manager
- Rino Trolio, Manager Operations Support
- Kim Partridge, Water Quality Consultant
- Angela Donohoe, Water Quality Consultant
- Richard Walker, Manager

#### Water Production Branch

- Ines Zic, Water Safety Planning Manager (Previously Drinking Water Quality Coordinator)
- Paul Prottey, Duty Coordinator, Customer Services
- Heather Stansfield, Acting Senior Engineer Water Quality

#### Goldfields & Agricultural Region

- Brian Kavanagh, Regional Business Manager
- Derek Host, Manager Service Delivery
- Chris Haynes, Operations Compliance Officer/Water Quality Coordinator
- Simon Peters, Sampling Officer

#### Perth Region

- Graeme Sneddon, Contracts Manager

## Key documents examined

- Drinking Water Quality Guidelines 1996 & 2004
- Water Services Operating licence - 32 Ver 2005 & 2009
- Memorandum of Understanding and supporting schedules
- Binding Protocols 1, 2, 3 and 4
- 2006 DWQM review report
- Drinking Water Quality Performance S010 Manual
- Drinking Water Sampling Procedures
- Management of DWQ Monitoring Procedure
- Management of Water Sampler Competency
- Management of Notifiable Events Procedure
- Managing and Responding to DWQ Incidents – Lessons Learnt Paper
- Managing and Responding to DWQ Incidents - Customer Complaints Incidents Procedure
- Managing and Responding to DWQ Incidents - Events of Public Health Significance Procedure
- Audit Report of Major Enhancements
- Review of DWQ Monitoring Results Report
- Responding to Allegations of Illness Cause by Drinking Water Procedure
- Development and Review of Assessable DWQ Monitoring Programs Procedure
- Assessable DWQ Monitoring Program Checklist
- Key Characteristic Checklist
- Listing of new monitoring points
- Listing of WQMS administrators
- Listing of notifiable events
- Field Instruments Approved for Operational Monitoring of Drinking Water Procedure

### Regular/operational reports

- Missed analysis exception report
- Planned analysis exception report
- Sampling program report
- Trained samplers report
- Corporate management reports (various months)
- Governance report – May 2009
- DWQ annual report
- Data audit reports (various months)

# Appendix C

## Table - Importance of recommendations based on risk and opportunity to improve

(Sourced from Water Corporation Management Review & Audit's reporting framework)

CATEGORY	IMPORTANCE	ACTION
***** CRITICAL	Critical issue.  Critical strategic importance.	CEO to initiate immediate action.  Immediate advice to Chairman, Audit & Compliance Committee.  Follow up briefings to Audit & Compliance Committee and the Board.
**** MAJOR	Major issue.  Major strategic importance or opportunity to improve business.	CEO to ensure process in place to initiate immediate action.  CEO to monitor action plan.  Regular progress reports to Audit & Compliance Committee and the Board.
*** SIGNIFICANT	Significant issue.  Significant strategic importance.	CEO/Custodian to ensure immediate action initiated.  CEO/Custodian to monitor action plan.  Regular progress reports to CEO with progress report to Audit & Compliance Committee meetings.
** MODERATE	Moderate issue.  Minimal strategic importance or opportunity to improve.	Branch/Regional Business Manager to ensure priority is set for action according to resource and other constraints. Where priority of action is affected by constraints appropriate General Manager must agree.  Branch/Regional Business Manager to monitor action plan.  Regular reporting to appropriate General Manager/Custodian with exception reporting to Audit & Compliance Committee.
* MINOR	No strategic importance.  Minor opportunity to improve.	Line management to ensure a priority is set for action according to resource & other constraints.  Line management to monitor action plan.  Exception reporting to Branch/Regional Business Manager.

